PROJECT SPECIAL PROVISION

(10-18-95) Z-1

PERMITS

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

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

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

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

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

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

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

I-72

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

REPLY TO
ATTENTION OF:

May 17, 2005

Regulatory Division

Action ID. 200430595, TIP No. R-0619E

Mr. Joel Setzer, P.E.
North Carolina Department of Transportation
Division 14
253 Wester Road
Sylva, North Carolina 28779

Dear Mr. Setzer:

In accordance with your written request of January 30, 2004, and the ensuing administrative record, enclosed are two copies of a permit to widen, pave, and grade a 4.5-mile section of NC Highway 281 from the Jackson/Transylvania County line to just north of SR 1307 (Shelton Road) in unnamed tributaries to the West Fork French Broad River and Mill Branch, north of Lake Toxaway, Transylvania County, North Carolina. Impacts include 718 linear feet of perennial stream for culvert installation and outlet protection and 935 linear feet of channel relocation.

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.

In addition, I have enclosed a copy of the Notification of Administrative Appeal Process and Options and Request for Appeal. Please carefully read Section "A" of this form for information regarding the appeal process for proffered permits.

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 Ms. Angie Pennock, Regulatory Division, telephone (828) 271-7980, extension 226.

Sincerely,

Scott McLendon
Chief, Asheville Regulatory Field Office

Enclosures

Copy Furnished with enclosures:

Mr. John Hennessy
Division of Water Quality
North Carolina Department of Environment and
Natural Resources
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Mr. William D. Gilmore
Division of Ecosystem Enhancement
North Carolina Department of Environment and
Natural Resources
1652 Mail Service Center
Raleigh, North Carolina 27699-1652

Mr. David McHenry
North Carolina Wildlife Resources Commission
20830 Great Smokey Mountain Expressway
Waynesville, North Carolina 28786

Mr. Bill Arrington
Division of Coastal Management
North Carolina Department of Environment and
Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Mr. Ronald J. Mikulak, Chief
Wetlands Section-Region IV
Water Management Division
US Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, Georgia 30303

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

Alan W. Klimek, P.E. Director
Division of Water Quality

May 9, 2005

Mark S. Davis
Division Environmental Officer, Division 14
North Carolina Department of Transportation
253 Webster Road
Sylva, North Carolina, 28779

Dear Mr. Davis:

Re: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act for the Proposed Improvements to NC 281, TIP No. R-0619E
Individual WQC No. 3498
Transylvania County

Attached hereto is a copy of Certification No. 3498 issued to The North Carolina Department of Transportation dated May 9, 2005. This certification authorizes 1,653 linear feet of impact and requires 590 linear feet of stream mitigation. All the authorized activities and conditions of the certification associated with the original Water Quality Certification dated January 24, 2005 still applies except where superceded by this certification.

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

Sincerely,

John E. Hennessy

Alan W. Klimek, P.E.
Director

Attachments

cc: Angie Pennock, Army Corps of Engineers Asheville Regulatory Field Office
Mike Parker, DWQ Mooresville Regional Office
Marla Chambers, NC Wildlife Resources Commission
Marella Buncick, US Fish and Wildlife Services
Central Files
File Copy

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
2321 Crabtree Boulevard, Suite 250, Raleigh, North Carolina 27604
Phone: 919-733-1786 / FAX 919-733-6893 / Internet: http://h2o.enr.state.nc.us/ncwetlands

APPROVAL OF 401 Water Quality Certification and 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, Section .0500, and 15 NCAC 2B .0259. This certification authorizes the NCDOT to place permanent to place permanent fill material, culverts, and piping in 1,653 linear feet of streams in Transylvania County. The project shall be constructed pursuant to the application dated January 30, 2004 (received January 13, 2005), to improve the section of NC 281 that extends from the Jackson County line to the Blue Ridge Parkway. The approved design is that submitted in your application dated January 30, 2004. The authorized impacts are as described below:

Table 1. Surface Water Impacts for the French Broad River Basin

Section	Stream	Stream Impacts (linear feet)	Stream Type	Mitigation Required (linear feet)
Site 1	UT to West Fork of French Broad River	21	Perennial	0
Site 2	UT to West Fork of French Broad River	55	Perennial	0
Site 3	UT to West Fork of French Broad River	21	Perennial	0
Site 4	UT to West Fork of French Broad River	25	Perennial	0
Site 5	UT to West Fork of French Broad River	35	Perennial	0
Site 6	UT to West Fork of French Broad River	50	Perennial	0
Site 7a	UT to West Fork of French Broad River	22	Perennial	0
Site 7b	UT to West Fork of French Broad River	65	Perennial	0
Site 8	UT to West Fork of French Broad River	590	Perennial	590

Site 9	UT to West Fork of French Broad River	26	Perennial	0
Site 10	UT to West Fork of French Broad River	45	Perennial	0
Site 11	UT to West Fork of French Broad River	21	Perennial	0
Site 12	UT to West Fork of French Broad River	25	Perennial	0
Site 13a	UT to West Fork of French Broad River	30	Perennial	0
Site 13b	UT to West Fork of French Broad River	80	Perennial	0
Site 14	UT to West Fork of French Broad River	10	Perennial	0
Site 15	UT to West Fork of French Broad River	40	Perennial	0
Site 16	UT to West Fork of French Broad River	45	Perennial	0
Site 17a	UT to West Fork of French Broad River	110	Perennial	0
Site 17b	UT to West Fork of French Broad River	90	Perennial	0
Site 18	UT to West Fork of French Broad River	27	Perennial	0
Site 19	UT to West Fork of French Broad River	61	Perennial	0
Site 20	UT to West Fork of French Broad River	10	Perennial	0
Site 21	UT to West Fork of French Broad River	25	Perennial	0
Site 22	UT to West Fork of French Broad River	14	Perennial	0

Site 23	UT to West Fork of French Broad River	21	Perennial	0
Site 24	UT to West Fork of French Broad River	1	Perennial	0
Site 25	UT to West Fork of French Broad River	11	Perennial	0
Site 26	UT to West Fork of French Broad River	10	Perennial	0
Site 27	UT to West Fork of French Broad River	41	Perennial	0
Site 28	UT to West Fork of French Broad River	26	Perennial	0
Total		**1,653**		**590**

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

This approval is only valid for the purpose and design that you submitted in your application, as described in the Public Notice. 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 three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is sooner.

Condition(s) of Certification:

Project Specific Conditions of Certification:

1. Compensatory mitigation for impacts to streams shall be done for 590 linear feet of stream impact as shown above in Table 1 at a replacement ratio of 1:1. We understand that you have chosen to perform compensatory mitigation for the impacts to streams through an in-lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP). NCEEP has indicated in a letter dated November 30, 2004 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements of 590 linear feet as required by DWQ.

General Conditions of Certification:

2. The dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or reducing the depth of the stream. Disturbed floodplains and streams should be restored to natural geomorphic conditions. All stream relocation and restoration activities shall comply with the final natural channel design plans approved by the NC Division of Water Quality.

3. Construction will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.

   a. The erosion and sediment control measures for the project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the North Carolina Sediment and Erosion Control Planning and Design Manual. These 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 equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the North Carolina Surface Mining Manual. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

4. All sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored after the Division of Land Resources has released the project.

5. If an environmental document is required, this Certification is not valid until a FONSI or ROD is issued by the State Clearinghouse. All water quality-related conditions of the FONSI or ROD shall become conditions of this Certification.

6. No live or fresh concrete shall come into contact with waters of the state until the concrete has hardened.

7. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit. Should waste or borrow sites be located in wetlands or stream, compensatory mitigation will be required since it is a direct impact from road construction activities.

8. Excavation of the stream crossings should be conducted in the dry. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.

9. All channel relocations will be constructed in a dry work area, and stabilized before stream flows are diverted. Channel relocations will be completed and stabilized prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30 foot wide wooded and an adjacent 20 foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested.

10. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.

11. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. 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 shall be maintained if requested in writing by DWQ.

12. 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.

13. All temporary fills in wetlands and surface waters shall be removed upon completion of the project. In addition, the post-construction removal of any temporary bridge structures or fill will need to return the project site to its preconstruction contours and elevations. The revegetation of the impacted areas with appropriate native species will be required.

14. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

15. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. 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.

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

17. Two copies of the final construction drawings shall be furnished to NCDWQ prior to the pre-construction meeting. Written verification shall be provided that the final construction drawings comply with the attached permit drawings contained in the application dated May 11, 2004.

18. 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.

19. NCDOT, 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 law 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 to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H.0507(d). Before modifying the certification, DWQ shall notify NCDOT and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 2H.0504. Any new or revised conditions shall be provided to NCDOT in writing, shall be provided to the United States Army Corps of Engineers for reference in any permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project.

20. 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.

21. Culverts that are less than 48-inch in diameter should be buried to a depth equal to or greater than 20% of their size to allow for aquatic life passage. Culverts that are 48-inch in diameter or larger should be buried at least 12 inches below the stream bottom to allow natural stream bottom material to become established in the culvert following installation and to provide aquatic life passage during periods of low flow. These measurements must be based on natural thalweg depths.

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 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, P.O. Box 27447, Raleigh, N.C. 27611-7447. 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 9th day of May 2005

DIVISION OF WATER QUALITY

John E. Hennessy

Alan W. Klimek, P.E.
Director

WQC No. 3498

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: NCDOT, Division 14	File Number: 200430595	Date:May 12, 2005
Attached is:		See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

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

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

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

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

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

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

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

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

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

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Ms. Angie Pennock CESAW-RG-A U.S Army Corps of Engineers, Wilmington District 151 Patton Avenue, Room 208 Asheville, North Carolina 28801-5006	If you only have questions regarding the appeal process you may also contact: Mr. Michael Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

DIVISION ENGINEER:
Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303

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DEPARTMENT OF THE ARMY PERMIT

Permittee **North Carolina Department of Transportation, Division 14**

Permit No. **200430595**

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 widen, grade and pave a 4.5-mile section of NC Highway 281 from the Jackson/Transylvania County line to just north of SR 1307 (Shelton Road), in unnamed tributaries to the West Fork French Broad River and Mill Branch. The project will entail the widening of an existing gravel road to a 20-foot roadway width including the relocation of 1,650 feet of the existing road to eliminate several switchbacks along the current alignment. A total of 25 culverts will be replaced and/or extended and several unnamed tributaries will be relocated for a total of 1,653 linear feet of impact. Total stream impacts due to culvert installation and outlet protection will be 718 linear feet. Stream relocations will be performed using natural channel design and relocated channels will be stabilized with erosion control matting and vegetation. Impacts to stream channels from channel change and roadside stream relocations would be 935 linear feet. TIP No. R-619E**

Project Location: **North of Lake Toxaway, Transylvania County, North Carolina**

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2008** 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.

_____ _____

(PERMITTEE) **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, DIVISION 14** *(DATE)*

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

_____ _____

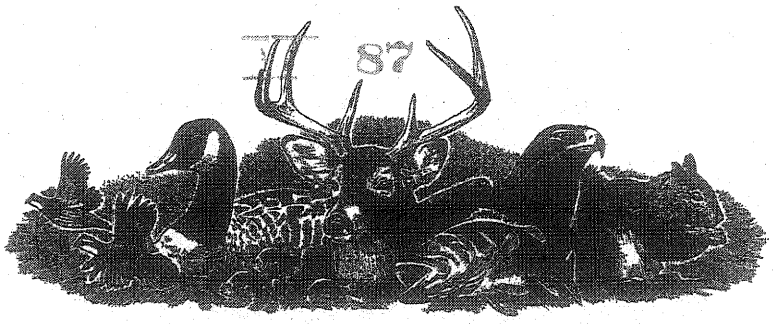
(DISTRICT ENGINEER) **CHARLES R. ALEXANDER, JR, COLONEL** *(DATE)*

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.

_____ _____

(TRANSFEREE) *(DATE)*

*U.S. GOVERNMENT PRINTING OFFICE: 1986 - 717-425



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

April 30, 2004

Mr. Steve Lund
U. S. Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-2714

SUBJECT: North Carolina Department of Transportation (NCDOT) Individual 404 Permit Application
Widening and paving of NC Highway 281, Transylvania County, North Carolina.
UTs to West Fork French Broad River and Mill Branch
TIP No. R-619E, Action ID No. 200430595

Dear Mr. Lund:

Dr. Gregory J. Thorpe of the North Carolina Department of Transportation (NCDOT) applied for a 404 Permit from the U. S. Army Corps of Engineers for stream impacts associated with widening and paving of NC Highway 281, Transylvania County, North Carolina. We reviewed the information provided by the applicant and visited the project area on April 29, 2004. Comments from the North Carolina Wildlife Resources Commission (Commission) are provided in accordance with provisions of the Clean Water Act of 1977 (33 U.S.C. 466 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

NCDOT proposes filling 718 feet and relocating 935 feet of unnamed tributaries (UT) to the West Fork French Broad River and Mill Branch in preparation of widening and paving of NC Highway 281 from the Jackson-Transylvania County line to near State Road 1307 north of Lake Toxaway, North Carolina. Stream filling is required for multiple culvert extensions or replacements and outlet stabilizations. Stream relocations involve four stream reaches currently aligned within the existing right of way. These reaches would be repositioned using natural stream design techniques.

The West Fork French Broad River and Mill Branch are classified as C Trout by the Division of Water Quality. Most streams in this watershed that are delineated and situated on the Pisgah National Forest are designated by the Commission as wild trout water. West Fork French Broad River supports naturally reproducing populations of brown and rainbow trout. The headwater of Miser Creek, which adjoins the Mill Branch watershed, also supports wild brook trout. Several of the streams affected by the project likely support wild trout, possibly inclusive of brook trout, where stream flow is sufficient. Therefore, it is our opinion that this project could adversely affect trout resources.

The Commission is concerned about potential sedimentation from the project construction and adverse effects on trout and other aquatic resources in this watershed. Paving of this road surface will eliminate a source of sediment in this watershed. However, extensive shoulder widening and culvert work could contribute substantial amounts of sediment to watershed streams. Trout likely occur short distances downstream of much of the crossings and possible natural barriers where stream flow and gradient are more suitable. Further, trout likely occur in some streams at the proposed crossing sites. In particular, stream reaches at crossing sites 12, 14, 18, 22, and 24 appear suitable to support trout. Therefore, the Commission requests that sediment and

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erosion control measures for sensitive watersheds be implemented and adequately maintained by NCDOT to minimize the potential for downstream sedimentation and trout habitat degradation.

In addition to sedimentation, the Commission is concerned about the potential for impeding the movements of aquatic life as a result of the numerous culvert extensions, the majority of which will result in perched outlet conditions similar to the existing pipes. We recognize that efforts will be made to correct these conditions, but that steep slopes and underlying bedrock will preclude this effort in most situations. As indicated above, many of the stream reaches at and upstream of the crossings probably do not support trout. However, those with suitable habitat, with possible exception of crossing 18 because of a vertical, natural barrier immediately upstream, would possibly benefit trout resources if the outlet barriers, if present, were corrected. Site 14, which is currently a double round barrel, is proposed to be replaced with a double arch pipe configuration. We encourage NCDOT to ensure that this replacement, as with others, is installed properly to avoid creating a passage problem for aquatic life. We would prefer utilization of a bridge for this crossing.

The compensatory mitigation plan for the stream impacts was not provided in the application. As part of the plan that is developed, we request evaluation of restoration opportunities that may exist with the segments of NC Highway 281 that will be abandoned by the road realignments. Removal of culverts in these areas may be suitable as compensation for some of the culvert extension and outlet stabilization impacts. However, we require access to wildlife openings via the forest service road that currently extends from the existing segment of the highway that is to be abandoned for the major realignment. Some of this segment may have restoration opportunities that could be accommodated while still maintaining the service road connection. Further, this service road is in poor condition and is aligned along and crosses in several locations a UT to the West Fork French Broad River. The potential for rerouting a portion of the service road away from the tributary may be worth evaluating in consultation with the Forest Service as a means of obtaining some stream mitigation credit that may be required.

The Commission is concerned about impacts to trout and other aquatic resources in this watershed. However, in addition to addressing the recommendations above, we can concur with the issuance of the 404 Permit provided the following conditions, which we feel would minimize adverse effects on resources, are attached and subsequently followed by NCDOT:

1. Construction in stream and within a 25-foot trout buffer is prohibited during the trout-spawning period of October 15 to April 15 to protect the sensitive egg and fry stages from sedimentation.
2. Sediment and erosion control measures shall adhere to the design standards for sensitive watersheds (15A NCAC 4B .0124 (a)-(d)) and be strictly maintained until project completion to avoid impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation should be planted on all bare soil as soon as possible and within 10 days of ground disturbing activities to provide long-term erosion control. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for stream bank stabilization when practicable. Erosion control matting should be used in riparian areas, instead of straw mulch.
3. Wherever possible, the culverts must be designed to allow for aquatic life and fish passage. Any existing perched culverts should be corrected during construction if site conditions permit. Single or base flow barrels that are less than 48-inch diameter should have the floor of the barrel installed with 20% of the diameter of the culvert below the level of the stream bottom (measured from the natural thalweg depth) to allow natural stream bottom materials to accumulate in the barrel and to facilitate aquatic life passage during periods of low flow. Those barrels 48-inch in diameter or larger should be placed with the floor of the barrel 12 inches below the stream bottom. Embedding culverts may require increasing the size of the culvert to meet flow conveyance requirements. Where multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design) and reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should further enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth

and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

4. Under no circumstances should rock, sand, or other materials be dredged from the wetted stream channel under authorization of this permit, except in the immediate vicinity of the culverts. The natural dimension, pattern, and profile of the stream above and below the culvert should not be modified by widening the stream channel or changing the depth of the stream. In-stream dredging has catastrophic effects on aquatic life, and disturbance of the natural form of the stream channel will likely cause downstream erosion problems, possibly affecting other landowners.
5. If possible, excavation of the stream crossings should be conducted in the dry. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
6. If concrete is used during culvert installation (e.g., headwalls), 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.
7. Rock check dams at culvert outlets should be removed at project completion to avoid blocking movement of aquatic life.
8. Storm water should be directed to buffer areas or retention basins and should not be routed directly into streams.
9. Riprap should be minimized and installed in a manner so as not to interfere with aquatic life passage during low flow conditions. Riprap placed for bank stabilization should be limited to the stream bank below the high water mark, and vegetation should be used for stabilization above the high water elevation. We encourage NCDOT to utilize onsite vegetation and materials for stream bank stabilization when practicable.
10. Removal of vegetation and grading and backfilling at the stream crossing and adjacent to streams should be minimized. Native trees and shrubs (e.g., rhododendron, dog hobble, willows, alders, sycamores, dogwoods, black walnut and red maple) should be planted along the stream bank to reestablish the riparian zone and to provide long-term erosion control and cover for fish and wildlife in the vicinity of the road crossing and along the streams within the dedicated rights of way. Backfill materials should be obtained from upland sites.
11. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic materials.
12. Discharging hydro-seed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
13. This permit does not authorize the discharge of waste rock and dirt into the stream or riparian zone except for permitted areas associated with culvert extensions and channel change.
14. Where no longer needed, the existing roadway that is to be eliminated should be removed back to original ground elevations and the natural floodplain elevations and functions should be restored. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'.

Thank you for the opportunity to review and comment on this project. Pending availability of field staff, the Commission may inspect the project area to evaluate the installations. If there are any questions regarding these comments, please contact me at (828) 452-2546 extension 24.

Sincerely,

Dave McHenry
Mountain Region Coordinator
Habitat Conservation Program

cc: Mr. John Dorney, Division of Water Quality, 401 Certification/Wetlands Unit
Mr. Mark Davis, NCDOT, Division 14 Environmental Officer
Ms. Becky Fox, U.S. Environmental Protection Agency
Ms. Marella Buncick, U.S. Fish and Wildlife Service, Asheville

Special Conditions

1. All work must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to the permit plans must be approved by the USACE prior to implementation.

2. Failure to institute and carry out the details of the following special conditions, below, 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 or wetlands.

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

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. Prior to commencing construction within jurisdictional waters of the United States for any portion of the proposed highway project, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Asheville Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings will be acceptable.

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

8. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area.

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

10. The permittee will report any violation of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act in writing to the Wilmington District, U. S Army Corps of Engineers, within 24 hours of the permittee's discovery of the violation.

11. The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate

turbidity water quality standard. The permittee shall conduct construction in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Increases such that the turbidity in the water body is 50 NTU's or less in all rivers not designated as trout waters by the North Carolina Division of Water Quality (NCDWQ) and 25 NTU's or less in all saltwater classes are not considered significant. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

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

13. 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 non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

14. 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 headcutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream unless 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 must 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 disequilibrium of wetlands or streambeds or banks, adjacent to, upstream or downstream of the structures. In order to allow for the continued movement of bed load and aquatic organisms, existing stream 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 the ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted, woody plants.

15. The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

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

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

18. This Department of the Army permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

19. This permit does not grant any property rights or exclusive privileges.

20. In issuing this permit, the Federal Government does not assume any liability for:

    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 Federal activities initiated on behalf of the general public.
    c. Damages to other permitted or un-permitted activities or structures caused by the authorized activity.
    d. Design and construction deficiencies associated with the permitted work.
    e. Damage claims associated with any future modification, suspension, or revocation of this permit.

21. The permittee shall implement the recommendations (1-14) in the attached April 30, 2004 letter from the North Carolina Wildlife Resources Commission.

22. The permittee shall mitigate for 935 linear feet of unavoidable impacts to streams with important aquatic function associated with this project by completing 935 linear feet of onsite stream relocation/restoration as described in the permit application. The stream relocation/restoration shall be constructed in accordance with the attached natural channel design plans. The permittee will construct the authorized channel relocation/restoration in a dry work area and stabilize the new channel before stream flows are diverted. Whenever possible, the permittee shall allow new channels to stabilize for an entire growing season. The Corps of Engineers, Asheville Regulatory Field Office will be notified in advance by facsimile transmission or electronic mail of the intended diversion of water into the new channel and approval must be obtained from the USACE prior to the diversion taking place. The banks and buffer area of the relocated channel will be

planted with appropriate species of deep-rooted, woody vegetation. A final inspection of the channel relocation by a representative of the Corps of Engineers, Ashville Regulatory Field Office will be conducted prior to completion of the road project. No clearing and grubbing of the existing channel shall take place until the stream has been diverted into the new channel.

23. The permittee shall complete an as-built channel survey within sixty days of completion of the stream relocation construction. The permittee shall document changes in the dimension, pattern, profile, vegetation plantings, and structures installed, of the relocated channel from the proposed design. The permittee shall also include in the as-built survey: photo documentation at representative segments and structures; and a plan view diagram.

* 24. The permittee shall monitor the completed stream relocation in accordance with Monitoring Level 2 of the US Army Corps of Engineers, Wilmington District, Stream Mitigation Guidelines of April 2003. The monitoring reports, including reference photographs, plant survival data and visual inspection notes identifying specific problem areas, will be submitted to the Corps of Engineers, Asheville Regulatory Field Office within 60 days of completion of the monitoring. The monitoring report will also include a discussion of any deviations from the as-built conditions and an evaluation of the significance of these deviations to channel stability. The success of the stream relocation as project mitigation will be evaluated based on those success criteria listed in the referenced Stream Mitigation Guidelines.

* 25. Compensatory mitigation for the unavoidable impacts to 718 linear feet of stream associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated November 30, 2004 from William D. Gilmore, EEP Transition Manager. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 1436 linear feet of restoration equivalent cold water stream channel in the French Broad River basin (Hydrologic Cataloging Unit 06010105) by one year of the date of this permit. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

26. If the North Carolina Division of Water Quality has issued a conditioned Water Quality Certification for your project, the conditions of that certification are hereby incorporated as special conditions of this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

22. Table of Impacts for R-619E NC 281 Transylvania County Individual 404 Permit Application
Stream Impacts, including all intermittent and perennial streams

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
Site 1	Culvert Extension	15	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P
Site 2	Culvert Extension	15	UT to W Fork French Broad	1'	P
	Outlet Stabilization	40	UT to W Fork French Broad	1'	P
Site 3	Culvert Extension	15	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P
Site 4	Culvert Extension	5	UT to W Fork French Broad	1'	P
	Outlet Stabilization	20	UT to W Fork French Broad	1'	P
Site 5	Culvert Extension	5	UT to W Fork French Broad	1'	P
	Outlet Stabilization	30	UT to W Fork French Broad	1'	P
Site 6	Culvert Extension	10	UT to W Fork French Broad	1'	P
	Outlet Stabilization	40	UT to W Fork French Broad	1'	P
Site 7a	Culvert Extension	10	UT to W Fork French Broad	2'	P
	Outlet Stabilization	12	UT to W Fork French Broad	2'	P
Site 7b	Roadside Stream Relocation	65	UT to W Fork French Broad	2'	P
Site 8	Roadside Stream Relocation	590	UT to W Fork French Broad	2'	P
Site 9	Culvert Replacement	0	UT to W Fork French Broad	1'	P
	Outlet Stabilization	26	UT to W Fork French Broad	2'	P
Site 10	Culvert Extension	25	UT to W Fork French Broad	1'	P
	Outlet Stabilization	20	UT to W Fork French Broad	1"	P
Site 11	Culvert Extension	15	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P
Site 12	Culvert Extension	5	UT to W Fork French Broad	3'	P
	Outlet Stabilization	20	UT to W Fork French Broad	3'	P
Site 13a	Culvert Extension	10	UT to W Fork French Broad	1'	P
	Outlet Stabilization	20	UT to W Fork French Broad	1'	P
Site 13b	Roadside Stream Relocation	80	UT to W Fork French Broad	1'	P
Site 14	Culvert Extension	10	Mill Branch	5'	P
Site 15	Culvert Extension	40	UT to W Fork French Broad	3'	P
Site 16	Culvert Extension	35	UT to W Fork French Broad	2'	P
	Outlet Stabilization	10	UT to W Fork French Broad	2'	P
Site 17a	Channel Change	110	UT to W Fork French Broad	2'	P
Site 17b	Roadside Stream Relocation	90	UT to W Fork French Broad	2'	P
Site 18	Culvert Extension	27	UT to W Fork French Broad	6'	P

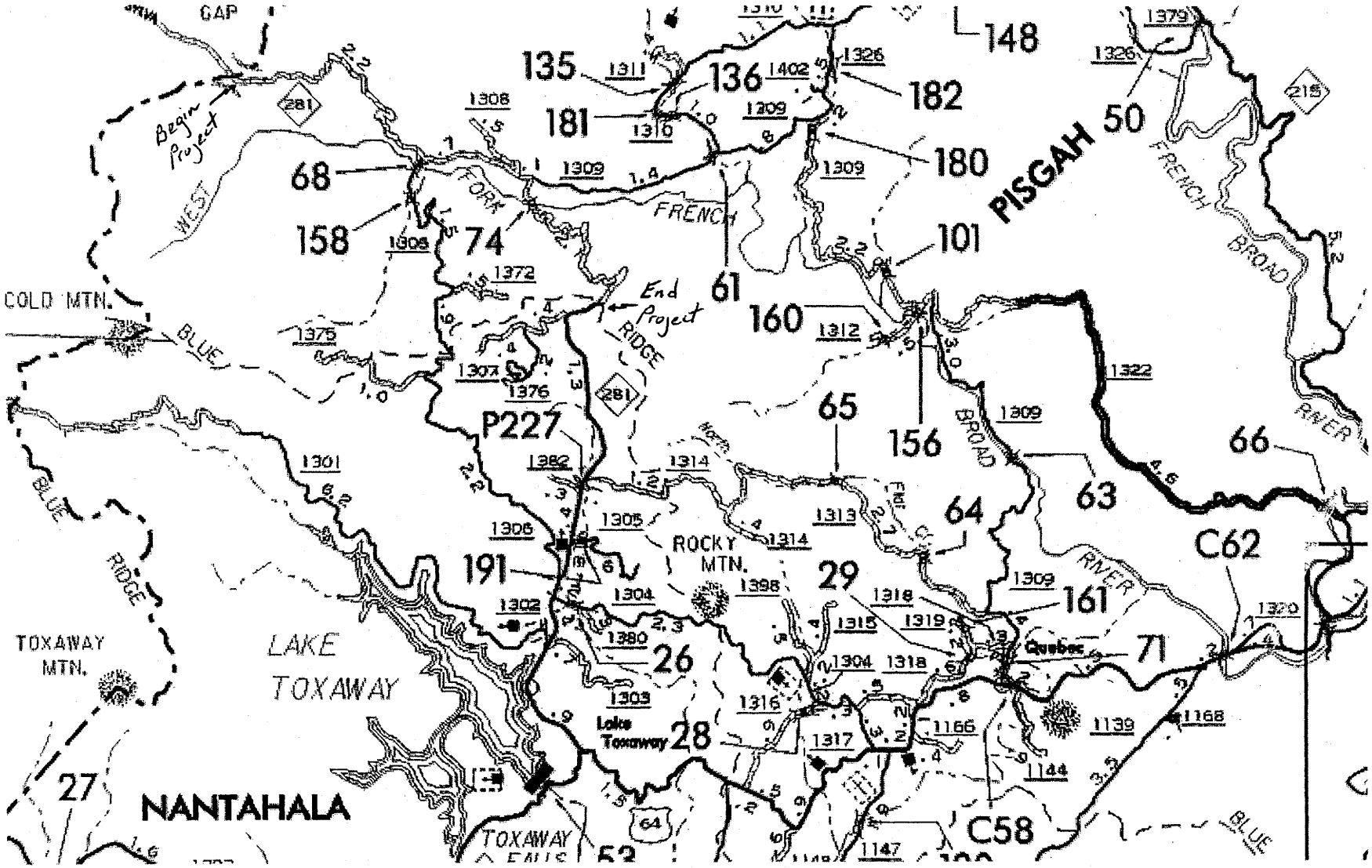
Site 19	Culvert Extension	45	UT to W Fork French Broad	3'	P
	Outlet Stabilization	16	UT to W Fork French Broad	3'	P
Site 20	Culvert Extension	10	UT to W Fork French Broad	2'	P
Site 21	Culvert Extension	25	UT to W Fork French Broad	1'	P
Site 22	Culvert Extension	8	UT to W Fork French Broad	4'	P
	Outlet Stabilization	6	UT to W Fork French Broad	4'	P
Site 23	Culvert Extension	15	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P
Site 24	Culvert Reduction	(5)	UT to W Fork French Broad	3'	P
	Outlet Stabilization	6	UT to W Fork French Broad	3'	P
Site 25	Culvert Extension	5	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W. Fork French Broad	1'	P
Site 26	Culvert Extension	10	UT to W Fork French Broad	1'	P
Site 27	Culvert Extension	35	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P
Site 28	Culvert Extension	20	UT to W Fork French Broad	1'	P
	Outlet Stabilization	6	UT to W Fork French Broad	1'	P

