

PROJECT SPECIAL PROVISION

(10-18-95)

Z-1

PERMITS

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

<u>PERMIT</u>	<u>AUTHORITY GRANTING THE PERMIT</u>
Navigation	U. S. Coast Guard
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
Stormwater	Division of Environmental and Natural 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 107-14 of the *Standard Specifications* and the following:

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

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

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
United States Coast Guard
Fifth Coast Guard District

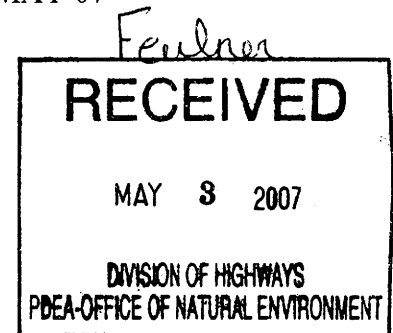
209

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6587
Fax: (757) 398-6334
Email: Terrance.A.Knowles@uscg.mil

16591
01 MAY 07

Mrs. Elizabeth Lusk
Project Manager, Natural Environment Unit
North Carolina Department of Transportation
1595 Mail Service Center
Raleigh, NC 27699

Dear Mrs. Lusk:



Enclosed is Coast Guard Bridge Permit 3-07-5 dated April 25, 2007, approving the location and plans of a bridge across the Atlantic Intracoastal Waterway to Oak Island, North Carolina. The following stipulations shall be adhered to:

a. The Contractor shall submit his plan and schedule of operation for approval at least 45 days prior to commencement of work in the waterway. On copy of such information shall be submitted concurrently to both the Resident Engineer, the United States Coast Guard Commander (dpb); Federal Building, 4th Floor, 431 Crawford Street; Portsmouth, Virginia 23704-5004, and the U. S. Coast Guard Sector North Carolina at 2301 East Fort Macon Road, Atlantic Beach, NC 28512-5633. The information shall include a sketch of the waterway; the bridge; the location of any restrictions that will be placed in the waterway such as barges, anchors, and anchor lines; the location and height above mean high water and detailed description of any scaffolding, or netting; detailed description indicating the placement, type and dimension of any cofferdams if used. The schedule should also include the hours of operation and whether or not the equipment will be removed at night. The contractor shall comply with all provisions of the Navigation Rules International - Inland, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. The Contractor shall submit to the Resident Engineer a copy of all correspondence between the Coast Guard and himself or herself. No deviation from the approved plan and schedule of operation may be made unless the modification has previously been submitted and approved by the Coast Guard.

b. At no time during the work will the waterway be closed to navigation without prior approval from the Coast Guard. You are required to maintain close and regular contact with Coast Guard Sector North Carolina to keep them informed to activities in waterway at (252) 247-4570.

c. Barges that are used in the waterway during the project must be marked in accordance with Title 33 Code of Federal Regulations, Section 118.95 that outlines temporary marking and lighting requirements. Enclosure (2) outlines temporary marking and lighting requirements for barges and structures not part of the bridge that will be used during construction. If barge or float anchor lines are used, they must be marked by anchor buoys, which should be lighted. If you should have any questions, regarding lights on the barges or work floats, please contact Mr. John Walters, Chief, Planning and Waterways Management Section, at (757) 398-6230. Floating

equipment shall have a radiotelephone capable of operation from its main control station in accordance with Part 26 of Title 33, Code of Federal Regulations and shall be monitored during all periods the floating equipment is on station.

d. During the progress of work, while the channel is in operation, should any material, machinery or equipment be lost, dumped, thrown overboard, sunk or misplaced which may be dangerous to or obstruct navigation, immediate notice shall be given to the Coast Guard and the object removed with the utmost dispatch. Until removal can be effected, the objects shall be properly marked in order to protect navigation. Notice to the Coast Guard shall give a description and location of any such object and the action taken or being taken to protect navigation.

e. Upon completion of the proposed project, an inspection of the waterway bottom shall be performed to insure that all construction waste materials have been completely removed. Certification will be required in writing by a licensed engineer or licensed surveyor that the waterway has not been impaired and all construction related debris has been cleared from it. The certification shall include the actual method used to conduct the inspection. The Contractor shall remove any bridge related debris, resulting from the current or prior work or occurrences, discovered during this survey.

f. Upon completion of the bridgework, a responsible official of the North Carolina Department of Transportation shall verify as-built clearances and a statement attesting to the correctness of the clearances shall be forwarded to this office for record purpose. In lieu of verification by the above listed official, certification by a licensed surveyor or registered professional engineer registered in the State of North Carolina will be accepted.

g. Except as shown on the plans, no dredging, excavation, filling, rip-rap, or other work affecting the bottom, shall be done in conjunction with this work.

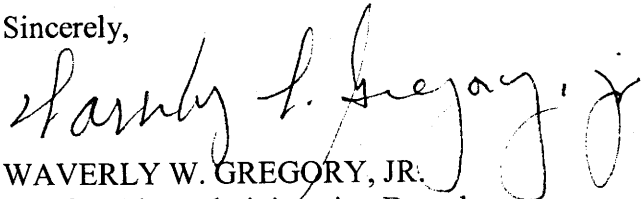
h. Compliance with the requirements stated herein does not relieve the contractor of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of the State of North Carolina, or any other federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge. It is advised that the Coast Guard can levy monetary civil penalties for violations of bridge regulations and statutes.

211

16591
1 MAY 07

The office of the Bridge Administrator, Fifth Coast Guard District, shall be notified immediately upon completion of the project. If you should have any questions regarding this matter, please call Mr. Terrance A. Knowles at the above listed telephone number.

Sincerely,



WAVERLY W. GREGORY, JR.
Chief, Bridge Administration Branch
By direction of the Commander
Fifth Coast Guard District

Encl: (1) Bridge Permit 3-07-5 dated April 25, 2007
(2) USCG Temporary Marking & Lighting

Copy: John Walters, (dpw) w/encls
USCG Sector North Carolina w/encls



BRIDGE PERMIT

(3-07-5)

APR 25 2007

WHEREAS by Title V of an act of Congress approved August 2, 1946, entitled "General Bridge Act of 1946," as amended (33 U.S.C. 525-533), the consent of Congress was granted for the construction, maintenance and operation of bridges and approaches thereto over the navigable waters of the United States;

AND WHEREAS the Secretary of Homeland Security has delegated the authority of Section 502(b) of that act to the Commandant, U. S. Coast Guard by Department of Homeland Security Delegation Number: 0170.1;

AND WHEREAS before construction is commenced, the Commandant must approve the location and plans of any such bridge and may impose any specific conditions relating to the construction, maintenance and operation of the structure deemed necessary in the interest of public navigation, such conditions to have the force of law;

AND WHEREAS the - STATE OF NORTH CAROLINA - has submitted for approval the location and plans of a bridge to be constructed across the Atlantic Intracoastal Waterway at Oak Island, North Carolina;

NOW THEREFORE, This is to certify that the location and plans dated 18 August 2006 are hereby approved by the Commandant, subject to the following conditions:

1. No deviation from the approved plans may be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant.

2. The construction of falsework, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the Commander, Fifth Coast Guard District, prior to construction of the bridge. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during construction of the bridge. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in the judgment of the District Commander the construction work has reached a point where such action should be taken, but in no case later than 90 days after the bridge has been opened to traffic.

213

3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of any federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge.

4. A bridge fendering system shall be installed and maintained in good condition by and at the expense of the owner of the bridge when so required by the District Commander. Said installation and maintenance shall be for the safety of navigation and be in accordance with plans submitted to and approved by the District Commander prior to its construction.

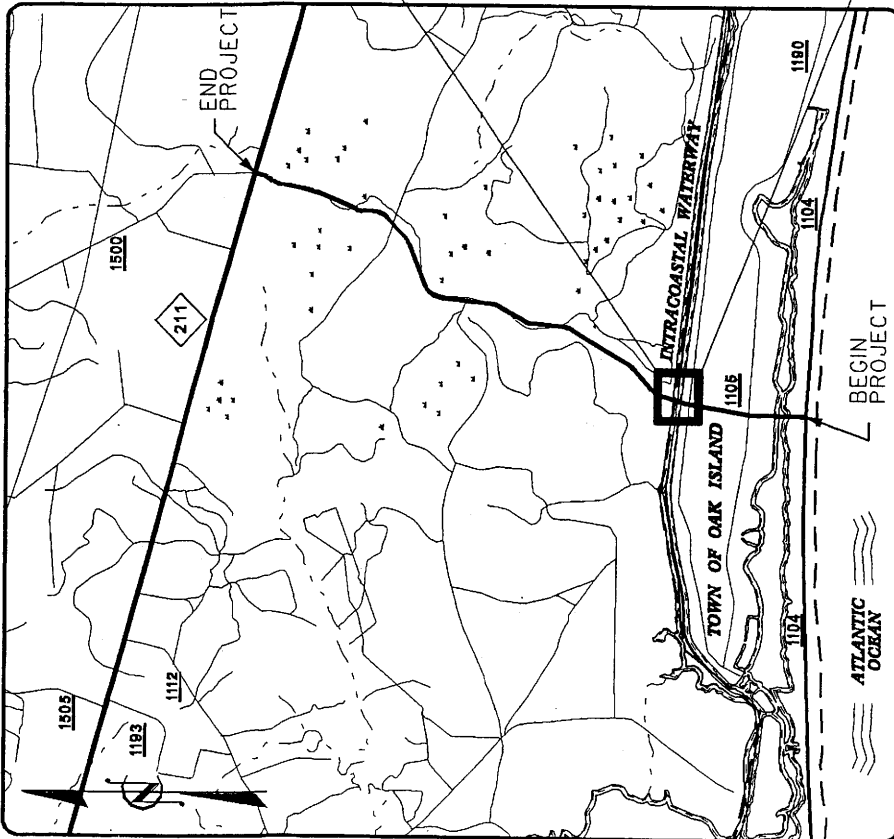
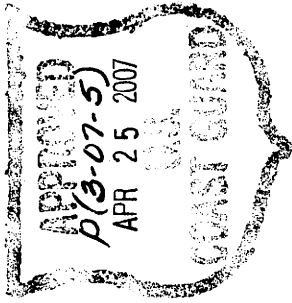
5. Clearance gauges shall be installed and maintained in a good and legible condition by and at the expense of the owner of the bridge when so required by the District Commander. The type of gauges and the locations in which they are to be installed will be submitted to the District Commander for approval.

6. When the proposed bridge is no longer used for transportation purposes, it shall be removed in its entirety or to an elevation deemed appropriate by the District Commander and the waterway cleared to the satisfaction of the District Commander. Such removal and clearance shall be completed by and at the expense of the owner of the bridge upon due notice from the District Commander.

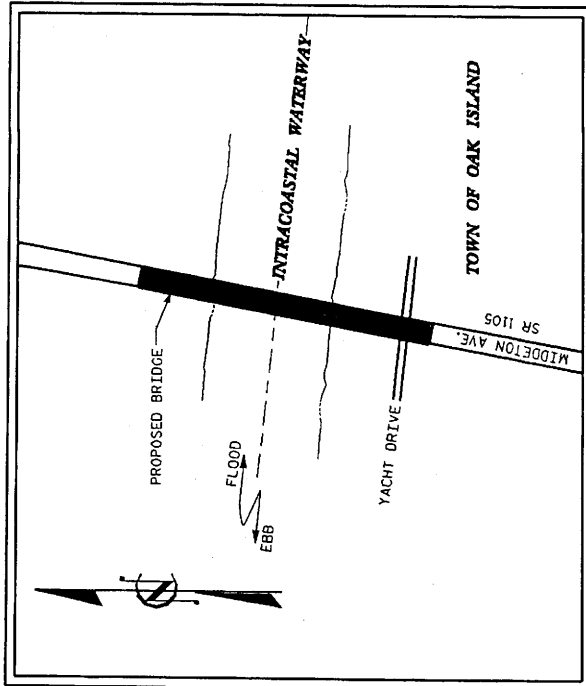
7. The approval hereby granted shall cease and be null and void unless construction of the bridge is commenced within three years and completed within five years after the date of this permit.

 FOR

N. E. MPRAS
Chief, Office of Bridge Administration
U. S. Coast Guard
By direction of the Commandant



LOCATION MAP



VICINITY MAP

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PALESTON, NC
PROPOSED BRIDGE ON SR 1105 (MIDDLETON AVENUE) BETWEEN SR 1104 AND NC211 — OVER — ATLANTIC INTRACOASTAL WATERWAY AT MILE MARKER 316.6mi (509.5km)
BRUNSWICK COUNTY
DRAWN BY : R.D. MARTIN CHECKED BY : <i>BEVIN</i>
DATE : 01-06 DATE : 8-18-06

F.A. PROJECT NO.: STP-1105 (6)
STATE PROJECT NO.: R-2245

RECORD OF DECISION**PROPOSED FIXED HIGHWAY BRIDGE
ACROSS THE ATLANTIC INTRACOASTAL WATERWAY
MILE 316.6, AT OAK ISLAND, NORTH CAROLINA
P(3-07-5)****I. DESCRIPTION OF THE PROPOSED PROJECT:**

The North Carolina Department of Transportation (NCDOT) in partnership with the Federal Highway Administration proposes to construct a new highway bridge across the Atlantic Intracoastal Waterway, mile 316.6, at Oak Island, Brunswick County, North Carolina. The proposed project consists of constructing a new high-level, fixed highway bridge as a second crossing to Oak Island, connecting SR-1104 with NC-211. The bridge will include two lanes in each direction.

The Federal Highway Administration (FHWA) is the lead federal agency for satisfying the requirements of the National Environmental Policy Act (NEPA). A Draft Environmental Impact Statement (DEIS) for the proposed project was approved by the FHWA on January 23, 2002. The Final Environmental Impact Statement (FEIS) was approved by FHWA on April 30, 2004. It was filed with the U.S. Environmental Protection Agency (USEPA) on June 4, 2004. No significant changes have occurred since the FEIS was approved by FHWA.

The Coast Guard was a cooperating agency in preparing the environmental document. Action by the Coast Guard consists of issuance or denial of a bridge permit for the proposed bridge. Coast Guard NEPA responsibility is to assess the navigational and environmental impacts of construction, maintenance and operation of the proposed bridge.

II. DECISION:

The Commander, Fifth Coast Guard District, has recommended, and the Commandant, U.S. Coast Guard, has decided to approve the location and plans for the proposed bridge. This decision is considered to be in the best public interest for satisfying project objectives with the least impacts on navigation and the environment.

III. ALTERNATIVES CONSIDERED:

Alternatives initially considered were three no-build and four build alternatives. The three no-build alternatives were Multi-Modal Alternatives which included 1) a Transportation Systems Management Alternative; 2) a Mass Transit Alternative; and 3) an Improve Existing Alternative. All three were evaluated but were not considered reasonable and feasible options and were therefore eliminated from further consideration.

Of the four build alternatives, the B, C and D alternatives proposed the use of the same site for crossing the waterway at SR-1105. Alternative E proposed using the south end of West Oak Island Drive. Build alternatives C, D and E were eliminated. Alternative C was eliminated

primarily for the preservation of potential protected species habitat; Alternative D was eliminated due to the presence of the largest amount of direct impacts to the Longleaf Pine Community; and Alternative E was eliminated due to a high number of relocations, high construction costs, impacts to the coastal fringe evergreen forest, and impacts to the Sunset Harbor community. The alternatives were narrowed down further because of potential impacts on the community and the environment.

The Preferred Alternative B was adopted for the following reasons: 1) it was the shortest and least costly alternative; 2) it had the lowest number of relocations; 3) and it was overwhelmingly favored by the public and local officials.

An expanded description of the various alternatives and the recommended (preferred) alternative, including the basis for the decision, is included in the DEIS, FEIS and the FHWA Record of Decision. After considering responses to the Coast Guard Public Notice, the impacts associated with each alternative and the present and future transportation needs, I have determined that the proposed project's impacts of the selected (preferred) alternative cannot be avoided, and all planning and mitigation to minimize these impacts have been accomplished.

PREFERRED ALTERNATIVE:

The Preferred Alternative (Alternative B) is a high-level, fixed, four-lane highway bridge. It would provide for navigation the proposed clearances:

Minimum horizontal clearance measured 90.0 ft (27.4m)
 normal to the axis of the channel. A navigable
 clearance of 140.0 ft is available with 65.0 ft
 vertical clearance for vessels requiring lesser
 water depths.

Minimum vertical clearance above mean high 65.0 ft (19.8m)
 water elevation 2.7 ft

Minimum vertical clearance above mean low 69.2 ft (21.1m)
 water elevation -1.5

IV. BASIS FOR DECISION:

After an independent review of the FEIS (FHWA-NC-EIS-02-01-F), approved on April 30, 2004, the FHWA, I have determined that the environmental document adequately assessed the impacts of the proposed construction of a new highway bridge across the Atlantic Intracoastal Waterway, mile 316.6, at Oak Island, Brunswick County, North Carolina. The Commander, Fifth Coast Guard District, adopted the bridge-related portions of the FEIS on April 6, 2007.

The FEIS contains an adequate detailed statement of the following: project description and purpose, probable impacts of the project, alternatives, unavoidable adverse environmental

effects, short-term impacts versus long-term benefits, irreversible and irretrievable commitment of resources and measures to minimize environmental harm. The proposal conforms with the North Carolina Department of Environmental and Natural Resources air quality implementation plan and the National Ambient Air Quality Standards.

V. MITIGATION:

The construction of this new bridge and subsequent completion of the Preferred Alternative will require the acquisition of seven residential properties. Families and individuals displaced by the project will be relocated in accordance with the NC Relocation Assistance Act and the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended.

In an effort to mitigate impacts, NCDOT and their contractors will follow the Procedures and Conditions of the Certificate and Permit, as outlined in the North Carolina 401 Water Quality Certification (WQC #3608), and the NC Department of Environment and Natural Resources & Coastal Resources Commission Permit (Permit #20-07). This includes adherence to all appropriate in-water work moratoriums (including the use of pile driving) prescribed by the National Marine Fisheries Service and the NC Division of Marine Fisheries. No in-water work is permitted between February 1 and September 30 of any year, without prior approval. In addition, the NCDOT shall conform with the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage" (May 12, 1997) at all times.

NCDOT shall follow the "Precautionary Guidelines for General Construction in Areas that may be used by the West Indian Manatee in North Carolina" in accordance with U.S. Fish and Wildlife Service requirements.

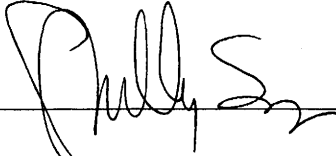
NCDOT and their contractors shall also comply with the U. S. Army Corps of Engineers (USACE) conditions in the Wetlands Permit #199506041 (Section 404 of Clean Water Act). Compliance with these conditions will minimize sedimentation and erosion impacts along Primary Nursery Areas and anadromous fish waters. Based on this information, this bridge project, as proposed, will not adversely affect fish and wildlife resources. Based on the mitigation plan that is part of the USACE permit, this project is expected to directly impact an estimated 16.1 acres of wetlands (14 acres Pocosin wetlands and 2.1 acres of Bottomland hardwoods wetlands.) Compensatory mitigation shall be provided through the NC Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP). EEP will provide 0.052 acres of restoration equivalent riparian wetlands, 42.844 acres of restoration equivalent non-riparian wetlands, and 30 linear feet of restoration equivalent warm water stream channel in the Lumber River Basin in the Southern Outer Coastal Plain.

Minimization, avoidance, or elimination of adverse impacts was a primary consideration throughout the project planning. All efforts have been made to minimize impacts on the environment and on navigation.

VI. CONCLUSION:

Based on an independent Coast Guard review of all pertinent factors, including navigation and the human environment, I conclude that the proposed bridge across the Atlantic Intracoastal Waterway will meet the reasonable needs of navigation with no unmitigated, significant adverse impacts on the quality of the human environment.

Date: APR 25 2000

 FOR

N. E. MPRAS
Chief, Office of Bridge Administration
U.S. Coast Guard
By direction of the Commandant

LIGHTING REQUIREMENTS FOR BARGES AND STRUCTURES NOT PART OF A BRIDGE OR APPROACH STRUCTURE

88.13 Lights on barges at bank or dock.

- (a) The following barges shall display at night and, if practicable, in periods of restricted visibility the lights described in paragraph (b) of this section -
 - (1) Every barge projecting into a buoyed or restricted channel.
 - (2) Every barge so moored that it reduces the available navigable width of any channel to less than 80 meters.
 - (3) Barges moored in groups more than two barges wide or to a maximum width of over 25 meters.
 - (4) Every barge not moored parallel to the bank or dock.
- (b) Barges described in paragraph (a) shall carry two unobstructed white lights of an intensity to be visible for a least one mile on a clear dark night and arranged as follows:
 - (1) On a single moored barge, lights shall be placed on the two corners farthest from the bank or dock.
 - (2) On barges moored in group formation, a light shall be placed on each of the upstream and downstream ends of the group, on the corners farthest from the bank or dock.
 - (3) Any barge in a group, projecting from the main body of the group toward the channel, shall be lighted as a single barge.
- (c) Barges moored in any slip or slough, which is used primarily for mooring purposes, are exempt from the lighting requirements of this section.

33 CODE OF FEDERAL REGULATIONS, SECTION 118.95

LIGHTS ON STRUCTURES NOT PART OF A BRIDGE OR APPROACH STRUCTURE

Lights on sheer booms, isolated piers, obstructions, and other structures not part of a bridge or approach structure must meet the requirements for aids to navigation in Subpart 66.01 of Part 66 of this chapter

33 CODE OF FEDERAL REGULATIONS, SECTION 66.01-10

- (a) The characteristics of a private aid to navigation shall conform to the United States Aids to Navigation System described in Subpart B of Part 62 of this subchapter, except that only tungsten-incandescent light sources will be approved for electric lights.

Therefore in accordance with 33 CFR 66.01-10(a), the above lights shall be marked with slow flashing yellow lights visible for two miles on a clear dark night. Lights similar to the Tideland ML-120 Barge Light may be used. Only tungsten-incandescent light sources will be approved for electric lights.

(3-07-5)

APR 25 2007

WHEREAS by Title V of an act of Congress approved August 2, 1946, entitled "General Bridge Act of 1946," as amended (33 U.S.C. 525-533), the consent of Congress was granted for the construction, maintenance and operation of bridges and approaches thereto over the navigable waters of the United States;

AND WHEREAS the Secretary of Homeland Security has delegated the authority of Section 502(b) of that act to the Commandant, U. S. Coast Guard by Department of Homeland Security Delegation Number: 0170.1;

AND WHEREAS before construction is commenced, the Commandant must approve the location and plans of any such bridge and may impose any specific conditions relating to the construction, maintenance and operation of the structure deemed necessary in the interest of public navigation, such conditions to have the force of law;

AND WHEREAS the - STATE OF NORTH CAROLINA - has submitted for approval the location and plans of a bridge to be constructed across the Atlantic Intracoastal Waterway at Oak Island, North Carolina;

NOW THEREFORE, This is to certify that the location and plans dated 18 August 2006 are hereby approved by the Commandant, subject to the following conditions:

1. No deviation from the approved plans may be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant.

2. The construction of falsework, cofferdams or other obstructions, if required, shall be in accordance with plans submitted to and approved by the Commander, Fifth Coast Guard District, prior to construction of the bridge. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation shall be given to the District Commander during construction of the bridge. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in the judgment of the District Commander the construction work has reached a point where such action should be taken, but in no case later than 90 days after the bridge has been opened to traffic.

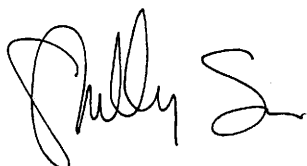
3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of any federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge.

4. A bridge fendering system shall be installed and maintained in good condition by and at the expense of the owner of the bridge when so required by the District Commander. Said installation and maintenance shall be for the safety of navigation and be in accordance with plans submitted to and approved by the District Commander prior to its construction.

5. Clearance gauges shall be installed and maintained in a good and legible condition by and at the expense of the owner of the bridge when so required by the District Commander. The type of gauges and the locations in which they are to be installed will be submitted to the District Commander for approval.

6. When the proposed bridge is no longer used for transportation purposes, it shall be removed in its entirety or to an elevation deemed appropriate by the District Commander and the waterway cleared to the satisfaction of the District Commander. Such removal and clearance shall be completed by and at the expense of the owner of the bridge upon due notice from the District Commander.

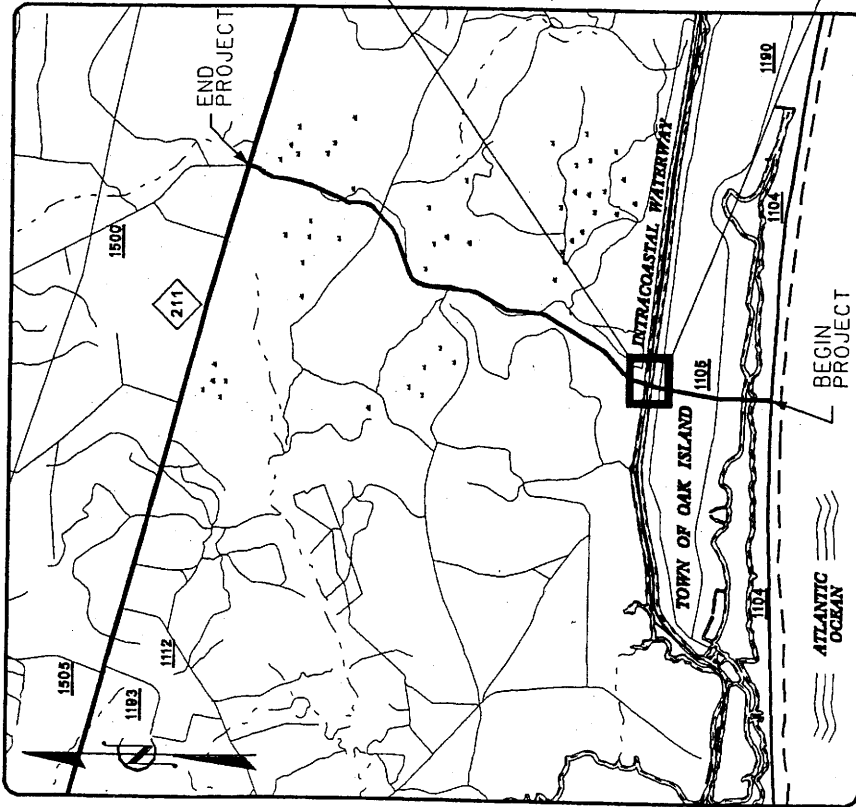
7. The approval hereby granted shall cease and be null and void unless construction of the bridge is commenced within three years and completed within five years after the date of this permit.

 FOR

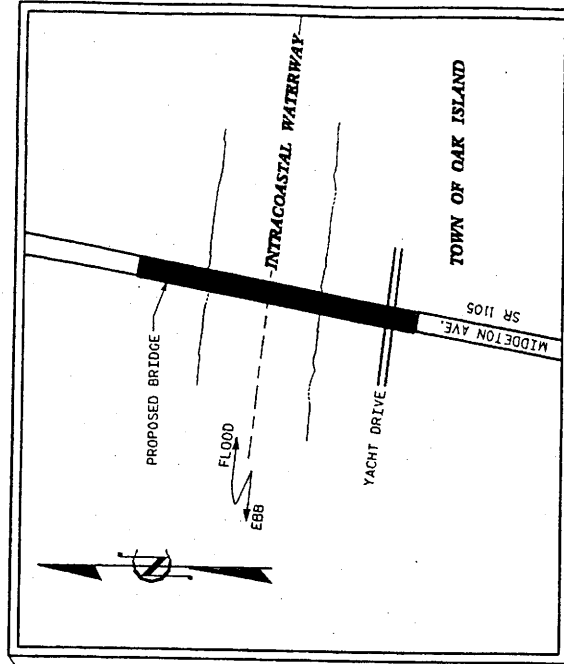
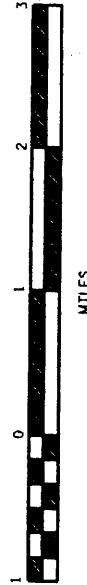
N. E. MPRAS
Chief, Office of Bridge Administration
U. S. Coast Guard
By direction of the Commandant



223



LOCATION MAP



VICINITY MAP

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC

PROPOSED BRIDGE ON SR 1105
(MIDDLETON AVENUE)
BETWEEN SR 1104 AND NC211

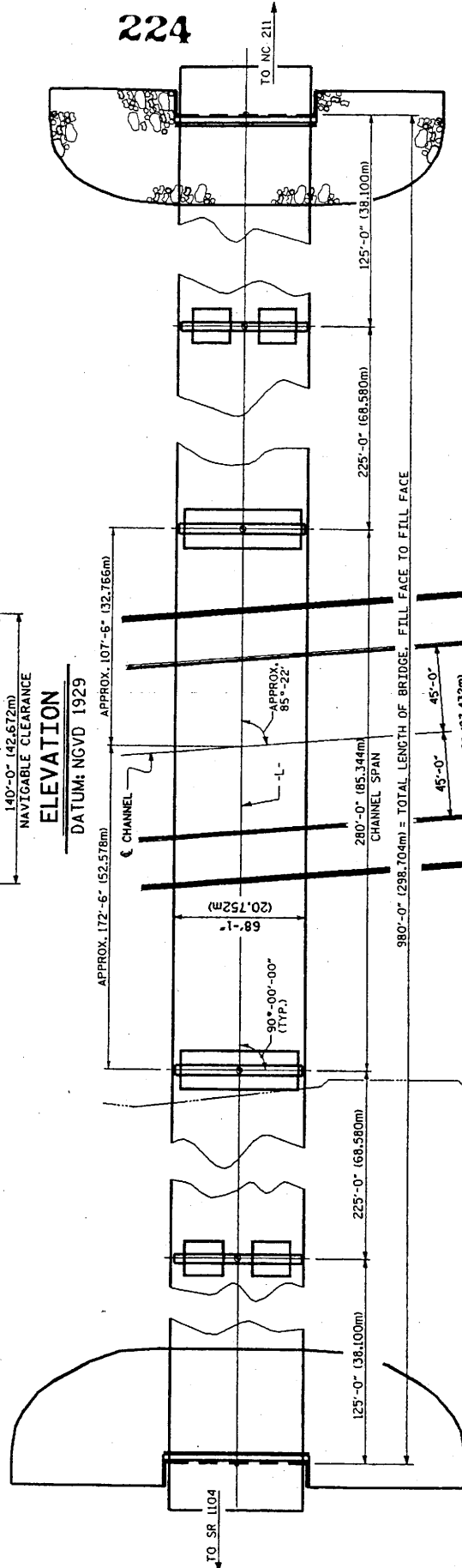
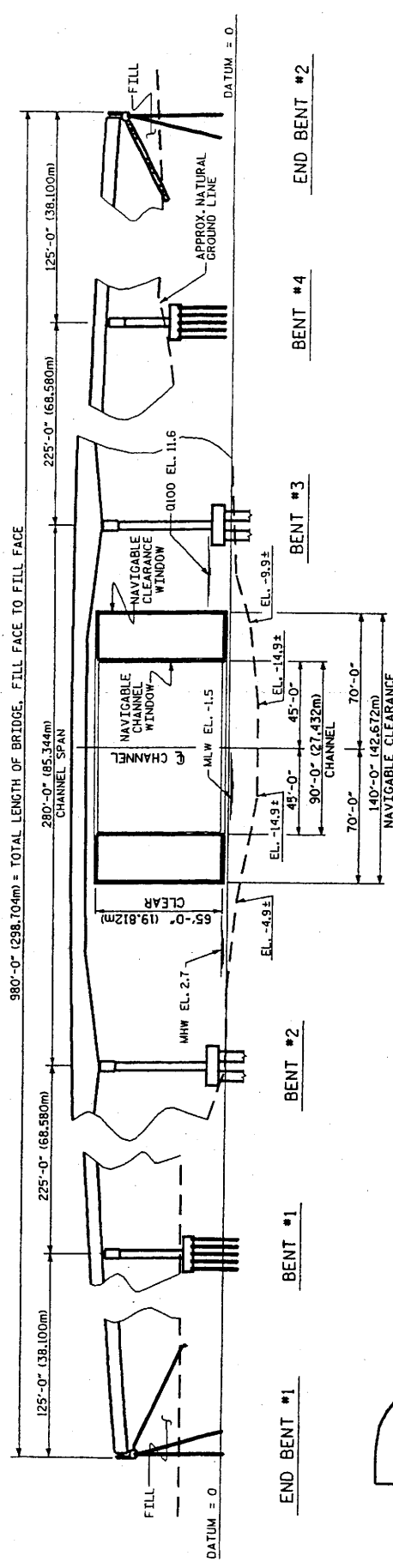
ATLANTIC INTRACOASTAL WATERWAY
AT MILE MARKER 316.6mi (509.5km)

BRUNSWICK COUNTY

DRAWN BY: R.D. MARTIN DATE: 01-06
CHECKED BY: *B. BEAUN* DATE: 01-06

F.A. PROJECT NO.: STP-1105 (6)

STATE PROJECT NO.: R-2245



SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC

PROPOSED BRIDGE ON SR 1105
(MIDDLETON AVENUE)
BETWEEN SR 1104 AND NC211

ATLANTIC INTRACOASTAL WATERWAY
AT MILE MARKER 316.6mi (509.5km)

BRUNSWICK COUNTY

DATE: 01-06
DRAWN BY: R.D. MARTIN
CHECKED BY: *R. Martin*

NOTE: THIS BRIDGE IS DESIGNED ACCORDING TO THE AASHTO GUIDE SPECIFICATION FOR VESSEL COLLISION DESIGN OF HIGHWAY BRIDGES.

100 0 100
SCALE IN FEET

25 0 25
SCALE IN METERS

APPROVED
P(3-07-5)
APR 25 2007
U.S. COAST GUARD

PLAN

F.A. PROJECT NO.: STP-1105 (6)
STATE PROJECT NO.: R-2245



225
DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
PO BOX 1890
WILMINGTON NC 28402-1890

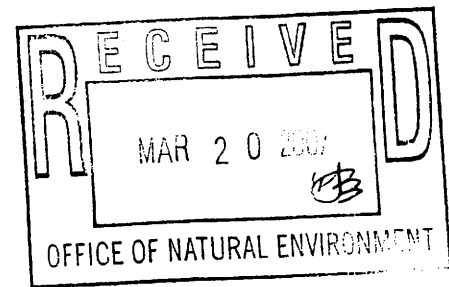


March 20, 2007

Regulatory Division

SUBJECT: Action ID 199506041; TIP Project No. R-2245, Second Bridge to Oak Island, Brunswick County, North Carolina

Gregory J. Thorpe, Ph.D, 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 Mr. Thorpe:

Enclosed is a Department of the Army (DA) permit to directly discharge dredged and /or fill material into the Atlantic Intracoastal Waterway (AIWW), Davis Canal and an unnamed tributary to River Swamp for the construction of a high rise bridge over the AIWW from Middleton Avenue to the mainland, the replacement of Bridge No. 206 over Davis Canal, and the construction of a four-lane road on a new location from the AIWW to NC Highway 211, near Smith, Brunswick County, North Carolina. The proposed roadway is approximately 4.5 miles in length and starts at SR 1104 (Beach Drive) on Oak Island and continues to NC 211, west of Southport (between Latitude 33.9169N, Longitude 78.1612W and Latitude 33.9719N, Longitude 78.1309W).

Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified.

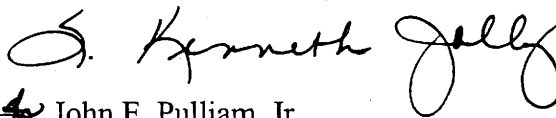
Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:

- a. You must complete construction before December 31, 2010.
- b. You must notify this office in advance as to when you intend to commence and complete work.

c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

You should address all questions regarding this authorization to Ms. Jennifer Frye of my Wilmington Regulatory Field Office at (910) 251-4923.

Sincerely,


John E. Pulliam, Jr.
Colonel, U.S. Army
District Commander

Enclosures

Copy Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
ATTN: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, MD 20910-3282

Copies Furnished (with special conditions and plans):

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

Mr. Pete Benjamin, Field Supervisor
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler
National Marine Fisheries
Service, NOAA
Pivers Island
Beaufort, North Carolina 28516

Mr. Doug Huggett
Division of Coastal Management
N.C. Department of Environment
and Natural Resources
Division of Coastal Management
400 Commerce Avenue
Morehead City, North Carolina 28557-3421

Mr. Dave Rackley
National Marine Fisheries
Service, NOAA
Pivers Island
Beaufort, North Carolina 28516

Applicant: North Carolina Department of Transportation	File Number: 199506041	Date: March 14, 2007
Attached is:	See Section below	
X INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
PERMIT DENIAL	C	
APPROVED JURISDICTIONAL DETERMINATION	D	
PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION I. The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg_of_Corps_regulations_at_33_CFR_Part_331.

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

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

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

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

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

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

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

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

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

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

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

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

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

If you only have questions regarding the appeal process you may also contact:

Mr. Michael Bell, Administrative Appeal Review Officer
CESAD-ET-CO-R
U.S. Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-8801

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

Signature of appellant or agent.

Date:

Telephone number:

DIVISION ENGINEER:

Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-3490

DEPARTMENT OF THE ARMY PERMIT

Permittee **NC DEPARTMENT OF TRANSPORTATION**Permit No. **199506041**Issuing Office **USAED, Wilmington**

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

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

Project Description: **directly discharge dredged and/or fill material into the Atlantic Intracoastal Waterway (AIWW), Davis Canal, and an unnamed tributary to River Swamp for the construction of a high rise bridge over the AIWW from Middleton Avenue to the mainland, the replacement of Bridge No. 206 over Davis Canal, and the construction of a four-lane road on a new location from the AIWW to NC Highway 211, near Smith, Brunswick County, North Carolina.**

Project Location: **The proposed roadway is approximately 4.5 miles in length and starts at SR 1104 (Beach Drive) on Oak Island and continues to NC 211, west of Southport (between Latitude 33.9169N, Longitude 78.1612W and Latitude 33.9719N, Longitude 78.1309W).**

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2010**. 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:

(X) 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.

