

PROJECT SPECIAL PROVISION

(10-18-95)

Z-1

PERMITS

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

PERMIT

AUTHORITY GRANTING THE PERMIT

Dredge and Fill and/or
Work in Navigable Waters (404)
Water Quality (401)

U. S. Army Corps of Engineers

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.

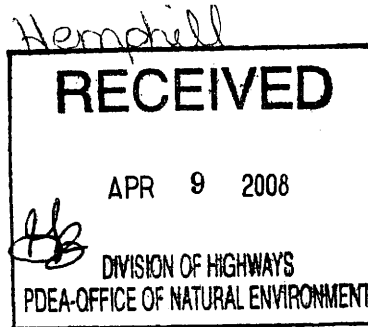
The Contractor's attention is also directed to Articles 107-10 and 107-14 of the *Standard Specifications* and the following:

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.

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



REPLY TO
ATTENTION OF:

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.

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:

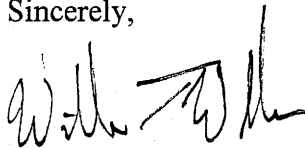
Col. John E. Pulliam, Jr., District Commander
US Army Corps of Engineers, Wilmington District
Post Office Box 1890
Wilmington, NC 28402-1890

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,

A handwritten signature in black ink, appearing to read 'William T. Walker', with a stylized flourish at the end.

William T. Walker
Chief, Asheville Field Office

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee **North Carolina Department of Transportation**

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

Issuing Office **CESAW-RG-A**

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

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

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

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

Permit Conditions:

General Conditions:

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

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

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (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.

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

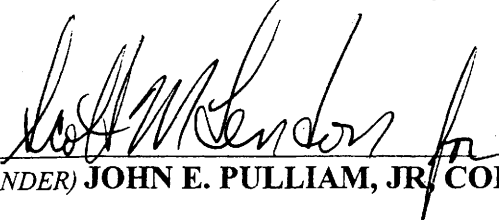
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance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

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

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

 4/10/08
 (PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE)

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

 18 April 2008
 (DISTRICT COMMANDER) JOHN E. PULLIAM, JR, COLONEL (DATE)

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

 (TRANSFEEE) (DATE)

Special Conditions

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

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

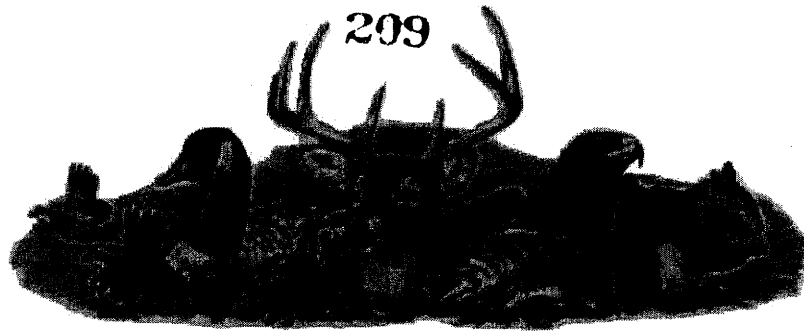
7. To ensure that all borrow and waste activities occur on uplands and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of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

a given segment of stream channel.

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

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

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



☒ North Carolina Wildlife Resources Commission ☒

Richard B. Hamilton, Executive Director

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

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

DATE: July 19, 2007

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

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

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

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

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

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

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

October 15 to April 15 trout moratorium: Big Crabtree Creek

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

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

cc: David Baker, USACE
Brian Wenn, NCDWQ
Marella Buncick, USFWS
Christopher Militscher, USEPA



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

211

Coleen H. Sullins, Director
Division of Water Quality

Hemphill

*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.

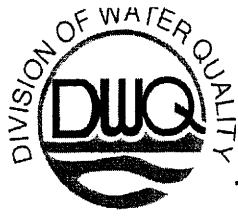


Table 3 - Estimated Stream Impacts for R-2519A in the French Broad River Basin*

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



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

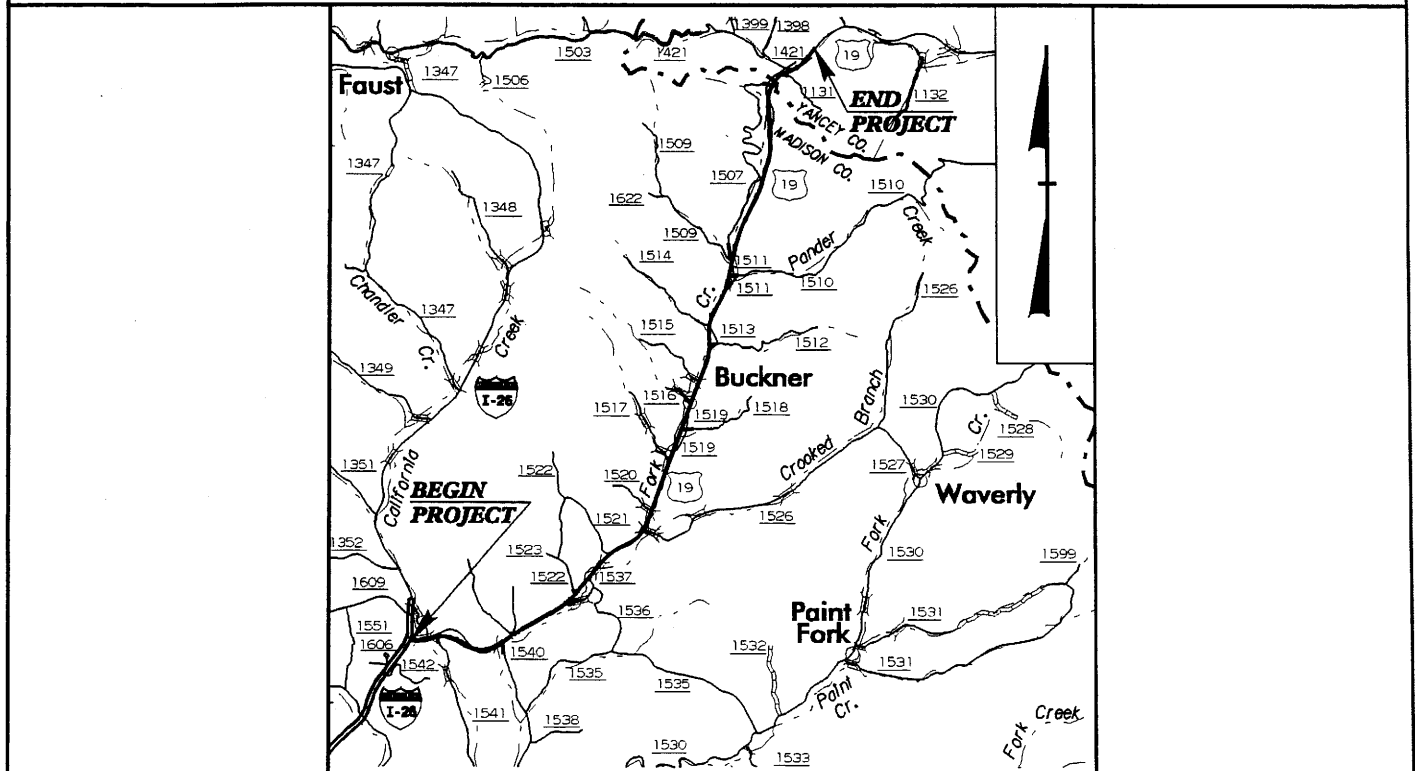
_____ Partial _____ Final

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



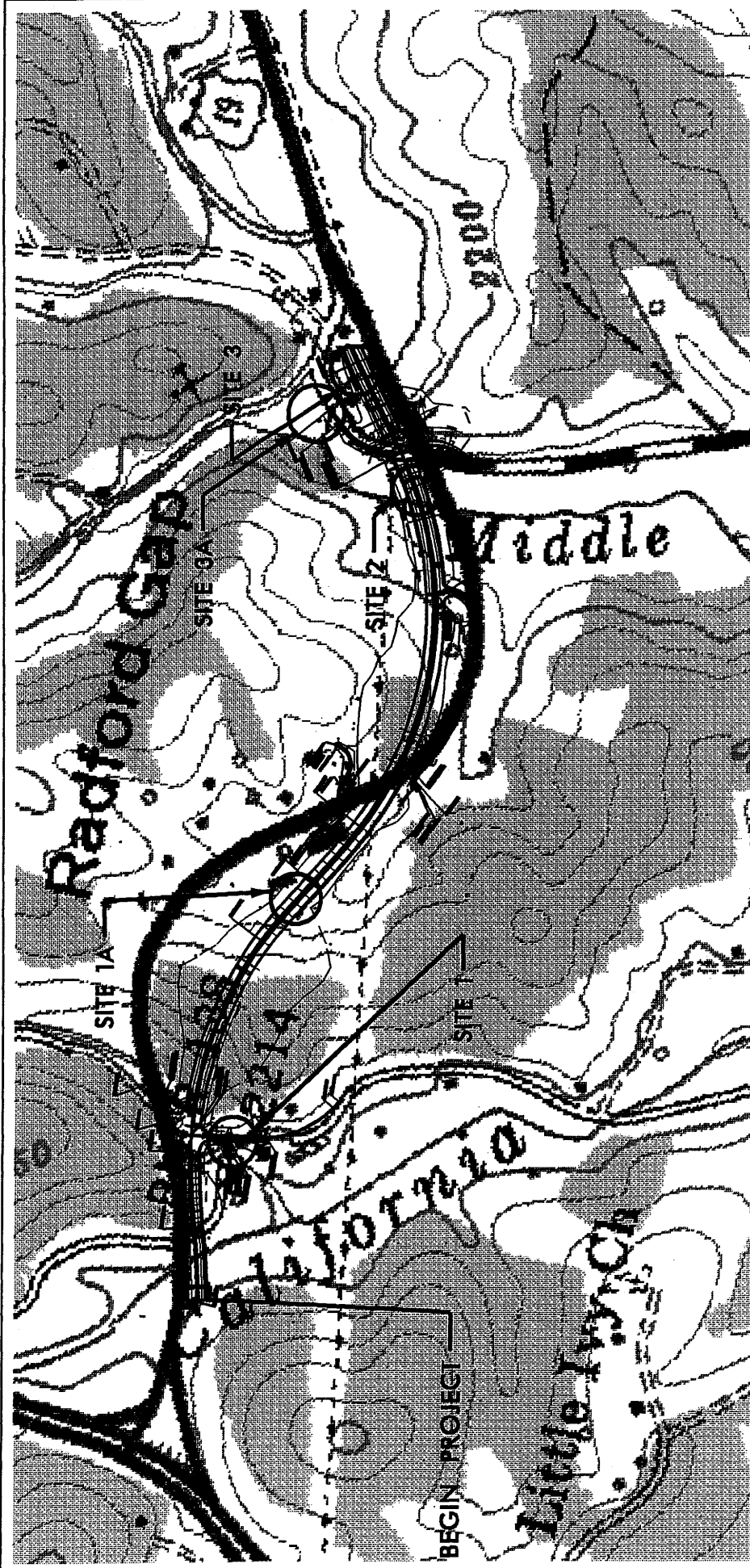
VICINITY MAPS

NCDOT

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

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

Permit Drawing
 Sheet 1 of 6



NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

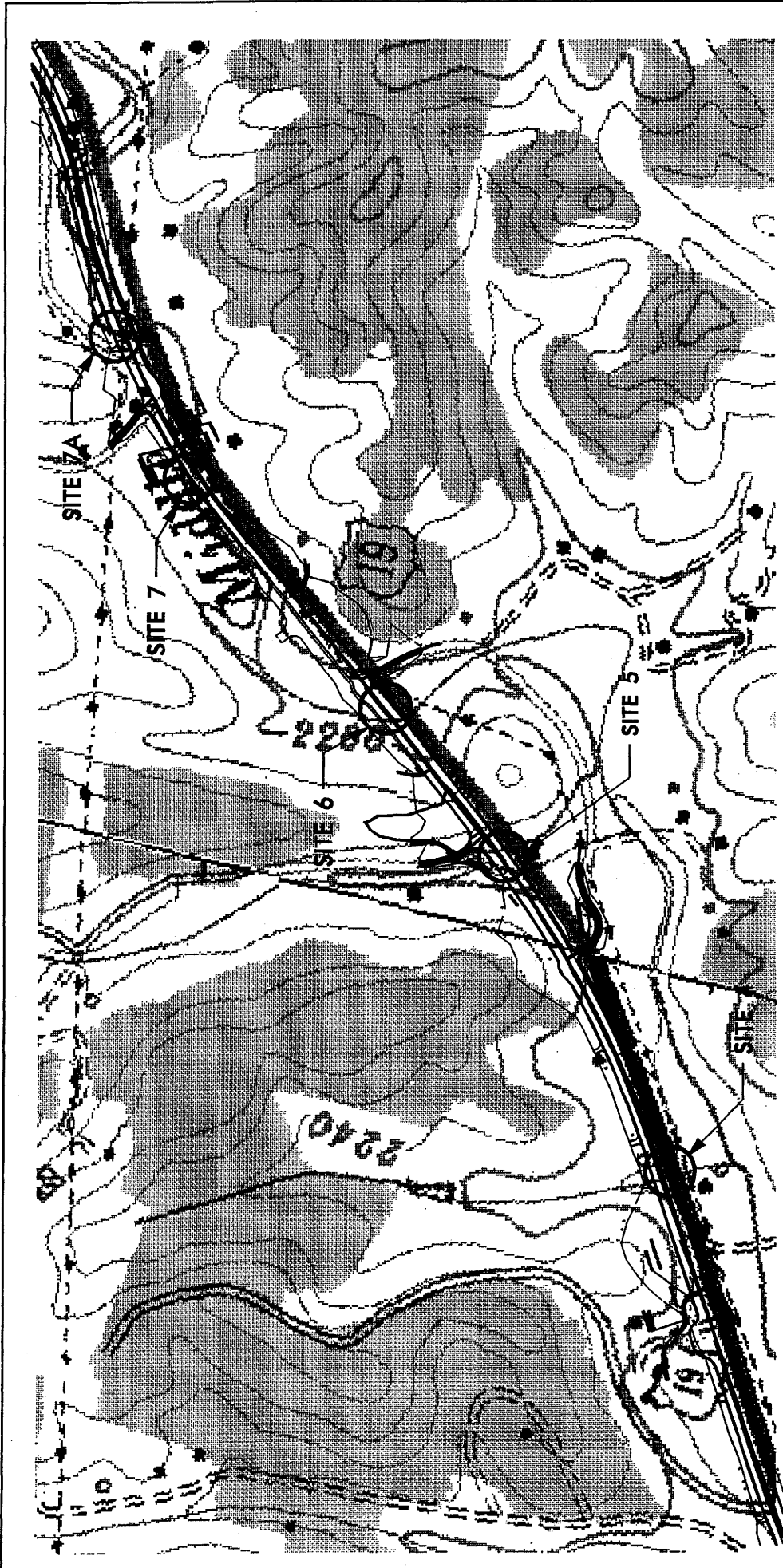
PROJECT: 6.869005T (R-2518A)

US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SHEET OF /

SITE MAP



NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

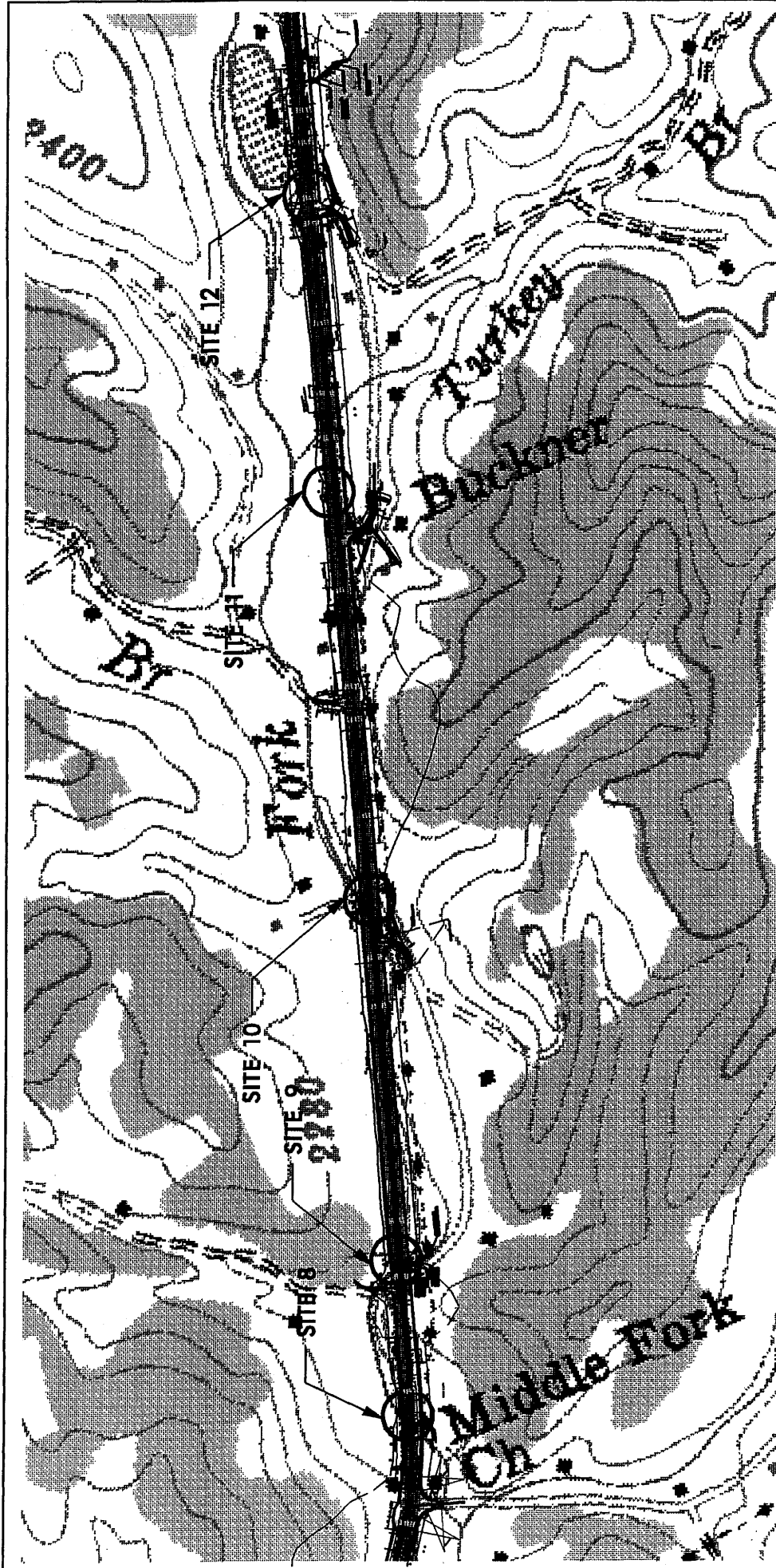
PROJECT: 6.869005T (R-2518A)

US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SHEET / OF /

SITE MAP

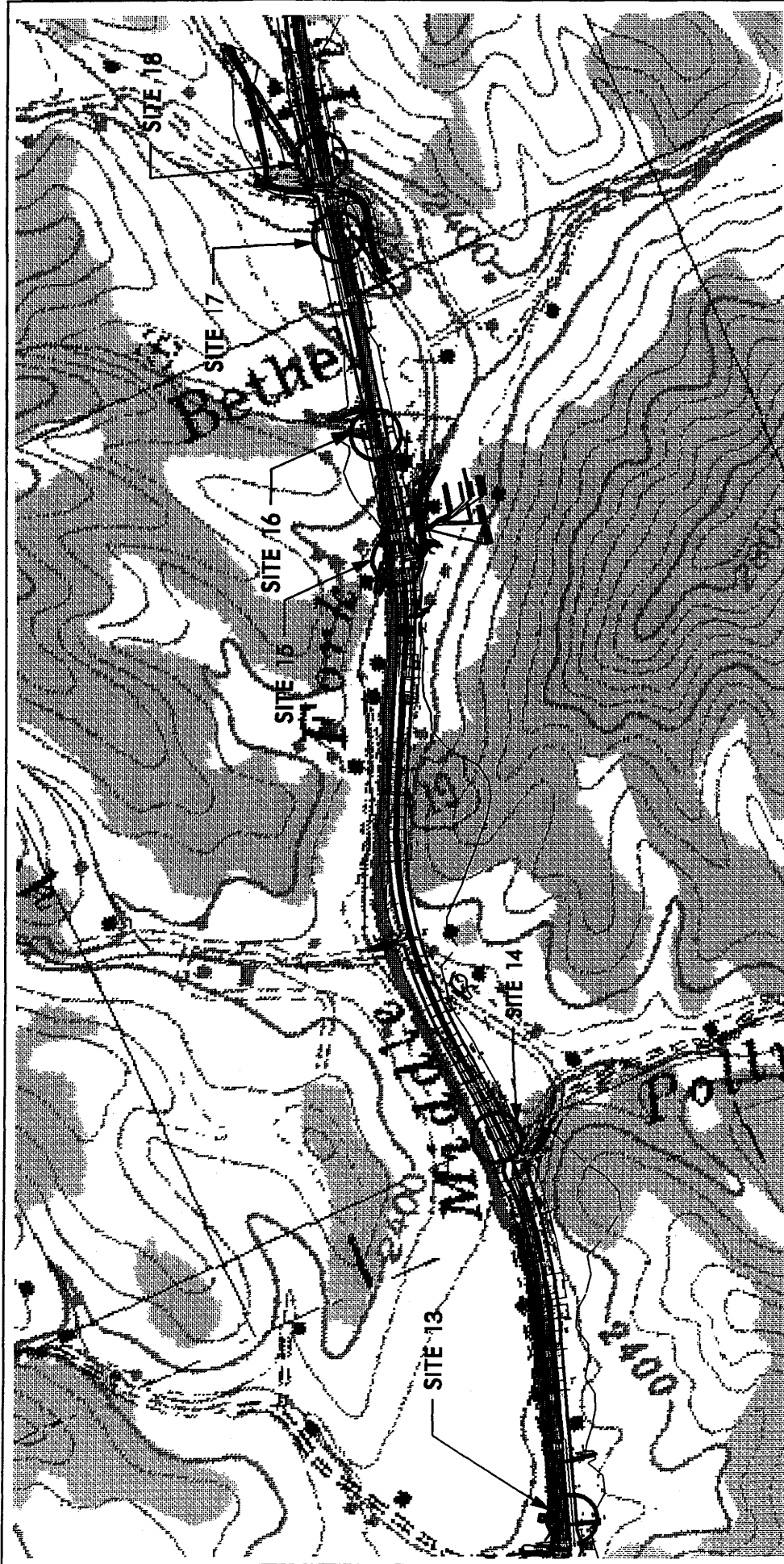


NCDOT

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

SITE MAP

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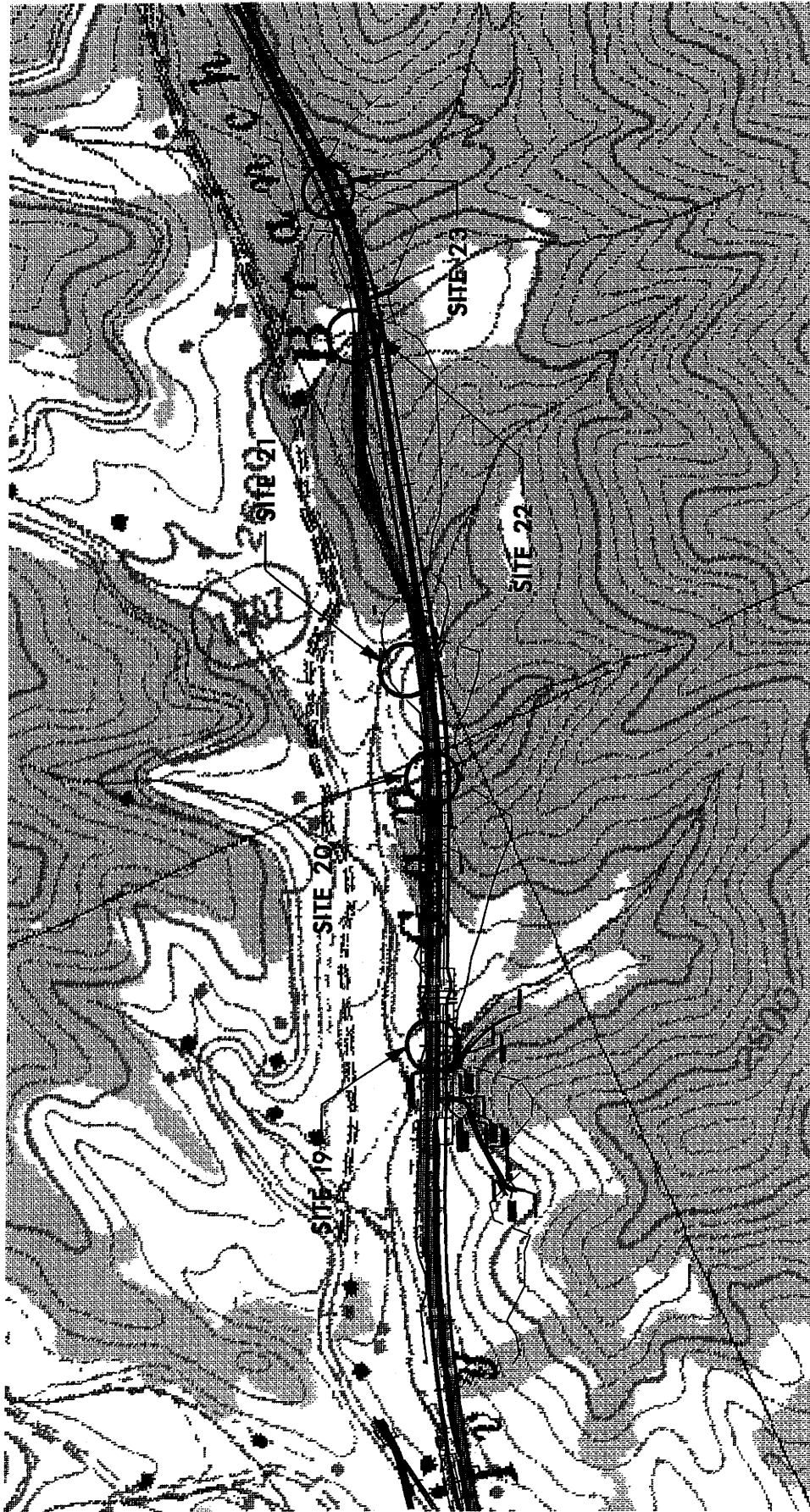


NCDOT

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

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SITE MAP



NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

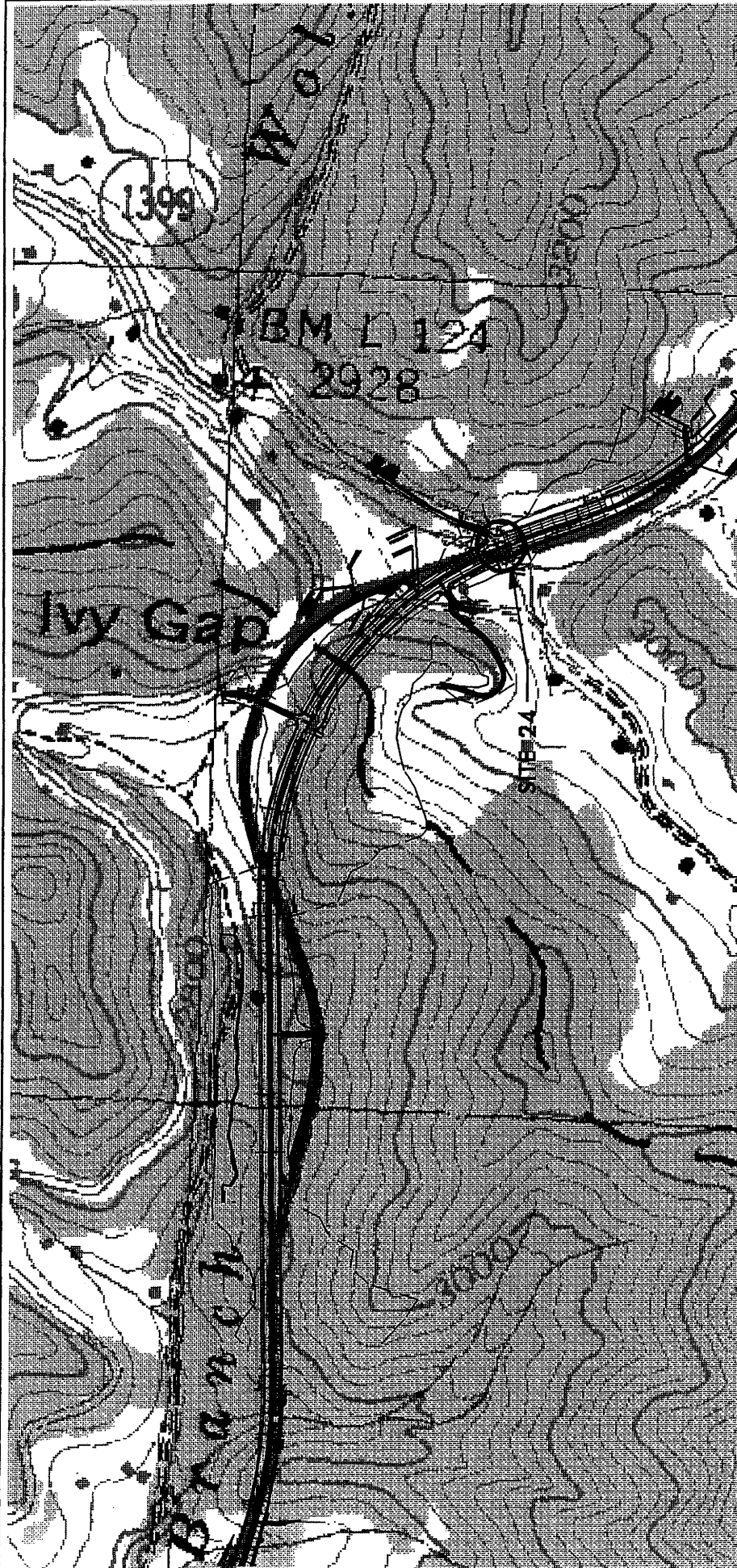
PROJECT: 6.869005T (R-2518A)

US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SITE MAP

SHEET OF /



NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

PROJECT: 6.869005T (R-2518A)

US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SHEET OF /

SITE MAP

PROPERTY OWNERS

NAMES AND ADDRESSES

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

NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

PROJECT: 6.869005T (R-2518A)

US 19 FROM I-26 TO 0.8 KM EAST

OF THE YANCEY CO LINE

Permit Drawing
Sheet 8 of 64

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
84	RALPH LEE FERGUSON	62 BETHEL CIRCLE MARS HILL, NC 28754
85	R. PAUL PONDER	4581 US HWY 19 MARS HILL, NC 28754
86	BETHEL BAPTIST CHURCH	100 BETHEL CIRCLE MARS HILL, NC 28754
87	MORRIS REAVIS, RALPH REAVIS	195 MELROSE DRIVE WAUKLE, IA 50263
88	DALLAS BUCKNER, JR.	4605 US HWY 19 MARS HILL, NC 28754
89	VESSIE REAVIS	ROUTE 2, BOX 294 MARS HILL, NC 28754
93	CLYDE CHANDLER, JR.	305 HOLCOMBE BRANCH WEAVERVILLE, NC 28787
98	ERNEST H. MCKINNEY	1527 US HWY 19 MARS HILL, NC 28754
99	MELVIN J. BEASLEY	5172 US HWY 19 MARS HILL, NC 28754
100	JAMES B. RAY	46 ROLLIN HILL ESTATE BURNSVILLE, NC 28714
101	DAVID M. THOMAS	5684 US HWY 19 MARS HILL, NC 28754
102	LARRY S. MCCALL	2222 MADRONE DR. FAIRFIELD, CA 94533
111	MARGIE REVIS CHANDLER	ROUTE 2, BOX 238 MARS HILL, NC 28754
112	VICTOR SHEPHERD	ROUTE 2, BOX 238 MARS HILL, NC 28754
113	JAY CHANDLER	ROUTE 3 BOX 452 BURNSVILLE, NC 28714

NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

PROJECT: 6.869005T (R-2518A)

US 19 FROM I-26 TO 0.8 KM EAST

OF THE YANCEY CO. LINE

Permit Drawing

Sheet 9 of 64

January 12, 2005

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

Subject: Stormwater Management Plan

ROADWAY DESCRIPTION

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

ENVIRONMENTAL DESCRIPTION

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

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

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

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

WETLAND PERMIT IMPACT SUMMARY

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

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

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

SHEET OF

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

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

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

WETLAND PERMIT IMPACT SUMMARY

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

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

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

SHEET OF

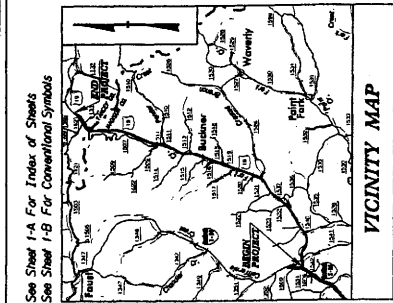
WETLAND PERMIT IMPACT SUMMARY											
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands Permanent (ac)	Fill In Wetlands Temporary (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Permanent SW impacts (ac)	Temp. SW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

