



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 17, 2003

MEMORANDUM TO: Mr. J. M. Mills, P.E.
Division 7 Engineer

FROM: Philip S. Harris, III, P.E., Manager
Office of the Natural Environment
Project Development and
Environmental Analysis Branch

SUBJECT: Guilford County; Greensboro Western Urban Loop from South
of I-40 to North of Bryan Boulevard; T.I.P. Number U-2524BA
and BB

Attached are the U. S. Army Corps of Engineers Individual Permit and the Division of Water Quality 401 for the construction of the above referenced project. All environmental permits have been received for the construction of this project.

PSH/eah

Attachment

cc: Ms. Debbie Barbour, P.E.
Mr. Omar Sultan
Mr. Jay Bennett, P.E.
Mr. David Chang, P.E.
Mr. Randy Garris, P.E.
Mr. Greg Perfetti, P.E.
Mr. Mark Staley
Mr. John F. Sullivan, III, FHWA
Mr. Jerry Parker, Division 7 DEO

TIP No. U-2524 BA/BB and I-2201G

Greensboro, Western Urban Loop
I-40 to North of Bryan Blvd.
Guilford County
State Project No. 8.U492101
Federal Aid No. STPNHF-NHF-124-1(1)
TIP Nos. U-2524BA and BB
And
Lighting on Interstate 40 from West of SR 1850
(Squire Davis Rd) to east of US 220 Interchange
State Project No. 8.T491604
Federal Aid No. IMF-40-3(84)207
TIP No. I-2201 G

In addition to the standard Section 404 Individual Permit General Conditions and Section 401 Major Water Quality Certification (WQC) Conditions, the following special commitments have been agreed to by NCDOT.

COMMITMENTS DEVELOPED THROUGH PROJECT DEVELOPMENT AND DESIGN

None of the environmental commitments pertain to lighting.

Project Development and Environmental Analysis Branch

Noise abatement measures which will continue to be considered throughout the design process include berms, alignment shifts and noise barriers. A detailed noise barrier evaluation will be performed during final design to determine the type and location of cost-effective noise abatement measures.

NOTE: The design noise barrier analysis has been completed for Sections BA and BB on October 10, 2000.

Geotechnical Unit

Any underground storage tanks discovered during construction will be reported to the North Carolina Division of Environmental Management.

NOTE: Standard Commitment

Hydraulics Unit, Design Services Unit

The final designs will be coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations. Stream channel modifications will be coordinated with appropriate review agencies. State-of-the-art stream relocation techniques will be used where practicable.

NOTE: Horsepen Creek crosses U-2524 at -L- Sta. 54+20. This crossing is involved in a FEMA detailed flood study. The review was approved on 3/12/01.

Naturalized stream channels are being used where practicable.

Hydraulics Unit

The project will be developed in conformance with federal and state floodplain regulations.

NOTE: Standard commitment.

Roadside Environmental Unit, Division Construction Engineer

The NCDOT "Best Management Practices for Protection of Surface Waters" will be implemented where practicable to control highway runoff and minimize wetland impacts.

NOTE: Standard commitment.

Project Development and Environmental Analysis Branch

A final wetland mitigation plan will be coordinated with the U. S. Army Corps of Engineers and other concerned review agencies as part of the permit application. The wetland mitigation plan will be implemented and the site will be preserved in perpetuity.

NOTE: Standard Permit requirement.

Location & Survey Unit

Geodetic survey control monuments will be located during design, and the U. S. Coastal and Geodetic Survey and North Carolina Geodetic Survey will be notified of their location.

NOTE: Standard commitment.

Project Development and Environmental Analysis Branch, Design Services Unit

A more detailed study of wetland and floodplain impacts at Horsepen Creek will be prepared during final design. Horsepen Creek floodplain and associated wetlands will be bridged as deemed necessary.

NOTE: All wetlands have been delineated. The designers have coordinated with the agencies to avoid/minimize wetlands in the Bryan Boulevard interchange area.

Project Development and Environmental Analysis Branch, Design Services Unit

The maintenance of existing and proposed bicycle routes or greenways by grade separation and route modification will be coordinated with the City of Greensboro Department of Transportation and the Guilford County Parks and Recreation Department during project design.

NOTE: Guilford County Parks and Recreation and PD&EA worked together on the alignment of the Bicentennial Greenway. It will cross the Western Urban Loop at Burnt Poplar Road (Section B) and will be accommodated by using bike lanes and sidewalks. Coordination with the City of Greensboro Parks and Recreation Department is complete concerning future greenways in the area.

Project Development and Environmental Analysis Branch, Design Services Unit

The North Carolina Department of Transportation will continue to work with the Piedmont Triad Airport Authority during project design to minimize impact on the Piedmont Triad International Airport’s access and planned expansion to the east.

NOTE: The Bryan Boulevard interchange was designed to allow for the future expansion of the runway. The intersection of Old Oak Ridge Road and relocated Chimney Rock Road was designed to accommodate the future relocation of Old Oak Ridge Road when the runway is extended.

Roadside Environmental Unit

During design, consideration will be given to planting trees as landscaping within the right-of-way, particularly at interchanges.

NOTE: The landscaping plan will be developed during or following construction.

COMMITMENTS DEVELOPED THROUGH PERMITTING PROCESS

Roadside Environmental Unit

401 Water Quality Certification (WQC), Condition 1(e). The applicant shall adhere to North Carolina regulations entitled, Design Standards for Sensitive Watersheds (15A NCAC 2B .0124 (b) through (e) only), for all activities undertaken in all waters classified as Water Supply including Horsepen Creek and Long Branch as well as their unnamed tributaries during construction of the project. Therefore, DOT is not required to comply with 15A NCAC 2B .0124 (a) which restricts clearing to 20 acres at a time.

Note: REU is in the process of updating the sedimentation and erosion control plans to reflect meeting this requirement from NCDWQ.

Hydraulics Unit

401 WQC, Condition 3. For all streams that are not in the Randleman Lake watershed, stormwater shall be transported by vegetation conveyance before discharge into the streams. For streams in the Randleman Lake watershed, stormwater shall be directed to diffuse flow at non-erosive velocities across the stream buffers using level spreaders, retention basins, pre-formed scour holes or site-appropriate devices. In either case, stormwater shall not be directed to flow directly into streams. Existing wooded stream buffers shall not be mowed in order to allow them to diffuse stormwater flow and/or streambank stabilization.

Note: The Hydraulics Unit and PDEA have been working with NCDWQ to ensure this condition is met.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

48T
B

June 30, 2003

Regulatory Division

Action ID. 200221216; Tip No. U-2524B

Dr. Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

In accordance with the written request of July 22, 2002, and the ensuing administrative record, enclosed is a permit to authorize the discharge of dredged and fill material into waters of the United States, for construction of Sections BA and BB of the Greensboro Western Urban Loop (T.I.P. No. U-2524B), impacting Long Branch, Horsepen Creek and unnamed tributaries, and an unnamed tributary of the East Fork Deep River, and adjacent wetlands, from south of I-40, to north of Bryan Boulevard, on the west side of Greensboro, in Guilford County, North Carolina.

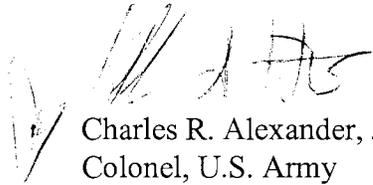
If any change in the authorized work is required because of unforeseen or altered conditions or for any other reason, the plans revised to show the change must be sent promptly to this office. Such action is necessary, as revised plans must be reviewed and the permit modified.

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 general conditions require that:

- a. You must complete construction before December 31, 2006.
- 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.

Should you have questions, contact Mr. Eric Alsmeyer of my Raleigh Field Office regulatory staff at telephone (919) 876-8441, extension 23.

Sincerely,



Charles R. Alexander, Jr.
Colonel, U.S. Army
District Engineer

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

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

Copies Furnished with special conditions
and plans:

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

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

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

Mr. Ronald E. Ferrell, Program Manager
Wetlands Restoration Program
Division of Water Quality
1619 Mail Service Center
Raleigh, North, Carolina 27699-1619

Mr. David Rackley
National Marine Fisheries
Service, NOAA
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

DEPARTMENT OF THE ARMY PERMIT

RECEIVED

JUN 27 2003

REGULATORY
WILMINGTON FIELD OFFICE

Permittee NC Department of Transportation

Permit No. 200221216

Issuing Office CESAW-RG-R

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:

Place fill material impacting a total of 1.87 acres of wetlands, 7,947 linear feet (1.3 acres) of stream, and 2.29 acres of ponds, for construction of Sections BA and BB of the Greensboro Western Urban Loop (T.I.P. No. U-2524B), impacting Long Branch, Horsepen Creek and unnamed tributaries, and an unnamed tributary of the East Fork Deep River, and adjacent wetlands, from south of I-40, to north of Bryan Boulevard, on the west side of Greensboro, in Guilford County, North Carolina.

Project Location:

From south of I-40, to north of Bryan Boulevard, on the west side of Greensboro, in Guilford County, North Carolina.

Permit Conditions:

General Conditions:

December 31, 2006

1. The time limit for completing the work authorized ends on _____ . 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 enclosed sheet.

Further Information:

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

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

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

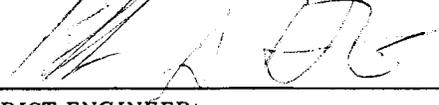
6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable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

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



 (PERMITTEE) 25 June 03
 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.



 (DISTRICT ENGINEER) 7/1/03
 CHARLES R. ALEXANDER, JR. COLONEL (DATE)

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

 (TRANSFeree) (DATE)

SPECIAL CONDITIONS (Action ID. 200221216; NCDOT/TIP U-2524B)

a. All work authorized by this permit must be completed in strict compliance with the attached plans, which are a part of this permit.

b. The permittee shall mitigate for 6,515 linear feet of important stream impact and 1.87 acres of scrub-shrub and emergent wetland impact for this project, as described below (2,014 linear feet of stream mitigation at the Starmount Forest Country Club Site, 1000 linear feet of stream mitigation at the Spring Valley Park Site, 1,113 linear feet of stream mitigation at the Caviness Stream Mitigation Site, 0.79 acre of wetland restoration at the Sandy Creek Mitigation Site, 9.48 acres of wetland restoration at the Blue Tract Mitigation Site, and a total of 8,240 linear feet of stream restoration/enhancement and 2.16 acres of wetland mitigation, within the Haw River basin, to be constructed through the North Carolina Wetlands Restoration Program).

STARMOUNT FOREST COUNTRY CLUB STREAM MITIGATION

c. The permittee shall mitigate for 1,007 linear feet of impacts to stream channel associated with this project with 2,014 linear feet of stream restoration, as described in the "Stream Restoration Mitigation Plan, Tributaries to North Buffalo Creek in Starmount Forest Country Club", prepared by KCI Associates of North Carolina, Inc., and dated October, 1998, to the extent necessary to provide the required mitigation. Since this stream mitigation was constructed several years ago and has been monitored, no additional monitoring will be required.

SPRING VALLEY PARK STREAM MITIGATION

d. The permittee shall mitigate for 500 linear feet of impacts to stream channel associated with this project with 1,000 linear feet of stream restoration/enhancement at the Spring Valley Park stream mitigation site in Guilford County, as described in the "Piedmont Creek, Spring Valley Park, Planning Document", prepared by Kimley-Horn & Associates, dated September 2001.

e. The permittee shall complete all site preparation activities at the Spring Valley Park Mitigation Site, except for planting, before December 31, 2003. The permittee shall complete Planting before March 15, 2004.

CAVINESS SITE STREAM MITIGATION

f. The permittee shall mitigate for 888 linear feet of unavoidable impacts to stream channel associated with this project with 1,113 linear feet of stream restoration at

the Caviness Stream Mitigation Site, as described in the "Caviness Site, Randolph County, NC, Stream Mitigation Plan", dated May 22, 2001.

g. The permittee shall complete all site preparation activities at the Caviness Mitigation Site, except for planting, before December 31, 2003. The permittee shall complete Planting before March 15, 2004.

SPRING VALLEY PARK AND CAVINESS SITE MONITORING

h. PROHIBITED ACTIVITIES: The permittee, and current and subsequent property owners, shall maintain the Spring Valley Park and Caviness Stream mitigation sites in their natural condition, as altered by work in the mitigation plan and subsequent remediation, in perpetuity. Prohibited activities within the mitigation sites specifically include, but are not limited to: the construction or placement of roads, walkways, buildings, signs, or structures of any kind (i.e., billboards, interior fences, etc.); filling, grading, excavation, leveling, or any other earth moving activity or activity that may alter the drainage patterns on the property; the cutting, mowing, destruction, removal, or other damage of any vegetation, except as specifically stated in the mitigation plan; disposal or storage of any debris, trash, garbage, or other waste material; except as may be authorized by the mitigation plans, or subsequent modifications that are approved by the Corps of Engineers. In addition, the permittee, and current and subsequent property owners, shall take no action, whether on or off the mitigation properties, which will adversely impact the streams on the mitigation properties, except as specifically authorized by this permit, or subsequent modifications that are approved by the Corps of Engineers.

i. AS-BUILT SURVEY: The permittee shall complete an as-built channel survey for each of the two sites within sixty days of completion of the stream mitigation construction at each site. The permittee shall document changes in the dimension, pattern, profile, vegetation plantings, and structures installed, of the constructed channel from the proposed design. The permittee shall also include in the as-built surveys: photo documentation at representative segments and structures; and plan view diagrams.

j. MONITORING SCHEDULE: The permittee shall perform the following components of Level I monitoring each year of a 5-year monitoring period: Reference photos; plant survival (i.e., identify specific problem areas (missing, stressed, damaged or dead plantings), estimated causes, and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. The permittee shall submit the monitoring reports to the Corps of Engineers, Raleigh Regulatory Field Office Project Manager, within sixty days after completing the monitoring. If less than two bankfull events occur on either site during the first 5 years, the permittee shall continue monitoring that site until the second bankfull event is documented. The bankfull events must occur during separate monitoring years for each site. In the event that the required bankfull events do not occur during the five-year monitoring period, the Corps of Engineers, in consultation with the

resource agencies, may determine that further monitoring is not required. It is suggested that all bankfull occurrences be monitored and reported through the required monitoring period. The permittee shall perform and submit photo documentation for each site twice each year (summer and winter) for the 5-year monitoring period, and for any subsequently required monitoring period.

k. MONITORING DATA/REPORT: The permittee shall include the following information in the Level I monitoring report for each site: reference photos; plant survival notes and recommendations, as appropriate; and a report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. The permittee shall complete the Monitoring Data Record, Sections 1, 2 and 3 (pages 1, 2 and 3, attached), for each representative segment of the channels, and for each year of monitoring (twice each year for each site, summer and winter, for reference photos). The permittee shall include in the monitoring reports a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situations.

1. STREAM MITIGATION SUCCESS CRITERIA: The mitigation success criteria, and required remediation actions, will be generally based on the attached Appendix II, and the Photo Documentation, Ecological Function, and Channel Stability criteria in the “Stream Mitigation Guidelines”, dated April, 2003 (available on the internet at http://www.saw.usace.army.mil/wetlands/Mitigation/stream_mitigation.html), pages 24 and 25, under “Success Criteria: ”.

STARMOUNT FOREST COUNTRY CLUB, SPRING VALLEY PARK AND CAVINESS SITE PROPERTY DISPENSATION

m. The permittee shall purchase the mitigation sites in fee simple, or shall secure a conservation easement on the mitigation sites, to ensure the maintenance of the mitigation sites by the current and subsequent property owners, in their natural condition, as altered by work in the mitigation plans, in perpetuity. In addition, the permittee, and current and subsequent property owners, shall take no action, whether on or off the mitigation properties, which will adversely impact the streams on the mitigation properties, except as specifically authorized by this permit, or subsequent modifications that are approved by the Corps of Engineers.

SANDY CREEK WETLANDS RESTORATION

n. The permittee shall provide the restoration described in condition o. below through continued implementation of the compensatory wetland mitigation plan “Wetland Mitigation Plan – Sandy Creek Site”, dated April, 1999.

o. The permittee shall mitigate for 0.395 acres of unavoidable impacts to wetlands associated with this project with 0.79 acres of wetland restoration at the Sandy Creek Mitigation Site.

p. NCDOT will do a survey of the 0.79 acres of wetland restoration at the Sandy Creek Mitigation Site, and submit a copy of the survey to the District Engineer within 60 days after the survey is completed.

q. The permittee will continue monitoring the site vegetation between June 1 and November 30, inclusively, of each year, and document plant mortality and stress. A minimum of three 0.05 acre sample plots will be used for the entire site. The permittee will continue monitoring of the planting areas annually until the respective performance criteria are met, as described below.

SANDY CREEK MITIGATION MONITORING

r. Performance criteria for tree planting areas will be met if sample plots demonstrate that for each of the first three complete years of monitoring, 320 target-species trees per acre have survived, such that at the end of three years, 320 three-year old target-species trees per acre have survived on the site, and, in years four and five, 288 and 260 trees per acre, respectively, have survived on the site, such that at the end of year five, 260 five-year old target-species trees per acre have survived on the site.

s. If for any monitoring year, vegetation survival is not favorable, as determined by the Corps of Engineers, any remedial action required by the Corps of Engineers will be performed, the required restoration areas will be replanted, and the five-year monitoring period will begin again with year one.

t. Hydrology in the restoration areas will be monitored through the use of monitoring gauges during each growing season for the first five years of the vegetative monitoring, or until performance criteria have been met, whichever occurs later. A minimum of six groundwater gauges will be used within the total wetland restoration area at Sandy Creek.

u. To meet the hydrology success criteria, the monitoring data must show that for each normal precipitation year within the monitoring period, the site has been inundated or saturated within the upper 12 inches of the soil for a minimum of 12.5% of the growing season (29 consecutive days for Randolph County). WETS tables for Randolph County will be utilized as appropriate to determine normal precipitation years.

v. If there are no normal precipitation years during the first five years of monitoring, to meet performance criteria, the permittee will continue to monitor hydrology on the site until it shows that the site has been inundated or saturated as described above during a normal precipitation year.

w. In the alternative, and at the Corps' discretion, a site may be found to meet the hydrology performance criteria on the basis of comparison of monitoring data taken from the site with monitoring data taken from an established jurisdictional mitigation reference site approved by the Corps. The Corps retains the discretion to find that the hydrology criteria are met if such monitoring data from the mitigation site and the reference site are substantially the same. This finding by the Corps may be made during years with or without normal rainfall.

x. In the event there are years of normal precipitation during the monitoring period, and the data for those years do not show that the site has been inundated or saturated within the upper 12 inches of the soil for a minimum of 12.5 % of the growing season (29 consecutive days) during a normal precipitation year, the Corps may require remedial action. The permittee shall perform such required remedial action, and continue to monitor hydrology on the site until it displays that the site has been inundated or saturated as described above, during a normal precipitation year. If the Corps determines that further remediation is not appropriate, other options will be considered, including use of a different site to mitigate for project impacts.

y. The permittee will submit yearly mitigation monitoring reports by the first day of February after each assessment period, for five years following final site manipulation. These reports will include, at a minimum, sample plot, well and rainfall data; number of individuals of each tree species within each sample plot; photographs, including a location key; and problems/resolution, and will be provided to both the Corps and the North Carolina Division of Water Quality.

BLUE TRACT WETLANDS PRESERVATION

z. The permittee shall continue implementation of the compensatory wetland mitigation plan entitled "Blue Tract Mitigation Planning Document", dated June 11, 2001, to provide the preservation described in condition aa. below.

aa. The permittee shall mitigate for 0.395 acres of unavoidable impacts to wetlands associated with this project with 9.48 acres of wetland preservation, and additional upland buffer and stream preservation, at the Blue Tract Mitigation Site.

bb. NCDOT will submit a copy of a survey of the 9.48 acres of wetland preservation at the Blue Tract Mitigation Site, to the District Engineer within 90 days after this permit is issued.

GENERAL WETLANDS MITIGATION

cc. The permittee and/or current and subsequent property owners shall maintain the Sandy Creek and Blue Tract mitigation sites in their natural condition, as altered by work in the mitigation plans, in perpetuity. Prohibited activities within the mitigation

sites specifically include, but are not limited to: the construction or placement of roads, walkways, buildings, signs, or structures of any kind (i.e., billboards, interior fences, etc.); filling, grading, excavation, leveling, or any other earth moving activity or activity that may alter the drainage patterns on the property; the cutting, mowing, destruction, removal, or other damage of any vegetation; disposal or storage of any debris, trash, garbage, or other waste material; except as may be authorized by the mitigation plans, or subsequent modifications that are approved by the Corps of Engineers. In addition, the permittee shall take no action, whether on or off the mitigation properties, which will adversely impact the wetlands or streams on the mitigation properties, except as specifically authorized by this permit, or subsequent modifications that are approved by the Corps of Engineers.

dd. The permittee shall make every effort to convey the Sandy Creek, and Blue Tract Mitigation Site properties to a nonprofit conservation organization or a natural resource agency, which is willing to hold the areas in perpetuity for conservation purposes, and which is acceptable to the Corps of Engineers. The annual monitoring reports, as required, will include the status of the conveyance efforts.

ee. The permittee shall not sell or otherwise convey any interest in the wetland mitigation properties used to satisfy mitigation requirements for this permit, to any third party, without 10 days prior notification to Wilmington District Corps of Engineers in writing, which writing shall reference this permit Action ID number.

ff. Any sale, lease, or other conveyance of the wetland mitigation site properties shall include restrictions on the use of the properties as described in condition ee. above, which conditions shall be enforced by the North Carolina Department of Transportation. Such restrictions shall include language providing for third party enforcement rights in favor of the Corps of Engineers. Such restrictions must be approved prior to conveyance by the Corps of Engineers.

NCWRP STREAM MITIGATION

gg. The permittee shall mitigate for an additional 4,120 linear feet of unavoidable impacts to important stream channel associated with this project by payment to the North Carolina Wetlands Restoration Program (NCWRP) in an amount determined by the NCWRP sufficient to perform 8,240 linear feet of warm water stream restoration, within the Cape Fear River drainage basin (Cataloging Unit 03030002). Construction within streams on the permitted highway project shall begin only after the permittee has made full payment to the NCWRP, and the NCWRP has made written confirmation to the District Engineer, that it agrees to accept responsibility for the mitigation work required, pursuant to Paragraph IV.D. of the Memorandum of Understanding between the North Carolina Department of Environment and Natural Resources and the U.S. Army Corps of Engineers, Wilmington District, dated November 4, 1998.

NCWRP WETLANDS MITIGATION

hh. The permittee shall mitigate for 1.08 acres of unavoidable impacts to wetlands associated with this project by payment to the North Carolina Wetlands Restoration Program (NCWRP) in an amount determined by the NCWRP sufficient to perform 2.16 acres of riparian, palustrine forested wetland mitigation in the Cape Fear River basin (Cataloging Unit 03030002). Construction within wetlands on the permitted highway project shall begin only after the permittee has made full payment to the NCWRP, and the NCWRP has made written confirmation to the District Engineer, that it agrees to accept responsibility for the mitigation work required, pursuant to Paragraph IV.D. of the Memorandum of Understanding between the North Carolina Department of Environment and Natural Resources and the U.S. Army Corps of Engineers, Wilmington District, dated November 4, 1998.

ii. Failure to institute and carry out the details of special conditions a. - gg., above, may result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with TIP U-2524B, or such other remedy as the District Engineer or his authorized representatives may seek.

PRE-CONSTRUCTION

jj. Prior to commencing construction within jurisdictional waters of the United States, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings are acceptable.

kk. The permittee shall schedule an environmental preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh 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 Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the environmental preconstruction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of four weeks in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

ll. The permittee and its contractors and/or agents shall not excavate, fill, or perform mechanized landclearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this permit, or any modification to this permit. There shall be no excavation from, or waste disposal into,

jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project.

mm. 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 ensure that all such areas comply with the preceding condition (ll.) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the preceding condition (ll.). All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

nn. 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.

WATER QUALITY CERTIFICATION

oo. The permittee shall comply with the conditions specified in the water quality certification, No. 3387, revised by the North Carolina Division of Water Quality on May 28, 2003.

pp. The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard (50 NTU's in all streams and rivers; 25 NTU's in all lakes and reservoirs).

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

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

OTHER CONDITIONS

ss. If the permittee discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required State/Federal coordination.

tt. The permittee shall not modify the dimension, pattern, or profile of any stream by widening the stream channel or reducing the depth of the stream above or below any base flow barrel or pipe culverts.

uu. The permittee shall not operate heavy equipment in any stream channel.

vv. The permittee shall not discharge hydroseeding mixtures, or wash out hydroseeders or other equipment, in or adjacent to surface waters.

ww. No excavated or fill material will be placed at any time in waters or wetlands outside the permitted construction areas, nor will it be placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

xx. The permittee will maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.

yy. All fill material will be clean and free of any pollutants except in trace quantities. Metal products, organic materials, or unsightly debris will not be used.

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

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

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

1. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

2. Damages to the permitted project or uses thereof as a result of current or future Federal activities initiated on behalf of the general public.

3. Damages to other permitted or unpermitted activities or structures caused by the authorized activity.

4. Design and construction deficiencies associated with the permitted work.

5. Damage claims associated with any future modification, suspension, or revocation of this permit.



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

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

May 28, 2003

Mr. Gregory J. Thorpe, Ph.D., Environmental Director
NCDOT Planning and Environmental Branch
1548 Mail Service Center
Raleigh, NC, 27699-1548

Dear Dr. Thorpe:

Re: MODIFICATION to Water Quality Certification Pursuant to §401 of the Federal Clean Water Act,
Greensboro Western Urban Loop from south of I-40 to north of Bryan Blvd.
F.A. Project No. STPNHF-NHF-124-1(1); State Project No. 8U492101
TIP No. U-2524 BA & BB
DWQ Project No. 011318

Attached hereto is a copy of Certification No. 3387 issued to The North Carolina Department of
Transportation dated May 28, 2003.

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

Sincerely,

Alan W. Klimmek, P.E.

Attachments

cc: Wilmington District Corps of Engineers
Eric Alsmeyer, USACE Raleigh Field Office
NCDWQ Winston-Salem Regional Office
Dasha Brown; Contract Administrator, Guilford County Attorney's Office
Sylvia Norman; City of Greensboro Attorney's Office
Kathy Matthews; US Environmental Protection Agency - Region IV
Ron Ferrell, NC Wetlands Restoration Program
Central Files
File Copy



Condition(s) of Certification:

1. 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 Practice in order to assure compliance with the appropriate turbidity water quality standard (50 NTUs in all fresh water streams and rivers not designated as trout waters; 25 NTUs in all lakes and reservoirs, and all saltwater classes; and 10 NTUs in trout waters).
 - a. Erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*.
 - c. NCDOT must develop a DOT-approved erosion and sediment control plan and implement and maintain the control measures on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor owned or leased borrow pits associated with NCDOT projects.
 - d. NCDOT must implement and maintain a DOT-approved reclamation plan on all borrow pit and waste pile (spoil) projects. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
 - e. NCDOT shall strictly adhere to North Carolina regulations entitled, *Design Standards in Sensitive Watersheds* (15A NCAC 4B .0124), for activities undertaken in all waters classified as WS (Water Supply) and draining to the Critical Area, including: Horsepen Creek, and Long Branch, as well as their unnamed tributaries.
2. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.
3. Storm water shall be directed to flow as diffuse flow at non-erosive velocities across the stream buffers or to retention basins or pre-formed scour holes and shall not be routed directly into streams. Existing stream buffers shall not be mowed in order to allow them to be used to provide diffuse flow of stormwater.
4. Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.
5. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this Certification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.
6. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.

7. *Mitigation*: Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6). A report must be submitted to the NC Division of Water Quality that describes the final approved wetland and stream mitigation for this project within two (2) months of the issuance of the 404 permit issued by the Army Corps of Engineers. NCDOT has agreed to provide 2:1 mitigation for most perennial stream impacts except for Site 6 of U-2524BA where a 1:1 mitigation ratio is proposed.
- Within HU 03030002, the wetland impact total is 1.08 acres, with needed mitigation of 2.16 acres; stream mitigation requirements total 8,240 linear feet.
 - Within HU 03030003, the wetland impact total is 0.79 acres; stream mitigation requirements total 4,127 linear feet.

Wetland Mitigation

1. Compensatory Mitigation in HU 03030002 of 2.16 acres of wetlands shall be provided via in-lieu payments to Wetlands Restoration Program, which has accepted your payment, for impacts associated with the above referenced projects
2. NCDOT proposes to provide compensatory mitigation for all wetland impacts in HU 03030003 using the following sites:
 - Sandy Creek Mitigation Site (HU 03030003) in Randolph County (restoration of a bottomland hardwood wetland system at 1:1 mitigation ratio).
 - Blue Tract Mitigation Site (HU 03030004) in Moore County at a mitigation ratio of 12:1.

Stream Mitigation

1. Compensatory mitigation in HU 03030002 of 8,240 linear feet of stream mitigation shall be provided via in-lieu payments to Wetlands Restoration Program, which has accepted your payment, for impacts associated with the above referenced projects.
2. NCDOT proposes to provide compensatory mitigation of 4,127 linear feet for all stream impacts in HU 03030003 by providing the following:
 - Starmount Forest County Club (HU 03030002) in Guilford County: 2,014 linear feet.
 - Spring Valley Park Mitigation Site (HU 03030002) in Guilford County: 1,000 linear feet.
 - Caviness Stream Mitigation Site (HU 03030003) in Randolph County: 1,113 linear feet.

In accordance with 15A NCAC 2R.0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h). Until plans are received and approved for the proposed mitigation sites, wetland or stream fill shall not occur.

8. In accordance with the findings of the cumulative impact study dated May 2003 prepared by Ecoscience Corporation, the anticipated cumulative impacts from this project shall be addressed via written agreements between NC Division of Water Quality, Greensboro and Guilford County in accordance with the appropriate signed agreements.
9. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.

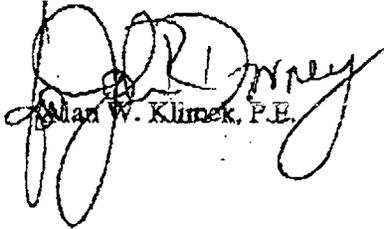
The Applicant shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification.

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

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

This the 28th day of May 2003

DIVISION OF WATER QUALITY



Alan W. Klimek, P.E.

**NORTH CAROLINA - DIVISION OF WATER QUALITY
401 WATER QUALITY CERTIFICATION
SUMMARY OF PERMITTED IMPACTS AND MITIGATION REQUIREMENTS**

In accordance with 15A NCAC 2H.0500, NCDOT, DWQ Project No. 011318, is authorized to impact the surface waters of the State of North Carolina as indicated below for the purpose of constructing Greensboro Western Urban Loop from south of I-40 to north of Bryan Boulevard (TIP Nos. U-2524BA and U-2524BB). All activities associated with these authorized impacts must be conducted in accordance with the conditions listed in the attached certification transmittal letter. **THIS CERTIFICATION IS NOT VALID WITHOUT THE ATTACHMENTS.**

COMPENSATORY MITIGATION REQUIREMENTS FOR WETLAND RESTORATION:

LOCATION: Greensboro Western Urban Loop from south of I-40 to north of Bryan Blvd.
COUNTY: Guilford
BASIN/SUBBASIN: Cape Fear River Basin, Cataloging Units 03030002 and 03030003

As required by 15A NCAC 2B .0250 and 15A NCAC 2H .0506(h), and the conditions of this certification, you are required to compensate for the above impacts through the restoration, creation, enhancement or preservation of wetlands, buffers, and surface waters as outlined below *prior* to conducting any activities that impact or degrade waters of the state.

Mitigation to be performed by NC Wetland Restoration Program in Hydrologic Unit 03030002:

- 8,240 linear feet of streams.
- 2.16 acres of wetlands.

Note: Acreage requirements proposed to be mitigated through the Wetland Restoration Program must be rounded to one-quarter increments according to 15A 2R .0503(b).

One of the options you have available to satisfy the compensatory mitigation requirements is through payment of a fee to the Wetland Restoration Program per 15A NCAC 2R .0503. If you choose this option, please sign this form and mail it to the Wetlands Restoration Fund at the address listed below.

An invoice for the appropriate amount of payment will be sent to you upon receipt of this form. **PLEASE NOTE, THE ABOVE IMPACTS ARE NOT AUTHORIZED UNTIL YOU RECEIVE NOTIFICATION THAT YOUR PAYMENT HAS BEEN PROCESSED BY THE WETLANDS RESTORATION PROGRAM.**

Signature Date

**WETLANDS RESTORATION PROGRAM
DIVISION OF WATER QUALITY
1619 Mail Service Center
RALEIGH, NC, 27699-1619
(919) 733-5219**

NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

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 incur the following permanent impacts:

1. U-2524BA

- 1.74 acres of jurisdictional wetlands (through permanent fill, excavation, and mechanized clearing);
- 3,429 linear feet of stream channels.