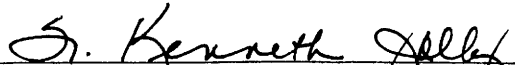
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance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

 3/20/2007
 (PERMITEE) NC DEPARTMENT OF TRANSPORTATION (DATE)

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

 3-20-07
 (DISTRICT ENGINEER) JOHN E. PULLIAM, JR., COLONEL (DATE)

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

 (TRANSFEE) (DATE)

SPECIAL CONDITIONS
TIP Project No. R-2245, Action ID 199606041

Work Limits

1. 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.
2. 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 connected with this project.
3. 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.

Related Laws

4. If the North Carolina Division of Water Quality has issued a conditioned Water Quality Certification for your project, the conditions of that certification are hereby incorporated as special conditions of this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
5. 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 (919) 733-5083, Ext. 526 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

Project Construction and Maintenance

6. The permittee shall schedule a pre-construction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, 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 provide the USACE, Wilmington Regulatory Field Office, NCDOT Regulatory Project Manager, with a copy of the final construction plans at least two weeks prior to the pre-construction meeting along with a description of any changes that have been made to the project's design, construction

methodology or construction timeframe. The permittee shall notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meeting in order to provide that individual with ample opportunity to schedule and participate in the required meeting.

7. The permittee shall advise the Corps in writing at least two weeks prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

8. 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.

9. 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.

10. 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).

11. 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.

Enforcement

12. Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors 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.

Navigation

13. 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 waterway to its former conditions. If the permittee fails to comply with this direction, the Secretary or his representative may restore the waterway, by contract or otherwise, and recover the cost from the permittee.

14. The authorized structure and associated activity must not interfere with the public's right to free navigation on all navigable waters of the United States. No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work for reason other than safety.

15. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal, relocation, or alteration.

16. The permittee shall notify NOAA/NATIONAL OCEAN SERVICE Chief Source Data Unit N CS261, 1315 E West HWY- RM 7316, Silver Spring, MD 20910-3282 at least two weeks prior to beginning work and upon completion of work.

17. The permittee must install and maintain, at his expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities. For further information, the permittee should contact the U.S. Coast Guard Marine Safety Office at (910) 772-2191.

Borrow and Waste

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

Moratorium

19. A moratorium on all work in the waters of Atlantic Intracoastal Waterway (AIWW) and Davis Canal will be in effect (in accordance with National Marine Fisheries Letter dated March 24, 2004) during construction of this project for the period between February 15 and June 30th of any year to protect anadromous fish spawning.

20. The West Indian manatee (*Trichechus manatus*), which is listed as a federally endangered species, has been reported in the waters in Brunswick County. If work must be done during the period from June through October the enclosed guidelines, entitled "Precautions for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina" must be followed.

Compensatory Mitigation

*21. Compensatory mitigation for the unavoidable impacts to 21.448 acres of wetlands and 15 linear feet of perennial stream associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated January 12, 2007 from William D. Gilmore, EEP Director. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 0.052 acres of restoration equivalent riparian wetlands, 42.844 acres of restoration equivalent non-riparian wetlands, and 30 linear feet of restoration equivalent warm water stream channel in the Lumber River Basin in the Southern Outer Coastal Plain eco-region (Hydrologic Cataloging Unit 03040207 in accordance with Section X of the MOA. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA."

Conservation Easements

22. Permittee shall execute and cause to be recorded in the Brunswick County Register of Deeds the conservation easement between Reserve Development and the North Carolina Department of Transportation in accordance with the agreement between Reserve Development and the North Carolina Department of Transportation dated December 22, 2006 for the purpose of maintaining the conservation areas, as shown on the "North Bay", "East Bay", Wildlife Corridor 1", and Wildlife Corridor 2" as depicted in Exhibit A, in their natural state in perpetuity by September 30, 2007. The permittee shall enforce the terms of the conservation easement and, prior to conveyance of the property, shall take no action on the property described in the covenants inconsistent with the terms thereof. The permittee shall provide copies of the recorded conservation easement to the Corps of Engineers and the United States Environmental Protection Agency by October 30, 2007.

23. Permittee shall execute and cause to be recorded in the Brunswick County Register of Deeds the conservation easement in accordance with the agreement between Ladane Williamson and Dr. DeCarol Williamson and the North Carolina Department of Transportation dated November 20, 2006 for the purpose of maintaining the conservation areas, as shown on the "PR3", "West Bay",

in Exhibit A, in their natural state in perpetuity by September 30, 2007. The permittee shall enforce the terms of the conservation easement and, prior to conveyance of the property, shall take no action on the property described in the covenants inconsistent with the terms thereof. The permittee shall provide copies of the recorded conservation easement to the Corps of Engineers and the United States Environmental Protection Agency by October 30, 2007.

Access Control

24. An access point/alignment is located along the project at approximately -L- Station 192+55 (full movement) (ACC3). Additional access points/alignments at approximately -L- Station 72+65 (ACC2) and -L- Station 151+55 (ACC4) have been approved pursuant to the Memorandum of Understanding (MOU) between the NCDOT, FHWA, USEPA, and NCDENR. Any future changes to the control of access, beyond the three enumerated above, that result in either direct or indirect impacts to waters of the United States require written approval from the US Army Corps of Engineers.



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

Michael F. Easley, Governor

Charles S. Jones, Director

William G. Ross Jr., Secretary

February 23, 2007

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.

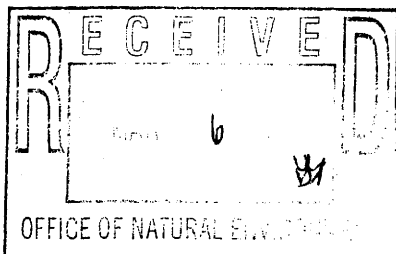
If you object to the permit or any of the conditions, you may request a hearing pursuant to NCGS 113A-121.1 or 113-229. Your petition for a hearing must be filed in accordance with NCGS Chapter 150B with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27611-6714, (919) 733-2698 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
Major Permits and Consistency Manager



Enclosure

1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: <http://dcm2.enr.state.nc.us>

An Equal Opportunity \ Affirmative Action Employer - 50% Recycled \ 10% Post Consumer Paper

Permit Class
NEW

Permit Number
20-07

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

Permit

for

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, 1598 Mail Service Center, Raleigh, NC 27699-1548

Authorizing development in Brunswick County at a new crossing of the Atlantic Intracoastal Waterway
and bridge replacement over Davis Canal on Oak Island, as requested in the permittee's application dated 8/8/06 (MP-1), 9/19/06 (MP-2 and MP-3) and 8/28/06 (MP-5), including the attached drawings as referenced in Condition No. 1 of this permit.

This permit, issued on 2/23/07, 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.

Second Bridge to Oak Island Project (TIP No. R-2245)

- 1) All work authorized by this permit must be carried out in accordance with the following workplan drawings, except as specifically modified herein:

1/2 size drawings: four (4) drawings dated 12/12/06; four (4) drawings dated 12/14/06; one (1) drawing dated 12/15/06; fourteen (14) drawings dated 12/18/06; seven (7) drawings dated 12/19/06; and thirty one (31) drawings dated 12/20/06.

8.5' X 11' Ocean Hazard Area Drawing, dated 9/14/06

Conservation Easement Map, dated 1/26/07

(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.

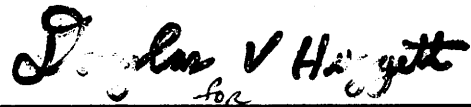
Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

No Expiration Date, pursuant to GS 136-44.7B

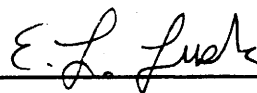
In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

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



Charles S. Jones, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.



Signature of Permittee

ADDITIONAL CONDITIONS

- 2) In order to protect juvenile finfish, shellfish, and anadromous fish, including the Shortnose Sturgeon, no in-water work shall be conducted from February 1st through September 30th of any year without prior approval of the NC Division of Coastal Management (DCM), in consultation with the NC Wildlife Resources Commission (WRC) and the NC Division of Marine Fisheries (DMF).
- 3) The permittee shall implement NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage, except as modified in Condition No. 2 of this permit.
- 4) The West Indian Manatee, *Trichechus manatus*, which is listed as a federally endangered species, has been reported in North Carolina waters. In order to protect the West Indian manatee all in-work should be done during the period from November 1 to May 31. If work must be done during the period from June through October the enclosed guidelines prepared by the U.S. Fish and Wildlife Service (USFWS) (rev. 06/2003), entitled "Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters" shall be followed.
- 5) The authorized project is located within a Primary Nursery Area (PNA). Therefore, in accordance with T15A:07H.0208 of the rules of the Coastal Resources Commission, no new dredging or excavation within the PNA shall be permitted. Dredging in any manner, including "kicking" with boat propellers is not authorized. This prohibition shall be applied and enforced throughout the construction and any following maintenance activities.
- 6) The NCDOT document "Best Management Practices for Bridge Demolition and Removal" (final 9/20/99) shall be followed during demolition and construction activities.
- 7) All materials and debris associated with the removal and/or construction of the existing, temporary, and/or new bridge, roadway asphalt, existing causeway, and associated materials shall be disposed of at an approved upland site or shall be recycled in an environmentally appropriate manner provided appropriate authorizations from any relevant state, federal, or local authorities are obtained.
- 8) Debris resulting from demolition of the existing bridge, including deck components, shall not enter wetlands or waters of the State, even temporarily.
- 9) The permittee shall exercise all available precautions in the day-to-day operation of the facility to prevent waste from entering the adjacent waters.
- 10) The permittee and/or his contractor shall provide for proper storage and handling of all oils, chemicals, etc., necessary to carry out the project.
- 11) The permanent and temporary work bridge piles shall be installed with vibratory hammer, pile driver, or drilling. Piles shall not be jetted. Should jetting of any bridge piles become necessary, a modification to this permit shall be required.
- 12) Live concrete shall not be allowed to contact waters of the State or water that will enter waters of the State.

ADDITIONAL CONDITIONS

- 13) Turbidity curtains shall be used to isolate all work areas from the waters of Davis Canal, including pile or casement installation, placement of riprap, excavation or filling. The turbidity curtains shall be installed parallel to the banks on each side of the river. The turbidity curtains shall be of sufficient length to extend to the substrate and shall encircle the immediate work area, however, they shall not extend across the water body or impede navigation. The turbidity curtains shall be removed when turbidity within the curtains reaches ambient levels. The turbidity curtains shall be properly maintained and retained in the water until work is complete and all of the planted work areas contained by the turbidity curtains have been stabilized by vegetation or other means.
- 14) No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. Drilling fluids shall be disposed of in an upland disposal site. Any water returning to the waters of the State shall be of sufficient quality so as to not pose a threat to aquatic organisms or otherwise violate State water quality standards.
- 15) Pilings from the existing bridge on Davis Canal shall be removed in their entirety, except that in the event that a piling breaks during removal and cannot be removed in its entirety, the piling may be cut off flush with the bed of the water body, and the NC Division of Coastal Management shall be notified of each occurrence within one working day.

Excavation and Fill

- 16) All excavated materials shall be confined above normal high 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.
- 17) No excavated or fill material shall be placed at any time in any vegetated wetlands or surrounding waters outside of the alignment of the fill area indicated on the work plan drawing(s).
- 18) Excavated material from the drilled-shaft construction shall be removed from the encasements directly into containment vessels.
- 19) All fill material shall be clean and free of any pollutants except in trace quantities.
- 20) All temporary fill shall be placed on geo-textile fabric to facilitate the total removal upon completion of the project.
- 21) There shall be no clearing or grubbing of wetlands outside of the area(s) indicated on the attached workplan drawing(s) without prior approval from the N.C. Division of Coastal Management.
- 22) Placement of riprap shall be limited to the areas as depicted on the attached work plan drawings. It shall be of a size sufficient to prevent its movement from the authorized alignment by wave or current action. The riprap material shall be free from loose dirt or any pollutant and shall consist of clean rock or masonry materials, such as but not limited to, granite, marl, or broken concrete.

ADDITIONAL CONDITIONS**Bulkhead**

- 23) The bulkhead shall be structurally tight so as to prevent seepage of fill materials through the structure.
- 24) The bulkhead shall be solid and constructed of treated wood, concrete slabs, metal sheet piles or other suitable materials approved by the N.C. Division of Coastal Management.
- 25) The bulkhead shall be in place prior to any backfilling activities.
- 26) All backfill material shall be obtained from a high ground source. No unconfined backfill shall be discharged into estuarine or public trust waters. The fill material shall be clean and free of any pollutants except in trace quantities.

Sedimentation and Erosion Control

- 27) The permittee shall follow "Best Management Practices for the Protection of Surface Waters" and shall also implement sedimentation and erosion control measures sufficient to protect aquatic resources.
- 28) 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.).
- 29) 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.
- 30) In order to protect water quality, runoff from construction shall not visibly increase the amount of suspended sediments in adjacent waters.
- 31) Any work conducted within the portion of this project that is in a High Quality Water Zone shall comply with the Design Standards in Sensitive Watersheds, 15A NCAC 4B .0124.

Avoidance and Minimization Measures

- 32) The permittee shall implement in its entirety the Special Control of Access provisions of the Memorandum of Understanding (MOU) between the NC Department of Transportation (NCDOT), the Federal Highway Administration (FHWA), the US Environmental Protection Agency (EPA), and the NC Department of Environment and Natural Resources (NCDENR). Any additional access points/alignments shall be approved pursuant to the MOU and the NC Division of Coastal Management shall be contacted to determine whether any additional approvals are necessary.

ADDITIONAL CONDITIONS

- 33) In accordance with commitments made by the permittee to address avoidance and minimization measures, the permittee shall place approximately 880 acres under conservation easement. The conservation easements shall be made up of properties of two adjacent property owners. The properties shall include properties known as: the West Bay; the western end of East Bay; a 300-foot wildlife corridor connecting the two bays; three future park areas (known as PR3, PR11, and PR13); the North Bay; the remainder of East Bay; and an additional 300-foot wildlife corridor connecting East Bay and North Bay. These parcels are represented in the map entitled, "R-2245 Second Bridge to Oak Island Water Quality Certification Application Proposed Conservation Easement Details", dated 1/26/07, which was included in supplemental information contained in the correspondence of 1/26/07. The conservation easements shall be recorded in the office of the Brunswick County Register of Deeds and a copy of the recorded conservation easements shall be provided to DCM by September 30, 2007.

Mitigation

- 34) In accordance with Condition No. 20 of the DWQ 401 Water Quality Certification, compensatory mitigation for impacts to 0.026 acres of riverine wetlands and 21.422 acres of non-riverine wetlands is required at a 2:1 ratio. The Ecosystem Enhancement Program (EEP) has agreed to implement the mitigation for this project.
- 35) In accordance with project commitments made by the permittee, in coordination with the Town of Oak Island, the loss of the Middleton Avenue access to the Atlantic Intracoastal Waterway shall be mitigated by the funding of the enhancement of existing public access points located at NE 2nd Street and NW 2nd Street. The permittee shall provide documentation to DCM of the specific actions taken to mitigate for the loss of the Middleton Avenue public access point and/or a copy of the signed agreement to mitigate for the loss of the Middleton Avenue access point within one year of the date of issuance of this permit.
- 36) Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent the temporary wetland impact areas from re-attaining jurisdictional wetland status, the permittee shall provide an annual update on the wetland areas temporarily impacted by this project. This annual update shall consist of photographs and a brief report on the progress of these temporarily impacted areas in re-attaining wetland jurisdictional status. Three years after project completion, the permittee shall schedule an agency field meeting with DCM, the DWQ, USACE, and the WRC to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If at the end of 3 years the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, DCM and the above listed agencies shall determine whether compensatory wetland mitigation shall be required.
- 37) In accordance with project commitments referenced in the permit application, native vegetation shall be planted along roadsides to deter the spread of exotic and invasive species.

Utility Line Relocations

- 38) Any relocation of utility lines that 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.

ADDITIONAL CONDITIONS**Stormwater Management**

- 39) The Division of Water Quality (DWQ) approval of this project under stormwater management rules of the Environmental Management Commission is covered by way of Stormwater Permit No. SW8 060118, which was issued on 5/15/06. Any violation of the permit approved by the DWQ will be considered a violation of this CAMA permit.

Development within the Ocean Hazard Area of Environmental Concern

- 40) Prior to the initiation of construction within the Ocean Hazard AEC, a Division representative shall approve the first line of stable, natural vegetation and the corresponding setbacks. In this case, the first line of stable natural vegetation is defined as the vegetation line that existed prior to the onset of the most recent large-scale beach renourishment project. These setback determinations shall replace those done at the time the permit application was processed and approved. Construction shall begin within sixty days of this determination or the measurement is void and shall be re-established. In the case of a major shoreline change within that period, a new setback determination shall be required before construction begins.
- 41) Any structure within the Ocean Hazard Area of Environmental Concern shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in .0308(2)(B). The structure(s) shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach renourishment takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under Rule .0308(a)(2) of this Section.

General

- 42) If it is determined that additional permanent and/or temporary impacts will occur that are not shown on the attached permit drawings, additional authorization from DCM shall be required.
- 43) This permit does not eliminate the need to obtain any additional permits, approvals or authorizations that may be required, including, but not limited to, any approvals by the USACE.
- 44) The issuance of this permit was based in part on information resulting from coordination between the permittee and the U.S. Coast Guard (USCG). In order to ensure the safety of vessels utilizing the Atlantic Intracoastal Waterway, the permittee shall implement any and all navigational safety requirements of the USCG.
- 45) Unless specifically altered herein, any mitigative measures or environmental commitments specifically made by the permittee in the CAMA permit application, the Final Environmental Impact Statement dated 4/30/04, and/or during the NEPA/404 Merger Process, shall be implemented, regardless of whether or not such commitments are addressed by individual conditions of this permit.

ADDITIONAL CONDITIONS

- 46) The N.C. Division of Water Quality (DWQ) authorized the proposed project (DWQ Project No. 20070047) on February 19, 2007 under Water Quality Certification No. 3608. Any violation of the Certification approved by the DWQ shall be considered a violation of this CAMA permit.
- 47) The permittee and/or contractor shall contact the N.C. Division of Coastal Management, Transportation Project Coordinator at (252) 808-2808 to schedule a pre-construction conference prior to project initiation.

NOTE: The U.S. Army Corps of Engineers assigned COE Action ID No. 199606041 to the project.



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.

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.

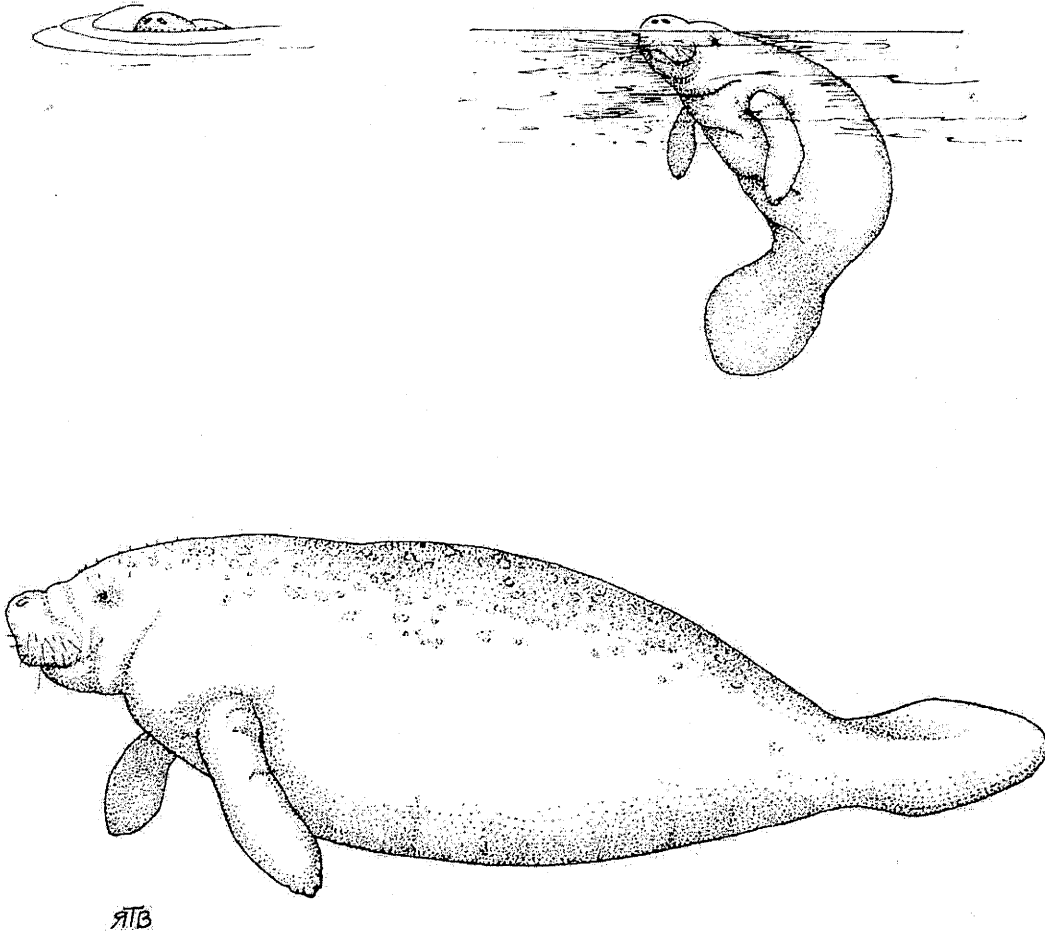
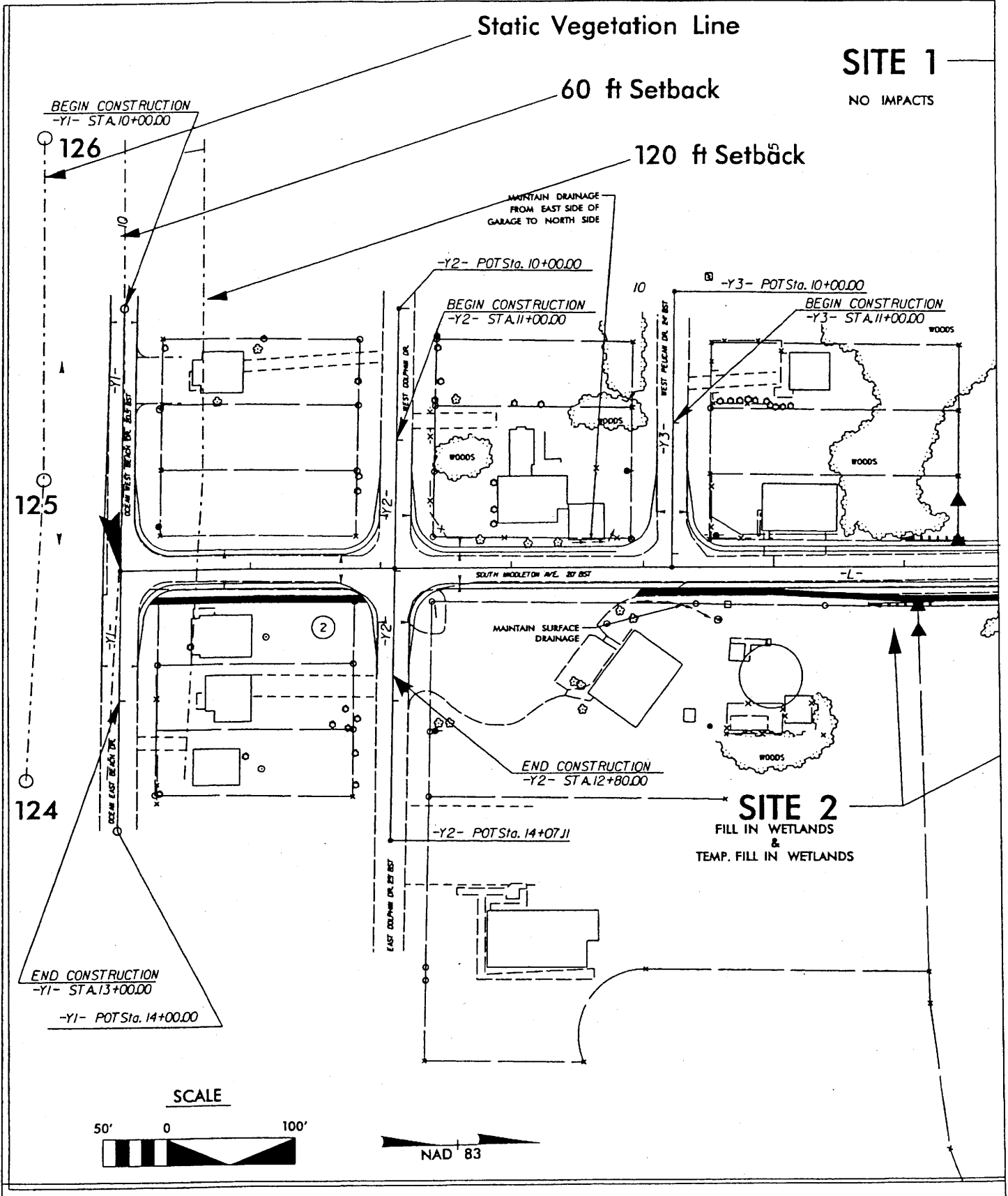
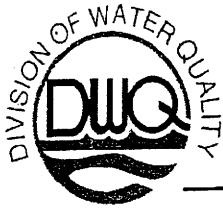


Illustration used with the permission of the North Carolina State Museum of Natural Sciences.
Source: Clark, M. K. 1987. Endangered, Threatened, and Rare Fauna of North Carolina: Part I. A re-evaluation of the mammals. Occasional Papers of the North Carolina Biological Survey 1987-3. North Carolina State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





DAI 199506041

250

North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

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

February 23 2007
RECEIVED

FEB 23 2007
REGULATORY
WILM. FLD. OFC.

Dr. Gregory J. Thorpe, PhD., Manager
Project Development and Environmental Analysis Branch
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Correction to 401 Water Quality Certification for TIP Project No. R-2245, DWQ Project No. 20070047, Individual Certification No. 3608

Dear Dr. Thorpe:

This letter is in regards to the Individual 401 Water Quality Certification issued on February 19, 2007 for the referenced project authorizing stream and wetland impacts for the construction of a second bridge to Oak Island over the Atlantic Intracoastal Waterway in Brunswick County. Condition 2 of the Water Quality Certification for the referenced project should be replaced with the following condition:

2. Although all three access breaks are approved by the MOU, only Access 3 and Access 4 are approved for construction under this Water Quality Certification. Access 3 shall be located at -L- Station No. 192+55.00 and shall maintain control of access for 100 feet of width for approximately 675 linear feet of roadway from the eastern edge of the mainline right-of-way. Small animal passage shall be provided under Access 3 by four 60" by 46" corrugated aluminum pipes with a continuous aluminum barrier at both ends. The small animal passage pipes shall be buried one foot deep and backfilled with one foot of soil. Access 4 shall be located at -L- Station No. 151+55.00 and shall maintain control of access for 100 feet of width for approximately 1,500 linear feet of roadway from the western edge of the mainline right-of-way.

Please attach a copy of this letter with any copies of the original Water Quality Certification. All other conditions written into the previous Water Quality Certification for this project dated February 19, 2007 still apply except where superceded by this correction. If you have any questions please contact John Hennessy at 919-733-5694.

Sincerely,

Alan Klimek,
Director

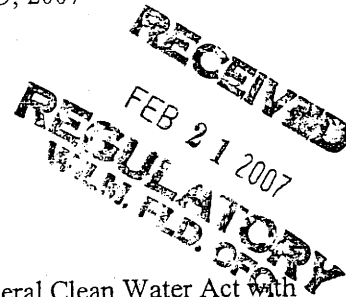
Cc: Dave Timpy, US Army Corps of Engineers, Wilmington Field Office
Steve Sollod, NC DCM
Chris Militscher, US EPA
Kathy Matthew, US EPA
Travis Wilson, NC WRC
Gary Jordan, US FWS
Ken Averitte, NC DWQ, Fayetteville Regional Office
File Copy



Michael F. Easley, Governor
 William G. Ross Jr., Secretary
 North Carolina Department of Environment and Natural Resources
 Alan W. Klimek, P.E. Director
 Division of Water Quality

February 19, 2007

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



Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with
 ADDITIONAL CONDITIONS Proposed Construction of Second Bridge to Oak Island in
 Brunswick County, Federal Aid Project No. STP-1105(6), State Project No. 8.2231201, TIP
 Project No. R-2245.
 DWQ Project No. 20070047, Individual Certification No. 3608

Dear Dr. Thorpe:

Attached hereto is a copy of Certification No. 3608 issued to The North Carolina Department of
 Transportation dated February 19, 2007.

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

Sincerely,

A handwritten signature in black ink that reads "Alan W. Klimek".

Alan W. Klimek, P.E.
 Director

Attachments

cc: Dave Timpy, US Army Corps of Engineers, Wilmington Field Office
 Jennifer Frye, US Army Corps of Engineers, Wilmington Field Office
 Chris Militscher, Environmental Protection Agency
 Kathy Matthews, Environmental Protection Agency
 Travis Wilson, NC Wildlife Resources Commission
 Gary Jordan, US Fish and Wildlife Service
 Steve Sollod, Division of Coastal Management
 Ken Averitte, DWQ Fayetteville Regional Office
 File Copy



William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

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

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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 22.798 acres of jurisdictional wetlands and 354 linear feet of jurisdictional streams in Brunswick County. The project shall be constructed pursuant to the application dated received January 8, 2007 and the subsequent supplemental information submittals dated received January 19, 2007 and January 30, 2007. The authorized impacts are as described below:

Stream Impacts in the Lumber River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
11	207	52	0	0	259	0
34	0	0	15	80	95	0
Total	207	52	15	80	354	0

Total Stream Impact for Project: 354 linear feet

Wetland Impacts in the Lumber River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Drawdown Effect (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
2	0.026	0.027	0	0	0	0	0	0.053
4	0	0.019	0	0	0	0	0	0.019
6	1.348	0	0	0	0.174	0.082	0	1.604
8	0.046	0	0	0	0.020	0.014	0	0.080
9	0.099	0	0	0	0.007	0	0	0.106
10	0.108	0	0	0	0.029	0.035	0	0.172
11	1.203	0	0	0	0.204	0.151	0	1.558
12	1.013	0	0	0	0.159	0.055	0	1.227
13	0.029	0	0	0	0.041	0.015	0	0.085
14	0.669	0	0	0	0.081	0.023	0	0.773
15	0.003	0	0	0	0.007	0.014	0	0.024
16	0.231	0	0	0	0.045	0	0	0.276
17	0.325	0	0	0	0.040	0.030	0	0.395
18	0.105	0	0	0	0.042	0.035	0	0.182
19	1.070	0	0	0	0.091	0	0	1.161
20	0.142	0	0	0	0.026	0	0	0.168
21	2.388	0	0	0	0.385	0.125	0	2.898
22	1.313	0	0	0	0.244	0.279	0	1.836
23	0.161	0	0	0	0.021	0.008	0	0.190
24	2.889	0	0	0	0.456	0.089	0	3.434

One
North Carolina
Naturally



25	2.497	0	0	0	0.411	0.167	0	3.075
26	0	0	0	0	0	0.013	0	0.013
27	0.004	0	0	0	0.021	0.007	0	0.032
28	0	0	0	0	0	0.002	0	0.002
29	0.682	0	0	0	0.123	0.019	0	0.824
30	0.687	0	0	0	0.297	0.091	0	1.075
31	0.073	0	0	0	0.015	0	0	0.088
32	0.514	0	0.671	0.166	0	0	0	1.351
33	0.047	0	0	0	0	0.050	0	0.097
Total	17.672	0.046	0.671	0.166	2.939	1.304	0	22.798

Total Wetland Impact for Project: 22.798 acres.

Open Water Impacts in the Lumber River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
3	0.001	0.029	0.030
4	0	0.006	0.006
5	0.068	0.012	0.080
Total	0.069	0.047	0.116

Total Open Water Impact for Project: 0.116 acres.

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

This approval is only valid for the purpose and design that you submitted in your application dated received January 8, 2007 and the subsequent supplemental information submittals dated received January 19, 2007 and January 30, 2007. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.



Condition(s) of Certification:

Project Specific Condition(s)

- Control of access shall be maintained along the proposed road corridor. Control of access shall be maintained through the Memorandum of Understanding (MOU) agreed to by Federal Highways Administration (FHWA), NC Department of Transportation (NC DOT), NC Department of Environment and Natural Resources (NC DENR), and US Environmental Protection Agency (US EPA) that was submitted in your application regarding the control of access procedures. The MOU states that a "Special Control of Access" symbol shall be included on all roadway plans for the Second Bridge to Oak Island. The symbol shall denote that special approval is necessary to break access along the road corridor. This special approval requires unanimous agreement in writing of the signatory agencies (FHWA, NC DOT, NC DENR, US EPA) to allow the break in access control. The MOU establishes three designated access breaks as follows:

Access	Centerline of Access Break	East or West of Mainline
Access 2	-L- Station 72+65.00	West
Access 3	-L- Station 192+55.00	East
Access 4	-L- Station 151+55.00	West

These access breaks are approved and not subject to the procedures of the MOU.

- Although all three access breaks are approved by the MOU, only Access 3 and Access 4 are approved for construction under this Water Quality Certification. Access 3 shall be located at -L- Station No. 192+55.00 and shall maintain control of access for 100 feet of width for approximately 1,000 linear feet of roadway from the eastern edge of the mainline right-of-way. Small animal passage shall be provided under Access 3 by four 60" by 46" corrugated aluminum pipes with a continuous aluminum barrier at both ends. The small animal passage pipes shall be buried one foot deep and backfilled with one foot of soil. Access 4 shall be located at -L- Station No. 151+55.00 and shall maintain control of access for 100 feet of width for approximately 1,500 linear feet of roadway from the western edge of the mainline right-of-way.
- Small animal passage shall be provided under the proposed subdivision road intersecting the wildlife corridor on the Williamson property. The small animal passage shall be constructed in accordance with section 3(b) of the notarized landowner agreement dated November 20, 2006 submitted in your application.
- Access 2 will provide landowner access to MAS Properties, LLC. Access 2 shall be located at -L- Station No. 72+65.00 and shall maintain control of access for 100 feet of width for approximately 500 linear feet of roadway from the western edge of the mainline right-of-way. If the final design plans for Access 2 include impacts to streams or wetlands, MAS Properties, LLC shall submit five copies of the application for a 401 Water Quality Certification and required fees to the NC Division of Water Quality for approval. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters. No construction activities related to Access 2 that impact any wetlands, streams, or surface waters, shall begin until after the permittee applies for, and receives written concurrence in the form of a 401 Water Quality Certification from the NC Division of Water Quality.



future landowners of the property accessed by Access 2 are also subject to the requirements of this condition.

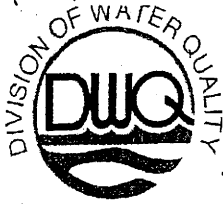
5. NC DOT shall provide a gated driveway access point at approximately -L- Station No. 73+00 Rt for the US Army Corps of Engineers to access maintenance areas for the Atlantic Intracoastal Waterway.
6. NC DOT shall adhere to all appropriate in-water work moratoriums (including the use of pile driving) prescribed by the National Marine Fisheries Service and the NC Division of Marine Fisheries. No in-water work is permitted between February 1 and September 30 of any year, without prior approval from the NC Division of Water Quality, the National Marine Fisheries Service, and the NC Division of Marine Fisheries. In addition, the NC DOT shall conform with the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage" (May 12, 1997) at all times.
7. The bridge over Davis Canal shall be constructed using driven piles. The bridge over the Atlantic Intracoastal Waterway shall be constructed using drilled shaft pile installation. Jetting shall not be used to install bridge piles at either location.
8. NC DOT shall follow the "Precautionary Guidelines for General Construction in Areas that may be used by the West Indian Manatee in North Carolina" in accordance with US Fish and Wildlife Service requirements.
9. Ten small animal passage pipes shall be constructed under the proposed mainline road between Station Nos. 147+00 and 210+00. The animal passage pipes shall be 48" reinforced concrete pipes or 60" by 46" corrugated aluminum pipes and shall be buried one foot deep and backfilled with one foot of soil.
10. For all construction activities occurring in high quality water (HQW) watersheds, NC DOT shall use *Design Standards in Sensitive Watersheds* [15A NCAC 4B .0124(a)-(e)]. All land disturbing activities south of -L- Station No. 141+00 are subject to *Design Standards in Sensitive Watersheds*. However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
11. If multiple pipes or barrels are required, they should 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.
12. As part of the avoidance and minimization strategy, NC DOT shall place approximately 880 acres under a conservation easement. The conservation easements shall be made up of properties from two separate landowners, the Williamsons and the Reserve Development Company (RDC). The Williamson properties shall include West Bay, the western end of East Bay, a 300-foot wildlife corridor connecting the two bays, and three future park areas (PR3, PR11, PR13). The RDC properties shall include North Bay, the remainder of East Bay, and a 300-foot wildlife corridor connecting East Bay and North Bay. These properties are shown on Exhibit A of the respective landowner agreements and on the map titled "R-2245 Second Bridge



to Oak Island Water quality Certification Application Proposed Conservation Easement Details” dated January 26, 2007. The approximate conservation easement wetland and upland acreages are as follows:

Landowner	Land Type	Acreage
Williamson		
	Wetland	410
	Upland	20
	Total	430
Reserve Development Co.		
	Wetland	290
	Upland	160
	Total	450
Total		880

13. The conservation easements for the Williamson property and the RDC property shall be signed and recorded with the Brunswick County Register of Deeds by September 30, 2007.
14. The property adjacent to -L- Station No. 199+30 Rt to 208+30 Rt has been obtained by NC DOT as part of the 300-foot wide wildlife corridor between the East Bay and North Bay. This property shall remain undisturbed and shall be noted in the NC DOT roadway plans as part of the wildlife corridor. In addition, the parcel shall be recorded as a mitigation site in NC DOT’s Mitigation Site Geodatabase. In the event that the parcel is transferred to another landowner, a conservation easement shall be placed on the parcel in perpetuity.
15. No work shall be performed in jurisdictional waters prior to obtaining a State Stormwater Permit.
16. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be re-vegetated with appropriate native species.
17. Bridge deck drains should not discharge directly into streams. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*. Stormwater shall be managed in accordance with your State Stormwater Permit issued by DWQ.
18. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact



William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

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

the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

19. Riprap should 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.
- * 20. Compensatory mitigation for impacts to 0.026 acres of riverine wetlands and 21.422 acres of non-riverine wetlands (total of 21.448 acres) is required at a 2:1 ratio. Therefore, mitigation for 0.052 acres of riverine wetlands and 42.844 acres of non-riverine 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 January 12, 2007 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.