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

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

SHEET OF

CONTRACT: C201372
TIP PROJECT: R-2518A



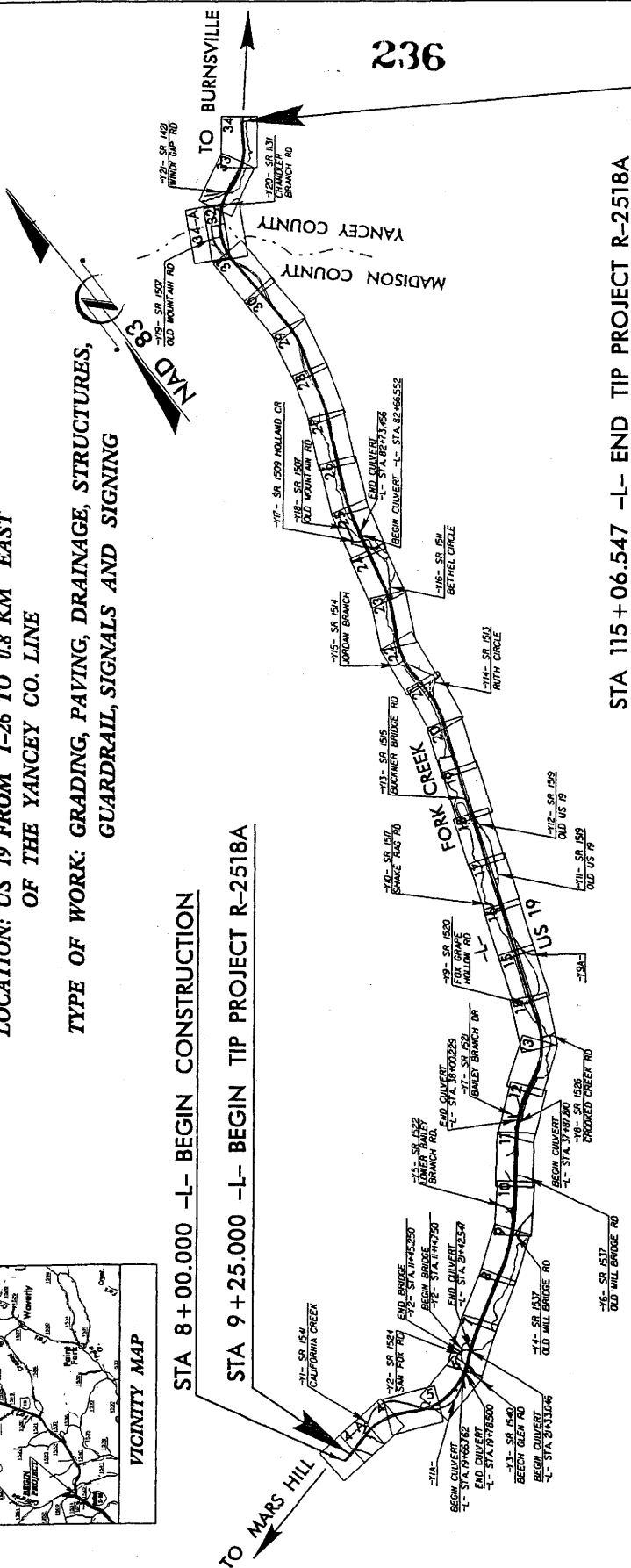
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

LOCATION: US 19 FROM 1-26 TO 0.8 KM EAST
OF THE YANCEY CO. LINE

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

STATE	N.C.	STATE PROJECT NUMBER	R-2518A
ROUTE	1	DATE PREPARED	3/4/05
CONTRACT	FE	ROW, UTIL	CONST.
METRIC		ALL DIMENSIONS IN METERS UNLESS OTHERWISE SHOWN	
DATE	3/4/05	SCALE	AS SHOWN
DESIGNER	34445.2.2	CHECKER	34445.4.1
APPROVED		DATE	



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

236

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

GRAPHIC SCALES PLANS: 1" = 100' PROFILE (HORIZONTAL): 1" = 100' PROFILE (VERTICAL): 1" = 100'	DESIGN DATA ADT 2008 = 10,840 - 12,080 ADT 2038 = 16,440 - 18,220 DHV = 10 % D = 65 % T = 10 % V = 100 km/h * (TST 6% + DUAL 4%)	PROJECT LENGTH LENGTH ROADWAY TIP PROJECT R-2518A = 10.551 KM LENGTH STRUCTURE TIP PROJECT R-2518A = 0.031 KM TOTAL LENGTH STATE TIP PROJECT R-2518A = 10.582 KM	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
			PREPARED IN THE OFFICE OF: DIVISION OF HIGHWAYS 1000 Black Bluffs Dr., Raleigh, NC 27610
RIGHT OF WAY DATE: MARCH 31, 2005	PROJECT ENGINEER: BRENDA MOORE, PE	STATE DESIGN ENGINEER: ROADWAY DESIGN ENGINEER	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
LETTING DATE: DECEMBER 18, 2007	PROJECT MANAGER: THAD F. DUNCAN, PE	STATE DESIGN ENGINEER: FEDERAL HIGHWAY ADMINISTRATION	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

METRIC

PROJECT REFERENCE NO. **5** SHEET NO. **5**

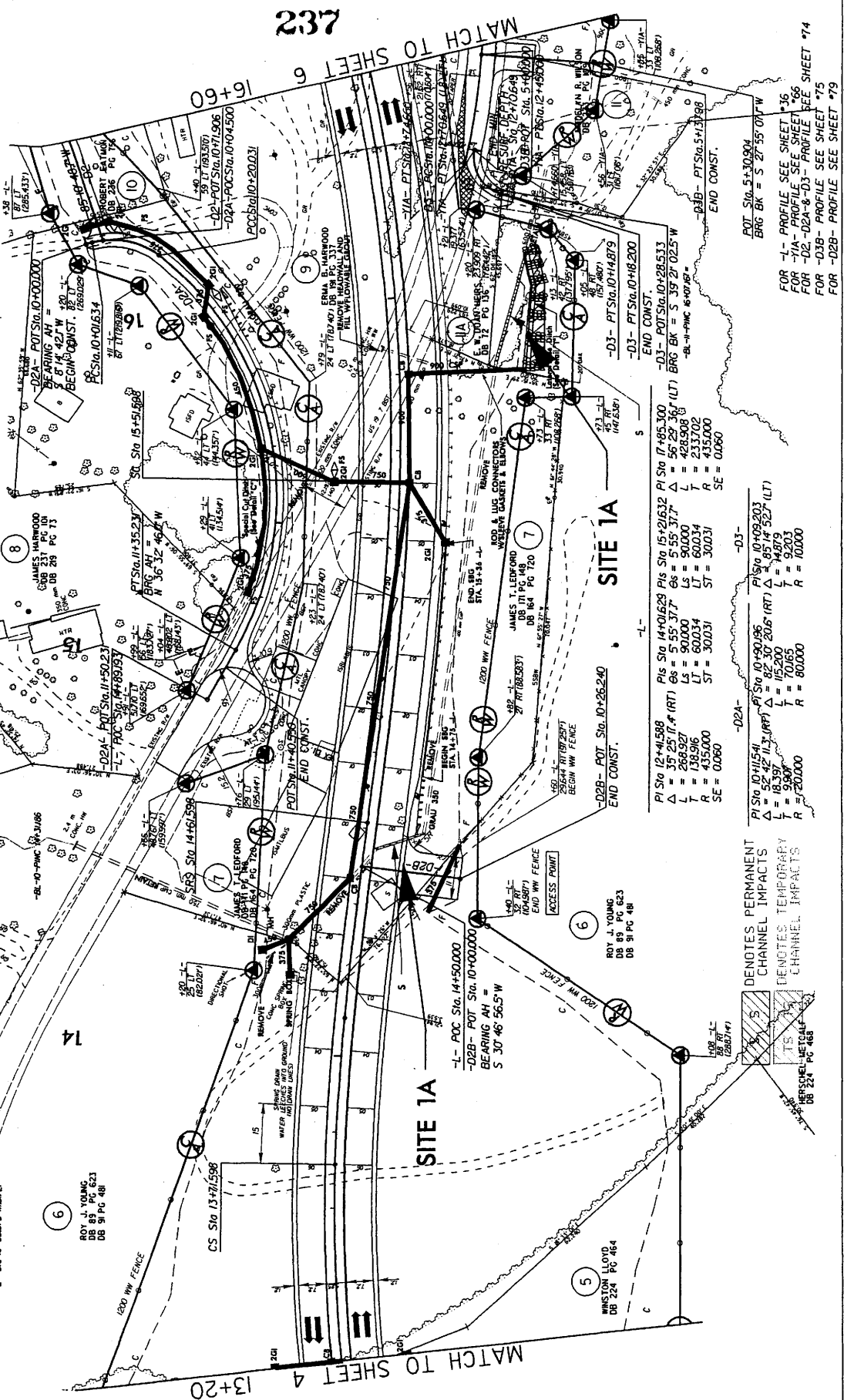
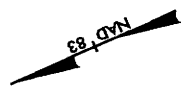
R-25/8A
LAW SHEET NO. **5**

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT BE USED FOR CONSTRUCTION

COUNTRY: **USA**

SCALE: **1" = 40'**



PI Sta 12+41.588	PI Sta 14+01.229	PI Sta 15+21.632	PI Sta 17+495.300	-D3- PT Sta. 10+14.879	END CONST.
L = 35.25 (7.7 RT)	CS = 55.37 (7.7)	CS = 55.37 (7.7)	CS = 55.37 (7.7)	-D3- PT Sta. 10+14.879	END CONST.
L = 268.927	CS = 90.000	L = 90.000	L = 428.908	-D3- PT Sta. 10+14.879	END CONST.
T = 138.916	LT = 600.34	LT = 600.34	T = 233.702	-D3- PT Sta. 10+14.879	END CONST.
R = 600.34	ST = 300.31	ST = 300.31	R = 435.000	-D3- PT Sta. 10+14.879	END CONST.
SE = 0.060			SE = 0.060	-D3- PT Sta. 10+14.879	END CONST.

PI Sta 10+15.4	PI Sta 10+90.196	PI Sta 10+109.203
L = 52.42 (11.3 OFF)	L = 82.30 (20.6 RT)	L = 65.14 (5.27 LT)
L = 18.397	L = 15.200	L = 14.879
T = 9.607	T = 7.065	T = 9.203
R = 200.000	R = 80.000	R = 10.000

DENOTES PERMANENT CHANNEL IMPACTS

DENOTES TEMPORARY CHANNEL IMPACTS



ROY J. YOUNG
DB 83 PC 62.3
DB 91 PC 481

Winston Lloyd
DB 224 PC 464

JAMES T. EDWARD
DB 111 PC 48
DB 84 PC 720

JAMES B. MARKWOOD
DB 198 PC 317
DB 111 PC 481

ERMA B. MARKWOOD
DB 198 PC 317
DB 111 PC 481

ROBERT S. MARKWOOD
DB 236 PC 74

HERSCHEL METCALF
DB 224 PC 464

POT Sta. 10+00.000
BRG BK = S 27°55'01"W

POT Sta. 10+10.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+20.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+30.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+40.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+50.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+60.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+70.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+80.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+90.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+100.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+110.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+120.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+130.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+140.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+150.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+160.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+170.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+180.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+190.000
BRG BK = S 39°27'02.5"W

POT Sta. 10+200.000
BRG BK = S 39°27'02.5"W

FOR -1- PROFILE SEE SHEET #36

FOR -7A- PROFILE SEE SHEET #66

FOR -D2A-8-D3- PROFILE SEE SHEET #74

FOR -D3B- PROFILE SEE SHEET #75

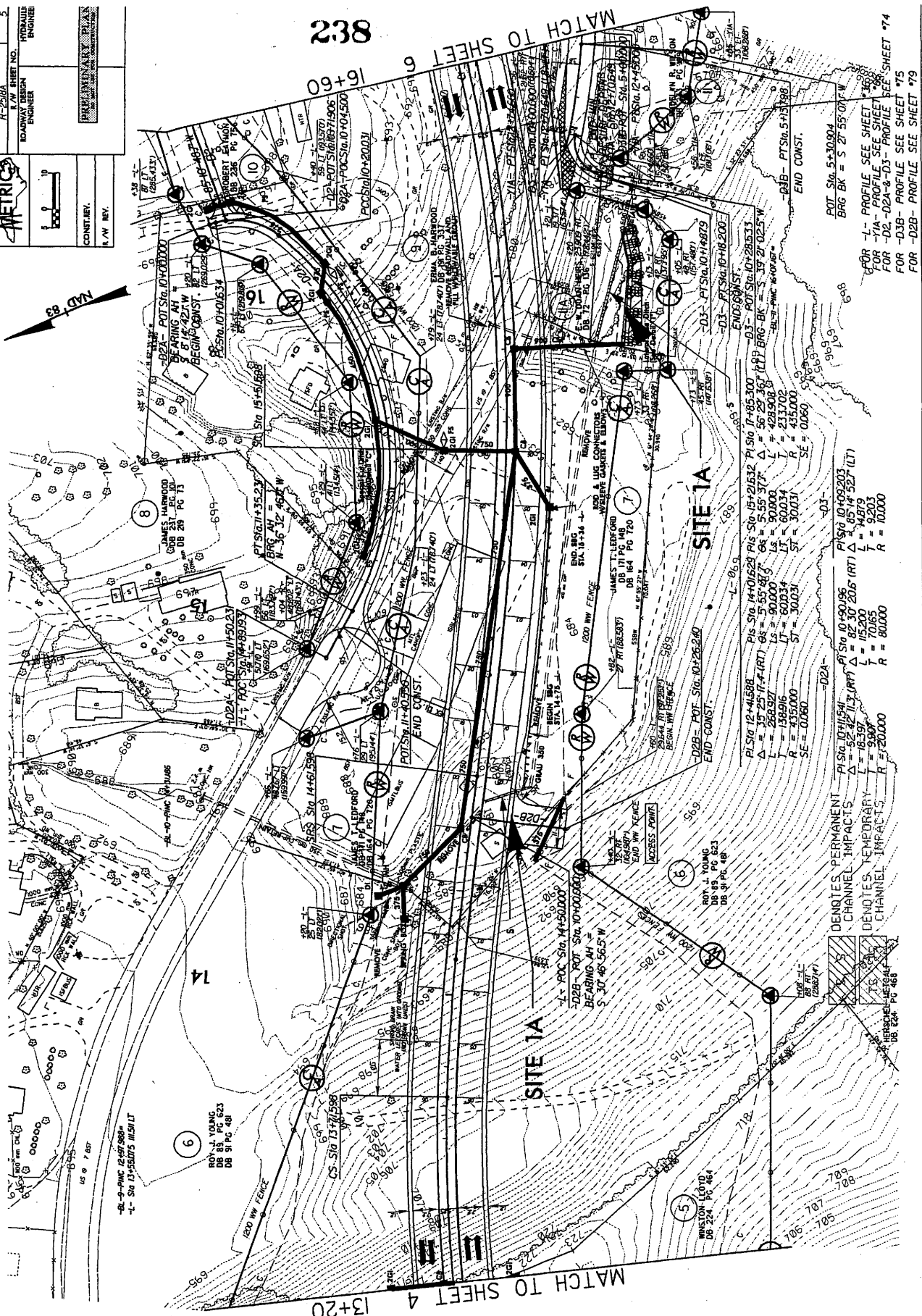
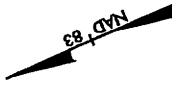
FOR -D2B- PROFILE SEE SHEET #79



R-250A K.W. RHEE, P.E. ROADWAY DESIGN ENGINEER	
CONTRACT NO.	DATE
LAW REV.	

832

MATCH TO SHEET 6
16+60



MATCH TO SHEET 4
13+20

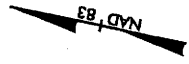
FOR -L- PROFILE SEE SHEET *74
FOR -1A- PROFILE SEE SHEET *68
FOR -D2A-&-D3- PROFILE SEE SHEET *74
FOR -D3B- PROFILE SEE SHEET *75
FOR -D2B- PROFILE SEE SHEET *79

Permit Drawing
Sheet 11 of 61

PROJECT REFERENCE NO. R-2506A
 SHEET NO. 6
 R/W SHEET NO. HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER

METRIX

CONST. R/W REV.
 PRELIMINARY PLANS



239

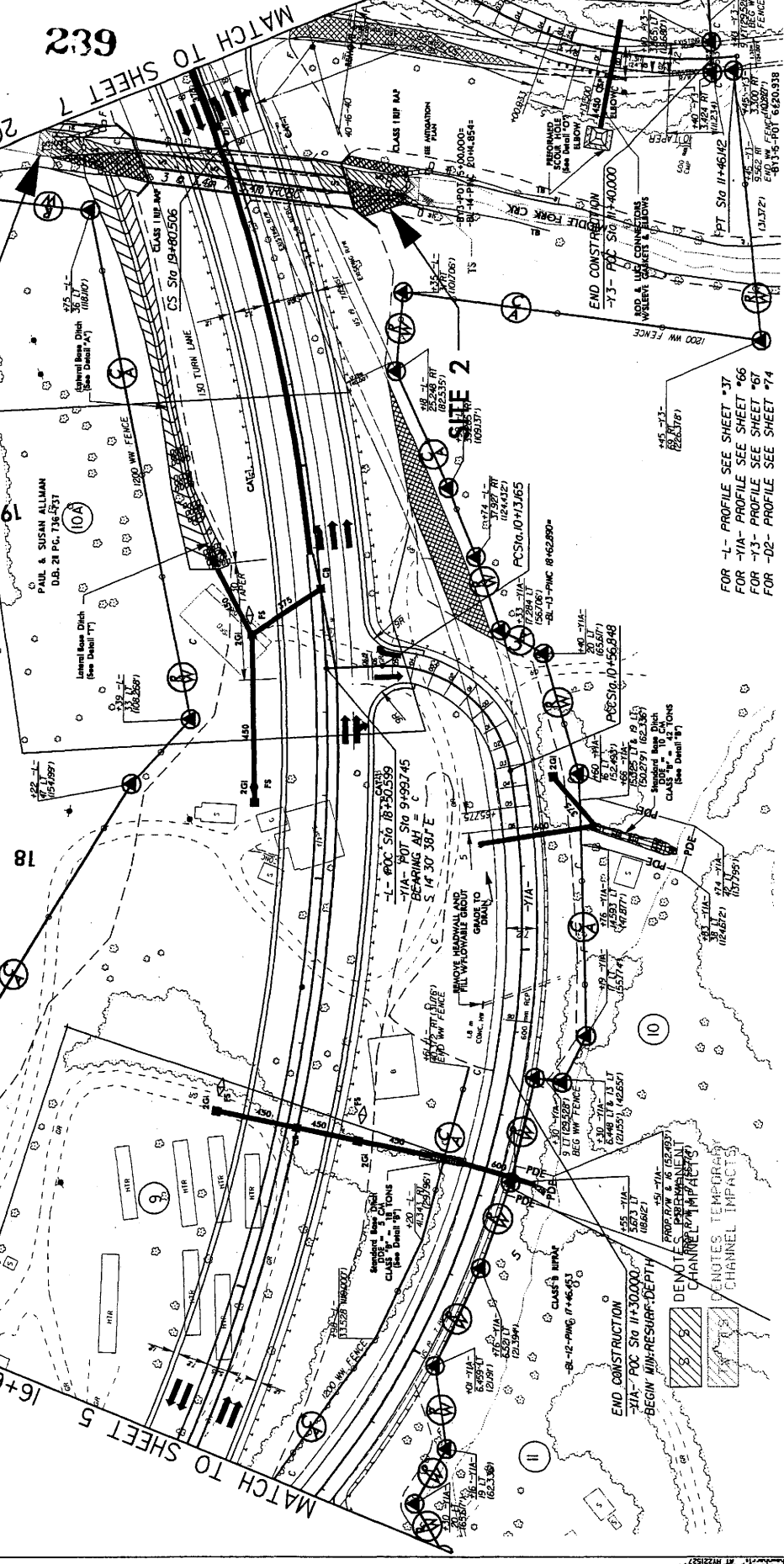
MATCH TO SHEET 7
 20+00
 CLASS 1.00 LANE
 150 TURF LANE
 1200 MW FENCE
 CAVE
 100
 200
 300
 400
 500
 600
 700
 800
 900
 1000

- L-
 PI Sta 17+85.300
 Δ = 56.29
 L = 429.908
 T = 233.702
 R = 435.000
 SE = 0.060
- L-
 PI Sta 17+85.300
 Δ = 42.167
 L = 73.770
 T = 38.654
 R = 600.000
 RO = 40
- D2-
 PI Sta 20+05.377
 Δ = 67.41
 L = 235.36
 T = 167.65
 R = 250.000
 RO = 40
- Y1A-
 PI Sta 10+39.907
 Δ = 83.25
 L = 43.683
 T = 267.42
 R = 300.000
 SE = 0.080
 RO = 40
- Y1A-
 PI Sta 11+75.618
 Δ = 56.43
 L = 217.913
 T = 157.170
 R = 220.000
 SE = 0.080
 RO = 40

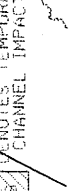
-D2- POC Sta 10+00.000
 BEARING AH = S 27° 07' 38.5" W
 BEGIN CONST.

PC Sta 10+04.311
 478.71
 150.531
 160.073

PT Sta 10+04.814



FOR -L- PROFILE SEE SHEET #37
 FOR -Y1A- PROFILE SEE SHEET #66
 FOR -Y1B- PROFILE SEE SHEET #67
 FOR -D2- PROFILE SEE SHEET #74



8/11/2005 11:58 AM

PROJECT REFERENCE NO. EHE
 R-256A
 K.W. BISHOP NO.
 ROADWAY DESIGN
 ENGINEER

CONST. REV.
 K.W. BISHOP

DATE: 01/11/11
 SCALE: AS SHOWN

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
 CHANNEL

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
 CHANNEL

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
 CHANNEL

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
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PROJECT: 100' WIDE
 10' HIGH
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 CONCRETE
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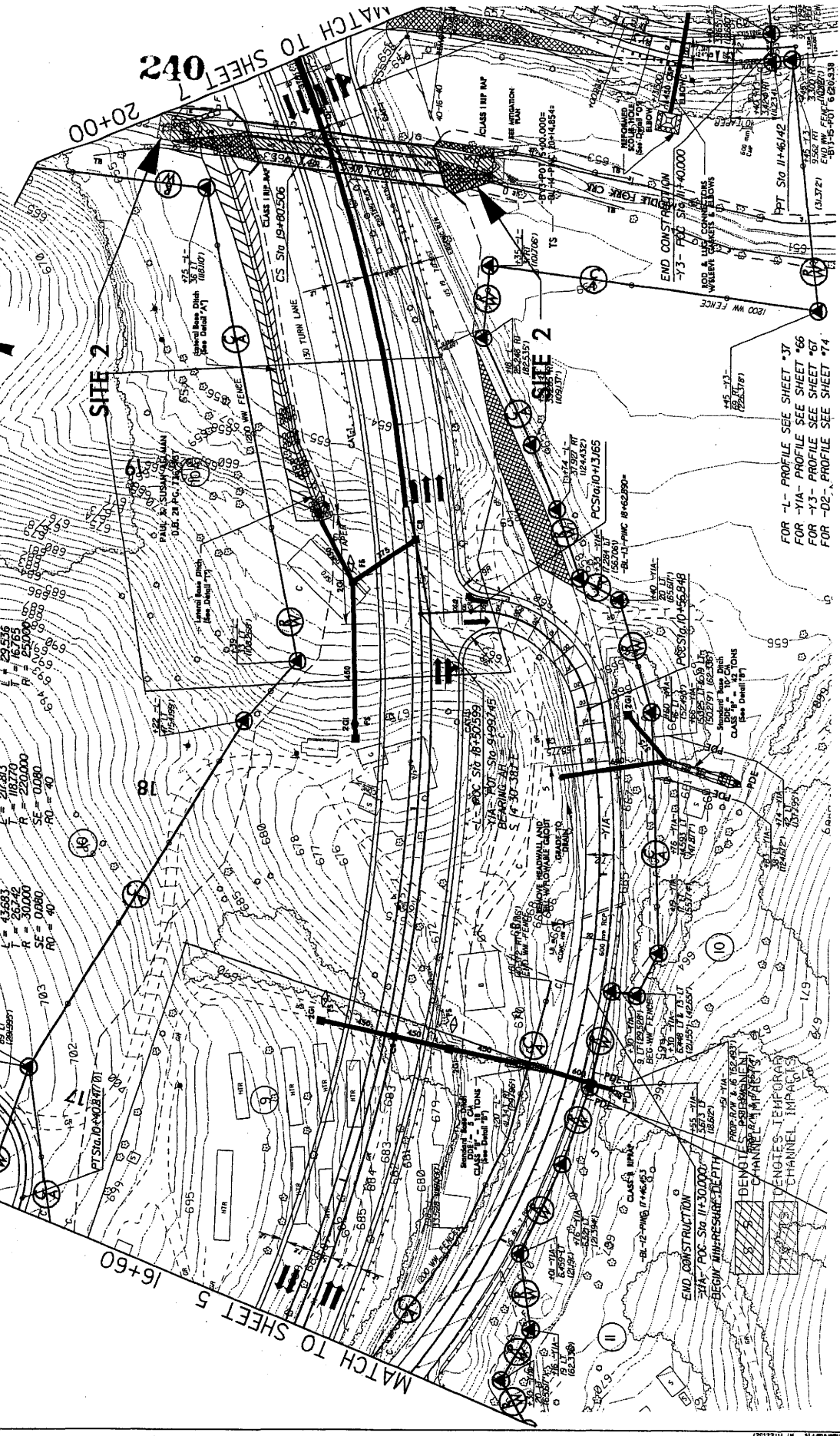
PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
 CHANNEL

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
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PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
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PROJECT: 100' WIDE
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 CONCRETE
 CHANNEL

PROJECT: 100' WIDE
 10' HIGH
 CONCRETE
 CHANNEL



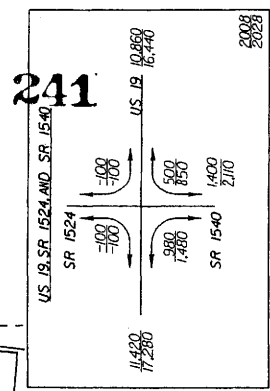
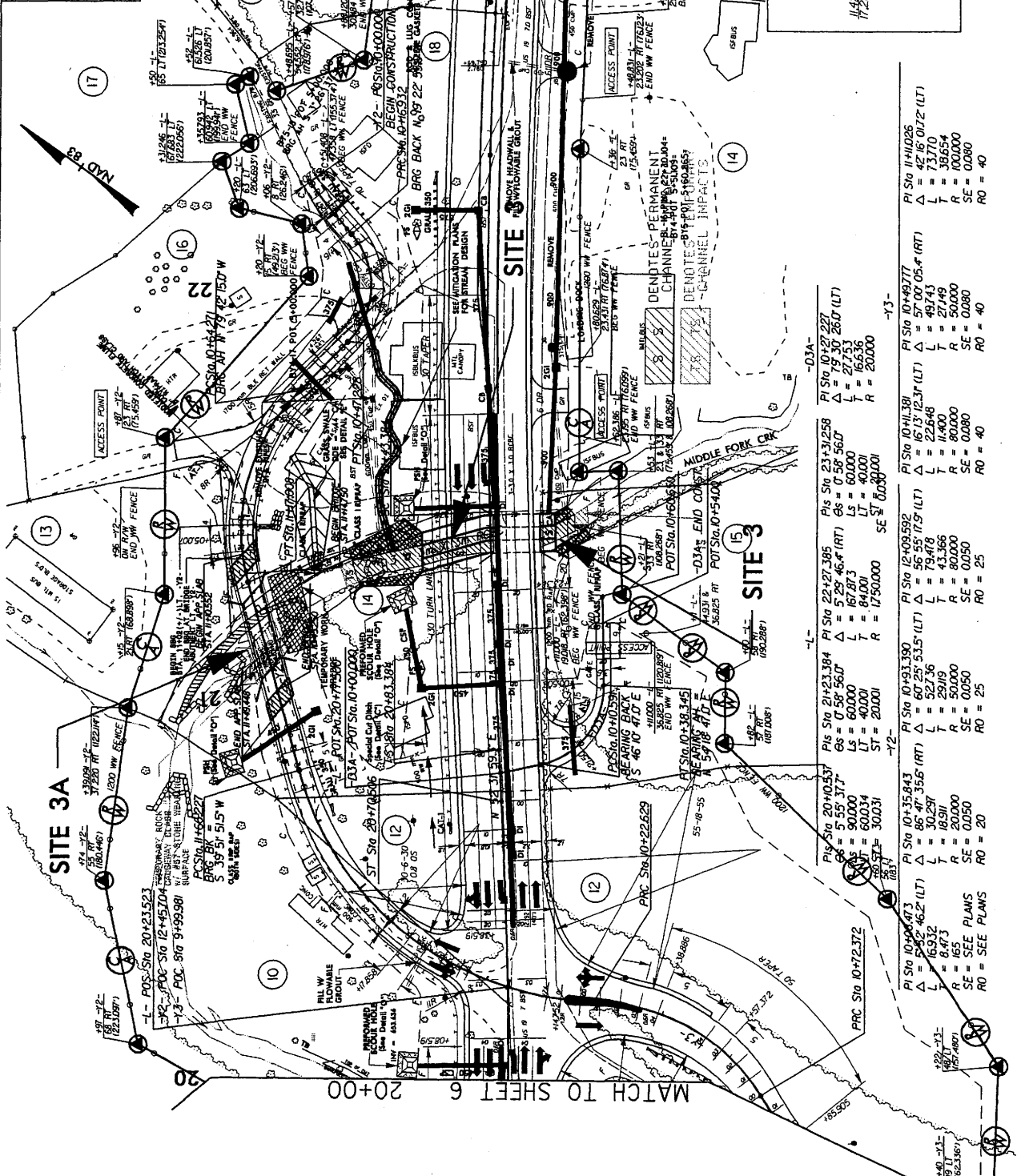
FOR -L- PROFILE SEE SHEET *37
 FOR -YIA- PROFILE SEE SHEET *66
 FOR -Y3- PROFILE SEE SHEET *67
 FOR -D2- PROFILE SEE SHEET *74

PROJECT REFERENCE NO. **R-2310A** SHEET NO. **7**
R/W DESIGN ENGINEER
HYDRAULICS ENGINEER

METRICS

CONTRARY.
 R/W REV.

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



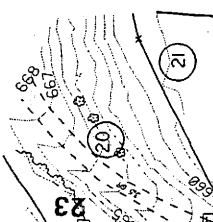
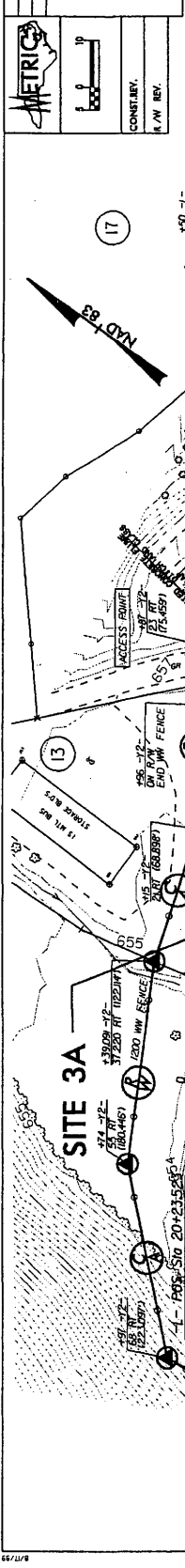
FOR -1- PROFILE SEE SHEET *18
 FOR -12- PROFILE SEE SHEET *67
 FOR -13- PROFILE SEE SHEET *74
 FOR -D3A- PROFILE SEE SHEET *74

Permit Drawings

Site	PI Stn	CS	LS	LT	R	SE	RO
SITE 3A	10+494.673	46.2	65.312	8.473	165	0.050	20
	10+494.673	46.2	65.312	8.473	165	0.050	20
SITE 3	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 12	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 13	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 14	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 15	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 16	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 17	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 18	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 19	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 20	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 21	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 22	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25
SITE 23	10+493.390	53.5	52.736	29.919	80,000	0.050	25
	10+493.390	53.5	52.736	29.919	80,000	0.050	25

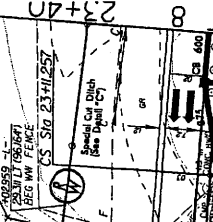
R/W REV. REVISING DRIVEWAY AND ACCESS POINT AND REVISING NAME AND DEED BOOK NUMBER
 ON PARCEL IS (BRYAN AND JORCE E. ANDERS REVOCABLE TRUST), 06/11/2007 NHH

PROJECT REFERENCE NO. 7
 1 - 25/2A
 R.A.V. SHEET NO. 7
 METRICS
 ROADWAY DESIGN ENGINEER
 PROPOSED BY: J. W. BRYAN
 CONSULTANT: J.W. BRYAN
 COUNTY: [blank]
 L.W. REF.



