

**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.**



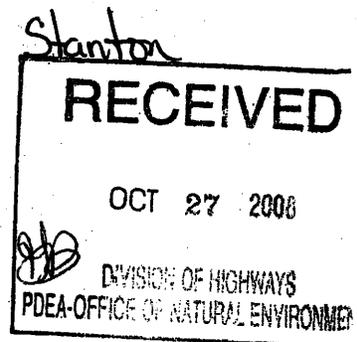
IN REPLY REFER TO

223

DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P. O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

October 23, 2008



Regulatory Division

Action ID Number 2008-01413, Fayetteville Outer Loop, Transportation Improvements Project . X-0002B & C and U-2519, State Project Number 8.2441301 and 8.T441302, Cumberland, Hoke and Robeson Counties.

Dr. Gregory J. Thorpe, PhD, Manager  
Project Development and Environmental Analysis Branch  
North Carolina Department of Transportation  
Division of Highways  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

In accordance with your written request of April 25, 2008 and the ensuing administrative record, enclosed are two copies of a Department of the Army permit to directly discharge dredged and/or fill material into jurisdictional wetlands to facilitate the construction of Fayetteville Outer Loop, Transportation Improvements Project X-0002B & C and U-2519, State Project Number 8.2441301 and 8.T441302, Cumberland, Hoke and Robeson Counties, North Carolina. The proposed 27.8 mile controlled-access freeway is located beginning at an interchange with I-95 just south of SR 1718 (Green Spring Road) in Robeson County, continues north through Cumberland County, turns eastward along the southern boundary of the Fort Bragg Military Reservation, and ends just west of US 401 (Ramsey Street).

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.

This correspondence contains a proffered permit for the above described project. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR part 331.

Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the District Commander, Wilmington District Corps of Engineers at the following address:

Colonel Jefferson M. Ryscavage, District Commander  
U.S. Army Corps of Engineers, Wilmington District  
Post Office Box 1890  
Wilmington, North Carolina 28402-1890

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete; that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by December 23, 2008.

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

After the permit is authorized in this office, the original copy will be returned to you; the duplicate copy will be permanently retained in this office. Should you have questions, contact Mr. Richard K. Spencer of my Wilmington Field Office regulatory staff at telephone (910) 251-4172.

Sincerely,



*fof*

Jefferson M. Ryscavage  
Colonel, U.S. Army  
District Commander

Enclosures



**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.

226

**SECTION III - 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.

**FOR CONTACT FOR QUESTION OR INFORMATION:**  
If you have questions regarding this decision and/or the appeal process you may contact:

Mr. Richard K. Spencer, Regulatory Project Manager  
U.S. Army Corps of Engineers, Wilmington District  
Wilmington Regulatory Field Office  
69 Darlington Avenue  
Wilmington, North Carolina 228402

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 30303-3490

## DEPARTMENT OF THE ARMY PERMIT

Permittee **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

Permit No. **2008-01413**

Issuing Office **USAED, Wilmington**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of 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: **Directly discharge dredged or fill material into waters of the United States associated with construction of the Fayetteville Outer Loop from I-95 South of Fayetteville to NC 24/87 in Cumberland and Robeson Counties, North Carolina.**

Project Location: **In the Lumber River, Hydrologic Cataloging Unit 03040203 and the Cape Fear River, Hydrologic Cataloging Unit 03030004. The project is more specifically located starting at Latitude 34.89727 N, Longitude 78.95899 W and ending at Latitude 35.11051, Longitude 78.97456.**

a. Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2011**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

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

Special Conditions:

## SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
  - Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - 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.

E. P. Lusk for Dr. Gregory J. Thayer, PhD 10-29-08  
 (PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE)

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

\_\_\_\_\_  
 (DISTRICT ENGINEER) JEFFERSON M. RYSCAVAGE, COLONEL (DATE)

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

\_\_\_\_\_  
 (TRANSFEREE) (DATE)

## SPECIAL CONDITIONS

2008-01413

SPECIAL CONDITIONS (Action ID. 2008-01413, Fayetteville Outer Loop, Transportation Improvements Project . X-0002B & C and U-2519, State Project Number 8.2441301 and 8.T441302

1. 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 of the United States, including wetlands, associated with the permitted project, or such other remedies and/or fines as the U.S. Army Corps of Engineers District Commander or his authorized representatives may seek.
2. All work authorized by this permit must be preformed in strict compliance with the attached plans, which are a part of this permit.
3. The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Mr. Richard Spencer, Wilmington Regulatory Field Office, 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 notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meetings in order to provide that individual with ample opportunity to schedule and participate in the required meetings. One copy of the final half-size construction drawings shall be furnished to the Corps of Engineers, Mr. Richard Spencer, Wilmington Regulatory Field Office prior to the pre-construction meeting.
4. The permittee shall 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, Mr. Richard Spencer, Wilmington Regulatory Field Office prior to any active construction in waters or wetlands.
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. Copies of this permit and any modifications authorized by the USACE shall be available for review at the construction site at all times. All violations, including non-compliance of these conditions, of the authorized permit shall be reported to the District Engineer within 24 hours of the violation.
- \*6. Compensatory mitigation for the unavoidable impacts to 34.84 acres of riparian wetlands and 13.59 acres of non-riparian wetlands associated with the proposed project shall be provided by

debiting 104.52 acres of riparian wetlands and 40.77 acres of non-riparian wetlands from the Privateer Farms Mitigation Site. Compensatory mitigation for the unavoidable impacts to 12,346 linear feet of important stream reach associated with the proposed project shall be provided by debiting 18,519 linear feet of stream reach from the Privateer Farms Mitigation Site. The permittee shall maintain the Privateer Farms Mitigation Site in its natural condition, as altered by the mitigation plan, in perpetuity. Except as authorized or required by the mitigation plan, prohibited activities on the mitigation property include, but are not limited to, filling; grading; excavating; earth moving of any kind; construction of roads, walkways, buildings signs, or any other structure; any activity that may alter the drainage patterns on the property; destruction, mowing, or other alteration of vegetation on the property; disposal or storage of any garbage trash, or other waste material. In addition, the permittee shall take no action, whether on or off the mitigation property, which will adversely impact the wetlands on the mitigation property. This condition above, runs with the land. The permittee shall not sell, lease, or otherwise convey any interest in the mitigation property without subjecting the property to legally enforceable restrictions on the use of the property, to ensure its preservation, approved in writing by the Wilmington District Corps of Engineers.

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. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project. 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 loss or 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 ensure that all such areas comply with the preceding condition (#7) 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 (#7). All information will be available to the Corps of Engineers 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 shall comply with the conditions specified in the water quality certification, No. 3758, issued by the North Carolina Division of Water Quality on 6 October 2008.

11. The permittee shall abide by the conservation measures identified in the Biological Assessment prepared for the Red-cockaded Woodpecker, *Piocoides borealis*, dated 9 September 2004 and the conservation measures identified by the US Fish and Wildlife Service in the Biological Opinion dated 28 April 2005.

12. This Corps permit does not authorize you to take an endangered species, in particular the Red Cockaded Woodpecker. In order to legally take a listed species, you must have separate authorization under the ESA. (e.g., an ESA Section 10 permit, or a BO under the ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed USFWS Biological Opinion, dated 28 April 2005, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and the ESA.

13. The permittee shall continue coordination of design for U-2519 Sections AA, AB, BA, BB, CA and CB through the NEPA/Section 404 Merger 01 Process – Concurrence points 2A, 4B and 4C. The final design shall incorporate appropriate avoidance, minimization and mitigation of aquatic resource impacts to the fullest extent practicable. The applicant shall not commence any work within waters of the United States within U-2519 Sections AA, AB, BA, BB, CA and CB until after the submittal of a modified application with final design plans reflecting the appropriate avoidance, minimization and mitigation within these sections and has received final approval from Wilmington District Corps of Engineers.

14. 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. Riprap armoring of streams at culvert 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 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. 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). Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

16. The permittee shall take appropriate measure to control any bottom sediment that may be sluiced by the draining of impacted ponds on the project site. Sediment sluicing from ponds is not authorized by this permit.

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

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

19. The permittee shall install barrier fencing or other acceptable forms of barrier around all wetlands that are not to be disturbed to make them readily visible and prevent construction equipment from inadvertently entering and disturbing the wetland areas that are to remain undisturbed.

20. 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.

21. The permittee shall abide by all project commitments identified in the FHWA/NCDOT EIS and ROD.

22. The permittee shall abide by all stipulations identified in the Memorandum of Agreement between the North Carolina Department of Transportation and the North Carolina State Historic Preservation Officer, executed 12 April 2005, and the stipulations identified in the Concurrence Form for Assessment of Effects, executed 11 January 2005.

23. If the permittee discovers any previously unknown historic or archeological sites while accomplishing the authorized work, he shall immediately stop work and notify the Wilmington District Engineer who will initiate the required State/Federal coordination.
24. The permittee shall maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.
25. 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.
26. This Department of the Army permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
27. 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.



**RECEIVED**

October 6, 2008

OCT - 8 2008

**REGULATORY  
WILM.FLD.OFC.**

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

Subject 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water with ADDITIONAL CONDITIONS for Proposed Fayetteville Outer Loop in Cumberland, Hoke and Robeson Counties, Federal Aid Project No NHF-DPR-0100(001), State Project No 8 2441301, TIP Nos X-002 B&C and U-2519  
DWQ Project No 20080737

Dear Dr Thorpe

Attached hereto is a copy of Certification No 3758 issued to The North Carolina Department of Transportation dated October 6, 2008

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

Sincerely,

Coleen Sullins,  
Director

**Attachments**

cc Richard Spencer, US Army Corps of Engineers, Wilmington Field Office  
Tyler Stanton, NCDOT NEU  
Jim Rerko, DOT Division 6 Environmental Officer  
Kathy Matthews, Environmental Protection Agency  
Travis Wilson, NC Wildlife Resources Commission  
Beth Harmon, Ecosystem Enhancement Program  
Ken Averitte, DWQ Fayetteville Regional Office  
File Copy



**401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS**

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H 0500. This certification authorizes the NCDOT to impact 57.08 acres of jurisdictional wetlands and 13,232 linear feet of jurisdictional streams in Cumberland, Hoke and Robeson Counties. The project shall be constructed pursuant to the application dated received April 25, 2008. The authorized impacts are as described below.

**Section X-0002 B Stream Impacts in the Cape Fear River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Impacts to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Impacts to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
2	0	0	213	0	213	213
<b>Total</b>	<b>0</b>	<b>0</b>	<b>213</b>	<b>0</b>	<b>213</b>	<b>213</b>

Total Stream Impact for Section X-0002 B : 213 linear feet

**Section X-0002 C Stream Impacts in the Cape Fear River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Impacts to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Impacts to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	0	0	279	0	279	279
3	0	0	775	0	775	775
5	0	0	361	0	361	361
6	0	0	479	0	479	479
7	0	0	213	0	213	213
8	0	0	509	0	509	509
9	0	0	98	0	98	98
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2714</b>	<b>0</b>	<b>2714</b>	<b>2714</b>

Total Stream Impact for Section X-0002 C : 2,714 linear feet

**Section U-2519 E Stream Impacts in the Cape Fear River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Impacts to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Impacts to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
2	886	0	0	0	886	0
<b>Total</b>	<b>886</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>886</b>	<b>0</b>

Total Stream Impact for Section U-2519 E: 886 linear feet



This approval is only valid for the purpose and design that you submitted in your application dated received April 25, 2008. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H 0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

### Conditions of Certification

1. This Water Quality Certification authorizes impacts to wetlands, streams and open waters to sections X-0002 B and C, and U-2519 DA and E only. When final design plans are completed for U-2519 Sections AA, AB, BA, BB, CA, and CB, modifications to the 401 Water Quality Certification shall be submitted with four copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, or surface waters, located in U-2519 Sections AA, AB, BA, BB, CA or CB shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Quality.
- \* 2. Compensatory mitigation for 12,346 linear feet of impact to streams is required. We understand that you have chosen to debit mitigation from the Privateer Farm Mitigation Bank. This certification gives approval to the debiting of 12,346 linear feet of stream mitigation from the Privateer Farms Mitigation Site in order to satisfy the mitigation requirements of this project.
- \* 3. Compensatory mitigation for 48.4 acres of wetlands is required at a 2.5:1 ratio. We understand that you have chosen to debit mitigation from the Privateer Farm Mitigation Bank. This certification gives approval to the debiting of 121.0 acres of wetland mitigation from the Privateer Farms Mitigation Site in order to satisfy the mitigation requirements of this project.
4. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species. The permittee shall observe any natural channel re-establishment, or utilize natural channel construction techniques, to ensure that the jurisdictional stream channel above and below the drained pond remain stable, and that no additional impacts occur within the natural stream channel as a result of draining the pond.
5. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species.
6. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.
7. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.



8 For any streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species

9 Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

10 If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

11 Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

12 One copy of the final construction drawings shall be furnished to NCDWQ Central Office, and one copy to the NCDWQ Fayetteville Regional Office, prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application dated received April 25, 2008. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Quality.

13 If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

14 During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.

15 The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.

16 The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.

17 The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.

18 All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

19 Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.

20 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.



- 21 No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification
- 22 Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited
- 23 The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification
- 24 All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification
- 25 A copy of this Water Quality Certification shall be maintained on site at 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
- 26 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
- 27 The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc
- 28 The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery
- 29 Upon completion of the project (including any impacts at associated borrow or waste site), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed
- 30 Native woody riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction
- 31 There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities
- 32 Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards
  - a The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*



- b The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
- c For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- d The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

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

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

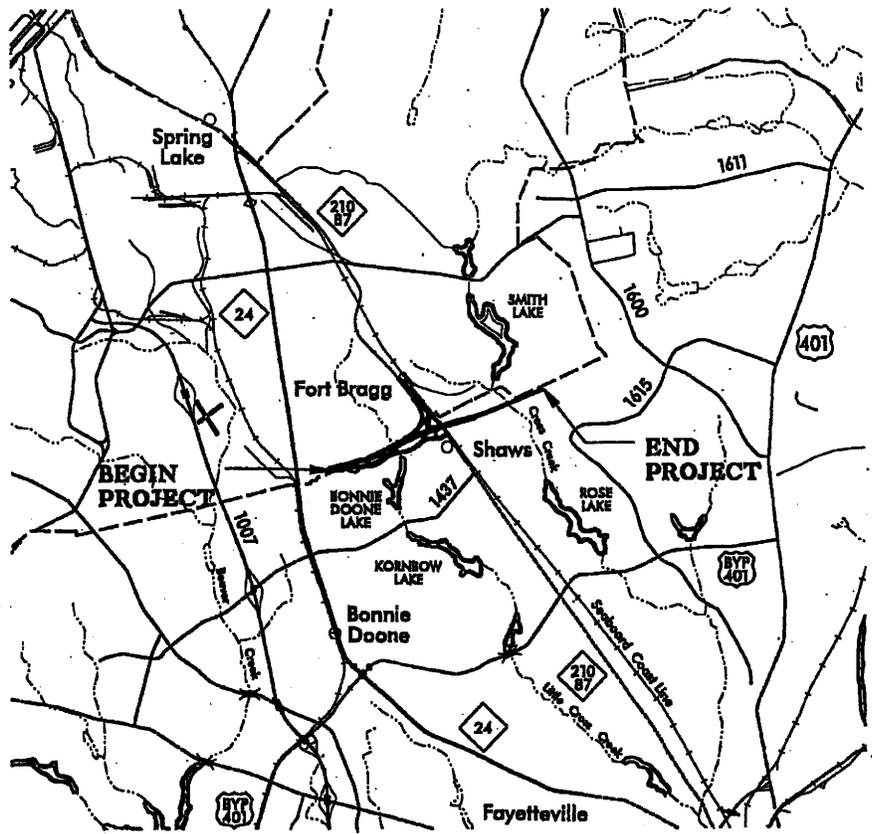
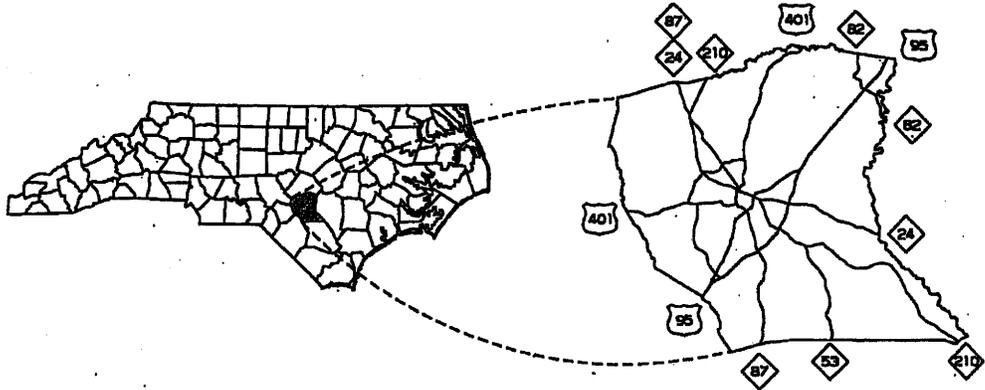
If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed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

This the 6th day of October 2008

DIVISION OF WATER QUALITY

Coleen Sullins  
Director

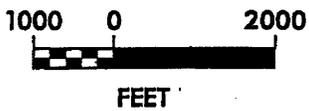
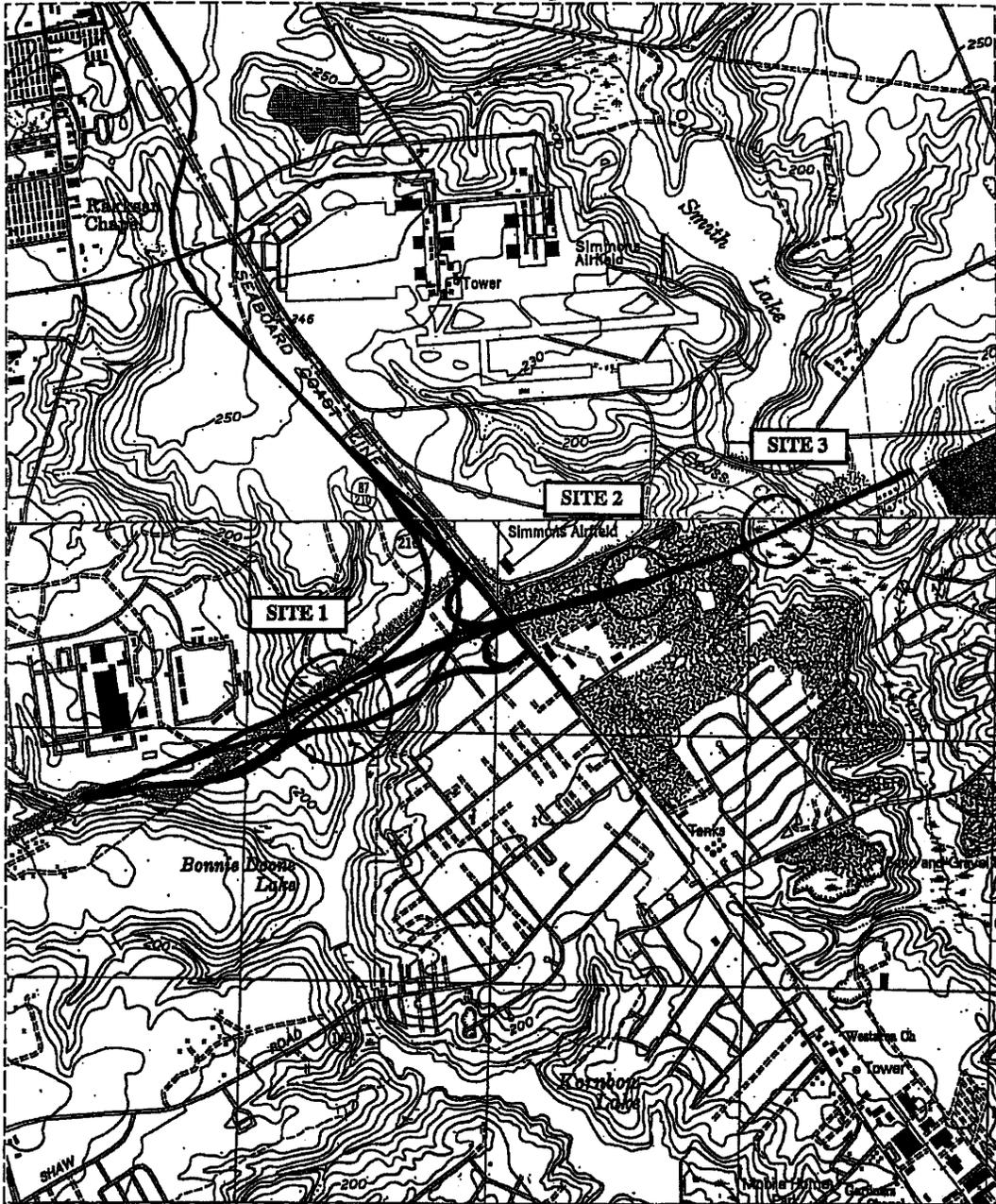
WQC No 3758



N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 CUMBERLAND COUNTY  
 PROJECT: 35196.13 (X-0002B)  
 FAYETTEVILLE OUTER LOOP  
 FROM EAST OF NC 24 (BRAGG BLVD)  
 TO 1.74 km EAST OF  
 NC87/NC 210 (MURCHINSON RD)

SHEET \_\_\_\_ OF \_\_\_\_ 04/11/07

Permit Drawing  
 Sheet 1 of 29



N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
CUMBERLAND COUNTY  
PROJECT: 35196.13 (X-0002B)  
FAYETTEVILLE OUTER LOOP  
FROM EAST OF NC 24 (BRAGG BLVD.)  
TO 1.74 km EAST OF  
NC87/NC 210 (MURCHINSON RD.)

