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
State Dredge and Fill and/or CAMA	Division of Coastal Management, DENR State of North Carolina
Water Quality (401)	Division of Environmental Management, DENR State of North Carolina
CCPCUA	Division of Water Resources, 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 107-13 of the *2012 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.

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF:

August 8, 2012 .

Regulatory Division

Action ID SAW-2005-9988695; TIP Project No. U-3810 Onslow County, North Carolina.

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

Dear Dr. Thorpe:

In accordance with your written request of April 20, 2012 and the ensuing administrative record, enclosed are two copies of a Department of the Army permit to directly discharge fill material into waters and wetlands adjacent to Northeast Creek, Little Northeast Creek, Poplar Creek, Mott Creek, and their tributaries in order to complete improvements to Piney Green Road (SR 1406), Onslow County, North Carolina. The proposed improvements total 6.6 miles in length.

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 site. 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 South Atlantic Division, Division Office at the following address:

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

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.

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. Brad Shaver of my Wilmington Field Office regulatory staff at telephone (910) 251-4611.

Sincerely,

Jean Gibby

Jean Gibby, Acting Chief
Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee: North Carolina Department of Transportation (NCDOT)

Permit No.: SAW-2005-9988695

Issuing Office: CESAW-RG-L

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: The overall purpose of the proposed highway project is to improve traffic flow and safety on Piney Green Road between NC 24 (Lejeune Blvd.) and US 17 (Marines Blvd.), in Jacksonville, Onslow County.

Project Location: Piney Green Road (SR 1406) is located within Jacksonville and connects US 17 (Marines Blvd) from the north and terminates south into NC 24 across from an existing United States Marine Corps (USMC) – Camp Lejeune Base entrance, Onslow County, North Carolina. Piney Green Road spans and bisects waters and wetlands adjacent to Northeast Creek, Little Northeast Creek, Poplar Creek, Mott Creek, and their tributaries ultimately draining to the New River. The road is physically located at 34.7750 N and -77.3610 W and is located in the White Oak River Basin and lies within Hydrologic Unit 03030001 (Subbasin 03-05-02).

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2017 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.

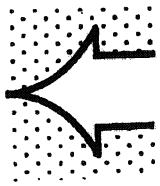
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance 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.

E. L. Lusk for Gregory J. Thorpe, PhD — Aug 9, 2012

(PERMITTEE) **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)** *(DATE)*



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

(DISTRICT ENGINEER) **STEVEN A. BAKER, 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

SAW-2005-9988695, SPECIAL CONDITIONS

In accordance with 33 U.S.C. 1341(d), all conditions of the North Carolina Division of Water Quality 401 Water Quality Certification #3928 and the North Carolina Division of Coastal Management Consistency Certification # 88-12 are incorporated as part of the Department of the Army permit.

a) 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.

b) All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.

c) The permittee must implement the "On-site Mitigation Plan SR 1406 (Piney Green Road) from NC 24 to US 17 Jacksonville, Onslow County, North Carolina" dated June 21, 2012. The elevation of the restoration site should be field confirmed by the USACE Wilmington Field Office prior to release of construction equipment so that any field level changes can be completed. The on-site mitigation consists of 7.87 acres of wetland preservation, 0.14 acre of non-tidal freshwater marsh, and 0.91 acre of riverine swamp forest restoration. The ratios applied to the mitigation effort are 10:1, 2:1, and 1:1 respectively. In total this is the equivalent of 1.76 acres of riparian wetland mitigation credits to be only used for this project. The mitigation work must be complete before the project final inspection and the contractor is released.

d) The permittee shall maintain the entire mitigation site in its natural condition, as altered by the work in the mitigation plan, in perpetuity. Prohibited activities within the mitigation site specifically include, but are not limited to: filling; grading; excavating; earth movement of any kind; construction of roads, walkways, buildings, signs, or any other structure; any activity that may alter the drainage patterns on the property; the destruction, cutting, removal, mowing, or other alteration of vegetation on the property; disposal or storage of any garbage, trash, debris or other waste material; graze or water animals, or use for any agricultural or horticultural purpose; or any other activity which would result in the property being adversely impacted or destroyed, except as specifically authorized by this permit.

* e) In order to compensate for impacts to 992 linear feet of stream / 0.78 acre of wetlands, the permittee shall make payment to the North Carolina Ecosystem Enhancement Program (NCEEP) in the amount determined by the NCEEP, sufficient to perform the restoration of 1,984 linear feet of warm water stream / 1.56 acres of riparian riverine

wetlands in the White Oak River Basin, Cataloging Unit 03030001. Construction within jurisdictional areas on the property may begin upon permit issuance; however, within 30 days of permit issuance, NCDOT shall provide written confirmation to the Corps that NCEEP agrees to accept responsibility for the mitigation work required, in compliance with the NCEEP In-Lieu Fee Instrument, approved by the United States Army Corps of Engineers, Wilmington District on July, 28, 2010. Until the Corps receives this confirmation letter from NCEEP, NCDOT remains responsible for this mitigation requirement. If the Corps has not received a confirmation from NCEEP within 150 days of the date of this verification, NCDOT shall provide plans to accomplish the required mitigation to the Corps of Engineers within 210 days of the date of this permit decision.

f) For culvert installations, measures should be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. These measures may include where appropriate; sills, baffles, created floodplain benches, and pre charged culverts. The dimension, pattern, and profile of the stream above and below a pipe or culvert should not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert should be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gage data, if available. In the absence of such data, bankfull flow can be used as a comparable level installation.

g) Culverts along this project should be buried at least one foot below the normal bed elevation. The excavation required, typically noted as temporary stream impact, should be restored to its original elevation at the completion of the culvert installation. A waiver from the depth specifications in this condition may be requested in writing. The waiver would be issued if it can be demonstrated that the proposal would result in the least impacts to the aquatic environment.

h) Culverts are to be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

i) Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried.

j) As described in the project commitments, the permittee will adhere to an in-stream work moratorium of February 15 to June 15 for Northeast Creek, Poplar Creek, and Little Northeast Creek for anadromous fish species.

k) 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.

l) Also as described in the project commitments, the permittee will adhere to *Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters* (Appendix F in EA) for this project.

m) 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.

n) 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. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities (including access roads) associated with this project.

o) 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 waters or wetlands or to reduce the reach of waters or wetlands.

p) 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. 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 1(800) 858- 0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

* q) The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

r) 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.

s) 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. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project

t) The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. 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).

u) No fill or excavation for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless it is included on the plan drawings and specifically authorized by this permit.

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

w) The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

x) Violations of these conditions or violations of Section 404 of the Clean Water Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.

y) Prior to commencing construction within jurisdictional waters of the United States, the permittee shall forward the latest version of project construction drawings to the USACE, Wilmington Regulatory Field Office NCDOT Regulatory Project Manager or confirm that the permit drawings submitted during application have not changed. Half-size drawings are acceptable.

* z) The permittee shall schedule an environmental preconstruction meeting between its representatives, the contractor's representatives, and the USACE, Wilmington 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 schedule the environmental 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 USACE and NCDWQ Project Managers a minimum of two weeks in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

aa) The permittee shall install barrier fencing around all wetlands that are not to be disturbed to make them readily visible and prevent construction equipment from inadvertently entering or disturbing these areas.

bb) If the permittee discovers any previously unknown historic or archaeological sites while accomplishing the authorized work, he shall immediately stop work and notify the Wilmington District Commander who would initiate the required State/Federal coordination.

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Beverly Eaves Perdue
Governor

Braxton C. Davis
Director

Dee Freeman
Secretary

RECEIVED
JUL 31 2012
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

7/27/12

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

Dear Dr. Thorpe:

The enclosed permit constitutes authorization under the Coastal Area Management Act, and where applicable, the State Dredge and Fill Law, for you to proceed with your project proposal. The original (buff-colored form) is retained by you and it must be available on site when the project is inspected for compliance. Please sign both the original and the copy and return the copy to this office in the enclosed envelope. Signing the permit and proceeding means you have waived your right of appeal described below.

If you object to the permit or any of the conditions, you may request a hearing pursuant to NCGS 113A-121.1 or 113-229. Your petition for a hearing must be filed in accordance with NCGS Chapter 150B with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27611-6714, (919) 733-2698 within twenty (20) days of this decision on your permit. You should also be aware that if another qualified party submits a valid objection to the issuance of this permit within twenty (20) days, the matter must be resolved prior to work initiation. The Coastal Resources Commission makes the final decision on any appeal.

The project plan is subject to those conditions appearing on the permit form. Otherwise, all work must be carried out in accordance with your application. Modifications, time extensions, and future maintenance require additional approval. Please read your permit carefully prior to starting work and review all project plans, as approved. If you are having the work done by a contractor, it would be to your benefit to be sure that he fully understands all permit requirements.

From time to time, Department personnel will visit the project site. To facilitate this review, we request that you complete and mail the enclosed Notice Card just prior to work initiation. However, if questions arise concerning permit conditions, environmental safeguards, or problem areas, you may contact Department personnel at any time for assistance. By working in accordance with the permit, you will be helping to protect our vitally important coastal resources.

Sincerely,

Douglas V. Huggett

Douglas V. Huggett
Major Permits and Consistency Manager

Enclosure

400 Commerce Ave., Morehead City, NC 28557
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

An Equal Opportunity \ Affirmative Action Employer

One North Carolina Naturally

Permit Class
NEW

Permit Number
88-12

STATE OF NORTH CAROLINA
Department of Environment and Natural Resources
and
Coastal Resources Commission

Permit

for

X Major Development in an Area of Environmental Concern pursuant to NCGS 113A-118

___ Excavation and/or filling pursuant to NCGS 113-229

Issued to N.C. Department of Transportation, 1548 Mail Service Center, Raleigh, NC 27699-1548

Authorizing development in Onslow County at Little Northeast Creek, Northeast Creek, and Poplar Creek on SR 1406 (Piney Green Road) as requested in the permittee's application dated 4/19/12 including the attached drawings as referenced in Condition No. 1 of this permit.

This permit, issued on 7/27/12, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

Widening of Piney Green Road (TIP No. U-3810)

1) Unless specifically altered herein, all work authorized by this permit shall be carried out in accordance with the following ninety nine (99) workplan drawings:

½ size drawings: Forty seven (47) drawings dated 10/11/11, thirteen (13) drawings dated 11/30/11, twelve (12) drawings dated 9/22/11, eight (8) drawings dated 2/16/12, five (5) drawings dated 10/18/11, four (4) drawings dated 4/28/11, two (2) drawings dated 6/17/11, two (2) drawings dated 2/7/11, one (1) drawing dated 10/12/11, one (1) drawing dated 12/8/11, one (1) drawing dated 3/8/12, one (1) drawing dated 3/23/12, and two (2) drawings dated as received on 4/23/12.

(See attached sheets for Additional Conditions)

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or continuance as the case may be.

This permit must be accessible on-site to Department personnel when the project is inspected for compliance.

Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

No Expiration Date, pursuant to GS 136-44.7B

In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission.

Douglas V. Huggett
for

Braxton C. Davis, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.

E. L. Lusk for Gregory J. Thorpe, PhD
Signature of Permittee

ADDITIONAL CONDITIONS

2) In order to protect anadromous fish during spawning periods and through embryonic, larval or juvenile life stages, and in accordance with project commitments made by the permittee within the CAMA permit application, no in-water work shall be conducted from February 15 through June 15 of any year in Little Northeast Creek, Northeast Creek and Poplar Creek. Any schedule modification shall require prior approval by the NC Division of Coastal Management (DCM), in consultation with the NC Wildlife Resources Commission (WRC).

3) Any debris resulting from the demolition or construction of bridges or culverts shall not enter wetlands or waters of the State, even temporarily.

4) The permittee and/or his contractor shall exercise all available precautions in day-to-day operations to prevent waste from entering the adjacent waters.

5) Any waste materials and debris associated with construction, demolition, or other activities shall be disposed of at an approved upland site or shall be recycled in an environmentally appropriate manner provided appropriate authorizations are obtained from any relevant state, federal, or local authorities.

6) The permittee and/or his contractor shall provide for proper storage and handling of all oils, chemicals, etc., necessary to carry out the project.

7) Construction staging areas shall be located only in upland areas, and not in wetlands or waters of the State.

8) The installation of bridge piles shall be performed by pile driving and/or the use of vibratory hammer. Should the permittee and/or its contractor desire to utilize another type of pile installation, such as drilled shaft or jetting, additional DCM authorization shall be required.

9) Live concrete shall not be allowed to contact waters of the State or water that will enter waters of the State or adjacent wetlands.

10) Placement of riprap shall be limited to the areas as depicted on the attached workplan drawings. The riprap material shall be free from loose dirt or any pollutant. The riprap material shall consist of clean rock or masonry materials, such as but not limited to, granite, marl, or broken concrete.

11) The middle culvert of three placed in Poplar Creek shall be buried at least one foot below normal bed elevation to allow for passage of water and aquatic life.

12) The temporary diversion channel and detour structure constructed at Poplar Creek shall be removed immediately upon completion of the permanent culvert and associated roadway.

13) The permittee shall minimize the need to cross wetlands in transporting equipment to the maximum extent practicable.

14) Construction mats shall be utilized to support equipment within wetland areas to minimize temporary wetland impacts. These mats shall be removed immediately following project completion.

ADDITIONAL CONDITIONS

15) There shall be no clearing or grubbing of wetlands outside of the areas indicated on the attached workplan drawings without prior approval from DCM.

16) In accordance with DWQ's 401 Water Quality Certification, bridge deck drains shall not discharge into the stream.

Excavation and Fill

17) No excavation shall take place at any time in any vegetated wetlands or surrounding waters outside of the alignment of the areas indicated on the attached workplan drawings, without permit modification.

18) Material excavated may be used in fill areas associated with the project or shall be removed from the site and taken to an approved high ground location.

19) All excavated materials shall be confined above normal water level and landward of regularly or irregularly flooded wetlands behind adequate dikes or other retaining structures to prevent spillover of solids into any wetlands or surrounding waters.

20) No excavated or fill material shall be placed at any time in any vegetated wetlands or surrounding waters outside of the alignment of the areas as indicated on the attached workplan drawings, without permit modification.

21) All fill material shall be clean and free of any pollutants except in trace quantities.

Sedimentation and Erosion Control

22) This project shall conform to all requirements of the NC Sedimentation Pollution Control Act and NC DOT's Memorandum of Agreement with the Division of Land Resources.

23) Unless specifically altered herein, the permittee shall follow "Best Management Practices for the Protection of Surface Waters (3/97)" and shall also implement sedimentation and erosion control measures sufficient to protect aquatic resources. At a minimum, appropriate sedimentation and erosion control devices, measures or structures shall be implemented to ensure that eroded materials do not enter adjacent wetlands, watercourses, and property (e.g. silt fence, diversion swales or berms, etc.).

Compensatory Mitigation

24) Unless specifically altered herein, on-site mitigation shall be carried out as described in the document entitled "On-Site Mitigation Plan, SR 1406 (Piney Green Road) from NC 24 to US 17, Jacksonville, Onslow County, North Carolina T.I.P. Number U-3810", dated 6/21/2012.

ADDITIONAL CONDITIONS

NOTE: The permittee is advised that additional mitigation or other remedial actions may be required for permanent wetland impacts if the on-site mitigation fails to meet its success criteria within 5 years of construction.

NOTE: The Ecosystem Enhancement Program (EEP) agreed to provide mitigation for 0.78 acres of riparian wetlands and 1,140 linear feet of stream impacts per the EEP Mitigation Acceptance Letter, dated 3/27/12.

Utilities Relocation

25) Any relocation of utility lines that has not been previously permitted by DCM or is not already depicted on the attached work plan drawings, or described within the attached permit application, shall require approval by DCM, either under the authority of this permit, or by the utility company obtaining separate authorization.

General

26) DWQ authorized the proposed project on June 25, 2012 by DWQ Project No. 110931v3 and modified by DWQ Project No. 110931v4 under Certification No. 3928. Any violation of the Certification approved by the DWQ shall be considered a violation of this CAMA permit.

NOTE: DWQ provided confirmation that the subject project is excluded from State Coastal Stormwater permitting requirements by way of the Stormwater Permit Exclusion letter, dated 11/4/11 (Project No. SW8110221).

27) The permittee and/or contractor shall contact the DCM Transportation Field Representative at (252) 808-2808 extension No. 208 to schedule a pre-construction conference prior to project initiation.

NOTE: If it is determined that additional permanent and/or temporary impacts are necessary that are not shown on the attached permit drawings or described in the authorized permit application, permit modification or additional authorization from DCM may be required.

NOTE: This permit does not eliminate the need to obtain any additional state, federal, or local permits, approvals, or authorizations that may be required, including, but not limited to, the US Army Corps of Engineers and/or the US Coast Guard.

P-17

North Carolina Department of Environment and Natural Resources
Division of Water Quality
Charles Wakild, P.E
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

RECEIVED
JUN 29 2012
CR
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRON

June 25, 2012

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

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for proposed widening of SR 1406 (Piney Green Road) from NC 24 to US 17 in Onslow County, Federal Aid Project No. STP-1406(4), WBS No. 35801.1.1, TIP U-3810. NCDWQ Project No. 11-0931v.3

Dear Dr. Thorpe:

Attached hereto is a copy of Certification No. 3928 issued to The North Carolina Department of Transportation (NCDOT) dated June 25, 2012.

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

Sincerely,

for Charles Wakild
Director

Attachments

cc: Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Karen Fussell, PE, Division 3 Engineer
Stoney Mathis, Division 3 Environmental Officer (electronic copy only)
Chris Militscher, Environmental Protection Agency (electronic copy only)
Gary Jordan, US Fish and Wildlife Service (electronic copy only)
Travis Wilson, NC Wildlife Resources Commission (electronic copy only)
Jason Elliott, NCDOT, Roadside Environmental Unit
Steve Sollod, Division of Coastal Management
Michael Ellison, Ecosystem Enhancement Program
Sonia Carrillo, NCDWQ Central Office
File Copy

Transportation and Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6492
Internet: www.ncwaterquality.org

An Equal Opportunity \ Affirmative Action Employer

One NorthCarolina Naturally

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 (NCDWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 2.70 acres of jurisdictional wetlands and 1,676 linear feet of jurisdictional streams in Onslow County. The project shall be constructed pursuant to the application dated received April 20, 2012. The authorized impacts are as described below:

Stream Impacts in the White Oak River Basin

Site	Station	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Bank Stabilization (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	-L-50+67 to 52+76	0	0	121	15	116	252	237
2	-L-79+00 to 86+30	0	0	86	0	0	86	0
3	117+87 to 119+25 Lt/Rt	88	16	0	0	0	104	0
4	-L-165+53 to 168+89	0	0	290	48	28	366	318
5	-L-231+47 to 242+32	0	0	36	0	0	36	0
6	-L-273+75 to 274+85	0	0	209	47	73	329	282
8	-L-328+58 to 329+72	0	0	45	49	66	160	0
11	-L-69+55 to 70+09 Lt/Rt	110	21	0	0	26	157	0
12	-L-192+46 Rt/Lt & 194+10 Rt	155	31	0	0	0	186	155
Total		**353**	**68**	**787**	**159**	**309**	**1,676**	**992**

Total Stream Impact for Project: 1,676 linear feet

Wetland Impacts in the White Oak River Basin (riparian)

Site	Station	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Excavation (temporary) (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Impacts Requiring Mitigation
2	-L-79+00 to 86+30	0.49	0	0.02	0	0.15	0.03	0.69	0.66
3	117+87 to 119+25 Lt/Rt	0.02	0	0	0	0.02	0	0.04	0.04
4	-L-165+53 to 168+89	0.32	0	0.09	0.02[a]	0.13	0	0.56	0.54
5	-L-231+47 to 242+32	0.72	0	0	0.07[b]	0.22	0.04	1.05	0.94
7	-L-284+98 to 286+16 Lt	0.19	0	0	0	0	0	0.19	0.19
9	-Y-21+80 to 23+60 Lt	0.10	0	0	0	0	0	0.10	0.10
10	-L-11+50 Rt	0.01	0	0.06	0	0	0	0.07	0.07
Total		**1.85**	**0**	**0.17**	**0.09**	**0.52**	**0.07**	**2.70**	**2.54**

Total Wetland Impact for Project: 2.70 acres.

[a)]Denotes temporary excavation for temporary diversion in proposed culvert phasing

[b)]Denotes temporary excavation for mitigation site tie in.

The application provides adequate assurance that the discharge of fill material into the waters of the White Oak 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 dated received April 20, 2012. Should your project change, you are required to notify the NCDWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or

local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

Project Specific Conditions

* 1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWQ staff shall be invited to the pre-construction meeting.

2. The permittee will need to adhere to all appropriate in-water work moratoria (including the use of pile driving or vibration techniques) prescribed by the NC Wildlife Resources Commission. No in-water work is permitted between February 15 and June 15 of any year, without prior approval from the NC Division of Water Quality and the NC Wildlife Resources Commission. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.

3. 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.

4. 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.

5. The reinforced concrete box culverts at Permit Sites 1, 4, 6 and 8 shall be backfilled to the adjacent natural streambed and/or floodplain elevations. The culverts must be backfilled and compacted with the same type of native material that is excavated from the streambed and/or floodplain during the construction of these structures.

6. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly.

7. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species.

8. Channel relocations shall be completed and stabilized, and approved on site by DWQ staff, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. 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. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills.

9. Pipes and culverts used exclusively to maintain equilibrium in wetlands and/or served as floodplain pipes, where aquatic life passage is not a concern shall not be buried. These pipes shall be installed at natural ground elevation.

10. 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.

11. 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.*

12. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from NCDWQ first.

* 13. Compensatory mitigation for 992 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated March 27, 2012 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the EEP Mitigation Banking Instrument signed July 28, 2010.

14. Compensatory mitigation for impacts to 2.54 acres of riparian wetlands. The permittee shall comply with the revised on-site wetland mitigation plan dated June 19, 2012. All on-site mitigation sites shall be protected in perpetuity by a conservation easement or through NCDOT fee simple acquisition and recorded in the NCDOT Natural Environment Unit mitigation geodatabase. The onsite mitigation shall comprise of 0.91 acres of riverine swamp forest restoration at 1:1 ratio (0.91 credits), 0.14 acres of non-tidal freshwater marsh at 2:1 ratio (0.07 credits) and 7.87 acres of riverine swamp preservation at 10:1 ratio (0.78 credits).

15. For the forested wetland mitigation site located from Station –L- Sta. 222+68 to 233+71.50 Lt., the permittee shall plant 680 stems/acre. Vegetation success shall be measured by survivability over a 5-year monitoring period. Survivability will be based on 320 stems/acre after three (3) years and 260 stems after five (5) years. A survey of vegetation during the growing season shall be conducted annually over the five-year monitoring period and submitted to the NC Division of Water Quality. If the surviving vegetation densities are below the required thresholds after the five-year monitoring period, the site may still be declared successful at the discretion of and with written approval from the NC Division of Water Quality.

* 16. Compensatory mitigation for the remaining impacts to 0.78 acre of riparian wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated March 27, 2012 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the EEP Mitigation Banking Instrument signed July 28, 2010.

17. The project shall be constructed in accordance with the Stormwater Management Plan submitted in the application dated April 20, 2012.

General Condition

18. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams 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 NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

19. 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.

20. 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.

21. 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.

22. 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.

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

24. 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.

25. 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.

26. 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.

27. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.

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

29. 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 NCDWQ 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, NCDWQ may reevaluate and modify this certification.

30. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification..

31. A copy of this Water Quality Certification shall be maintained 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.

32. 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.

33. 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.

34. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.

* 35. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify NCDWQ when all work included in the 401 Certification has been completed.

36. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction.

37. 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.

38. 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.

39. 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 you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. William Cary, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

P-23

This the 25th day of June 2012

DIVISION OF WATER QUALITY

for Charles Wakild
Director

WQC No. 3928

RECEIVED
MAR 26 2012
cR
OFFICE OF NATURAL ENVIRONMENT

North Carolina
Environmental Management Commission
Department of Environment and Natural Resources

Permit For The Withdrawal And Use Of Water In The Central Coastal Plain Capacity Use Area

In accordance with the provisions of Part 2, Article 21 of Chapter 143, General Statutes of North Carolina as amended, and any other applicable Laws, Rules and Regulations,

Permission Is Hereby Granted To

NC Department of Transportation

Project No. U-3810
Improvements to SR 1406 (Piney Green Rd) from US 17 (Marine Blvd) to NC 24 (Freedom Way)

FOR THE

Withdrawal and Use of Water in Onslow County, North Carolina in accordance with the grantee's application dated January 10, 2012, and any supporting data submitted with the application, all of which are filed with the Department of Environment and Natural Resources and are considered part of this Permit.

This Permit shall be effective from the date of its issuance until January 31, 2017, and shall be subject to the specified conditions and/or limitations contained in Sections I - X of this Permit.

Permit issued this the 21 day of MARCH, 2012.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

BY _____

Thomas A. Reeder
Director, Division of Water Resources

By Authority of the Secretary of the Department of Environment and Natural Resources

PERMIT #CU4027

I. WITHDRAWALS

A. USE

This Permit allows the withdrawal of water for the purpose of dewatering borrow pits to extract material for road construction.

B. RATES OF WITHDRAWALS

The maximum quantity of water that may be withdrawn shall not exceed what is established in the Reclamation Plan as specified in NCDOT's CCPCUA Special Provisions document.

C. SOURCE(s) OF WITHDRAWALS

Ground Water Source(s): Withdrawals shall be made from sumps in borrow pits in the surficial aquifer.

D. MONITORING OF WITHDRAWALS

Withdrawals from each source, whether well or sump, shall be measured by an approved metering device equipped with a totalizing indicator, and having an accuracy within plus or minus five percent.

II. WATER LEVELS

A. MAXIMUM DRAWDOWN LEVELS

1. Pump intakes for the well(s) shall not be set below the depth specified in the permit application or associated documentation without prior approval of the Division of Water Resources.

2. In the event that data from the permitted wells or other wells within the zone influenced by pumping of the permitted wells indicates a deterioration of quality or quantity in surrounding aquifers or the source aquifer, an alternate maximum pumping level may be established by the Division of Water Resources.

B. MONITORING OF WATER LEVELS

1. The pumping water level in each supply well shall be measured once a month:
   a. by a steel or electric tape from a fixed reference point, or by using the air-line method
   b. within accuracy limits of plus or minus one percent,
   c. just prior to shutting off the pump, or after sufficient time of pumping, so that a maximum drawdown may be obtained, and
   d. during the last planned pumping day of the month, or within the last five days of the month.

2. The static water level in each supply well shall be measured once a month:
   a. by a steel or electric tape from a fixed reference point, or by using the air-line method
   b. within accuracy limits of plus or minus one percent,
   c. after the pump is shut off for approximately 12 hours, and
   d. within the last five days of the month.

3. Unused supply wells or other suitable wells that may be available shall be monitored when such monitoring is specified by the Division of Water Resources and when pertinent to observation or evaluation of the effects of withdrawals made under this permit.

III. OTHER PROVISIONS

A. WELL CONSTRUCTION APPROVAL

A Well Construction Permit shall be required prior to the construction of any well that will be used to withdraw any portion of the water regulated under this Permit. Application for these permits must be submitted to the Washington Regional Office, Division of Water Quality, P.O. Box 2188, Washington, NC 27889.

B. ACCESS TO FACILITIES

The Environmental Management Commission and employees of the Department of Environment and Natural Resources shall have reasonable access to areas owned and under control of the permittee for observation and inspection of water use and related facilities pertinent to the provisions of this permit and other regulations.

IV. REPORTS REQUIRED

A. WITHDRAWALS

Monthly reports of daily withdrawal totals from each well or sump shall be furnished to the Division on a quarterly basis, within 30 days after the end of March, June, September and December.

B. WATER LEVELS

Water level measurements for each supply well shall be measured in accordance with Condition II. B. 1. of this permit and submitted to the Division not later than 30 days after the end of the calendar month in which the measurement was taken.

V. MODIFICATION OR REVOCATION

A. MODIFICATION

1. The Permittee must notify the Director of any proposed major changes in usage and apply for a modification of the permit for such changes or for any revisions of the terms of this permit.

2. The Director may modify the terms of the permit, after 60 days written notice to the permittee, if he finds that the terms of the permit and/or the resulting water use are found to be contrary to the purposes of the Water Use Act of 1967 or contrary to public interest or having an unreasonably adverse effect upon other water uses in the capacity use area. Modifications may include, but are not limited to, requirements for alternate pumping levels or the collection, analysis, and reporting of ground or surface water quality samples.

B. REVOCATION

The Director may revoke the permit if he finds that:

1. the Permittee has violated the terms of the permit; or

2. the terms of the Permit and/or the resulting water use are contrary to the purpose of the Water Use Act of 1967 or contrary to the public interest or having an unreasonably adverse effect upon other water uses in the capacity use area and cannot be cured by modification; or

3. the Permittee made false or fraudulent statements in the application for the water use permit; or

4. water withdrawn under the terms of the permit is used for purposes other than those set forth in the permit.

VI. CONSTRUCTION OF PERMIT

A. The terms and conditions shall not be construed to relieve the Permittee of any legal obligation or liability, which it owes or may incur to third parties as the result of the conduct of its operations in conformity with this Permit.

B. When under the terms hereof, any provision of this Permit requires approval of the Department or becomes effective at the discretion of the Department, the notice of approval or the exercise of such discretion shall be evidenced by written instrument issued by the Department.

C. The terms and conditions of this Permit shall not be construed as a limitation of the powers, duties, and authority vested in the Environmental Management Commission or any other State, Federal, or local agency, or any applicable laws hereafter enacted.

VII. ADDITIONAL CONDITIONS

A. This Permit shall be subject to any limitations or conditions in other State permits, including but not limited to permits required pursuant to North Carolina General Statutes §143-215.1.

B. Issuance of this Permit shall have no bearing on subsequent State decision(s) regarding any other water use or other permit application(s) submitted or which may be submitted by the Permittee, its successors or assigns.

C. Compliance with the terms and conditions in this permit does not relieve the permittee of compliance with any provision, now in force or hereafter enacted or promulgated, of the Water Use Act of 1967, the regulations promulgated thereunder, or any other provision of State law.

VIII. PENALTIES

Violations of the terms and conditions of this Permit are subject to penalties as set forth in North Carolina General Statutes §143-215.17.

IX. PERMIT NONTRANSFERABLE

Water Use Permits shall not be transferred except with approval of the Environmental Management Commission.

X. RENEWAL OF PERMIT

The Permittee, at least three (3) months prior to the expiration of this permit, shall request its extension. Upon receipt of the request, the Commission will review the adequacy of the facilities described therein, and if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Report of Weekly or Monthly Water Levels Pumping (P) and (S)

North Carolina Department Of Environmental and Natural Resources

Mail to: Division of Water Resources- NC DENR
1611 Mail Service Center
Raleigh, NC 27699-1611
Attention: Capacity Use Administration

Name: _____
Signature: _____
Date: _____

Month _____ Year _____ Facility Name: **NCDOT (U-3810)** Permit #: **CU4027** Sheet # ____ of ____

Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____			
Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S

Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____			
Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S

Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____				Well ID_____ Land Surface Elev. (ft) _____			
Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S	Date	Time	Feet Below Land Surface	P or S

DWR CCPCUA-6

State land surface elevations and depths below land surface to the nearest 0.1 feet.

Report of Water Withdrawals from Each Source

North Carolina Department of Environment and Natural Resources

Mail To: Division of Water Resources - NC DENR
1611 Mail Service Center
Raleigh, North Carolina 27699-1611
Attention : Capacity Use Administration

Check Box If No Use This Month ☐

For month of: _____ Year: _____ Facility: **NCDOT (U-3810)** Permit #: **CU4027** Sheet ___of___

Well/Sump ID →							
	meter readings ↓	gallons per day	meter readings ↓	gallons per day	meter readings ↓	gallons per day	Total Withdrawn
Beginning reading →							
Day 1							
Day 2							
Day 3							
Day 4							
Day 5							
Day 6							
Day 7							
Day 8							
Day 9							
Day 10							
Day 11							
Day 12							
Day 13							
Day 14							
Day 15							
Day 16							
Day 17							
Day 18							
Day 19							
Day 20							
Day 21							
Day 22							
Day 23							
Day 24							
Day 25							
Day 26							
Day 27							
Day 28							
Day 29							
Day 30							
Day 31							

DWR CCPCUA-4 **Name:** _____ **Signature:** _____ **Date:** _____

P-30

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE
Precautionary Measures for Construction Activities in North Carolina Waters

The West Indian manatee (*Trichechus manatus*), also known as the Florida manatee, is a Federally-listed endangered aquatic mammal protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C 1461 *et seq.*). The manatee is also listed as endangered under the North Carolina Endangered Species Act of 1987 (Article 25 of Chapter 113 of the General Statutes). The U.S. Fish and Wildlife Service (Service) is the lead Federal agency responsible for the protection and recovery of the West Indian manatee under the provisions of the Endangered Species Act.

Adult manatees average 10 feet long and weigh about 2,200 pounds, although some individuals have been recorded at lengths greater than 13 feet and weighing as much as 3,500 pounds. Manatees are commonly found in fresh, brackish, or marine water habitats, including shallow coastal bays, lagoons, estuaries, and inland rivers of varying salinity extremes. Manatees spend much of their time underwater or partly submerged, making them difficult to detect even in shallow water. While the manatee's principal stronghold in the United States is Florida, the species is considered a seasonal inhabitant of North Carolina with most occurrences reported from June through October.

To protect manatees in North Carolina, the Service's Raleigh Field Office has prepared precautionary measures for general construction activities in waters used by the species. Implementation of these measure will allow in-water projects which do not require blasting to proceed without adverse impacts to manatees. In addition, inclusion of these guidelines as conservation measures in a Biological Assessment or Biological Evaluation, or as part of the determination of impacts on the manatee in an environmental document prepared pursuant to the National Environmental Policy Act, will expedite the Service's review of the document for the fulfillment of requirements under Section 7 of the Endangered Species Act. These measures include:

1. The project manager and/or contractor will inform all personnel associated with the project that manatees may be present in the project area, and the need to avoid any harm to these endangered mammals. The project manager will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.

2. The project manager and/or the contractor will advise all construction personnel that

there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act and the Endangered Species Act.

3. If a manatee is seen within 100 yards of the active construction and/or dredging operation or vessel movement, all appropriate precautions will be implemented to ensure protection of the manatee. These precautions will include the immediate shutdown of moving equipment if a manatee comes within 50 feet of the operational area of the equipment. Activities will not resume until the manatee has departed the project area on its own volition (i.e., it may not be herded or harassed from the area).

4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service (ph. 919.856.4520 ext. 16), the National Marine Fisheries Service (ph. 252.728.8762), and the North Carolina Wildlife Resources Commission (ph. 252.448.1546).

5. A sign will be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

> CAUTION: The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes within 50 feet of the vessel or operating equipment. A collision with and/or injury to the manatee must be reported immediately to the U.S. Fish and Wildlife Service (919-856-4520 ext. 16), the National Marine Fisheries Service (252.728.8762), and the North Carolina Wildlife Resources Commission (252.448.1546).

6. The contractor will maintain a log detailing sightings, collisions, and/or injuries to manatees during project activities. Upon completion of the action, the project manager will prepare a report which summarizes all information on manatees encountered and submit the report to the Service's Raleigh Field Office.

7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than a four foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

Prepared by (rev. 06/2003):
U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726
919/856-4520

Figure 1. The whole body of the West Indian manatee may be visible in clear water; but in the dark and muddy waters of coastal North Carolina, one normally sees only a small part of the head when the manatee raises its nose to breathe.

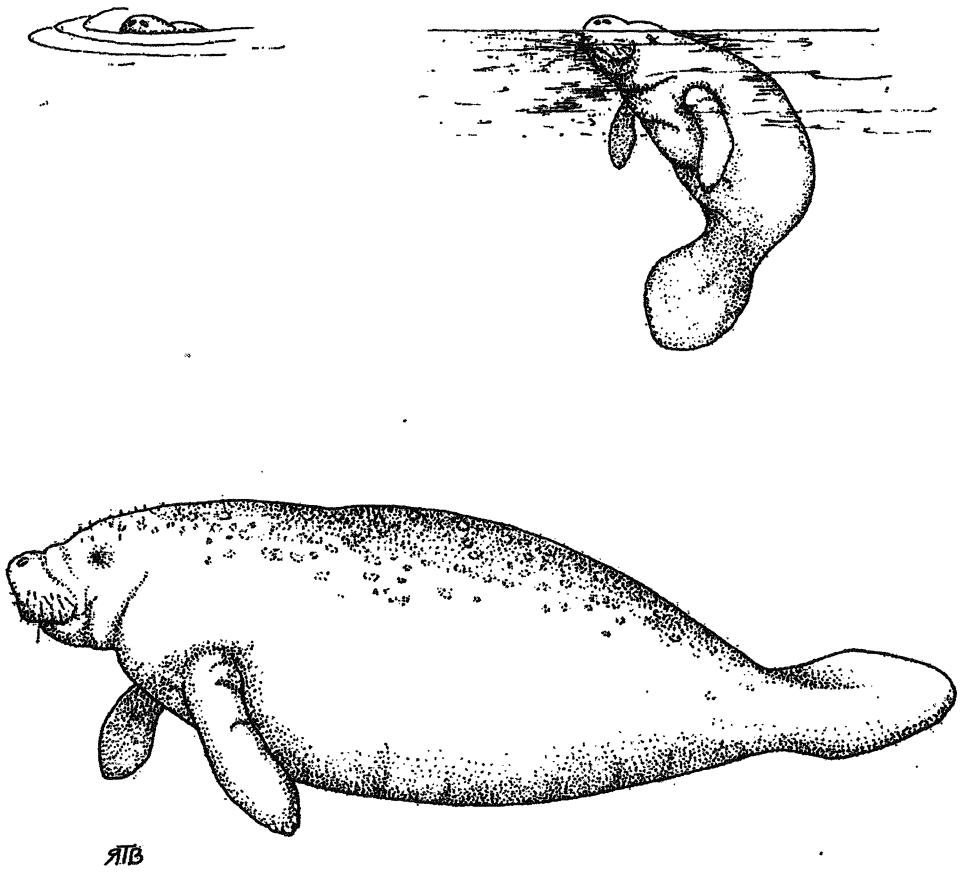
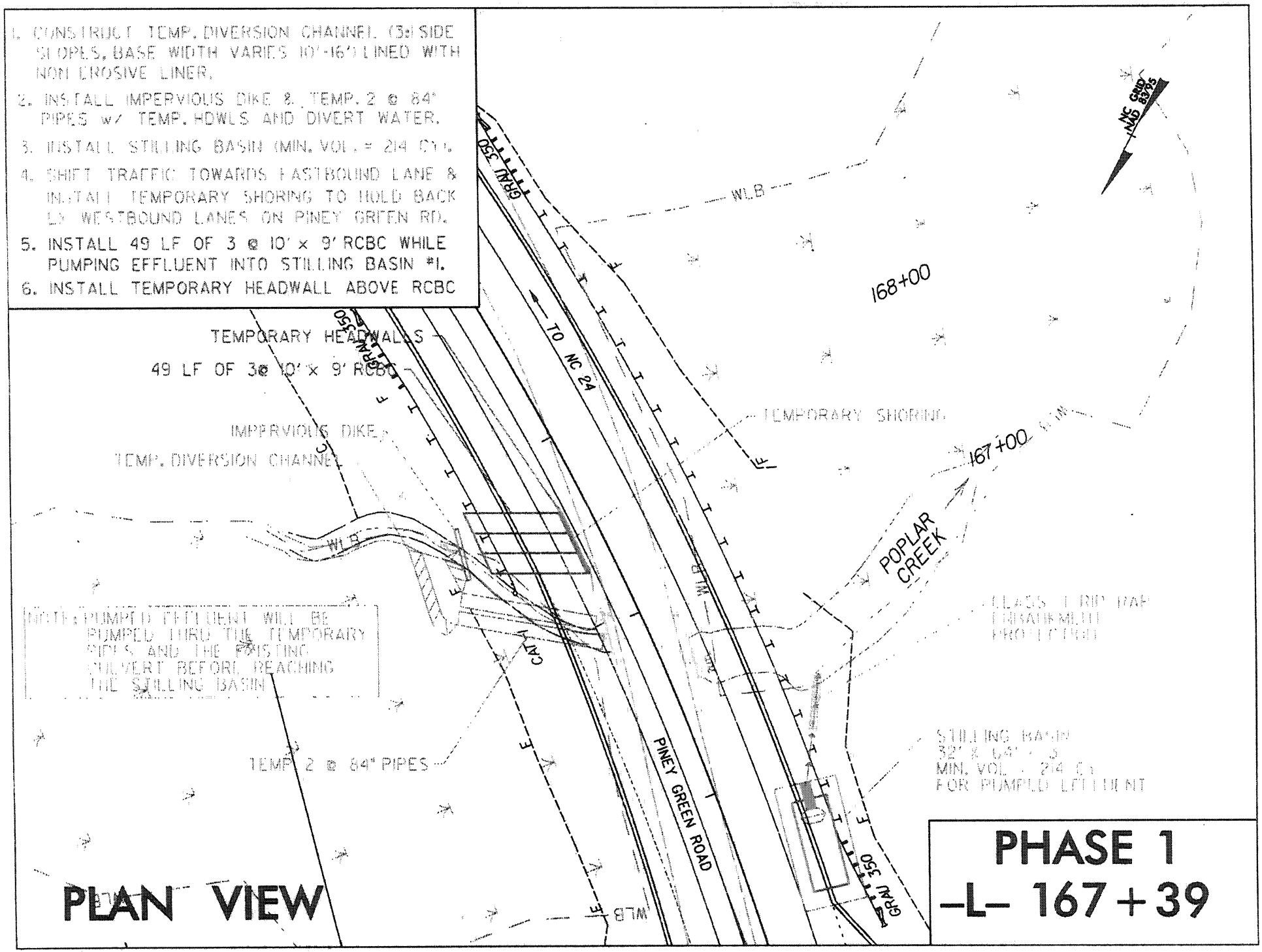
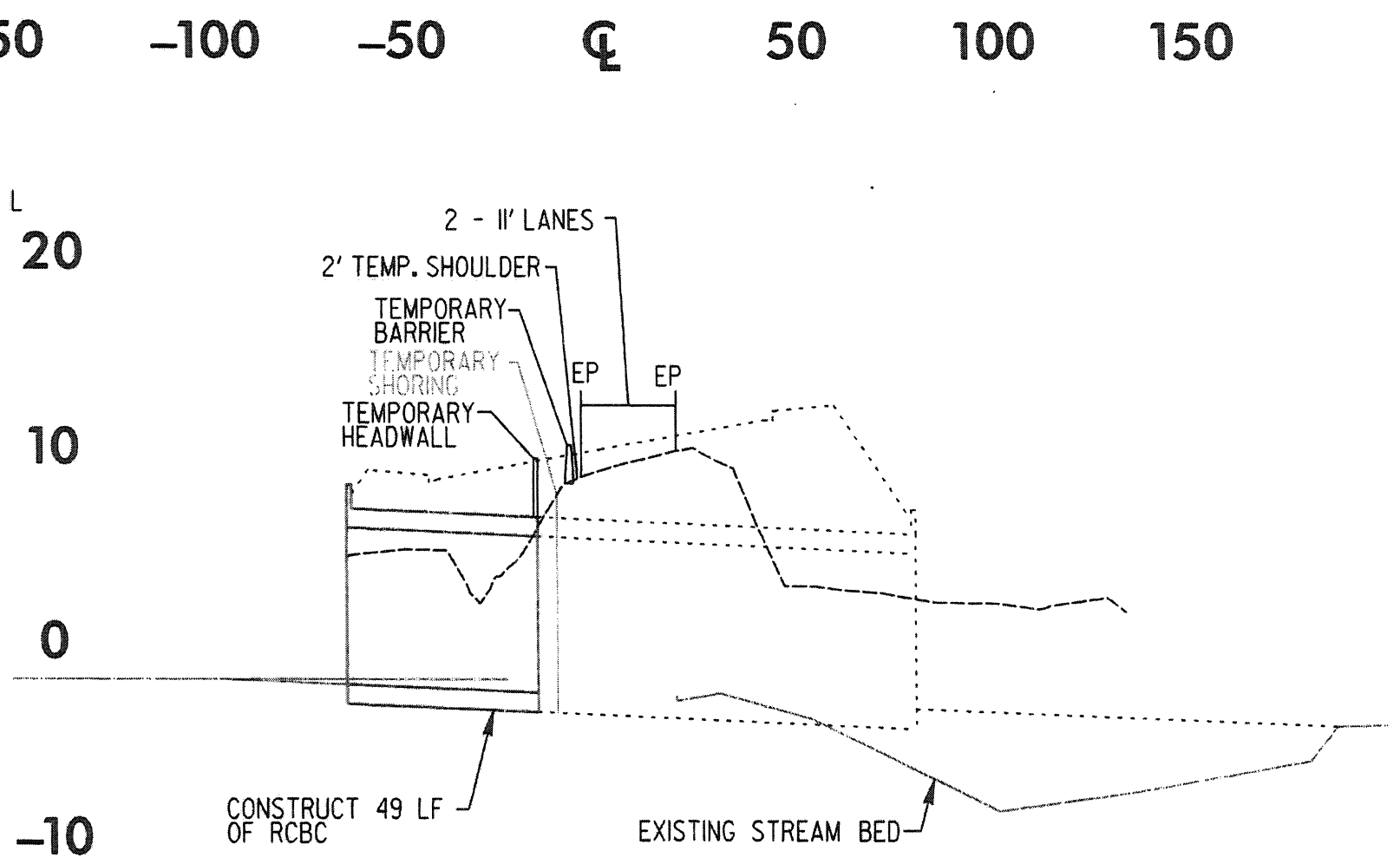


Illustration used with the permission of the North Carolina State Museum of Natural Sciences. Source: Clark, M. K. 1987. Endangered, Threatened, and Rare Fauna of North Carolina: Part I. A re-evaluation of the mammals. Occasional Papers of the North Carolina Biological Survey 1987-3. North Carolina State Museum of Natural Sciences. Raleigh, NC. pp. 52.