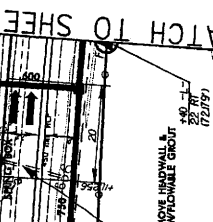
FOR -L- PROFILE SEE SHEET *38
 FOR -Y2- PROFILE SEE SHEET *67
 FOR -Y3- PROFILE SEE SHEET *67
 FOR -D3A- PROFILE SEE SHEET *74

Station	PI	Δ	T	R	SE	RO
10+72.372	10+72.372	46.2	16.932	165	0.050	20
10+35.843	10+35.843	86.47	35.5	183	0.050	20
10+497.3	10+497.3	542	46.2	165	0.050	20
10+497.3	10+497.3	56	55	179	0.050	25
12+095.92	12+095.92	58	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25
10+72.372	10+72.372	59	30	80	0.050	25
10+35.843	10+35.843	60	34	80	0.050	25
10+497.3	10+497.3	54	27	79	0.050	25
12+095.92	12+095.92	56	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25
10+72.372	10+72.372	59	30	80	0.050	25
10+35.843	10+35.843	60	34	80	0.050	25
10+497.3	10+497.3	54	27	79	0.050	25
12+095.92	12+095.92	56	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25



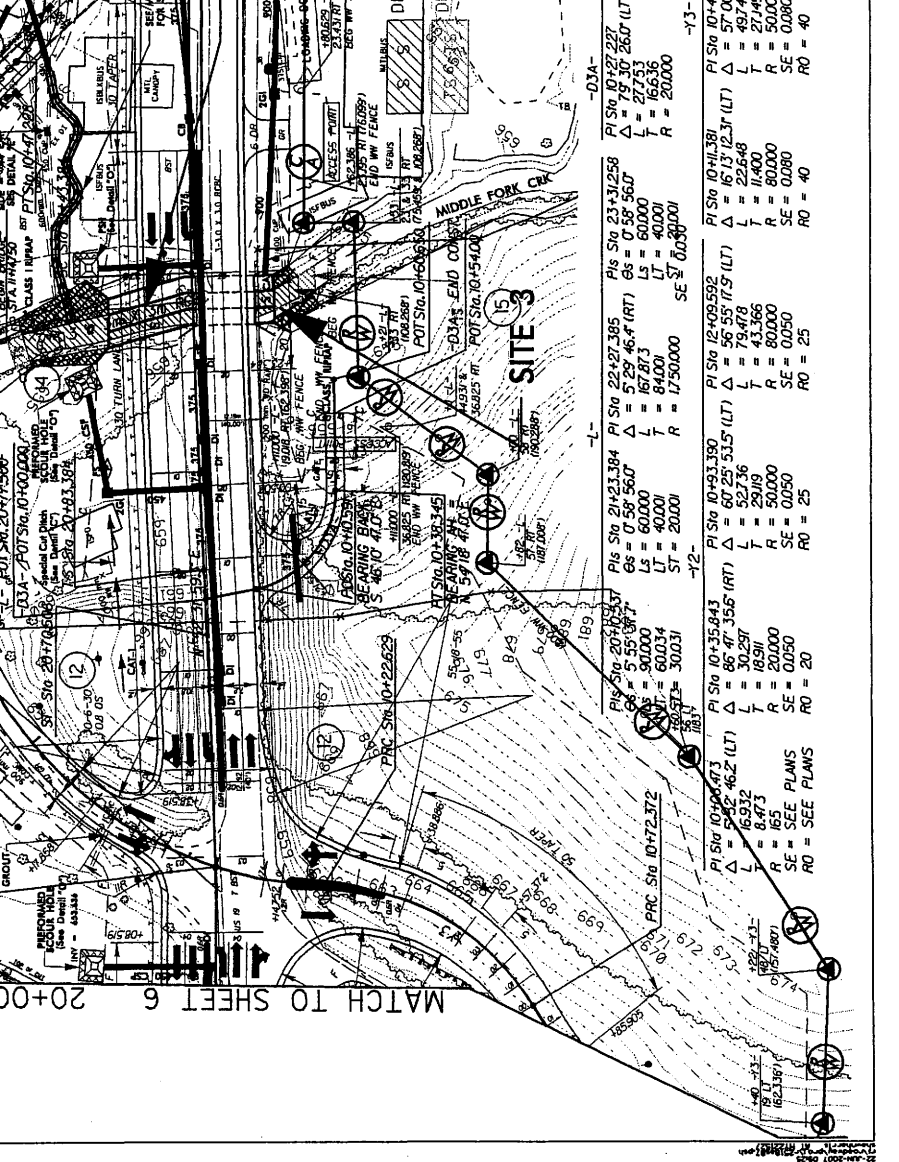
FOR -L- PROFILE SEE SHEET *38
 FOR -Y2- PROFILE SEE SHEET *67
 FOR -Y3- PROFILE SEE SHEET *67
 FOR -D3A- PROFILE SEE SHEET *74

Station	PI	Δ	T	R	SE	RO
10+72.372	10+72.372	46.2	16.932	165	0.050	20
10+35.843	10+35.843	86.47	35.5	183	0.050	20
10+497.3	10+497.3	542	46.2	165	0.050	20
10+497.3	10+497.3	56	55	179	0.050	25
12+095.92	12+095.92	58	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25
10+72.372	10+72.372	59	30	80	0.050	25
10+35.843	10+35.843	60	34	80	0.050	25
10+497.3	10+497.3	54	27	79	0.050	25
12+095.92	12+095.92	56	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25



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

Station	PI	Δ	T	R	SE	RO
10+72.372	10+72.372	46.2	16.932	165	0.050	20
10+35.843	10+35.843	86.47	35.5	183	0.050	20
10+497.3	10+497.3	542	46.2	165	0.050	20
10+497.3	10+497.3	56	55	179	0.050	25
12+095.92	12+095.92	58	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25
10+72.372	10+72.372	59	30	80	0.050	25
10+35.843	10+35.843	60	34	80	0.050	25
10+497.3	10+497.3	54	27	79	0.050	25
12+095.92	12+095.92	56	55	179	0.050	25
22+27.385	22+27.385	57	29	80	0.050	25
21+23.384	21+23.384	60	25	80	0.050	25
20+46.37	20+46.37	55	59	177	0.050	25



R/W REV. REVISING DRAWING AND ACCESS POINT AND REVISION NAME AND DEED BOOK NUMBER
 ON PARCEL IS BRYAN AND JOYCE E. ANDERS REVOCABLE TRUST, 06/11/2007 NNH



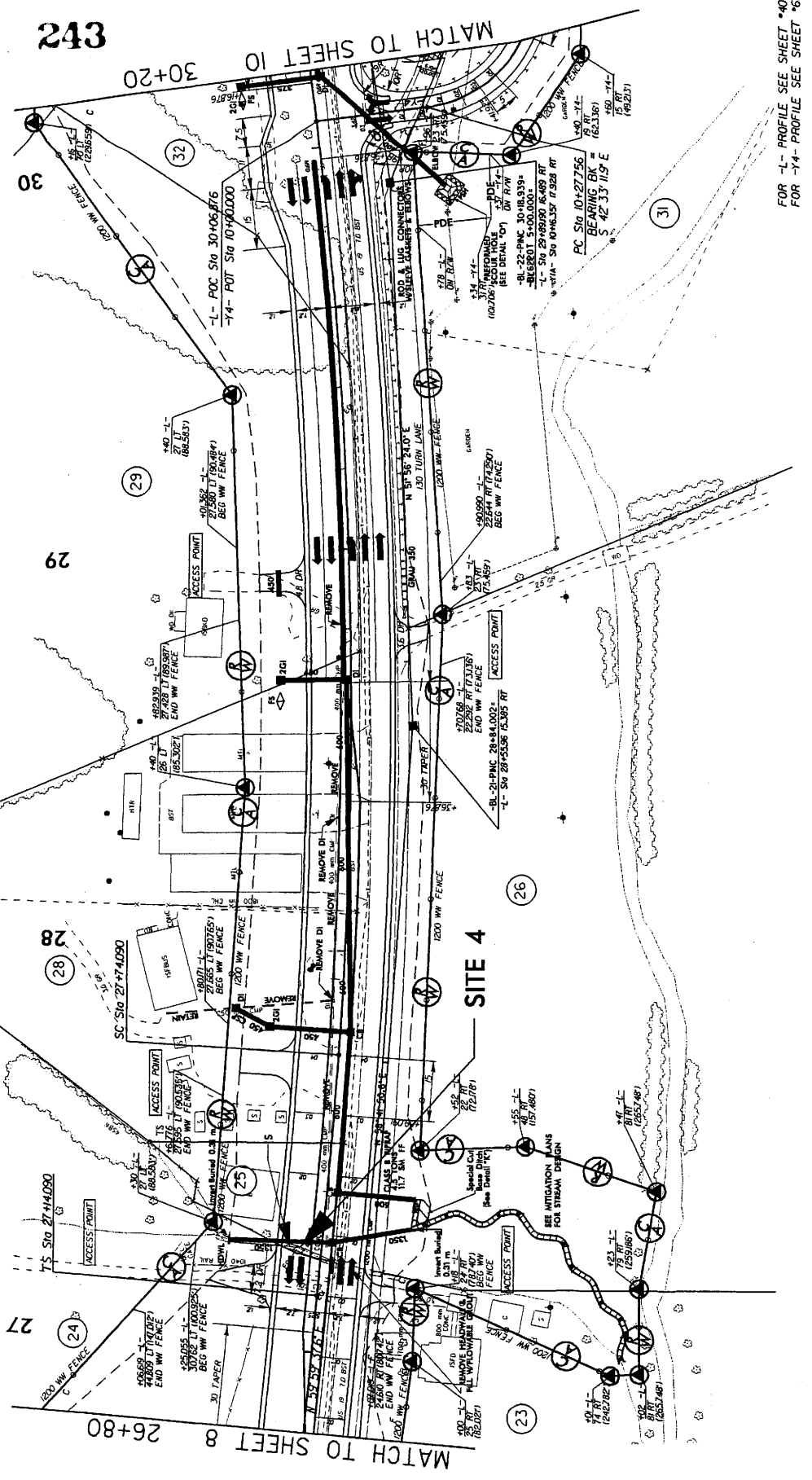
PROJECT REFERENCE NO.	R-23/BA	SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
PRELIMINARY PLANS NO. 10. NOT FOR CONSTRUCTION			
COUNTRY:	P/W REV.		



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

-Y4-
 PI Sta 10+62.692
 $\Delta = 98.41' 390' (LT)$
 $L = 318.76$
 $R = 300.00$
 $SE = 0.080$
 $RO = 40$

-L-
 PI Sta 27+54.091
 $\Delta = 17' 15' 54.2' (LT)$
 $L = 361.999$
 $R = 162.000$
 $SE = 0.040$



MATCH TO SHEET 8 26+80

MATCH TO SHEET 10 30+20

FOR -L- PROFILE SEE SHEET *40
FOR -Y4- PROFILE SEE SHEET *67

Permit Drawing



PROJECT REFERENCE NO. SHEET N
 R-252A R/W SHEET NO. 9
 ROADWAY DESIGN HYDRAULICS
 ENGINEER
 PRELIMINARY PLANS
 (FOR INFORMATION ONLY - NOT FOR CONSTRUCTION)
 CONT'RY.
 R/W REV.

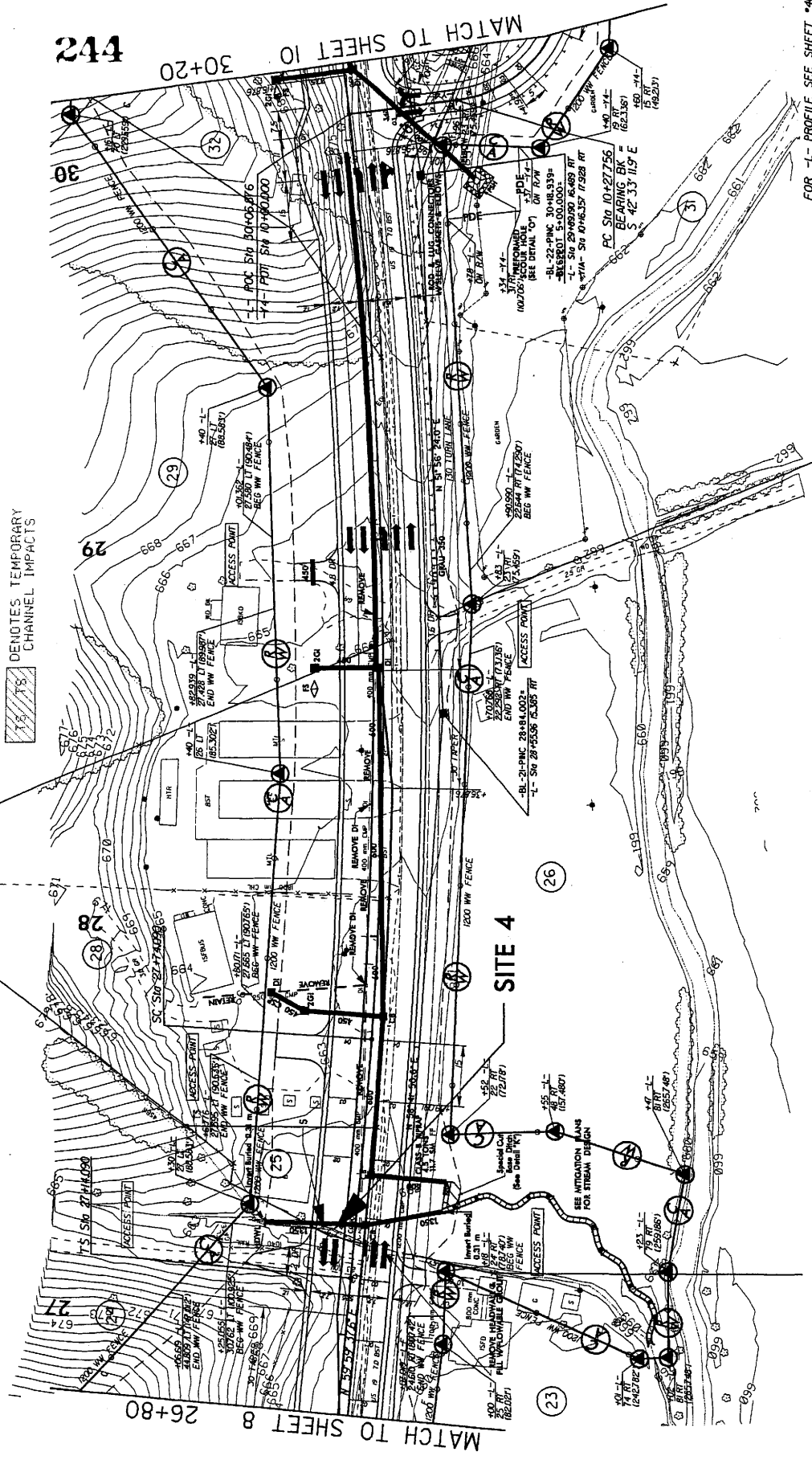


DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

PI Sta 10+62.892
 $\Delta = 96.47$ 39D (LT)
 $L = 574.99$
 $R = 30000$
 $SE = 0.080$
 $RO = 40$

PI Sta 29+56.270
 $\Delta = 17.15$ 34.2 (LT)
 $L = 361.99$
 $R = 19200$
 $SE = 0.090$

PI Sta 27+55.091
 $\Delta = 125.566$
 $L = 60000$
 $R = 20000$
 $SE = 0.000$



FOR -L- PROFILE SEE SHEET *40
 FOR -T4- PROFILE SEE SHEET *6
 DRAWING

METRIC

PROJECT REFERENCE NO. **A-253A**
SHEET NO. **10**

ROADWAY DESIGN ENGINEER
PRELIMINARY PLANS
NO. 0001 1995 REV. 12/2000

COUNTY, **N.W. ILL.**

Scale: 1" = 40'

Scale: 1" = 40'

Match to Sheet 9 30+20

Match to Sheet 33+60 245

Match to Sheet 34+60 245

-L-

PI Sta 29+56.270
Δ = 17.15 54.2' (LT)
L = 361.599
T = 182.180
R = 1,200.000
SE = 0.040

PI Sta 10+41.987
Δ = 29.02' 13.2' (RT)
L = 15.207
T = 9.231
R = 35.000

PI Sta 10+23.456
Δ = 17.96' 10.5' (LT)
L = 15.506
T = 9.231
R = 30.000

-Y4-

PI Sta 10+62.692
Δ = 58.4' 39.0' (LT)
L = 516.76
T = 312.07
R = 800.000
SE = 0.080
RO = 40

PI Sta 10+35.311
Δ = 38.57' 49.3' (LT)
L = 67.288
T = 35.311
R = 100.000
SE = 0.030
RO = 18

-D5-

POT Sta 10+00.000
BEARING AH = S 55° 52.3' E

POT Sta 10+118.600
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+26.590
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+43.083
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+86.301
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+95.689
BEARING AH = S 38° 50' 31.6" W

-D6-

POT Sta 10+04.000
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+18.600
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+26.590
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+43.083
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+86.301
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+95.689
BEARING AH = S 38° 50' 31.6" W

-D5-

POT Sta 10+04.000
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+18.600
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+26.590
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+43.083
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+86.301
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+95.689
BEARING AH = S 38° 50' 31.6" W

-D5-

POT Sta 10+04.000
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+18.600
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+26.590
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+43.083
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+86.301
BEARING AH = S 38° 50' 31.6" W

POT Sta 10+95.689
BEARING AH = S 38° 50' 31.6" W

Legend

S DENOTES PERMANENT CHANNEL IMPACTS

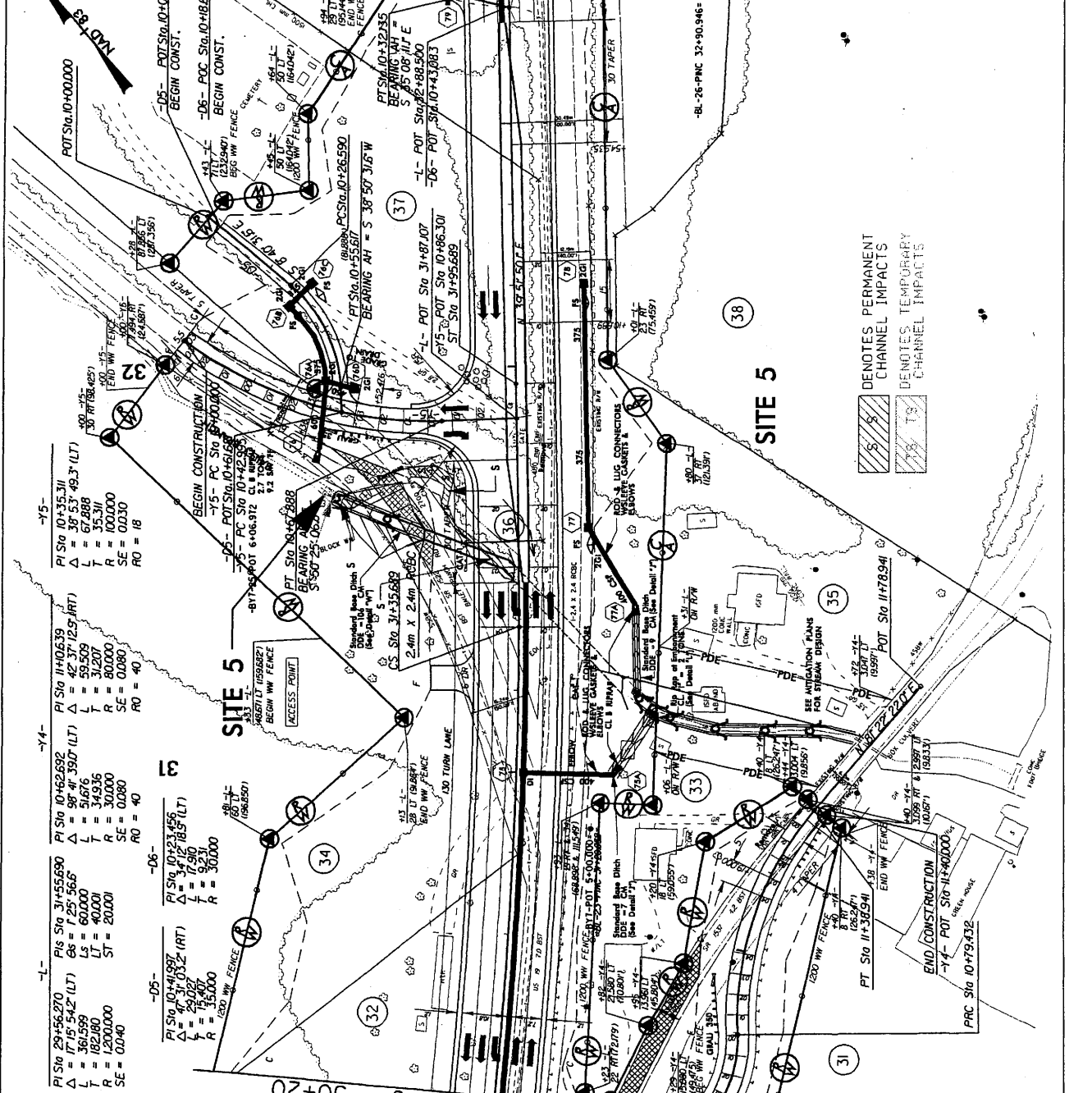
T DENOTES TEMPORARY CHANNEL IMPACTS

10 1200' WY FENCE

30 30' TURN LANE

30 TAPER

BL-26-PNC 32+90.946



MATCH TO SHEET 9 30+20

MATCH TO SHEET 33+60 245

MATCH TO SHEET 34+60 245

FOR -L- PROFILE SEE SHEET *4

FOR -Y4- PROFILE SEE SHEET *67

FOR -D5- PROFILE SEE SHEET *67

FOR -D6- PROFILE SEE SHEET *75


PARTIAL DRAWING

PAGE 246 thru 254

INTENTIONALLY

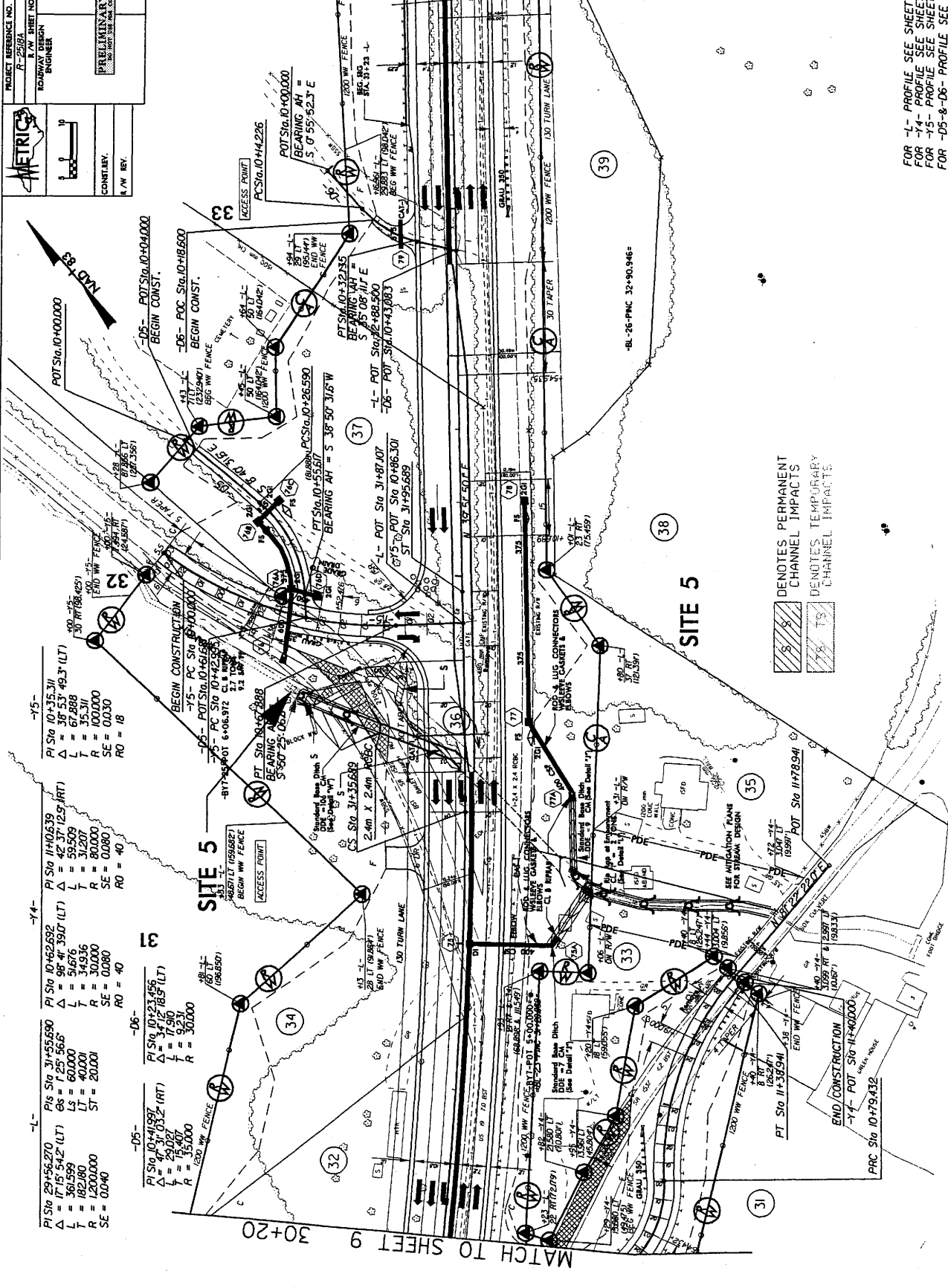
OMITTED

PROJECT REFERENCE NO.	SHEET NO.
R-2318A	10
RDWAY DESIGN	HYDRAULICS
ENGINEER	ENGINEER



CONTRACT NO.	REV.
PRELIMINARY PLANS	1/1
DO NOT USE FOR CONSTRUCTION	

MATCH TO SHEET # 33+60 255



DENOTES PERMANENT CHANNEL IMPACTS

DENOTES TEMPORARY CHANNEL IMPACTS



SITE 5

-Y5-
PI Sta 10+35.311
Δ = 36.53' 49.3" (LT)
L = 67.888
P = 35.311
R = 100.000
SE = 0.030
RO = 18

-Y4-
PI Sta 10+62.692
Δ = 96.47' 39.0" (LT)
L = 91.676
P = 31.200
R = 60.000
SE = 0.080
RO = 40

-L-
PI Sta 10+41.987
Δ = 47' 03.2" (RT)
L = 29.027
P = 15.400
R = 30.000
SE = 0.040

-D6-
PI Sta 10+23.456
Δ = 34' 12" 18.5" (LT)
L = 17.900
P = 9.231
R = 30.000
SE = 0.030
RO = 40

MATCH TO SHEET # 30+20

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

PROJECT REFERENCE NO. R-250A
R/W SHEET NO. 10
ROADWAY DESIGN BRUNNER
PRELIMINARY PLANS
 (DO NOT BE USED FOR CONSTRUCTION)

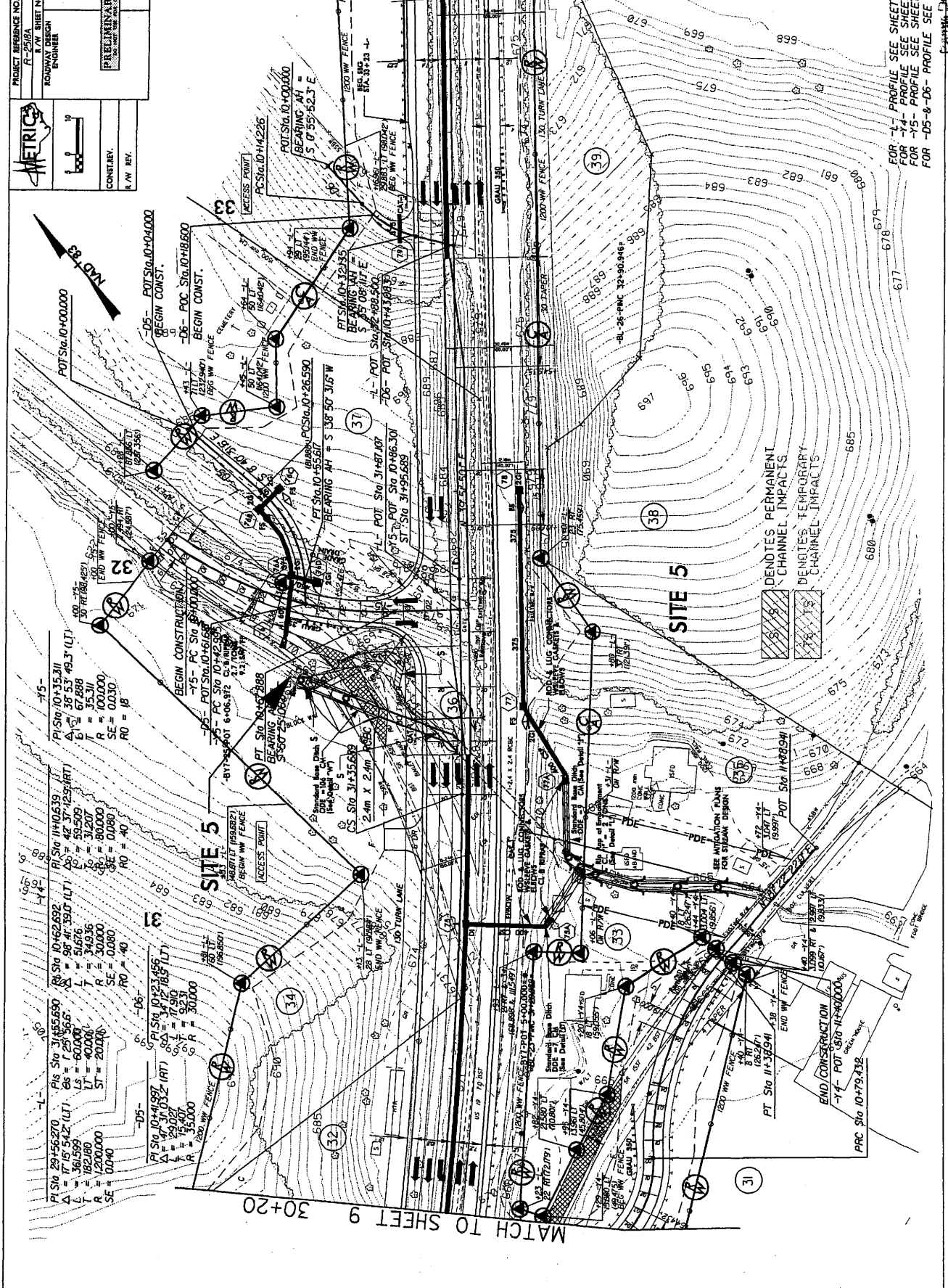
METRICS

COUNTRY:
 I/W REV.