This includes 0.95 acres of wetland impacts and 1,034 feet of stream loss in Hydrologic Unit 03030002 and 0.79 acres of wetland impacts and 2,395 feet of stream loss in Hydrologic Unit 03030003.

2. U-2524BB

- 0.13 acres of wetlands;
- 4,518 linear feet of stream channels.

These impacts occur in Hydrologic Unit 03030002.

Total impacts are 1.87 acres of wetlands and 7,947 linear feet of stream channels for the combined projects.

These impacts occur in Guilford County, as described in the Application dated 29 August 2001, and additional information dated 28 May 2002 and 25 June 2002. The project shall be constructed pursuant to the application dated August 29, 2001 and amended May 28, 2002 to construct Greensboro Western Urban Loop from south of I-40 to north of Bryan Boulevard in Guilford County.

The application provides adequate assurance that the discharge of fill material into the waters of the state 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. Should your project change, you are required to notify the DWQ *in writing*, and you may be required to 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 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, Non-discharge and Water Supply watershed regulations. This Certification shall expire three (3) years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is later.

DWQ Project No.: _____
Applicant: _____

County: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

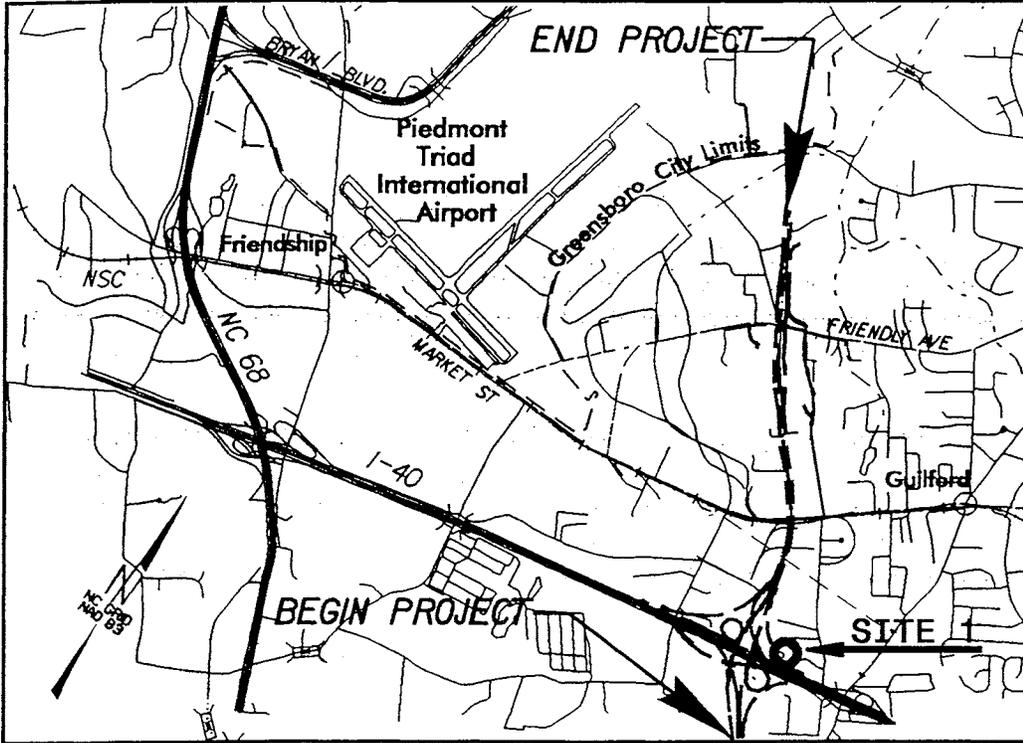
Engineer's Certification

_____ Partial _____ Final

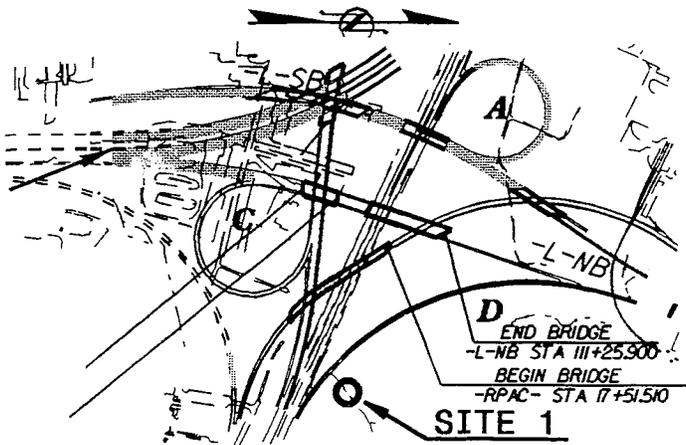
I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____



VICINITY MAP

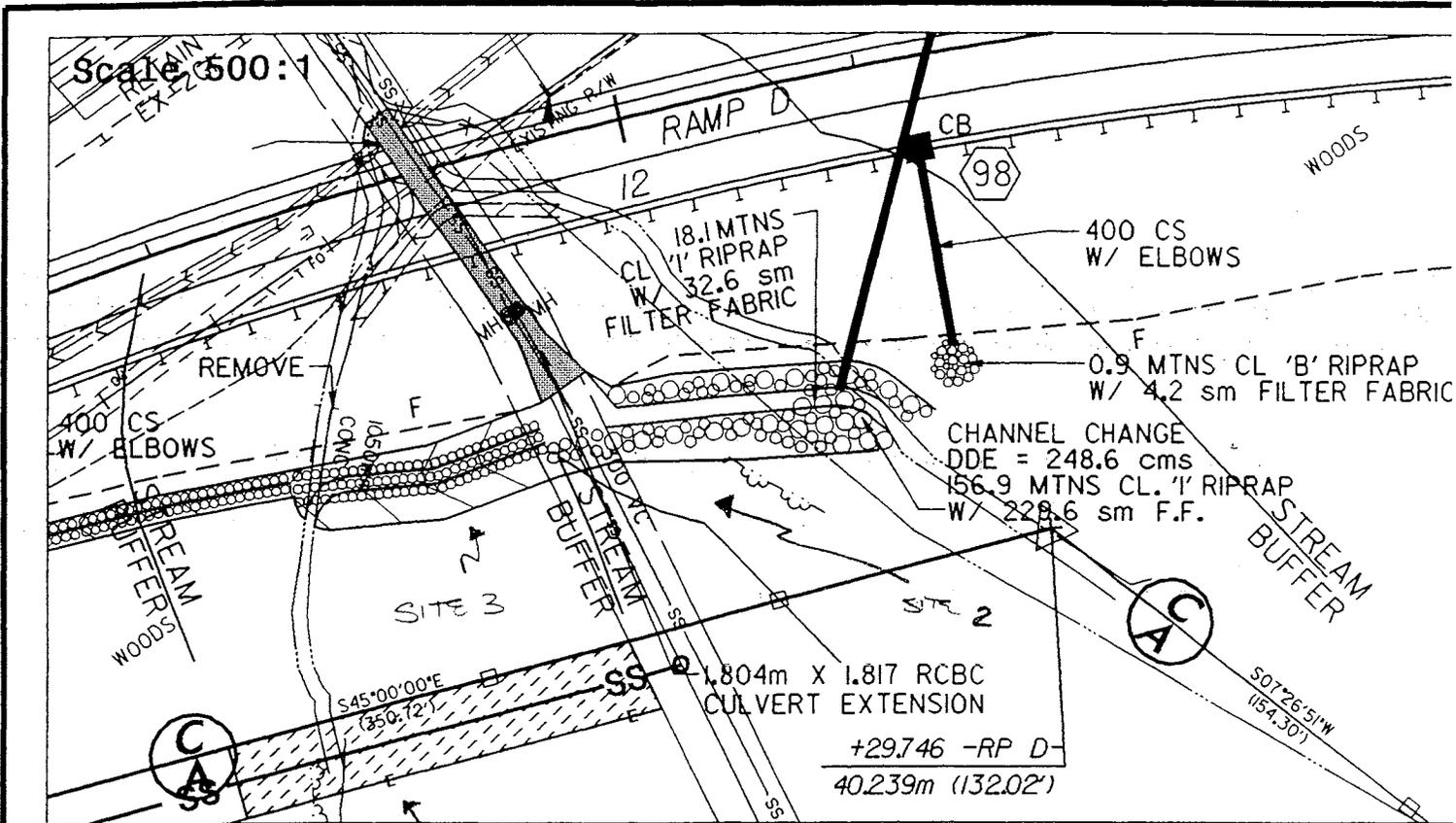


N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 8.U492101 (U-2524BA)

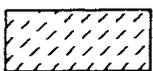
GREENSBORO WESTERN LOOP

SHEET 1 OF 6

SEPT 2002



LOCATION, RIGHT OF STA. 11+61.76 RAMP D



TEMPORARY IMPACTS
ZONE 1

Length=114 FEET
Area=2275.63 FEET²



PLAN VIEW
SITE 3A
BUFFER ZONE
IMPACTS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 8.U492101, (U-25248A)
GREENSBORO WESTERN URBAN LOOP
FROM 1-40 TO NORTH OF WEST
FRIENDLY AVENUE
SHEET 2 OF 6

SEPT 2002

TOTAL TEMPORARY IMPACTS IN
BUFFER ZONE

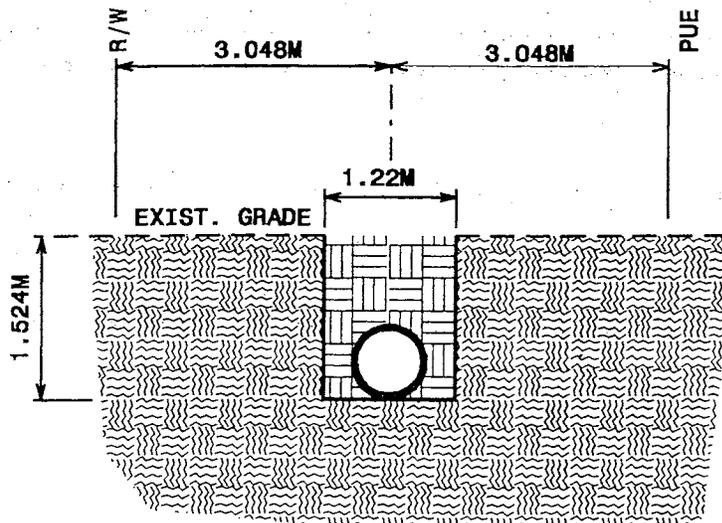
Area=2275.63 FEET²

TOTAL TEMPORARY STREAM IMPACT

Area=200 FEET²

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 8.U492101, (U-2524BA)
GREENSBORO WESTERN URBAN LOOP
FROM 1-40 TO NORTH OF WEST
FRIENDLY AVENUE
SHEET 4 OF 6

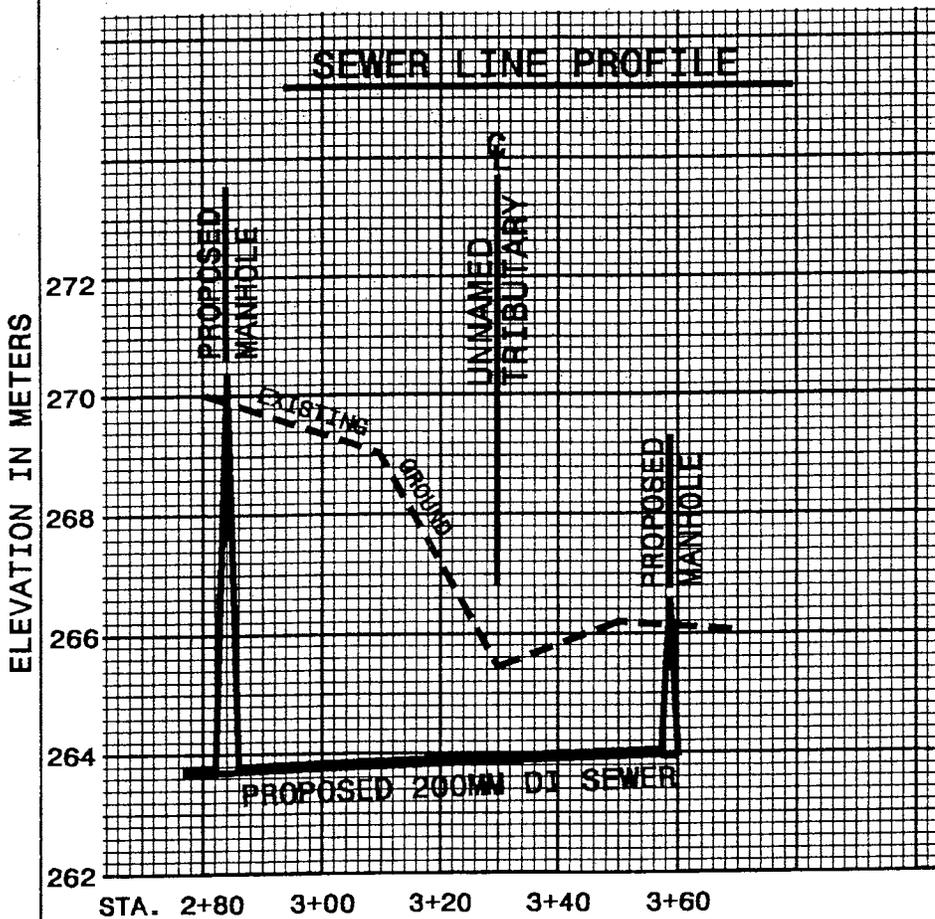
SEPT 2002



TRENCH DETAIL
SITE 3A

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 8.U492101, (U-2524BA)
GREENSBORO WESTERN URBAN LOOP
FROM 1-40 TO NORTH OF WEST
FRIENDLY AVENUE
SHEET 5 OF 6

SEPT 2002



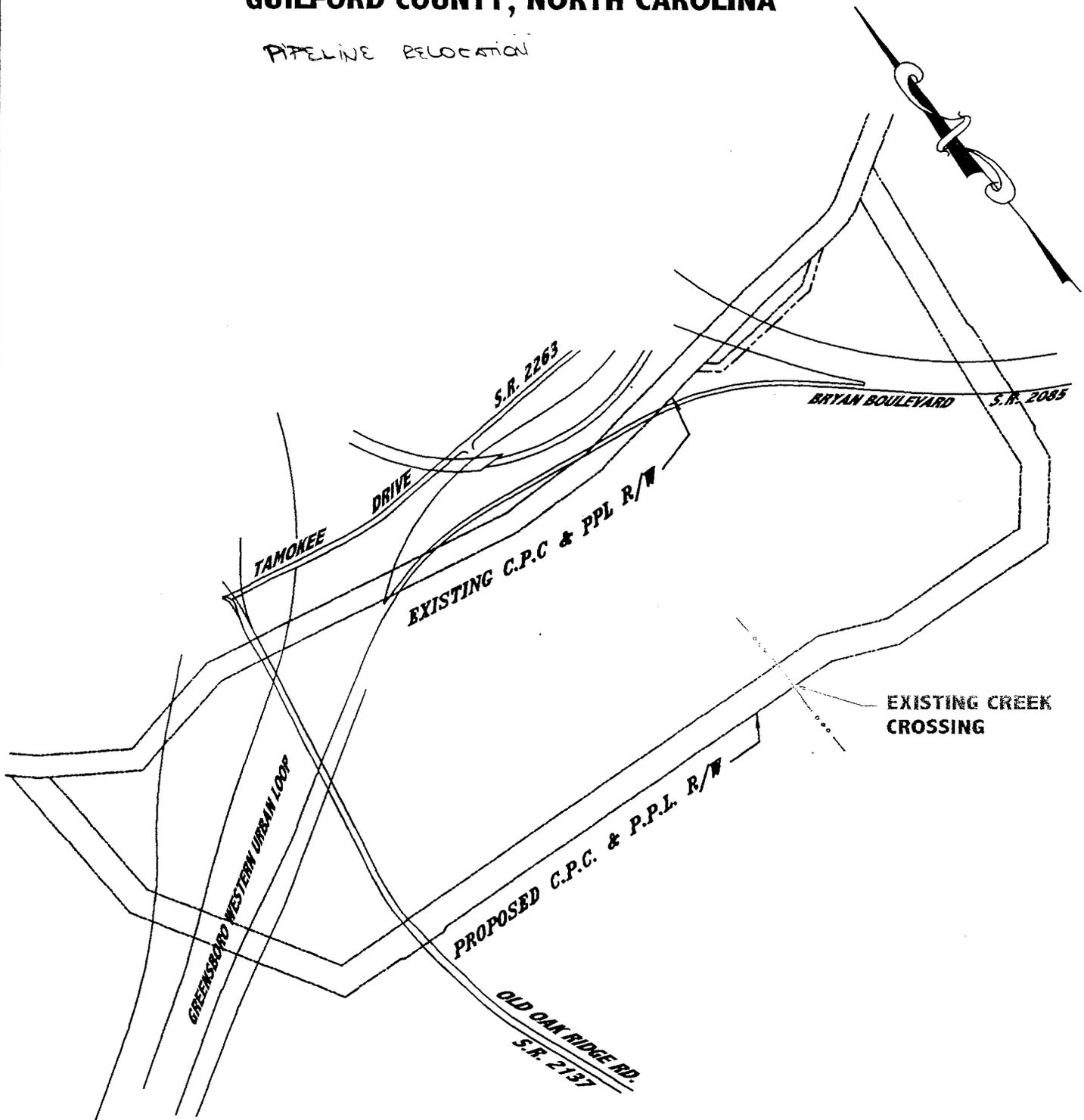
SITE 3A

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 8.U492101, (U-2524BA)
 GREENSBORO WESTERN URBAN LOOP
 FROM 1-40 TO NORTH OF WEST
 FRIENDLY AVENUE
 SHEET 6 OF 6

SEPT 2002

GUILFORD COUNTY, NORTH CAROLINA

PIPELINE RELOCATION



TIP # U-2524BB

SHEET 1 OF 4

DOT PROJECT REFERENCE: U-2524BB

PHOENIX ENVIRONMENTAL SERVICES INC.
106 BROAD STREET, SUITE B LOGANVILLE, GEORGIA

DRAWN: PESI

NOTES:

SCALE: 1"=400'

DATE: 5/02

CHECKED: PBD

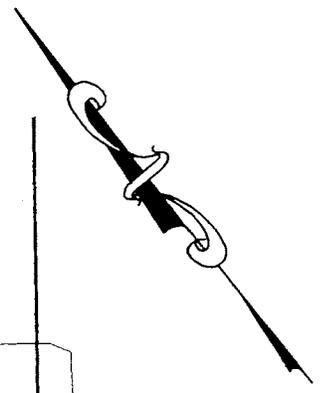
SITE1.CPC.PPL

SITE #1 VICINITY MAP

REVISION	DATE

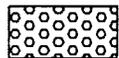
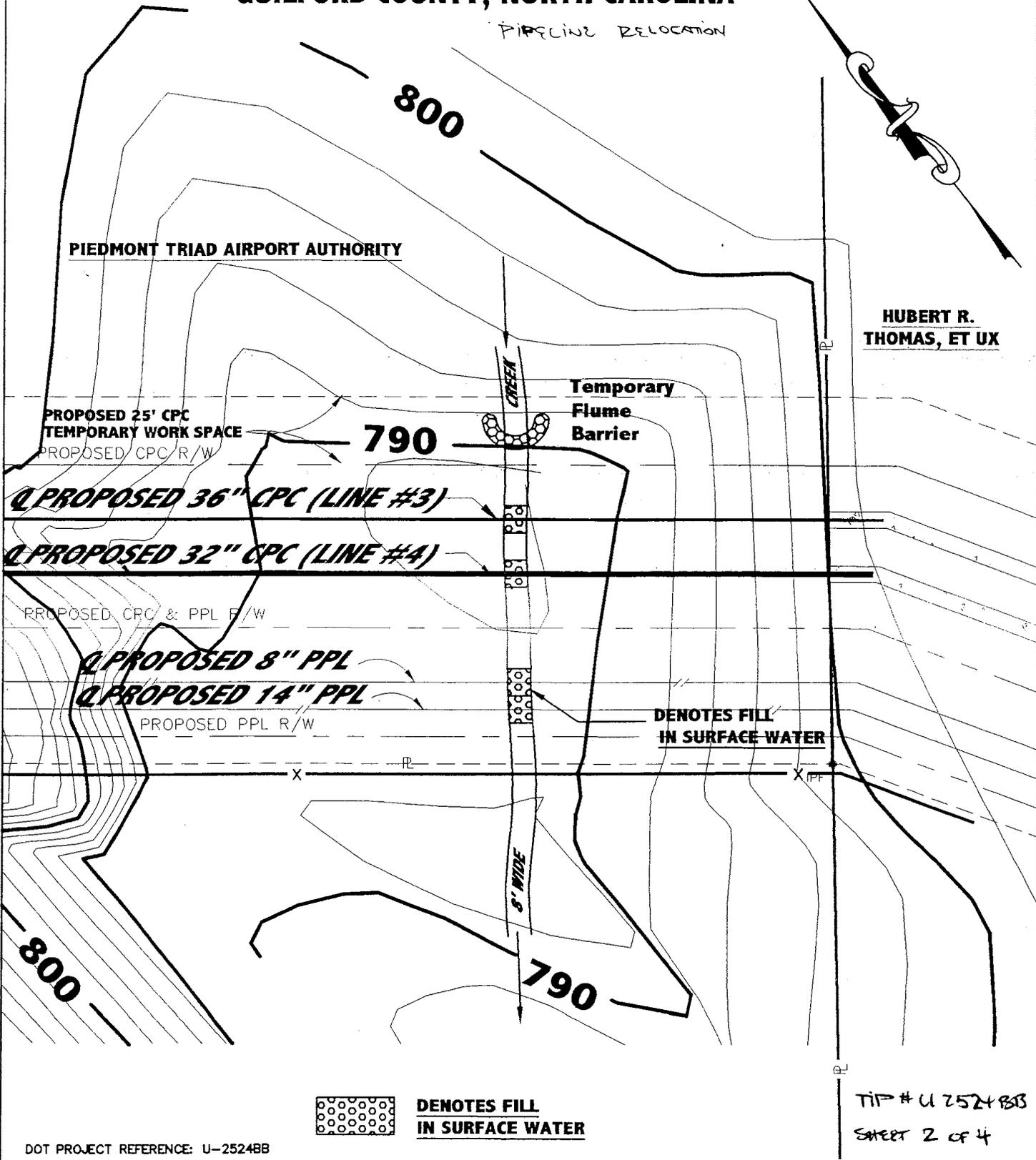
GUILFORD COUNTY, NORTH CAROLINA

PIPELINE RELOCATION



PIEDMONT TRIAD AIRPORT AUTHORITY

HUBERT R. THOMAS, ET UX



**DENOTES FILL
IN SURFACE WATER**

TIP # U 252488
SHEET 2 OF 4

DOT PROJECT REFERENCE: U-252488

REVISION	DATE

PHOENIX ENVIRONMENTAL SERVICES INC.
106 BROAD STREET, SUITE B LOGANVILLE, GEORGIA

**SITE #1
FILL IN SURFACE WATER**

DRAWN: PESI
NOTES:
SCALE: 1"=50'
DATE: 5/02
CHECKED: PBD
SITE1.CPC.PPL

SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS			
Site No.	Station (From/To)	Structure Size	Fill in Wetlands (ha)	Temp. Fill in Wetlands (ha)	Excavation in Wetlands (ha)	Interchange Isolated Wetland (ha)	Mechanized Clearing (Method III) (ha)	Fill in SW (Natural) (ha)	Fill in SW (Pond) (ha)	Existing Channel Impacted (m)	Relocated Channel (m)
1	[See Note 1]	N/A	0	0	0	0	0	<0.01 ²	0	12 ³	0

NOTES:

- CPC 36" Pipeline – 234+37 to 234+45
 CPC 32" Pipeline – 233+81 to 233+89
 PPL 8" Pipeline – 221+29 to 221+37
 PPL 14" Pipeline – 221+71 to 221+79
- For each pipeline, riprap will be placed on the stream bed for erosion control (impact area of 8' stream width × 10' stream length)
- Cumulative channel length impacted.

Sheet 3 of 4

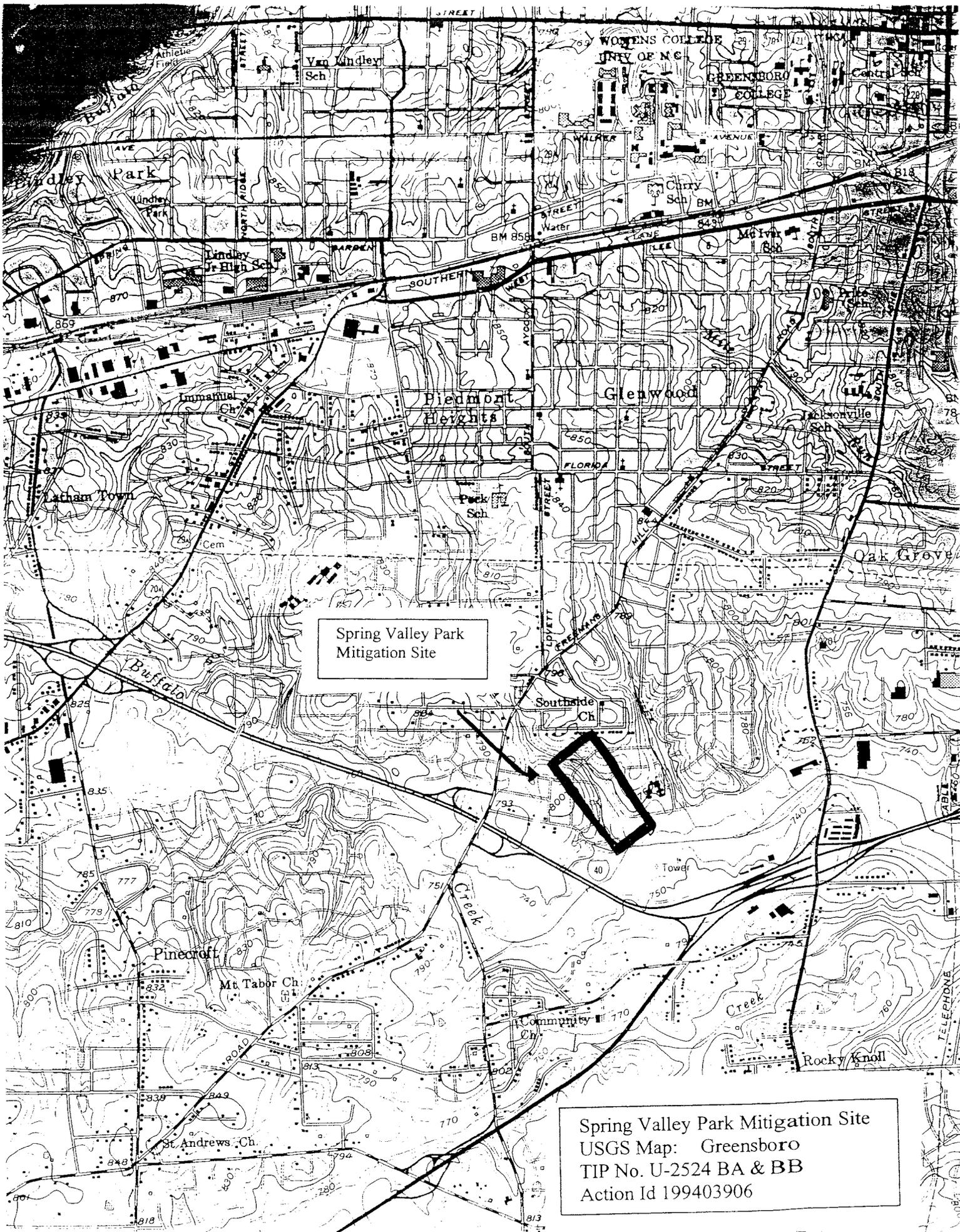
SITE #1
 UNNAMED TRIBUTARY TO HORSEPEN CREEK
 PRODUCT PIPELINE RELOCATION
 GREENSBORO WESTERN URBAN LOOP
 Guilford County, North Carolina
 May 2002
 DOT Project Reference: U-2524BB

**PROPERTY OWNERS
NAME AND ADDRESS**

OWNER'S NAME	ADDRESS
Piedmont Triad Airport Authority	PO Box 35005 Greensboro, NC 27425 (336) 665-5600
Mr. Ray Rumsey	American Coatings PO Box 19706 Greensboro, NC 27419 (336) 294-0507
Oak Ridge Property Partnership	5888 Old Oak Ridge Road Greensboro, NC 27410 (336) 665-0291

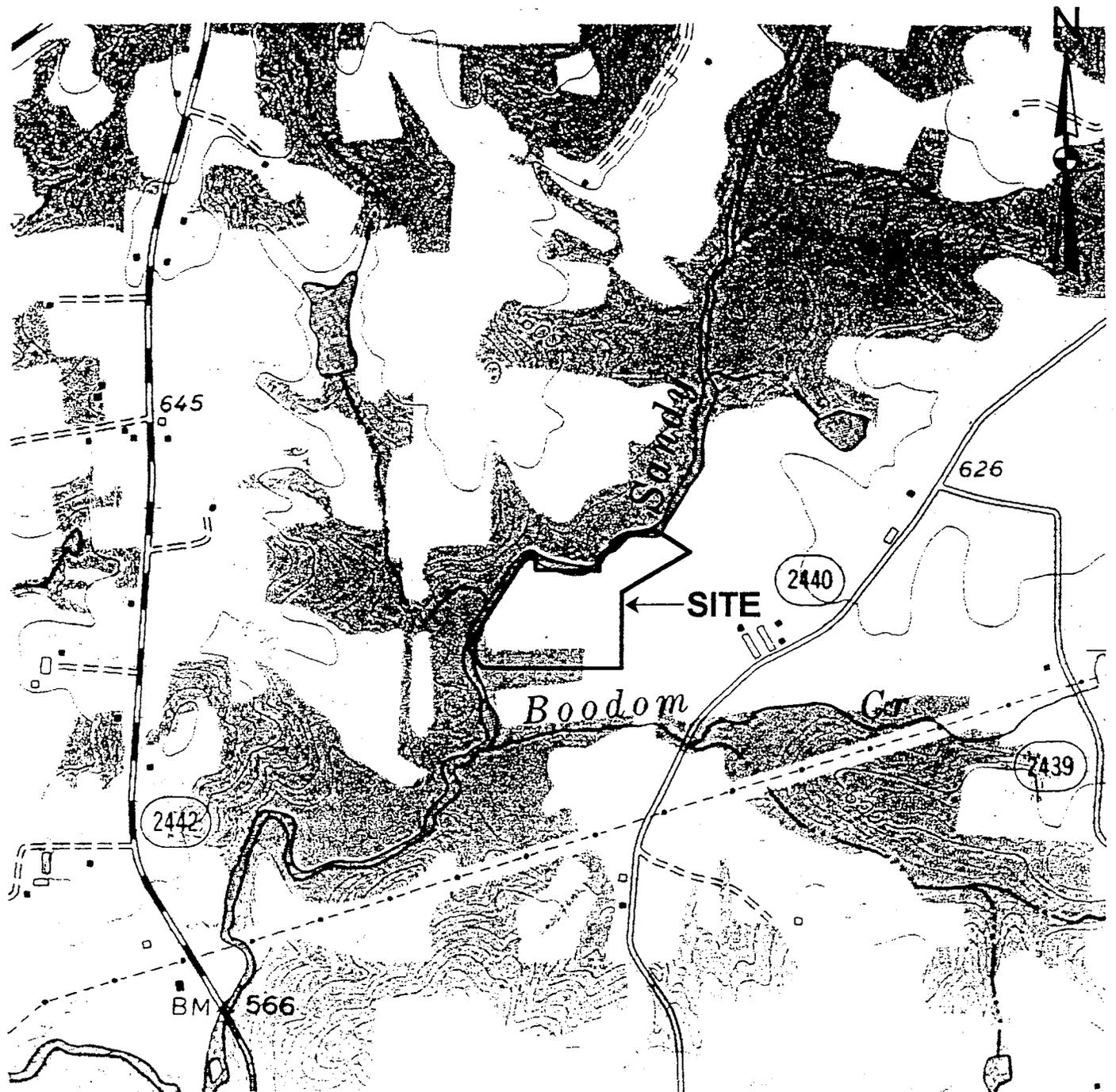
SHEET 4 OF 4

SITE #1
UNNAMED TRIBUTARY TO HORSEPEN CREEK
PRODUCT PIPELINE RELOCATION
GREENSBORO WESTERN URBAN LOOP
Guilford County, North Carolina
May 2002
DOT Project Reference: U-2524BB



