



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

June 27, 2003

LYNDO TIPPETT  
SECRETARY

**Addendum No. 1**

RE: Contract ID: C200734 (Combined Proposal No. 3)  
Work Order 8.T491607, 8.U492108, 8.U492110  
F. A. No. IMS-40-3(93)207, NHF-1241(9), NHF-1241(11)  
Guilford County (I-2201G, U-2524BA, U-2524BB)

**July 15, 2003 Letting**

To Whom It May Concern:

Reference is made to the proposal form furnished to you on the above-mentioned project.

The following revisions have been made to the proposal form:

On page no. 33, the Project Special Provision entitled "Concrete Flashboard Riser" has been added. Please void page no. 33 in your proposal and staple the revised page no. 33 thereto.

On page no. 450, the Project Special Provision entitled "Permits" has been revised. Please void page no. 450 in your proposal and staple the revised page no. 450 thereto.

New page nos. 451 thru 534 are being added to include the 404 and 401 permits for the project. Please staple new page nos. 451 thru 534 after page no. 450 in your proposal.

The Table of Contents has been revised to reflect the above changes. Please void the Table of Contents in your proposal and staple the revised page thereto.

On page no. 3 of the item sheets, the quantity for line item number "32-0106000000-M-230 Borrow Excavation" has been revised. By copy of this addendum, the pay item quantity is hereby decreased from 2,190,400 M3 to 2,159,400 M3. The Contractor's bid price should be based on this revised pay item quantity. On page no 31 of the item sheets, a new pay item is being added. By copy of this addendum, the following pay item is hereby added: "596-2473000000-N-SP Generic Drainage Item – Concrete Flashboard Riser (Quantity = 1 EA.)". The Contractor's bid price must include this new pay item. The contract will be prepared accordingly.

The Expedite file has been updated to reflect this revision. Please download the Expedite addendum file and follow the instructions for applying the addendum. Bid Express will not accept your bid unless all addendums have been applied.

Sincerely,

A handwritten signature in black ink, appearing to read "R. A. Garris". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

R. A. Garris, PE  
Contract Officer

RAG/jag/mj

Attachments

cc: Mr. J. D. Goins, PE  
Mr. S. D. DeWitt, PE  
Mr. J. M. Mills, PE  
Ms. D. M. Barbour, PE  
Mr. J. V. Barbour, PE  
Mr. J. F. Sullivan, III (FHWA)  
Mr. Mark Staley (2)  
Mr. Aydren Flowers  
Mr. Ron Davenport, Jr., PE  
Ms. Kim Canady  
Ms. Yang Steelman  
Project File (2)

PROJECT: 8.T491607, ETC.  
GUILFORD COUNTY

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- Item Sheets
- Award Limits
- Signature

Cost and Escrow Instructions:

The cost of the escrow will be borne by the Department. The Department will provide escrow instructions to the banking institution or other bonded document storage facility consistent with this provision.

Payment:

There will be no separate payment for all costs of compilation of the data, container, or verification of the bid documentation. Payment at the various contract unit or lump sum prices in the contract will be full compensation for all such costs.

SP1G142

**RAILROAD TRACK WORK:**

For Project U-2524BA, the Contractor shall remove and dispose of all railroad tracks and associated material within the limits of the project from approximate Survey Station 121+500 to 124+75, to include the tracks on Parcel 17 to where the switch has been removed.

No separate payment will be made for such work as it shall be included in the contract pay item lump sum for "Clearing and Grubbing".

**PAYMENT FOR LUMP SUM ITEMS (CLUSTER PROJECT):**

There are numerous lump sum items included on the item sheets included elsewhere in this proposal form. Many of these lump sum items include payment for work described identically on U-2524BA and U-2524BB. For example, Overhead Sign Assembly "A" on the cluster item sheet will include a lump sum bid amount for the required. Overhead Sign Assembly "A" on both projects U-2524BA and U-2524BB. Likewise, any other lump sum pay item in this cluster proposal which includes a pay item description that is duplicated in the individual BA and BB projects is intended to cover payment at one lump sum price for the work performed on both projects.

**CONCRETE FLASHBORAD RISER:**

The Contractor shall construct the flashboard riser in accordance with the detail shown in the plans, at the location shown in the plans and as directed by the Engineer.

The flashboard riser shall be connected to the proposed 600mm corrugated steel pipe.

The quantity of "Concrete Flashboard Riser" to be paid for will be the actual number of flashboard risers satisfactorily completed and accepted.

The quantity of flashboard risers measured as provided for above will be paid for at the contract unit price each for "Concrete Flashboard Riser". Such price and payment will be full compensation for all materials, labor, equipment and other incidentals necessary to complete the work.

**PROJECT SPECIAL PROVISIONS**  
**PERMITS**

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

**PERMIT**

**AUTHORITY GRANTING THE PERMIT**

Dredge and Fill and/or  
Work in Navigable Waters

U. S. Army Corps of Engineers

Water Quality

Division of Environmental Management, DEHNR  
State of North Carolina

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

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

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

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

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

## DEPARTMENT OF THE ARMY PERMIT

Permittee NC Department of TransportationPermit No. 200221216Issuing 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.

d. Design or construction deficiencies associated with the permitted work.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

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.

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

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

d. This permit does not authorize interference with any existing or proposed Federal project.

c. This permit does not authorize any injury to the property or rights of others.

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

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

2. Limits of this authorization.

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Further Information:

See enclosed sheet.

Special 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.

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.

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.



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)  
NC DEPARTMENT OF TRANSPORTATION

25 June 03  
\_\_\_\_\_  
(DATE)

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

\_\_\_\_\_  
(DISTRICT ENGINEER)  
CHARLES R. ALEXANDER, JR. COLONEL

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

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

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

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

**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.

l. 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](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.

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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



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**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.

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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.

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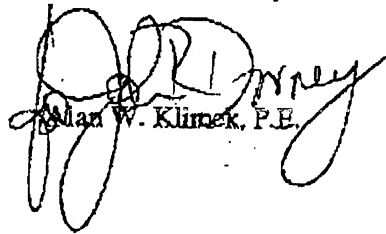
The Applicant shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification.

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. Klimex, P.E.

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**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**

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**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.



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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: \_\_\_\_\_

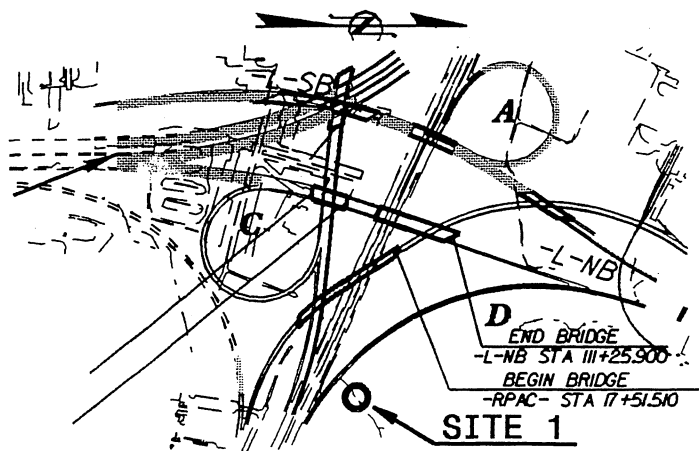
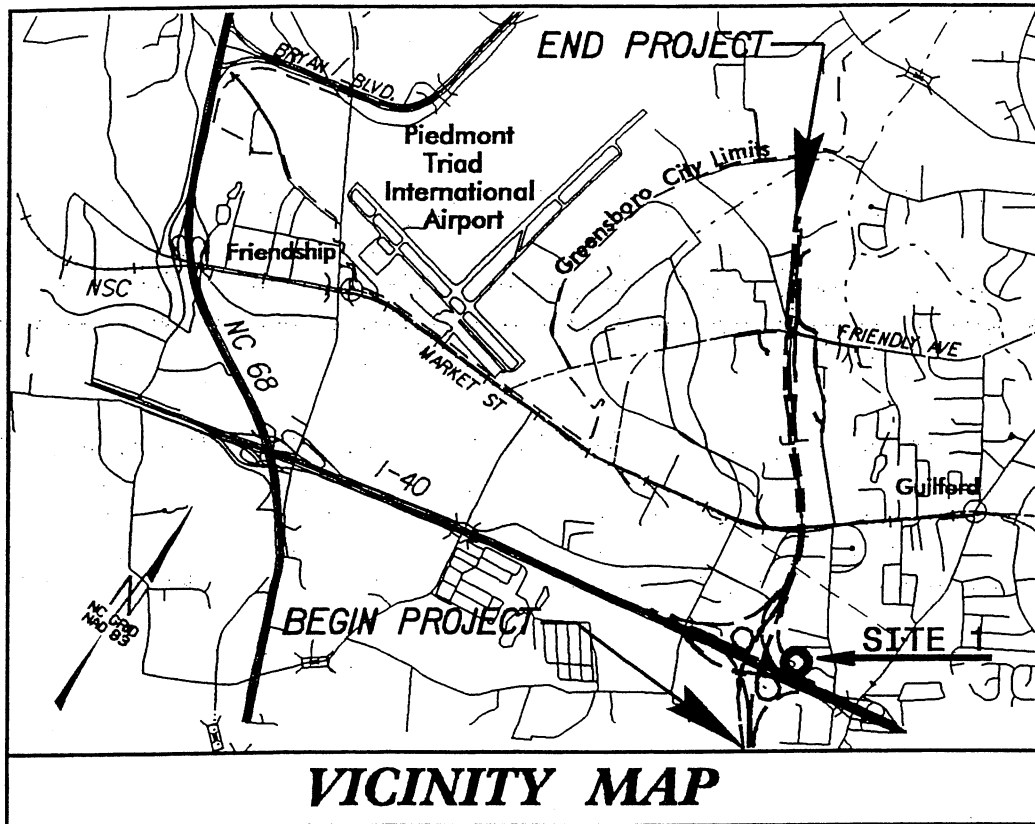
**Engineer's Certification**

\_\_\_\_\_ 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 \_\_\_\_\_

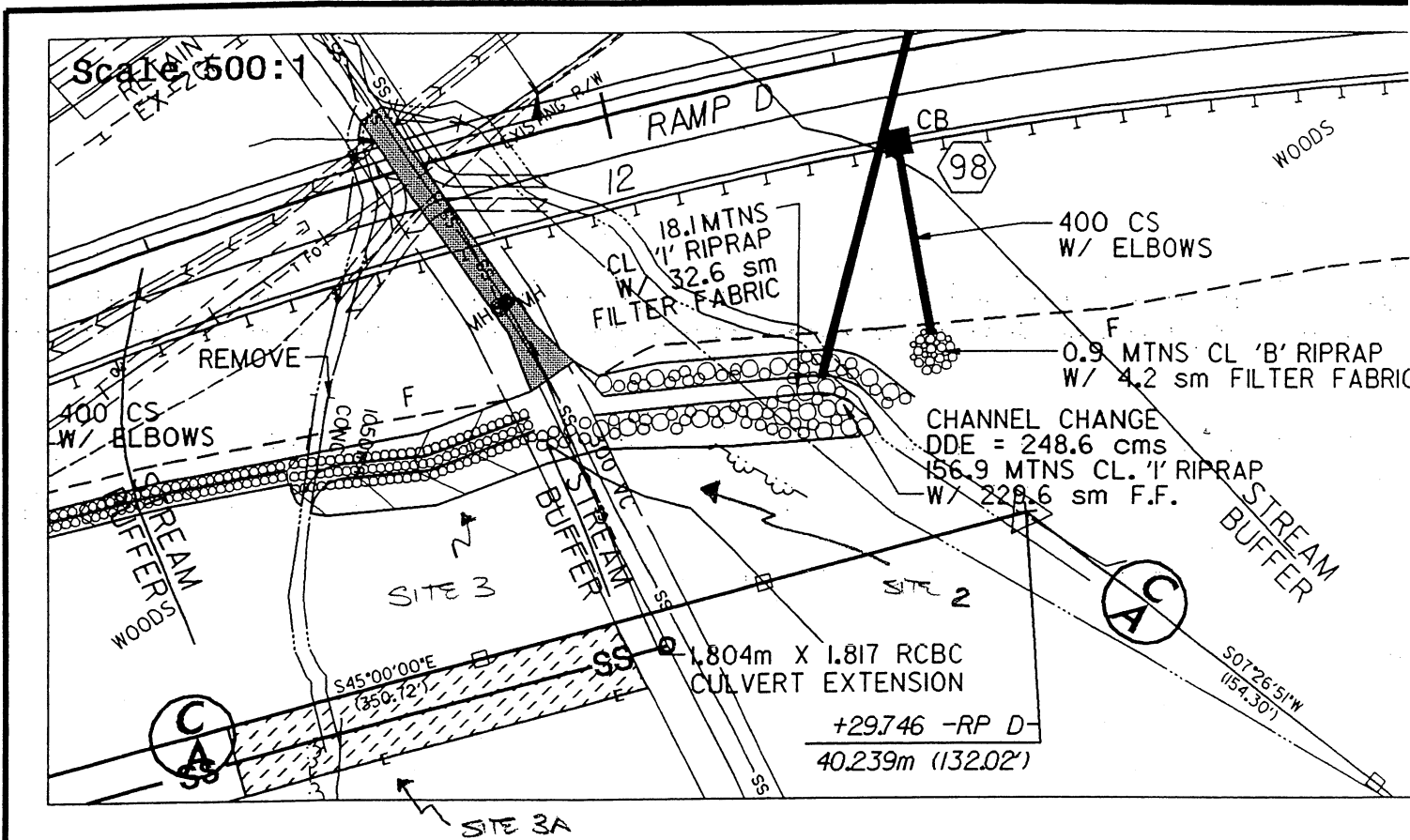


N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GUILFORD COUNTY  
PROJECT: 8.U492101 (U-2524BA)

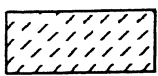
GREENSBORO WESTERN LOOP

SHEET 1 OF 6

SEPT 2002

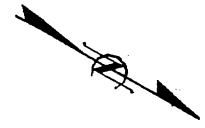


LOCATION, RIGHT OF STA. 11+61.76 RAMP D



TEMPORARY IMPACTS ZONE 1

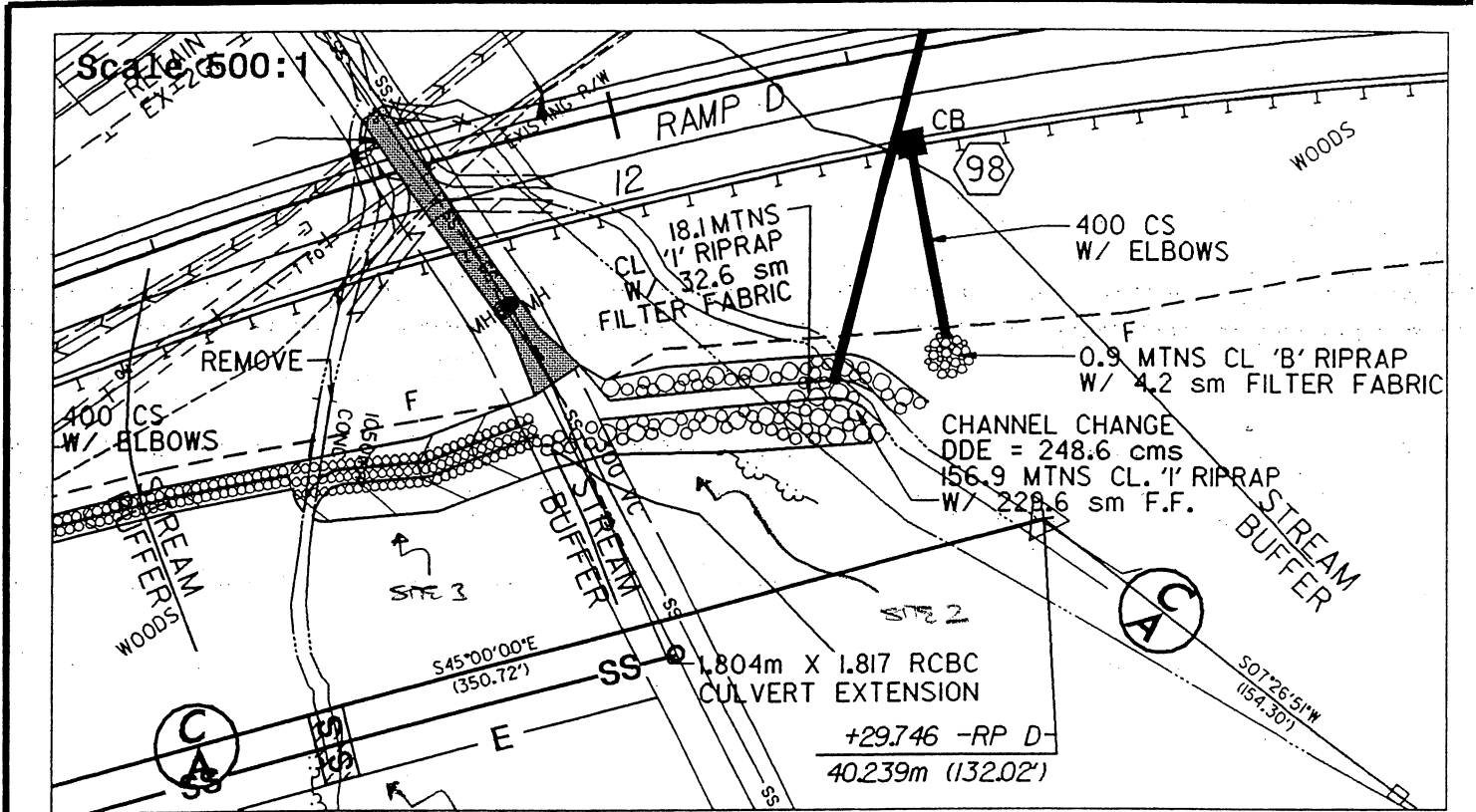
Length=114 FEET  
Area=2275.63 FEET<sup>2</sup>



PLAN VIEW  
SITE 3A  
BUFFER ZONE  
IMPACTS

N. C. DEPT. OF TRANSPORTATIO  
DIVISION OF HIGHWAYS  
GUILFORD COUNTY  
PROJECT: 8.U492101, (U-2524B/  
GREENSBORO WESTERN URBAN L00  
FROM 1-40 TO NORTH OF WEST  
FRIENDLY AVENUE  
SHEET 2 OF 6