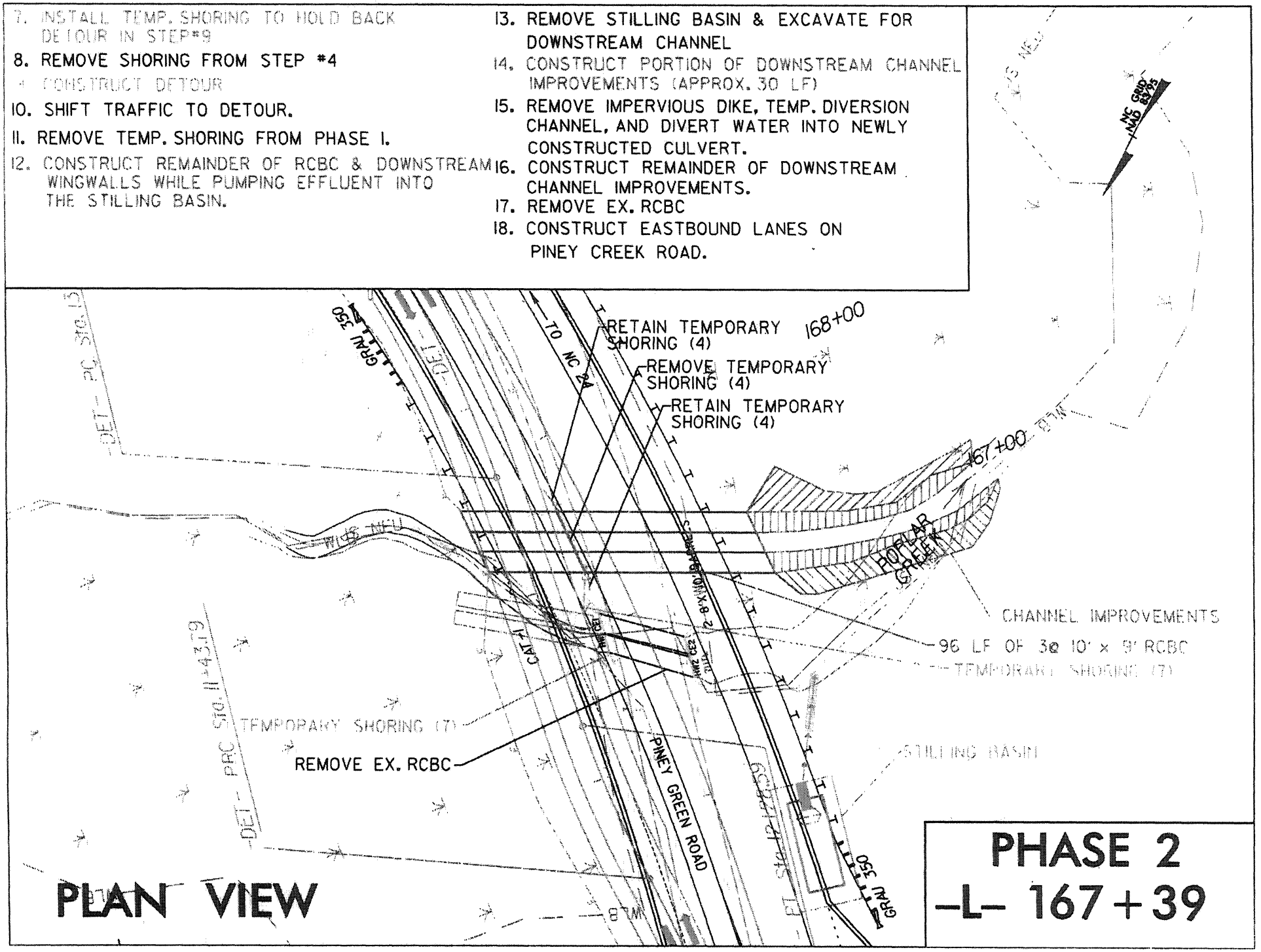

1. CONSTRUCT TEMP. DIVERSION CHANNEL (3:1 SIDE SLOPES, BASE WIDTH VARIES 10'-16') LINED WITH NON EROSIVE LINER.
2. INSTALL IMPERVIOUS DIKE & TEMP. 2 @ 84" PIPES w/ TEMP. HDWLS AND DIVERT WATER.
3. INSTALL STILLING BASIN (MIN. VOL. = 214 CY).
4. SHIFT TRAFFIC TOWARDS EASTBOUND LANE & INSTALL TEMPORARY SHORING TO HOLD BACK EX WESTBOUND LANES ON PINEY GREEN RD.
5. INSTALL 49 LF OF 3 @ 10' x 9' RCBC WHILE PUMPING EFFLUENT INTO STILLING BASIN #1.
6. INSTALL TEMPORARY HEADWALL ABOVE RCBC
TEMPORARY HEADWALLS
49 LF OF 3@ 10' x 9' RCBC
IMPERVIOUS DIKE
TEMP. DIVERSION CHANNEL
NOTE: PUMPED EFFLUENT WILL BE PUMPED THRU THE TEMPORARY PIPES AND THE EXISTING CULVERT BEFORE REACHING THE STILLING BASIN
TEMP. 2 @ 84" PIPES
TO NC 24
PINEY GREEN ROAD
GRAU 350
WLB
168+00
167+00
TEMPORARY SHORING
POPLAR CREEK
CLASS I RIP RAP ENBANKMENT PROTECTION
STILLING BASIN 32' X 64' x 3 MIN. VOL. = 214 CY FOR PUMPED EFFLUENT
NC GRID NAD 83/95
PLAN VIEW
PHASE 1
-L- 167+39



CULVERT TEMPLATE VIEW

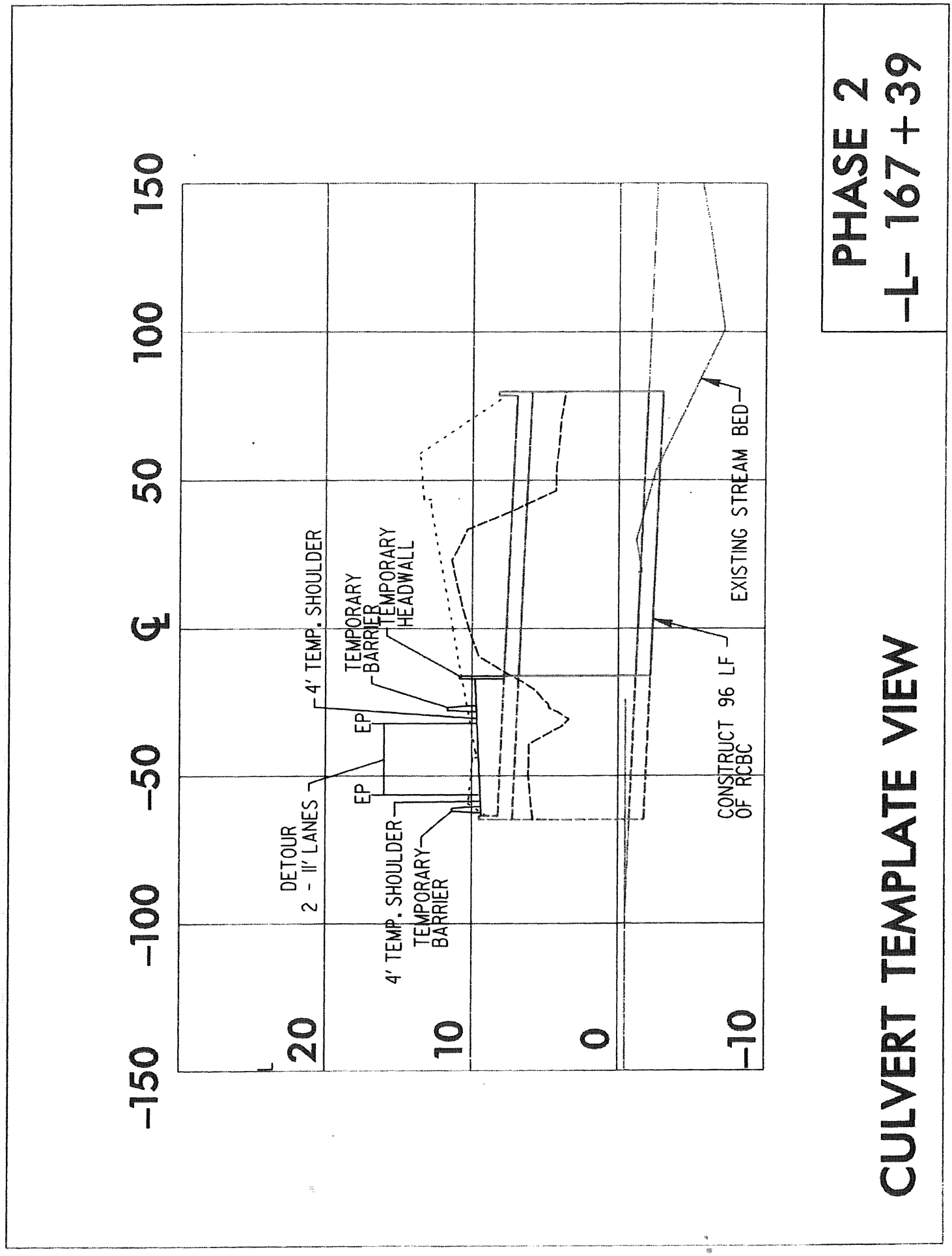
PHASE 1
-L- 167+39

7. INSTALL TEMP. SHORING TO HOLD BACK DETOUR IN STEP #9
8. REMOVE SHORING FROM STEP #4
9. CONSTRUCT DETOUR
10. SHIFT TRAFFIC TO DETOUR.
11. REMOVE TEMP. SHORING FROM PHASE I.
12. CONSTRUCT REMAINDER OF RCBC & DOWNSTREAM WINGWALLS WHILE PUMPING EFFLUENT INTO THE STILLING BASIN.
13. REMOVE STILLING BASIN & EXCAVATE FOR DOWNSTREAM CHANNEL
14. CONSTRUCT PORTION OF DOWNSTREAM CHANNEL IMPROVEMENTS (APPROX. 30 LF)
15. REMOVE IMPERVIOUS DIKE, TEMP. DIVERSION CHANNEL, AND DIVERT WATER INTO NEWLY CONSTRUCTED CULVERT.
16. CONSTRUCT REMAINDER OF DOWNSTREAM CHANNEL IMPROVEMENTS.
17. REMOVE EX. RCBC
18. CONSTRUCT EASTBOUND LANES ON PINEY CREEK ROAD.

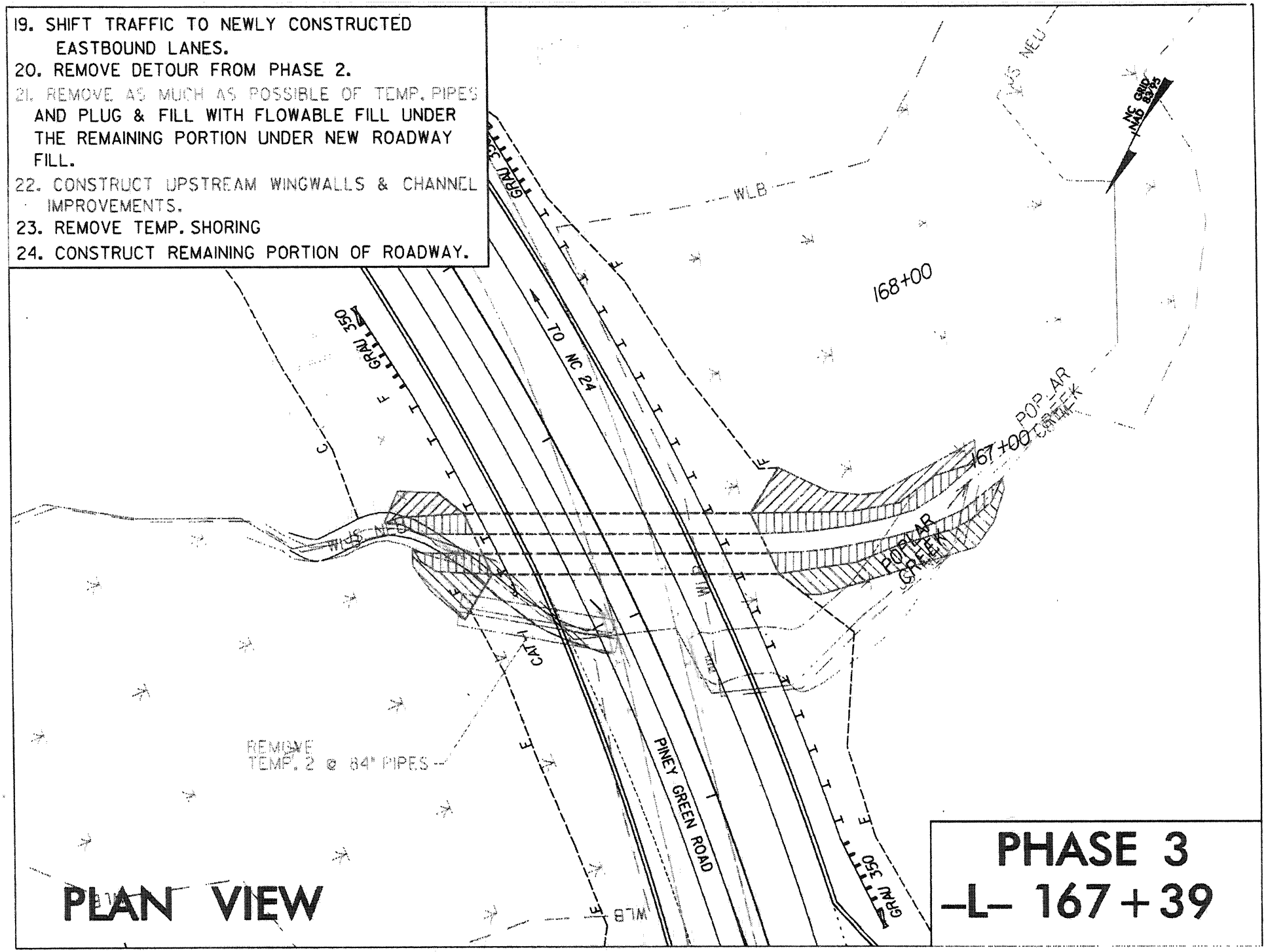


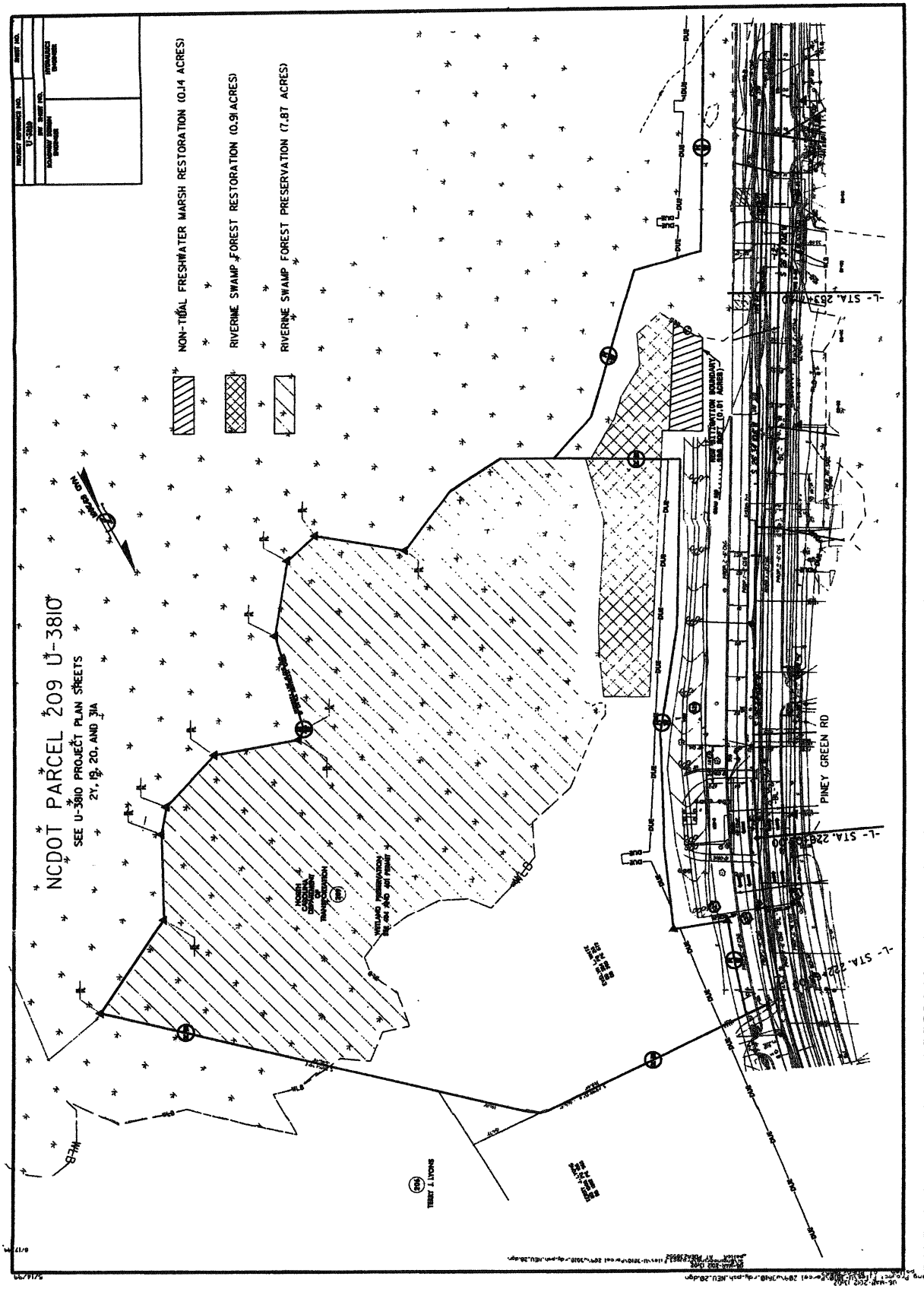
PLAN VIEW

PHASE 2
-L- 167+39


PHASE 2
-L- 167+39
CULVERT TEMPLATE VIEW
-150
-100
-50
℄
50
100
150
L
20
10
0
-10
DETOUR
2 - 11' LANES
4' TEMP. SHOULDER
TEMPORARY
BARRIER
TEMPORARY
HEADWALL
EP
EP
4' TEMP. SHOULDER
TEMPORARY
BARRIER
CONSTRUCT 96 LF
OF RCBC
EXISTING STREAM BED

19. SHIFT TRAFFIC TO NEWLY CONSTRUCTED EASTBOUND LANES.
20. REMOVE DETOUR FROM PHASE 2.
21. REMOVE AS MUCH AS POSSIBLE OF TEMP. PIPES AND PLUG & FILL WITH FLOWABLE FILL UNDER THE REMAINING PORTION UNDER NEW ROADWAY FILL.
22. CONSTRUCT UPSTREAM WINGWALLS & CHANNEL IMPROVEMENTS.
23. REMOVE TEMP. SHORING
24. CONSTRUCT REMAINING PORTION OF ROADWAY.

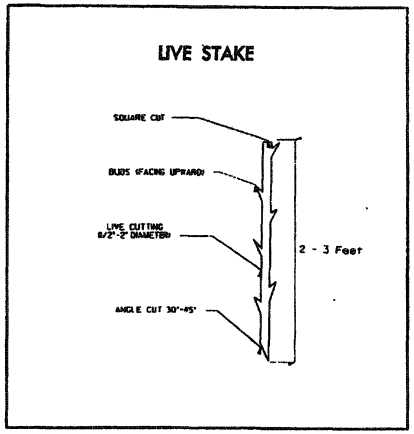


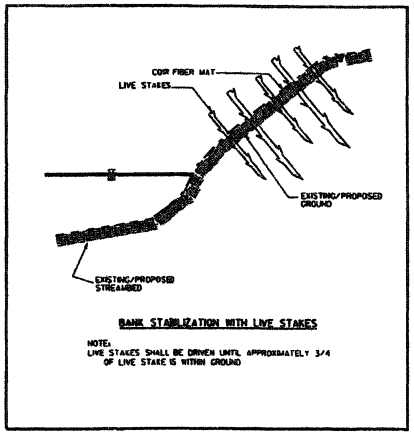

NCDOT PARCEL 209 U-3810
SEE U-3810 PROJECT PLAN SHEETS
2Y, 19, 20, AND 31A
NON-TIDAL FRESHWATER MARSH RESTORATION (0.14 ACRES)
RIVERINE SWAMP FOREST RESTORATION (0.91 ACRES)
RIVERINE SWAMP FOREST PRESERVATION (7.87 ACRES)
PINEY GREEN RD
-L- STA. 283+00.00
-L- STA. 228+00.00
-L- STA. 222+00.00
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
WETLAND PRESERVATION
TERRY J. LYONS
WLB
DUE

N.C.	U-3810	1	2

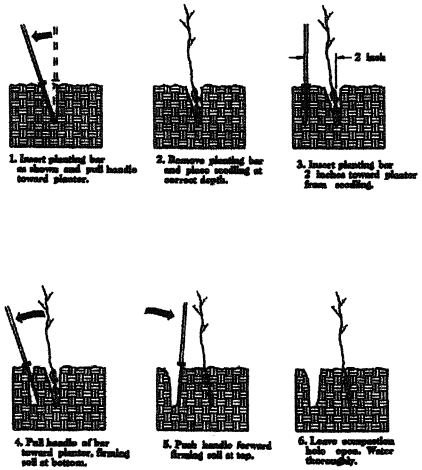
PLANTING DETAILS

LIVE STAKES PLANTING DETAIL





BAREROOT PLANTING DETAIL DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

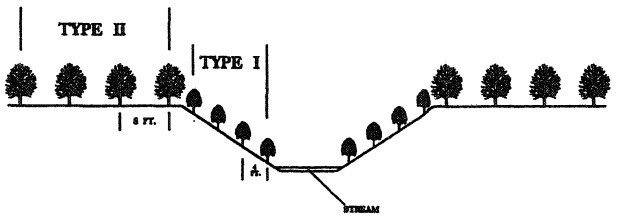
PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

- ☐ TYPE 1 STREAMBANK REFORESTATION SHALL BE PLANTED 3 FT. TO 5 FT. ON CENTER, RANDOM SPACING, AVERAGING 4 FT. ON CENTER, APPROXIMATELY 2724 PLANTS PER ACRE.
- ☐ TYPE 2 STREAMBANK REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- ☐ NOTE: TYPE 1 AND TYPE 2 STREAMBANK REFORESTATION SHALL BE PAID FOR AS "STREAMBANK REFORESTATION"

STREAMBANK REFORESTATION TYPICAL



STREAMBANK REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

TYPE 1			
50%	SALIX NIGRA	BLACK WILLOW	2 ft - 3 ft LIVE STAKES
50%	CORNUS AMOMUM	SILKY DOGWOOD	2 ft - 3 ft LIVE STAKES
TYPE 2			
20%	NYSSA SYLVATICA VAR.	SWAMP BLACKGUM	12 in - 18 in BR
20%	TAXODIUM DISTICHUM,	BALDCYPRESS	12 in - 18 in BR
20%	FRAXINUS PENNSYLVANICA,	GREEN ASH	12 in - 18 in BR
20%	NYSSA AQUATICA,	WATER TUPELO	12 in - 18 in BR
20%	LIRIODENDRON TULIPIFERA,	TULIP POPLAR	12 in - 18 in BR

- ☐ SEE PLAN SHEETS FOR AREAS TO BE PLANTED

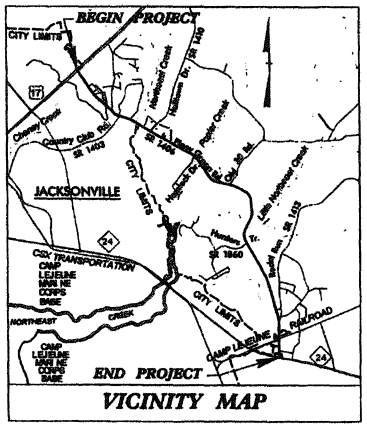
STREAMBANK REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

CONTRACT:

TIP PROJECT: U-3810

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

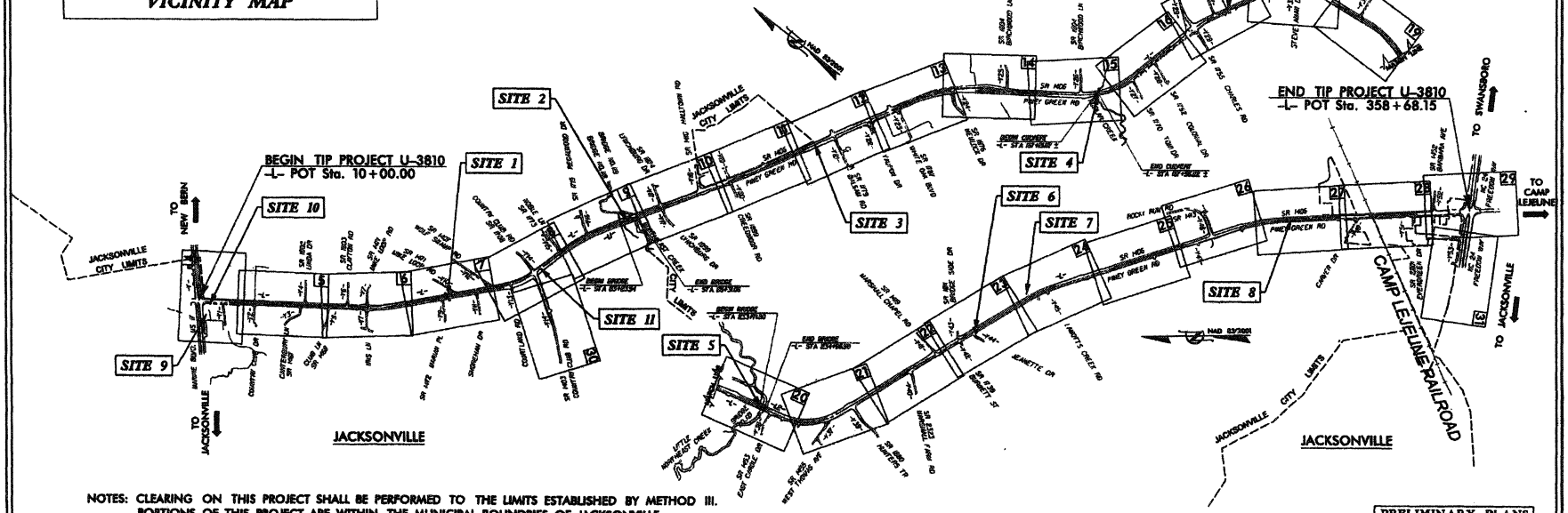
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3810	1	
STATE FED.-NO.	F.A. PROJ. NO.	DESCRIPTION	
35801.1.1	STP-1406(4)	PE	
35801.2.1	STP-1406(6)	RW & UTIL	

LOCATION: *SR 1406 (PINEY GREEN ROAD) FROM US 17 (MARINE BOULEVARD) TO NC 24 (FREEDOM WAY)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, WIDENING SIGNING, SIGNALS, CULVERTS, STRUCTURES AND RETAINING WALL*

Permit Drawing
Sheet 1 of 64

WETLAND & STREAM IMPACTS



NOTES: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
PORTIONS OF THIS PROJECT ARE WITHIN THE MUNICIPAL BOUNDRIES OF JACKSONVILLE.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 25 0 50 100
PROFILE (HORIZONTAL) 50 25 0 50 100
PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2005 = 24,000
ADT 2030 = 35,300
DHV = 7 %
D = 60 %
T = 5 % *
V = 50 MPH
FUNC CLASS = URBAN ARTERIAL
* TTST 1 % + DUAL 4 %
TIER = SUB-REGIONAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJ. U-3810 = 6.514 MILES +/-
LENGTH STRUCTURES TIP PROJ. U-3810 = 0.090 MILES +/-
TOTAL LENGTH OF TIP PROJ. U-3810 = 6.604 MILES +/-

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 30, 2009

LETTING DATE: SEPTEMBER 18, 2012

ROGER D. THOMAS, PE
PROJECT ENGINEER

SAMUEL L. ST.CLAIR
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE P.E.

ROADWAY DESIGN ENGINEER

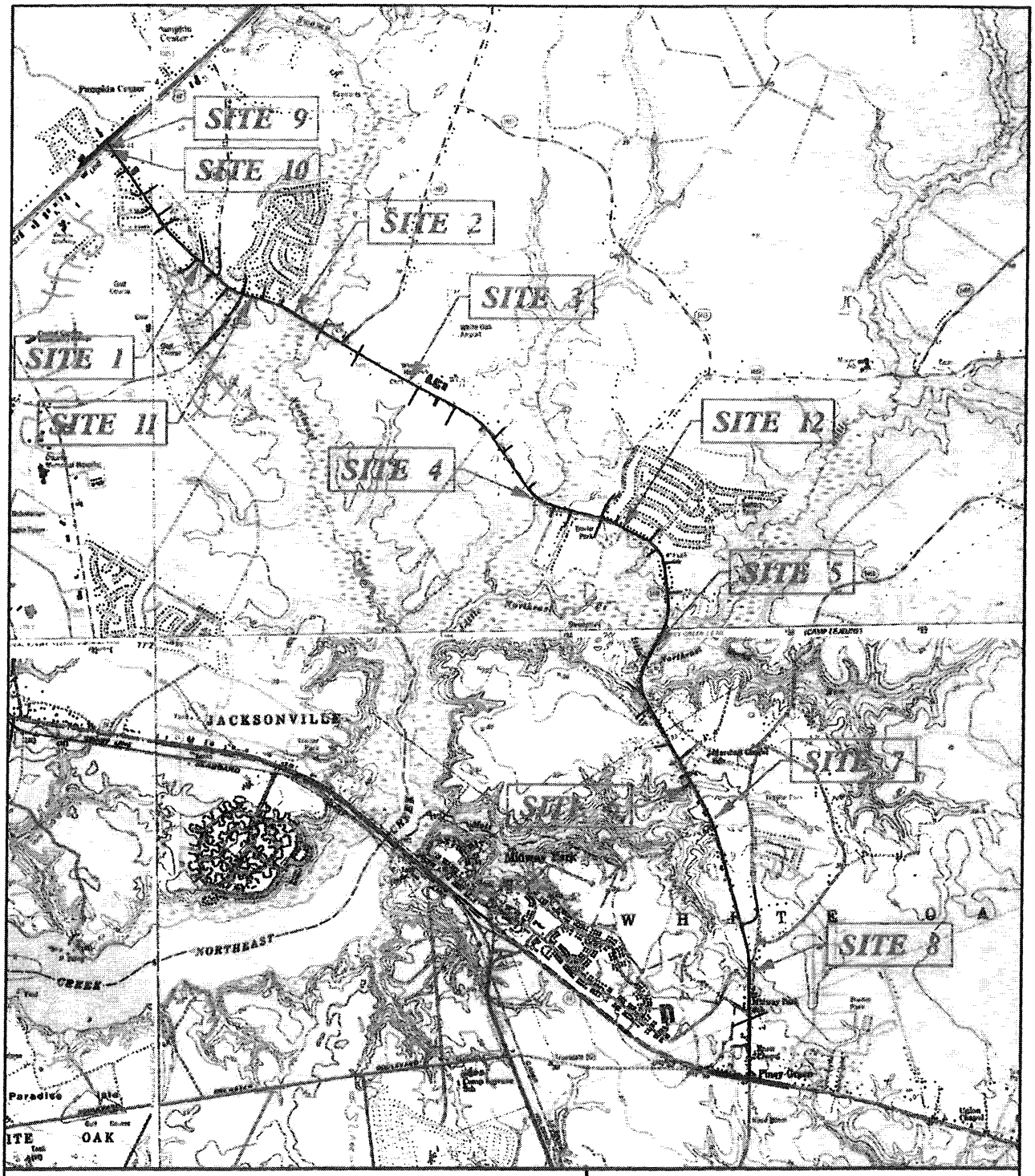
SIGNATURE P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

2/15/2012
R:\Hydraulics\Permits Environmental\Drawings\u3810_hyd_prm_tsh.dgn
4:04:44 PM

P-41



TOPO MAP

SCALE: 1" = 4000'

NCDOT

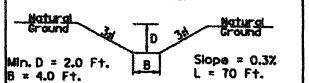
DIVISION OF HIGHWAYS
ONSLOW COUNTY
PROJECT: U-3810

SR 1406 (PINEY GREEN ROAD)
FROM US 17 (MARINE BLVD)
TO NC 24 (FREEDOM WAY)

SHEET Permit Drawing OF 10/11/11

Sheet 2 of 64

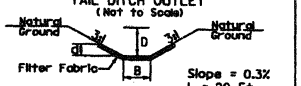
DETAIL 2
TAIL DITCH
(Not to Scale)



Min. D = 2.0 Ft.
B = 4.0 Ft.
Slope = 0.3%
L = 70 Ft.

STA. 11+58 -L- RT., DDE = 90 CY

DETAIL 68
TAIL DITCH OUTLET
(Not to Scale)



Min. D = 2.0 Ft.
B = 4.0-8.0 Ft.
Slope = 0.3%
L = 20 Ft.
Max. d=2.0 Ft.

Type of Liner= Class B Rip Rap

STA. 11+58 -L- RT., DDE = 30 CY

PSH4

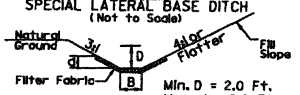
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 3 of 64

PSH6

DETAIL 6
SPECIAL LATERAL BASE DITCH
(Not to Scale)

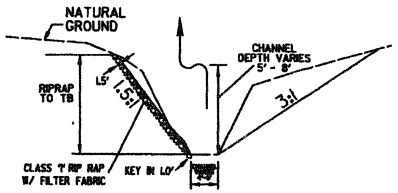


Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 4.0 Ft.

Type of Liner= Class I Rip-Rap

FROM STA. 50+00 TO STA. 50+85 -L- LT.

DETAIL 7

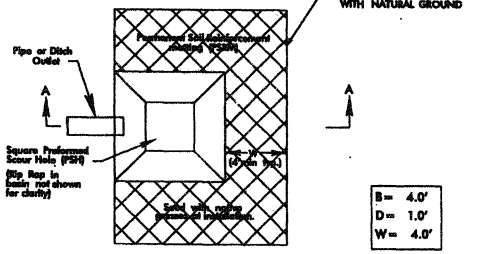


INLET TYPICAL
NOT TO SCALE

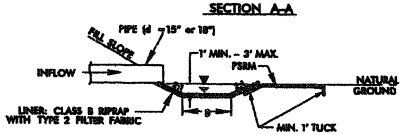
EST TONS CLASS 'I' = 30 TONS
EST FILTER FABRIC = 40 SY
DDE = 65 CY

DETAIL 10
PREFORMED SCOUR HOLE
*NOT TO SCALE

PLAN VIEW



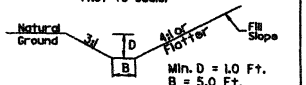
SECTION A-A



308

STA. 52+70 -L- RT.

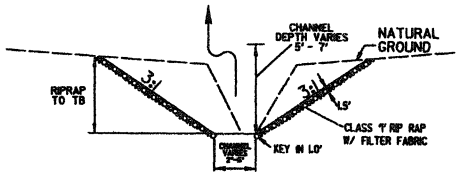
DETAIL 9
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
B = 5.0 Ft.

FROM STA. 51+50 TO STA. 52+00 -L- LT.

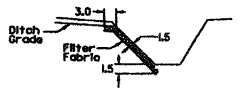
DETAIL 8



OUTLET TYPICAL
NOT TO SCALE

EST TONS CLASS 'I' = 105 TONS
EST FILTER FABRIC = 145 SY
DDE = 145 CY

DETAIL 65
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 4 TONS CL I Rip-Rap
Filter Fabric= 7 SY

STA. 50+85 -L- LT.

PSH7

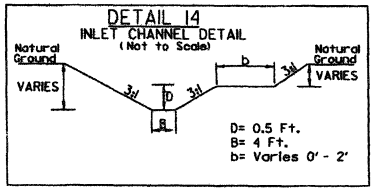
REVISIONS

P-43

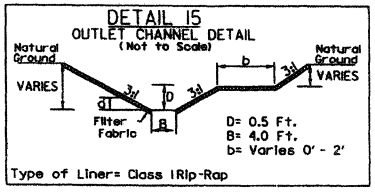
PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 4 of 64



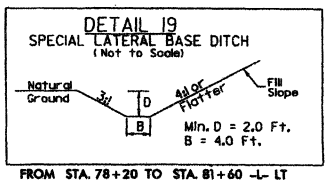
STA. 69+67 -L- LT., DDE=65 CY



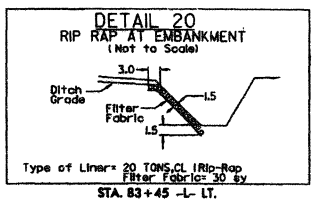
STA. 69+95 -L- RT., 52 TON, 73 SY FF, DDE=30CY

PSH8

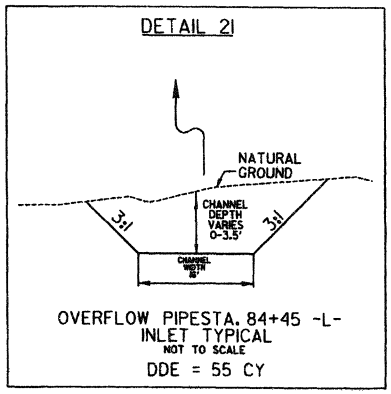
PSH9



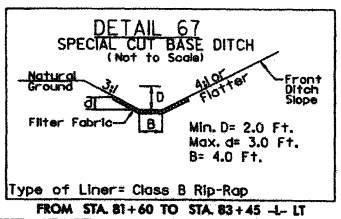
FROM STA. 78+20 TO STA. 81+60 -L- LT



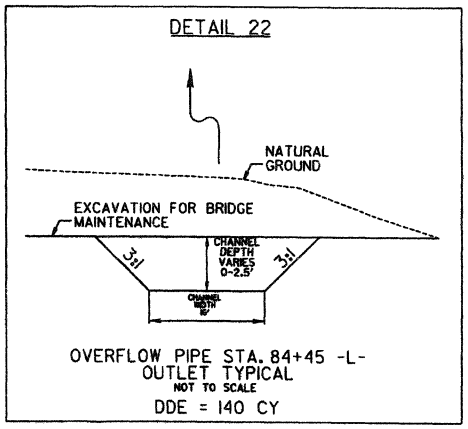
STA. 83+45 -L- LT.