SCALE:
 1" = 40'

NORTH ARROW:
 88.4 ON

MATCH TO SHEET 33+60 256



FOR -1- PROFILE SEE SHEET #4
 FOR -3- PROFILE SEE SHEET #7
 FOR -5- PROFILE SEE SHEET #7
 FOR -6- PROFILE SEE SHEET #7
 FOR -8- PROFILE SEE SHEET #7

MATCH TO SHEET 9 30+20

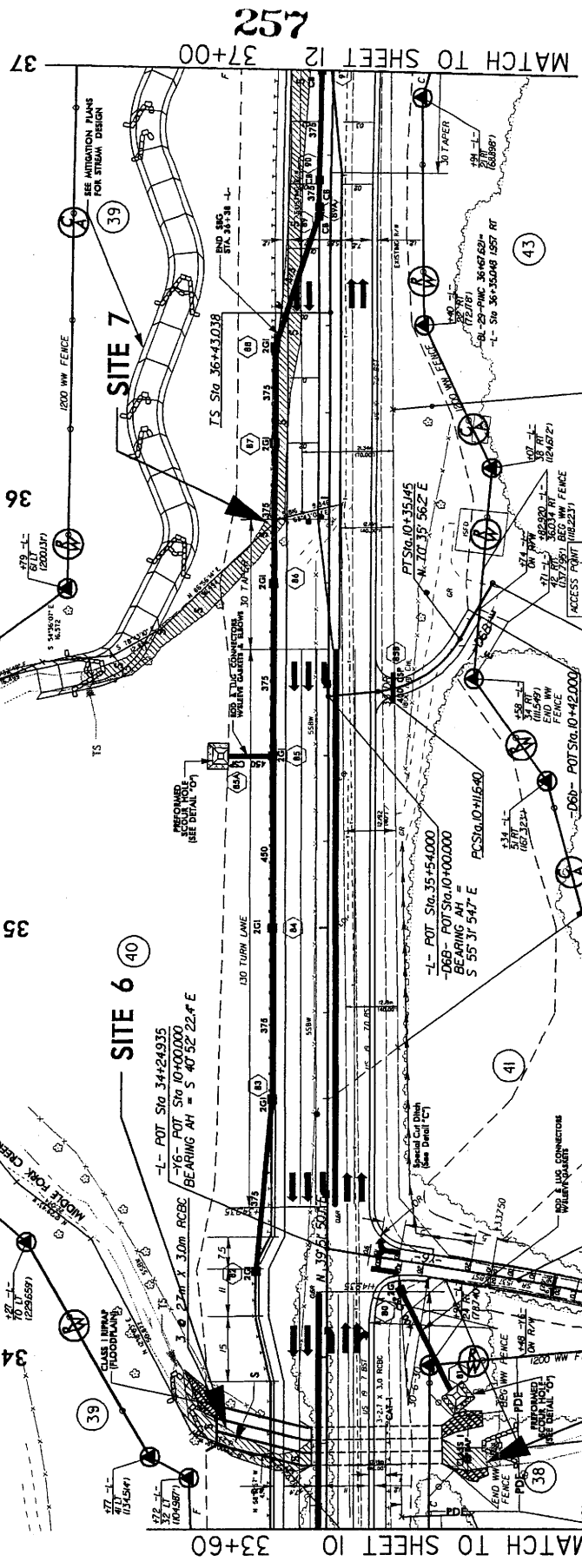
PROJECT REFERENCE NO. R-258A
 SHEET NO. 11
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER
 METRICS
 PRELIMINARY PLANS
 FOR THE PROPOSED
 CONSTRUCTION



-L-
 PLS Sta 36+93.043
 Δ = 2° 23' 14.4"
 Ls = 75.000
 Lt = 30.005
 SE = 0.080
 ST = 25.004

-Y6-
 PI Sta 10+69.669
 Δ = 12° 04' 14.8" (RT)
 L = 48.455
 T = 24.318
 R = 230.000
 SE = 0.080
 RO = 40

-D6B-
 PI Sta 10+24.342
 Δ = 31° 56' 09.1" (LT)
 L = 127.702
 T = 25.000



MATCH TO SHEET 12 37+00

MATCH TO SHEET 10 33+60

DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

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

PROJECT REFERENCE NO.	R-23/0A
SHEET NO.	II
R/W SHEET NO.	HYDRAULICS
DESIGNER	ENGINEER

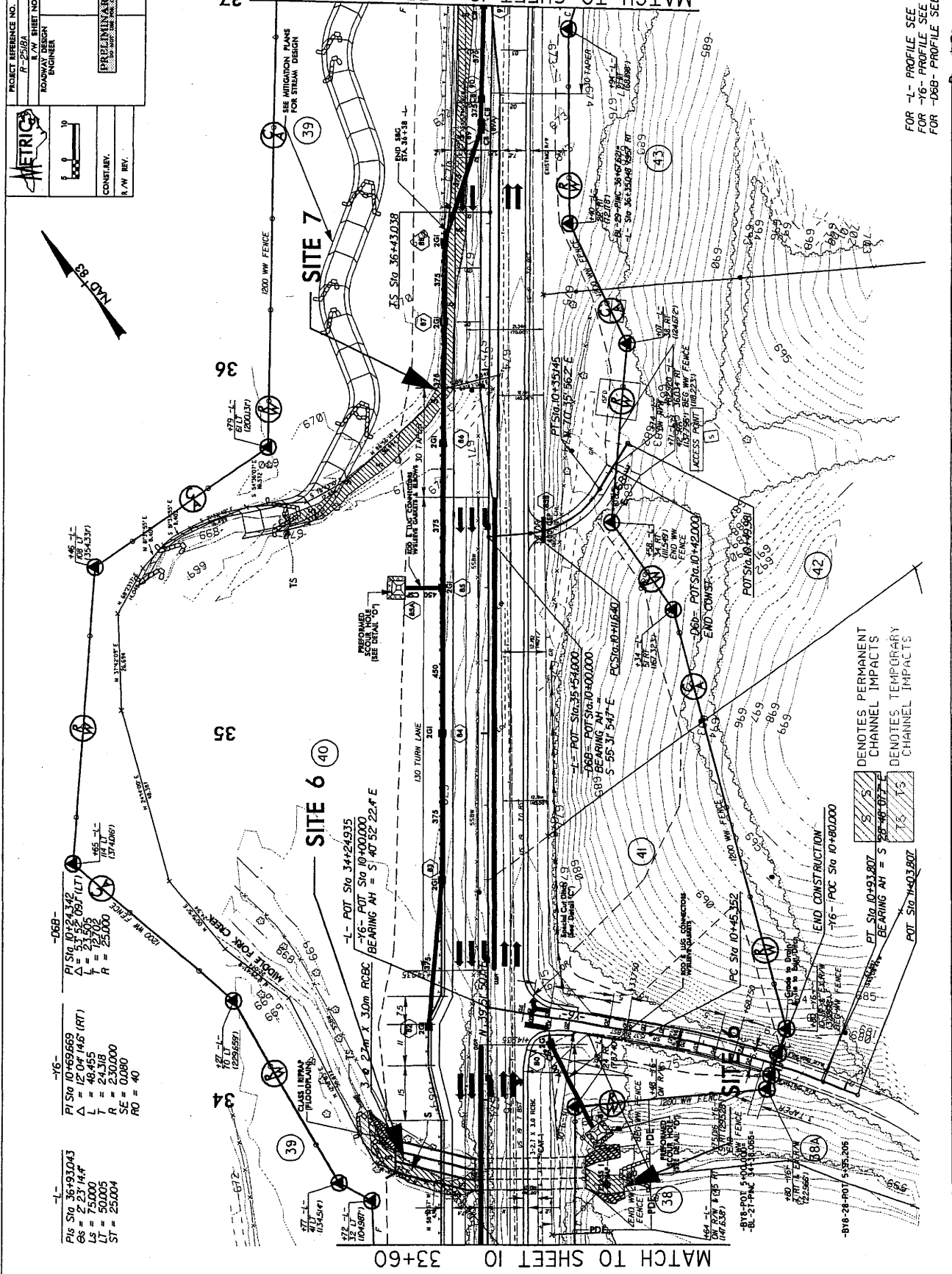
METRIX	PRELIMINARY PLANS
CONTRACT	
R/W REV.	



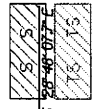
-L-
 P16 Sta 36+93.043
 Δ = 2° 23' 14.8"
 LS = 75.000
 LT = 50.005
 ST = 25.004

-76-
 P1 Sta 10+69.669
 Δ = 12° 04' 14.5" (RT)
 L = 48.455
 T = 23.903
 R = 250.000
 SE = 0.080
 RO = 40

-D6B-
 P1 Sta 10+24.342
 Δ = 5° 52' 08.7" (LT)
 L = 23.903
 R = 250.000



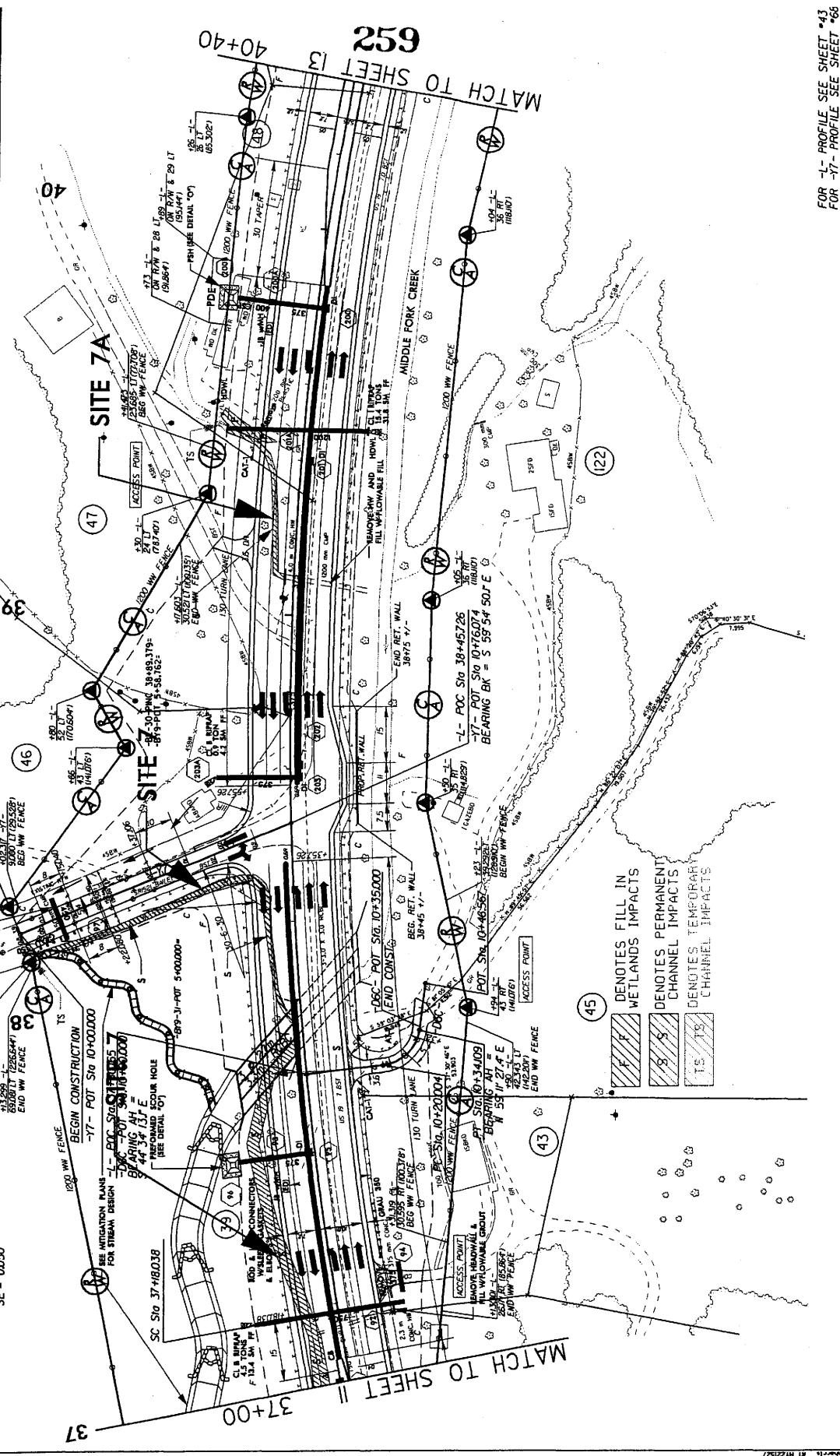
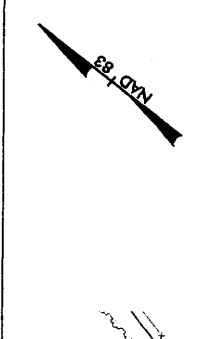
DENOTES PERMANENT
 CHANNEL IMPACTS
 DENOTES TEMPORARY
 CHANNEL IMPACTS



FOR -L- PROFILE SEE SHEET 42
 FOR -76- PROFILE SEE SHEET 46
 FOR -D6B- PROFILE SEE SHEET 7

Permit Drawing

PROJECT REFERENCE NO. **652** SHEET NO. **12**
R/W SHEET NO. **12**
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
METRICS
 PRELIMINARY PLANS
 CONTRACTOR: **R/W REV.**



-L-

PI Sta 36+93.043
 G8 = 2.23' 14.4"
 L8 = 75.000'
 LT = 50.005'
 ST = 25.004'

PI Sta 10+28.321
 Δ = 24' 25" 23.4" (RT)
 L = 14.105'
 T = 8.317'
 R = 10.600'

PI Sta 10+100.000
 SC Sta 37+480.38
 SEE MITIGATION PLANS FOR STREAM DESIGN

PI Sta 10+100.000
 -77- POT Sta 10+100.000

PI Sta 10+34.009
 BEARING AX = S 55° 11' 27.4" E
 BEARING BK = S 59° 54' 50.7" E

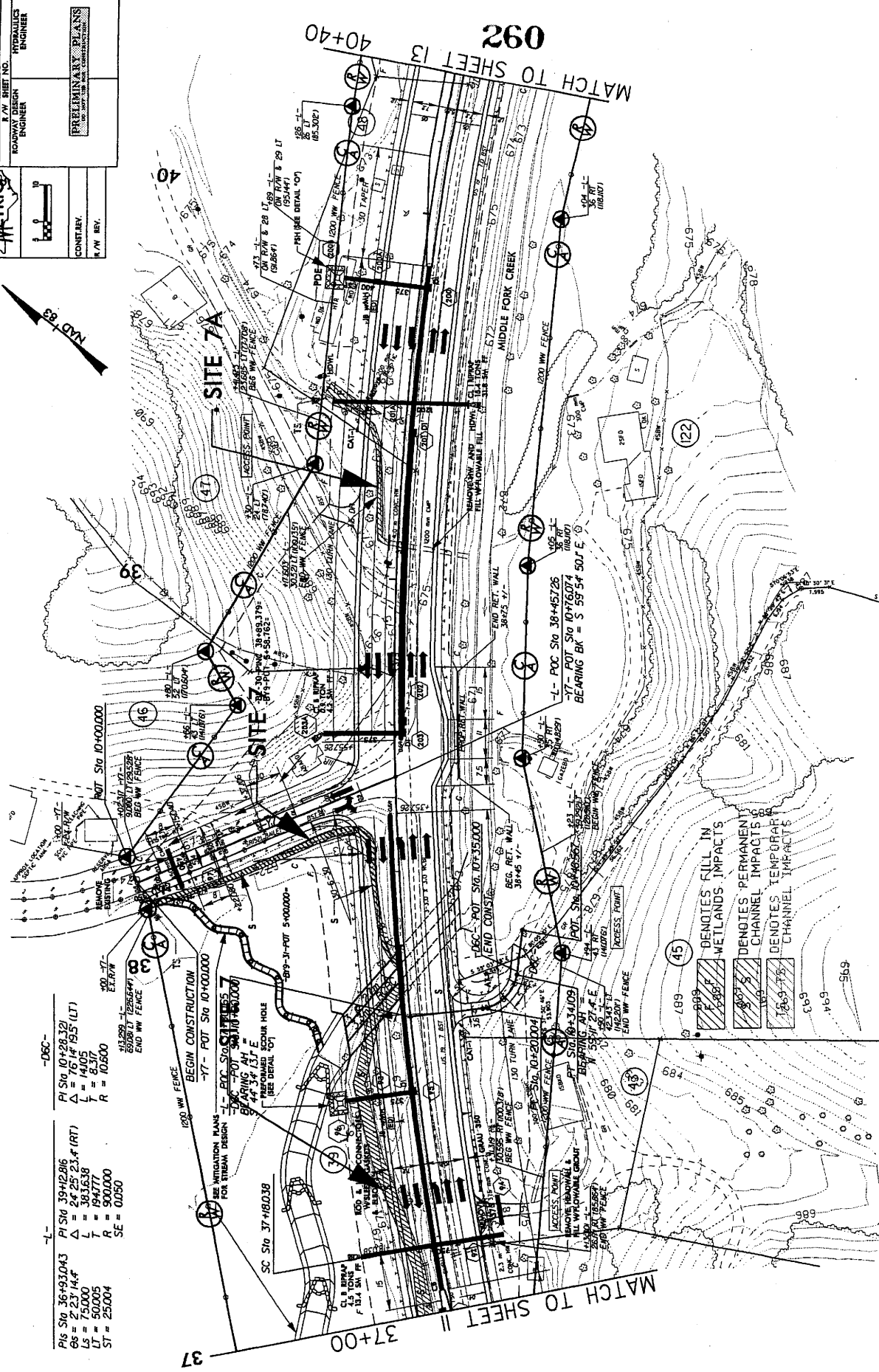
- 45 DENOTES FILL IN WETLANDS IMPACTS
- 46 DENOTES PERMANENT CHANNEL IMPACTS
- 47 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET #43
 FOR -77- PROFILE SEE SHEET #66
 FOR -DEC- PROFILE SEE SHEET #1

PROJECT REFERENCE NO. **R-2518A** SHEET NO. **12**
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

METRIX

CONTRARY TO ANY REV.
 PRELIMINARY PLANS
 10-10-2001 (REV. 06/11/2007)



-060-

L-1
 PI STA 36+93.043
 Δ = 2° 23' 14.4"
 LS = 75.000
 LT = 50.005
 ST = 25.004

L-2
 PI STA 39+12.816
 Δ = 2° 25' 23.4" (RT)
 L = 363.638
 T = 194.777
 R = 500.000
 SE = 0.050

-061-
 PI STA 10+28.32
 Δ = 76° 14' 19.5" (LT)
 L = 14.005
 T = 83.37
 R = 10.800

SC STA 37+180.38
 BEG CONSTRUCTION
 -77- POT STA 10+00.000

END CONSTRUCTION
 -77- POT STA 10+00.000

BEARINGS
 BEARING = S 44° 34' 13.1" E
 PERFORMED SECUR HOLE
 (SEE DETAIL '01')

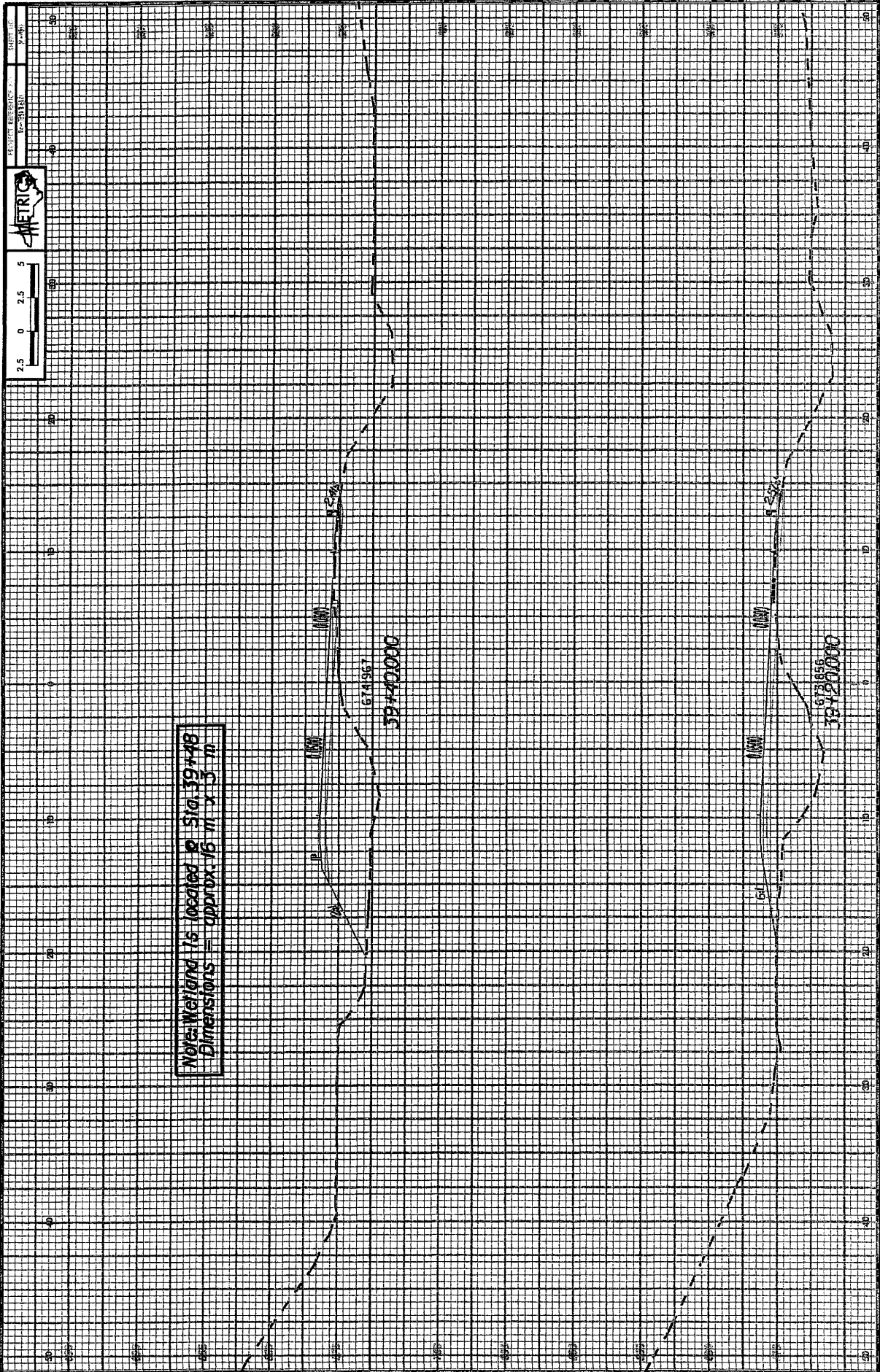
45

DENOTES FILL IN
 WETLANDS IMPACTS

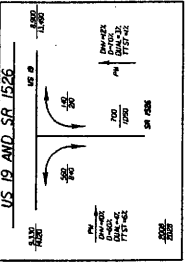
DENOTES PERMANENT
 CHANNEL IMPACTS

DENOTES TEMPORARY
 CHANNEL IMPACTS

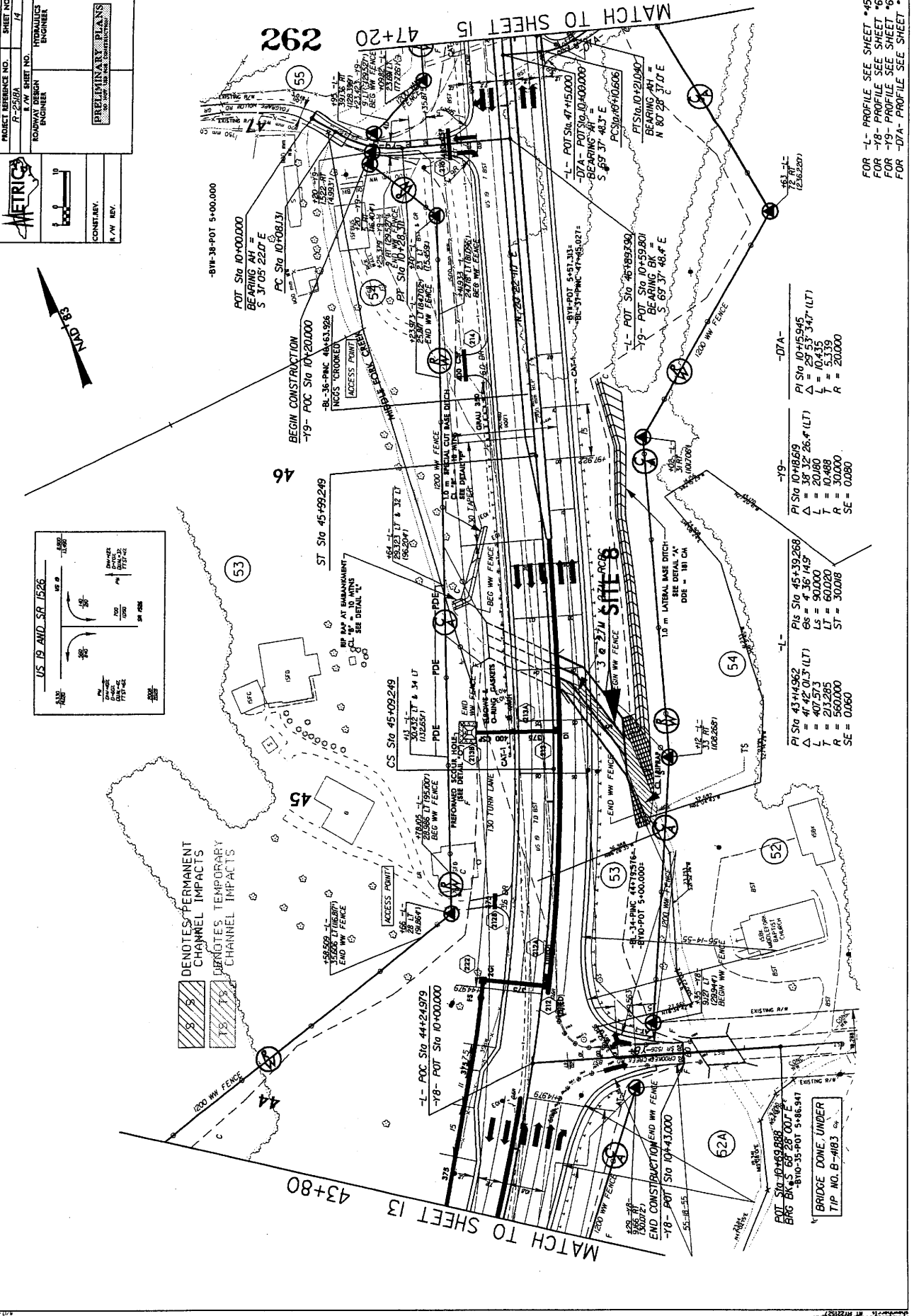
FOR -L- PROFILE SEE SHEET #43
 FOR -77- PROFILE SEE SHEET #68
 FOR -060- PROFILE SEE SHEET #7
 Permit Drawings



PROJECT REFERENCE NO. R-2506
 SHEET NO. 14
 HIGHWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
PRELIMINARY PLANS
 COUNTY: ...
 P/W REV. ...





DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

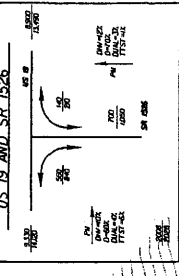


Station	PI Sta	PI	LA	LS	LT	R	SE
-18-	10+43.000	43.4962	47.42	01.2	11.7	500.000	0.080
-18-	10+44.000	44.24979	47.42	01.2	11.7	500.000	0.080
-19-	10+18.669	18.669	38.32	26.4	11.7	500.000	0.080
-19-	10+19.000	19.000	29.53	34.7	11.7	500.000	0.080
-19-	10+15.945	15.945	29.53	34.7	11.7	500.000	0.080
-20-	10+15.945	15.945	29.53	34.7	11.7	500.000	0.080

PERMIT NUMBER:
 FOR -L- PROFILE SEE SHEET #45
 FOR -Y8- PROFILE SEE SHEET #6
 FOR -Y9- PROFILE SEE SHEET #6
 FOR -D7A- PROFILE SEE SHEET #6

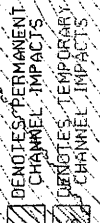
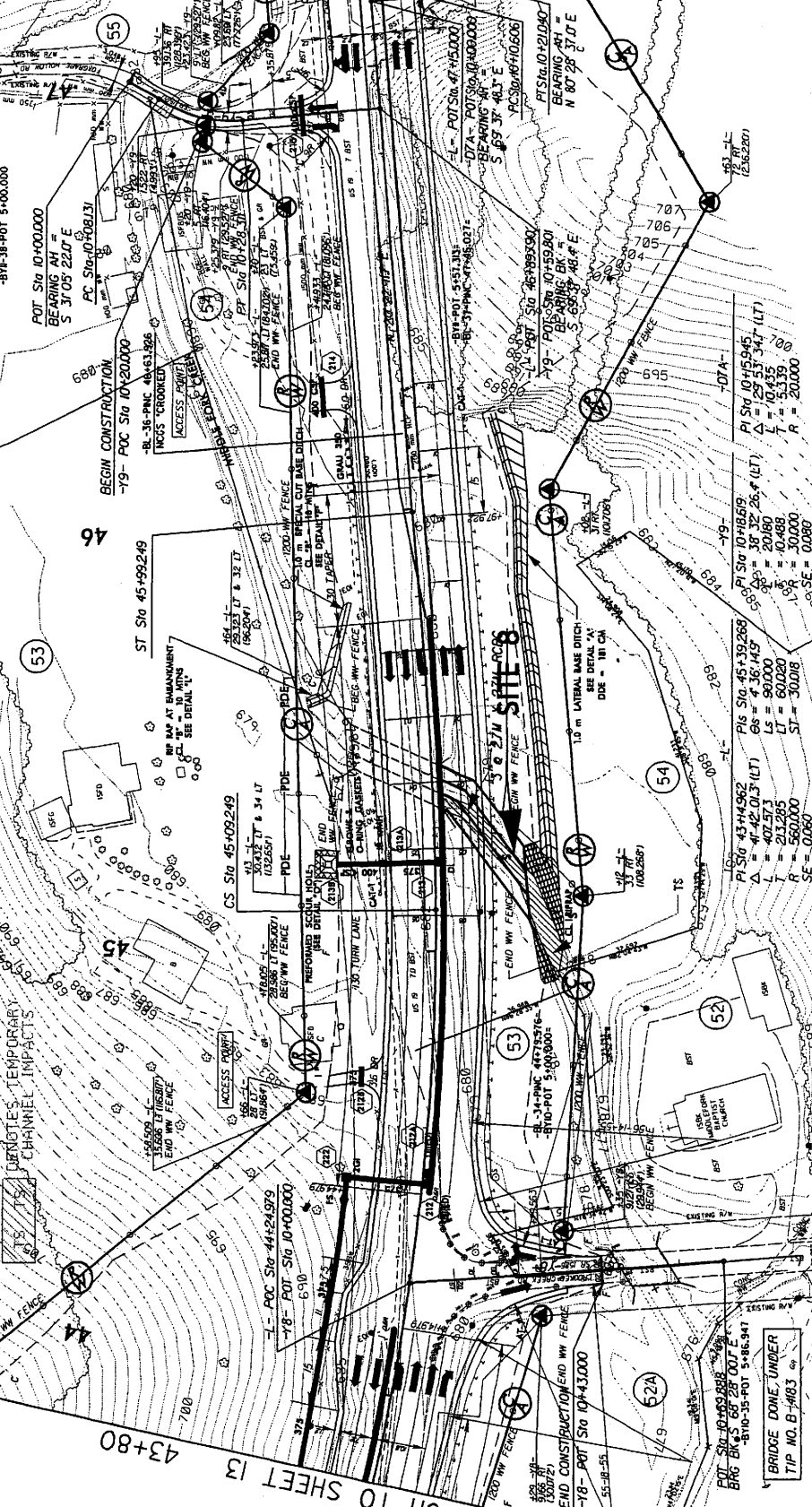
	PROJECT REFERENCE NO.	SHEET NO.
	R-25/8A	14
	ROWWAY DESIGN ENGINEER	HYDRAULIC ENGINEER

	CONST. REV.
	R/W REV.



263

47+20 MATCH TO SHEET 15



PI Sta 10+15.045
 Δ = 20.57 (LT)
 L = 10.285
 T = 5.139
 R = 20.000
 SE = 0.080

PI Sta 45+39.268
 Δ = 36.149
 L = 40.253
 T = 21.285
 R = 560.000
 SE = 0.060

PI Sta 43+14.962
 Δ = 42.03 (LT)
 L = 40.253
 T = 21.285
 R = 560.000
 SE = 0.060

PI Sta 10+18.619
 Δ = 38.32 26.4 (LT)
 L = 20.180
 T = 10.488
 R = 30.000
 SE = 0.080

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

BRIDGE DONE UNDER
 TIP NO. B-463

43+80 MATCH TO SHEET 13

32

METRICS

PROJECT REFERENCE NO. **R-258A**
 R/W SHEET NO. **15**
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

CONST. REV.
 P/W REV.