SEPT 2002



LOCATION, RIGHT OF STA. 11+61.76 RAMP D



TEMPORARY IMPACTS  
ZONE 1

Length=10 FEET  
Area=200 FEET 2

PLAN VIEW  
SITE 3A  
STREAM IMPACTS

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 3 OF 6

SEPT 2002

**TOTAL TEMPORARY IMPACTS IN  
BUFFER ZONE**

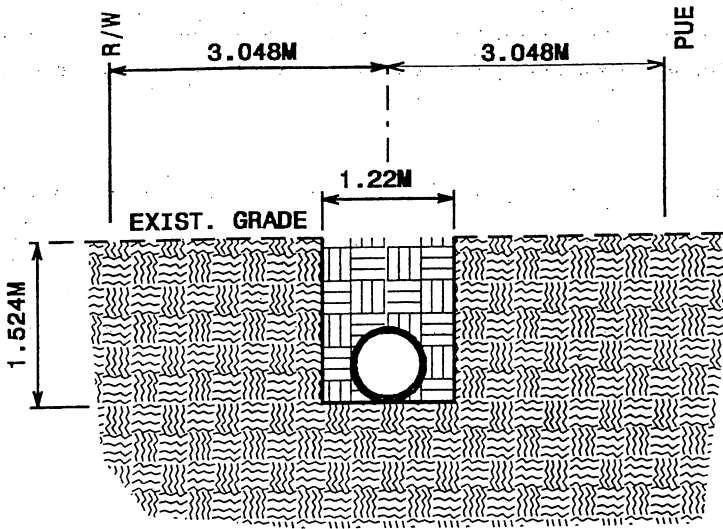
**Area=2275.63 FEET<sup>2</sup>**

**TOTAL TEMPORARY STREAM IMPACT**

**Area=200 FEET<sup>2</sup>**

**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 AVENUE  
SHEET 4 OF 6**

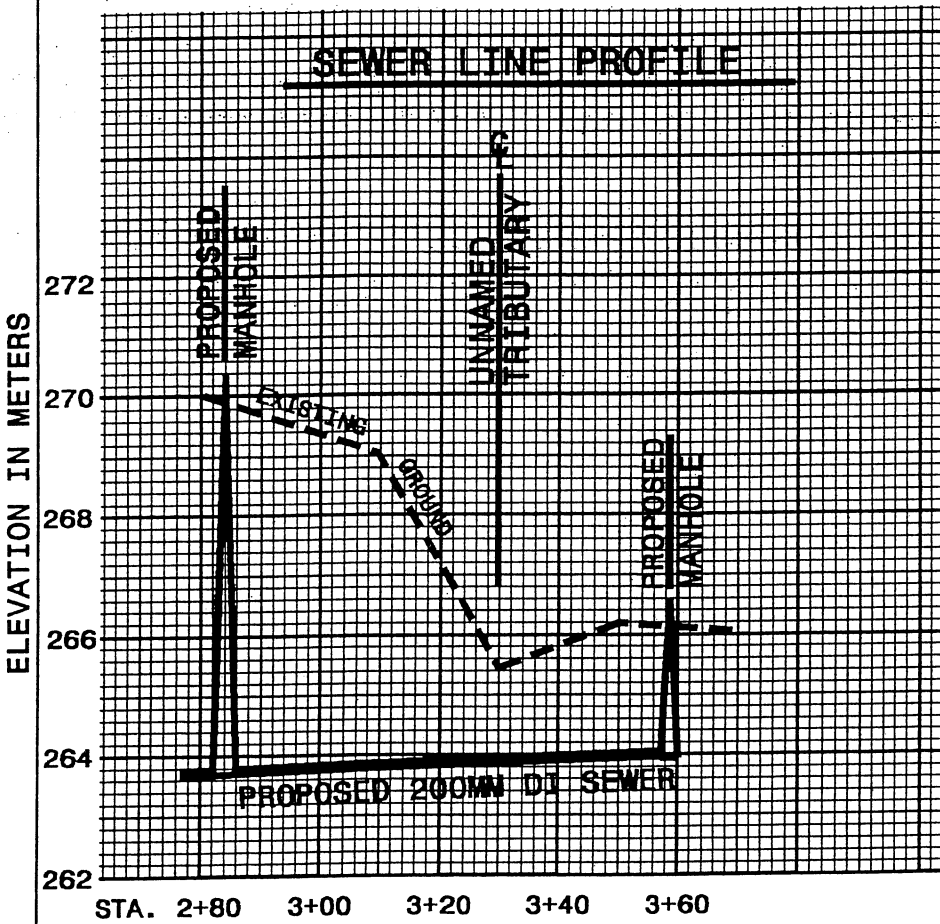
*SEPT 2002*



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



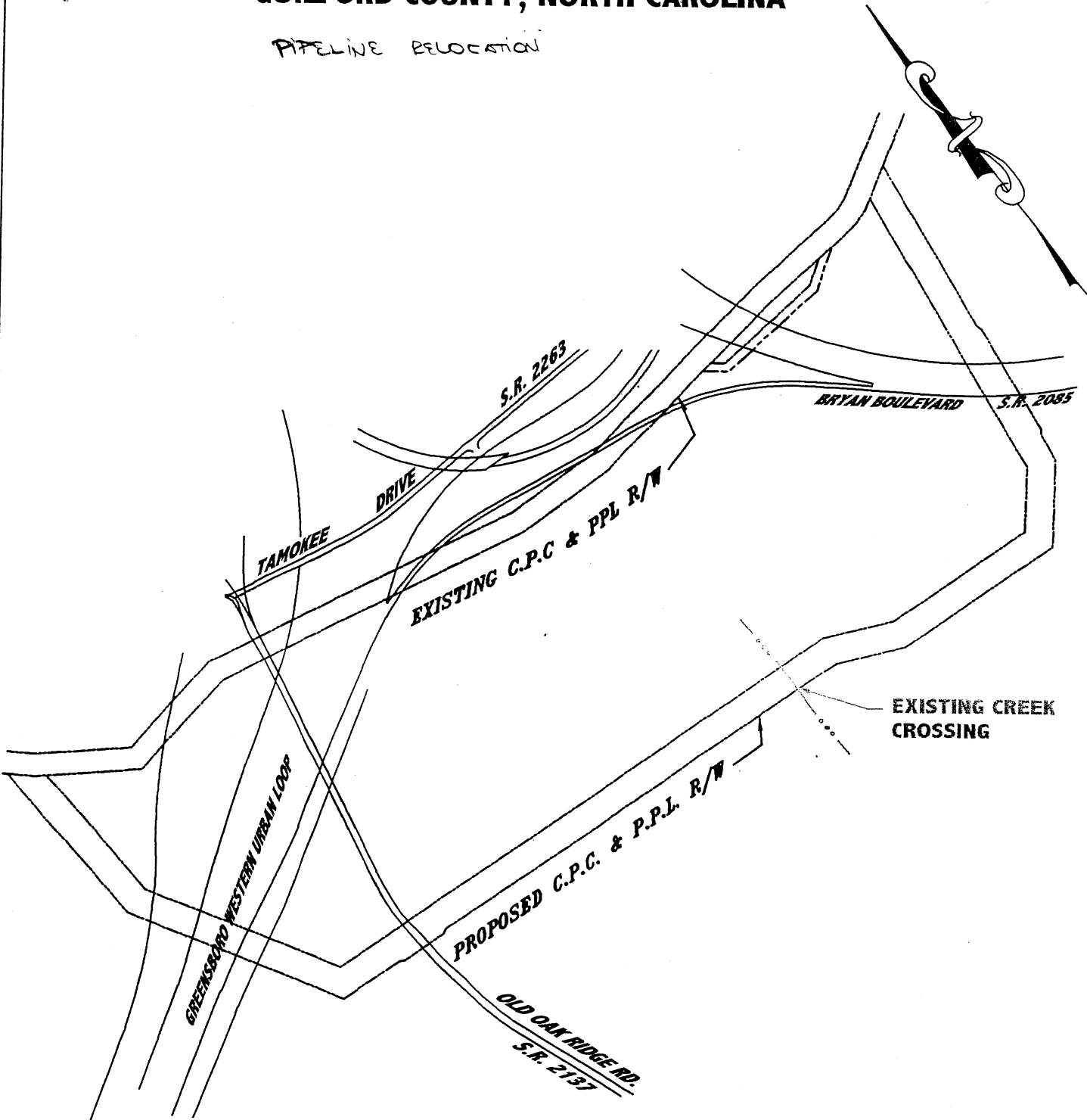
SITE 3A

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

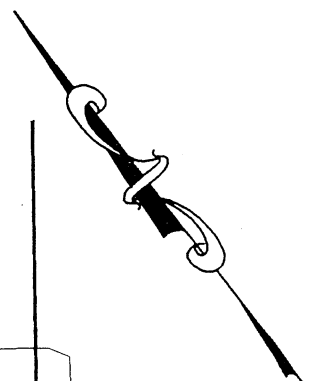
DOT PROJECT REFERENCE: U-2524BB

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<p style="text-align: center;"><b>SITE #1</b></p> <p style="text-align: center;"><b>VICINITY MAP</b></p>		NOTES:																
		SCALE: 1"=400'																
		DATE: 5/02																
		CHECKED: PBD <b>SITE1.CPC.PPL</b>																
REVISION	DATE																	



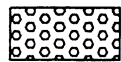
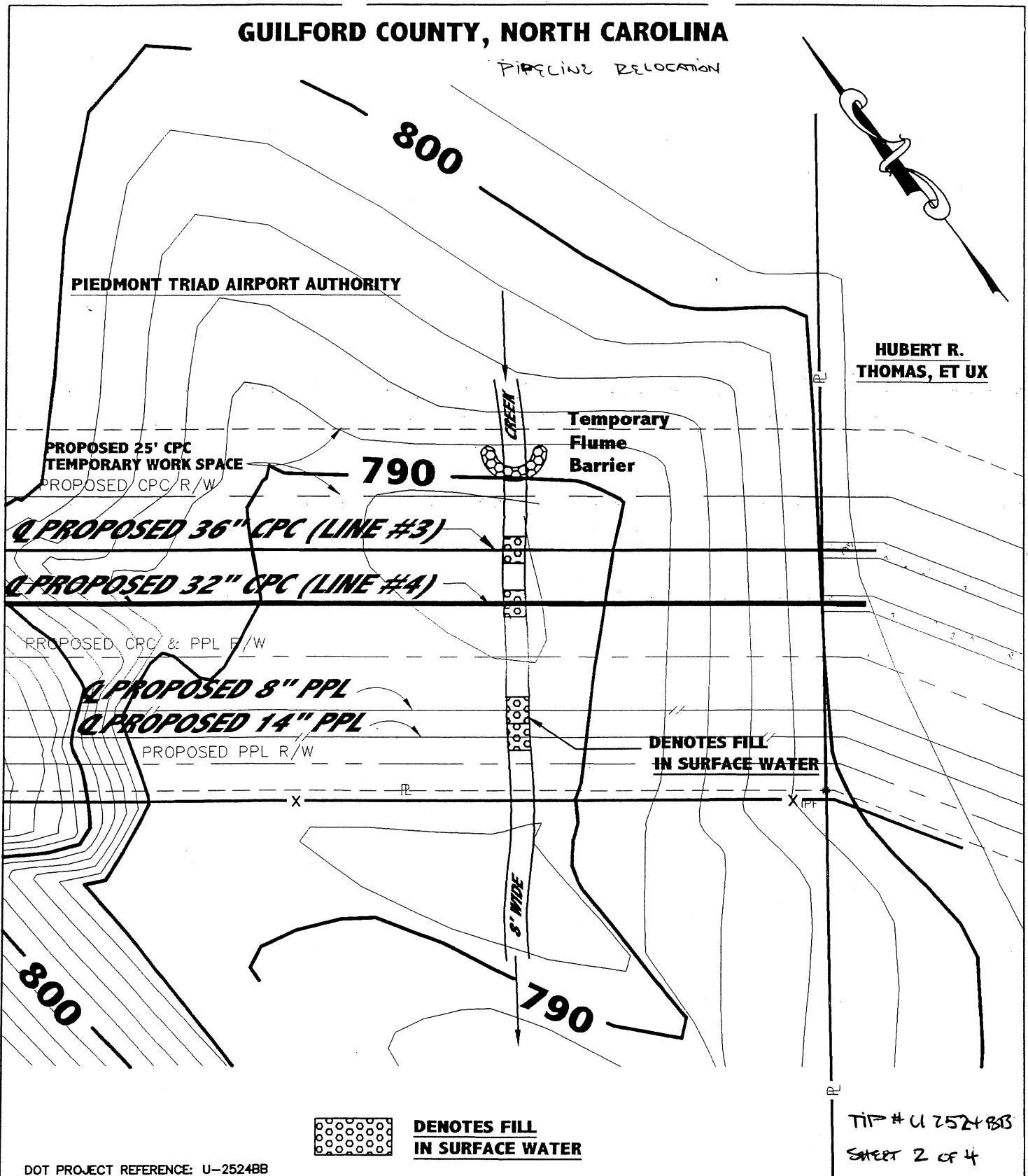
# GUILFORD COUNTY, NORTH CAROLINA

PIPELINE RELOCATION



**PIEDMONT TRIAD AIRPORT AUTHORITY**

**HUBERT R. THOMAS, ET UX**



**DENOTES FILL IN SURFACE WATER**

TIP # U 252488

SHEET 2 OF 4

▲		
▲		
▲		
▲		
	REVISION	DATE

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

## **SITE #1** **FILL IN SURFACE WATER**

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

**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)
1	[See Note 1]	N/A	0	0	0	0	<0.01 <sup>2</sup>	0	12 <sup>3</sup>	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 x 10' stream length)
- Cumulative channel length impacted.

SHEET 3 OF 4

SITE #1

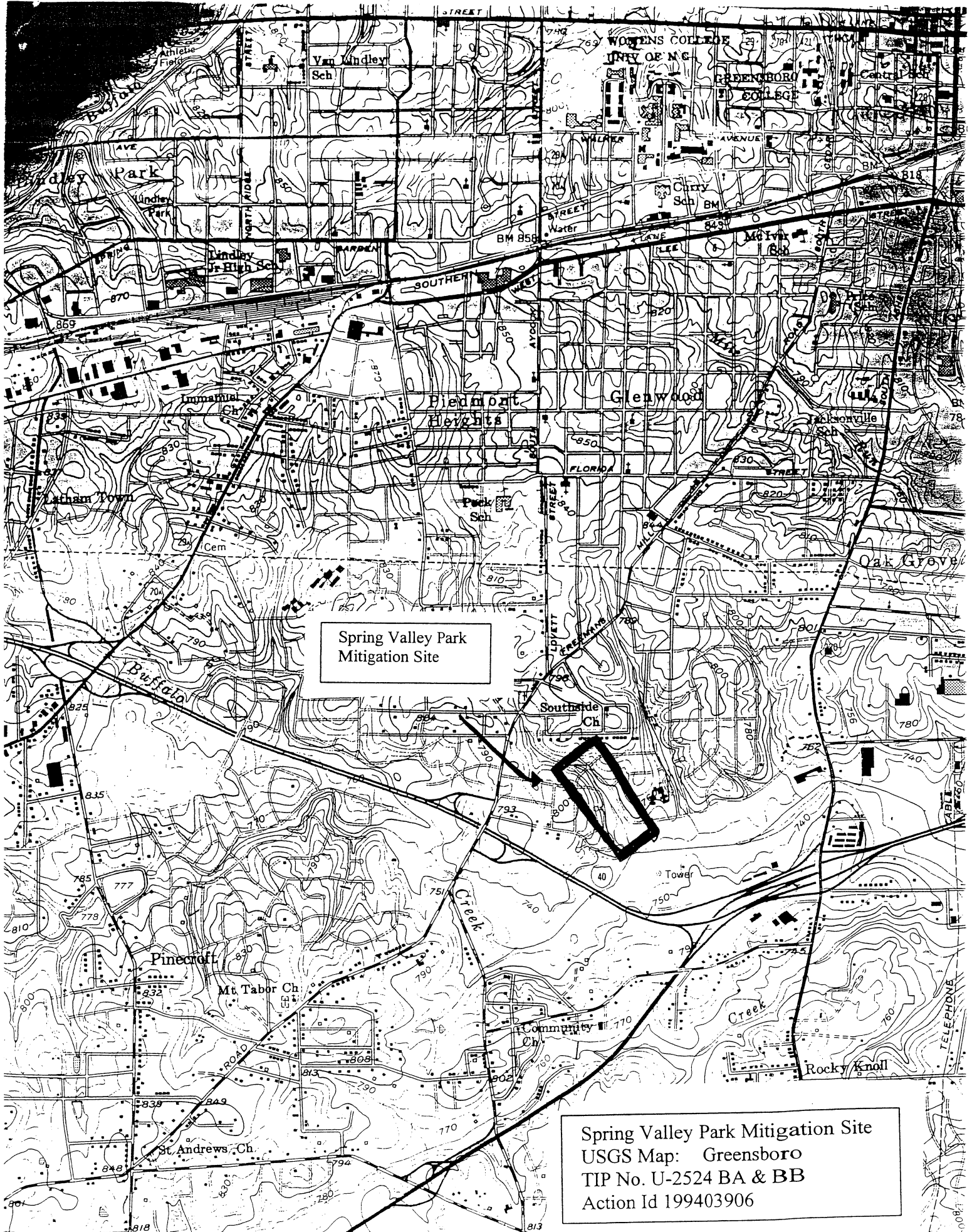
UNNAMED TRIBUTARY TO HORSEPEN CREEK  
PRODUCT PIPELINE RELOCATION  
GREENSBORO WESTERN URBAN LOOP  
Guilford County, North Carolina  
May 2002  
DOT Project Reference: U-2524BB

**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

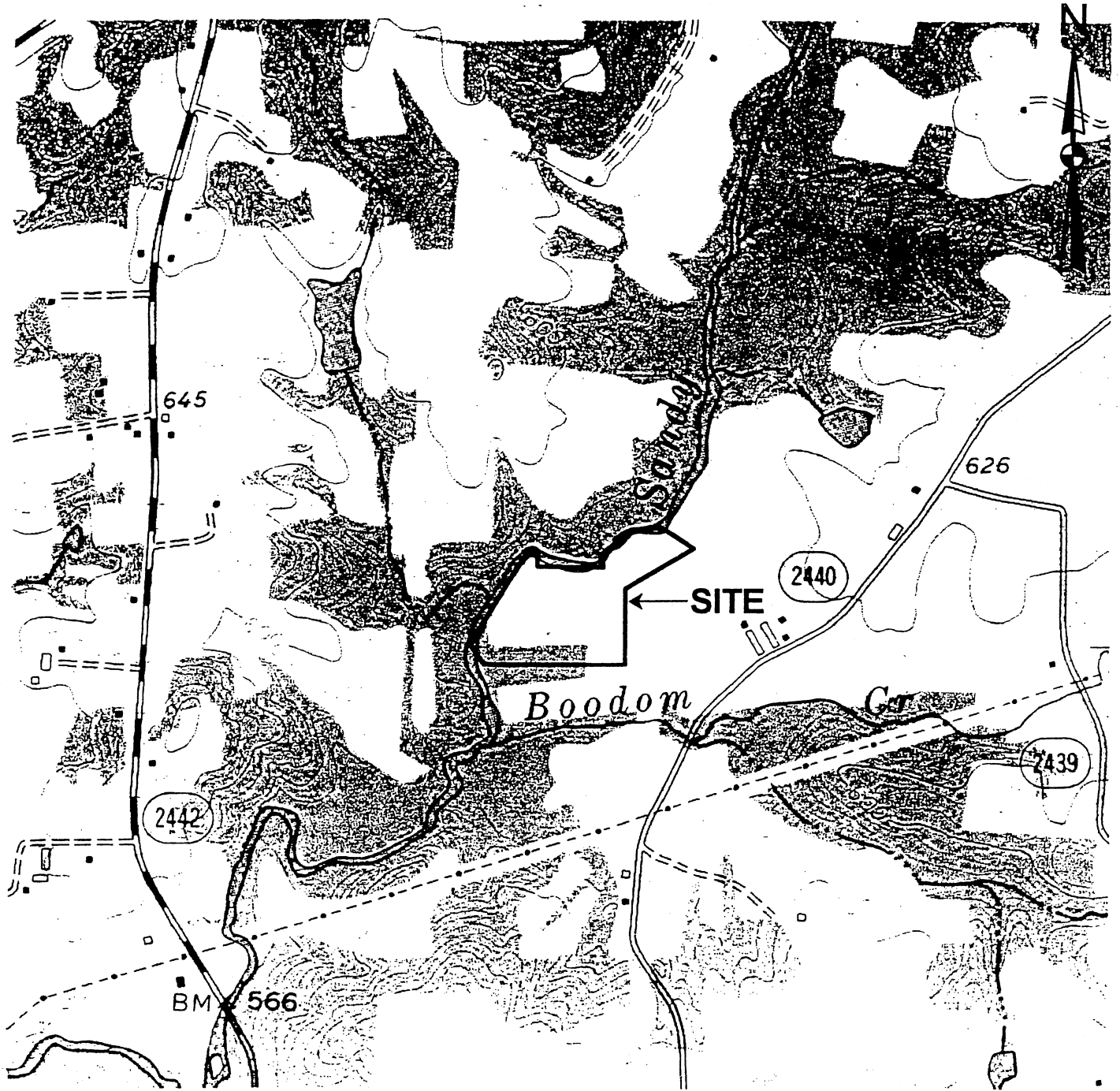
SHEET 4 OF 4

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

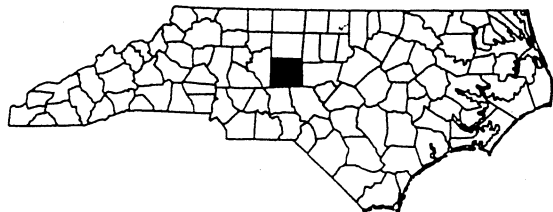
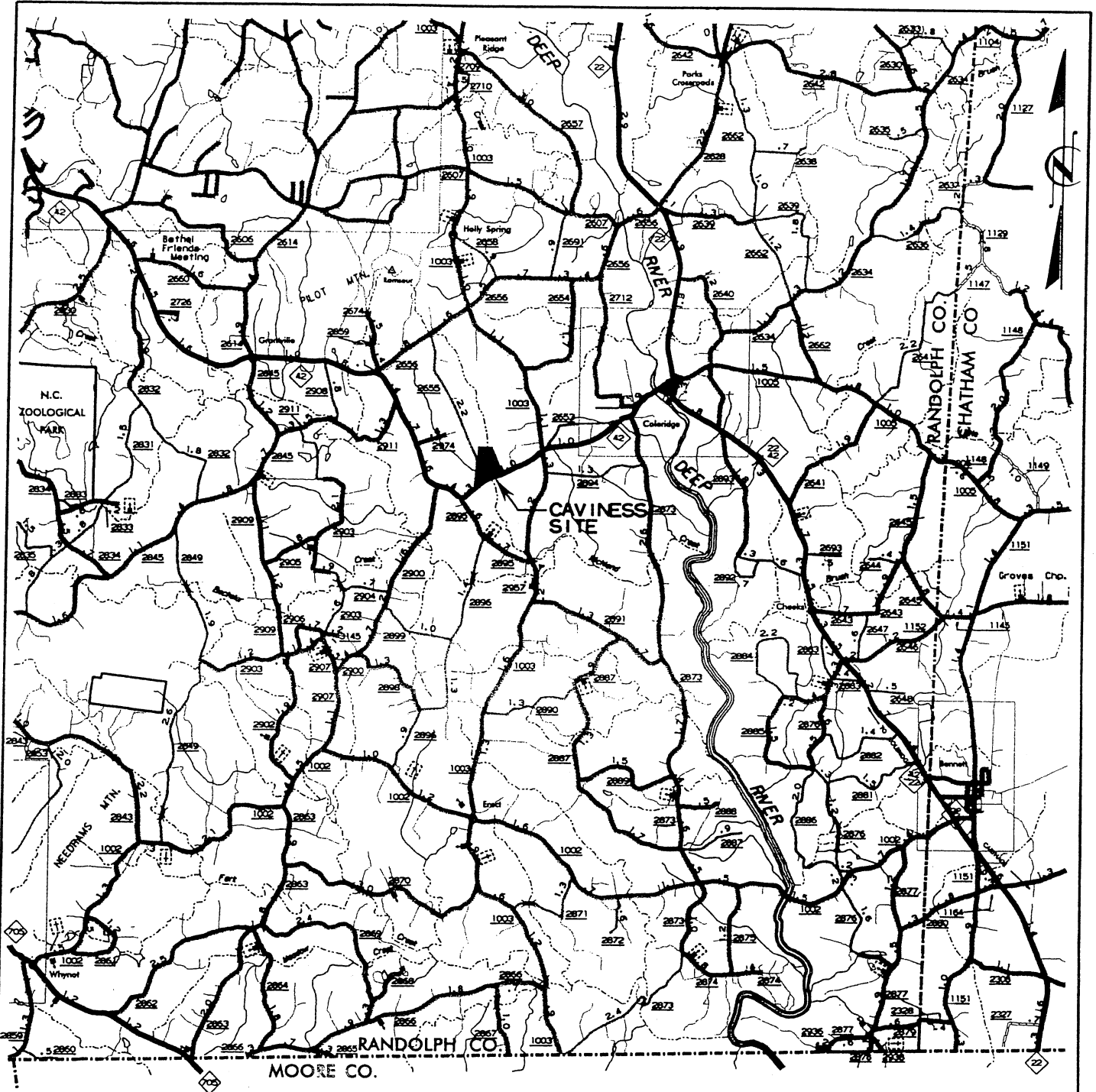
Spring Valley Park Mitigation Site  
USGS Map: Greensboro  
TIP No. U-2524 BA & BB  
Action Id 199403906



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

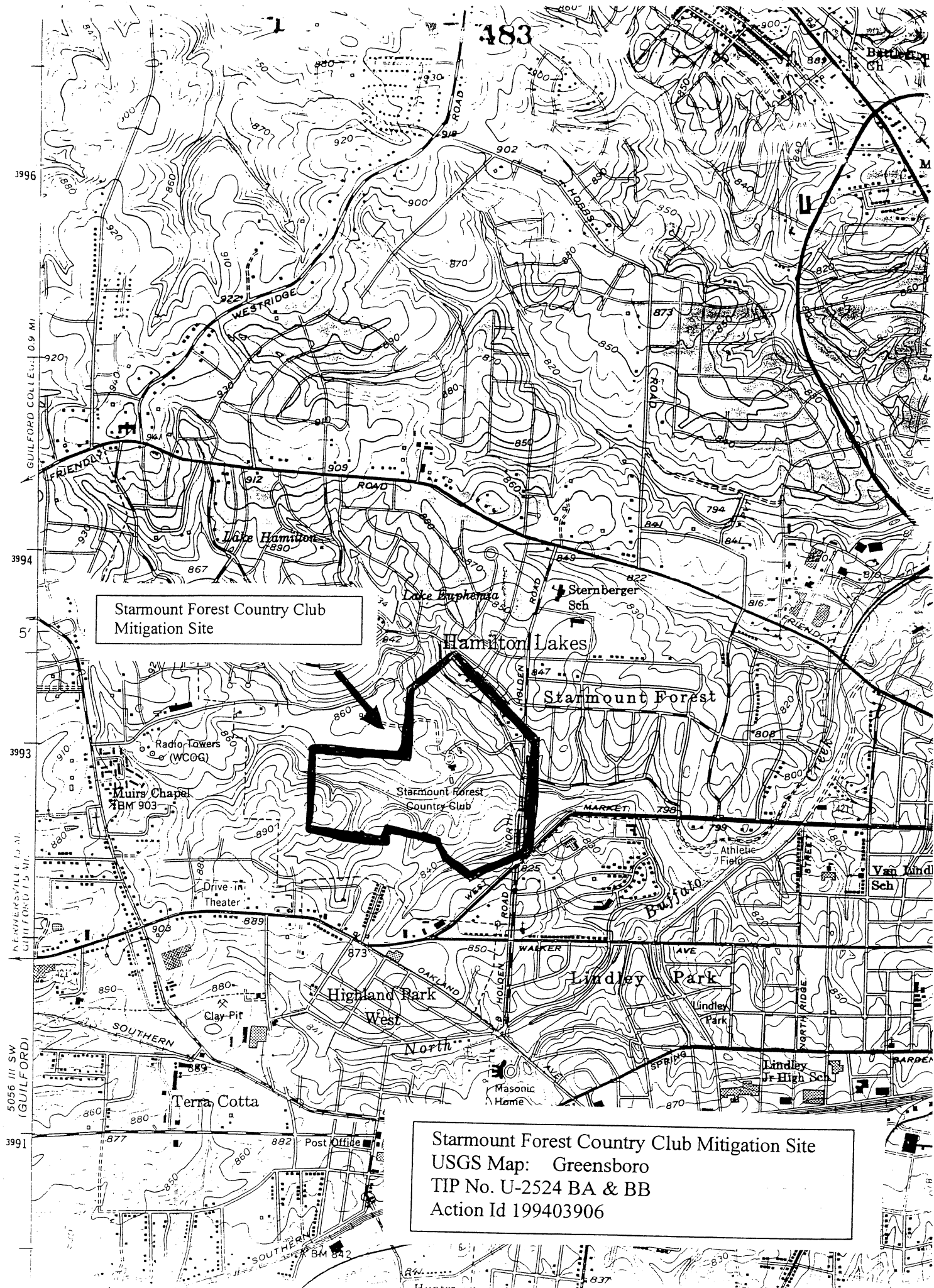
2000 0 2000 Feet





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

FIGURE 1



Starmount Forest Country Club  
Mitigation Site

Starmount Forest Country Club Mitigation Site  
USGS Map: Greensboro  
TIP No. U-2524 BA & BB  
Action Id 199403906