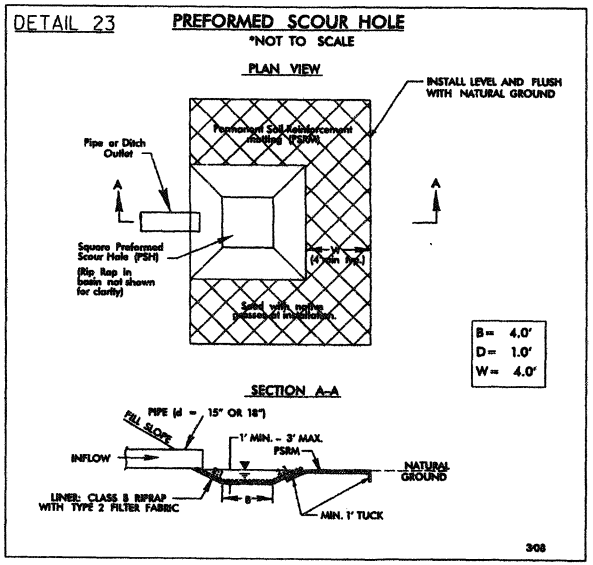
OVERFLOW PIPESTA. 84+45 -L-
INLET TYPICAL
NOT TO SCALE
DDE = 55 CY



FROM STA. 81+60 TO STA. 83+45 -L- LT



OVERFLOW PIPE STA. 84+45 -L-
OUTLET TYPICAL
NOT TO SCALE
DDE = 140 CY



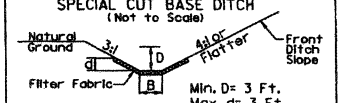
STA. 86+15 -L- RT.

REVISIONS

8/17/99

2/16/2002
R:\Hydraulics\Permits Environmental\Drawings\u3810_hyd_prm_DETAILS.dgn

DETAIL 24
SPECIAL CUT BASE DITCH
(Not to Scale)

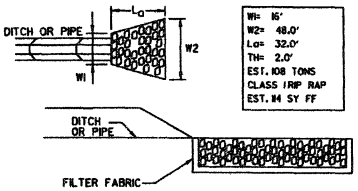


Min. D= 3 Ft.
Max. d= 3 Ft.
B= 4 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 88+50 TO STA. 90+25 -L- LT

DETAIL 66
DISSIPATOR PAD
(Not to Scale)

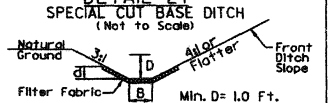


W1= 16'
W2= 48.0'
La= 32.0'
TH= 2.0'
EST. 108 TONS CLASS I RIP RAP
EST. 114 SY FF

STA. 88+00 -L- IT.

PSH10

DETAIL 27
SPECIAL CUT BASE DITCH
(Not to Scale)

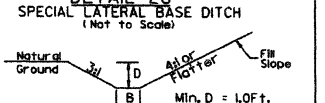


Min. D= 1.0 Ft.
Max. d= 3.0 Ft.
B= 1.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 119+15 TO STA. 119+40 -L- LT.

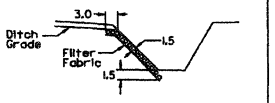
DETAIL 28
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.0Ft.

FROM STA. 118+00 TO STA. 119+10 -L- RT., B=5.0 Ft.
FROM STA. 119+20 TO STA. 119+50 -L- RT., B=4.0 Ft.

DETAIL 29
RIP RAP AT EMBANKMENT
(Not to Scale)



STA. 119+10 -L- RT., 8 TONS, CLASS I RIP-RAP, 16 SY FF
STA. 119+15 -L- LT., 8 TONS, CLASS I RIP-RAP, 16 SY FF
STA. 119+20 -L- RT., 8 TONS, CLASS I RIP-RAP, 16 SY FF

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-J
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

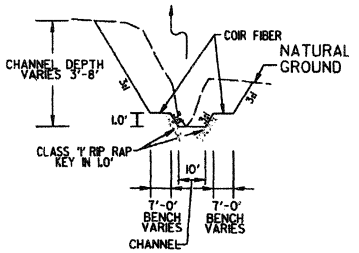
Permit Drawing
Sheet 5 of 64

PSH12

PSH13

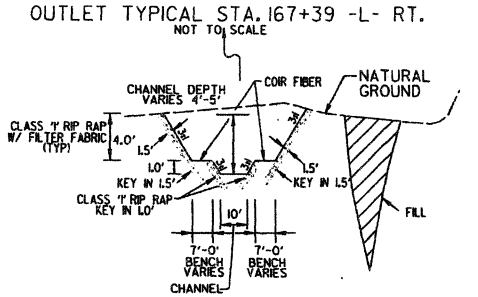
PSH14

DETAIL 34
INLET TYPICAL STA. 167+39 -L- LT.
NOT TO SCALE



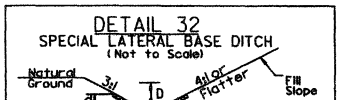
DDE = 175 CY

DETAIL 35
OUTLET TYPICAL STA. 167+39 -L- RT.
NOT TO SCALE



EST TONS CLASS 'I' = 350 TONS
EST FILTER FABRIC = 500 SY
EST FILL = 25 CY
DDE = 375 CY

DETAIL 32
SPECIAL LATERAL BASE DITCH
(Not to Scale)

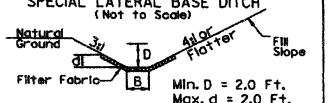


Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 4.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 164+75 TO STA. 165+50 -L- LT.

DETAIL 33
SPECIAL LATERAL BASE DITCH
(Not to Scale)

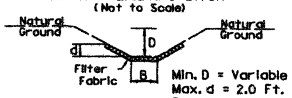


Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 2.0 Ft.

Type of Liner= Class B Rip-Rap

FROM STA. 168+10 TO STA. 178+50 -L- LT.

DETAIL 37
RIP-RAP EXISTING DITCH
(Not to Scale)

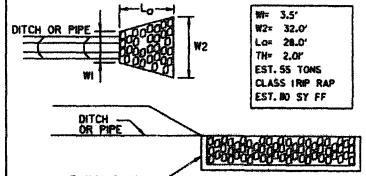


Min. D = Variable
Max. d = 2.0 Ft.
B = Variable

Type of Liner= Class I Rip-Rap

FROM STA. 169+20 TO STA. 169+50 -L- RT.

DETAIL 36
DISSIPATOR PAD
(Not to Scale)



W1= 3.5'
W2= 32.0'
La= 28.0'
TH= 2.0'
EST. 55 TONS CLASS I RIP RAP
EST. 80 SY FF

STA. 169+20 -L- RT.

PSH15

REVISIONS

P-45

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

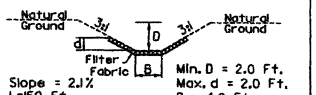
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 64

PSH16

PSH17

DETAIL 42
TAIL DITCH
(Not to Scale)



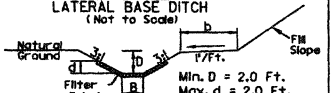
Slope = 2.1%
L=150 Ft.
Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 4.0 Ft.
Type of Liner= Class I Rip-Rap

FROM STA. 194+23 -L- RT., 240 TON, 540 SY FF, DDE=680 CY

PSH18

PSH19

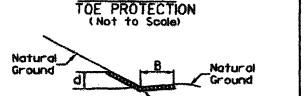
DETAIL 44
LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
B = 6.0 Ft.
b = 5.0 Ft.
Type of Liner= Class B Rip-Rap

FROM STA. 225+00 TO STA. 231+65 -L- LT.

DETAIL 45
TOE PROTECTION
(Not to Scale)

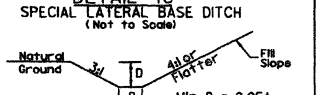


d = 1.0 Ft.
B = 3.0 Ft.
Type of Liner= Class 'B' Rip-Rap

FROM STA. 235+11 TO STA. 237+50 -L- LT.

PSH20

DETAIL 46
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.0Ft.
B = 4.0 Ft.

FROM STA. 242+35 TO STA. 245+25 -L- LT.

PSH21

PSH22

REVISIONS

8/17/99

P-46

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-L
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

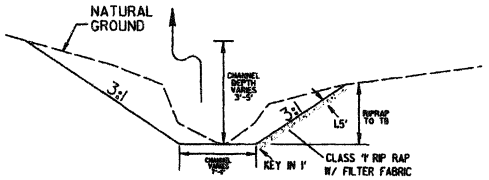
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 7 of 64

REVISIONS

DETAIL 49

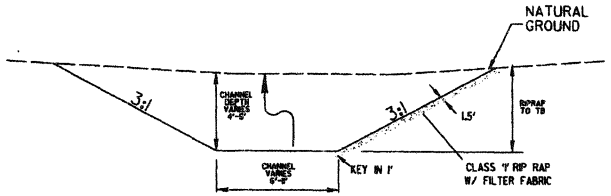
INLET TYPICAL STA. 274+68 -L- LT.
NOT TO SCALE



EST TONS CLASS 'I' = 25 TONS
EST FILTER FABRIC = 32 SY
DDE = 12 CY

DETAIL 50

OUTLET TYPICAL STA. 274+68 -L- RT.
NOT TO SCALE



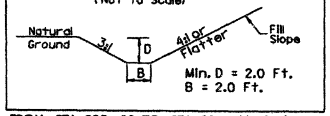
EST TONS CLASS 'I' = 135 TONS
EST FILTER FABRIC = 190 SY
DDE = 440 CY

PSH23

PSH24

DETAIL 53

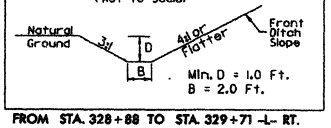
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 325+00 TO STA. 329+60 -L- LT.
FROM STA. 329+82 TO STA. 333+50 -L- RT.

DETAIL 55

SPECIAL LATERAL BASE DITCH
(Not to Scale)

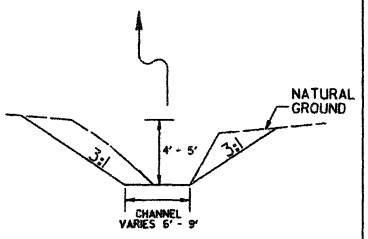


FROM STA. 328+88 TO STA. 329+71 -L- RT.
FROM STA. 329+75 TO STA. 331+63 -L- LT.

PSH26

DETAIL 56

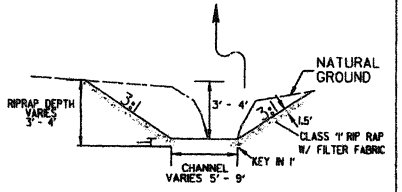
INLET TYPICAL
NOT TO SCALE



DDE = 40 CY

DETAIL 57

OUTLET TYPICAL
NOT TO SCALE



EST TONS CLASS 'I' = 50 TONS
EST FILTER FABRIC = 70 SY
DDE = 55 CY

PSH27

P-47

PROJECT REFERENCE NO.	SHEET NO.
U-3810	2-M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 8 of 64

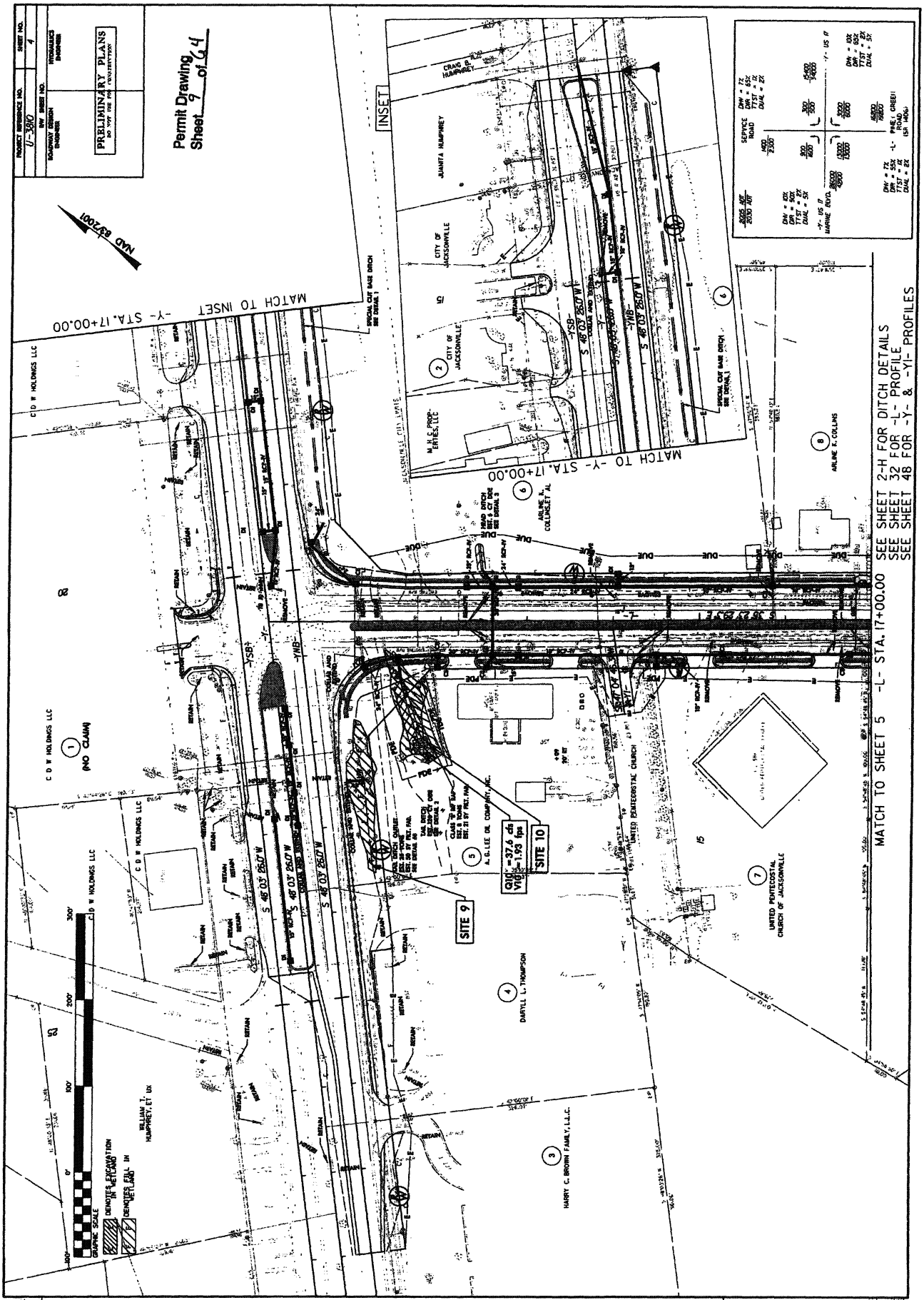
PSH28

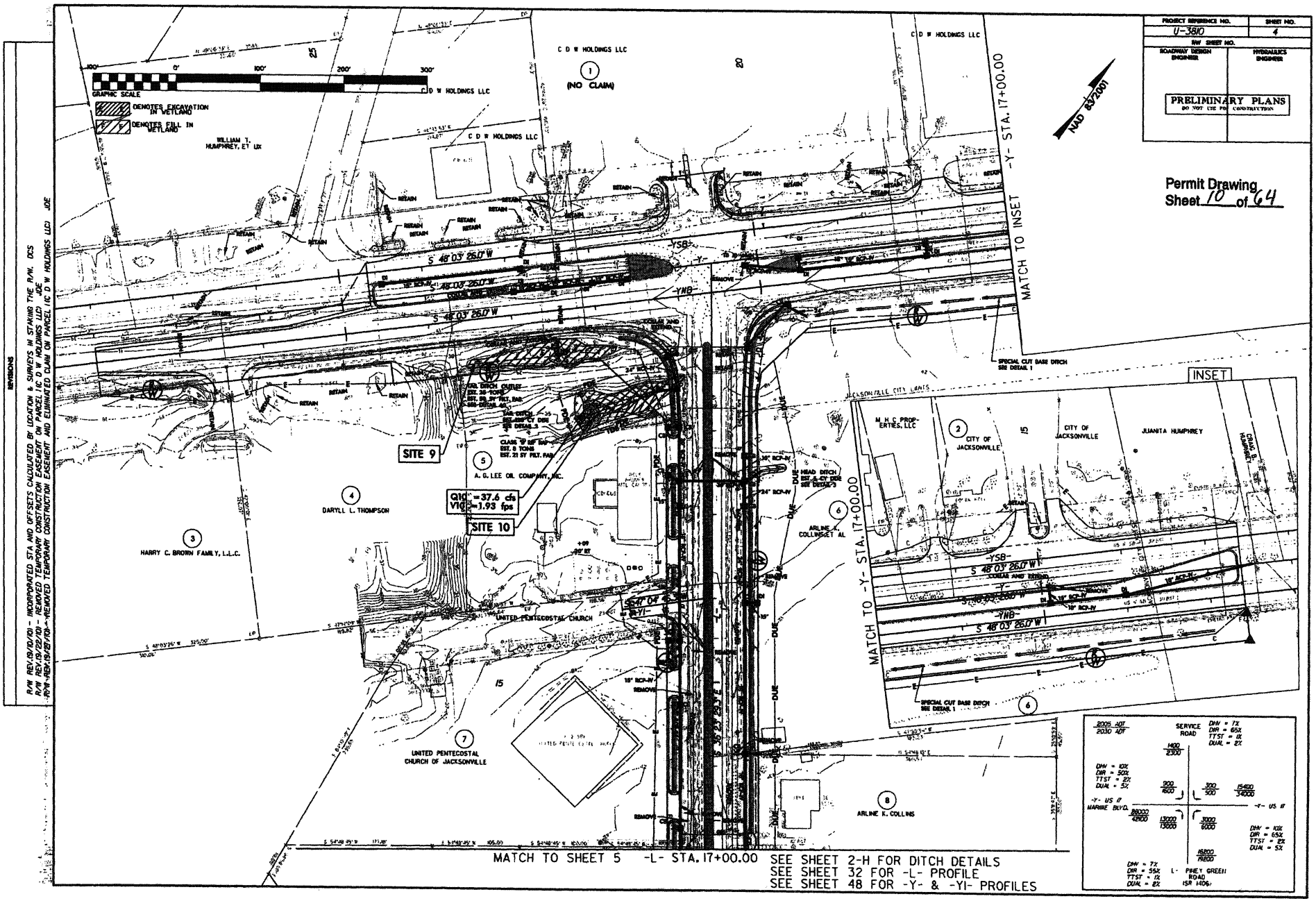
PSH29

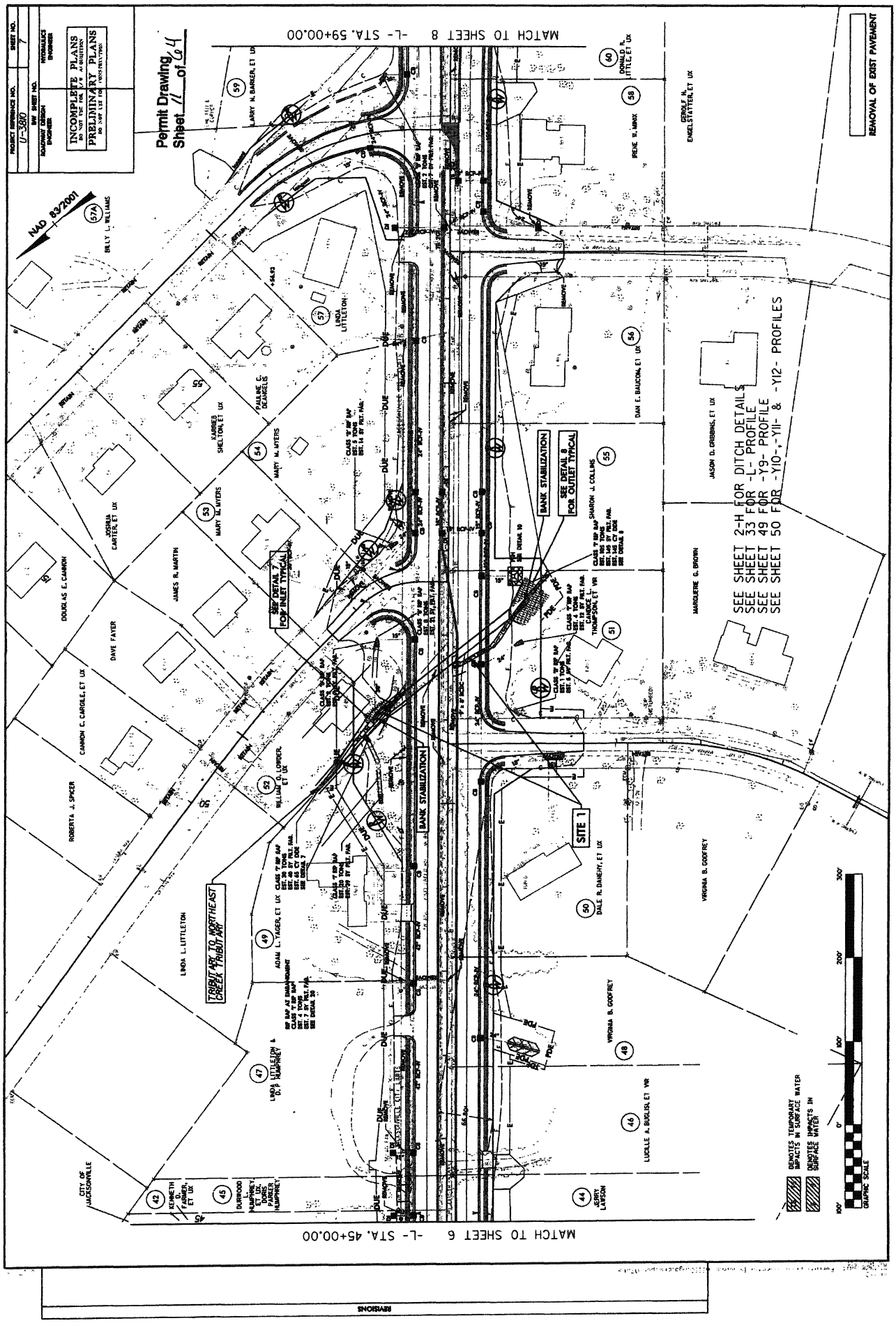
PSH31

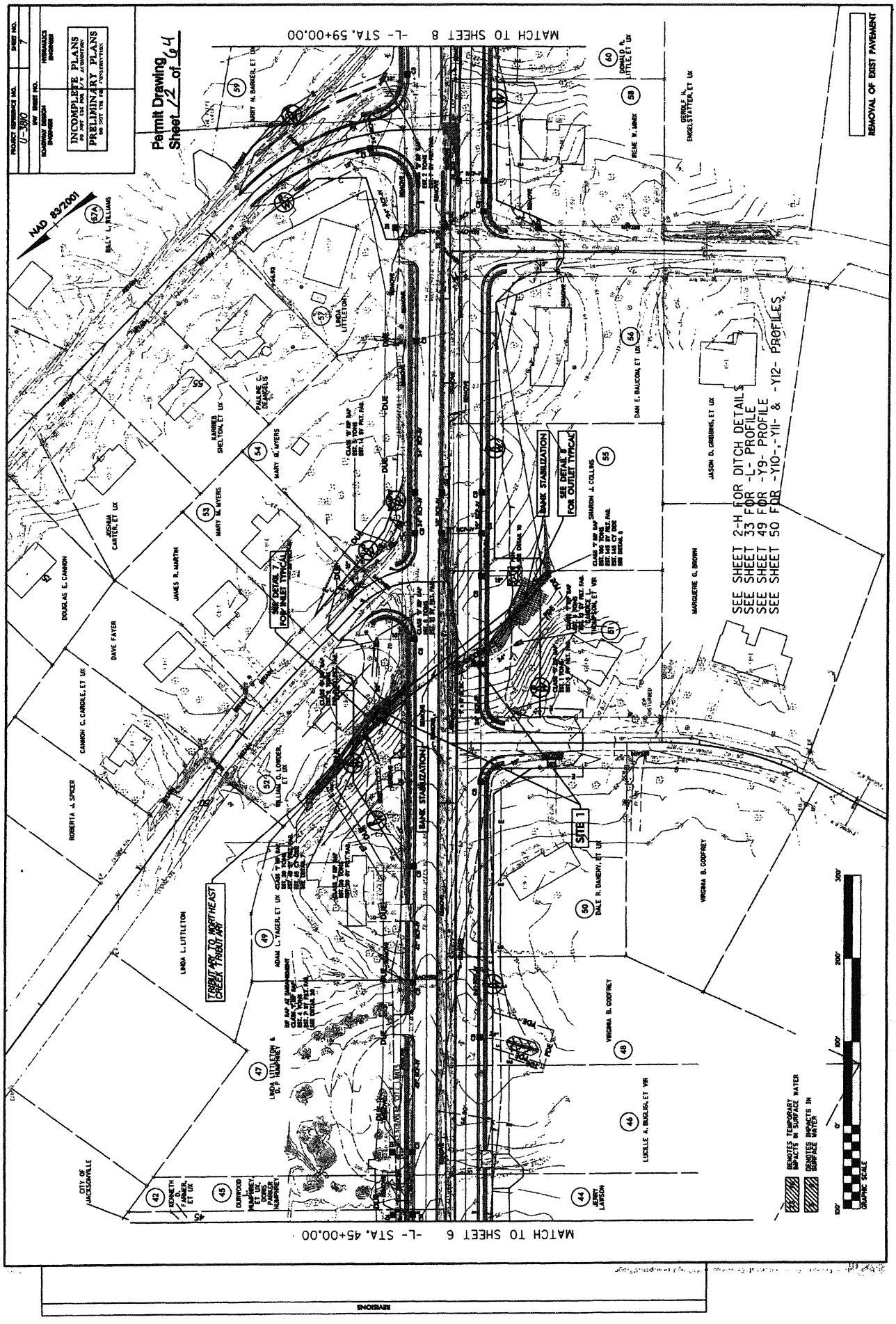
PSH30

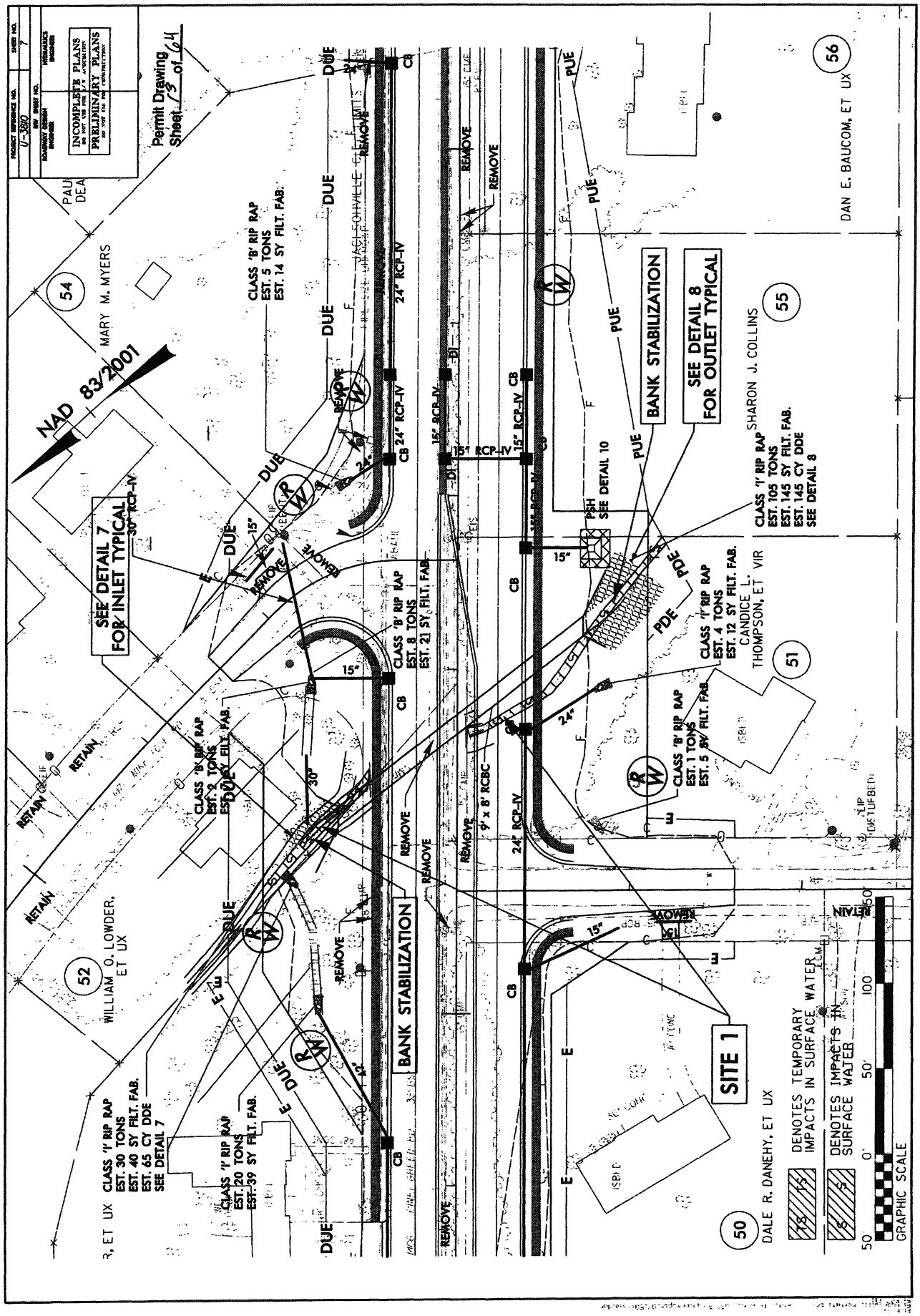
REVISIONS


PROJECT REFERENCE NO. U-3810
PRELIMINARY PLANS
NOT FOR CONSTRUCTION
Permit Drawing Sheet 9 of 64
NAD 83/2001
MATCH TO INSET -Y- STA. 17+00.00
INSET
MATCH TO -Y- STA. 17+00.00
MATCH TO SHEET 5 -L- STA. 17+00.00
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 48 FOR -Y- & -YI- PROFILES
SITE 9
SITE 10
Qc = 37.4 cfs
Vc = 1.93 fps
C D W HOLDINGS LLC
(NO CLAIM)
JUANITA HUMPHREY
CITY OF JACKSONVILLE
M.H.S. PROPERTIES, LLC
ARLINE K. COLLINS
DARYLL L. THOMPSON
HARRY C. BROWN FAMILY, L.L.C.
UNITED PENTECOSTAL CHURCH OF JACKSONVILLE
A.G. LEE OIL COMPANY, INC.
GRAPHIC SCALE
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
REVISIONS
R/W REV.(9/10/10) - INCORPORATED STA AND OFFSETS CALCULATED BY LOCATION & SURVEYS IN STAKING THE R/W. DCS
R/W REV.(9/22/10) - REMOVED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 1 C D W HOLDINGS (LC) JOE
R/W REV.(9/27/10) - REMOVED TEMPORARY CONSTRUCTION EASEMENT AND ELIMINATED CLAIM ON PARCEL 1 C D W HOLDINGS (LC) JOE


PROJECT REFERENCE NO. U-3810
SHEET NO. 4
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 10 of 64
NAD 83/2001
REVISIONS
R/W REV.09/10/10 - INCORPORATED STA AND OFFSETS CALCULATED BY LOCATION & SURVEYS IN STAKING THE R/W. DCS
R/W REV.09/22/10 - REMOVED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 1 IC D W HOLDINGS (LLC) JDE
R/W REV.09/27/10 - REMOVED TEMPORARY CONSTRUCTION EASEMENT AND ELIMINATED CLAIM ON PARCEL 1 IC D W HOLDINGS (LLC) JDE
GRAPHIC SCALE
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
C D W HOLDINGS LLC
(NO CLAIM)
WILLIAM T. HUMPHREY, ET UX
MATCH TO INSET -Y- STA. 17+00.00
SPECIAL CUT BASE DITCH SEE DETAIL 1
INSET
JACKSONVILLE CITY LIMITS
M.H.C. PROPERTIES, LLC
CITY OF JACKSONVILLE
JUANITA HUMPHREY
CRAIG O. HUMPHREY
SITE 9
SITE 10
A. G. LEE OIL COMPANY, INC.
DARYLL L. THOMPSON
HARRY C. BROWN FAMILY, L.L.C.
ARLINE K. COLLINS ET AL
UNITED PENTECOSTAL CHURCH
UNITED PENTECOSTAL CHURCH OF JACKSONVILLE
ARLINE K. COLLINS
Q10 = 37.6 cfs
V10 = 1.93 fps
MATCH TO SHEET 5 -L- STA. 17+00.00
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 48 FOR -Y- & -Y1- PROFILES
2005 ADT
2030 ADT
SERVICE ROAD
PINEY GREEN ROAD
SR 1406
-Y- US 17 MARINE BLVD.


PROJECT REFERENCE NO.
U-3810
SHEET NO.
7
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 11 of 64
NAD 83/2001
MATCH TO SHEET 8 -L- STA. 59+00.00
MATCH TO SHEET 6 -L- STA. 45+00.00
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 49 FOR -Y9- PROFILE
SEE SHEET 50 FOR -Y10-, -Y11- & -Y12- PROFILES
BANK STABILIZATION
SEE DETAIL 8 FOR OUTLET TYPICAL
SEE DETAIL FOR INLET TYPICAL
SITE 1
TRIBUT ARC TO NORTHEAST CREEK TRIBUT AR
REMOVAL OF EXIST PAVEMENT
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
REVISIONS


Permit Drawing
Sheet 12 of 64
INCOMPLETE PLANS
PRELIMINARY PLANS
NAD 83/2001
MATCH TO SHEET 8 -L- STA. 59+00.00
MATCH TO SHEET 6 -L- STA. 45+00.00
SEE SHEET 2-H FOR DITCH DETAILS
SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 49 FOR -Y9- PROFILE
SEE SHEET 50 FOR -Y10-,-Y11- & -Y12- PROFILES
SEE DETAIL 'T' FOR INLET TYPICAL
SEE DETAIL 'R' FOR OUTLET TYPICAL
BANK STABILIZATION
SITE 1
TRIBUTARY TO NORTHEAST CREEK TRIBUTARY
REMOVAL OF EXIST PAVEMENT
REMOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE

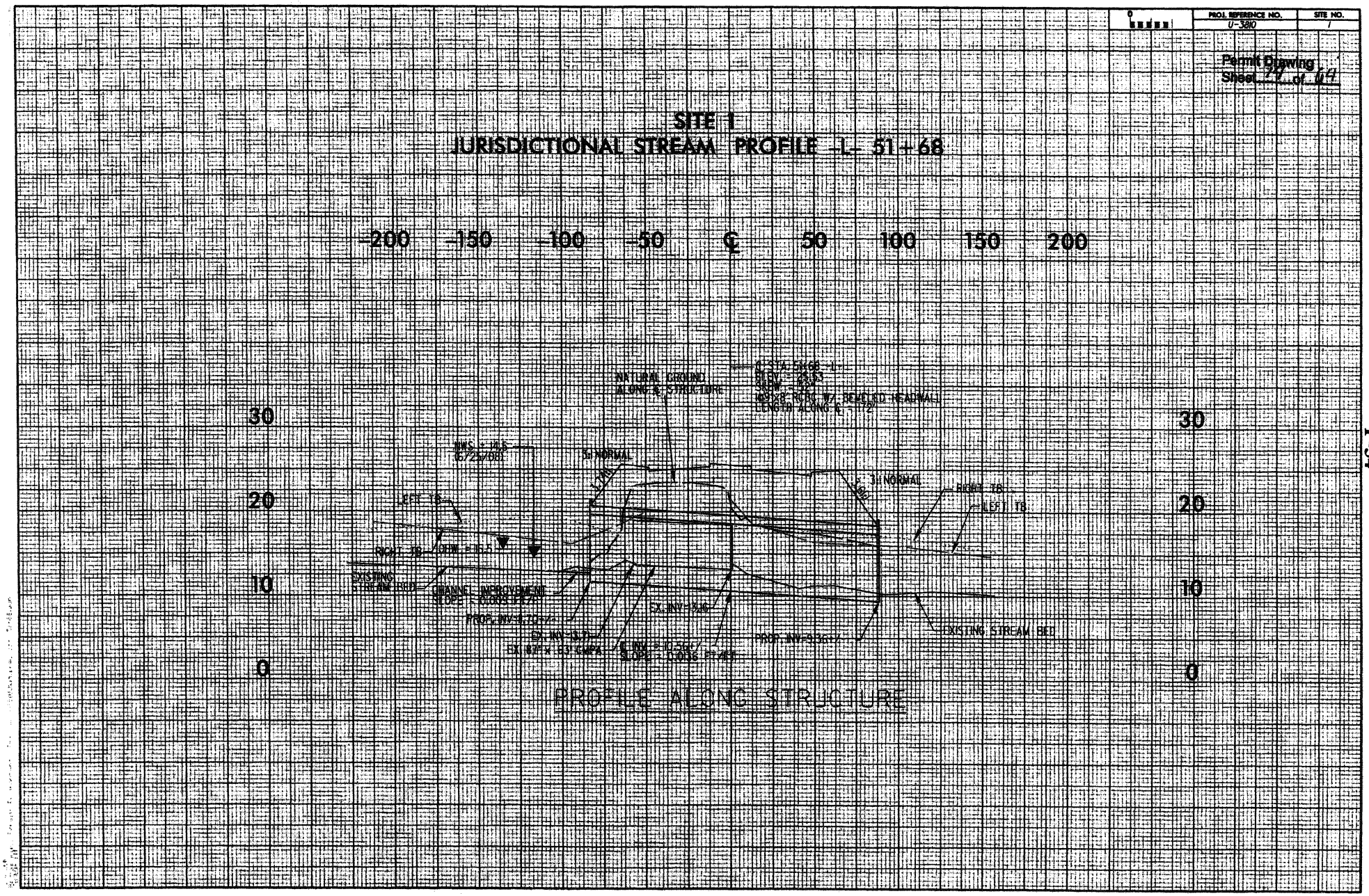


INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing Sheet 13 of 64
NAD 83/2001
MARY M. MYERS
54
WILLIAM O. LOWDER, ET UX
52
DAN E. BAUCOM, ET UX
56
SHARON J. COLLINS
55
CANDICE L. THOMPSON, ET VIR
51
DALE R. DANEHY, ET UX
50
SEE DETAIL 7 FOR INLET TYPICAL
BANK STABILIZATION
SEE DETAIL 8 FOR OUTLET TYPICAL
SITE 1
CLASS 'B' RIP RAP EST. 5 TONS EST. 14 SY FILT. FAB.
CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY FILT. FAB.
CLASS 'B' RIP RAP EST. 2 TONS EST. 2 SY FILT. FAB.
CLASS 'I' RIP RAP EST. 30 TONS EST. 40 SY FILT. FAB. EST. 65 CY DDE SEE DETAIL 7
CLASS 'I' RIP RAP EST. 20 TONS EST. 39 SY FILT. FAB.
CLASS 'I' RIP RAP EST. 105 TONS EST. 145 SY FILT. FAB. EST. 145 CY DDE SEE DETAIL 8
CLASS 'I' RIP RAP EST. 4 TONS EST. 12 SY FILT. FAB.
CLASS 'B' RIP RAP EST. 1 TONS EST. 5 SY FILT. FAB.
PSH SEE DETAIL 10
24" RCP-IV
15" RCP-IV
30" RCP-IV
9' x 8' RCBC
REMOVE
RETAIN
DUE
PUE
PDE
CB
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
50' 0' 50' 100' 150'