PRELIMINARY PLANS
 FOR THE STATE OF MISSISSIPPI
 FOR THE PROJECT OF THE MISSISSIPPI
 RIVER AND GULF COAST WATERWAY



MATCH TO SHEET 16 50+60

264

50

49

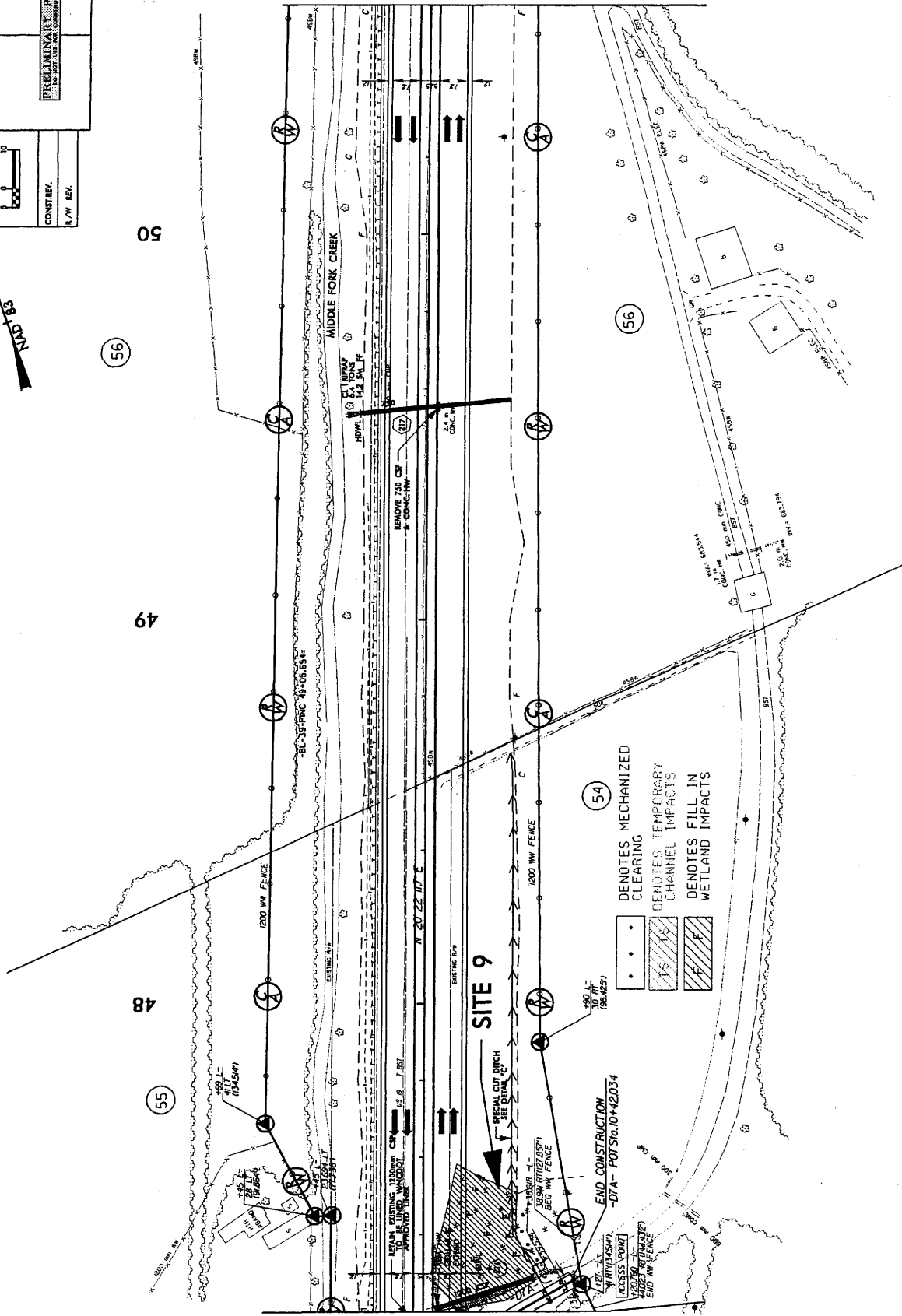
48

55

(56)

(56)

MATCH TO SHEET 14 47+20



(54)

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY CHANNEL IMPACTS

DENOTES FILL IN WETLAND IMPACTS

FOR -L- PROFILE SEE SHEET #46
 FOR -D7A- PROFILE SEE SHEET #

Permit Drawing



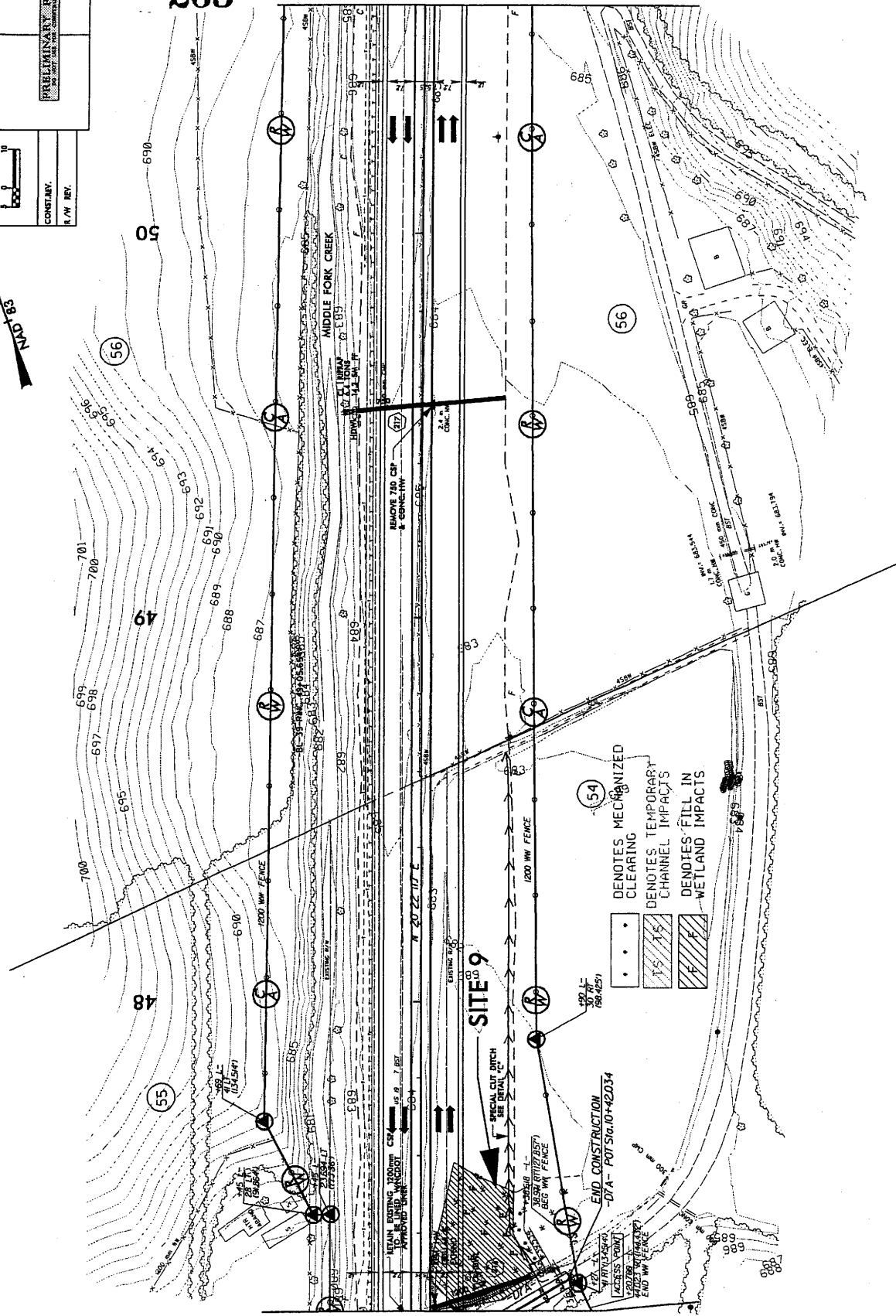
PROJECT REFERENCE NO.	SHEET NO.
R-250A	15
R/W SHEET NO.	
HYDRAULIC ENGINEER	
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS	
NO DATE FOR THIS DOCUMENT	
CONSTANT	
R/W REV.	



265

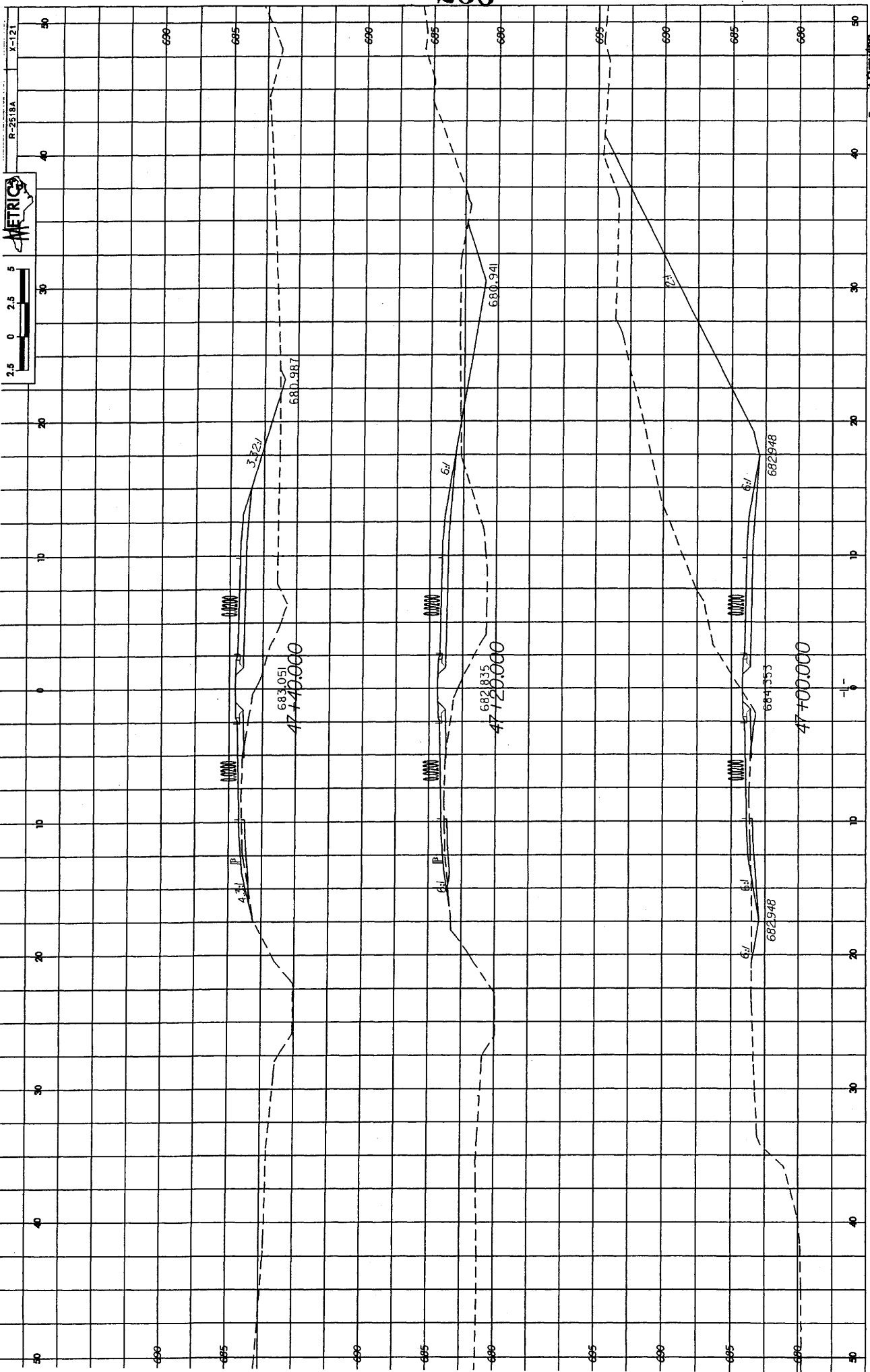
MATCH TO SHEET 16 50+60

MATCH TO SHEET 14 47+20



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

FOR -I- PROFILE SEE SHEET #46
 FOR -D/A- PROFILE SEE SHEET #47



R-2518A X-121

METRICS

PROJECT REFERENCE NO. **R-2519A**
 SHEET NO. **56**

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONTRACTOR:
 R/W REV.

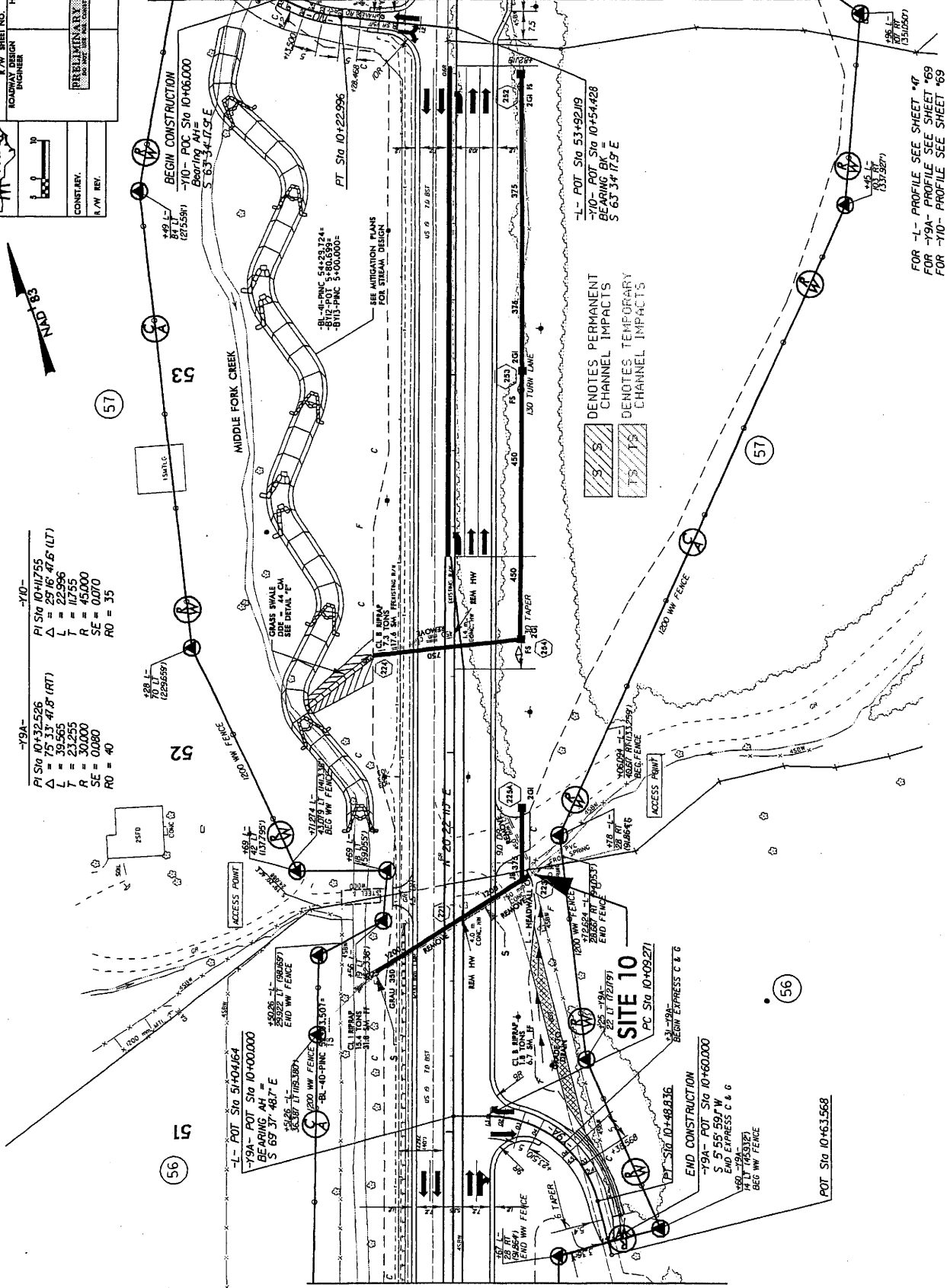
292

MATCH TO SHEET 17 54+00



-Y10-
 PI Sta 10+117.55
 Δ = 29.16 47.6' (LT)
 L = 22.956
 T = 17.55
 R = 45.000
 SE = 0.070
 RO = 35

-Y9A-
 PI Sta 10+32.526
 Δ = 29.16 47.6' (RT)
 L = 23.255
 T = 30.000
 SE = 0.080
 RO = 40



MATCH TO SHEET 15 50+60

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

DATE: 06/11/2007
 SHEET: 56 OF 57

292

MATCH TO SHEET 17 54+00

METRICS

PROJECT REFERENCE NO. SHEET NO.
R-25/6A 16

R/W SHEET NO. HYDRAULICS
ROADWAY DESIGN SURVEYOR

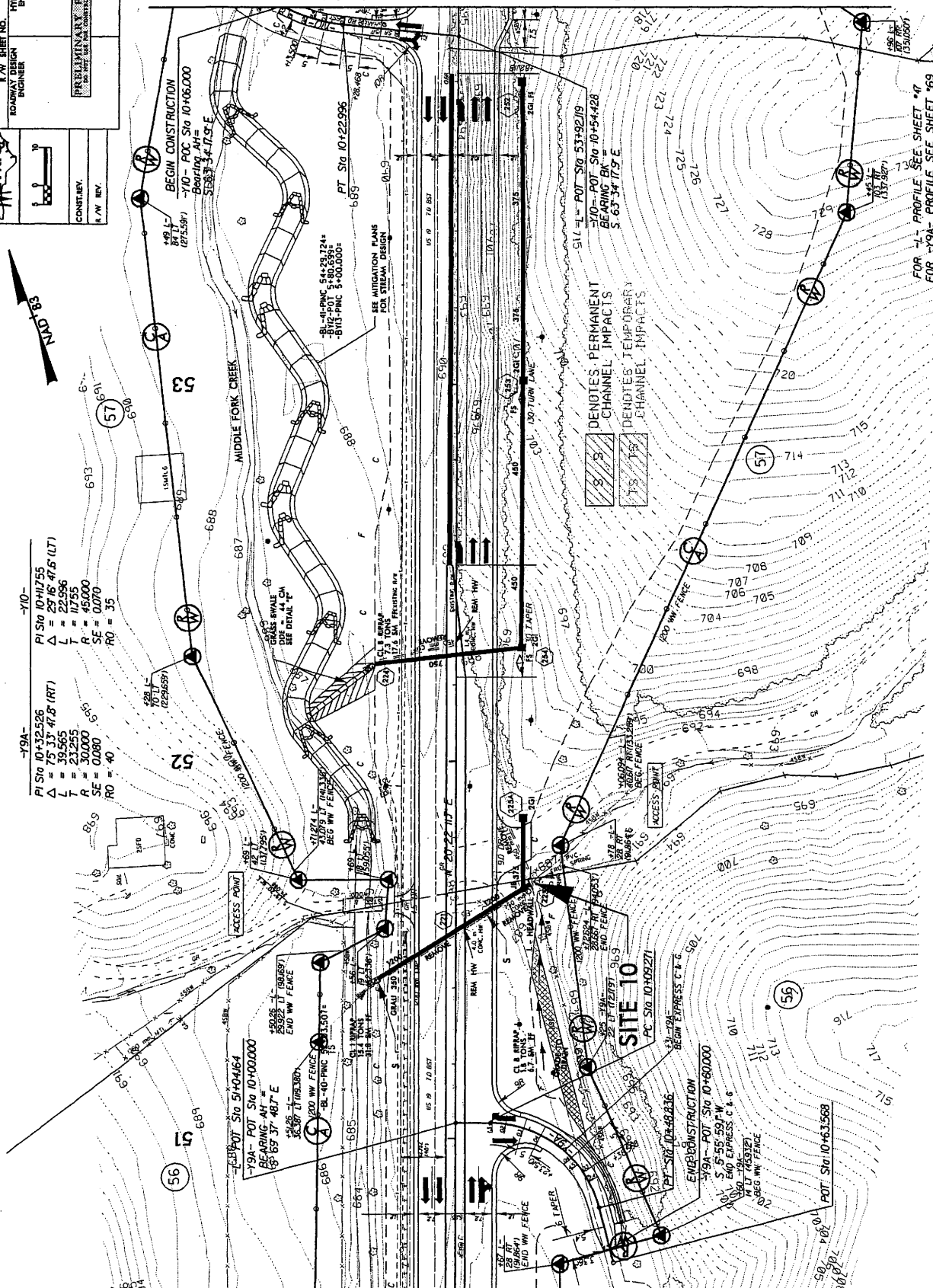
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV. R/W REV.



-Y9A-
 PI Sta 10+32526
 $\Delta = 75.33' 41.8" (RT)$
 $L = 39.565'$
 $T = 22.596'$
 $E = 17.755'$
 $C = 30.000'$
 $SE = 0.070'$
 $RO = 40'$

-Y10-
 PI Sta 10+11255
 $\Delta = 29.16' 47.6" (LT)$
 $L = 22.596'$
 $T = 17.755'$
 $C = 30.000'$
 $SE = 0.070'$
 $RO = 35'$

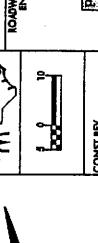


MATCH TO SHEET 15 50+60

FOR -L- PROFILE SEE SHEET #7
 FOR -Y9A- PROFILE SEE SHEET #9
 FOR -Y10- PROFILE SEE SHEET #9

Permit Drawing
 Sheet 27 of 61

PROJECT REFERENCE NO. R-25/81A
 SHEET NO. 17
 R/W SHEET NO. 17
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER
 METRICS
 PRELIMINARY PLANS
 CONTRACTOR
 R/W REV.



-Y10-
 PI STA 10+17.55
 $\Delta = 25.16$ 47.6' (LT)
 $L = 22.966$
 $R = 47.33$
 $SE = 0.070$
 $RO = 35$

-Y11-
 PI STA 10+42.234
 $\Delta = 85.00$ 082.2' (LT)
 $L = 44.507$
 $R = 27.491$
 $SE = 0.000$
 $RO = 40$

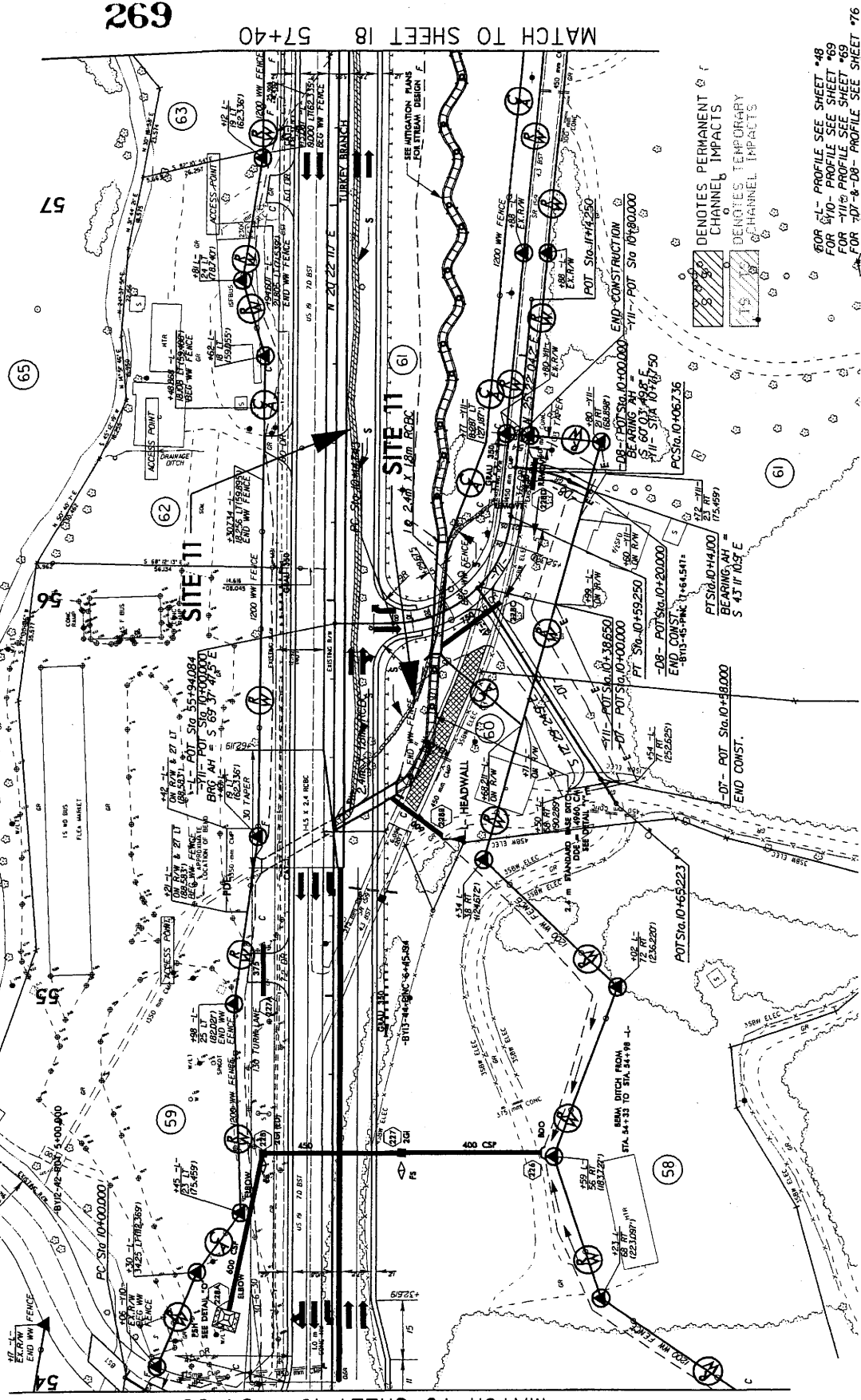
-Y11-
 PI STA 10+10.445
 $\Delta = 16.32$ 38.9' (RT)
 $L = 7.364$
 $R = 3.709$
 $R = 25.000$

-Y11-
 PI STA 10+10.445
 $\Delta = 16.32$ 38.9' (RT)
 $L = 7.364$
 $R = 3.709$
 $R = 25.000$

-Y11-
 PI STA 10+10.445
 $\Delta = 16.32$ 38.9' (RT)
 $L = 7.364$
 $R = 3.709$
 $R = 25.000$

-Y11-
 PI STA 10+10.445
 $\Delta = 16.32$ 38.9' (RT)
 $L = 7.364$
 $R = 3.709$
 $R = 25.000$

-Y11-
 PI STA 10+10.445
 $\Delta = 16.32$ 38.9' (RT)
 $L = 7.364$
 $R = 3.709$
 $R = 25.000$



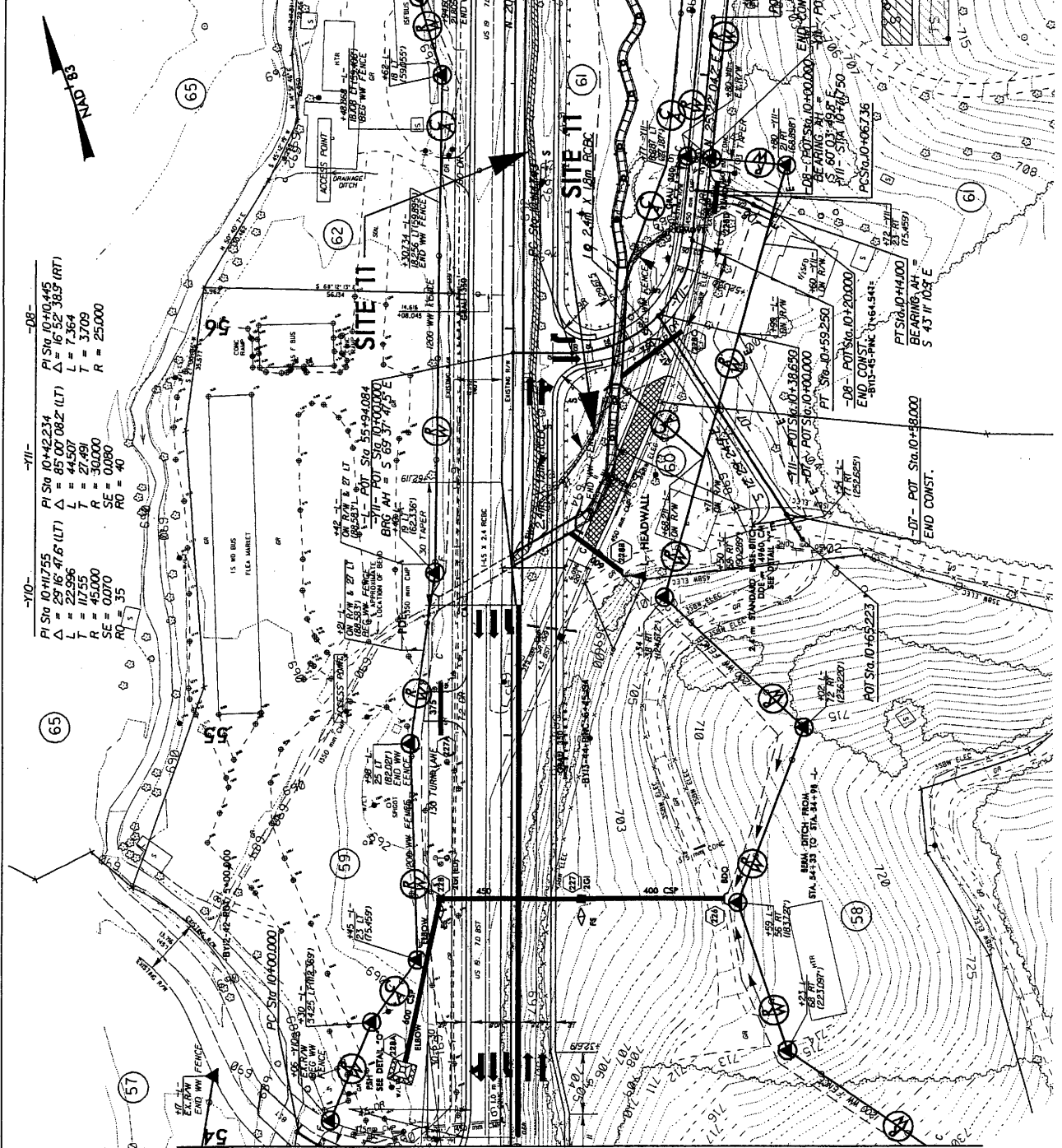
DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -Y10- PROFILE SEE SHEET #68
 FOR -Y11- PROFILE SEE SHEET #69
 FOR -Y12- PROFILE SEE SHEET #69
 FOR -Y13- PROFILE SEE SHEET #76

PROJECT REFERENCE NO. SHEET NO. 7
 R-258A R-17 SHEET NO. HYDRAULICS
 ROADWAY DESIGN ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 COUNTY, N.Y.
 1/4" = 100'
 1/4" = 100'

072

MATCH TO SHEET 18 57+40



-10-

PI Sta 10+117.55	PI Sta 10+42.234	PI Sta 10+40.45
$\Delta = 29.86$	$\Delta = 65.00$	$\Delta = 16.22$
$T = 17.55$	$T = 27.49$	$T = 3.709$
$R = 45.000$	$R = 30.000$	$R = 25.000$
$SE = 0.070$	$SE = 0.080$	
$RD = 35$	$RD = 40$	

-11-

PI Sta 10+42.234	PI Sta 10+40.45
$\Delta = 65.00$	$\Delta = 16.22$
$T = 27.49$	$T = 3.709$
$R = 30.000$	$R = 25.000$
$SE = 0.080$	
$RD = 40$	

-08-

PI Sta 10+40.45	PI Sta 10+40.000
$\Delta = 16.22$	$\Delta = 16.22$
$T = 3.709$	$T = 3.709$
$R = 25.000$	$R = 25.000$
$SE = 0.080$	
$RD = 40$	

MATCH TO SHEET 16 54+00

IDENTIFIES PERMANENT CHANNEL IMPACTS
 IDENTIFIES TEMPORARY CHANNEL IMPACTS

FOR L- PROFILE SEE SHEET *48
 FOR S-10- PROFILE SEE SHEET *69
 FOR S-11- PROFILE SEE SHEET *69
 FOR S-12- PROFILE SEE SHEET *76
 FOR S-13- PROFILE SEE SHEET *76

Sheet 29 of 54
 Permit Drawing

PROJECT REFERENCE NO. R-2568A
 SHEET NO. 18
 R/W SHEET NO. HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER

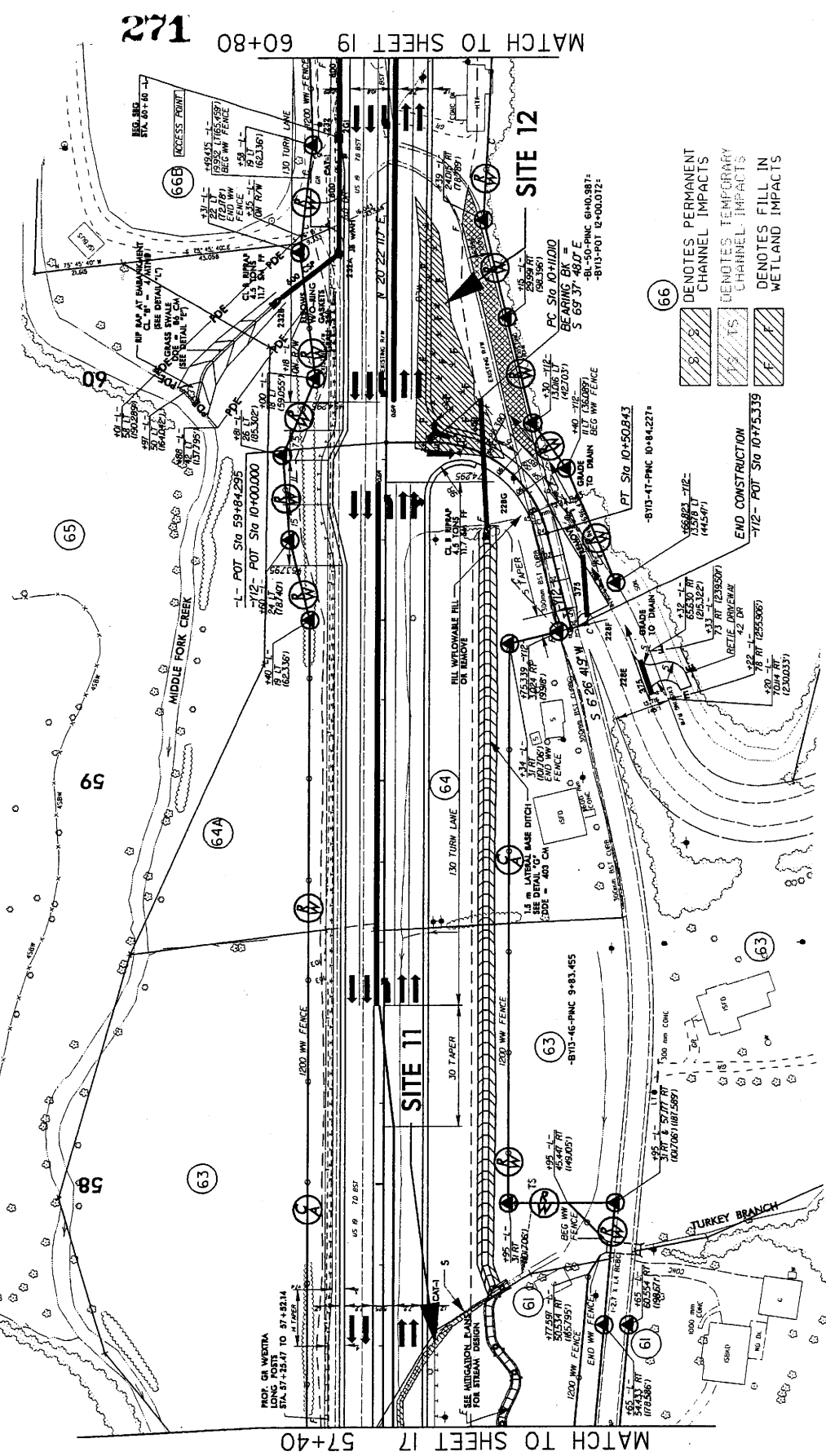
AFRICA

CONTRACT NO. R/W REV.