SHEET \_\_\_\_\_ OF \_\_\_\_\_ 04/11/07

Permit Drawing  
Sheet 2 of 29

**LEGEND**

	WETLAND BOUNDARY		PROPOSED BRIDGE
	WETLAND		PROPOSED BOX CULVERT
	DENOTES FILL IN WETLAND		PROPOSED PIPE CULVERT
	DENOTES FILL IN SURFACE WATER	(DASHED LINES DENOTE EXISTING STRUCTURES)	
	DENOTES FILL IN SURFACE WATER (POND)		SINGLE TREE
	DENOTES TEMPORARY FILL IN WETLAND		WOODS LINE
	DENOTES EXCAVATION IN WETLAND		DRAINAGE INLET
	DENOTES TEMPORARY FILL IN SURFACE WATER		ROOTWAD
	DENOTES HAND CLEARING		RIP RAP
	DENOTES MECHANIZED CLEARING		ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE
	RIPARIAN BUFFER ZONE		RIP RAP ENERGY DISSIPATOR BASIN
	FLOW DIRECTION		
	TOP OF BANK		
	EDGE OF WATER		
	PROP. LIMIT OF CUT		
	PROP. LIMIT OF FILL		
	PROP. RIGHT OF WAY		
	NATURAL GROUND		
	PROPERTY LINE		
	TEMP. DRAINAGE EASEMENT		
	PERMANENT DRAINAGE EASEMENT		
	EXIST. ENDANGERED ANIMAL BOUNDARY		
	EXIST. ENDANGERED PLANT BOUNDARY		
	WATER SURFACE		
	LIVE STAKES		
	BOULDER		
	COIR FIBER ROLLS		

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 CUMBERLAND COUNTY  
 PROJECT: 35196.13 (X-0002B)  
 FAYETTEVILLE OUTER LOOP  
 FROM EAST OF NC 24 (BRAGG BLVD.)  
 TO 1.74 km EAST OF  
 NC87/NC 210 (MURCHINSON RD.)

Project No. 35196.1.3 (X-0002B)

Property Owner List

Parcel Number	Name	Address
1	United States of America Fort Bragg Military Reservation	Fort Bragg, Fayetteville
2	City of Fayetteville	433 Hay St. Fayetteville, NC 28301
31	Crowell Constructors, Inc.	6050 Murchison Rd. Fayetteville, NC 28311

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
CUMBERLAND COUNTY  
PROJECT: 35196.1.3 (X-0002B)  
FAYETTEVILLE OUTER LOOP  
FROM EAST OF NC 24 (BRAGG BLVD.)  
TO 1.74 km EAST OF  
NC87/NC 210 (MURCHINSON RD.)  
SHEET \_\_\_\_ OF \_\_\_\_ 04/11/07

Permit Drawing  
Sheet 4 of 29

WETLAND PERMIT IMPACT SUMMARY															
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS								
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW Impacts (ac)	Temp. SW Impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)			
1a	-TT7-21+44 / 22+24		-	-	-	-	0.22	-	-	-	-	-	-	-	-
1b	-L-57+45 / 58+84	Work Bridge	-	-	-	-	1.42	-	-	-	-	-	-	-	-
1c	-FLYOVER- 16+28 / 17+04	Work Bridge	-	-	-	-	0.59	-	-	-	-	-	-	-	-
2	-L-71+53 / 73+84	Roadway Fill	-	-	-	-	-	-	-	0.11	-	-	213.3	-	-
3	-L-76+32 / 78+57	Work Bridge	-	-	-	-	1.59	-	-	-	-	-	-	-	-
<b>TOTALS:</b>			0.00	0.00	0.00	0.00	3.82	0.11	0.00	0.00	0.00	213	0	0	0

The work bridge from Site 1a was removed. The proposed bridge will be built using top down construction.

A Total Impact of 0.01 acres is anticipated due to bridge pair construction.

The permanent surface water impact due to the pond at Site 2 is 2.58 Acres.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 CUMBERLAND COUNTY  
 PROJECT 35196.1.3 (X-0002B)

SHEET OF 4/10/2008

Permit Drawing  
 Sheet 5A of 27

WETLAND PERMIT IMPACT SUMMARY																
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS								
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)				
1a	-T17-21+44 / 22+24		-	-	-	-	-	0.09	-	-	-	-	-	-	-	-
1b	-L-57+45 / 58+84	Work Bridge	-	-	-	-	-	0.57	-	-	-	-	-	-	-	-
1c	-FLYOVER- 16+28 / 17+04	Work Bridge	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-
2	-L-71+53 / 73+84	Roadway Fill	-	-	-	-	-	-	-	0.04	-	-	65.0	-	-	-
3	-L-76+32 / 78+57	Work Bridge	-	-	-	-	-	0.84	-	-	-	-	-	-	-	-
TOTALS:			0.00	0.00	0.00	0.00	1.54	0.04	0.00	0.00	0.00	0	65	0	0	0

The work bridge from Site 1a was removed. The proposed bridge will be built using top down construction.

A Total Impact of < 0.01 ha is anticipated due to bridge pair construction.

The permanent surface water impact due to the pond at Site 2 is 1.04 ha.

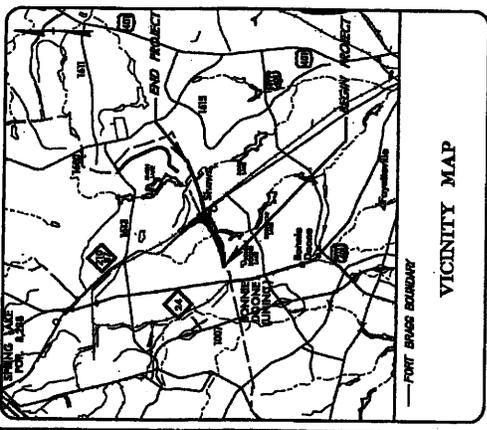
NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
CUMBERLAND COUNTY  
PROJECT 35196.1.3 (X-0002B)

SHEET OF 4/10/2008

Permit Drawing  
Sheet 5b of 29

# CONTRACT: TIP PROJECT: X-0002B

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



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN AND PROFILE OF PROPOSED  
STATE HIGHWAY

## CUMBERLAND COUNTY

**LOCATION:** FAYETTEVILLE OUTER LOOP FROM EAST OF NC 24 (BRAGG BLVD.) TO 1.74 km EAST OF NC 87 / NC 210 (MURCHISON RD.)

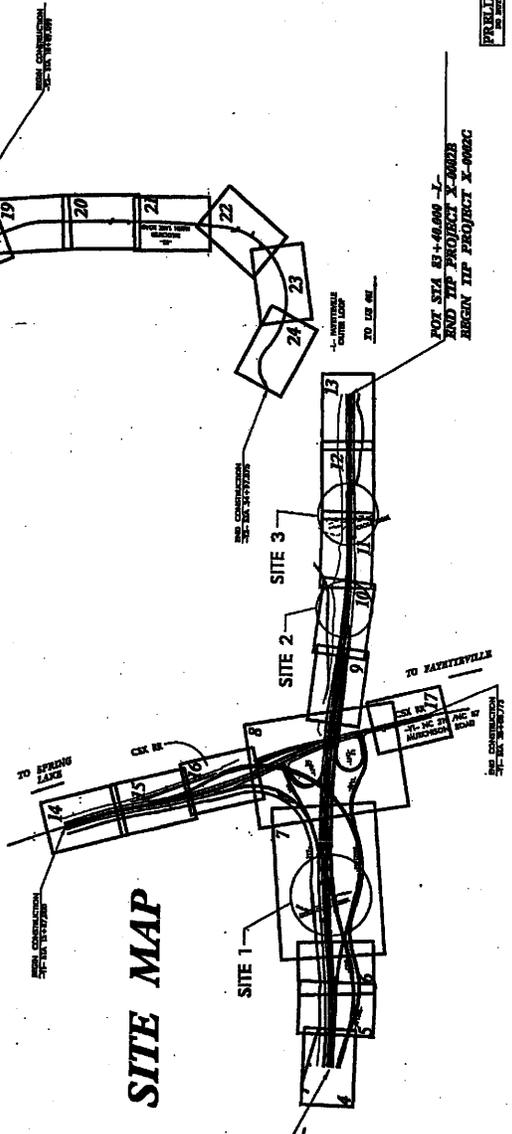
**TYPE OF WORK:** GRADING, STRUCTURES, PAVING, GUARDRAIL, CURB AND GUTTER, DRAINAGE, SIGNALS, AND SIGNING

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

N.C. PROJECT NUMBER	X-0002B	SHEET NUMBER	1
REVISED BY	DATE	BY	DATE
REVISED BY	DATE	BY	DATE
REVISED BY	DATE	BY	DATE

Permit Drawing  
Sheet 0 of 01

## X-0002B: WETLAND SITE MAP



**DESIGN DATA**

ADT 2008 = 57,500  
ADT 2030 = 74,300

DIV = 9 %  
D = 55 %  
T = 12 %

V = 110 km/h  
\* TST 4% + DUAL 8%  
FUNC. CLASS - INTERSTATE

**GRAPHIC SCALE**

PLANS  
0 10  
500

PROFILE (HORIZONTAL)  
0 10  
500

PROFILE (VERTICAL)  
0 10  
500

NOTE: THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE

**PROJECT LENGTH**

LENGTH OF ROADWAY, TIP PROJECT X-0002B = 2.879 km  
LENGTH OF STRUCTURES, TIP PROJECT X-0002B = 0.481 km  
TOTAL LENGTH, TIP PROJECT X-0002B = 3.360 km

\*NOTE: LENGTH BASED ON WBL BRIDGES

Prepared in the Office of  
**Ralph Whitehead Associates, Inc.**  
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATE:  
May 31, 2006

LETTING DATE:  
June 11, 2008

PROJECT MANAGER:  
JOSEPH FREEMAN, P.E.

PROJECT DESIGN ENGINEER:  
JOSEPH FREEMAN, P.E.

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

STATE HIGHWAY PROJECT NUMBER: X-0002B

247

PRELIMINARY PLANS  
DO NOT BE USED FOR CONSTRUCTION

CONTRACTOR'S NOTE: THIS PROJECT IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND LOCAL GOVERNMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND LOCAL GOVERNMENTS.

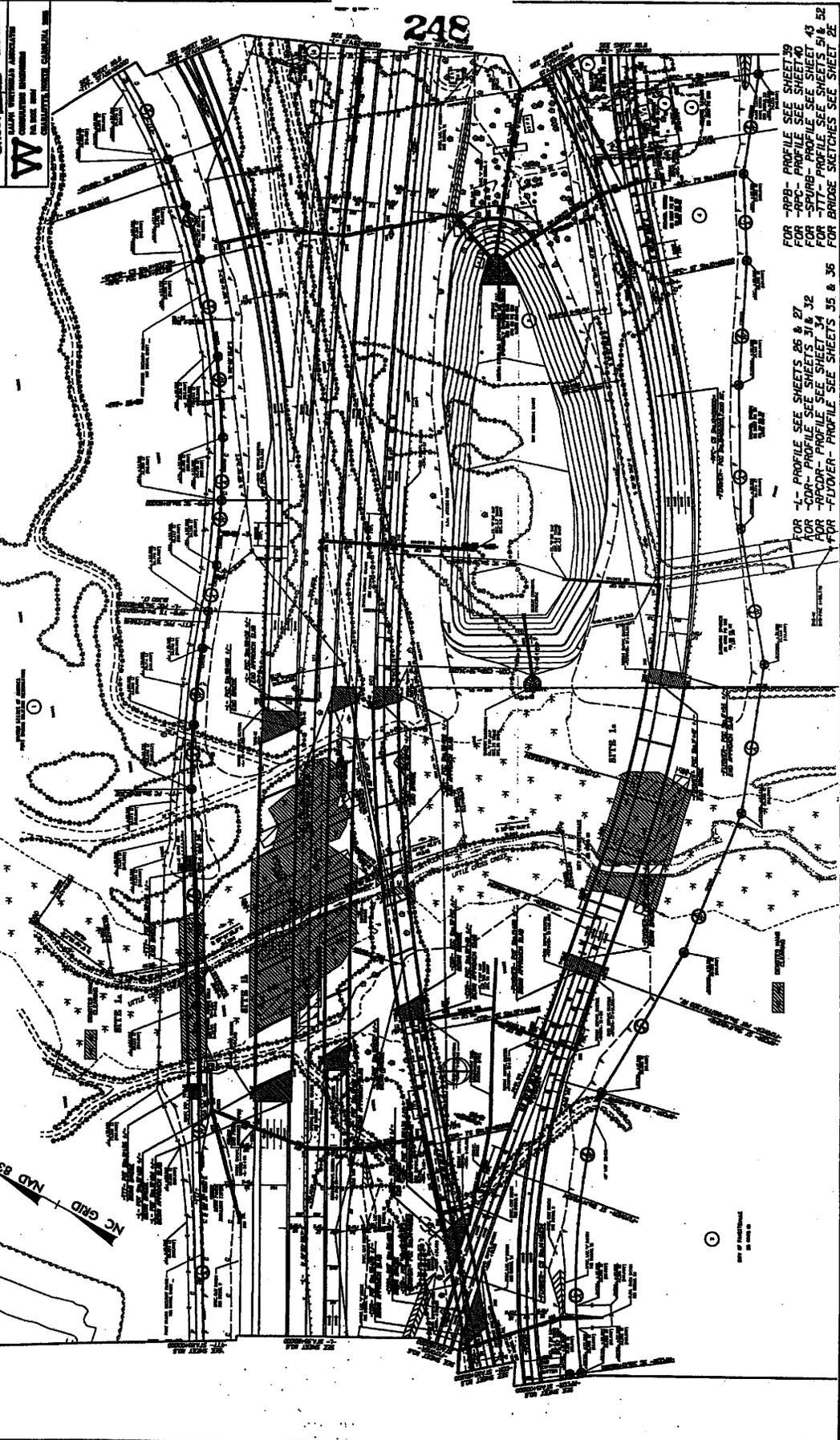
**METRIC**

CONTRACT NO. 248

DATE: 10/1/88

SCALE: 1" = 40'

PROJECT REFERENCE NO.	SHEET NO.
248	7
DATE	DATE
10/1/88	10/1/88
DESIGNED BY	CHECKED BY
ENGINEER	ENGINEER
PRELIMINARY PLANS INCOMPLETE PLANS PERMIT DRAWING <b>Sheet 7 of 28</b>	



REVISIONS

NO GRID NAD 83

FOR -PPB- PROFILE SEE SHEET 39  
 FOR -RPC- PROFILE SEE SHEET 40  
 FOR -SPUB- PROFILE SEE SHEET 43  
 FOR -STTT- PROFILE SEE SHEETS 51 & 52  
 FOR BRIDGE SKETCHES SEE SHEET 28

FOR -L- PROFILE SEE SHEETS 26 & 27  
 FOR -COR- PROFILE SEE SHEETS 31 & 32  
 FOR -COP- PROFILE SEE SHEET 34  
 FOR -FLOWER- PROFILE SEE SHEETS 35 & 36

DATE OF PLOT: 10/1/88



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

2. DESIGN BY \_\_\_\_\_

ROADWAY DESIGNER

PRELIMINARY BY \_\_\_\_\_

INCOMPLETE PLANS BY \_\_\_\_\_

PERMIT DRAWING BY \_\_\_\_\_

Sheet 9 of 24

DATE: \_\_\_\_\_

CONTRACT NO. \_\_\_\_\_

BY \_\_\_\_\_

FOR \_\_\_\_\_

**METRIC**

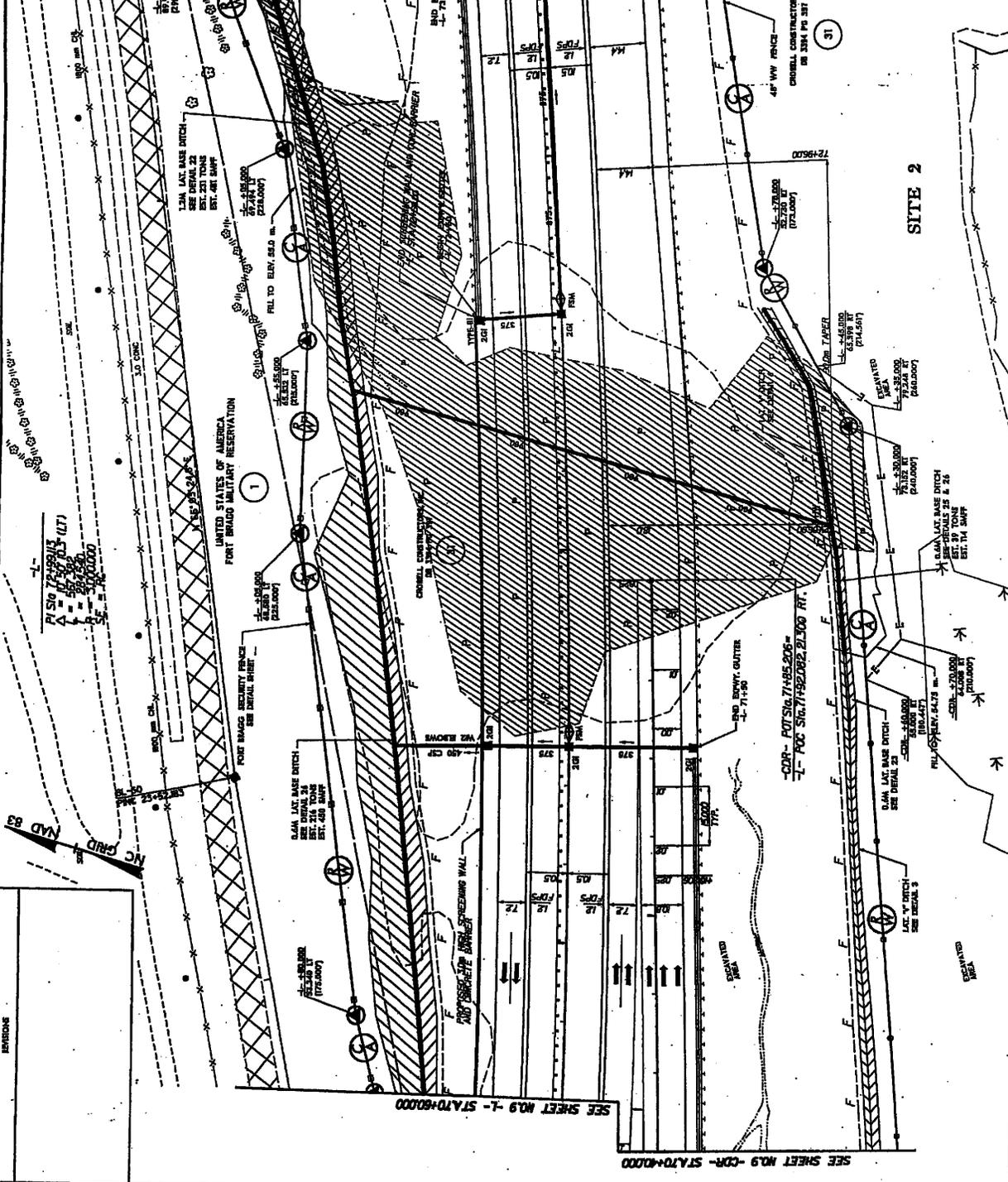
CONVERSION

1/4" = 1' (VERTICAL)