PROJ. REFERENCE NO.	SITE NO.
U-3810	1

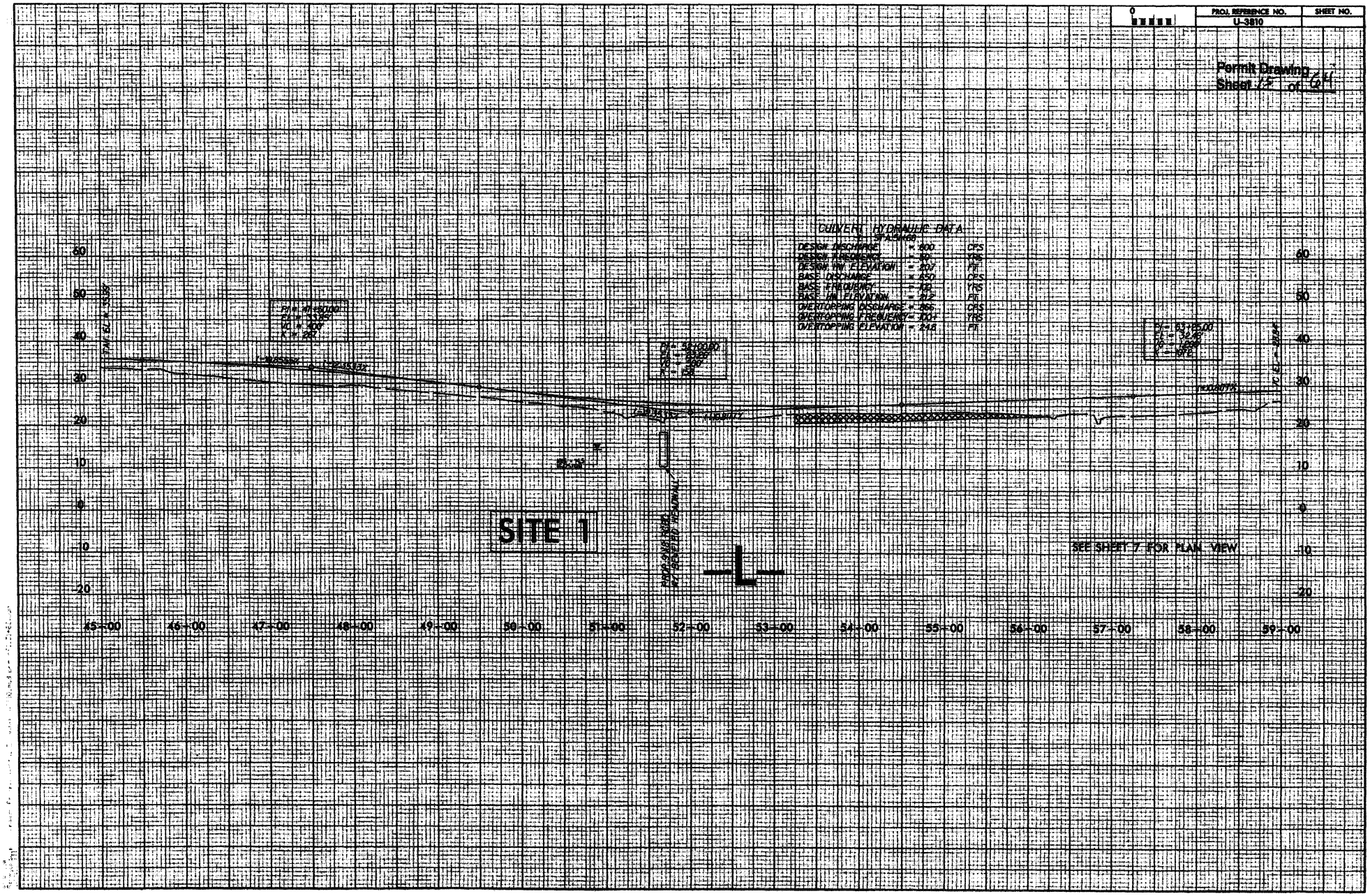
Permit Drawing
Sheet 27 of 44

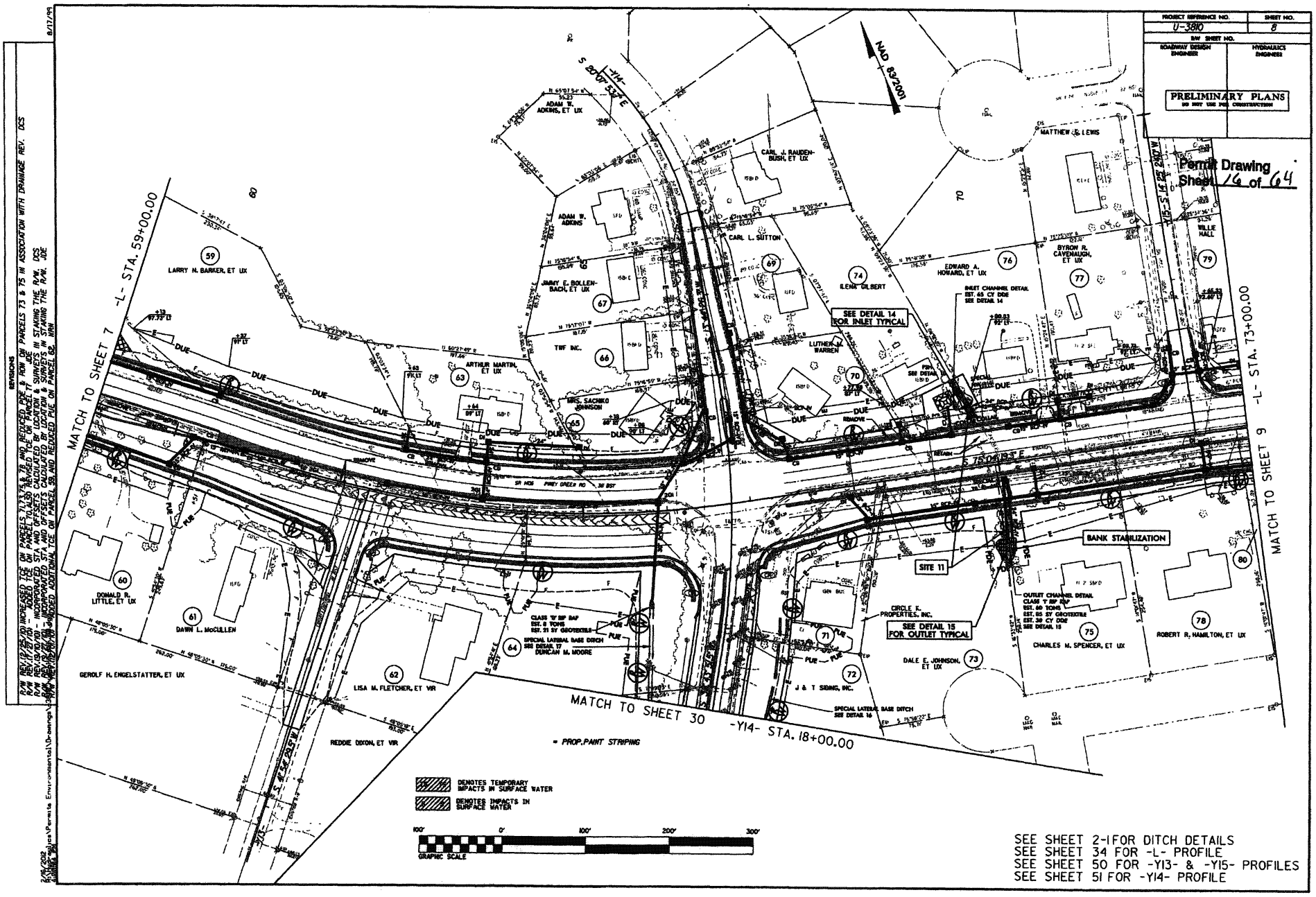
SITE 1
JURISDICTIONAL STREAM PROFILE -L- 51+68

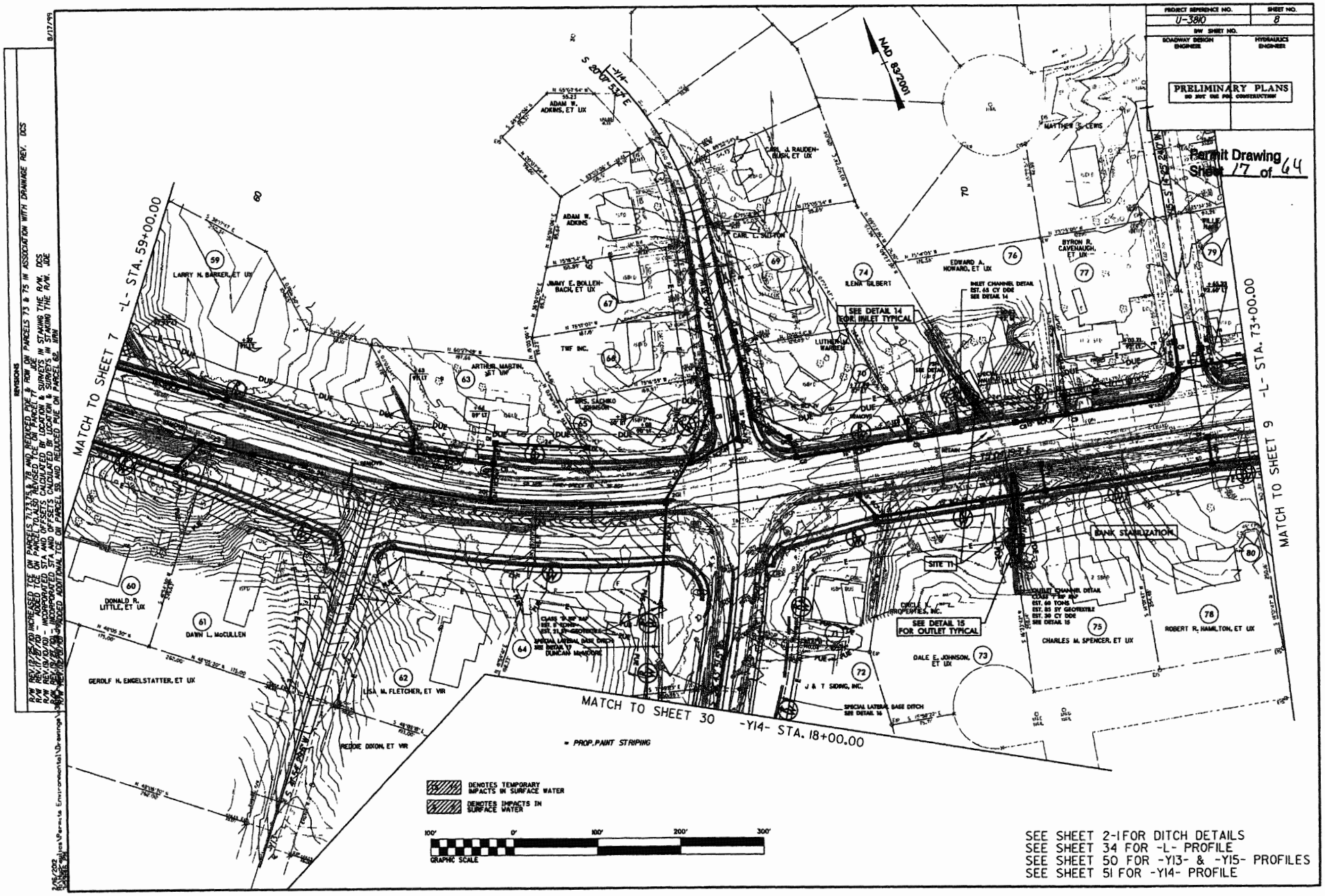


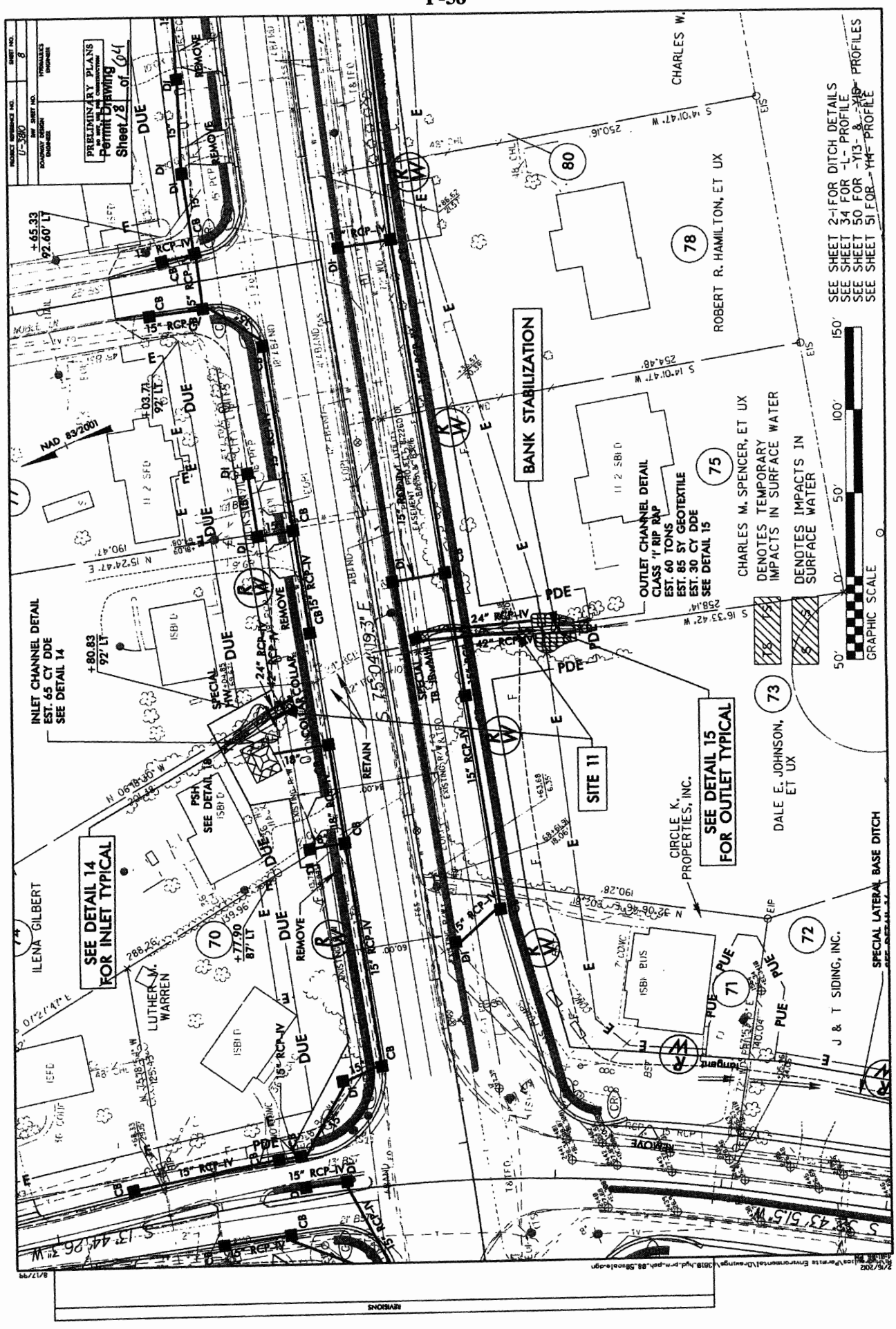
PROFILE ALONG STRUCTURE

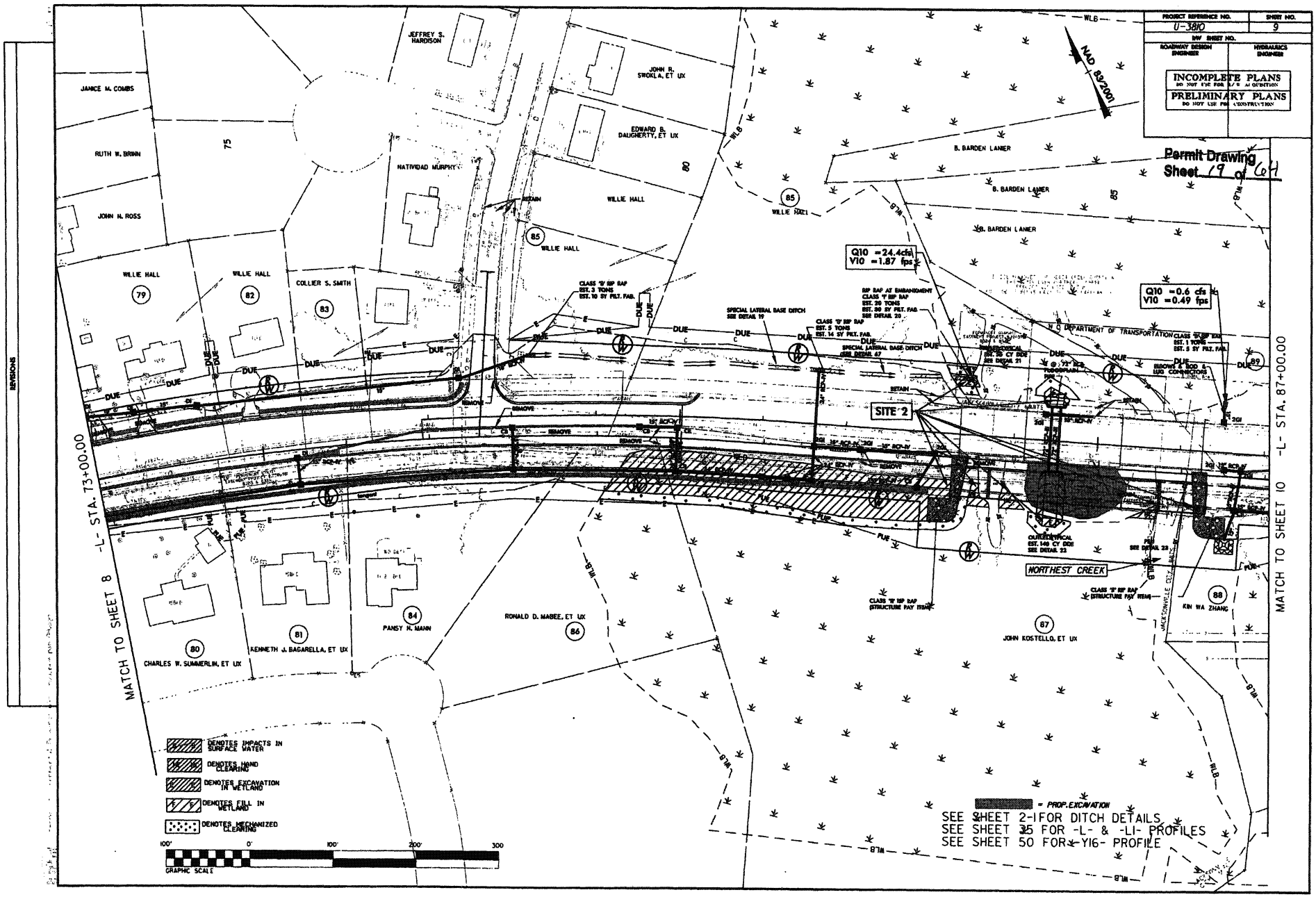
P-54


PROJ. REFERENCE NO.
U-3810
SHEET NO.
Permit Drawing
Sheet 12 of 14
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 600 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 207 FT
BASE DISCHARGE = 650 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 212 FT
OVERTOPPING DISCHARGE = 866 CFS
OVERTOPPING FREQUENCY = 300+ YRS
OVERTOPPING ELEVATION = 218 FT
SITE 1
-L-
SEE SHEET 7 FOR PLAN VIEW
45+00
46+00
47+00
48+00
49+00
50+00
51+00
52+00
53+00
54+00
55+00
56+00
57+00
58+00
59+00

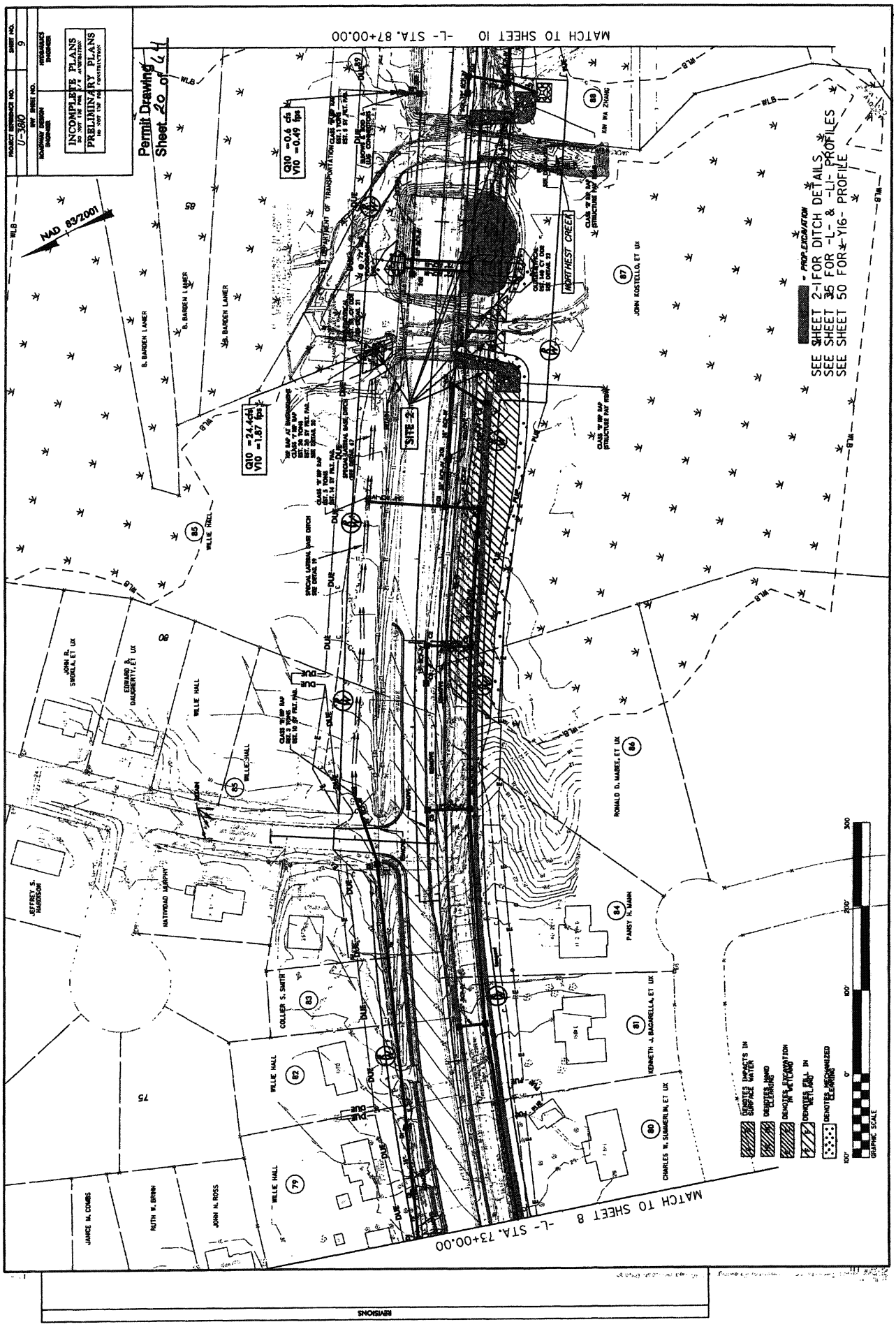

PROJECT REFERENCE NO.
U-3810
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 16 of 64
NAD 83/2001
MATCH TO SHEET 7 -L- STA. 59+00.00
MATCH TO SHEET 9 -L- STA. 73+00.00
MATCH TO SHEET 30 -Y14- STA. 18+00.00
LARRY N. BARKER, ET UX
ADAM W. ADKINS, ET UX
JIMMY E. BOLLENBACH, ET UX
TWF INC.
ARTHUR MARTIN, ET UX
MRS. SACHIKO JOHNSON
CARL J. RAUDENBUSH, ET UX
CARL L. SUTTON
ILENA GILBERT
LUTHER M. WARREN
EDWARD A. HOWARD, ET UX
BYRON R. CAVENAUGH, ET UX
MATTHEW E. LEWIS
WILLIE HALL
SEE DETAIL 14 FOR INLET TYPICAL
INLET CHANNEL DETAIL EST. 65 CY DDE SEE DETAIL 14
BANK STABILIZATION
SITE 11
SEE DETAIL 15 FOR OUTLET TYPICAL
CIRCLE K. PROPERTIES, INC.
DALE E. JOHNSON, ET UX
J & T SIDING, INC.
CHARLES M. SPENCER, ET UX
ROBERT R. HAMILTON, ET UX
DONALD R. LITTLE, ET UX
DAWN L. McCULLEN
GEROLF H. ENGELSTATTER, ET UX
LISA M. FLETCHER, ET VIR
REDDIE DIXON, ET VIR
DUNCAN M. MOORE
CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY GEOTEXTILE
SPECIAL LATERAL BASE DITCH SEE DETAIL 17
SPECIAL LATERAL BASE DITCH SEE DETAIL 16
OUTLET CHANNEL DETAIL CLASS 'I' RIP RAP EST. 60 TONS EST. 85 SY GEOTEXTILE EST. 30 CY DDE SEE DETAIL 15
= PROP. PAINT STRIPING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
100' 0' 100' 200' 300'
SEE SHEET 2-1 FOR DITCH DETAILS
SEE SHEET 34 FOR -L- PROFILE
SEE SHEET 50 FOR -Y13- & -Y15- PROFILES
SEE SHEET 51 FOR -Y14- PROFILE
REVISIONS
8/17/99

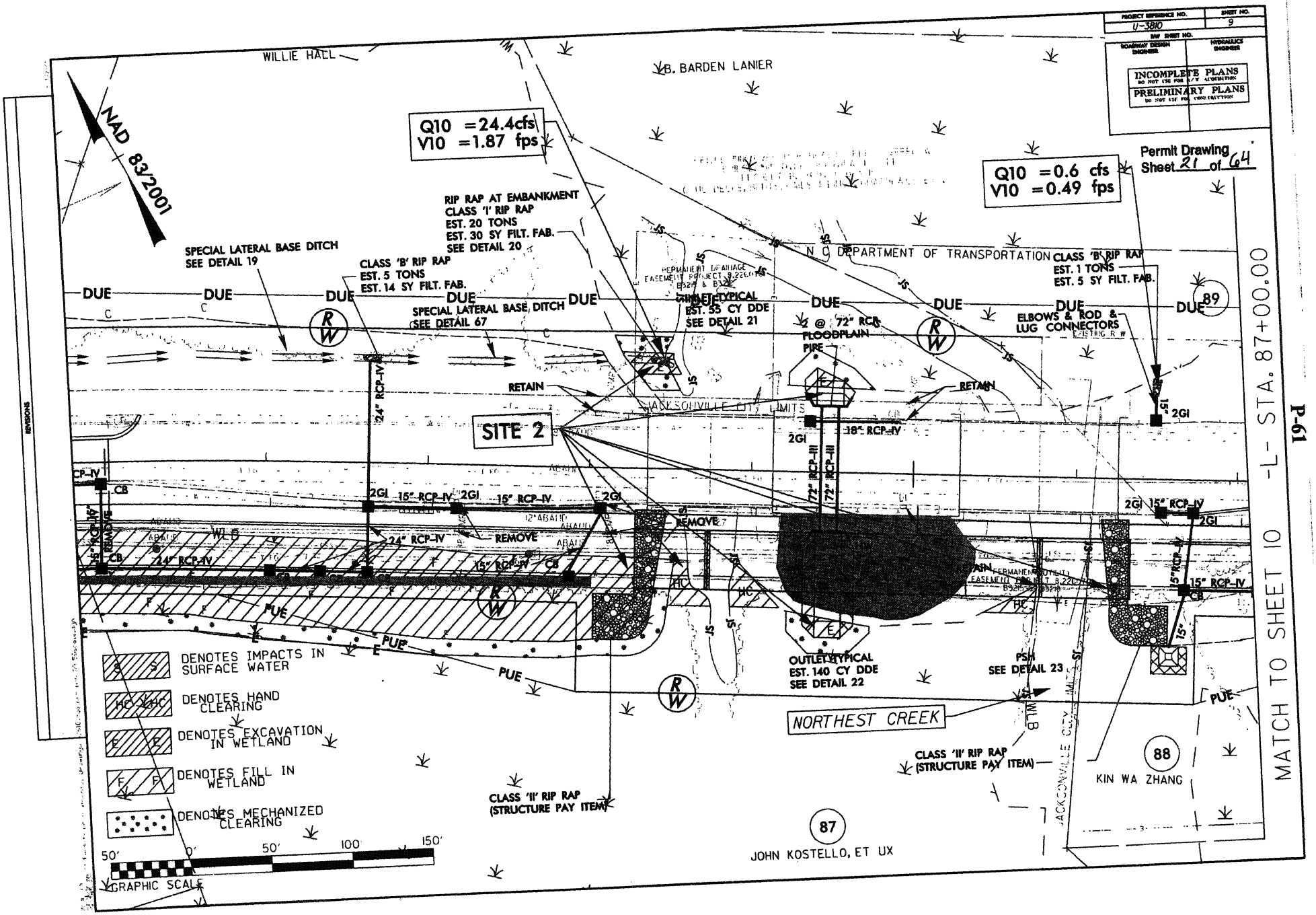

PROJECT REFERENCE NO.
U-3810
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 17 of 64
NAD 83/2001
MATCH TO SHEET 7 -L- STA. 59+00.00
MATCH TO SHEET 9 -L- STA. 73+00.00
MATCH TO SHEET 30 -Y14- STA. 18+00.00
LARRY H. BARKER, ET UX
ADAM W. ADKINS, ET UX
ADAM W. ADKINS
JIMMY E. BOLLENBACH, ET UX
CARL J. RAUDENBUSH, ET UX
CARL L. SUTTON
ILENA GILBERT
EDWARD A. HOWARD, ET UX
BYRON R. CAVENAUGH, ET UX
MATTHEW S. LEWIS
ARTHUR MARTIN, ET UX
TWF INC.
BRS. SACHIKO JOHNSON
LUTHER M. WARREN
SEE DETAIL 14 FOR INLET TYPICAL
INLET CHANNEL DETAIL
EST. 65 CY DDE
SEE DETAIL 14
BANK STABILIZATION
SITE 11
CIRCLE L. PROPERTIES, INC.
SEE DETAIL 15 FOR OUTLET TYPICAL
OUTLET CHANNEL DETAIL
CLASS 1 RIP RAP
EST. 60 TONS
EST. 85 SY GEOTEXTILE
EST. 30 CY DDE
SEE DETAIL 15
CHARLES M. SPENCER, ET UX
ROBERT R. HAMILTON, ET UX
DALE E. JOHNSON, ET UX
J & T SIDING, INC.
SPECIAL LATERAL BASE DITCH
SEE DETAIL 16
DONALD R. LITTLE, ET UX
DAWN L. McCULLEN
GEROLF H. ENGELSTATTER, ET UX
LISA M. FLETCHER, ET VIR
REDDIE DIXON, ET VIR
= PROP. PAINT STRIPING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
100' 0' 100' 200' 300'
GRAPHIC SCALE
SEE SHEET 2-1 FOR DITCH DETAILS
SEE SHEET 34 FOR -L- PROFILE
SEE SHEET 50 FOR -Y13- & -Y15- PROFILES
SEE SHEET 51 FOR -Y14- PROFILE
REVISIONS
8/17/99


PRELIMINARY PLANS
Permit Drawing
Sheet 8 of 64
BANK STABILIZATION
SITE 11
SEE DETAIL 14 FOR INLET TYPICAL
SEE DETAIL 15 FOR OUTLET TYPICAL
INLET CHANNEL DETAIL
EST. 65 CY DDE
SEE DETAIL 14
OUTLET CHANNEL DETAIL
CLASS "I" RIP RAP
EST. 60 TONS
EST. 85 SY GEOTEXTILE
EST. 30 CY DDE
SEE DETAIL 15
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
SEE SHEET 2-I FOR DITCH DETAILS
SEE SHEET 34 FOR -L- PROFILE
SEE SHEET 50 FOR -Y13- & -Y15- PROFILES
SEE SHEET 51 FOR -Y14- PROFILE
ILENA GILBERT
LUTHER W. WARREN
CIRCLE K, PROPERTIES, INC.
DALE E. JOHNSON, ET UX
ROBERT R. HAMILTON, ET UX
CHARLES M. SPENCER, ET UX
J & T SIDING, INC.
SPECIAL LATERAL BASE DITCH
NAD 83/2001


PROJECT REFERENCE NO.
U-3810
SHEET NO.
9
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 19 of 64
NAD 83/2001
JEFFREY S. HARDISON
JOHN R. SWOKLA, ET UX
EDWARD B. DAUGHERTY, ET UX
JANICE M. COMBS
RUTH W. BRINN
JOHN N. ROSS
NATIVIDAD MURPHY
WILLIE HALL
COLLIER S. SMITH
B. BARDEN LANIER
Q10 =24.4cfs
V10 =1.87 fps
Q10 =0.6 cfs
V10 =0.49 fps
N.C. DEPARTMENT OF TRANSPORTATION
SITE 2
NORTHEST CREEK
CHARLES W. SUMMERLIN, ET UX
KENNETH J. BAGARELLA, ET UX
PANSY N. MANN
RONALD D. MABEE, ET UX
JOHN KOSTELLO, ET UX
KIN WA ZHANG
MATCH TO SHEET 8 -L- STA. 73+00.00
MATCH TO SHEET 10 -L- STA. 87+00.00
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
GRAPHIC SCALE
= PROP. EXCAVATION
SEE SHEET 2-1 FOR DITCH DETAILS
SEE SHEET 35 FOR -L- & -L1- PROFILES
SEE SHEET 50 FOR -Y16- PROFILE

REVISIONS

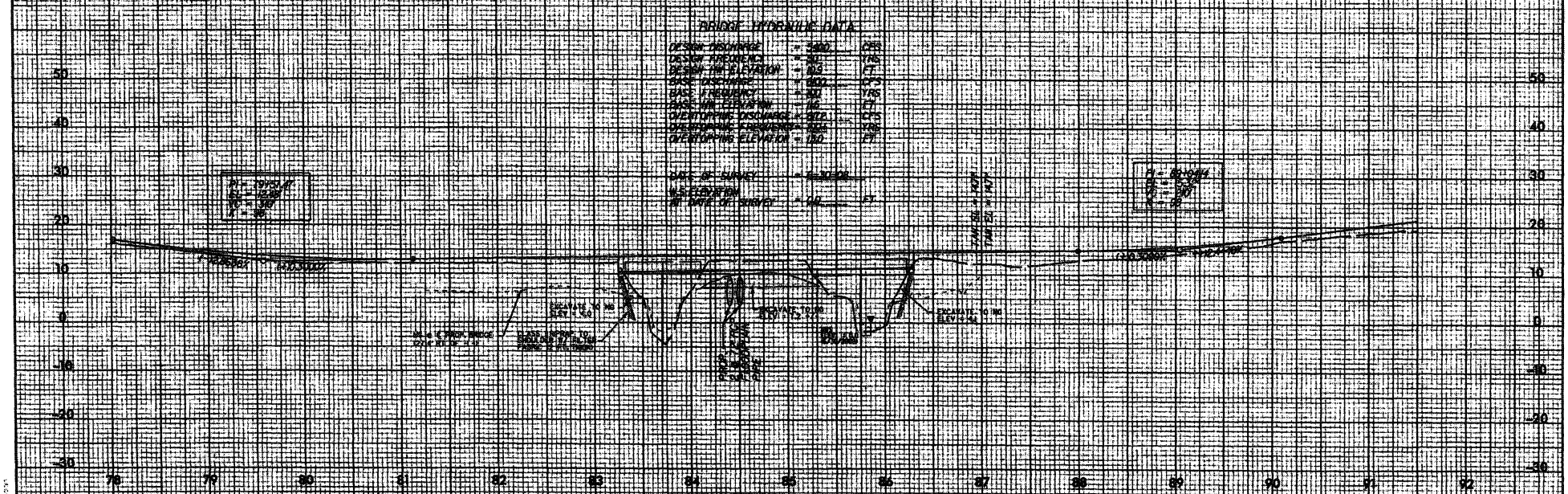

PROJECT REFERENCE NO.
U-380
SHEET NO.
9
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 20 of 44
NAD 83/2001
MATCH TO SHEET 10 -L- STA. 87+00.00
MATCH TO SHEET 8 -L- STA. 73+00.00
SITE 2
Q10 =0.4 cfs
V10 =0.49 fps
Q10 =24.4 cfs
V10 =1.87 fps
NORTHWEST CREEK
SEE SHEET 21 FOR DITCH DETAILS
SEE SHEET 35 FOR -L- & -LI- PROFILES
SEE SHEET 50 FOR -Y16- PROFILE
- PROP. EXCAVATION
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
GRAPHIC SCALE
REVISIONS



PROJECT REFERENCE NO.
U-3810
SHEET NO.
9
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 21 of 64
NAD 83/2001
WILLIE HALL
B. BARDEN LANIER
Q10 =24.4cfs
V10 =1.87 fps
Q10 =0.6 cfs
V10 =0.49 fps
RIP RAP AT EMBANKMENT
CLASS 'I' RIP RAP
EST. 20 TONS
EST. 30 SY FILT. FAB.
SEE DETAIL 20
SPECIAL LATERAL BASE DITCH
SEE DETAIL 19
CLASS 'B' RIP RAP
EST. 5 TONS
EST. 14 SY FILT. FAB.
SPECIAL LATERAL BASE DITCH
SEE DETAIL 67
N C DEPARTMENT OF TRANSPORTATION
CLASS 'B' RIP RAP
EST. 1 TONS
EST. 5 SY FILT. FAB.
ELBOWS & ROD & LUG CONNECTORS
EXISTING R/W
DUE
RETAIN
SITE 2
JACKSONVILLE CITY LIMITS
2 @ 72" RCP
FLOODPLAIN PIPE
18" RCP-IV
72" RCP-III
24" RCP-IV
15" RCP-IV
REMOVE
CB
PUE
OUTLET TYPICAL
EST. 140 CY DDE
SEE DETAIL 22
PSH
SEE DETAIL 23
NORTHEST CREEK
CLASS 'II' RIP RAP
(STRUCTURE PAY ITEM)
KIN WA ZHANG
JOHN KOSTELLO, ET UX
87
88
89
MATCH TO SHEET 10 -L- STA. 87+00.00
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
50' 0' 50' 100' 150'
GRAPHIC SCALE
REVISIONS