Spring Valley Park Mitigation Site

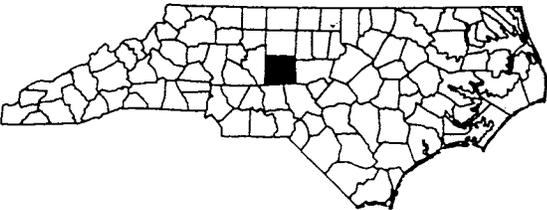
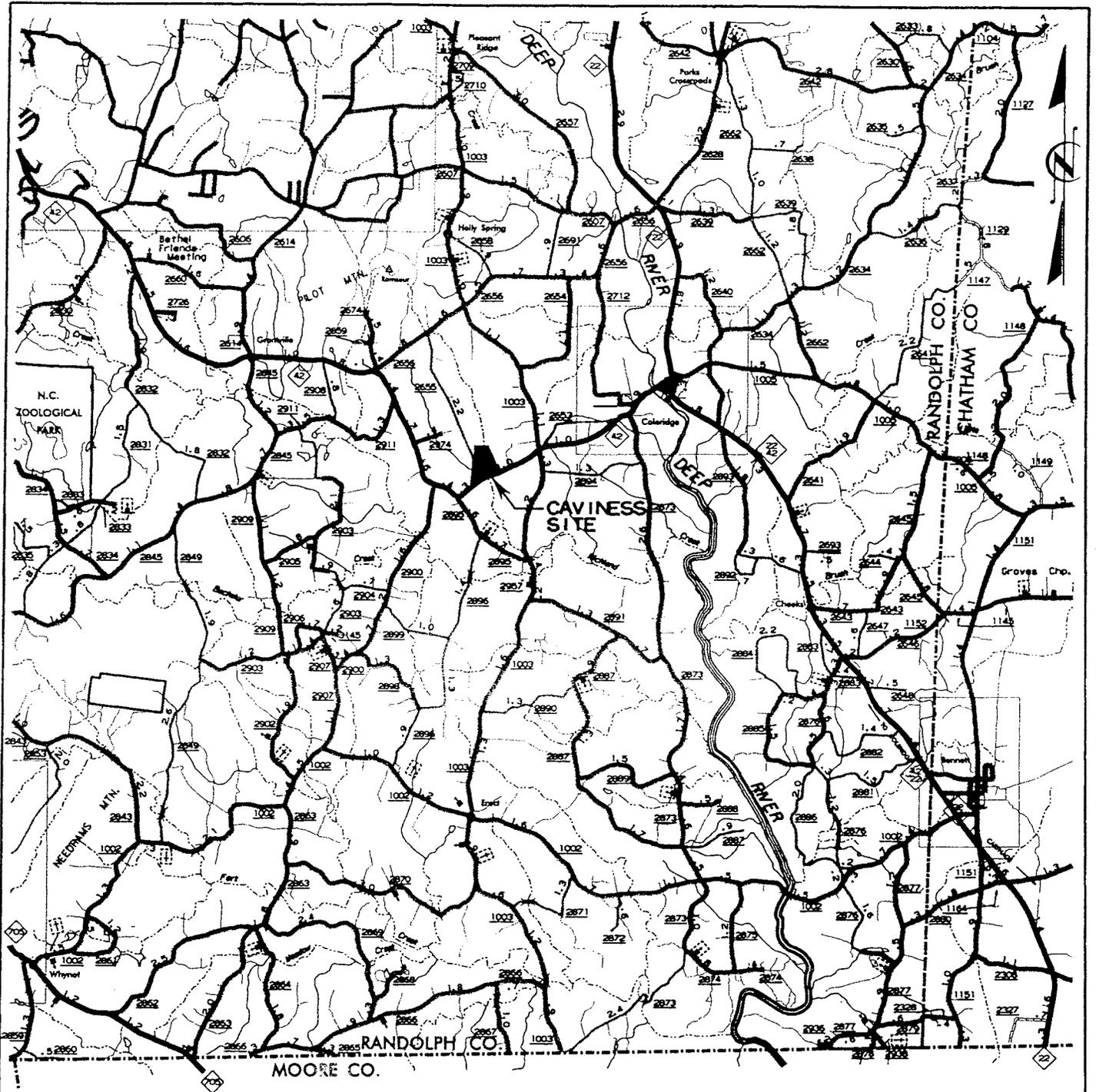
Spring Valley Park Mitigation Site
USGS Map: Greensboro
TIP No. U-2524 BA & BB
Action Id 199403906



2000 0 2000 Feet

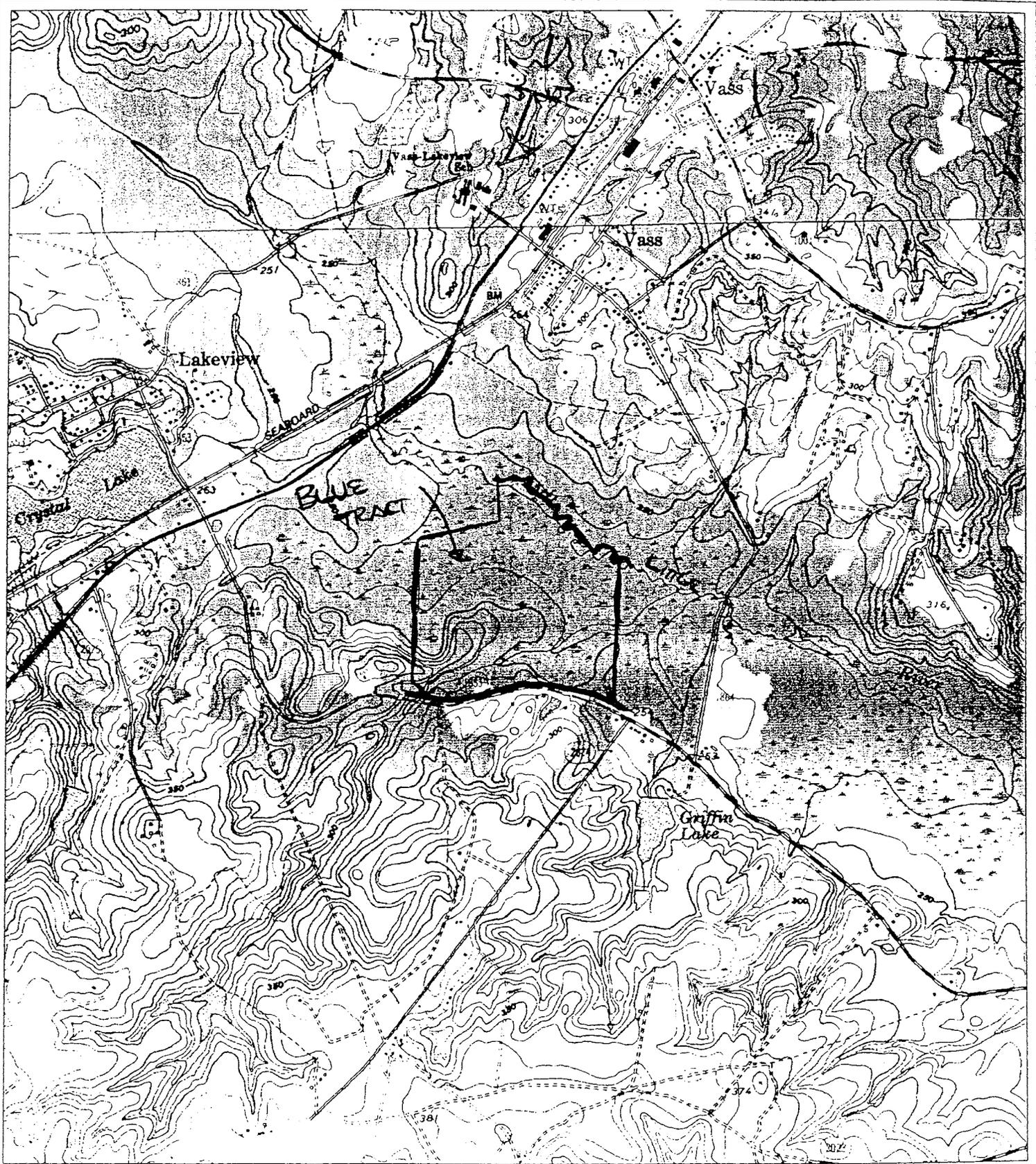


SOURCE: U.S. GEOLOGICAL SURVEY MAPS:
7.5 MINUTE QUADRANGLE: GRAYS CHAPEL NC 1974



SITE VICINITY MAP
 CAVINESS SITE
 STREAM MITIGATION PLAN
 RANDOLPH COUNTY, N. C.

FIGURE 1



USGS Quads:
Niagara and
Vass

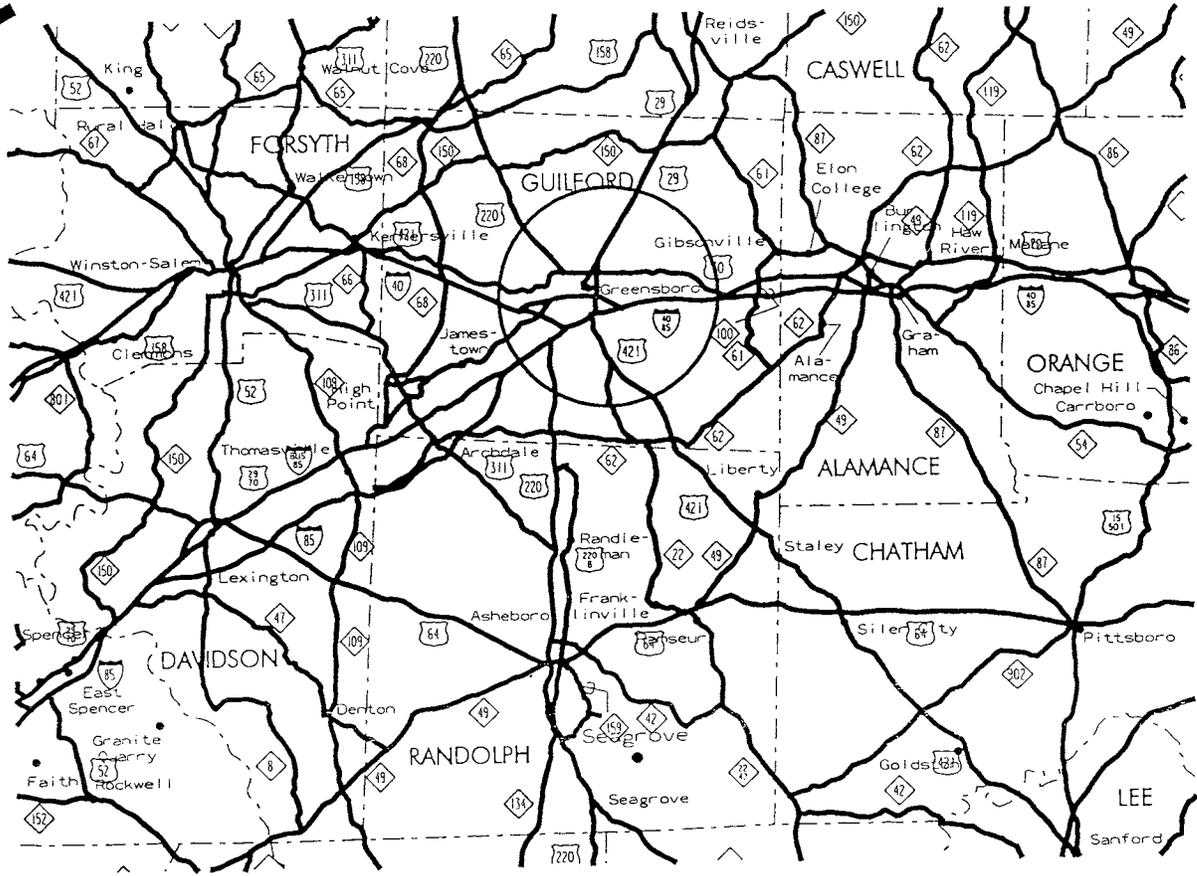
1" = 2,000'



Blue Tract Vicinity Map
ACTION ID 199403906

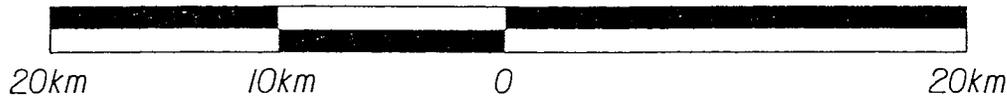
2000 0 2000 Feet



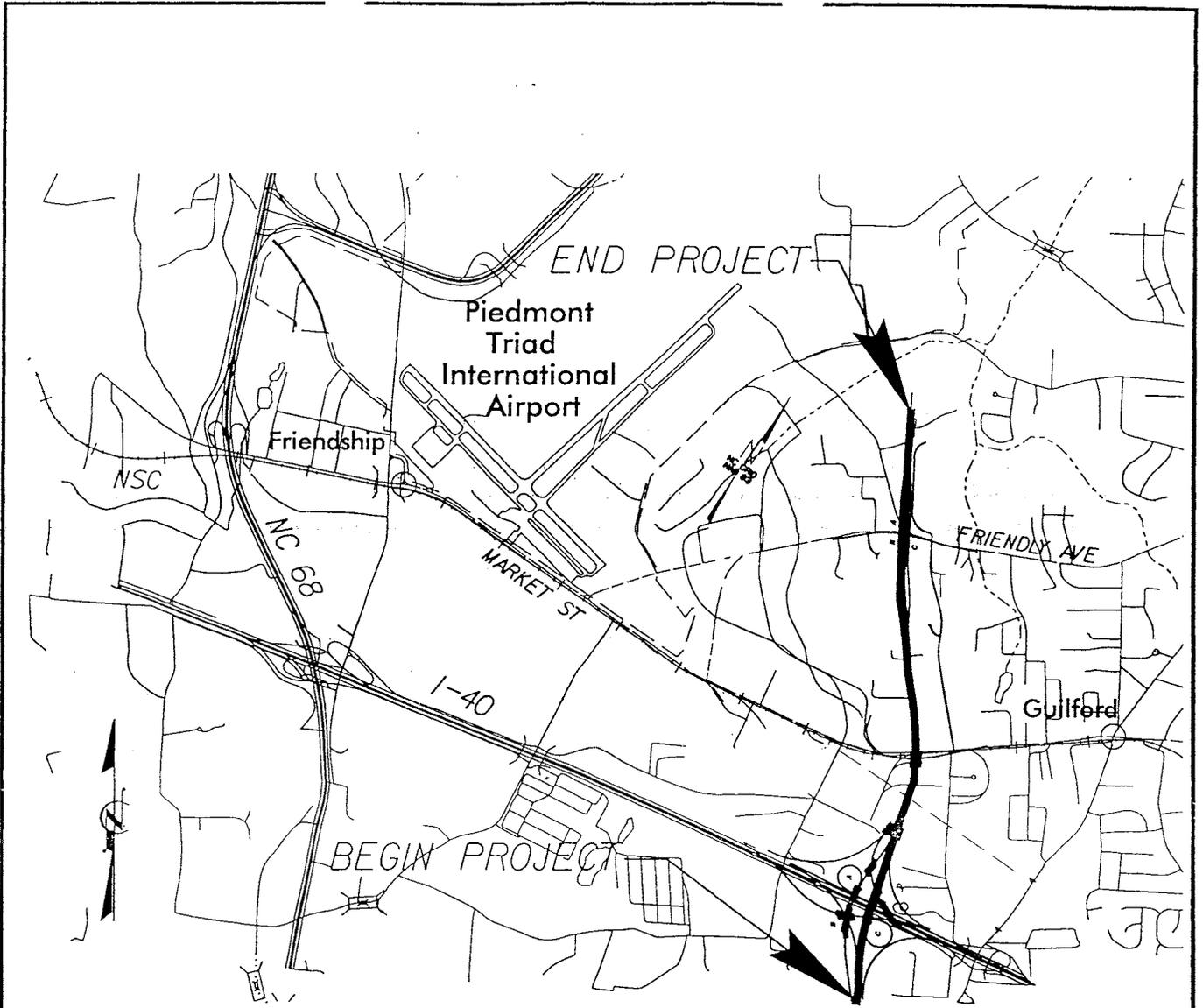


VICINITY MAP

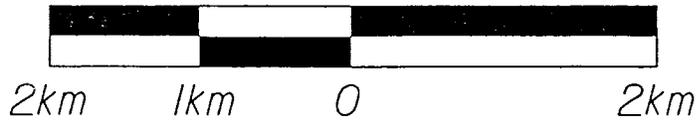
SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 1 OF 28 FEBRUARY 13, 2002



VICINITY MAP



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

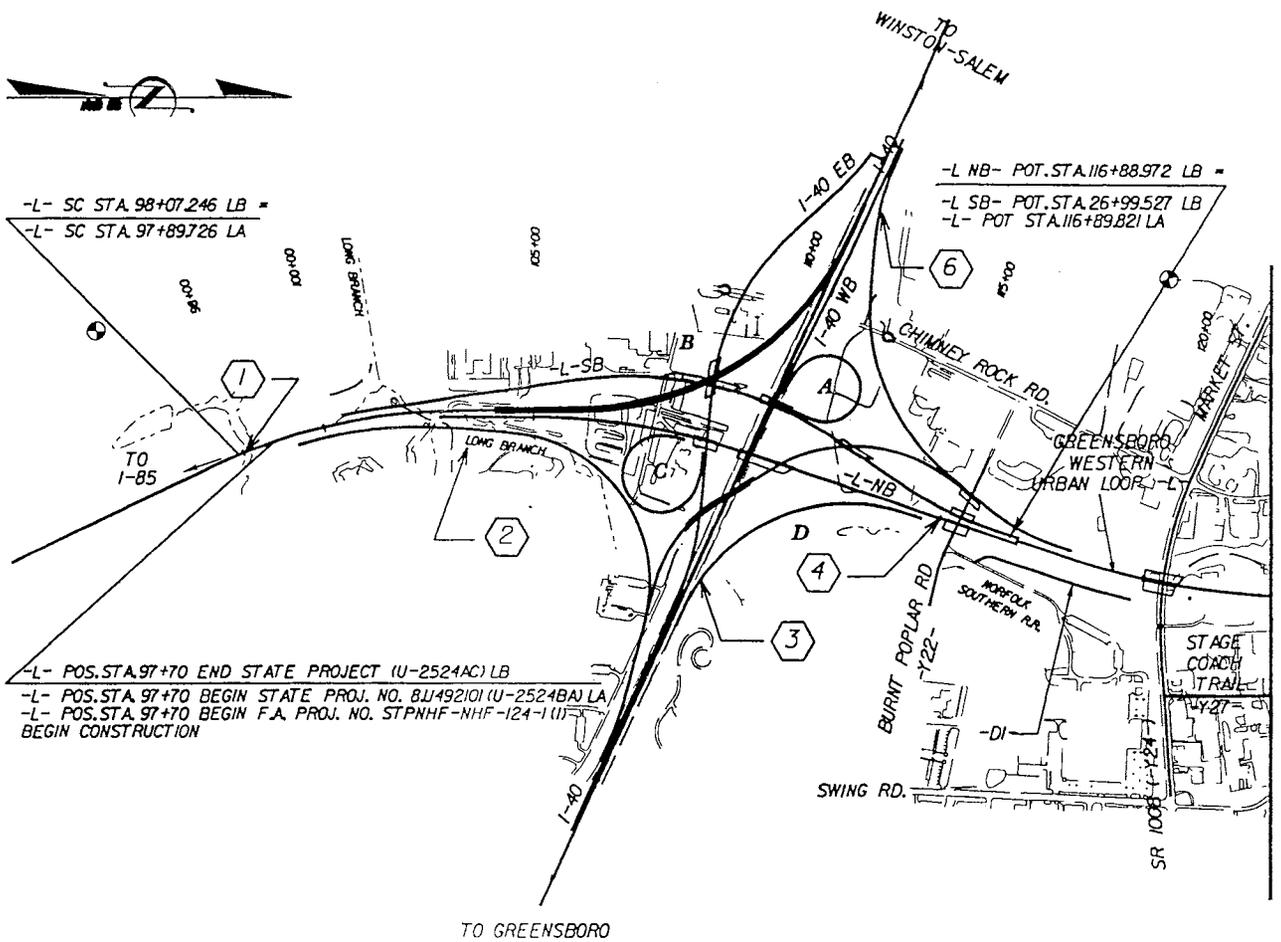
U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

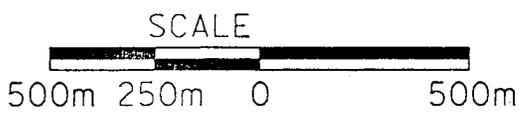
SHEET 2 OF 28

FEBRUARY 13, 2002



MATCHLINE STA. 123+03.98 -L-

SITE MAP



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

8.U492101

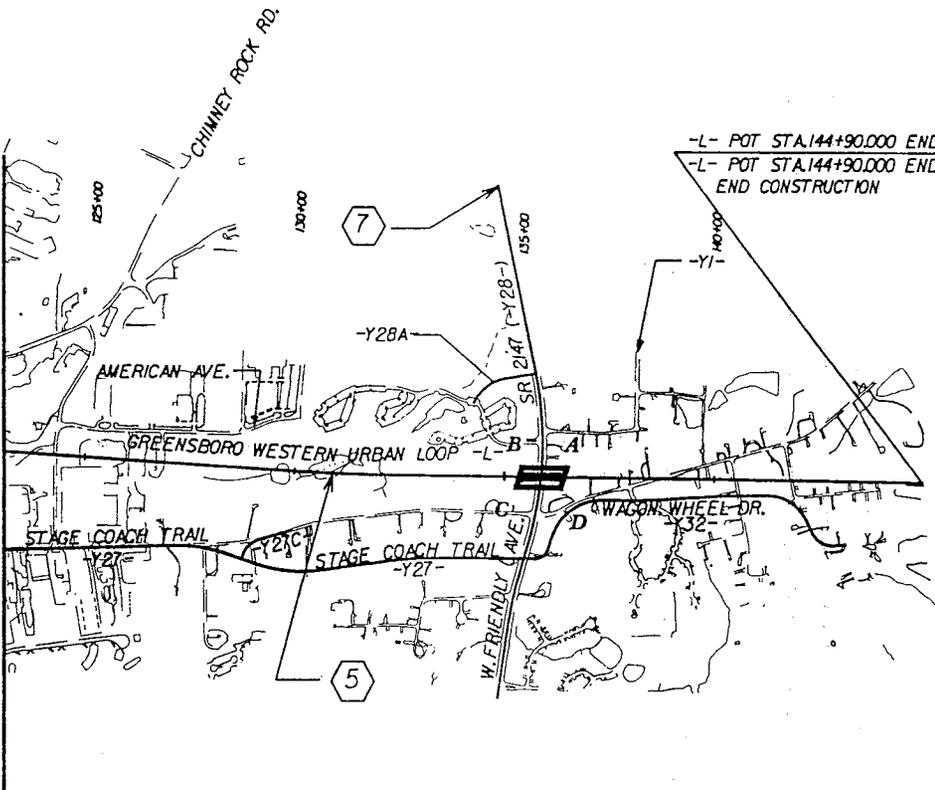
U-2524BA

GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 3 OF 28

FEBRUARY 13, 2002



SITE MAP
SCALE
500m 250m 0 500m

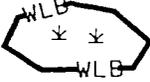
MATCHLINE STA. 123+03.98

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
8.U492101
U-2524BA
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN
SHEET 4 OF 28
FEBRUARY 13, 2002

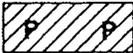
LEGEND

— WLB — WETLAND BOUNDARY

 WETLAND

 DENOTES FILL IN WETLAND

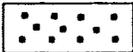
 DENOTES FILL IN SURFACE WATER

 DENOTES FILL IN SURFACE WATER (POND)

 DENOTES TEMPORARY FILL IN WETLAND

 DENOTES EXCAVATION IN WETLAND

 DENOTES TEMPORARY FILL IN SURFACE WATER

 DENOTES MECHANIZED CLEARING

← ← FLOW DIRECTION

— TB — TOP OF BANK

--- WE --- EDGE OF WATER

— C — PROP. LIMIT OF CUT

— F — PROP. LIMIT OF FILL

— ▲ — PROP. RIGHT OF WAY

--- NG --- NATURAL GROUND

— PL — PROPERTY LINE

— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

— EPB — EXIST. ENDANGERED PLANT BOUNDARY

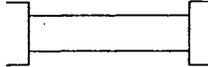
--- ▽ --- WATER SURFACE

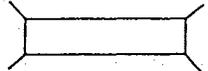
X X X LIVE STAKES
X X X

 BOULDER

— COIR FIBER ROLLS

 ADJACENT PROPERTY OWNER OR PARCEL NUMBER

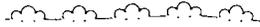
 PROPOSED BRIDGE

 PROPOSED BOX CULVERT

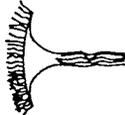
 PROPOSED PIPE CULVERT

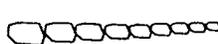
(DASHED LINES DENOTE EXISTING STRUCTURES)

 SINGLE TREE

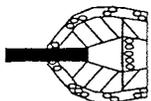
 WOODS LINE

 DRAINAGE INLET

 ROOTWAD

 VANE

 RIP RAP

 RIP RAP ENERGY DISSIPATOR BASIN

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101

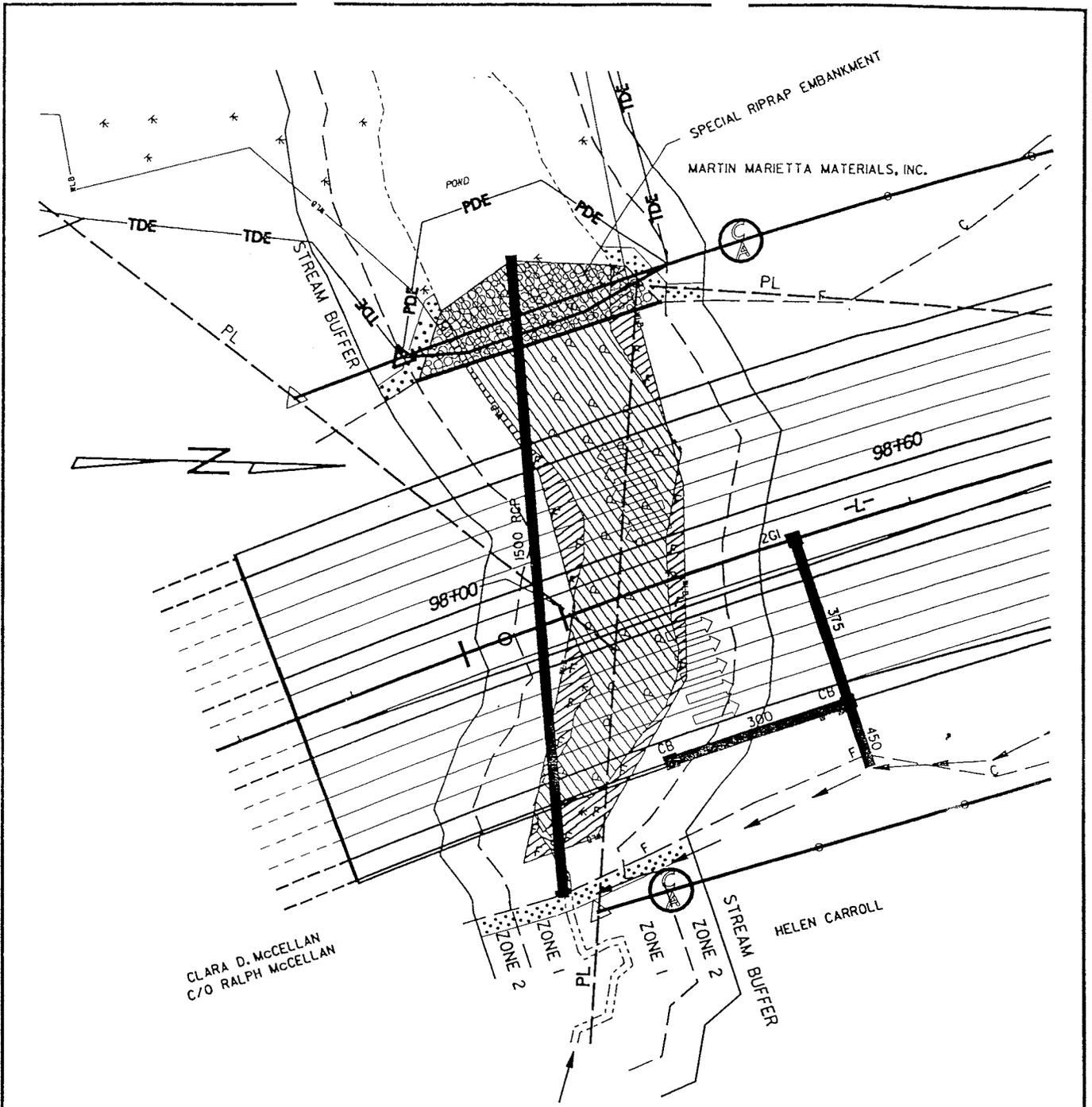
U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

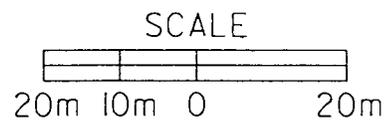
SCALE AS SHOWN

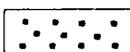
SHEET 5 OF 28

FEBRUARY 13, 2002



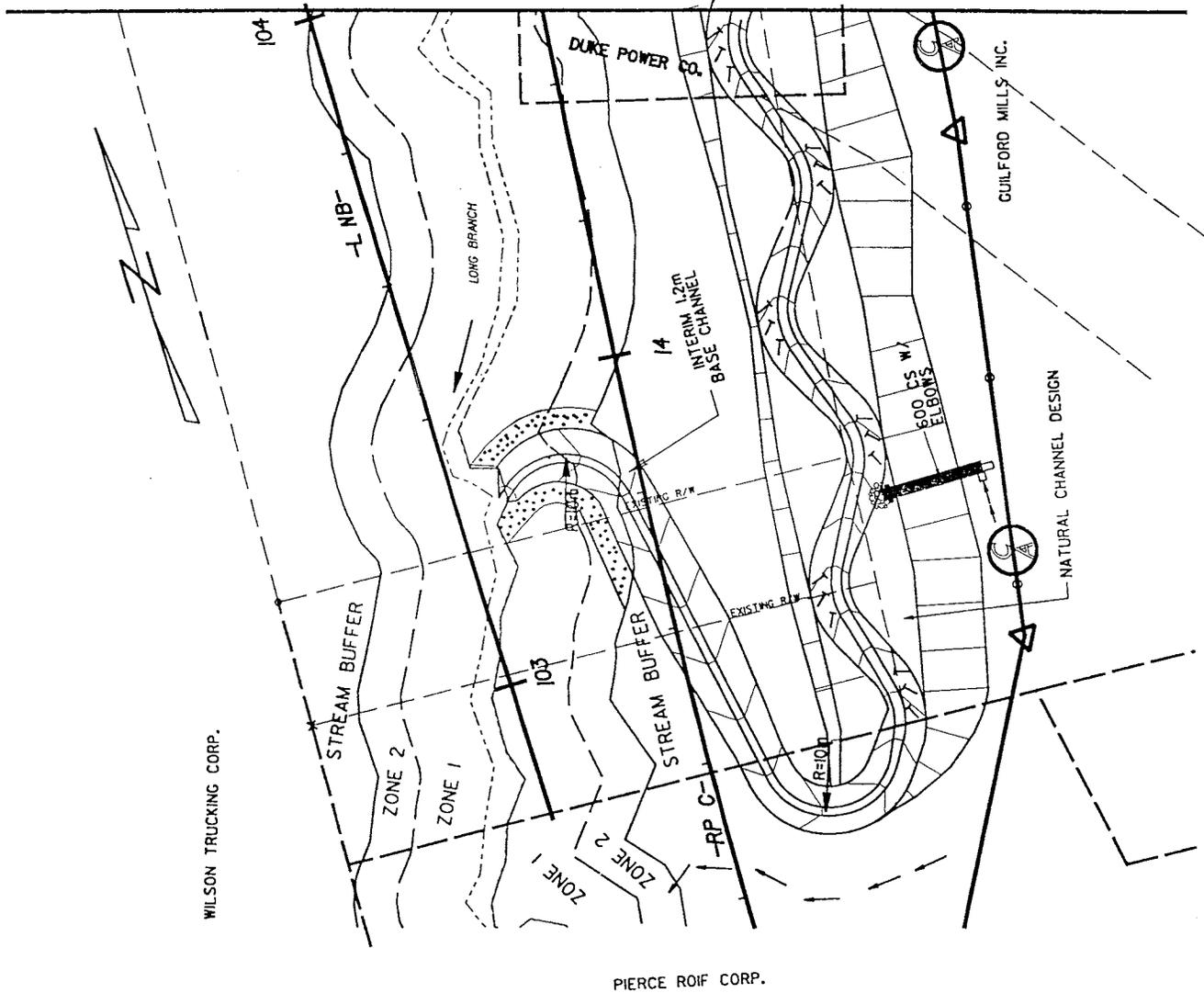
ULTIMATE SITE #1



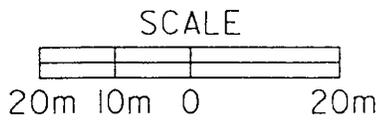
-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 6 OF 28 FEBRUARY 13, 2002