General Condition(s)

21. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
22. 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.
23. The dimension, pattern and profile of the stream above and below the crossing should not be modified. Disturbed floodplains and streams should be restored to natural geomorphic conditions.
24. 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.
25. 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.
26. 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.
27. Heavy equipment may be operated within the stream channels however, its usage shall be minimized.



28. 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.
29. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
30. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
31. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.
32. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.
33. A copy of this Water Quality Certification shall be posted on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
34. 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.
35. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
36. Native riparian vegetation (ex., river birch, green ash, water tupelo, blackgum, redbay, sycamore, swamp chestnut oak, tag alder, common pawpaw, ironwood, sweet pepperbush, titi, Virginai willow, doghobble) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
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 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.



39. 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*.
- 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.
 - 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*.
 - The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
40. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored upon completion of the project.

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

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

This the 19th day of February 2007

DIVISION OF WATER QUALITY

Alan W. Klimek, P.E.
Director

WQC No. 3608



Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

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

261

May 15, 2006

Mr. Ray Lovingood, P.E.
NCDOT Hydraulics Unit
1590 Mail Service Center
Raleigh, NC 27699-1590

RECEIVED

MAY 18 2006

**Subject: Stormwater Permit No. SW8 060118
R-2245 2nd Oak Island Bridge and Road
High Density Project
Brunswick County**

**DIVISION OF HIGHWAYS
HYDRAULICS UNIT**

Dear Mr. Lovingood:

The Wilmington Regional Office received a complete Stormwater Management Permit Application for R-2245 2nd Oak Island Bridge and Road on April 28, 2006. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW8 060118 dated May 15, 2006, for the construction of the subject project.

This permit shall be effective from the date of issuance until May 15, 2016, and shall be subject to the conditions and limitations as specified therein. Please pay special attention to the Operation and Maintenance requirements in this permit. Failure to establish an adequate system for operation and maintenance of the stormwater management system will result in future compliance problems.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within sixty (60) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, NC 27611-7447. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact Linda Lewis, or me at (910) 796-7215.

Sincerely,

Edward Beck
Regional Supervisor
Surface Water Protection Section

ENB/arl: S:\WQS\STORMWAT\PERMIT\060118.may06

cc: Max Price, P.E., NCDOT Hydraulics Unit
Delaney Aycok, Brunswick County Building Inspections
Brian Wrenn, NCDOT/DENR Coordinator
Doug Huggett, DCM
Linda Lewis
Wilmington Regional Office
Central Files

One
North Carolina
Naturally

OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number
4-18-2006	\$420 ⁰⁰	SWB 060118

262
State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
LINEAR ROADWAY PROJECT

This form may be photocopied for use as an original.

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes this application form, a supplement form for each BMP proposed (see Section V), design calculations, and plans and specifications showing all road and BMP details.

I. PROJECT INFORMATION

NCDOT Project Number: R-2245 County: BRUNSWICK
Project Name: NEW ROUTE FROM SR-1104 (OCEAN BEACH DRIVE) TO NC-211
Project Location: FROM OAK ISLAND TO MIDWAY SECOND BRIDGE TO OAK ISLAND
Contact Person: RAY LOVINGOOD Phone: 1.919.250.4100 Fax: 1.919.250.4108
Receiving Stream Name: INTRACOASTAL River Basin: LUMBER Class: SA
Proposed linear feet of project: WATERWAY & DAVIS CANAL 23,865

Proposed Structural BMP and Road Station (attach a list of station and BMP type if more room is needed):

-L STA 25+00 RT, STORM CHAMBER ; -L STA 48+00 LT ; RT INFILTRATION
BASIN

Type of proposed project: (check all that apply):

- New Widening 2 lane* 4 lane* Curb and Gutter Bridge Replacement
 Other (Describe) _____

*2 lane and 4 lane imply that roadside ditches are used unless Curb and Gutter is also checked.

II. REQUIRED ITEMS CHECKLIST

Initial in the space provided below to indicate the following design requirements have been met and supporting documentation is attached. Supporting documentation shall, at a minimum, consist of a brief narrative description including (1) the scope of the project, (2) how the items below are met, (3) how the proposed best management practices minimize water quality impacts, and (4) any significant constraints and/or justification for not meeting a, b, c and d to the maximum extent practicable.

Designer's Initials

- RDL a. The amount of impervious surface has been minimized as much as possible.
RDL b. The runoff from the impervious areas has been diverted away from surface waters as much as possible.
RDL c. Best Management Practices are employed which minimize water quality impacts.
RDL d. Vegetated roadside ditches are 3:1 slope or flatter.

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

UNDERGROUND INFILTRATION TRENCH SUPPLEMENT

This form may be photocopied for use as an original

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes a stormwater management permit application, an underground infiltration trench supplement for each system, design calculations, and plans and specifications showing all stormwater conveyances and system details.

I. PROJECT INFORMATION

SECOND BRIDGE TO OAK ISLAND

Project Name : NEW ROUTE FROM SR-1104 (OCEAN BEACH DRIVE) TO NC-211

Contact Person: RAY LOVINGGOOD Phone Number: (919) 250. 4100

For projects with multiple infiltration systems, a supplement form must be completed for each system. This worksheet applies to: Trench STORM CHAMBER in Drainage Area DAVIS CANAL BRIDGE
(from plans) (from Form SWU-101)

II. DESIGN INFORMATION (attach supporting calculations/documentation):

Soils Report Summary (based upon an actual field investigation and soil borings)

Soil Type FILL
Infiltration Rate 23.3 in/hr or cf/hr/sf (circle appropriate units)
SHWT Elevation < 11 fmsl (Seasonal High Water Table elevation)

Trench Design Parameters

Design Volume 1,765 c.f.
Design Storm 1.5 inch event (1.5 inch event for SA waters, 1 inch event for others)
Drawdown Time _____ days
Perforated Pipe Size 51" w x 30" h inch diameter storm chamber
Perforated Pipe Length 170 ft.
No. Observation Wells _____ (may be required on a case-by-case basis)
Stone Type (if used) WASHED # 57
Stone Void Ratio 40%

Trench Elevations (in feet mean sea level)

Bottom Elevation 11.75' BOTTOM fmsl OF STORM CHAMBER
Storage/Overflow Elevation 14.25' fmsl

- _____ s. Observation well(s) are provided (case-by-case basis).
- RDL t. Vegetated filter is provided for overflow (50 feet for SA waters, 30 feet for other waters) and detail is shown on plans.
- RDL u. A benchmark for checking sediment accumulation is provided.

IV. UNDERGROUND INFILTRATION TRENCH OPERATION AND MAINTENANCE AGREEMENT

1. After every runoff producing rainfall event and at least monthly inspect the bypass/overflow structure for blockage and deterioration and the infiltration system for erosion, trash accumulation, grass cover, and general condition.
2. Repair eroded areas immediately, re-seed as necessary to maintain adequate vegetative cover, mow vegetative cover to maintain a maximum height of six inches, and remove trash and blockages as needed to maintain system performance.
3. Remove accumulated sediment annually or when depth is reduced to 75% of the original design depth. Restore depth to original design depth without over-excavating. Over-excavating may cause the required water table separation to be reduced and may compromise the ability of the system to perform as designed.
4. The water level in any monitoring wells will be recorded after a 1 inch rainfall event and at least once a month. Chronic high water table elevations (within 1 foot of the bottom of the system for a period of three months) shall be reported to DWQ immediately.
5. If DWQ determines that the system is failing, the system will immediately be repaired or replaced to original design specifications. If the system cannot be repaired to perform its design function, other stormwater control devices as allowed by NCAC 2H .1000 must be designed, approved and constructed.
6. Remove accumulated sediment from the infiltration system annually or when depth in the unit is reduced to 75% of the original design depth. The system shall be restored to the original design depth without over-excavating. Over-excavating may cause the required water table separation to be reduced and may compromise the ability of the system to perform as designed. Removed sediment shall be disposed of in an appropriate manner and shall not be handled in a manner that will adversely impact water quality (i.e. stockpiling near a stormwater treatment device or stream, etc.).

A benchmark shall be established in the infiltration system. The benchmark will document the original design depth so that accurate sediment accumulation readings can be taken. The measuring device used to determine the depth at the benchmark shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the depth at the benchmark reads 0.5', the accumulated sediment shall be removed from the system.

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

INFILTRATION BASIN SUPPLEMENT

This form may be photocopied for use as an original

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes a stormwater management permit application, an infiltration basin supplement for each system, design calculations, soils report and plans and specifications showing all stormwater conveyances and system details.

I. PROJECT INFORMATION

SECOND BRIDGE TO OAK ISLAND

Project Name : NEW ROUTE FROM SR 1104 (OCEAN BEACH DRIVE) TO NC 211

Contact Person: RAY LOVINGOOD Phone Number: (919) 250 4100

INTRACOASTAL WATERWAY

This worksheet applies to: Basin No. INFILTRATION BASIN in Drainage Area BRIDGE
(as identified on plans) (from Form SWU-101)

II. DESIGN INFORMATION - Attach supporting calculations/documentation. The soils report must be based upon an actual field investigation and soil borings. County soil maps are not an acceptable source of soils information. All elevations shall be in feet mean sea level (fmsl).

Soils Report Summary

Soil Type WANDO VARIANT
Infiltration Rate 64.4 in/hr or cf/hr/sf (circle appropriate units)
SHWT Elevation < 20.5 fmsl (Seasonal High Water Table elevation)

Basin Design Parameters

Design Storm 1.5 inch (1.5 inch event for SA waters, 1 inch event for others)
Design Volume 7,350 c.f.
Drawdown Time 1 days

Basin Dimensions

Basin Size 100 ft. x 34 ft. = 3,400 sq. ft. (bottom dimensions)
Basin Volume Provided 22,200 c.f. $V + 17^2\pi$

Basin Elevations

Bottom Elevation 23.0 fmsl
Storage Elevation 24.35 fmsl (weir elevation)
Top Elevation 26.0 fmsl

IV. INFILTRATION BASIN OPERATION AND MAINTENANCE AGREEMENT

- 1. After every runoff producing rainfall event and at least monthly inspect the infiltration system for erosion, trash accumulation, vegetative cover, and general condition.
- 2. Repair eroded areas immediately, re-seed as necessary to maintain adequate vegetative cover, mow vegetated cover to maintain a maximum height of six inches, and remove trash as needed.
- 3. After every runoff producing rainfall event and at least monthly inspect the bypass, inflow and overflow structures for blockage and deterioration. Remove any blockage and repair the structure to approved design specifications.
- 4. Remove accumulated sediment from the pretreatment system and infiltration basin annually or when depth in the pretreatment unit is reduced to 75% of the original design depth. The system shall be restored to the original design depth without over-excavating. Over-excavating may cause the required water table separation to be reduced and may compromise the ability of the system to perform as designed. Removed sediment shall be disposed of in an appropriate manner and shall not be handled in a manner that will adversely impact water quality (i.e. stockpiling near a stormwater treatment device or stream, etc.).

A benchmark shall be established in the pretreatment unit. The benchmark will document the original design depth so that accurate sediment accumulation readings can be taken. The measuring device used to determine the depth at the benchmark shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the design depth reads 0.3 feet in the pretreatment unit, the sediment shall be removed from both the pretreatment unit and the infiltration basin.

- 5. If the Division determines that the system is failing, the system will immediately be repaired to original design specifications. If the system cannot be repaired to perform its design function, other stormwater control devices as allowed by NCAC 2H .1000 must be designed, approved and constructed.

I acknowledge and agree by my signature ^{BY THE NCDOT} below that I am responsible for the performance of the five maintenance procedures listed above. I agree to notify DWQ of any problems with the system or prior to any changes to the system or responsible party.

Print Name and Title: DAVID L. THOMAS, P.E. DIVISION MAINTENANCE ENGR.

Address: 124 DIVISION DRIVE WILMINGTON NC 28401

Phone: 910 251-5724 Date: 12/1/05

Signature: [Handwritten Signature]

Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

I, _____, a Notary Public for the State of _____, County of _____, do hereby certify that _____ personally appeared before me this _____ day of _____, _____, and acknowledge the due execution of the forgoing infiltration basin maintenance requirements. Witness my hand and official seal,

SEAL

My commission expires _____

267

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

STATE STORMWATER MANAGEMENT PERMIT

HIGH DENSITY DEVELOPMENT

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

PERMISSION IS HEREBY GRANTED TO

NCDOT

R-2245 2nd Oak Island Bridge and Road

New Route from SR 1004 Oak Island to NC 211, Brunswick County

FOR THE

construction, operation and maintenance of an infiltration basin and StormTech (or equivalent) underground infiltration chambers, in compliance with the provisions of 15A NCAC 2H .1000 (hereafter referred to as the "*stormwater rules*") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit.

This permit shall be effective from the date of issuance until May 15, 2016, and shall be subject to the following specified conditions and limitations:

I. DESIGN STANDARDS

1. This permit is effective only with respect to the nature and volume of stormwater described in the application and other supporting data.
2. This stormwater system has been approved for the management of stormwater runoff as described in Sections I.6 and I.7 on page 3 of this permit. The stormwater controls have been designed to handle the runoff from 61,630 ft² and 14,861 ft² respectively, of impervious area. Each infiltration facility must be operated with a 50' vegetated filter.
3. The remainder of the linear road project will utilize grassed swales for treatment of the runoff.
3. The drainage area for each proposed stormwater facility will be limited to the amount of built-upon area indicated on page 3 of this permit, and per approved plans.
4. All stormwater collection and treatment systems must be located within the DOT right-of-way or in recorded easements. The final plats for the project will be recorded showing all such required easements, in accordance with the approved plans.

268

5. The runoff from all built-upon area within the permitted drainage area of this project must be directed into the permitted stormwater control system.
6. The infiltration basin provides treatment for the runoff from the southern half of the larger bridge. The following design criteria have been provided in the infiltration basin and must be maintained at design condition:

a.	Drainage Area, acres:	1.415
	Onsite, ft ² :	61,630
	Offsite, ft ² :	0
b.	Total Impervious Surfaces, ft ² :	61,630
c.	Design Storm, inches:	1.5
d.	Basin Depth, feet:	3.0
e.	Bottom Elevation, FMSL:	23.0
f.	Bottom Surface Area, ft ² :	4,308
g.	Bypass Weir Elevation, FMSL:	24.5
h.	Permitted Storage Volume, ft ³ :	8,668
i.	Type of Soil:	Wando Variant
j.	Expected Infiltration Rate, in/hr:	64
k.	Seasonal High Water Table, FMSL:	20.5
l.	Time to Draw Down, hours:	1
m.	Receiving Stream/River Basin:	Intracoastal Waterway / Lumber
n.	Stream Index Number:	LBR59 15-25
o.	Classification of Water Body:	"SA"

7. The StormTech chambers provide treatment for the runoff from the smaller bridge. The following design criteria have been provided in the Stormtech Chamber System (or equivalent) and must be maintained at design condition:

a.	Drainage Area, acres:	0.34
	Onsite, ft ² :	14,861
	Offsite, ft ² :	0
b.	Total Impervious Surfaces, ft ² :	14,861
c.	Design Storm, inches:	1.5
d.	Chamber Volume, ft ³ :	74.9 with 6" stone 81.6 with 12" stone 88.4 with 18"
e.	Bottom Elevation, FMSL:	11.75
g.	Bypass Weir Elevation, FMSL:	14.25
h.	Permitted Storage Volume, ft ³ :	1,765
i.	Required number of StormTech units:	24 with 6" stone 22 with 12" stone 20 with 18" stone
j.	Type of Soil:	Dredge Spoil
k.	Expected Infiltration Rate, in/hr:	23
l.	Seasonal High Water Table, FMSL:	<11
m.	Time to Draw Down, hours:	<1
n.	Receiving Stream/River Basin:	ICWW (Davis Canal) / Lumber
o.	Stream Index Number:	LBR59 15-25
p.	Classification of Water Body:	"SA"

II. SCHEDULE OF COMPLIANCE

1. The stormwater management system shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surface.
2. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.

269

3. The facilities shall be constructed as shown on the approved plans. This permit shall become voidable unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
4. The permittee shall at all times provide the operation and maintenance necessary to assure the permitted stormwater system functions at optimum efficiency. The approved Operation and Maintenance Plan must be followed in its entirety and maintenance must occur at the scheduled intervals including, but not limited to:
 - a. Semiannual scheduled inspections (every 6 months).
 - b. Sediment removal.
 - c. Mowing and revegetation of slopes and the vegetated filter.
 - d. Immediate repair of eroded areas.
 - e. Maintenance of all slopes in accordance with approved plans and specifications.
 - f. Debris removal and unclogging of bypass structure, infiltration media, flow spreader, catch basins, piping and vegetated filter.
 - g. A clear access path to the bypass structure must be available at all times.
5. Records of maintenance activities must be kept and made available upon request to authorized personnel of DWQ. The records will indicate the date, activity, name of person performing the work and what actions were taken.
6. Upon completion of construction, prior to issuance of a Certificate of Occupancy, and prior to operation of this permitted facility, a certification must be received from an appropriate designer for the system installed certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting documentation. Any deviations from the approved plans and specifications must be noted on the Certification. A modification may be required for those deviations.
7. If the stormwater system was used as an Erosion Control device, it must be restored to design condition prior to operation as a stormwater treatment device, and prior to occupancy of the facility.
8. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction, for any modification to the approved plans, including, but not limited to, those listed below:
 - a. Any revision to any item shown on the approved plans, including the stormwater management measures, built-upon area, details, etc.
 - b. Project name change.
 - c. Transfer of ownership.
 - d. Redesign or addition to the approved amount of built-upon area or to the drainage area.
 - e. Further subdivision, acquisition, lease or sale of all or part of the project area. The project area is defined as all property owned by the permittee, for which Sedimentation and Erosion Control Plan approval or a CAMA Major permit was sought.
 - f. Filling in, altering, or piping of any vegetative conveyance shown on the approved plan.
9. The permittee shall submit final site layout and grading plans for any permitted future areas shown on the approved plans, prior to construction.
10. A copy of the approved plans and specifications shall be maintained on file by the Permittee for a minimum of ten years from the date of the completion of construction.

270

11. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

III. GENERAL CONDITIONS

1. This permit is not transferable except after notice to and approval by the Director. In the event of a change of ownership, or a name change, the permittee must submit a formal permit transfer request to the Division of Water Quality, accompanied by a completed name/ownership change form, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved. The permittee is responsible for compliance with all permit conditions until such time as the Division approves the transfer request.
2. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to enforcement action by the Division of Water Quality, in accordance with North Carolina General Statute 143-215.6A to 143-215.6C.
3. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal) having jurisdiction.
4. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those as may be required by this Division, such as the construction of additional or replacement stormwater management systems.
5. The permittee grants DENR Staff permission to enter the property during normal business hours for the purpose of inspecting all components of the permitted stormwater management facility.
6. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance or termination does not stay any permit condition.
7. Unless specified elsewhere, permanent seeding requirements for the stormwater control must follow the guidelines established in the North Carolina Erosion and Sediment Control Planning and Design Manual.
8. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of the permit.
9. The permittee shall notify the Division any name, ownership or mailing address changes within 30 days.

Permit issued this the 15th day of May 2006.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



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

By Authority of the Environmental Management Commission

R-2245 2nd Oak Island Bridge and Road 271
Stormwater Permit No. SW8 060118
Brunswick County

Designer's Certification

I, _____, as a duly registered _____ in the State of North Carolina, having been authorized to observe (periodically/ weekly/ full time) the construction of the project,

(Project)

for _____ (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is included in the Certification.

Noted deviations from approved plans and specification:

SEAL

Signature _____

Registration Number _____

Date _____

Certification Requirements:

272

- ____ 1. The drainage area to the system contains approximately the permitted acreage.
- ____ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- ____ 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- ____ 4. All roof drains are located such that the runoff is directed into the system.
- ____ 5. The bypass structure weir elevation is per the approved plan.
- ____ 6. The bypass structure is located per the approved plans.
- ____ 7. A Trash Rack is provided on the bypass structure.
- ____ 8. All slopes are grassed with permanent vegetation.
- ____ 9. Vegetated slopes are no steeper than 3:1.
- ____ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ____ 11. The permitted amounts of surface area and/or volume have been provided.
- ____ 12. All required design depths are provided.
- ____ 13. All required parts of the system are provided.
- ____ 14. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Delaney Aycock, Brunswick County Building Inspections



**R-2245 Second Bridge to Oak Island
Water Quality Certification Application
Proposed Conservation Easement Details**



Proposed Conservation Easement Boundary

(Approximate total easement area = 880 acres. Land within this boundary, and outside the Approximate is considered wetland. See Notes below. Approximate wetland acreage = 700 acres.)



Approximate Upland Area Boundary

(Approximate upland acreage = 180 acres)



Proposed residential lot



Brunswick Electric Pow



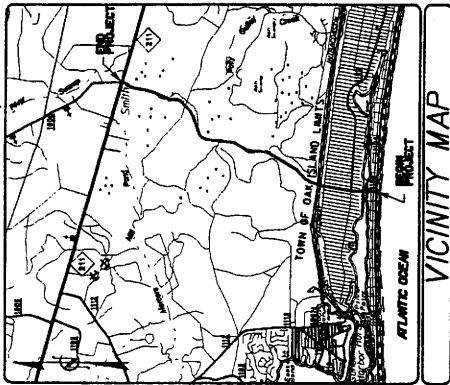
Wildlife pipe crossing location



NCDOT ROW

Notes: This figure is a representation of the proposed Conservation Easement Areas to be acquired by NCDOT as part of the R-2245 roadway project. The landowners who are granting the Conservation Easements have agreed to the bounda

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

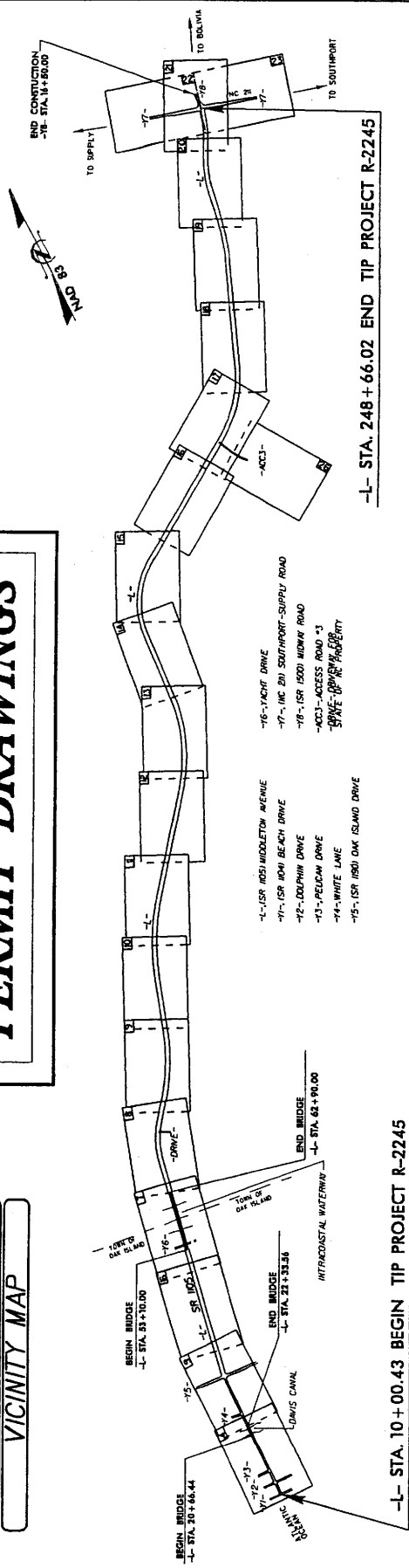
BRUNSWICK COUNTY

LOCATION: NEW ROUTE FROM SR 1104 (BEACH DRIVE)
TO NC 211 (SECOND BRIDGE TO OAK ISLAND)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, STRUCTURES
AND CULVERT

PERMIT DRAWINGS

STATE	N.C.	STATE PROJECT NUMBER	R-2245	SCALE	1" = 40'
PROJECT NUMBER	34407.1.1	ENGINEER	STP-10516	DATE	1
PROJECT NUMBER	34407.2.1	PROJ. ENGR.	STP-10517	DATE	
PROJECT NUMBER	34407.2.3	RAW & UTIL.	STP-10517	DATE	
PROJECT NUMBER		CONST.		DATE	



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ACCESS IS NOT CONTROLLED FROM OCEAN BEACH DRIVE TO 735' SOUTH OF YACHT DRIVE.
ACCESS CONTROL IS LIMITED TO POINTS AS SHOWN ON THE PLANS FROM 735' SOUTH OF YACHT DRIVE TO NC 211.

GRAPHIC SCALES 50 25 0 50 100 PLANS 50 25 0 50 100 PROFILE (HORIZONTAL) 10 5 0 10 20 PROFILE (VERTICAL)	DESIGN DATA ADT 2006 = 13800 ADT 2030 = 31000 DHV = 8 % D = 55 % T = 3 % V = 40-60 MPH * (TST 1% + DUAL 2%) FUNC CLASS = RURAL COLLECTOR	PROJECT LENGTH LENGTH ROADWAY TIP PROJECT R-2245 = 4.303 MI LENGTH STRUCTURES TIP PROJECT R-2245 = 0.217 MI TOTAL LENGTH OF TIP PROJECT R-2245 = 4.520 MI	DIVISION OF HIGHWAYS Prepared in the Office of 1800 Balsa Ridge Dr., Raleigh, NC, 27618	HYDRAULICS ENGINEER P.E.	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
			RIGHT OF WAY DATE: APRIL 29, 2005 LETTING DATE: MAY 15, 2006	PROJECT ENGINEER GLENN W. MUMFORD, P.E. PROJECT DESIGN ENGINEER SUSAN C. LANCASTER, P.E.	STATE DESIGN ENGINEER P.E.

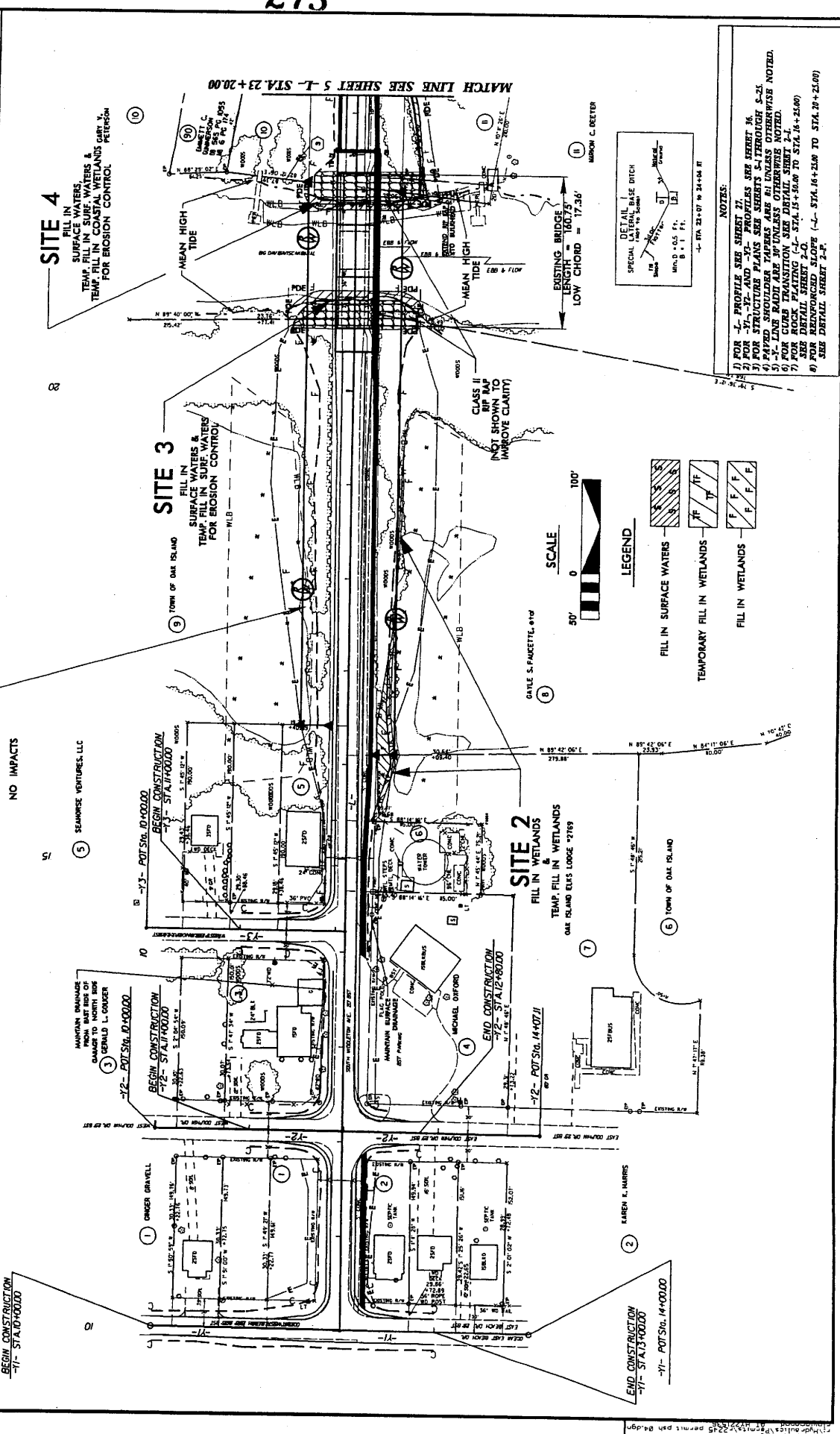
TIP PROJECT: R-2245

CONTRACT: C201550

PROJECT REFERENCE NO. H-22245
 SHEET NO. 4
 PREPARED BY: [Redacted]
 CHECKED BY: [Redacted]
 DATE: [Redacted]

ENGLISH

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



- NOTES:**
- 1) FOR -L- PROFILE SEE SHEET 31
 - 2) FOR -31- AND -32- PROFILES SEE SHEET 36
 - 3) FOR STRUCTURE PLANS SEE SHEETS 5-1 THROUGH 5-21
 - 4) PAVED SHOULDER PAPERS ARE RI UNLESS OTHERWISE NOTED.
 - 5) FOR CLUB TRANSLATION SEE DETAIL SHEET 2-0
 - 6) FOR ROCK PLATING (-L- STA. 15+50.00 TO STA. 16+24.00) SEE DETAIL SHEET 2-0
 - 7) FOR RECONSTRUCTED SLOPE (-L- STA. 16+24.00 TO STA. 16+25.00) SEE DETAIL SHEET 2-0

PROJECT REFERENCE NO. 8-2215
 SHEET NO. 7
 DRAWING NUMBER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

ATLANTIC INTERCOASTAL WATERWAY CENTERLINE - THE U.S. ARMY CORPS OF ENGINEERS WASHINGTON DISTRICT

UNLAWFUL, VIOLATION OF PERMIT, LICENSE

UNLAWFUL, VIOLATION OF PERMIT, LICENSE

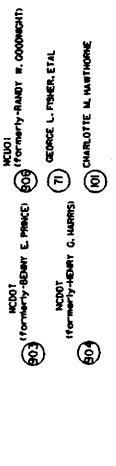
UNLAWFUL, VIOLATION OF PERMIT, LICENSE

UNLAWFUL, VIOLATION OF PERMIT, LICENSE

- 601 NCDOT (formerly-RANDY W. OODNICHT)
- 602 (formerly-BENNY E. PRINCE)
- 603 (formerly-HEBRY G. HARRIS)
- 604 CHARLOTTE M. HARTHORNE
- 605 (formerly-GENE L. FISHER, ET AL)
- 606 (formerly-HEBRY G. HARRIS)

- 607 (formerly-DONALD S. BATCHELOR)
- 608 PHILIP ALLEWS
- 609 THOMAS R. STABLEY
- 610 NCDOT (formerly-JOHN MCCONNELL)
- 611 (formerly-BARBARA S. BRUNSON)

- NOTES:
- 1) FOR -L- PROFILE SEE SHEETS 28 AND 29.
 - 2) FOR -76- PROFILE SEE SHEET 37.
 - 3) FOR STRUCTURE PLANS SEE SHEETS S-26 THROUGH S-34.
 - 4) FOR BULKHEAD PLANS SEE SHEETS W-1 THROUGH W-2.
 - 5) EXISTING PAVEMENT WITHIN THE AREA OF END BENT FILES SHALL BE REMOVED AND SCAFFOLD TO MINIMUM DEPTH OF 2'-0".



MATCH LINE SEE SHEET 6 - L - STA. 50 + 20.00

MATCH LINE SEE SHEET 8 - L - STA. 64 + 05.00

DETAIL 6
 MEAN HIGH TIDE
 (EAST & WEST)
 (NOT TO SCALE)
 4" DEPTH
 CL. 10' TO 12' 6"
 SEE BRIDGE PLAN SHEET S-28
 FOR DEPTH
 EST. OR. EAST. LINE CL. 105.