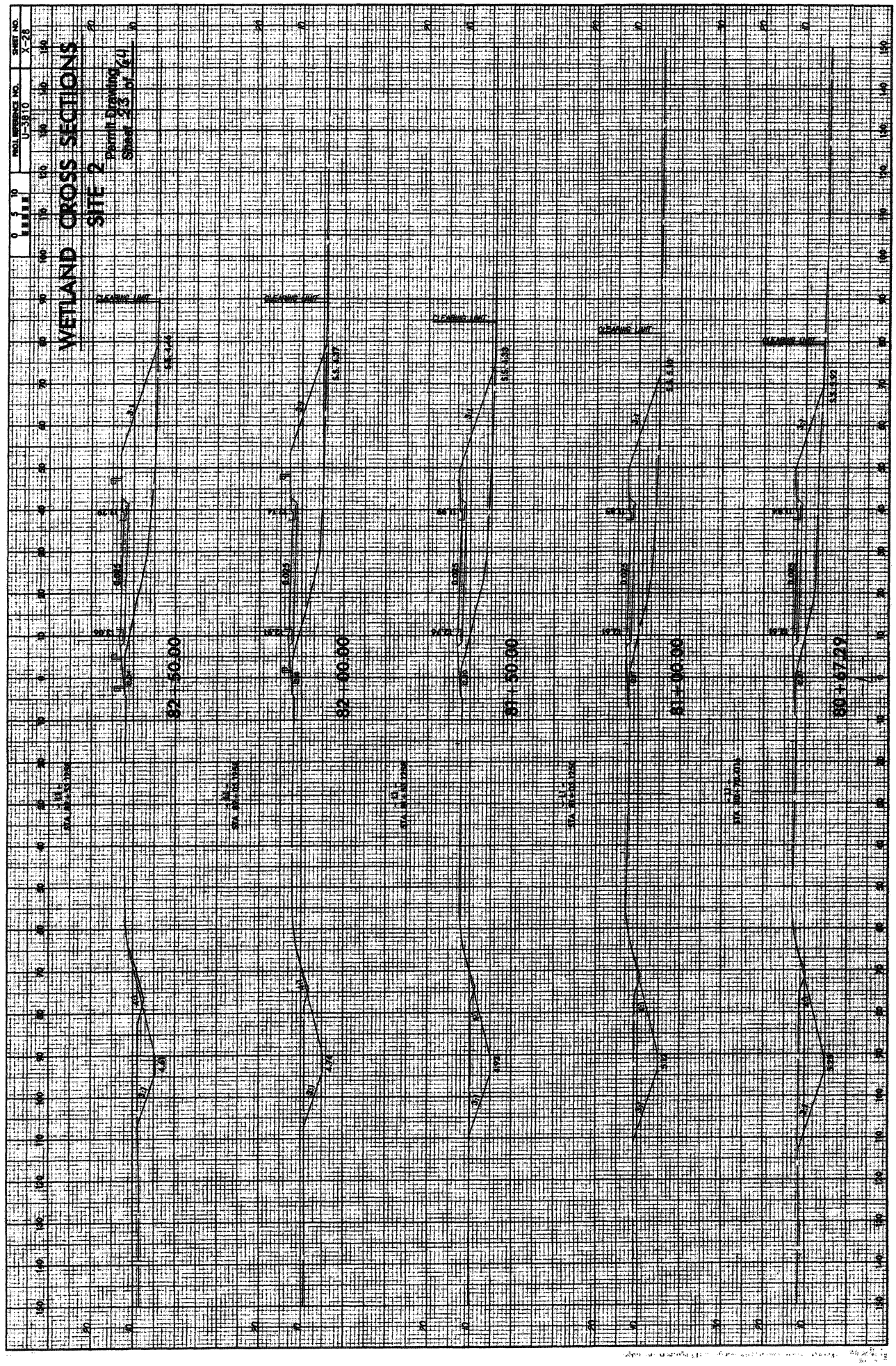
PROJ. REFERENCE NO.	SHEET NO.
U-3810	

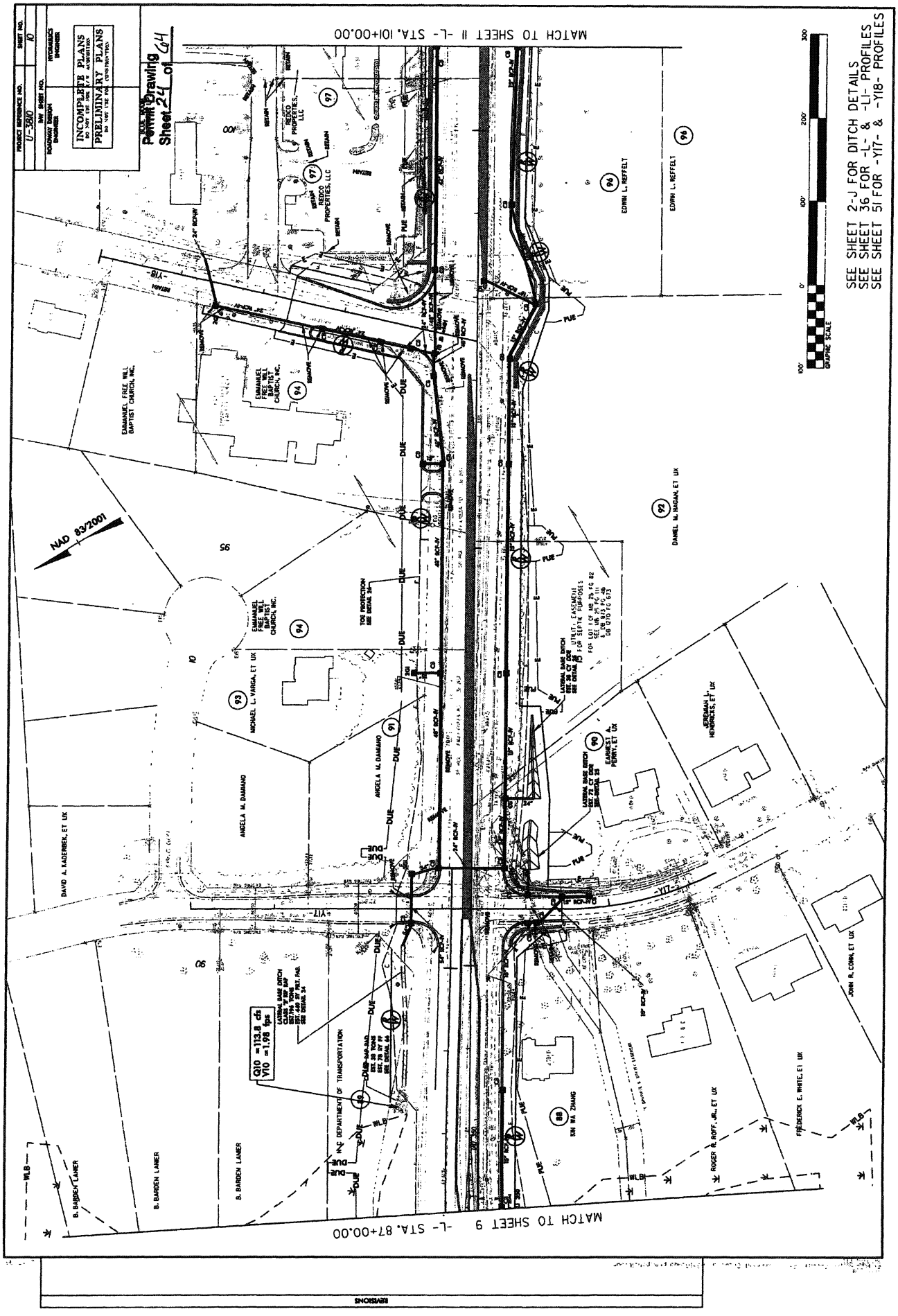
Permit Drawing
Sheet 22 of 64

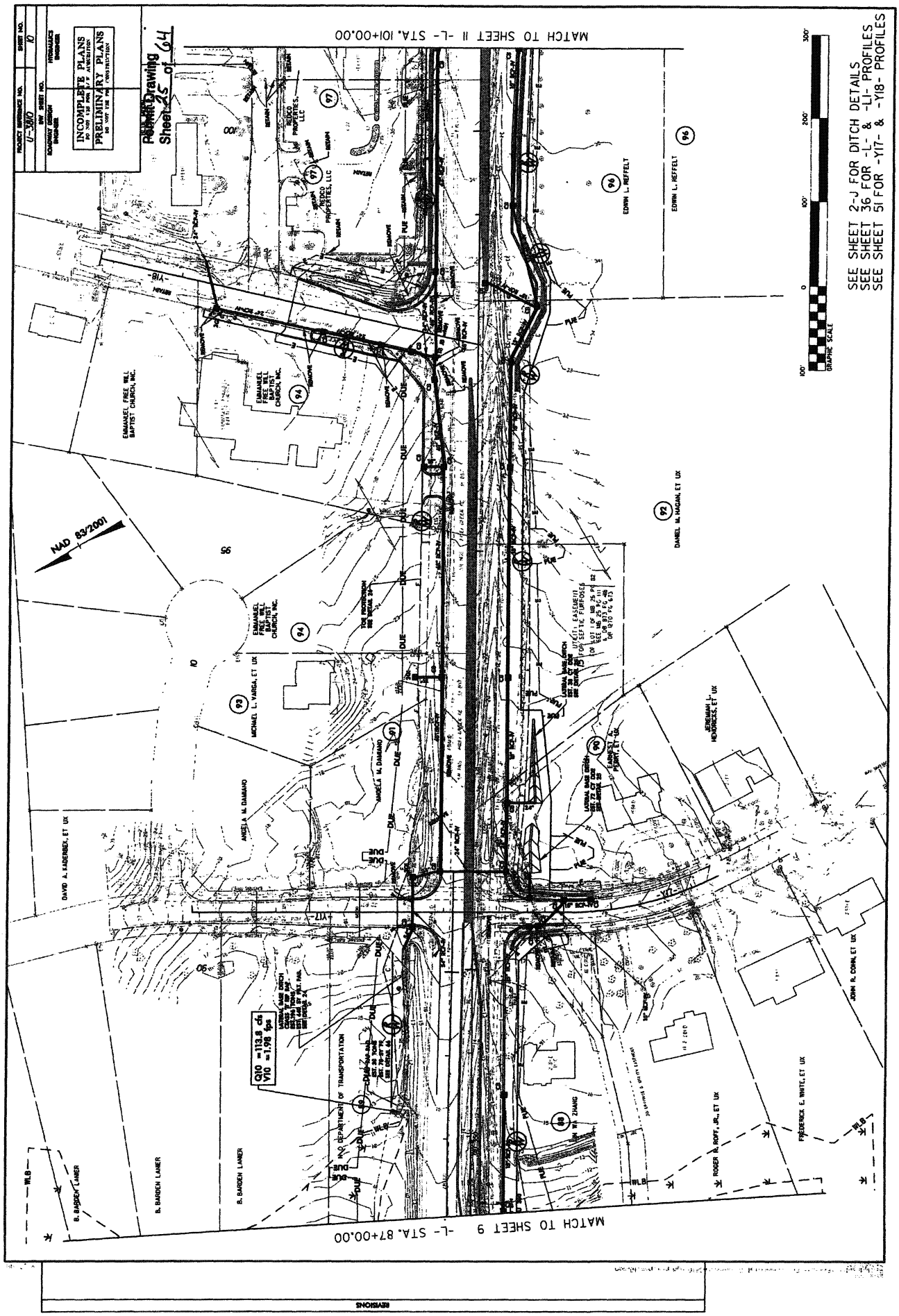


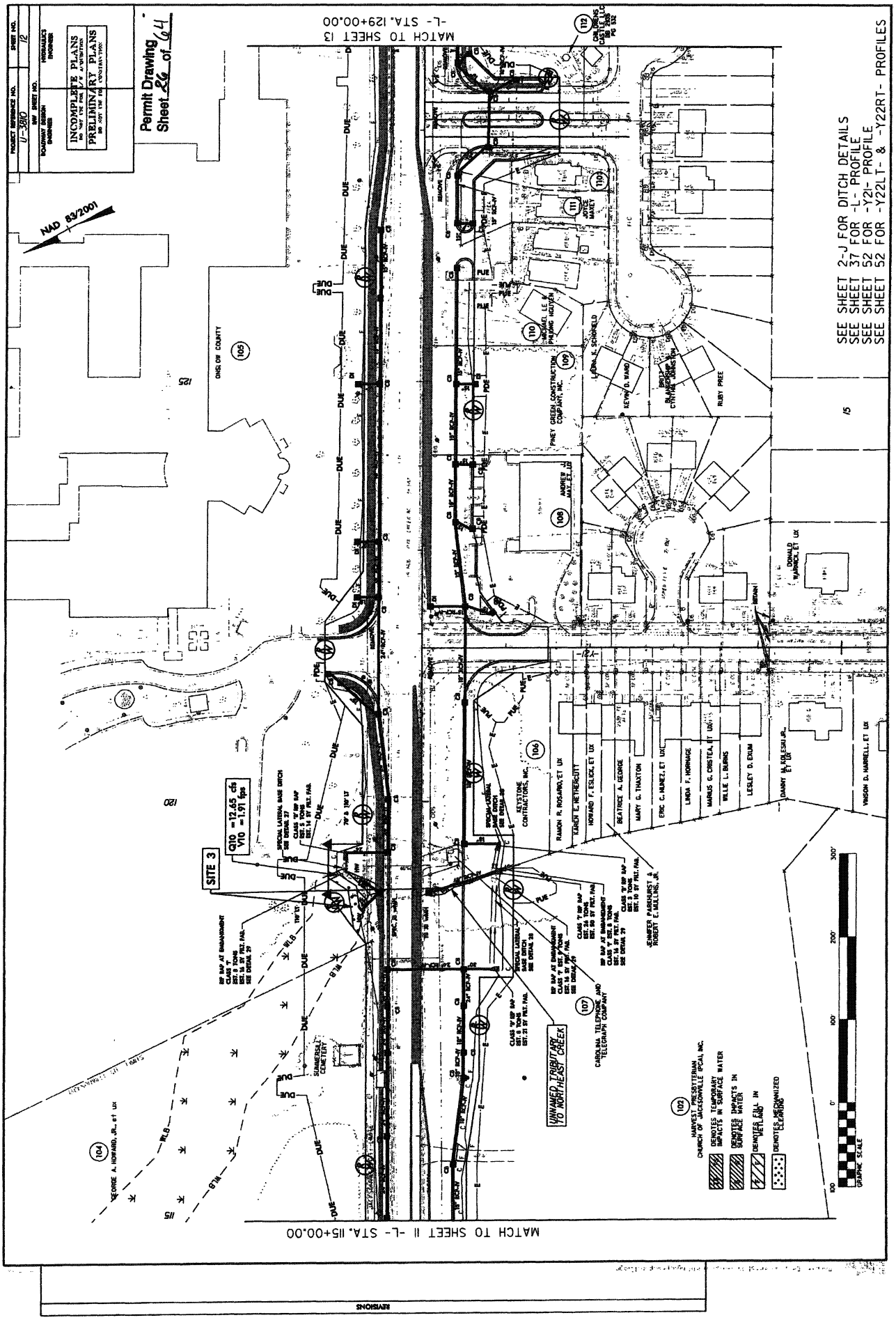
SITE 2

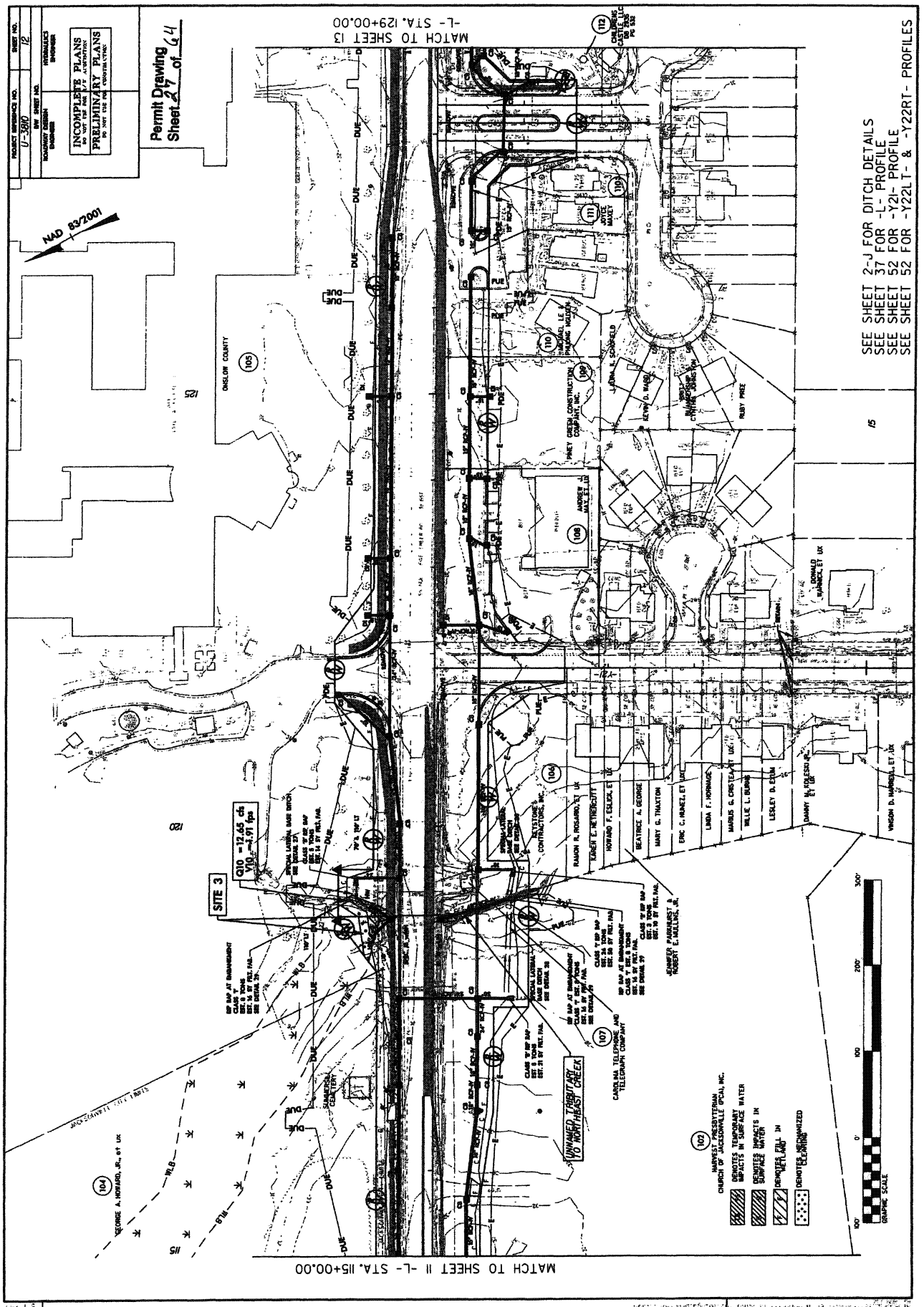
-L-

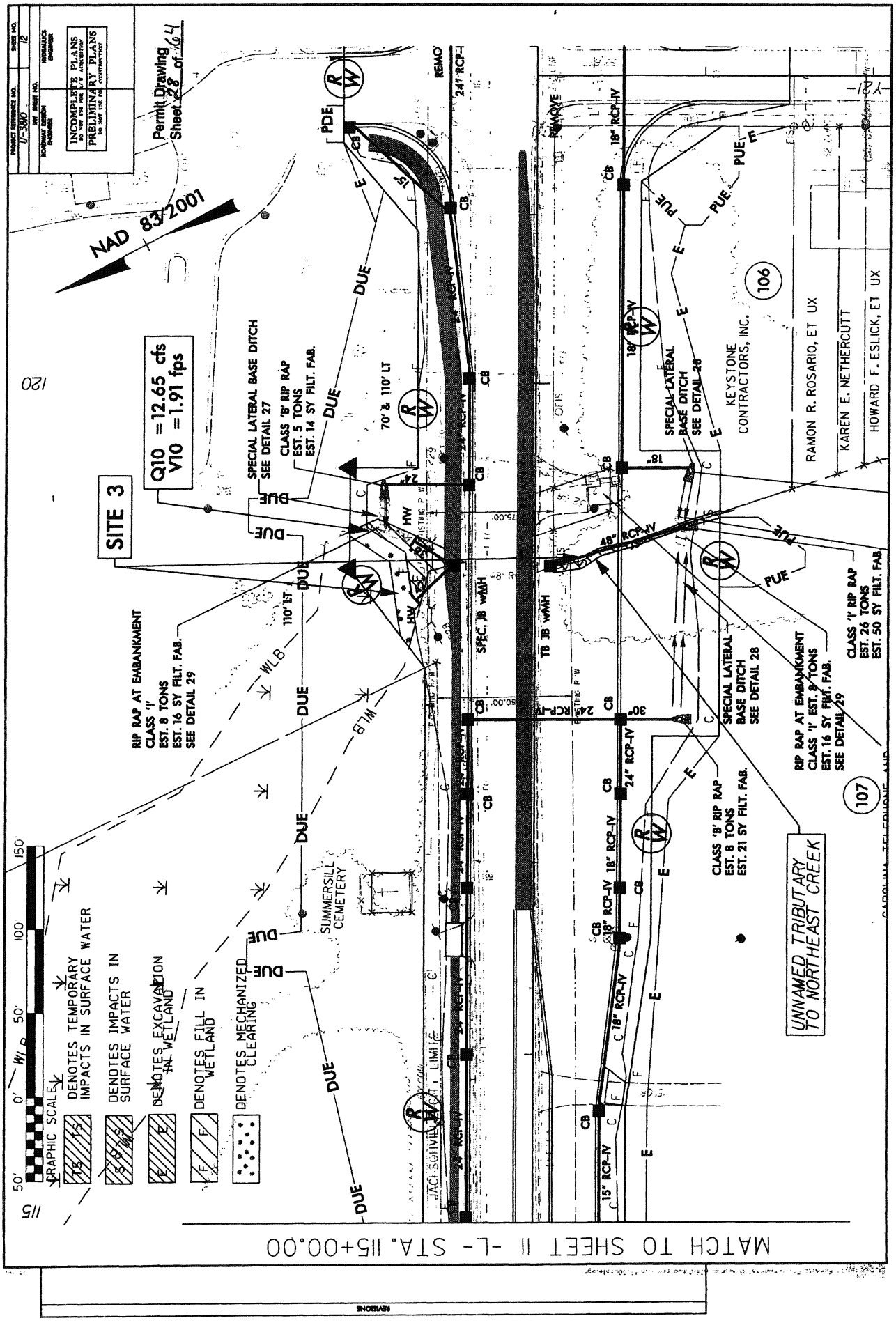

WETLAND CROSS SECTIONS
SITE 2
Permit Drawing
Sheet 23 of 41
PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-28
0 5 10
CLEARING LIMIT
82+50.00
82+00.00
81+50.00
81+00.00
80+67.29

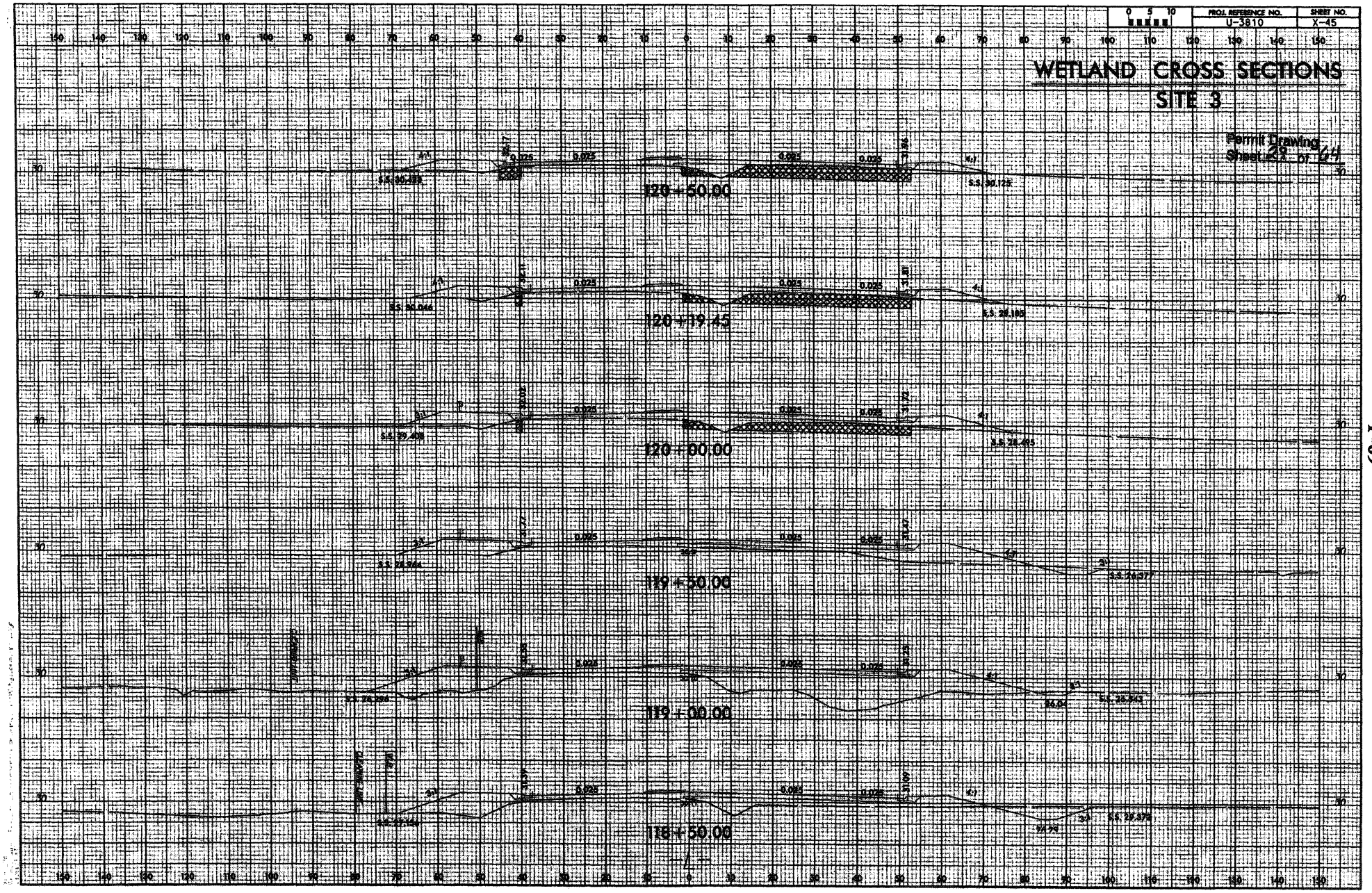

PROJECT REFERENCE NO.
U-3810
SHEET NO.
10
INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION
PRELIMINARY PLANS
NO RIGHT OF WAY CONSTRUCTION
Permit Drawing
Sheet 24 of 64
MATCH TO SHEET 11 -L- STA. 101+00.00
MATCH TO SHEET 9 -L- STA. 87+00.00
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 36 FOR -L- & -LI- PROFILES
SEE SHEET 51 FOR -Y17- & -Y18- PROFILES
NAD 83/2001
GRAPHIC SCALE
EMMANUEL FREE WILL BAPTIST CHURCH, INC.
REDCO PROPERTIES, LLC
EDWIN L. REFFELT
DANIEL M. HAGAN, ET UX
MICHAEL L. VARGA, ET UX
ANGELA M. DAMIANO
DAVID A. KADERBEK, ET UX
EARNEST PERRY, ET UX
JEREMIAH L. HENDRICKS, ET UX
JOHN R. COBB, ET UX
FREDERICK E. WHITE, ET UX
ROGER R. ROFF, JR., ET UX
BIN MA ZHANG
B. BARDEN LANIER
B. BADDY LANIER
NCDEPARTMENT OF TRANSPORTATION
Q10 =113.8 cfs
V10 =1.98 fps
REVISIONS

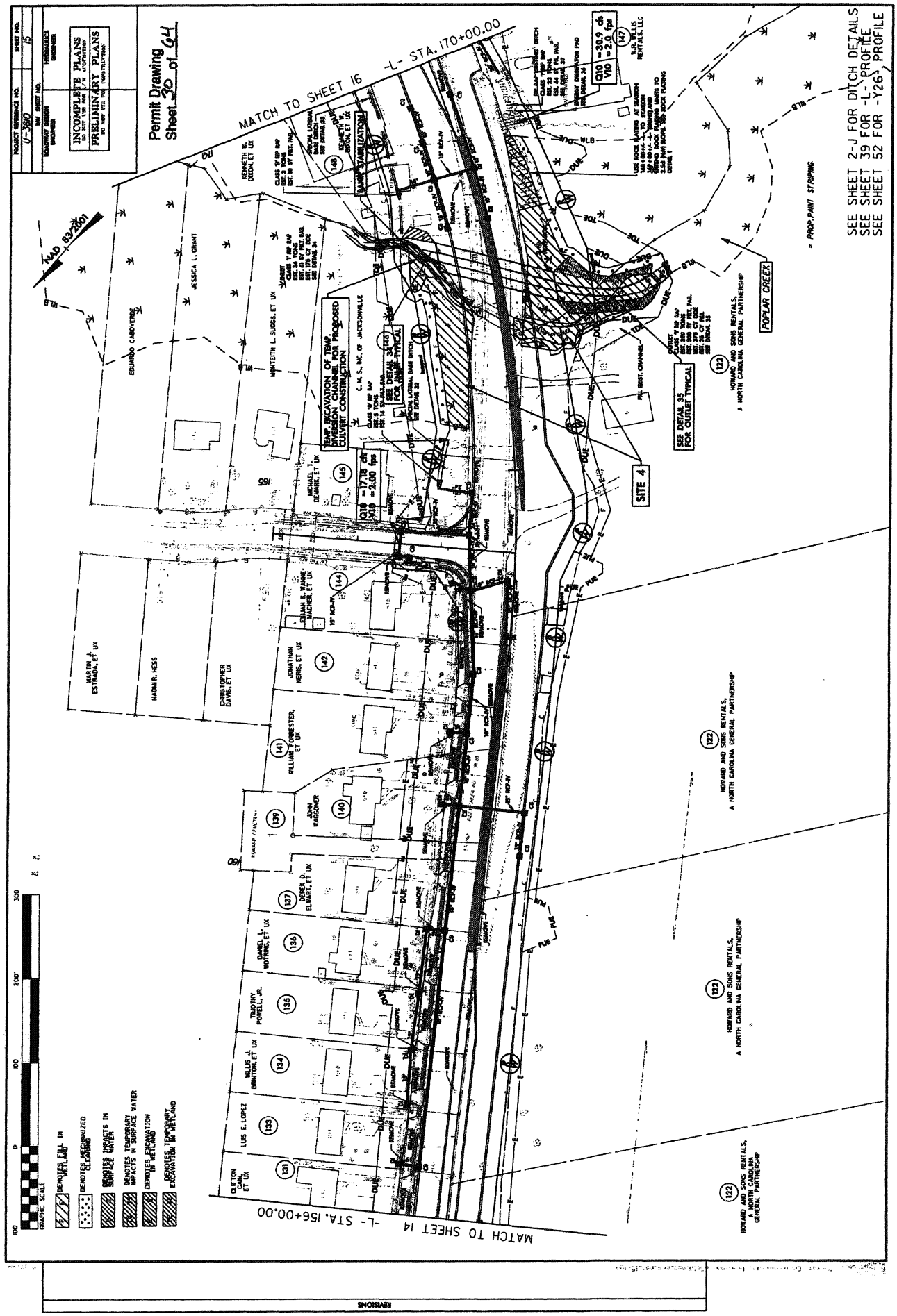

PROJECT REFERENCE NO. U-5810
SHEET NO. 10
RW SHEET NO.
ROADWAY DESIGNER
STRUCTURES ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
NOT FOR CONSTRUCTION
Permit Drawing
Sheet 25 of 64
MATCH TO SHEET 11 -L- STA. 101+00.00
MATCH TO SHEET 9 -L- STA. 87+00.00
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 36 FOR -L- & -LI- PROFILES
SEE SHEET 51 FOR -Y17- & -Y18- PROFILES
NAD 83/2001
GRAPHIC SCALE
Q10 =113.8 cfs
V10 =1.98 fps
EMMANUEL FREE WILL BAPTIST CHURCH, INC.
EMMANUEL FREE WILL BAPTIST CHURCH, INC.
FREE WILL BAPTIST CHURCH, INC.
MICHAEL L. VARGA, ET UX
ANGELA M. DAMIANO
DAVID A. KADERBEK, ET UX
B. BARDEN LANER
B. BARDEN LANER
B. BARDEN LANER
NC DEPARTMENT OF TRANSPORTATION
ROGER R. ROFF, JR., ET UX
FREDERICK E. WHITE, ET UX
JOHN R. COHN, ET UX
JEREMIAH J. HENDRICKS, ET UX
DANIEL M. HAGAN, ET UX
EDWIN L. HEFFELT
EDWIN L. HEFFELT
REVISIONS

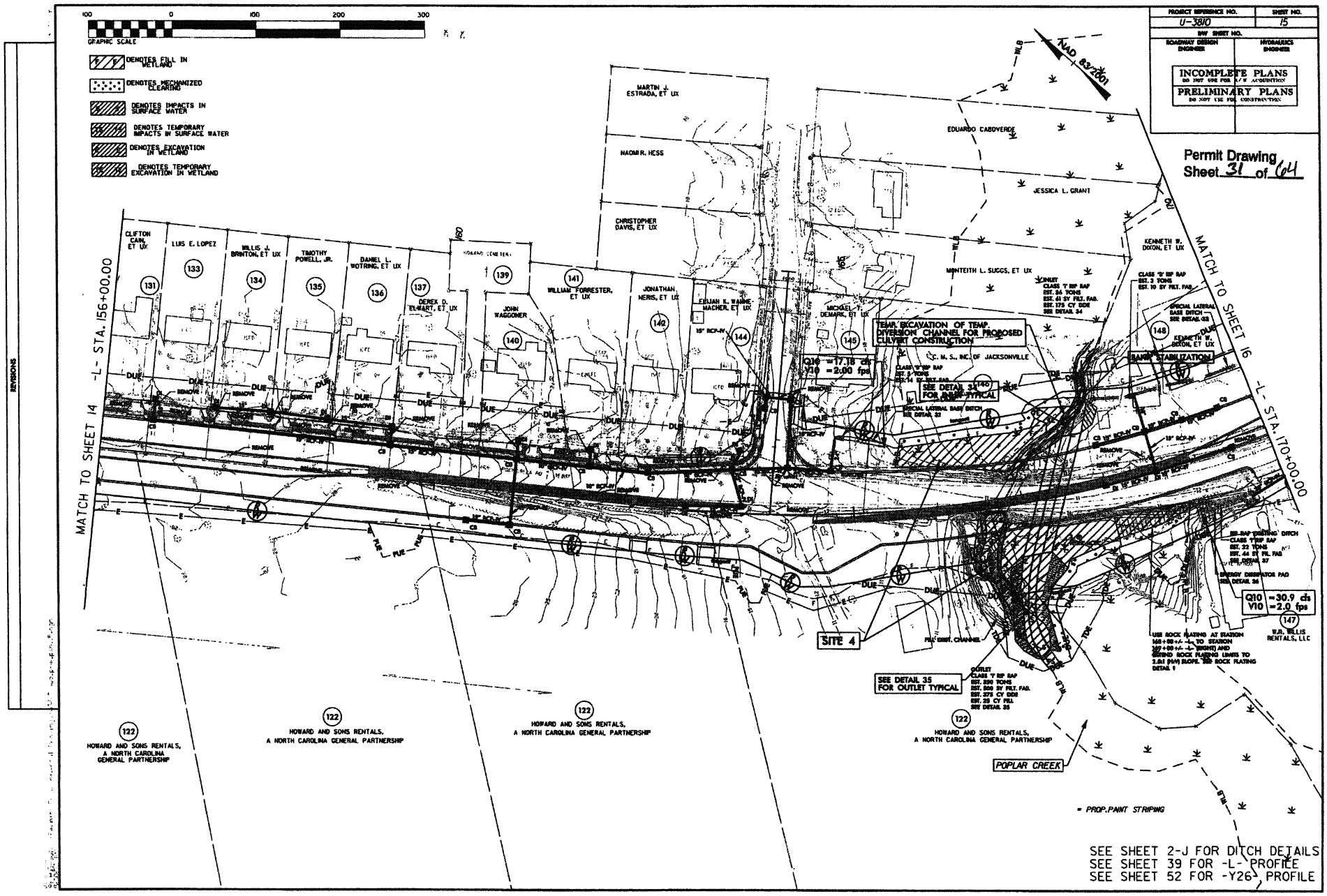

PROJECT REFERENCE NO. U-3810
SHEET NO. 12
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 29 of 64
NAD 83/2001
MATCH TO SHEET 13 -L- STA. 129+00.00
MATCH TO SHEET 11 -L- STA. 115+00.00
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 52 FOR -Y2I- PROFILE
SEE SHEET 52 FOR -Y22LT- & -Y22RT- PROFILES
SITE 3
Q10 = 12.65 cfs
V10 = 1.91 fps
UNNAMED TRIBUTARY TO NORTHEAST CREEK
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
GRAPHIC SCALE
REVISIONS


PROJECT REFERENCE NO. U-380
SHEET NO. 12
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing Sheet 27 of 44
NAD 83/2001
MATCH TO SHEET 13 -L- STA. 129+00.00
MATCH TO SHEET 11 -L- STA. 115+00.00
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 52 FOR -Y2I- PROFILE
SEE SHEET 52 FOR -Y22LT- & -Y22RT- PROFILES
SITE 3
Q10 = 12.65 cfs
V10 = 4.91 fps
UNNAMED TRIBUTARY TO NORTHEAST CREEK
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
GRAPHIC SCALE
ONSLOW COUNTY
REVISIONS

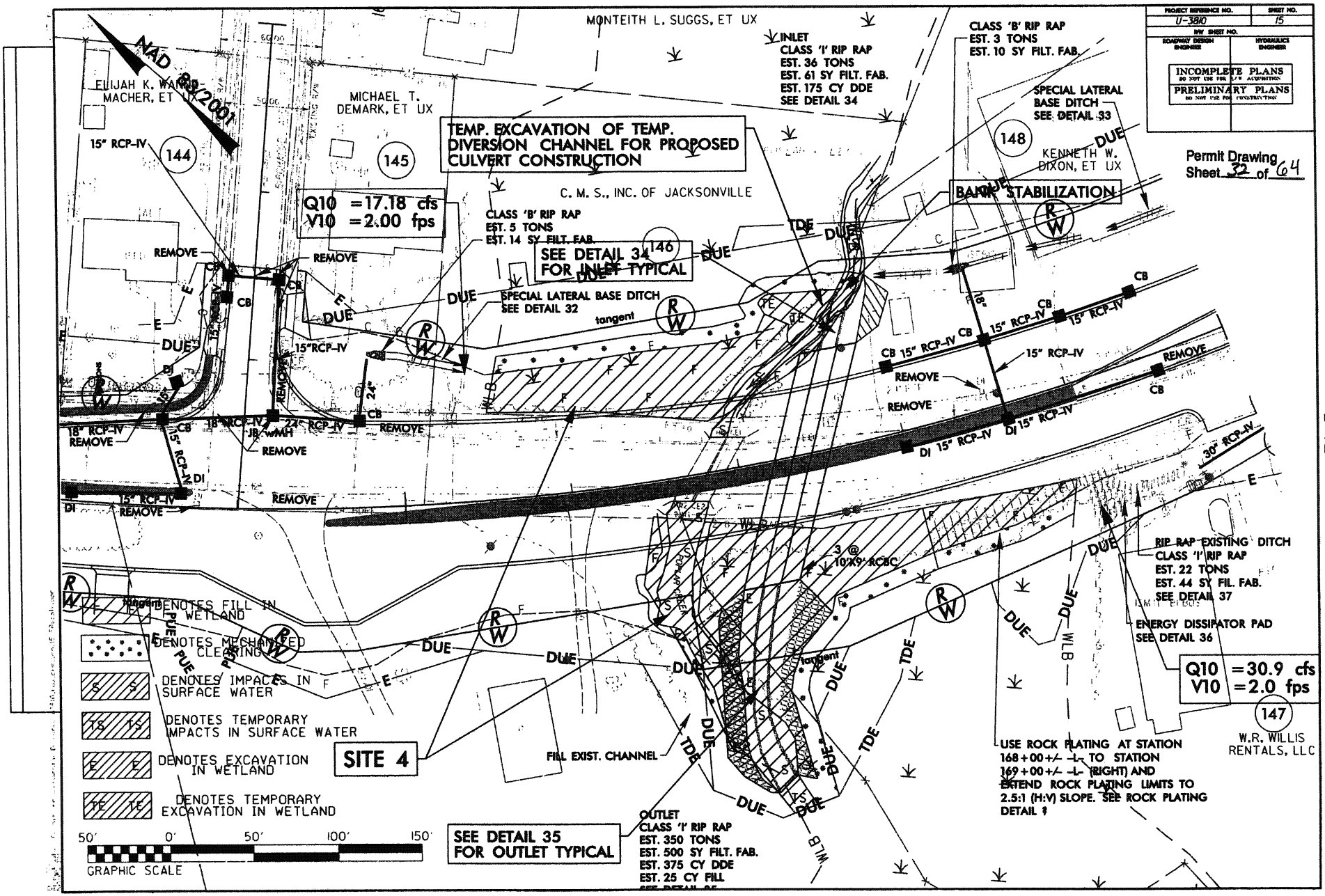

PROJECT REFERENCE NO. U-380
SHEET NO. 12
ROADWAY DESIGNER
HYDRAULIC ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 28 of 64
NAD 83/2001
SITE 3
Q10 = 12.65 cfs
V10 = 1.91 fps
SPECIAL LATERAL BASE DITCH SEE DETAIL 27
CLASS 'B' RIP RAP EST. 5 TONS EST. 14 SY FILT. FAB.
70' & 110' LT
RIP RAP AT EMBANKMENT CLASS 'I' EST. 8 TONS EST. 16 SY FILT. FAB. SEE DETAIL 29
110' LT
SPECIAL LATERAL BASE DITCH SEE DETAIL 28
CLASS 'I' RIP RAP EST. 26 TONS EST. 50 SY FILT. FAB.
CLASS 'B' RIP RAP EST. 8 TONS EST. 21 SY FILT. FAB.
RIP RAP AT EMBANKMENT CLASS 'I' EST. 8 TONS EST. 16 SY FILT. FAB. SEE DETAIL 29
UNNAMED TRIBUTARY TO NORTHEAST CREEK
KEYSTONE CONTRACTORS, INC.
RAMON R. ROSARIO, ET UX
KAREN E. NETHERCUTT
HOWARD F. ESLICK, ET UX
SUMMERSILL CEMETERY
JACKSONVILLE CITY LIMITS
106
107
GRAPHIC SCALE
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
MATCH TO SHEET 11 -L- STA. 115+00.00
REVISIONS


0 5 10
PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-45
WETLAND CROSS SECTIONS
SITE 3
Permit Drawing
Sheet 28 of 41
120+50.00
120+19.45
120+00.00
119+50.00
119+00.00
118+50.00


PROJECT REFERENCE NO. U-580
SHEET NO. 15
ROADWAY DESIGNER BMP
SHEET NO.
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 30 of 64
MATCH TO SHEET 16 -L- STA. 170+00.00
MATCH TO SHEET 14 -L- STA. 156+00.00
NAD 83/2001
SITE 4
TEMP. EXCAVATION OF TEMP. DIVERSION CHANNEL FOR PROPOSED CULVERT CONSTRUCTION
SEE DETAIL 34 FOR JUMP TYPICAL
SEE DETAIL 35 FOR OUTLET TYPICAL
Q10 = 17.18 cfs V10 = 2.00 fps
Q10 = 30.9 cfs V10 = 2.0 fps
POPLAR CREEK
PROP. PAINT STRIPING
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 52 FOR -Y26- PROFILE
EDUARDO CARDIVERDE
JESSICA L. GRANT
KENNETH W. DIXON, ET UX
MINNIETH L. SUDDS, ET UX
MICHAEL T. DEMARIS, ET UX
C. M. S., INC. OF JACKSONVILLE
ERLAND R. WANNEMACHER, ET UX
JONATHAN MORRIS, ET UX
WILLIAM FORRESTER, ET UX
JOHN RAGGONER
DEREK T. ELMAN, ET UX
DANIEL L. WOTRING, ET UX
TIMOTHY POWELL, SR.
WILLIS H. BRINTON, ET UX
LUIS E. LOPEZ
CLETON ALL, ET UX
MARTIN J. ESTRADA, ET UX
NADIA R. MESS
CHRISTOPHER DAVIS, ET UX
H.R. WILLIS RENTALS, LLC
HOWARD AND SONS RENTALS, A NORTH CAROLINA GENERAL PARTNERSHIP
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY EXCAVATION IN WETLAND
GRAPHIC SCALE
REVISIONS