3996  
3994  
3993  
3991

GUILFORD COLLEGE 0.9 MI

NEVERSVILLE 1.5 MI  
GUILFORD 1.5 MI

5056 III SW  
(GUILFORD)

483

WESTRIDGE

Lake Hamilton

Lake Bephenia

Hamilton Lakes

Starmount Forest

Muir's Chapel  
BM 903

Starmount Forest  
Country Club

MARKET

Drive-in  
Theater

Athletic  
Field

Lindley Park

Highland Park  
West

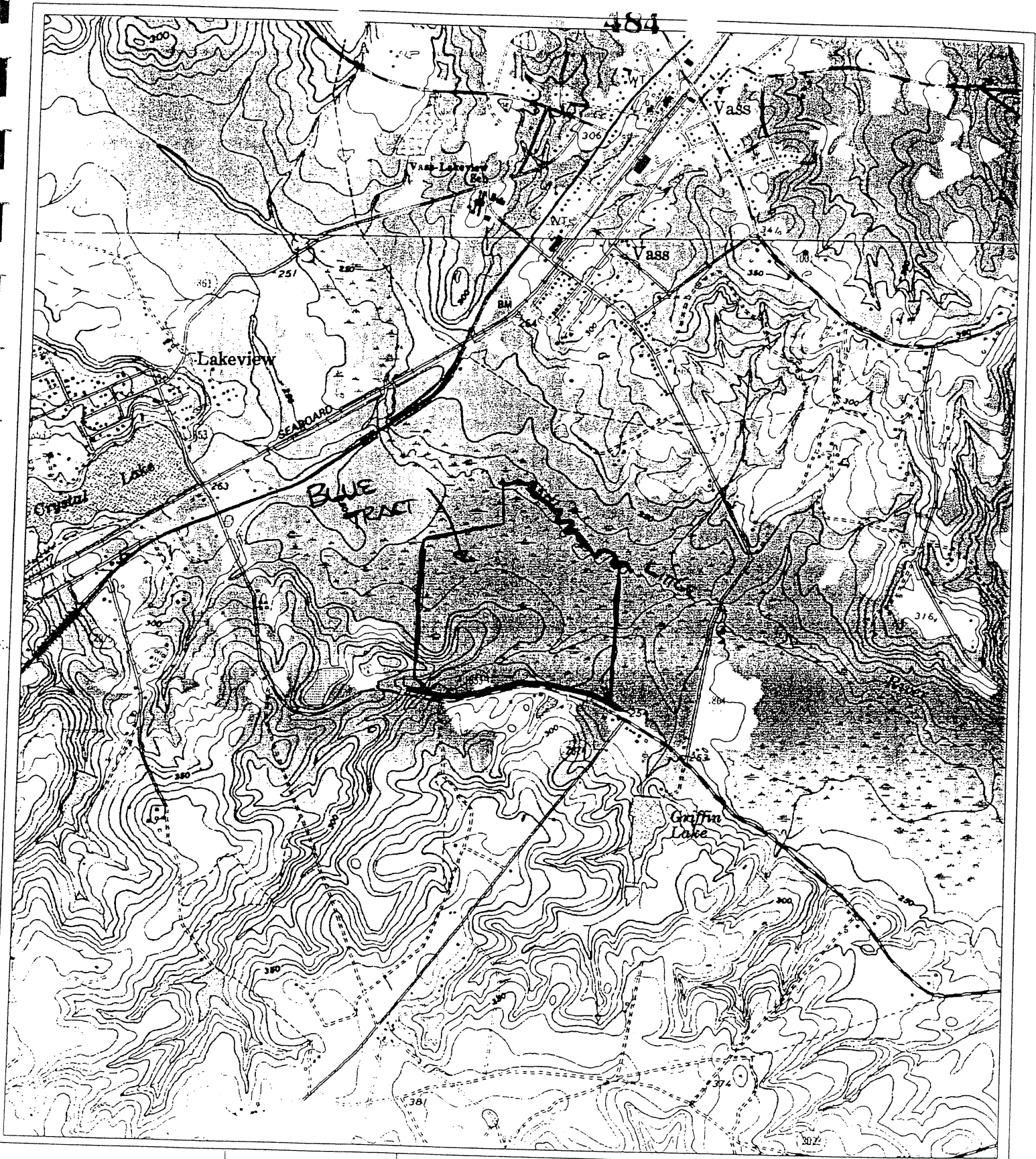
Terra Cotta

Masonic  
Home

Lindley  
Jr High Sch

SOUTHERN  
BM 842

Hunter



USGS Quads:  
Niagara and  
Vass

1" = 2,000'

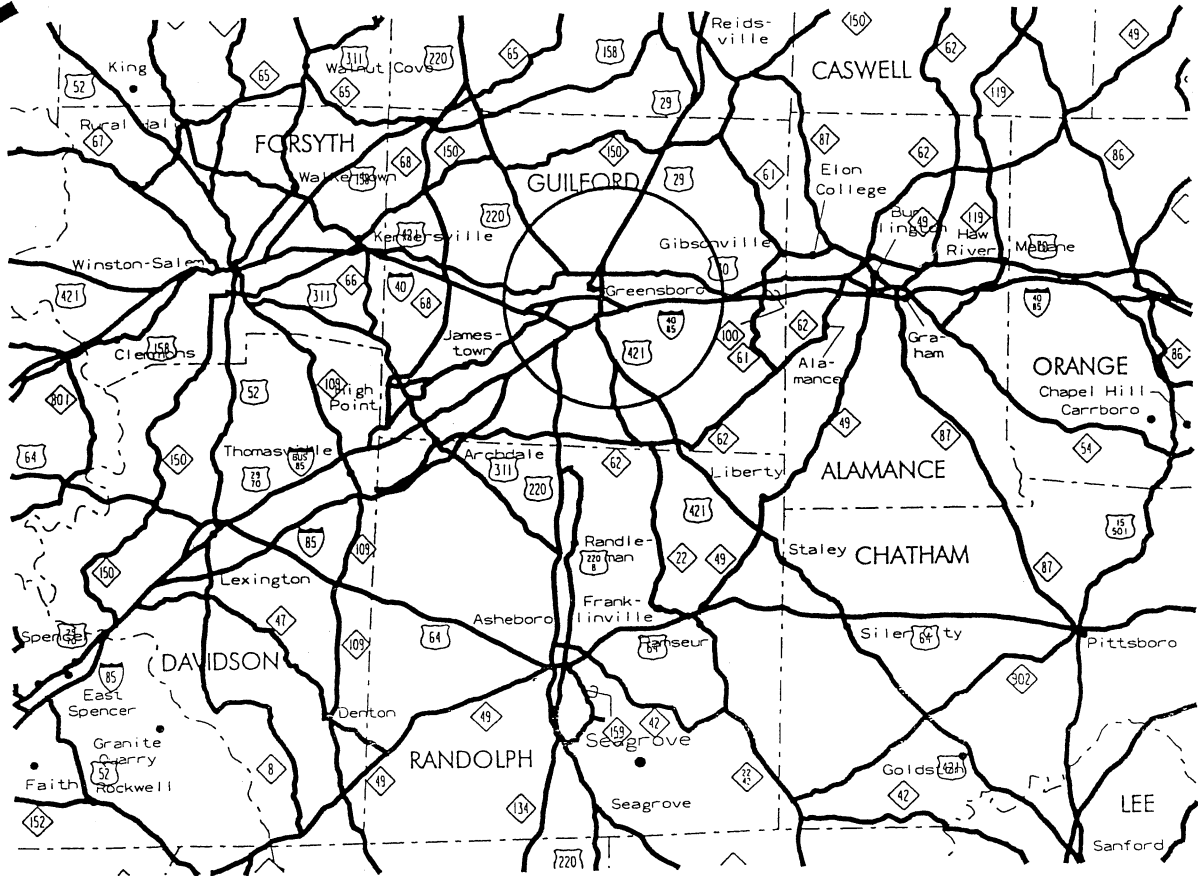


Blue Tract Vicinity Map  
ACTION ID P9403906

2000 0 2000 Feet

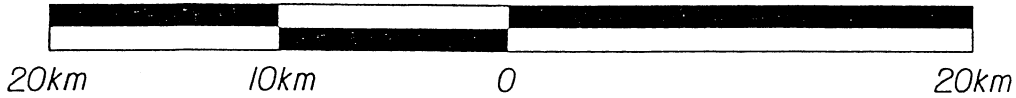






VICINITY MAP

SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492 101

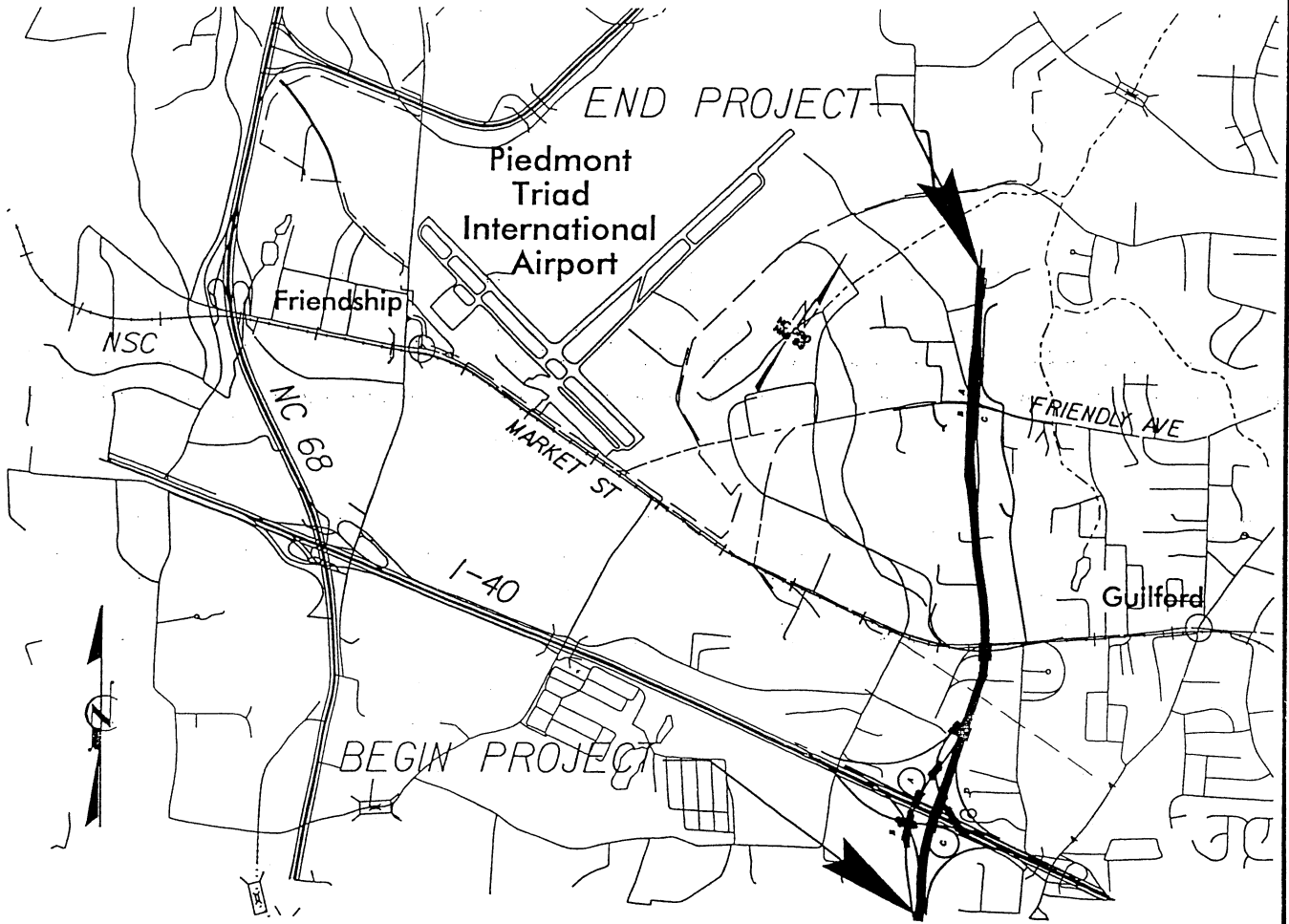
U-2524BA

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

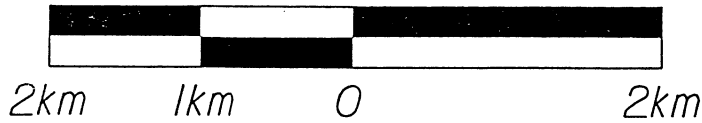
SCALE AS SHOWN

SHEET 1 OF 28

FEBRUARY 13, 2002



### VICINITY MAP

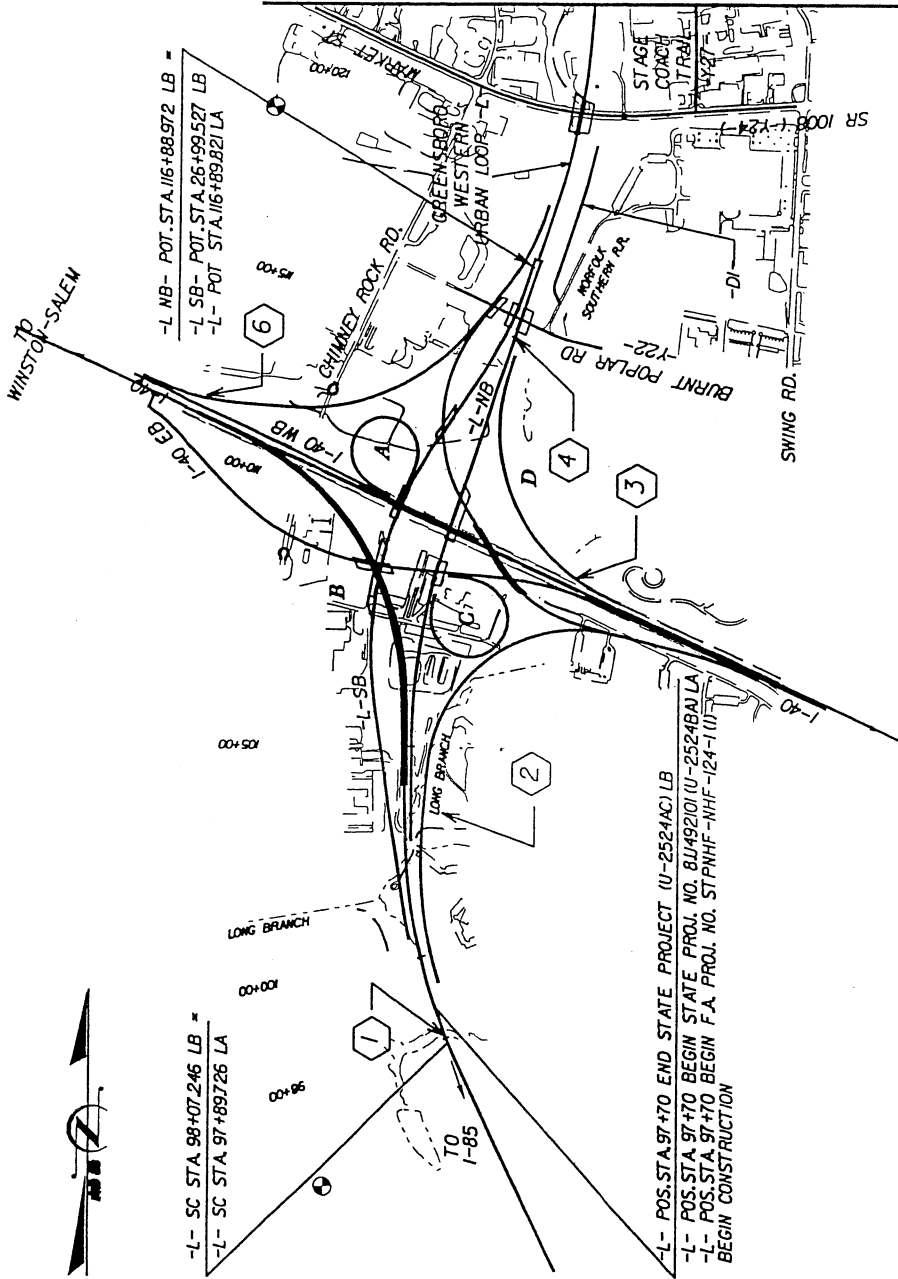


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 8.U492101 U-2524BA  
 GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 2 OF 28

FEBRUARY 13, 2002



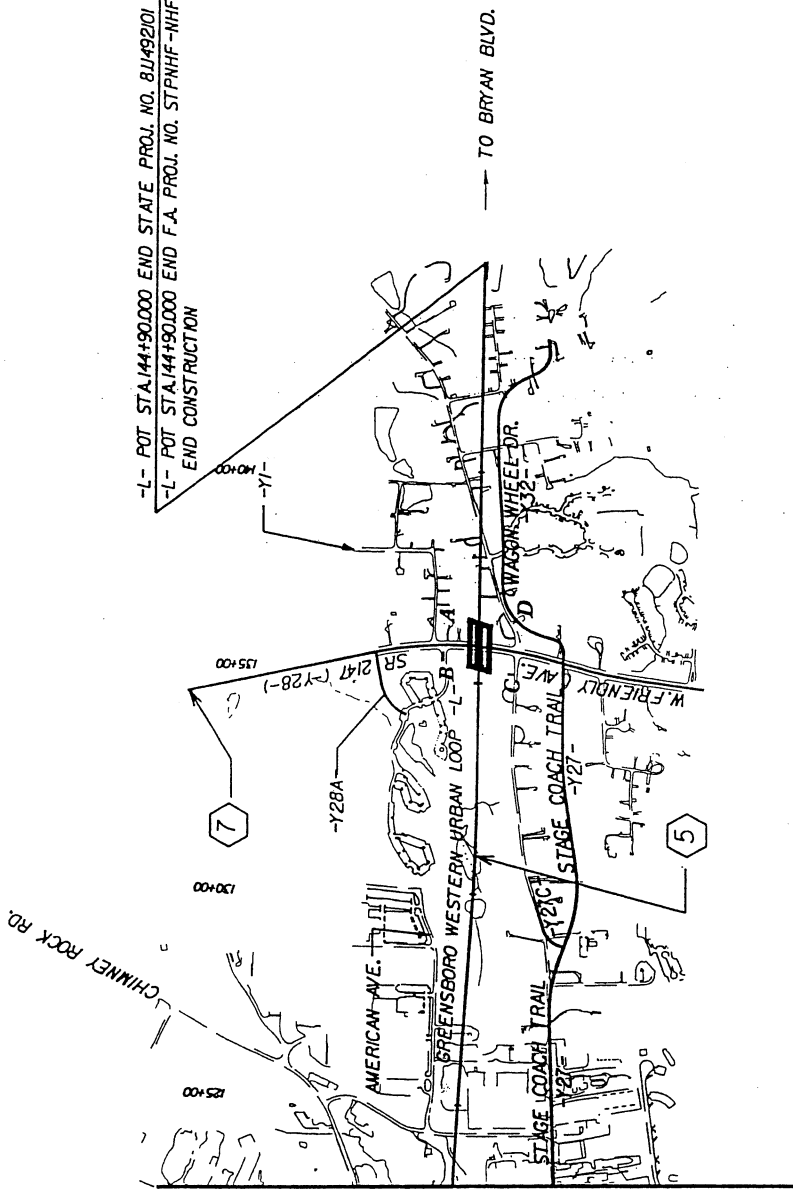
TO GREENSBORO

SITE MAP



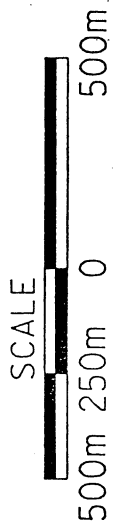
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 8.U492101 U-2524BA  
 GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.  
 SCALE AS SHOWN  
 SHEET 3 OF 28  
 FEBRUARY 13, 2002

-L- POT STA. 144+90.000 END STATE PROJ. NO. B1492101 (U-2524BA)  
-L- POT STA. 144+90.000 END F.A. PROJ. NO. STPNHF-NHF-124-1(1)  
END CONSTRUCTION



MATCHLINE STA. 123+03.98 -L-

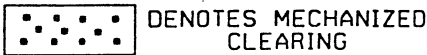
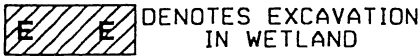
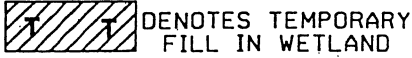
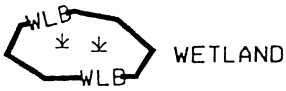
SITE MAP