Impacts (linear feet) from culvert installation and slope and outlet stabilization 718 ✓
Impacts (linear feet) from channel change and roadside stream relocations 935

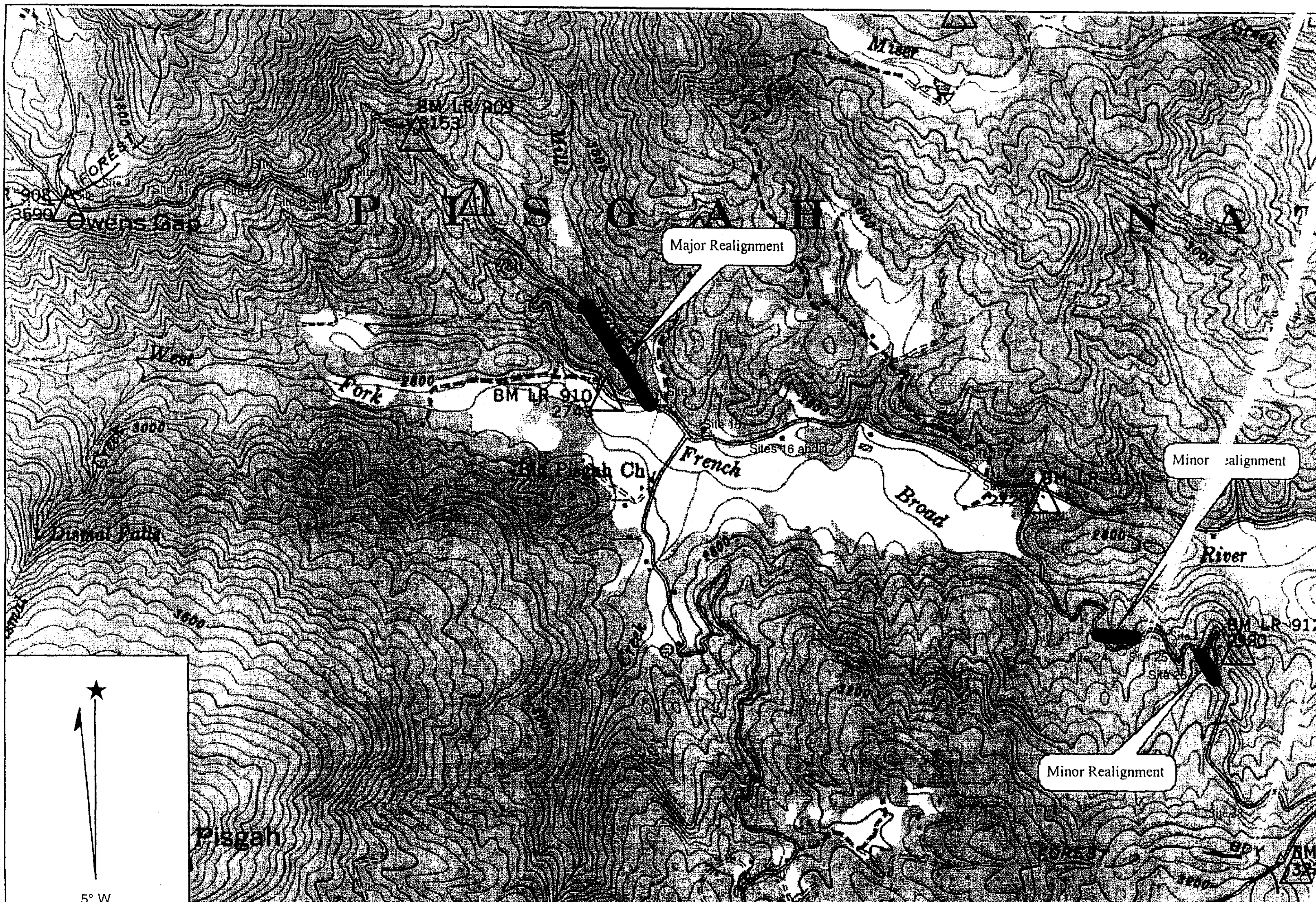
Total Impact (linear feet) 1653

Note: See Attached Cross-Sections and Stream Relocation Plans

[C:\Program Files\Lizardtech\MrSID Viewer\Bridge maps\transylvania\tran-basemap.sid] Scale 1:2.000

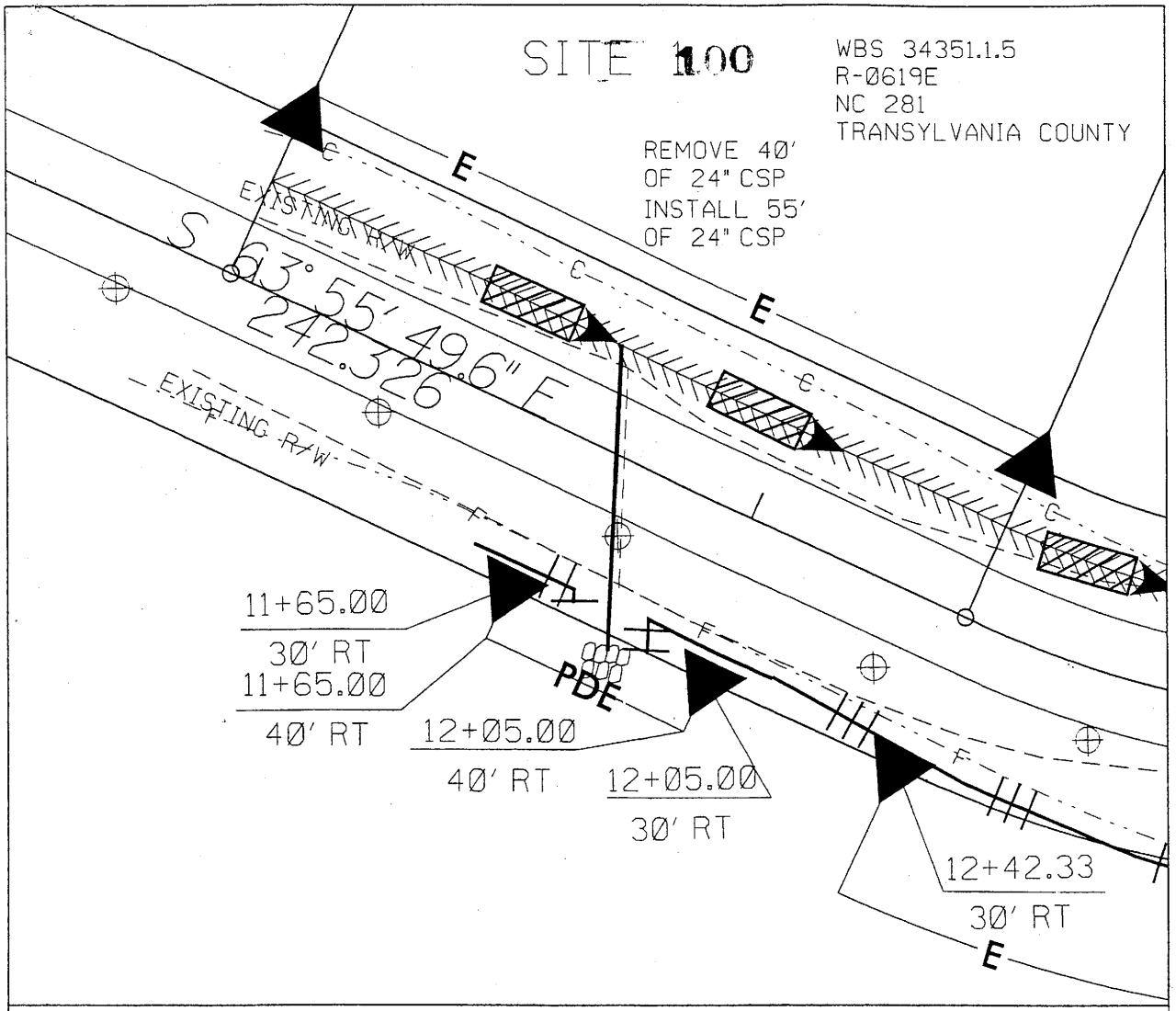


NC 281 R-619E
Transylvania County

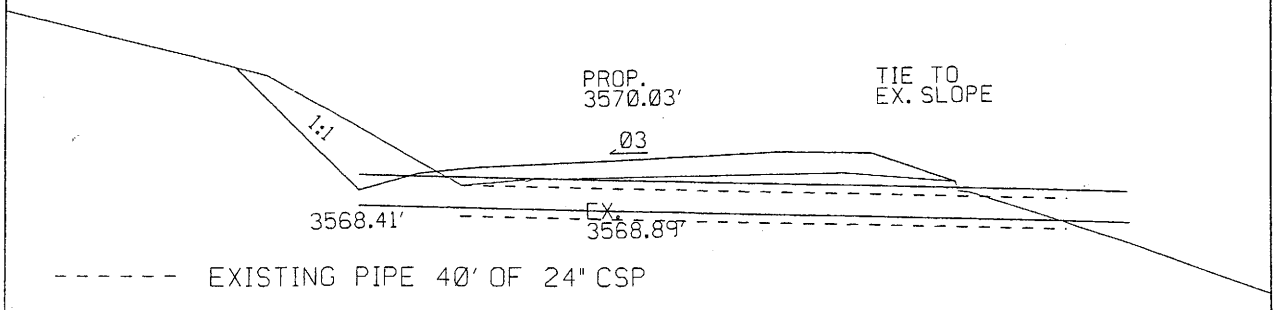


Name: LAKE TOXAWAY
Date: 1/28/2004
Scale: 1 inch equals 1379 feet

Location: 035° 11' 04.26" N 082° 56' 59.76" W
Caption: NC 281 Transylvania County
R 619-E
Stream Impact Sites



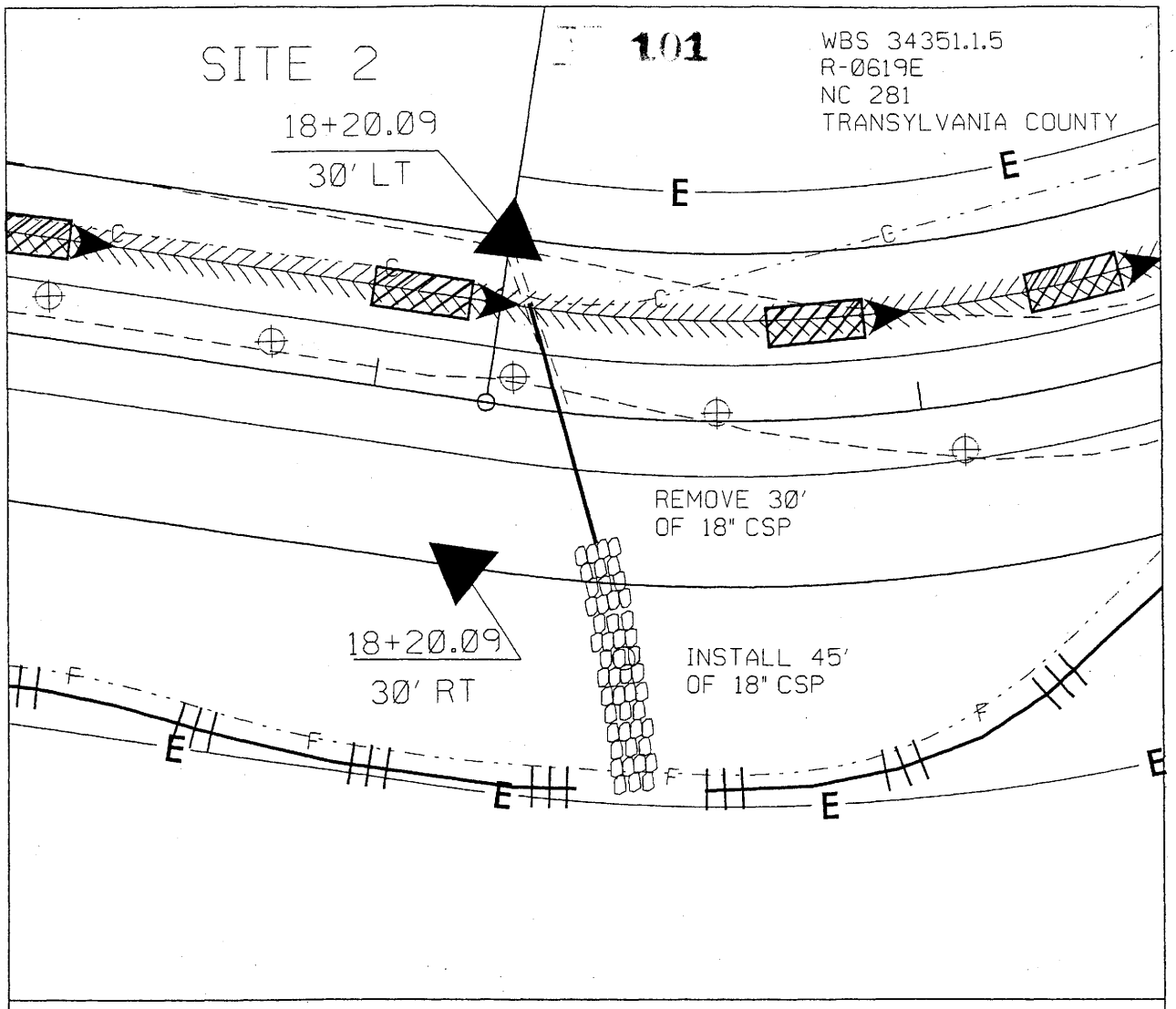
STATION 11+72



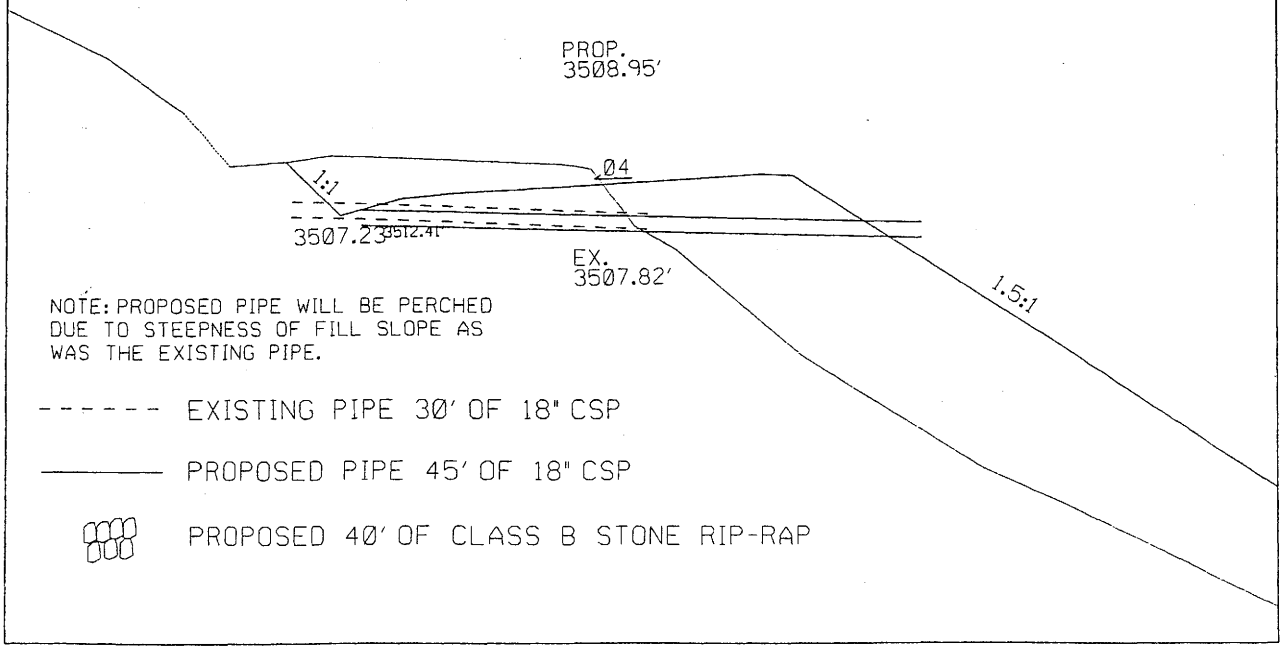
------ EXISTING PIPE 40' OF 24" CSP

——— PROPOSED PIPE 55' OF 24" CSP

PROPOSED 6' OF CLASS B STONE RIP-RAP



STATION 18+20



NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

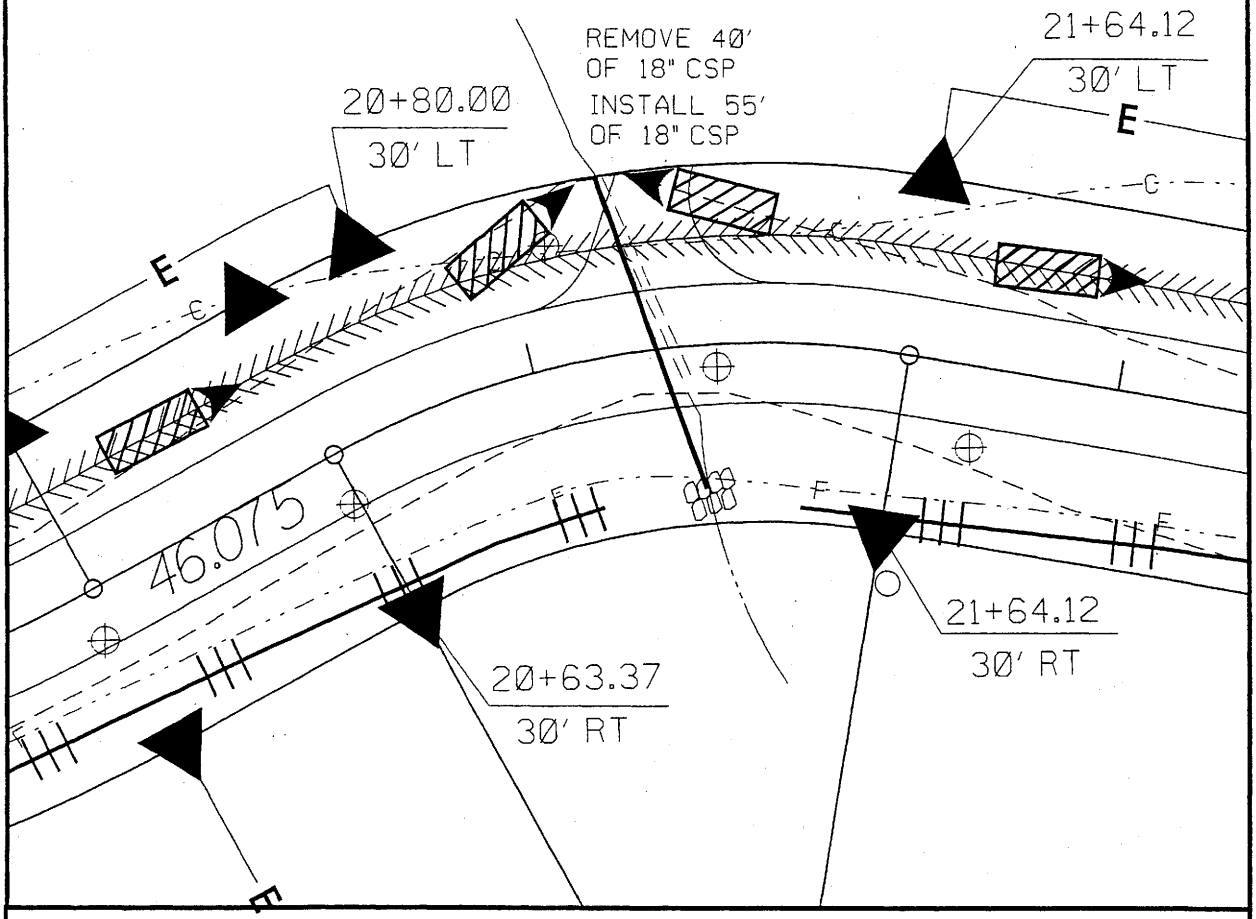
------ EXISTING PIPE 30' OF 18" CSP

——— PROPOSED PIPE 45' OF 18" CSP

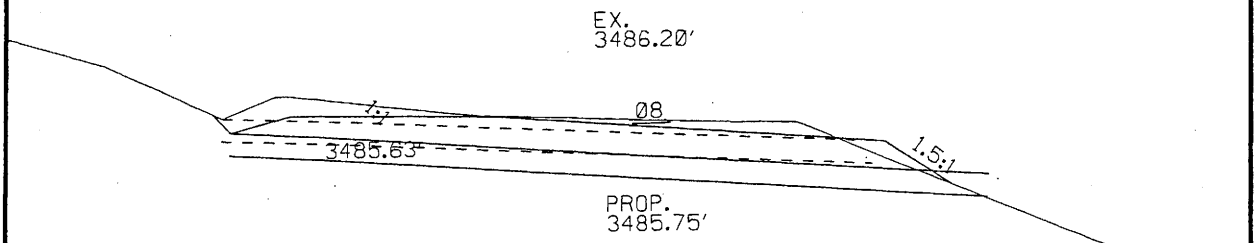
PROPOSED 40' OF CLASS B STONE RIP-RAP

SITE 3102

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY



STATION 21+30



- - - - EXISTING PIPE - 40' OF 18" CSP

——— PROPOSED PIPE - 55' of 18" CSP

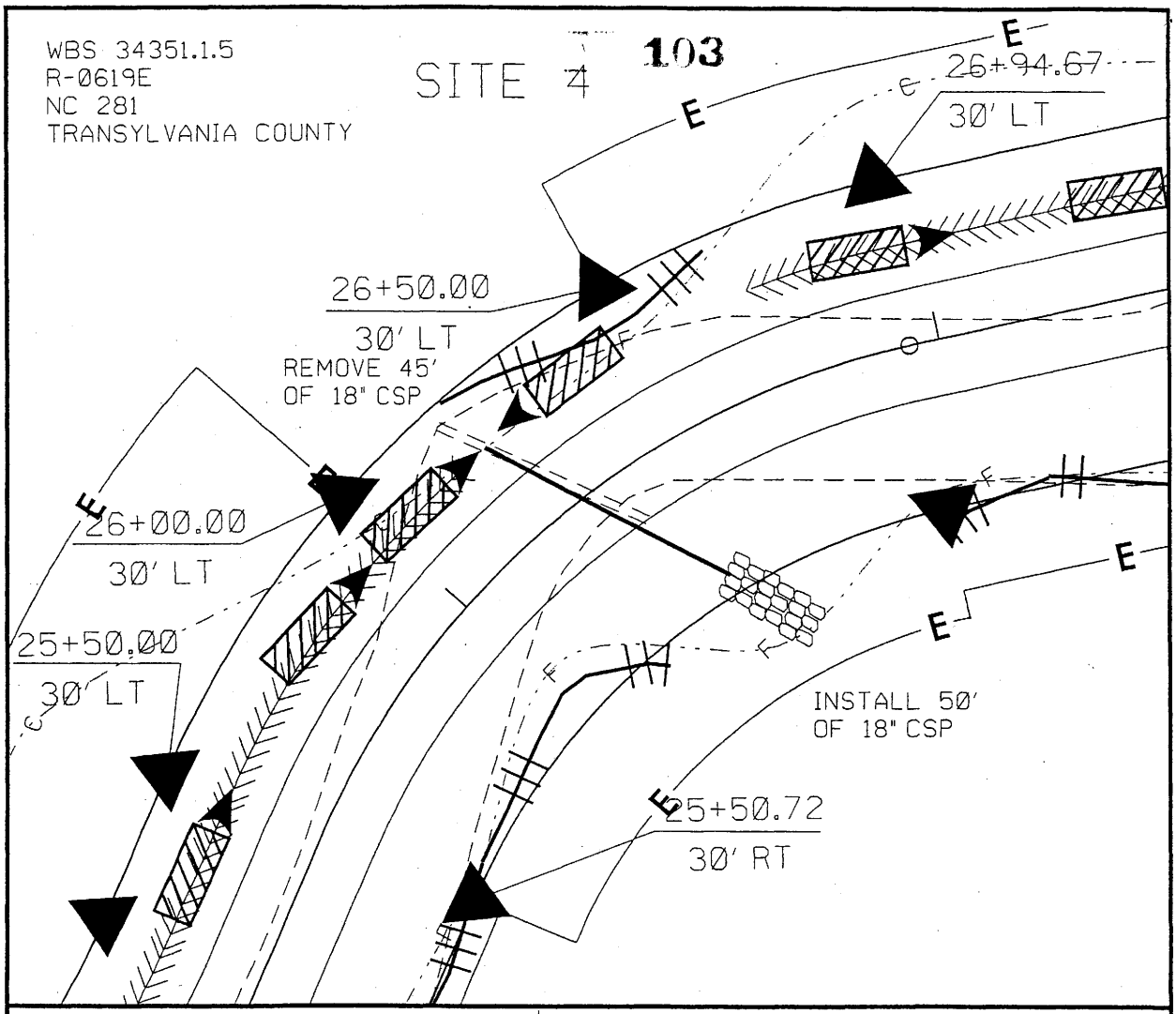
PROPOSED 6' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

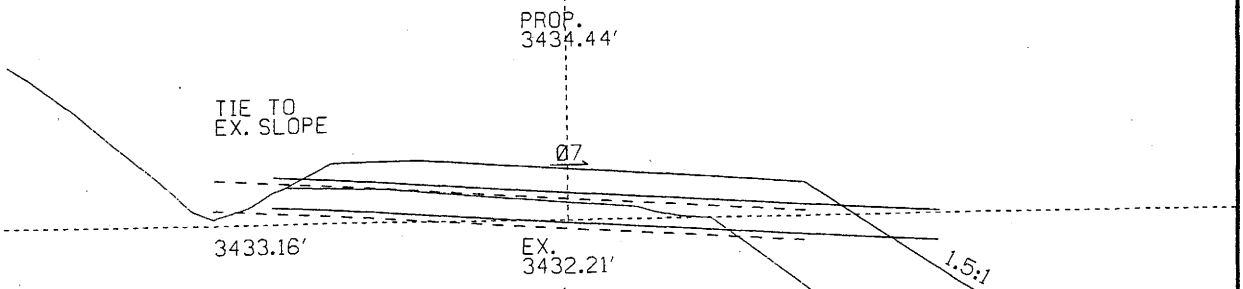
WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 4