MATCHLINE 1



INTERIM SITE #2



DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

B.U492101 U-2524BA

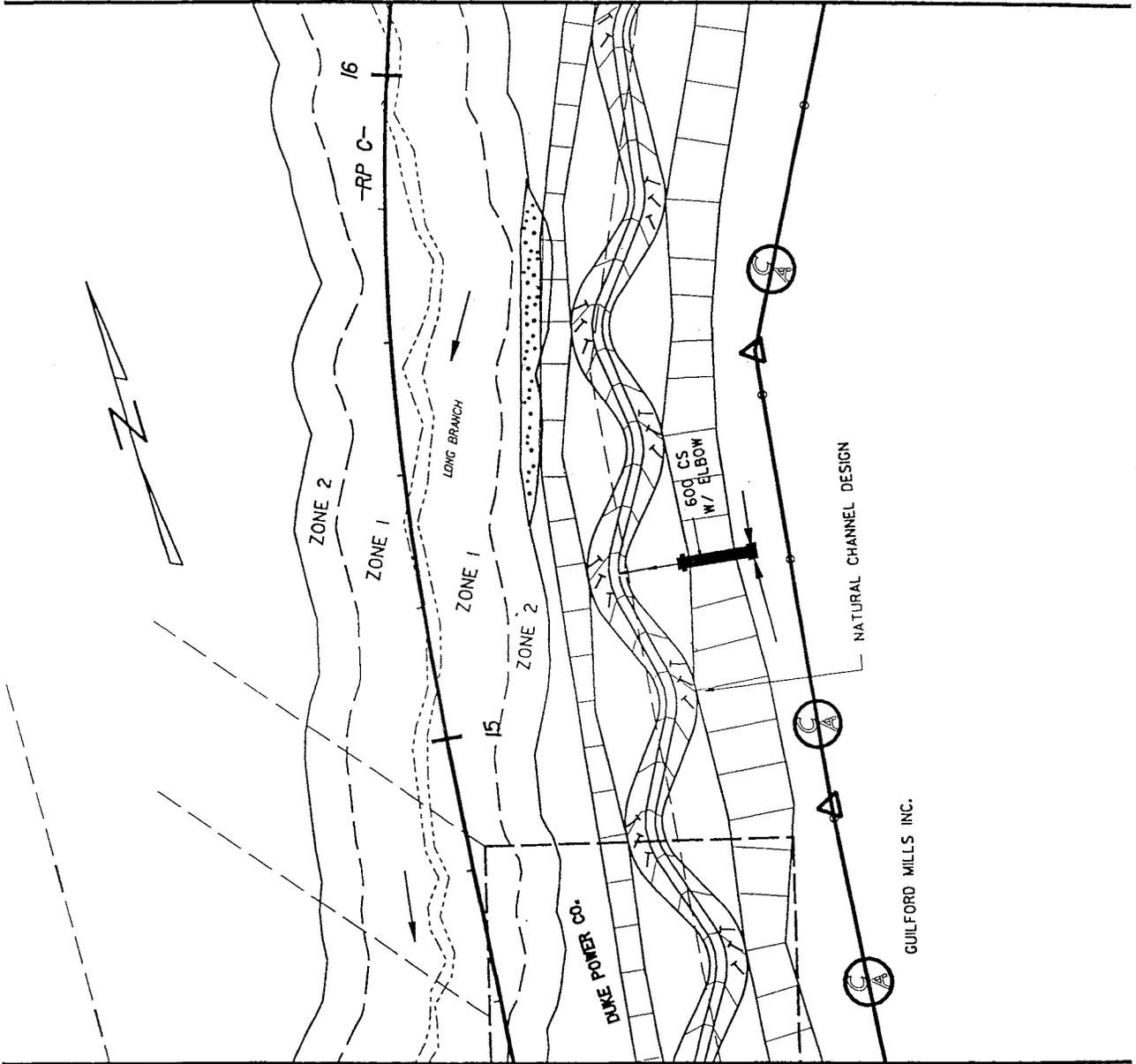
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 7 OF 28

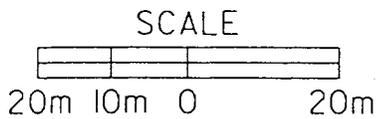
FEBRUARY 13, 2002

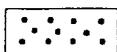
MATCHLINE 2



MATCHLINE 1

INTERIM SITE #2



 DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101

U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

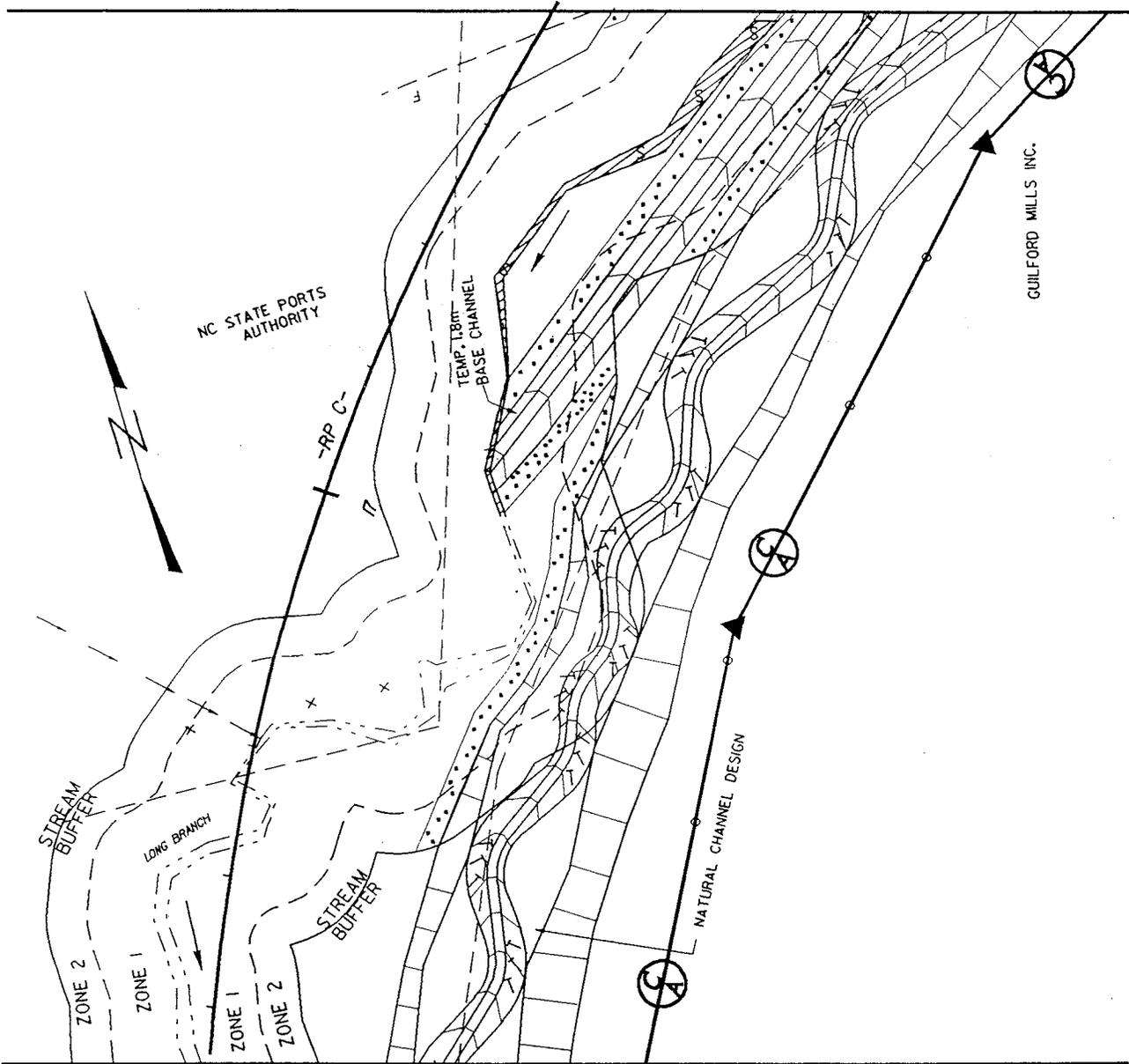
SCALE AS SHOWN

SHEET 8 OF 28

FEBRUARY 13, 2002

GUILFORD MILLS INC.

MATCHLINE 3

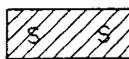


MATCHLINE 2

INTERIM SITE #2

SCALE



-  DENOTES FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101

U-2524BA

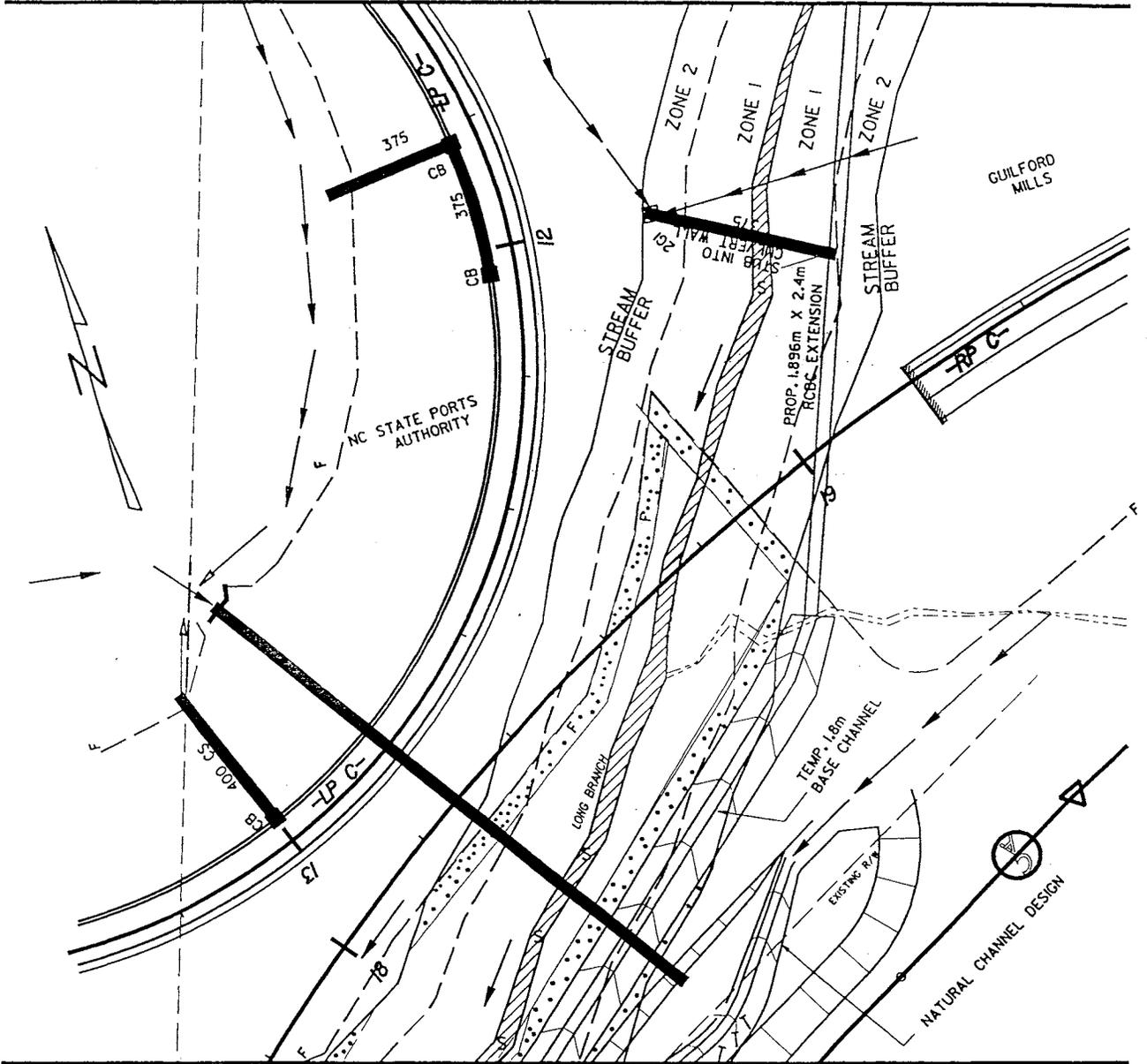
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 9 OF 28

MARCH 6, 2002

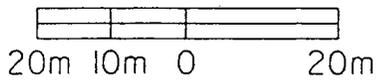
SAME AS ULTIMATE DESIGN ABOVE THIS LINE



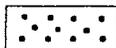
MATCHLINE 3

INTERIM SITE #2

SCALE



DENOTES FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

U-2524BA

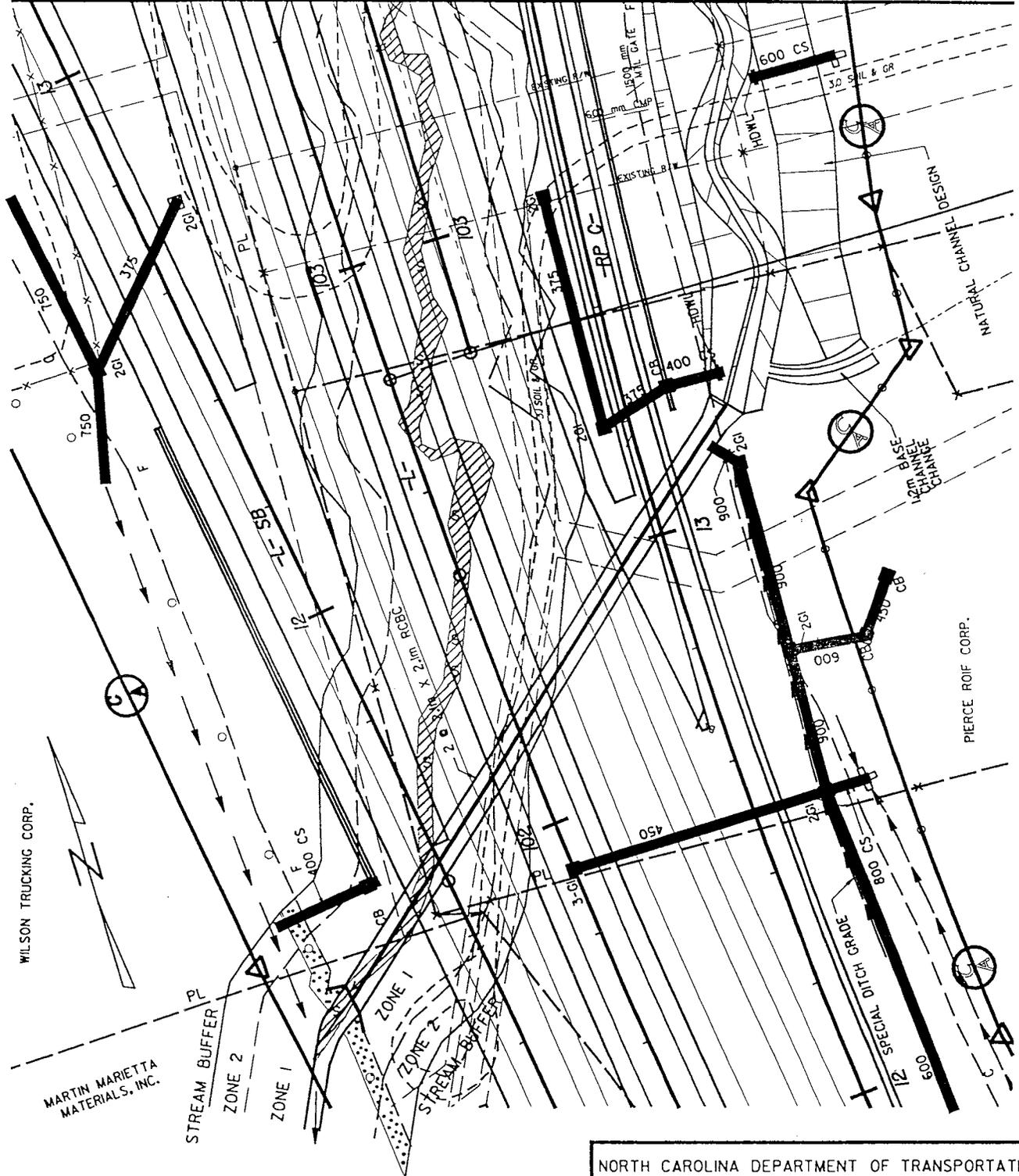
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

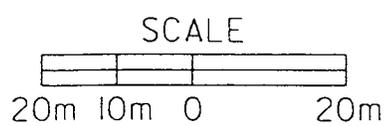
SHEET 10 OF 28

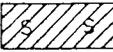
FEBRUARY 13, 2002

MATCHLINE I



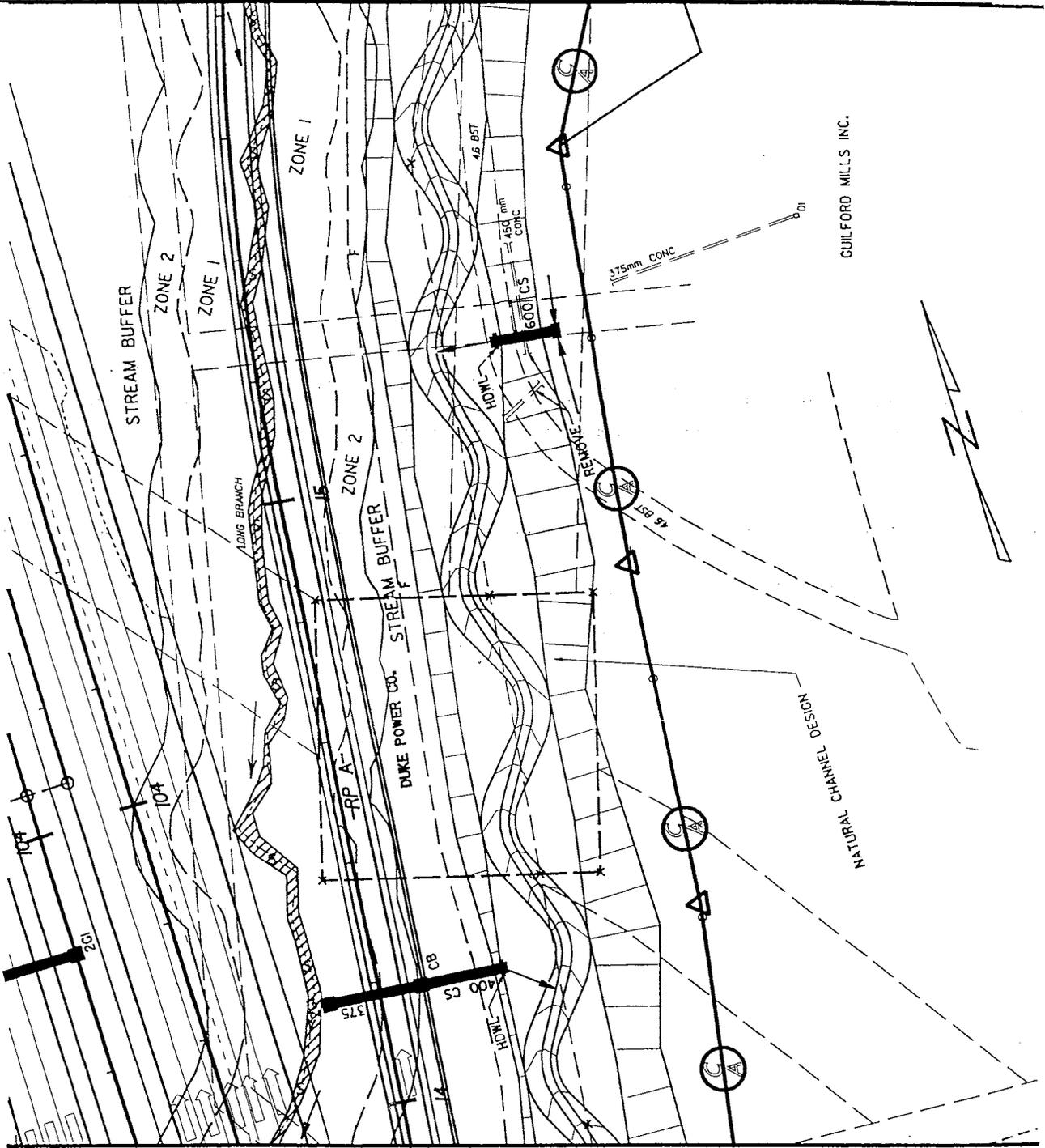
ULTIMATE SITE #2



-  DENOTES FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET II OF 28 FEBRUARY 13, 2002

MATCHLINE 2



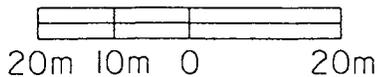
GUILFORD MILLS INC.

NATURAL CHANNEL DESIGN

MATCHLINE 1

ULTIMATE SITE #2

SCALE



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

8.U492101

U-2524BA

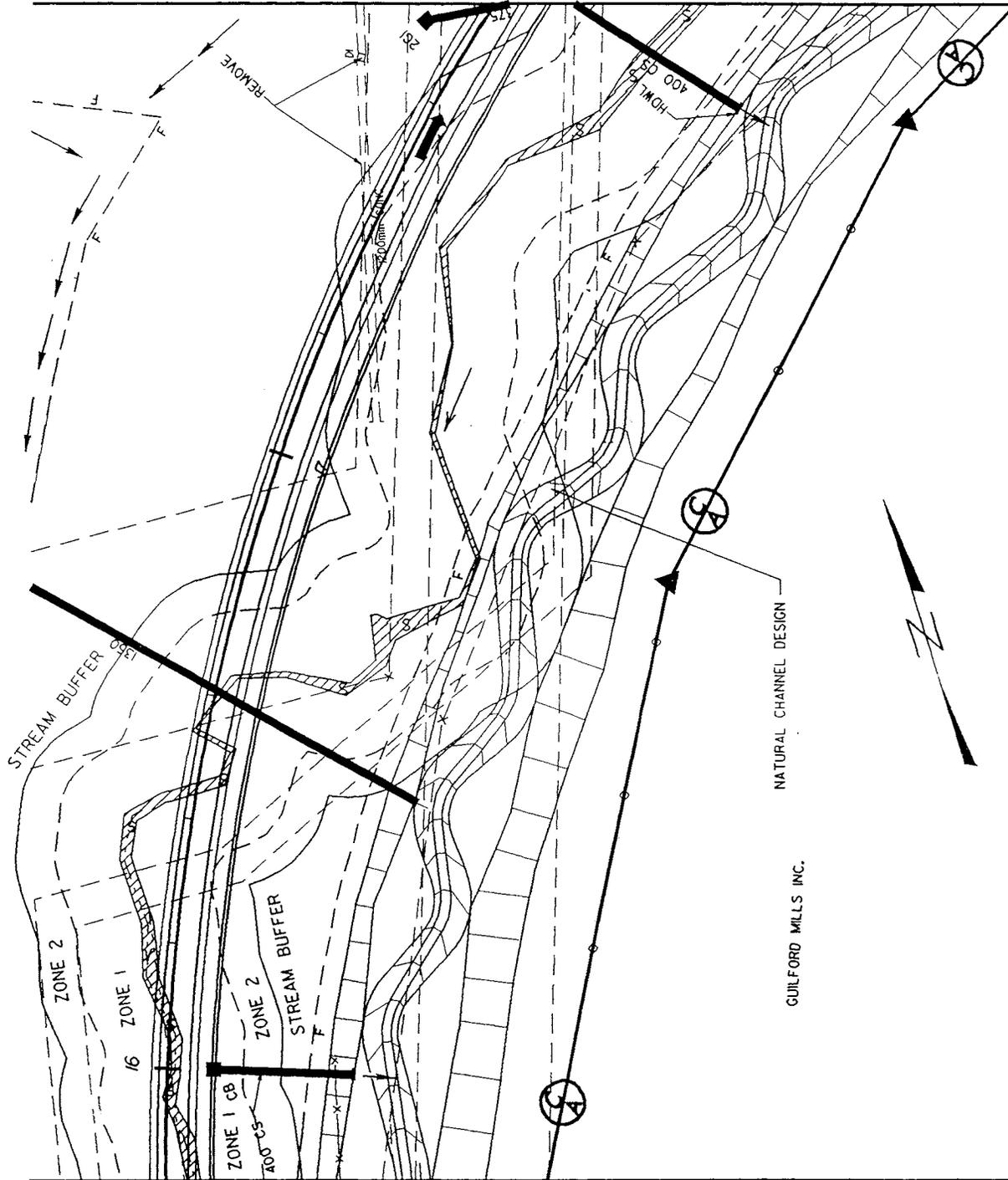
GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 12 OF 28

FEBRUARY 13, 2002

MATCHLINE 3



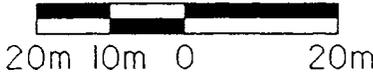
NATURAL CHANNEL DESIGN

GUILFORD MILLS INC.

MATCHLINE 2

ULTIMATE SITE #2

SCALE



 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

8.U492101

U-2524BA

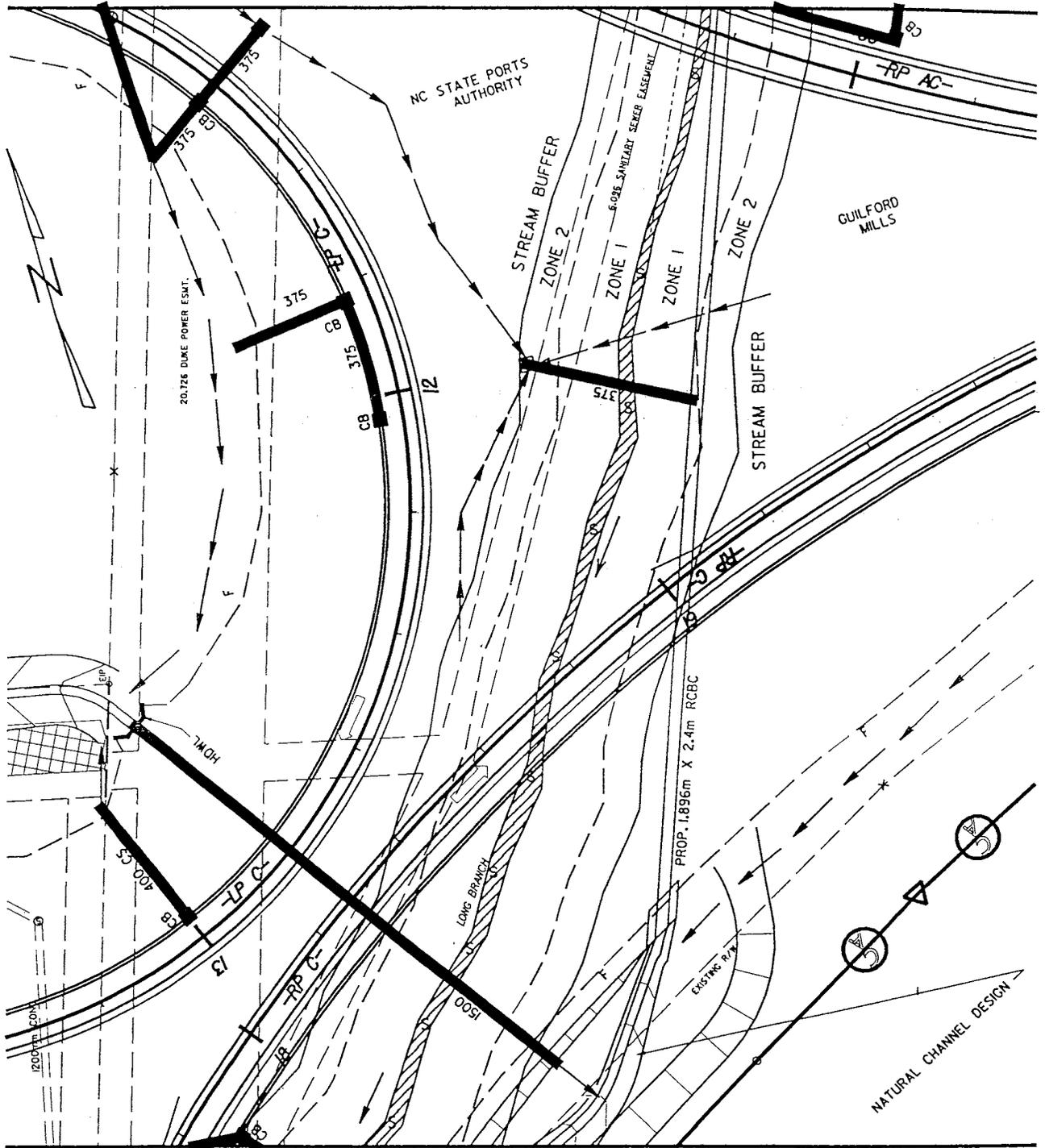
GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 13 OF 28

FEBRUARY 13, 2002

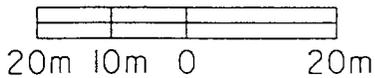
MATCHLINE 4



MATCHLINE 3

ULTIMATE SITE #2

SCALE



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

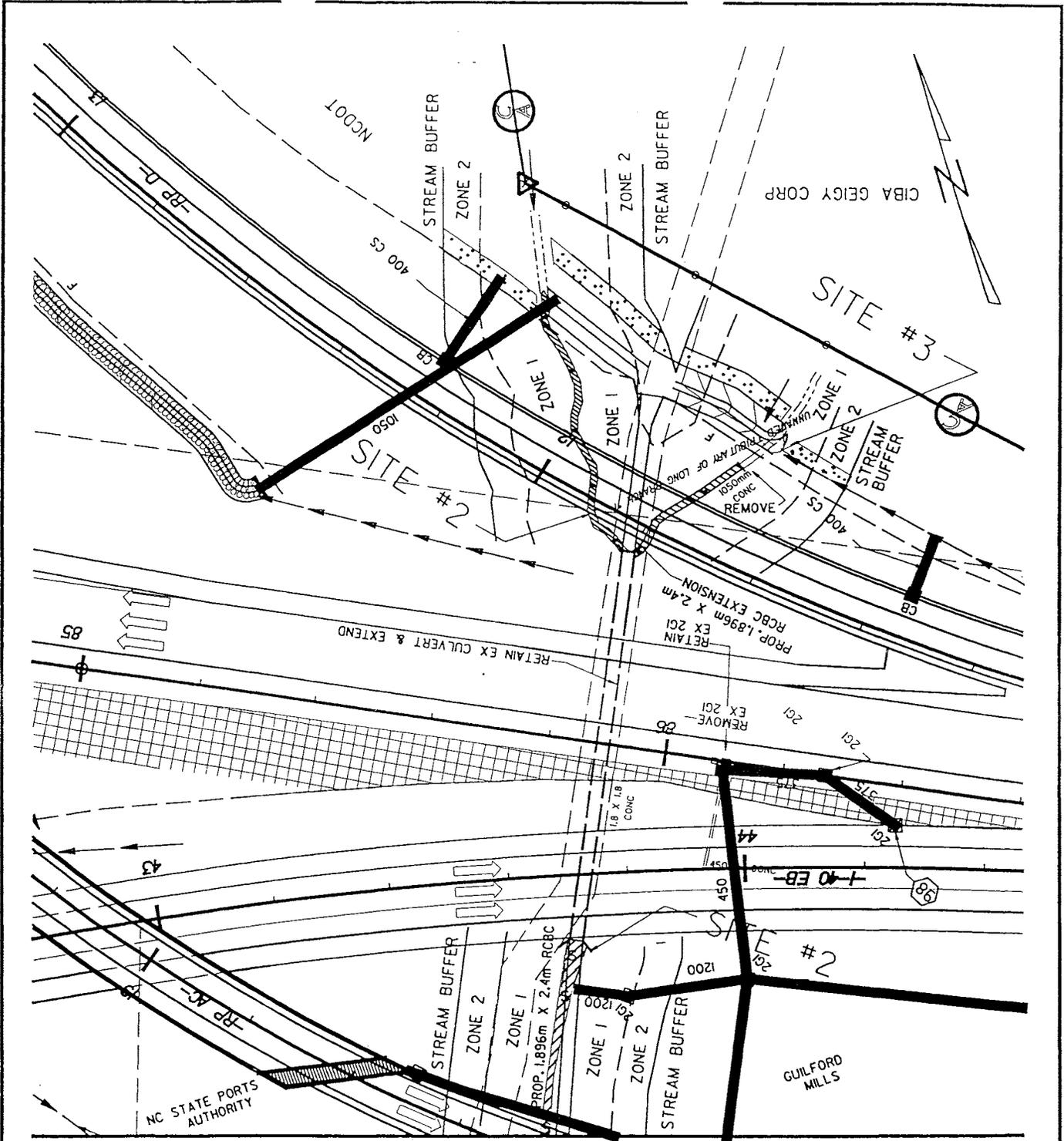
U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

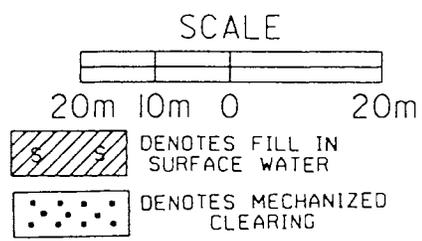
SCALE AS SHOWN

SHEET 14 OF 28

FEBRUARY 13, 2002



MATCHLINE 4
 SITES #2 & #3



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

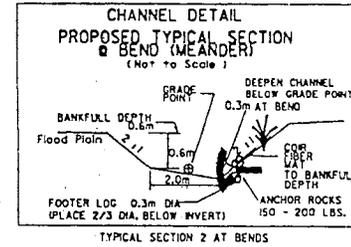
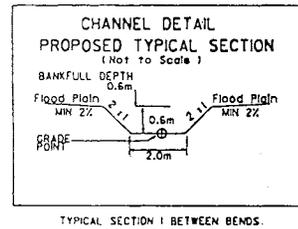
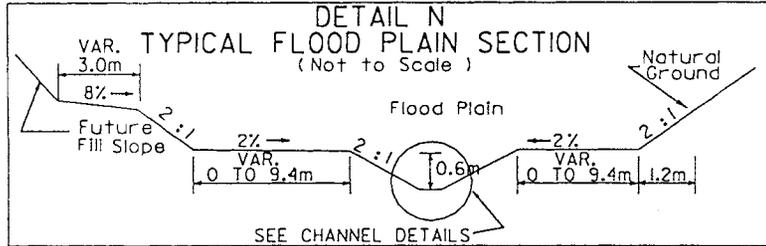
8.U492101 U-2524BA

GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 15 OF 28 FEBRUARY 13, 2002

NATURAL CHANNEL DESIGN TYPICALS



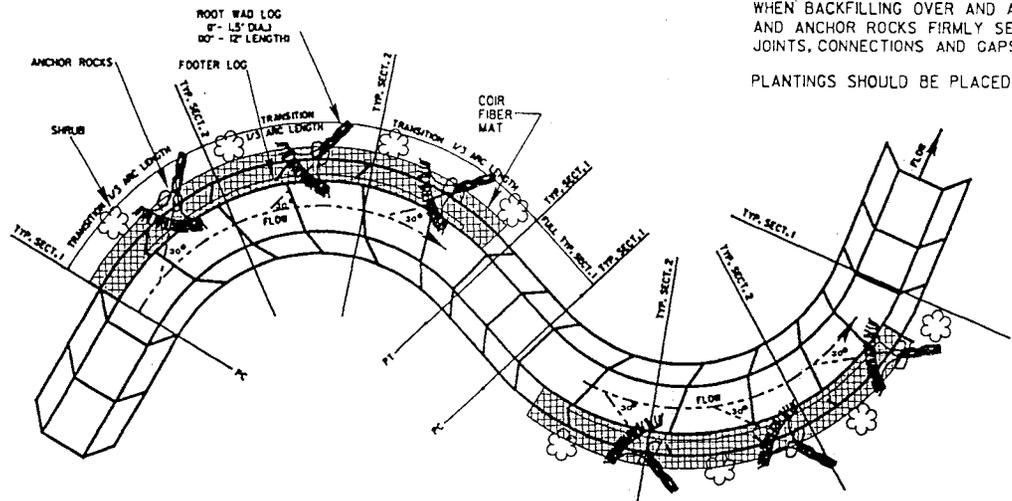
NOTES:

NUMBER OF ROOTWADS INSTALLED TO BE DETERMINED ON SITE
 ROOTWADS TO BE SPACED 4x DIAMETER OF ROOT BASE

FOOTER LOG ANCHOR ROCK TO BE PLACED ON THE DOWNSTREAM END
 OF EACH FOOTER LOG SO THAT IT IS LEANING AGAINST THE LOG ON
 THE SIDE AWAY FROM THE CHANNEL.