1" = 100' (HORIZONTAL)

250

SEE SHEET NO. 1 - STA 7+00.00



DENOTES FILL IN SURFACE WATER  
 DENOTES FILL IN SURFACE WATER

SITE 2

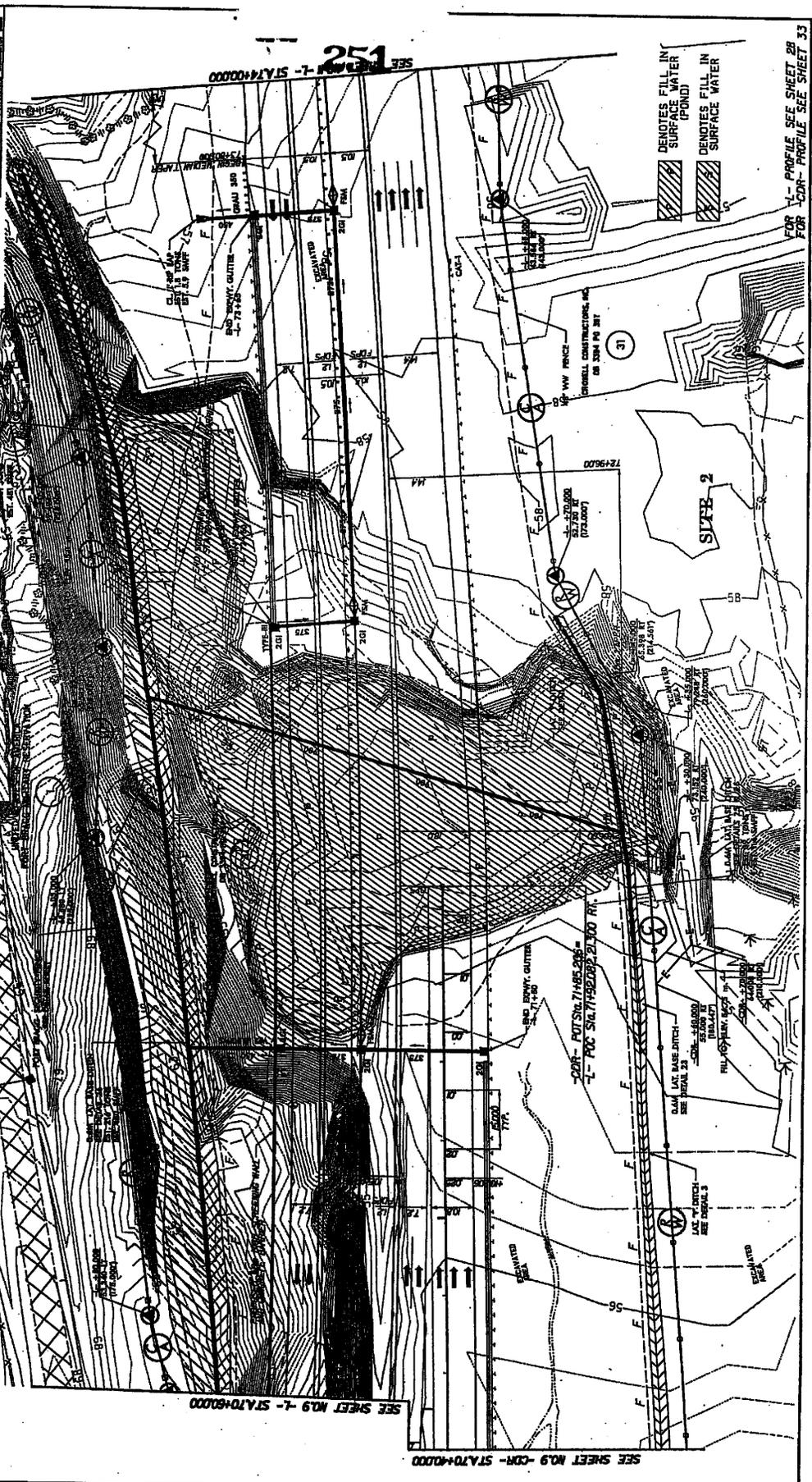
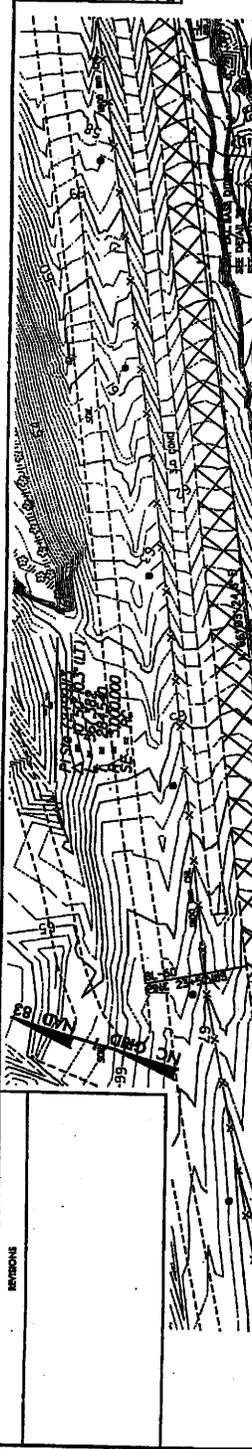
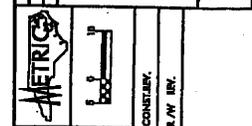
FOR 1 - PROFILE SEE SHEET 28  
FOR 2 - COR - PROFILE SEE SHEET 33

ERRORS

SEE SHEET NO. 9 - STA 7+00.00

SEE SHEET NO. 9 - COR - STA 7+00.00

PROJECT REFERENCE NO. SHEET NO.  
 2-2000 10  
 HYDRAULIC ENGINEER  
 PRELIMINARY PLANS  
 ENCLOSURE PLANS  
 IN PART OF THE 775  
 PERMIT DRAWING  
 Sheet 10 of 29  
 W  
 CONTRACTOR  
 S. W. INC.



SEE SHEET NO. 9 - STA. 7+00.00

SEE SHEET NO. 9 - CON- STA. 7+00.00





PROJECT REFERENCE NO. SHEET NO. 2

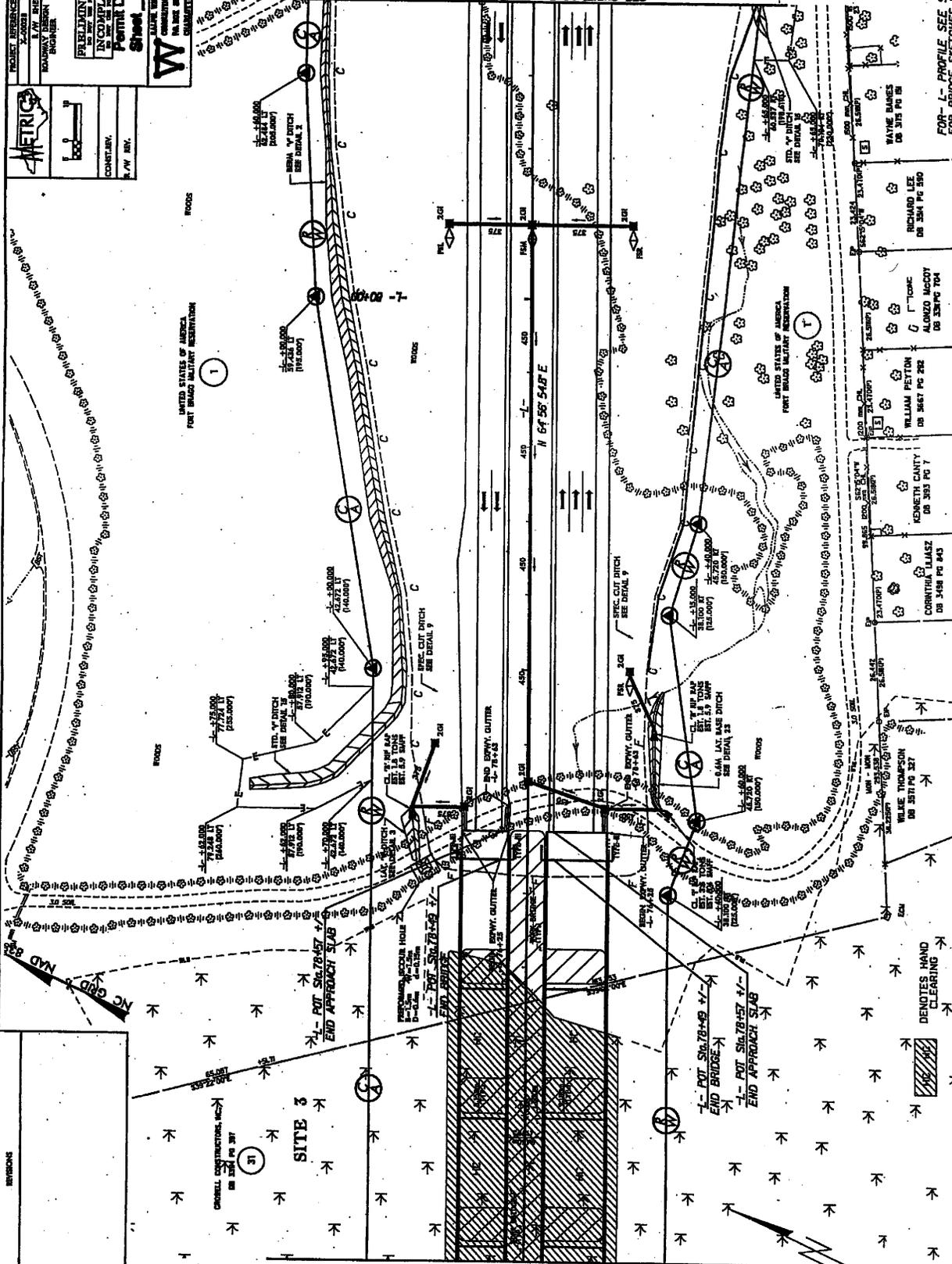
RAILROAD DISTRICT NO. 10

PRELIMINARY PLANS  
 IN COMPLIANCE WITH  
 FEDERAL REGULATIONS  
 FOR THE CONSTRUCTION OF  
 FEDERAL PROJECTS  
 SHEET 12 of 29

W  
 WALTER W. WATSON & ASSOCIATES  
 CONSULTING ENGINEERS  
 1000 PAV. BLDG.  
 CHARLOTTE, NORTH CAROLINA, 28202

AMERIC  
 CONSULTING  
 P. O. BOX 100

254  
 SEE SHEET NO. 1 - STA. 0+000

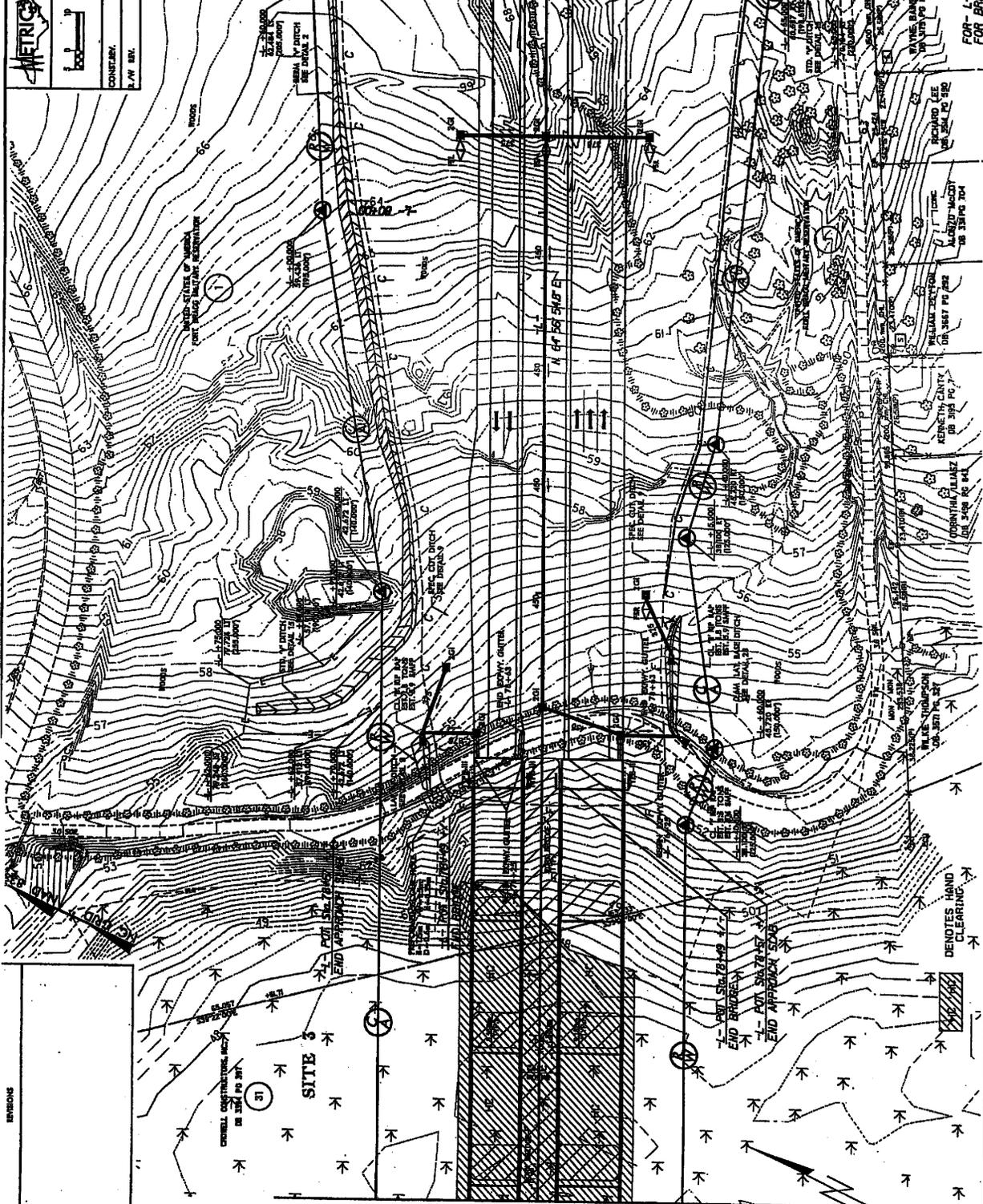


FOR L-1 PROFILE SEE SHEET 28  
 FOR BRIDGE SKETCHES SEE SHEET 2E

SEE SHEET NO. 1 - STA. 7+000

PROJECT REFERENCE NO. SHEET NO. 1  
 L-20000 1  
 PROPOSER  
 TOWN OF BOSTON  
 ENGINEER  
 METRIC  
 PRELIMINARY PLANS  
 DISCOMMITTEE PLAN  
 Permit Drawing  
 Sheet 14 of 24  
 W  
 CONTRACTOR  
 2 1/2" BY 1"

255  
 OFF SHEET NOS 1- STABD-0000



FOR - L- PROFILE SEE SHEET 23  
 FOR BRIDGE SKETCHES SEE SHEET 24

SEE SHEET NOS 1- STABD-0000





METRIC  
 CONSULTING  
 1111 W. 1st St.  
 Vancouver, BC V6C 2K7  
 TEL: 604-278-8888  
 FAX: 604-278-8889  
 WWW: www.metric.ca

PREPARED BY: BLAIR  
 IN CHARGE: M. BLAIR  
 PERMIT DRAWING  
 Sheet 17 of 29

SHEET NO. 17  
 PROJECT NO. 100-1000-0000  
 ROADWAY DESIGN ENGINEER

SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.

BRIDGE HYDRAULIC DATA  
 DESIGN DISCHARGE = 482 CWS  
 DESIGN FREQUENCY = 50 YRS  
 DESIGN HW ELEVATION = 48.92 M  
 BASE DISCHARGE = 566 CWS  
 BASE FREQUENCY = 100 YRS  
 BASE HW ELEVATION = 49.4 M  
 OVERTOPPING FREQUENCY = 1000+ YRS  
 OVERTOPPING ELEVATION = 50.64 M  
 DATE OF SURVEY = 4-4-05  
 SURVEY ELEVATION AT DATE OF SURVEY = 48.13 M  
 \* OVERTOPPING IS GREATER THAN 800+ YR EVENT

68  
66  
64  
62  
60  
58  
56  
54  
52  
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+60 +80 +100 +120 +140 +160 +180 +200 +220 +240 +260 +280 +300 +320 +340 +360 +380 +400 +420 +440 +460 +480 +500 +520 +540 +560 +580 +600 +620 +640 +660 +680 +700 +720 +740 +760 +780 +800 +820 +840 +860 +880 +900 +920 +940 +960 +980 +1000

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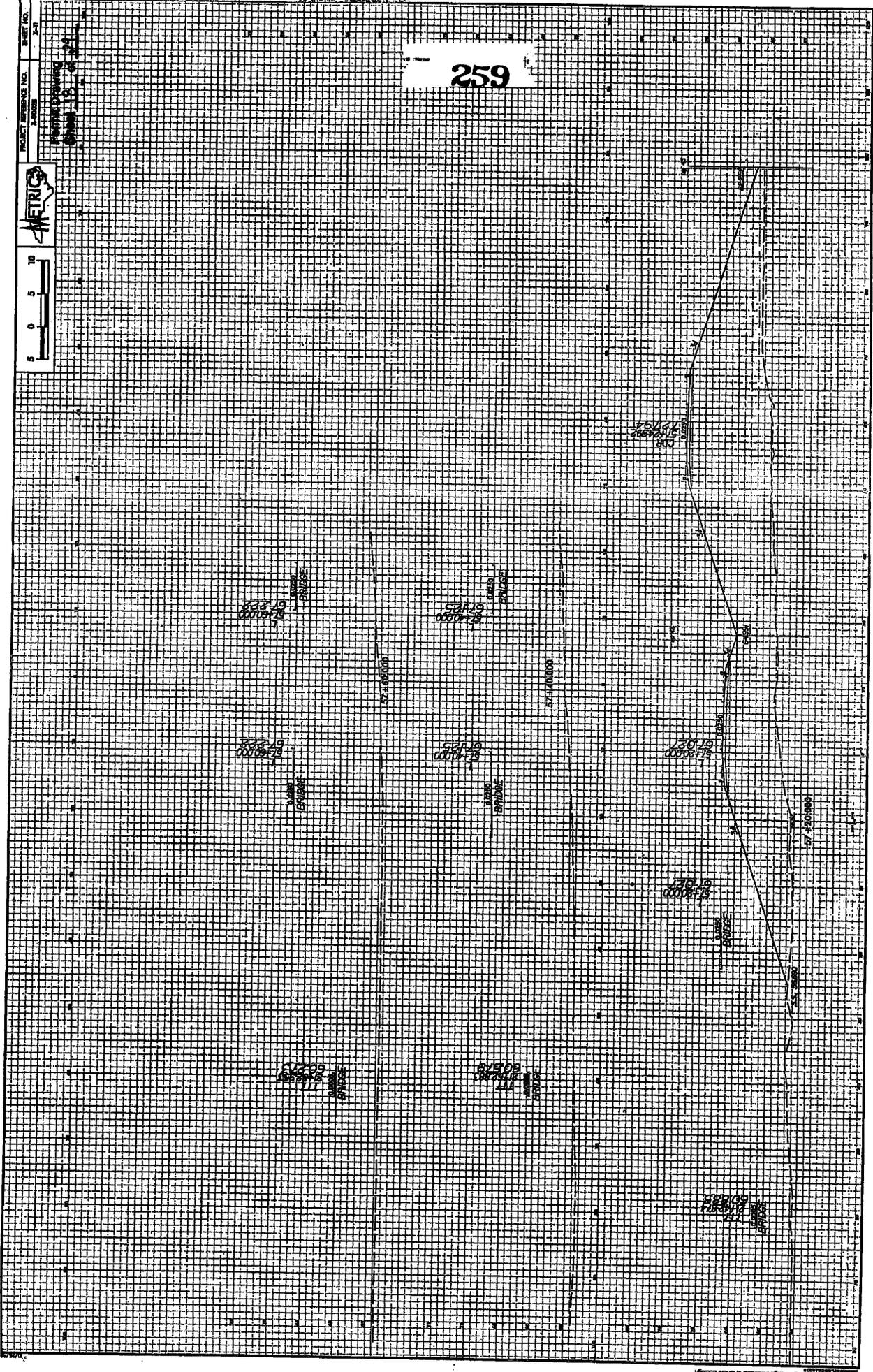
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 \*\*\*\*\*JOBNO\*\*\*\*\*