103



STATION 26+29



NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

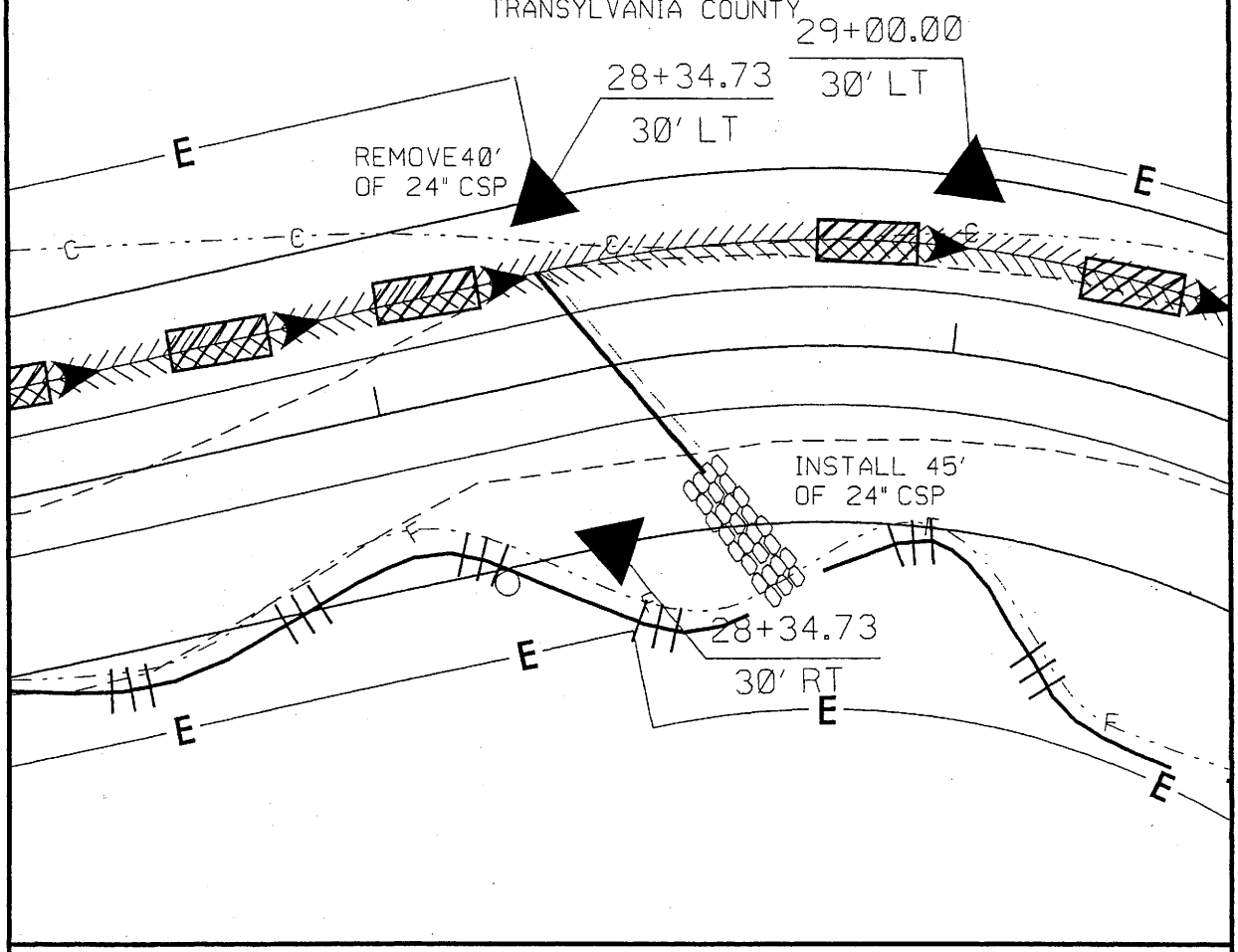
- - - - - EXISTING PIPE - 45' OF 18" CSP

——— PROPOSED PIPE - 50' OF 18" CSP

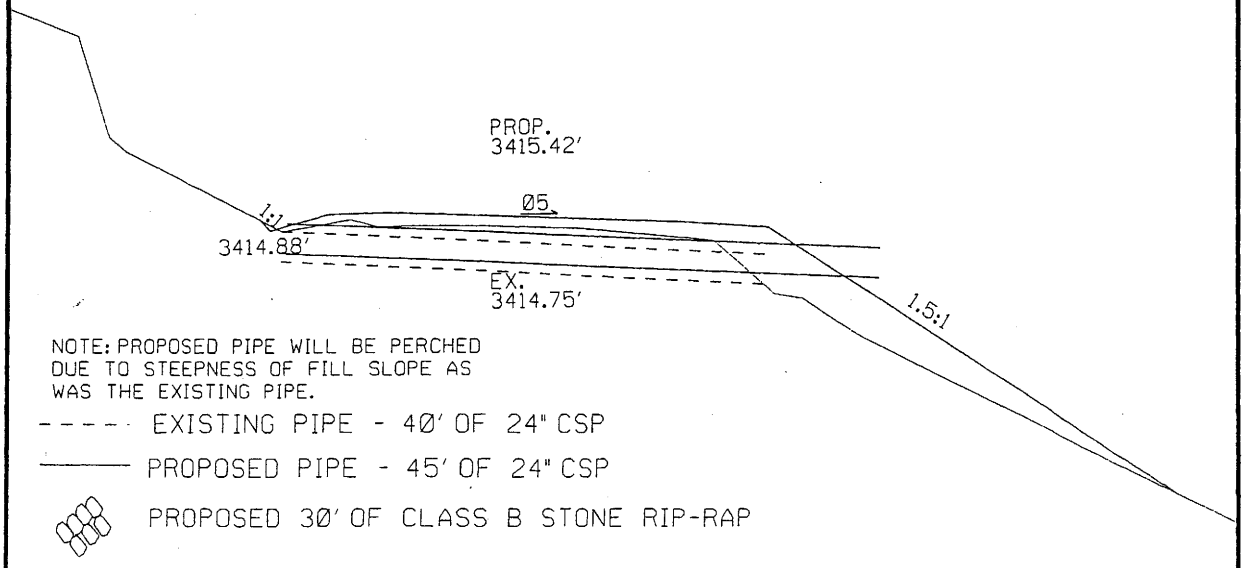
PROPOSED 20' OF CLASS B STONE RIP-RAP

SITE 5

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY



STATION 28+45



NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

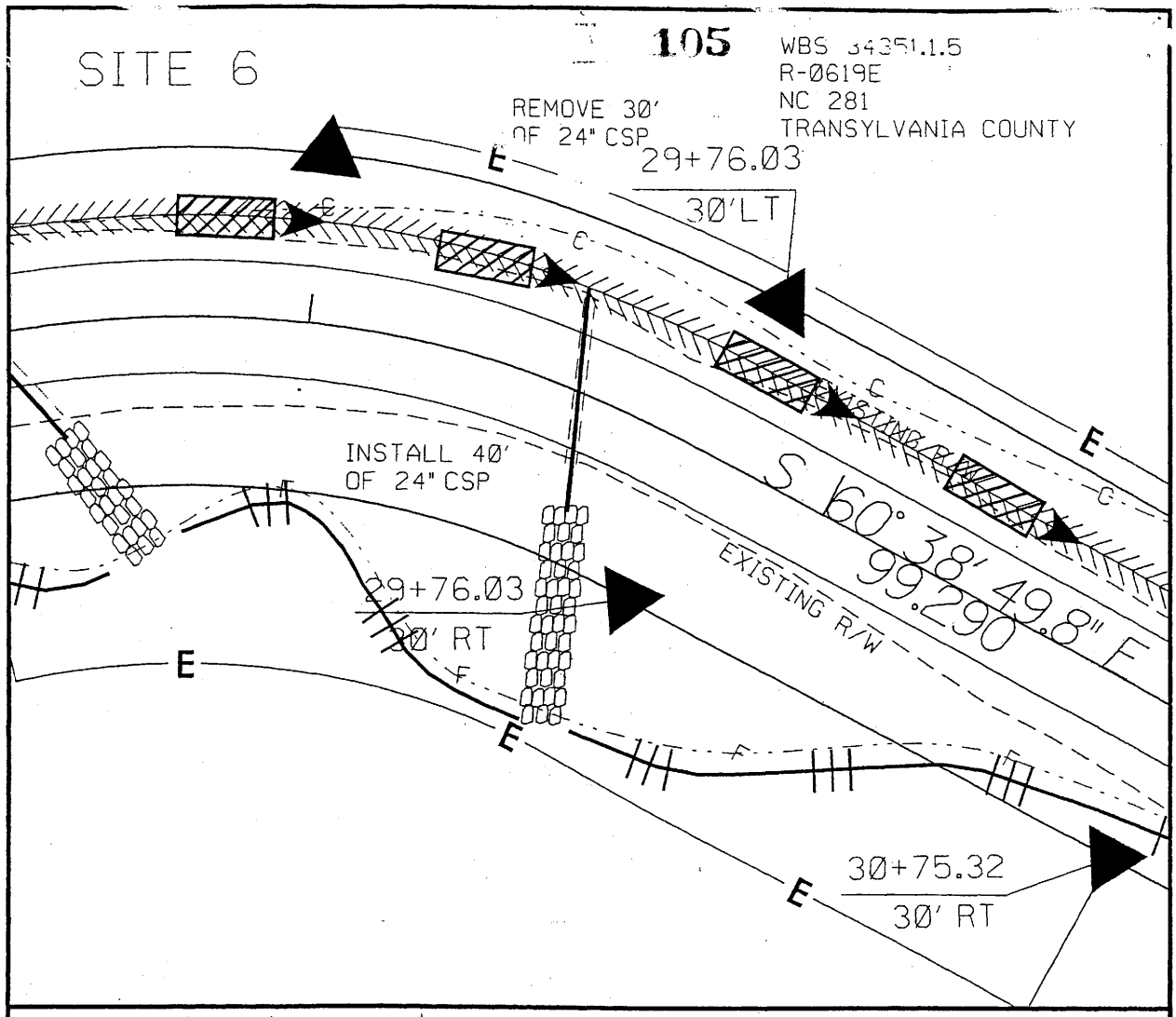
- - - - - EXISTING PIPE - 40' OF 24" CSP

——— PROPOSED PIPE - 45' OF 24" CSP

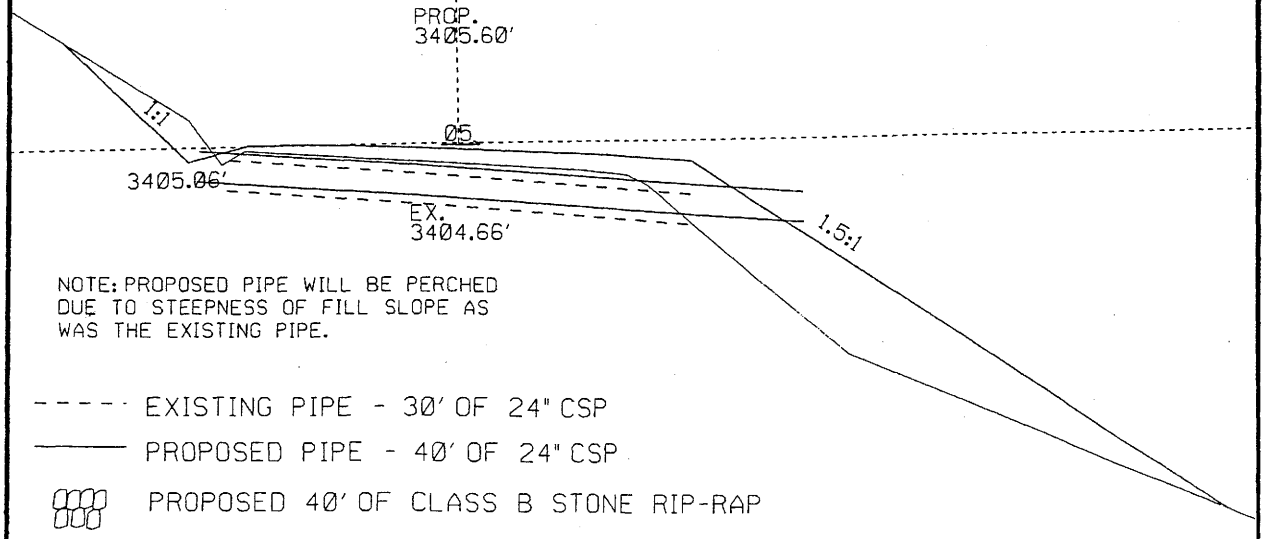
PROPOSED 30' OF CLASS B STONE RIP-RAP

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 6



STATION 29+50

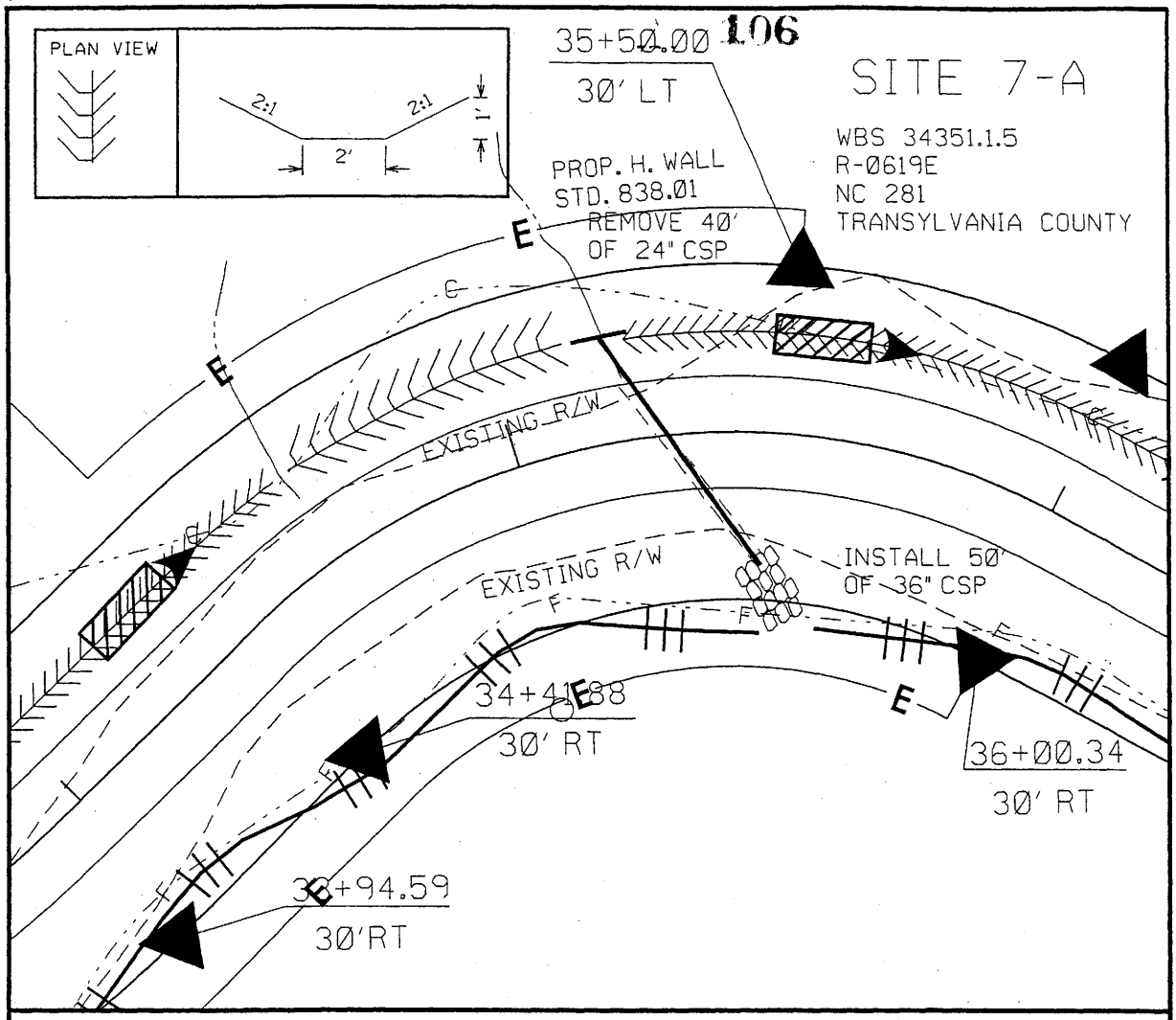


NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

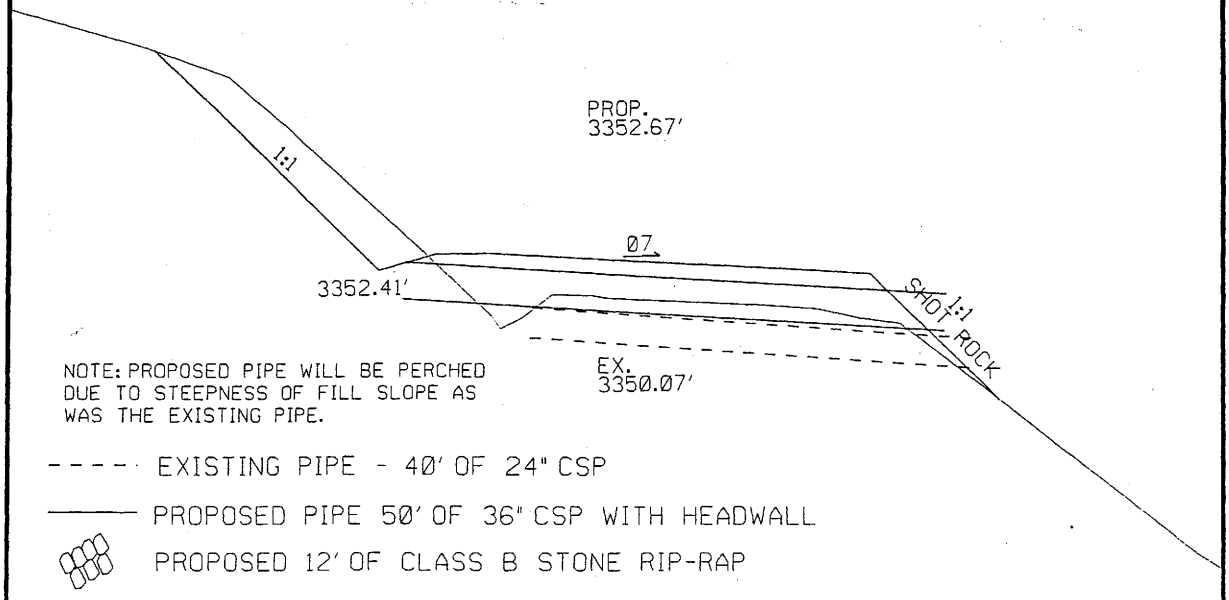
- - - - - EXISTING PIPE - 30' OF 24" CSP

——— PROPOSED PIPE - 40' OF 24" CSP

PROPOSED 40' OF CLASS B STONE RIP-RAP



STATION 35+25

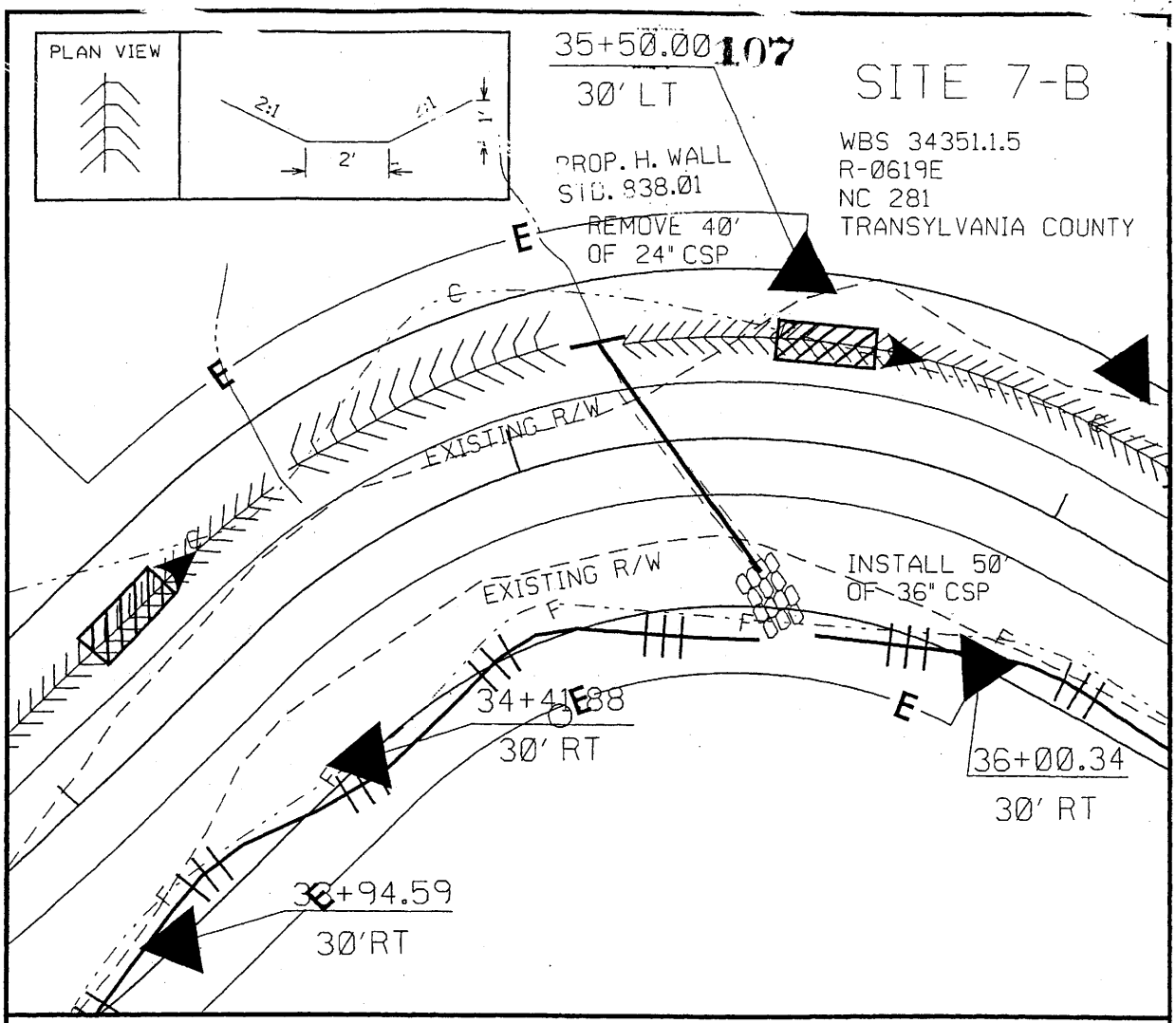


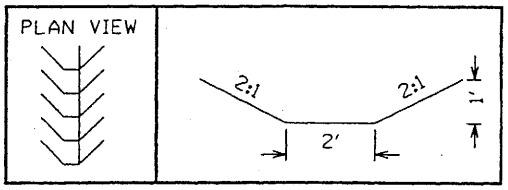
NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