WHEN BACKFILLING OVER AND AROUND FOOTER LOGS, ROOTWAD LOGS
 AND ANCHOR ROCKS FIRMLY SECURE ALL COMPONENTS INCLUDING
 JOINTS, CONNECTIONS AND GAPS.

PLANTINGS SHOULD BE PLACED ABOVE BANKFULL DEPTH



CHANNEL PLAN VIEW
 LONG BRANCH
 SITE 2

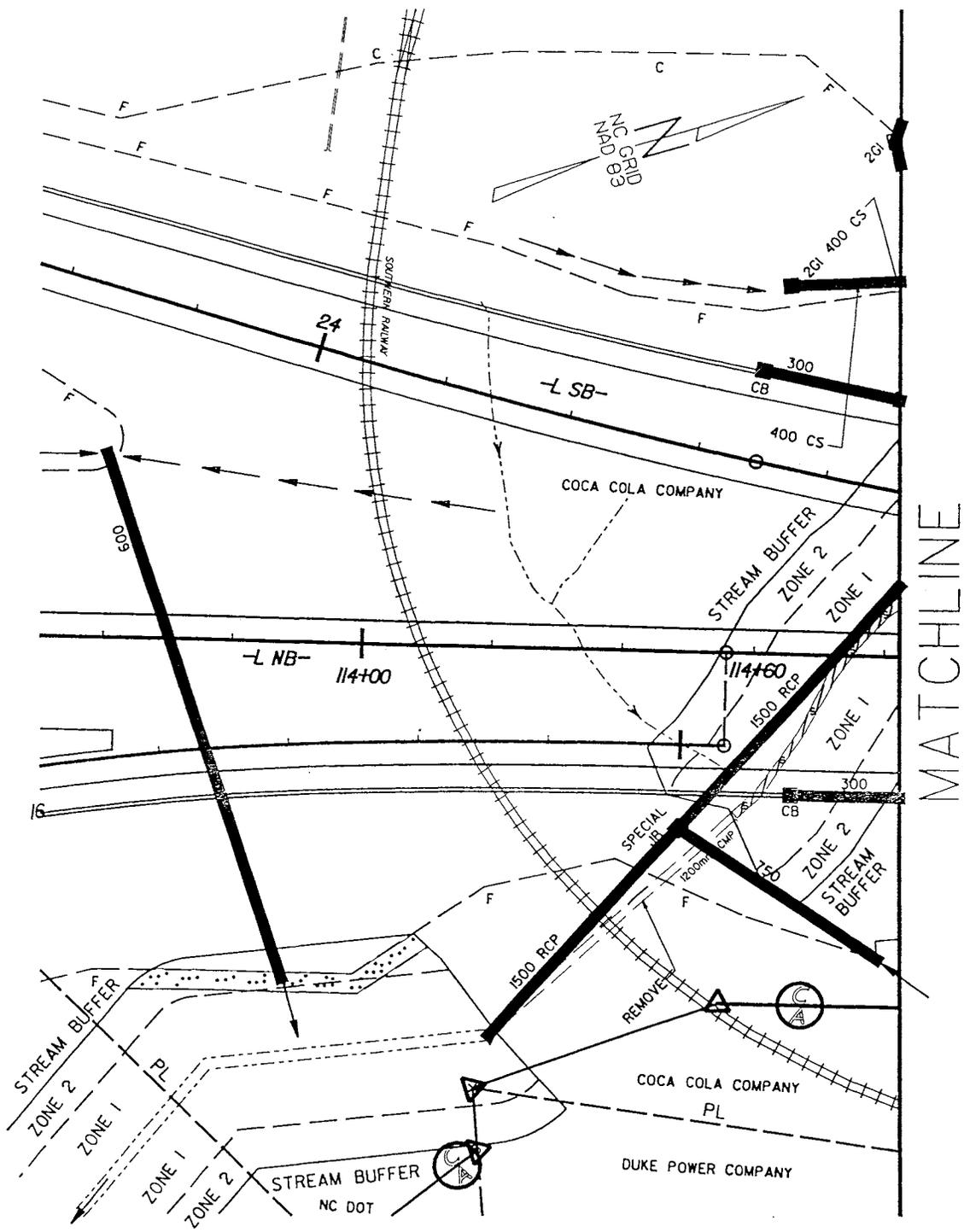
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8U492 101 U-25248A
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 16 OF 28
 FEBRUARY 13, 2002

Variables	Existing Channel	Proposed Reach	USGS Station	Reference Reach
1. stream type	E3	E3	N/A	N/A
2. drainage area	166 ha	166 ha		
3. bankfull width	2.76M	4.40M		
4. bankfull mean depth	0.66M	0.44M		
5. width/depth ratio	4.18	10.0		
6. bankfull cross-sectional area	1.81M ²	1.92 M ²		
7. bankfull mean velocity	1.49M/S	1.38M/S		
8. bankfull discharge, cfs	2.70cms	2.65cms		
9. bankfull max depth	0.76M	0.60M		
10. width of floodprone area	40.7M	17.4M		
11. entrenchment ratio	14.75	3.95		
12. meander length	12M – 20M	40.0M		
13. ratio of meander length to bankfull width	4.3 – 7.2	9.1		
14. Radius of curvature	8M – 12M	10M		
15. Ratio of radius of curvature to bankfull width	2.9 – 4.3	2.3		
16. Belt width	5M – 8M	14M		
17. Meander width ratio	1.8 – 2.9	3.2		
18. Sinuosity (stream length/valley length)	1.15	1.05		
19. Valley Slope	0.0075	0.0072		
20. Average slope	0.0065	0.0068		
21. Pool slope	0.0010	0.0010		
22. Ratio of pool slope to average slope	0.153	0.147		
23. Maximum pool depth	0.38M	0.30		
24. Ratio of pool depth to average bankfull depth	0.58	0.68		
25. Pool width	5.1M	8.4M		
26. Ratio of pool width to bankfull width	1.85	1.91		
27. Pool to pool spacing	11.3M	22M		
28. Ratio of pool to pool spacing to bankfull width	4.1	5.0		
29. Ratio of lowest bank height to bankfull height (or max bankfull depth)	1.83	1.50		

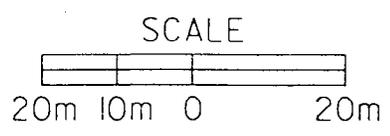
STREAM DESCRIPTION
AND
CLASSIFICATION DATA

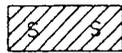
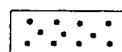
SITE # 2

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 8.U492101 U-2524BA
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.



SITE #4



-  DENOTES FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 B.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 18 OF 28 FEBRUARY 13, 2002

AMP INCORPORATED

N.C. GRID
NAD 83

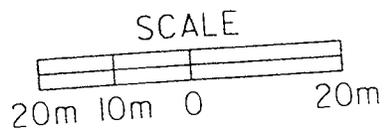
EXISTING R/W VARIES

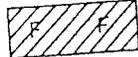
NCDOT

MATCHLINE 1

GUILFORD COUNTY
BOARD OF EDUCATION

SITE #5



-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
8.U492101 U-25248A

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 20 OF 28

FEBRUARY 13, 2002

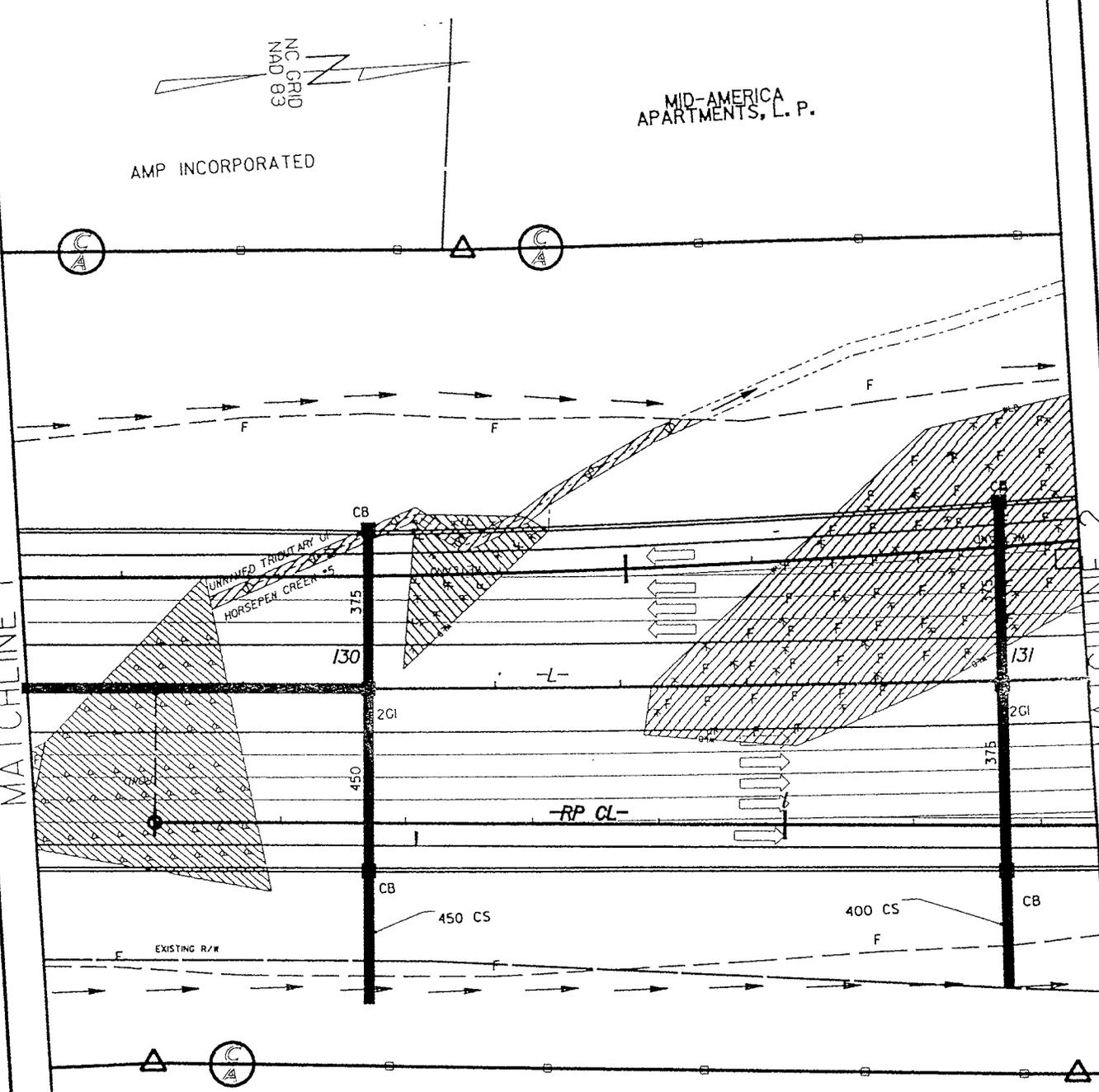
AMP INCORPORATED

MID-AMERICA APARTMENTS, L. P.

NC GRID
NAD 83

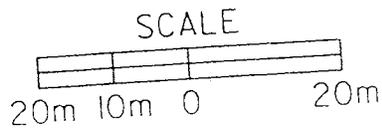
MATCHLINE 1

MATCHLINE 2



GUILFORD COUNTY BOARD OF EDUCATION

SITE #5



- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN SURFACE WATER (POND)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

B.U492101

U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

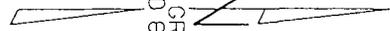
SCALE AS SHOWN

SHEET 21 OF 28

FEBRUARY 13, 2002

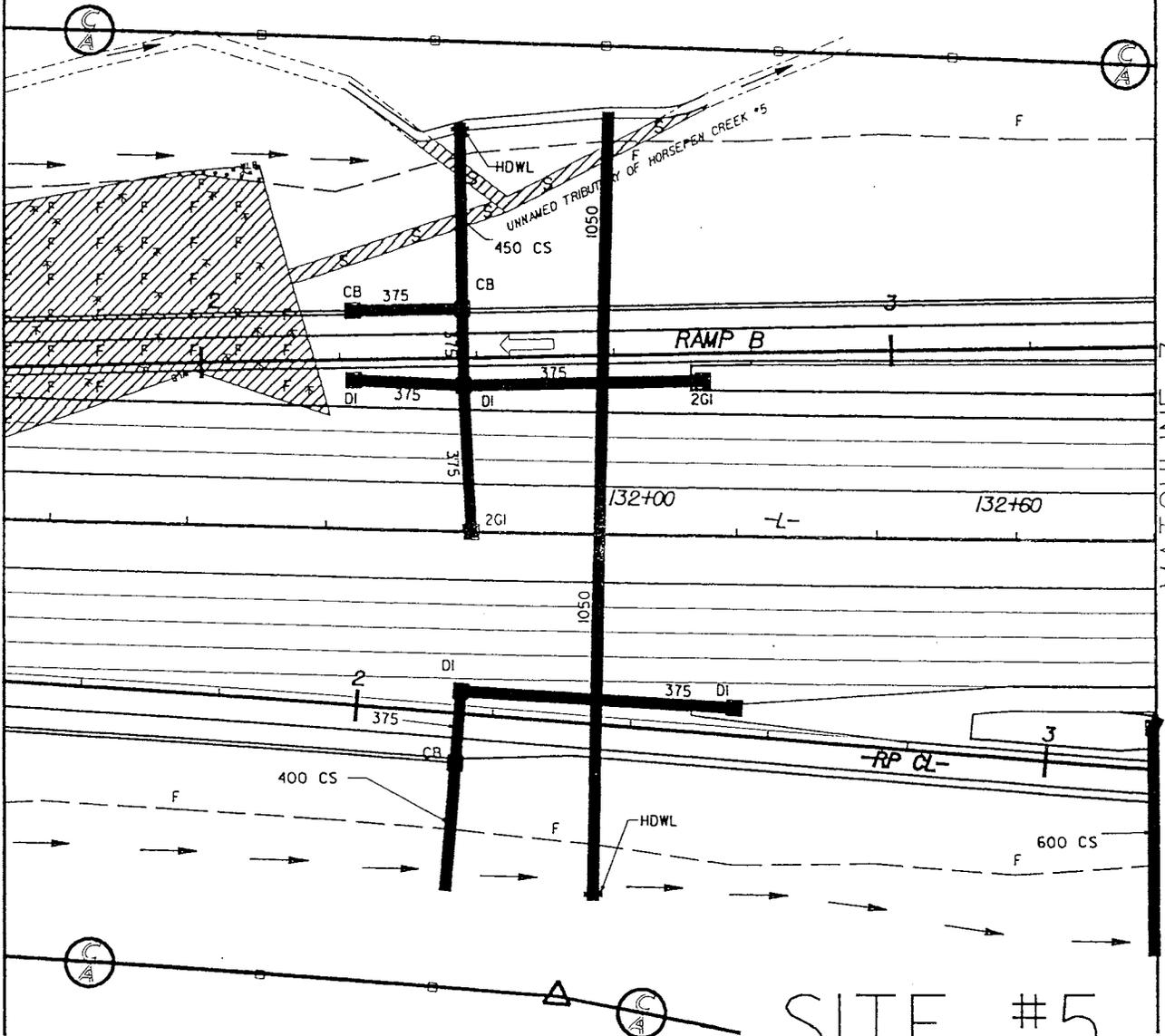
MID-AMERICA
APARTMENTS, L. P.

NC GRID
NAD 83



MATCHLINE 2

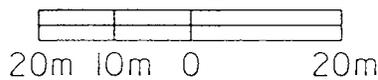
MATCHLINE 3



SITE #5

GUILFORD COUNTY
BOARD OF EDUCATION

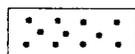
SCALE



DENOTES FILL IN
WETLAND



DENOTES FILL IN
SURFACE WATER



DENOTES MECHANIZED
CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

U-2524BA

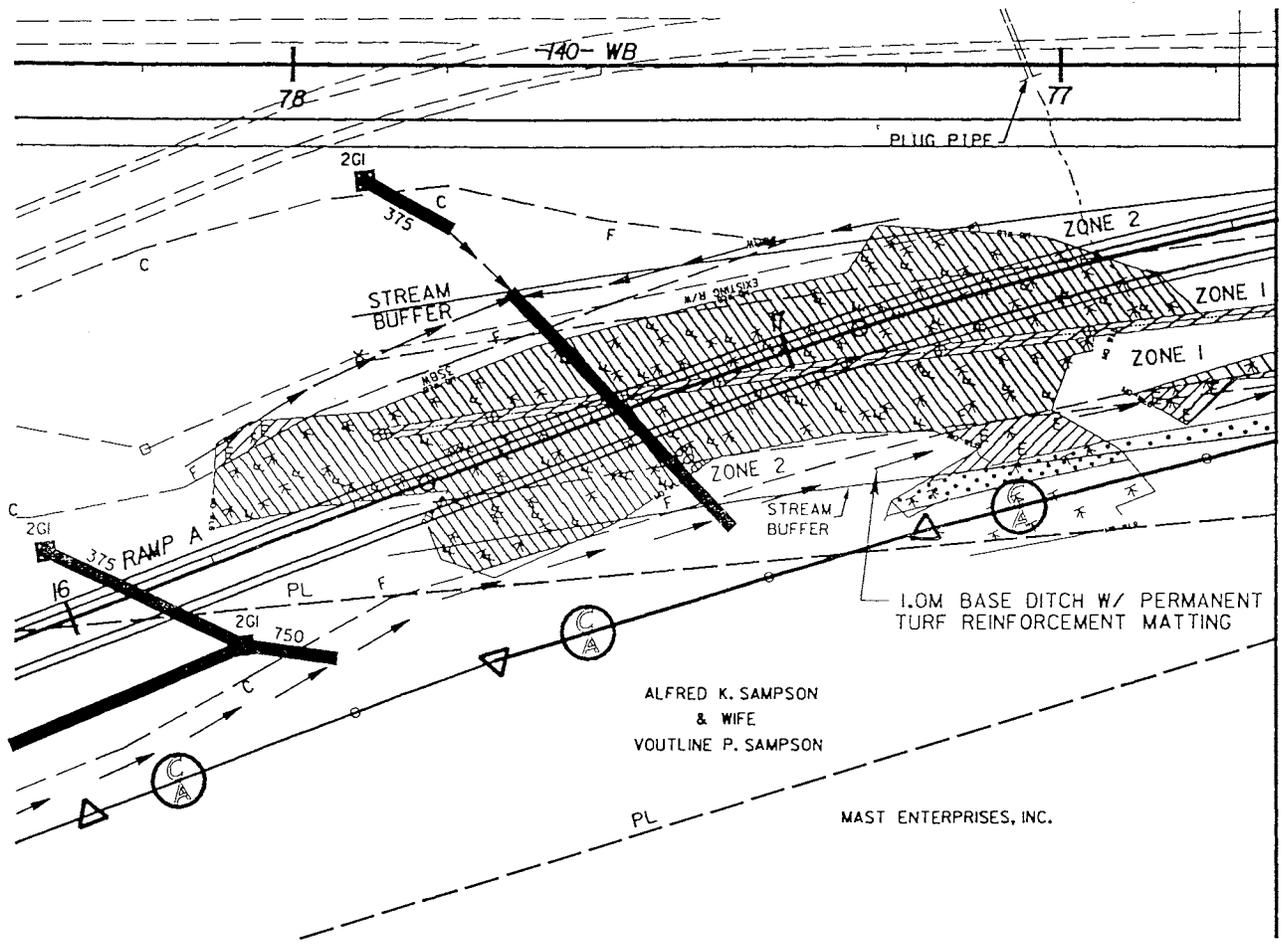
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 22 OF 28

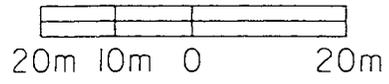
FEBRUARY 13, 2002

NC GRID
MAD 83



MATCHLINE

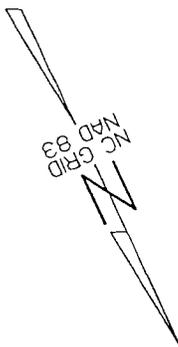
SCALE



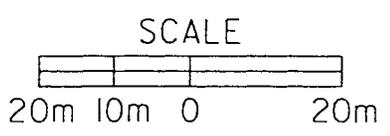
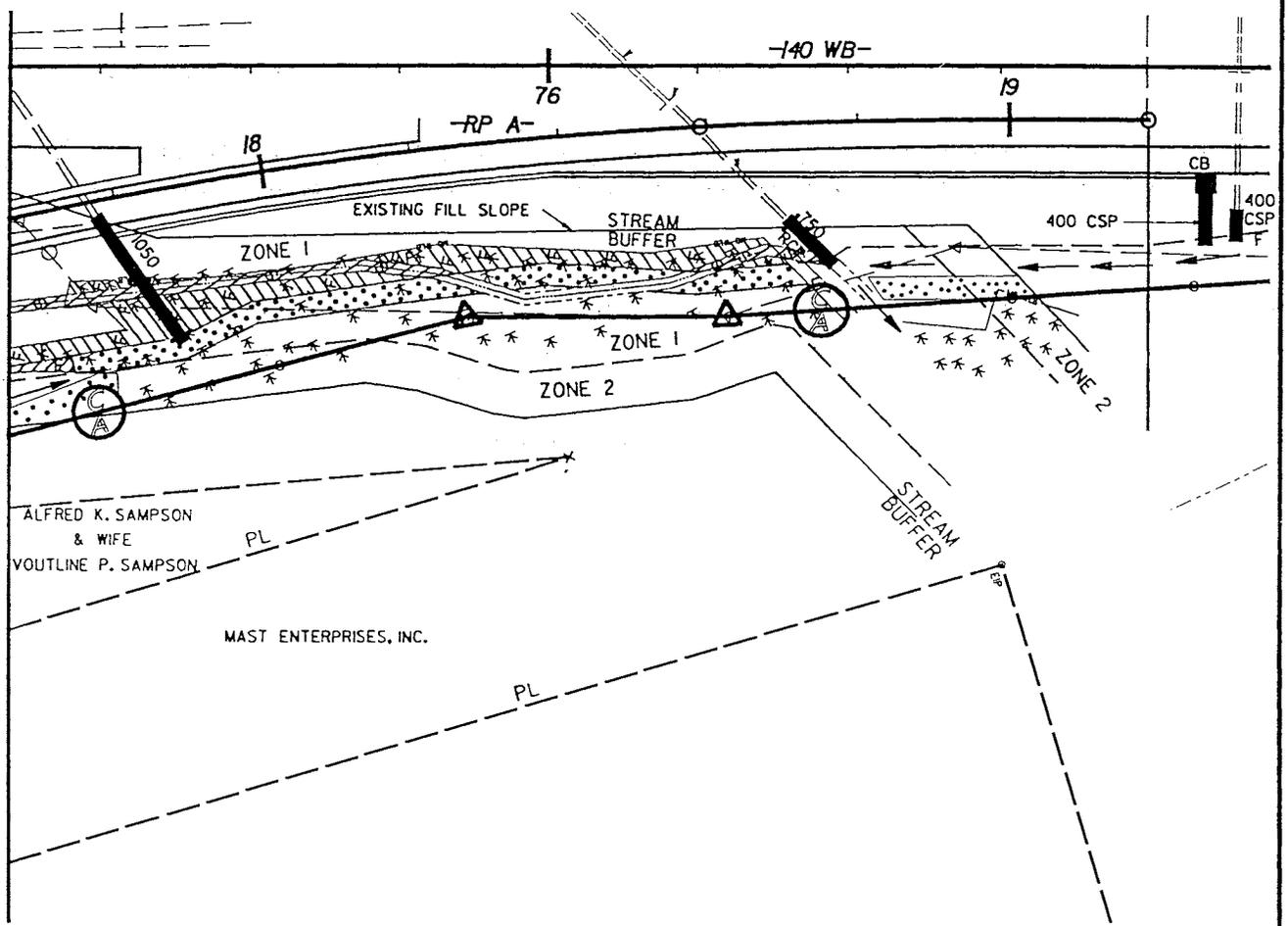
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND

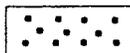
SITE #6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-25248A
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 23 OF 28 FEBRUARY 13, 2002



MATCHLINE



-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND

SITE #6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
 SCALE AS SHOWN
 SHEET 24 OF 28 FEBRUARY 13, 2002

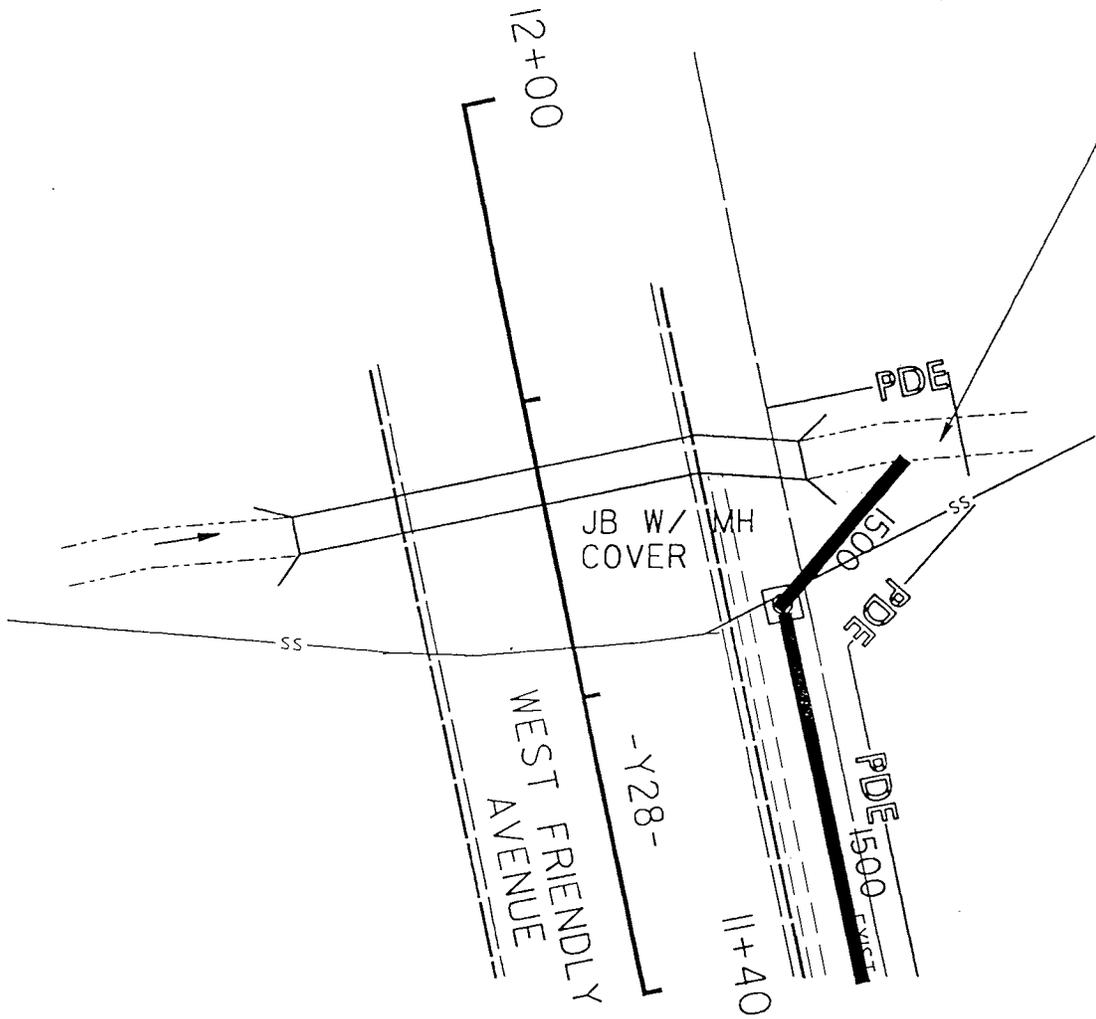
**PROPERTY OWNERS
NAME AND ADDRESS**

OWNER'S NAME	ADDRESS
Helen Carrol	ADDRESS UNKNOWN
Martin Marietta Materials, Inc.	ADDRESS UNKNOWN
Clara D. McCellan c/o Ralph McCellan	ADDRESS UNKNOWN
Wilson Trucking Corp.	ADDRESS UNKNOWN
Pierce Roof Corp.	ADDRESS UNKNOWN
Duke Power Co.	ADDRESS UNKNOWN
Guilford Mills, Inc.	ADDRESS UNKNOWN
N C State Ports Authority	ADDRESS UNKNOWN
Ciba Geigy Corp.	ADDRESS UNKNOWN
N C Dept. of Transportation	6812 Friendly Road Greensboro, NC 27410
Coca Cola Company	ADDRESS UNKNOWN
Williams Energy Ventures, Inc.	ADDRESS UNKNOWN
Guilford County Board of Education	712 N. Eugene St. Greensboro, NC 27401-1654
Amp Inc.	P.O. Box 3608 Harrisburg, PA 17105-3608

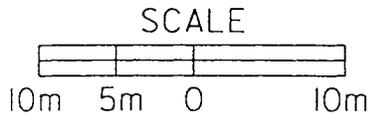
**N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT No. 8.U492101 U-2524BA
 GREENSBORO WESTERN URBAN LOOP FROM
 I-40 TO NORTH OF WEST FRIENDLY AVE.**



NOTE: Channel impact is bank disturbance due to pipe placement



SITE #7



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
8.U492101 U-25248A
GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.
SCALE AS SHOWN
SHEET 25 OF 28 FEBRUARY 13, 2002

IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS				SURFACE WATER IMPACTS					BUFFER IMPACTS		
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)	Relocated Channel (m)	Zone 1 (ha)	Zone 2 (ha)	Mech Clear (ha)
1 ULT.*	98+00 -L-	1500 RCP	0.05	0	0	<0.01	<0.01	0.17		13	0	0.19	0.12	0.02
1 INTERIM	98+00 -L-	N/A	0	0	0	0	0	0		0	0	0	0	0
2 ULT.	101+80 -L- / 12+20 -RP D-	2@2.1 x 2.1 RCBC	0	0	0	0	0.18	0		925	540	1.65	1.08	0.03
2 INTERIM	101+80 -L- / 12+20 -RP D-	N/A	0	0	0	0	0.07	0		385	0	0.41	0.41	0.15
3	11+67 / 11+80 -RP D-	1.896 x 2.4 RCBC	0	0	0	0	<0.01	0		23	0	0.04	0.02	0.01
4	114+20-L-NB/ 10+11-RP-A	1500 RCP	0	0	0	0	0.02	0		120	0	0.32	0.20	0.13
5	127+80 / 132+15 -L-	1050 RCP	0.38	0	0	<0.01	0.05	0.11		309	0	N/A	N/A	N/A
6	16+20 / 19+15 -RP A-	600 RCP 1050 RCP 750 RCP	0.26	0	0.02	0.04	0.03	0		202	0	0.30	0.15	0.04
7	11+73 -Y28-	1500 RCP	0	0	0	0	0	0		6	0	N/A	N/A	N/A
TOTALS:			ULTIMATE DES.	0.69	0.00	0.02	0.04	0.28	0.28	1598	540	2.50	1.57	0.23
			INTERIM DES.	0.64	0.00	0.02	0.04	0.17	0.11	1045	0	1.07	0.78	0.33

* SITE 1 - BEAVER IMPOUNDMENT AREA. A TEMPORARY IMPACT WILL OCCUR IN ADDITION TO ABOVE LISTED QUANTITIES DUE TO TEMPORARY LOWERING OF WATER LEVEL.