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 4 OF 28 FEBRUARY 13, 2002

# 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

—○— BOULDER

— COIR FIBER ROLLS

○ 5 ○ 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

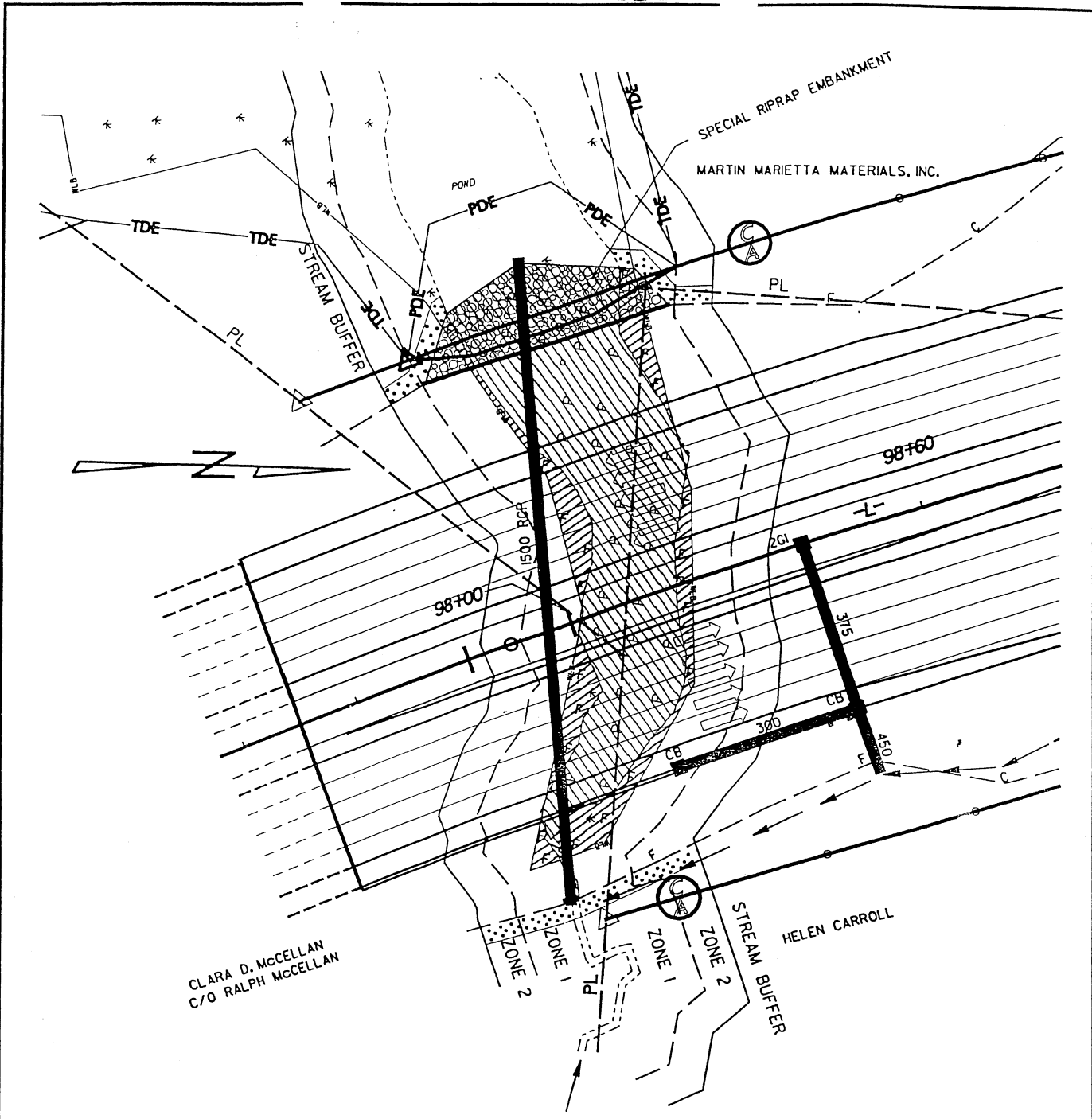
U-2524BA

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

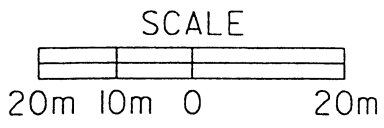
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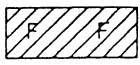
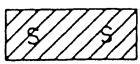
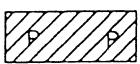
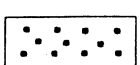
SHEET 5 OF 28

FEBRUARY 13, 2002



# ULTIMATE SITE #1



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

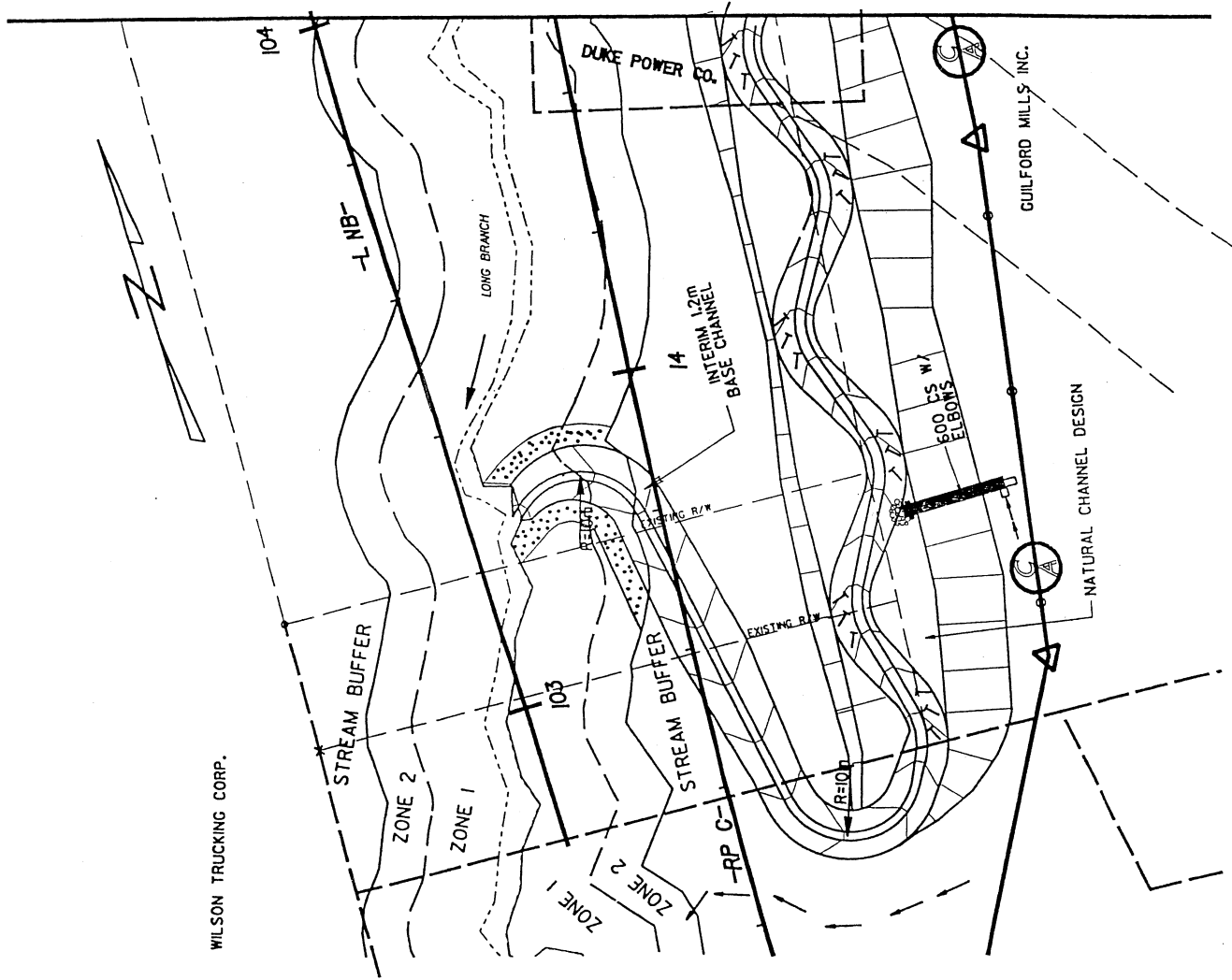
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

8.U492101 U-2524BA

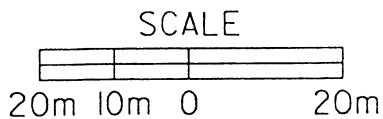
GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

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

8.U492101

U-2524BA

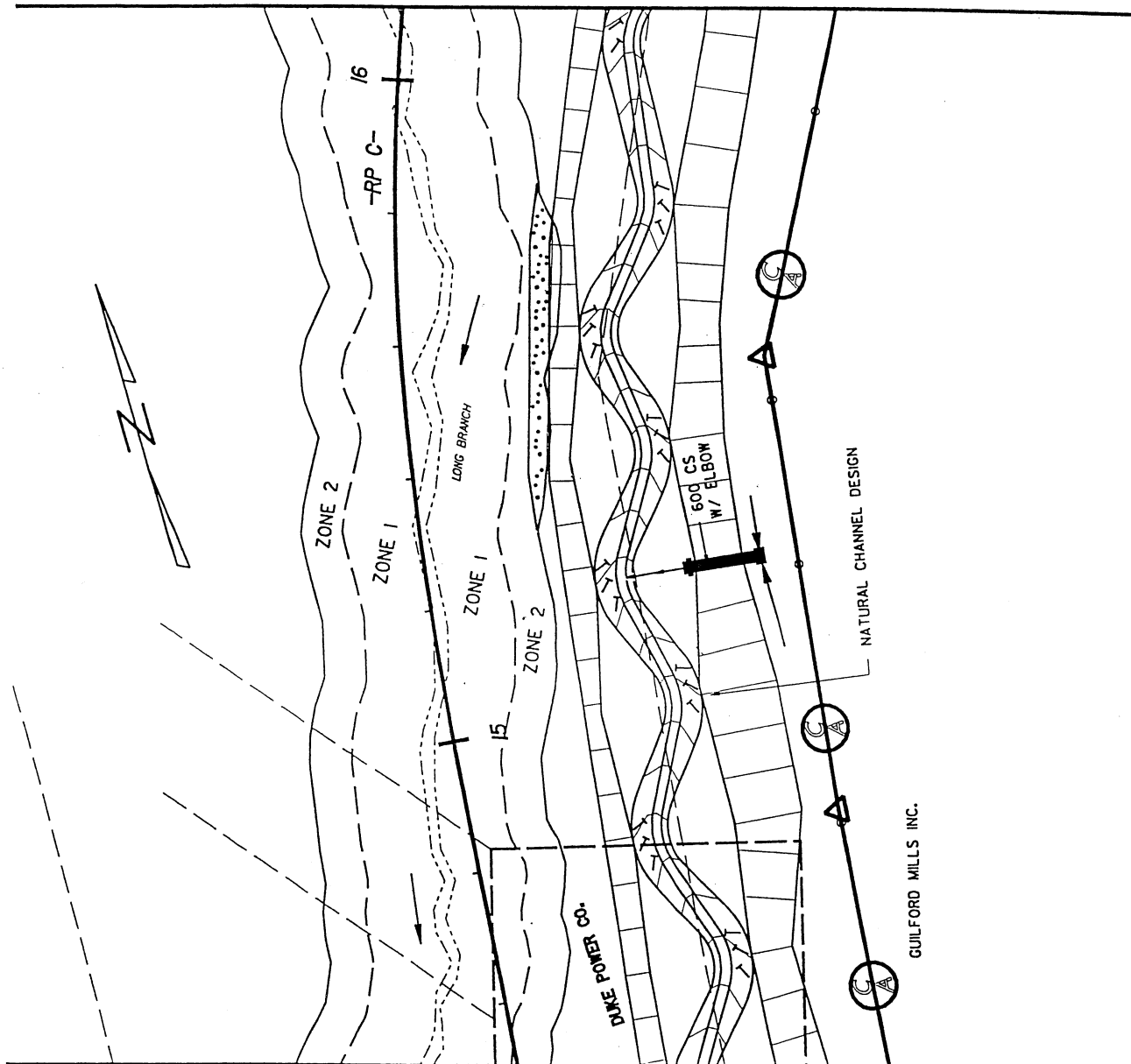
GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 7 OF 28

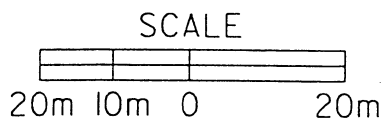
FEBRUARY 13, 2002

# MATCHLINE 2



# MATCHLINE 1

## INTERIM SITE #2



 DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492 10 I

U-2524BA

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

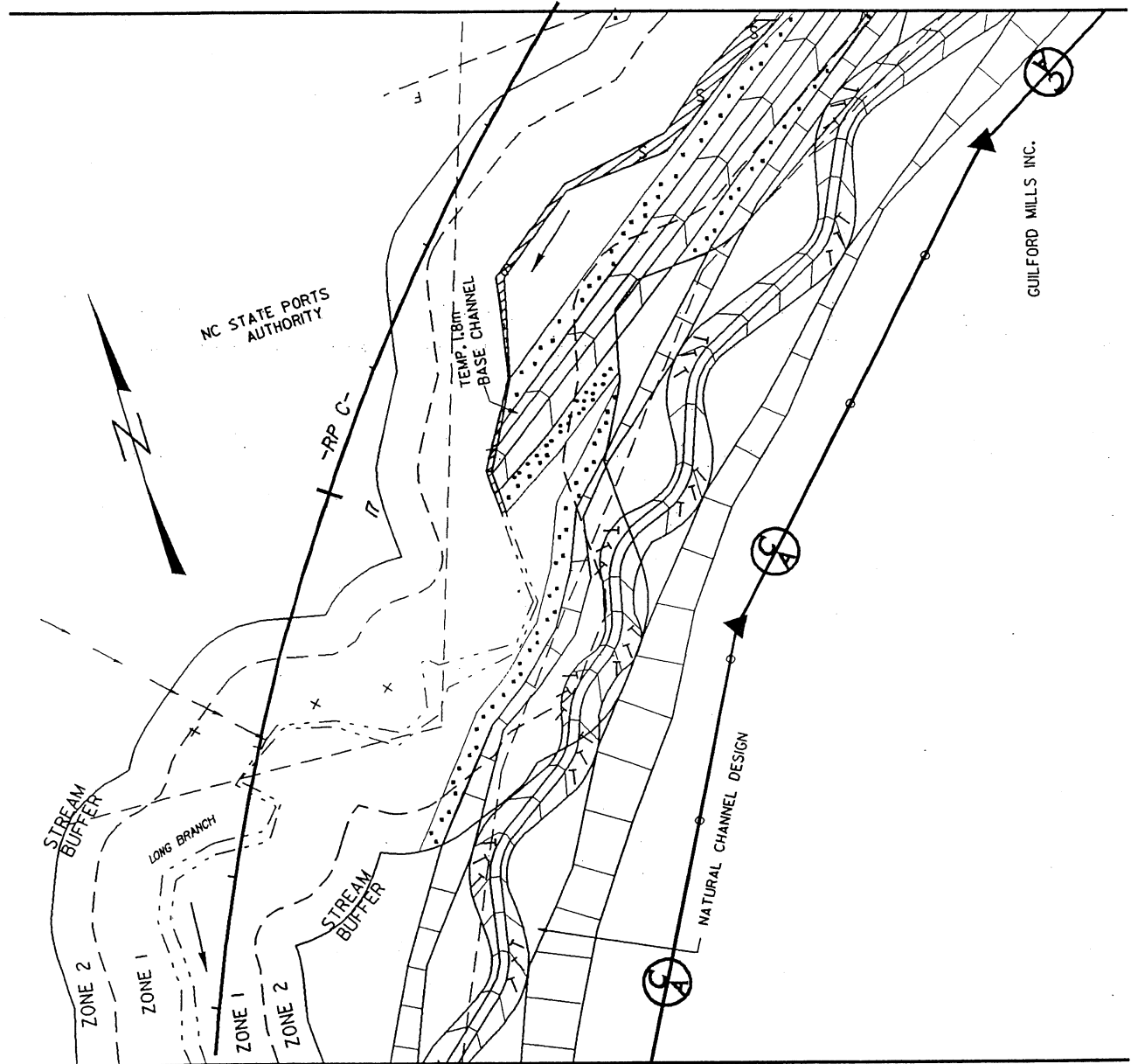
SCALE AS SHOWN

SHEET 8 OF 28

FEBRUARY 13, 2002

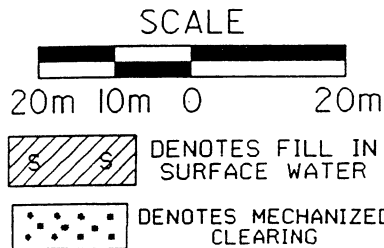


# MATCHLINE 3



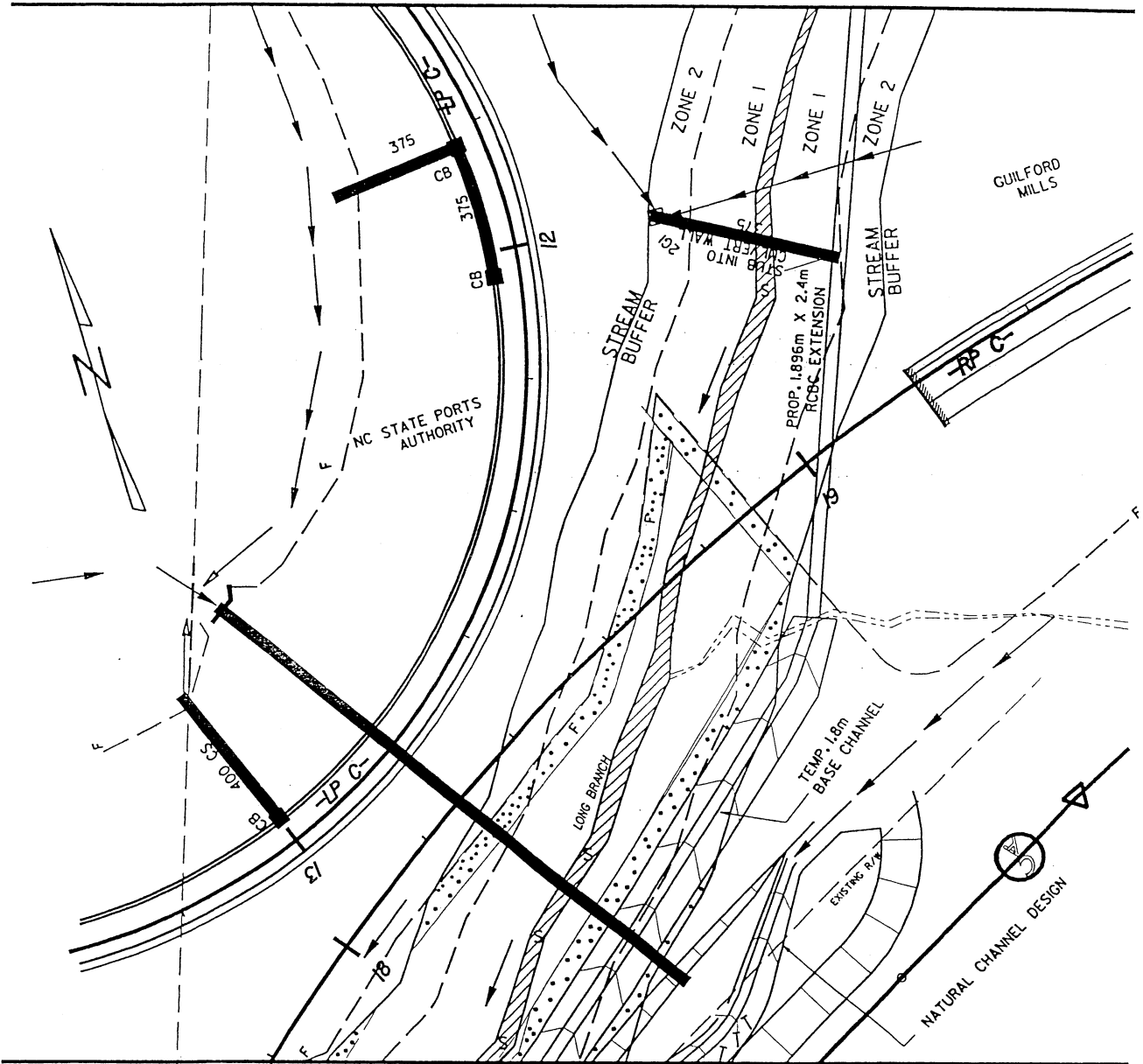
# MATCHLINE 2

## INTERIM SITE #2



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

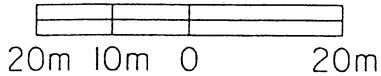
SAME AS ULTIMATE DESIGN ABOVE THIS LINE


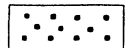


MATCHLINE 3

# 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

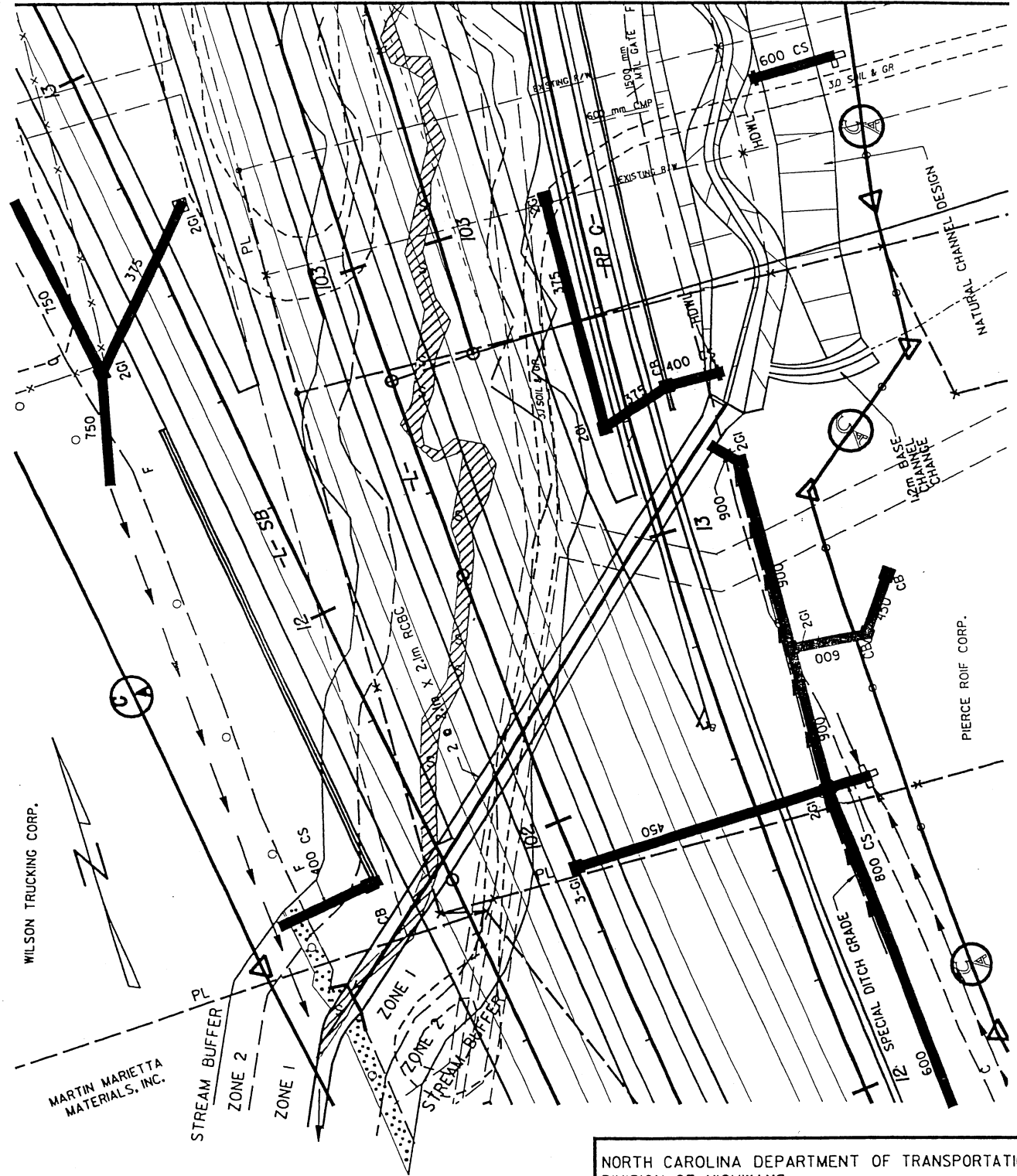
GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