- - - - - EXISTING PIPE - 40' OF 24" CSP

——— PROPOSED PIPE 50' OF 36" CSP WITH HEADWALL

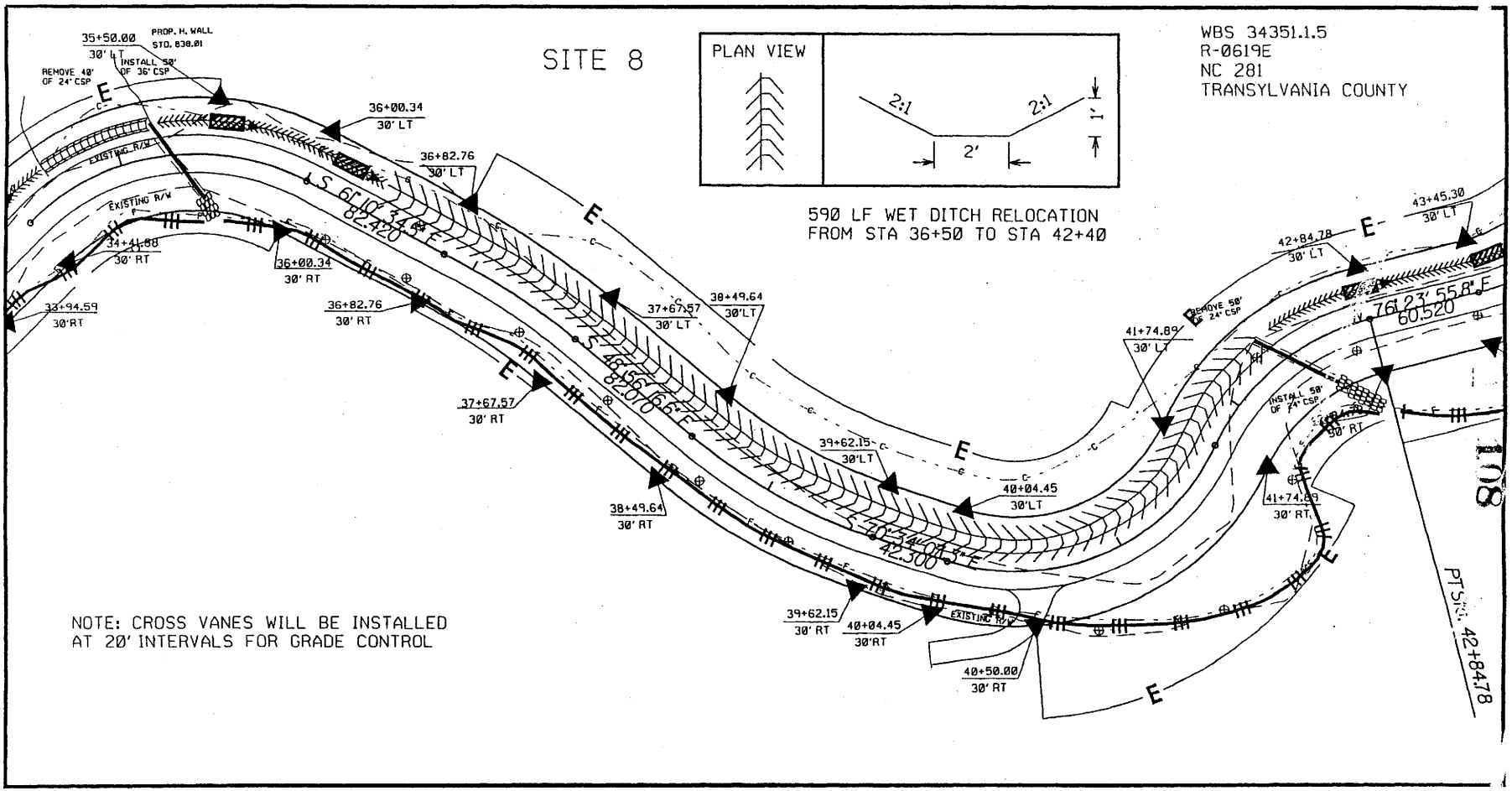
PROPOSED 12' OF CLASS B STONE RIP-RAP

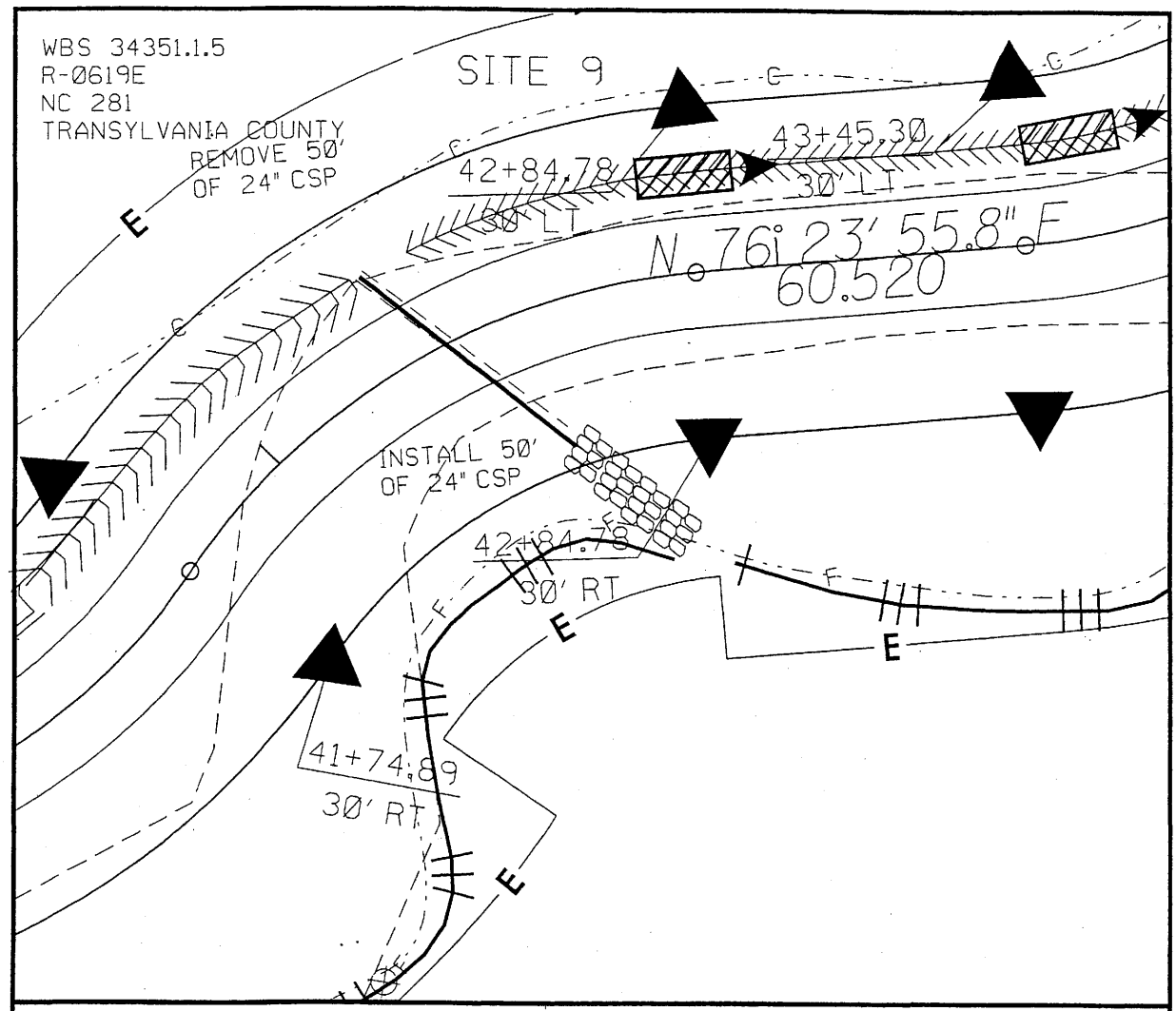


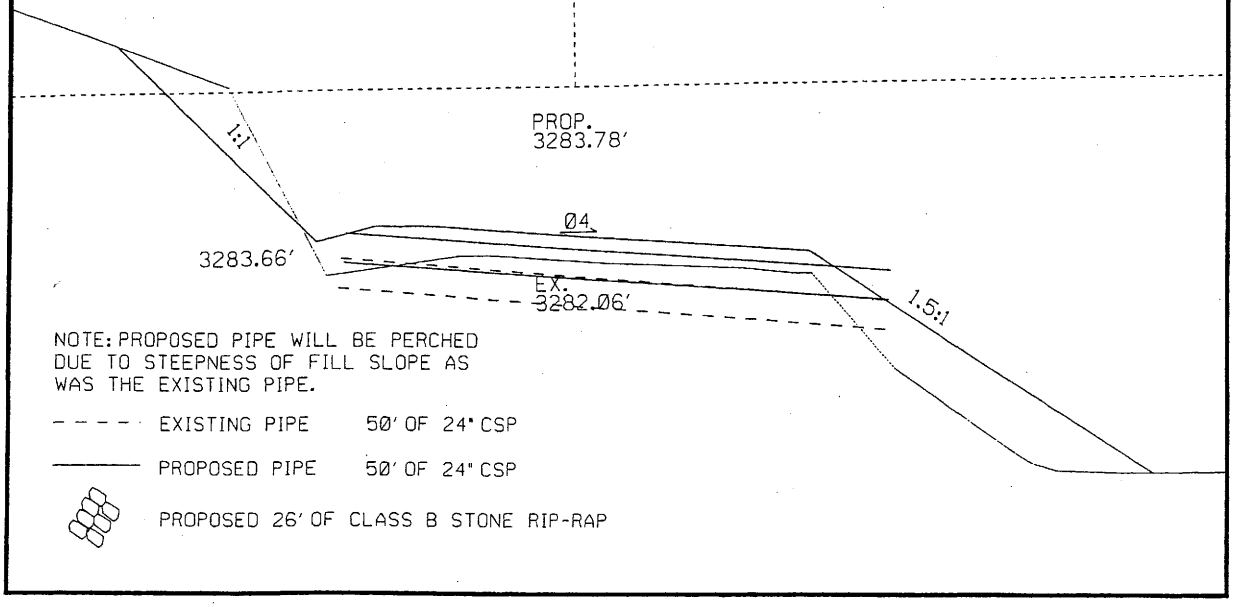


65' OF WET DITCH RELOCATION FROM STATION 34+55 TO STATION 35+20

NOTE: CROSS VANES WILL BE INSTALLED AT 20' INTERVALS FOR GRADE CONTROL

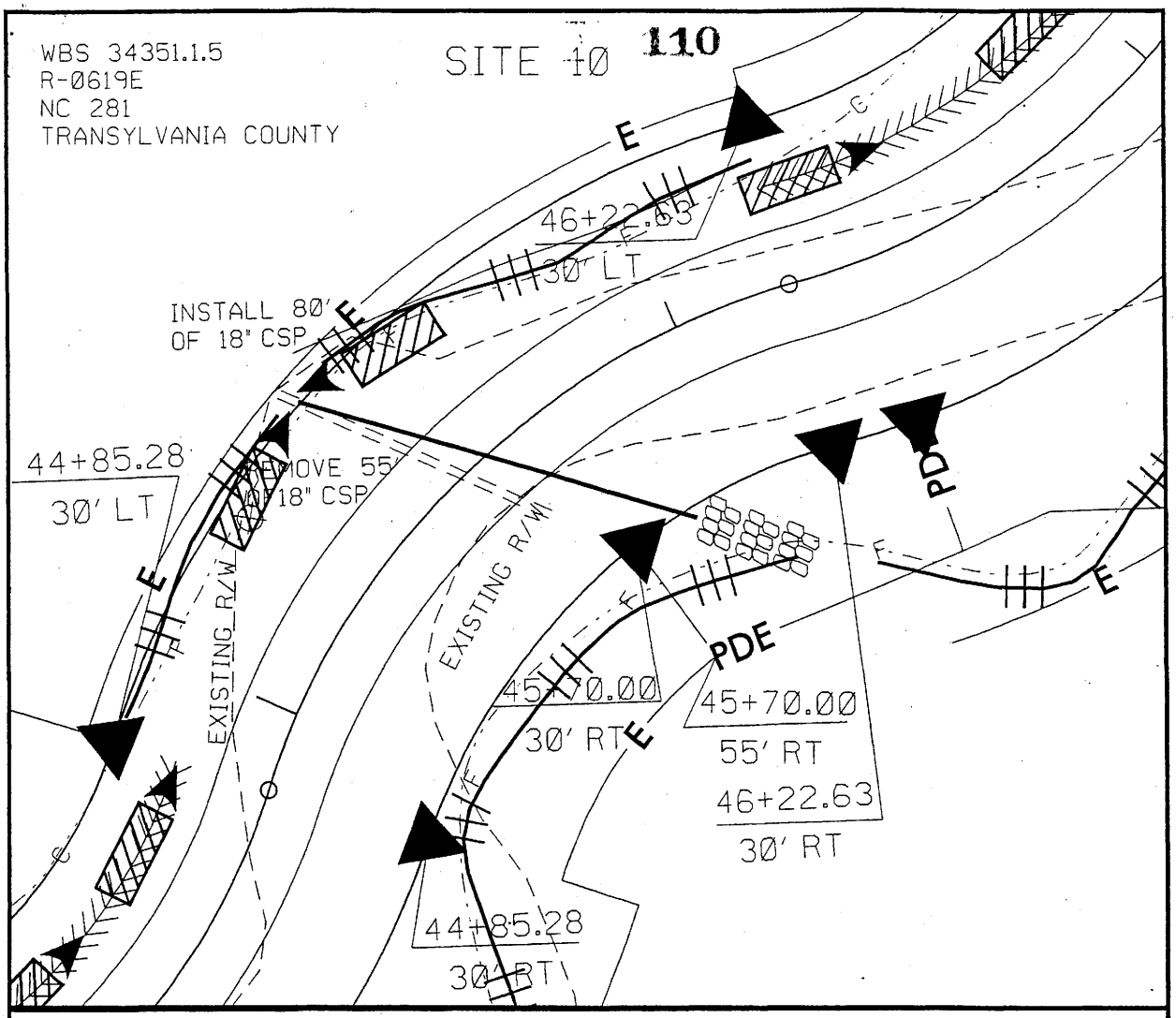

SITE 8
PLAN VIEW
2:1
2:1
1'
2'
590 LF WET DITCH RELOCATION
FROM STA 36+50 TO STA 42+40
WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY
35+50.00
30' LT
PROP. H. WALL
STA. 838.01
INSTALL 50'
OF 36" CSP
REMOVE 48'
OF 24" CSP
EXISTING R/W
36+00.34
30' LT
36+82.76
30' LT
S 61° 10' 34.4" E
82.420
34+41.88
30' RT
36+00.34
30' RT
33+94.59
30' RT
36+82.76
30' RT
37+67.57
30' LT
38+49.64
30' LT
S 46° 56' 16.6" E
82.010
37+67.57
30' RT
38+49.64
30' RT
39+62.15
30' LT
40+04.45
30' LT
S 70° 34' 04.3" E
42.300
39+62.15
30' RT
40+04.45
30' RT
40+50.00
30' RT
41+74.89
30' LT
REMOVE 50'
OF 24" CSP
42+84.78
30' LT
43+45.30
30' LT
S 76° 23' 55.8" E
60.520
INSTALL 50'
OF 24" CSP
30' RT
41+74.89
30' RT
PT STA. 42+84.78
NOTE: CROSS VANES WILL BE INSTALLED
AT 20' INTERVALS FOR GRADE CONTROL


WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY
REMOVE 50'
OF 24" CSP
SITE 9
42+84.78
30' LT
43+45.30
30' LT
N 76° 23' 55.8" E
60.520
INSTALL 50'
OF 24" CSP
42+84.78
30' RT
41+74.89
30' RT

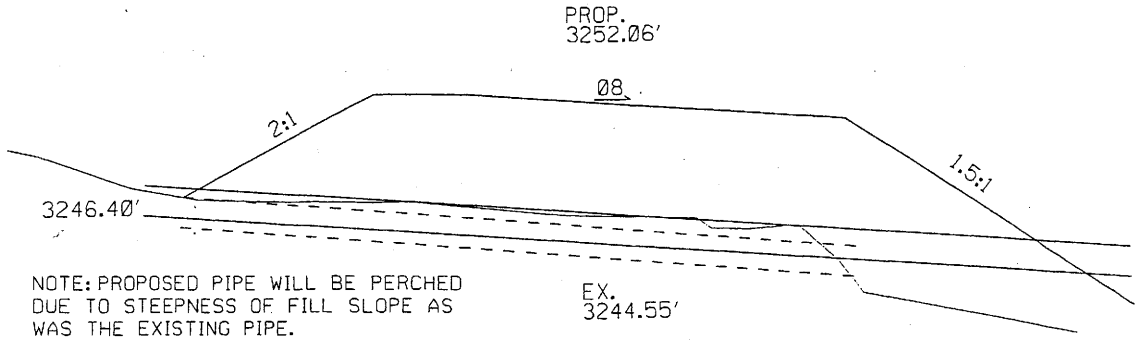

STATION 42+33
PROP.
3283.78'
1:1
Ø4
3283.66'
EX.
3282.06'
1.5:1
NOTE: PROPOSED PIPE WILL BE PERCHED
DUE TO STEEPNESS OF FILL SLOPE AS
WAS THE EXISTING PIPE.
EXISTING PIPE 50' OF 24" CSP
PROPOSED PIPE 50' OF 24" CSP
PROPOSED 26' OF CLASS B STONE RIP-RAP

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 10 **110**



STATION 45+40



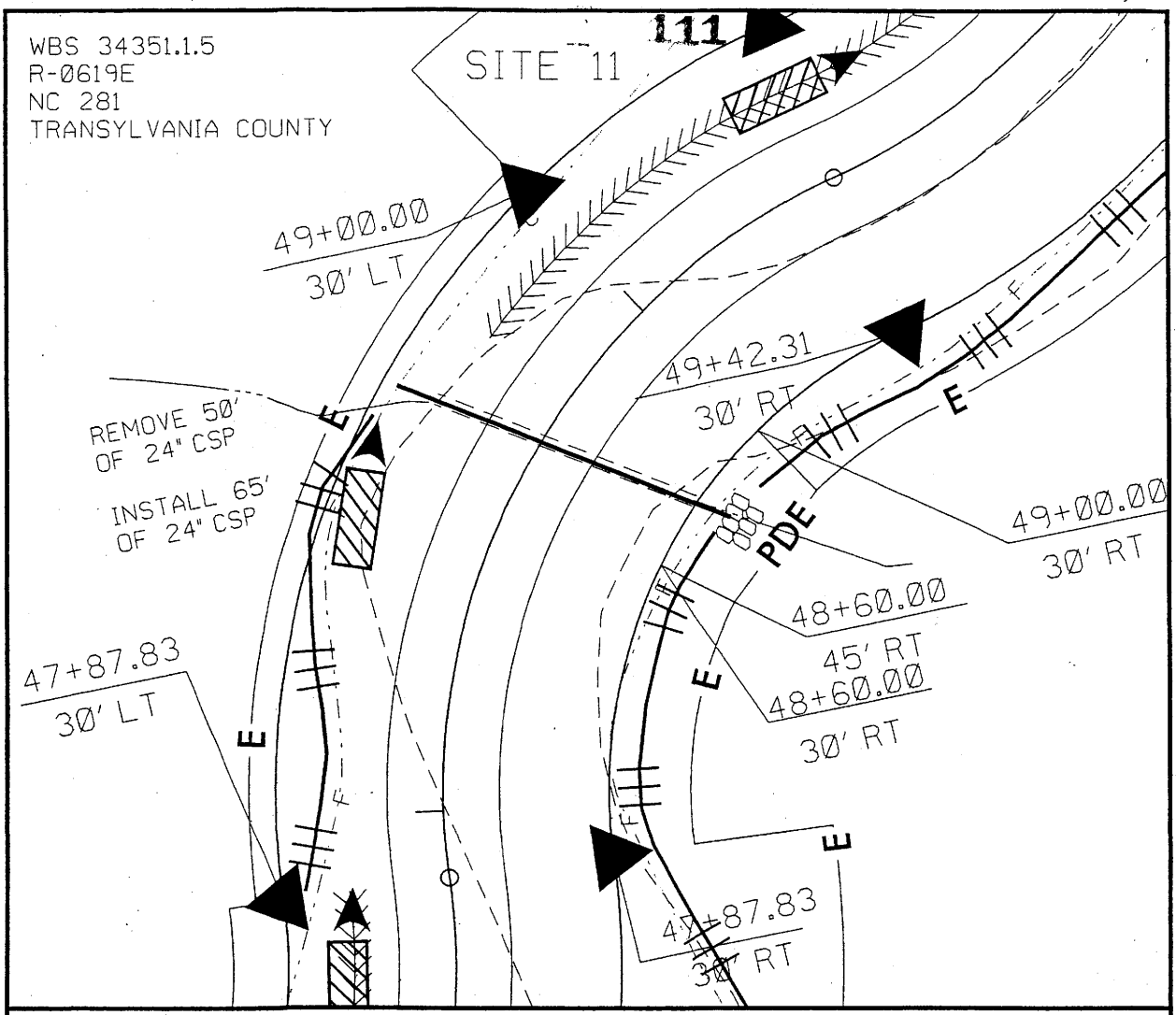
NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

- - - - - EXISTING PIPE - 55' OF 18" CSP

——— PROPOSED PIPE - 80' of 18" CSP

PROPOSED 20' OF CLASS B STONE RIP-RAP

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY



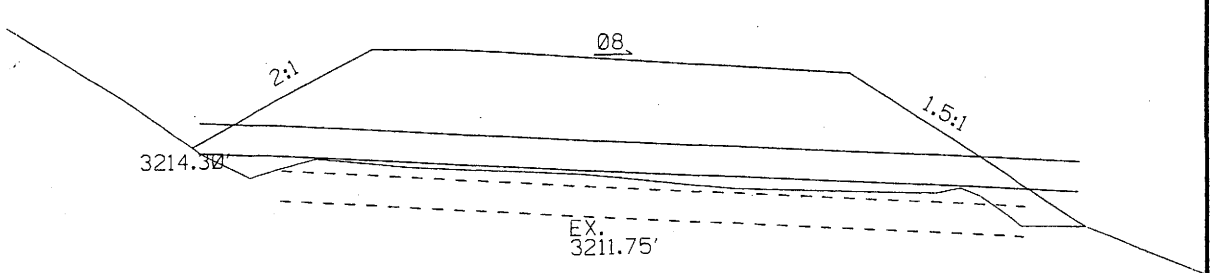
EXISTING PIPE 50' OF 24" CSP

PROPOSED PIPE 65' OF 24" CSP

PROPOSED 6' OF CLASS B STONE RIP-RAP

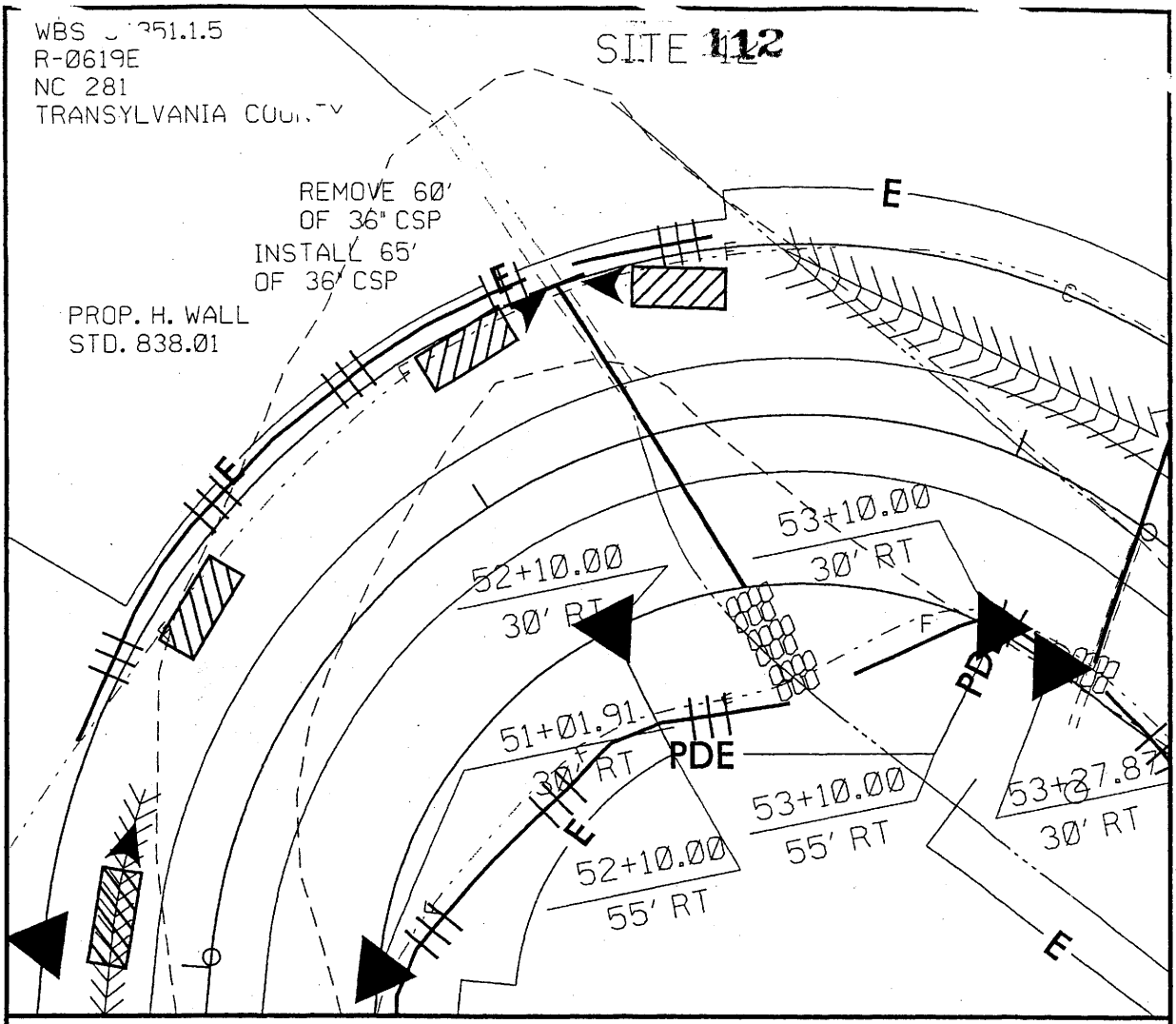
STATION 48+77

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

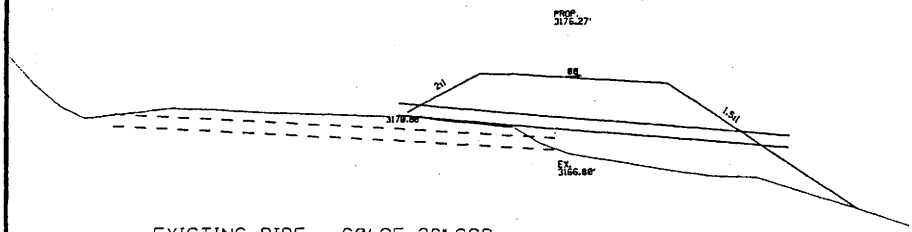


WBS [illegible]51.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 112



STATION 52+30



EXISTING PIPE - 60' OF 36" CSP

PROPOSED PIPE - 65' OF 36" CSP

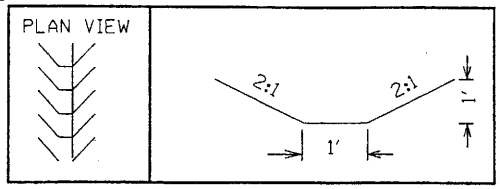
PROPOSED 20' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

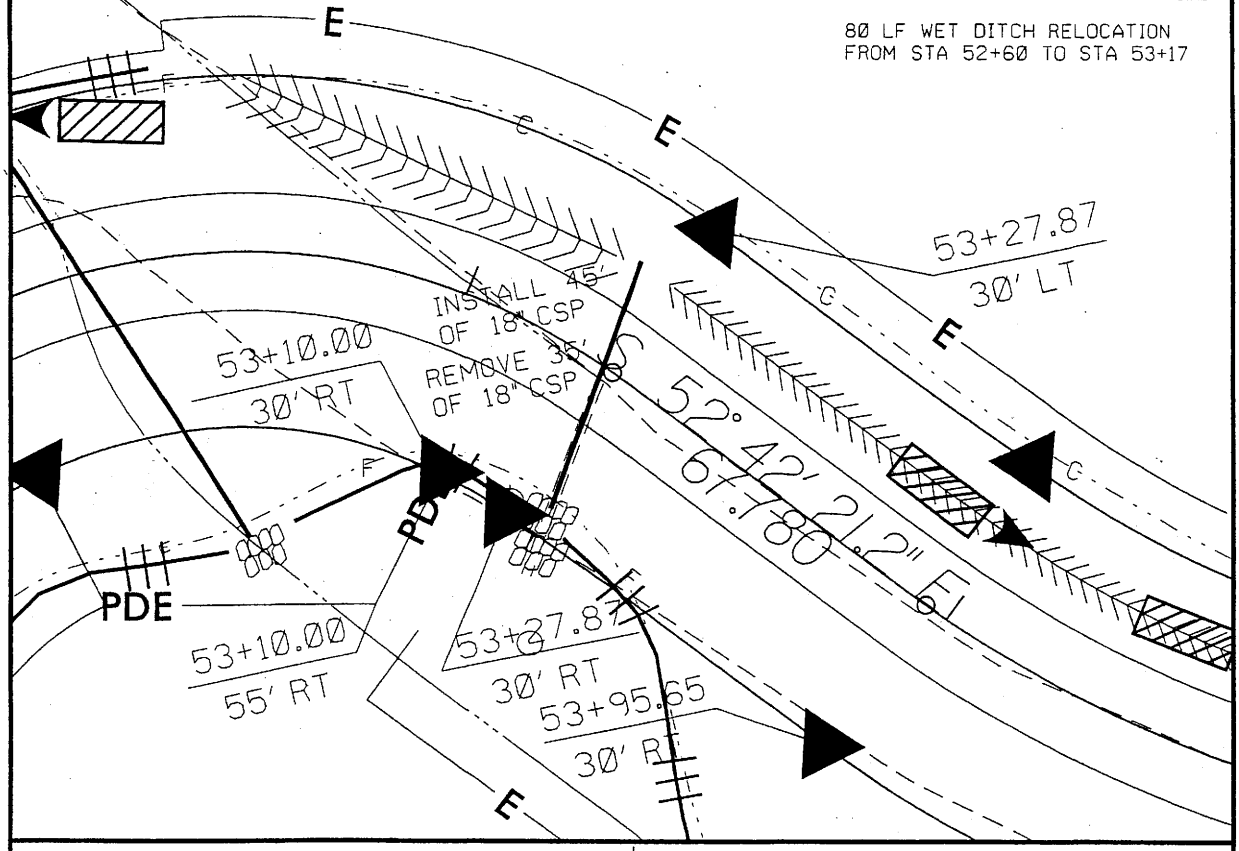
WHERE EXISTING PIPE IS REMOVED FROM EXISTING ROAD, STREAM BANKS WILL BE SLOPED, MATTED, AND PLANTED WITH NATIVE RIPARIAN VEGETATION.