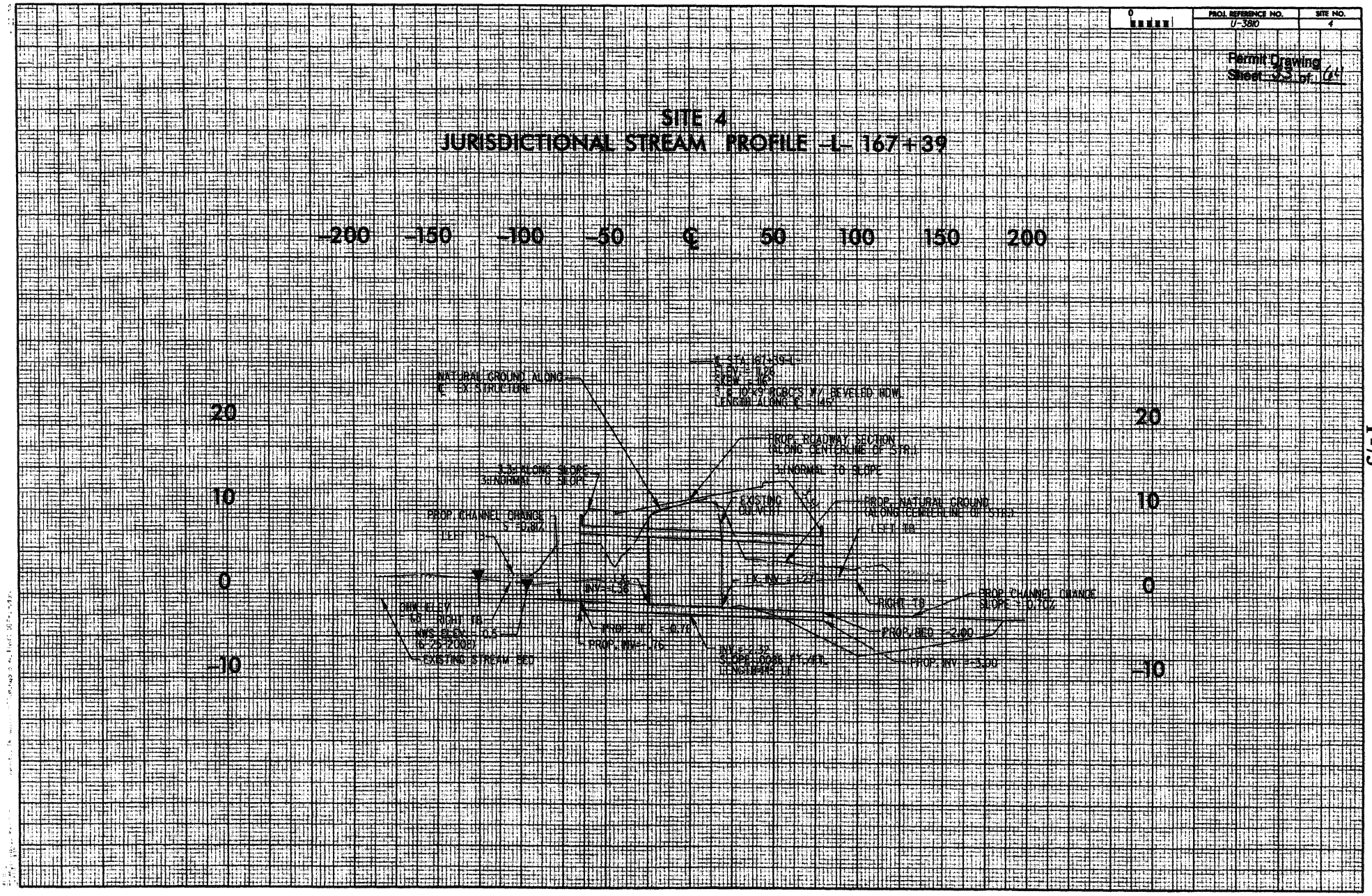
PROJECT REFERENCE NO.
U-3810
SHEET NO.
15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 31 of 64
GRAPHIC SCALE
100 0 100 200 300
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY EXCAVATION IN WETLAND
REVISIONS
NAD 83/2001
MATCH TO SHEET 14 -L- STA. 156+00.00
MATCH TO SHEET 16 -L- STA. 170+00.00
CLIFTON CAIN, ET UX
LUIS E. LOPEZ
WILLIS J. BRINTON, ET UX
TIMOTHY POWELL, JR.
DANIEL L. WOTRING, ET UX
DEREK D. ELWART, ET UX
JOHN WAGGONER
WILLIAM FORRESTER, ET UX
JONATHAN NERIS, ET UX
ELIJAH K. WAHNEMACHER, ET UX
MICHAEL T. DEMARK, ET UX
MARTIN J. ESTRADA, ET UX
NADMIR. HESS
CHRISTOPHER DAVIS, ET UX
EDUARDO CABOVERDE
JESSICA L. GRANT
MONTEITH L. SUGGS, ET UX
KENNETH W. DIXON, ET UX
TEMP. EXCAVATION OF TEMP. DIVERSION CHANNEL FOR PROPOSED CULVERT CONSTRUCTION
C. M. S., INC. OF JACKSONVILLE
Q10 =17.18 cfs
V10 =2.00 fps
SEE DETAIL 34 FOR INLET TYPICAL
SPECIAL LATERAL BASE DITCH SEE DETAIL 32
BANK STABILIZATION
Q10 =30.9 cfs
V10 =2.0 fps
W.R. WILLIS RENTALS, LLC
SITE 4
SEE DETAIL 35 FOR OUTLET TYPICAL
POPLAR CREEK
HOWARD AND SONS RENTALS, A NORTH CAROLINA GENERAL PARTNERSHIP
= PROP. PAINT STRIPING
SEE SHEET 2-J FOR DITCH DETAILS
SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 52 FOR -Y26- PROFILE


NAD 83/2001
MONTEITH L. SUGGS, ET UX
ELIJAH K. WAMBACHER, ET UX
MICHAEL T. DEMARK, ET UX
KENNETH W. DIXON, ET UX
C. M. S., INC. OF JACKSONVILLE
W.R. WILLIS RENTALS, LLC
144
145
146
147
148
TEMP. EXCAVATION OF TEMP. DIVERSION CHANNEL FOR PROPOSED CULVERT CONSTRUCTION
Q10 =17.18 cfs
V10 =2.00 fps
SEE DETAIL 34 FOR INLET TYPICAL
INLET
CLASS 'I' RIP RAP
EST. 36 TONS
EST. 61 SY FILT. FAB.
EST. 175 CY DDE
SEE DETAIL 34
CLASS 'B' RIP RAP
EST. 3 TONS
EST. 10 SY FILT. FAB.
SPECIAL LATERAL BASE DITCH
SEE DETAIL 33
CLASS 'B' RIP RAP
EST. 5 TONS
EST. 14 SY FILT. FAB.
SPECIAL LATERAL BASE DITCH
SEE DETAIL 32
BANK STABILIZATION
RIP RAP EXISTING DITCH
CLASS 'I' RIP RAP
EST. 22 TONS
EST. 44 SY FIL. FAB.
SEE DETAIL 37
ENERGY DISSIPATOR PAD
SEE DETAIL 36
Q10 =30.9 cfs
V10 =2.0 fps
3 @ 10'X9' RCBC
FILL EXIST. CHANNEL
SITE 4
SEE DETAIL 35 FOR OUTLET TYPICAL
OUTLET
CLASS 'I' RIP RAP
EST. 350 TONS
EST. 500 SY FILT. FAB.
EST. 375 CY DDE
EST. 25 CY FILL
USE ROCK PLATING AT STATION 168+00+/- -L- TO STATION 169+00+/- -L- (RIGHT) AND EXTEND ROCK PLATING LIMITS TO 2.5:1 (H:V) SLOPE. SEE ROCK PLATING DETAIL ?
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY EXCAVATION IN WETLAND
50' 0' 50' 100' 150'
GRAPHIC SCALE
PROJECT REFERENCE NO. U-3810
SHEET NO. 15
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 32 of 64

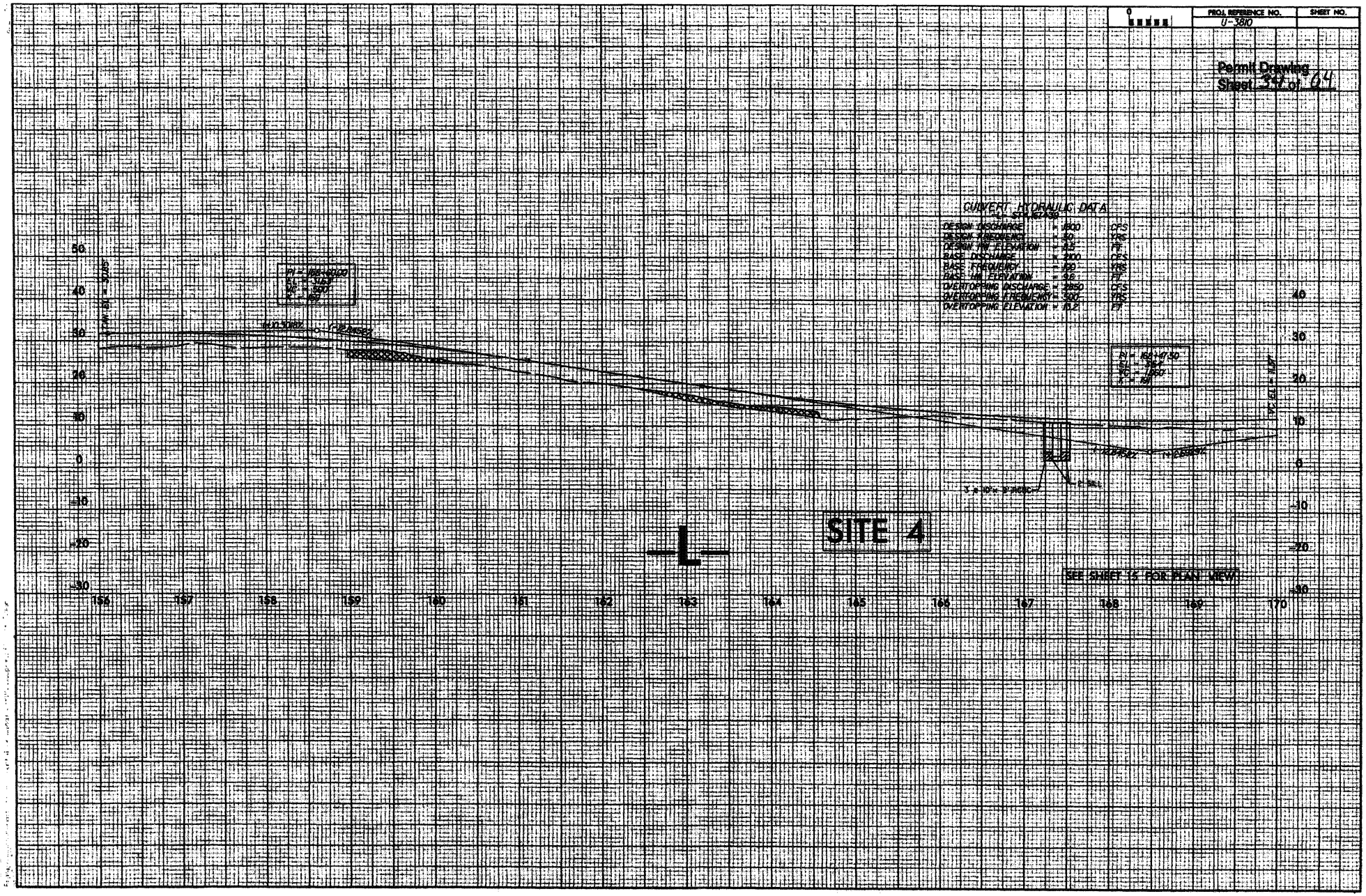
PROJ. REFERENCE NO.	SITE NO.
U-3810	4

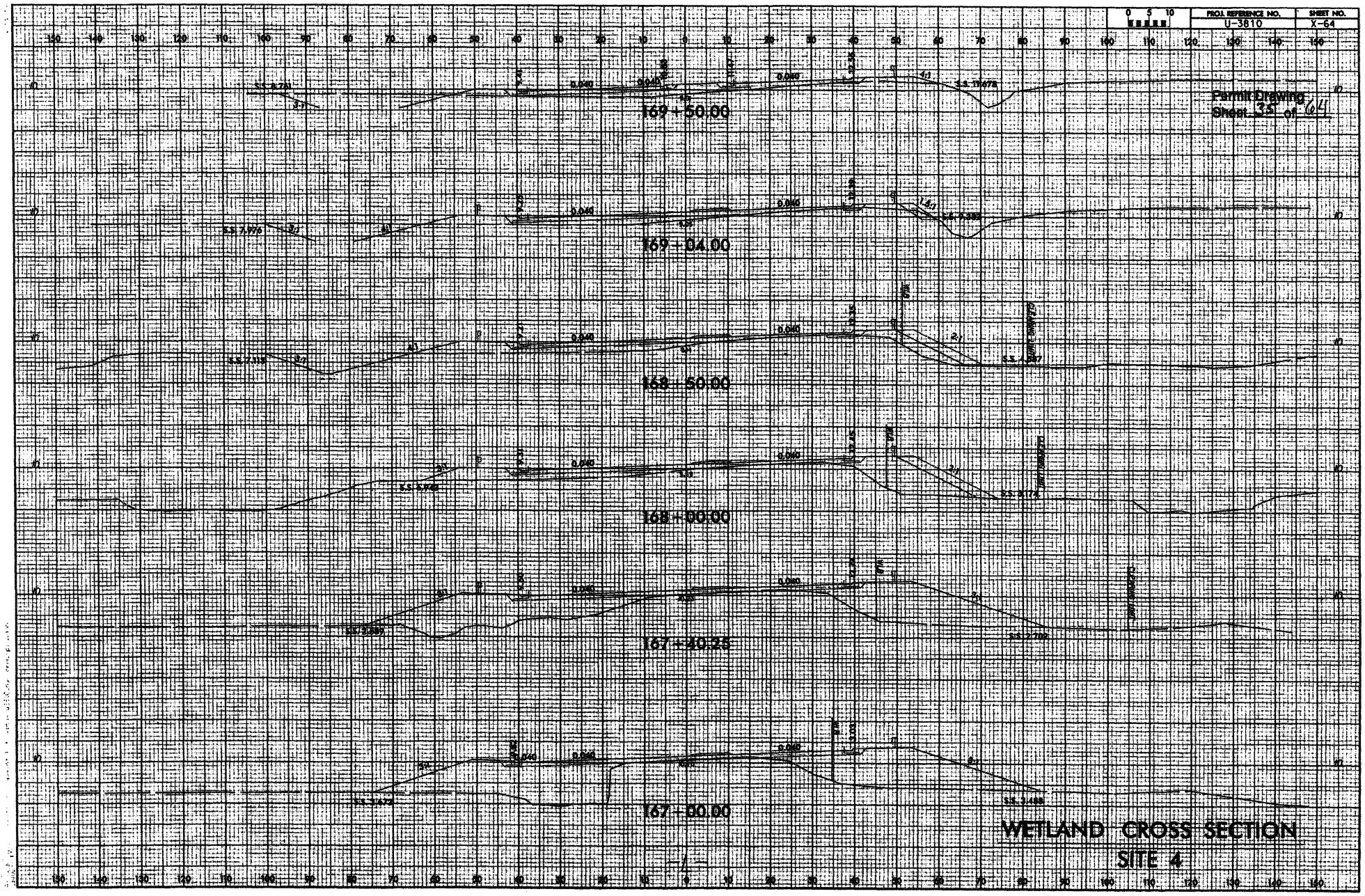
Permit Drawing
Sheet 23 of 24

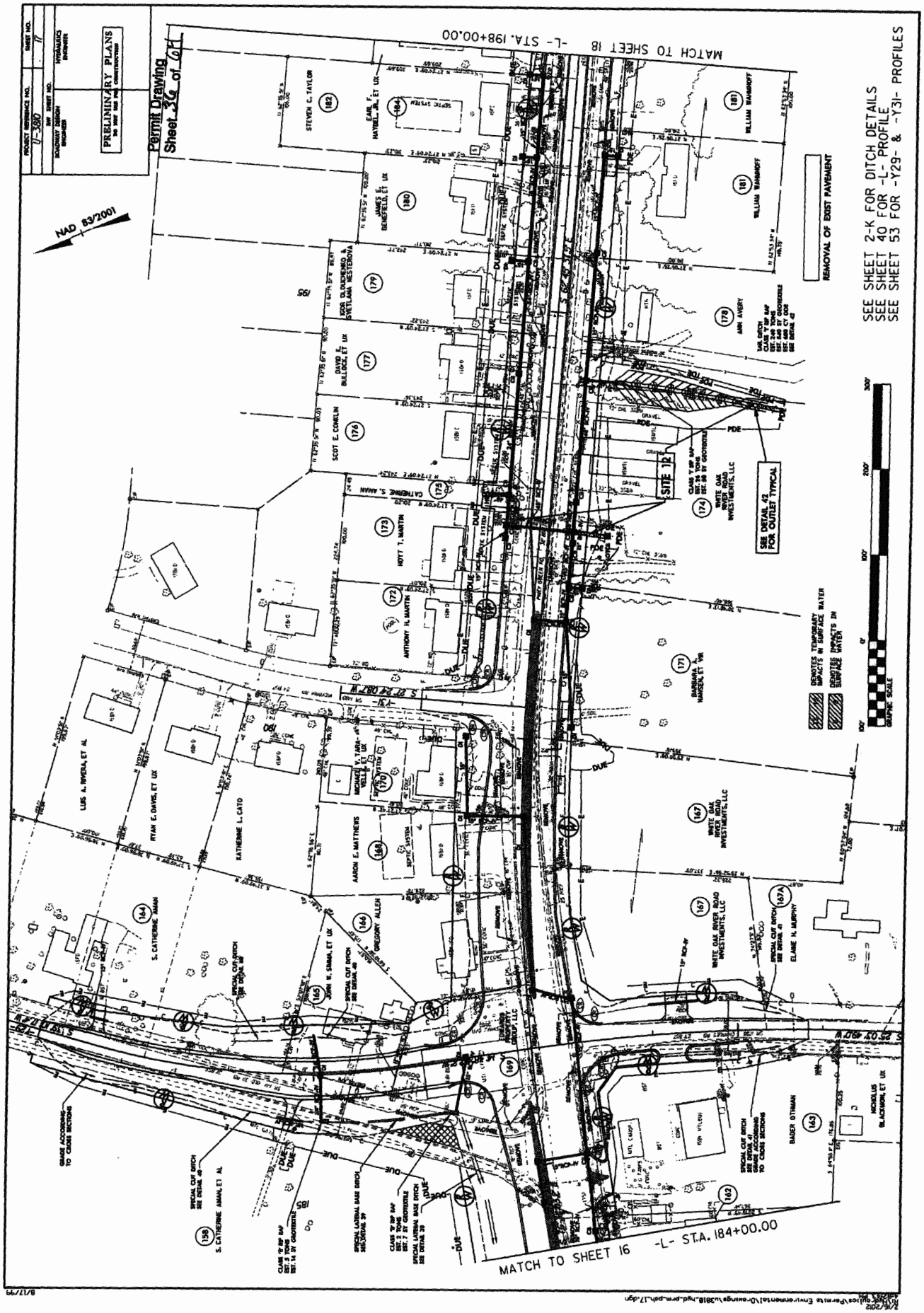
SITE 4
JURISDICTIONAL STREAM PROFILE -L- 167+39

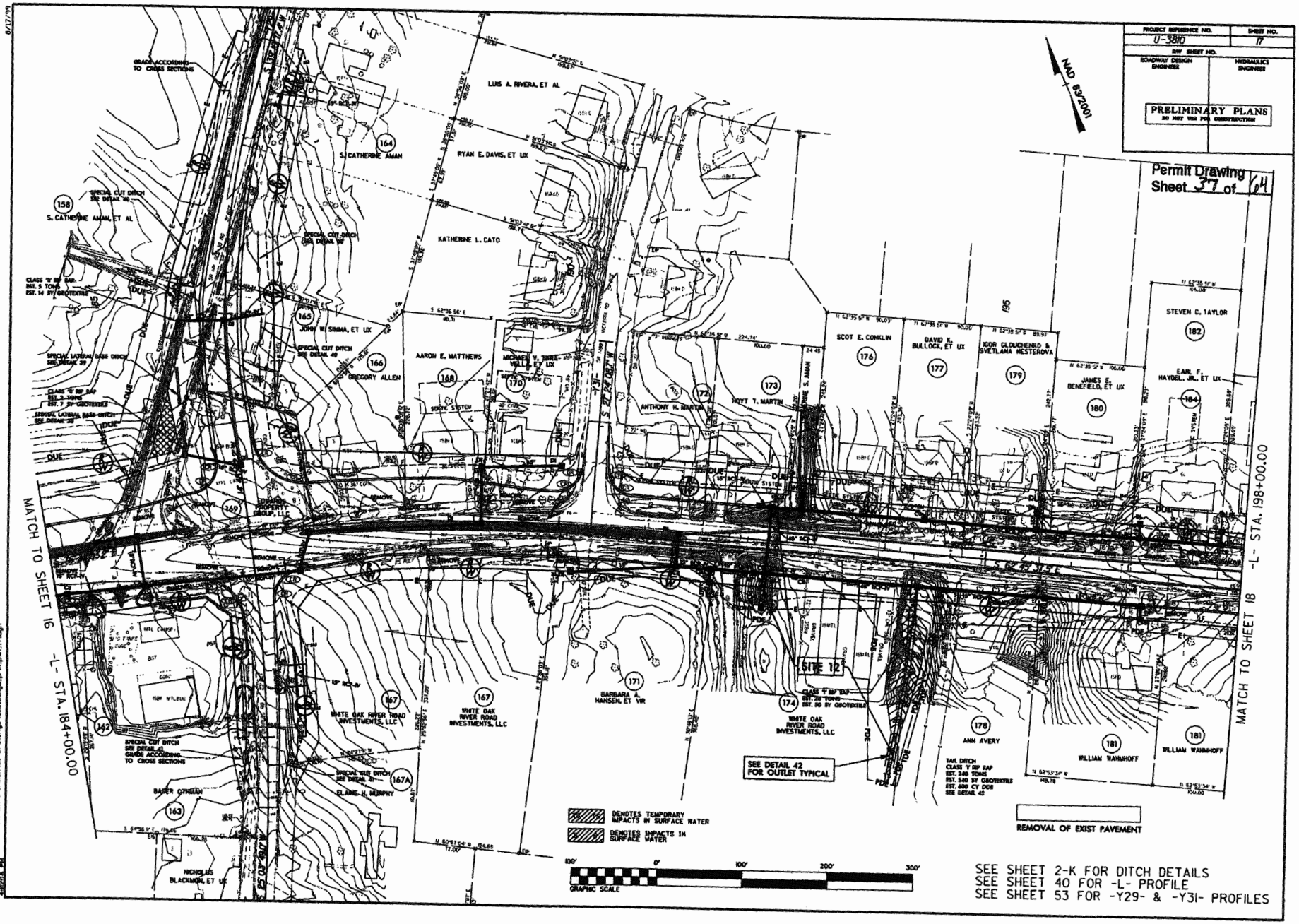


P-73

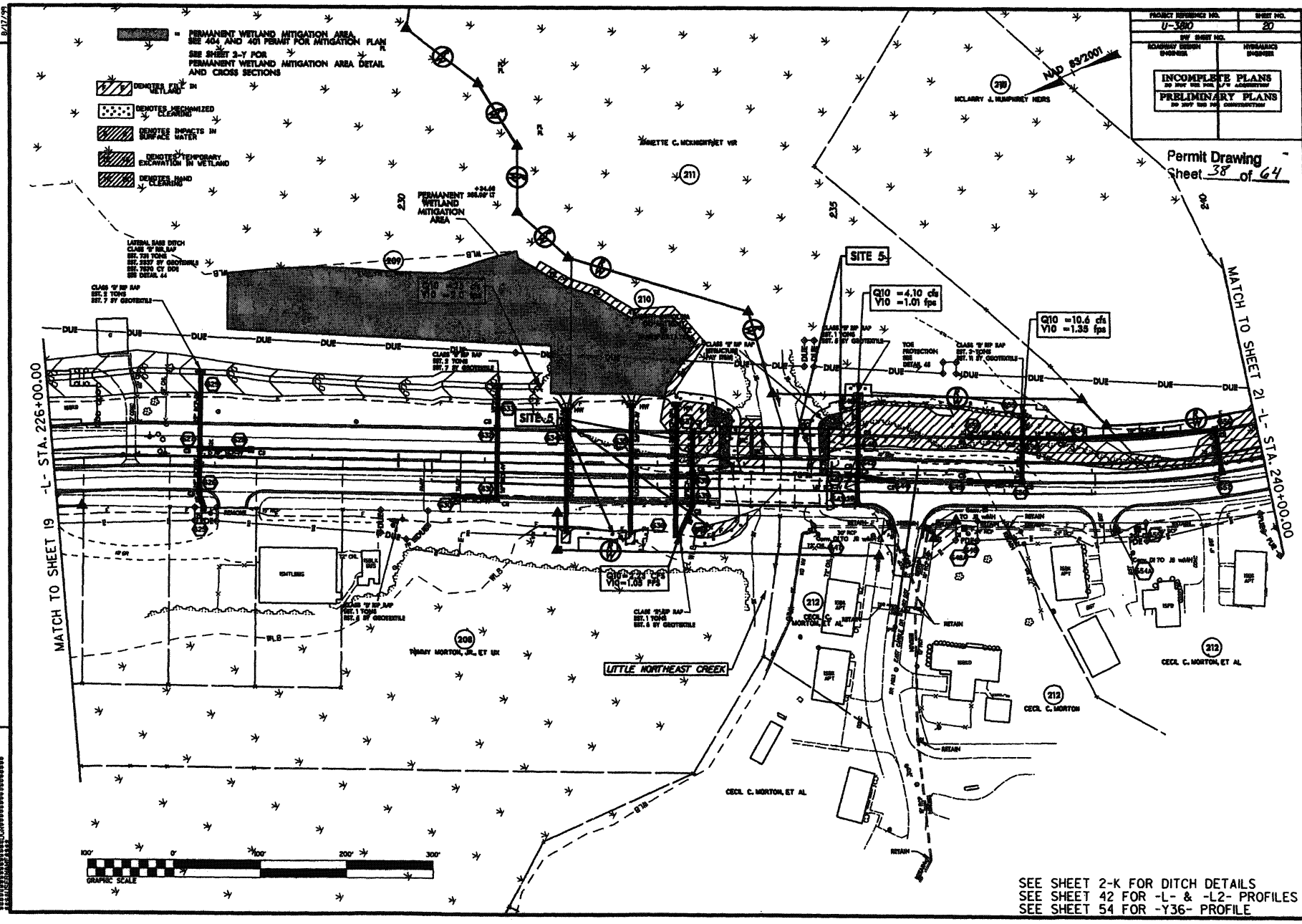

PROJ. REFERENCE NO.
U-3810
SHEET NO.
Permit Drawing
Sheet 34 of 64
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 1800 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 8.5 FT
BASE DISCHARGE = 2100 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 9.8 FT
OVERTOPPING DISCHARGE = 2850 CFS
OVERTOPPING FREQUENCY = 500 YRS
OVERTOPPING ELEVATION = 13.2 FT
PI = 168+47.50
EL = 364
VC = 1,060'
K = 191
SITE 4
SEE SHEET 15 FOR PLAN VIEW
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
50
40
30
20
10
0
-10
-20
-30

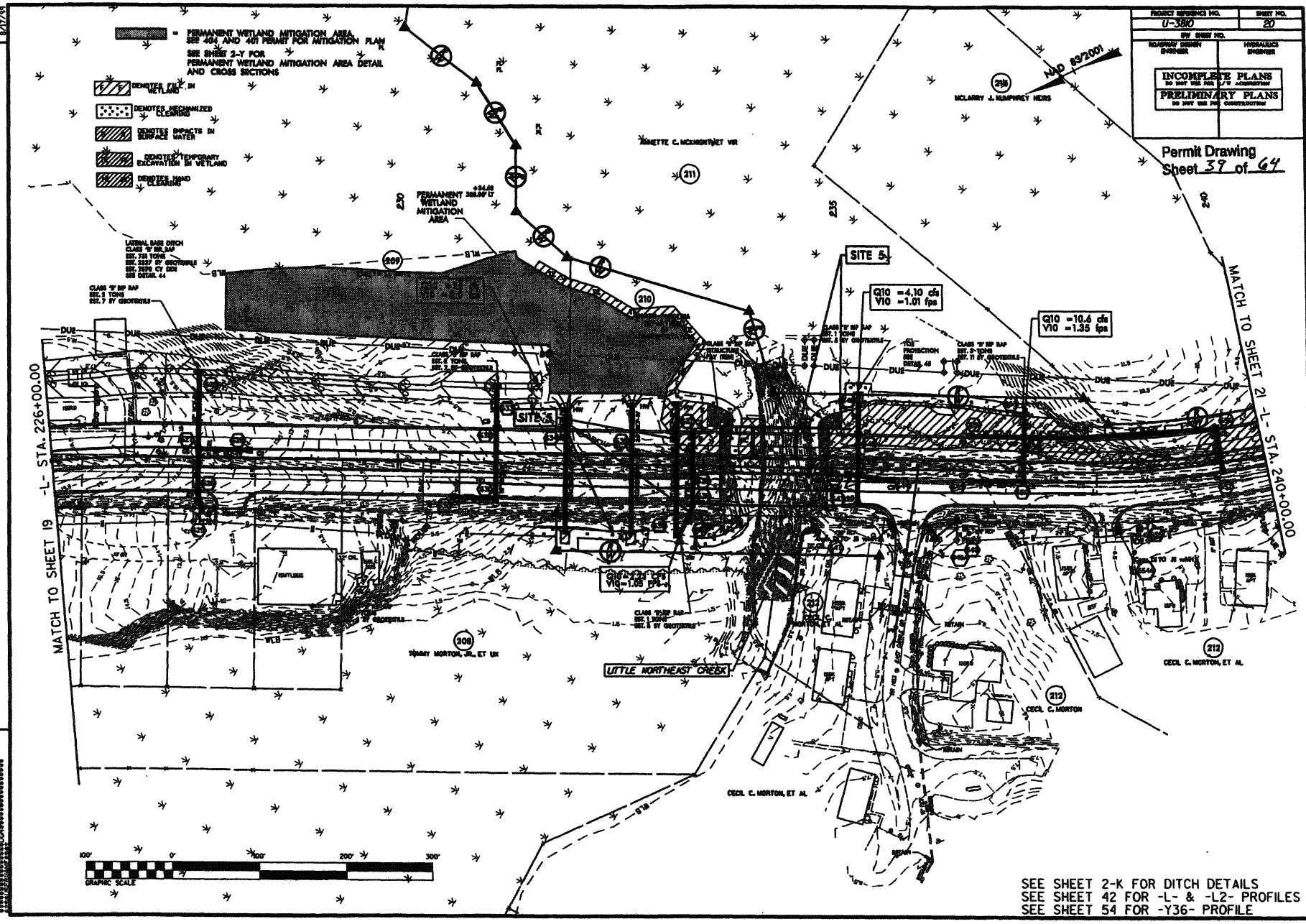

PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-64
Permit Drawing
Sheet 35 of 64
169+50.00
169+04.00
168+50.00
168+00.00
167+40.25
167+00.00
WETLAND CROSS SECTION
SITE 4


PRELIMINARY PLANS
Permit Drawing
Sheet 16 of 61
NAD 83/2001
MATCH TO SHEET 18 -L- STA. 198+00.00
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 53 FOR -Y29- & -Y31- PROFILES
REMOVAL OF EXIST PAVEMENT
SITE 12
SEE DETAIL 42 FOR OUTLET TYPICAL
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES PERMANENT IMPACTS IN SURFACE WATER
GRAPHIC SCALE
MATCH TO SHEET 16 -L- STA. 184+00.00

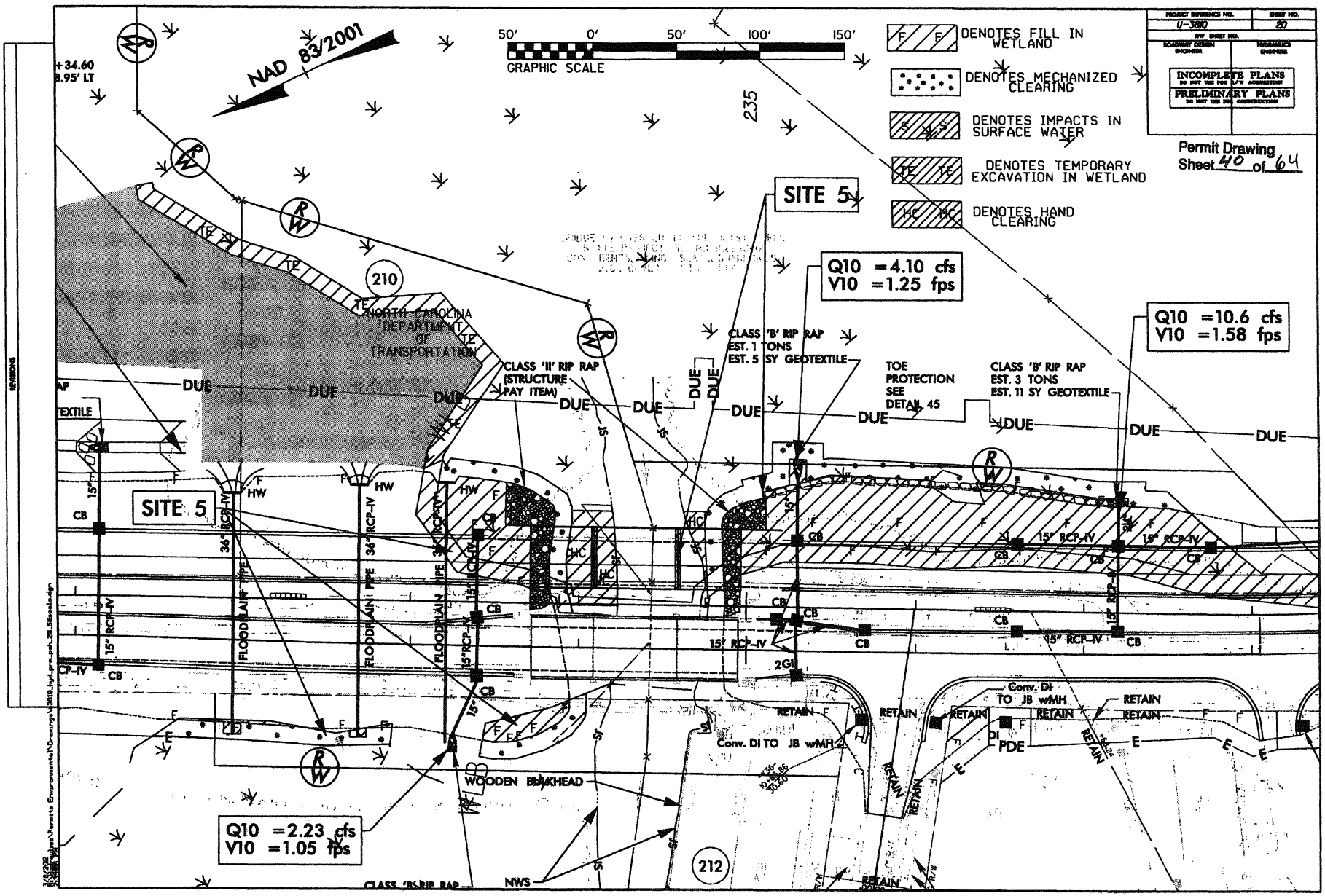


PROJECT REFERENCE NO.
U-3810
SHEET NO.
17
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83/2001
Permit Drawing
Sheet 37 of 64
MATCH TO SHEET 16 -L- STA. 184+00.00
MATCH TO SHEET 18 -L- STA. 198+00.00
LUIS A. RIVERA, ET AL
RYAN E. DAVIS, ET UX
S. CATHERINE AMAN
S. CATHERINE AMAN, ET AL
KATHERINE L. CATO
JOHN W. SIMMA, ET UX
GREGORY ALLEN
AARON E. MATTHEWS
MICHAEL V. TIMMA VELLA, ET UX
ANTHONY H. MARTIN
HOYT T. MARTIN
SCOT E. CONKLIN
DAVID K. BULLOCK, ET UX
IGOR GLOUCHENKO & SVETLANA NESTEROVA
JAMES E. BENEFIELD, ET UX
STEVEN C. TAYLOR
EARL F. HAYDEL, JR., ET UX
EDWARDS PROPERTY GROUP, LLC
WHITE OAK RIVER ROAD INVESTMENTS, LLC
BARBARA A. HANSEN, ET VIR
ELAINE H. MURPHY
BAKER OTHMAN
NICHOLUS BLACKMON, ET UX
ANN AVERY
WILLIAM WAHMHOFF
SITE 12
SEE DETAIL 42 FOR OUTLET TYPICAL
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
REMOVAL OF EXIST PAVEMENT
GRAPHIC SCALE
100' 0' 100' 200' 300'
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 53 FOR -Y29- & -Y31- PROFILES

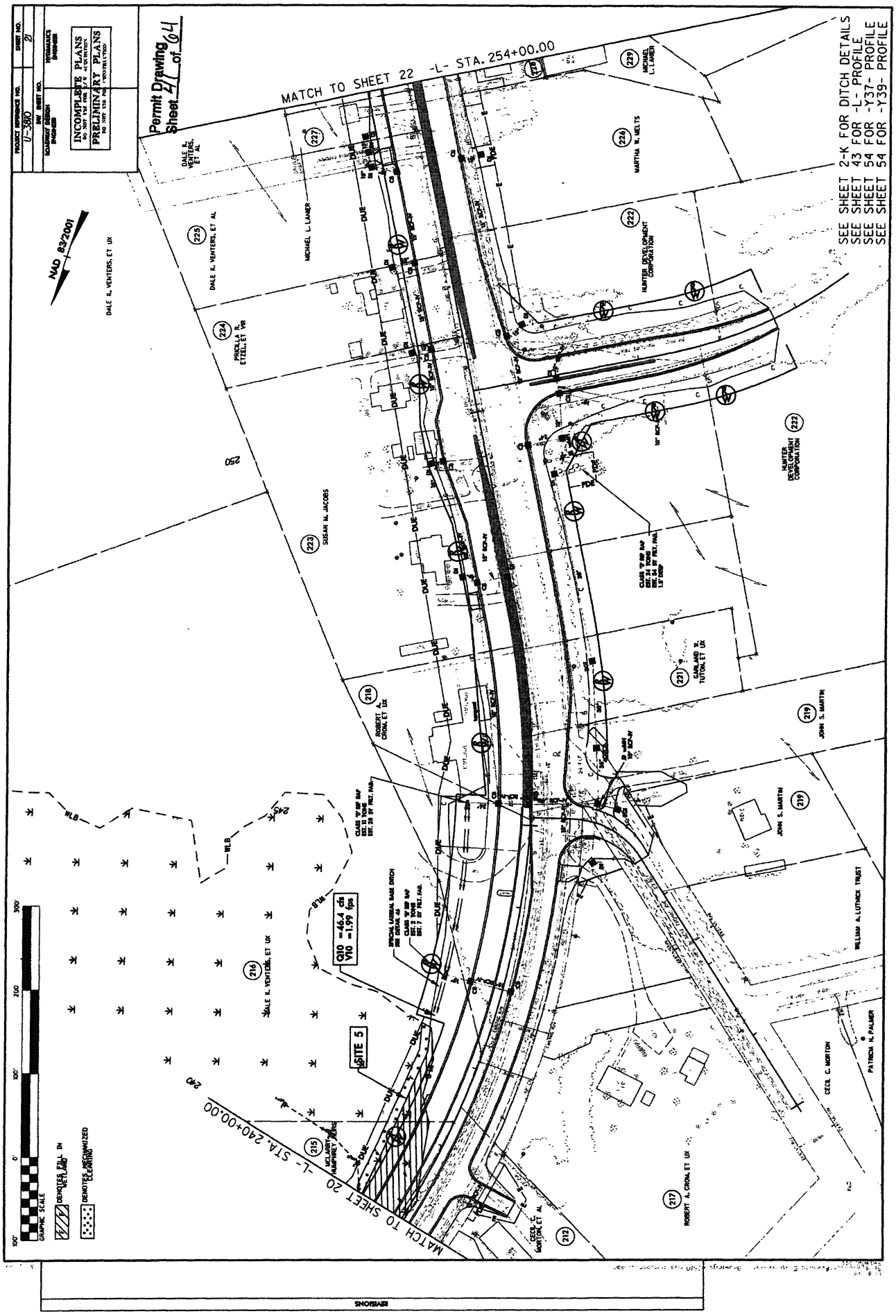

PROJECT REFERENCE NO.
U-3810
SHEET NO.
20
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 38 of 64
PERMANENT WETLAND MITIGATION AREA, SEE 404 AND 401 PERMIT FOR MITIGATION PLAN
SEE SHEET 2-Y FOR PERMANENT WETLAND MITIGATION AREA DETAIL AND CROSS SECTIONS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY EXCAVATION IN WETLAND
DENOTES HAND CLEARING
PERMANENT WETLAND MITIGATION AREA
SITE 5
Q10 =4.10 cfs
V10 =1.01 fps
Q10 =10.6 cfs
V10 =1.35 fps
Q10=2.23 CFS
V10=1.05 FPS
LITTLE NORTHEAST CREEK
MATCH TO SHEET 19 -L- STA. 226+00.00
MATCH TO SHEET 21 -L- STA. 240+00.00
NAD 83/2001
MCLARRY J. HUMPHREY HEIRS
ANNETTE C. MCKNIGHT, ET VIR
TOMMY MORTON, JR., ET UX
CECIL C. MORTON, ET AL
CECIL C. MORTON
GRAPHIC SCALE
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 42 FOR -L- & -L2- PROFILES
SEE SHEET 54 FOR -Y36- PROFILE