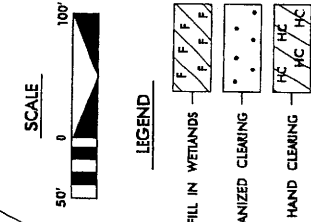
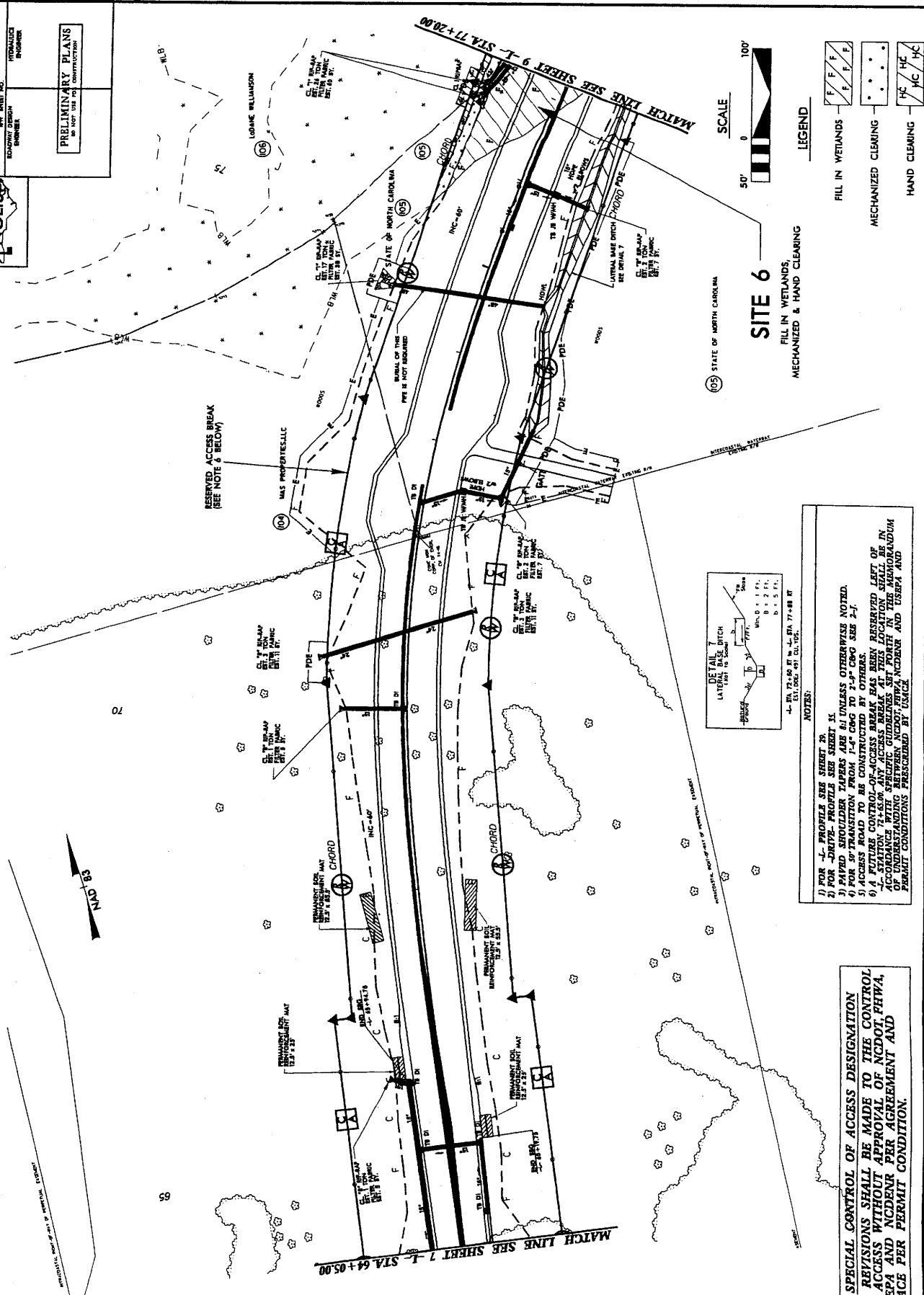
SCALE
 1" = 50'
 1" = 100'



TEMPORARY WORK BRIDGE

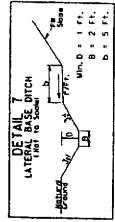
UNLAWFUL, VIOLATION OF PERMIT, LICENSE

PROJECT REFERENCE NO. R-2245
 SHEET NO. 8
 PRELIMINARY PLANS
 TO BE USED FOR CONSTRUCTION



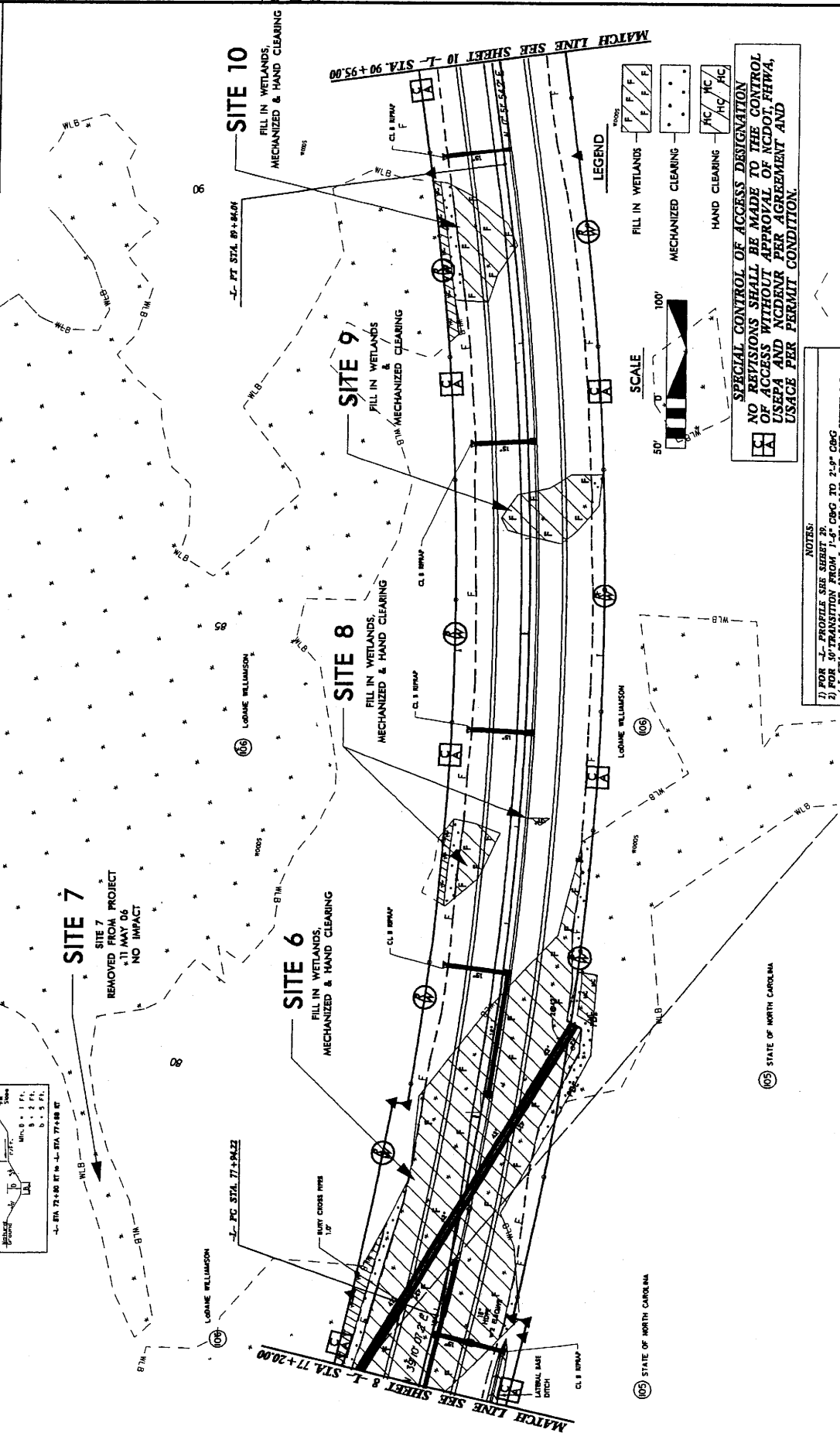
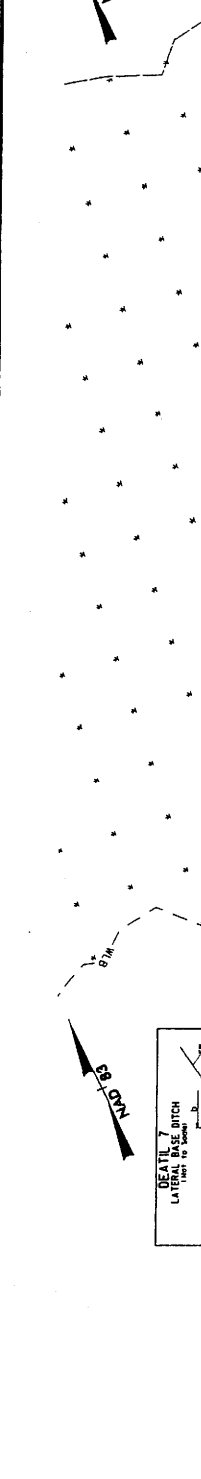
SITE 6
 FILL IN WETLANDS,
 MECHANIZED & HAND CLEARING

- NOTES:**
- 1) FOR -L- PROFILE SEE SHEET 2.
 - 2) FOR -DRIVE- PROFILES SEE SHEET 11.
 - 3) PAVED SHOULDER TAPERS ARE AS UNLESS OTHERWISE NOTED.
 - 4) FOR 30' TRANSITION FROM 7'-0" C&G TO 7'-0" C&G SEE 2-J.
 - 5) ALL CONSTRUCTION SHALL BE CONSTRUCTED BY OTHERS.
 - 6) FUTURE CONTROL OF THIS LOCATION SHALL BE IN ACCORDANCE WITH SPECIFIC GUIDELINES SET FORTH IN THE MEMORANDUM PERMIT CONDITIONS PREPARED BY USFPA AND USACE.



SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO. R-2245
 SHEET NO. 9
 PRELIMINARY PLANS
 TO BE USED FOR CONSTRUCTION



NOTES:

- 1) FOR -L- PROFILE SEE SHEET 20.
- 2) FOR 30' TRANSITION FROM 7'-6" C&G TO 2'-6" C&G (-L- STA. 89+40.6 RT ADD -L- STA. 77+94.2 RT) SEE SHEET 2-1.

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF ACDOT, FHWA, USEPA AND AGENCIES PER AGREEMENT AND USAGE PER PERMIT CONDITION.

STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. R-2245	SHEET NO. 10
HWY. SHEET NO. ROADWAY DESIGN	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

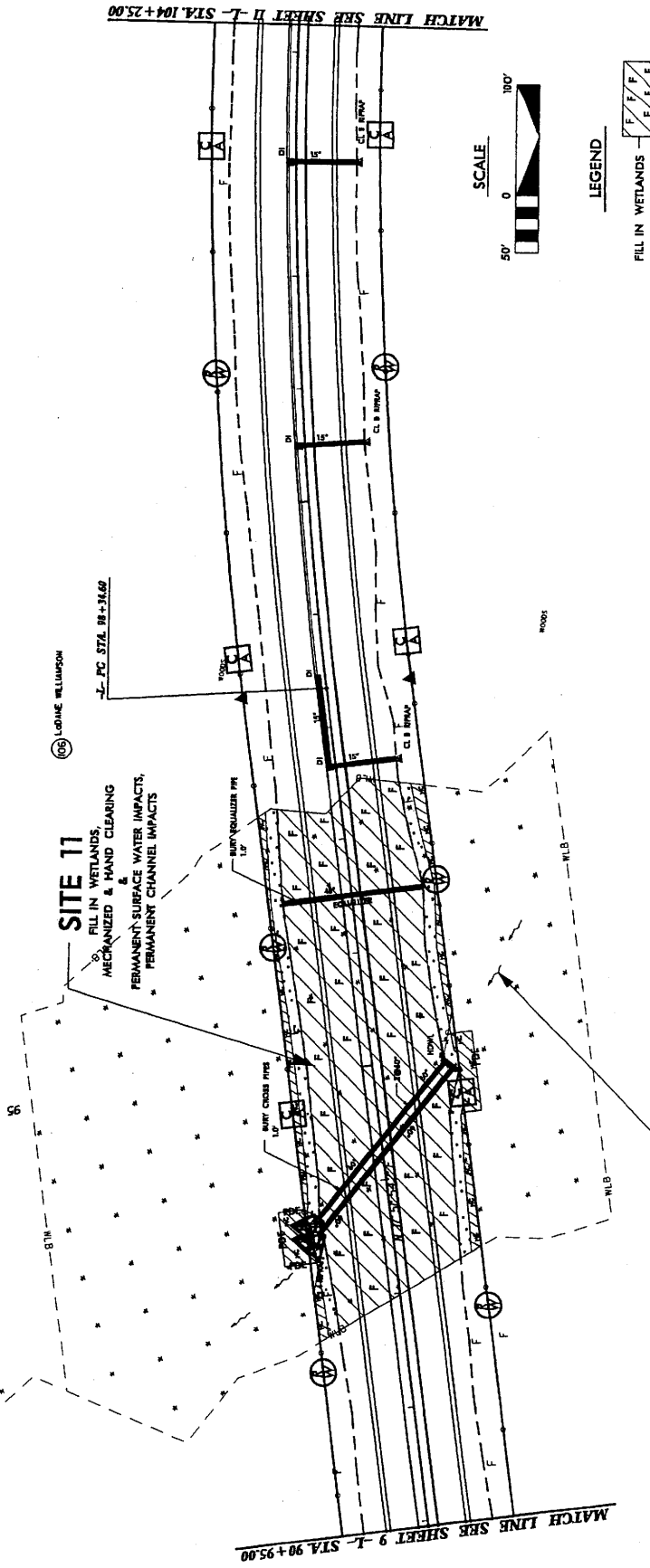


SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND MCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.



00

MATCH LINE SEE SHEET II - L- STA. 104+25.00



LEGEND

	FILL IN WETLANDS
	MECHANIZED CLEARING
	HAND CLEARING

NOTES:
 1) FOR -L- PROFILE SEE SHEETS 29 AND 30.
 2) FOR -L- MANHOLE FROM 1'-6" C&G TO 2'-9" C&G
 (-L- SEE SHEETS 29 AND 30)

UNNAMED JURISDICTIONAL TRIBUTARY TO INTRACOASTAL WATERWAY

PROJECT REFERENCE NO. **R-2245** SHEET NO. **II**

DATE SHEET NO. **11/11/05** HYDRAULIC ENGINEER

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
OR NOT USE FOR CONSTRUCTION

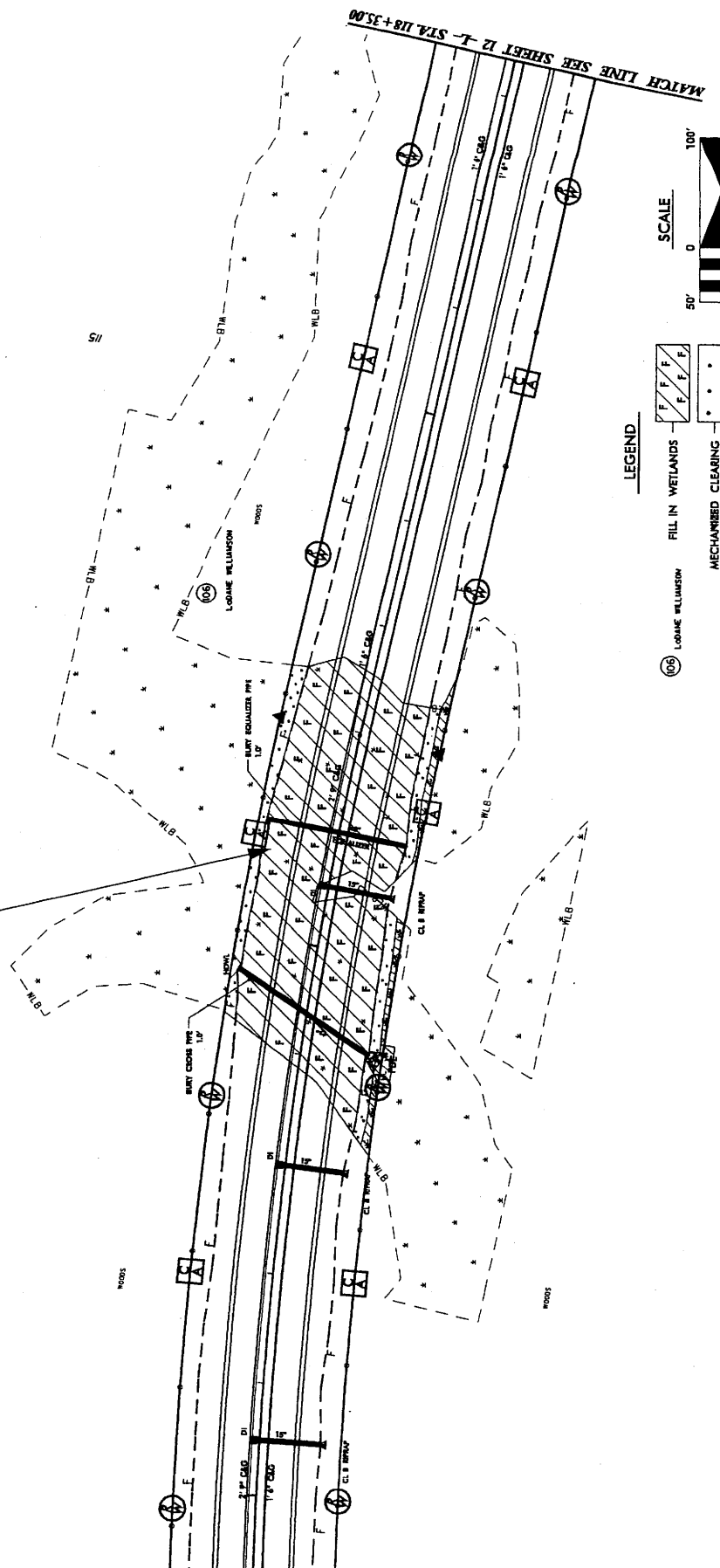
ENGLISH



SITE 12
FILL IN WETLANDS
MECHANIZED & HAND CLEARING

MATCH LINE SEE SHEET 10 - STA. 104+25.00

MATCH LINE SEE SHEET 12 - STA. 118+35.00



LEGEND

- 106 LOGSME WETLANDS
- FILL IN WETLANDS
- MECHANIZED CLEARING
- HAND CLEARING

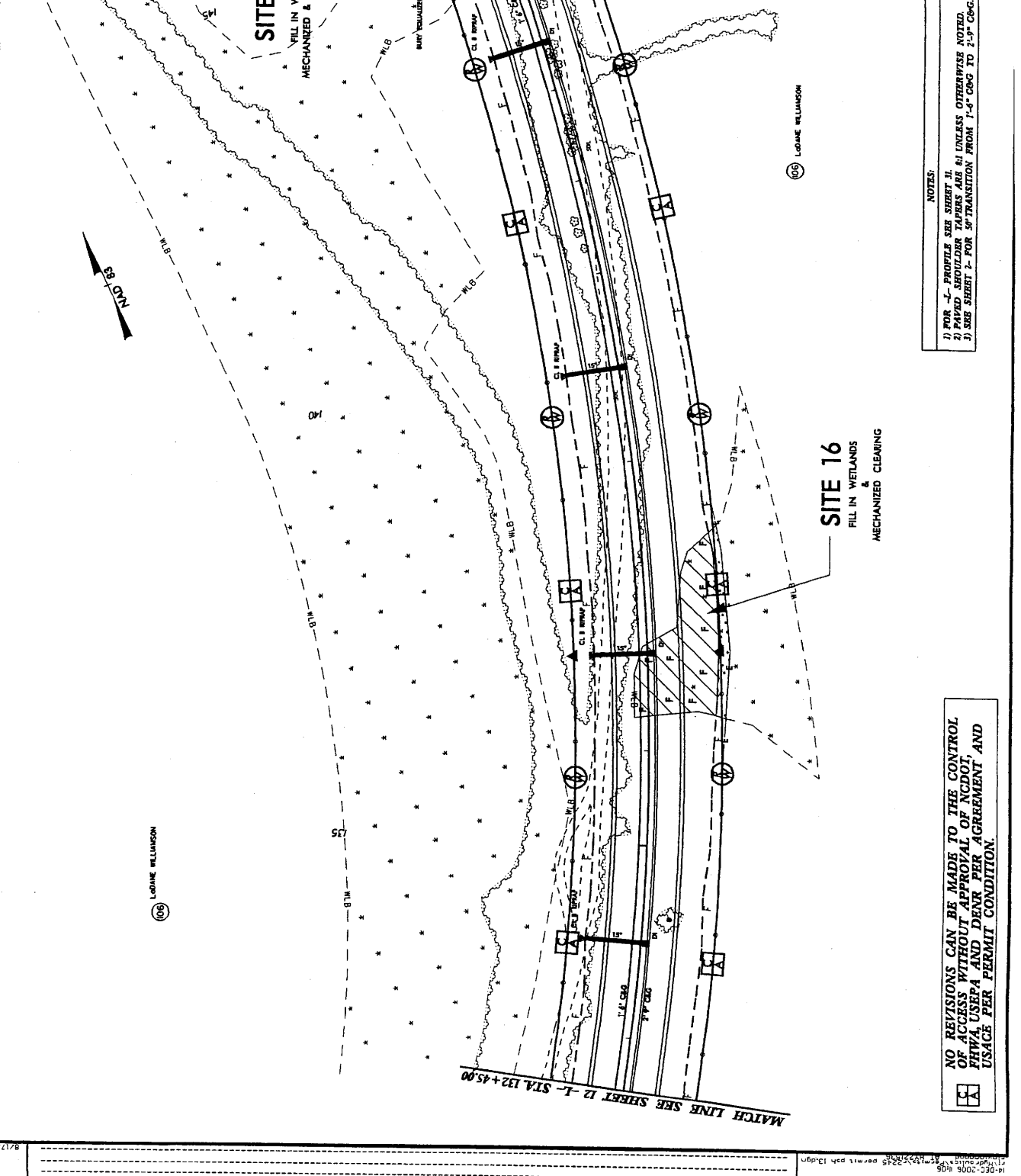
SCALE
50' 0 100'

NOTES:

- FOR -L- PROFILE SEE SHEET 10
- FOR 50' TRANSITION FROM 1'-6\"/>

SPECIAL CONTROL OF ACCESS DESIGNATION
NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO. **17-2245**
 SHEET NO. **13**
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



LEGEND

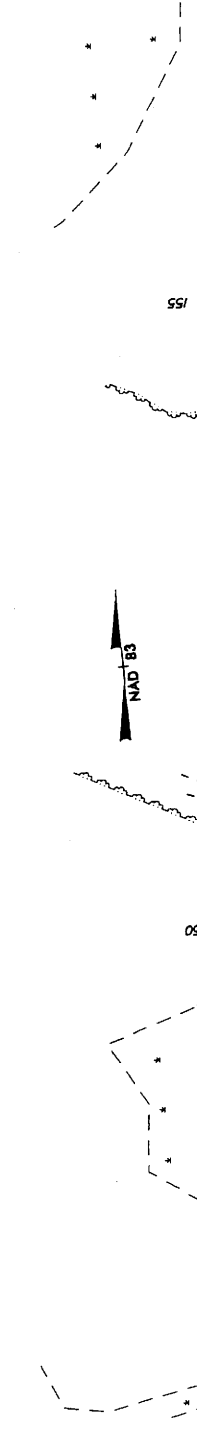
- FILL IN WETLANDS
- MECHANIZED CLEARING
- HAND CLEARING

NOTES:

- 1) FOR -L- PROFILE SEE SHEET 11.
- 2) PAVED SHOULDER TAPERS ARE 6:1 UNLESS OTHERWISE NOTED.
- 3) SEE SHEET 2- FOR 30' TRANSITION FROM 1'-0" CGG TO 2'-0" CGG.

NO REVISIONS CAN BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND DEAR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO. **1-2245**
 SHEET NO. **14**
 HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 TO BE USED FOR CONSTRUCTION



SITE 19
 FILL IN WETLANDS
 &
 MECHANIZED CLEARING

SITE 18
 FILL IN WETLANDS
 &
 MECHANIZED & HAND CLEARING

MATCH LINE SEE SHEET 15 - STA. 159+50.00

MATCH LINE SEE SHEET 1 - STA. 146+15.00



LEGEND

F F F F	FILL IN WETLANDS
• • • •	MECHANIZED CLEARING
H C / H C	HAND CLEARING

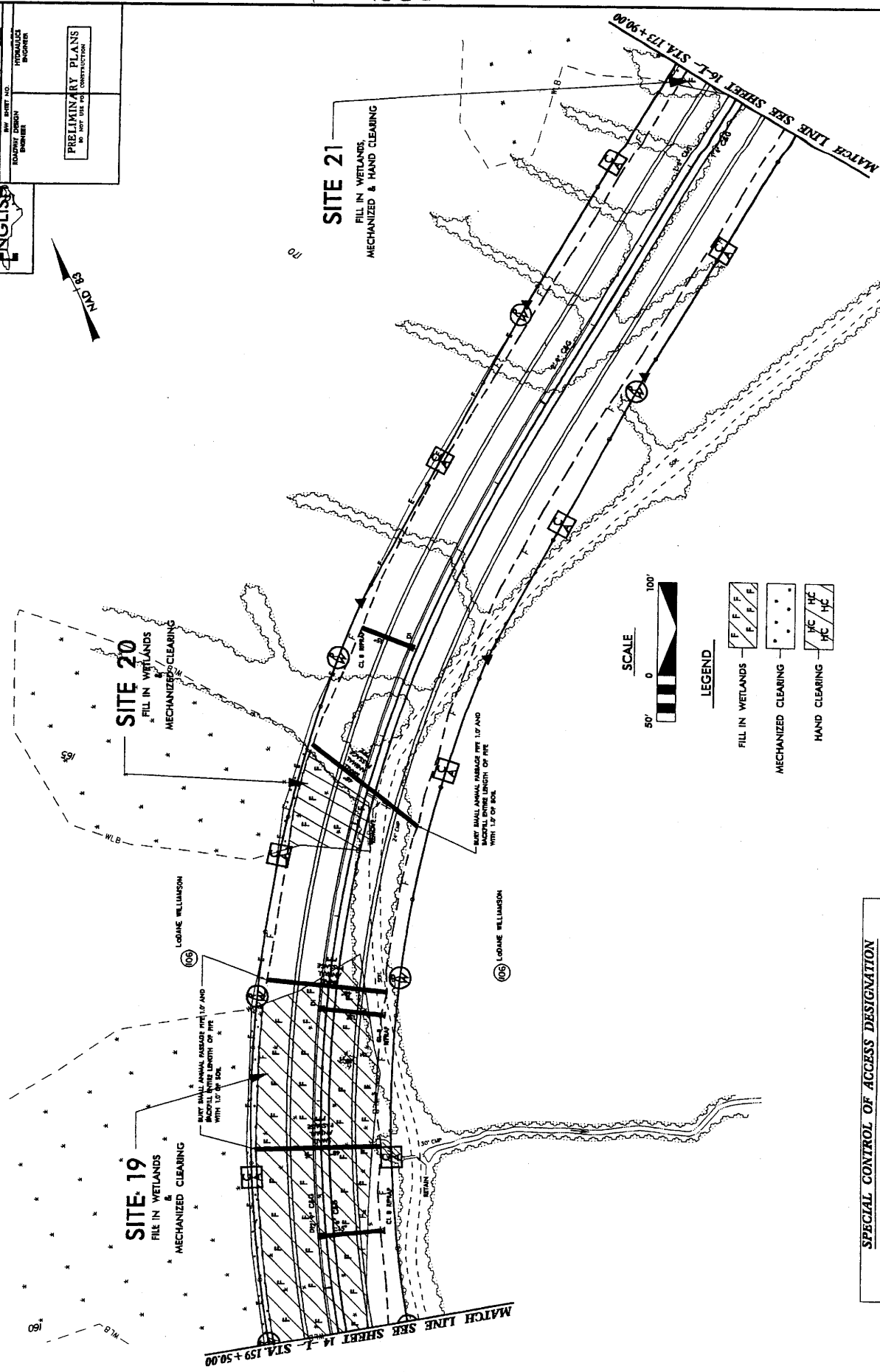
NOTES:
 1) FOR PROFILE SEE SHEETS H AND 12.
 2) FOR 10' TRANSITION FROM 1'-6" CGG TO 2'-9" CGG
 (SEE STA. 15+18.97) SEE SHEET 2-J.
 3) FOR ACCESS BREAK SEE DETAIL SHEET 2-G.

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS
 WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER
 AGREEMENT AND USAGE PER PERMIT CONDITION.

• 4" x 4" CORNER ALUM. PIPES
 FOR ANIMAL PASSAGE
 WITH CONCRETE BENTONITE
 ON BOTH ENDS
 BURY PER 12" AND BENTONITE
 WITHIN LENGTH OF EACH PIPE
 WITH 12" OF SOIL

605 LODGE WILMUNSON

PROJECT REFERENCE NO. R-2245
 SHEET NO. 15
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
PRELIMINARY PLANS
 NO SHOP USE FOR CONSTRUCTION



SITE 20
 FILL IN WETLANDS
 MECHANIZED CLEARING

SITE 21
 FILL IN WETLANDS
 MECHANIZED & HAND CLEARING

SITE 19
 FILL IN WETLANDS
 MECHANIZED CLEARING



LEGEND

- FILL IN WETLANDS
- MECHANIZED CLEARING
- HAND CLEARING

NOTES:
 1) FOR WETLANDS SEE SHEET 17.
 2) FOR MECHANIZED CLEARING SEE SHEET 17.
 3) FOR HAND CLEARING SEE SHEET 17.
 (SEE STA. 170+82.17, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200)

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHVA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO. R-2245
 SHEET NO. 16
 HWY SHEET NO. HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 IN CONNECTION WITH THE
 CONSTRUCTION



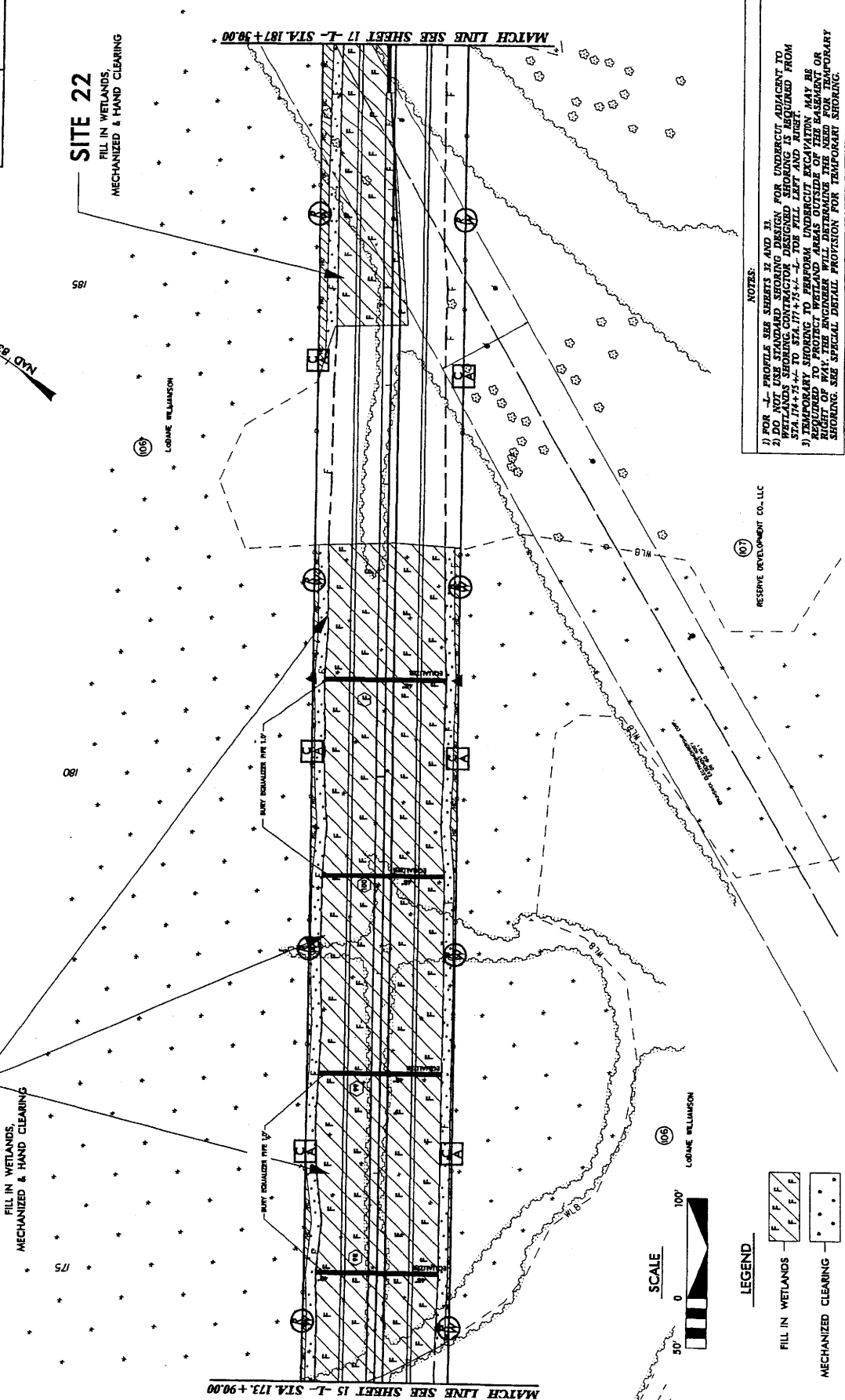
SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USACE PER PERMIT CONDITION.

SITE 21

FILL IN WETLANDS,
 MECHANIZED & HAND CLEARING

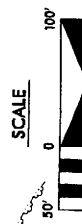
SITE 22

FILL IN WETLANDS,
 MECHANIZED & HAND CLEARING



MATCH LINE SEE SHEET 15 - L - STA. 173. +90.00

MATCH LINE SEE SHEET 17 - L - STA. 187. +90.00

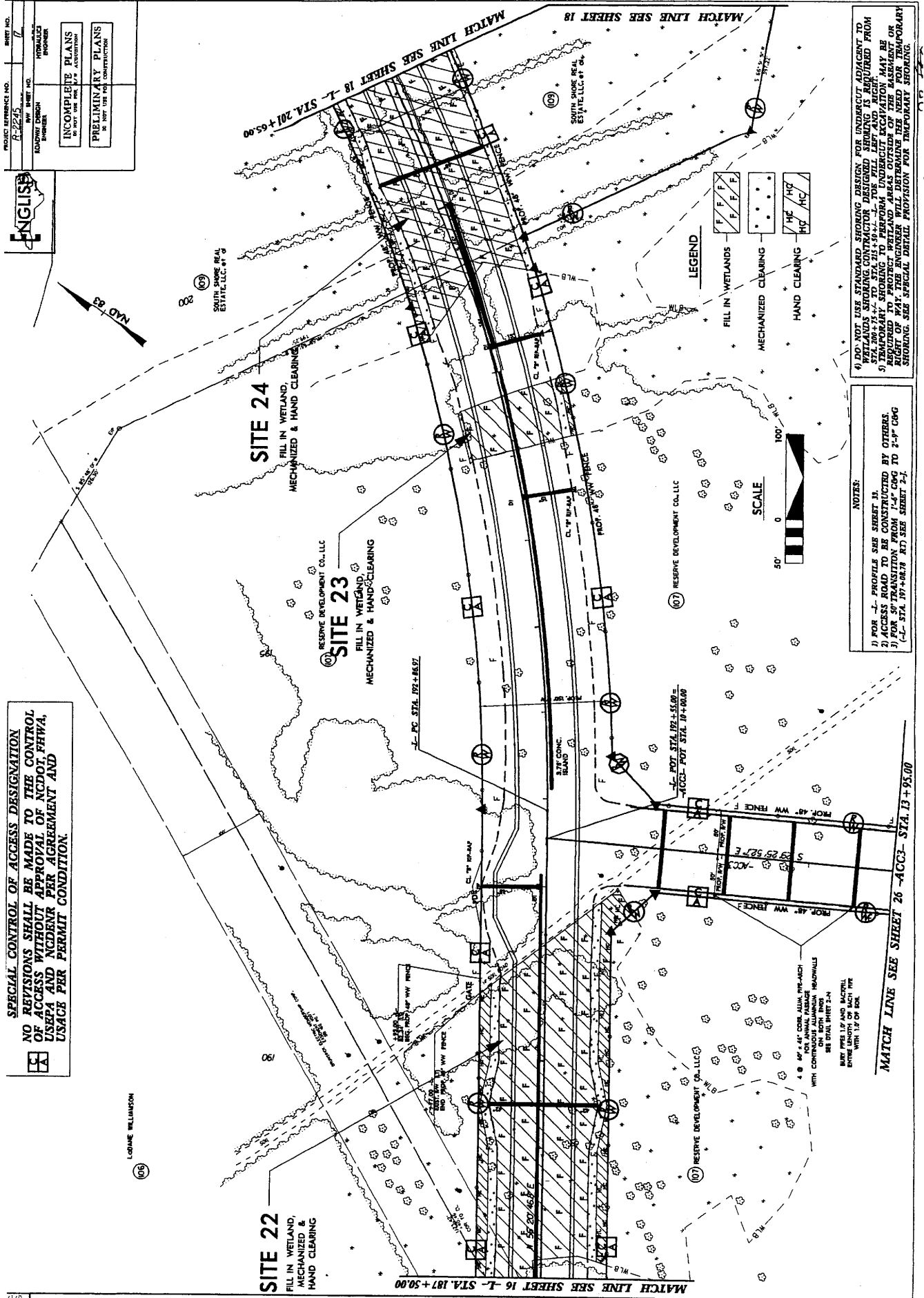


LEGEND

- FILL IN WETLANDS
- MECHANIZED CLEARING
- HAND CLEARING

NOTES:
 1) FOR SITES 21 AND 22, THE CONTRACTOR SHALL BE RESPONSIBLE FOR UNDERCUT ADJACENT TO WETLANDS SHORING. CONTRACTOR DESIGNED SHORING IS REQUIRED FROM STA. 174. +9.00 TO STA. 177. +5.00 - L. THE FILL LEFT AND RIGHT.
 2) TEMPORARY SHORING TO PERFORM UNDERCUT EXCAVATION MAY BE REQUIRED FOR THE PROTECTION OF THE ADJACENT WETLANDS. THE CONTRACTOR SHALL DETERMINE THE NEED FOR TEMPORARY SHORING. SEE SPECIAL DETAIL PROVISION FOR TEMPORARY SHORING.

RESERVE DEVELOPMENT CO., LLC



SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO. R-2245
 SHEET NO. 7
 DRAWING DESIGNER: HYDRAULICS ENGINEER
 INCOMPLETE PLANS: NOT FOR PERMIT SUBMISSION
 PRELIMINARY PLANS: NOT FOR POB CONSTRUCTION



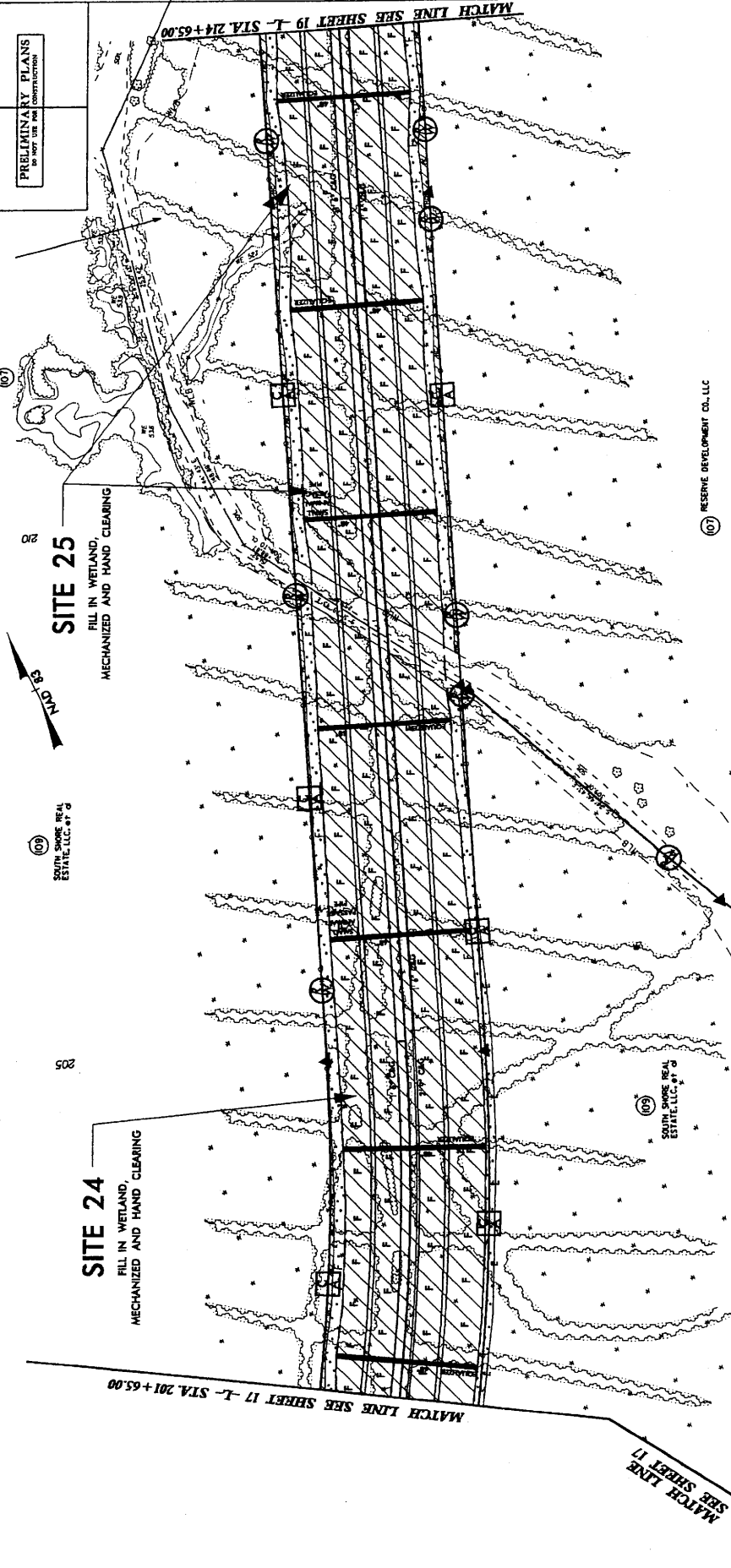
LOGAN WILKINSON
 (06)

4) DO NOT USE STANDARD SHORING DESIGN FOR UNDERCUT ADJACENT TO WETLANDS. SHORING CONTRACTOR DESIGNED SHORING IS REQUIRED FROM STA. 190+74 TO STA. 211+99.7 FOR THE LEFT AND RIGHT. 5) THE SHORING SHALL BE TO BE CONSTRUCTED TO THE RIGHT AND LEFT OF THE RIGHT OF WAY. THE ENGINEER WILL DETERMINE THE NEED FOR TEMPORARY SHORING. SEE SPECIAL DETAIL PROVISION FOR TEMPORARY SHORING.