259

PROJECT REFERENCE NO. 24  
SHEET NO. 24



PERMIT DRAWING  
BRIDGE 19 OF 24



BRIDGE  
20.19  
0000-78

PROJECT REFERENCE NO. 2-3  
SHEET NO. 2-3



PAVING  
BRIDGE

260

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BRIDGE

14801  
0000000000  
BRIDGE

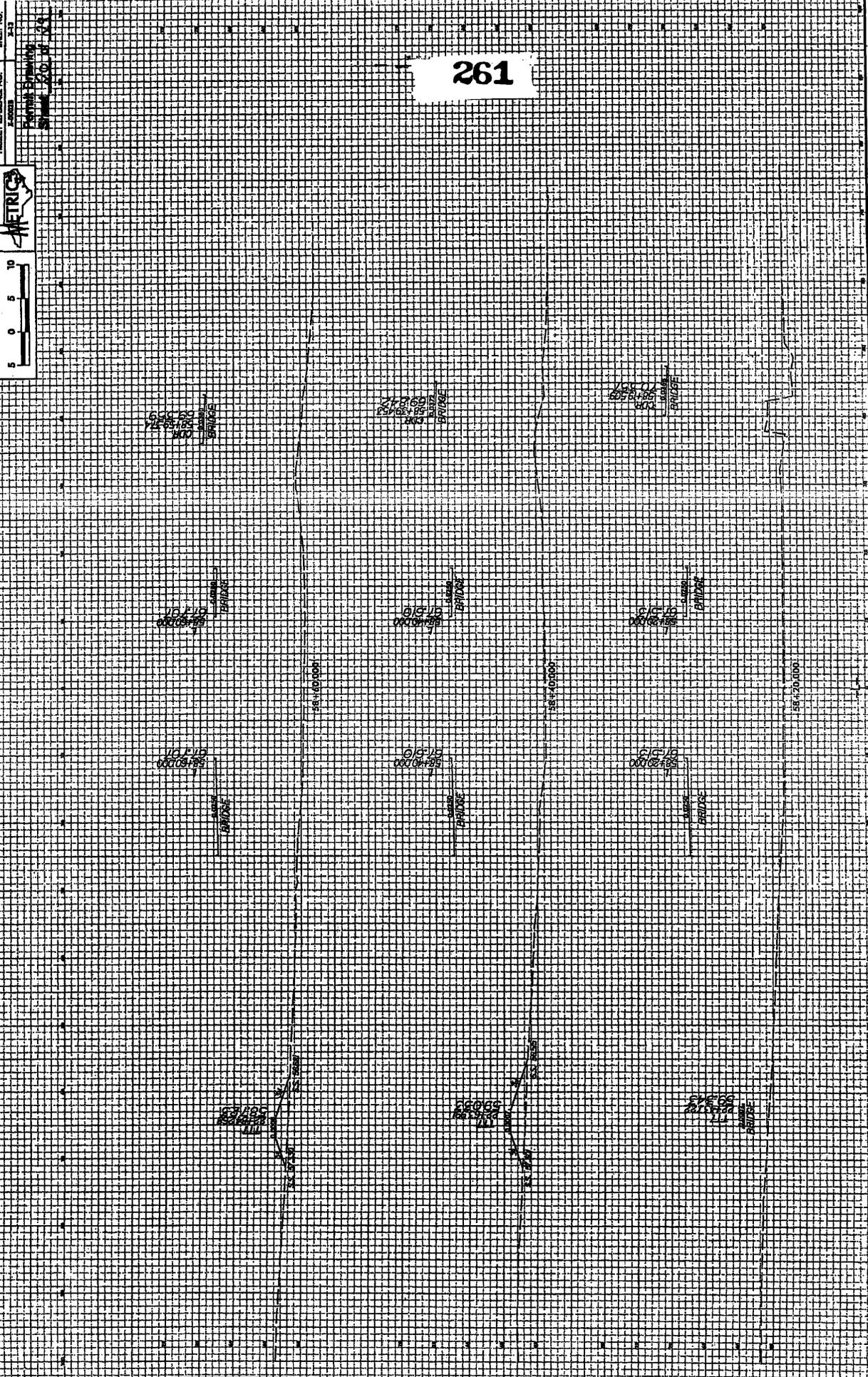
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571-80-0000

PROJECT REFERENCE NO. SHEET NO. 261



261



01C112  
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LUMBER  
BRIDGE

58+00.00

58+40.00

58+70.00

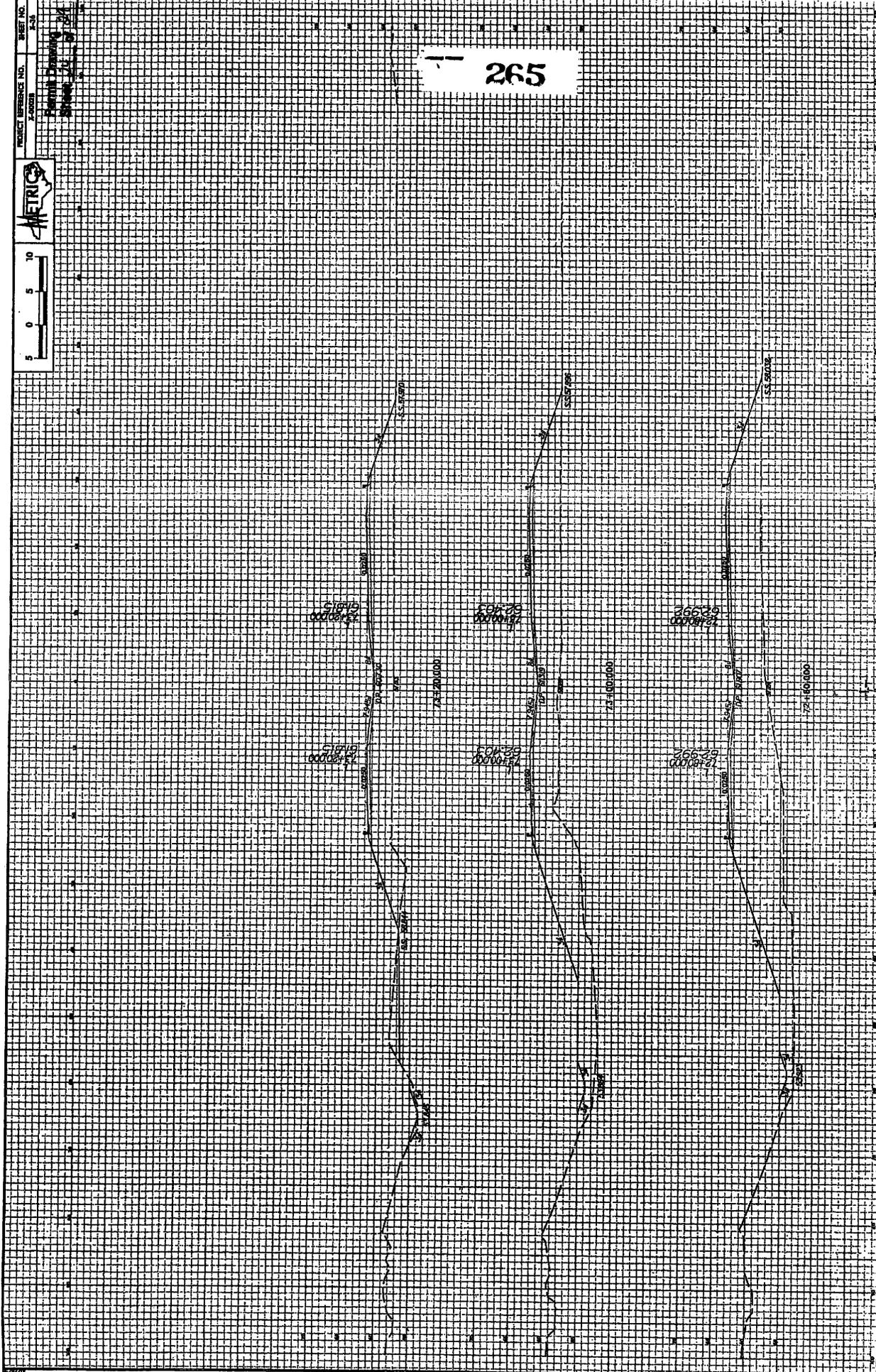
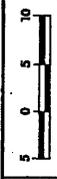






PROJECT NUMBER NO. 10  
SHEET NO. 265  
METRIC  
Scale: 1:50,000  
0 5 10

265

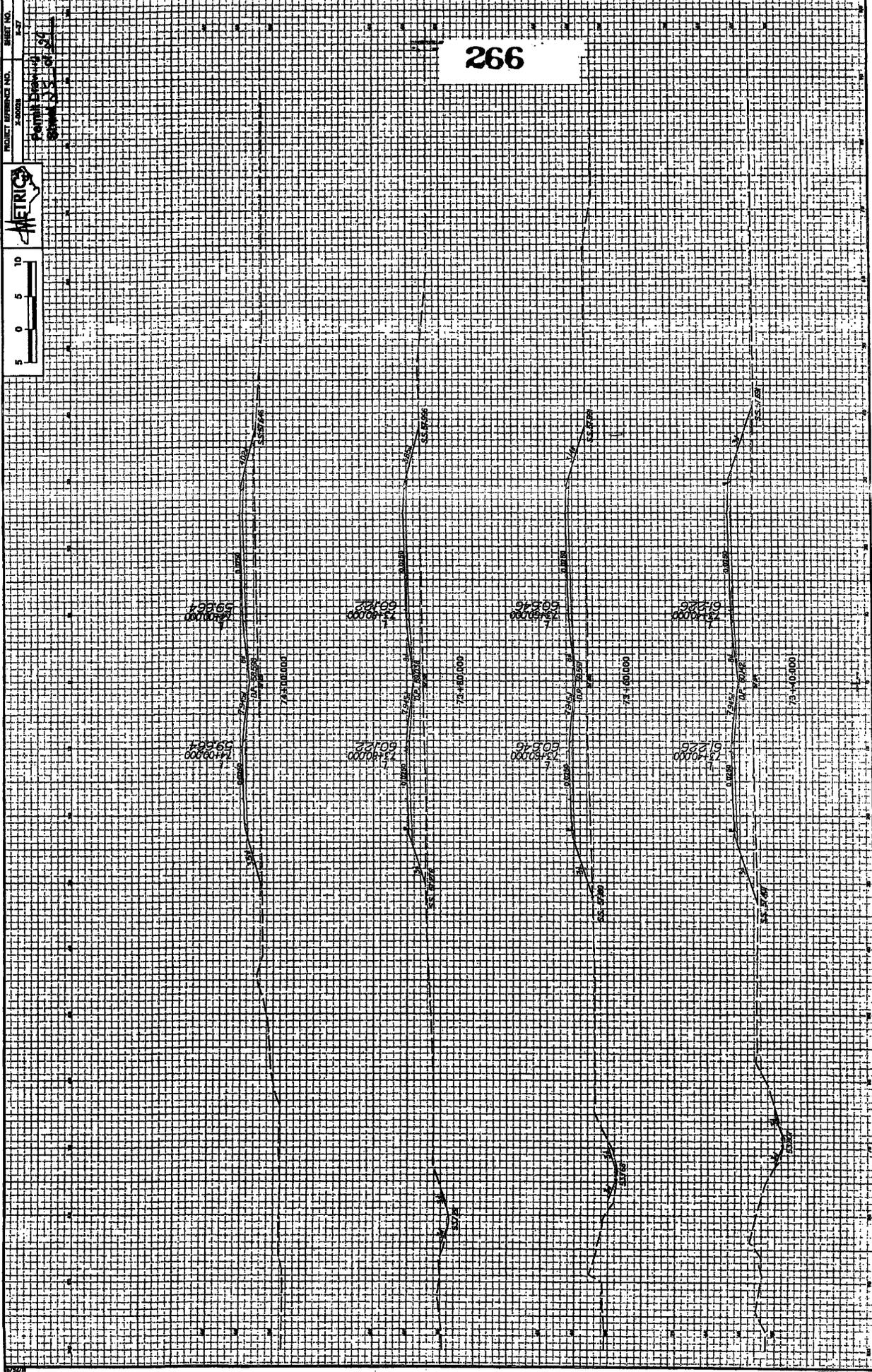


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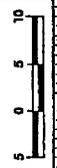


Permit Engineering  
SHEET 2-27 of 27

266



PROJECT REFERENCE NO. 2-0000



SHEET NO. 2-40  
Permit Drawing  
Sheet 2-40 of 41

267

05875  
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76+00.0000

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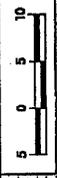
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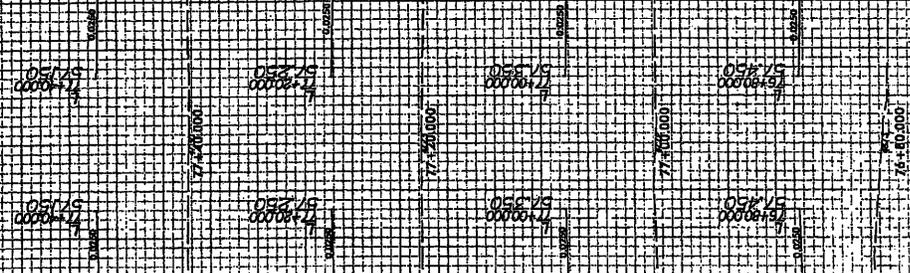
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SHEET NO. 2-41

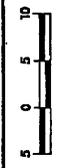


Point 1  
Sheet 2 of 2

268



PROJECT REFERENCE NO. 2-2000



SHEET NO. 2-4  
Pavement Design  
SHEET 2-4 OF 2-8

269

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55750

749000  
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749000  
55750

749000  
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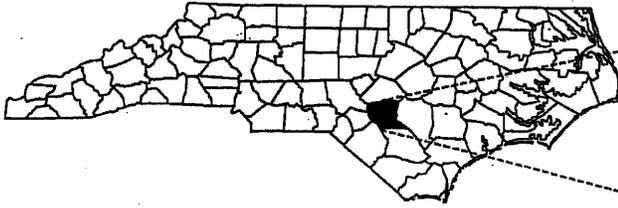
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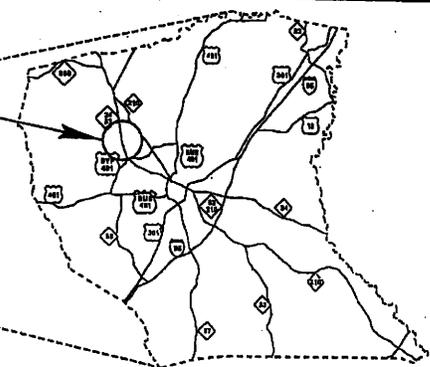


271

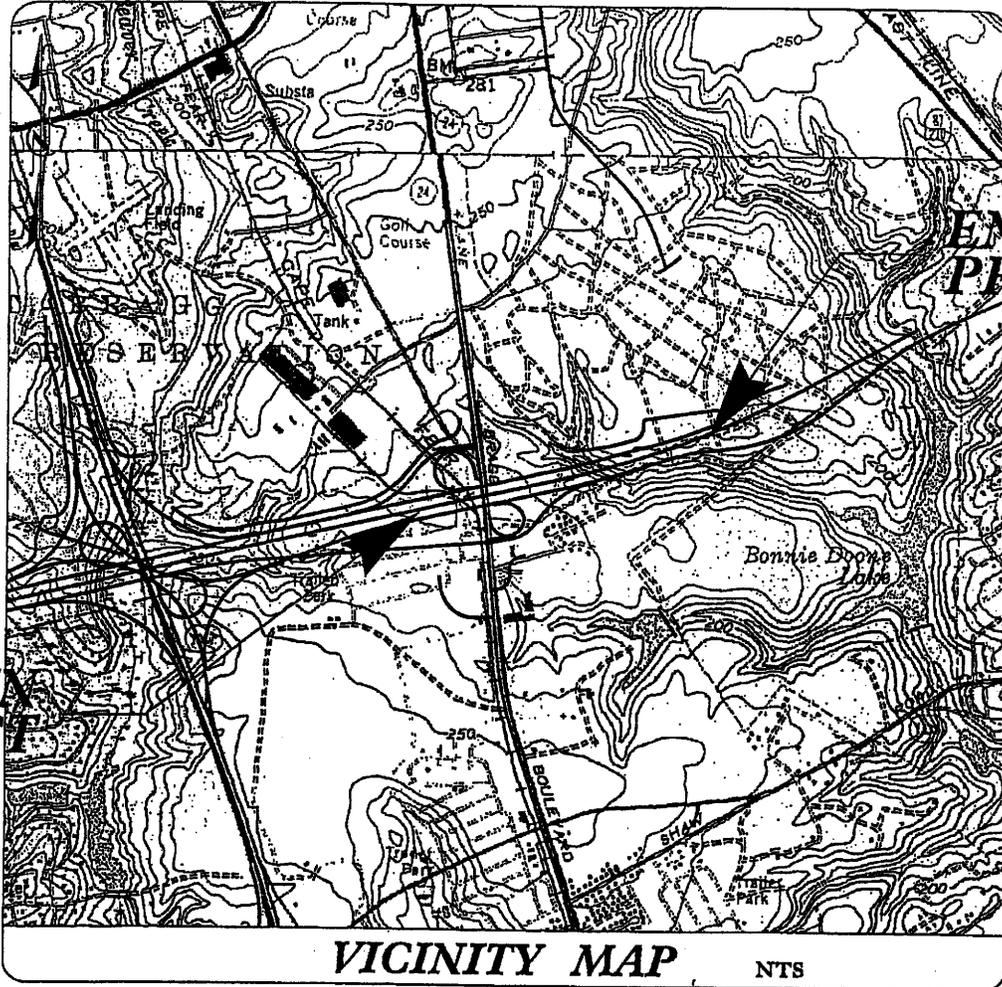


SITE

SEE INSET BELOW



CUMBERLAND COUNTY



**END PROJECT**

**BEGIN PROJECT**

**VICINITY MAP** NTS

**WETLAND IMPACT**

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY  
PROJECT: 34817.1.2 (U-2519E)  
FAYETTEVILLE OUTER LOOP  
FROM WEST OF NC 24  
TO EAST OF NC 24 (BRAGG BLVD)

SHEET \_\_\_\_ OF \_\_\_\_

12/7/07

Permit Drawing  
Sheet 1 of 29



PROPERTY OWNERS  
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	FORT BRAGG MILITARY RESERVATION	
9A	DON BROADWELL	P.O. BOX 53587 FAYETTEVILLE, NC 28305
911	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	

NCDOT

DIVISION OF HIGHWAYS  
CUMBERLAND COUNTY  
PROJECT: 34817.1.2 (U-2519E)  
FAYETTEVILLE OUTER LOOP  
FROM WEST OF NC 24  
TO EAST OF NC 24

SHEET

OF

12/7/07

Permit Drawing  
Sheet 3 of 29





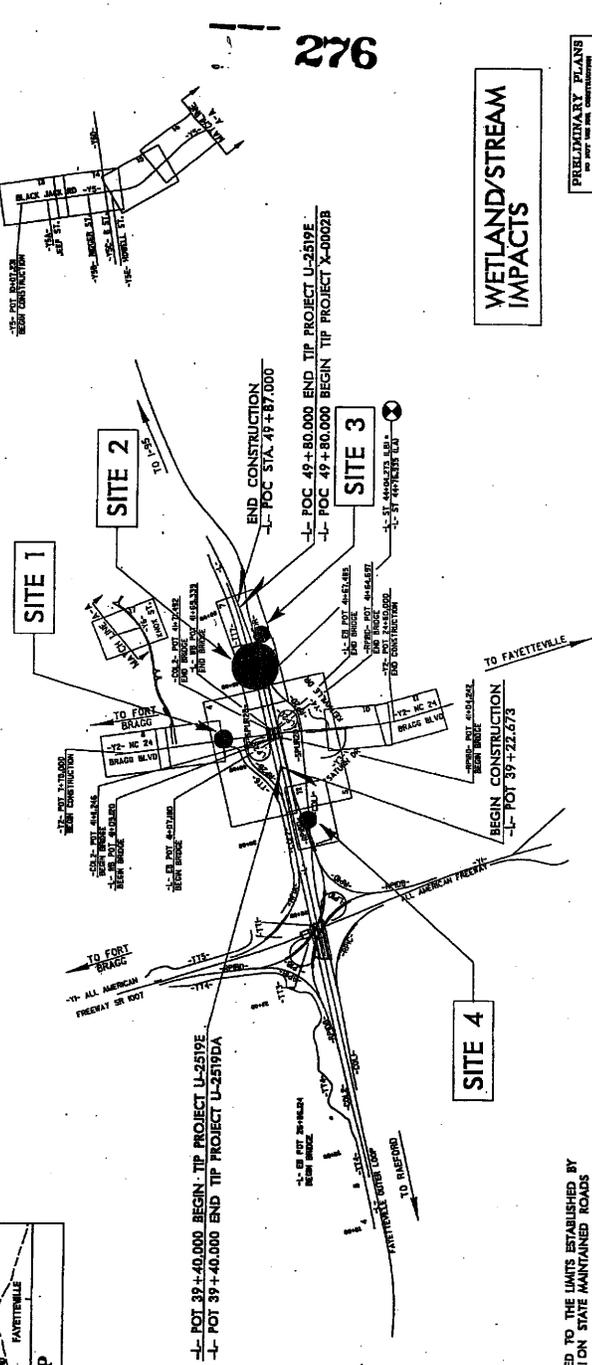
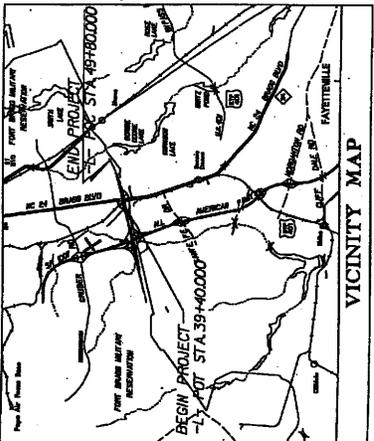
STATE PROJECT NUMBER	U-2519E	SHEET NUMBER	1
PROJECT NAME	FAYETTEVILLE OUTER LOOP		
DATE	3/4/17	SCALE	AS SHOWN
DESIGNER	METRIC INC.		
CHECKER	DENNIS J. HORY, P.E.		
APPROVER	HENRY W. BARE		
DATE APPROVED	NOV. 18, 2008		

ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN

Permit Drawing  
Sheet 1 of 2

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS CUMBERLAND COUNTY

LOCATION: FAYETTEVILLE OUTER LOOP  
FROM WEST OF NC 24 TO EAST OF  
NC 24 (BRAGG BOULEVARD)  
TYPE OF WORK: GRADINGS, DRAINAGE,  
STRUCTURES, CULVERTS,  
PAVING, TRAFFIC SIGNALS, & SIGNING



WETLAND/STREAM  
IMPACTS

CLEANING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II ON FORT BRAGG ROADS, METHOD III ON STATE MAINTAINED ROADS  
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

**DESIGN DATA**

ADT 2007	= 27300
ADT 2030	= 66200
DHV	= 9 %
D	= 55 %
T	= 12 %
(DUALS 8 %, TTST 4 %)	
V	= 110 km/h

**GRAPHIC SCALE**

PLANS: 1" = 100'

PROFILE (HORIZONTAL): 1" = 100'

PROFILE (VERTICAL): 1" = 10'

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-2519E	0.880 KM
LENGTH STRUCTURES TIP PROJECT U-2519E	0.060 KM
TOTAL LENGTH TIP PROJECT U-2519E	1.040 KM

NOTED: LANE BRIDGE STATIONING USED TO DETERMINE LENGTH OF STRUCTURES

PLANS PREPARED BY:  
**FLORENCE & HUTCHINSON, INC.**  
CONSULTING ENGINEERS  
400 WESTBROOK DRIVE, SUITE 400  
FAYETTEVILLE, NC 28403  
PREPARED FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
300 EASTANBURY DRIVE, RALEIGH, NC 27601

RIGHT OF WAY DATE: JUNE 26, 2006  
LETTING DATE: NOV. 18, 2008

PROJECT MANAGER: DENNIS J. HORY, P.E.  
PROJECT DESIGNER: HENRY W. BARE

NCDDOT CONTACT: CATHY S. HOUSER, P.E.  
PROJECT SUPERVISOR - PROJECT MANAGER

HYDRAULICS ENGINEER: [Blank]

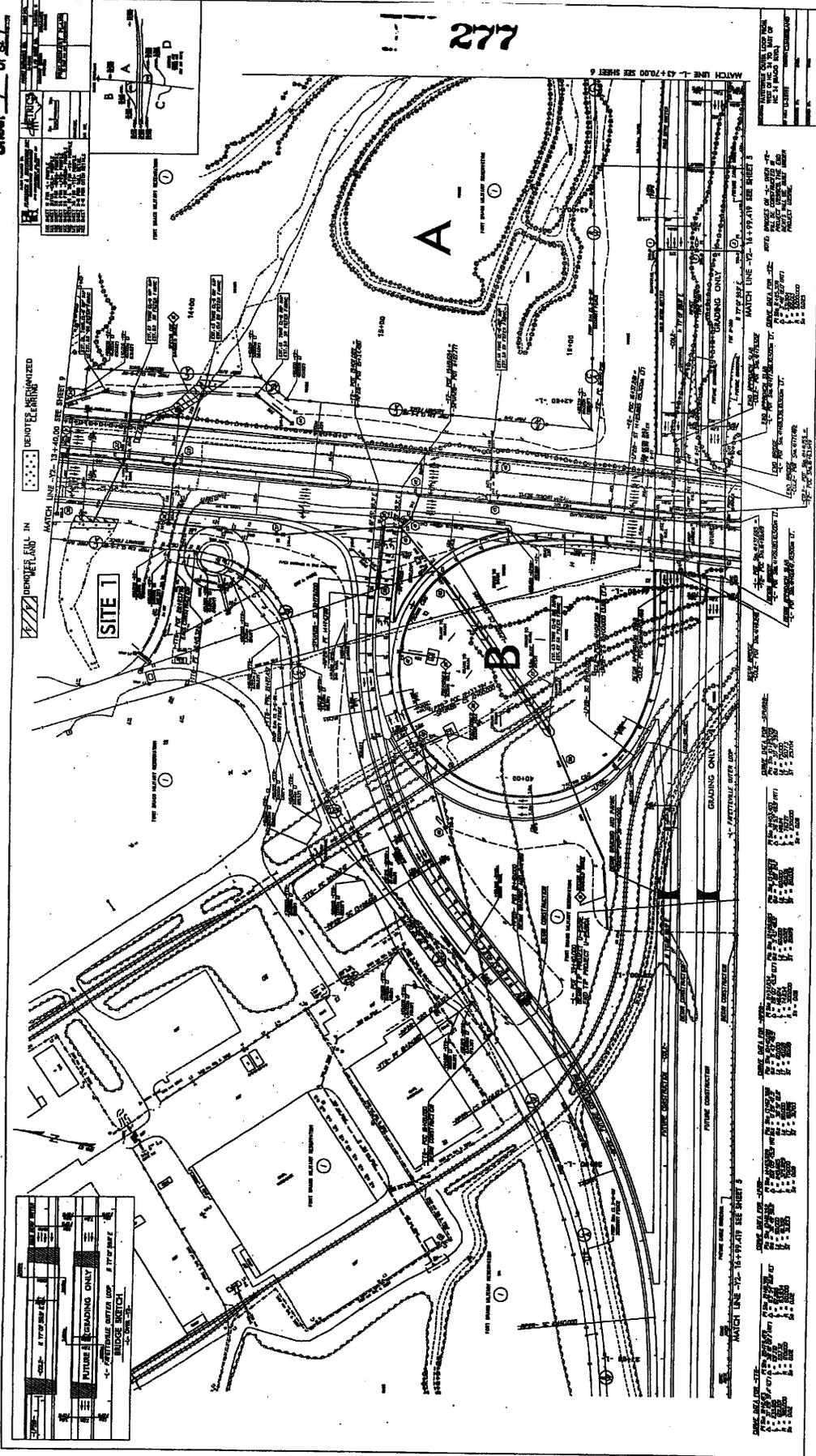
ROADWAY DESIGN: [Blank]

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

TIP PROJECT: U-2519E

PROJECT: 34817.2.4

Permit Drawing  
Sheet 7 of 29



CONCRETE	1/4" = 1'-0"
GRAVEL	1/4" = 1'-0"
ASPHALT	1/4" = 1'-0"
FUTURE TRADING ONLY	1/4" = 1'-0"
VENTILATION DUCT	1/4" = 1'-0"
1/4" = 1'-0"	1/4" = 1'-0"

SITE 1

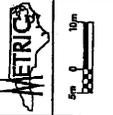
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277



PROJECT REFERENCE NO. SHEET NO.  
 DRAWING NO. 1474789  
 PRELIMINARY PLANS  
 Permit Drawing  
 Sheet 9 of 29

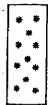


PLANS PREPARED BY  
 HAZENDE & HUTTENLOCH, INC.  
 CONSULTING ENGINEERS  
 1000 W. 15th Street, Suite 100  
 Fort Worth, Texas 76102

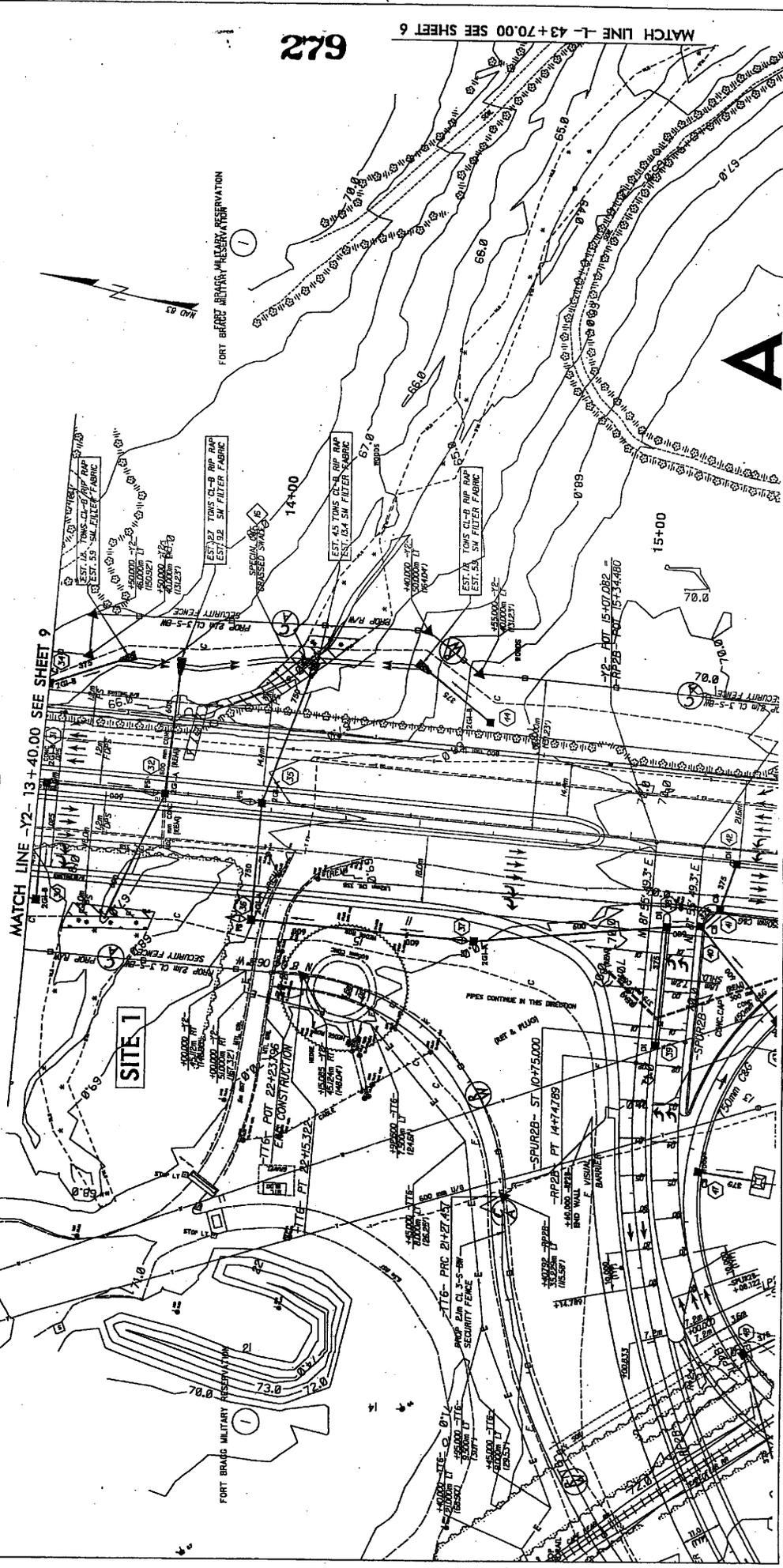
622

MATCH LINE L-43+70.00 SEE SHEET 6

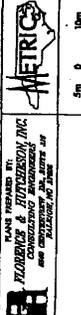
DENOTES MECHANIZED CLEARING



DENOTES FILL IN WETLAND



A

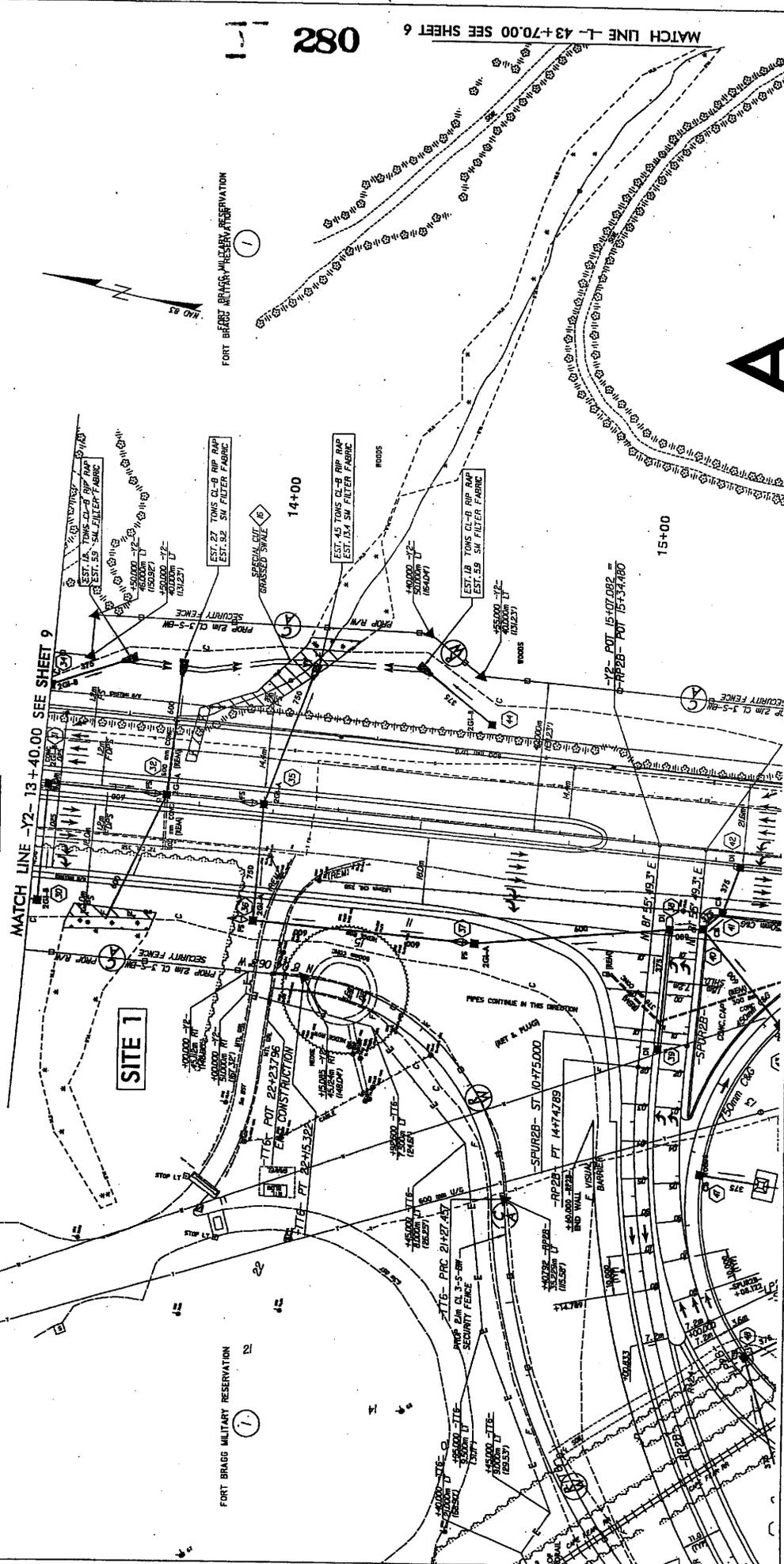


PLANNED BY:  
**PLANNING & DESIGN, INC.**  
 10000 W. 10TH AVE., SUITE 100  
 DENVER, CO 80202

PROJECT REFERENCE NO. \_\_\_\_\_ SHEET NO. \_\_\_\_\_  
 L.A.M. SHEET NO. \_\_\_\_\_ U.S. ARMY  
 ENGINEER  
 PRELIMINARY PLANS  
 Permit Drawing  
 Sheet 10 of 22



□ F F □ DENOTES FILL IN WETLAND  
 \* \* \* \* \* DENOTES MECHANIZED CLEARING



082

MATCH LINE L-43+70.00 SEE SHEET 6

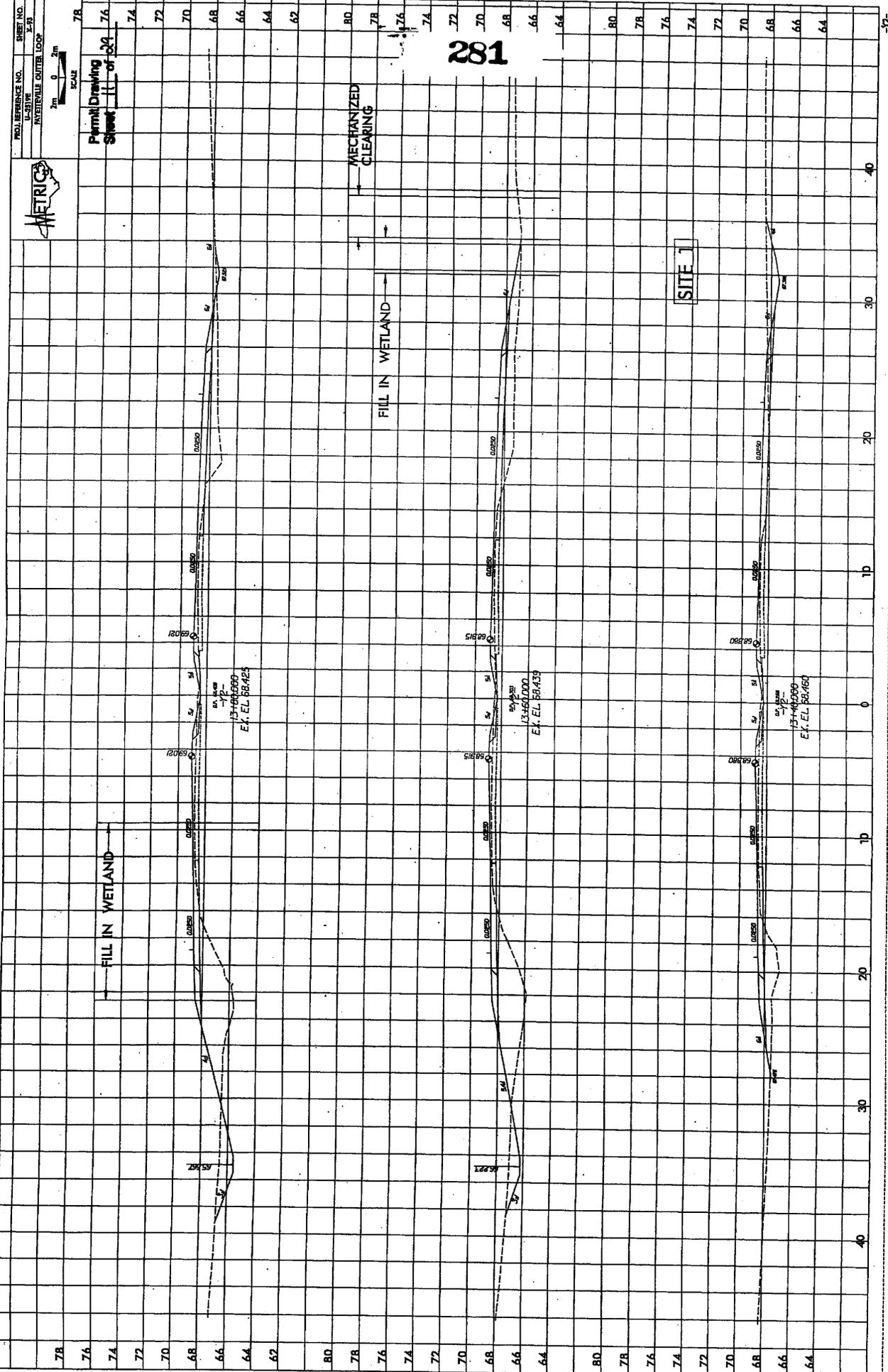
PROJ. REFERENCE NO. 15-1000000  
 15-1000000  
 EXTERIOR OUTER LOOP