PRELIMINARY PLANS
 FOR THE STATE OF MISSISSIPPI
 FOR THE PROJECT OF ROADWAY CONSTRUCTION



-Y12-
 PI STA 10+34.480
 L = 70.000
 Δ = 39.833 (RT)
 T = 23.470
 R = 30.000
 SE = 0.080
 RO = 48



- (S) DENOTES PERMANENT CHANNEL IMPACTS
- (TS) DENOTES TEMPORARY CHANNEL IMPACTS
- (W) DENOTES FILL IN WETLAND IMPACTS

FOR -L- PROFILE SEE SHEET 49
 FOR -Y12- PROFILE SEE SHEET 66

Permit Drawing

271

MATCH TO SHEET 19 60+80

MATCH TO SHEET 17 57+40

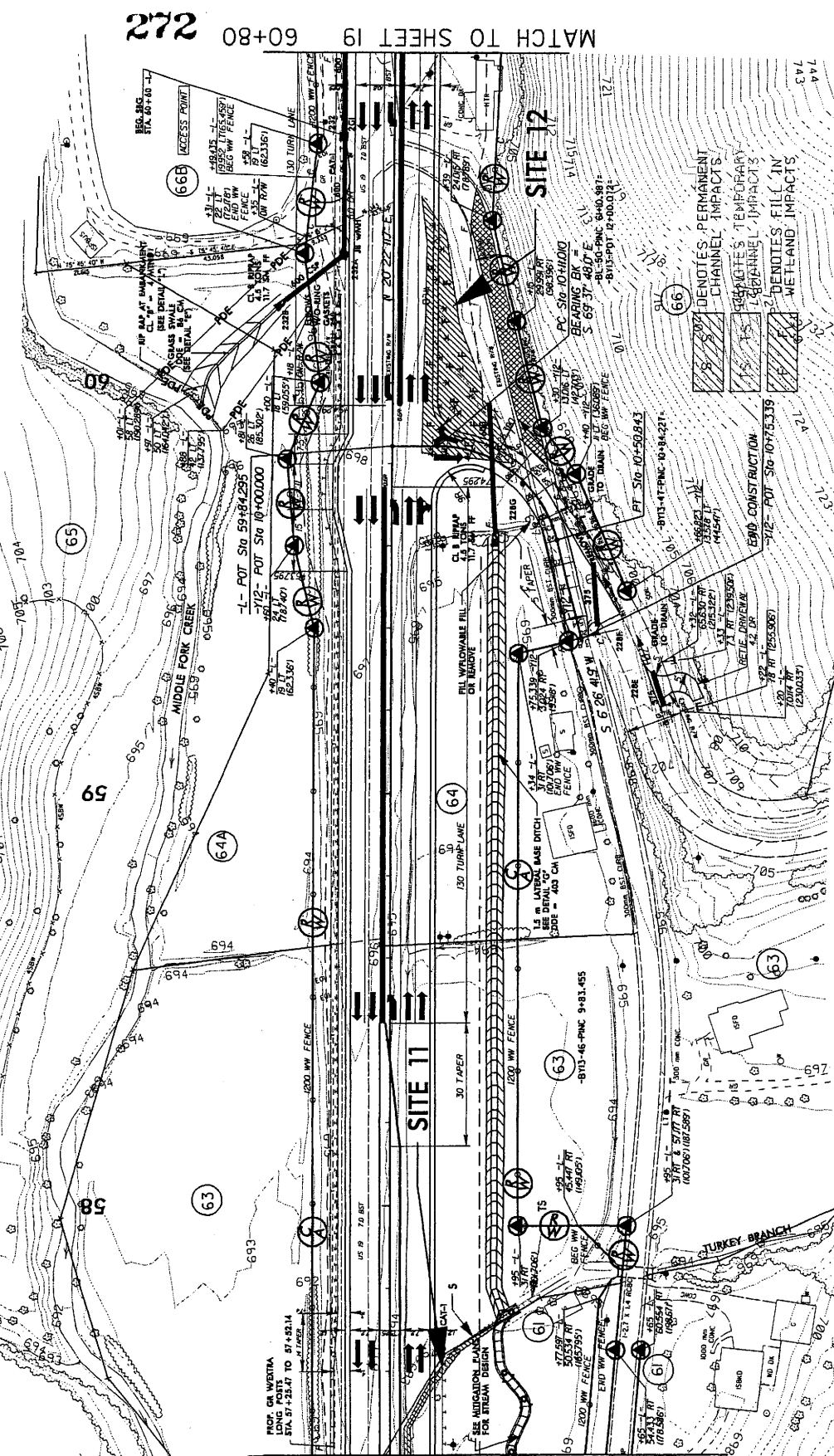
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	PROJECT REFERENCE NO.	SHEET N
	P-23/2A	18
	ROADWAY DESIGN ENGINEER	PROJ. NO.
	ENGINEER	
	CONTRACT NO.	DATE
	COMPILED BY	DATE
	REVISIONS	DATE

-Y12-
 PI Sta 10+34.480
 Δ = 76.04 29.8 (RT)
 L = 39.833
 T = 23.470
 R = 30.000
 SE = 0.080
 RO = .48

FROM OLD VERTICA
 POINT TO 57+52.14
 AT STA 57+23.47

SEE AUGUST 2014 PLAN
 FOR STREAM DESIGN

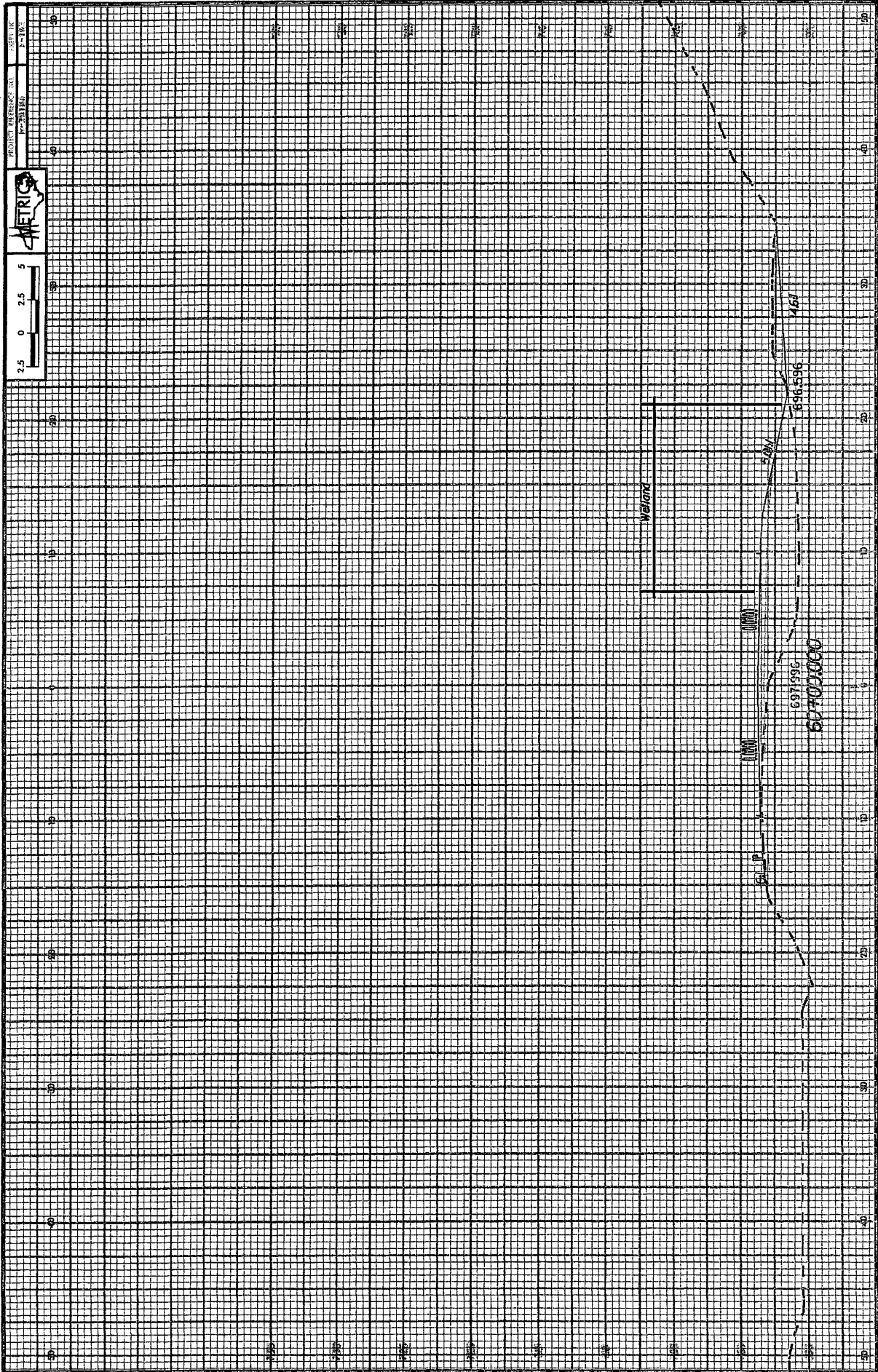



MATCH TO SHEET 17 57+40

MATCH TO SHEET 19 60+80

272

FOR -Y1- PROFILE SEE SHEET *49
 FOR -Y12- PROFILE SEE SHEET *6
 PER THE DRAWING



PROJECT REFERENCE NO.	SHEET NO.
P-22/0A	20
DESIGNED BY	ENGINEER
MONITORING ENGINEER	
	
PRELIMINARY PLANS NO. 1000 FOR THE UNIVERSITY OF TEXAS AT ARLINGTON	
COUNTY, T.M. BR.	



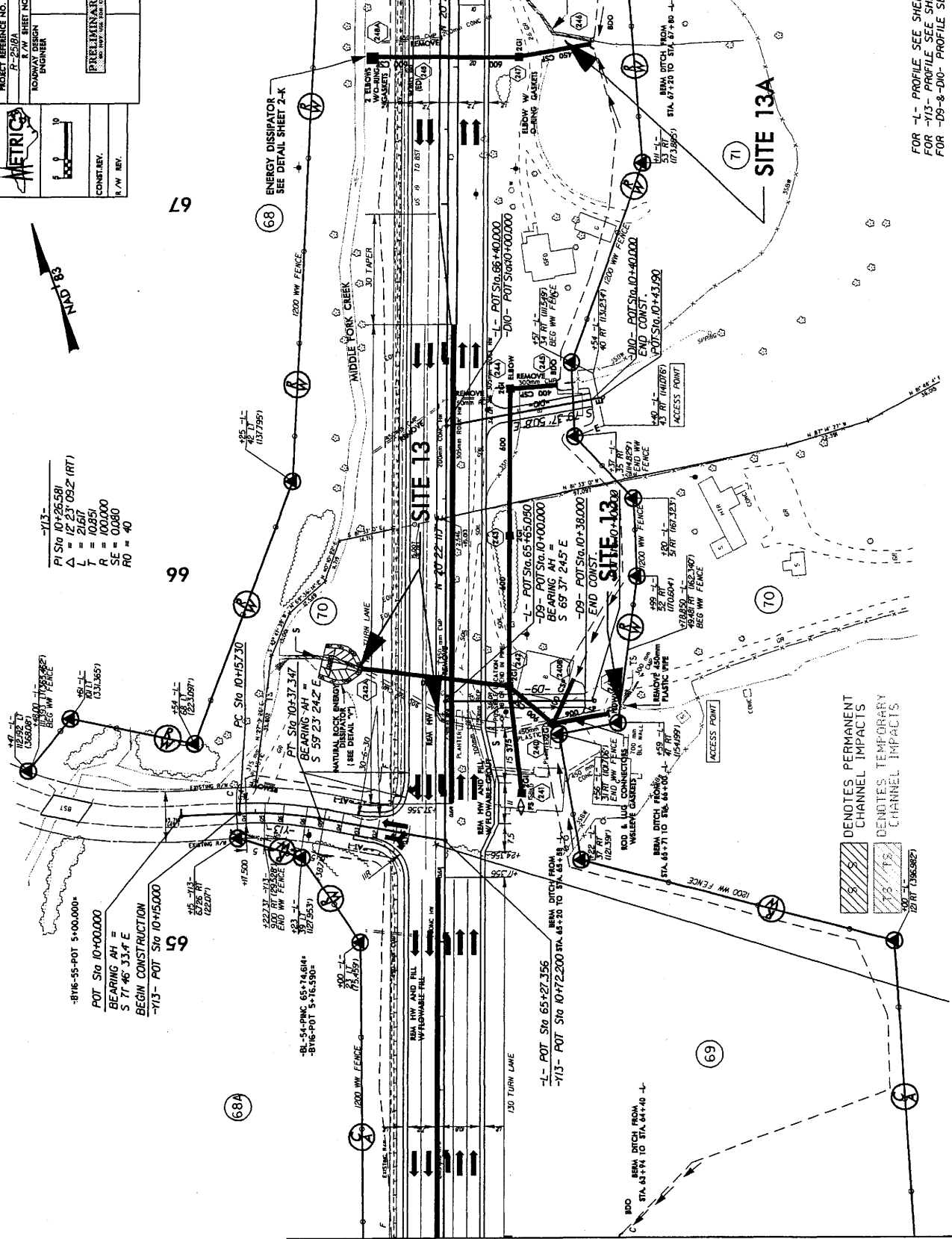
-Y13-
 P1 Sta 10+26.581
 L = 23.082 (RT)
 Δ = 21.67
 T = 10.851
 R = 100.000
 SE = 0.080
 R0 = 40

67

69

MATCH TO SHEET 21 67+60 274

MATCH TO SHEET 19 64+20



 DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *51
 FOR -Y13- PROFILE SEE SHEET *70
 FOR -D9-8-D10- PROFILE SEE SHEET *

PAUL W. METRICS, INC.

PROJECT REFERENCE NO. SHEET NO.
 R-2508A 20
 ROADWAY DESIGN ENGINEER
 TRANSPORTATION ENGINEER



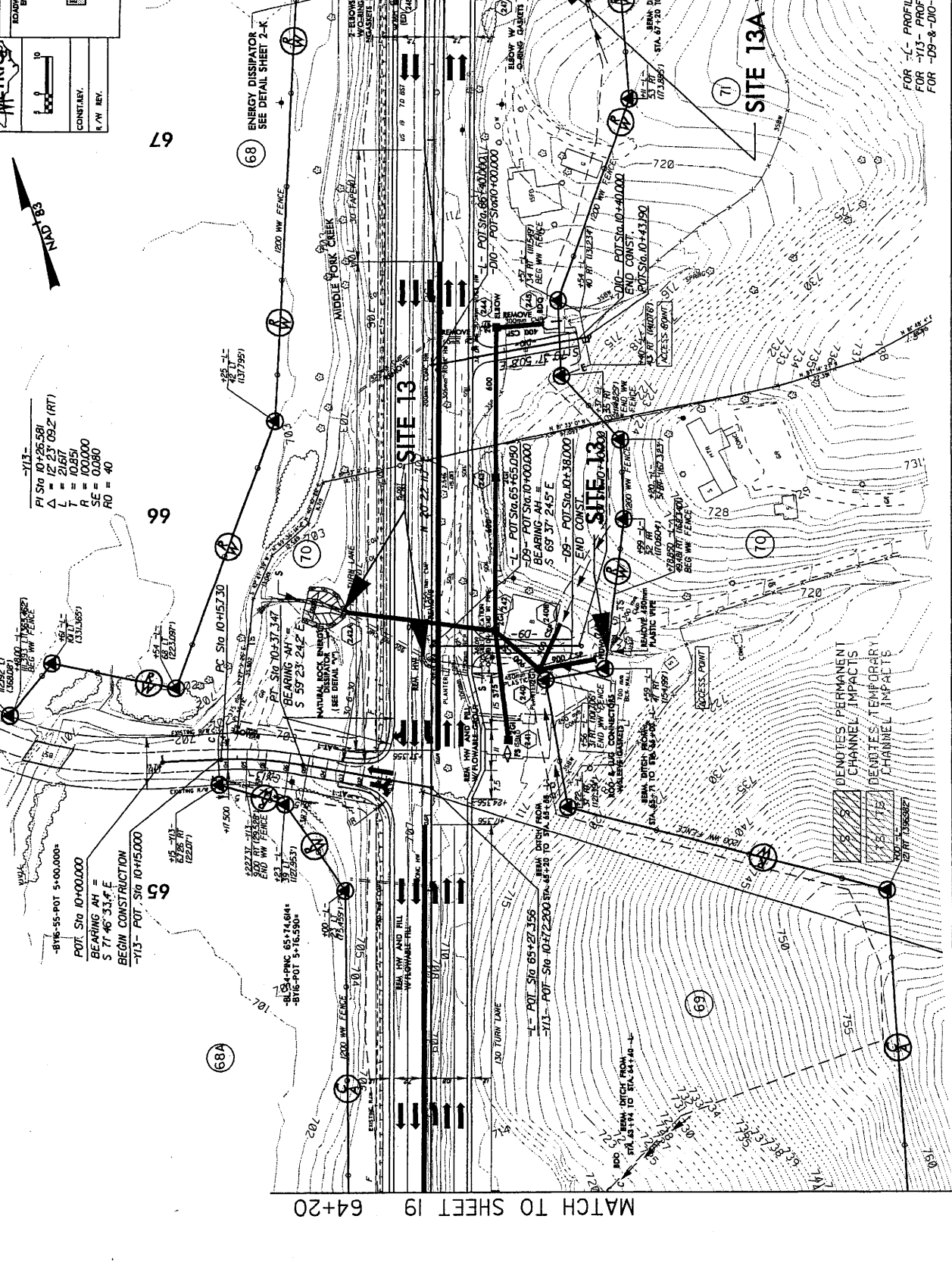
CONSTANT
 1" = 40'

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

ENERGY DISSIPATOR
 SEE DETAIL SHEET 2-K

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

Permit Drawing



-Y13-
 PI Sta 10+26.681
 L = 21.67
 T = 10.851
 R = 100.000
 SE = 0.080
 RO = 40

-L-
 POT Sta 65+65.090
 BEARING AH = S 89° 31' 24.5" E

-D9-
 POT Sta 10+38.000
 BEARING AH = S 89° 31' 24.5" E

-D10-
 POT Sta 10+40.000
 POT Sta 10+41.900

-D9-&-D10-
 POT Sta 10+41.900

-L-
 POT Sta 65+65.090
 BEARING AH = S 89° 31' 24.5" E

-D9-
 POT Sta 10+38.000
 BEARING AH = S 89° 31' 24.5" E

-D10-
 POT Sta 10+40.000
 POT Sta 10+41.900

-D9-&-D10-
 POT Sta 10+41.900

ENERGY DISSIPATOR
 SEE DETAIL SHEET 2-K

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

Permit Drawing

METRIC

PROJECT REFERENCE NO. **21** SHEET NO. **21**

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

CONTRACTOR: **PRELIMINARY PLANS**

DATE: **10/15/2019**

SCALE: **1" = 40'**

DATE: **10/15/2019**

SCALE: **1" = 40'**

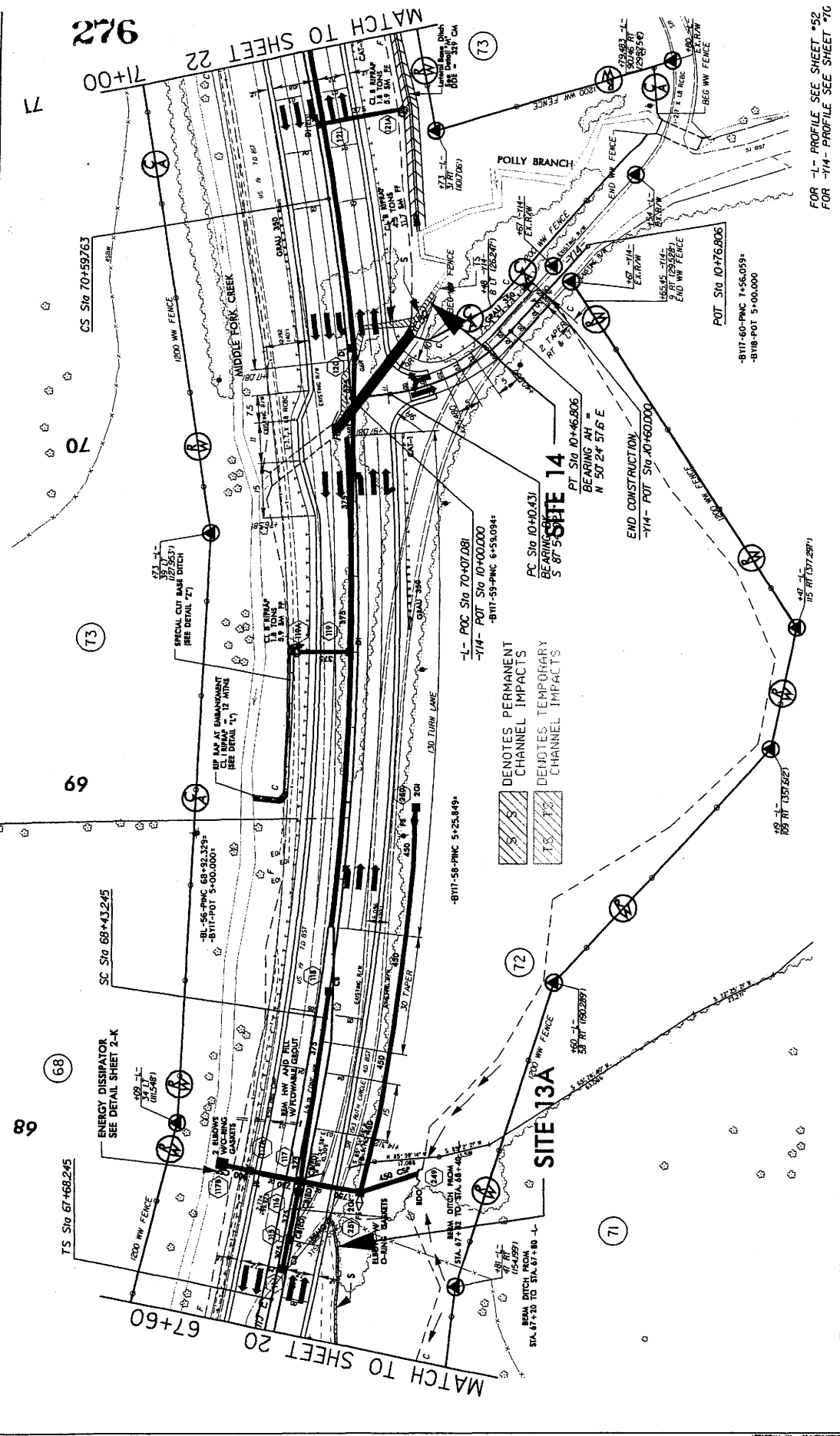


-1/4-
 PI Sta 10+29.466
 Δ = 47.40
 L = 36.376
 T = 19.035
 R = 50.000
 SE = 0.080
 RO = 40

-L-
 PI Sta 68+18.253
 Δ = 37.04
 L = 246.517
 T = 109.130
 R = 700.000
 SE = 0.050

PI Sta 69+52.375
 Δ = 17.43
 L = 192.87
 T = 109.130
 R = 700.000
 SE = 0.050

PI Sta 70+84.769
 Δ = 17.04
 L = 192.87
 T = 109.130
 R = 700.000
 SE = 0.050



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



PROJECT REFERENCE NO.	R-256A	SHEET N°	21
ROADWAY DESIGN	HYDRAULICS	SHEET NO.	21
DESIGNER	ENGINEER		
PRELIMINARY PLANS			
CONTRACT NO.			
DATE			
SCALE			
BY			
CHECKED			
APPROVED			

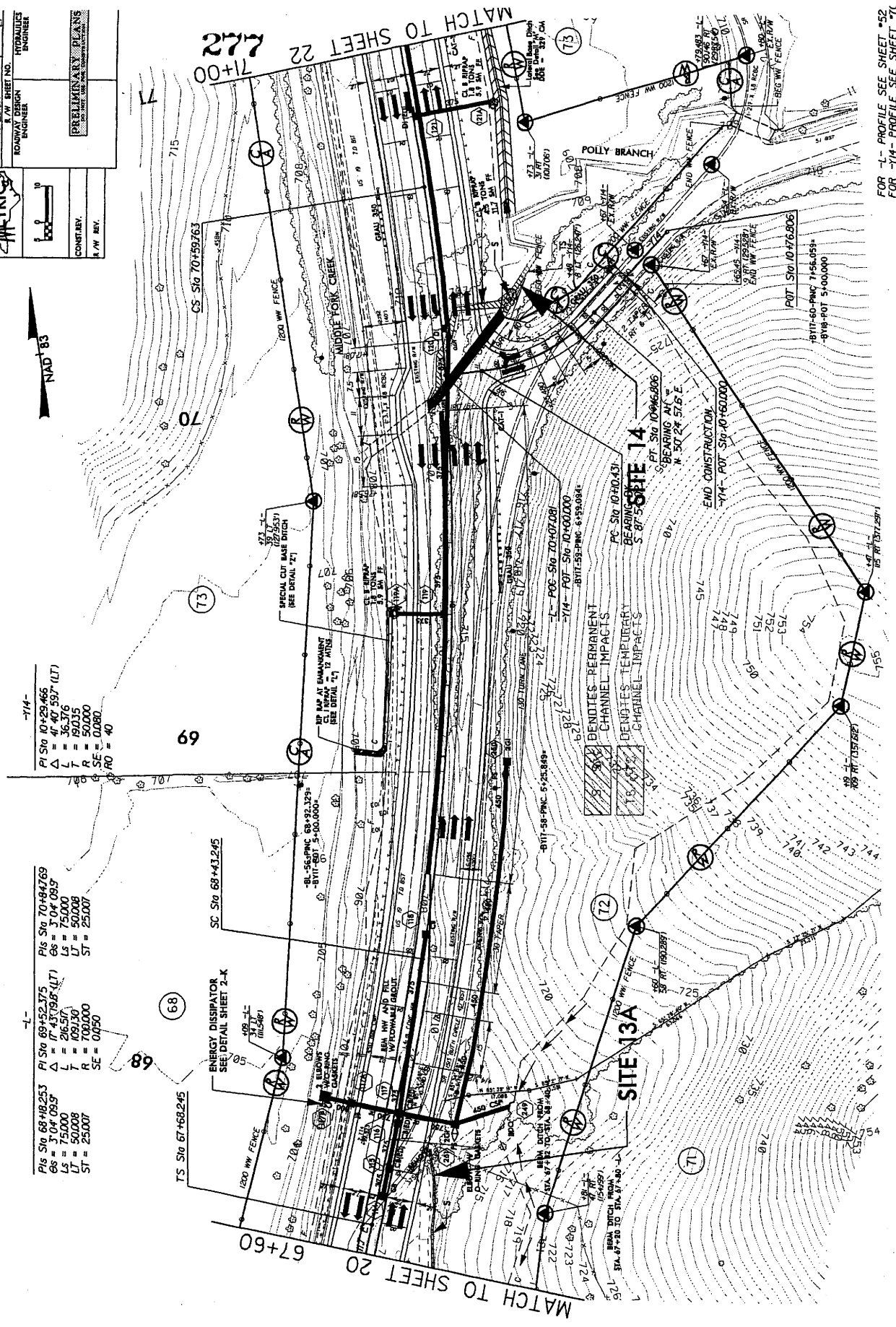


-14-
 PI Sta 10+29.466
 $\Delta = 41.40$ 597 (LT)
 $L = 36.376$
 $R = 190.35$
 $E = 502.00$
 $SE = 0.0280$
 $AO = 40$

-L-
 PI Sta 68+18.253
 $\Delta = 3.04$ 095
 $L = 75.000$
 $R = 691.30$
 $E = 502.08$
 $SE = 25.007$
 PI Sta 69+52.375
 $\Delta = 17.43$ 798 (LT)
 $L = 216.517$
 $R = 691.30$
 $E = 502.08$
 $SE = 25.007$
 PI Sta 70+84.769
 $\Delta = 3.04$ 095
 $L = 75.000$
 $R = 691.30$
 $E = 502.08$
 $SE = 25.007$

MATCH TO SHEET 22 71+00

MATCH TO SHEET 20 67+60



FOR 1- PROFILE SEE SHEET 52
 FOR 14- PROFILE SEE SHEET 71
 Permit Drawing 1122

PROJECT REFERENCE NO. SHEET N
R-258A 23

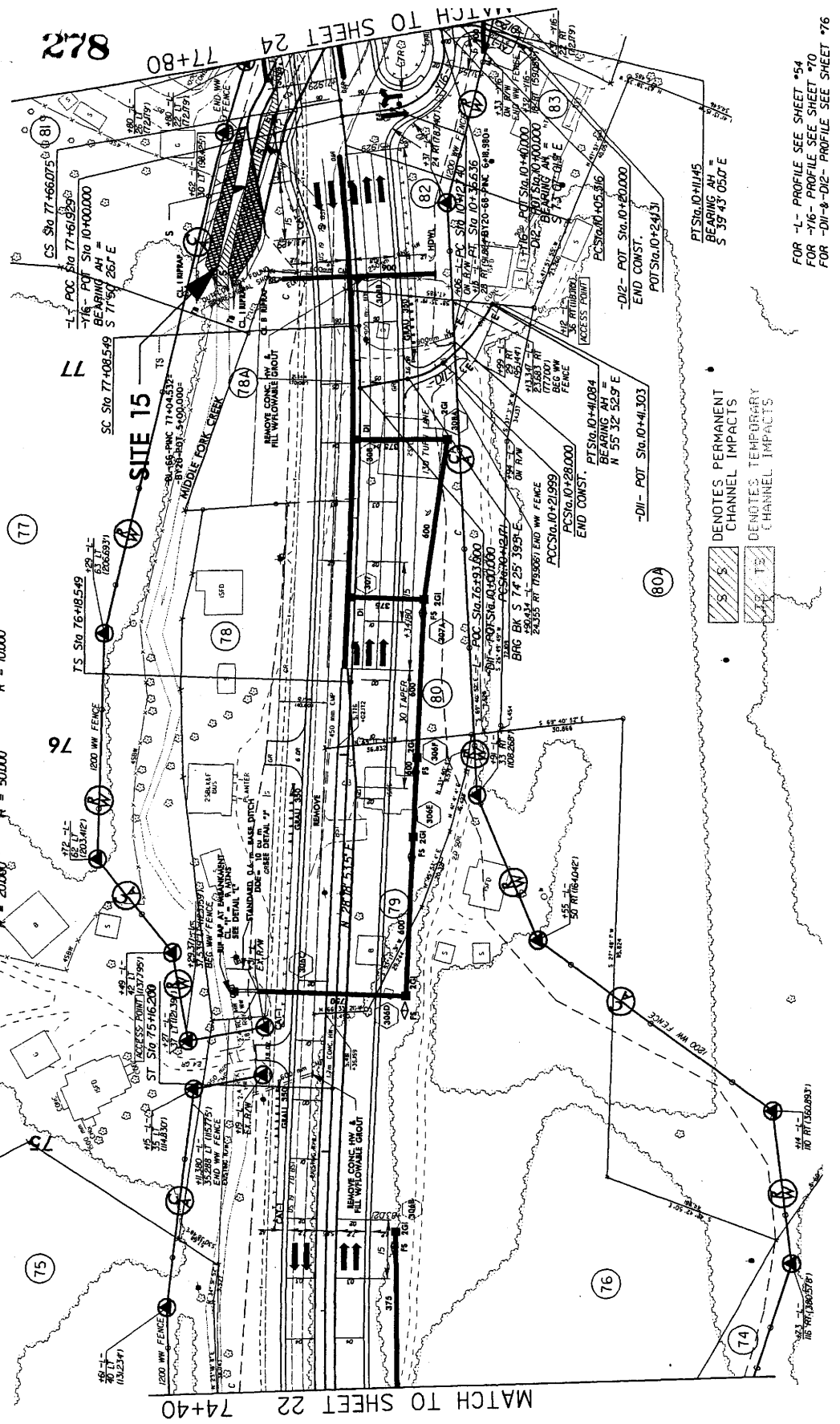
ROADWAY DESIGNER: METRICS
ENGINEER: [Signature]

PRELIMINARY PLANS
FOR THE [Project Name]

CONTRACT NO. [Blank]
N.W. REV. [Blank]



Station	PI	Sta	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22	74+56.22
75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37	75+37.37
76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59	76+18.59
77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59	77+08.59
77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075	77+46.075



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *54
 FOR -Y16- PROFILE SEE SHEET *70
 FOR -DI1- & -DI2- PROFILE SEE SHEET *76

Permit Drawing



PROJECT REFERENCE NO. SHEET
 R-2512 23
 ROADWAY DESIGN ENGINEER HYDRAULIC ENGINEER
 PRELIMINARY PLAN
 IN PART FOR PARCEL 80A (SEE PARCEL MAP)