NOTES:
 1) FOR -L- PROFILE SEE SHEET 13.
 2) ACCESS ROAD TO BE CONSTRUCTED BY OTHERS.
 3) ACCESS ROAD TO BE CONSTRUCTED TO 2'-0" CGG (-L- STA. 197+88.18, R.D. SEE SHEET 23).

MATCH LINE SEE SHEET 26 -ACC3- STA. 13+95.00

RESERVE DEVELOPMENT CO., LLC
 PRELIMINARY PLANS
 FOR THE USE AND CONSTRUCTION



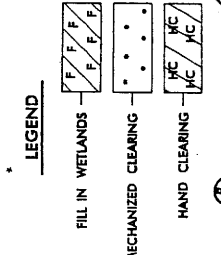
SITE 25
 FILL IN WETLAND,
 MECHANIZED AND HAND CLEARING

SITE 24
 FILL IN WETLAND,
 MECHANIZED AND HAND CLEARING

RESERVE DEVELOPMENT CO., LLC

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

- NOTES:
- 1) FOR -L- PROFILE SEE SHEETS 31 AND 34.
 - 2) FOR 3" TRANSITION FROM 1.5" C&G TO 2.5" C&G SEE SHEETS 37 AND 38.
 - 3) FOR 3" TRANSITION FROM 2.5" C&G TO 3" C&G SEE SHEETS 39 AND 40.
 - 4) DESIGN FOR UNDERCUT ADJACENT TO WETLANDS SHORING CONTRACTOR DESIGNED SHORING IS REQUIRED FROM STA. 200+75.0 TO STA. 211+99.0 -L- FOR FILL LEFT AND RIGHT.
 - 5) TEMPORARY SHORING DESIGN FOR UNDERCUT ADJACENT TO WETLANDS SHORING CONTRACTOR DESIGNED SHORING IS REQUIRED TO PROTECT WETLAND AREAS OUTSIDE OF THE PERMANENT OR RIGHT OF WAY. THE ENGINEER WILL DETERMINE THE NEED FOR TEMPORARY SHORING. SEE SPECIAL DETAIL PROVISION FOR TEMPORARY SHORING.



PROJECT REFERENCE NO. **12** SHEET NO. **12**
 DRAWING NO. **12-224** DATE **12/15/11**
 DRAWN BY **DMH** CHECKED BY **DMH**
 PROJECT TITLE **WETLANDS RESTORATION PROJECT**



ALL OF THE AREAS WITHIN THE PERMITTED ZONE SHALL BE RESTORED AND AS DIRECTED BY THE ENGINEER.

SITE 25
 FILL IN WETLAND,
 MECHANIZED & HAND CLEARING

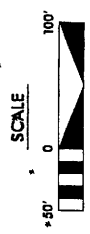
SITE 26
 HAND CLEARING

SITE 28
 HAND CLEARING

SITE 27
 FILL IN WETLAND,
 MECHANIZED & HAND CLEARING

MATCH LINE SEE SHEET 20 - STA 228+75.00

MATCH LINE SEE SHEET 18 - STA 214+65.00




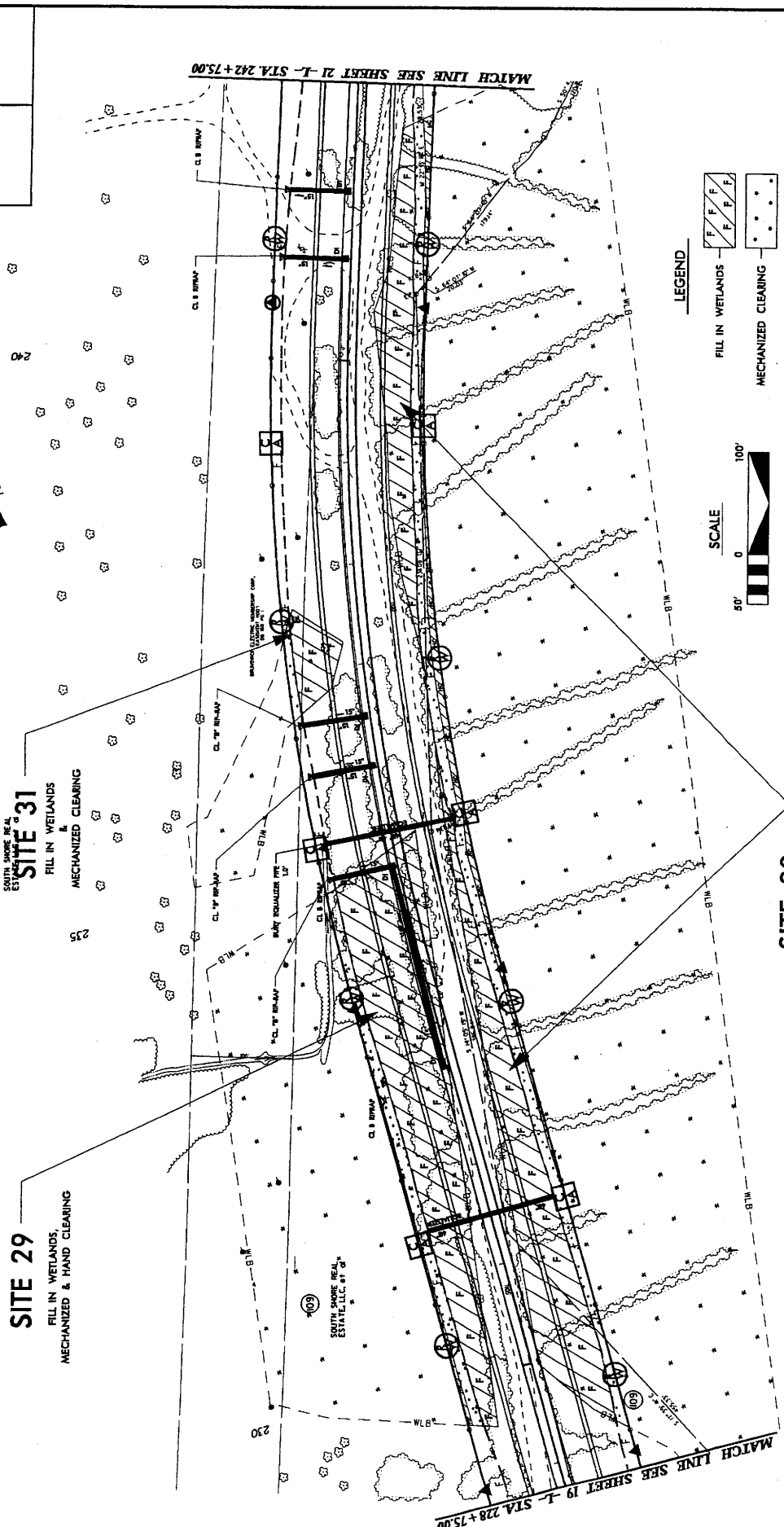
LEGEND

F F F F	FILL IN WETLANDS
• • • •	MECHANIZED CLEARING
HC HC	HAND CLEARING

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND MCDNR PER AGREEMENT AND USACE PER PERMIT CONDITION.

- NOTES:**
- 1) FOR PROFILE SEE SHEET 34.
 - 2) FOR 5% TRANSITION FROM 1'-6" C&G TO 2'-0" C&G SEE SHEET 2-1.
 - 3) DO NOT USE STAKE AND SEE SHEET 2-1.
 - 4) WETLANDS SHORING CONTRACTOR DESIGNED SHORING IS REQUIRED FROM STA. 200+75.00 TO STA. 215+50.00 - 1' FOR FILL LEFT AND RIGHT.
 - 5) SHORING TO BE PROVIDED TO PERSONNEL TO CONDUCT EXCAVATION MAY BE REQUIRED TO PROTECT EXISTING SHORING FROM COLLAPSE OR REMOVAL. THE ENGINEER WILL DETERMINE THE NEED FOR TEMPORARY SHORING. SEE SPECIAL DETAIL PROVISION FOR TEMPORARY SHORING.

PROJECT REFERENCE NO. **A-2245** SHEET NO. **20**
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 NOT FOR CONSTRUCTION







SITE 29
 FILL IN WETLANDS,
 MECHANIZED & HAND CLEARING

SITE 31
 SOUTH SHORE REAL
 ESTATE, LLC
 FILL IN WETLANDS
 MECHANIZED CLEARING

SITE 30
 FILL IN WETLANDS,
 MECHANIZED & HAND CLEARING

LEGEND

	FILL IN WETLANDS
	MECHANIZED CLEARING
	HAND CLEARING



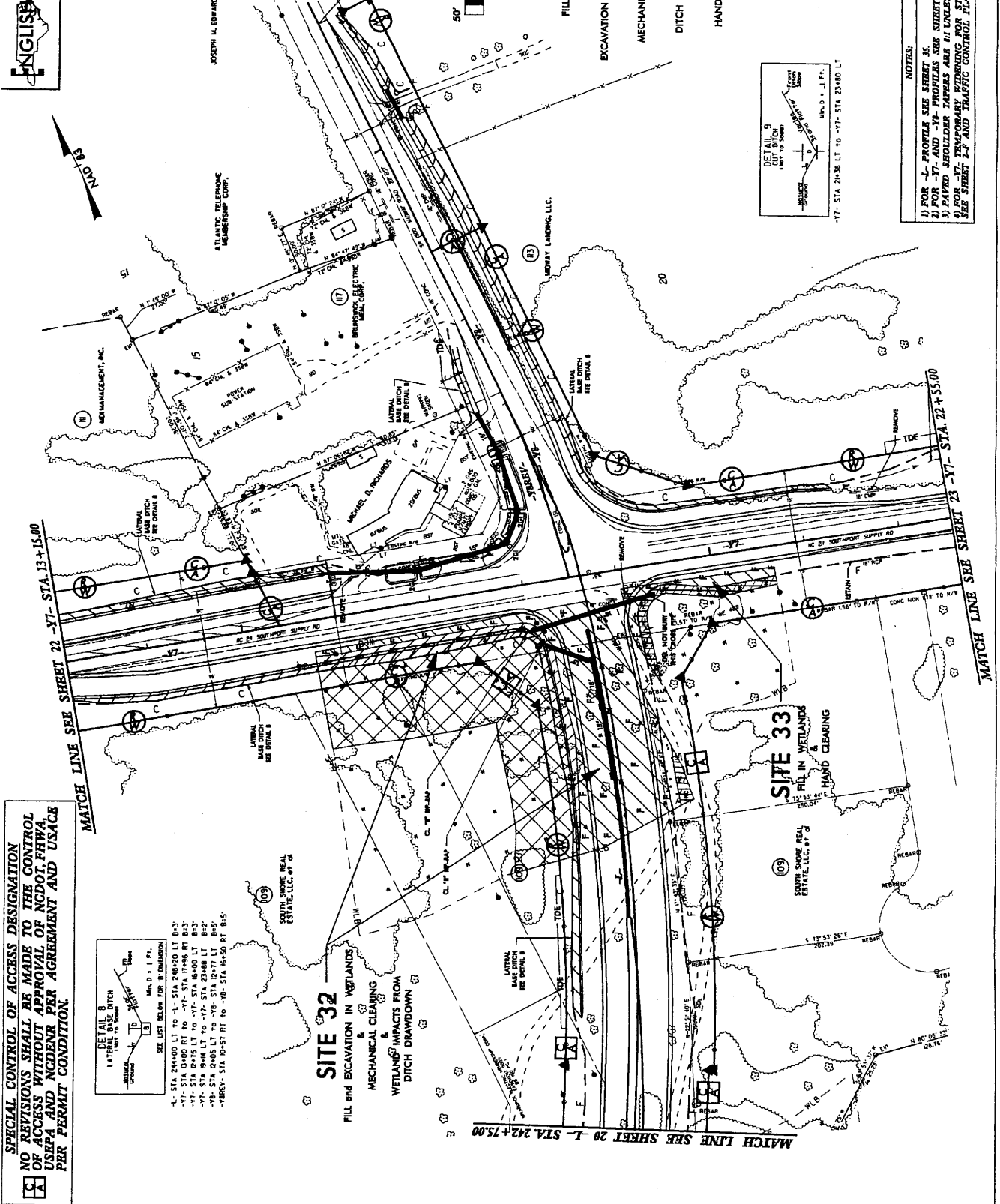
NOTES:

- 1) FOR -L- PROFILE SEE SHEETS 14 AND 15.
- 2) FOR 50' TRANSITION FROM 7'-4" CGG TO 2'-4" CGG (-L- STA. 23+91.24 RT. -L- STA. 23+91.24 LT) SEE SHEET 2-1.

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USACE PER PERMIT CONDITION.

(07) RESERVE DEVELOPMENT CO., LLC

PROJECT REFERENCE NO. B-2245
 SHEET NO. 21
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 NO NOT FOR CONSTRUCTION



SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FFWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

DETAIL B
 LATERAL DITCH
 MIN. D = 1 FT.
 SEE LIST BELOW FOR DIMENSIONS

- L- STA 244+00 LT TO -L- STA 248+20 LT B13'
- Y7- STA 0+00 RT TO -Y7- STA 17+96 RT B13'
- Y7- STA 0+15 LT TO -Y7- STA 16+00 LT B13'
- Y8- STA 0+05 LT TO -Y8- STA 02+37 LT B15'
- Y8- STA 0+57 RT TO -Y8- STA 16+50 RT B15'

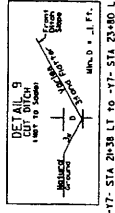
SITE 32
 FILL and EXCAVATION IN WETLANDS
 MECHANIZED CLEARING
 WETLAND IMPACTS FROM
 DITCH DRAWDOWN

SITE 33
 FILL IN WETLANDS
 MECHANIZED CLEARING



LEGEND

[Symbol: FFF]	FILL IN WETLANDS
[Symbol: EEE]	EXCAVATION IN WETLANDS
[Symbol: . . .]	MECHANIZED CLEARING
[Symbol: X X X]	DITCH DRAWDOWN
[Symbol: HC]	HAND CLEARING



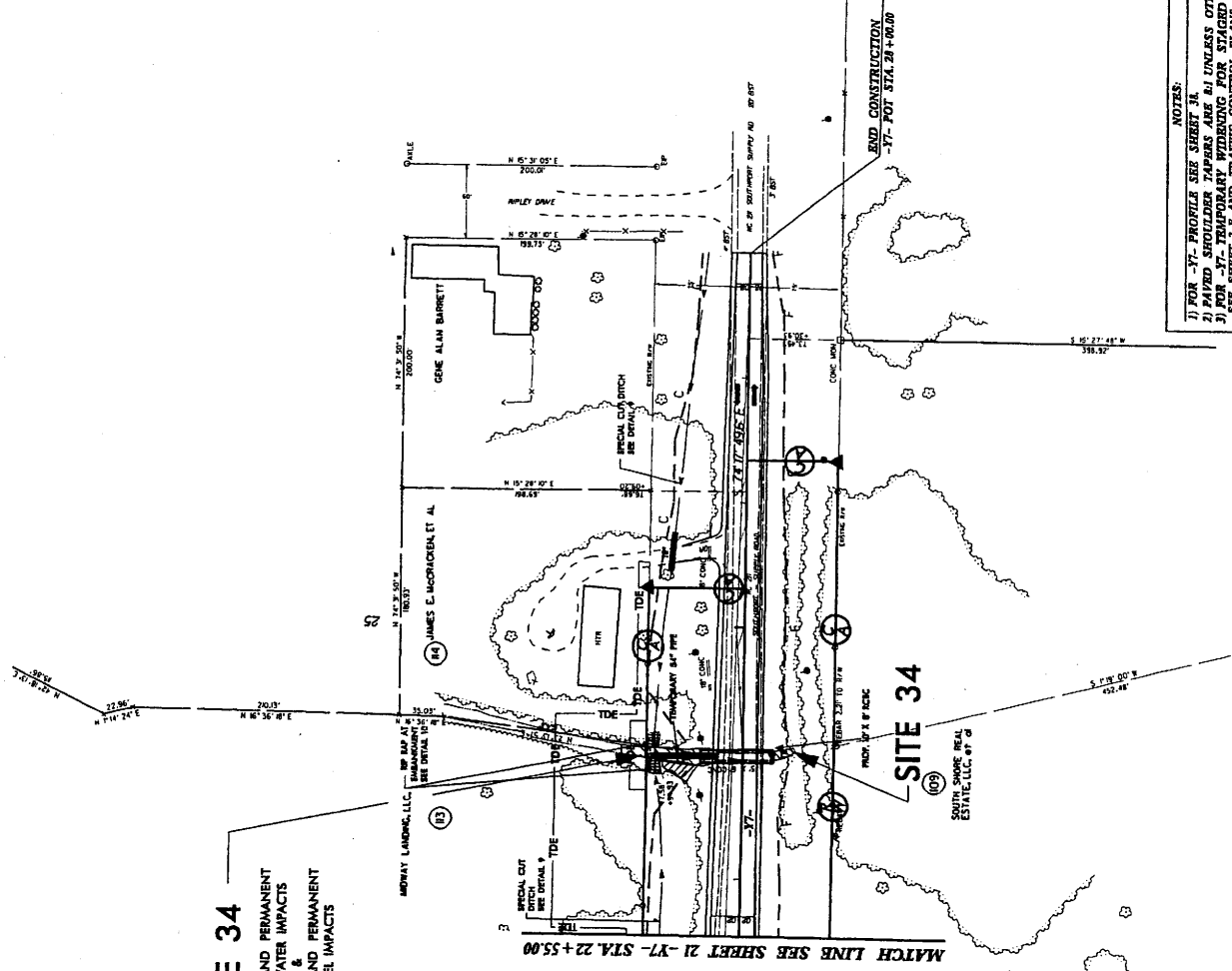
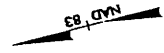
NOTES:

- 1) FOR L PROFILE SEE SHEET 20.
- 2) FOR R PROFILE SEE SHEET 21.
- 3) PAVED SHOULDERS TO BE PAVED FOR STAGED CONSTRUCTION. SEE SHEET 2-3 AND TRAFFIC CONTROL PLANS.

PROJECT REFERENCE NO. R-2245
 SHEET NO. 23
 HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

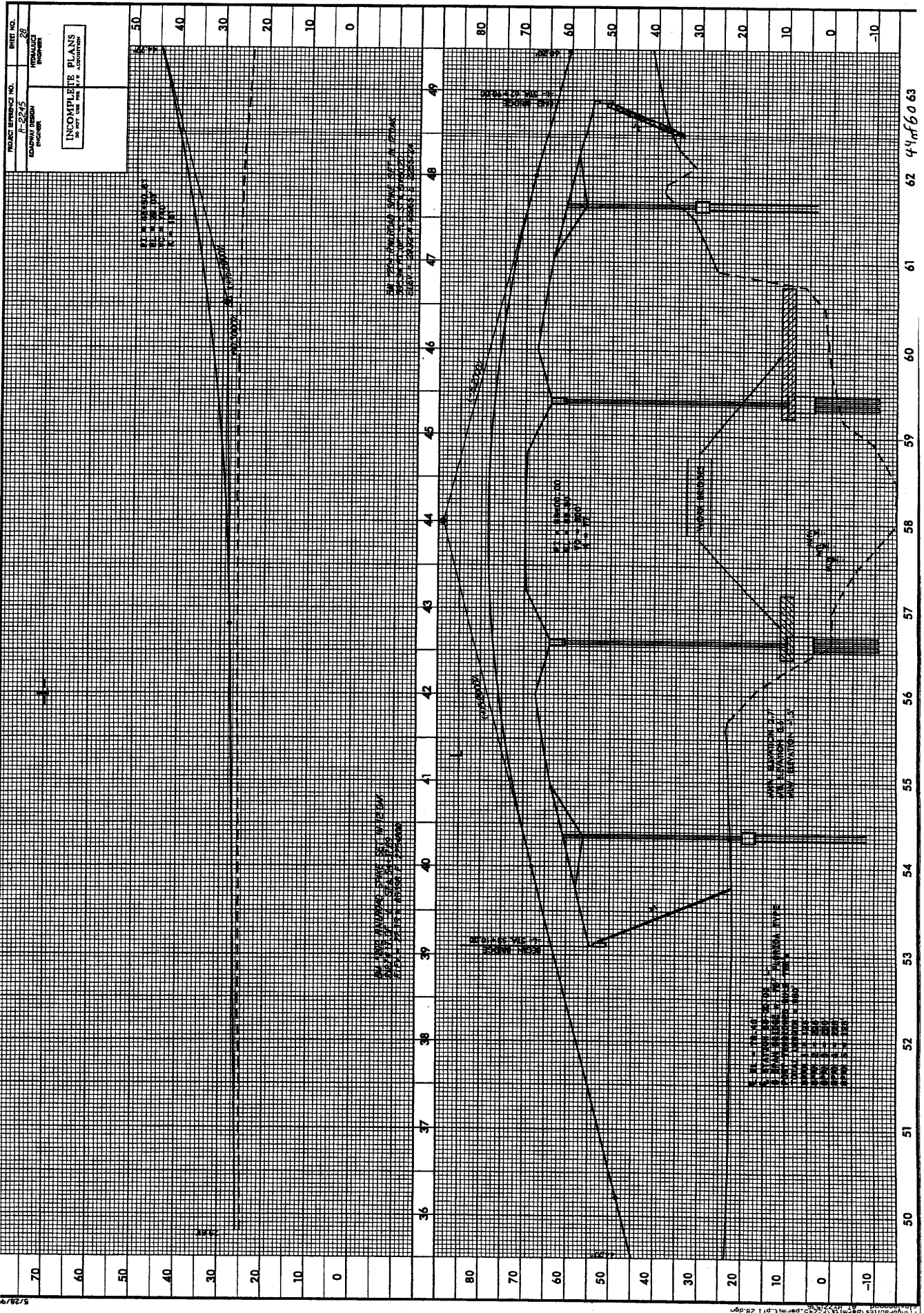


SITE 34
 TEMPORARY AND PERMANENT
 SURFACE WATER IMPACTS
 &
 TEMPORARY AND PERMANENT
 CHANNEL IMPACTS



- NOTES:**
- 1) FOR -Y7- PROFILE SEE SHEET 21.
 - 2) PAVED SHOULDER TAPERS ARE AS UNLESS OTHERWISE NOTED.
 - 3) FOR -Y7- TEMPORARY STAGING FOR STAGED CONSTRUCTION, SEE SHEET 21-Y7-SHA.22+55.00.
 - 4) FOR CULVERT PLANS SEE SHEETS C-1 THROUGH C-4.
 - 5) USE ALTERNATIVE SPACING FOR GUARDRAIL INSTALLATION OVER CULVERT.

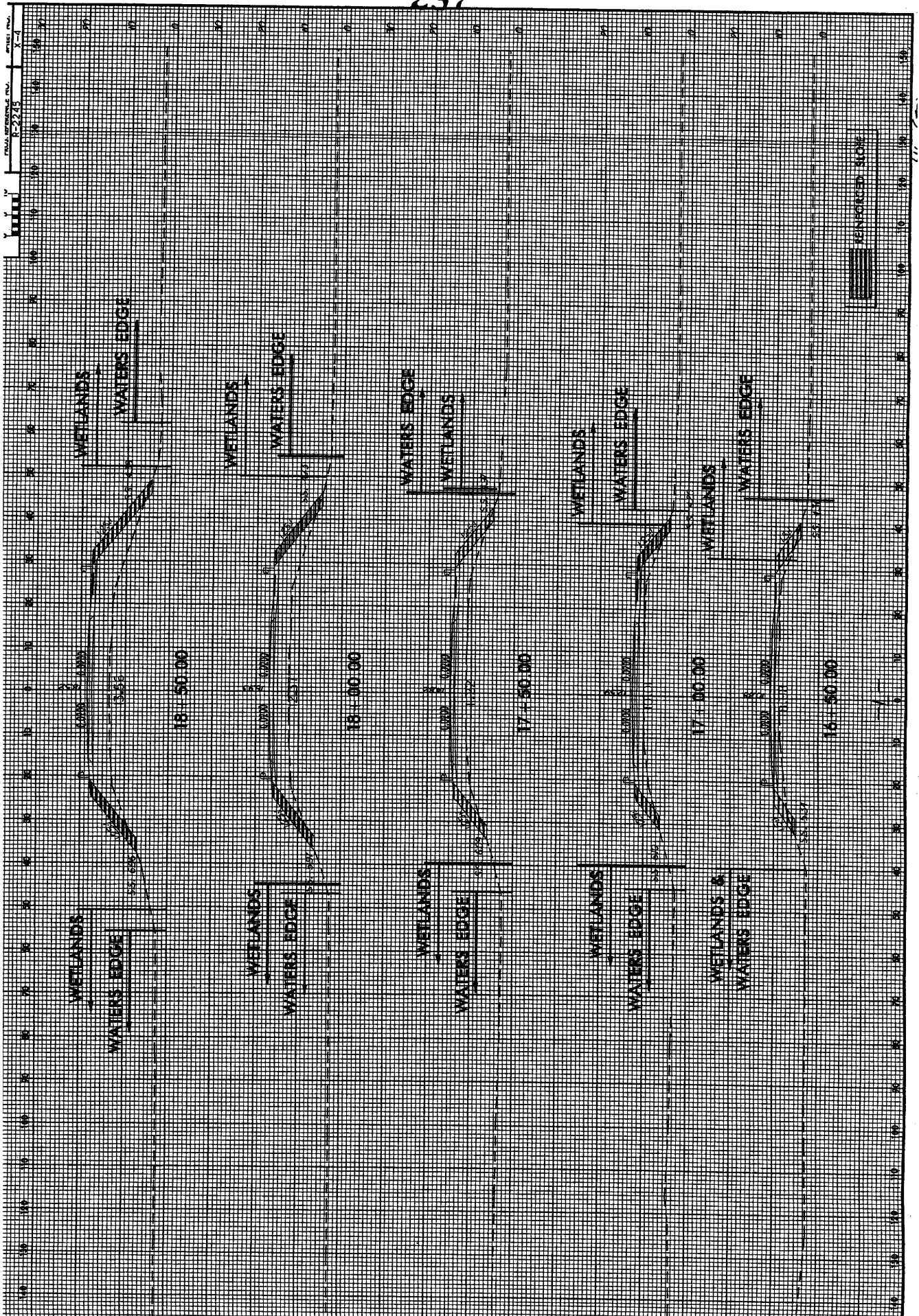
42 of 60

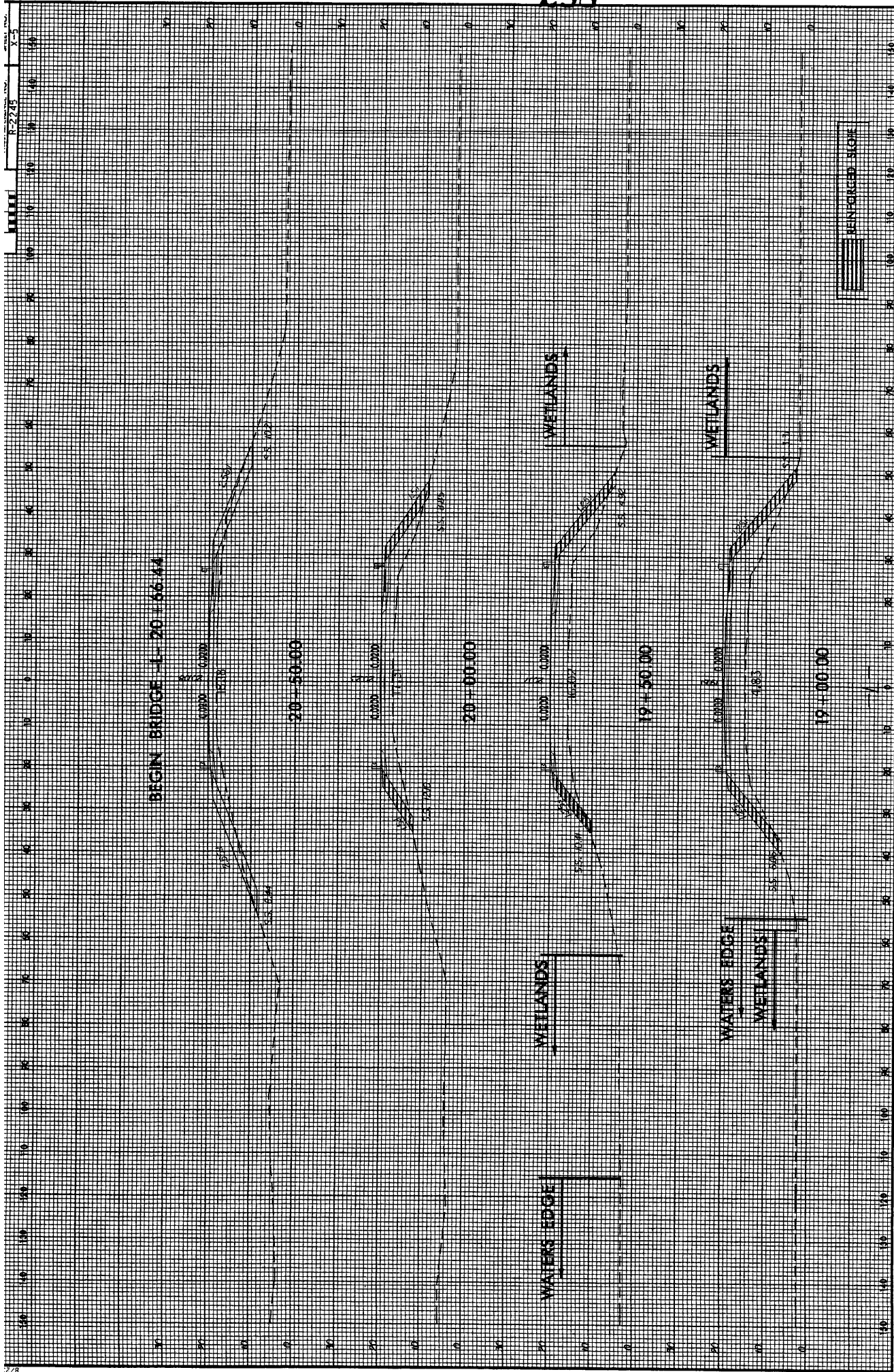


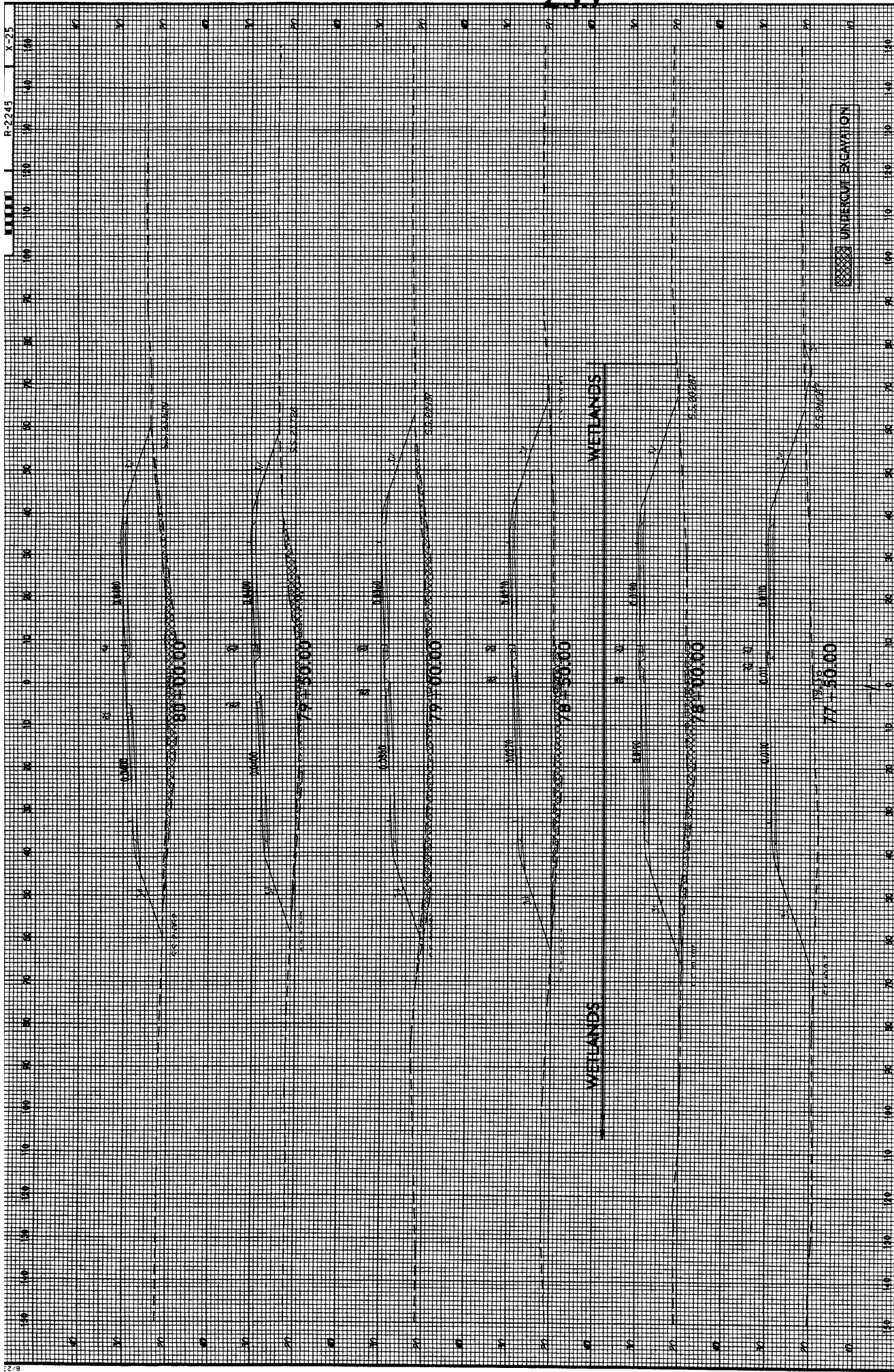
PROJECT REFERENCE NO. **A-2245**
 DRAWING DESIGN NUMBER **PROBABLE**