METHOD III CLEARING IN WETLANDS (3.0M BEYOND CONSTRUCTION LIMITS)

INCLUDED IN THE ABOVE QUANTITIES ARE IMPACTS TO INTERMITTENT CHANNELS:

3	30 M
5	75 M
TOTAL INTERMITTENT IMPACTS	105 M

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

PROJECT: 8.U492101

U-2524BA

GREENSBORO WESTERN URBAN LOOP
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SHEET 28 OF 28

MARCH 6, 2002

Table 2. Impacts to Wetlands from TIP No. U-2524 BA

Permit Site	Cowardin Classification	DEM Rating	Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
5	PEM1C	71	0.94	N/A	0.01	0.95
6	PEM1A	42	0.64	0.05	0.10	0.79
Totals			1.58	0.05	0.11	1.74

"PFO1Hb" denotes broad-leaved deciduous palustrine forested system that is permanently flooded due to beaver activity.

"PEM1C" denotes emergent palustrine wetland this seasonally flooded.

"PEM1A" denotes emergent palustrine wetland this temporarily flooded.

Table 3. Impacts to Wetlands from TIP No. U-2524 BB

Permit Site	Cowardin Classification	DEM Rating	Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
6	PSS/EM1C	52	0.07	N/A	0.02	0.09
13	PEM1C	60	0.02	N/A	0.02	0.04
Totals			0.09	N/A	0.04	0.13

"PSS/EM1C" denotes scrub/shrub and emergent palustrine wetland this seasonally flooded.

"PEM1C" denotes emergent palustrine wetland this seasonally flooded.

Table 4. Wetland Impacts per Community Type (acres)

Section	Emergent (ac)	Scrub/Shrub (ac)	Total Impact (ac)
BA	1.74	N/A	1.74
BB	0.04	0.09	0.13
Totals	1.78	0.09	1.87

NOTE

* " INDICATES HU 03030002
 " " INDICATES HU 03030003

24-Aug-01

UPDATED May 2002
 PCT

Table 5. Impacts to Streams and Ponds for TIP No. U-2524 BA

Permit Site	Stream Name	Drainage Type	Surface Water Impact (ac)	Surface Water Impact (Pond) (ac)	Existing Stream Length (ft)	Channel Loss (ft)	Mitigation Footage Needed
2	Long Branch	Perennial	0.17	N/A	1263	1263	2526
3	Long Branch	Perennial	0.02	N/A	75	75	150
4	Long Branch	Perennial	0.05	N/A	394	394	788
5	UT #5 Horsepen Creek	Intermittent/Perennial	0.12	0.27	1014	1014	1534
6	UT East Fork Deep River	Perennial	0.07	N/A	663	663	1326
7	UT Horsepen Creek	Perennial	0.00	N/A	20	20	40
Totals			0.74	0.44	3429	3429	6364

For Site 5, the intermittent length is 246 feet (75 meters) and the perennial length is 767 feet (234 meters).
 Of the 6,364 feet required for mitigation, 1,574 feet lies in HU 03030002 and 4,790 feet lies in HU 03030003.

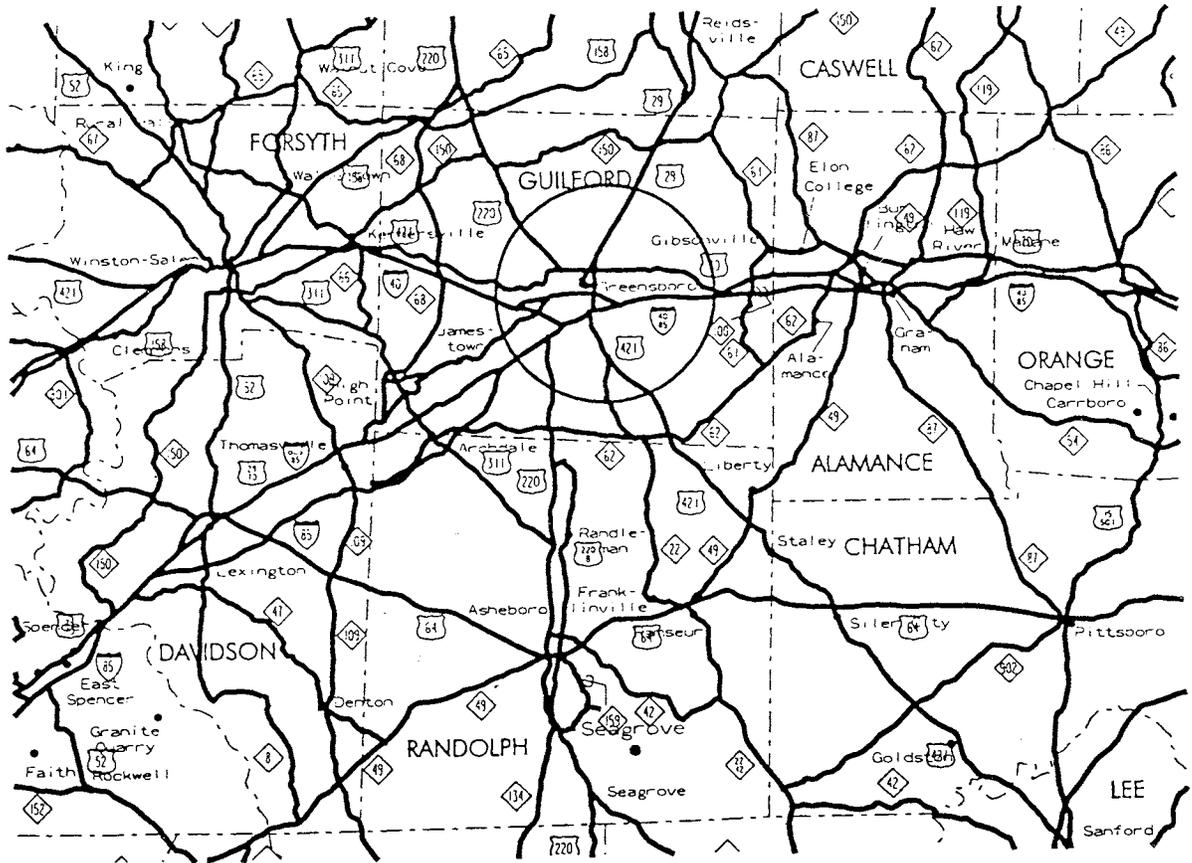
Table 6. Impacts to Streams and Ponds for TIP No. U-2524 BB

Permit Site	Stream Name	Drainage Type	Surface Water Impact (ac)	Surface Water Impact (Pond) (ac)	Existing Stream Length (ft)	Channel Loss (ft)	Mitigation Footage Needed
1	Horsepen Creek	Perennial	0.15	N/A	853	853	1706
2	UT #1 Horsepen Creek	Perennial	0.05	N/A	289	289	578
3	UT #2 Horsepen Creek	Intermittent	0.02	N/A	637	637	N/A
4	Pond		0.05	1.85	105	105	N/A
5	UT #4 Horsepen Creek	Perennial	0.05	N/A	440	440	880
6	UT #4 Horsepen Creek	Perennial	0.05	N/A	285	285	570
7	UT #9 Horsepen Creek	Perennial	0.10	N/A	902	902	1804
8	UT #4 Horsepen Creek	Perennial	0.02	N/A	456	456	912
9	UT #10 Horsepen Creek	Perennial	0.01	N/A	108	108	216
11	UT Horsepen Creek	Intermittent	0.01	N/A	151	151	N/A
12	UT Horsepen Creek	Intermittent	0.01	N/A	157	157	N/A
14	UT #6 Horsepen Creek	Intermittent	0.01	N/A	95	95	N/A
Totals			0.53	1.85	4478	4479	6666

NOTE

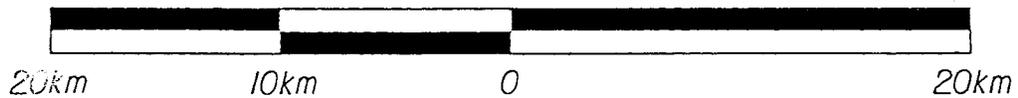
* IDENTICAL STREAMS IN HU 03030002.
 * IDENTICAL STREAMS IN HU 03030003.

UPDATED
 MAY 2002
 PCT



VICINITY MAP

SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

B.U492101

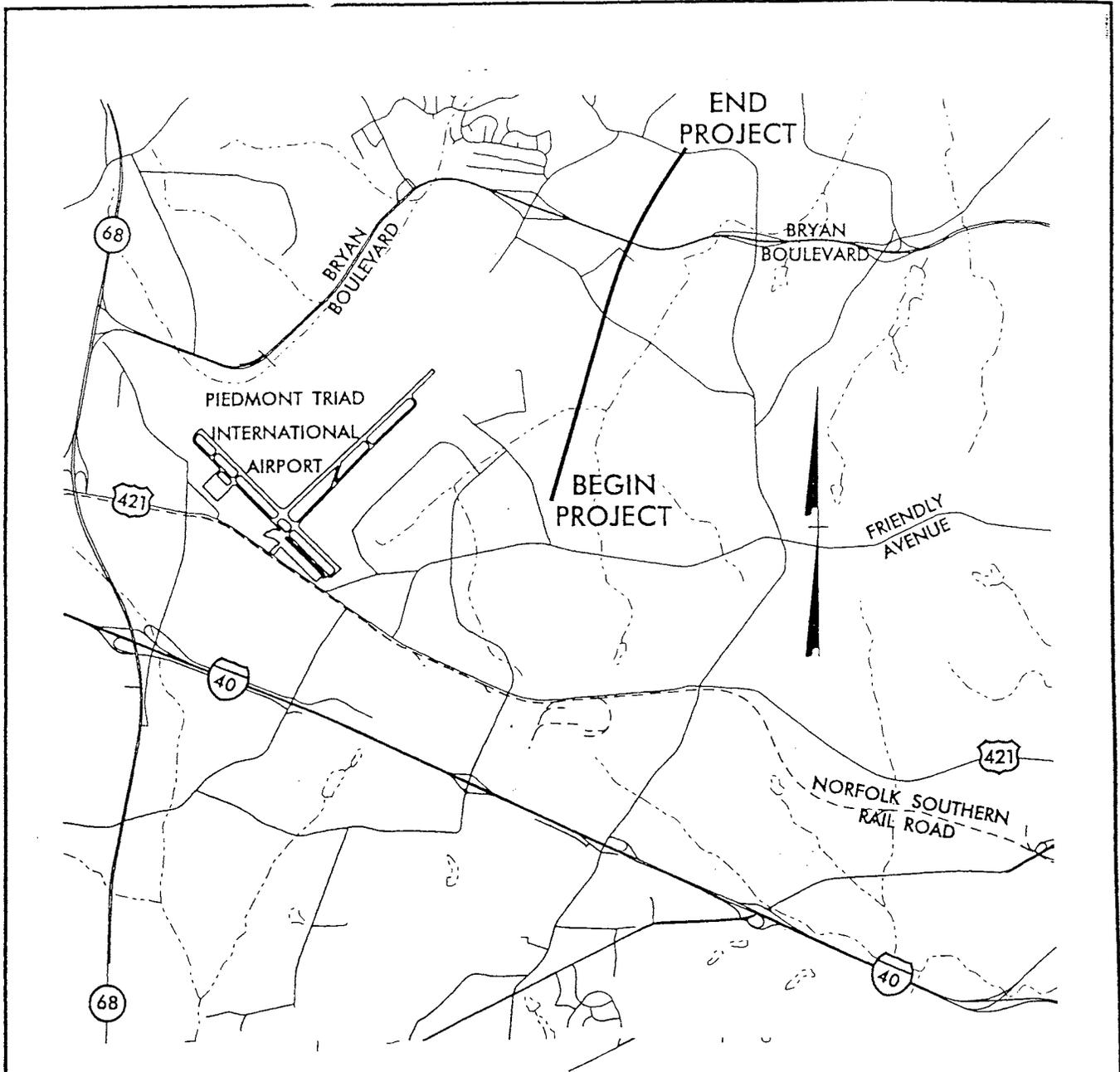
U-2524BB

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

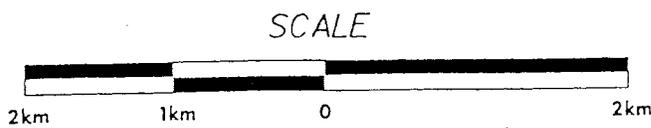
SCALE AS SHOWN

SHEET 1 OF 20

JANUARY 16, 2001



VICINITY MAP



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8-U492101

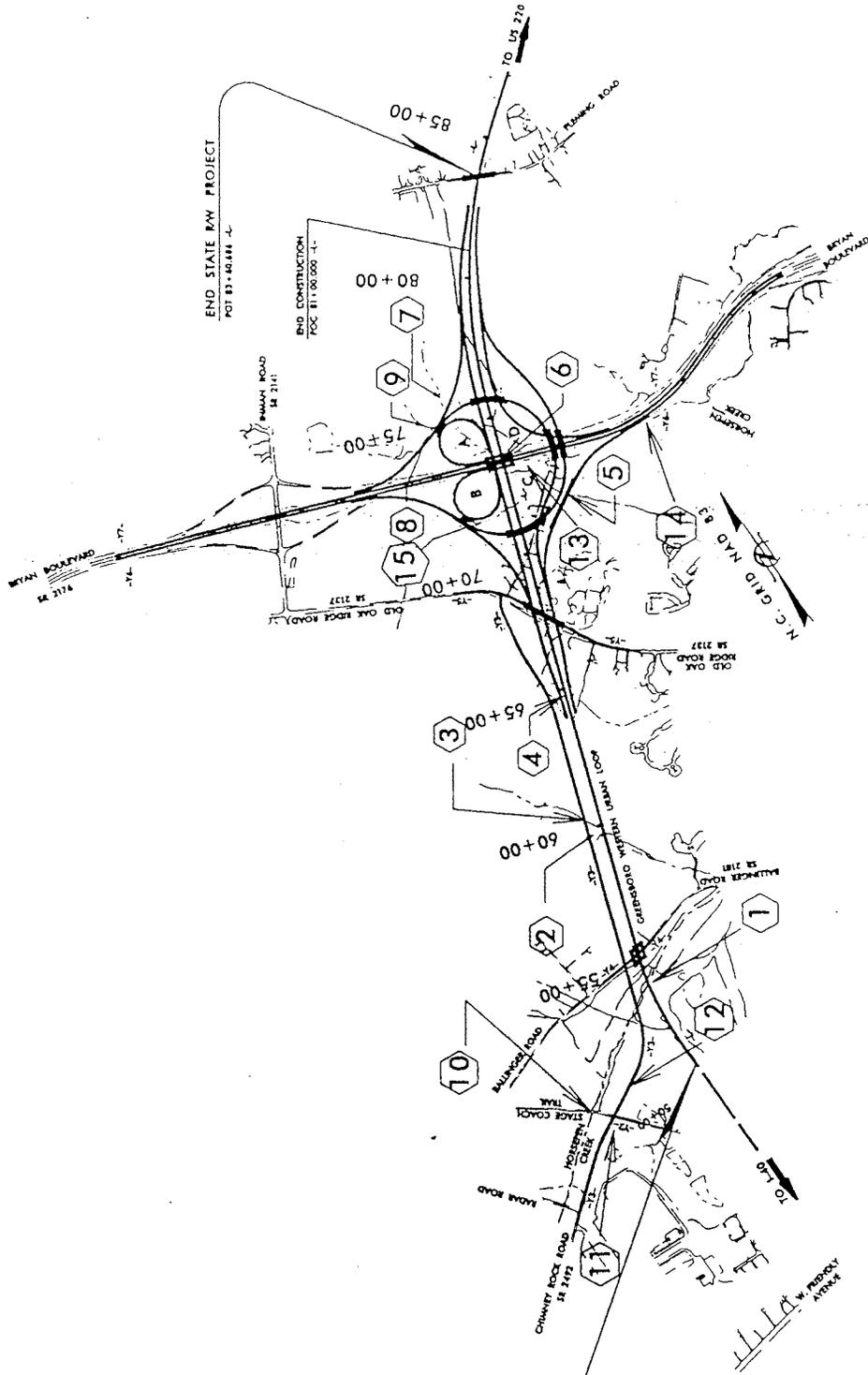
U-2524BB

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 2 OF 20

JANUARY 16, 2001



SITE MAP



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-2524BB
 GREENSBORO WESTERN URBAN LOOP
 FROM NORTH OF WEST FRIENDLY AVENUE
 TO NORTH OF BRYAN BOULEVARD
 SCALE AS SHOWN
 SHEET 3 OF 20 JANUARY 16, 2001

BEGIN STATE PROJECT U-2524BB
 POC 81+00.000 L-
 POT 80+87.710 L- AHEAD

END STATE HW PROJECT
 POT 83+40.000 L-

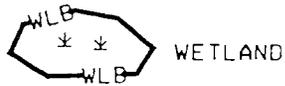
END CONSTRUCTION
 POC 81+00.000 L-

BLANK

Intentionally

LEGEND

— WLB — WETLAND BOUNDARY



← ← FLOW DIRECTION

— TB — TOP OF BANK

--- WE --- EDGE OF WATER

— C — PROP. LIMIT OF CUT

— F — PROP. LIMIT OF FILL

— ▲ — PROP. RIGHT OF WAY

— NG — NATURAL GROUND

— PL — PROPERTY LINE

— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

— EPB — EXIST. ENDANGERED PLANT BOUNDARY

--- ▽ --- WATER SURFACE

X X X LIVE STAKES
X X

BOULDER

— COIR FIBER ROLLS

ADJACENT PROPERTY OWNER OR PARCEL NUMBER

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTING STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

VANE

RIP RAP

RIP RAP ENERGY DISSIPATOR BASIN

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

U-252488

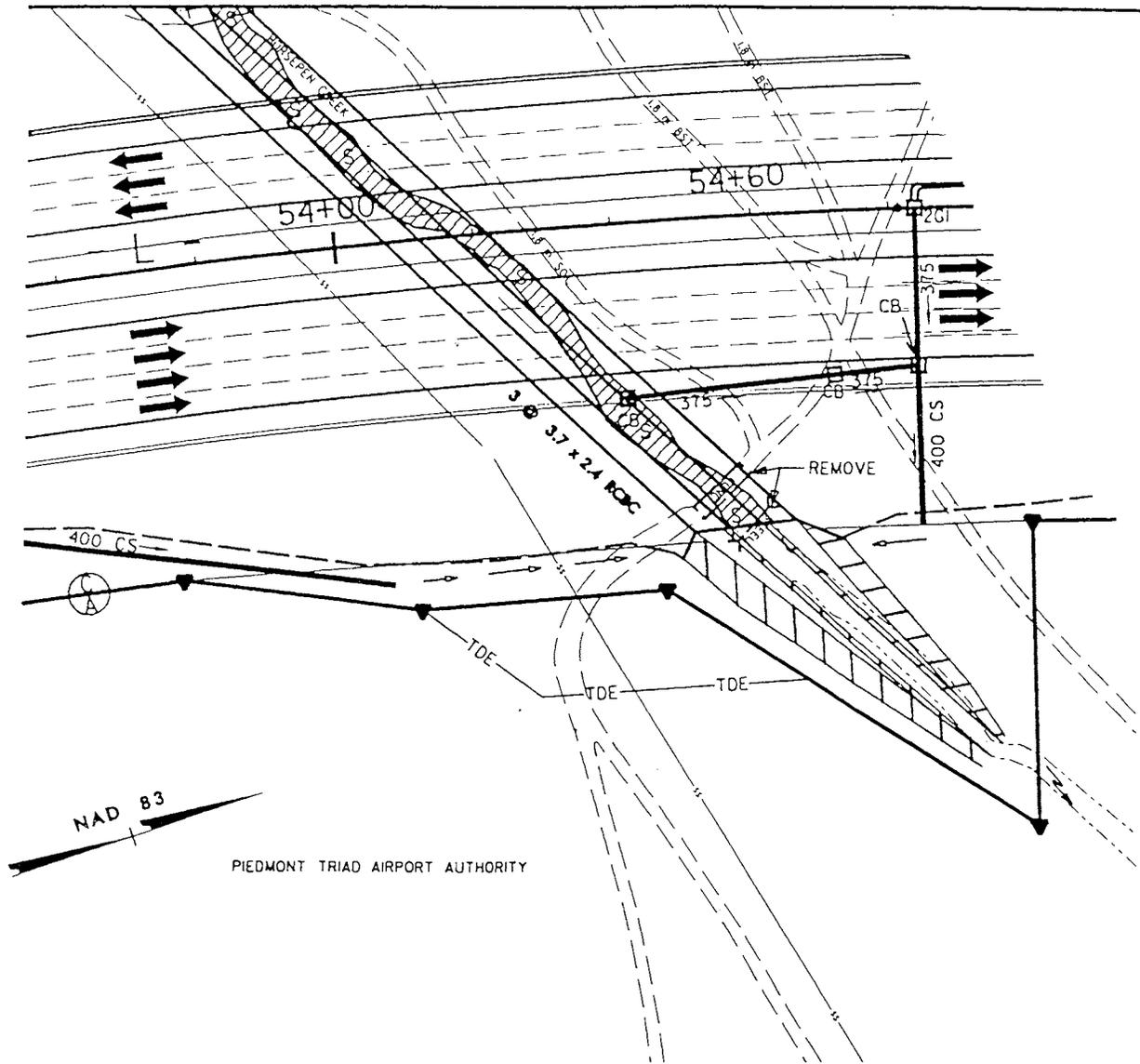
GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 4 OF 20

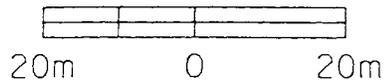
JANUARY 16, 2001

MATCHLINE



PIEDMONT TRIAD AIRPORT AUTHORITY

SCALE



DENOTES FILL IN SURFACE WATER

SITE #1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

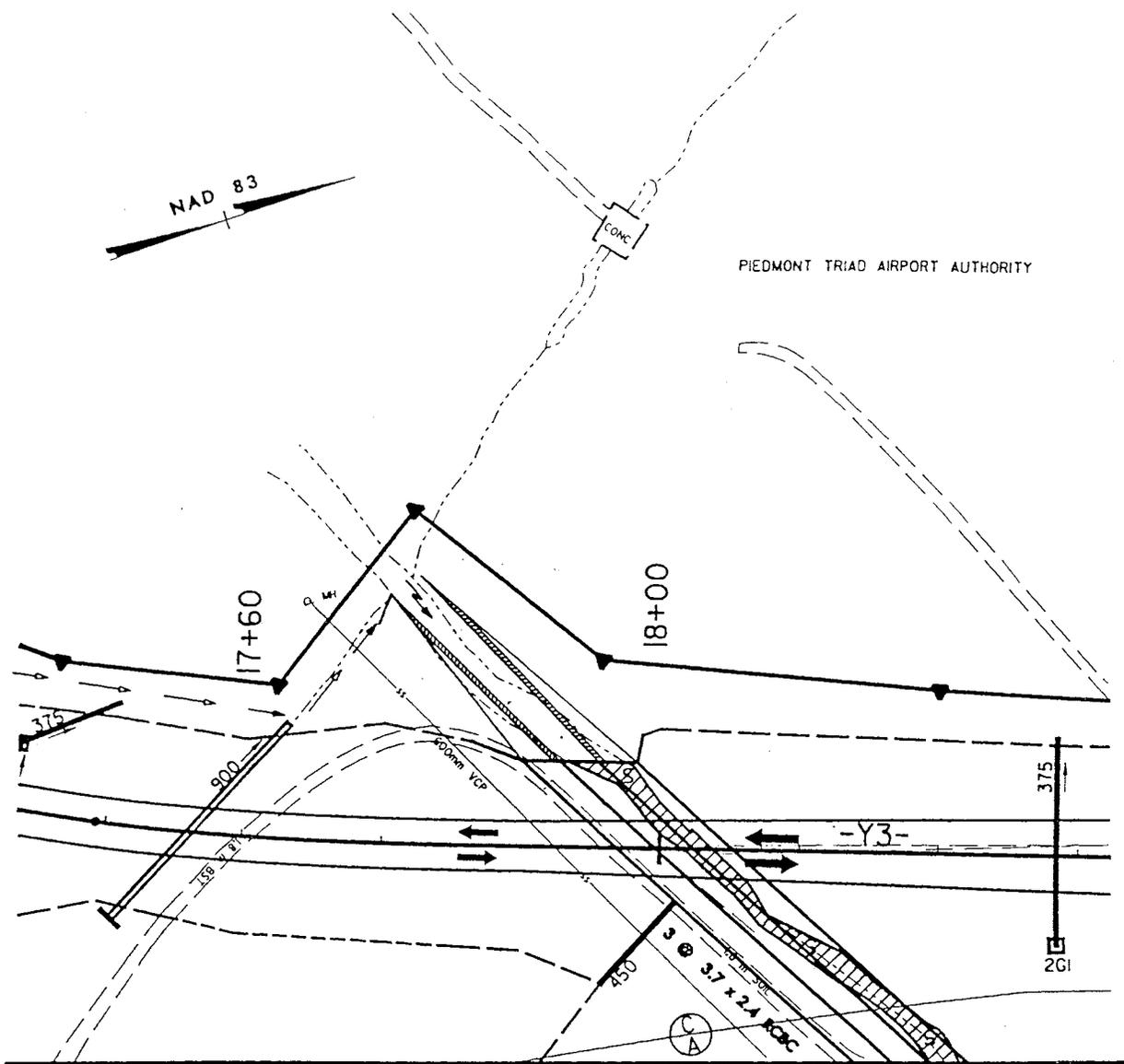
U-252488

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

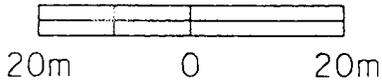
SHEET 5 OF 20

JANUARY 16, 2001



MATCHLINE

SCALE



SITE #1



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

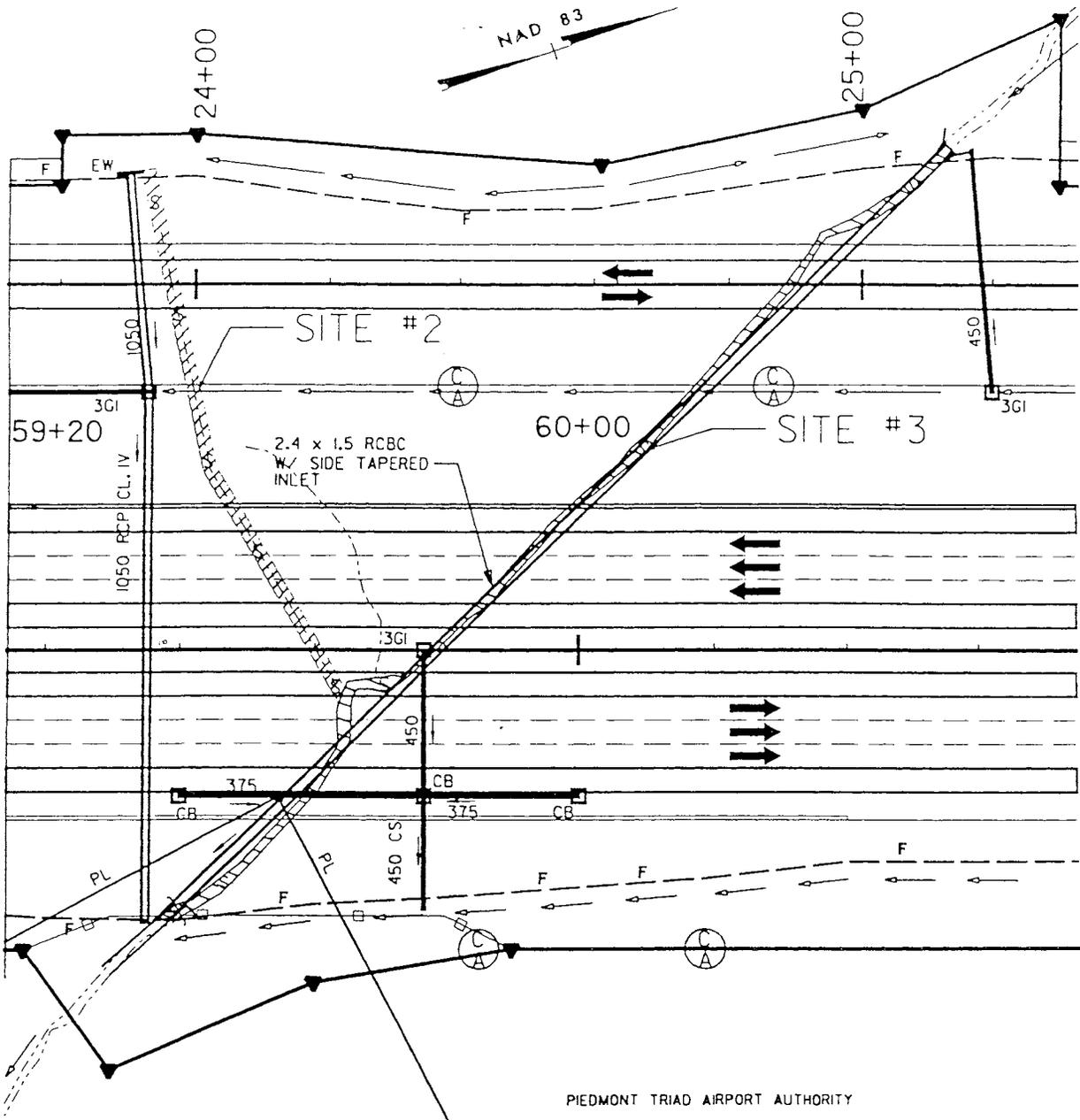
U-252488

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 6 OF 20

JANUARY 16, 2001

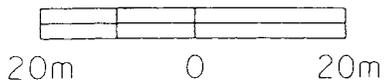


CITY OF GREENSBORO

PIEDMONT TRIAD AIRPORT AUTHORITY

SITES #2 & #3

SCALE



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101

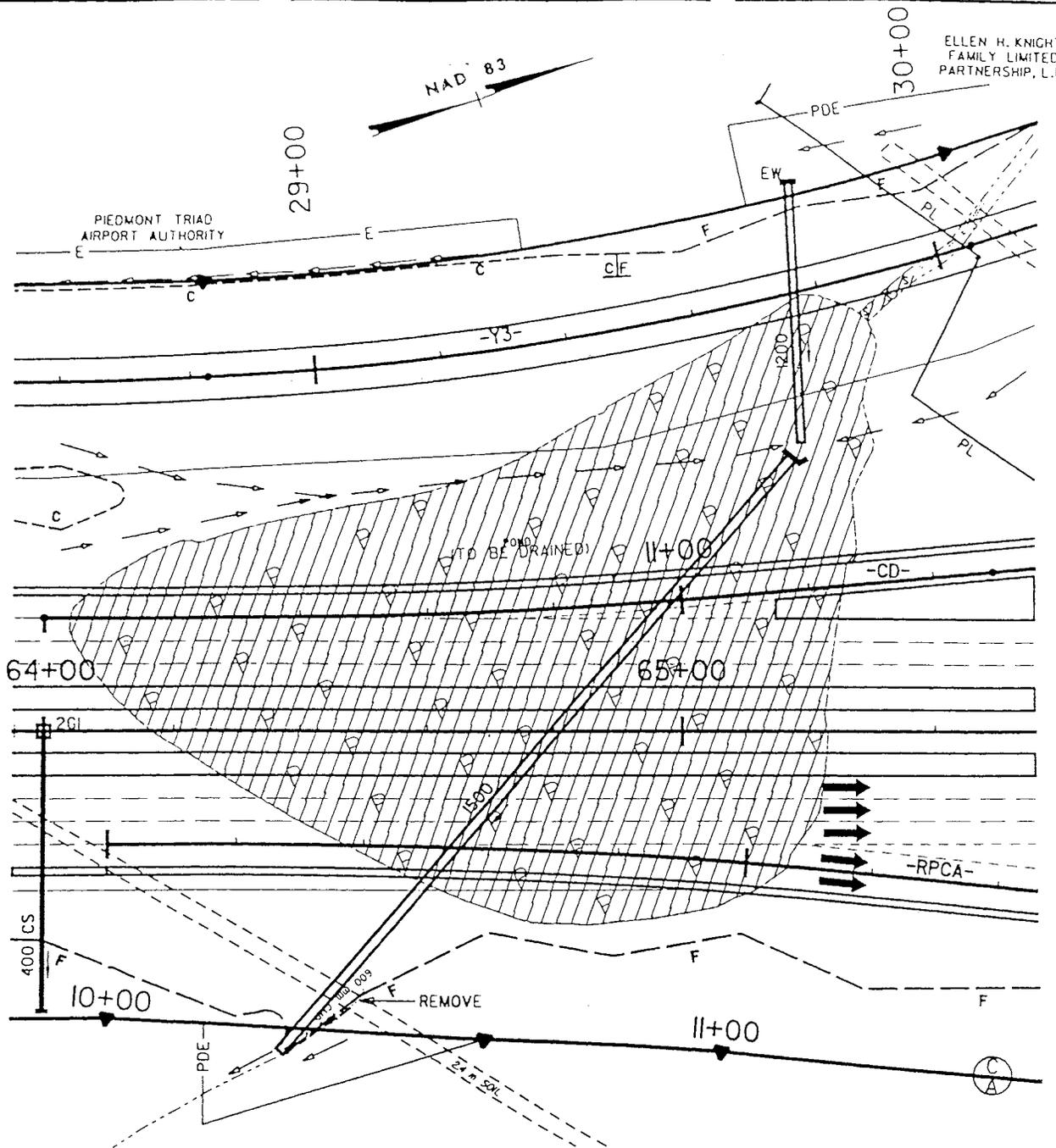
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GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