SHEET NO. 2-93



Permit Drawing  
 Sheet 111 of 24

SCALE  
 1" = 20'



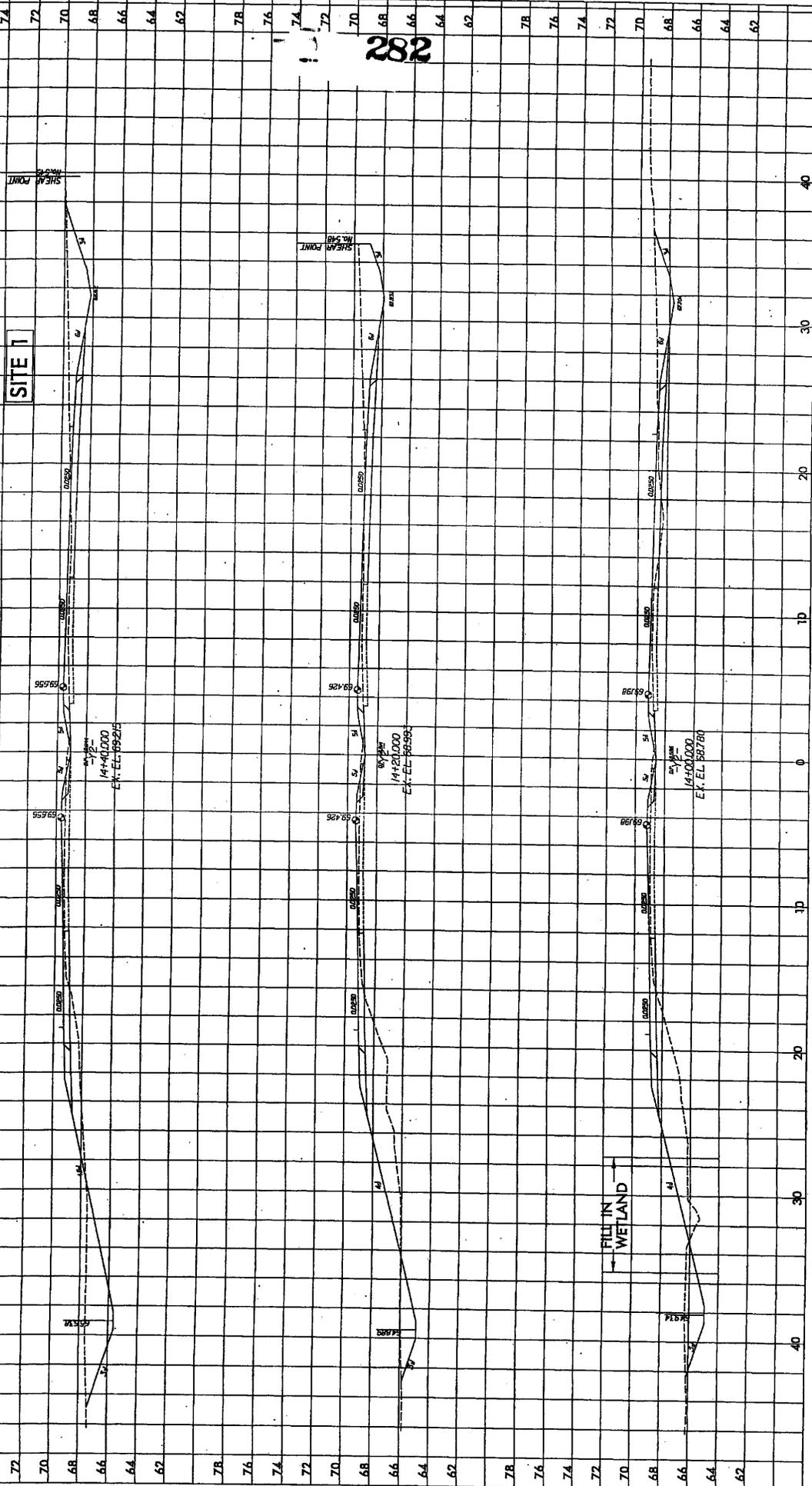
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 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 APPROVED BY: [Name]

PROJ. REFERENCE NO. U-5176  
 U-5176  
 PATTERVILLE OUTER LOOP



1" = 0' 2" SCALE

Reprint Drawing  
 Sheet 3 of 3



78 76 74 72 70 68 66 64 62 78 76 74 72 70 68 66 64 62 78 76 74 72 70 68 66 64 62

DATE: 08/11/00  
 DRAWN: [Name]  
 CHECKED: [Name]  
 PROJECT: PATTERVILLE OUTER LOOP



PROJECT REFERENCE NO. 6  
 SHEET NO. 284  
 L.S. SHEET NO. 13  
 HYDRAULICS ENGINEER

PRELIMINARY PLANS  
 Permit Drawing  
 Sheet 11 of 24

CONST. NO. 1000  
 DW. NO. 1000

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 OS 510 514.978  
 LS 510 514.978  
 LT 510 514.978  
 ST 510 514.978

CURVE DATA FOR -L-  
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 LT 510 514.978  
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CURVE DATA FOR -L-  
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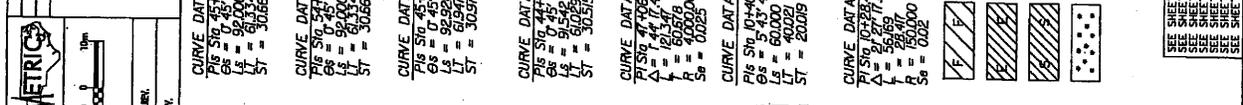
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CURVE DATA FOR -L-  
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 OS 510 514.978  
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 LT 510 514.978  
 ST 510 514.978

- DENOTES FILL IN WETLAND
- ▨ DENOTES EXCAVATION IN WETLAND
- ▧ DENOTES IMPACTS IN SURFACE WATER
- ⋯ DENOTES MECHANIZED CLEARING

SEE SHEETS 18 & 19 FOR -L- PROFILE  
 SEE SHEET 24 FOR -L- CURVE - PROFILE  
 SEE SHEET 27 FOR -L- CURVE - PROFILE  
 SEE SHEET 28 FOR -L- CURVE - PROFILE  
 SEE SHEET 29 FOR -L- CURVE - PROFILE  
 SEE SHEET 30 FOR -L- CURVE - PROFILE  
 SEE SHEET 31 FOR -L- CURVE - PROFILE  
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 SEE SHEET 98 FOR -L- CURVE - PROFILE  
 SEE SHEET 99 FOR -L- CURVE - PROFILE  
 SEE SHEET 100 FOR -L- CURVE - PROFILE



MATCH LINE -L- 47+40.00 SEE SHEET 7



MATCH LINE -L- 43+70.00 SEE SHEET 5

MATCH LINE -L- 43+70.00 SEE SHEET 4

NO. 1000  
 PLAN  
 PREPARED BY  
 ENGINEER  
 DATE



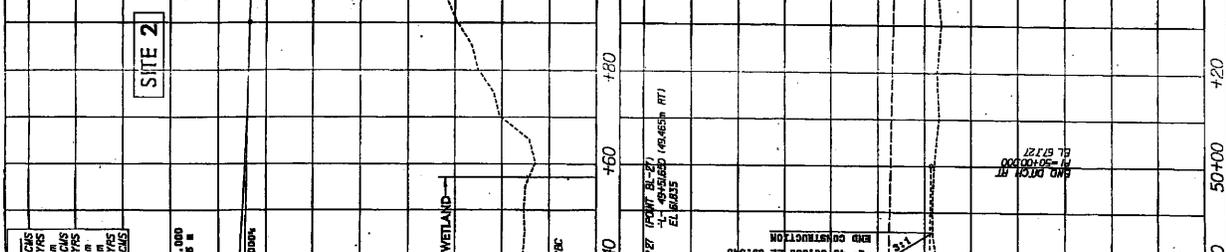
PROJECT REFERENCE NO.	SHEET NO.	SHEET NO. OF TOTAL SHEETS	PROJECT NO.
ROADWAY DESIGN ENGINEER	DATE	BY	DATE
<b>PRELIMINARY PLANS</b> <b>Permit Drawing</b> <b>Sheet 10 of 09</b>			

PLAN PROVIDED BY: **MOOREHEAD & BUTCHERSON INC.**  
 CONSULTING ENGINEERS AND ARCHITECTS  
 1000 W. 10TH AVENUE, SUITE 200  
 DENVER, CO 80202

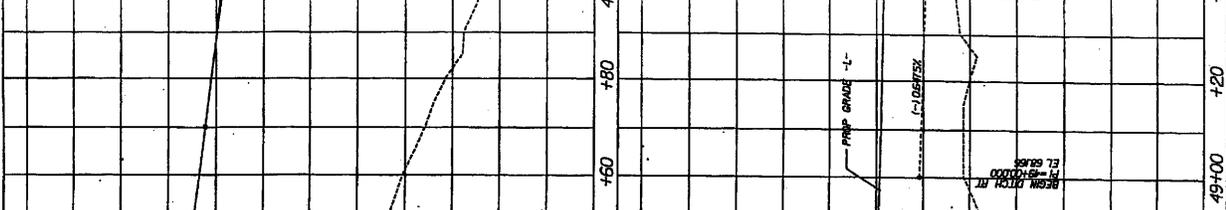
CONTRACT NO. \_\_\_\_\_  
 R/W NO. \_\_\_\_\_

**CONVERT ONE L. SUMMARY**  
 DESIGN DISCHARGE: 50 CFS  
 DESIGN HIGH WATER: 67.40 FT  
 ADD 1% FREQ. WATER: 1.00 CFS  
 ADD 1% FREQ. WATER: 1.00 CFS  
 OVERTOPPING FLOOD ELEV.: 67.40 FT  
 DISCHARGE: 50.00 CFS

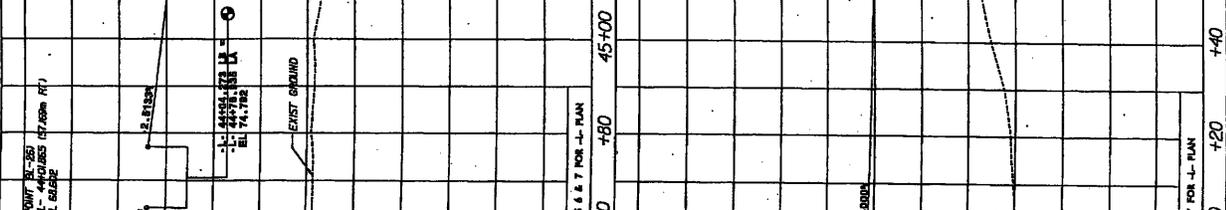
**SITE 2**  
 PUMP GRADE -1-  
 EXIST. GROUND  
 FILL IN WETLAND  
 2.0m x 2.0m PEBEC



78	BM 25 (PUMP) EL. 67.40 (RT)	BM 27 (BM) EL. 67.40 (RT)	BM 28 (BM) EL. 67.40 (RT)	BM 29 (BM) EL. 67.40 (RT)	BM 30 (BM) EL. 67.40 (RT)	BM 31 (BM) EL. 67.40 (RT)	BM 32 (BM) EL. 67.40 (RT)	BM 33 (BM) EL. 67.40 (RT)	BM 34 (BM) EL. 67.40 (RT)	BM 35 (BM) EL. 67.40 (RT)	BM 36 (BM) EL. 67.40 (RT)	BM 37 (BM) EL. 67.40 (RT)	BM 38 (BM) EL. 67.40 (RT)	BM 39 (BM) EL. 67.40 (RT)	BM 40 (BM) EL. 67.40 (RT)	BM 41 (BM) EL. 67.40 (RT)	BM 42 (BM) EL. 67.40 (RT)	BM 43 (BM) EL. 67.40 (RT)	BM 44 (BM) EL. 67.40 (RT)	BM 45 (BM) EL. 67.40 (RT)	BM 46 (BM) EL. 67.40 (RT)	BM 47 (BM) EL. 67.40 (RT)	BM 48 (BM) EL. 67.40 (RT)	BM 49 (BM) EL. 67.40 (RT)	BM 50 (BM) EL. 67.40 (RT)	BM 51 (BM) EL. 67.40 (RT)	BM 52 (BM) EL. 67.40 (RT)	BM 53 (BM) EL. 67.40 (RT)	BM 54 (BM) EL. 67.40 (RT)	BM 55 (BM) EL. 67.40 (RT)	BM 56 (BM) EL. 67.40 (RT)	BM 57 (BM) EL. 67.40 (RT)	BM 58 (BM) EL. 67.40 (RT)
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78	BM 25 (PUMP) EL. 67.40 (RT)	BM 27 (BM) EL. 67.40 (RT)	BM 28 (BM) EL. 67.40 (RT)	BM 29 (BM) EL. 67.40 (RT)	BM 30 (BM) EL. 67.40 (RT)	BM 31 (BM) EL. 67.40 (RT)	BM 32 (BM) EL. 67.40 (RT)	BM 33 (BM) EL. 67.40 (RT)	BM 34 (BM) EL. 67.40 (RT)	BM 35 (BM) EL. 67.40 (RT)	BM 36 (BM) EL. 67.40 (RT)	BM 37 (BM) EL. 67.40 (RT)	BM 38 (BM) EL. 67.40 (RT)	BM 39 (BM) EL. 67.40 (RT)	BM 40 (BM) EL. 67.40 (RT)	BM 41 (BM) EL. 67.40 (RT)	BM 42 (BM) EL. 67.40 (RT)	BM 43 (BM) EL. 67.40 (RT)	BM 44 (BM) EL. 67.40 (RT)	BM 45 (BM) EL. 67.40 (RT)	BM 46 (BM) EL. 67.40 (RT)	BM 47 (BM) EL. 67.40 (RT)	BM 48 (BM) EL. 67.40 (RT)	BM 49 (BM) EL. 67.40 (RT)	BM 50 (BM) EL. 67.40 (RT)	BM 51 (BM) EL. 67.40 (RT)	BM 52 (BM) EL. 67.40 (RT)	BM 53 (BM) EL. 67.40 (RT)	BM 54 (BM) EL. 67.40 (RT)	BM 55 (BM) EL. 67.40 (RT)	BM 56 (BM) EL. 67.40 (RT)	BM 57 (BM) EL. 67.40 (RT)	BM 58 (BM) EL. 67.40 (RT)
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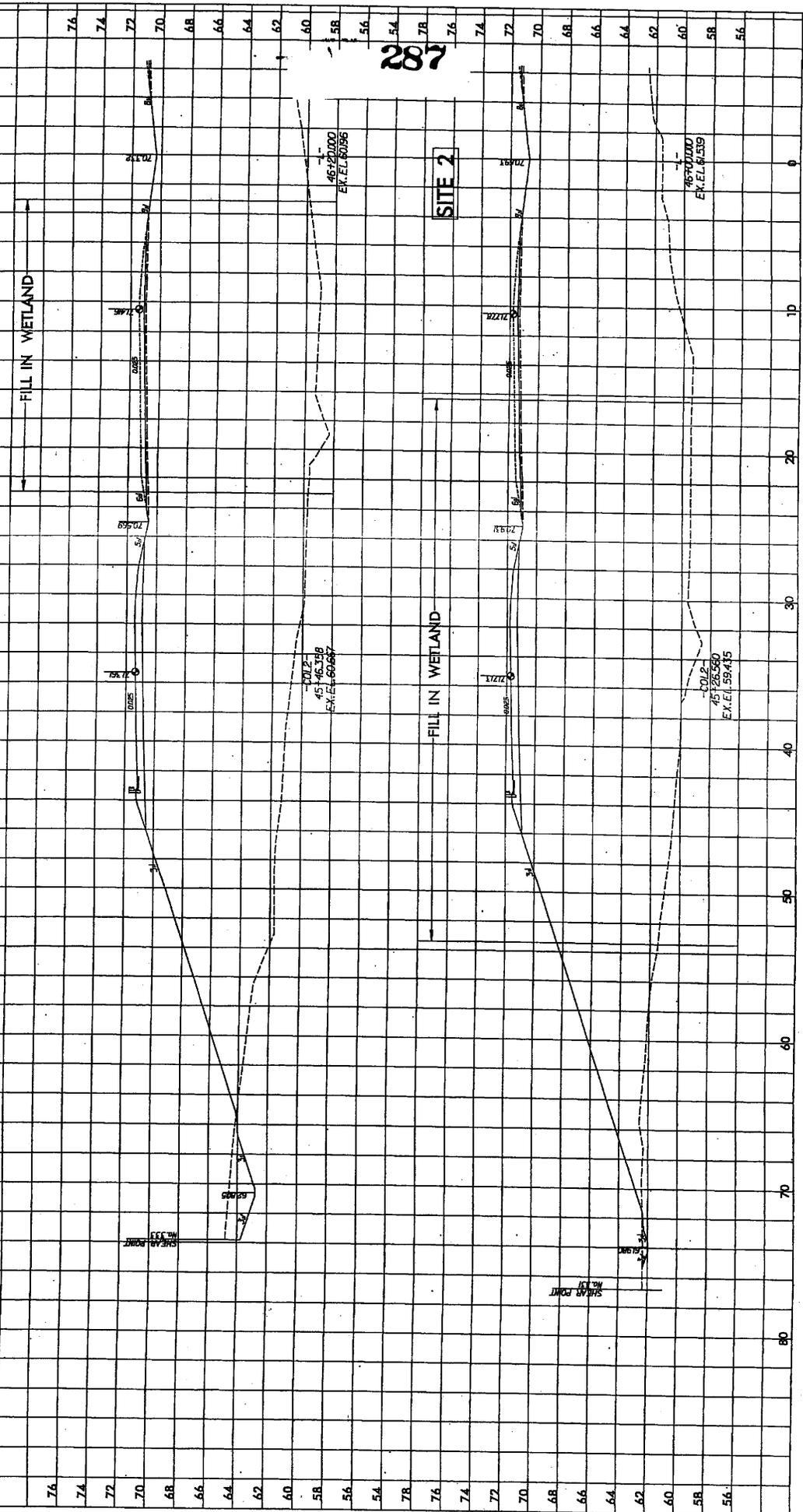
78	BM 25 (PUMP) EL. 67.40 (RT)	BM 27 (BM) EL. 67.40 (RT)	BM 28 (BM) EL. 67.40 (RT)	BM 29 (BM) EL. 67.40 (RT)	BM 30 (BM) EL. 67.40 (RT)	BM 31 (BM) EL. 67.40 (RT)	BM 32 (BM) EL. 67.40 (RT)	BM 33 (BM) EL. 67.40 (RT)	BM 34 (BM) EL. 67.40 (RT)	BM 35 (BM) EL. 67.40 (RT)	BM 36 (BM) EL. 67.40 (RT)	BM 37 (BM) EL. 67.40 (RT)	BM 38 (BM) EL. 67.40 (RT)	BM 39 (BM) EL. 67.40 (RT)	BM 40 (BM) EL. 67.40 (RT)	BM 41 (BM) EL. 67.40 (RT)	BM 42 (BM) EL. 67.40 (RT)	BM 43 (BM) EL. 67.40 (RT)	BM 44 (BM) EL. 67.40 (RT)	BM 45 (BM) EL. 67.40 (RT)	BM 46 (BM) EL. 67.40 (RT)	BM 47 (BM) EL. 67.40 (RT)	BM 48 (BM) EL. 67.40 (RT)	BM 49 (BM) EL. 67.40 (RT)	BM 50 (BM) EL. 67.40 (RT)	BM 51 (BM) EL. 67.40 (RT)	BM 52 (BM) EL. 67.40 (RT)	BM 53 (BM) EL. 67.40 (RT)	BM 54 (BM) EL. 67.40 (RT)	BM 55 (BM) EL. 67.40 (RT)	BM 56 (BM) EL. 67.40 (RT)	BM 57 (BM) EL. 67.40 (RT)	BM 58 (BM) EL. 67.40 (RT)
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286

PROJ. REFERENCE NO. 11-33737  
 SHEET NO. 2-3  
 METRIC DRAWING  
 SCALE 1" = 20'