SHEET NO. **28**
 TOTAL SHEETS **PROBABLE**

INCOMPLETE PLANS
 DO NOT USE FOR CONSTRUCTION







XXXXX UNDERCUT EXCAVATION

WETLANDS

WETLANDS

80+00.00

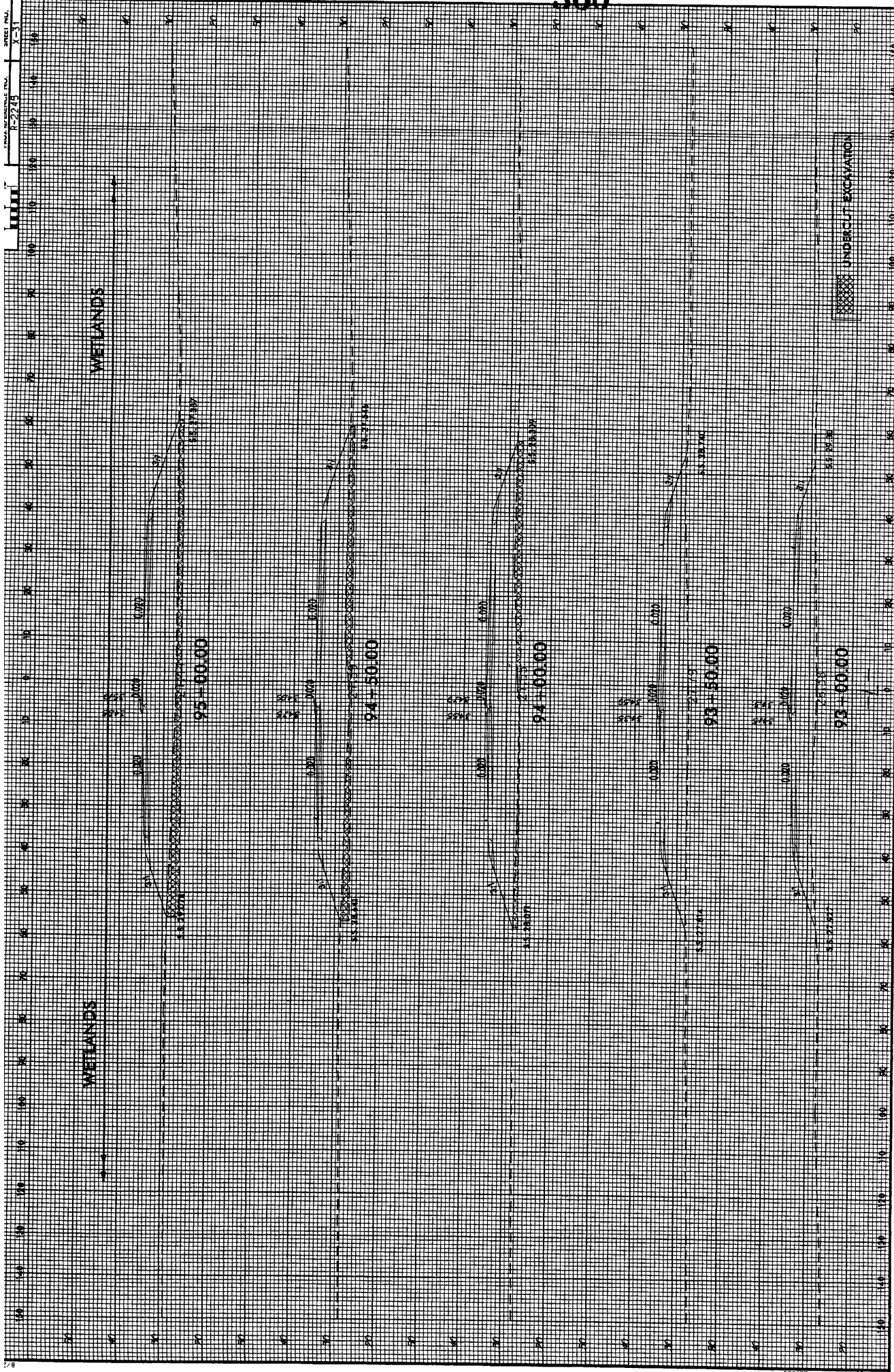
79+50.00

79+00.00

78+50.00

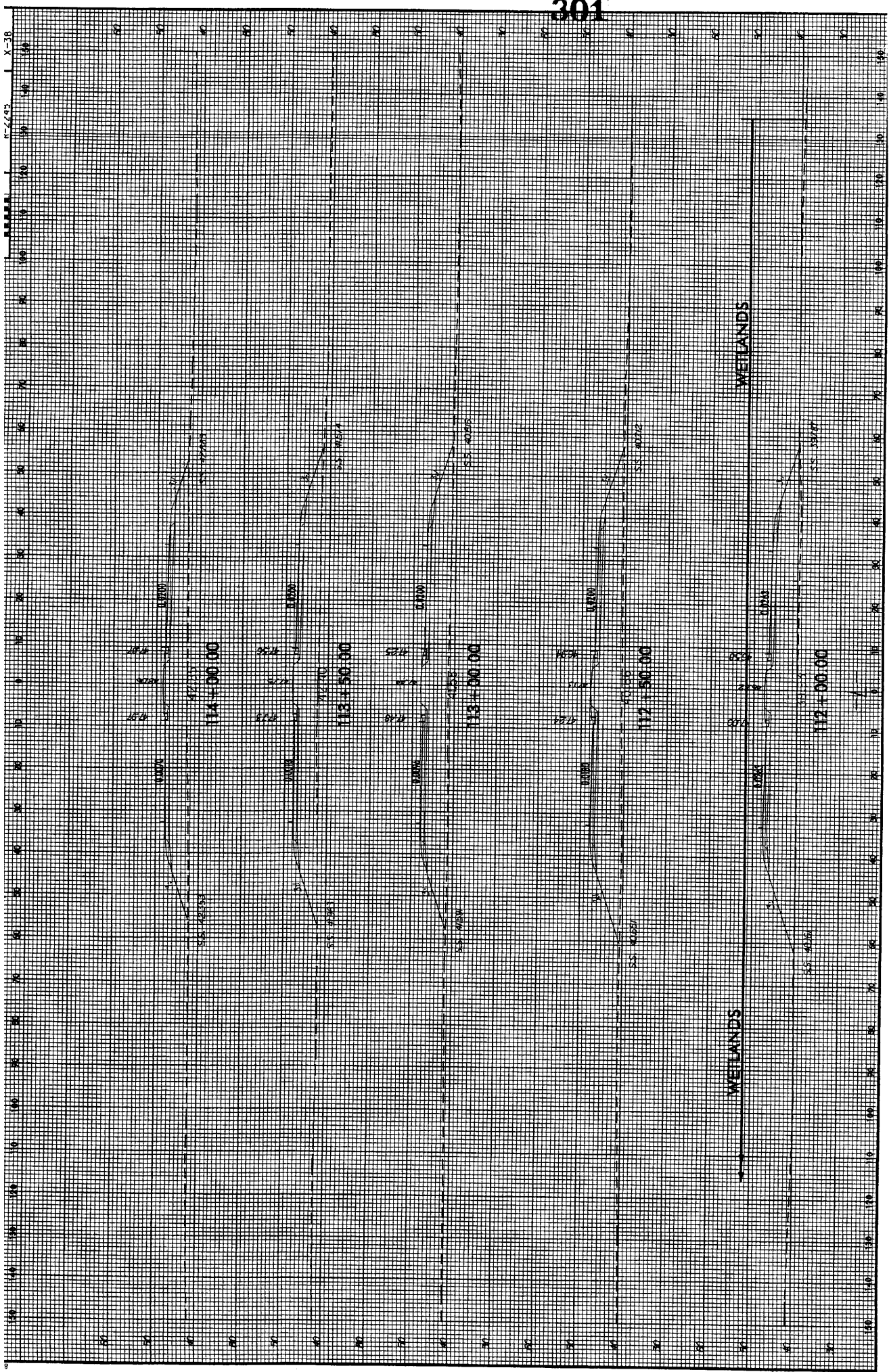
78+00.00

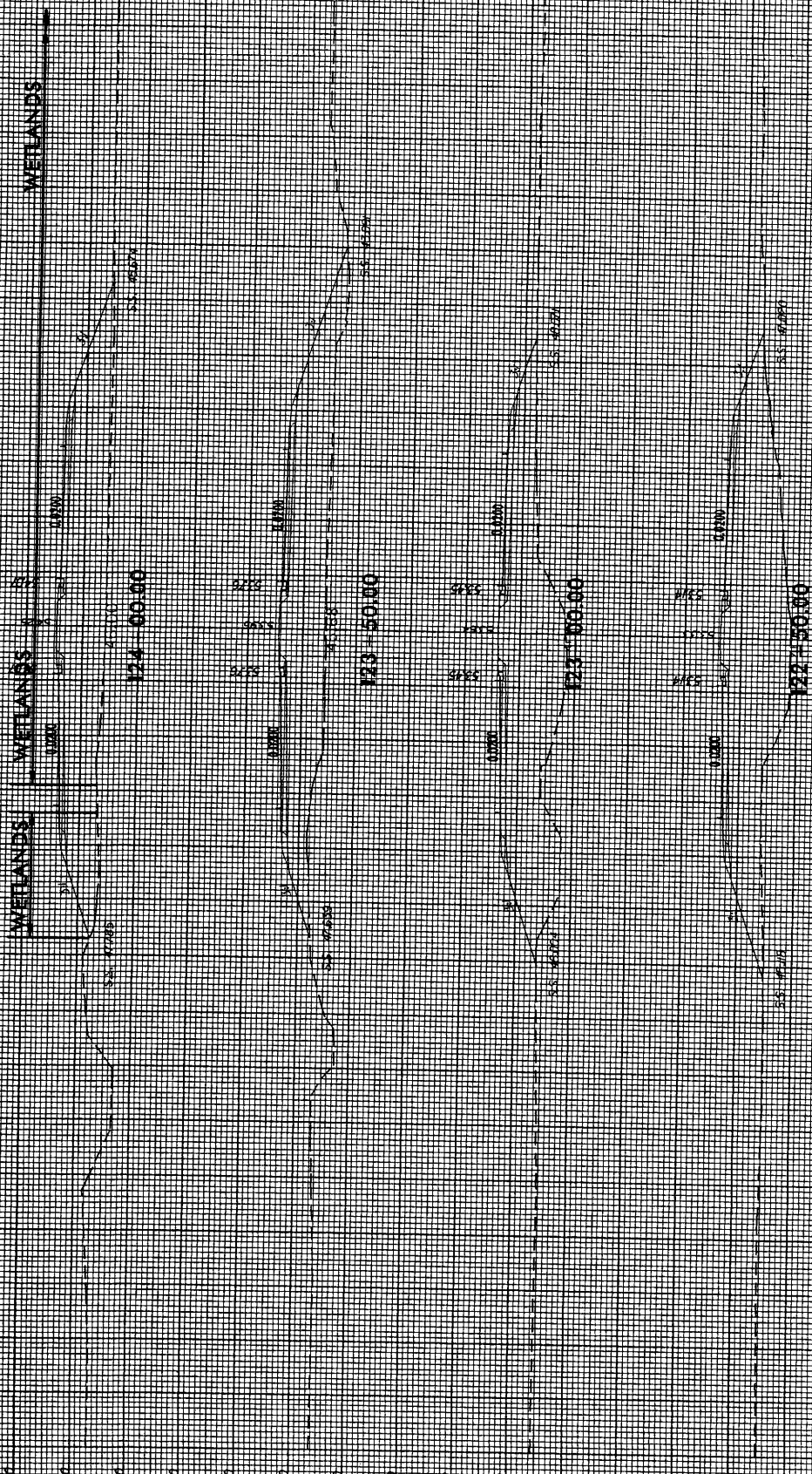
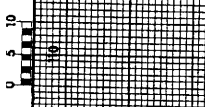
77+50.00

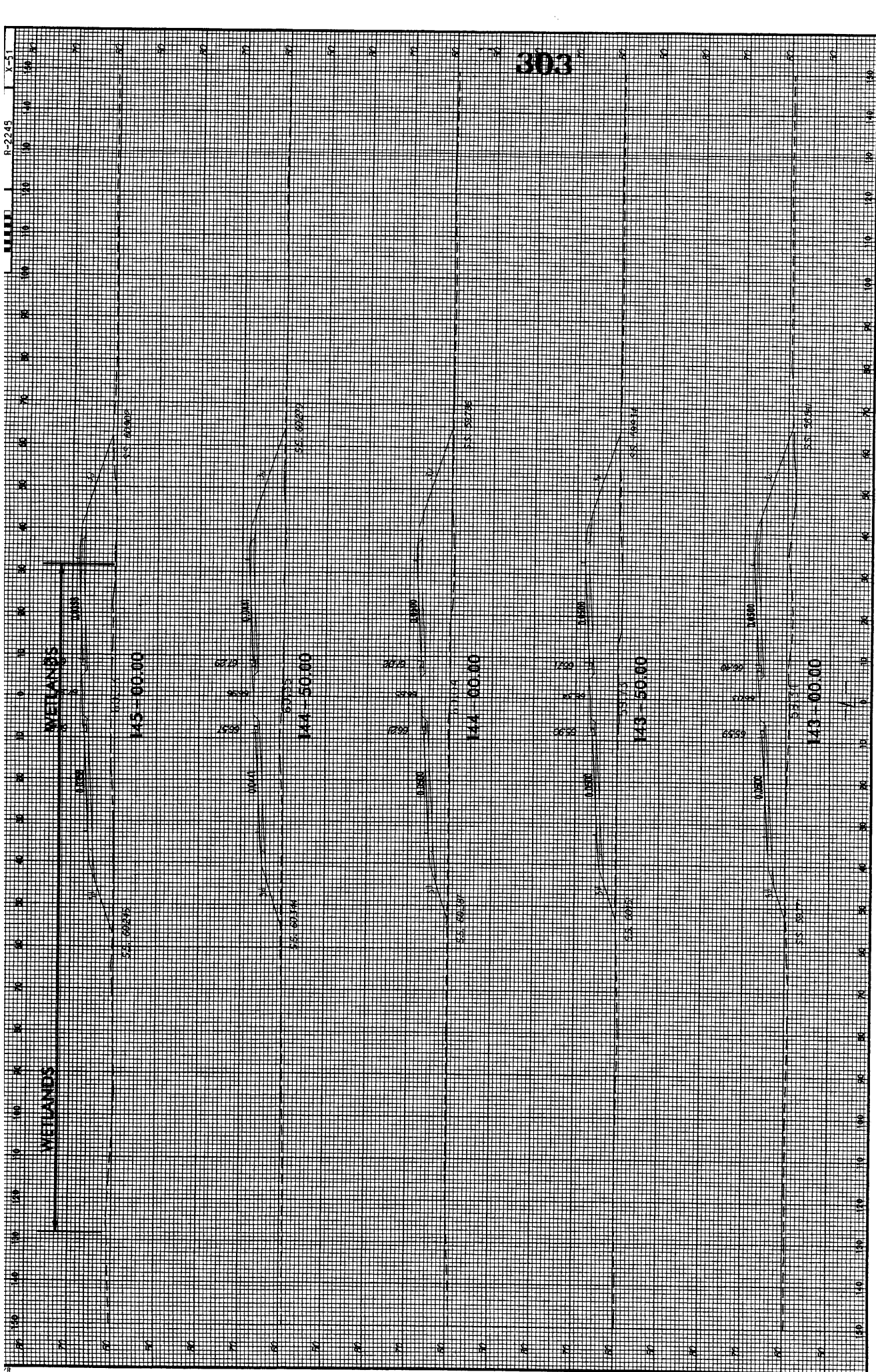


STREET NO. X-31
EAST WASHINGTON ST. 1-22745
100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300







WETLANDS

WETLANDS

145-00.00

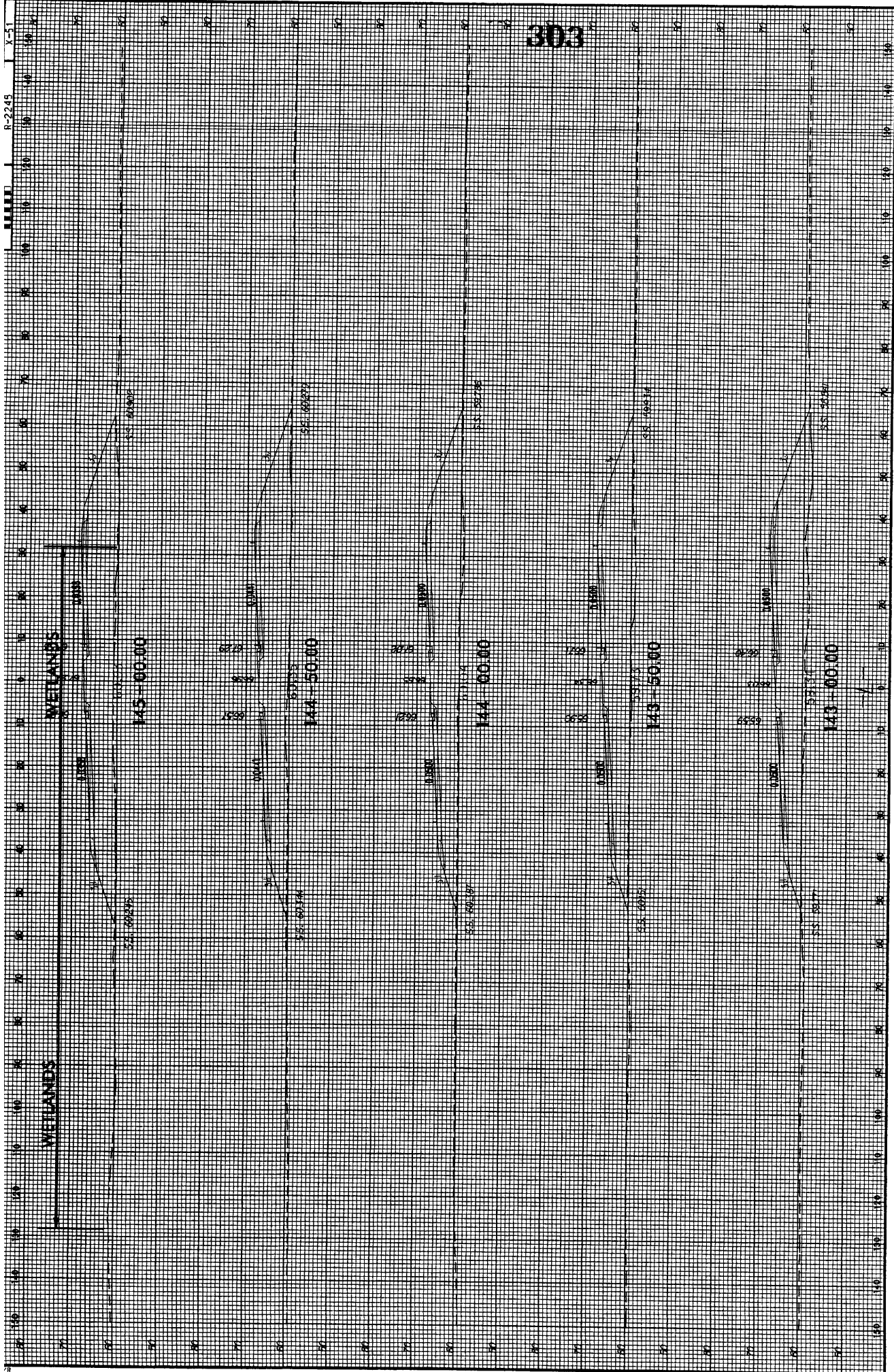
144-50.00

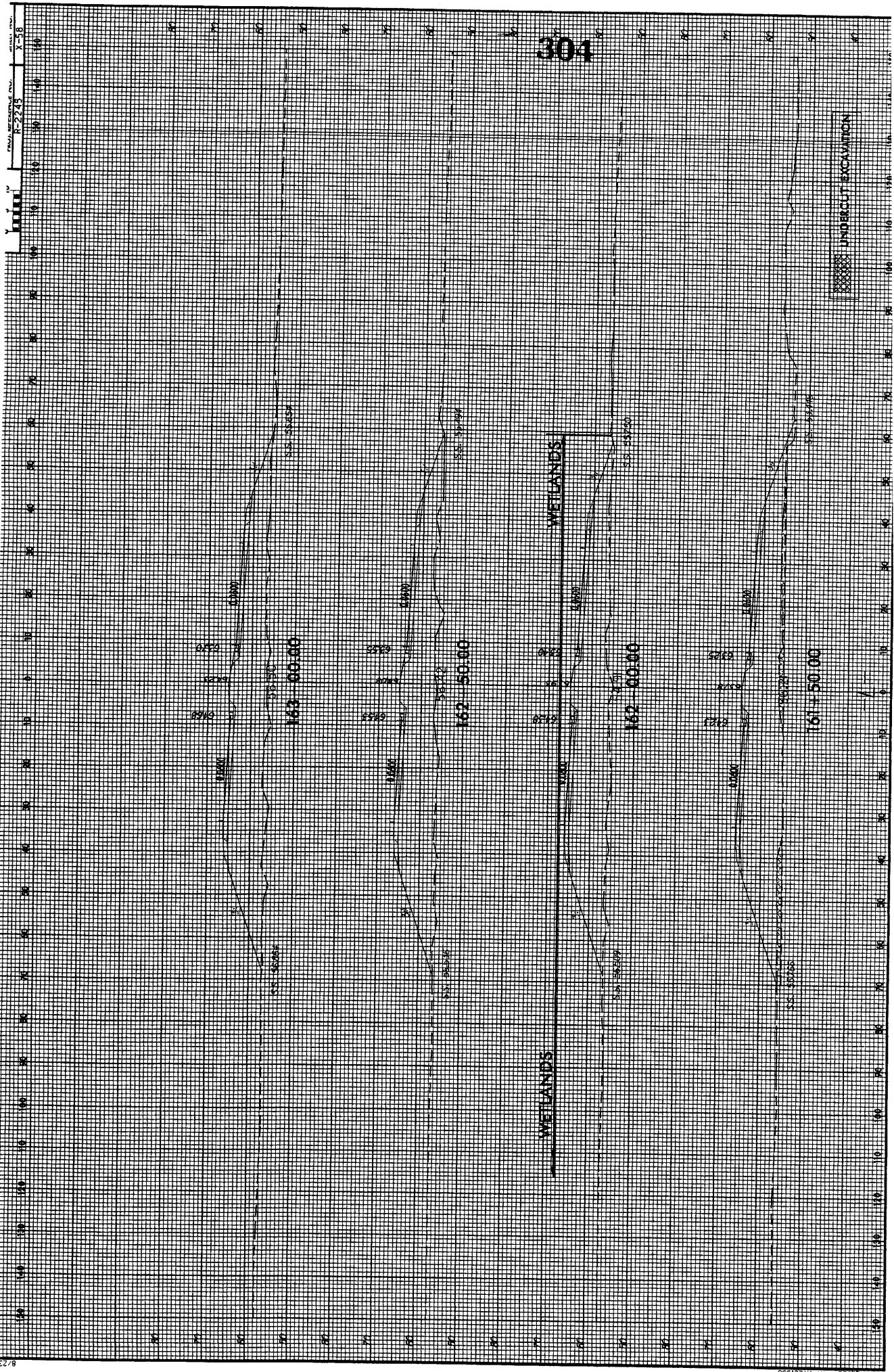
143-50.00

143-00.00

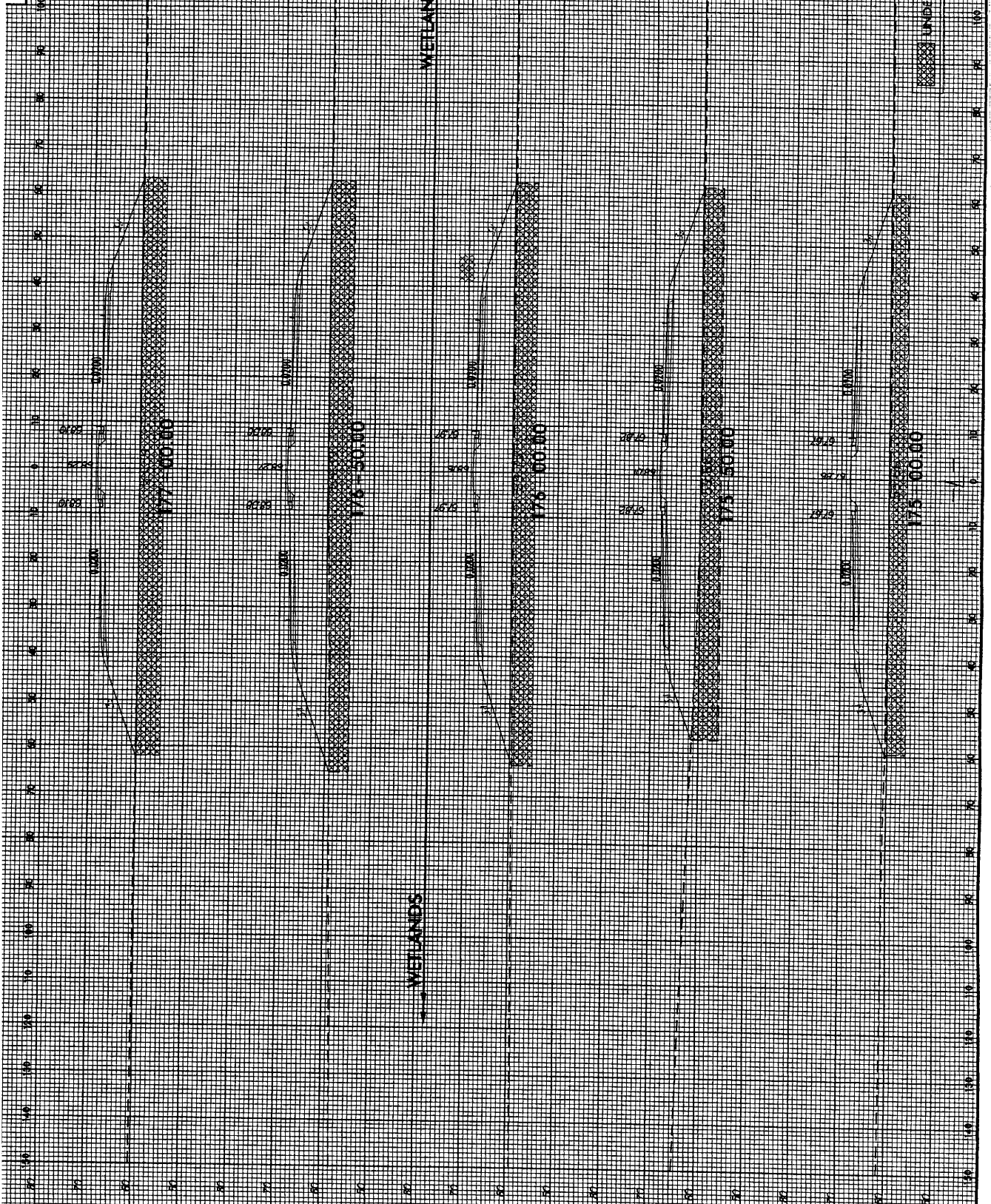
R-2245

Y-5





304

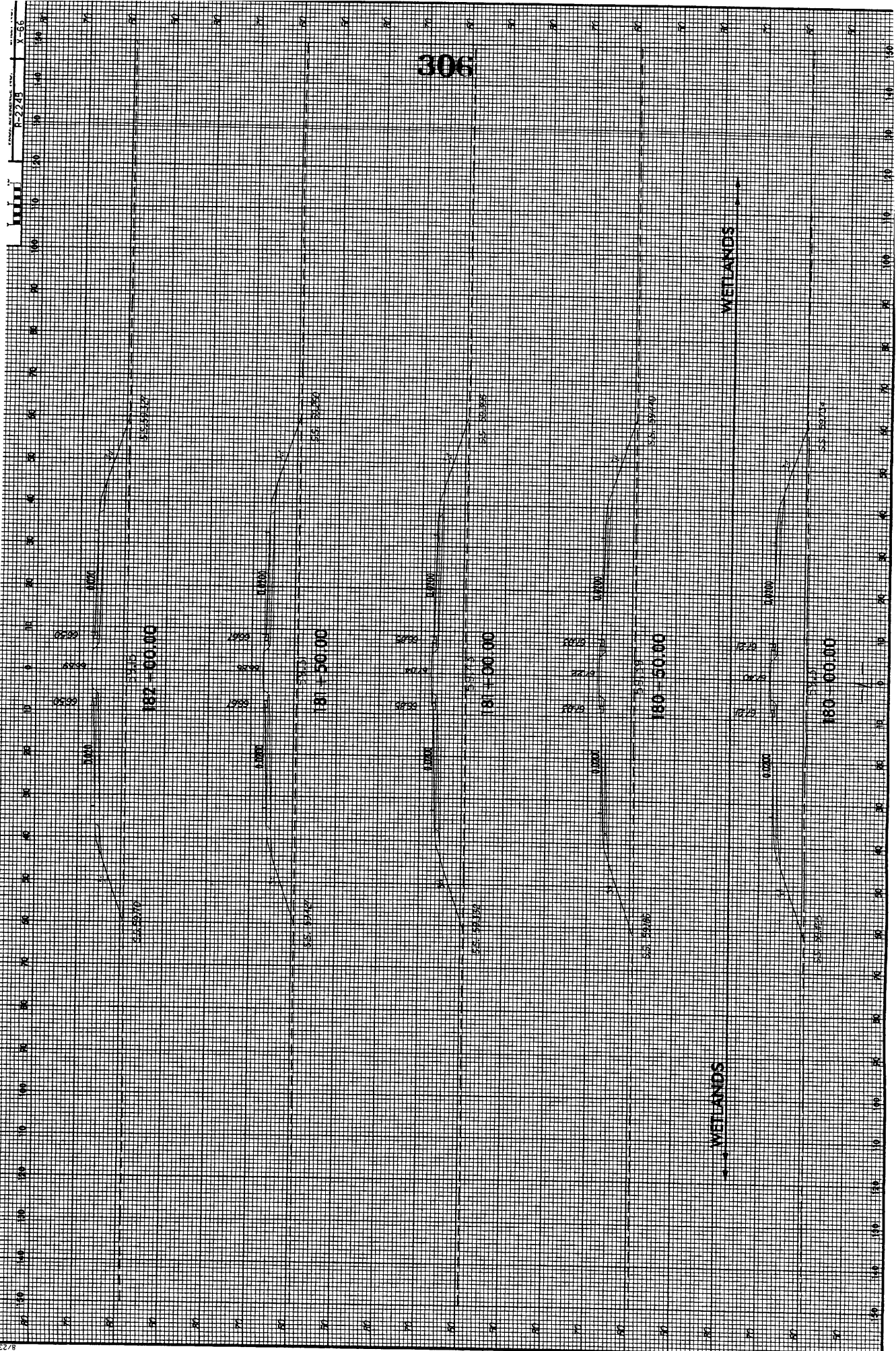


305

WETLANDS

WETLANDS

UNDERCUT EXCAVATION



306

WETLANDS

WETLANDS

100 110 120 130 140 150

100 110 120 130 140 150

8/23

PROJECT REFERENCE NO. R-2243

DATE 7/10/06

SCALE 1"=40'

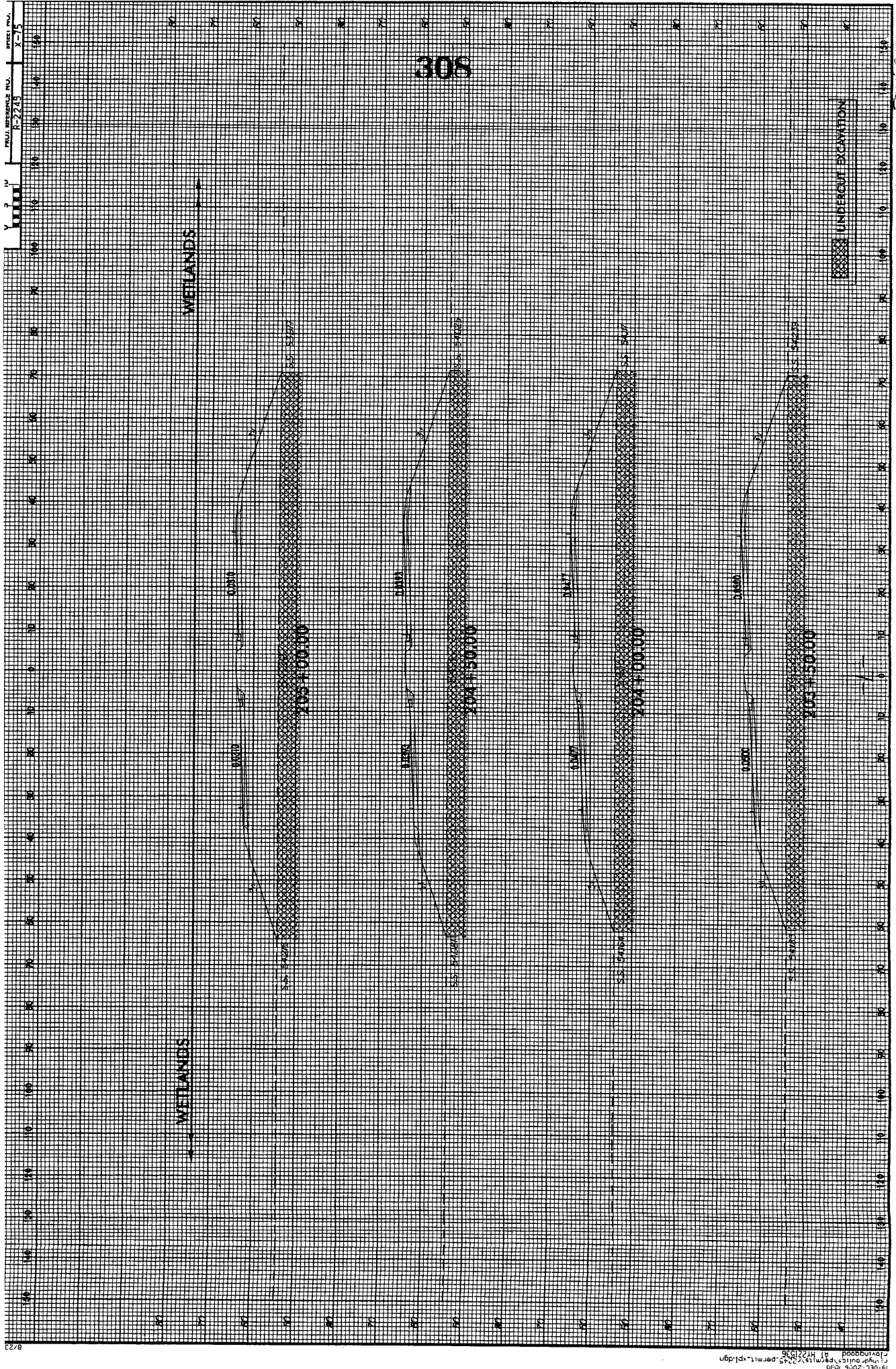
SHEET NO. X-75

308

WETLANDS

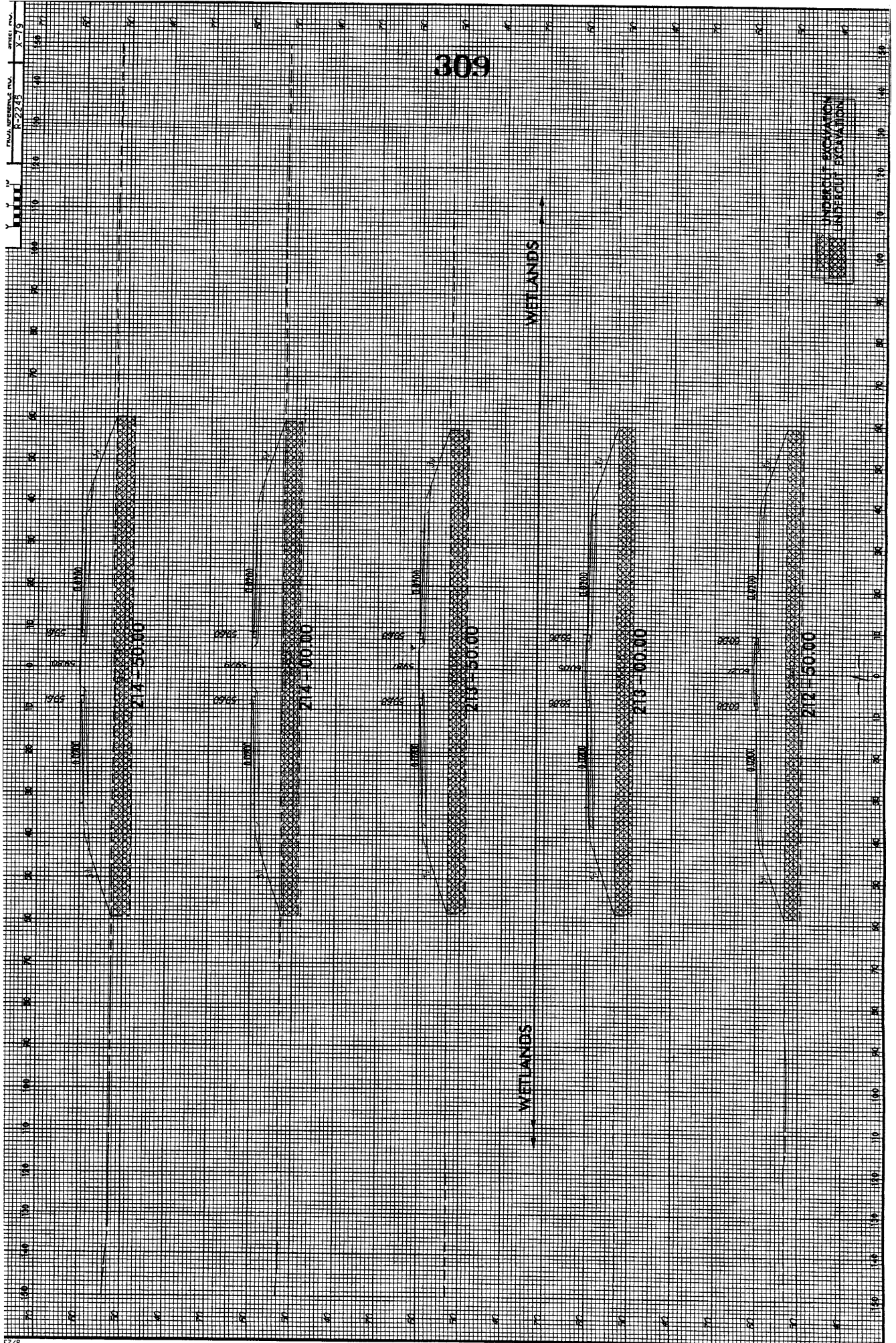
WETLANDS

UNDERCUT EXCAVATION



02/8

19-DEC-2006 09:01
I:\proj\06113\2243\perm\1-pl.dgn
11/12/2006 11:29:36



309

PLANNED PROJECT NO. E-2225
 SHEET NO. A-19

PROPOSED UNDERCUT EXCAVATION
 EXISTING UNDERCUT EXCAVATION

WETLANDS

WETLANDS

214-50+00

215-00+00

216-50+00

218-00+00

217-50+00



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

VICINITY MAP

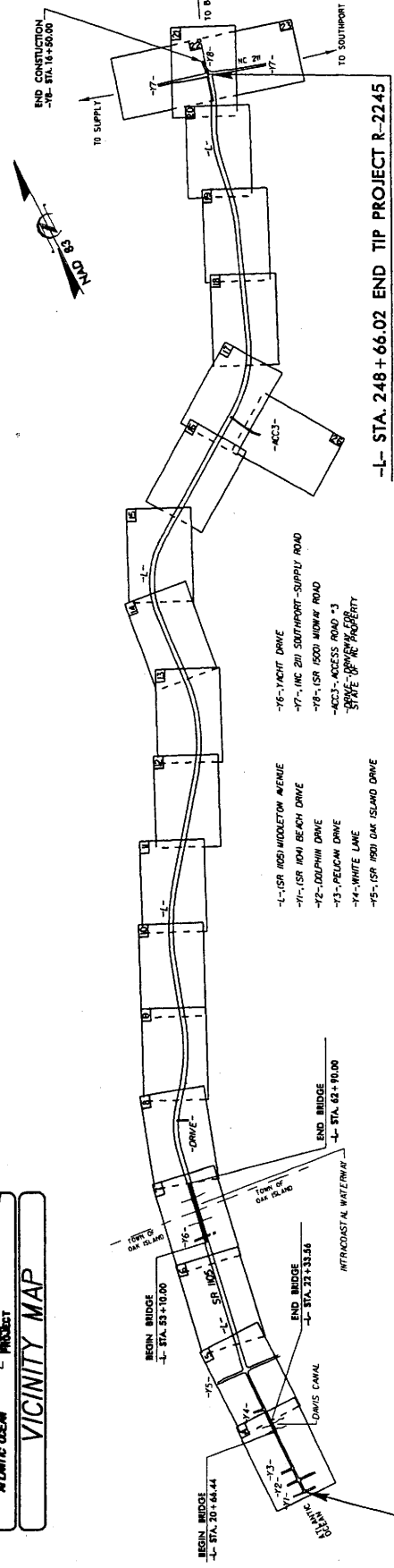
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRUNSWICK COUNTY

LOCATION: NEW ROUTE FROM SR 1104 (BEACH DRIVE)
TO NC 211 (SECOND BRIDGE TO OAK ISLAND)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, STRUCTURES
AND CULVERT

STATE	N.C.	FEDERAL PROJECT IDENTIFICATION NO.	R-2245	SHEET NO.	1
PROJECT NUMBER	34407.1.1	DESCRIPTION	BRUNSWICK COUNTY	DATE	
DESIGNER	34407.2.1	BY	P.E.		
CHECKER	34407.2.3	BY	R.W. & UTIL.		
APPROVED		DATE	CONST.		