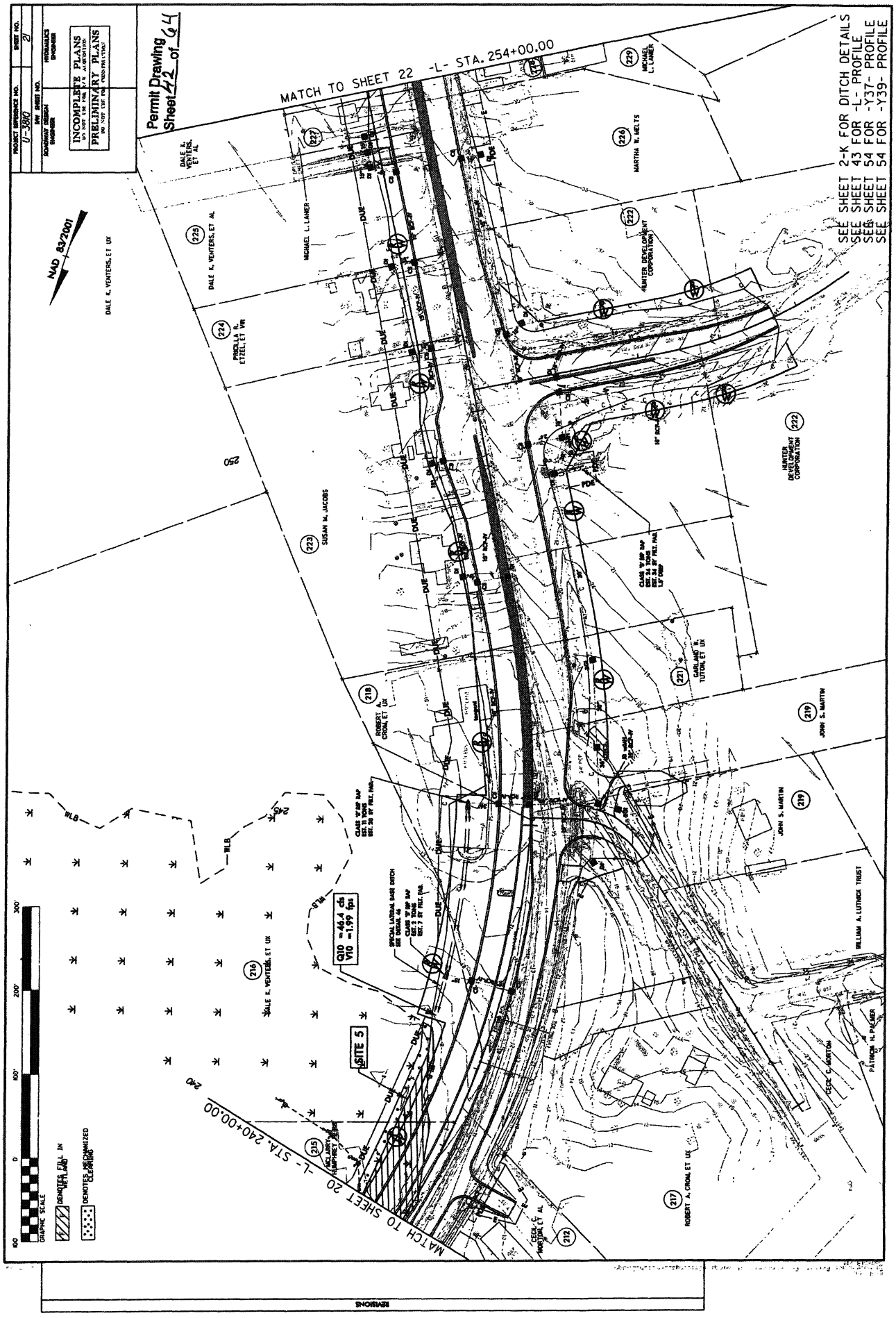


PROJECT REFERENCE NO.
U-3810
SHEET NO.
20
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 39 of 64
= PERMANENT WETLAND MITIGATION AREA, SEE 404 AND 401 PERMIT FOR MITIGATION PLAN
SEE SHEET 2-Y FOR PERMANENT WETLAND MITIGATION AREA DETAIL AND CROSS SECTIONS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY EXCAVATION IN WETLAND
DENOTES HAND CLEARING
NAD 83/2001
MCLARRY J. HUMPHREY HEIRS
ANNETTE C. MCKNIGHT, ET VIR
PERMANENT WETLAND MITIGATION AREA
SITE 5
Q10 =4.10 cfs
V10 =1.01 fps
Q10 =10.6 cfs
V10 =1.35 fps
Q10 =2.23 cfs
V10 =1.05 fps
MATCH TO SHEET 19 -L- STA. 226+00.00
MATCH TO SHEET 21 -L- STA. 240+00.00
LITTLE NORTHEAST CREEK
TOMMY MORTON, JR., ET UX
CECIL C. MORTON, ET AL
CECIL C. MORTON
GRAPHIC SCALE
100' 0' 100' 200' 300'
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 42 FOR -L- & -L2- PROFILES
SEE SHEET 54 FOR -Y36- PROFILE

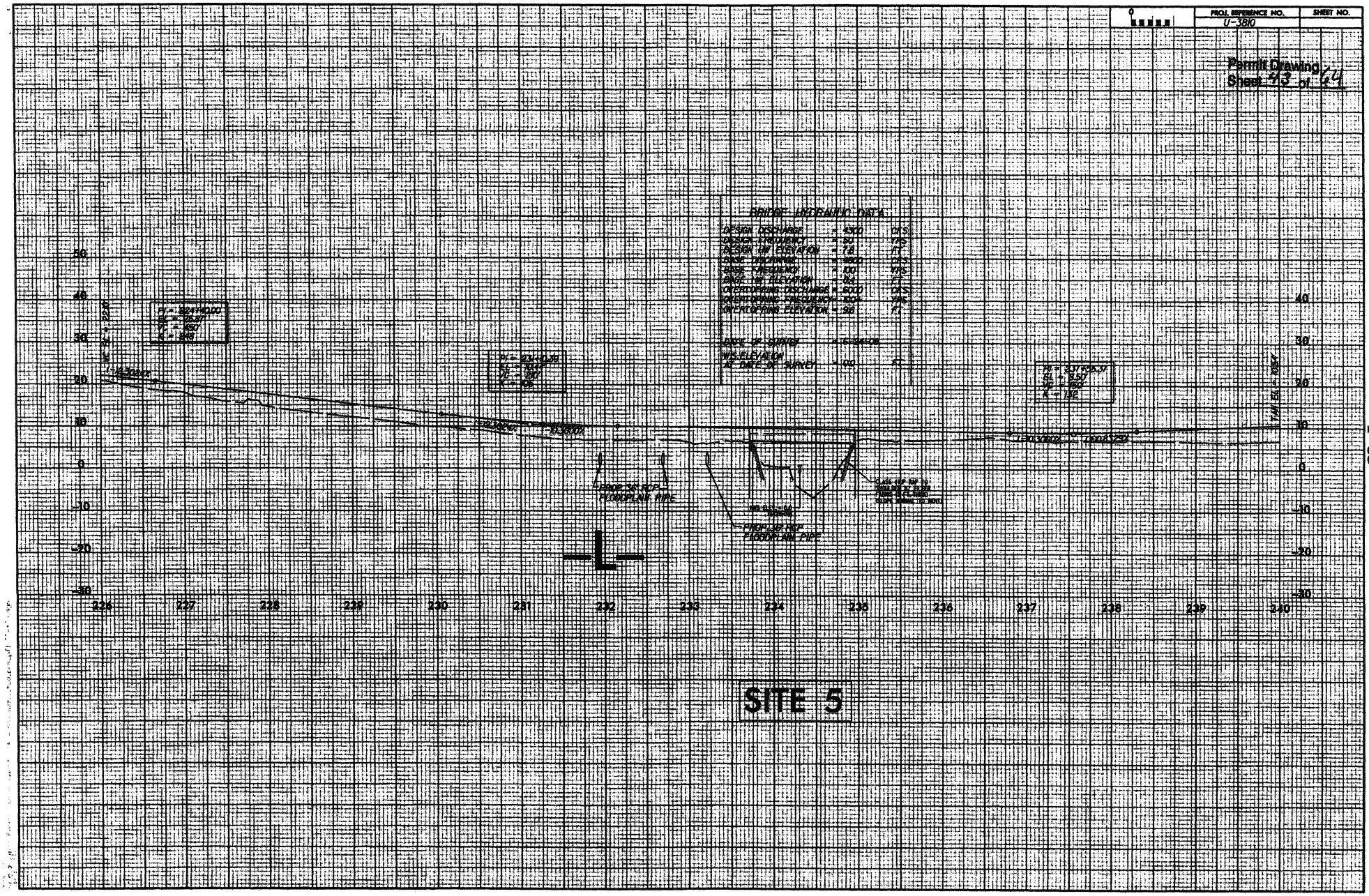


NAD 83/2001
50' 0' 50' 100' 150'
GRAPHIC SCALE
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY EXCAVATION IN WETLAND
DENOTES HAND CLEARING
PROJECT REFERENCE NO. U-3810
SHEET NO. 20
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing Sheet 40 of 64
SITE 5
Q10 =4.10 cfs
V10 =1.25 fps
Q10 =10.6 cfs
V10 =1.58 fps
Q10 =2.23 cfs
V10 =1.05 fps
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
CLASS 'II' RIP RAP (STRUCTURE PAY ITEM)
CLASS 'B' RIP RAP EST. 1 TONS EST. 5 SY GEOTEXTILE
TOE PROTECTION SEE DETAIL 45
CLASS 'B' RIP RAP EST. 3 TONS EST. 11 SY GEOTEXTILE
WOODEN BULKHEAD
Conv. DI TO JB wMH
FLOODPLAIN PIPE
15" RCP-IV
36" RCP-IV
DUE
RETAIN
NWS
210
212
235

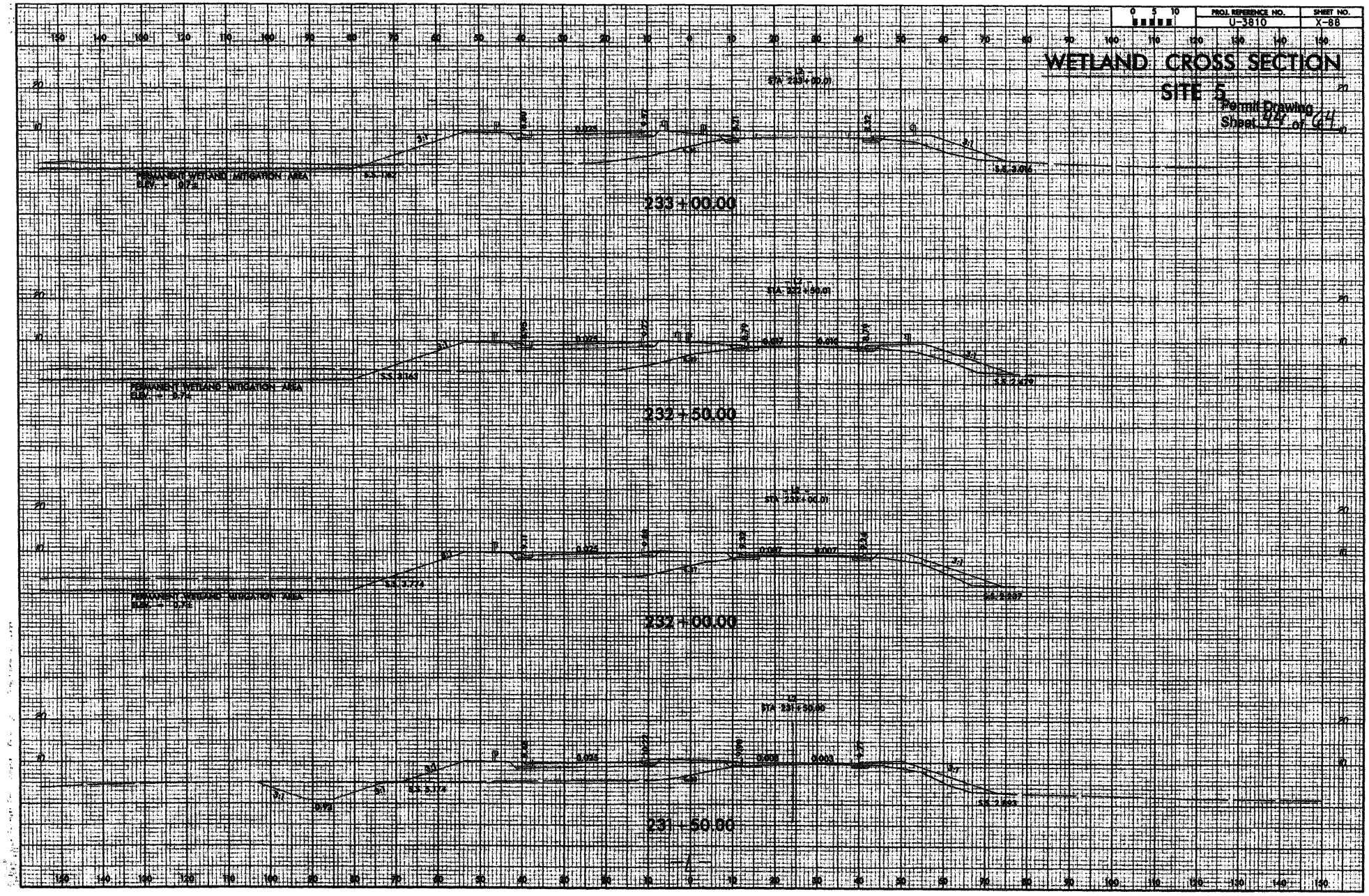

Permit Drawing
Sheet 21 of 64
PROJECT REFERENCE NO. U-3810
SHEET NO. 21
INCOMPLETE PLANS
PRELIMINARY PLANS
MATCH TO SHEET 22 -L- STA. 254+00.00
MATCH TO SHEET 20 -L- STA. 240+00.00
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 54 FOR -Y37- PROFILE
SEE SHEET 54 FOR -Y39- PROFILE
NAD 83/2001
Q10 =46.4 cfs
V10 =1.99 fps
SITE 5
DALE K. VENTERS, ET AL
MICHAEL L. LANIER
MARTHA W. MELTS
HUNTER DEVELOPMENT CORPORATION
SUSAN M. JACOBS
GARLAND W. TUTON, ET UX
JOHN S. MARTIN
WILLIAM A. LUTHICK TRUST
CECIL C. MORTON
PATRICIA H. PALMER
ROBERT A. CRONA, ET UX
MELANIE HUMPHREY
GRAPHIC SCALE
DENOTES FILL IN
DENOTES MECHANIZED CLEARING
REVISIONS


Permit Drawing
Sheet 42 of 44
PROJECT REFERENCE NO. U-3810
SHEET NO. 21
INCOMPLETE PLANS
PRELIMINARY PLANS
MATCH TO SHEET 22 -L- STA. 254+00.00
MATCH TO SHEET 20 -L- STA. 240+00.00
NAD 83/2001
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 54 FOR -Y37- PROFILE
SEE SHEET 54 FOR -Y39- PROFILE
SITE 5
Q10 = 46.4 cfs
V10 = 1.99 fps
DENOTES WETLAND
DENOTES MECHANIZED CLEARING
GRAPHIC SCALE
REVISIONS

Permit Drawing
Sheet #3 of 24

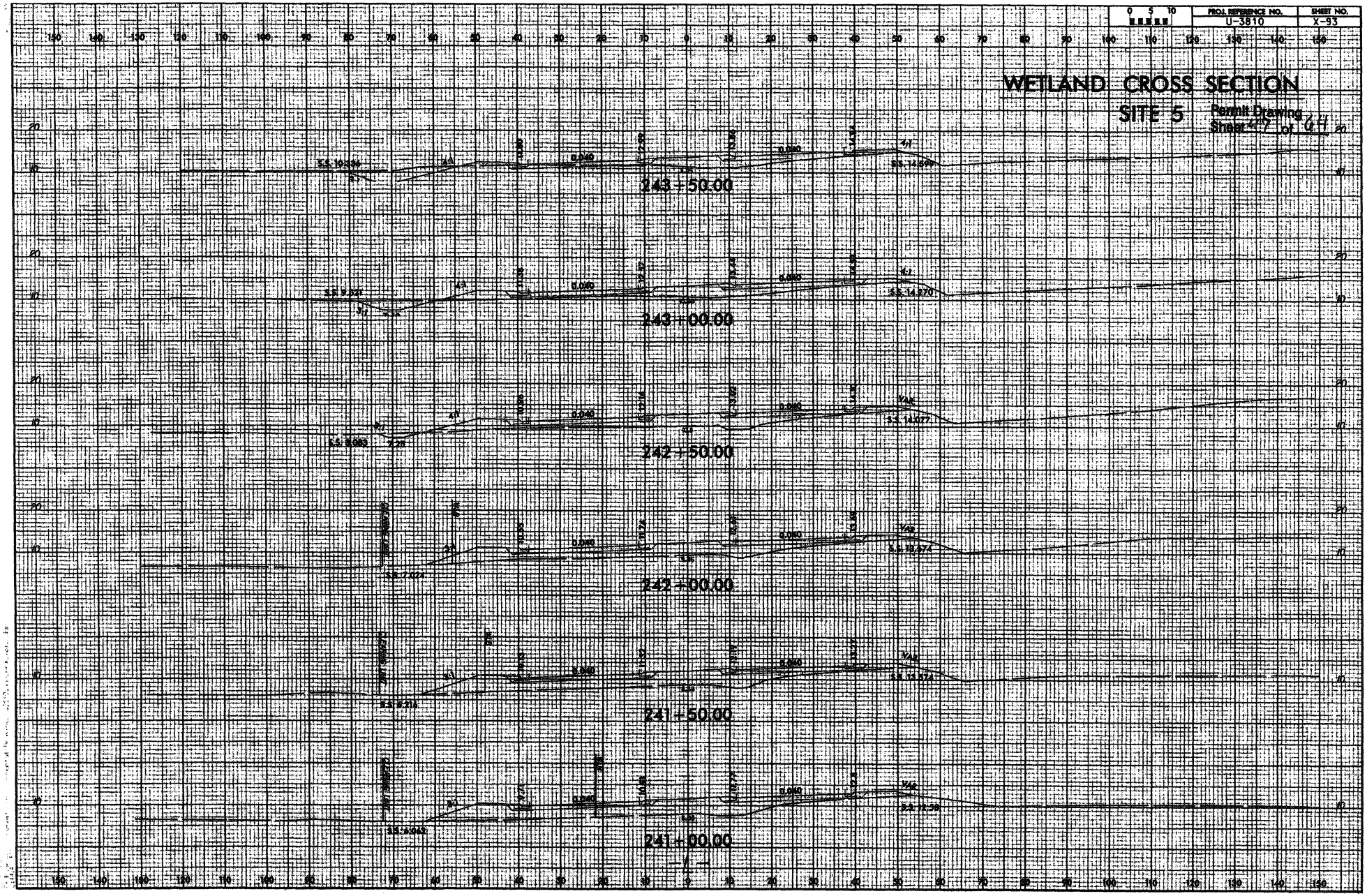


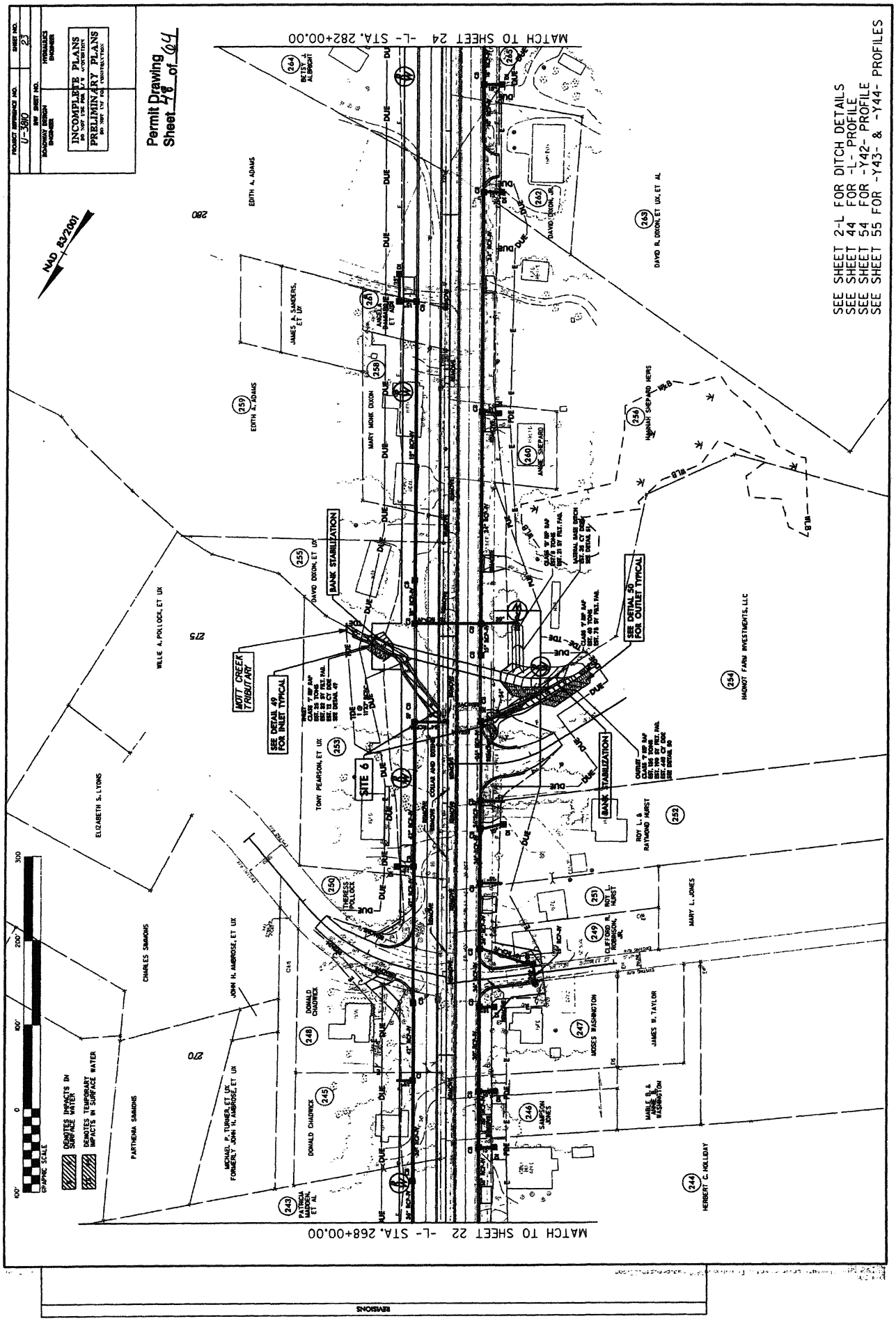
P-83

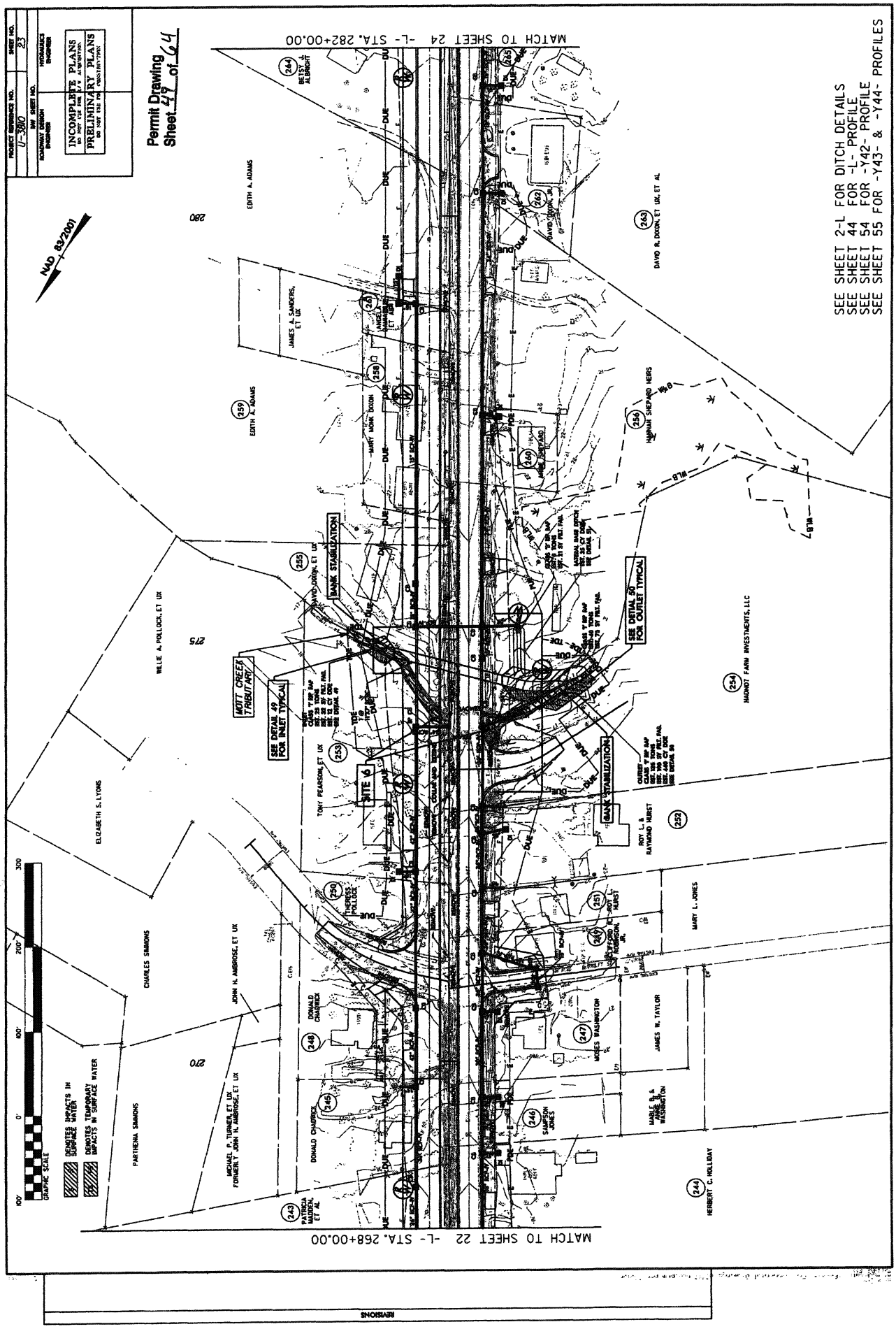

PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-88
WETLAND CROSS SECTION
SITE 5
Permit Drawing
Sheet 44 of 64
STA 233+00.01
PERMANENT WETLAND MITIGATION AREA
ELEV. = 0.7±
S.S. 3.016
233+00.00
STA 232+50.01
PERMANENT WETLAND MITIGATION AREA
ELEV. = 0.7±
S.S. 3.163
S.S. 2.479
232+50.00
STA 232+00.01
PERMANENT WETLAND MITIGATION AREA
ELEV. = 0.7±
S.S. 3.774
S.S. 2.237
232+00.00
STA 231+50.00
S.S. 5.174
S.S. 2.693
231+50.00

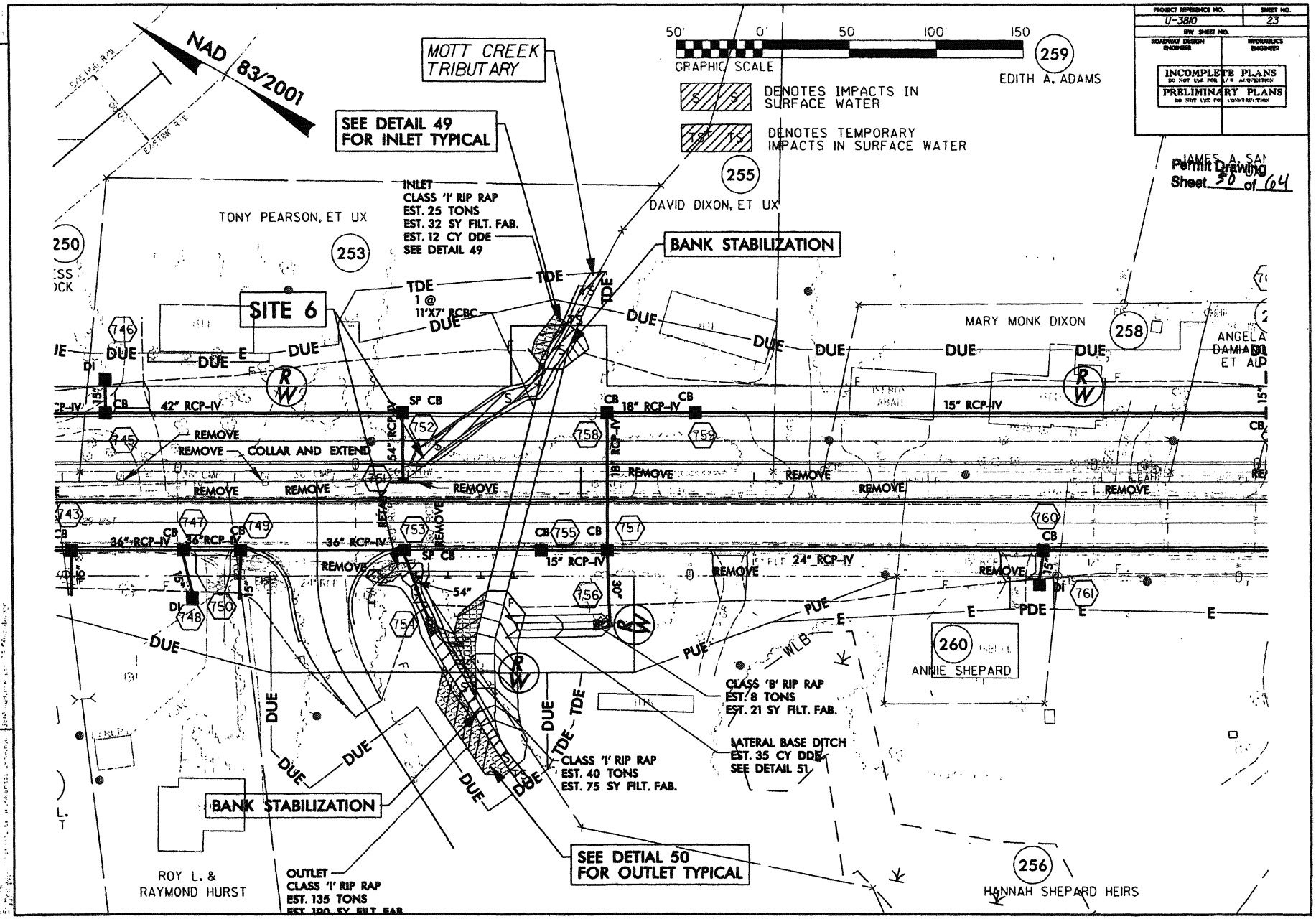
PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-89
WETLAND CROSS SECTION
SITE 5
Permit Drawing
Sheet 45 of 64
234+50.00
234+00.00
STA 233+72.17
233+72.15
233+50.00
CLEARING LIMIT
WLB

PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-92
WETLAND CROSS SECTION
SITE 5
Permit Drawing
240+50.00
240+00.00
239+50.00
239+00.00
238+50.00
238+04.20
CLEARING LIMIT
WLB


PROJ. REFERENCE NO.
U-3810
SHEET NO.
X-93
WETLAND CROSS SECTION
SITE 5
Permit Drawing
Sheet 47 of 64
243+50.00
243+00.00
242+50.00
242+00.00
241+50.00
241+00.00


PROJECT REFERENCE NO. U-3810
SHEET NO. 23
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing Sheet 48 of 64
NAD 83/2001
MATCH TO SHEET 24 -L- STA. 282+00.00
MATCH TO SHEET 22 -L- STA. 268+00.00
SEE SHEET 2-L FOR DITCH DETAILS
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 54 FOR -Y42- PROFILE
SEE SHEET 55 FOR -Y43- & -Y44- PROFILES
MOTT CREEK TRIBUTARY
SEE DETAIL 49 FOR INLET TYPICAL
SEE DETAIL 50 FOR OUTLET TYPICAL
BANK STABILIZATION
SITE 6
EDITH A. ADAMS
DAVID R. DIXON, ET UX, ET AL
HANNAH SHEPARD HEIRS
HADNOT FARM INVESTMENTS, LLC
WILLIE A. POLLOCK, ET UX
ELIZABETH S. LYONS
CHARLES SIMMONS
PARTHENIA SIMMONS
JOHN H. AMBROSE, ET UX
MICHAEL P. TURNER, ET UX FORMERLY JOHN H. AMBROSE, ET UX
DONALD CHADWICK
TONY PEARSON, ET UX
ROY L. & RAYMOND HURST
MARY L. JONES
JAMES W. TAYLOR
HERBERT C. HOLLIDAY
GRAPHIC SCALE
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REVISIONS

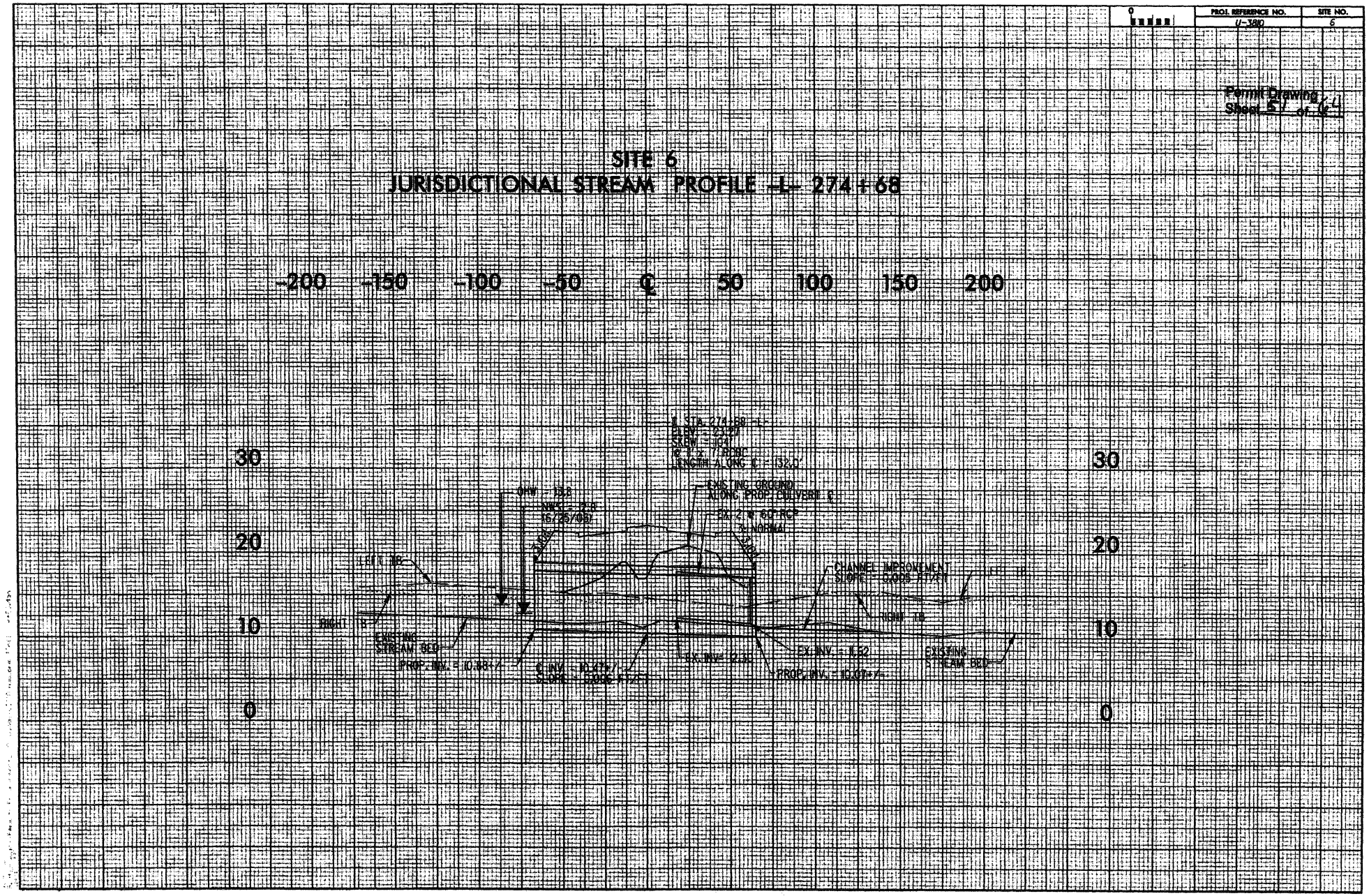

PROJECT REFERENCE NO. U-380
SHEET NO. 23
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 49 of 64
NAD 83/2001
MATCH TO SHEET 24 -L- STA. 282+00.00
MATCH TO SHEET 22 -L- STA. 268+00.00
SEE SHEET 2-L FOR DITCH DETAILS
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 54 FOR -Y42- PROFILE
SEE SHEET 55 FOR -Y43- & -Y44- PROFILES
SEE DETAIL 49 FOR INLET TYPICAL
SEE DETAIL 50 FOR OUTLET TYPICAL
MOTT CREEK TRIBUTARY
BANK STABILIZATION
SITE #6
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE
REVISIONS
EDITH A. ADAMS
JAMES A. SANDERS, ET UX
MARY MONK DIXON
DAVID R. DIXON, ET UX, ET AL
HANNAH SHEPARD HEIRS
WILLIE A. POLLOCK, ET UX
TONY PEARSON, ET UX
HAGNOT FARM INVESTMENTS, LLC
ELIZABETH S. LYONS
ROY L. & RAYMOND HURST
MARY L. JONES
CHARLES SIMMONS
JOHN H. AMBROSE, ET UX
PARTHENIA SIMMONS
MICHAEL P. TURNER, ET UX FORMERLY JOHN H. AMBROSE, ET UX
DONALD CHADWICK
MOSES WASHINGTON
JAMES W. TAYLOR
MARBLE B. & ANN WASHINGTON
HERBERT C. HOLLIDAY
PATRICIA HURST, ET AL

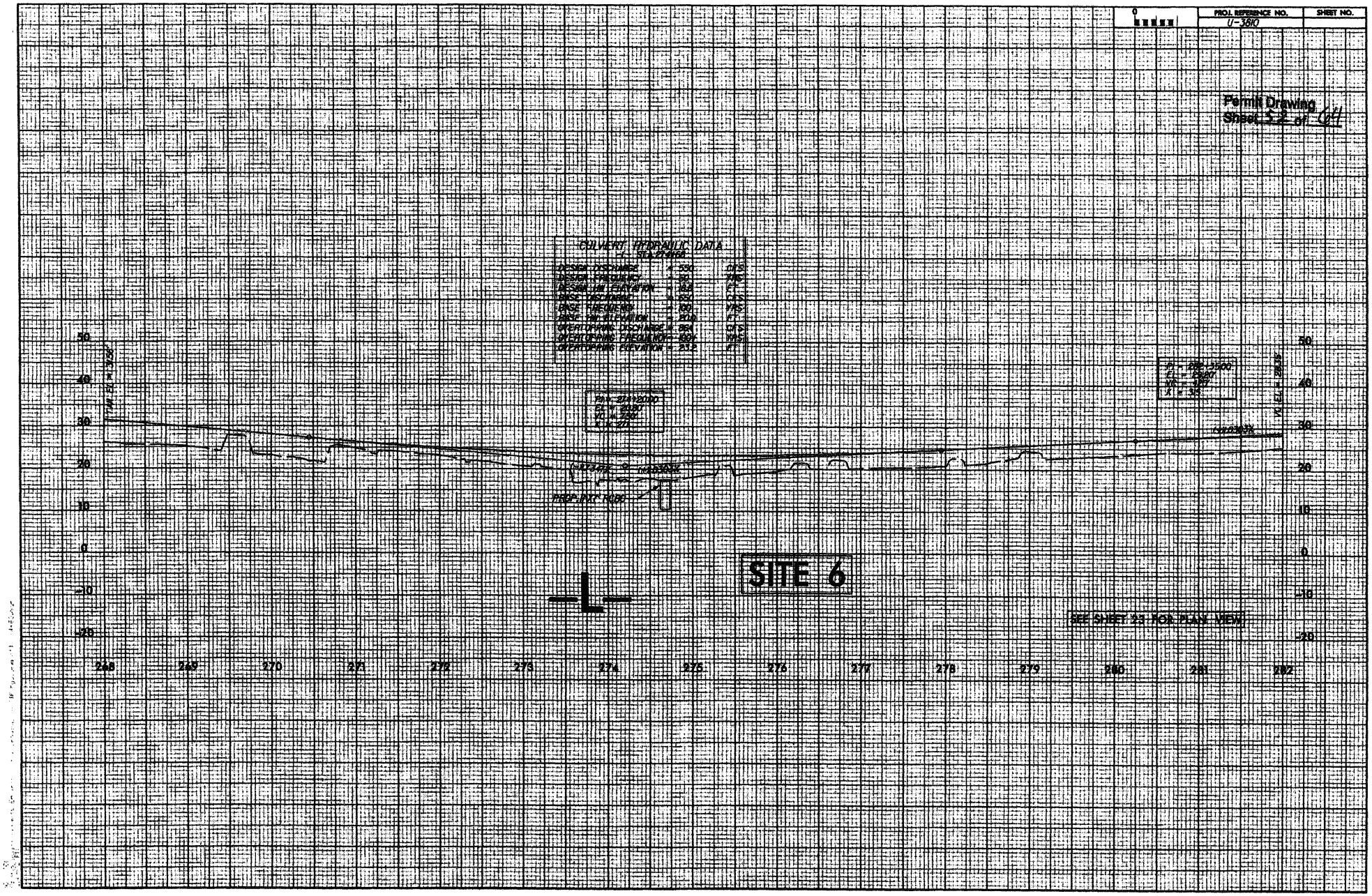

NAD 83/2001
MOTT CREEK TRIBUTARY
SEE DETAIL 49 FOR INLET TYPICAL
INLET
CLASS 'I' RIP RAP
EST. 25 TONS
EST. 32 SY FILT. FAB.
EST. 12 CY DDE
SEE DETAIL 49
TONY PEARSON, ET UX
DAVID DIXON, ET UX
EDITH A. ADAMS
JAMES A. SAN
MARY MONK DIXON
ANGELA DAMIANO ET AL
ANNIE SHEPARD
HANNAH SHEPARD HEIRS
ROY L. & RAYMOND HURST
SITE 6
BANK STABILIZATION
TDE
1 @ 11'X7' RCBC
DUE
PUE
WLB
PDE
REMOVE
COLLAR AND EXTEND
42" RCP-IV
36" RCP-IV
24" RCP-IV
18" RCP-IV
15" RCP-IV
54" RCP-IV
SP CB
CB
DI
CLASS 'B' RIP RAP
EST. 8 TONS
EST. 21 SY FILT. FAB.
LATERAL BASE DITCH
EST. 35 CY DDE
SEE DETAIL 51
CLASS 'I' RIP RAP
EST. 40 TONS
EST. 75 SY FILT. FAB.
SEE DETIAL 50 FOR OUTLET TYPICAL
OUTLET
CLASS 'I' RIP RAP
EST. 135 TONS
EST. 190 SY FILT. FAB.
GRAPHIC SCALE
50' 0' 50 100' 150
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
INCOMPLETE PLANS
PRELIMINARY PLANS
PROJECT REFERENCE NO. U-3810
SHEET NO. 23
Permit Drawing Sheet 50 of 64
P-90