-116-
 PI Sta 10+28.073
 Δ = 91.63 32.7 (LT)
 L = 23.896
 T = 15.338
 R = 15.000
 SE = 0.070
 RO = 42

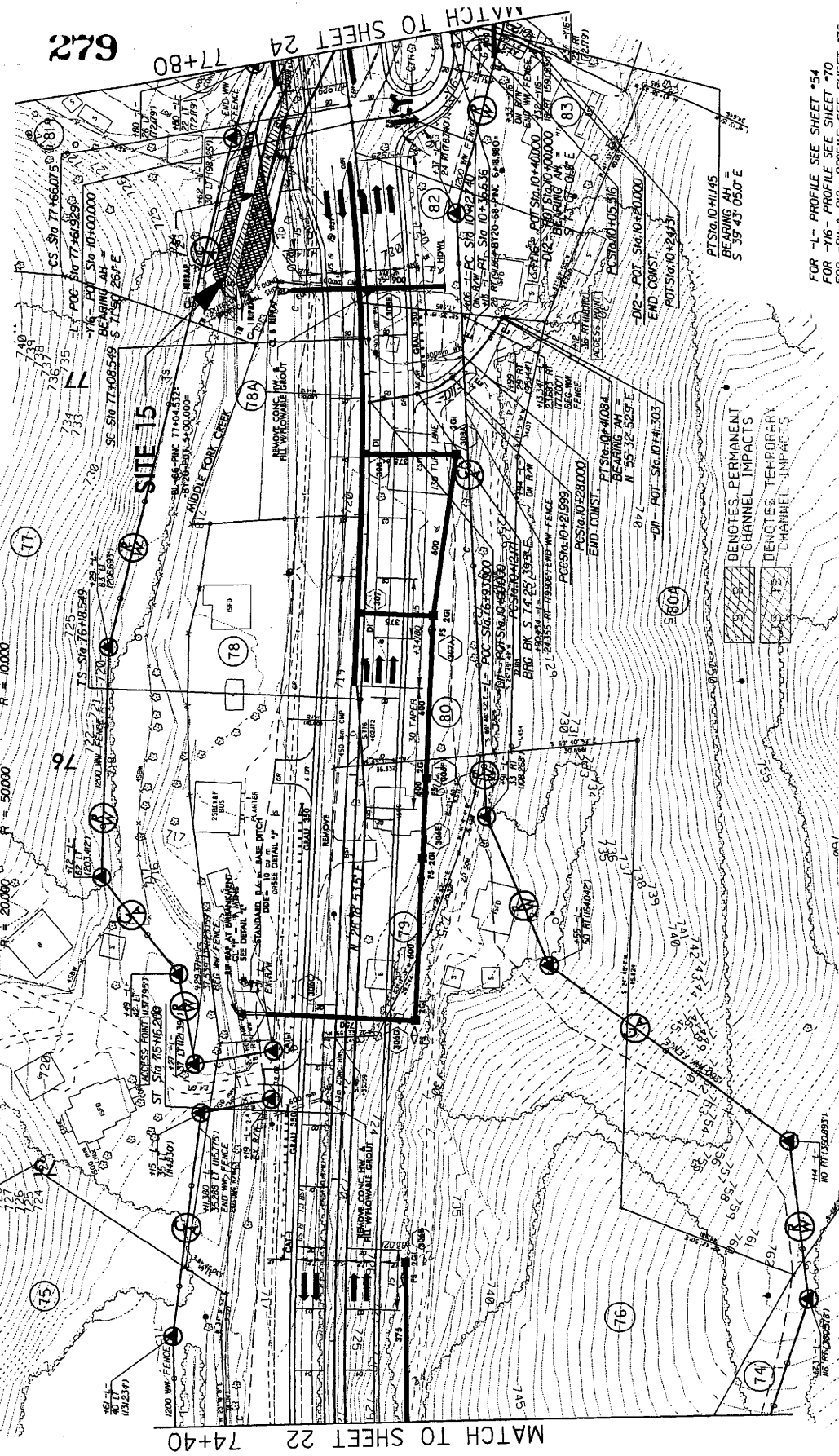
-D12-
 PI Sta 10+108.316
 Δ = 33.27 56.8 (RT)
 L = 32.29
 T = 10.000
 R = 10.000

-L-
 PI Sta 76+78.569
 Δ = 4.38 44.2
 L = 90.000
 LT = 60.021
 ST = 30.019

-D11-
 PI Sta 10+107.187
 Δ = 26.09 19.7 (LT)
 L = 5.56 19.5 (LT)
 L = 57.526
 T = 28.789
 R = 555.000
 SE = 0.060

-D12-
 PI Sta 10+316.539
 Δ = 31.52 08.5 (LT)
 L = 18.084
 T = 20.000
 R = 20.000

-D11-
 PI Sta 77+37.337
 Δ = 5.56 19.5 (LT)
 L = 57.526
 T = 28.789
 R = 555.000
 SE = 0.060



MATCH TO SHEET 24 77+80
 MATCH TO SHEET 22 74+00

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

REMOVE CONC. FILL WITH W/WT FILL
 REMOVE CONC. FILL WITH W/WT FILL

PT Sta. 10+114.45
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+20.000
 END CONST.
 ROT: Sta. 10+24.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

PT Sta. 10+40.000
 BEARING: AH
 S 39.43 03.0 E

PT Sta. 10+40.000
 END CONST.
 ROT: Sta. 10+44.431

FOR -116- PROFILE SEE SHEET #64
 FOR -116- PROFILE SEE SHEET #70
 FOR -D11 & D12- PROFILE SEE SHEET #76

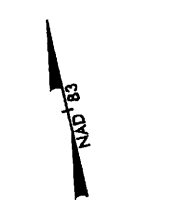
PERMIT DRAWING

PERMIT DRAWING

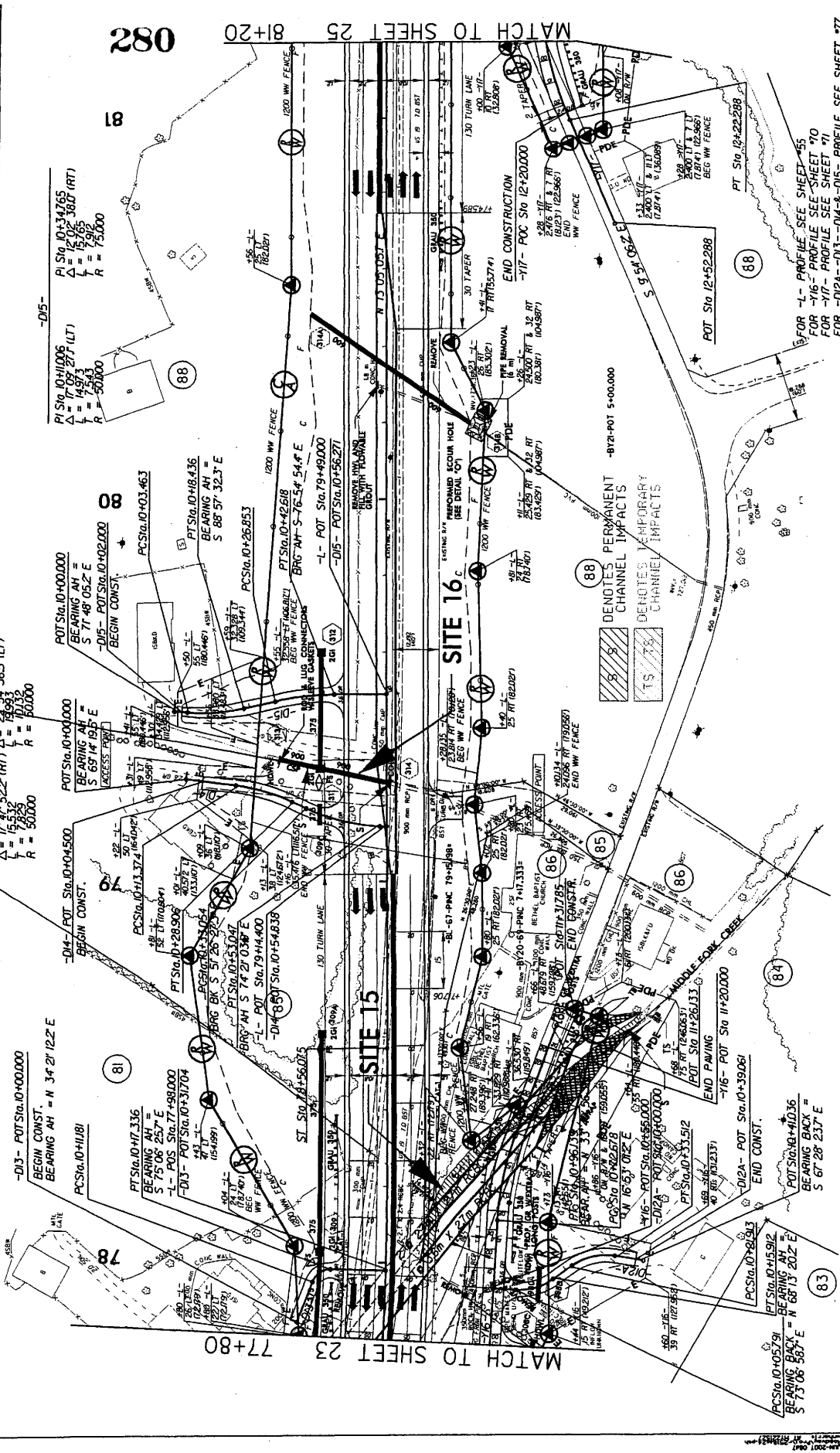
PERMIT DRAWING

PERMIT DRAWING

METRICS
 PROJECT REFERENCE NO. R-2516A
 SHEET NO. 24
 R/W DESIGN ENGINEER
 HYDRAULICS ENGINEER
 CONTRACTOR: M.W. REV.
 PROJECT: ...



-1/- PI Sta 77+96.093 Δ = 23.442 L = 80.000 LT = 60.020 ST = 30.009	-1/6/- PI Sta 10+194.490 Δ = 23.442 L = 80.000 R = 17.812 SF = 0.080 RO = 42	-1/7/- PI Sta 12+00.804 Δ = 23.442 L = 80.000 R = 17.812 RO = 42	-D12A- PI Sta 10+119.533 Δ = 10.232 L = 5.262 R = 15.000	-D14- PI Sta 10+212.203 Δ = 15.512 L = 7.825 R = 50.000	-D12A- PI Sta 10+280.020 Δ = 15.512 L = 11.598 R = 15.000	-D12A- PI Sta 10+414.717 Δ = 15.512 L = 13.336 R = 5.000
---	---	--	---	--	--	---



FOR -1/- PROFILE SEE SHEET 23
 FOR -1/6/- PROFILE SEE SHEET 24
 FOR -1/7/- PROFILE SEE SHEET 25
 FOR -D12A-, -D13-, -D14- & -D15- PROFILE SEE SHEET 27

81
82
83
84
85
86
87
88
89

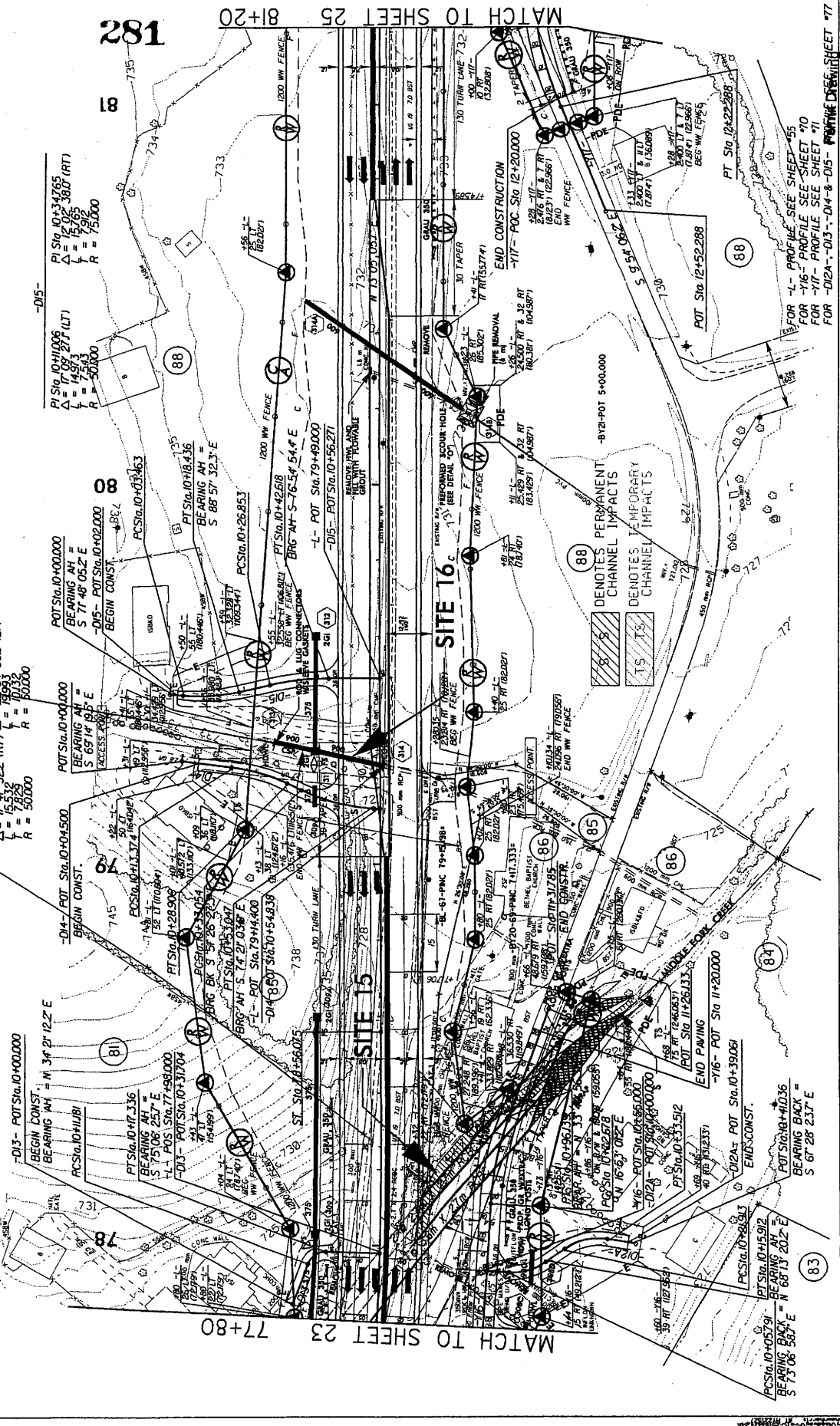
77+80 MATCH TO SHEET 23
 81+20 MATCH TO SHEET 25



PROJECT REFERENCE NO.	SHEET IN
R-258A	24
SHEET NO.	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
COUNTY:	N.W. 1/4



-Y16-	-Y17-	-D12A-	-D13-
PI Sta. 10+84.690 Δ = 4° 38' 44.2" L = 90.000 LT = 60.021 ST = 30.019	PI Sta. 10+40.604 Δ = 35° 39' 41.1" (LT) L = 10.222 T = 22.412 R = 100.000 SE = 0.080 RO = 42	PI Sta. 10+105.3 Δ = 38° 39' 41.1" (LT) L = 10.222 T = 22.412 R = 15.000	PI Sta. 10+41.717 Δ = 4° 18' 16.1" (RT) L = 6.156 T = 3.536 R = 5.000
-Y16- POT Sta. 10+00.000 BEGIN CONST. BEARING IN4 = N 34° 21' 12.2" E	-D14- POT Sta. 10+04.500 BEGIN CONST.	-D15- POT Sta. 10+02.000 BEGIN CONST.	-D15- POT Sta. 10+02.000 BEGIN CONST.
PT Sta. 10+17.336 BEARING AH = S 75° 06' 25.7" E	PT Sta. 10+11.74 BEARING AH = S 71° 48' 05.2" E	PT Sta. 10+18.436 BEARING AH = S 88° 57' 32.3" E	PT Sta. 10+34.765 Δ = 1° 09' 27.7" (LT) L = 1.925 T = 1.925 R = 75.000



MATCH TO SHEET 25 81+20

MATCH TO SHEET 23 77+80

FOR -L- PROFILE SEE SHEET 55
FOR -Y16- PROFILE SEE SHEET 20
FOR -Y17- PROFILE SEE SHEET 21
FOR -D12A-, -D13-, -D14- & -D15- PROFILE SEE SHEET 27

PROJECT REFERENCE NO. **AT-2007**
 SHEET NO. **25**
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER



CONTINUED
 NAD 83



PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION OF
 THE NEW 100' WIDE ROADWAY

SCALE: 1" = 40'

DATE: 06/11/2007

BY: [Signature]

CHECKED BY: [Signature]

DATE: 06/11/2007

PROJECT NO. 06110007

PROJECT NAME: [Illegible]

PROJECT LOCATION: [Illegible]

PROJECT DESCRIPTION: [Illegible]

PROJECT STATUS: [Illegible]

PROJECT OWNER: [Illegible]

PROJECT CONTACT: [Illegible]

PROJECT ADDRESS: [Illegible]

PROJECT PHONE: [Illegible]

PROJECT FAX: [Illegible]

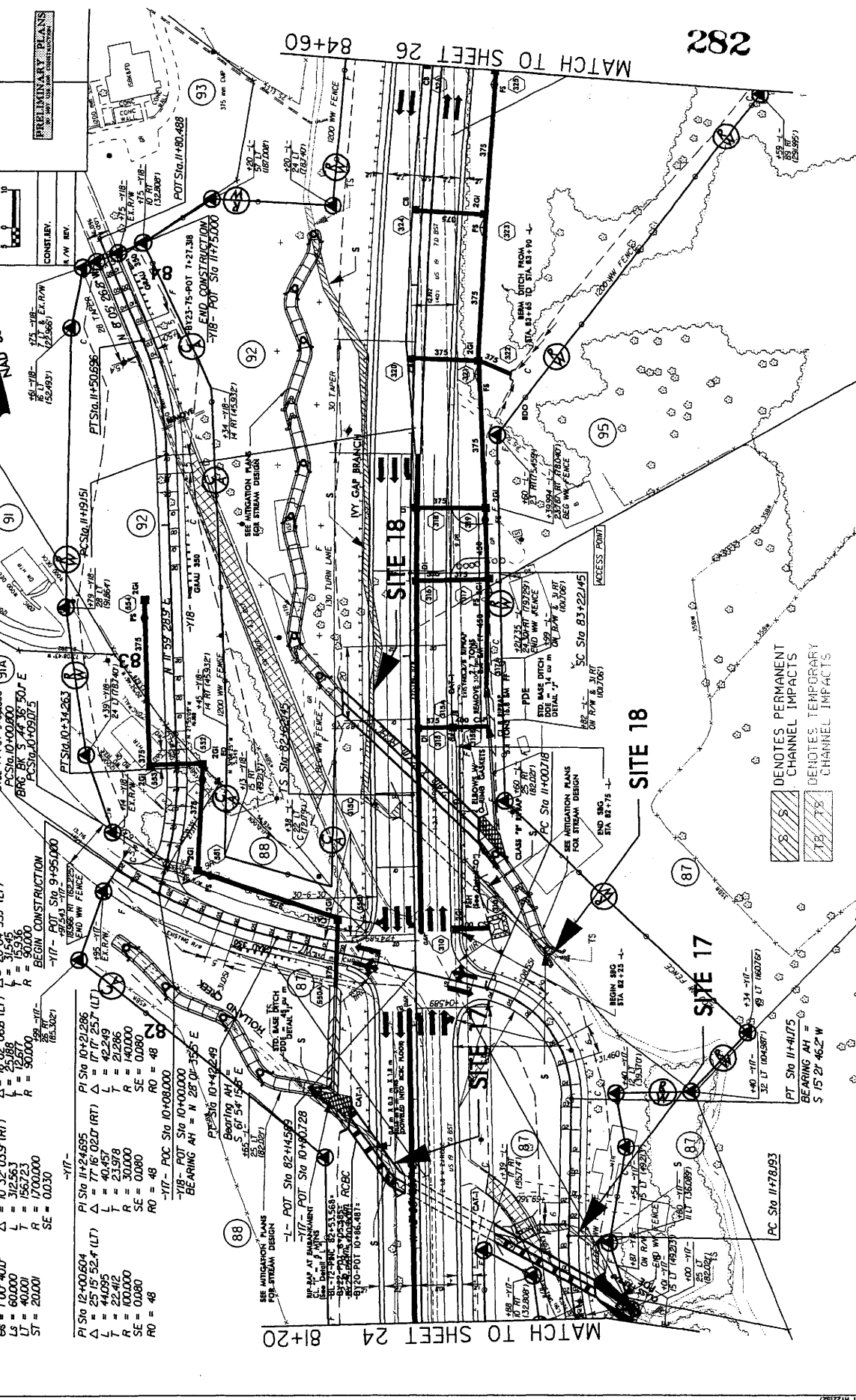
PROJECT EMAIL: [Illegible]

PROJECT WEBSITE: [Illegible]

PROJECT URL: [Illegible]

PROJECT MAP: [Illegible]

PROJECT PLAN: [Illegible]



FOR -L- PROFILE SEE SHEET 26
 FOR -117- PROFILE SEE SHEET 25
 FOR -118- PROFILE SEE SHEET 27

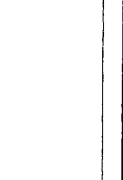
Perma Drawing

R/W REV: REVISING NAME ON PARCEL 87 SHEET 25 ONLY. (DALLAS BUCKNER, JR.), 06/11/2007 NHH.
 R/W REV: REVISING NAME ON PARCEL 87 SHEET 25 ONLY. (LAWRENCE AND VESSIE REAVIS HEIRS), 06/11/2007 NHH.
 R/W REV: CHANGING PARCEL 89 TO PARCEL 87 AND REVISING PROPERTY OWNER NAME (LAWRENCE AND VESSIE REAVIS HEIRS) 06/11/2007 NHH.

METRIX

PROJECT REFERENCE NO. R-25/8A
 R/W SHEET NO. 26
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 CONTRACT NO. 17000000
 R/W REV.

SHEET NO. 26
 ROADWAY DESIGN ENGINEER
 CONTRACT NO. 17000000
 R/W REV.



-D168-
 PI Sta. 10+74.540
 $\Delta = 53.55' 49.0" (LT)$
 L = 1419.3
 R = 15000

-D144-
 PI Sta. 11+42.540
 $\Delta = 50.55' 56.7" (LT)$
 L = 1333.4
 R = 15000

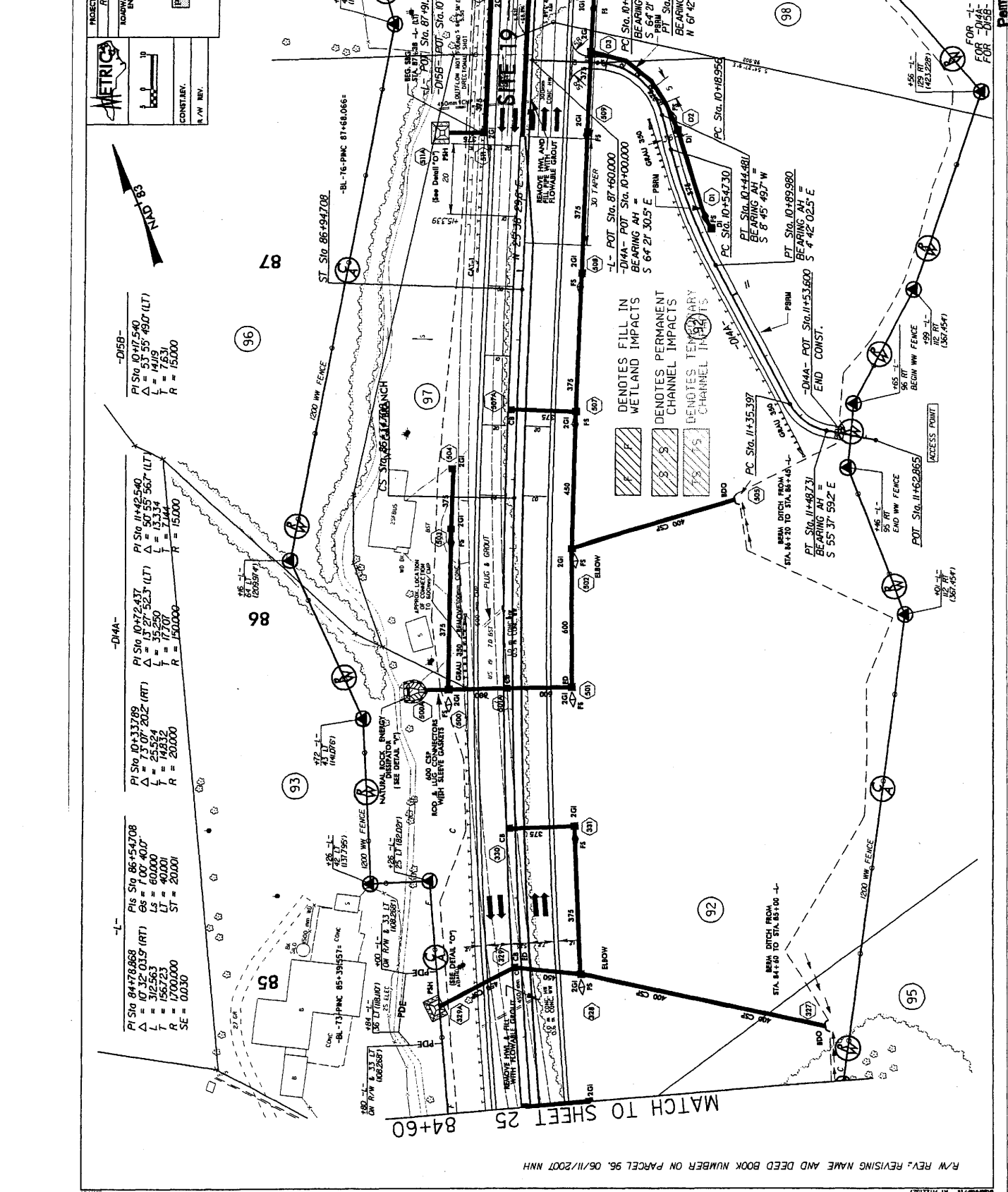
-D144-
 PI Sta. 10+12.437
 $\Delta = 13.27' 52.3" (LT)$
 L = 352.50
 R = 20000

-L-
 PI Sta. 86+547.08
 $\Delta = 10.52' 03.9" (RT)$
 L = 700.40
 R = 40000

-L-
 PI Sta. 10+33.789
 $\Delta = 73.07' 20.2" (RT)$
 L = 755.54
 R = 20000

-BL-13-PNC-
 CONC. 85+39.557± CONC.
 33.33 LT (108.2857)
 35.51± CONC. 85+39.557± CONC.
 33.33 LT (108.2857)

-BL-16-PNC-
 81+68.06± CONC.
 33.33 LT (108.2857)



MATCH TO SHEET 25 84+60

MATCH TO SHEET 27 88+00

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

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

284

FOR -L- PROFILE SEE SHEET 27
 FOR -D168- PROFILE SEE SHEET 27
 POINT DRAWING 1-4

METRICS

PROJECT REFERENCE NO. SHEET NO.
 R-25/6A 25

ROADWAY DESIGN ENGINEER
 PROJECT ENGINEER

CONTRACTOR
 R/W REF.



-D15B-
 PI Sta. 0+472.540
 $\Delta = 317.5$ 450 (LT)
 $L = 71.9$
 $T = 7.63$
 $R = 15,000$

-D14A-
 PI Sta. 10+472.437
 $\Delta = 13.27$ 52.3 (LT)
 $L = 15.34$
 $T = 39.29$
 $R = 15,000$

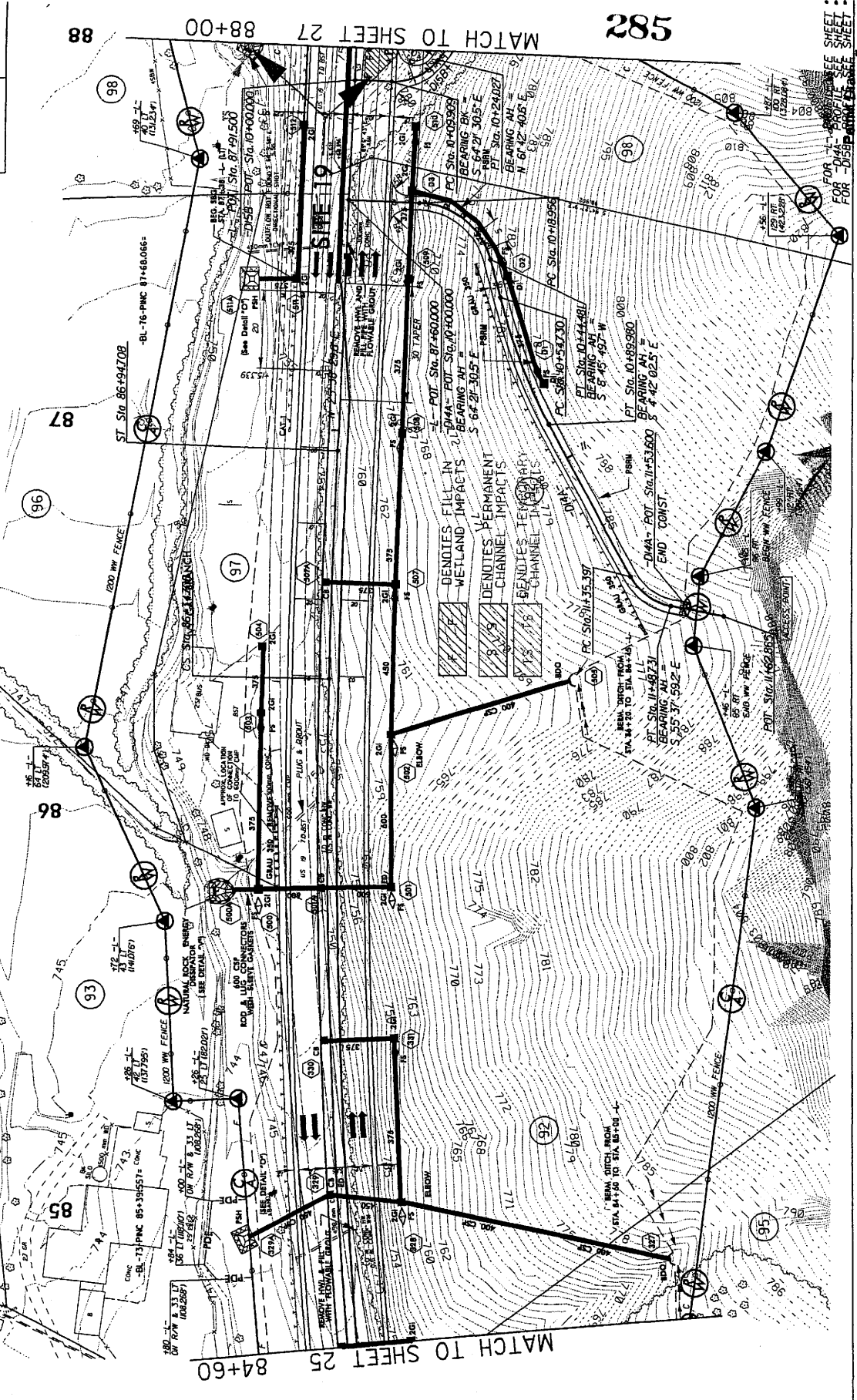
-D14A-
 PI Sta. 10+337.99
 $\Delta = 25.59$ 202 (RT)
 $L = 14.82$
 $T = 20.00$
 $R = 15,000$

-L-
 PI Sta. 84+78.868
 $\Delta = 312.53$ (RT)
 $L = 312.53$
 $T = 155.26$
 $R = 17,000.00$
 $SE = 0.030$

-D14A-
 PI Sta. 85+54.708
 $\Delta = 1.00$ 40.0
 $L = 40.00$
 $T = 40.00$
 $R = 20,000$

-D14A-
 PI Sta. 85+315.557 (Circ)
 $\Delta = 100.00$ 33.3
 $L = 100.00$
 $T = 50.00$
 $R = 17,000.00$

-D14A-
 PI Sta. 85+315.557 (Circ)
 $\Delta = 100.00$ 33.3
 $L = 100.00$
 $T = 50.00$
 $R = 17,000.00$



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

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

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

FOR - SEE SHEET 25 FOR - SEE SHEET 27

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64

Sheet 25 of 64



2.5 0 2.5 5

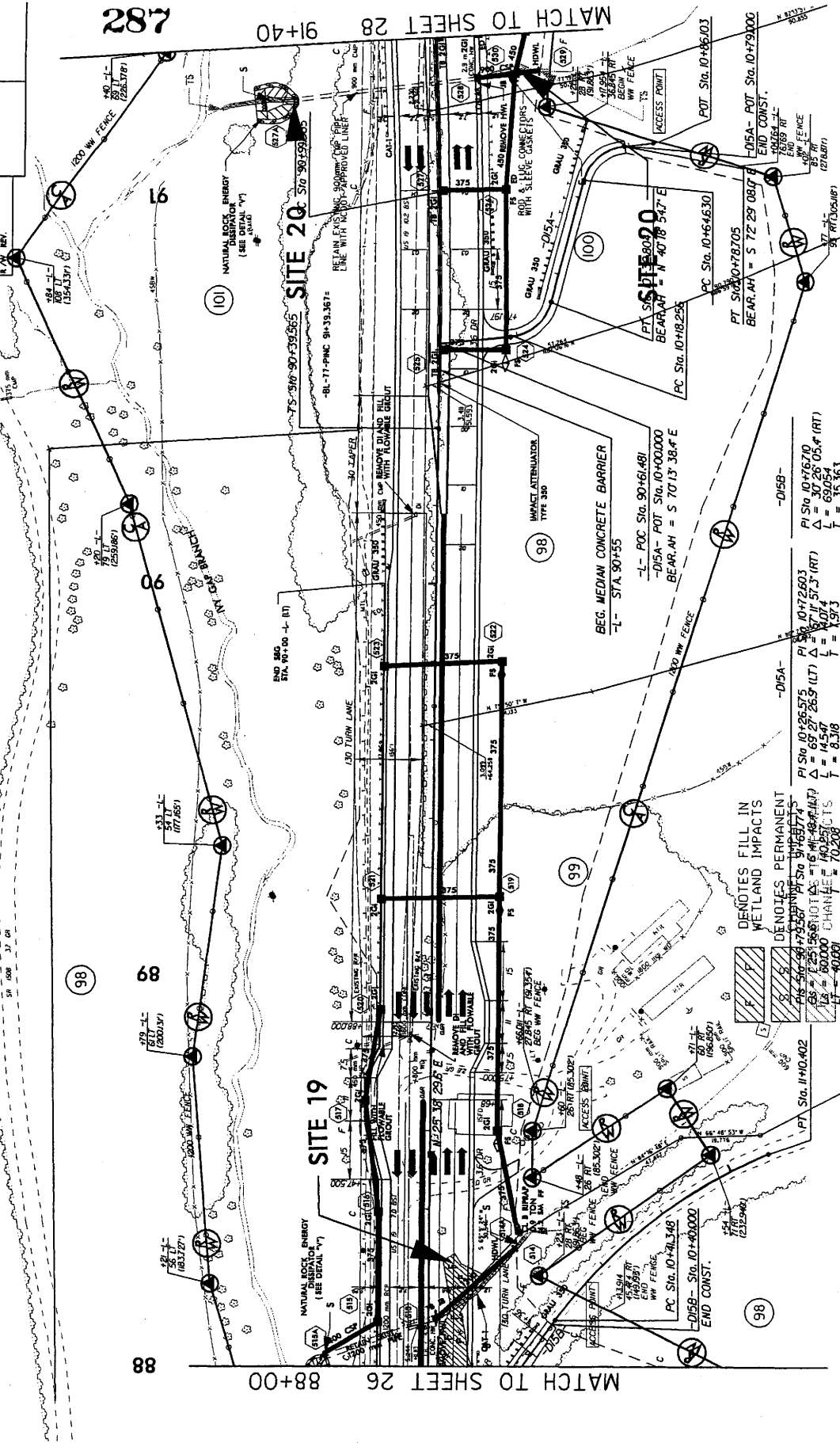
PRODUCT DEVELOPMENT, INC.
14255 130th Ave.
S. - 20070

PROJECT REFERENCE NO. SHEET NO.
 71-2570 27
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER



CONTRACT NO.
 R.W. REV.