-L- STA. 10 + 00.43 BEGIN TIP PROJECT R-2245

-L- STA. 248 + 66.02 END TIP PROJECT R-2245

ACCESS IS NOT CONTROLLED FROM OCEAN BEACH DRIVE TO 735' SOUTH OF YACHT DRIVE.
ACCESS CONTROL IS LIMITED TO POINTS AS SHOWN ON THE PLANS FROM 735' SOUTH OF YACHT DRIVE TO NC 211.

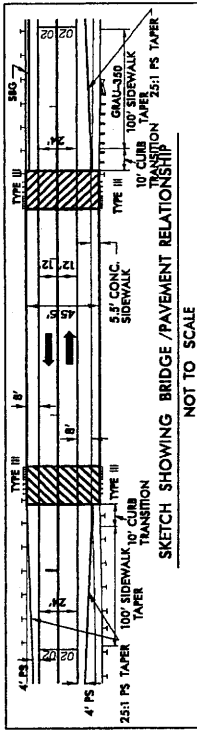
PRELIMINARY PLANS
DO NOT HAVE THE FORCE OF CONSTRUCTION

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 2006 = 19800 ADT 2030 = 31000 DHV = 8 % D = 55 % T = 3 % V = 40-60 MPH * (TTS) 1% + DUAL 2% FUNC CLASS - RURAL COLLECTOR	PROJECT LENGTH LENGTH ROADWAY TIP PROJECT R-2245 = 4.303 MI LENGTH STRUCTURES TIP PROJECT R-2245 = 0.217 MI TOTAL LENGTH OF TIP PROJECT R-2245 = 4.520 MI	DIVISION OF HIGHWAYS Prepared in the Office of: 1000 Birch Rider Dr., Raleigh, NC, 27610	HYDRAULICS ENGINEER TITLE: P.E. NAME: SUSAN C. LANCASTER, P.E. PROJECT NUMBER: 2245	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION TITLE: P.E. NAME: SUSAN C. LANCASTER, P.E. PROJECT NUMBER: 2245
			RIGHT OF WAY DATE: APRIL 29, 2005 LETTING DATE: MAY 15, 2006	PROJECT ENGINEER TITLE: P.E. NAME: GLENN W. MUMFORD, P.E. PROJECT NUMBER: 2245	APPROVED TITLE: P.E. NAME: SUSAN C. LANCASTER, P.E. PROJECT NUMBER: 2245

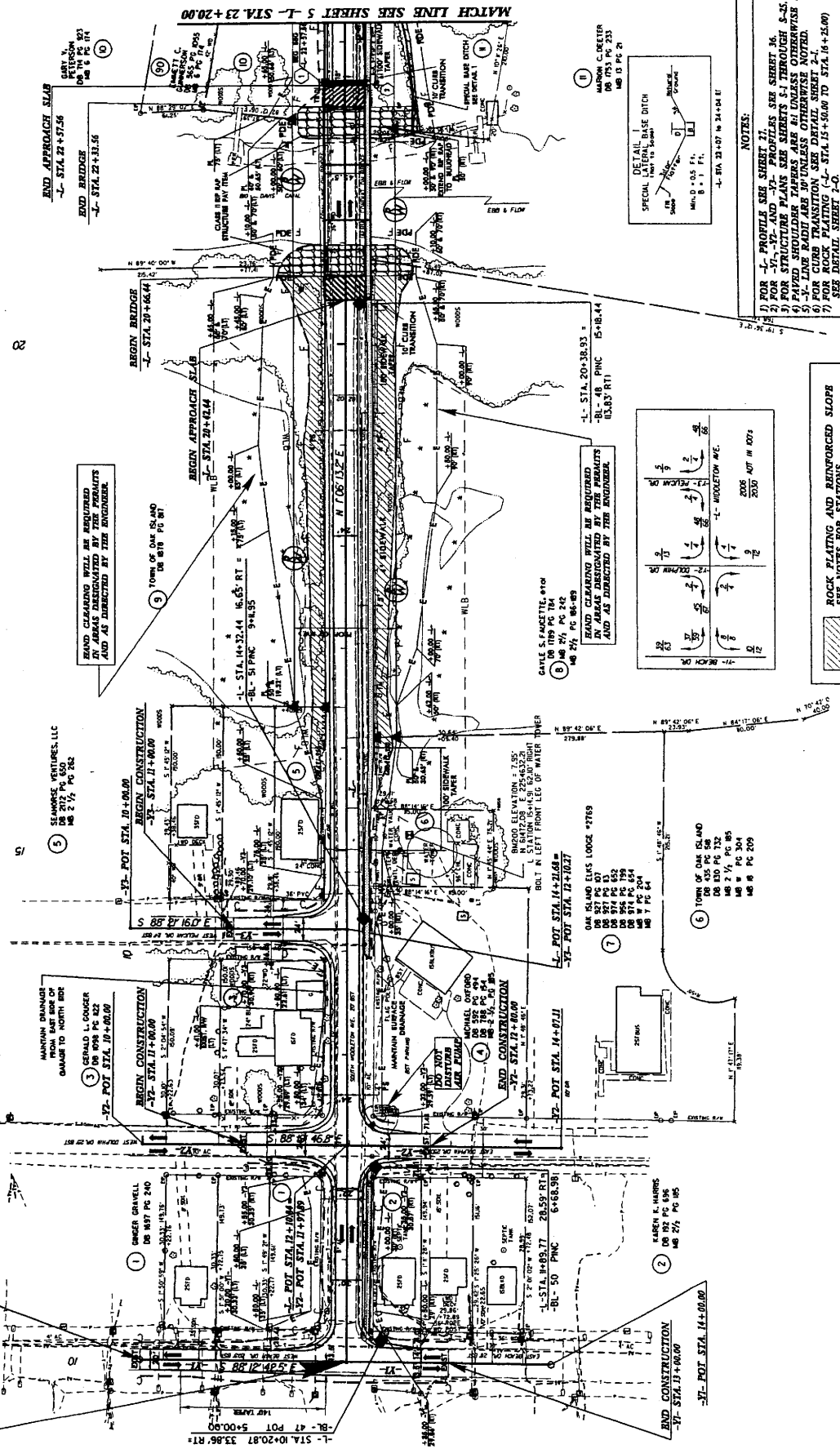
TIP PROJECT: R-2245

CONTRACT: C201550

PROJECT REFERENCE NO. R-2245
 SHEET NO. 4
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



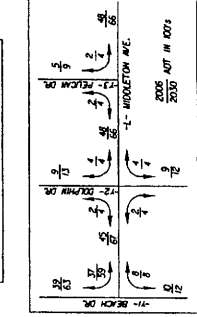
BEGIN TIP PROJECT R-2245
 -L- POT Sta. 10+00.43 =
 -Y1- POT Sta. 11+99.95



BRAND CLEARING WILL BE REQUIRED IN AREAS DESIGNATED BY THE PERMITS ADOPT AS DIRECTED BY THE ENGINEER.

LAND CLEARING WITH BE PRESERVED IN AREAS DESIGNATED BY THE ENGINEER AND AS DIRECTED BY THE ENGINEER.

ROCK FLATING AND REINFORCED SLOPE SEE NOTES FOR STATIONS

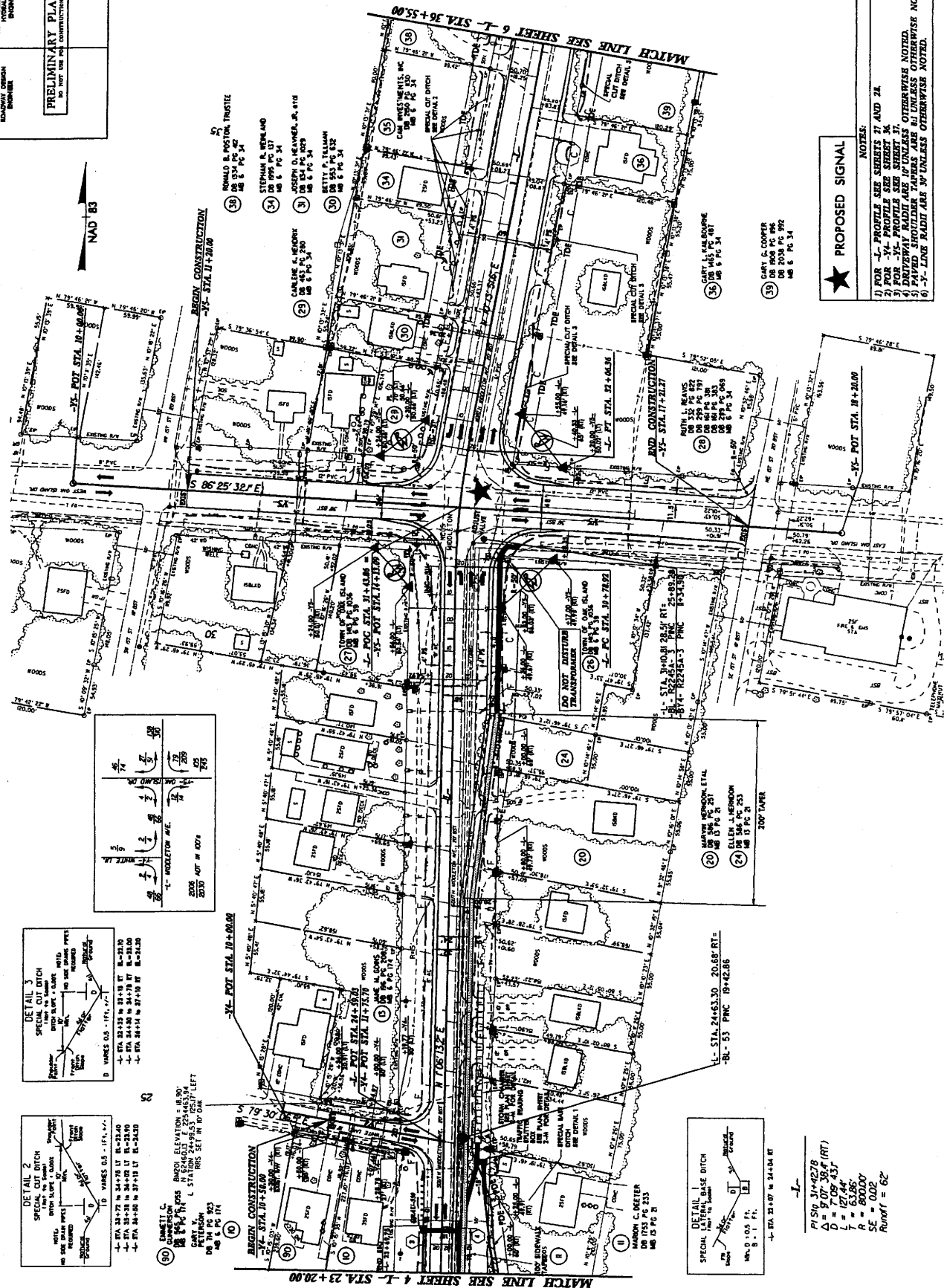


- NOTES:
- 1) FOR -L- PROFILE SEE SHEET 7.
 - 2) FOR -Y1-, -Y2- AND -Y3- PROFILES SEE SHEET 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - 3) FOR STRUCTURE TAPERES ARE AS INDICATED UNLESS OTHERWISE NOTED.
 - 4) -Y- LIVE RADI ARE 30' UNLESS OTHERWISE NOTED.
 - 5) FOR CURB PLATING SEE DETAIL SHEET 2-1.
 - 6) FOR ROCK FLATING -L- STA 15+50.00 TO STA 16+25.00
 - 7) FOR REINFORCED SLOPE (-L- STA 16+25.00 TO STA 20+25.00) SEE DETAIL SHEET 2-2.

REVISIONS

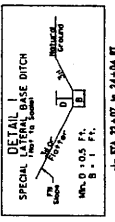
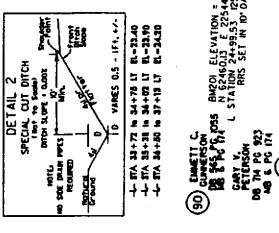
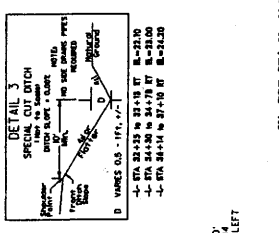
PROJECT REFERENCE NO. R-2245	SHEET NO. 5
BY ROADWAY DESIGN ENGINEER	CHECKED BY HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PROPOSED SIGNAL

- NOTES:
- 1) FOR 1" PROFILE SEE SHEETS 7 AND 24
 - 2) FOR 3/4" PROFILE SEE SHEET 34
 - 3) FOR 1/2" PROFILE SEE SHEET 37
 - 4) DRIVEWAY RADII ARE IF UNLESS OTHERWISE NOTED.
 - 5) PAVED SHOULDERS ARE UNLESS OTHERWISE NOTED.
 - 6) 1/2" LINE ADJUST ARE UNLESS OTHERWISE NOTED.



PI 519.31+42.78
 $\Delta = 9' 07'' 36.6'' (RT)$
 $D = 7' 09'' 43.7''$
 $L = 127.44'$
 $R = 800.00'$
 $SE = 0.02$
 $Runoff = 62'$

EMMETT C. CLAWSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

GARY L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

MARION C. BREYER
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

DAVID L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

STEPHAN R. WELAND
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

JOSEPH D. WAGNER, JR.
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

RONALD B. POSTON, TRUSTEE
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

CHARLES S. WAGNER
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

BETTY A. TELLMAN
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

RUTH L. HEWES
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

GARY L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

ELLEN L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

MARION C. BREYER
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

DAVID L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

STEPHAN R. WELAND
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

JOSEPH D. WAGNER, JR.
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

CHARLES S. WAGNER
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

BETTY A. TELLMAN
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

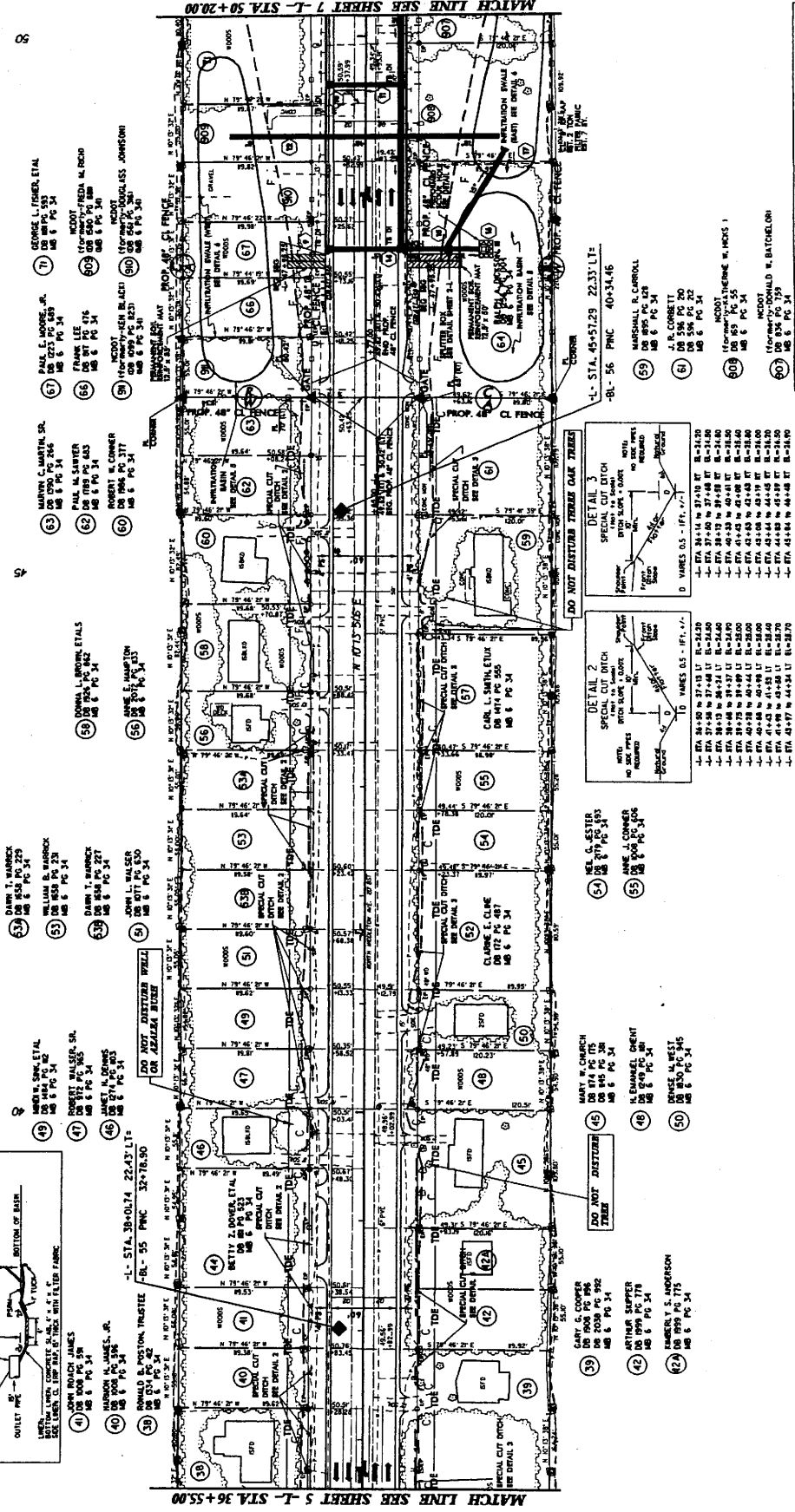
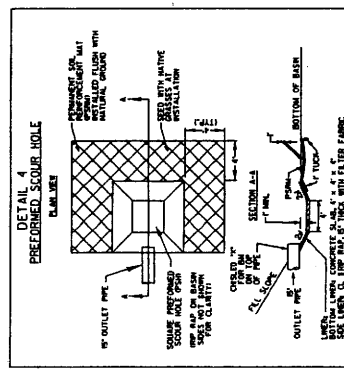
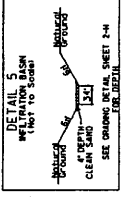
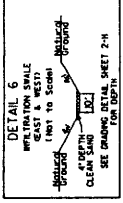
RUTH L. HEWES
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

GARY L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

ELLEN L. HENSON
 CIVIL ENGINEER
 1100 W. 10TH ST. SUITE 100
 DENVER, CO 80202
 PHONE: 733-1111
 FAX: 733-1112

PROJECT REFERENCE NO.	817-295
DATE	6
BY	W. J. WARD
CHECKED BY	W. J. WARD
DESIGNED BY	W. J. WARD
IN CHARGE	W. J. WARD

PRELIMINARY PLANS
NO PART USE FOR CONSTRUCTION



- 39 DAWN T. WARDEN
DB 854 PC 229
MB 6 PC 34
- 40 WILIAM B. WARDEN
DB 854 PC 229
MB 6 PC 34
- 41 DAWN T. WARDEN
DB 854 PC 229
MB 6 PC 34
- 42 DAWN T. WARDEN
DB 854 PC 229
MB 6 PC 34
- 43 DAWN T. WARDEN
DB 854 PC 229
MB 6 PC 34
- 44 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 45 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 46 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 47 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 48 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 49 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 50 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 51 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 52 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 53 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 54 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 55 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 56 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 57 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 58 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 59 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 60 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 61 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 62 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 63 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 64 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 65 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 66 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 67 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 68 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 69 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34
- 70 MARIAN S. SKEETAL
DB 854 PC 229
MB 6 PC 34

- 41- STA. 45+51.29 22.33' LT
- 42- STA. 45+51.29 22.33' LT
- 43- STA. 45+51.29 22.33' LT
- 44- STA. 45+51.29 22.33' LT
- 45- STA. 45+51.29 22.33' LT
- 46- STA. 45+51.29 22.33' LT
- 47- STA. 45+51.29 22.33' LT
- 48- STA. 45+51.29 22.33' LT
- 49- STA. 45+51.29 22.33' LT
- 50- STA. 45+51.29 22.33' LT
- 51- STA. 45+51.29 22.33' LT
- 52- STA. 45+51.29 22.33' LT
- 53- STA. 45+51.29 22.33' LT
- 54- STA. 45+51.29 22.33' LT
- 55- STA. 45+51.29 22.33' LT
- 56- STA. 45+51.29 22.33' LT
- 57- STA. 45+51.29 22.33' LT
- 58- STA. 45+51.29 22.33' LT
- 59- STA. 45+51.29 22.33' LT
- 60- STA. 45+51.29 22.33' LT
- 61- STA. 45+51.29 22.33' LT
- 62- STA. 45+51.29 22.33' LT
- 63- STA. 45+51.29 22.33' LT
- 64- STA. 45+51.29 22.33' LT
- 65- STA. 45+51.29 22.33' LT
- 66- STA. 45+51.29 22.33' LT
- 67- STA. 45+51.29 22.33' LT
- 68- STA. 45+51.29 22.33' LT
- 69- STA. 45+51.29 22.33' LT
- 70- STA. 45+51.29 22.33' LT

NOTES:
1) FOR - 1. PROFILE SEE SHEET 24
2) DRIVEWAY RADIUS ARE UNLESS OTHERWISE NOTED.
3) PAVED SHOULDER TAPERS ARE UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO. R-2245
 SHEET NO. 7
 HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

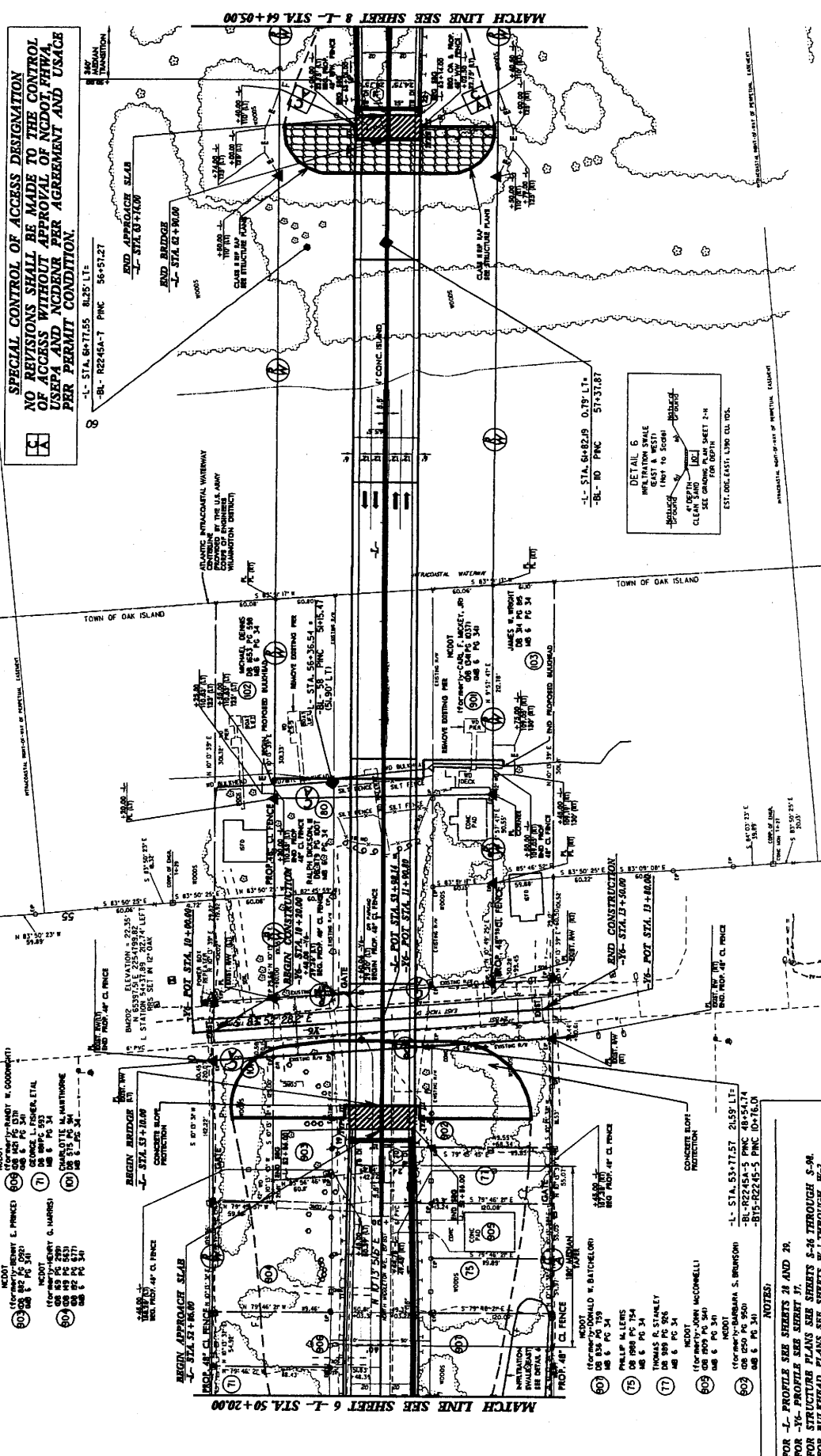
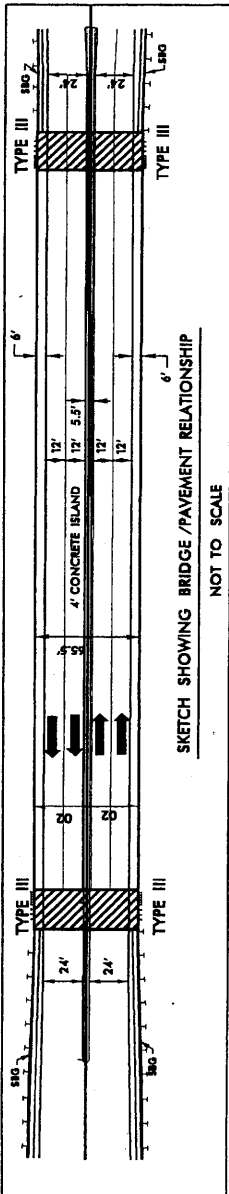


SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND MCDNR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

-L- STA. 64+71.55 B.L.25 L.T.
 -BL- R2245A-7 PNC 56+51.27

-L- STA. 64+82.09 0.75' L.T.
 -BL- R2245A-7 PNC 57+37.87

DETAIL 6
 INFILTRATION SHALE (WEST & WEST) (SEE PG. 54)
 4" (2") CLEAN SAND (SEE CHART SHEET 2-N)
 1" (1/2") CLEAN SAND (SEE CHART SHEET 2-N)
 EST. ONE EAST, 1.390 COL. 052.

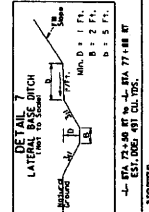
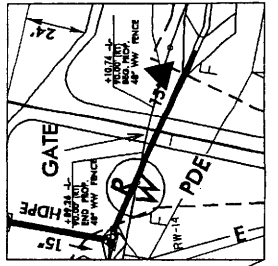
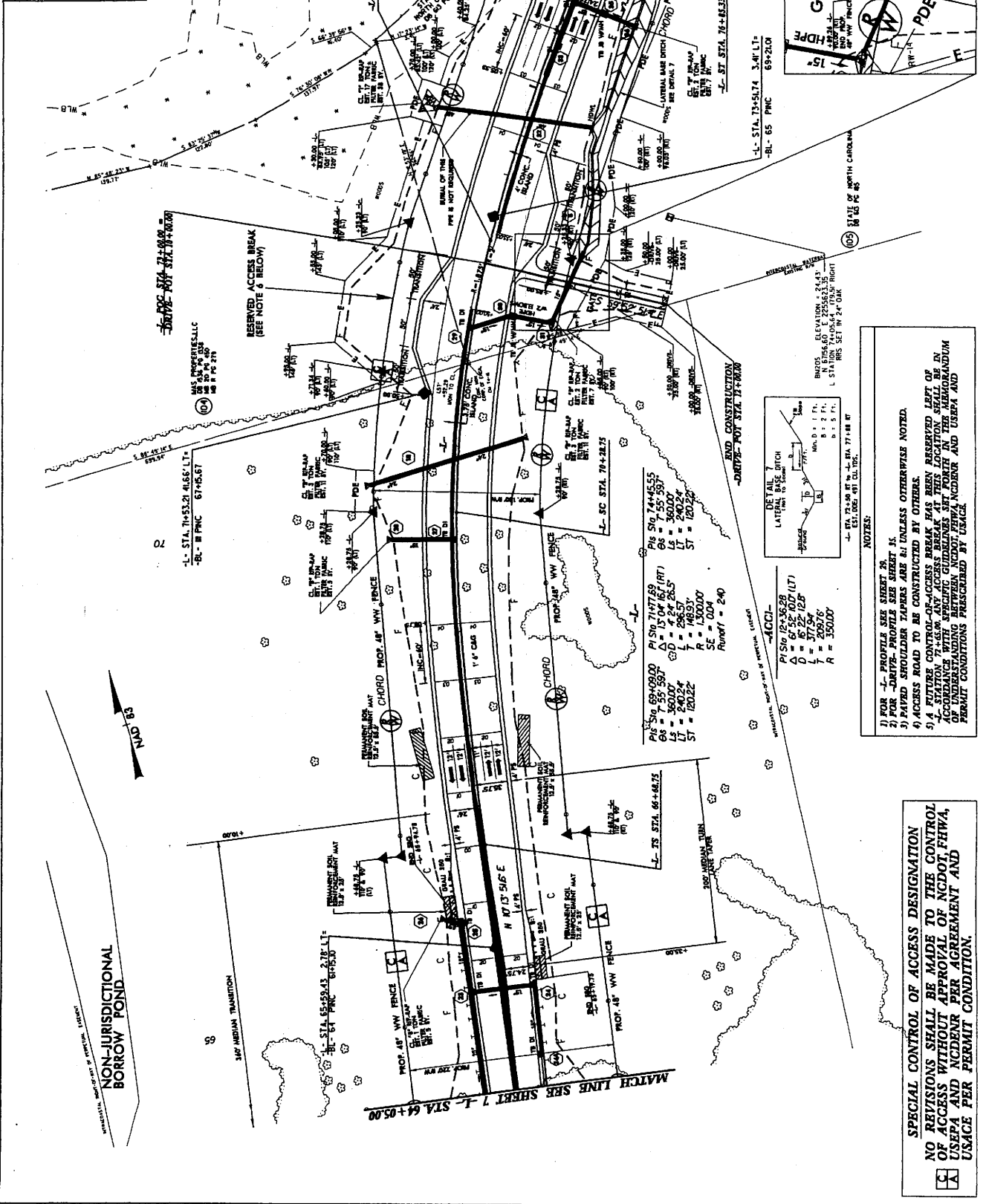


- (60) (FORMER) RENTY E. PRINCE
 08 250 PG 541
 08 250 PG 541
- (61) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (62) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (63) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (64) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (65) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (66) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (67) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (68) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541
- (69) (FORMER) RENTY E. COONMINT
 08 250 PG 541
 08 250 PG 541

- NOTES**
- 1) FOR -L- PROFILE SEE SHEETS 28 AND 29.
 - 2) FOR -Y6- PROFILE SEE SHEET 37.
 - 3) FOR STRUCTURE PLANS SEE SHEETS 5-26 THROUGH 5-34.
 - 4) FOR BULKHEAD PLANS SEE SHEETS W-1 THROUGH W-2.
 - 5) DISTURBED AREAS NOT SHOWN WITH BULKHEADS SHALL BE REMOVED AND SCARIFIED TO MINIMUM DEPTH OF 2.0'.

-L- STA. 53+77.57 21.59' L.T.
 -BL- R2245A-5 PNC 48+54.74
 -B15-R2245-5 PNC 0+76.0

PROJECT REFERENCE NO. R-2245
 SHEET NO. 8
 DRAWN BY: [blank]
 CHECKED BY: [blank]
 DATE: [blank]
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



DATA TABLE

PI STA. 69+09.00	PI STA. 71+71.69	PI STA. 74+45.55
Δ = 15.00 (FT)	Δ = 12.00 (FT)	Δ = 3.00 (FT)
LS = 35.00	LS = 30.00	LS = 30.00
LI = 240.24	LI = 240.24	LI = 240.24
ST = 120.12	ST = 120.12	ST = 120.12
R = 1,300.00	R = 1,300.00	R = 1,300.00
SE = 0.04	SE = 0.04	SE = 0.04
Runoff = 2.40	Runoff = 2.40	Runoff = 2.40

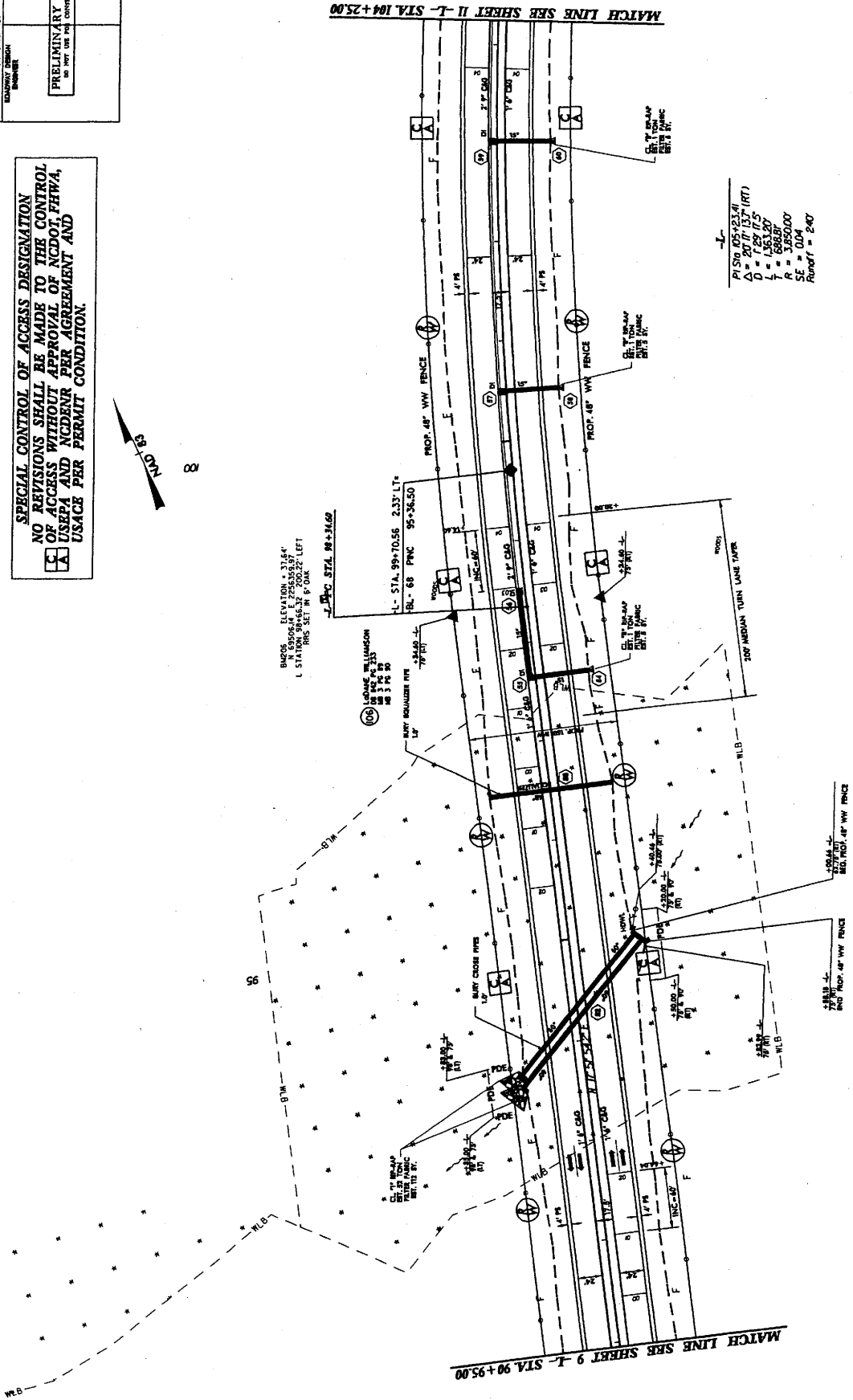
NOTES:

- 1) FOR -L- PROFILE SEE SHEET 28
- 2) FOR -DRIVE- PROFILE SEE SHEET 18
- 3) PAVED SHOULDER TAPERS ARE 8:1 UNLESS OTHERWISE NOTED.
- 4) ACCESS ROAD TO BE CONSTRUCTED BY OTHERS.
- 5) A FUTURE CONTROL-OF-ACCESS BREAK HAS BEEN RESERVED LEFT OF -L- STATION 74+55.00. ANY ACCESS BREAK AT THIS LOCATION SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE FEDERAL HIGHWAY ADMINISTRATION UNDERSTANDING BETWEEN FHWA, MCDENR AND USEPA AND PERMIT CONDITIONS PRESCRIBED BY USACE.