Plan and Profile  
 Sheet 17 of 23



DATE: 08/11/03  
 DRAWN BY: J. W. BROWN  
 CHECKED BY: J. W. BROWN  
 IN CHARGE: J. W. BROWN

PROJ. REFERENCE NO. SHEET NO. 2-28  
 EXISTING QUOTE LOCK

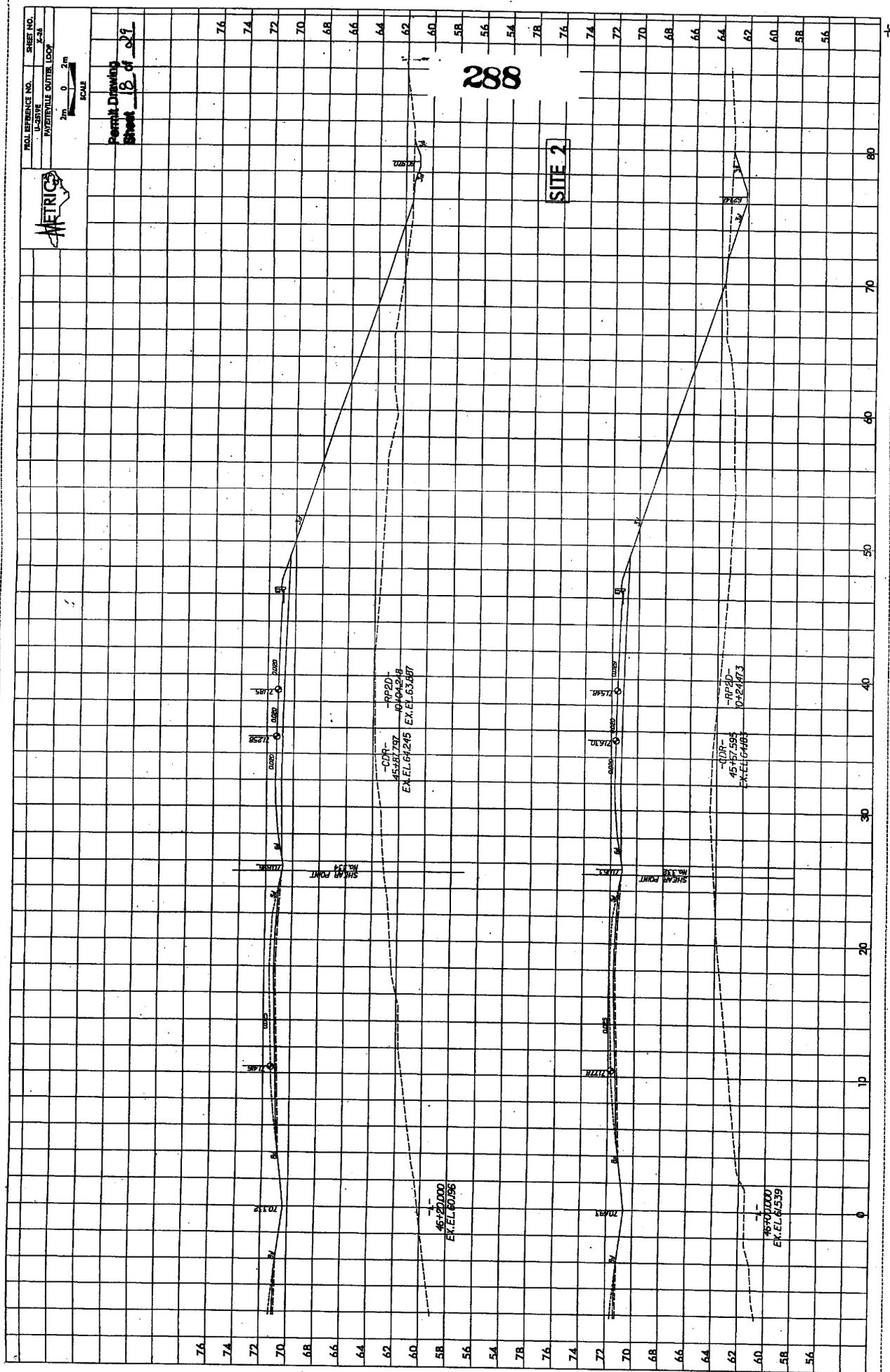


Parent Drawing  
 Sheet 12 of 21



288

SITE 2

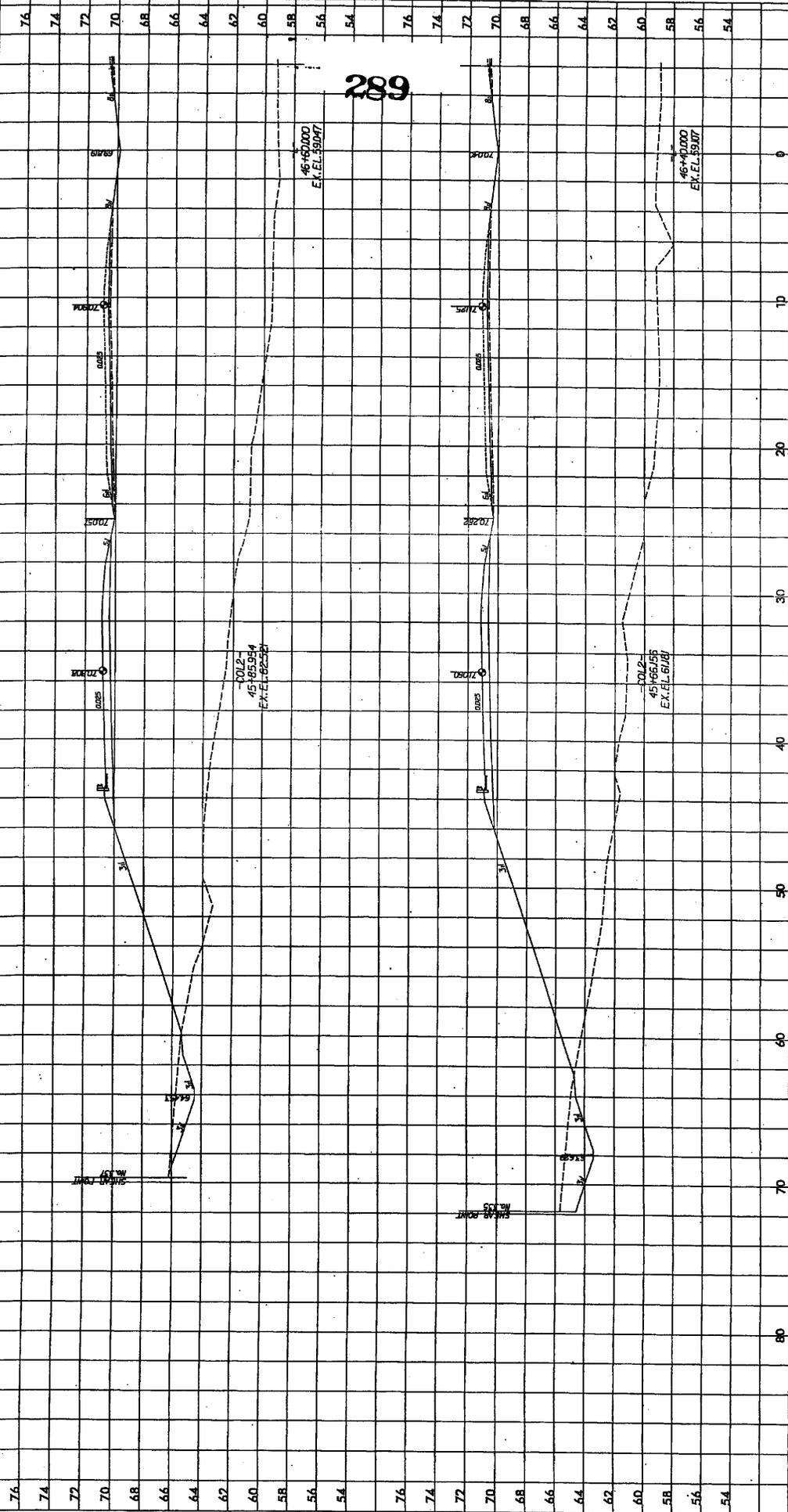


DATE: 08/11/2008  
 DRAWN BY: J. J. JONES  
 CHECKED BY: J. J. JONES

PERMITS REFERENCE NO. SHEET NO. 227  
 12-23-2017  
 INVERTIBLE OUTER LOOP



Permit Drawing  
 Sheet 17 of 24



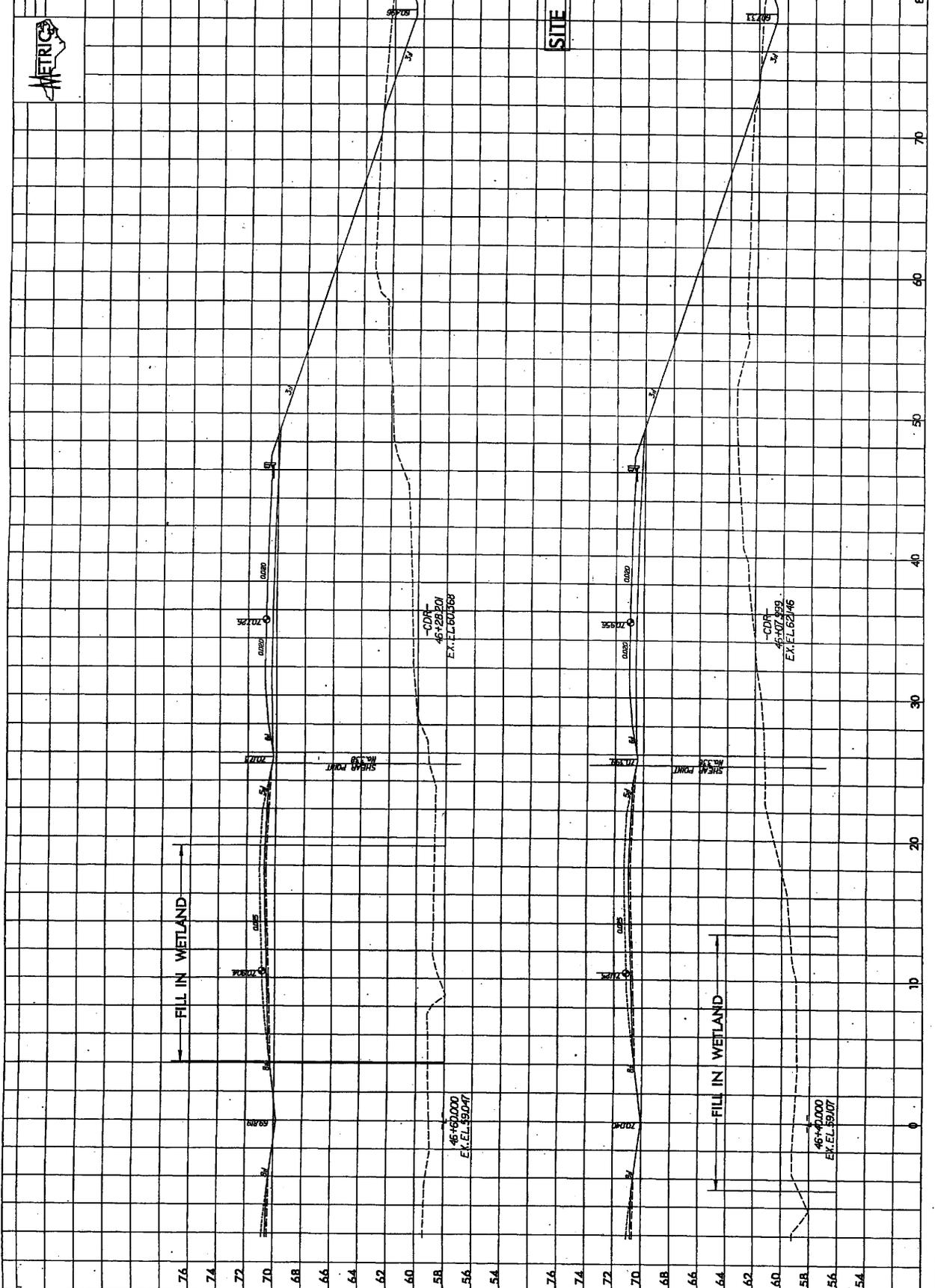
289

DATE: 08/15/17  
 DRAWN: [Name]  
 CHECKED: [Name]  
 PROJECT: [Name]

PROJ. REFERENCE NO. SHEET NO. 2-28  
LAUREL AVENUE OUTER LOOP



Permit Drawing  
Sheet 2.0 of 2.1



DATE: 01/11/00  
DRAWN BY: JMM  
CHECKED BY: JMM  
SCALE: AS SHOWN

PROJECT REFERENCE NO. 7  
 DATE 12/14/14  
 DRAWN BY J. W. HARRIS  
 CHECKED BY J. W. HARRIS

PRELIMINARY PLANS  
 FOR THE  
**Palmetto University**  
**Sheet 21 of 22**

SCALE: 1" = 50'

CONTR. BY: [Signature]

MADE PERMITS BY:  
**FLORIAN & WITKOWSKI, INC.**  
 1000 W. 15th Ave., Suite 100  
 Ft. Lauderdale, FL 33304  
 (954) 546-1111

DEVELOPER: **FLORIAN & WITKOWSKI, INC.**

DEMOLITION FILL IN  
 DENOTES MECHANIZED  
 CLEARING

CURVE DATA FOR -COL2-  
 P1 Stg 49+32.574  
 P2 Stg 49+32.574 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

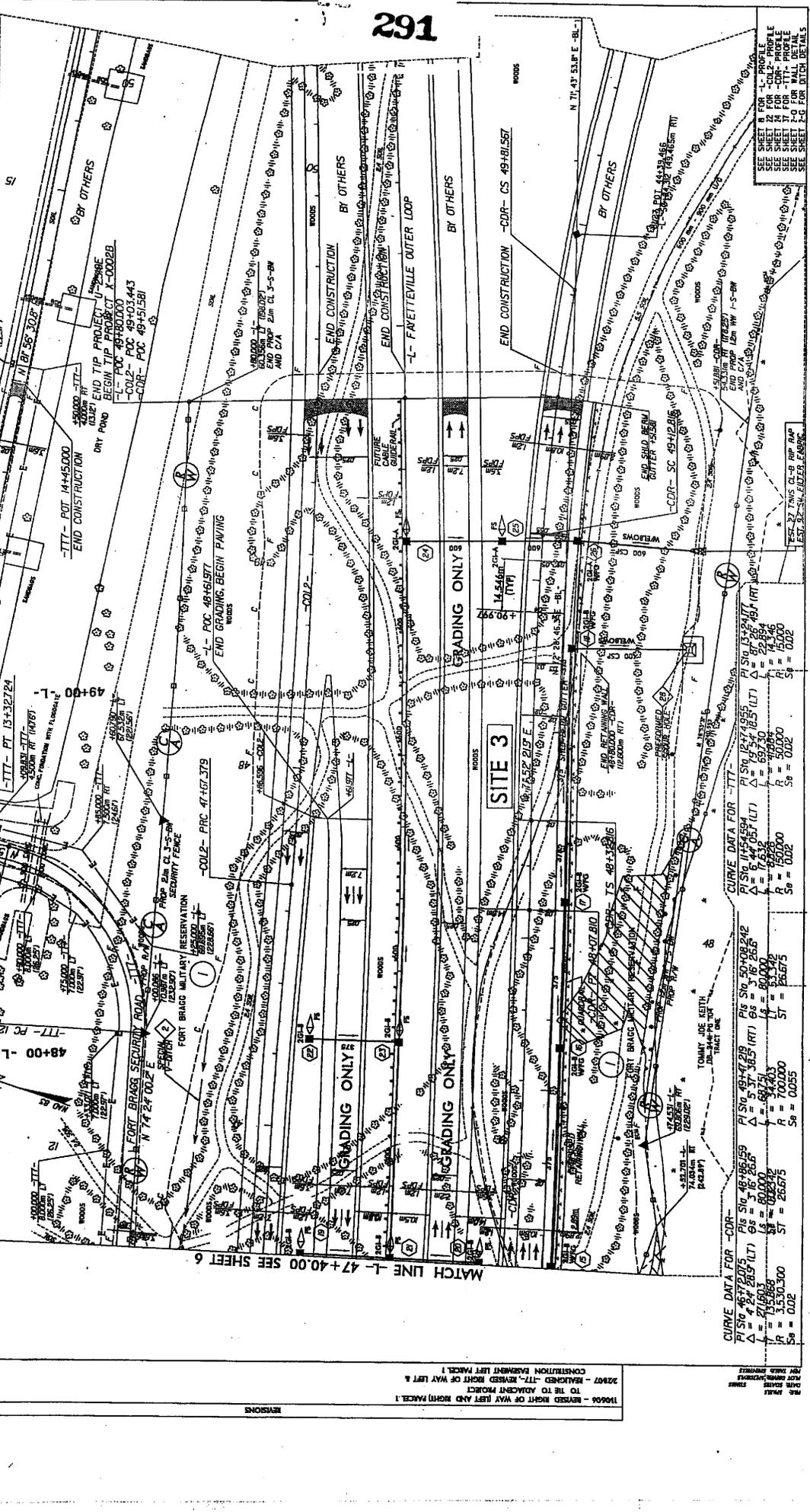
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 P2 Stg 48+00.000 (LT)  
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 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
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 P2 Stg 47+47.379 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 48+00.000  
 P2 Stg 48+00.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 49+40.000  
 P2 Stg 49+40.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -COL2-  
 P1 Stg 49+40.000  
 P2 Stg 49+40.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025



SEE SHEET 22 FOR L-PROFILE  
 SEE SHEET 27 FOR L-TYP-PROFILE  
 SEE SHEET 28 FOR WALL-DETAILS  
 SEE SHEET 29 FOR DITCH-DETAILS

27 TMS 02-B RPT APP  
 10/25/14 10:25:56 AM

CURVE DATA FOR -COL2-  
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 P2 Stg 49+32.574 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 48+00.000  
 P2 Stg 48+00.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 47+47.379  
 P2 Stg 47+47.379 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 48+00.000  
 P2 Stg 48+00.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -TTT-  
 P1 Stg 49+40.000  
 P2 Stg 49+40.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

CURVE DATA FOR -COL2-  
 P1 Stg 49+40.000  
 P2 Stg 49+40.000 (LT)  
 Δ = 307.981  
 L = 121.547  
 R = 508.000  
 S<sub>c</sub> = 0.025

10606 - REVERSED RIGHT OF WAY (LEFT AND RIGHT PARCELS)  
 20207 - REVERSED -TTT- REVERSED RIGHT OF WAY LEFT & CONSTRUCTION EASTWEST LEFT PARCEL 1  
 20207 - REVERSED -TTT- REVERSED RIGHT OF WAY LEFT & CONSTRUCTION EASTWEST LEFT PARCEL 1