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

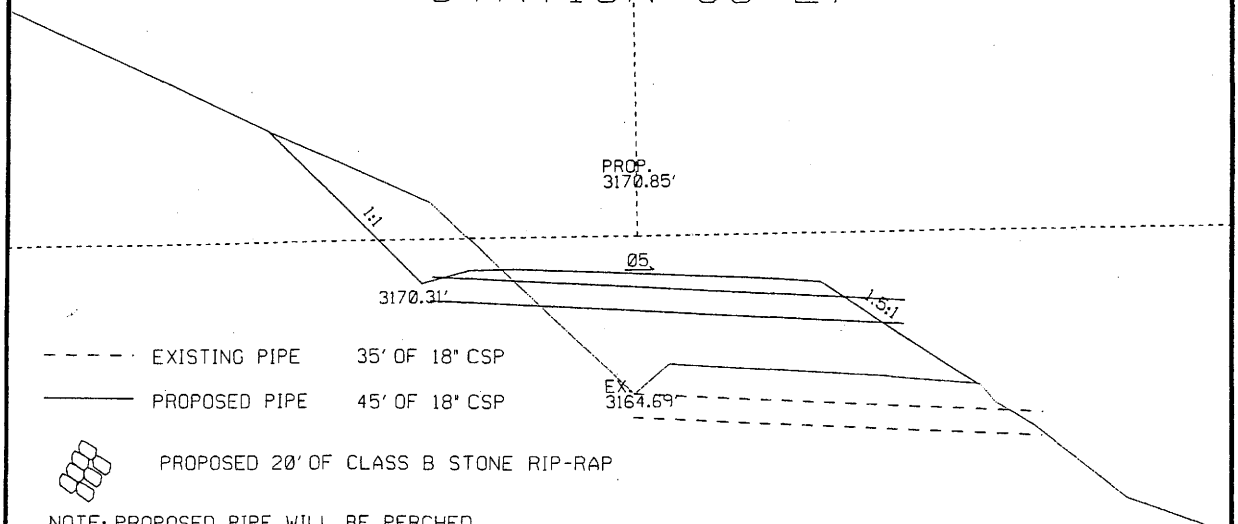
SITE 13 A



80 LF WET DITCH RELOCATION
FROM STA 52+60 TO STA 53+17



STATION 53+27



EXISTING PIPE 35' OF 18" CSP

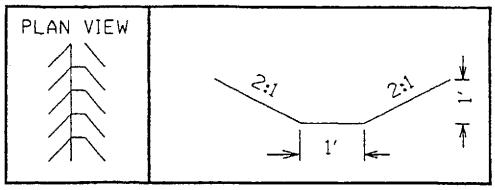
PROPOSED PIPE 45' OF 18" CSP

PROPOSED 20' OF CLASS B STONE RIP-RAP

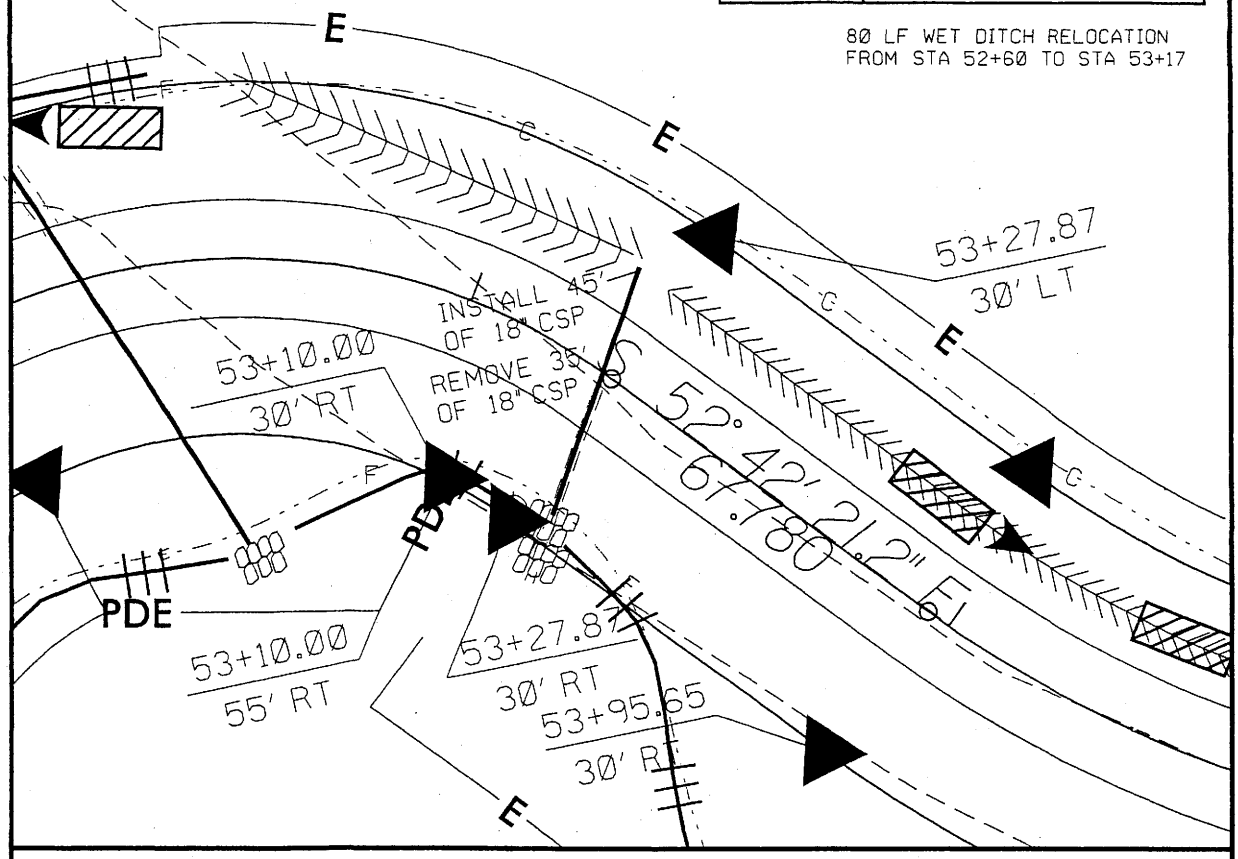
NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

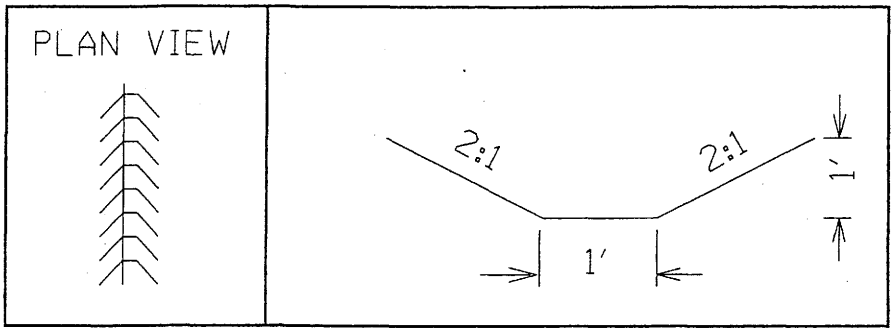
SITE 13 B



80 LF WET DITCH RELOCATION
FROM STA 52+60 TO STA 53+17

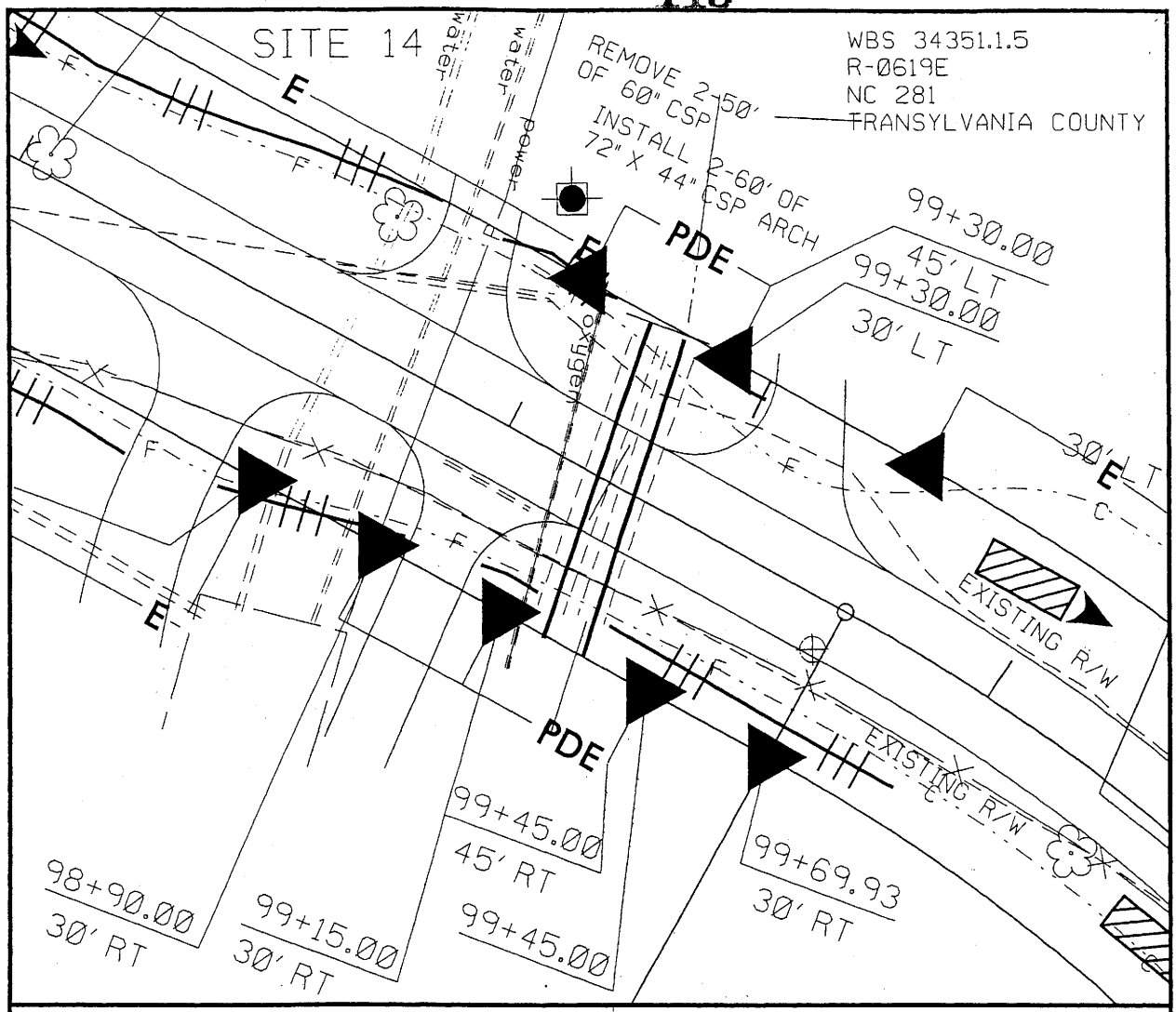


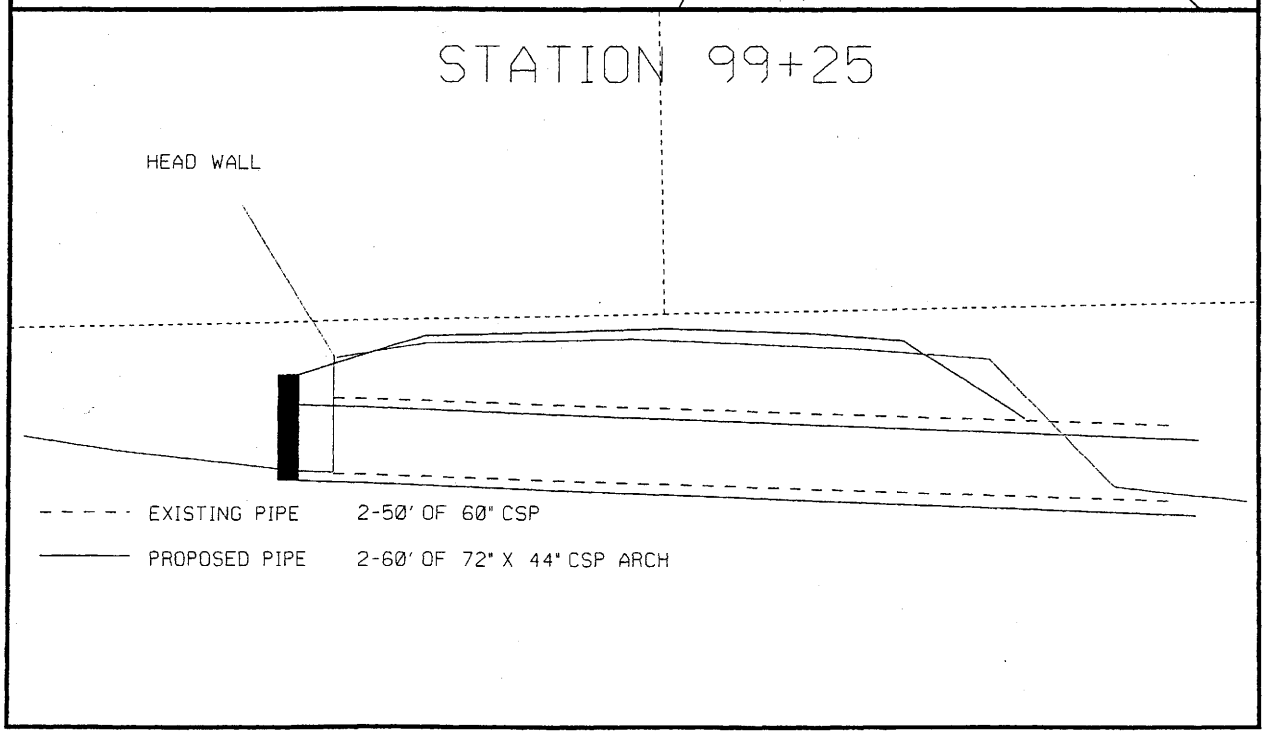
STATION 53+27



80 LF WET DITCH RELOCATION
FROM STA 52+60 TO STA 53+17

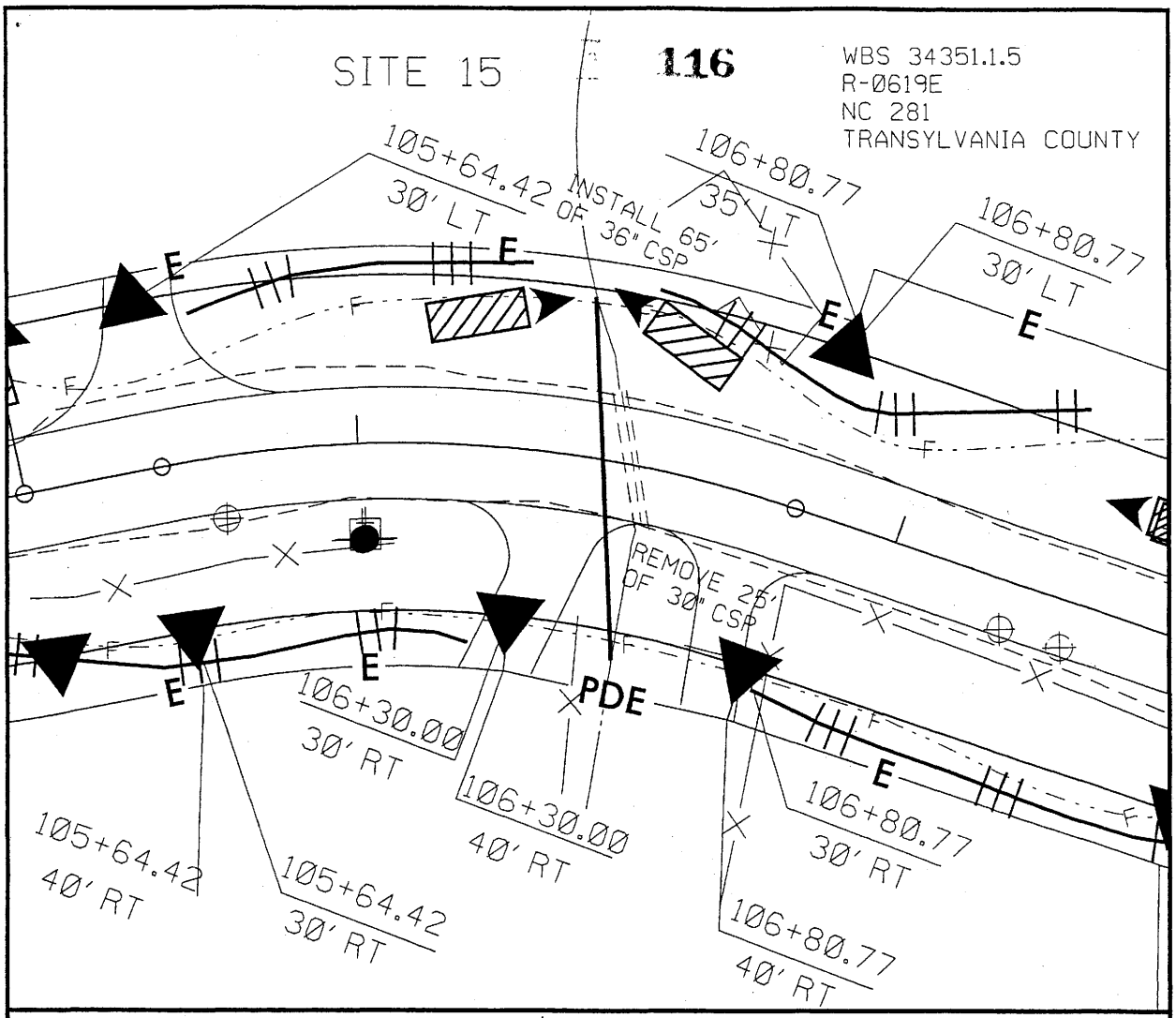
NOTE: CROSS VANES WILL BE INSTALLED
AT 20' INTERVALS FOR GRADE CONTROL


SITE 14
WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY
REMOVE 2-50' OF 60" CSP
INSTALL 2-60' OF 72" X 44" CSP ARCH
99+30.00
45' LT
99+30.00
30' LT
30' LT
EXISTING R/W
EXISTING R/W
PDE
PDE
98+90.00
30' RT
99+15.00
30' RT
99+45.00
45' RT
99+45.00
99+69.93
30' RT
water
power
oxygen

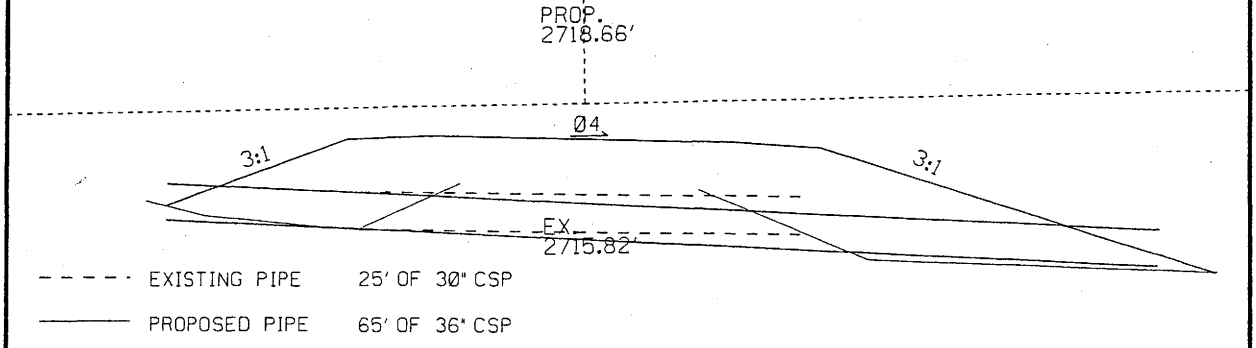

STATION 99+25
HEAD WALL
EXISTING PIPE 2-50' OF 60" CSP
PROPOSED PIPE 2-60' OF 72" X 44" CSP ARCH

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 15



STATION 106+50

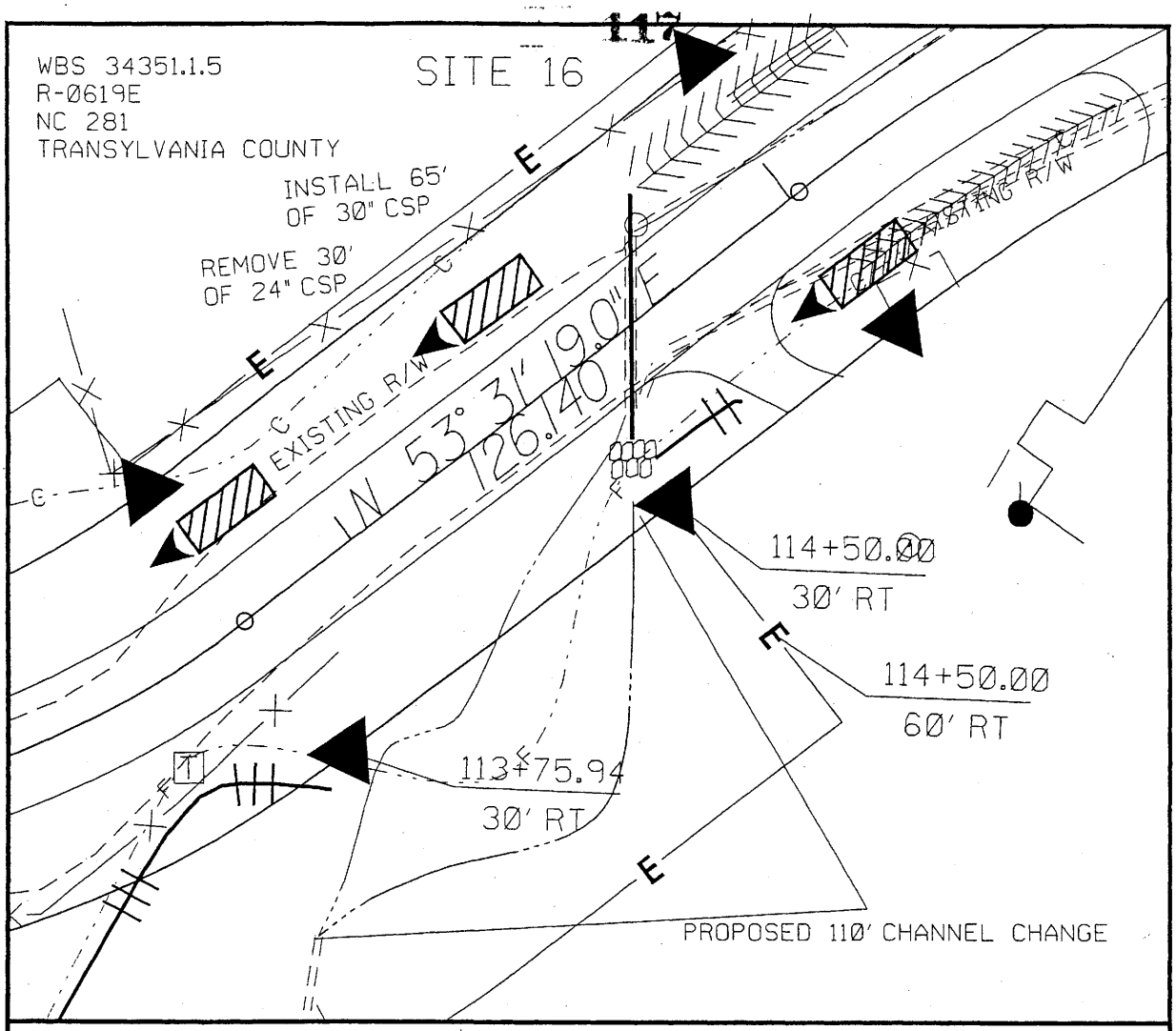


EXISTING PIPE 25' OF 30" CSP

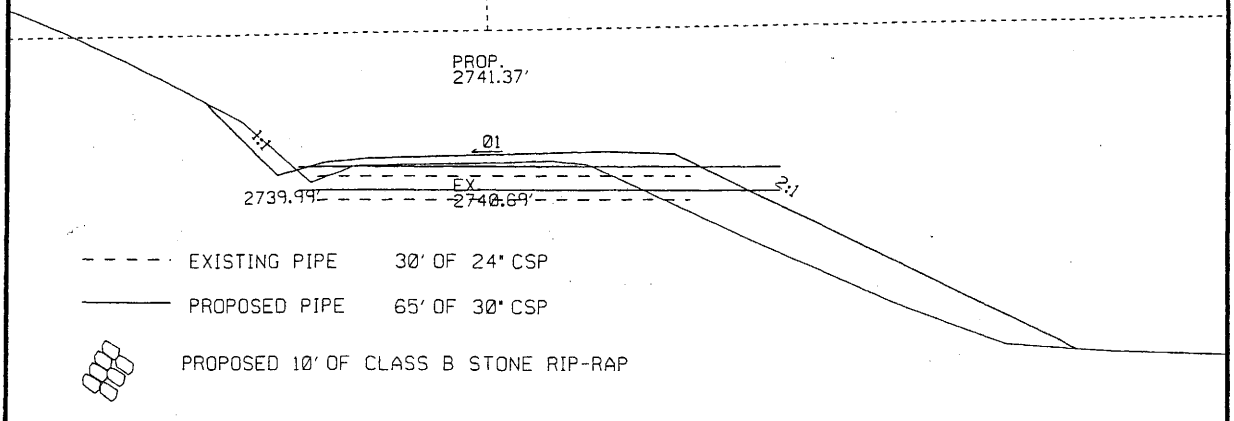
PROPOSED PIPE 65' OF 36" CSP

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 16



STATION 114+70

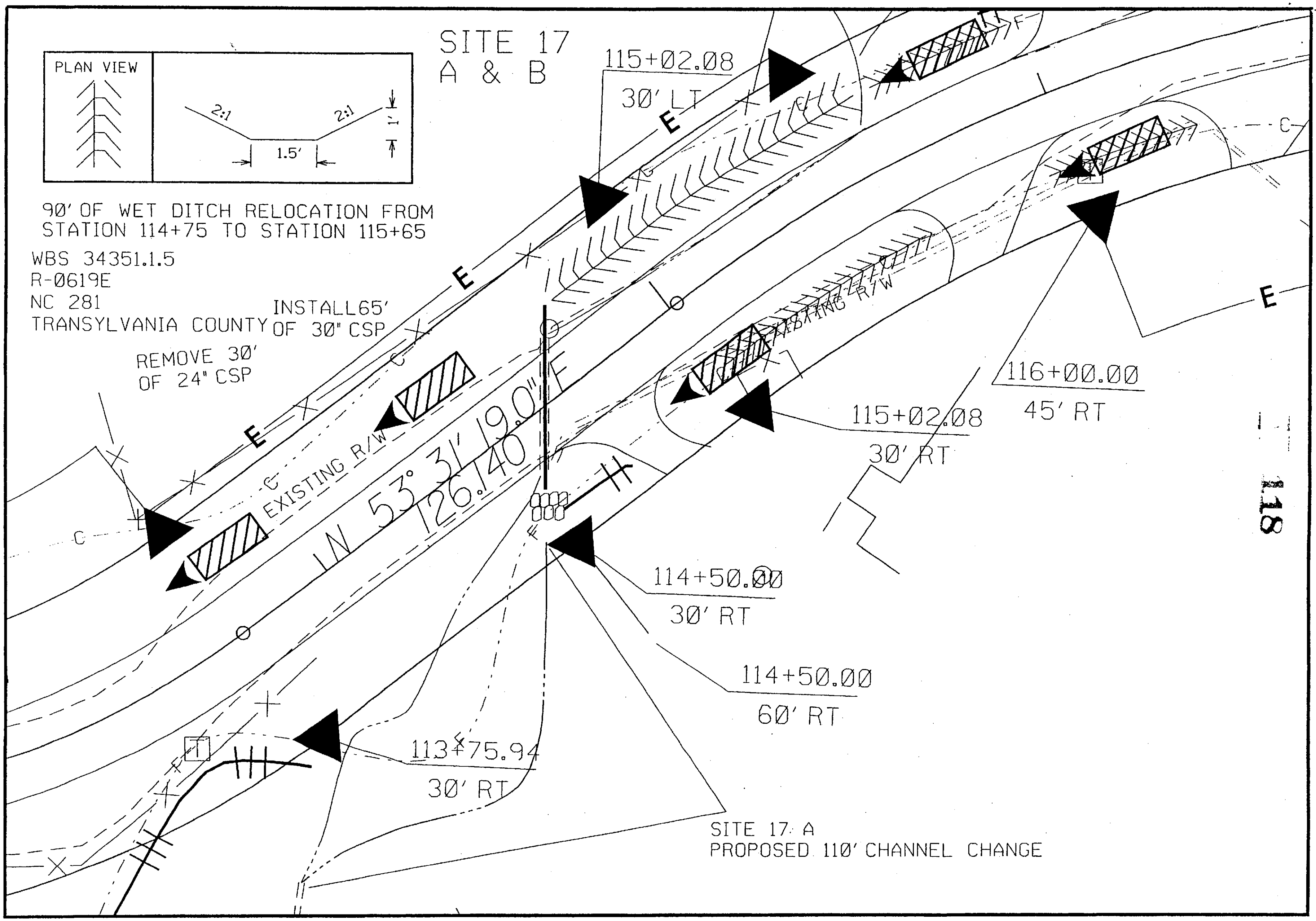


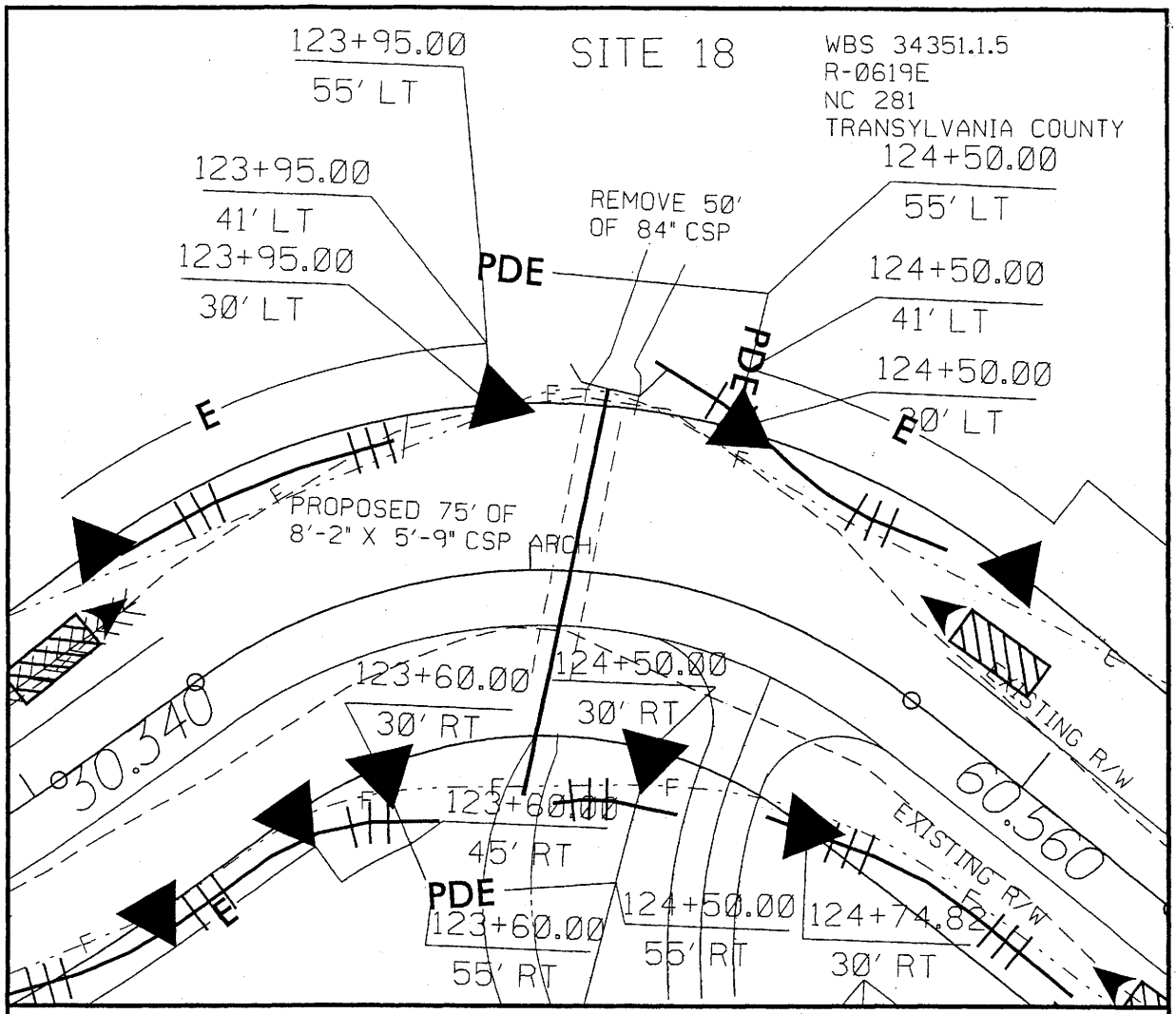
- - - - - EXISTING PIPE 30' OF 24" CSP

——— PROPOSED PIPE 65' OF 30" CSP

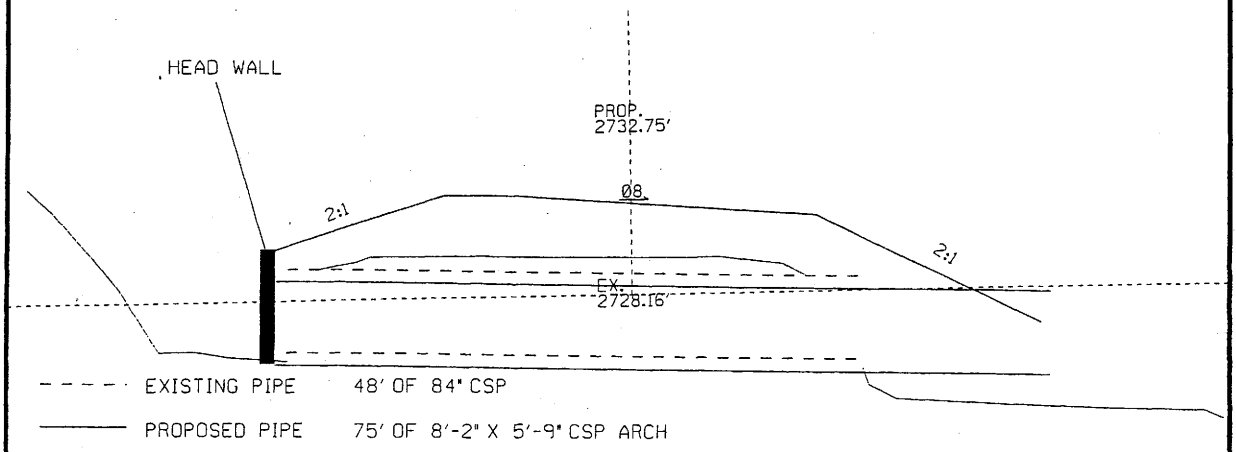
PROPOSED 10' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.