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND MCDENR PER AGREEMENT AND USACE PER PERMIT CONDITION.

PROJECT REFERENCE NO. R-2245	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

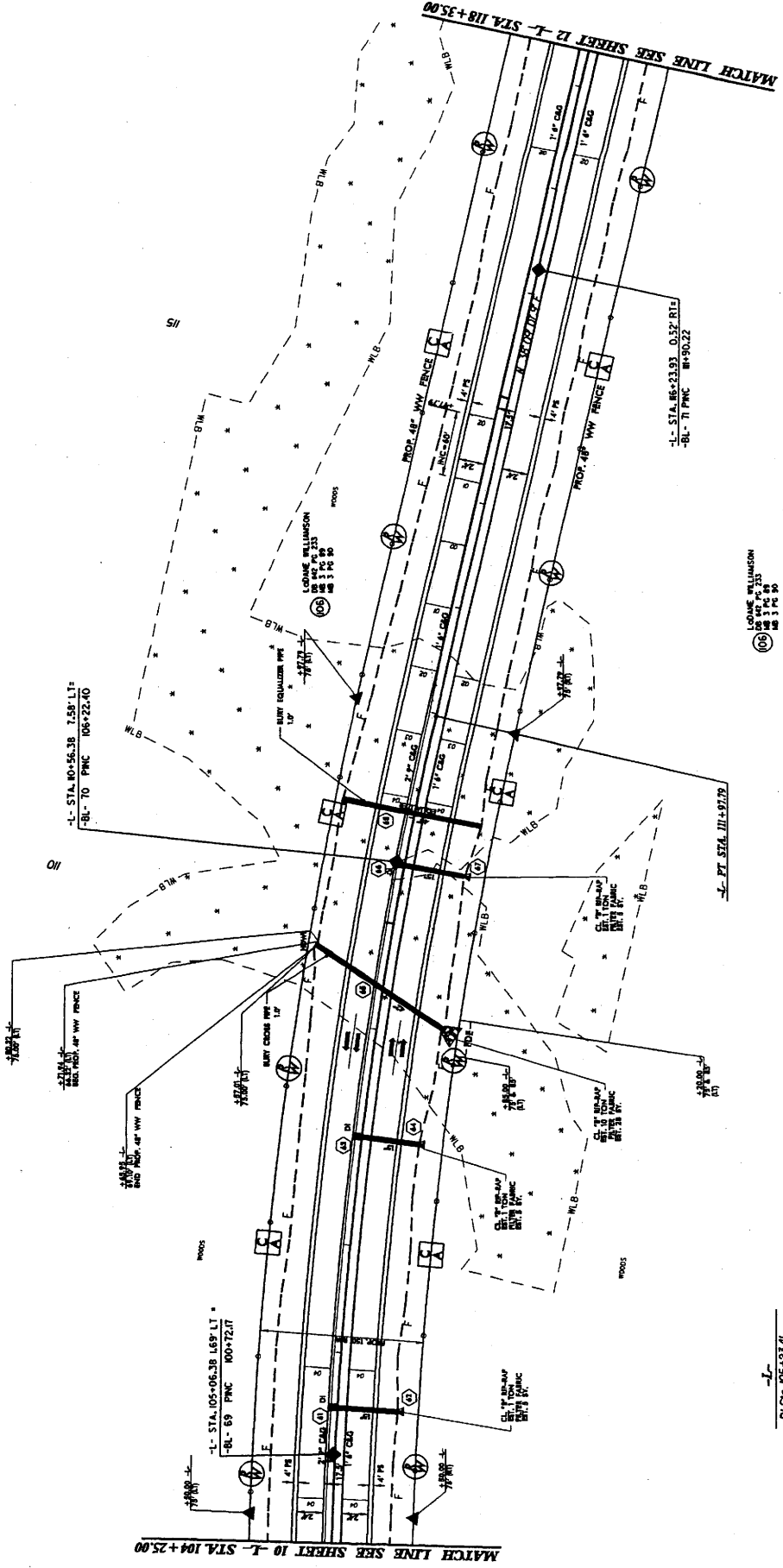
SPECIAL CONTROL OF ACCESS DESIGNATION
NO REVISIONS SHALL BE MADE TO THE CONTROL
OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA,
USEPA AND ACDNR PER AGREEMENT AND
USAGE PER PERMIT CONDITION.



-L-
 P/SW 05.93.21
 D = 1.69 17.5
 L = 1.63 207
 E = 688.87
 R = 3050.00
 R/cut = 240

NOTES:
 1) FOR -L- PROFILE SEE SHEETS 29 AND 30.
 2) FOR S/W TRANSITION FROM 14'-0\"/>

PROJECT REFERENCE NO. A-2245	SHEET NO. 11
COUNTY SHERMAN	TOWNSHIP WYOMING
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



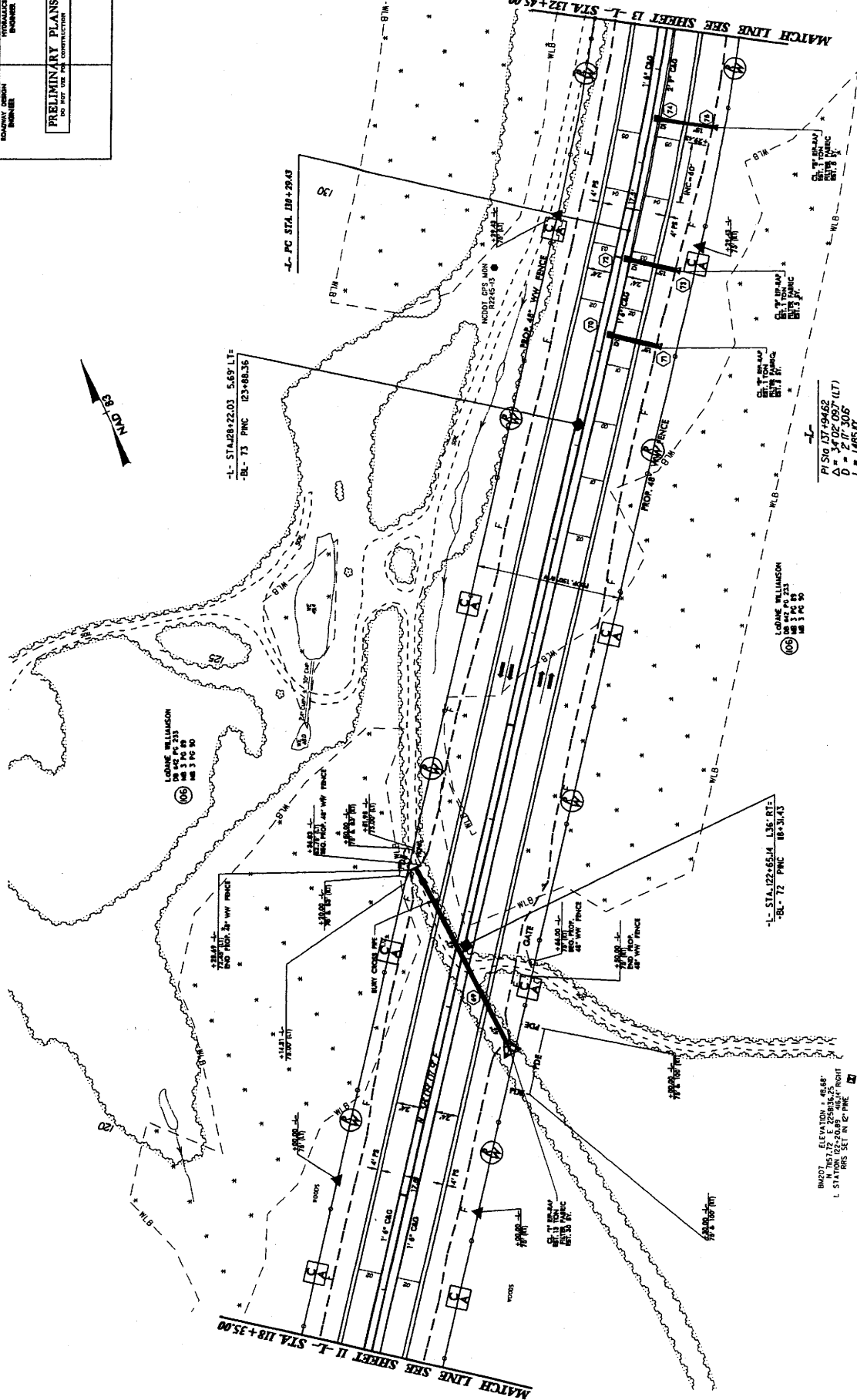
NOTES:

- FOR -L- PROFILE SEE SHEET 3A
- FOR 50' TRANSITION FROM 1'-4\"/>

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USACE PER PERMIT CONDITION.

-L-
 PI STA. 105+23.41
 Δ = 20.17' (15.7' RT)
 D = 1.29' (1.5')
 L = 1.63' (2.0')
 R = 57850.00'
 SE = 0.04
 Runoff = 240

PROJECT REFERENCE NO. A-2245	SHEET NO. 12
BY SHEET NO. DESIGNED BY CHECKED BY APPROVED BY	DATE REVISION REVISION REVISION
PRELIMINARY PLANS FOR THE STATE OF CALIFORNIA	



-L- STA 128+22.03 5.69 LT
-BL- 73 PNC 03+488.35

PI 50.017 09462
D = 54.02 097 (LT)
D = 247.306
L = 1485.07
R = 2500.00
SE = 0.05
Runoff = 300

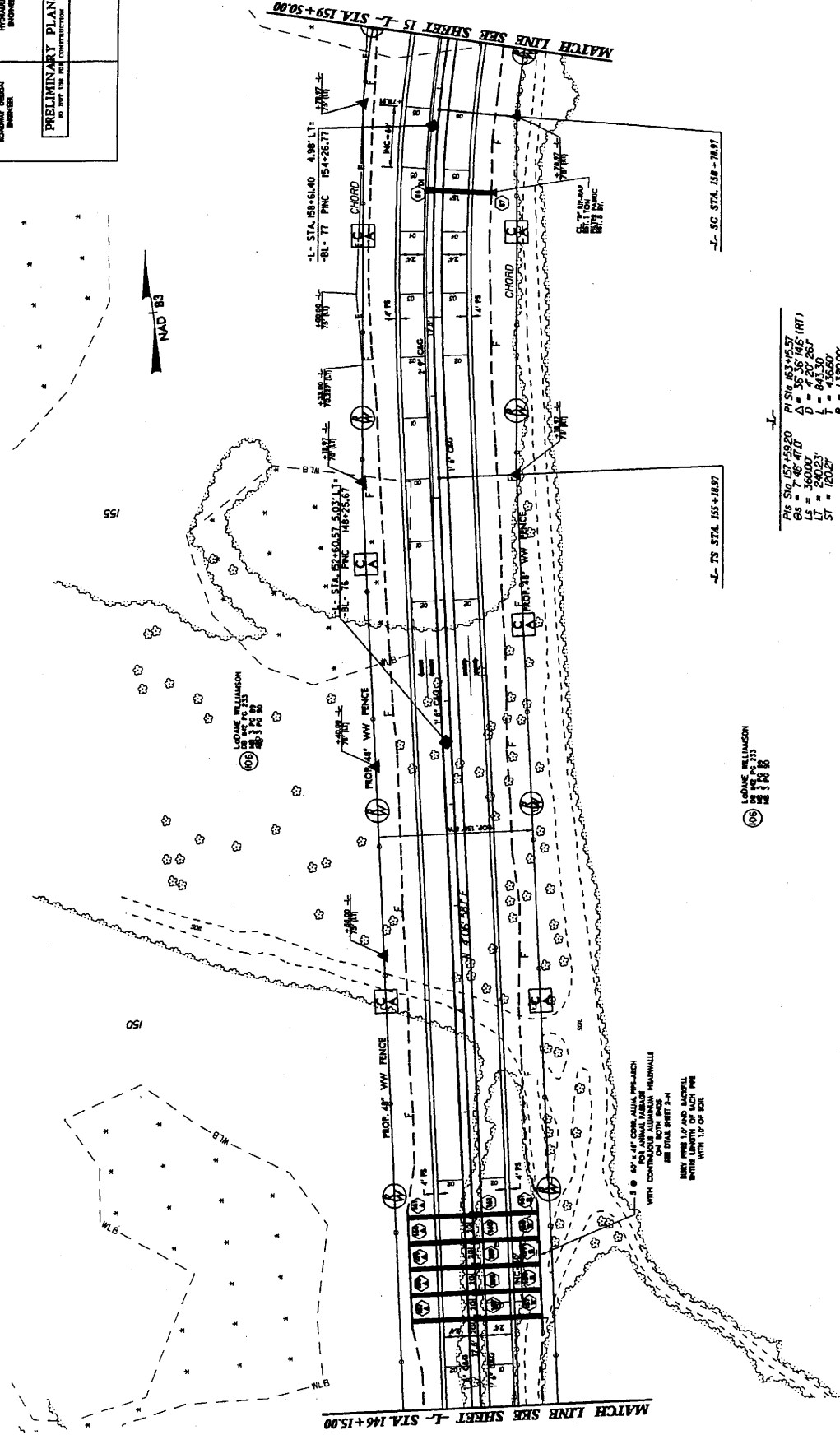
-L- STA 122+65.14 LSC RT
-BL- 72 PNC 18+31.43

BENCHMARK ELEVATION = 45.88
L STATION 122+20.85 20' FROM RIGHT
RHS SET IN 2' PNE

NOTES:
1) FOR -L- PROFILE SEE SHEETS 30 AND 31
2) FOR 50' TRANSITION FROM 7'-6" C&G TO 7'-9" C&G
3) (-L- STA. 119+29.63 RT) SEE SHEET 2-1

SPECIAL CONTROL OF ACCESS DESIGNATION
NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF MCDOT, FHWA, USEPA AND INCIDENT PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO.	R-2245	SHEET NO.	14
ROADWAY DESIGN NUMBER	HYDRAULIC ENGINEER		
PRELIMINARY PLANS FOR THE ROAD CONSTRUCTION			



-L-

PI	84.300	PI S/C	85.2557 (RT)
CI	46.475	D	20.282
LS	360.00	L	841.30
LT	240.23	T	456.60
ST	120.27	SE	1520.00
		SC	108.360
		Radius	360

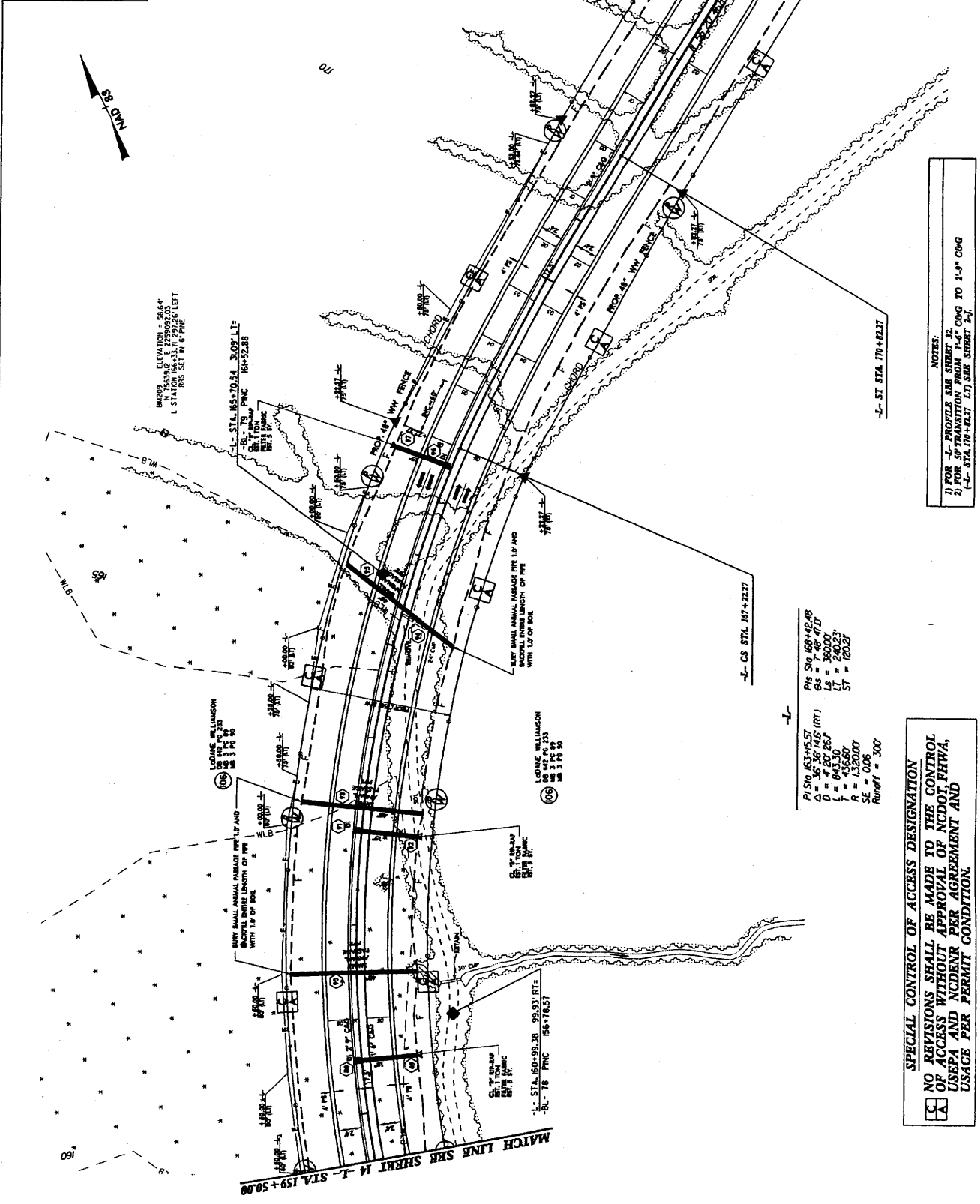
NOTES:

- FOR L- PROFILE SEE SHEETS 11 AND 22
- FOR 48\"/>

SPECIAL CONTROL OF ACCESS DESIGNATION

NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO.	R-2245	SHEET NO.	15
ROADWAY DESIGN ENGINEER	MCWALLEN	PROJECT NO.	15
PRELIMINARY PLANS FOR PERMIT AND CONSTRUCTION			



PI Stg 163+16.57
 Gs = 36.26
 L = 843.30
 T = 436.60
 A = 1,320.00
 SE = 0.06
 Runoff = 300

SPECIAL CONTROL OF ACCESS DESIGNATION
NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

NOTES:
 1) FOR L- PROFILES SEE SHEET 21
 2) FOR W-TRANSITION PROFILE, CONC TO 1-3" COG (-L- STA. 170+82.27) SEE SHEET 2-J.

PROJECT REFERENCE NO. R-2245	SHEET NO. 16
DATE 04/11/2006	DESIGNED BY KIMBERLY
CHECKED BY KIMBERLY	APPROVED BY KIMBERLY

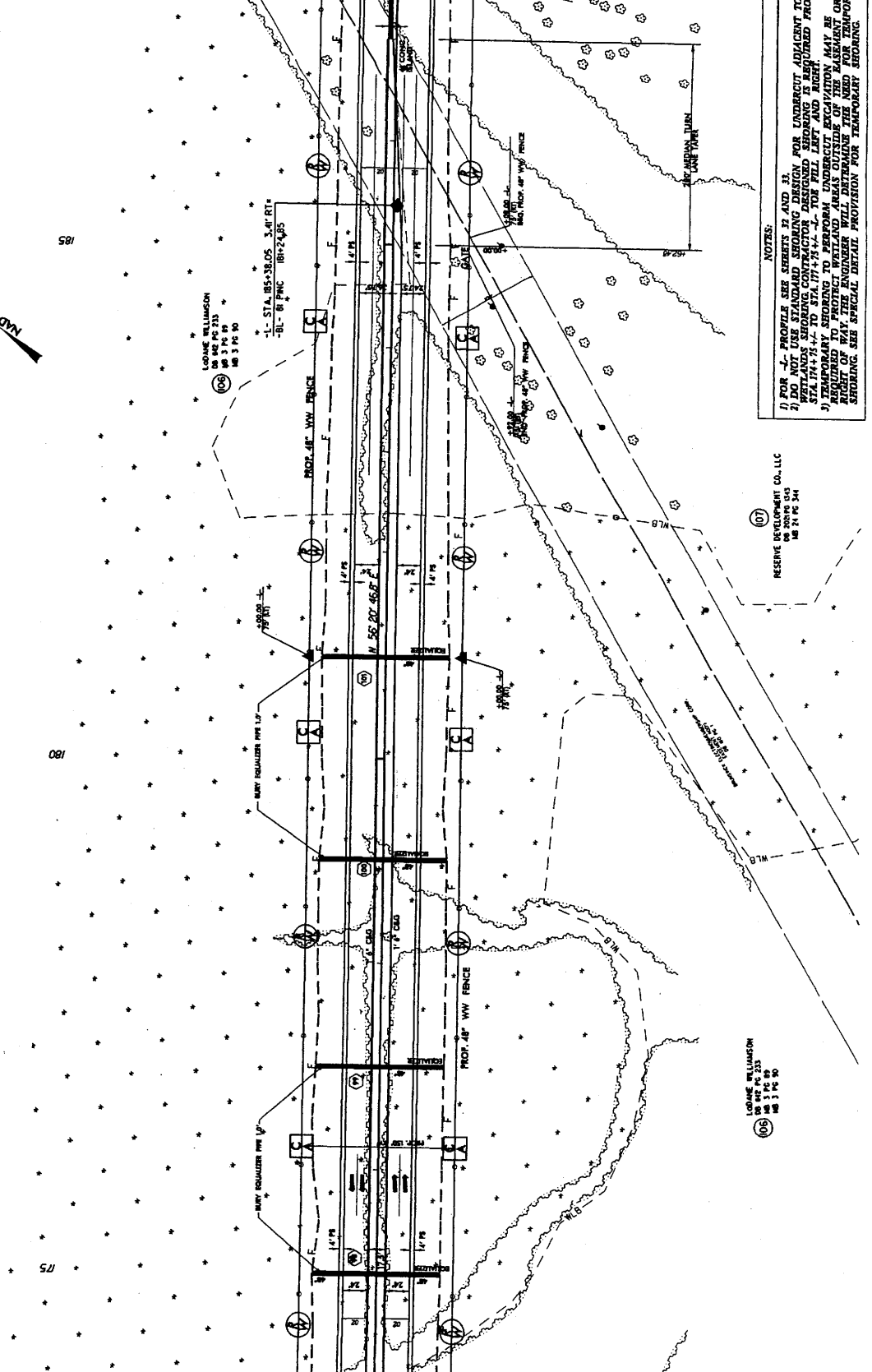
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SPECIAL CONTROL OF ACCESS DESIGNATION
NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND NCDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.



MATCH LINE SEE SHEET 15 - STA 173 + 90.00

MATCH LINE SEE SHEET 17 - STA 187 + 50.00



- NOTES:
- I) FOR "A" PROFILES SEE SHEETS 22 AND 33
 - J) FOR "B" PROFILES SEE SHEETS 22 AND 33
 - K) TEMPORARY STAGING FOR EXCAVATION ADJACENT TO HETLANDS STAGING CONSTRUCTION DESIGNED TO BE BARRIRED FROM STA 174+75+/- TO STA 177+75+/- "A" FOR FILL LEFT AND RIGHT
 - L) TEMPORARY STAGING TO PERFORM UNDERCUT EXCAVATION MAY BE PERMITTED TO BE BARRIRED FROM THE RIGHT OF WAY OF THE EXCAVATION WALL DETAILING OF THE TEMPORARY STAGING SEE SPECIAL DETAIL PROVISION FOR TEMPORARY STAGING.

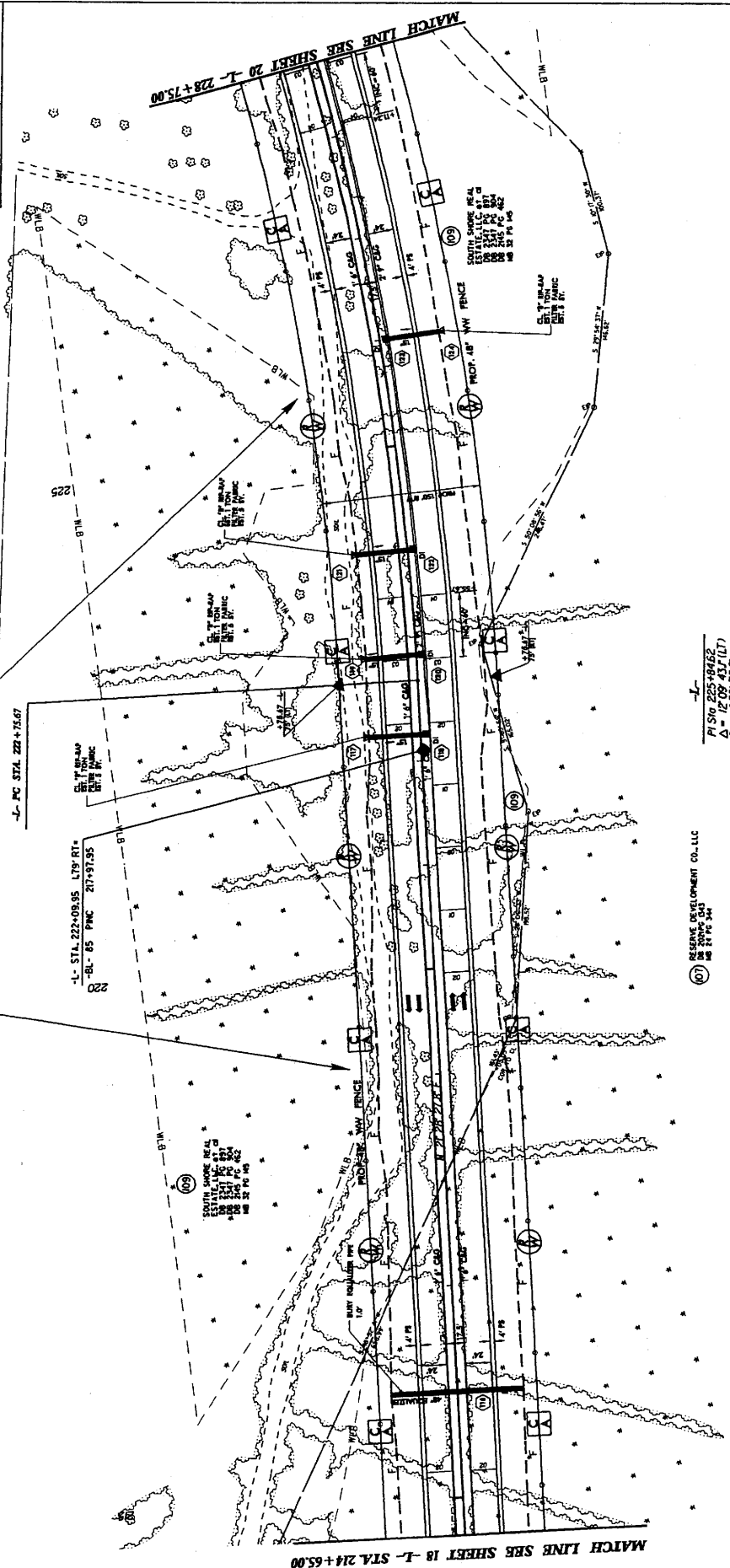
LOHME WELLSUMON
NO 3 PG 33
NO 3 PG 34

LOHME WELLSUMON
NO 3 PG 33
NO 3 PG 34

RESERVE DEVELOPMENT CO. LLC
NO 2 PG 33
NO 2 PG 34

PROJECT REFERENCE NO. R-2245
 SHEET NO. B
 HIGHWAY DESIGN NUMBER
 HYDRAULIC ENGINEER
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

GRADE CHANGING WILL BE REQUIRED AND ALL DISTURBED AREAS TO BE REVEGETATED.



NOTES:

- 1) FOR -L- PROFILE SEE SHEET 3A.
- 2) FOR S-TRANSITION FROM 1-4\"
- 3) FOR S-TRANSITION FROM 1-4\"
- 4) TEMPORARY SHORING TO BE PROVIDED FOR UNDERCUT EXCAVATION FROM STA 214+75 TO STA 215+50. -L- TOE WILL BE LEFT AND RIGHT SIDE OF ROAD WILL BE REVEGETATED FOR TEMPORARY SHORING. SEE SPECIAL DETAIL PROVISION FOR TEMPORARY SHORING.

-L-
 P1 STA 225+84.62
 Δ = 12.09 43.7 (LT)
 D = 156.326
 L = 665.08'
 R = 290.00'
 SE = 0.04
 Runoff = 2.40'

(67) RESERVE DEVELOPMENT CO., LLC
 100 2241 1ST ST SW
 WAB 2170 216 00 217 00 00 217 00 00

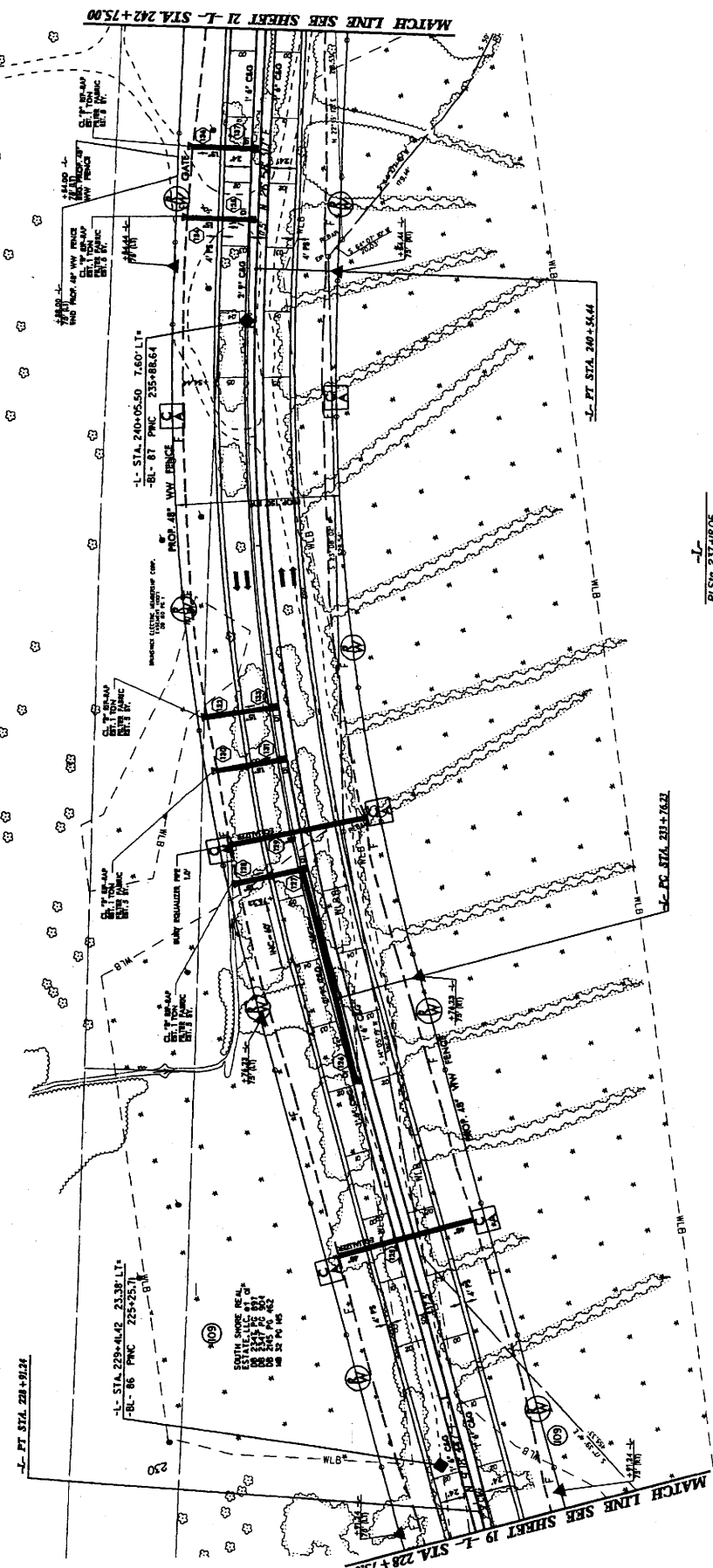
SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THE CONTROL OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA, USEPA AND ACDENR PER AGREEMENT AND USAGE PER PERMIT CONDITION.

PROJECT REFERENCE NO.	R-2245
DATE	20
DESIGNED BY	FORNALLA
CHECKED BY	ENGINEER
PRELIMINARY PLANS FOR USE AND CONSTRUCTION	



P/Sig 223+84.62
 $\Delta = 12.09$ 437 (LT)
 $D = 1.58$ 326
 $L = 528.95$
 $R = 2300.00$
 $SE = 0.04$

BMTZ ELEVATION = 55.52
 L STA FROM 231+37.05 TO 232+71.00
 PINS SET IN TOP PINE



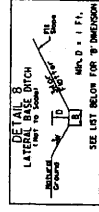
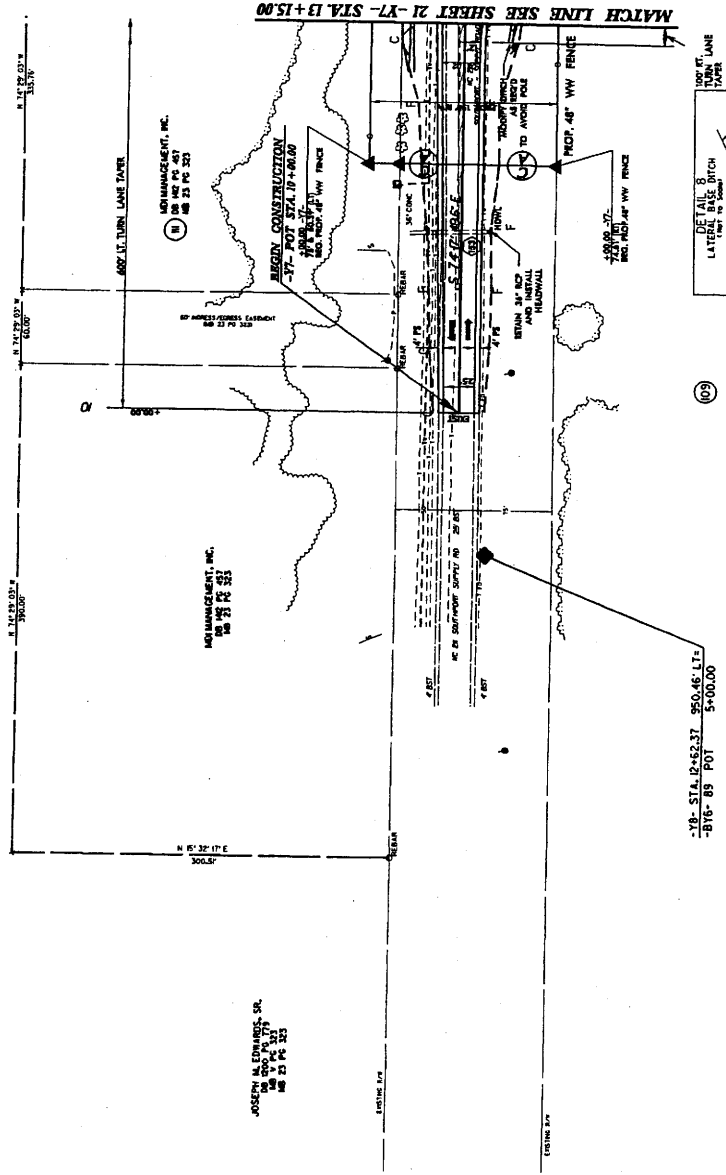
P/Sig 237+18.05
 $\Delta = 17.39$ 46.9 (RT)
 $D = 2.36$ 157
 $L = 624.00$
 $R = 2300.00$
 $SE = 0.05$
 Runoff = 300

NOTES:
 1) FOR PROFILE SEE SHEETS M AND 35.
 2) FOR 50' TRANSITION FROM 14' C&G TO 12' C&G
 (-L- STA 238+91.24 RT -L- STA 234+14.3 LT) SEE SHEET 2-J.

SPECIAL CONTROL OF ACCESS DESIGNATION
 NO REVISIONS SHALL BE MADE TO THIS CONTROL
 OF ACCESS WITHOUT APPROVAL OF NCDOT, FHWA,
 USEPA AND NCDNR PER AGREEMENT AND
 USAGE PER PERMIT CONDITION.

RESERVE DEVELOPMENT CO., LLC
 20 DEC 2006 09:43
 172425.rdp.pst.dgn

PROJECT REFERENCE NO. A-2245	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- 177- STA 12+00 RT TO -177- STA 12+56 RT B-3
- 177- STA 12+75 LT TO -177- STA 12+00 LT B-3
- 177- STA 12+14 LT TO -177- STA 23+88 LT B-2



- 178- STA 12+62.37 950.46 L.F. -B16- 83 POT 5+00.00

1) FOR -177- PROFILE SEE SHEET 3A