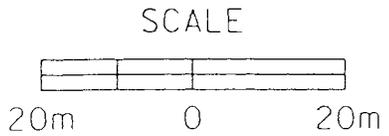
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SHEET 7 OF 20

JANUARY 16, 2001

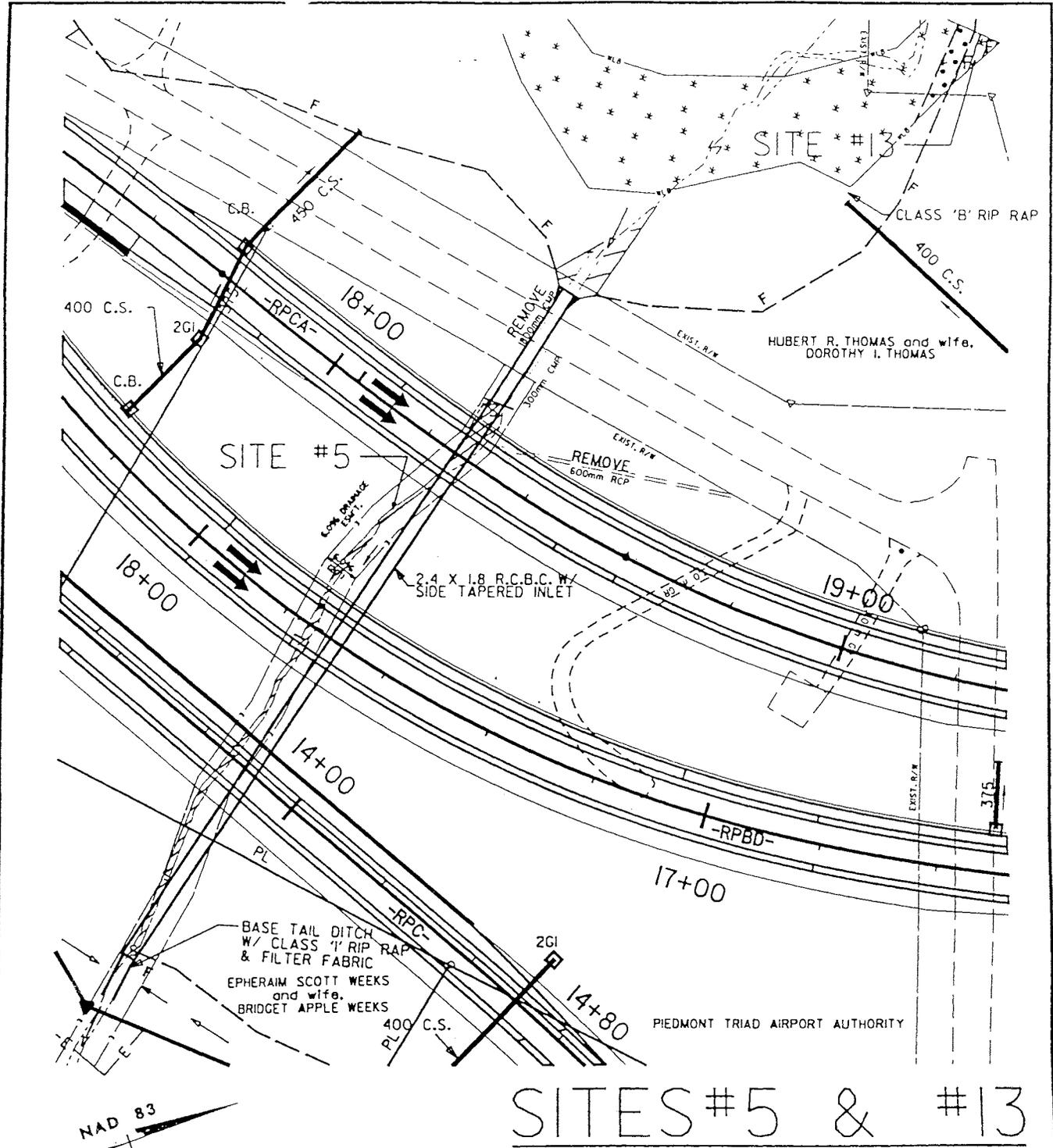


SITES #4

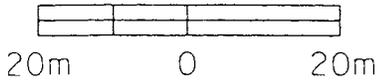


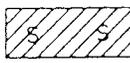
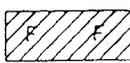
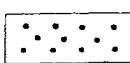
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 B.U492101 U-252488
 GREENSBORO WESTERN URBAN LOOP
 FROM NORTH OF WEST FRIENDLY AVENUE
 TO NORTH OF BRYAN BOULEVARD
 SCALE AS SHOWN
 SHEET 8 OF 20 JANUARY 16, 2001



SCALE



-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING

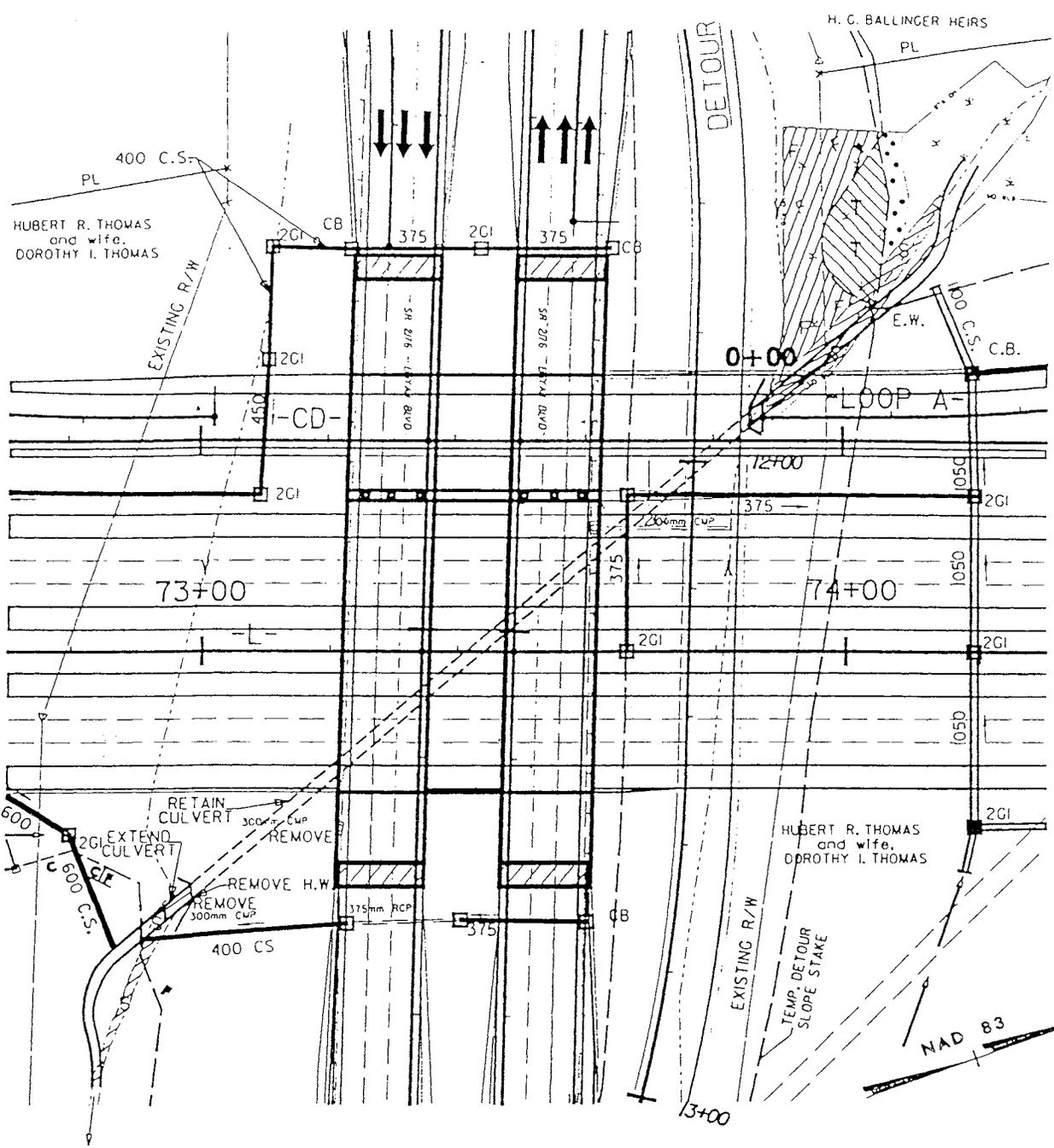
SITES #5 & #13

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

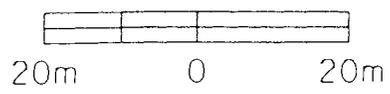
B.U492101 U-2524BB

GREENSBORO WESTERN URBAN LOOP
 FROM NORTH OF WEST FRIENDLY AVENUE
 TO NORTH OF BRYAN BOULEVARD

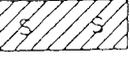
SCALE AS SHOWN
 SHEET 9 OF 20 JANUARY 16, 2001



SCALE

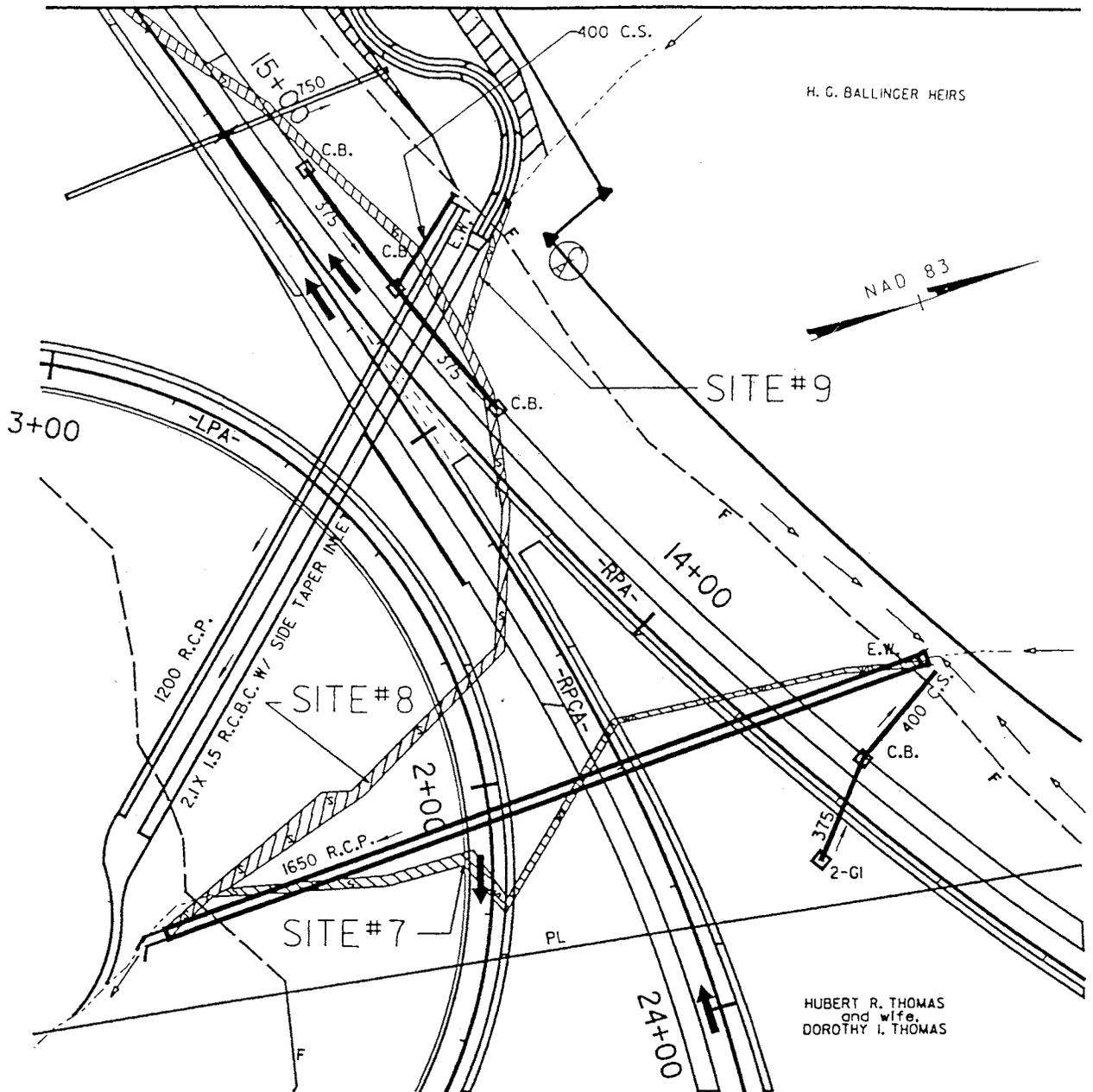


SITE #6

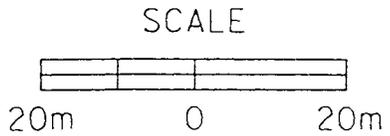
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING

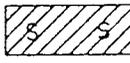
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492101 U-252488
 GREENSBORO WESTERN URBAN LOOP
 FROM NORTH OF WEST FRIENDLY AVENUE
 TO NORTH OF BRYAN BOULEVARD
 SCALE AS SHOWN
 SHEET 10 OF 20 MARCH 1, 2001

MATCHLINE



SITE #7, #8, & #9

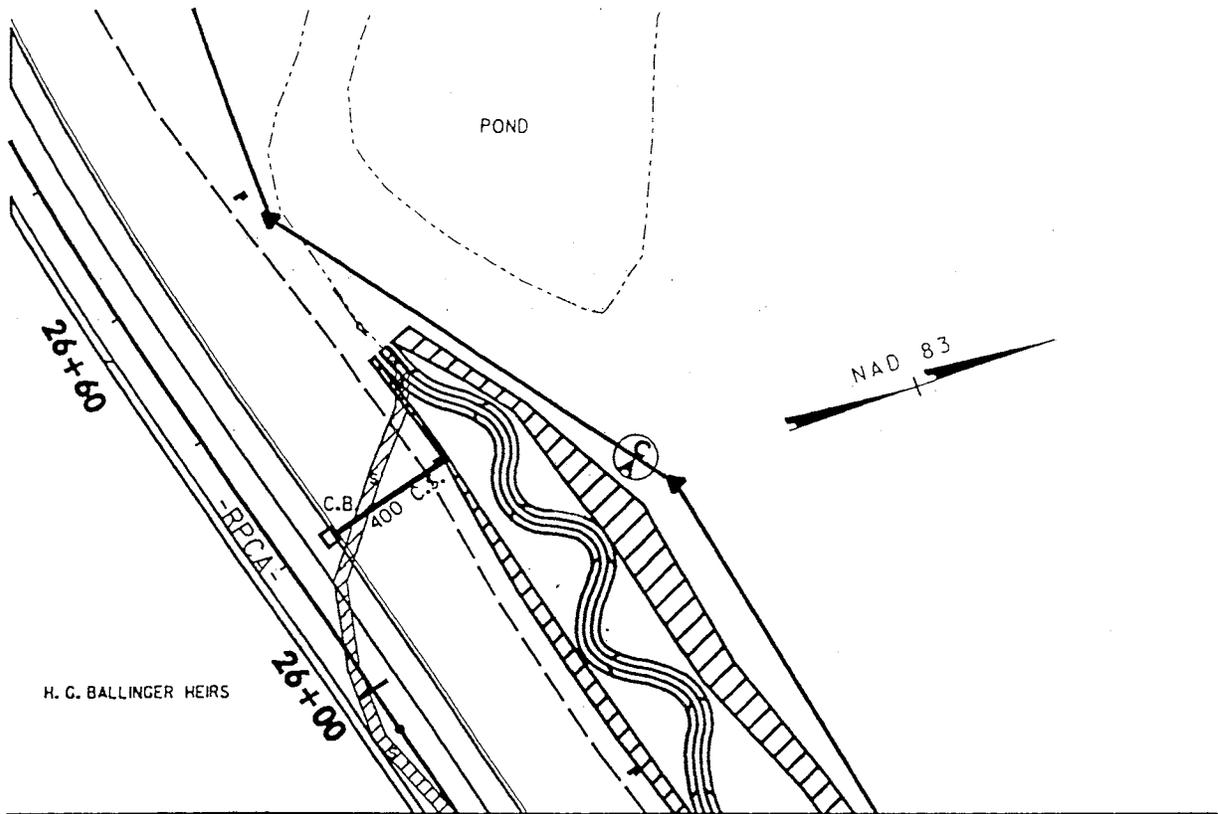


 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 8.U492 101 U-252488

GREENSBORO WESTERN URBAN LOOP
 FROM NORTH OF WEST FRIENDLY AVENUE
 TO NORTH OF BRYAN BOULEVARD

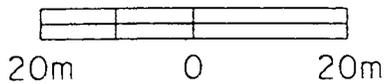
SCALE AS SHOWN
 SHEET 11 OF 20 JANUARY 16, 2001



MATCHLINE

SITE#8

SCALE



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492 101

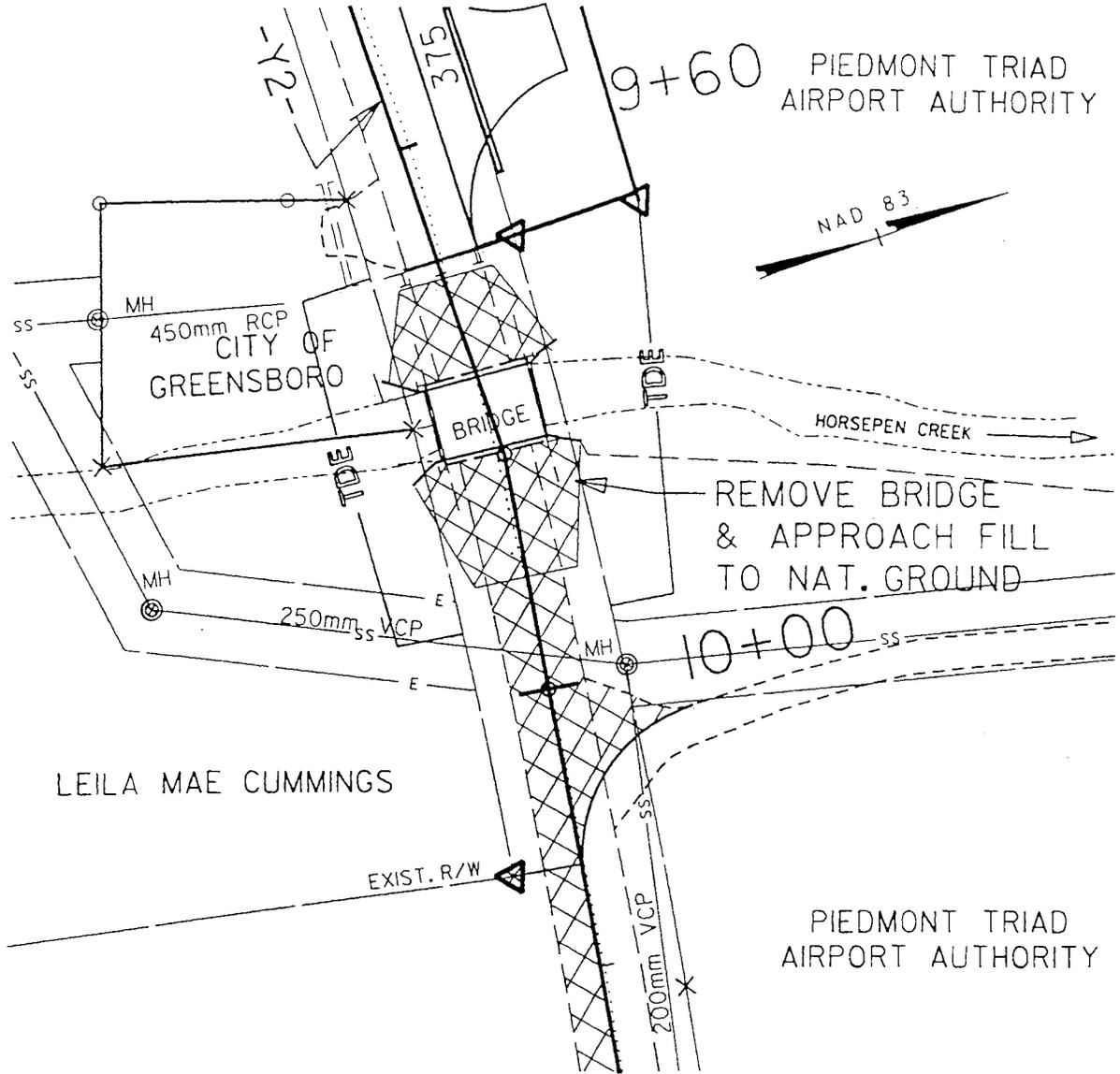
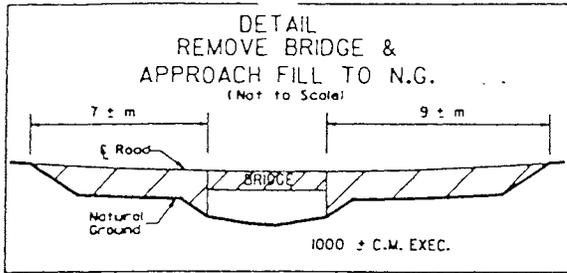
U-252488

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

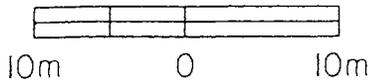
SHEET 12 OF 20

JANUARY 16, 2001



SITE #10

SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

B.U492101

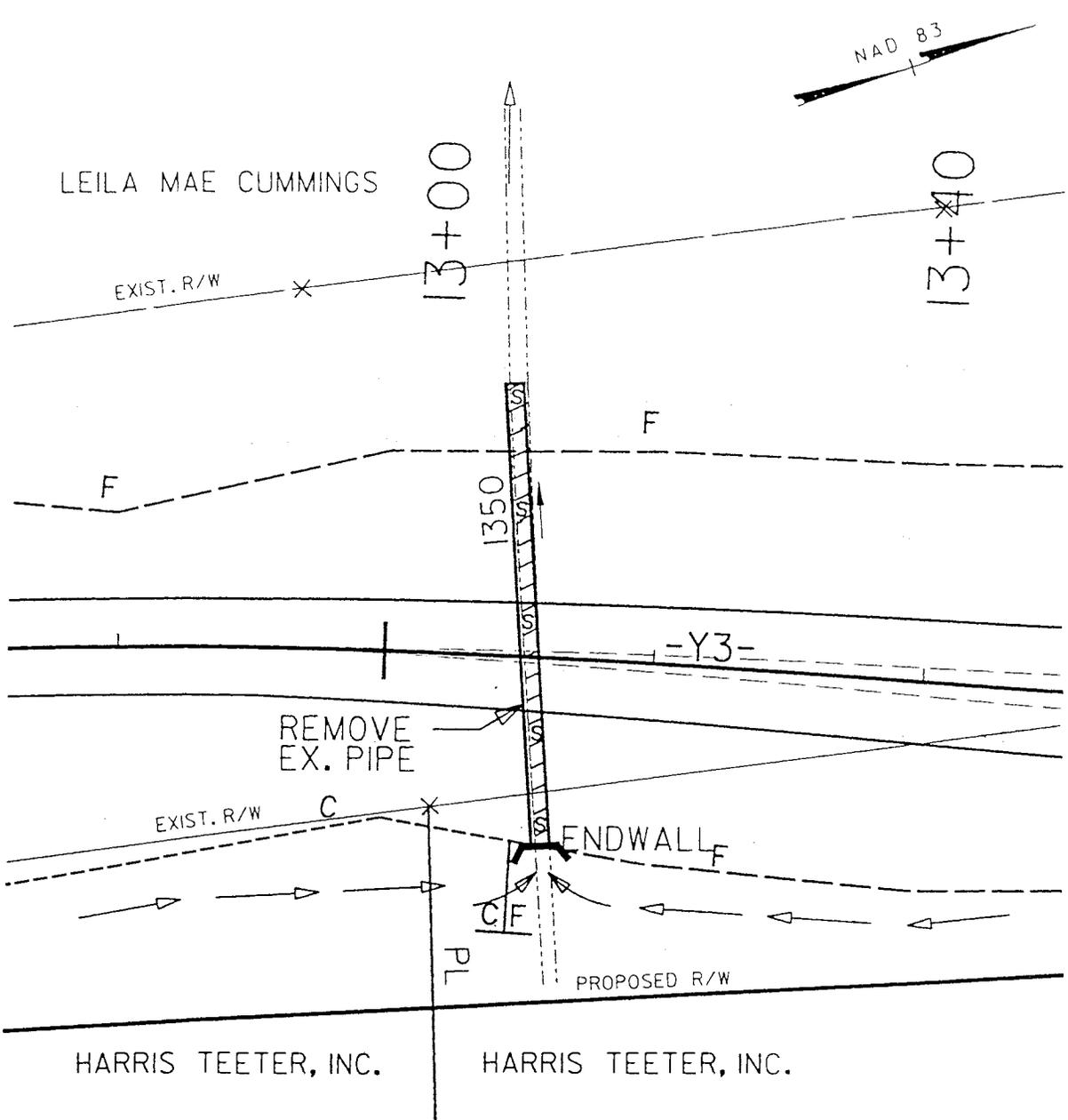
U-2524BB

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 13 OF 20

JANUARY 16, 2001



LEILA MAE CUMMINGS

NAD 83

13+00

13+40

EXIST. R/W

F

F

1350

-Y3-

REMOVE EX. PIPE

EXIST. R/W

C

ENDWALL

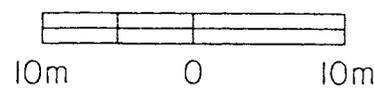
TP

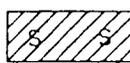
PROPOSED R/W

HARRIS TEETER, INC.

HARRIS TEETER, INC.