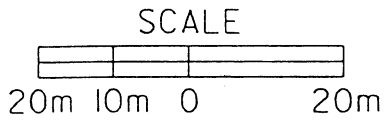
SHEET 10 OF 28

FEBRUARY 13, 2002

MATCHLINE I



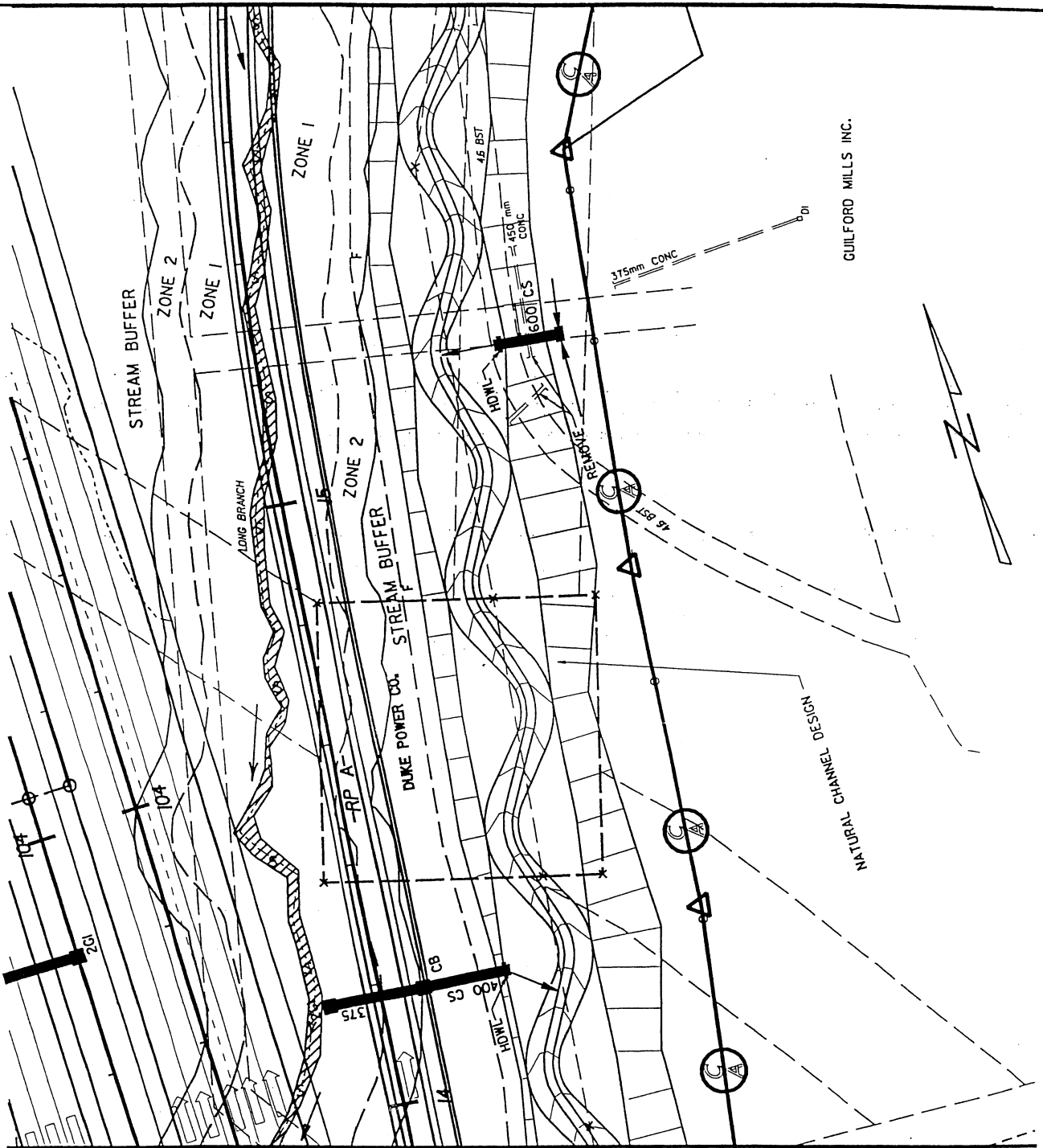
ULTIMATE SITE #2



- DENOTES FILL IN SURFACE WATER
- DENOTES MECHANIZED CLEARING

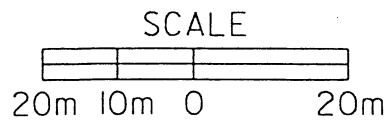
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 8.U492 10 I U-2524BA  
 GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.  
 SCALE AS SHOWN  
 SHEET II OF 28 FEBRUARY 13, 2002

MATCHLINE 2



MATCHLINE 1

ULTIMATE SITE #2



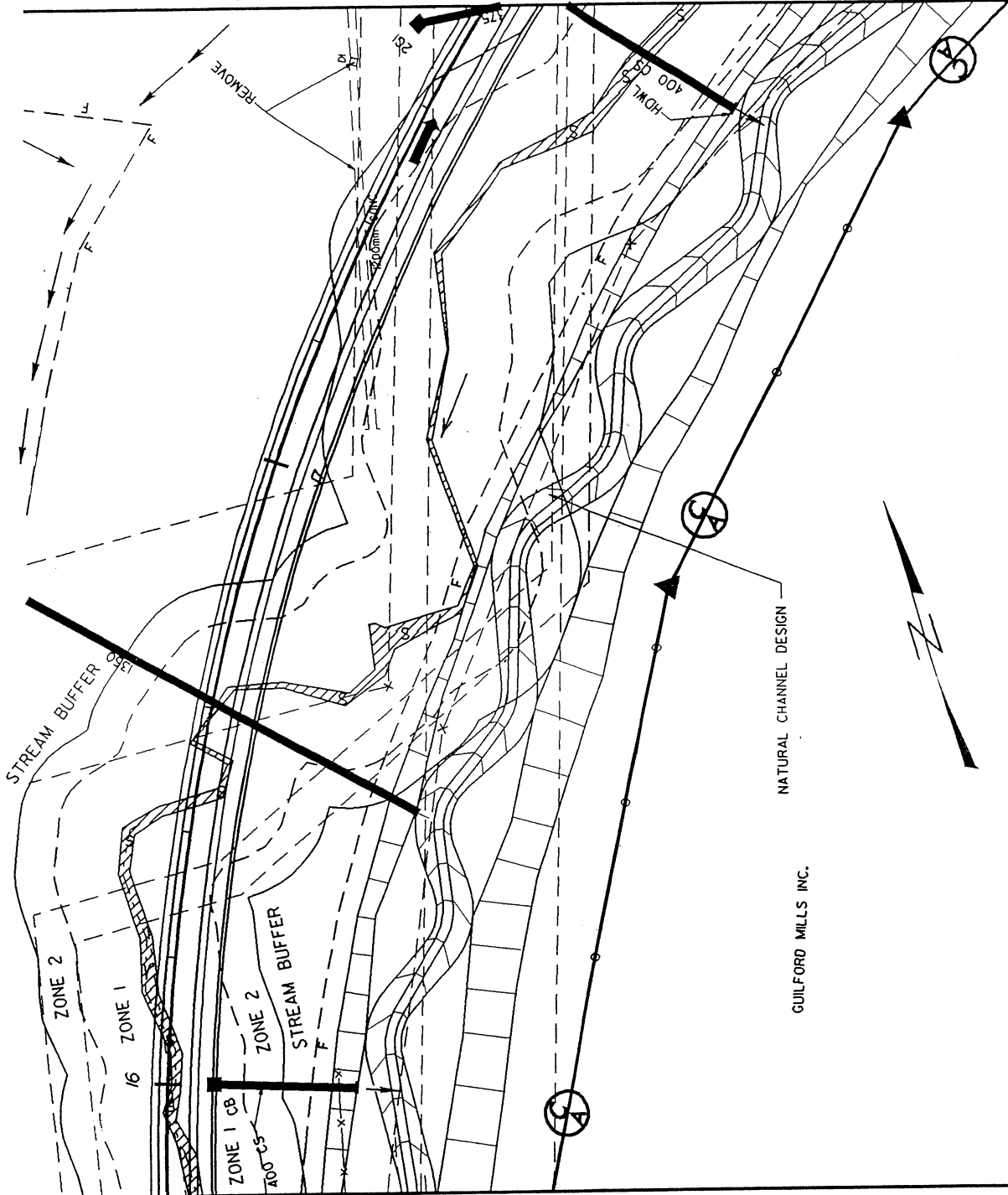
DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

8.U492 101 U-2524BA

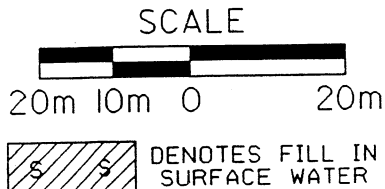
GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

MATCHLINE 3



MATCHLINE 2

ULTIMATE SITE #2



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

8.U492101

U-2524BA

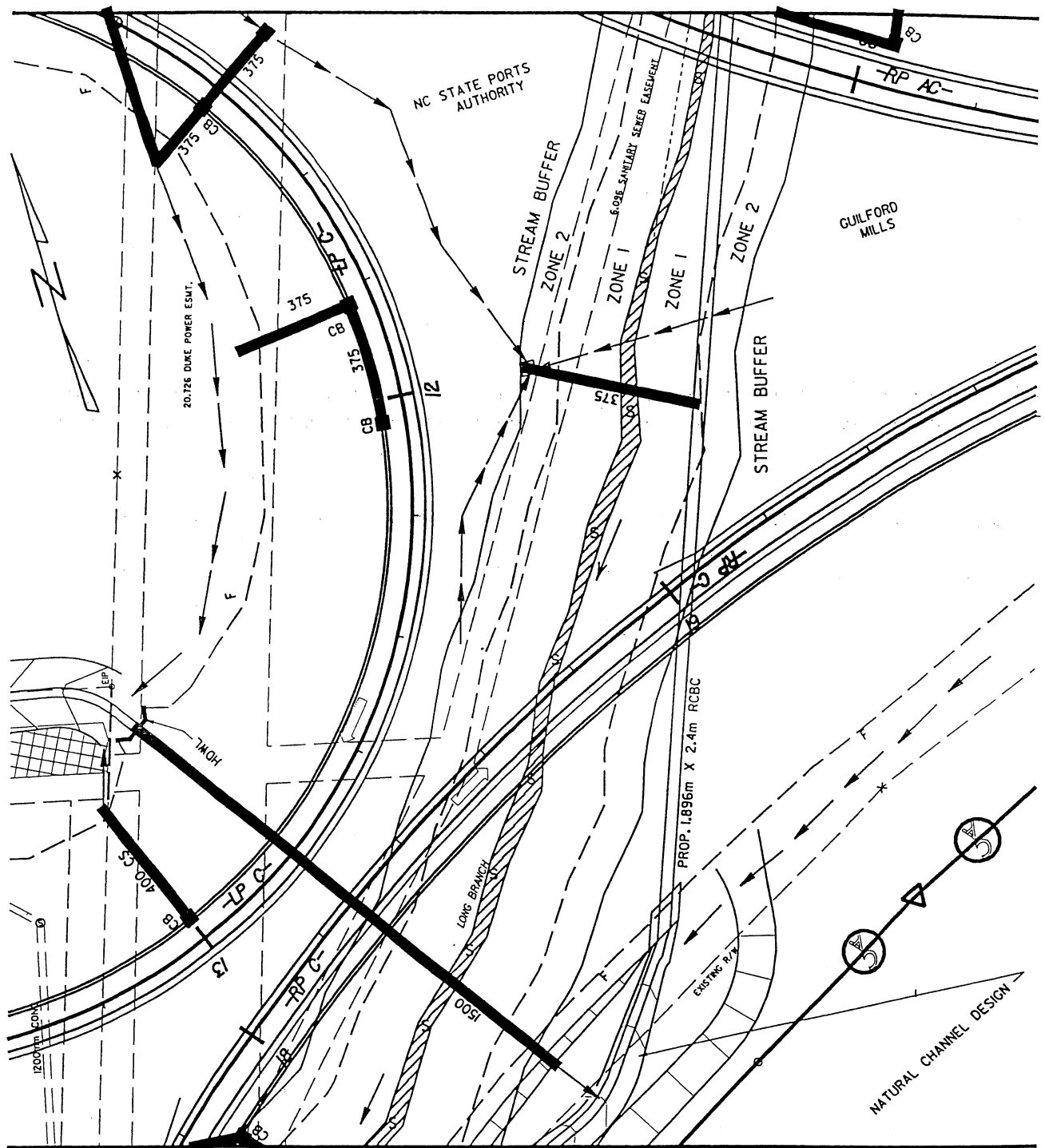
GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 13 OF 28

FEBRUARY 13, 2002

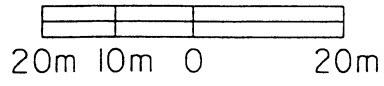
# MATCHLINE 4



# MATCHLINE 3

## ULTIMATE SITE #2

SCALE



 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

B.U492101

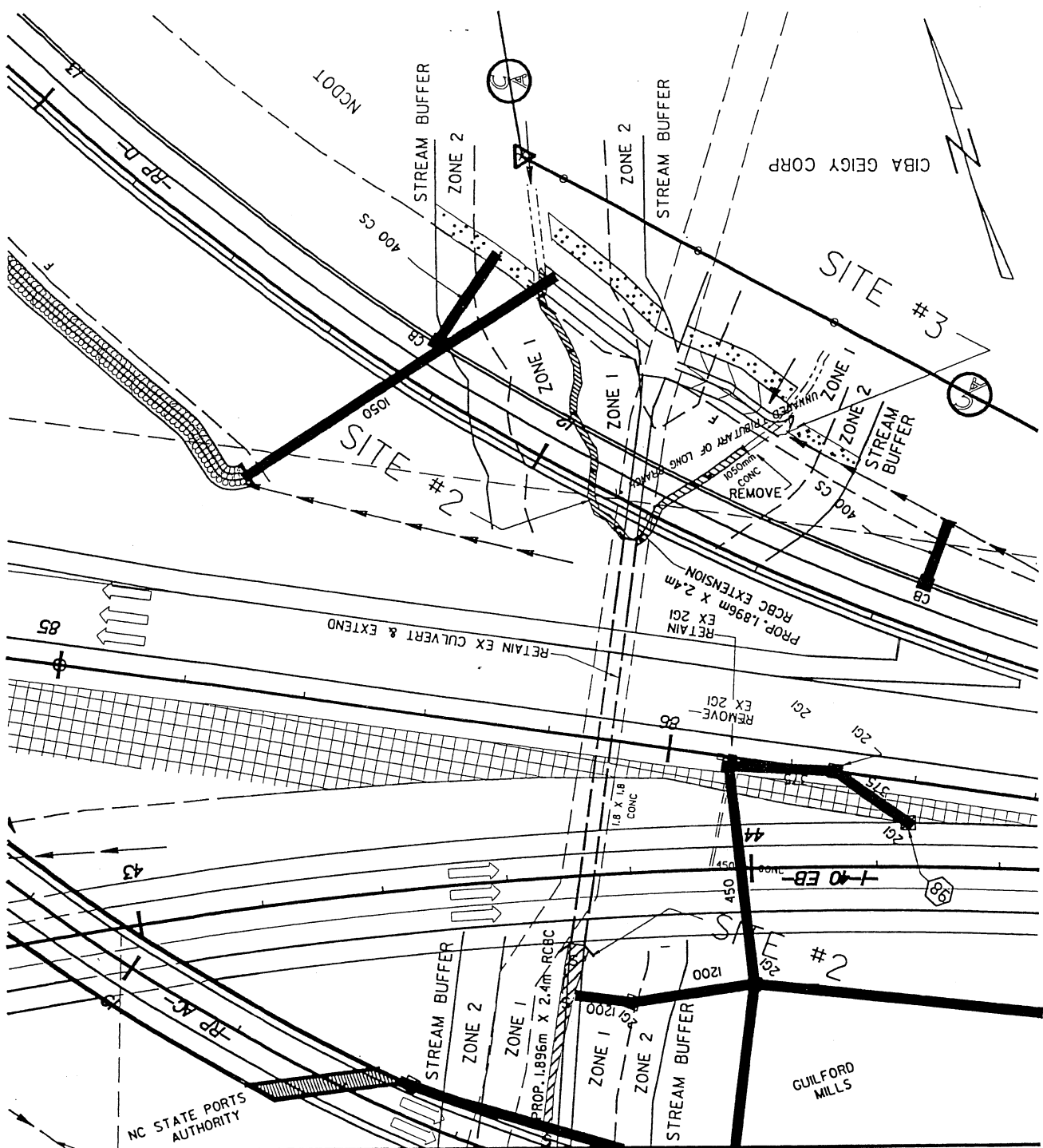
U-2524BA

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

SCALE AS SHOWN

SHEET 14 OF 28

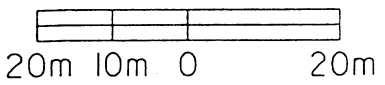
FEBRUARY 13, 2002

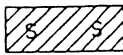
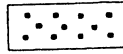


### MATCHLINE 4

# SITES #2 & #3

SCALE



-  DENOTES FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

8.U492 10 1 U-2524BA

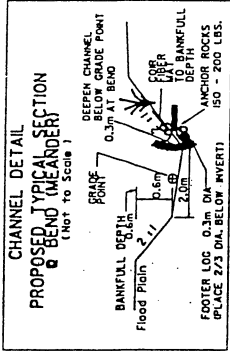
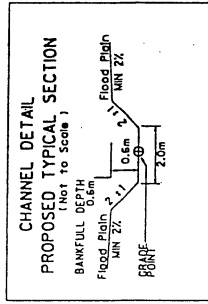
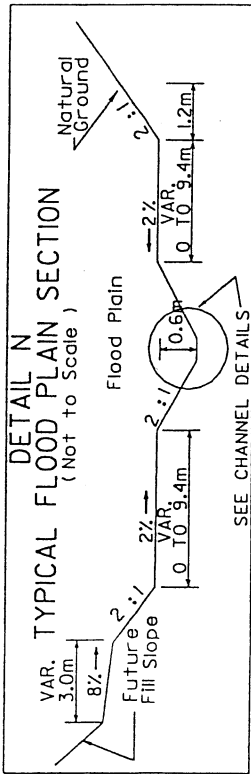
GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 15 OF 28

FEBRUARY 13, 2002

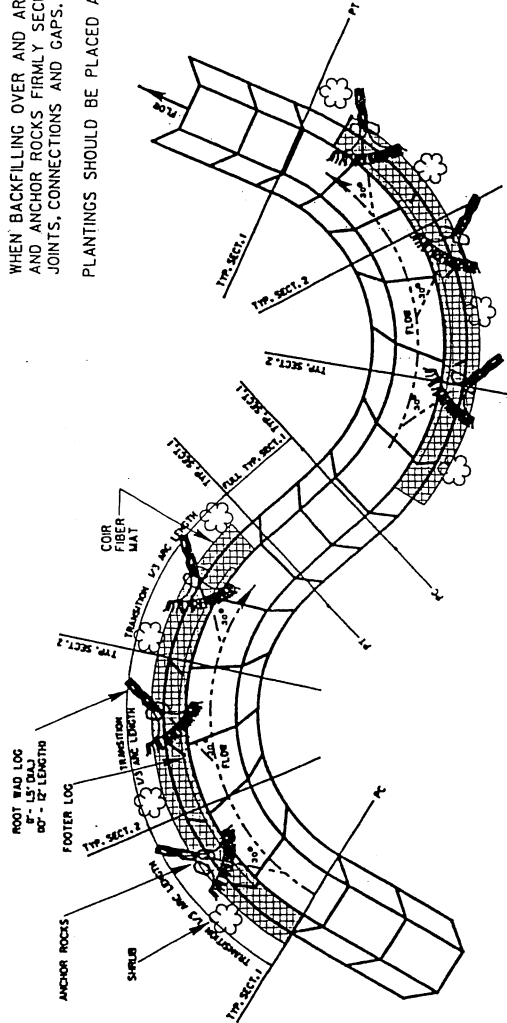
# NATURAL CHANNEL DESIGN TYPICALS



**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  
 8.U492 101 U-2524BA  
 GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.  
 SCALE AS SHOWN  
 SHEET 16 OF 28 FEBRUARY 13, 2002

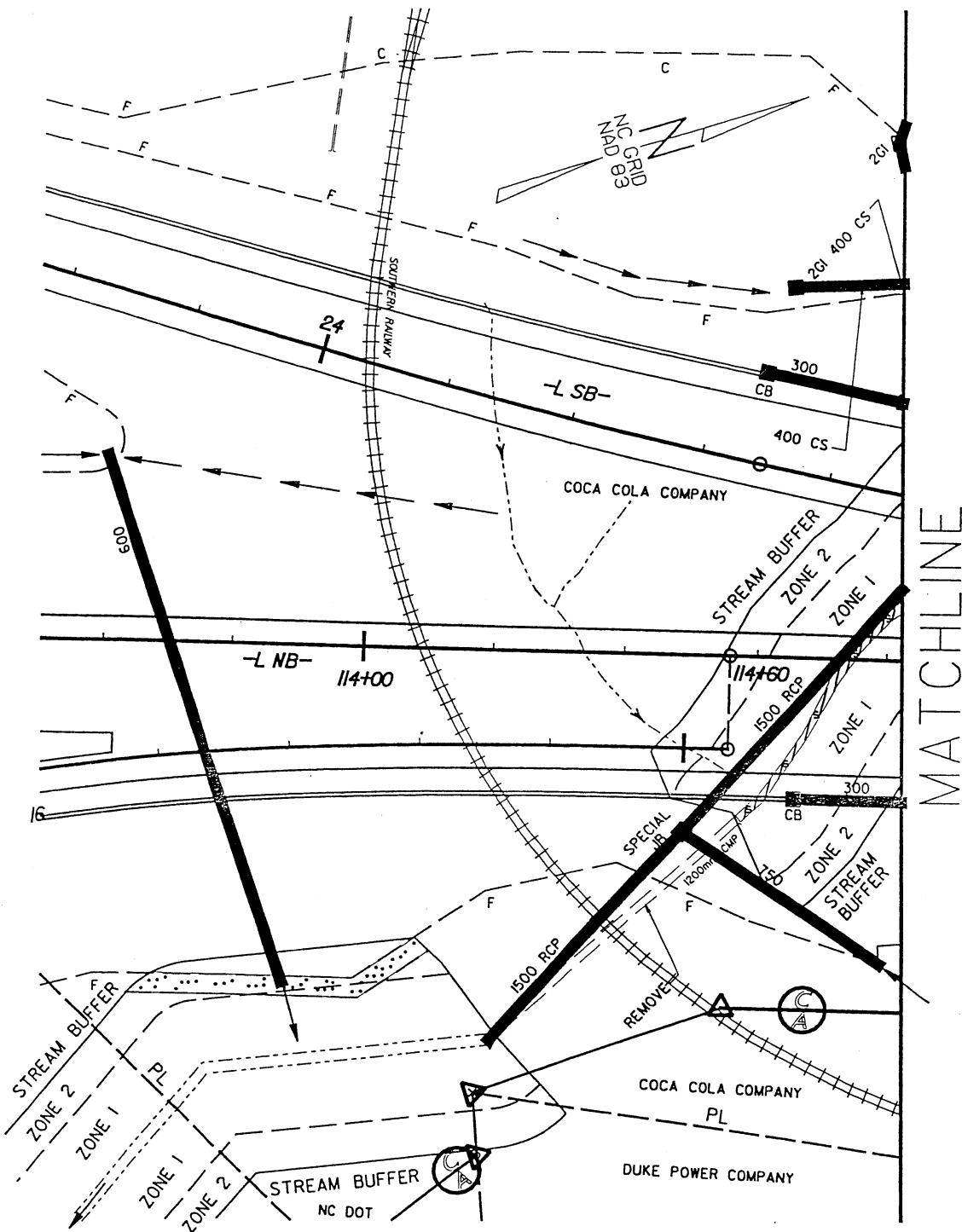


Variables	Existing Channel	Proposed Reach	USGS Station	Reference Reach
1. stream type	E3	E3	N/A	N/A
2. drainage area	166 ha	166 ha		
3. bankfull width	2.76M	4.40M		
4. bankfull mean depth	0.66M	0.44M		
5. width/depth ratio	4.18	10.0		
6. bankfull cross-sectional area	1.81M <sup>2</sup>	1.92 M <sup>2</sup>		
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

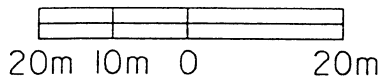
SITE # 2

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.