SITE 17
A & B
PLAN VIEW
2:1
2:1
1.5'
1'
90' OF WET DITCH RELOCATION FROM
STATION 114+75 TO STATION 115+65
WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY
INSTALL65'
OF 30" CSP
REMOVE 30'
OF 24" CSP
EXISTING R/W
N 53° 31' 19.0" E
126.140
115+02.08
30' LT
116+00.00
45' RT
115+02.08
30' RT
114+50.00
30' RT
114+50.00
60' RT
113+75.94
30' RT
SITE 17 A
PROPOSED 110' CHANNEL CHANGE

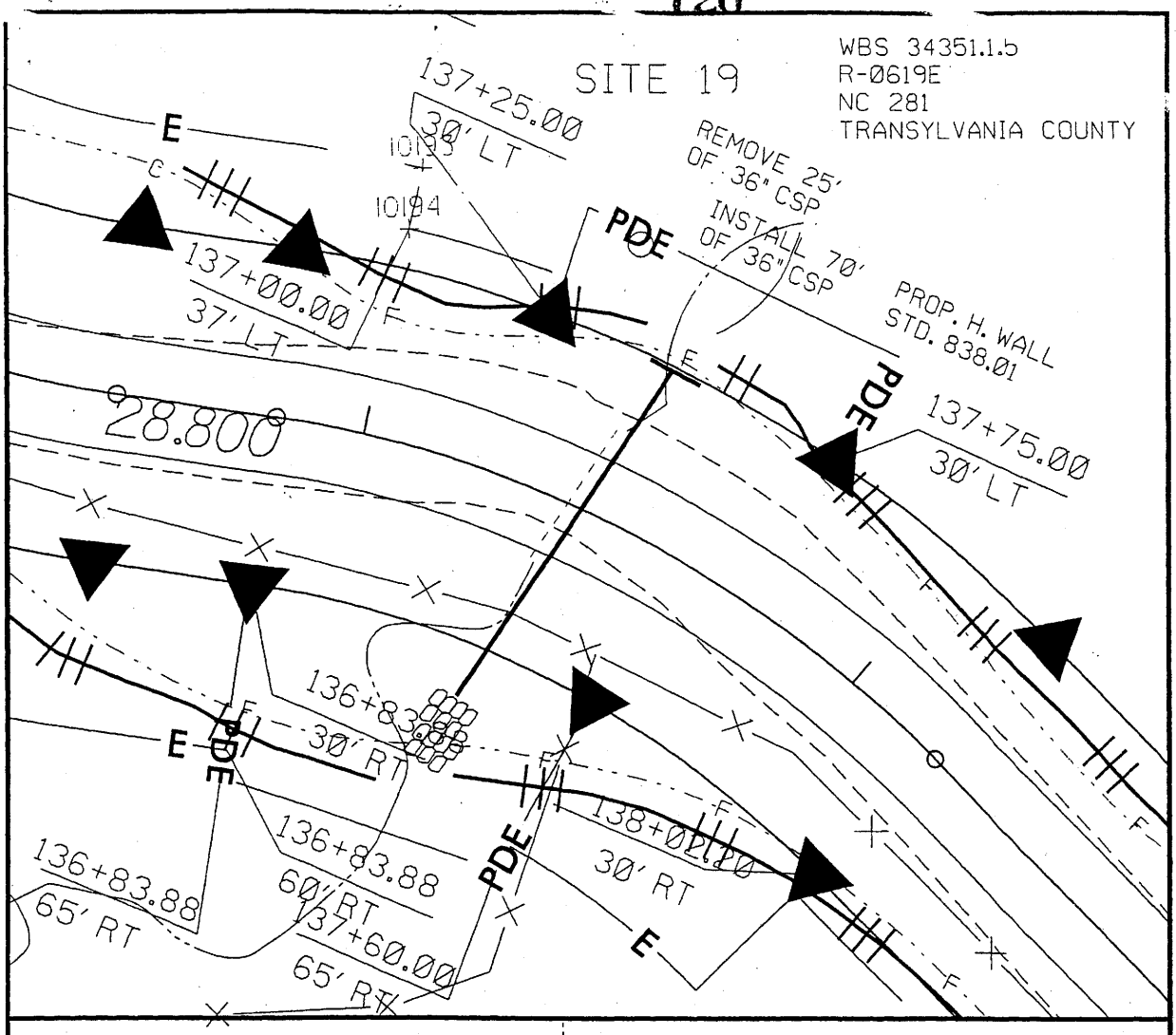


STATION 124+17

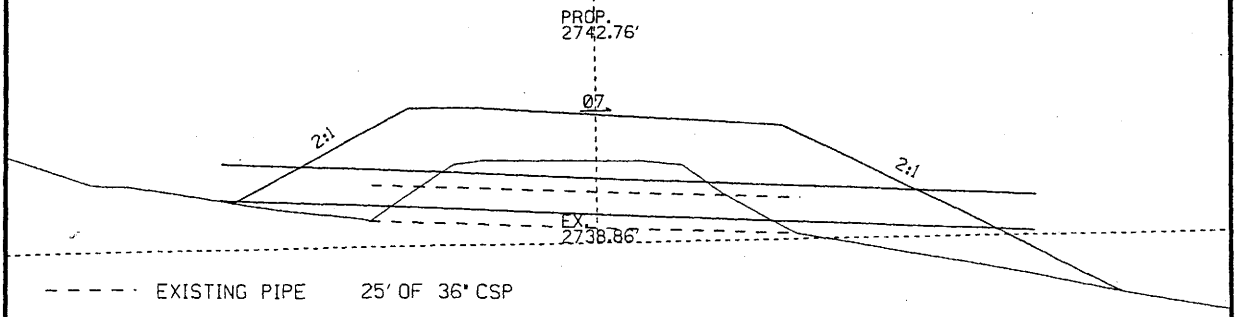


NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO BEDROCK AS WAS THE EXISTING PIPE.

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY



STATION 137+55



EXISTING PIPE 25' OF 36" CSP

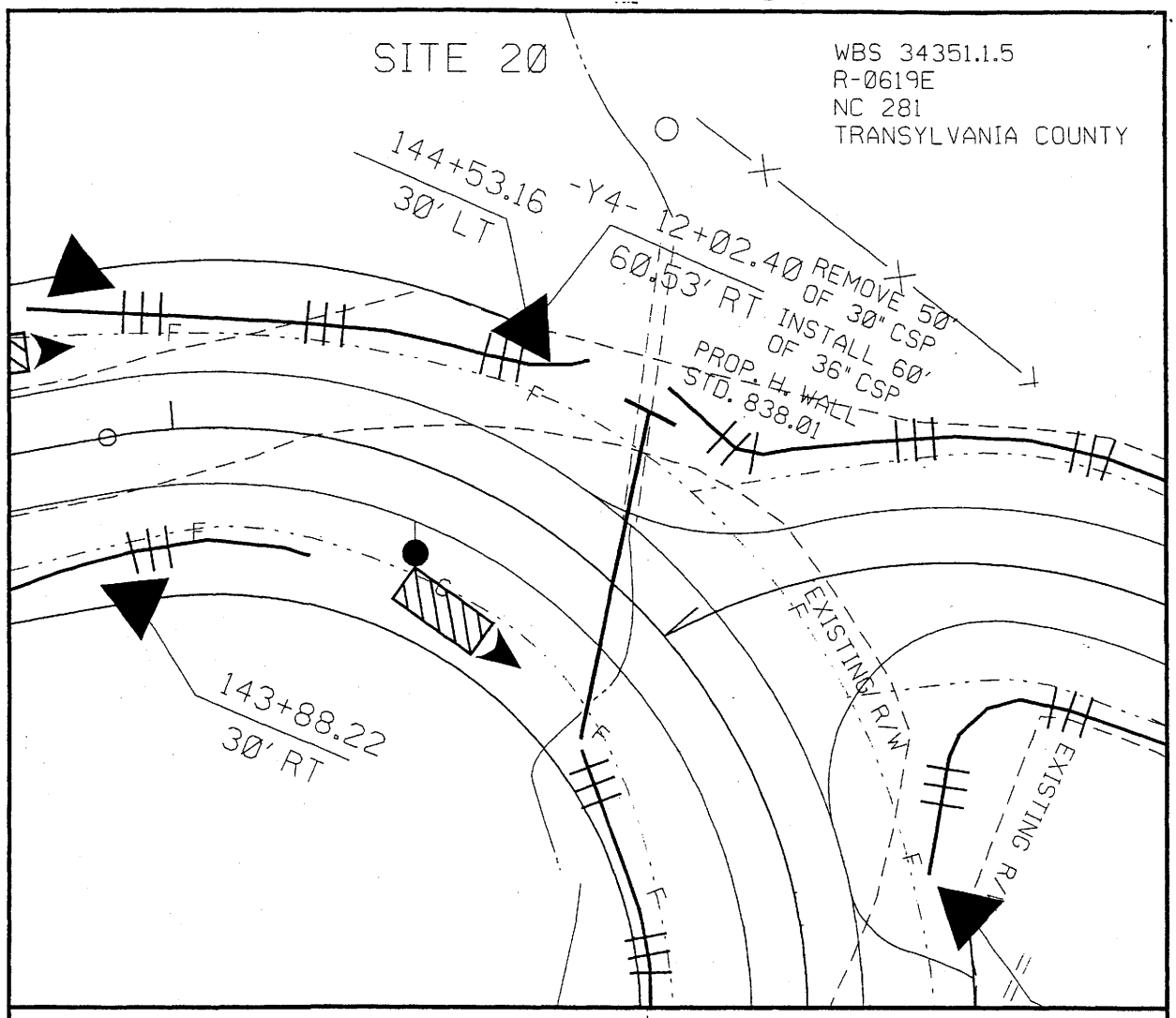
PROPOSED PIPE 70' OF 36" CSP

PROPOSED 16' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

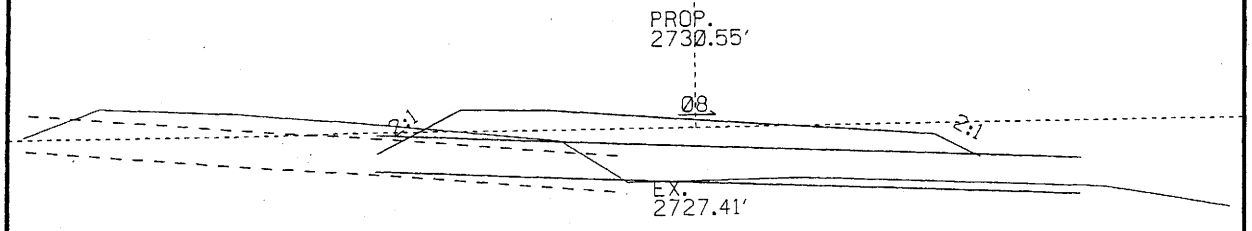
SITE 20

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY



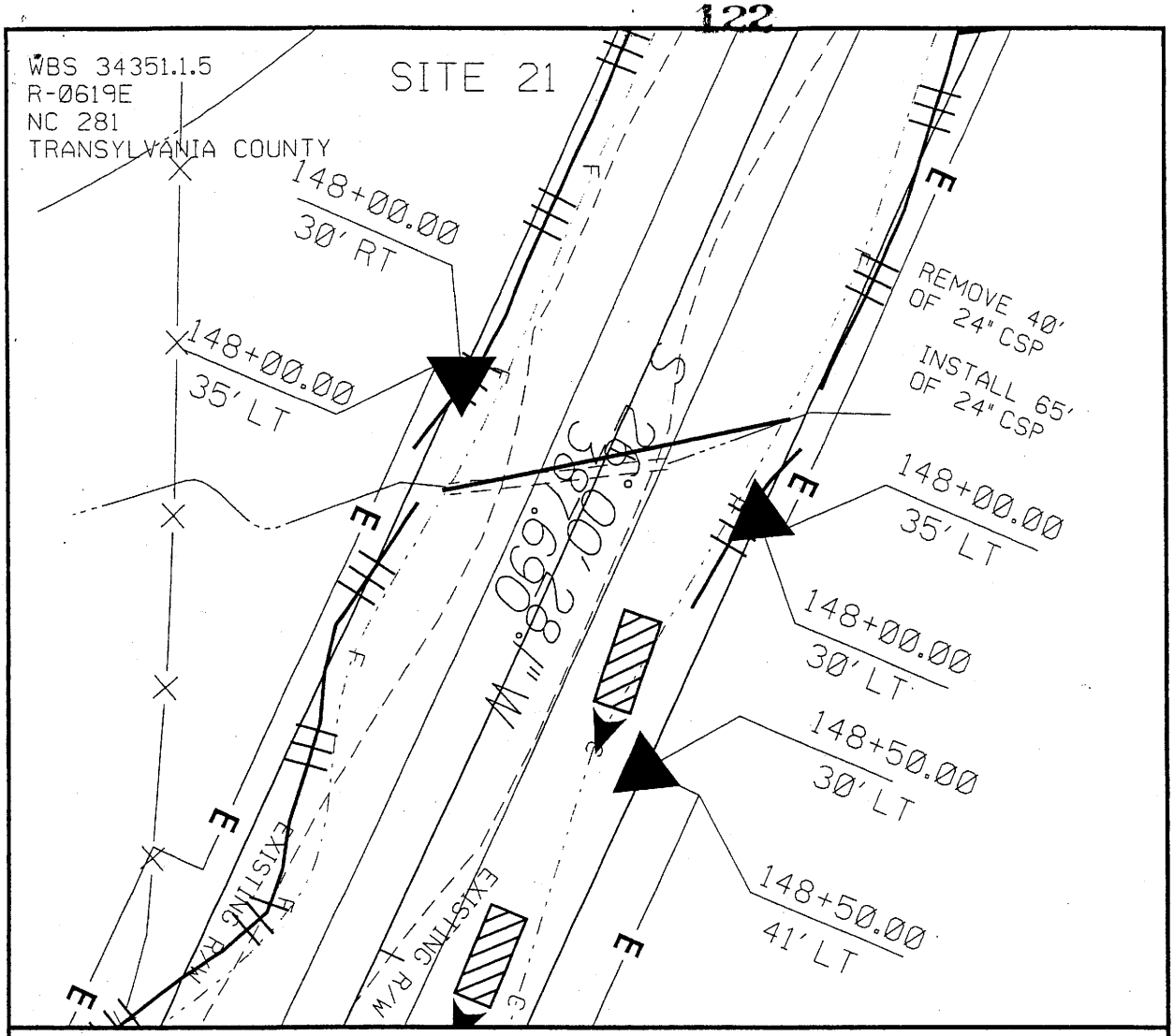
STATION 144+80

WHERE EXISTING PIPE IS REMOVED FROM EXISTING ROAD, STREAM BANKS WILL BE SLOPED, MATTED, AND PLANTED WITH NATIVE RIPARIAN VEGETATION.

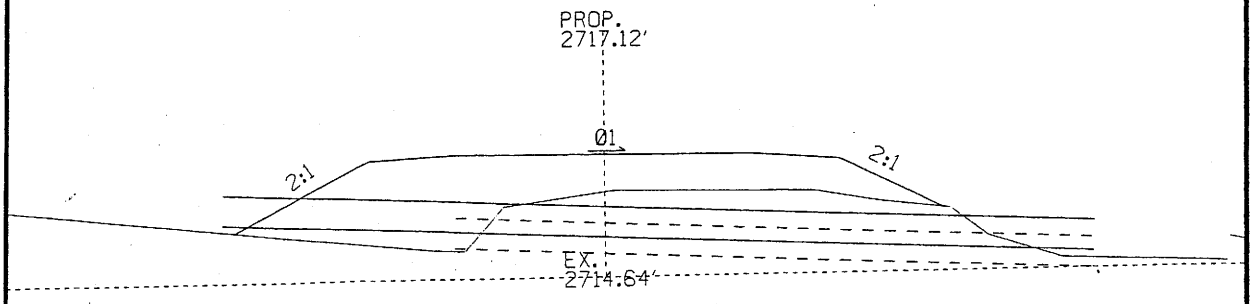


- - - - - EXISTING PIPE 50' OF 30" CSP

——— PROPOSED PIPE 60' OF 36" CSP



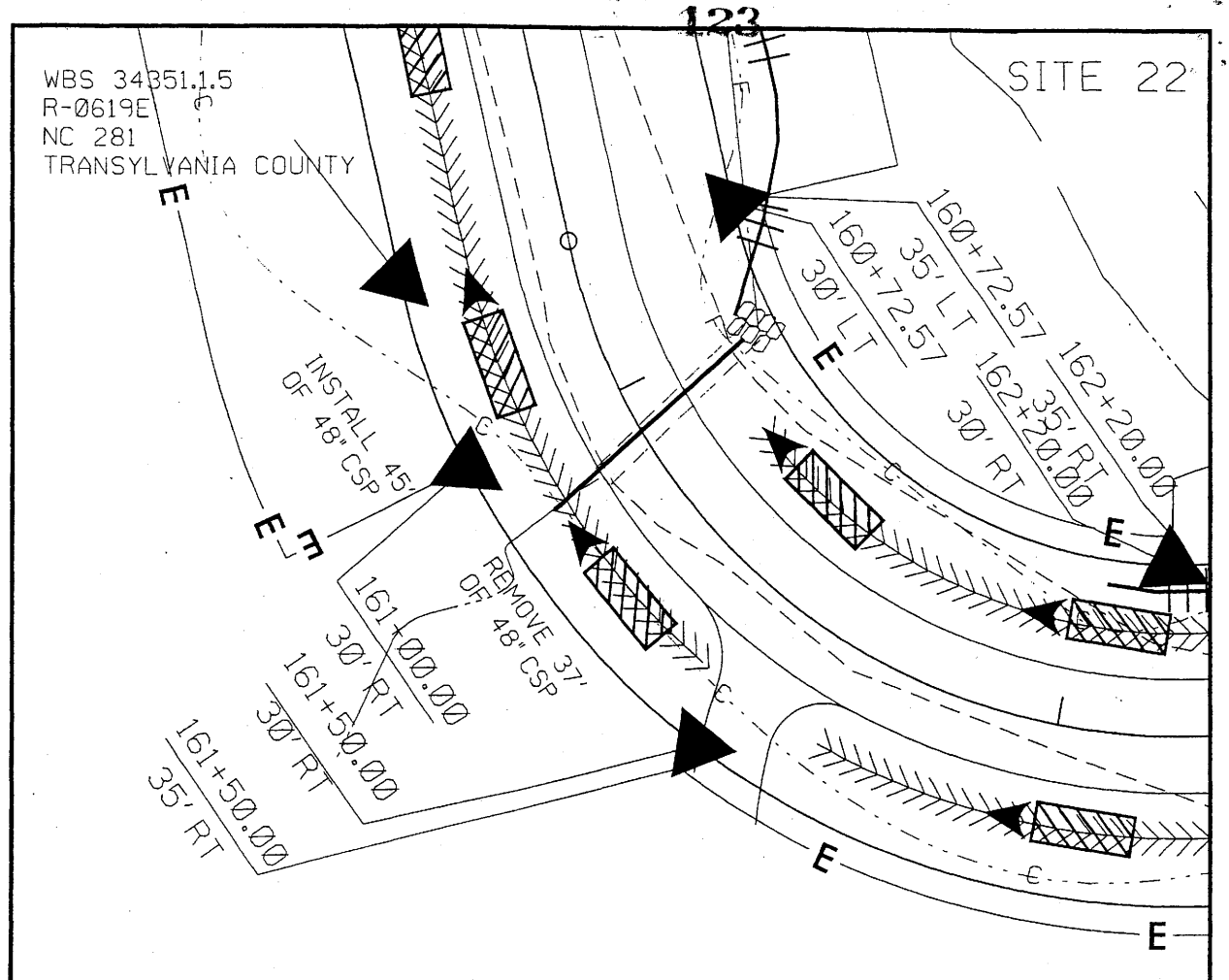
STATION 148+00



EXISTING PIPE 40' OF 24" CSP

PROPOSED PIPE 65' OF 24" CSP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO BEDROCK AS WAS THE EXISTING PIPE.



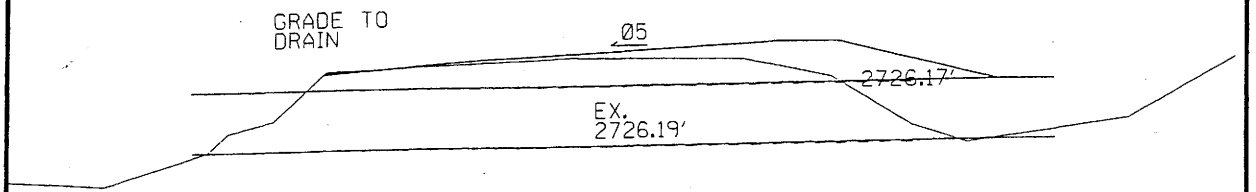
EXISTING PIPE 37' OF 48" CSP

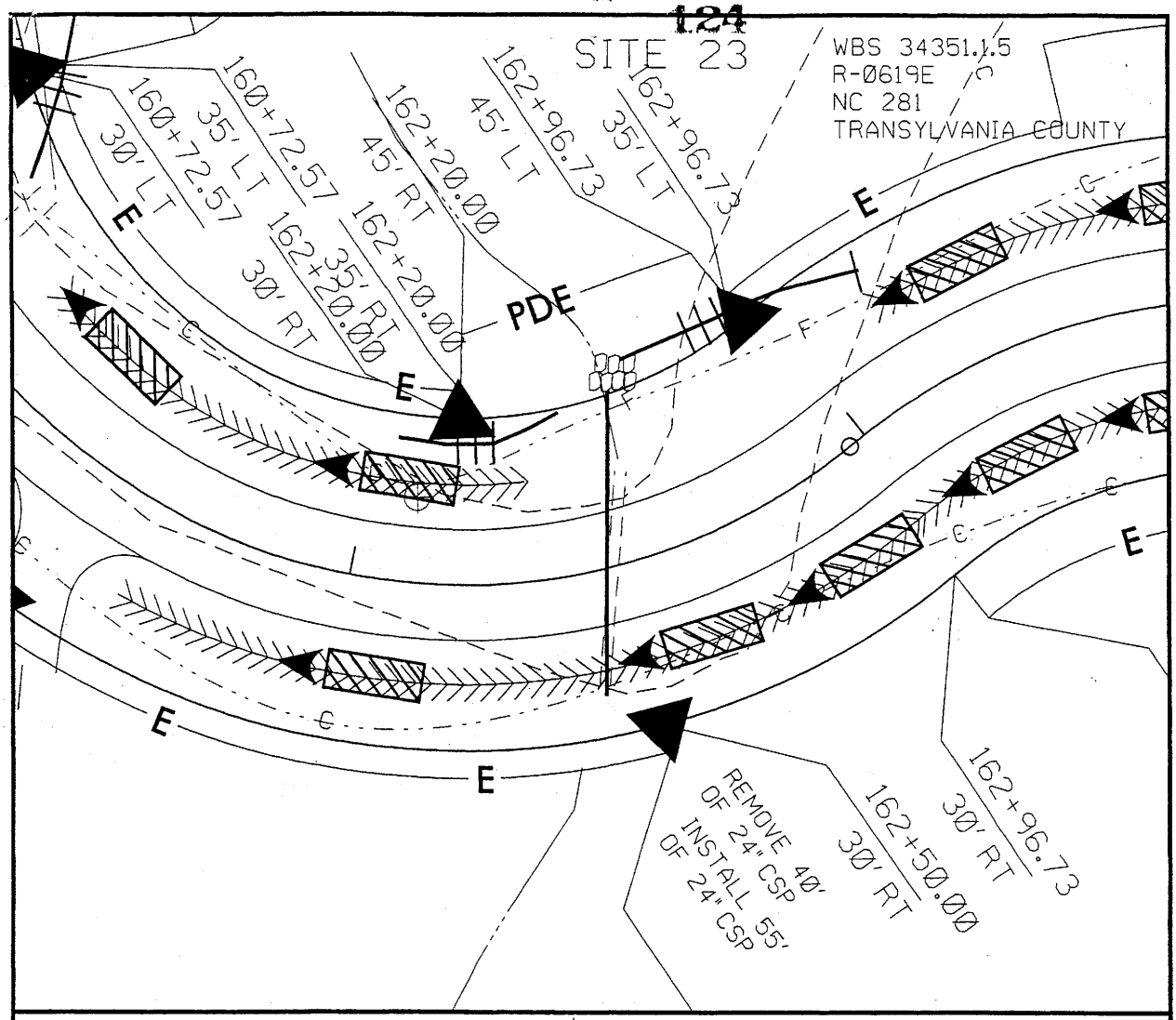
PROPOSED PIPE 45' OF 48" CSP

PROPOSED 6' OF CLASS B STONE RIP-RAP

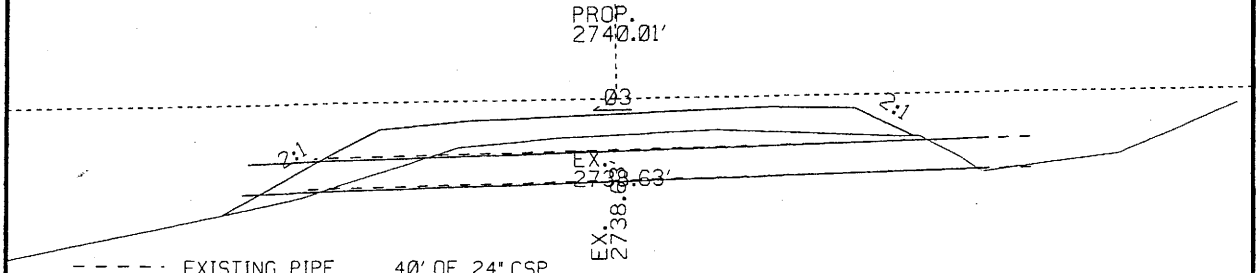
NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF SLOPE AS WAS THE EXISTING PIPE.