PRELIMINARY PLANS
 (FOR INFORMATION ONLY)



782

MATCH TO SHEET 28 91+40

88

MATCH TO SHEET 26 88+00

PI STA 10+76.70
 Δ = 30.26 OS.A (RT)
 L = 69.054
 T = 35.363
 R = 130.000

PI STA 10+72.603
 Δ = 17.53 (RT)
 L = 34.074
 T = 12.000
 R = 12.000

PI STA 10+26.575
 Δ = 69.27 26.5 (LT)
 L = 14.547
 T = 8.308
 R = 12.000

PI STA 10+73.527
 Δ = 15.41 (RT)
 L = 30.831
 T = 15.41
 R = 12.000
 SE = 00.40

PI STA 10+40.402
 Δ = 10.00 (RT)
 L = 20.00
 T = 10.00
 R = 12.000

PI STA 10+41.348
 Δ = 10.00 (RT)
 L = 20.00
 T = 10.00
 R = 12.000

PI STA 10+64.630
 Δ = 72.29 08.0 (E)
 L = 143.68
 T = 72.29
 R = 130.000

FOR -L- PROFILE SEE SHEET #58
 FOR -D15B- PROFILE SEE SHEET #8
 FOR -D15A- PROFILE SEE SHEET #8

Permit Drawing
 Sheet 51 of 64

PROJECT REFERENCE NO. R-2916A
 SHEET NO. 27
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER

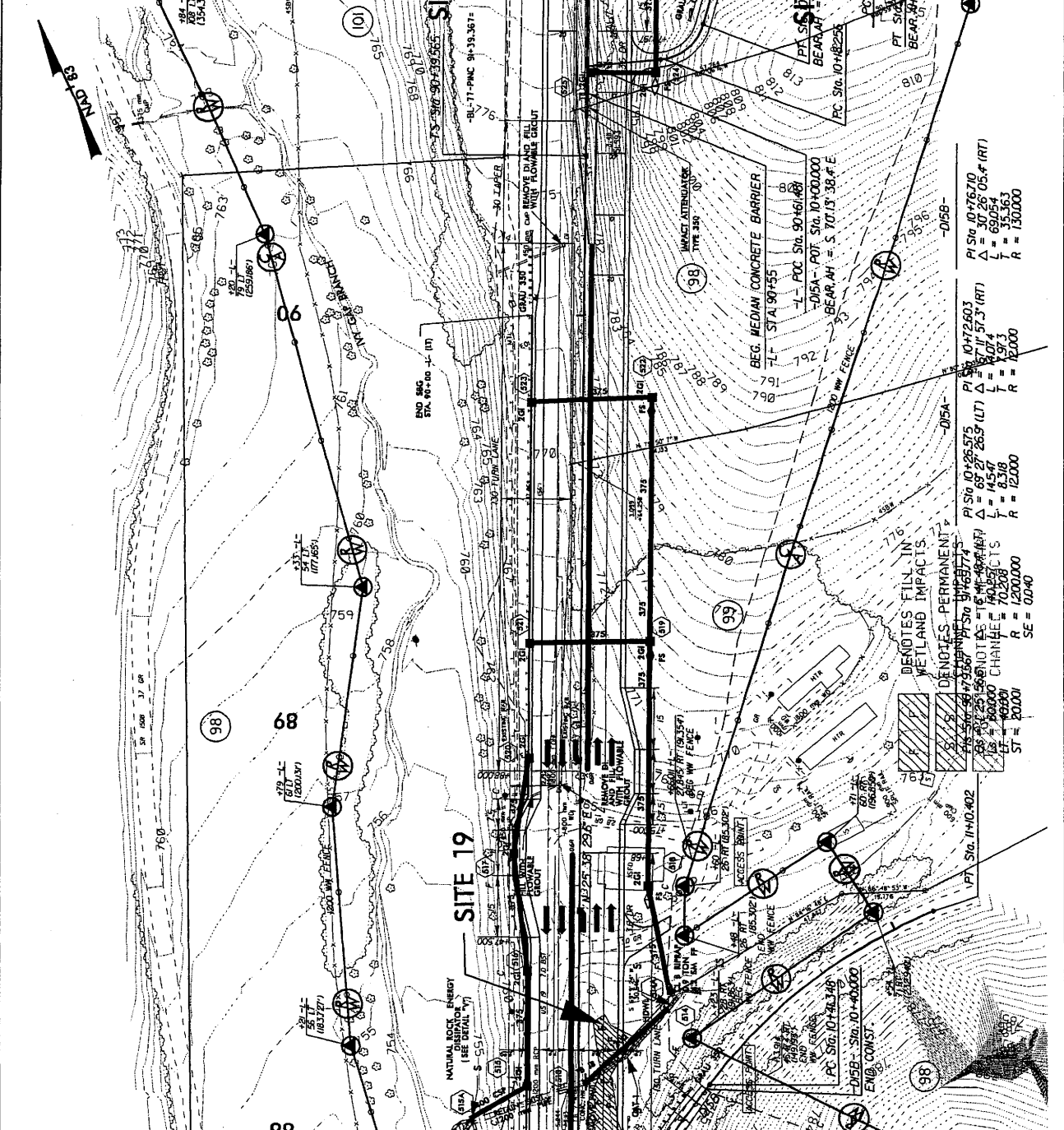
METRICS

CONST. UNIT: METRIC
 N. BY REV. 10/11/2007

PRELIMINARY PLANS
 100% CONTRACT DOCUMENTS

882

MATCH TO SHEET 28 91+40



PROJECT REFERENCE NO. R-2916A
 SHEET NO. 27
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER

METRICS

CONST. UNIT: METRIC
 N. BY REV. 10/11/2007

PRELIMINARY PLANS
 100% CONTRACT DOCUMENTS

88

MATCH TO SHEET 26 88+00

FOR -L- PROFILE SEE SHEET *58
 FOR -D5B- PROFILE SEE SHEET *9C
 FOR -D5A- PROFILE SEE SHEET *9I
 Permit Drawing

DEMONSTRATES PERMANENT WETLAND IMPACTS

PI Sta. 10+76.710
 Δ = 30.26 0.5.F (RT)
 L = 69.054
 T = 35.563
 R = 150.000

PI Sta. 10+76.603
 Δ = 67.11 57.3 (RT)
 L = 145.47
 T = 6.318
 R = 12.000

PI Sta. 10+26.575
 Δ = 67.27 26.9 (LT)
 L = 145.47
 T = 6.318
 R = 12.000

PI Sta. 9+49.447
 Δ = 145.47
 L = 145.47
 T = 6.318
 R = 12.000

PI Sta. 9+49.447
 Δ = 145.47
 L = 145.47
 T = 6.318
 R = 12.000

PI Sta. 11+0.402
 Δ = 145.47
 L = 145.47
 T = 6.318
 R = 12.000

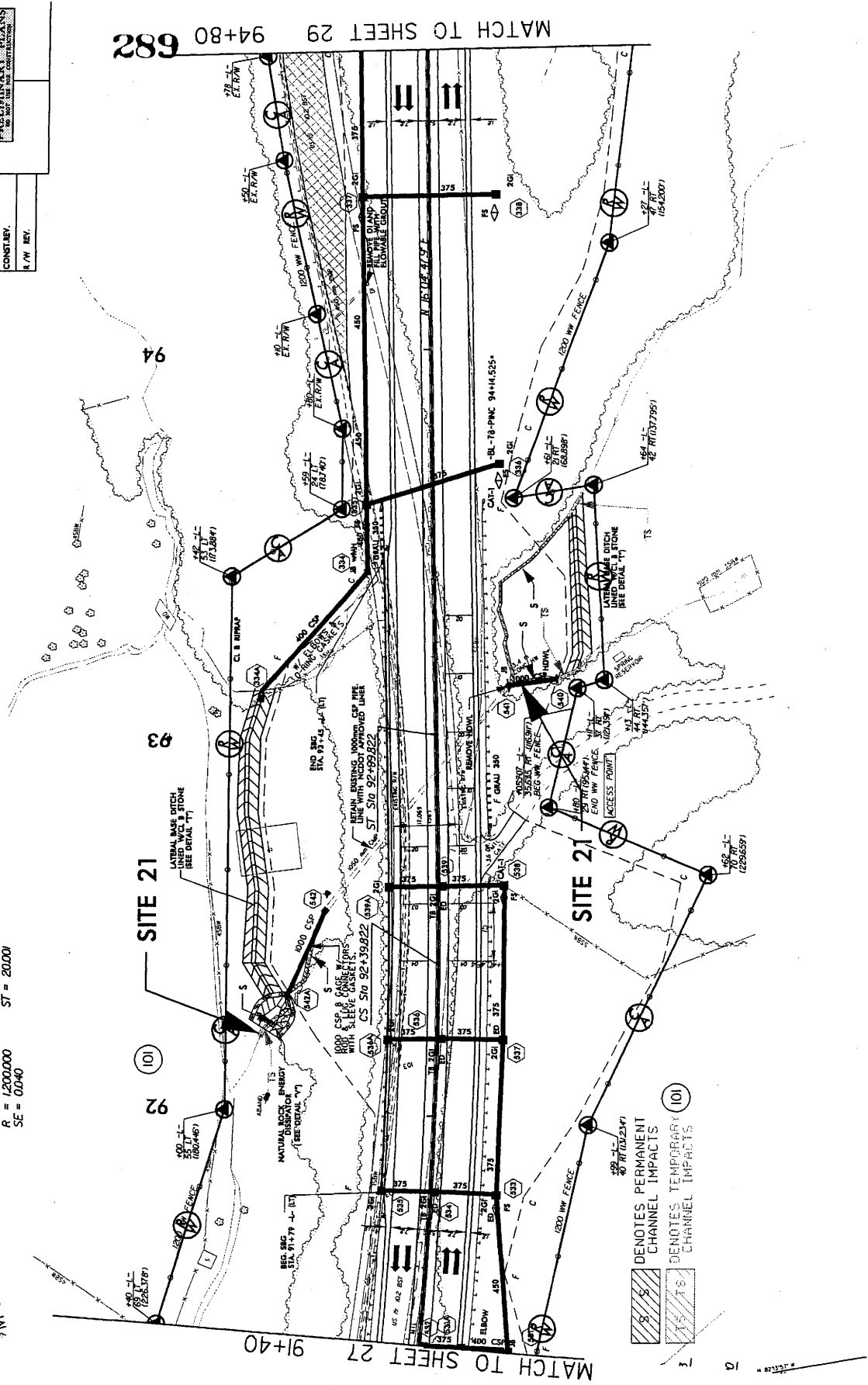
SE = 02.40

PROJECT REFERENCE NO.	SHEET NO.
A-2202A	28
ROADWAY DESIGN ENGINEER	NORMALIZED ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONSTREY, S/W, INC.	



PI Stn 91+63.774
 $\Delta = 6' 41'' 48.4'' (LT)$
 $L = 140.257'$
 $T = 70.208'$
 $R = 1200.000'$
 $SE = 0.040$

PI Stn 92+59.824
 $\Delta = 1' 25' 56.6''$
 $L = 60.000'$
 $LT = 40.000'$
 $ST = 20.000'$



FOR -L- PROFILE SEE SHEET #59

Permit Drawing
Sheet 28 of 64

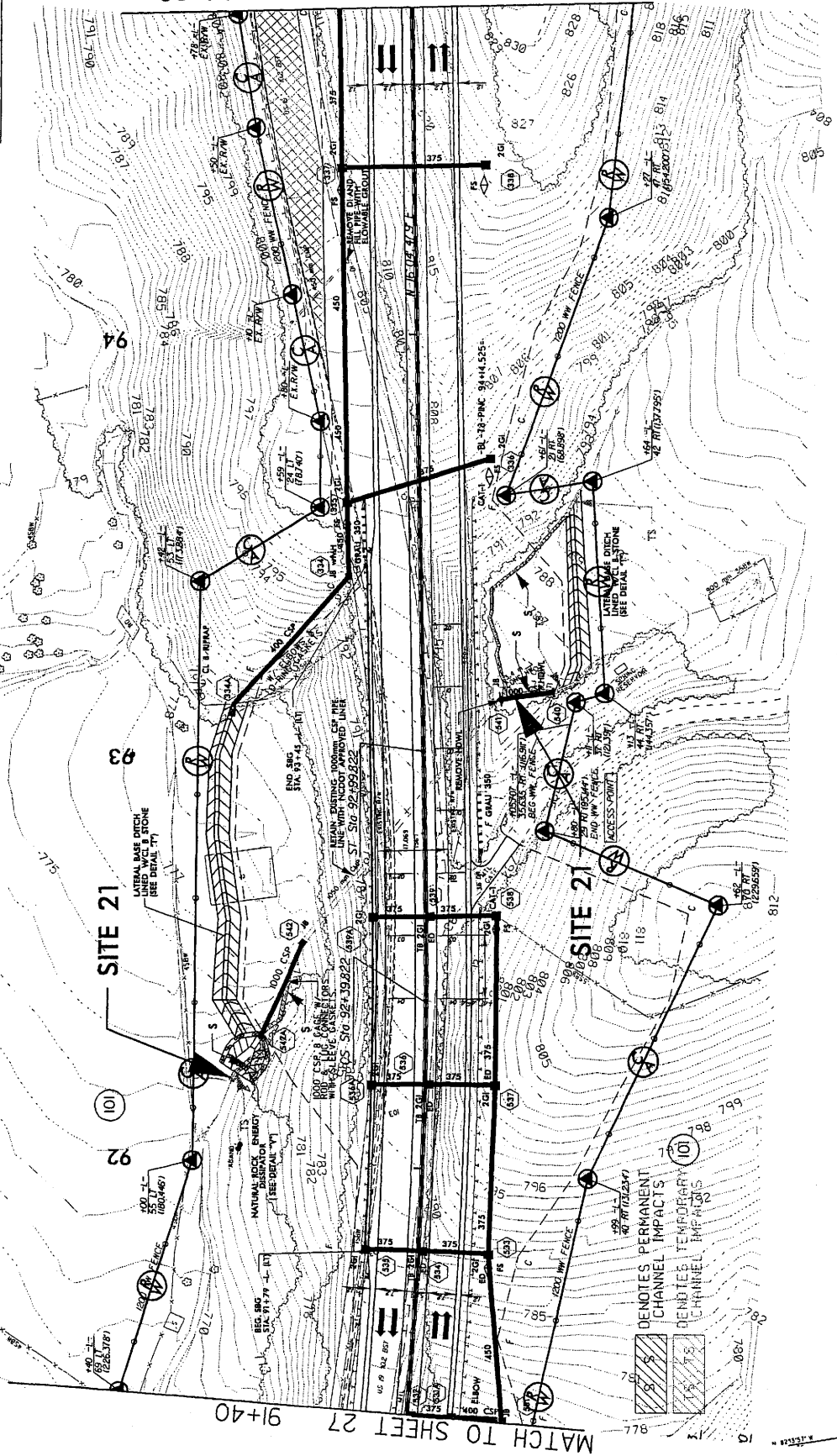
PROJECT REFERENCE NO. SHEET NO.
 F-230A 22
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 MAY BE USED FOR CONSTRUCTION
 CONTRACT NO. 11/11/11
 A.W. BEV.



-L-
 PI Sta 91+69.774 PIS Sta 92+59.824
 Δ = 6' 41" 48.4" (LT) OS = 1' 25" 56.6"
 L = 140.257 LS = 60.000
 T = 70.208 LT = 40.000
 R = 1200.000 ST = 20.000
 SE = 0.040

MATCH TO SHEET 29 94+80 290

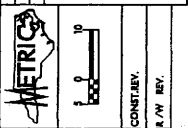
MATCH TO SHEET 27 91+40



FOR -L- PROFILE SEE SHEET *59
 Permit Drawing
 Sheet 59 of 64

11/11/11
 11/11/11
 11/11/11

PROJECT REFERENCE NO.	SHEET NO.
R-25183	29
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS	
CONTRACT NO.	
R/W REV.	



-D6-

PI Sta 10+32242
 $\Delta = 15' 48" 00.2 (LT)$
 $L = 14.25'$
 $R = 60.000$

PI Sta 99+21280
 $\Delta = 10' 06" 09.7 (LT)$
 $LS = 90.000$
 $L = 105.733$
 $R = 60.000$
 $ST = 30.016$
 $SE = 0.060$

PI Sta 97+38505
 $\Delta = 10' 06" 09.7 (LT)$
 $LS = 90.000$
 $L = 105.733$
 $R = 60.000$
 $ST = 30.016$
 $SE = 0.060$

291

MATCH TO SHEET 30 98+20

SITE 22

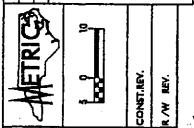
SITE 23

MATCH TO SHEET 28 94+80



Permit Drawing
 Sheet 2 of 4

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
CONTR. REV.	
R/W REV.	

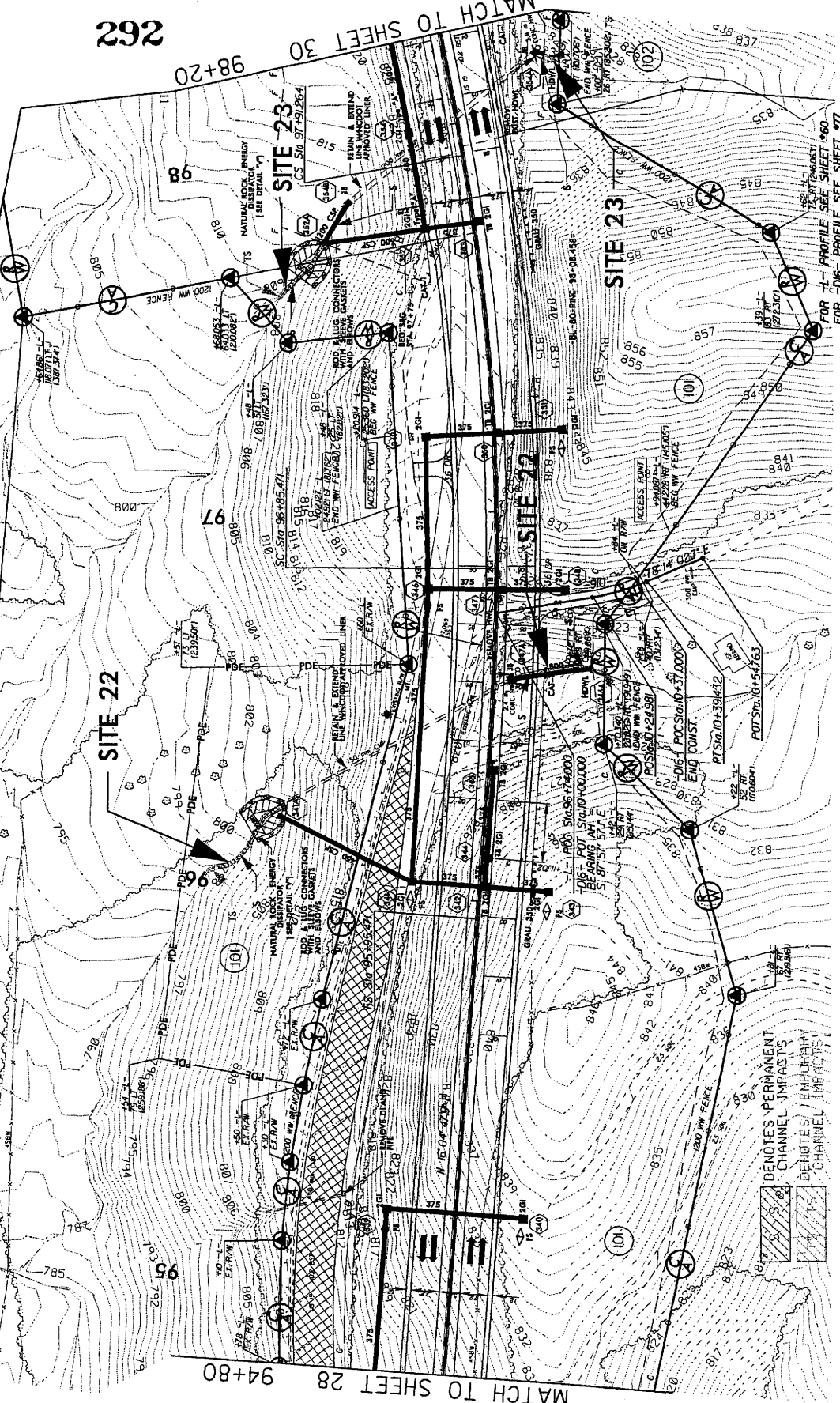


-D6-

PI Sta 96+55.488
 OS = 47' 49.5"
 LS = 90.000
 LT = 60.018
 ST = 30.016
 SE = 0.080

PI Sta 97+38.505
 OS = 47' 49.5"
 LS = 90.000
 LT = 60.018
 ST = 30.016

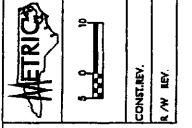
PI Sta 98+85.471
 OS = 47' 49.5"
 LS = 90.000
 LT = 60.018
 ST = 30.016



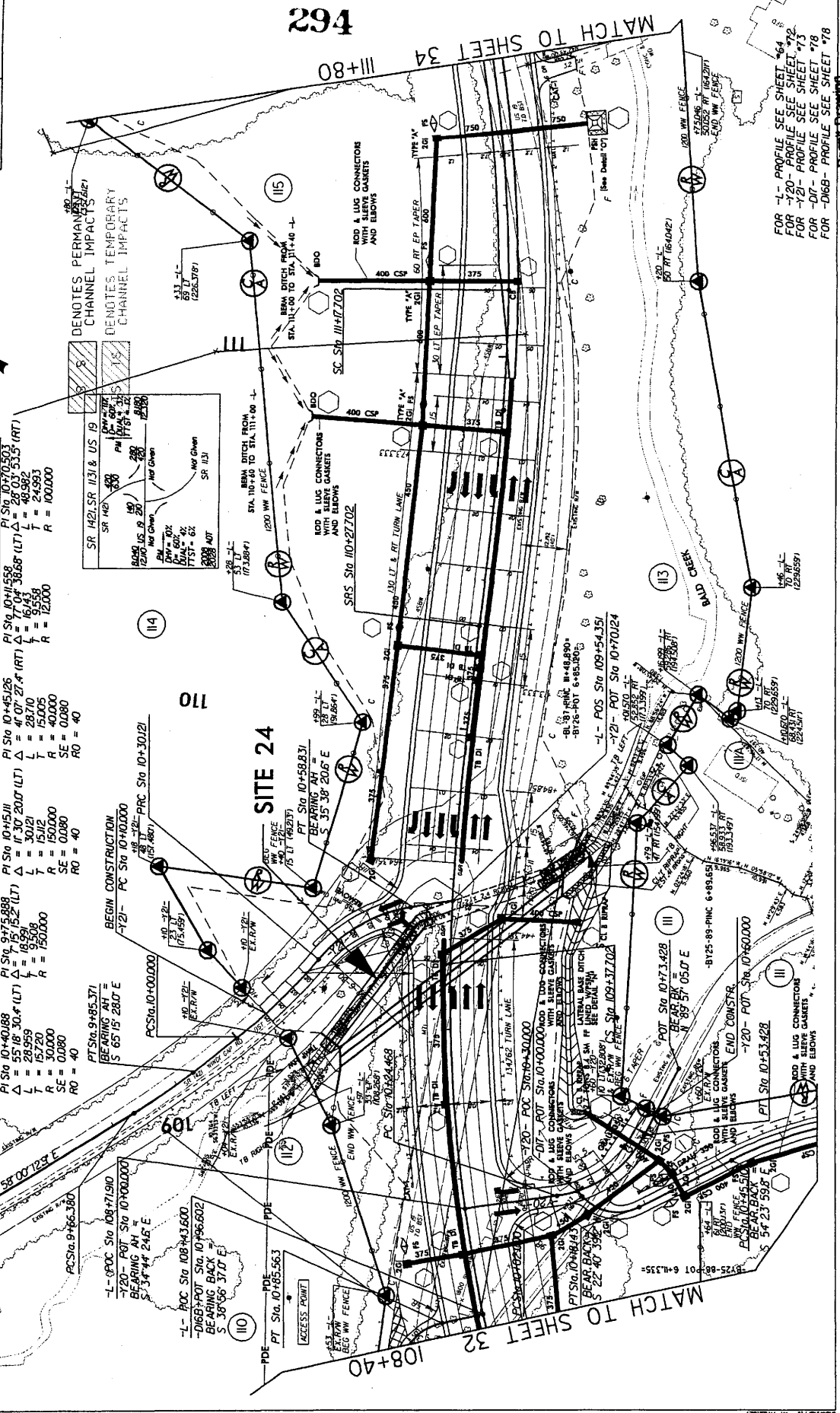
FOR L- PROFILE SEE SHEET #60
 FOR D6- PROFILE SEE SHEET #77

Permit Drawing

PROJECT REFERENCE NO. R-2502A
 SHEET NO. 33
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
 CONSTRUCTION
 R/W REV.

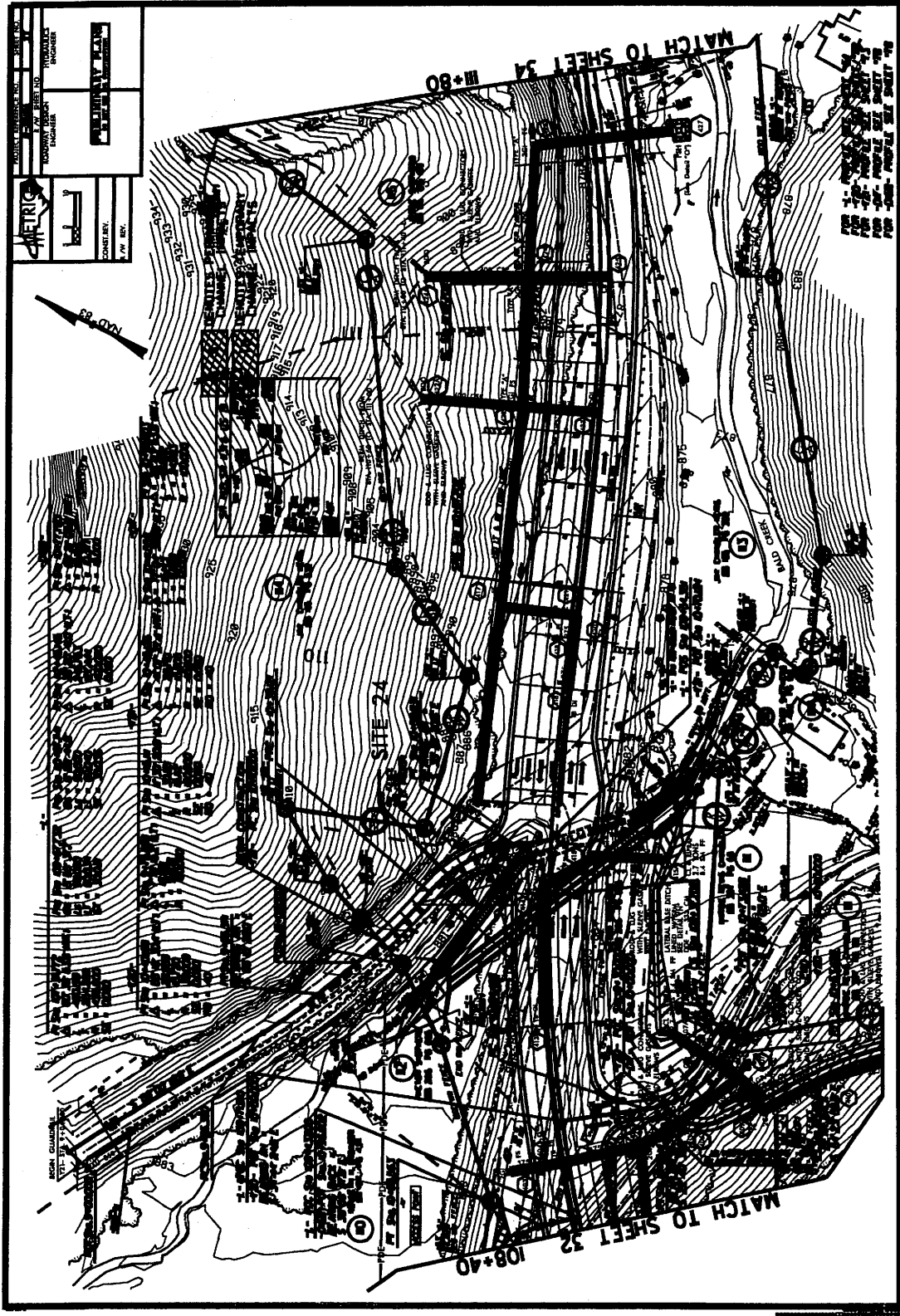


-D6B-	
PI Sta 10+77.283	PI Sta 10+70.503
Δ = 68' 27" 08.6 (RT)	Δ = 28' 03" 53.5 (RT)
L = 18.556	L = 46.982
T = 10.377	T = 24.593
R = 15.000	R = 100.000
	PI Sta 10+11.558
	Δ = 16' 43" 17.3 (RT)
	L = 16.433
	T = 9.556
	R = 12.000
	PI Sta 10+45.126
	Δ = 10' 07" 27.4 (RT)
	L = 28.710
	T = 15.005
	R = 40.000
	SE = 0.080
	RO = 40
	PI Sta 10+45.111
	Δ = 11' 30" 20.0 (LT)
	L = 30.212
	T = 15.12
	R = 150.000
	SE = 0.080
	RO = 40
	PI Sta 10+48.741
	Δ = 35' 20" 41.0 (LT)
	L = 246.753
	T = 127.444
	R = 400.000
	SE = 0.060
	PI Sta 10+67.732
	Δ = 55' 18" 30.4 (RT)
	L = 18.99
	T = 15.270
	R = 150.000
	SE = 0.080
	RO = 40
	PI Sta 10+67.716
	Δ = 5' 55" 37.7
	L = 90.000
	T = 60.040
	R = 300.36
	SE = 0.060
	PI Sta 10+87.741
	Δ = 6' 26" 44.8
	L = 90.000
	T = 127.444
	R = 400.000
	SE = 0.060
	PI Sta 10+94.945
	Δ = 35' 20" 41.0 (LT)
	L = 246.753
	T = 127.444
	R = 400.000
	SE = 0.060



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

Plan Drawing



FOR REVISION PROPERTY LINE BOUNDARIES AND REVISION FIELD BOOK INFORMATION ON PANEL NO. 04/1/07