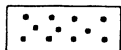


# SITE #4

SCALE



DENOTES FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

U-2524BA

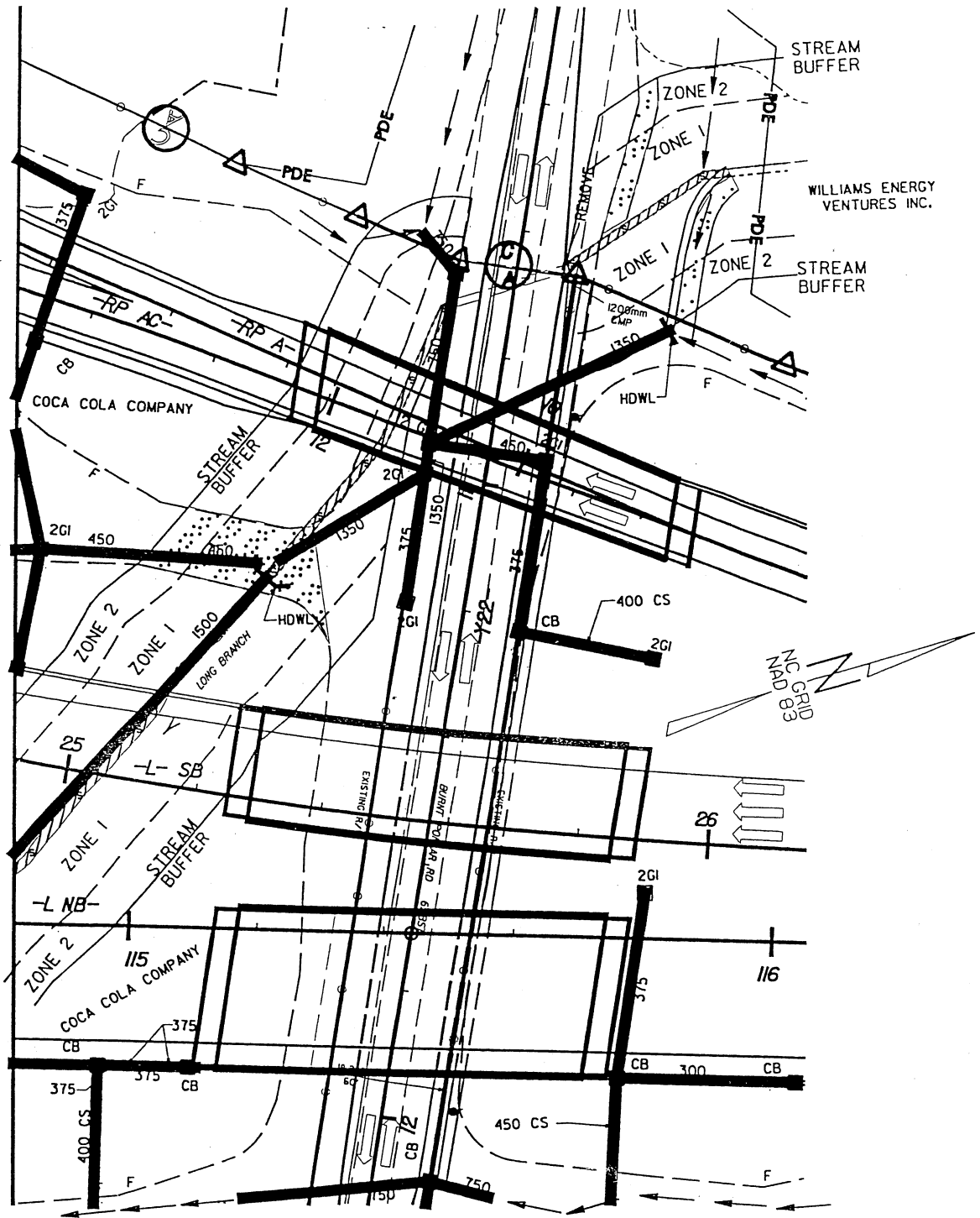
GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 18 OF 28

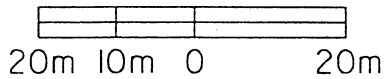
FEBRUARY 13, 2002

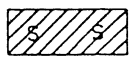
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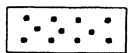


SITE #4

SCALE



 DENOTES FILL IN SURFACE WATER

 DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

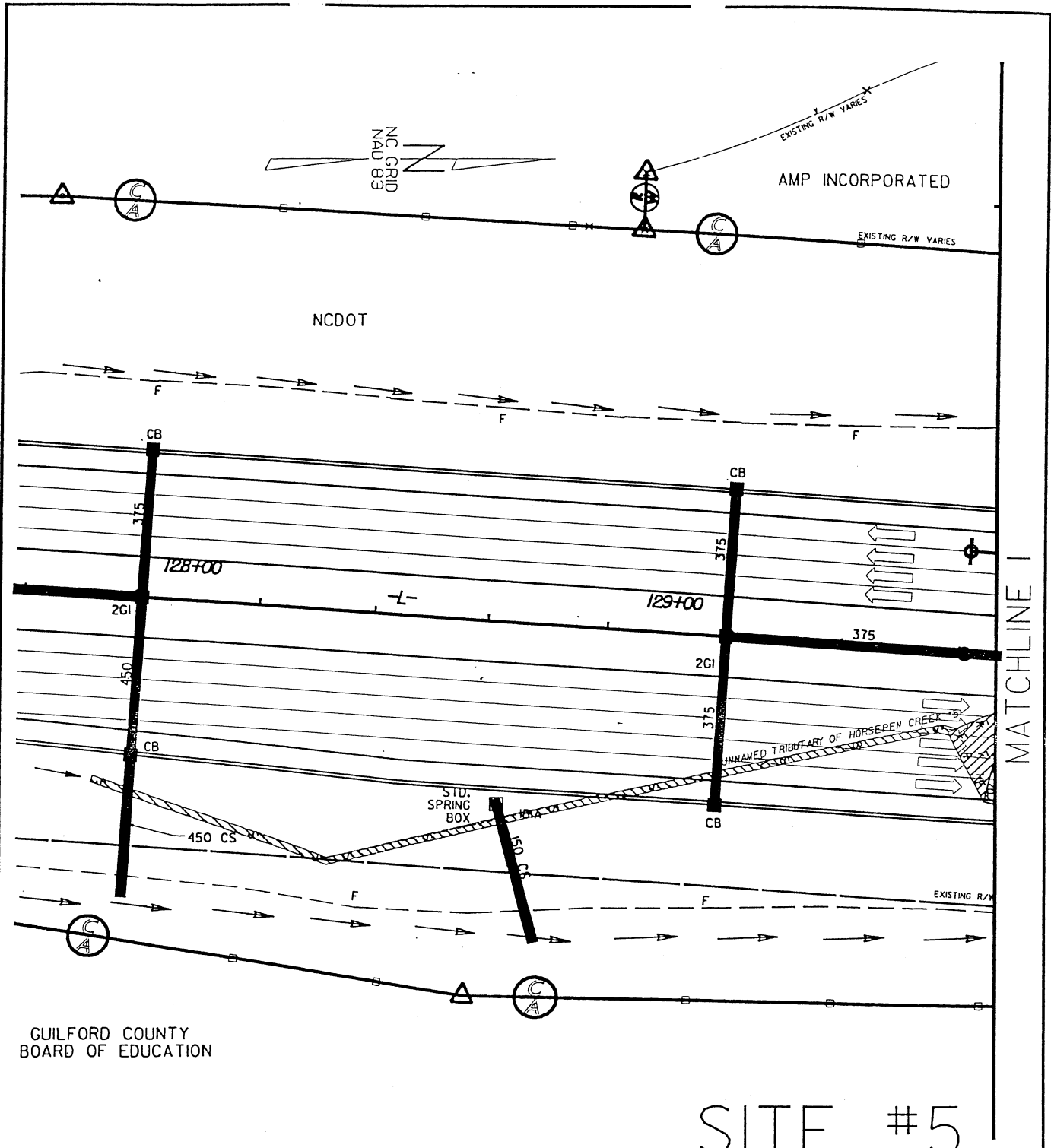
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GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 19 OF 28

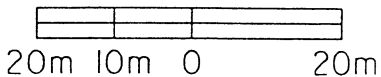
FEBRUARY 13, 2002

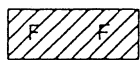
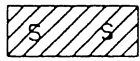



GUILFORD COUNTY BOARD OF EDUCATION

# SITE #5

### SCALE



-  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 20 OF 28

FEBRUARY 13, 2002

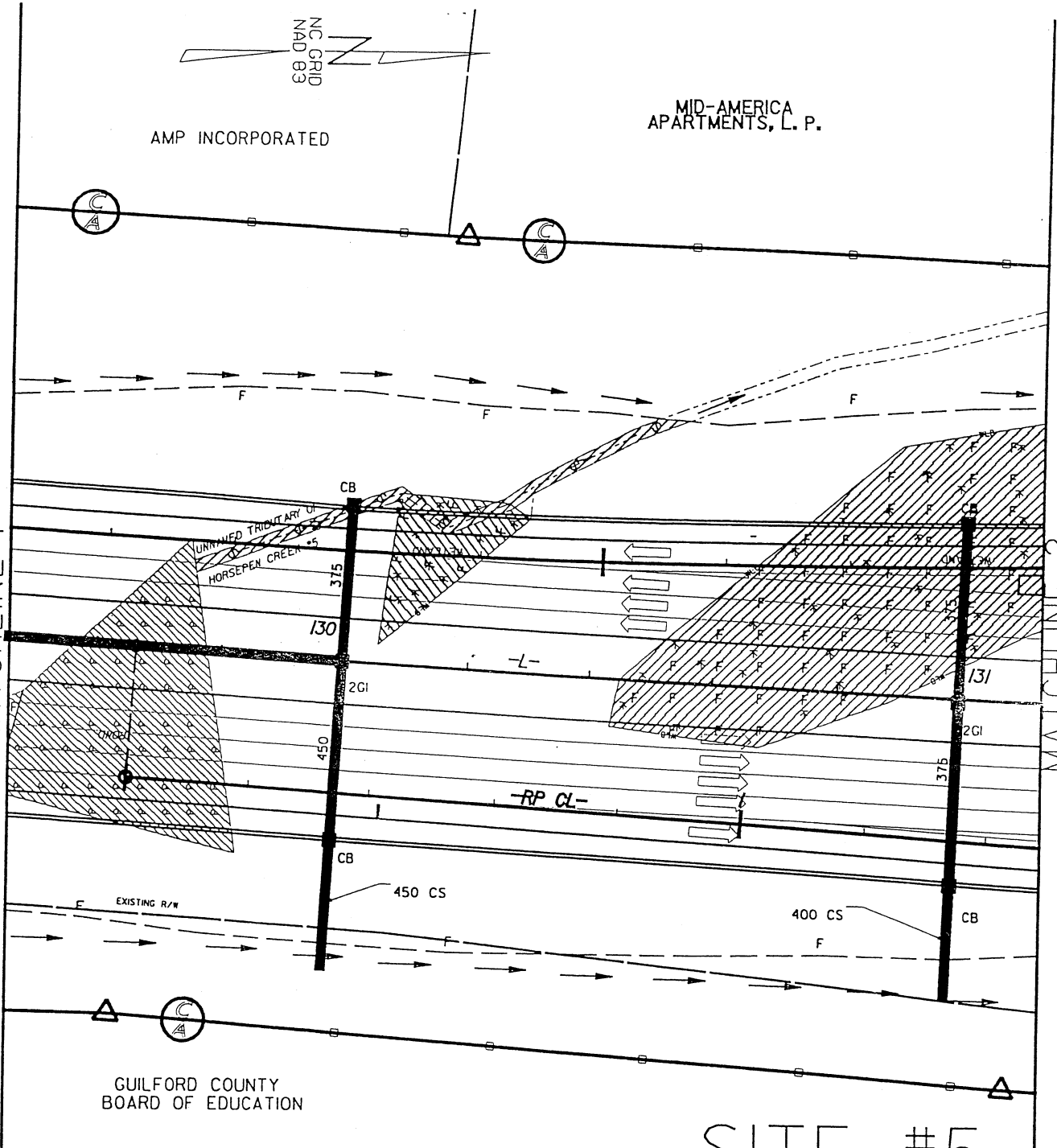
NC GRID  
NAD 83

AMP INCORPORATED

MID-AMERICA  
APARTMENTS, L. P.

MATCHLINE 1

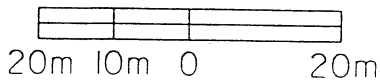
MATCHLINE 2



GUILFORD COUNTY  
BOARD OF EDUCATION

# SITE #5

SCALE



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-2524BA

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

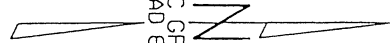
SCALE AS SHOWN

SHEET 21 OF 28

FEBRUARY 13, 2002

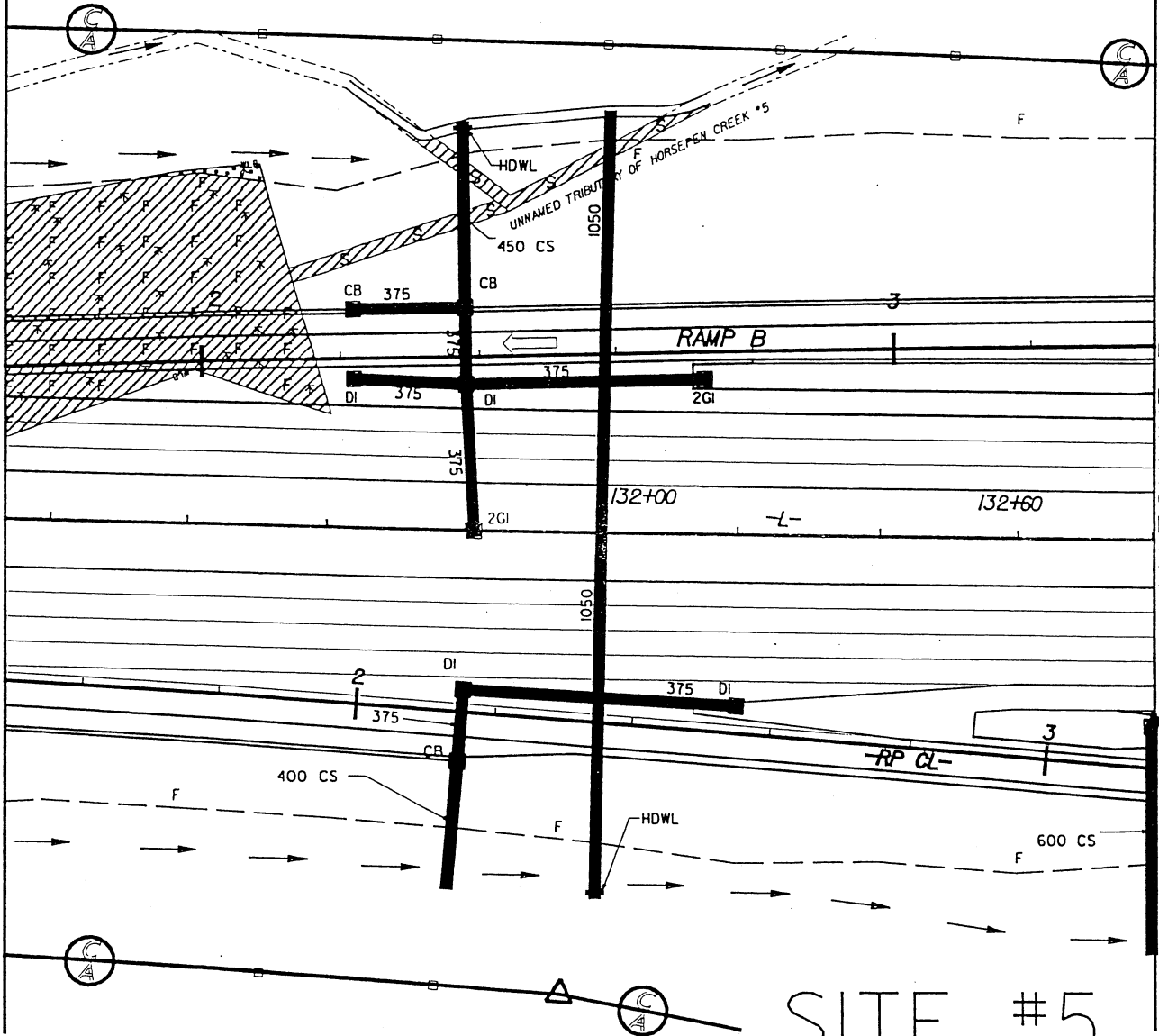
MID-AMERICA APARTMENTS, L. P.

NC GRID  
NAD 83



MATCHLINE 2

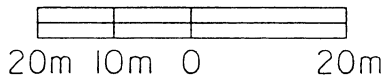
MATCHLINE 3



SITE #5

GUILFORD COUNTY BOARD OF EDUCATION

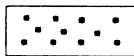
SCALE



DENOTES FILL IN WETLAND



DENOTES FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

B.U492 10 1

U-2524BA

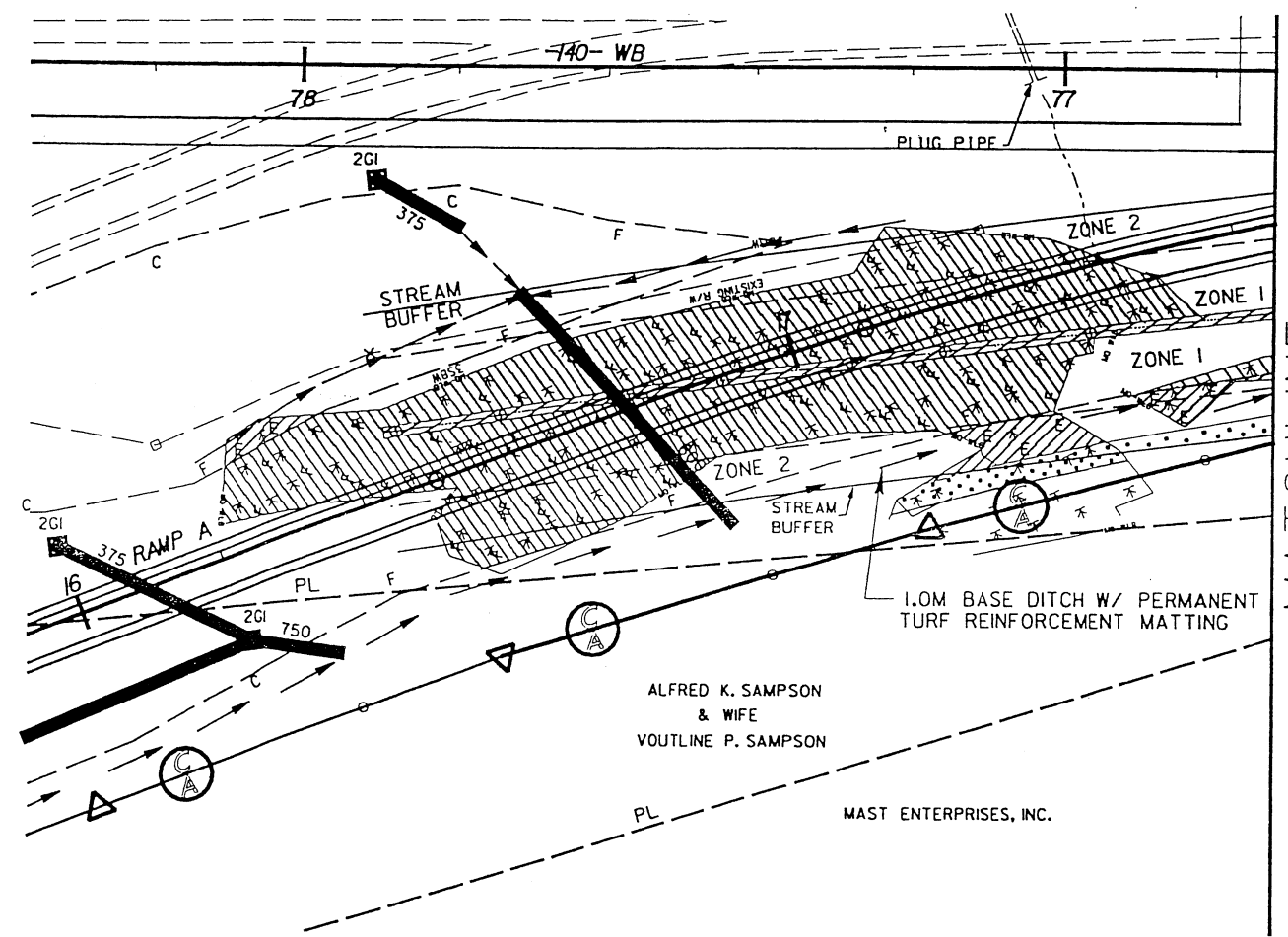
GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN

SHEET 22 OF 28

FEBRUARY 13, 2002

NC GRID  
NAD 83

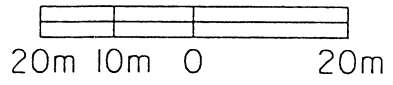


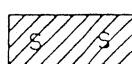

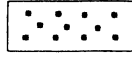
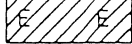
MATCHLINE

ALFRED K. SAMPSON  
& WIFE  
VOUTLINE P. SAMPSON

MAST ENTERPRISES, INC.