SCALE



 DENOTES FILL IN SURFACE WATER

SITE #II

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492 101

U-2524BB

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

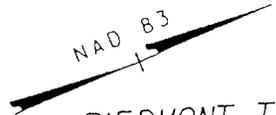
SCALE AS SHOWN

SHEET 14 OF 20

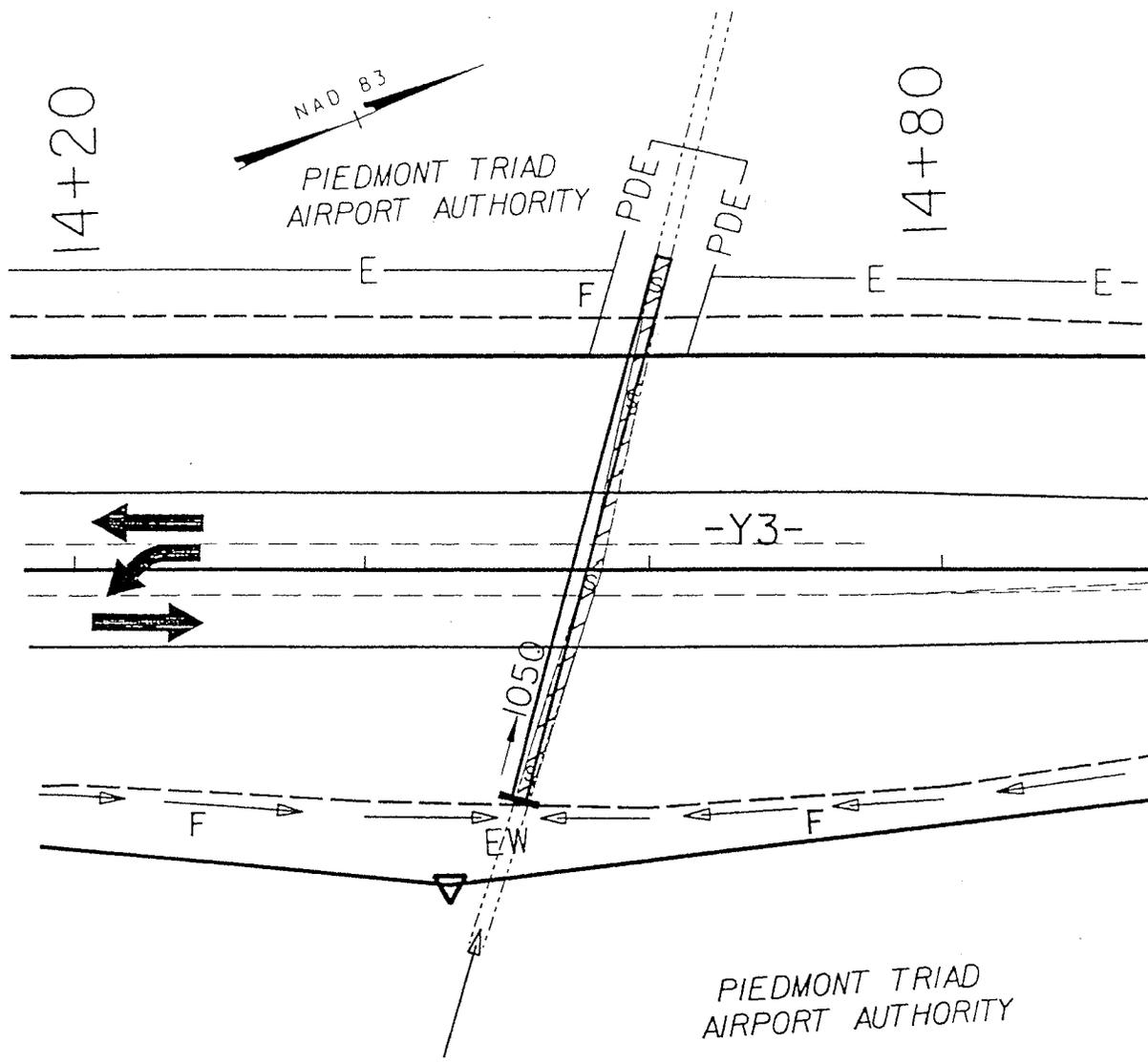
JANUARY 16, 2001

14+20

14+80



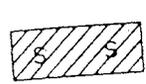
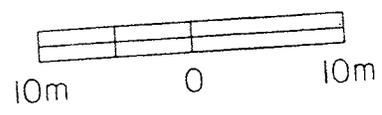
PIEDMONT TRIAD
AIRPORT AUTHORITY



PIEDMONT TRIAD
AIRPORT AUTHORITY

SITE #12

SCALE



DENOTES FILL IN
SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492 101

U-252488

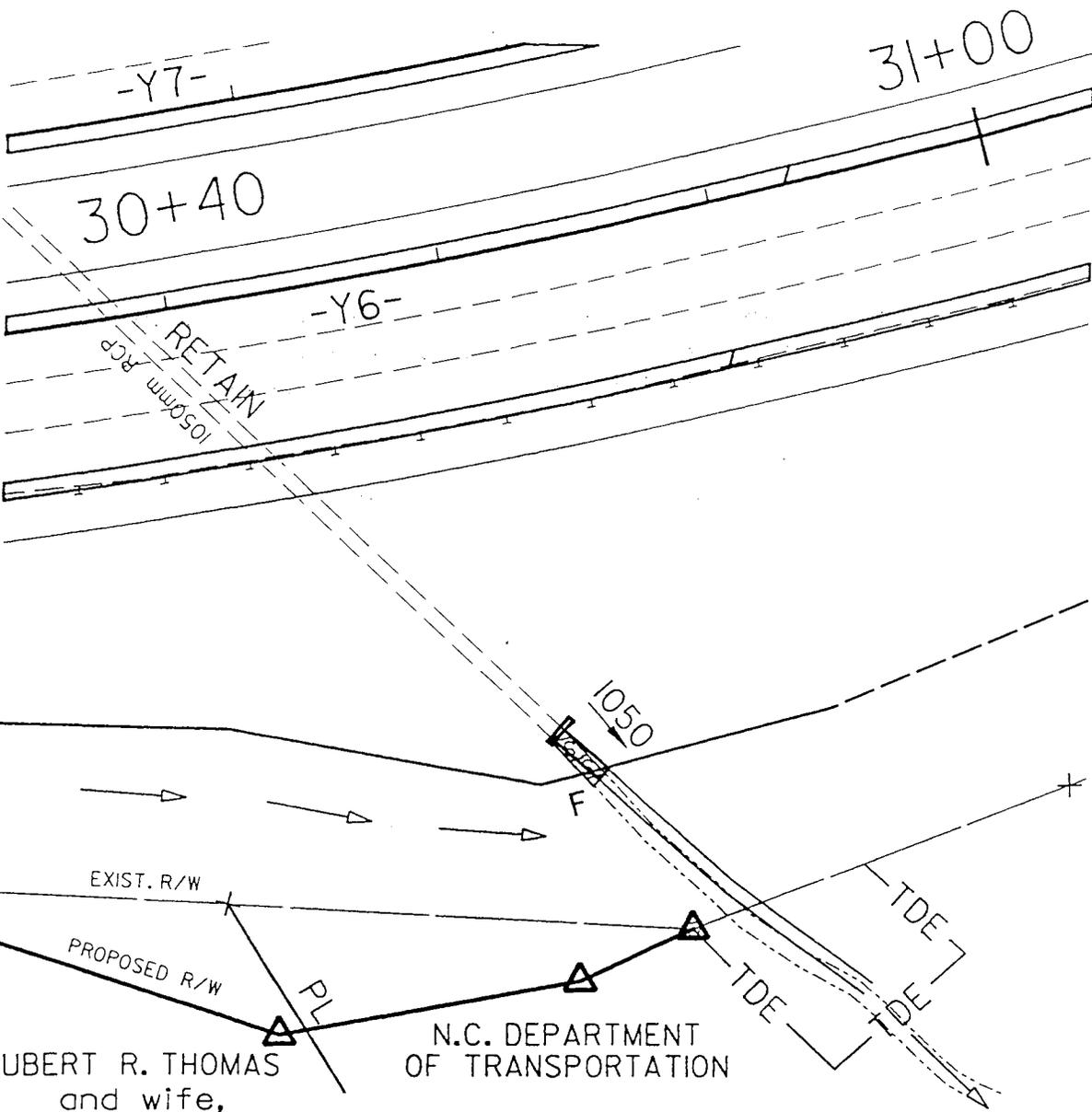
GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 15 OF 20

JANUARY 16, 2001

NAD 83

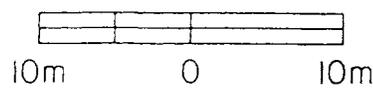


HUBERT R. THOMAS
and wife,
DOROTHY I. THOMAS

N.C. DEPARTMENT
OF TRANSPORTATION

SITE #14

SCALE



 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101

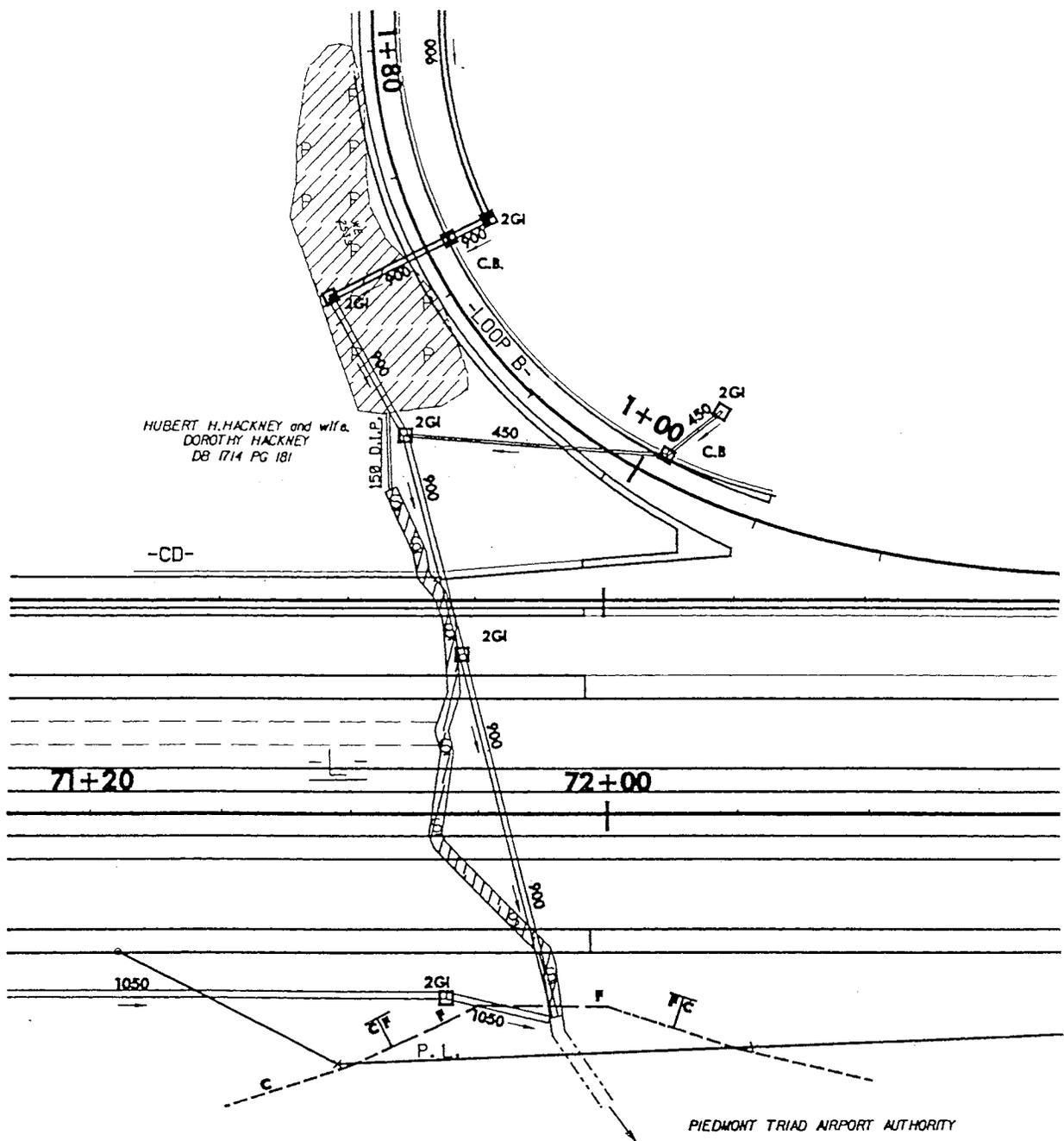
U-2524BB

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 16 OF 20

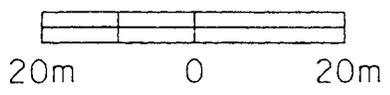
JANUARY 16, 2001

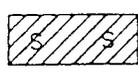


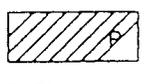
SITE 15



SCALE



 DENOTES FILL IN SURFACE WATER

 DENOTES FILL IN SURFACE WATER (POND)

SHEET

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

8.U492101 U-25248B

GREENSBORO WESTERN URBAN LOOP
FROM NORTH OF WEST FRIENDLY AVENUE
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 17 OF 20

JANUARY 16, 2001

SUMMARY

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS					SURFACE WATER IMPACTS			
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Interchange Isolated Wetland (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Existing Channel Impacted (m)	Relocated Channel (m)
1	54+20 -L-	3 @ 3.7 x 2.4 RCBC	0	0	0	0	0	0.06	0	260	0
2	59+60 -L-	1050 RCP	0	0	0	0	0	0.02	0	88	0
3	59+80 -L-	2.4 x 1.5 RCBC	0	0	0	0	0	0.02	0	194	0
4	64+84 -L-	1500 RCP	0	0	0	0	0	<0.01	0.75	32	0
5	18+25 RAMP CA	2.4 x 1.8 RCBC	0	0	0	0	0	0.02	0	134	0
6	73+43 -L-	1.83 x 1.83 RCBC	0.03	0.02	0	0	0.01	0.02	0	87	0
7	24+40 RAMP CA	1650 RCP	0	0	0	0	0	0.02	0	275	0
8	24+40 LT / 26+40 RT RAMP CA	2.1 x 1.5 RCBC & 1200 RCP	0	0	0	0	0	0.04	0	139	0
9	14+60 RT RAMP A	N/A	0	0	0	0	0	<0.01	0	33	0
10*	9+80 -Y4-	6M BRIDGE	0	0	0	0	0	0	0	0	0

* SITE 10 - 0.02 ha of flood plain is being restored due to removal of bridge and approach fill.

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 8.U492101 U-2524BB
 GREENSBORO WESTERN URBAN LOOP FROM
 NORTH OF WEST FRIENDLY AVE. (SR2 2147)
 TO NORTH OF BRYAN BLVD.
 SHEET 19 OF 20 March 1, 2001

PROPERTY OWNERS
NAME AND ADDRESS

OWNER'S NAME

ADDRESS

Piedmont Triad Airport Authority
P. O. Box 35005
Greensboro, NC 27425-5005

City of Greensboro
P.O. Box 3136
Greensboro, NC 27402-3136

Ellen H. Knight
209 Lindley Rd., # 5
Greensboro, NC 27410-4986

Epheraim S. Weeks
5521 Tamokee Dr.
Greensboro, NC 27410-0000

Hubert R. Thomas, et. Ux.
5204 Hedrick Drive
Greensboro, NC 27410-9341

H. G. Ballinger Heirs
5908 Ballinger Rd.
Greensboro, NC 27410-3216

Leila Mae Cummings
1005 Stagecoach Trail
Greensboro, NC 27410-9189

Harris Teeter, Inc.,#2400
P. O. Box 33129
Charlotte, NC 28233-3129

NC Dept. of Transportation
P. O. Box 14996
Greensboro, NC 27415-4996

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY

PROJECT: 8.U492101 U-2524BB
GREENSBORO WESTERN LOOP FROM
NORTH OF WEST FRIENDLY AVE. (SR 2147)
TO NORTH OF BRYAN BLVD.

SHEET 18 OF 20 January 16, 2001

SUMMARY											
Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS					SURFACE WATER IMPACTS			
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Interchange Isolated Wetland (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Existing Channel Impacted (m)	Relocated Channel (m)
11	13+11 -Y3-	1350 RCP	0	0	0	0	0	<0.01	0	46	0
12	14+55 -Y3-	1050 RCP	0	0	0	0	0	<0.01	0	48	0
13	24+84 RT -Y6-	N/A	<0.01	0	0	0	<0.01	0	0	0	0
14	30+40 -Y6-	1050 RCP	0	0	0	0	0	<0.01	0	29	0
15	1+80 LT. LOOP B/72+00 RT. -L-	900 RCP	0	0	0	0	0	<0.01	0.08	107	0
TOTALS			0.03	0.02	0	0	0.01	0.20	0.83	1472	0

* METHOD III CLEARING IN WETLANDS (3.0M BEYOND CONSTRUCTION LIMITS)

INCLUDED IN THE ABOVE QUANTITIES ARE IMPACTS TO INTERMITTENT CHANNELS:

SITE	CHANNEL IMPACTS
2	88
4	32
12	48
14	29
15	107
TOTAL INTERMITTENT IMPACTS	304

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 8.U492101 U-2524BB
 GREENSBORO WESTERN URBAN LOOP FROM
 NORTH OF WEST FRIENDLY AVE. (SR2 2147)
 TO NORTH OF BRYAN BLVD.
 SHEET 20 OF 20 March 1, 2001

Monitoring Data Record

Project Title: _____ COE Action ID: 200221216

Stream Name: _____ DWQ Number: _____

City, County and other Location Information: _____

Date Construction Completed: _____ Monitoring Year: () of 5

Ecoregion: _____ 8 digit HUC unit _____

USGS Quad Name and Coordinates: _____

Rosgen Classification: _____

Length of Project: _____ Urban or Rural: _____ Watershed Size: _____

Monitoring DATA collected by: _____ Date: _____

Applicant Information:

Name: _____

Address: _____

Telephone Number: _____ Email address: _____

Consultant Information:

Name: _____

Address: _____

Telephone Number: _____ Email address: _____

Project Status: _____

Monitoring Level required by COE and DWQ (404 permit/ 401 Cert.): Level 1 2 3

Monitoring Level 1 requires completion of *Section 1, Section 2 and Section 3*

Section 1. PHOTO REFERENCE SITES

(Monitoring at all levels must complete this section)

Attach site map showing the location and angle of all reference photos with a site designation (name, number, letter, etc.) assigned to each reference photo location. Photos should be provided for all structures and cross section locations, should show both banks and include an upstream and downstream view. Photos taken to document physical stability should be taken in winter. Photos taken to document vegetation should be taken in summer (at representative locations). Attach photos and a description of each reference photo or location. We recommend the use of a photo identification board in each photo to identify location.

Total number of reference photo locations at this site: _____

Dates reference photos have been taken at this site: _____

Individual from whom additional photos can be obtained (name, address, phone): _____

Other Information relative to site photo reference: _____

If required to complete Level 3 monitoring only stop here; otherwise, complete section 2.



Section 2. PLANT SURVIVAL

Attach plan sheet indicating reference photos.

Identify specific problem areas (missing, stressed, damaged or dead plantings):

Estimated causes, and proposed/required remedial action: _____

ADDITIONAL COMMENTS: _____

If required to complete Level 1 and Level 2 monitoring only stop here; otherwise, complete section 3.



Section 3. CHANNEL STABILITY

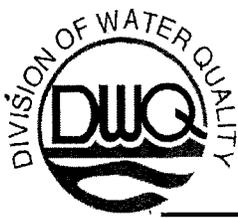
Visual Inspection: The entire stream project as well as each in-stream structure and bank stabilization/revetment structure must be evaluated and problems addressed.

Report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. Include a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

Date Inspected	Station Number				
Structure Type					
Is water piping through or around structure?					
Head cut or down cut present?					
Bank or scour erosion present?					
Other problems noted?					

NOTE: Attach separate narrative sheets to each monitoring report describing/discussing the overall monitoring results. Include the identification of specific problem areas/channel failures, estimated cause and proposed/required remedial action. This should include a brief discussion of any parameter that has changed significantly from as-built.

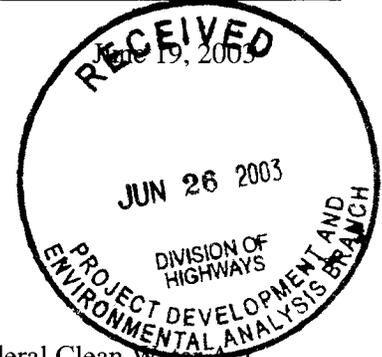




Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director
Division of Water Quality
Coleen H. Sullins, Deputy Director
Division of Water Quality

4PT
aa



Mr. Gregory J. Thorpe, Ph.D., Environmental Director
NCDOT Planning and Environmental Branch
1548 Mail Service Center
Raleigh, NC, 27699-1548

Dear Dr. Thorpe:

Re: MODIFICATION to Water Quality Certification Pursuant to §401 of the Federal Clean Water Act,
Greensboro Western Urban Loop from south of I-40 to north of Bryan Blvd.
F.A. Project No. STPNHF-NHF-124-1(1); State Project No. 8U492101
TIP No. U-2524 BA & BB
DWQ Project No. 011318

Attached hereto is a copy of Certification No. 3387 issued to The North Carolina Department of Transportation dated June 19, 2003.

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

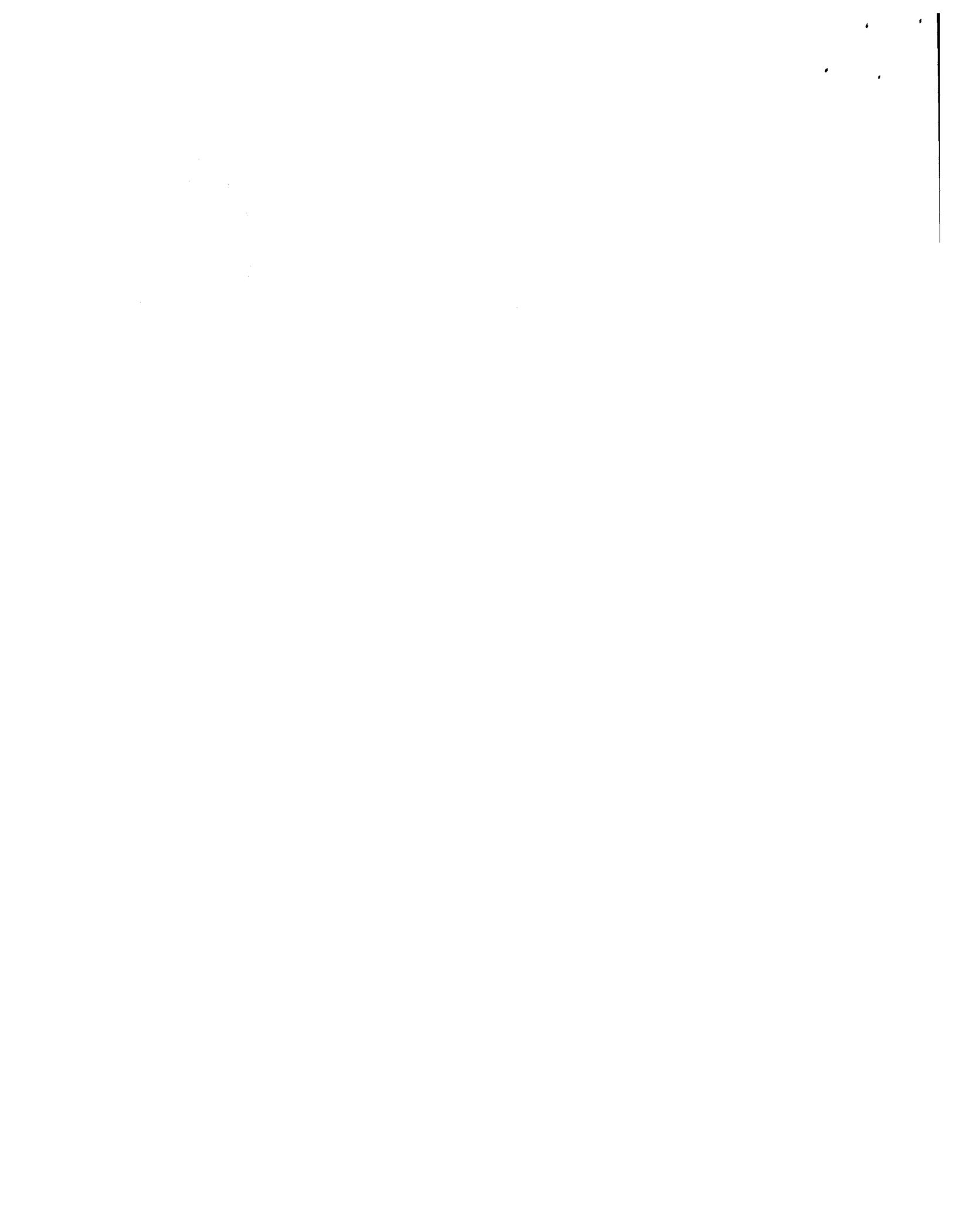
Sincerely,

Alan W. Klimek, P.E.

Attachments

- cc: Wilmington District Corps of Engineers
- Eric Alsmeyer, USACE Raleigh Field Office
- NCDWQ Winston-Salem Regional Office
- Dasha Brown; Contract Administrator, Guilford County Attorney's Office
- Sylvia Norman; City of Greensboro Attorney's Office
- Kathy Matthews; US Environmental Protection Agency – Region IV
- Ron Ferrell, NC Wetlands Restoration Program
- Central Files
- File Copy





NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

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 incur the following permanent impacts:

1. U-2524BA

- 1.74 acres of jurisdictional wetlands (through permanent fill, excavation, and mechanized clearing);
- 3,429 linear feet of stream channels.

This includes 0.95 acres of wetland impacts and 1,034 feet of stream loss in Hydrologic Unit 03030002 and 0.79 acres of wetland impacts and 2,395 feet of stream loss in Hydrologic Unit 03030003.

2. U-2524BB

- 0.13 acres of wetlands;
- 4,518 linear feet of stream channels.

These impacts occur in Hydrologic Unit 03030002.

Total impacts are 1.87 acres of wetlands and 7,947 linear feet of stream channels for the combined projects.

These impacts occur in Guilford County, as described in the Application dated 29 August 2001, and additional information dated 28 May 2002 and 25 June 2002. The project shall be constructed pursuant to the application dated August 29, 2001 and amended May 28, 2002 to construct Greensboro Western Urban Loop from south of I-40 to north of Bryan Boulevard in Guilford County.

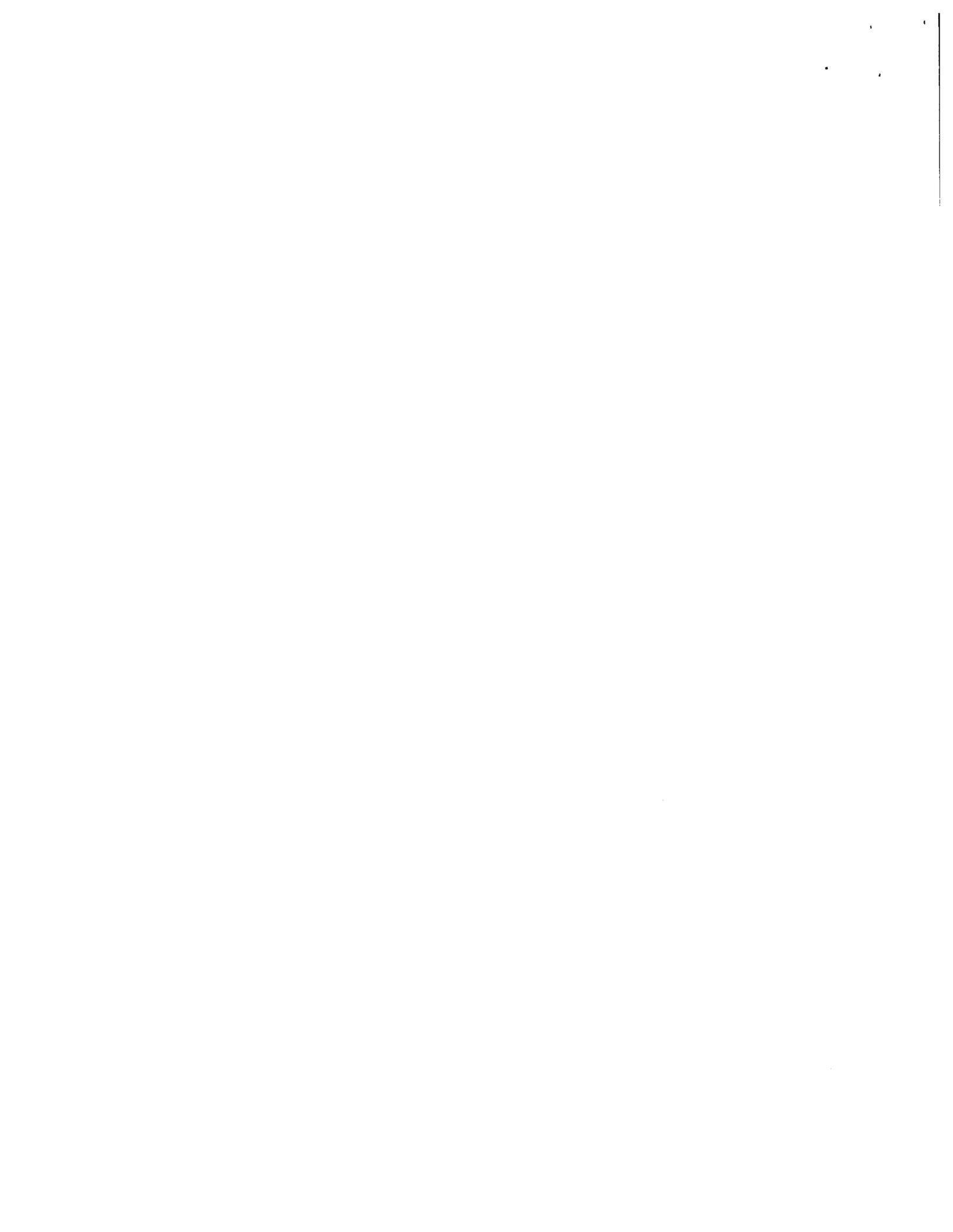
The application provides adequate assurance that the discharge of fill material into the waters of the state with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity 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. Should your project change, you are required to notify the DWQ *in writing*, and you may be required to 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 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, Non-discharge and Water Supply watershed regulations. This Certification shall expire three (3) years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is later.



Condition(s) of Certification:

1. 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 Practice in order to assure compliance with the appropriate turbidity water quality standard (50 NTUs in all fresh water streams and rivers not designated as trout waters; 25 NTUs in all lakes and reservoirs, and all saltwater classes; and 10 NTUs in trout waters).
 - a. Erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*.
 - c. NCDOT must develop a DOT-approved erosion and sediment control plan and implement and maintain the control measures on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor owned or leased borrow pits associated with NCDOT projects.
 - d. NCDOT must implement and maintain a DOT-approved reclamation plan on all borrow pit and waste pile (spoil) projects. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
 - e. NCDOT shall strictly adhere to North Carolina regulations entitled, *Design Standards in Sensitive Watersheds* (15A NCAC 4B .0124 (b) –(e) *only*), for activities undertaken in all waters classified as WS (Water Supply) and draining to the Critical Area, including: Horsepen Creek, and Long Branch, as well as their unnamed tributaries. NCDOT will *not* be required to comply with 15A NCAC 2B .0124(a), which restricts clearing to 20 acres at a time.
2. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.
3. For all streams that are *not* in the Randleman Lake watershed, stormwater shall be transported by vegetated conveyance before discharge into the streams. For streams *in* the Randleman Lake Watershed, stormwater shall be directed to flow as diffuse flow at non-erosive velocities across the stream buffers using level spreaders, retention basins, pre-formed scour holes or other site-appropriate devices. In either case, stormwater shall not be routed to flow directly into streams. Existing wooded stream buffers shall not be mowed in order to allow them to provide diffuse stormwater flow and/or streambank stabilization.
4. Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.
5. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this Certification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.
6. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.



7. *Mitigation:* Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6). *A report must be submitted to the NC Division of Water Quality that describes the final approved wetland and stream mitigation for this project within two (2) months of the issuance of the 404 permit issued by the Army Corps of Engineers.* NCDOT has agreed to provide 2:1 mitigation for most perennial stream impacts except for Site 6 of U-2524BA where a 1:1 mitigation ratio is proposed.
- Within HU 03030002, the wetland impact total is 1.08 acres, with needed mitigation of 2.16 acres; stream mitigation requirements total 8,240 linear feet.
 - Within HU 03030003, the wetland impact total is 0.79 acres; stream mitigation requirements total 4,127 linear feet.

Wetland Mitigation

1. Compensatory Mitigation in HU 03030002 of 2.16 acres of wetlands shall be provided via in-lieu payments to Wetlands Restoration Program, which has accepted your payment, for impacts associated with the above referenced projects
2. NCDOT proposes to provide compensatory mitigation for all wetland impacts in HU 03030003 using the following sites:
 - Sandy Creek Mitigation Site (HU 03030003) in Randolph County (restoration of a bottomland hardwood wetland system at 1:1 mitigation ratio).
 - Blue Tract Mitigation Site (HU 03030004) in Moore County at a mitigation ratio of 12:1.

Stream Mitigation

1. Compensatory mitigation in HU 03030002 of 8,240 linear feet of stream mitigation shall be provided via in-lieu payments to Wetlands Restoration Program, which has accepted your payment, for impacts associated with the above referenced projects.
2. NCDOT proposes to provide compensatory mitigation of 4,127 linear feet for all stream impacts in HU 03030003 by providing the following:
 - Starmount Forest County Club (HU 03030002) in Guilford County: 2,014 linear feet.
 - Spring Valley Park Mitigation Site (HU 03030002) in Guilford County: 1,000 linear feet.
 - Caviness Stream Mitigation Site (HU 03030003) in Randolph County: 1,113 linear feet.

In accordance with 15A NCAC 2R.0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h). Until plans are received and approved for the proposed mitigation sites, wetland or stream fill shall not occur.

8. In accordance with the findings of the cumulative impact study dated May 2003 prepared by Ecoscience Corporation, the anticipated cumulative impacts from this project shall be addressed via written agreements between NC Division of Water Quality, Greensboro and Guilford County in accordance with the appropriate signed agreements.
9. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.



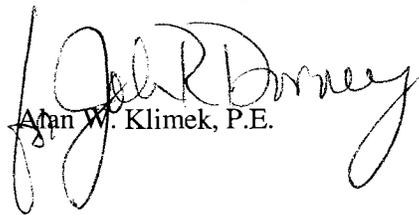
The Applicant shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification.

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

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

This the 19th day of June 2003

DIVISION OF WATER QUALITY


Alan W. Klimek, P.E.

WQC No. 3387



DWQ Project No.: _____

County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____