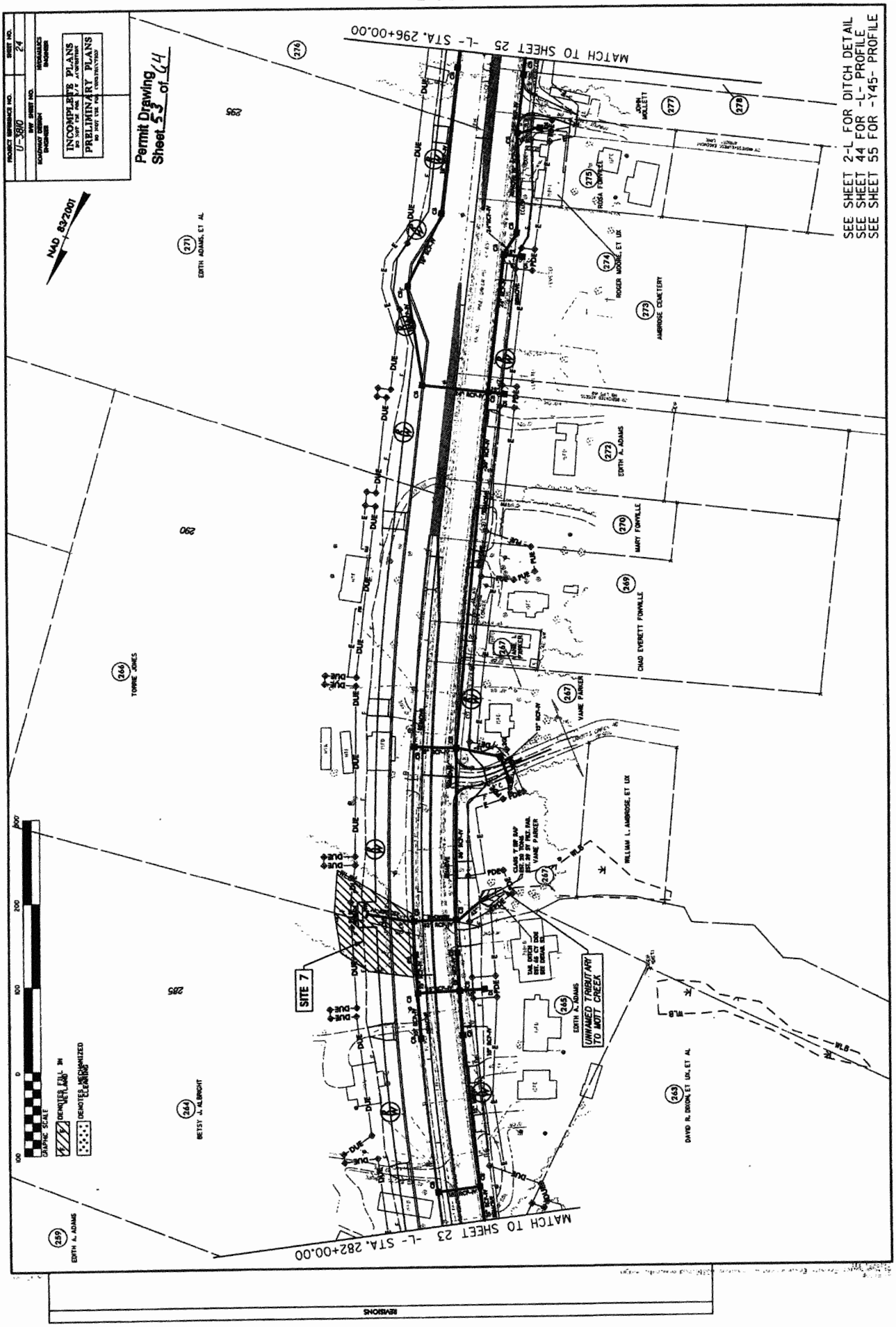
PROJ. REFERENCE NO.	SITE NO.
U-380	6

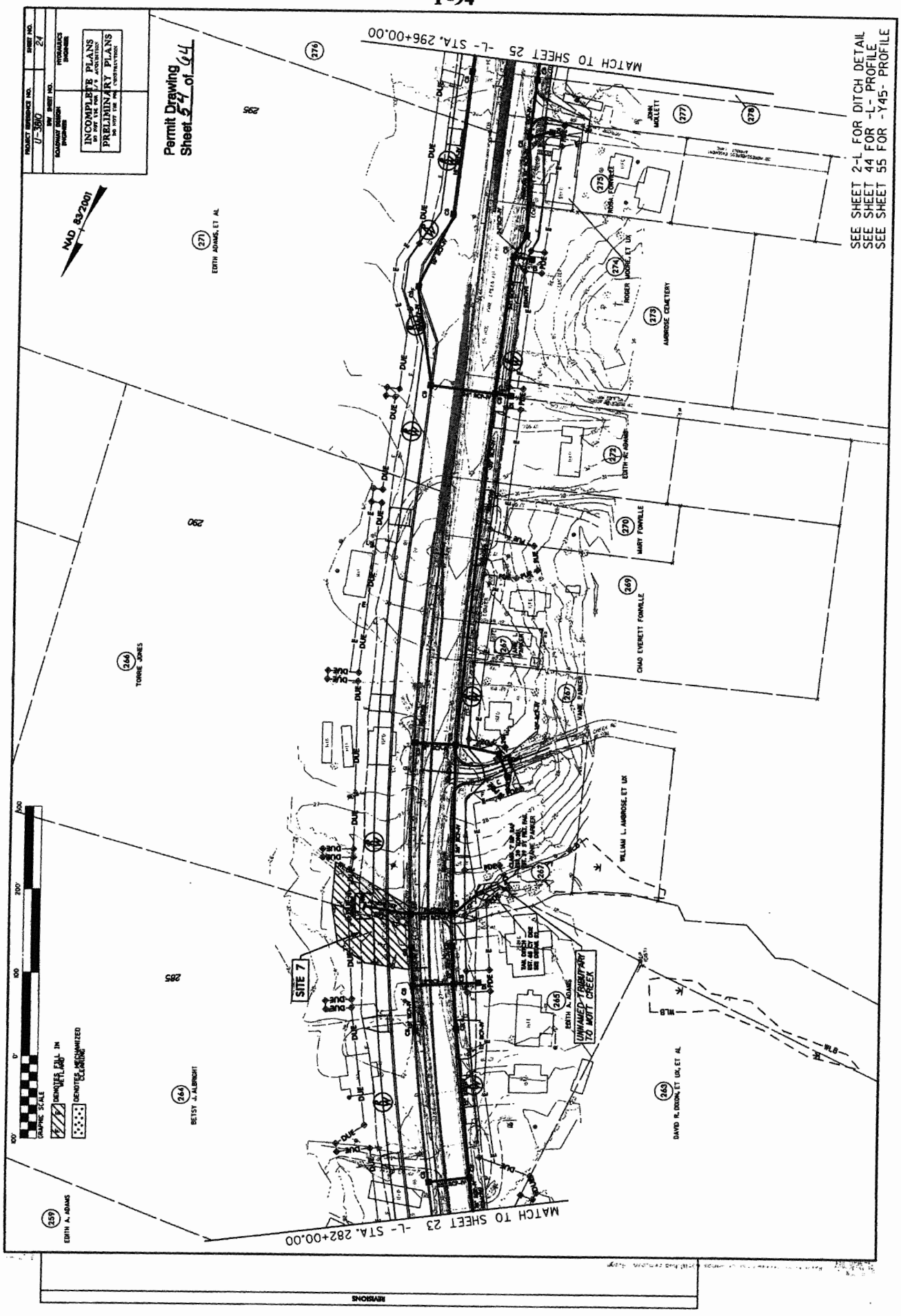
Permit Drawing
Sheet 5 of 14

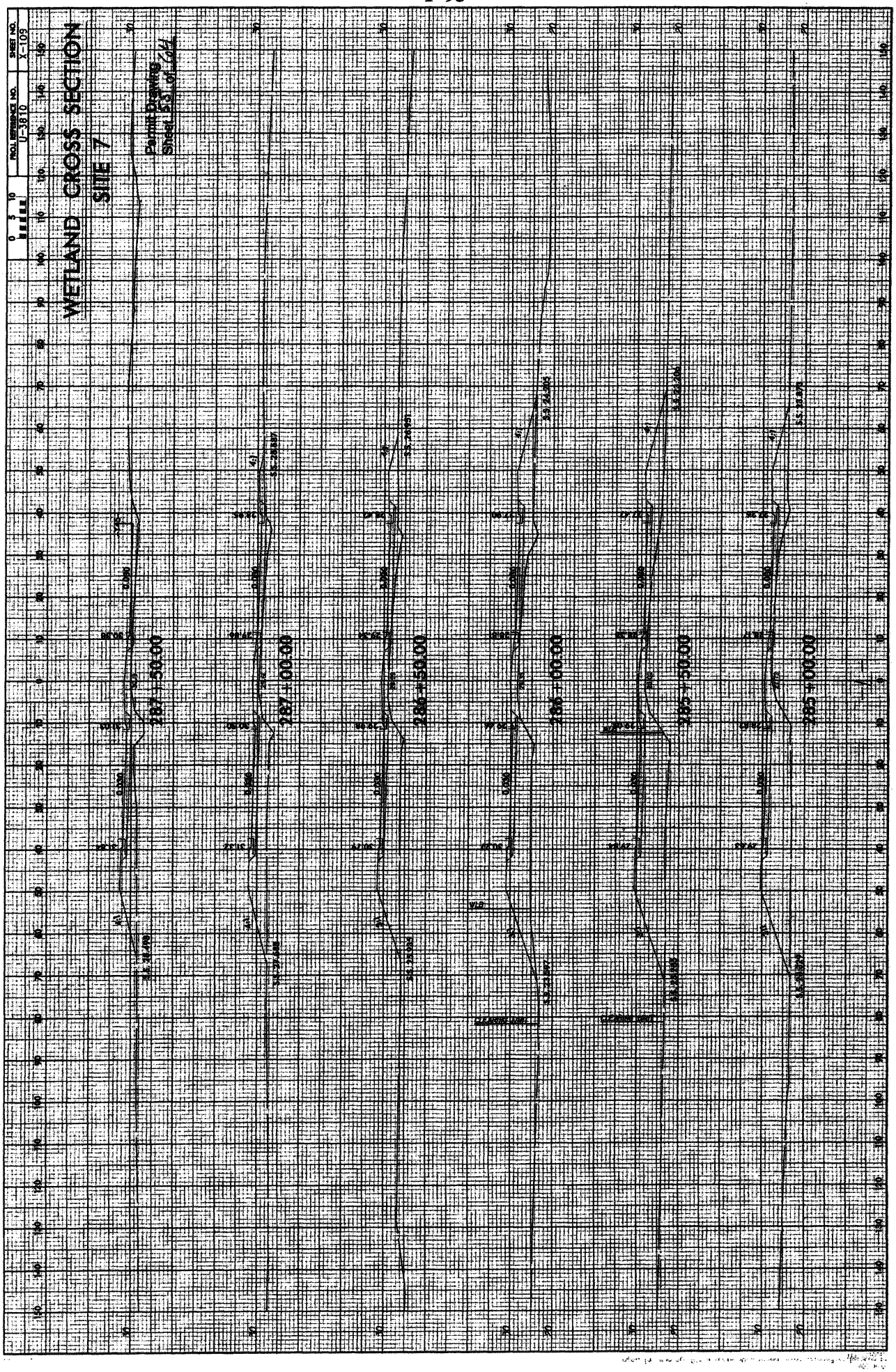
SITE 6
JURISDICTIONAL STREAM PROFILE -L- 274+68

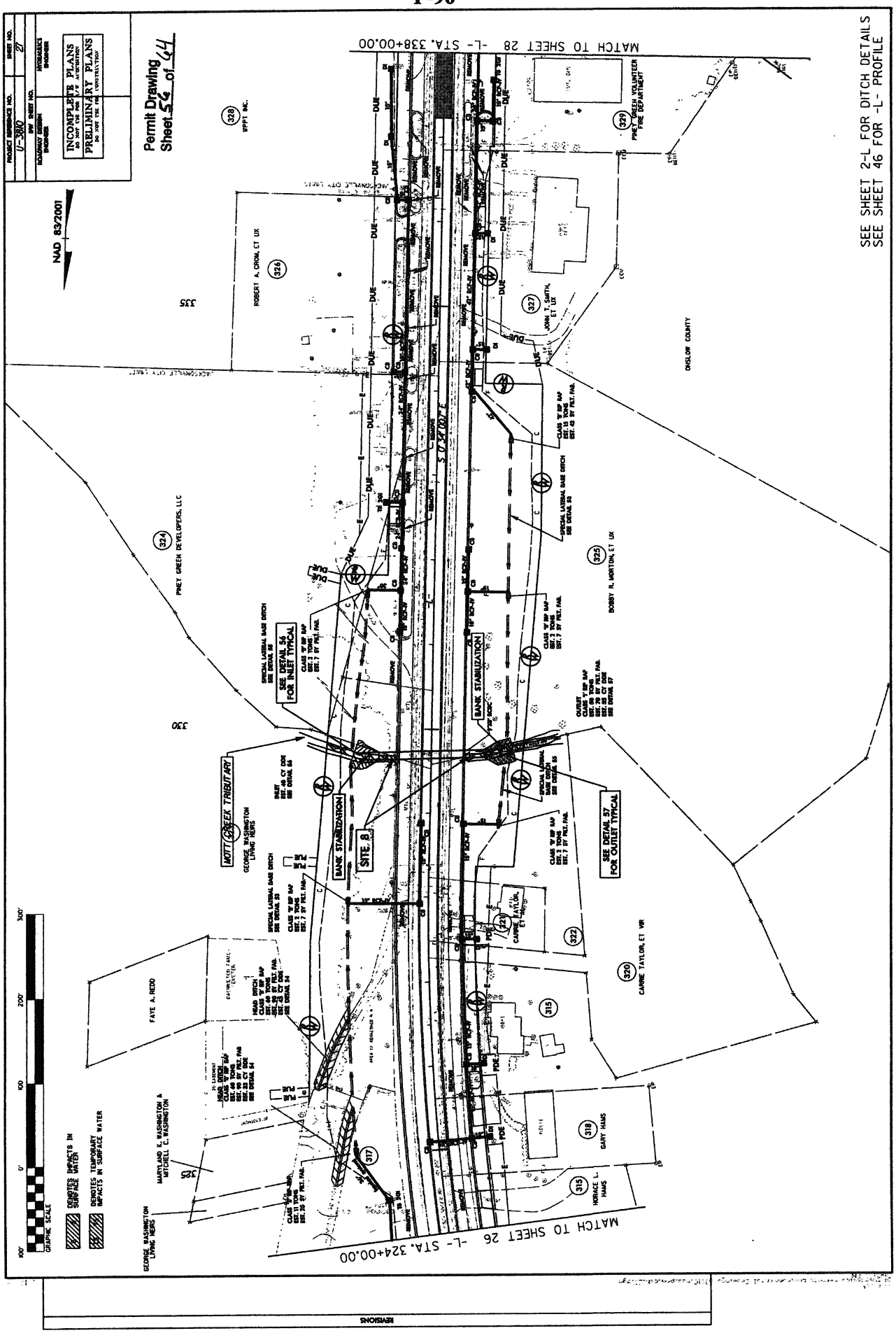


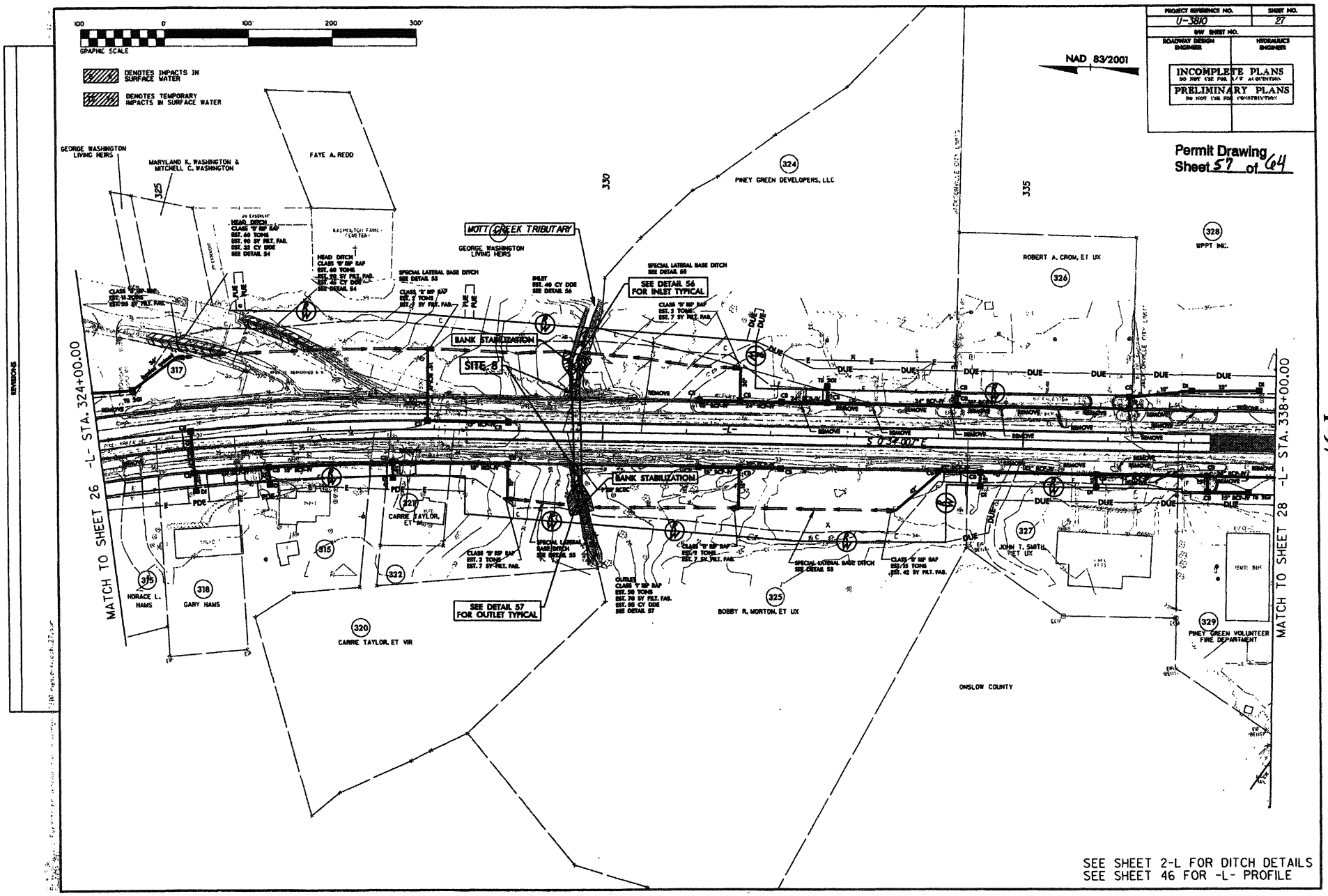

PROJ. REFERENCE NO.
U-3810
SHEET NO.
Permit Drawing
Sheet 52 of 64
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 550 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 18.8 FT
BASE DISCHARGE = 650 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 20.8 FT
OVERTOPPING DISCHARGE = 864 CFS
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING ELEVATION = 23.2 FT
PI = 274+20.00
EL = 20.80'
VC = 750'
X = 271
PI = 282+35.00
EL = 29.20'
VC = 420'
X = 315
PROP. INT'L RCBC
SITE 6
SEE SHEET 23 FOR PLAN VIEW
50
40
30
20
10
0
-10
-20
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282


PROJECT REFERENCE NO. U-3810
SHEET NO. 24
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 53 of 44
NAD 83/2001
SEE SHEET 2-L FOR DITCH DETAIL
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 55 FOR -Y45- PROFILE
MATCH TO SHEET 25 -L- STA. 296+00.00
MATCH TO SHEET 23 -L- STA. 282+00.00
SITE 7
UNNAMED TRIBUTARY TO MOTT CREEK
EDITH A. ADAMS, ET AL
ROSA POWELL
JOHN MOLLETT
ROGER MOORE, ET UX
AMBROSE CEMETERY
EDITH A. ADAMS
MARY FOWVILLE
CHAD EVERETT FOWVILLE
VANE PARKER
TONNIE JONES
WILLIAM L. AMBROSE, ET UX
BETSY J. ALBRIGHT
DAVID R. DIXON, ET UX, ET AL
EDITH A. ADAMS
GRAPHIC SCALE
REVISIONS

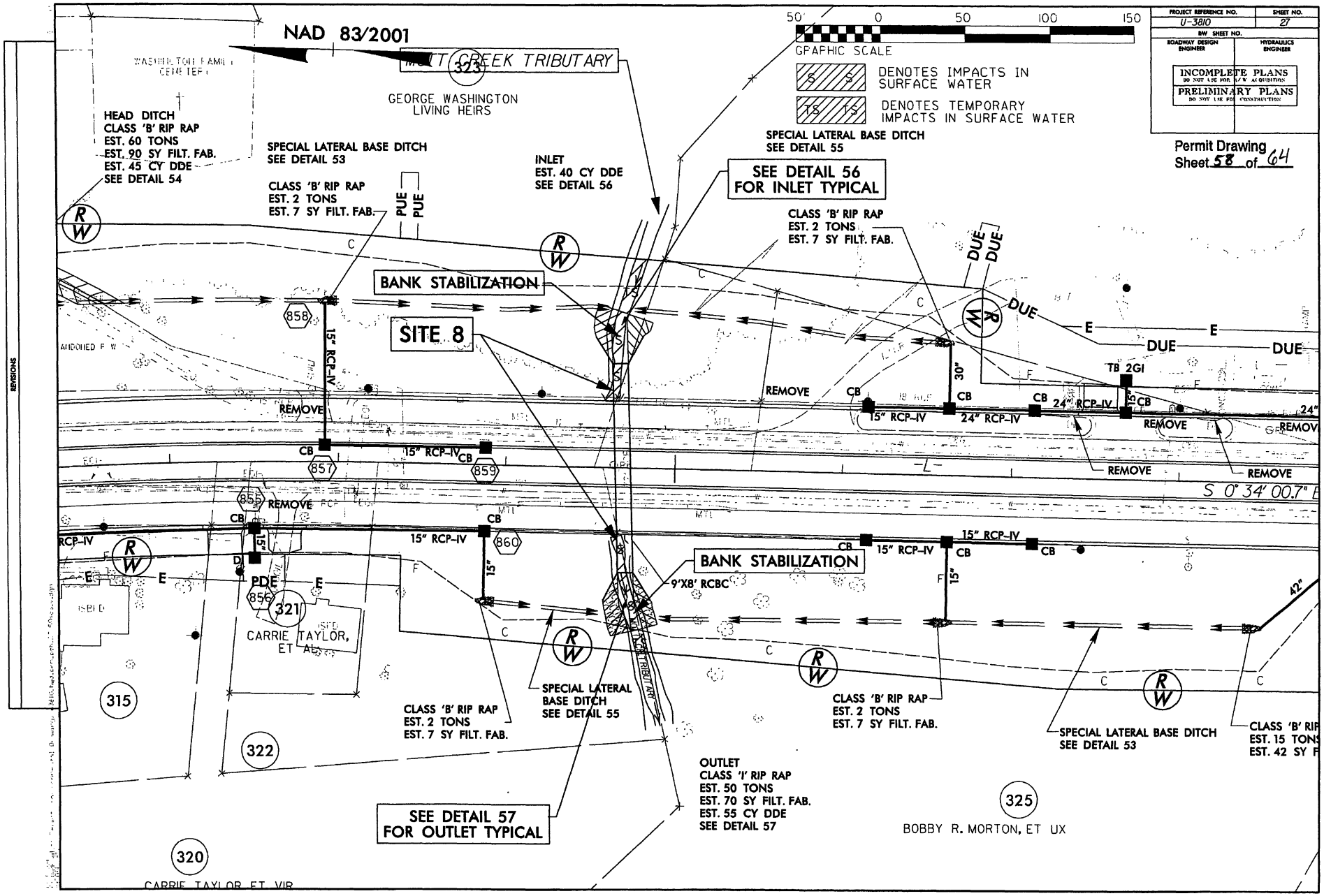

PROJECT REFERENCE NO.
0-380
SHEET NO.
24
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing
Sheet 54 of 64
NAD 83/2001
SEE SHEET 2-L FOR DITCH DETAIL
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 55 FOR -Y45- PROFILE
MATCH TO SHEET 25 -L- STA. 296+00.00
MATCH TO SHEET 23 -L- STA. 282+00.00
SITE 7
UNNAMED TRIBUTARY TO MOTT CREEK
EDITH ADAMS, ET AL
TORRIE JONES
BETSY J. ALBRIGHT
EDITH A. ADAMS
DAVID R. DIXON, ET UX, ET AL
WILLIAM L. AMBROSE, ET UX
CHAD EVERETT FONVILLE
MARY FONVILLE
AMBROSE CEMETERY
ROGER MOORE, ET UX
JOHN MOLLETT
GRAPHIC SCALE
DENOTES FILL IN AREA
DENOTES RECLAIMED CLEARING
REVISIONS


WETLAND CROSS SECTION
SITE 7
Permit Drawing
Sheet 13 of 22
ROJ. REFERENCE NO.
U-3810
SHEET NO.
X-109
0 5 10
287+50.00
287+00.00
286+50.00
286+00.00
285+50.00
285+00.00


PROJECT REFERENCE NO.
U-380
SHEET NO.
27
INCOMPLETE PLANS
DO NOT USE FOR ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 54 of 64
NAD 83/2001
SEE SHEET 2-L FOR DITCH DETAILS
SEE SHEET 46 FOR -L- PROFILE
MATCH TO SHEET 28 -L- STA. 338+00.00
MATCH TO SHEET 26 -L- STA. 324+00.00
S 05°47'00" E
MOTT CREEK TRIBUTARY
SITE 8
BANK STABILIZATION
SEE DETAIL 56 FOR INLET TYPICAL
SEE DETAIL 57 FOR OUTLET TYPICAL
PINEY GREEN DEVELOPERS, LLC
ROBERT A. CRON, ET UX
JOHN T. SMITH, ET UX
PINEY GREEN VOLUNTEER FIRE DEPARTMENT
BOBBY H. MORTON, ET UX
CARRIE TAYLOR, ET VIR
FAYE A. REDD
GARY HAMS
HORACE L. HAMS
GEORGE WASHINGTON LIVING HEIRS
MARYLAND R. WASHINGTON & MITCHELL C. WASHINGTON
ONSLOW COUNTY
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE
REVISIONS



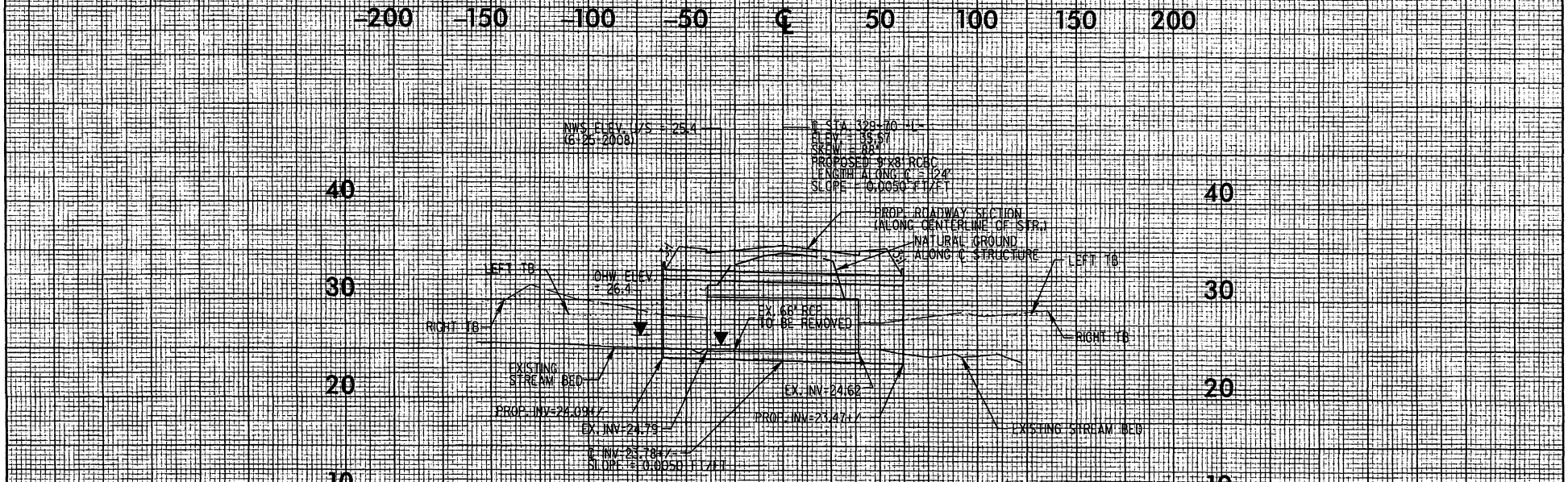
PROJECT REFERENCE NO.
U-3810
SHEET NO.
27
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 57 of 64
NAD 83/2001
GRAPHIC SCALE
100 0 100' 200 300'
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REVISIONS
GEORGE WASHINGTON LIVING HEIRS
MARYLAND K. WASHINGTON & MITCHELL C. WASHINGTON
FAYE A. REDD
MOTT CREEK TRIBUTARY
GEORGE WASHINGTON LIVING HEIRS
PINEY GREEN DEVELOPERS, LLC
ROBERT A. CROM, ET UX
WPPT INC.
BANK STABILIZATION
SITE 8
SEE DETAIL 56 FOR INLET TYPICAL
SEE DETAIL 57 FOR OUTLET TYPICAL
HORACE L. HAMS
GARY HAMS
CARRIE TAYLOR, ET VIR
BOBBY R. MORTON, ET UX
JOHN T. SMITH, ET UX
PINEY GREEN VOLUNTEER FIRE DEPARTMENT
ONSLOW COUNTY
MATCH TO SHEET 26 -L- STA. 324+00.00
MATCH TO SHEET 28 -L- STA. 338+00.00
SEE SHEET 2-L FOR DITCH DETAILS
SEE SHEET 46 FOR -L- PROFILE


NAD 83/2001
MATT CREEK TRIBUTARY
323
GEORGE WASHINGTON LIVING HEIRS
WASHINGTON FAMILY CEMETERY
HEAD DITCH
CLASS 'B' RIP RAP
EST. 60 TONS
EST. 90 SY FILT. FAB.
EST. 45 CY DDE
SEE DETAIL 54
SPECIAL LATERAL BASE DITCH
SEE DETAIL 53
CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY FILT. FAB.
INLET
EST. 40 CY DDE
SEE DETAIL 56
SEE DETAIL 56
FOR INLET TYPICAL
SPECIAL LATERAL BASE DITCH
SEE DETAIL 55
CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY FILT. FAB.
BANK STABILIZATION
SITE 8
858
857
859
860
856
855
15" RCP-IV
24" RCP-IV
30"
9'X8' RCBC
REMOVE
CB
PDE
321
CARRIE TAYLOR, ET AL
315
322
320
CARRIE TAYLOR ET VIR
325
BOBBY R. MORTON, ET UX
CLASS 'B' RIP RAP
EST. 2 TONS
EST. 7 SY FILT. FAB.
SPECIAL LATERAL BASE DITCH
SEE DETAIL 55
SEE DETAIL 57
FOR OUTLET TYPICAL
OUTLET
CLASS 'I' RIP RAP
EST. 50 TONS
EST. 70 SY FILT. FAB.
EST. 55 CY DDE
SEE DETAIL 57
SPECIAL LATERAL BASE DITCH
SEE DETAIL 53
CLASS 'B' RIP
EST. 15 TONS
EST. 42 SY F
S 0° 34' 00.7" E
TB 2GI
DUE
PUE
RW
50 0 50 100 150
GRAPHIC SCALE
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO. U-3810
SHEET NO. 27
INCOMPLETE PLANS
PRELIMINARY PLANS
Permit Drawing Sheet 58 of 64
REVISIONS

PROJ. REFERENCE NO.	SITE NO.
U-3810	8

Permit Drawing
Sheet 57 of 64

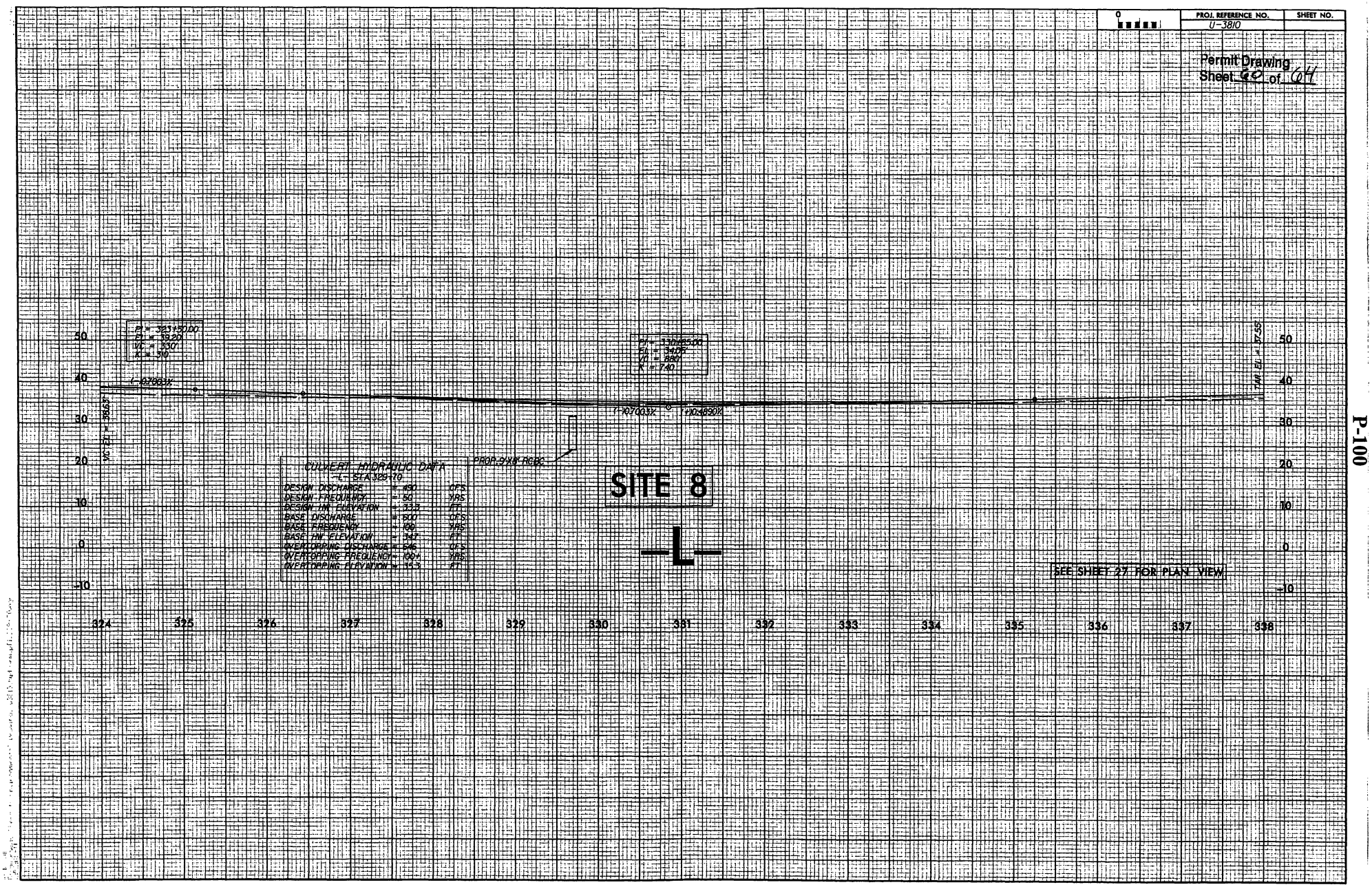
SITE 8
JURISDICTIONAL STREAM PROFILE -L- 329 + 70



P-99

PROJ. REFERENCE NO.	SHEET NO.
U-3810	

Permit Drawing
Sheet 26 of 64



P-100

PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
5	A.G. LEE OIL COMPANY, INC.	PO BOX 237 SMITHFIELD, NC 27577
49	ADAM YAGER	405 PINEY GREEN ROAD JACKSONVILLE, NC 28546
51	CANDICE THOMPSON	104 MARION PLACE JACKSONVILLE, NC 28546
52	WILLIAM LOWDER	732 LYNCHBURG DRIVE JACKSONVILLE, NC 28546
73	DALE E. JOHNSON	312 PEBBLE LANE JACKSONVILLE, NC 28546
74	ILENA GILBERT	567 PINEY GREEN ROAD JACKSONVILLE, NC 28546
75	CHARLES M. SPENCER	1009 BEECH TREE ROAD JACKSONVILLE, NC 28546
85	WILLIE HALL	444 GRANTS CREEK ROAD JACKSONVILLE, NC 28546
86	RONALD MABEE	2476 NORTHWOODS AVE. JACKSONVILLE, NC 28540
87	J&J REALTY, INC	PO BOX 7252 JACKSONVILLE, NC 28540
104	GEORGE HOWARD, JR.	100 PRESTON DR. JACKSONVILLE, NC 28540
105	ONSLOW COUNTY	118 OLD BRIDGE STREET JACKSONVILLE, NC 28540

NCDOT

DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT: U-3810

SR 1406 (PINEY GREEN ROAD)
FROM US 17 (MARINE BLVD)
TO NC 24 (FREEDOM WAY)

Permit Drawing
Sheet 61 of 64

SHEET 61 OF 64 10/11/11

PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
143	HOWARD AND SONS RENTALS	100 PRESTON DR. JACKSONVILLE, NC 28540
146	C.M.S., INC	PO BOX 5052 JACKSONVILLE, NC 28540
147	W.R. WILLIS RENTALS	123 TIGER HILL DR. JACKSONVILLE, NC 28546
148	KENNETH DIXON	2121 KINSTON HWY. RICHLANDS, NC 28574
173	HOYT T. MARTIN	1551 PINEY GREEN ROAD JACKSONVILLE, NC 28540
174	WHITE OAK RIVER ROAD INVESTMENTS	2705 WHITE OAK RIVER ROAD MAYSVILLE, NC 28555
175	CATHERINE S. AMAN	122 OLD 30 ROAD JACKSONVILLE, NC 28546
208	TOMMY MORTON, JR.	1844 PINEY GREEN ROAD JACKSONVILLE, NC 28546
210	NCDOT	306 DIVISION DRIVE WILMINGTON, NC 28401
211	ANNETTE MCKNIGHT	3305 MEADOW RUN DRIVE DURHAM, NC 27707
215	MCLARRY HUMPHREY	5000 STENTON AVE. PHILADELPHIA, PA 19144

NCDOT

DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT: U-3810

SR 1406 (PINEY GREEN ROAD)
FROM US 17 (MARINE BLVD)
TO NC 24 (FREEDOM WAY)

SHEET OF 10/11/11

Permit Drawing
Sheet 02 of 64

PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
216	DALE VENTERS	2043 PINEY GREEN ROAD JACKSONVILLE, NC 28540
253	TONY PEARSON	2195 PINEY GREEN ROAD JACKSONVILLE, NC 28540
254	ONSLOW CARTERET PROPERTIES	PO BOX 7287 JACKSONVILLE, NC 28541
264	BETSY ALBRIGHT	2273 PINEY GREEN ROAD MIDWAY PARK, NC 28544
266	EDITH ADAMS	2282 PINEY GREEN ROAD MIDWAY PARK, NC 28544
323	GEORGE WAHINGTON LIVING HEIRS	108 BURNETTE STREET JACKSONVILLE NC 28546
324	PINEY GREEN DEVELOPERS	PO BOX 1685 JACKSONVILLE, NC 28540
322	TOMMY MORTON, JR.	2626 PINEY GREEN ROAD MIDWAY PARK, NC 28544
325	BOBBY MORTON	1212 DECATUR ROAD JACKSONVILLE, NC 28540

NCDOT

DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT: U-3810

SR 1406 (PINEY GREEN ROAD)
FROM US 17 (MARINE BLVD)
TO NC 24 (FREEDOM WAY)

SHEET OF 10/11/11

Permit Drawing
Sheet 03 of 04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Temp. Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 50+67 to 52+76	1@9'x8' RCBC							0.02	<0.01	121.00	15.00	
	Bank Stabilization								0.01		116.00		
2	-L- 79+00 to 86+30	305' Bridge	0.49		0.02		0.15	0.03	0.01		86.00		
3	117+87 to 119+25 Lt/Rt	42" RCP / 36" RCP / 48" RCP	0.02				0.02		0.01	<0.01	88.00	16.00	
4	-L- 165+53 to 168+89	3@10'x9' RCBC	0.32		0.09	0.02_1	0.13		0.10	0.01	290.00	48.00	
	Bank Stabilization								0.01		28.00		
5	-L- 231+47 to 242+32	125' Bridge	0.72			0.07_2	0.22	0.04	<0.01		36.00		
6	-L-273+75 to 274+85	1@11'x7' RCBC							0.03	0.01	209.00	47.00	
	Bank Stabilization								0.01		73.00		
7	-L- 284+98 to 286+16 Lt	42" RCP	0.19										
8	-L-329+58 to 329+72	1@9'x8' RCBC							0.01	0.01	45.00	49.00	
	Bank Stabilization								0.01		66.00		
9	-Y- 21+80 to 23+60 Lt.	Roadway Fill	0.10										
10	-L- 11+50 Rt.	Proposed Ditch	0.01		0.06								
11	-L- 69+55 to 70+09 Lt/Rt	42" RCP / 24" RCP							0.01	<0.01	110.00	21.00	
	Bank Stabilization								<0.01		26.00		
12	-L- 192+46 Rt/Lt	48" RCP							0.01	<0.01	115.00	11.00	
	-L- 194+10 Rt	Proposed Ditch							<0.01	<0.01	40.00	20.00	
TOTALS:			1.85	0.00	0.17	0.09	0.52	0.07	0.23	0.03	1449.00	227.00	

Bent Impacts at Bridge Site 2 = 240 SF

$_1$Temporary Excavation due to Temporary Diversion for Proposed Culvert Phasing

$_2$Temporary Excavation due to Mitigation Site

Bent Impacts at Bridge Site 5 = 240 SF

Site 5 Wetland Mitigation = 1.05 Ac.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
WBS - 35801.1.1 (U-3810)

SHEET 3/20/2012

ATN Revised 3/31/05

Permit Drawing
Sheet 64 of 64

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