STATION 161+10





STATION 162+50

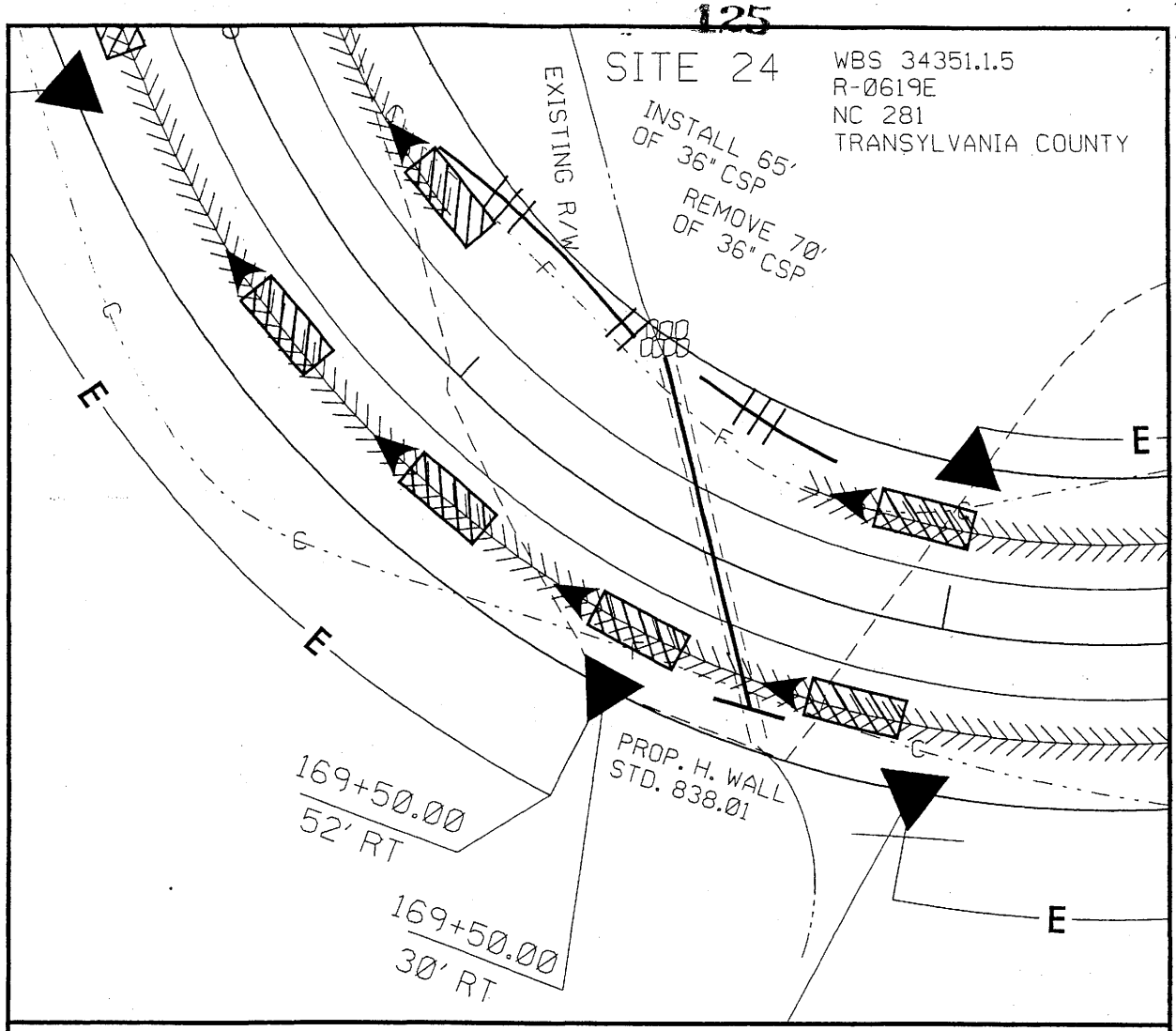


EXISTING PIPE 40' OF 24" CSP

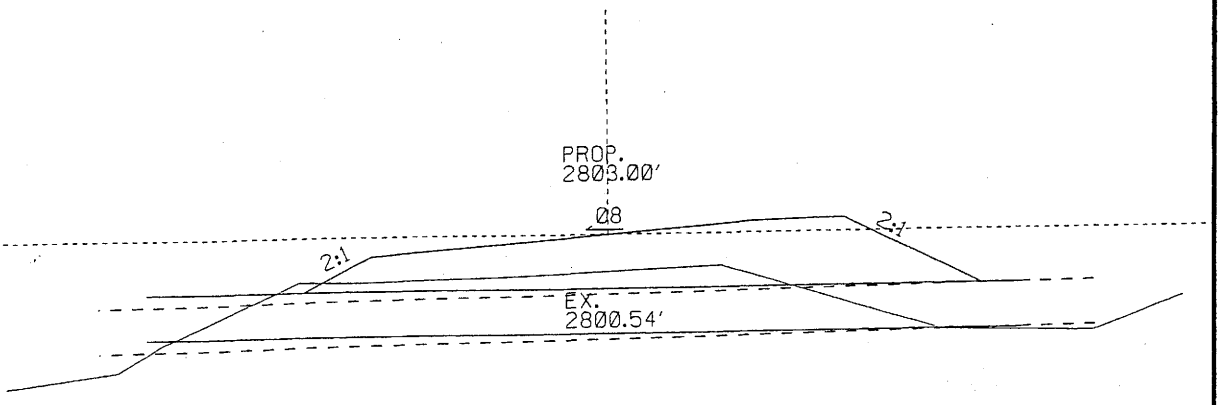
PROPOSED PIPE 55' OF 24" CSP

PROPOSED 6' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.



STATION 169+57

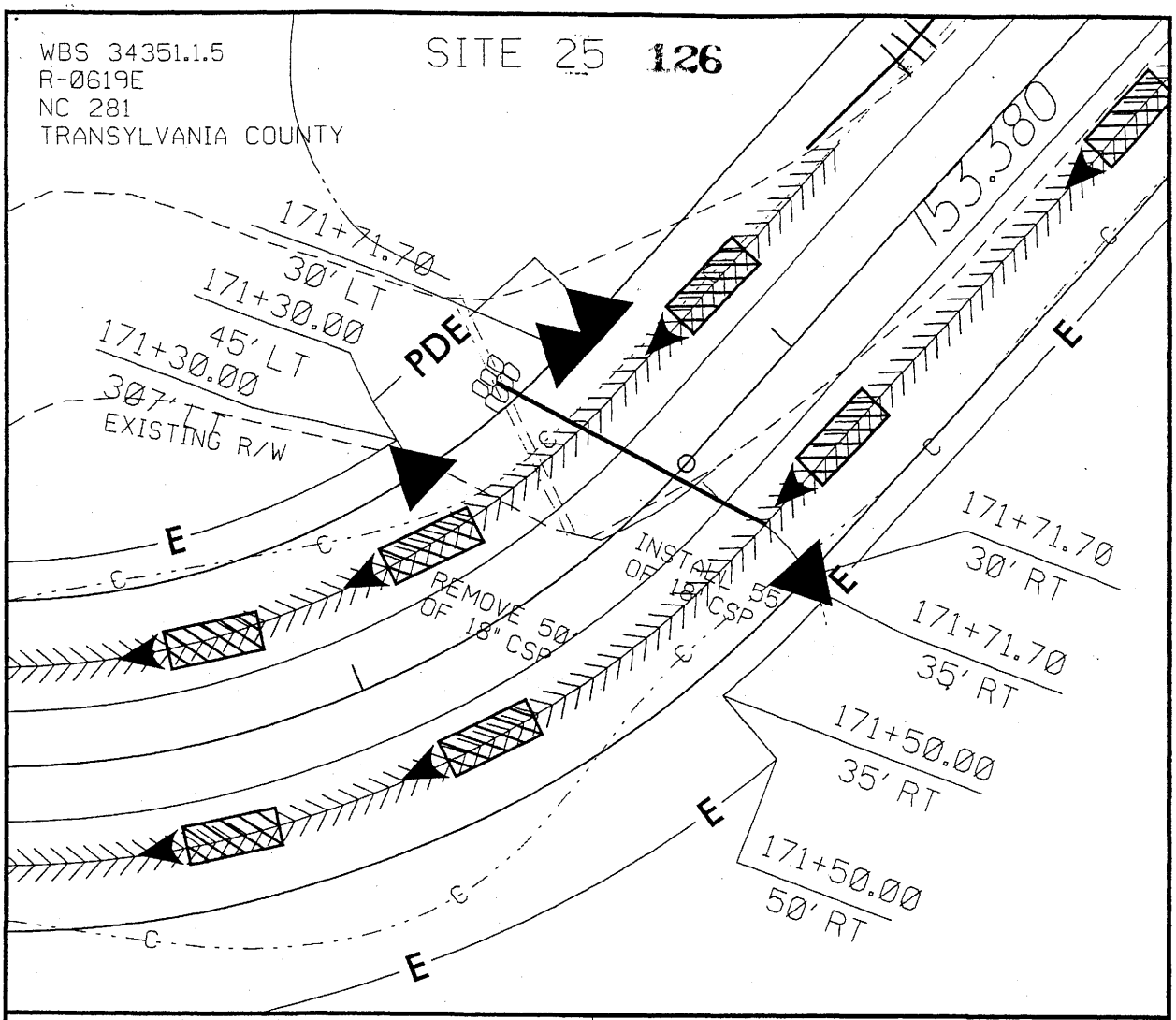


EXISTING PIPE 70' OF 36" CSP

PROPOSED PIPE 65' OF 36" CSP

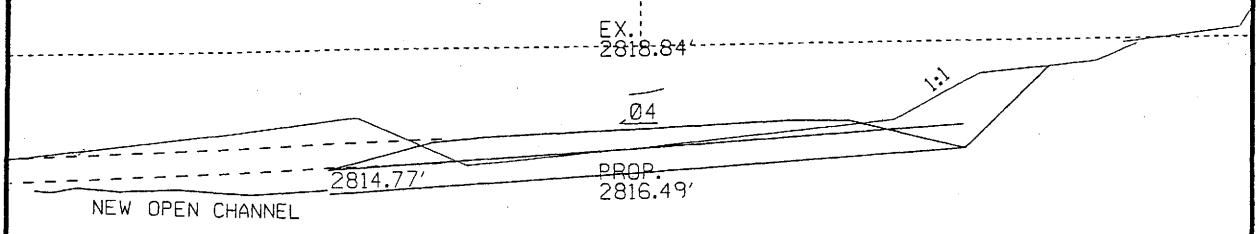
PROPOSED 6' OF CLASS B STONE RIP-RAP

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.



STATION 171+46

WHERE EXISTING PIPE IS REMOVED FROM EXISTING ROAD, STREAM BANKS WILL BE SLOPED, MATTED, AND PLANTED WITH NATIVE RIPARIAN VEGETATION.



EXISTING PIPE 50' OF 18" CSP

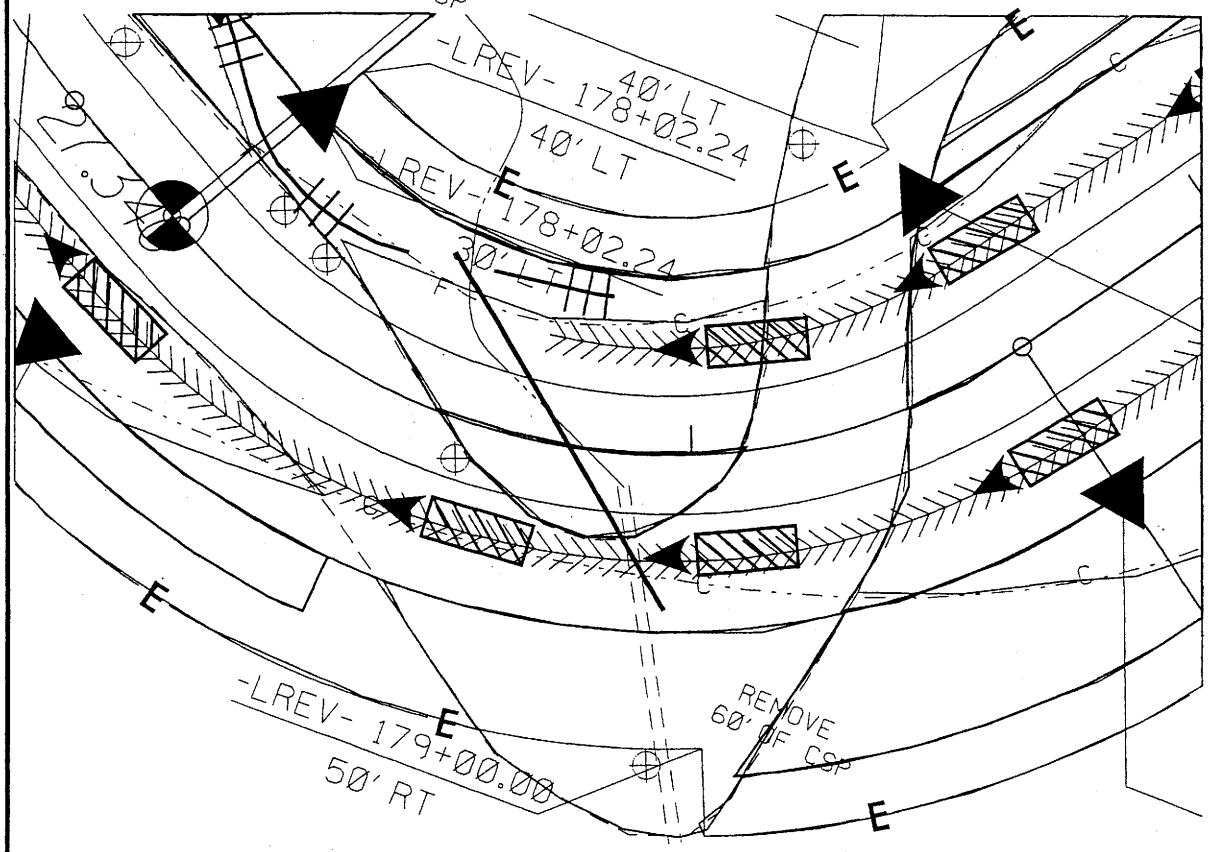
PROPOSED PIPE 55' OF 18" CSP

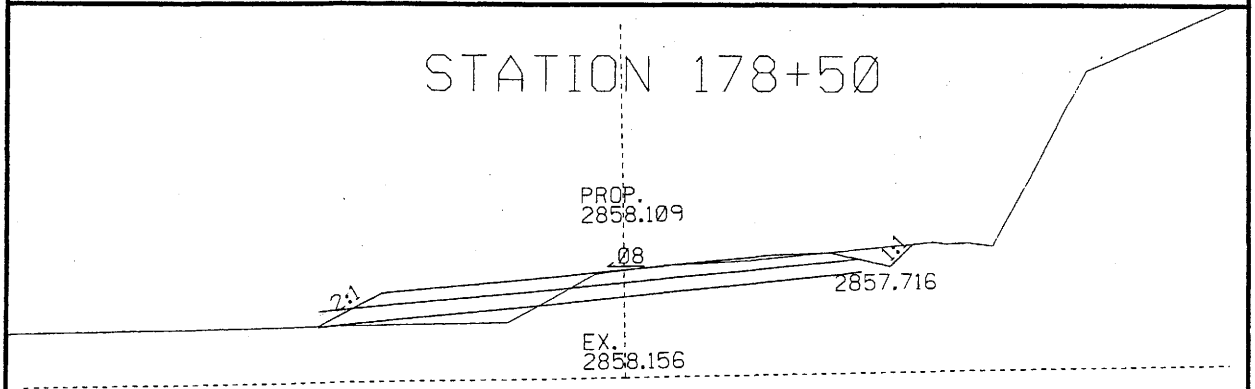
PROPOSED 6' OF CLASS B STONE RIP-RAP

NOTE: CROSS VANES WILL BE INSTALLED FOR GRADE CONTROL

WBS 34351.1.5
R-0619E
NC 281
TRANSYLVANIA COUNTY

SITE 26





EXISTING PIPE 60' OF 24" CSP

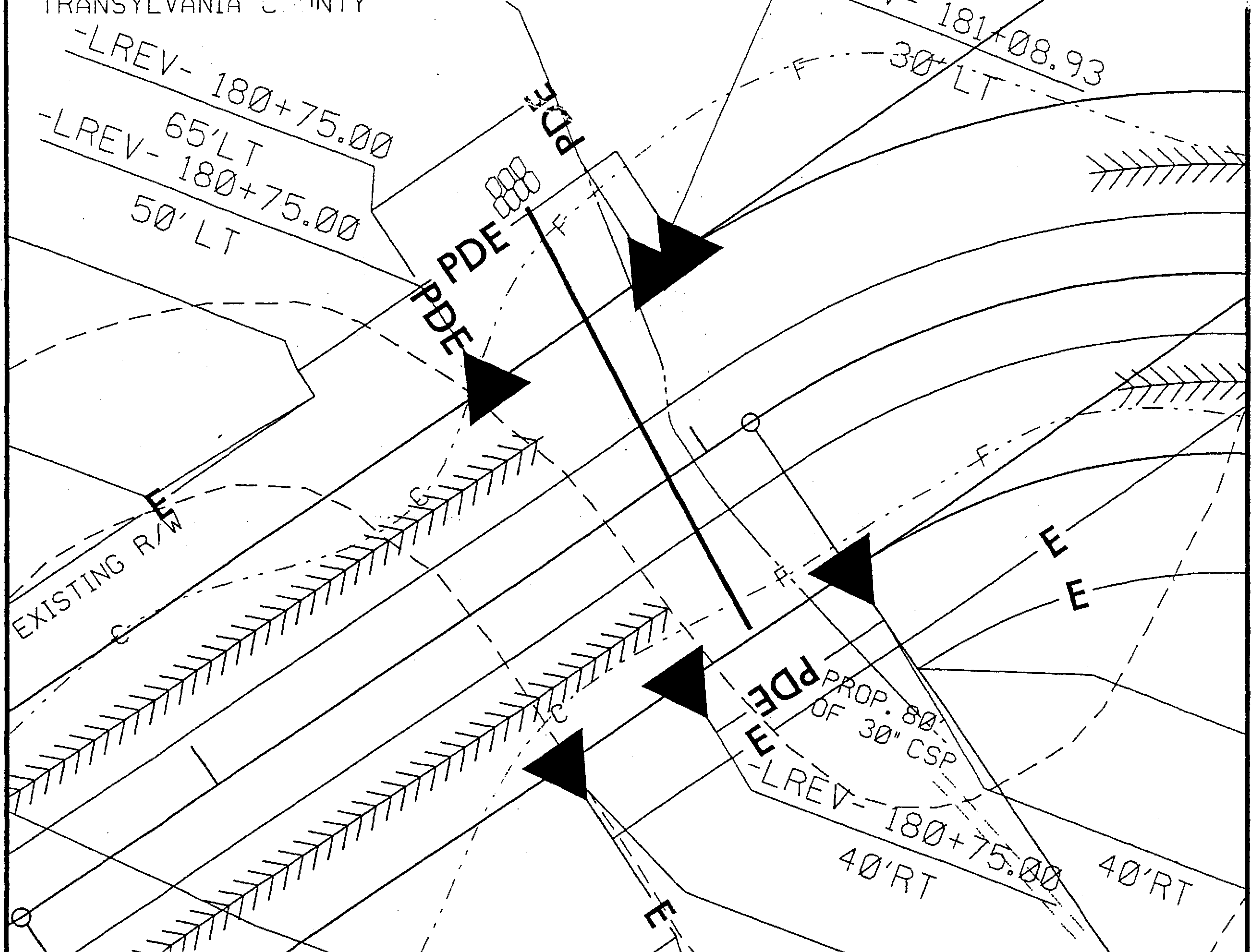
PROPOSED PIPE 70' OF 30" CSP

WHERE EXISTING PIPE IS REMOVED FROM EXISTING ROAD, STREAM BANKS WILL BE SLOPED, MATTED, AND PLANTED WITH NATIVE RIPARIAN VEGETATION.

NOTE: CROSS VANES WILL BE INSTALLED FOR GRADE CONTROL

W[illegible] 34351.1.5
R-Ø61[illegible]
NC 281
TRANSYLVANIA [illegible]UNTY

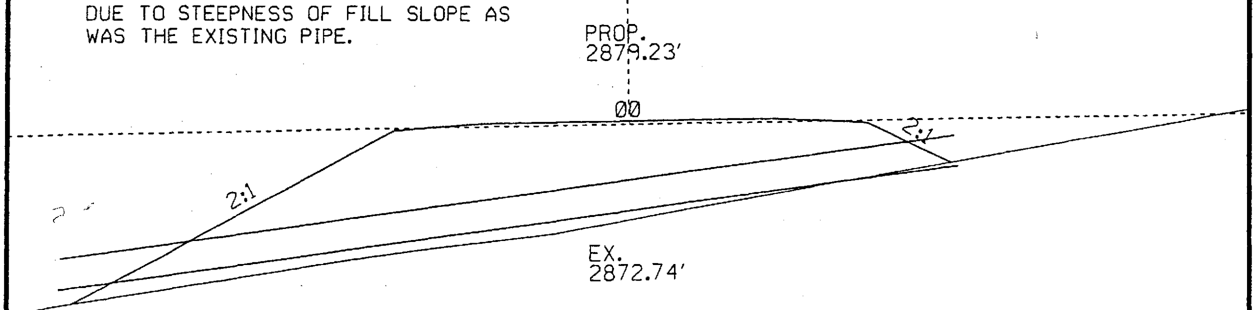
SITE 27



STATION 181+00

• EXISTING PIPE IS NOT SHOWN DUE TO ALIGNMENT CHANGE

NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF FILL SLOPE AS WAS THE EXISTING PIPE.

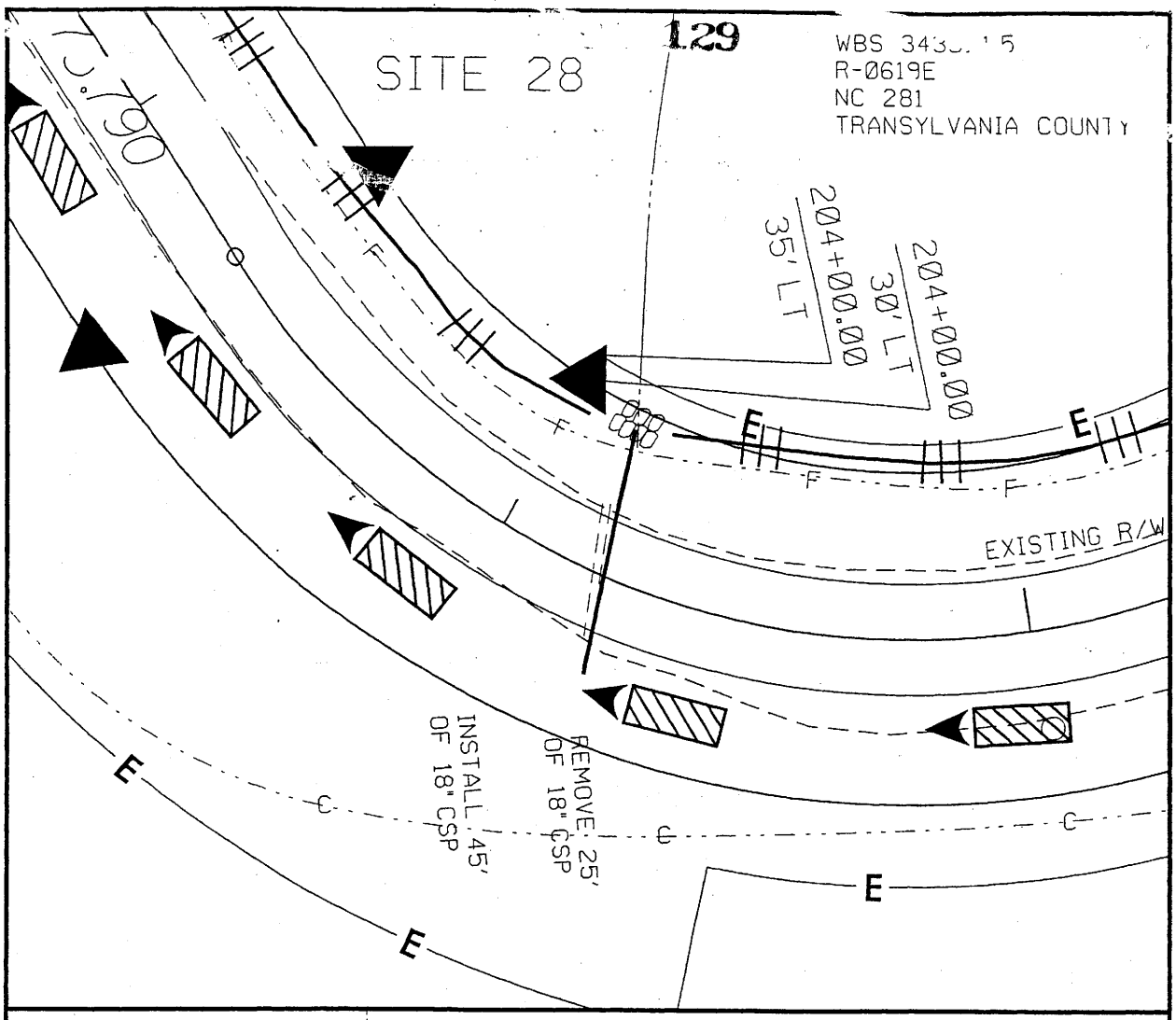


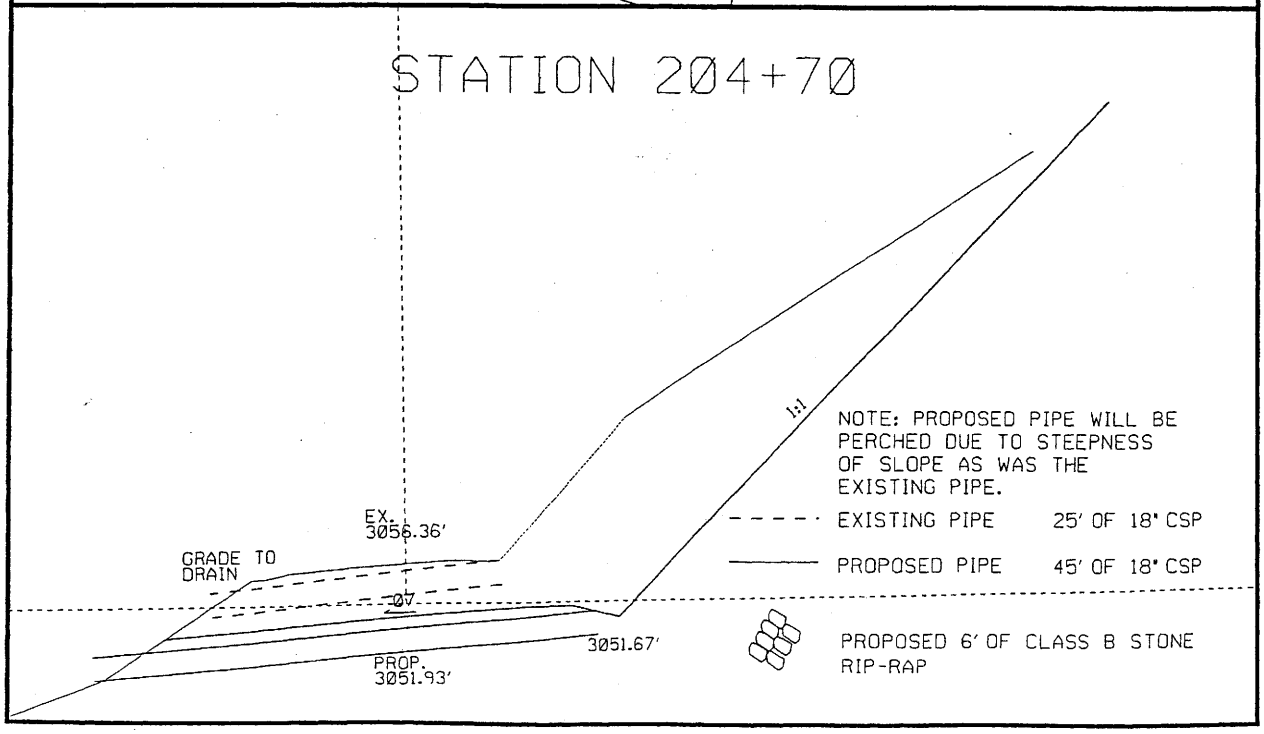
- - - - EXISTING PIPE 50' OF 24" CSP

——— PROPOSED PIPE 80' OF 30" CSP

PROPOSED 6' OF CLASS B STONE RIP-RAP

WHERE EXISTING PIPE IS REMOVED FROM EXISTING ROAD, STREAM BANKS WILL BE SLOPED, MATTED, AND PLANTED WITH NATIVE RIPARIAN VEGETATION.
CROSS VANES WILL BE USED WHERE NEEDED FOR GRADE CONTROL