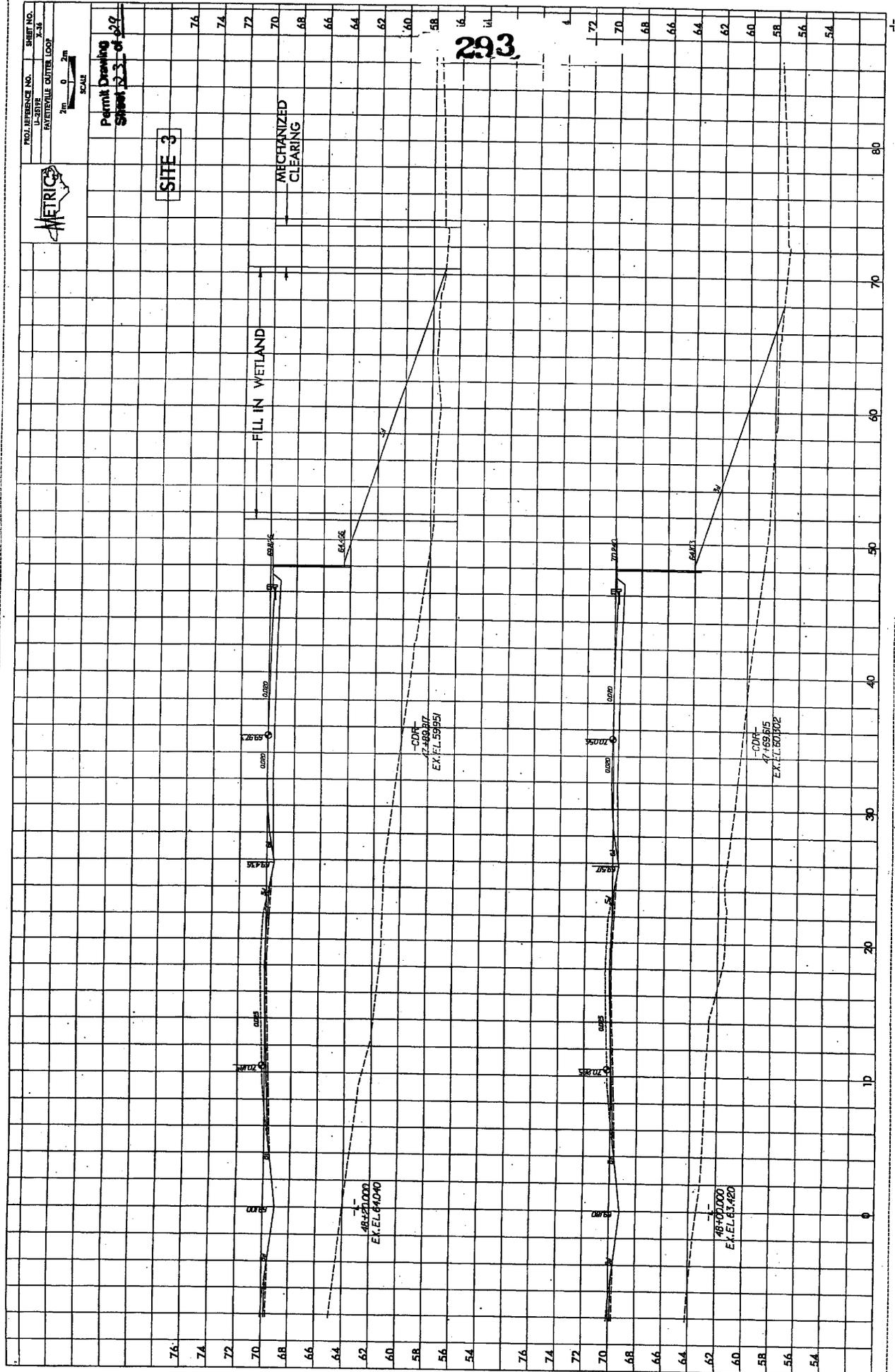


Permit Drawing  
 Sheet 23 of 29

SITE 3



293



PROJ. REFERENCE NO.  
 15-10-10  
 FAYETTEVILLE OUTRILL LOOP

SHEET NO.  
 238

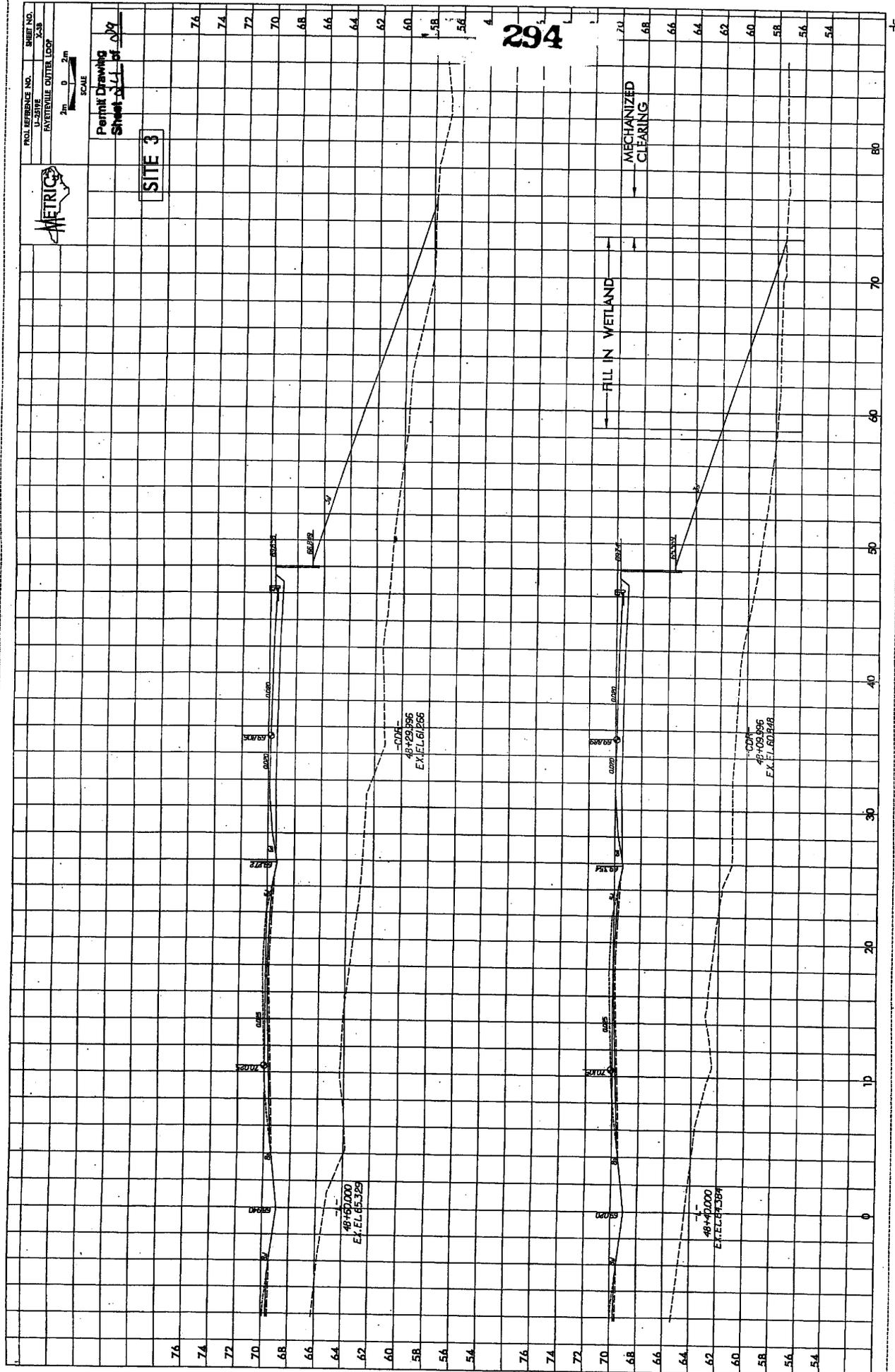


Permit Drawing  
 Sheet 238 of 239

SITE 3

SCALE  
 1" = 20'

294



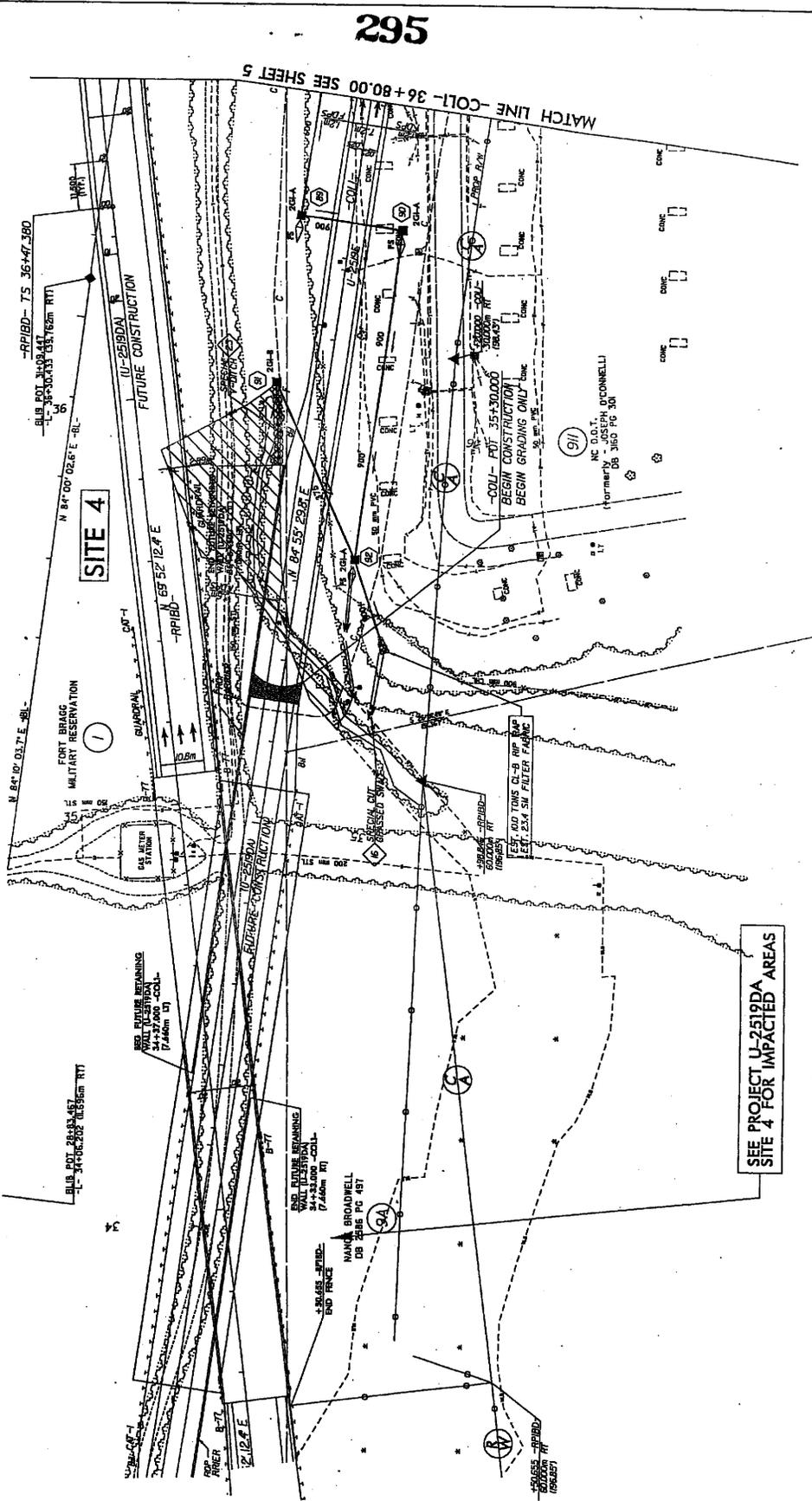
DATE PLOTTED  
 10/10/10  
 DRAWN BY  
 J. HARRIS  
 CHECKED BY  
 J. HARRIS

DRAWN BY: **ADDERSON & BUTCHER INC.**  
 CONSULTING ENGINEERS  
 1000 W. 10th Street, Suite 100  
 Oklahoma City, Oklahoma 73101  
 PHONE: (405) 233-1111  
 FAX: (405) 233-1112  
 WWW: www.adder.com

PROJECT REFERENCE NO. \_\_\_\_\_ SHEET NO. \_\_\_\_\_  
 ROADWAY DESIGN ENGINEER \_\_\_\_\_  
 PRELIMINARY PLANS  
 FINAL DESIGN  
 Sheet 25 of 89

10m  
 0m 50m 100m  
 COUNTY \_\_\_\_\_  
 HW. DIV. \_\_\_\_\_

 DENOTES FILL IN  
 DENOTES MECHANIZED CLEARING



SEE PROJECT U-2519DA  
 SITE 4 FOR IMPACTED AREAS

295

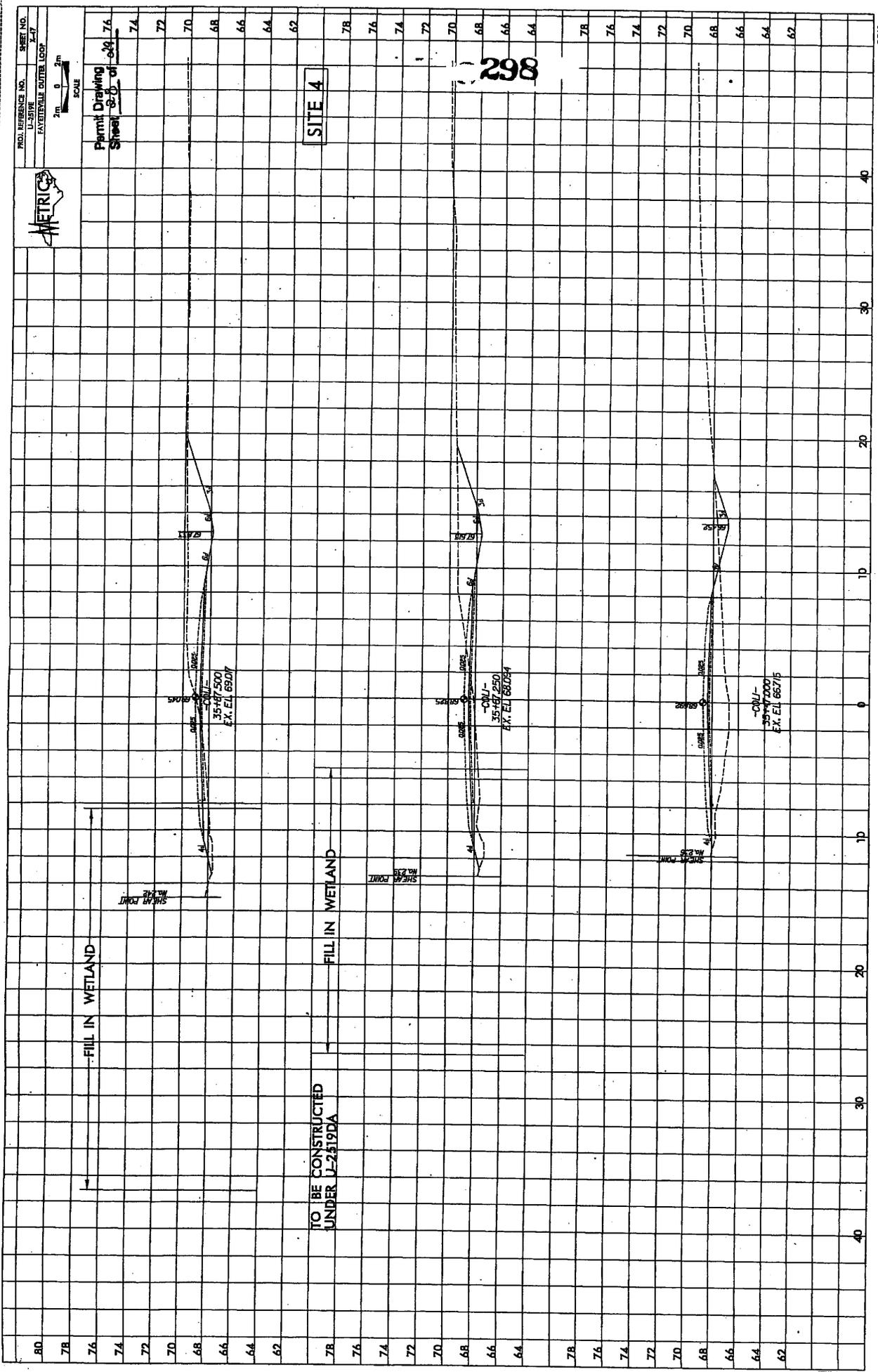
MATCH LINE - COLL-36+80.00 SEE SHEET 5

SEE SHEET 23 FOR "RIPED" PROFILE  
 SEE SHEET 2-C FOR DITCH DETAILS

100% GRADE  
 5% GRADE  
 2% GRADE  
 1% GRADE  
 0% GRADE  
 1% GRADE  
 2% GRADE  
 5% GRADE  
 10% GRADE  
 15% GRADE  
 20% GRADE  
 25% GRADE  
 30% GRADE  
 35% GRADE  
 40% GRADE  
 45% GRADE  
 50% GRADE  
 55% GRADE  
 60% GRADE  
 65% GRADE  
 70% GRADE  
 75% GRADE  
 80% GRADE  
 85% GRADE  
 90% GRADE  
 95% GRADE  
 100% GRADE







PROJ. REFERENCE NO. U-10000  
 U-10000  
 FAVORABLE OUTER LOOP



Permit Drawing  
 Sheet 8-0 of 8-0

SCALE  
 1" = 20'

SITE 4

298

FILL IN WETLAND

FILL IN WETLAND

TO BE CONSTRUCTED UNDER J-2519DA

SHEAR POINT

SHEAR POINT

CUJ-35+87.500  
 EX. EL. 69.07

CUJ-35+87.250  
 EX. EL. 66.04

CUJ-39+7.000  
 EX. EL. 66.715

80 78 76 74 72 70 68 66 64 62 78 76 74 72 70 68 66 64 62 78 76 74 72 70 68 66 64 62

40 30 20 10 0 10 20 30 40

DATE: 08/11/00  
 DRAWN: [Name]  
 CHECKED: [Name]  
 APPROVED: [Name]

-CON-

PROJ. REFERENCE NO. SHEET NO. 2-18  
 LICENSED PROFESSIONAL ENGINEER  
 METRIC

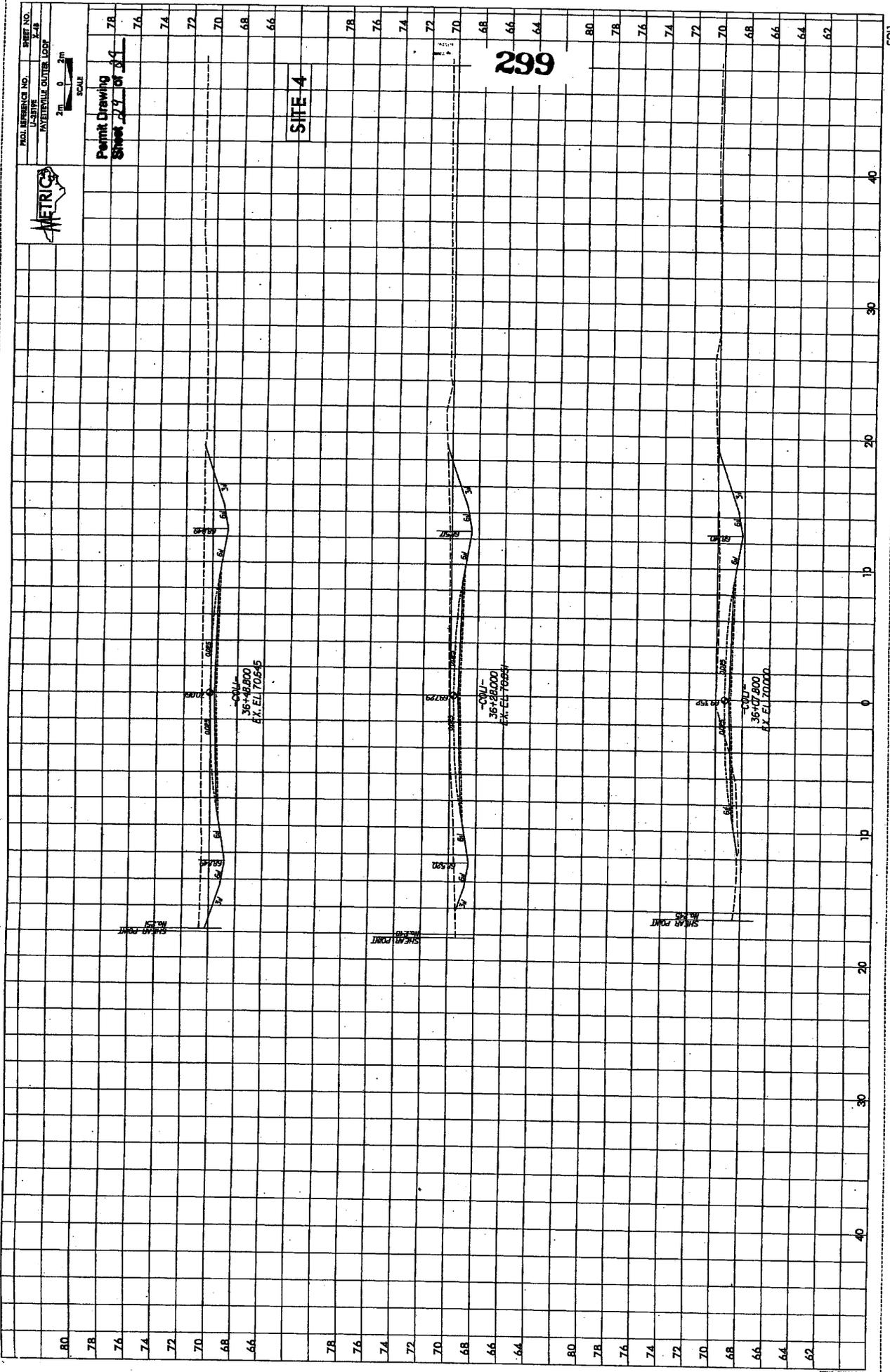


Permit Drawing  
 Sheet 22 of 31



SITE 4

299



-CONT-

DATE: 08/15/18  
 PROJECT: 22-18-18-18  
 SHEET: 22 OF 31