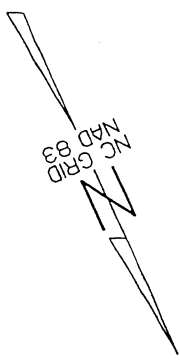
SCALE



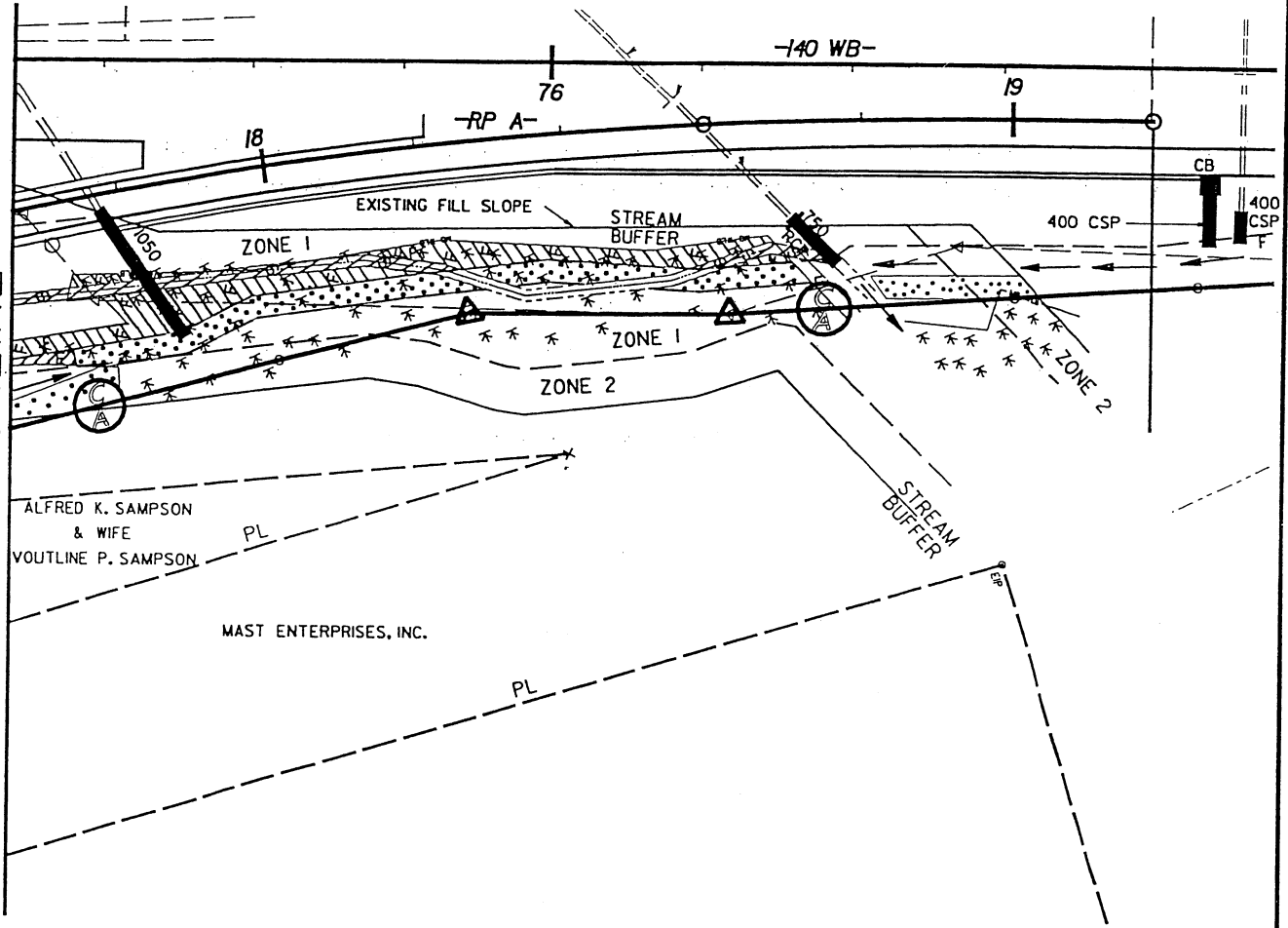
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND

SITE #6

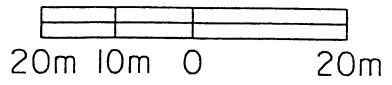
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GUILFORD COUNTY  
8.U492101 U-2524BA  
GREENSBORO WESTERN URBAN LOOP  
FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

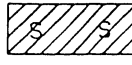

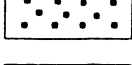
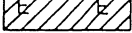


MATCHLINE



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

B.U492101 U-2524BA

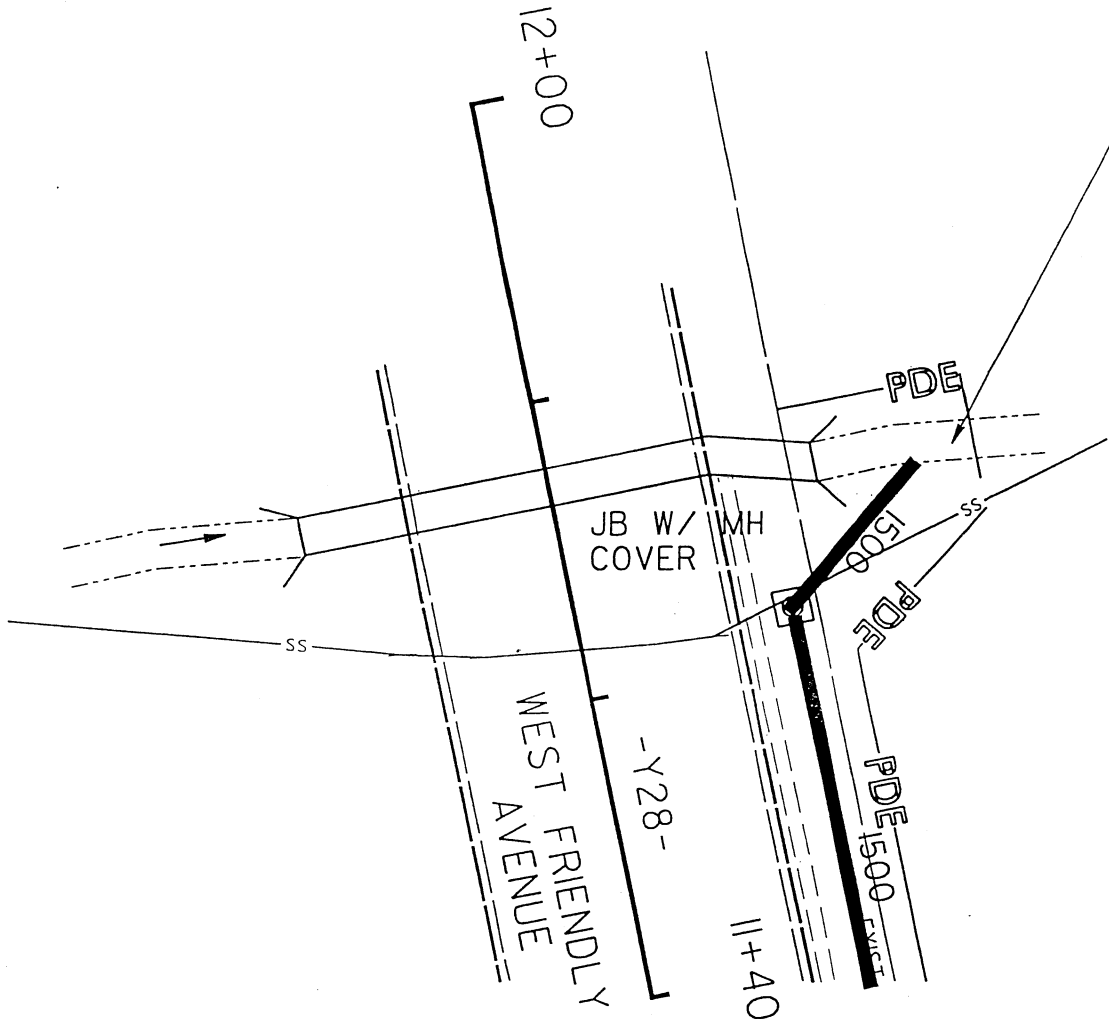
GREENSBORO WESTERN URBAN LOOP  
 FROM I-40 TO NORTH OF WEST FRIENDLY AVE.

SCALE AS SHOWN  
 SHEET 24 OF 28 FEBRUARY 13, 2002

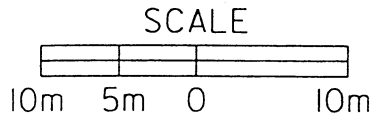




NOTE: Channel impact is bank disturbance due to pipe placement



# SITE #7



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

8.U492101

U-2524BA

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

SCALE AS SHOWN

SHEET 25 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.



**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)
1	ULT.	1500 RCP	0.05	0	0	<0.01	0.17		13	0	0.19	0.12	0.02
1	INTERIM	N/A	0	0	0	0	0		0	0	0	0	0
2	ULT.	2Ø2.1 x 2.1 RCBC	0	0	0	0.18	0		925	540	1.65	1.08	0.03
2	INTERIM	N/A	0	0	0	0.07	0		385	0	0.41	0.41	0.15
3		1.886 x 2.4 RCBC	0	0	0	<0.01	0		23	0	0.04	0.02	0.01
4		1500 RCP	0	0	0	0.02	0		120	0	0.32	0.20	0.13
5		1050 RCP	0.38	0	0	<0.01	0.11		309	0	N/A	N/A	N/A
6		600 RCP	0.26	0	0.02	0.04	0		202	0	0.30	0.15	0.04
		1050 RCP											
		750 RCP											
7		1500 RCP	0	0	0	0	0		6	0	N/A	N/A	N/A
<b>TOTALS:</b>			<b>0.69</b>	<b>0.00</b>	<b>0.02</b>	<b>0.04</b>	<b>0.28</b>	<b>0.28</b>	<b>1598</b>	<b>540</b>	<b>2.50</b>	<b>1.57</b>	<b>0.23</b>
			<b>0.64</b>	<b>0.00</b>	<b>0.02</b>	<b>0.04</b>	<b>0.17</b>	<b>0.11</b>	<b>1045</b>	<b>0</b>	<b>1.07</b>	<b>0.78</b>	<b>0.33</b>

\* 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:  
 CHANNEL IMPACTS  
 30 M  
 75 M  
 105 M  
 TOTAL INTERMITTENT IMPACTS

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	PEMIC	71	0.94	N/A	0.01	0.95
6	PEM1A	42	0.64	0.05	0.10	0.79
<b>Totals</b>			<b>1.58</b>	<b>0.05</b>	<b>0.11</b>	<b>1.74</b>

\* -

"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
<b>Totals</b>			<b>0.09</b>	<b>N/A</b>	<b>0.04</b>	<b>0.13</b>

\* \*

"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
<b>Totals</b>	<b>1.78</b>	<b>0.09</b>	<b>1.87</b>

NOTE  
 " \* " INDICATES HU 03030002  
 " - " INDICATES HU 03030005

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
<b>Totals</b>			<b>0.74</b>	<b>0.44</b>	<b>3429</b>	<b>3429</b>	<b>6364</b>

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
<b>Totals</b>			<b>0.53</b>	<b>1.85</b>	<b>4478</b>	<b>4479</b>	<b>6666</b>

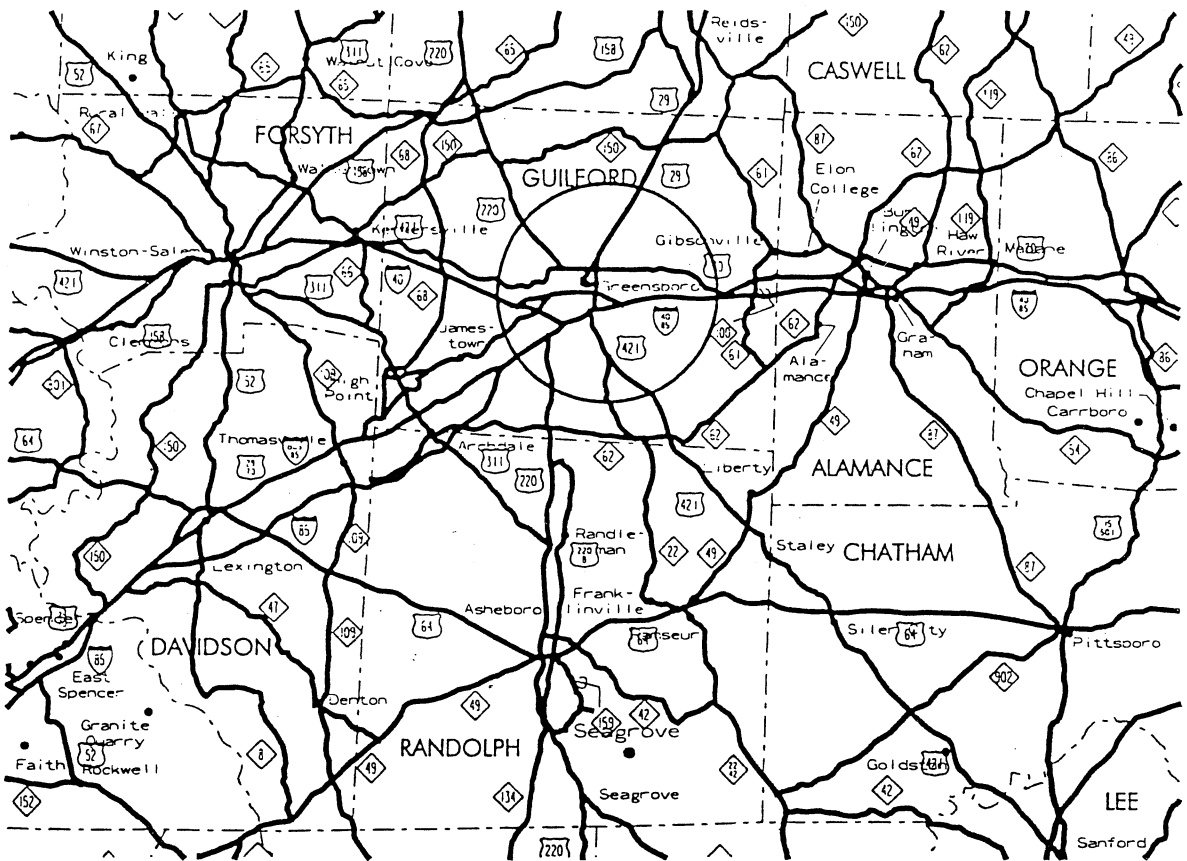
NOTE: IDENTIFIED STREAMS IN HU 03030002.  
IDENTIFIED STREAMS IN HU 03030003.

UPDATED  
MAY 2002  
PCT

\* \* \* \* \*

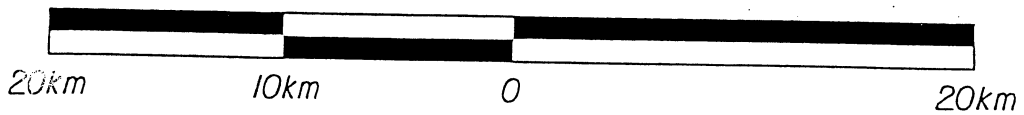






# VICINITY MAP

## SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

B.U492 10 I

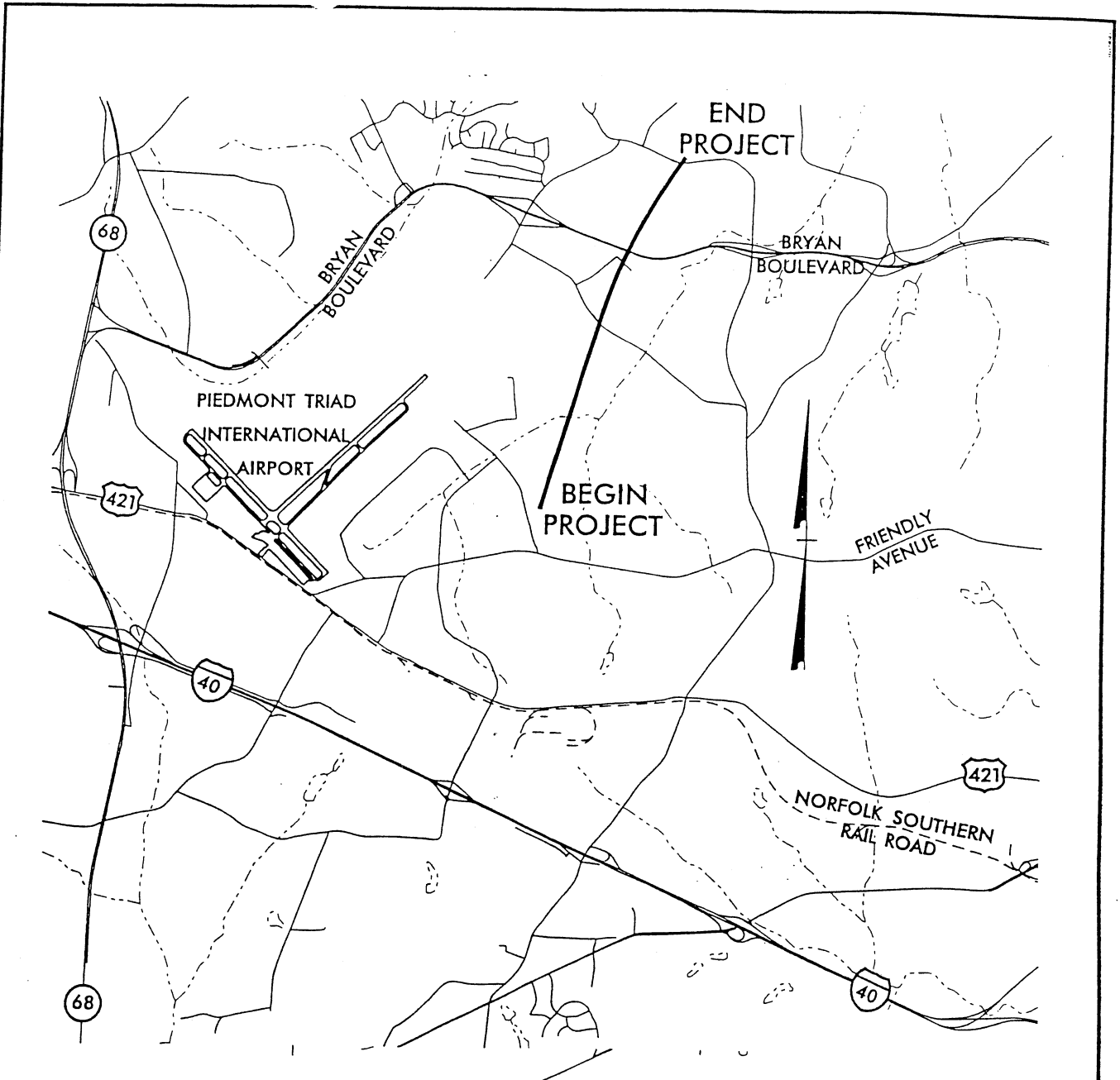
U-2524BB

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

SCALE AS SHOWN

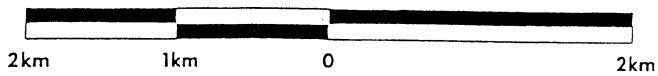
SHEET 1 OF 20

JANUARY 16, 2001



### VICINITY MAP

SCALE



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

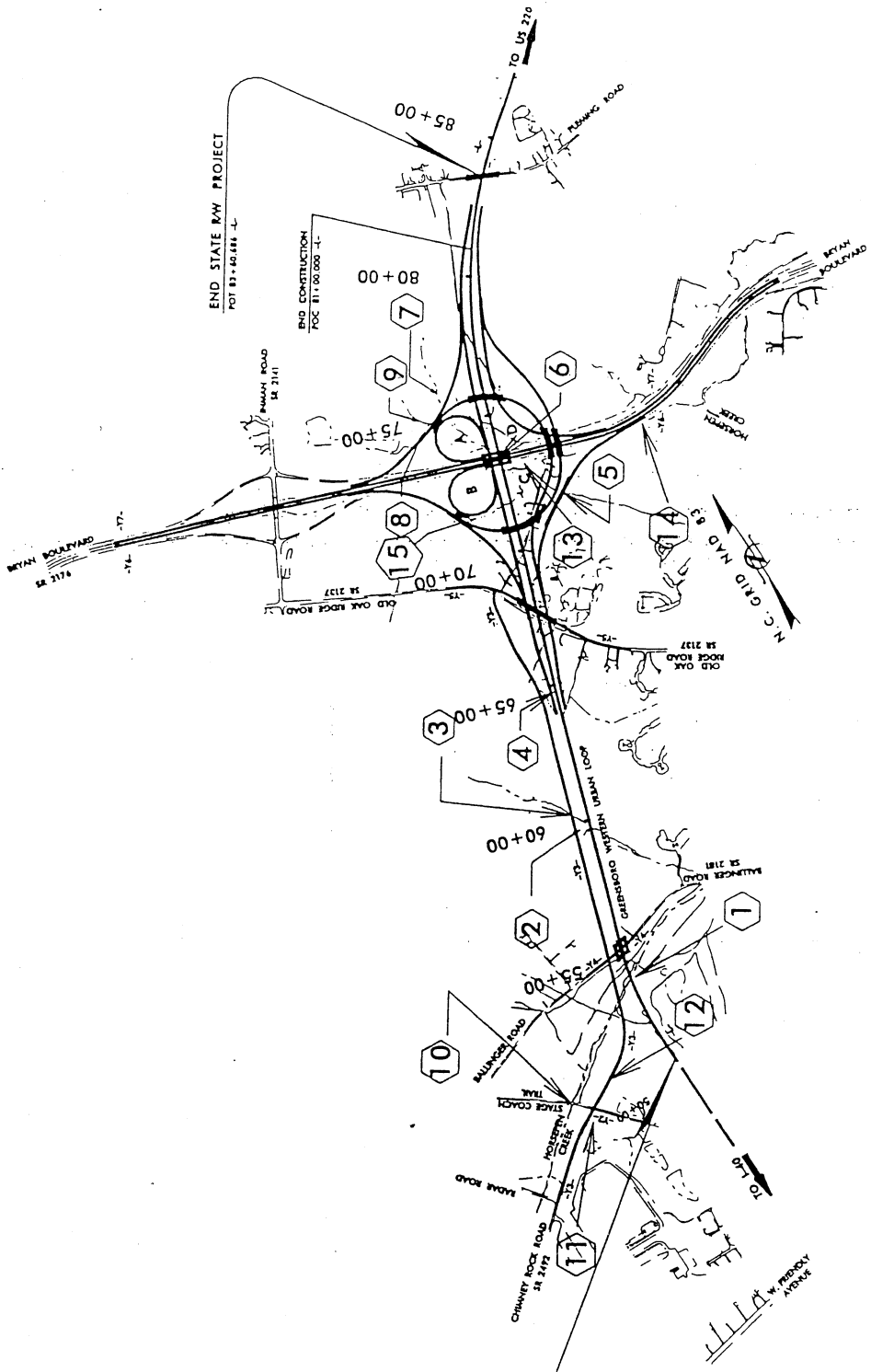
U-2524BB

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

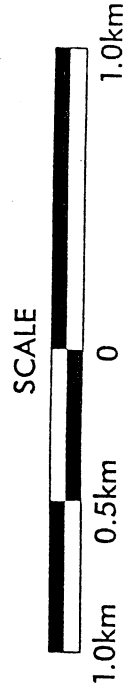
SCALE AS SHOWN

SHEET 2 OF 20

JANUARY 16, 2001



# SITE MAP



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 8.U492 10 I 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  
 BEGIN CONSTRUCTION  
 POST 14+40.000 -L- BACK  
 POST 20+87.718 -L- 0+100