SITE 28
WBS 34[illegible] 5
R-0619E
NC 281
TRANSYLVANIA COUNTY
SR 1790
204+00.00
35' LT
204+00.00
30' LT
EXISTING R/W
INSTALL 45' OF 18" CSP
REMOVE 25' OF 18" CSP


STATION 204+70
EX. 3056.36'
GRADE TO DRAIN
3051.67'
PROP. 3051.93'
1:1
NOTE: PROPOSED PIPE WILL BE PERCHED DUE TO STEEPNESS OF SLOPE AS WAS THE EXISTING PIPE.
EXISTING PIPE 25' OF 18" CSP
PROPOSED PIPE 45' OF 18" CSP
PROPOSED 6' OF CLASS B STONE RIP-RAP

Stream Reference Reach Data

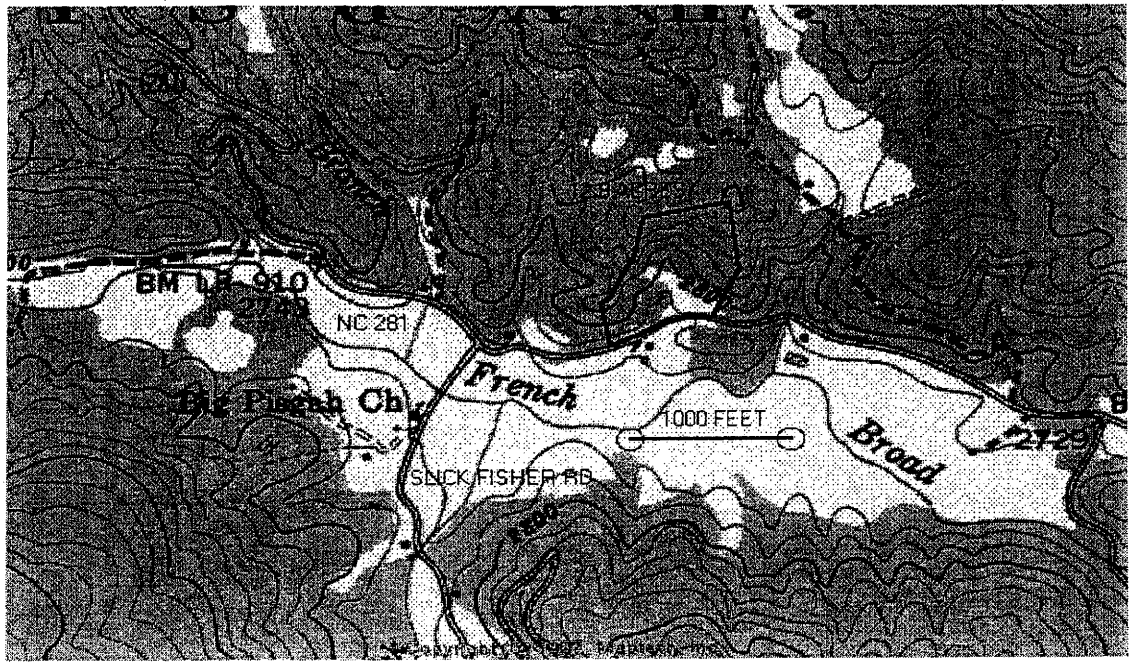
Project Name:	**NC 281 Site 17 Channel Relocation**	Date:	12/3/2003
Stream Name:	Unnamed tributary to West Fork French Broad River		
Basin Name:	French Broad	Drainage Area:	12.8 acres
Location:	1050 feet east of Slick Fisher Road (SR 1306)		
Collection Date:	7/24/2002		
Data collected by:	Jason Tilley, Ed Cabe, Mark Davis, Mitchell Bishop, Larry Haskett, Paul White		

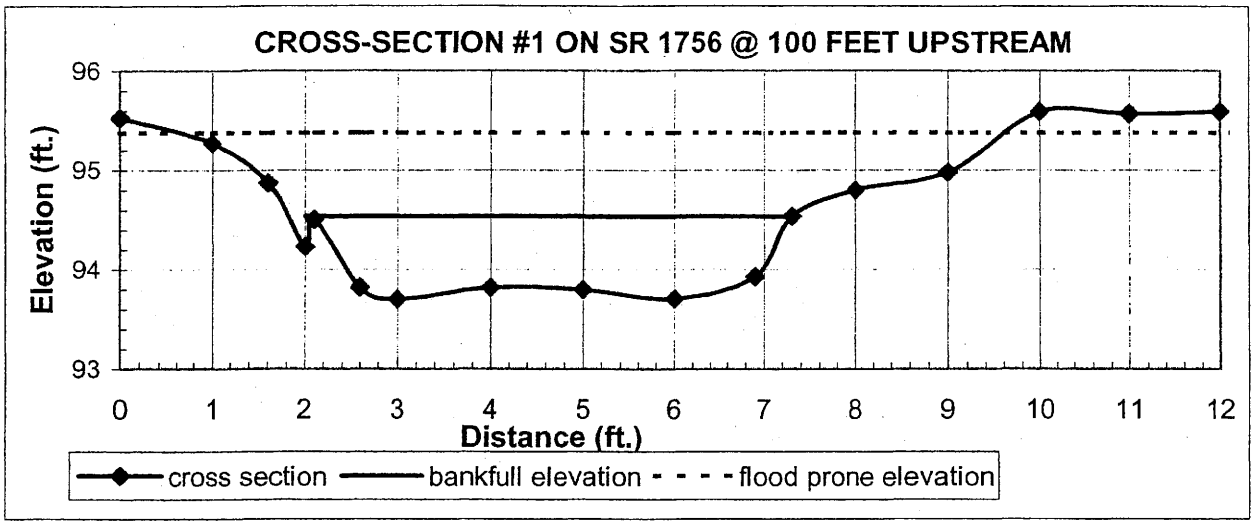
Summary of Stream Impairment and Restoration Goals:

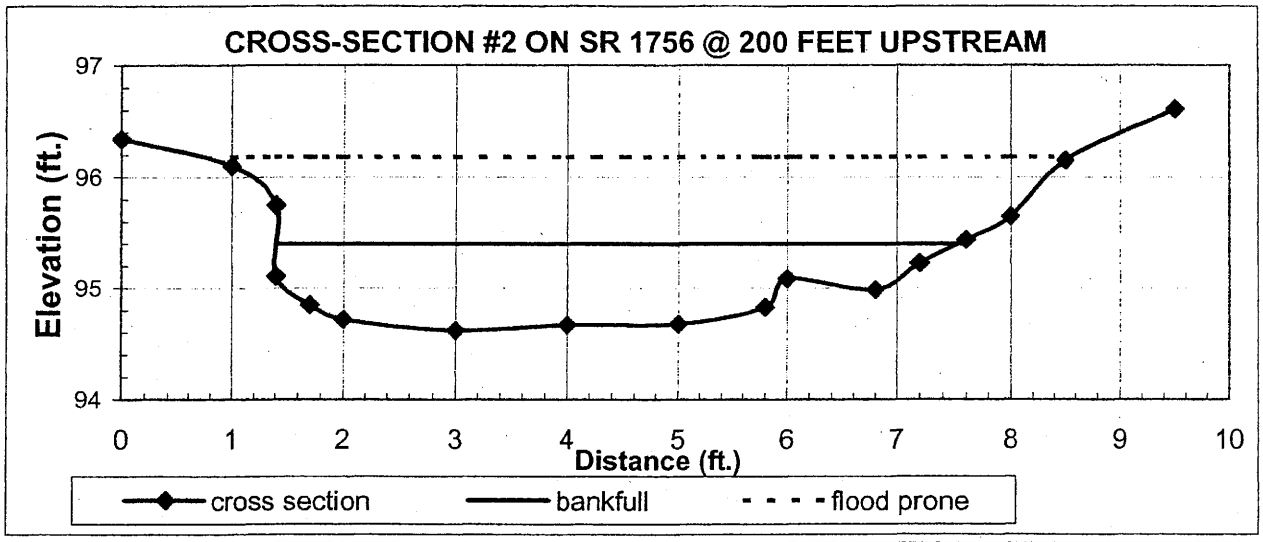
The existing 80 feet of stream affected flows out of an existing cross pipe onto a steep section of channel below the road and flattens out in the edge of the flood plain of the river near the end. The stream flows on the surface and subsurface through silt and discarded metal and other trash, therefore no attempt was made to profile the existing channel. The proposed new channel location is very near the same slope profile and parallels the existing stream. No representative cross sections were available on the existing stream, so three cross sections were measured on 2 other streams in the same area. The gradient requires a step pool design using cross vanes for stability.

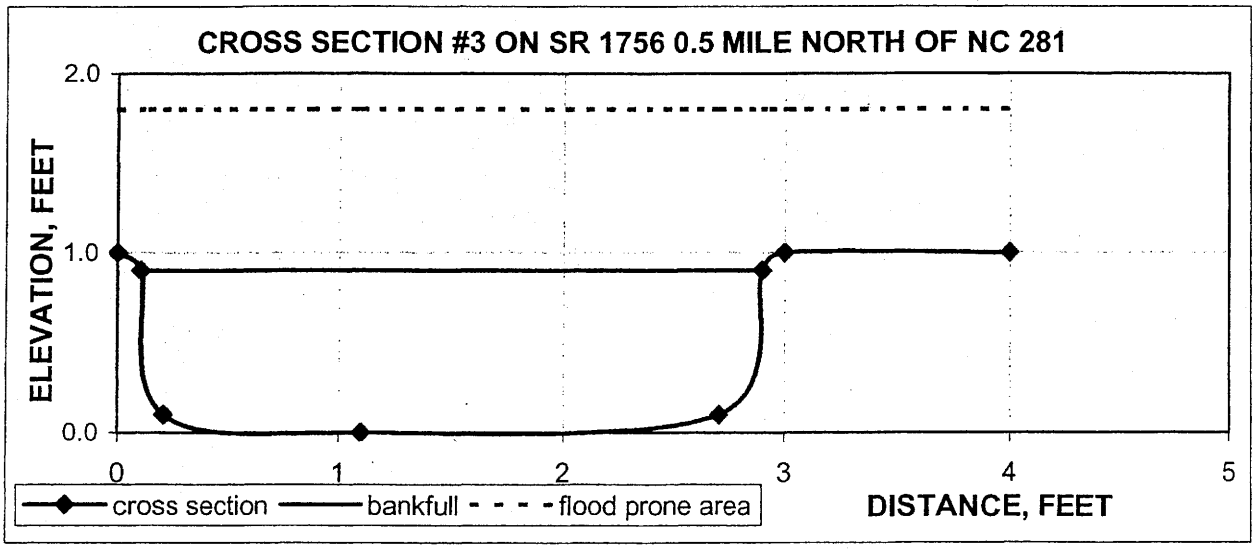
	EXISTING REFERENCES			REGION CURVE	PROPOSED
Bankfull WIDTH (W_{bkf}):	5.2	6.2	2.8	4.9	4.5
Mean DEPTH (D_{bkf}):	0.70	0.58	0.80	0.33	0.50
Bankfull X-sectional AREA (A_{bkf}):	3.64	3.60	2.25	1.61	2.25
Maximum DEPTH (d_{mbkf}):	0.84	0.78	0.9		0.75
WIDTH of Flood-Prone Area (W_{fpa}):	14.2	7.9	6		
Entrenchment Ratio (ER):	2.73	1.27	2.14		
Width / Depth RATIO (W_{bkf}/d_{bkf}):	7.4	10.8	3.5		9.0
Channel SINUOSITY (K):	1.0	1.0	1.0		1.0
Thalweg slope:					0.20
STREAM TYPE:	B	B	B		B

LOCATION MAP

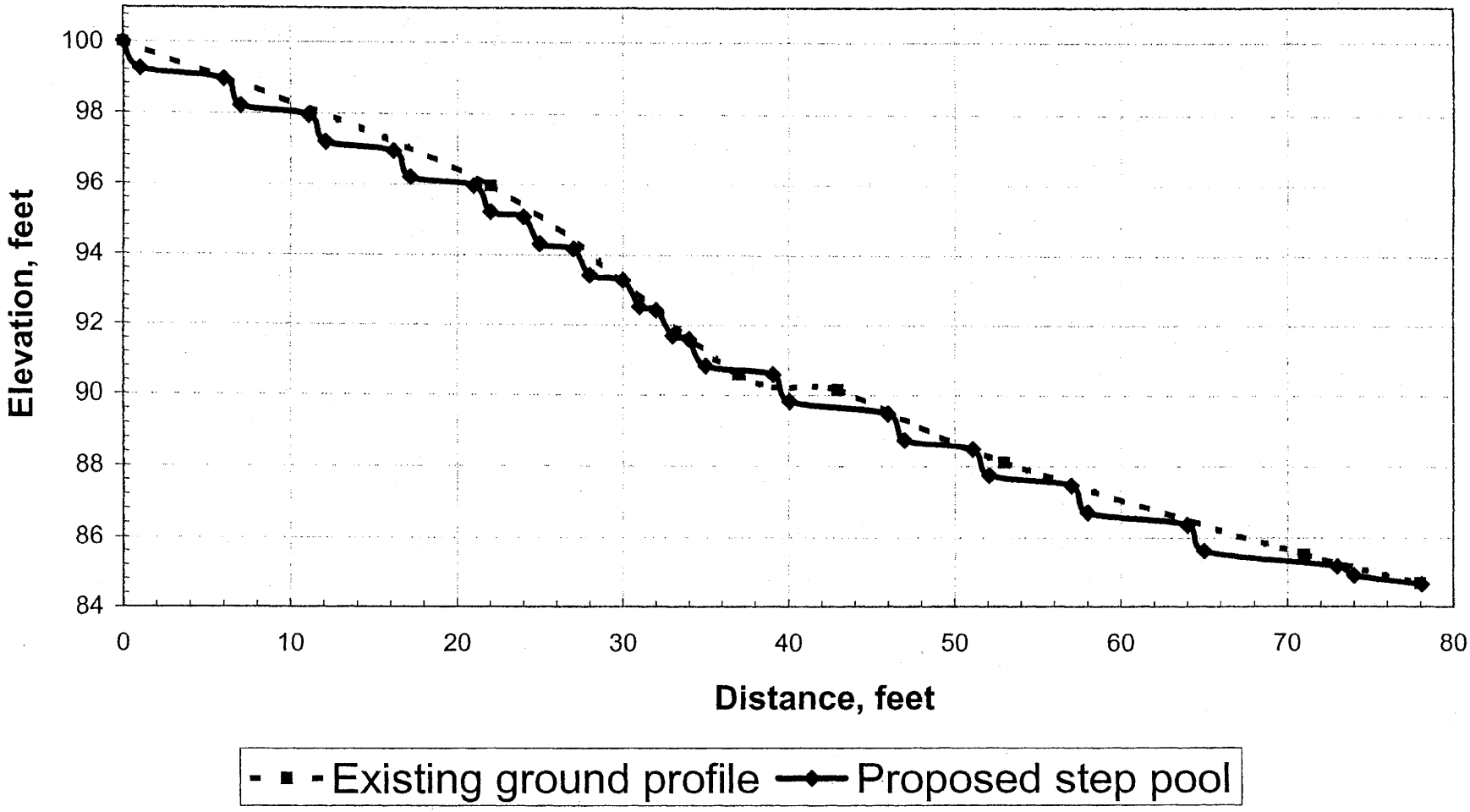



CROSS-SECTION #1 ON SR 1756 @ 100 FEET UPSTREAM
Elevation (ft.)
96
95
94
93
0 1 2 3 4 5 6 7 8 9 10 11 12
Distance (ft.)
cross section
bankfull elevation
flood prone elevation


CROSS-SECTION #2 ON SR 1756 @ 200 FEET UPSTREAM
Elevation (ft.)
97
96
95
94
0 1 2 3 4 5 6 7 8 9 10
Distance (ft.)
cross section
bankfull
flood prone

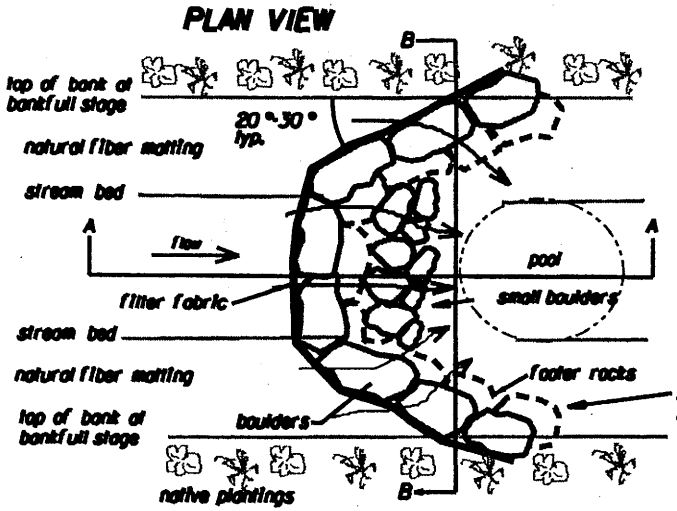

CROSS SECTION #3 ON SR 1756 0.5 MILE NORTH OF NC 281
ELEVATION, FEET
2.0
1.0
0.0
0 1 2 3 4 5
DISTANCE, FEET
cross section
bankfull
flood prone area

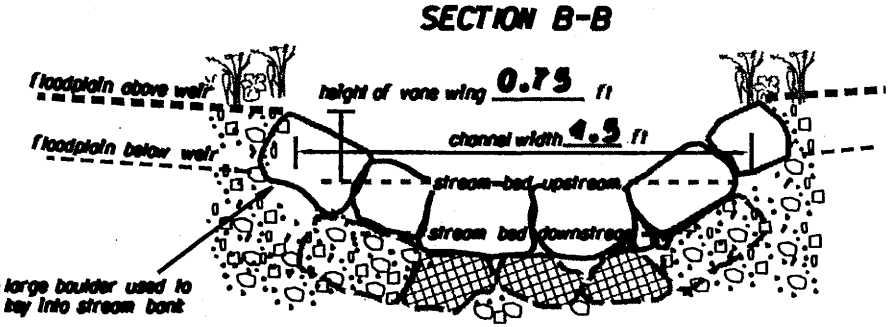
PROPOSED PROFILE OF UN-NAMED TRIBUTARY TO THE WEST FORK FRENCH BROAD RIVER ON NC 281 1050 FEET EAST OF SLICK FISHER ROAD IN TRANSYLVANIA COUNTY



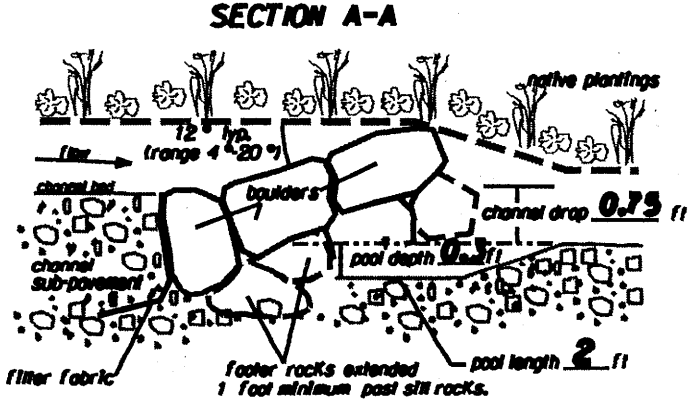
AVERAGE SLOPE =	0.20 FT/FT
SLOPE BETWEEN STEPS =	0.049 FT/FT
AVERAGE STEP =	0.75 FEET
AVERAGE STEP SPACING =	5.1 FEET

CROSS VANE ROCK WEIR DETAIL





Large boulders should be native stone or shot rock, angular and oblong with shortest axis a minimum of 0.7 ft in length.



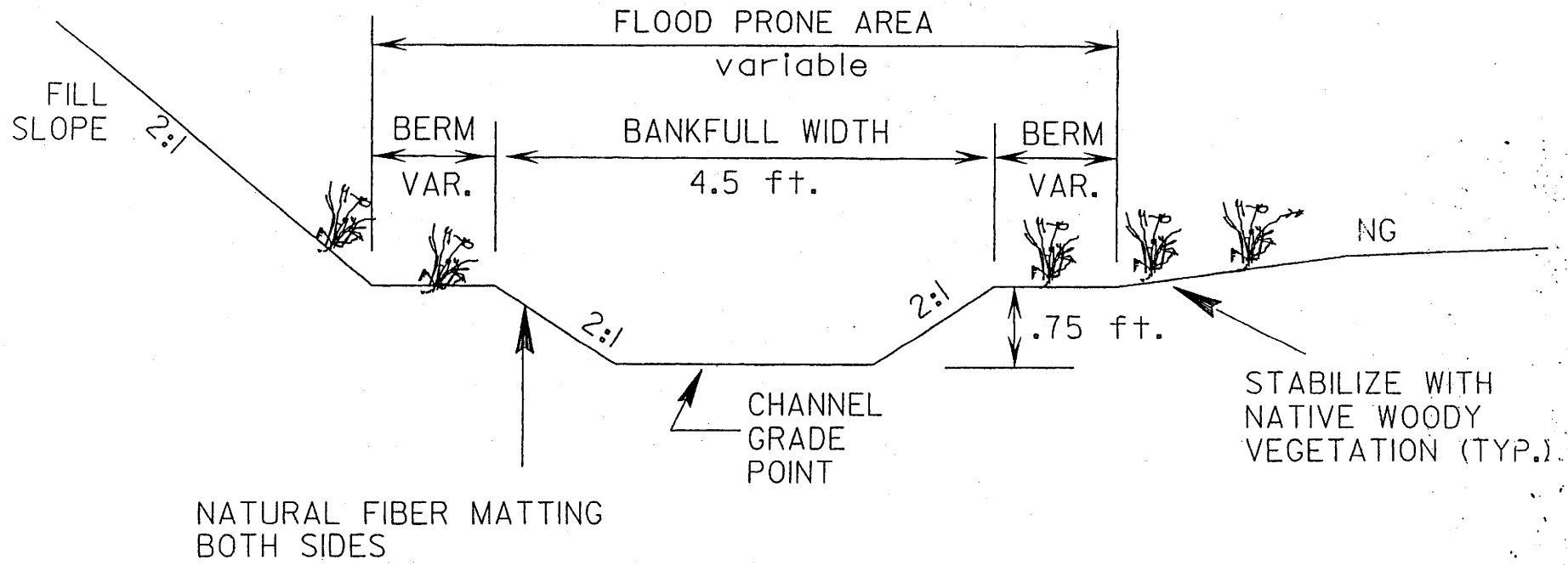
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

UNNAMED TRIBUTARY TO
WEST FORK FRENCH BROAD RIVER

PROJECT NC 281
1060 FT EAST OF
SLICK FISHER RD (SR 1306)

TRANSYLVANIA COUNTY

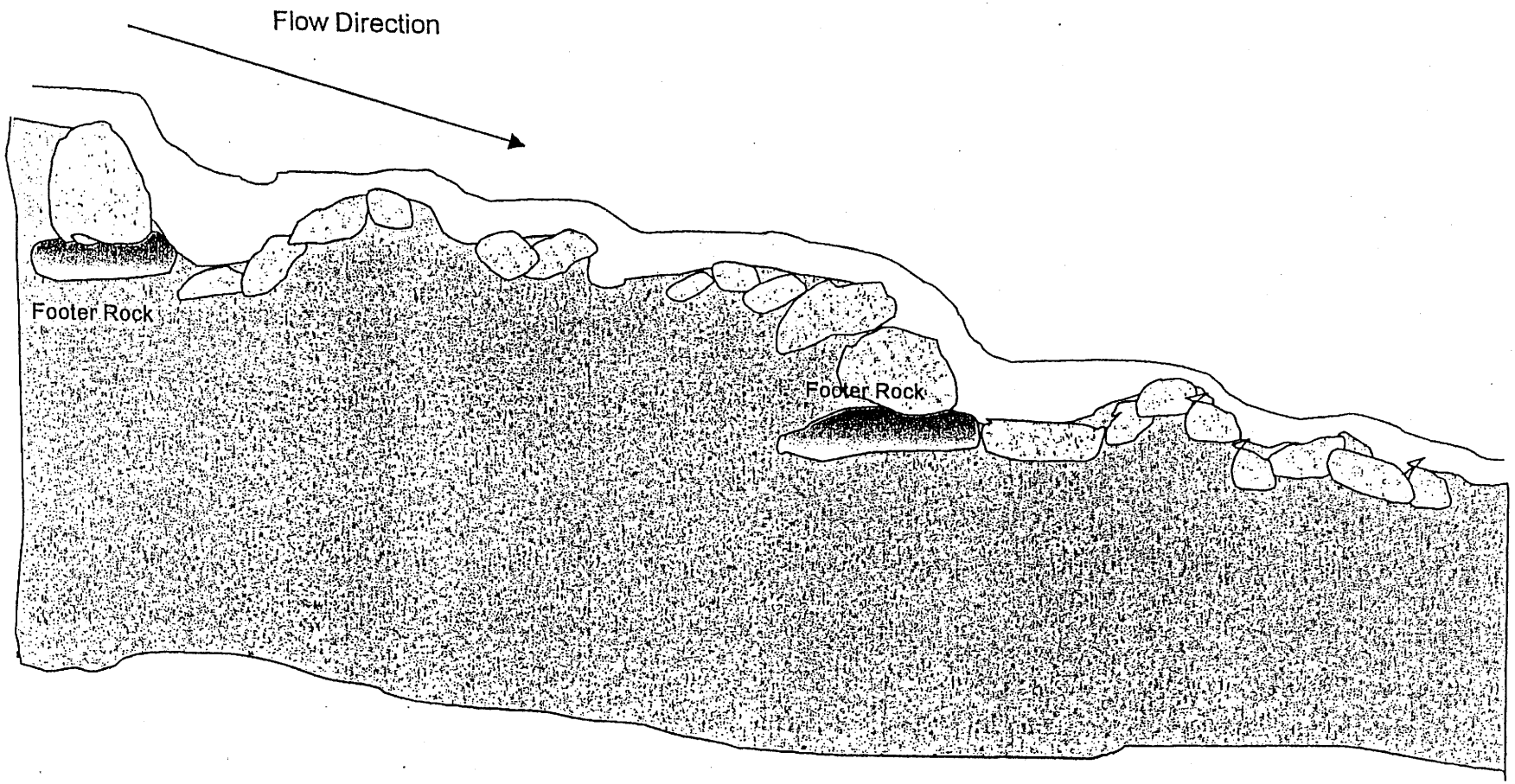
...\NC 281\NC281.dgn 01/28/2004 02:12:40 PM



CROSS SECTION DIMENSIONS

UNNAMED TRIBUTARY TO WEST FORK FRENCH BROAD RIVER IN TRANSYLVANIA COUNTY

STEP POOL HABITAT



PROFILE VIEW