END STATE RW PROJECT  
 POST 83+80.888 -L-

END CONSTRUCTION  
 POST 81+00.000 -L-

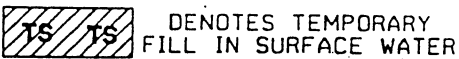
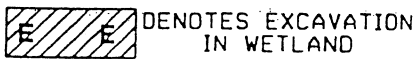
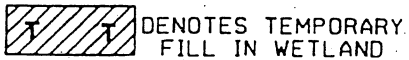
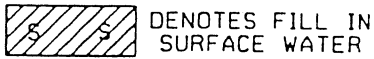
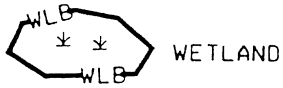


BLANK

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

~ ~ BOULDER

— COIR FIBER ROLLS

5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTING STRUCTURES)

Single tree symbol SINGLE TREE

Woods line symbol WOODS LINE

Drainage inlet symbol DRAINAGE INLET

Rootwad symbol ROOTWAD

Vane symbol VANE

Rip rap symbol RIP RAP

Rip rap energy dissipator basin symbol RIP RAP ENERGY DISSIPATOR BASIN

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GUILFORD COUNTY

8.U492 101

U-252488

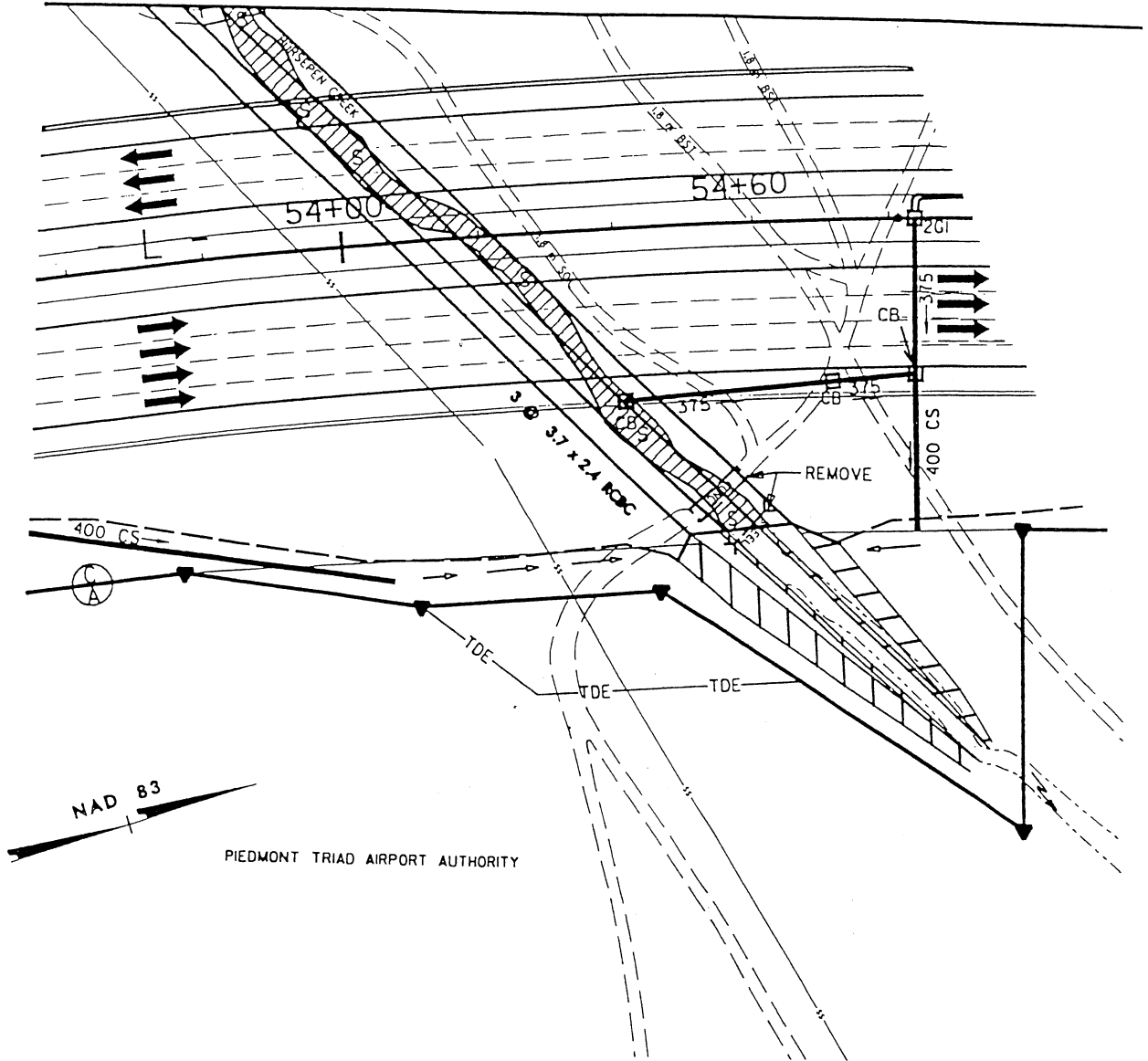
GREENSBORO WESTERN URBAN LOOP  
FROM NORTH OF WEST FRIENDLY AVENUE  
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 4 OF 20

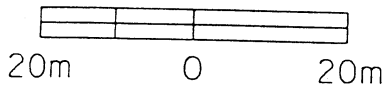
JANUARY 16, 2001

MATCHLINE



PIEDMONT TRIAD AIRPORT AUTHORITY

SCALE



SITE #1

 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

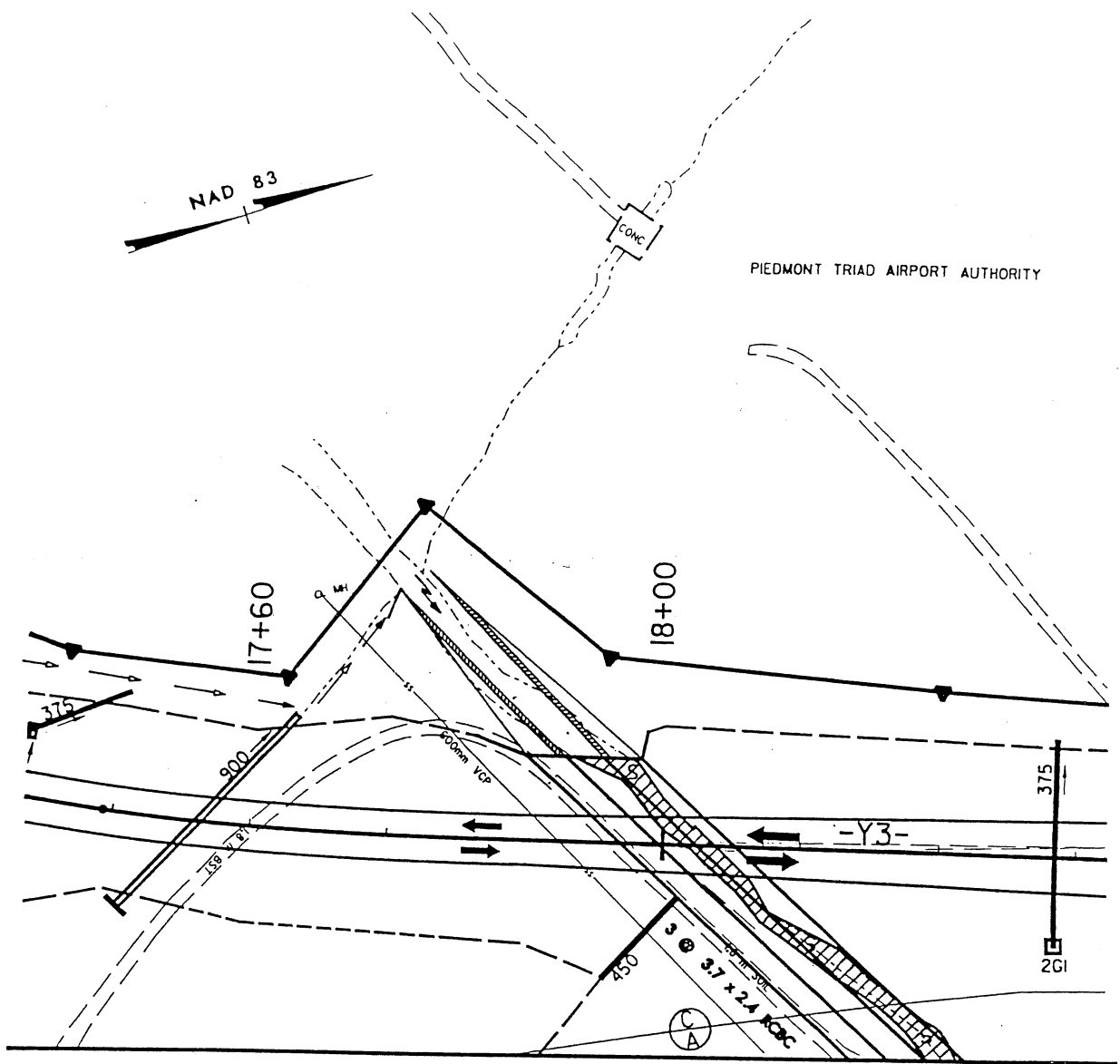
U-252488

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

SCALE AS SHOWN

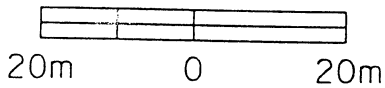
SHEET 5 OF 20

JANUARY 16, 2001

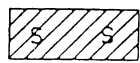


MATCHLINE

SCALE



SITE #1


 DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

8.U492101

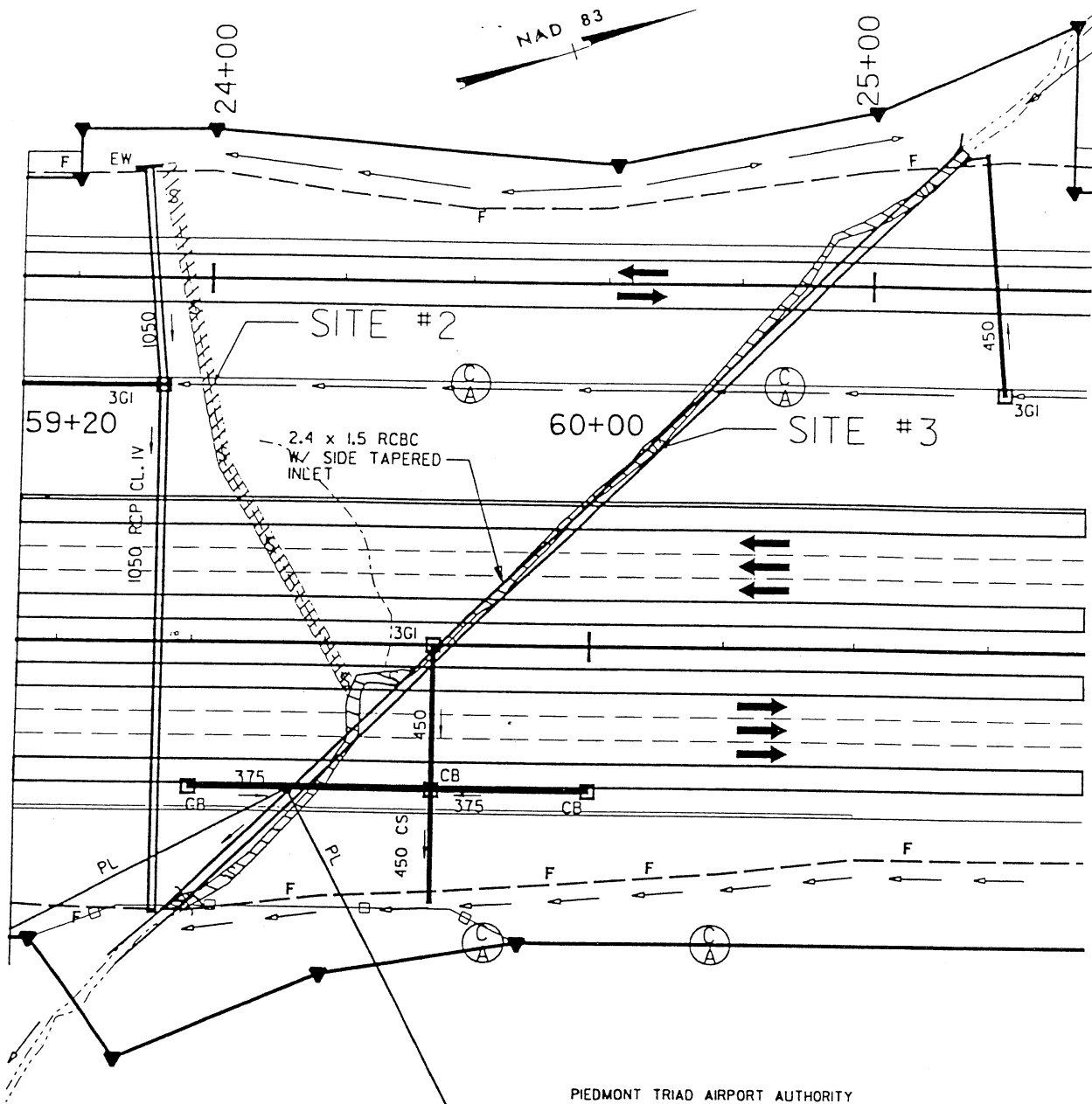
U-252488

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

SCALE AS SHOWN

SHEET 6 OF 20

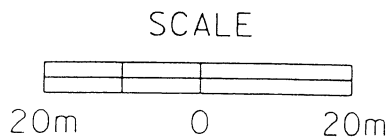
JANUARY 16, 2001



CITY OF GREENSBORO

PIEDMONT TRIAD AIRPORT AUTHORITY

# SITES #2 & #3



 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

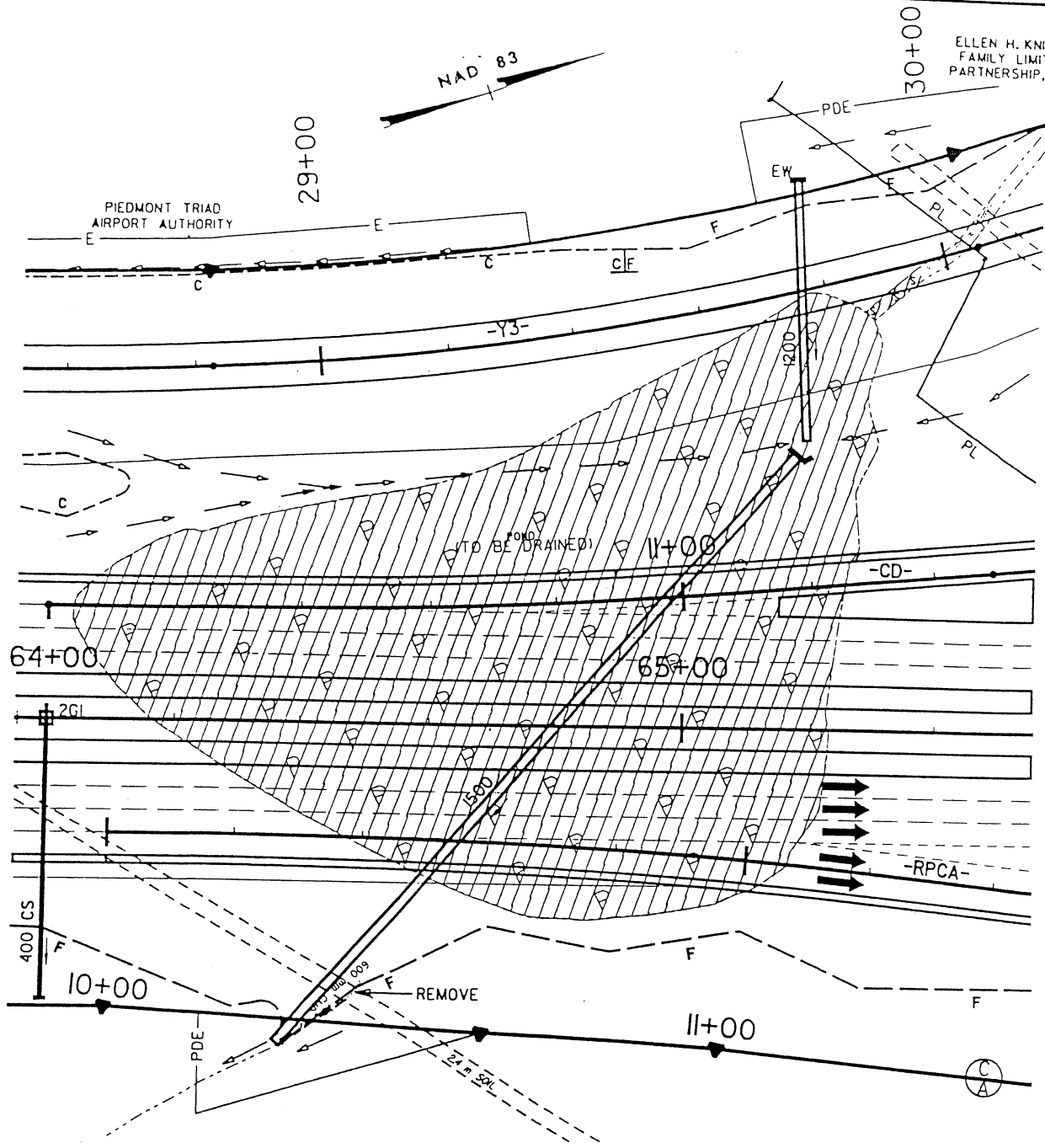
SCALE AS SHOWN

SHEET 7 OF 20

JANUARY 16, 2001

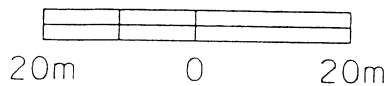


ELLEN H. KNIGHT  
FAMILY LIMITED  
PARTNERSHIP, L.L.P.



# SITES #4

SCALE



DENOTES FILL IN  
SURFACE WATER



DENOTES FILL IN  
SURFACE WATER  
(POND)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GUILFORD COUNTY

B.U492 10.1

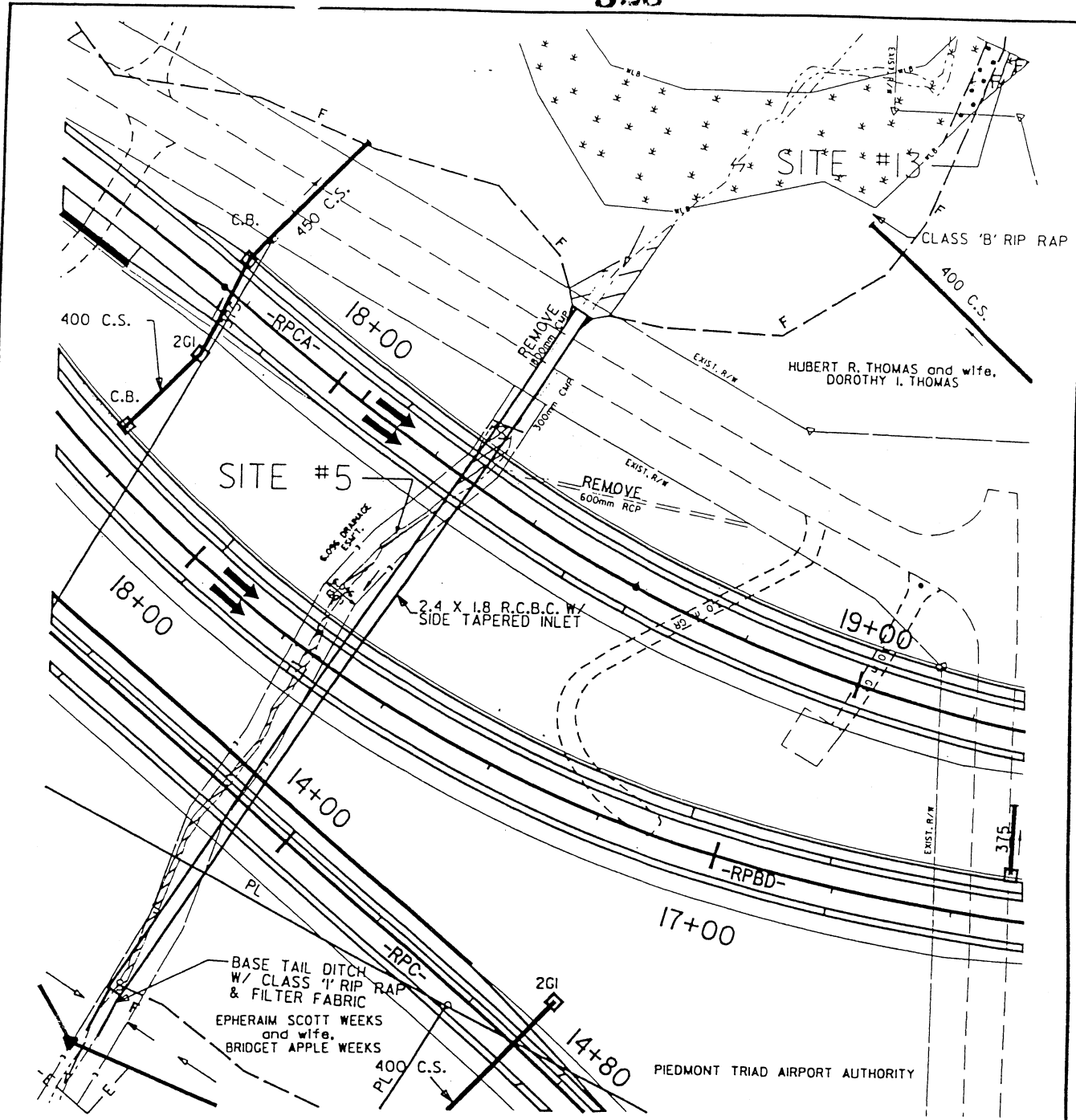
U-252488

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

SCALE AS SHOWN

SHEET 8 OF 20

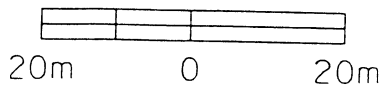
JANUARY 16, 2001

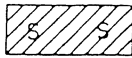

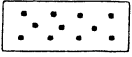


# SITES #5 & #13

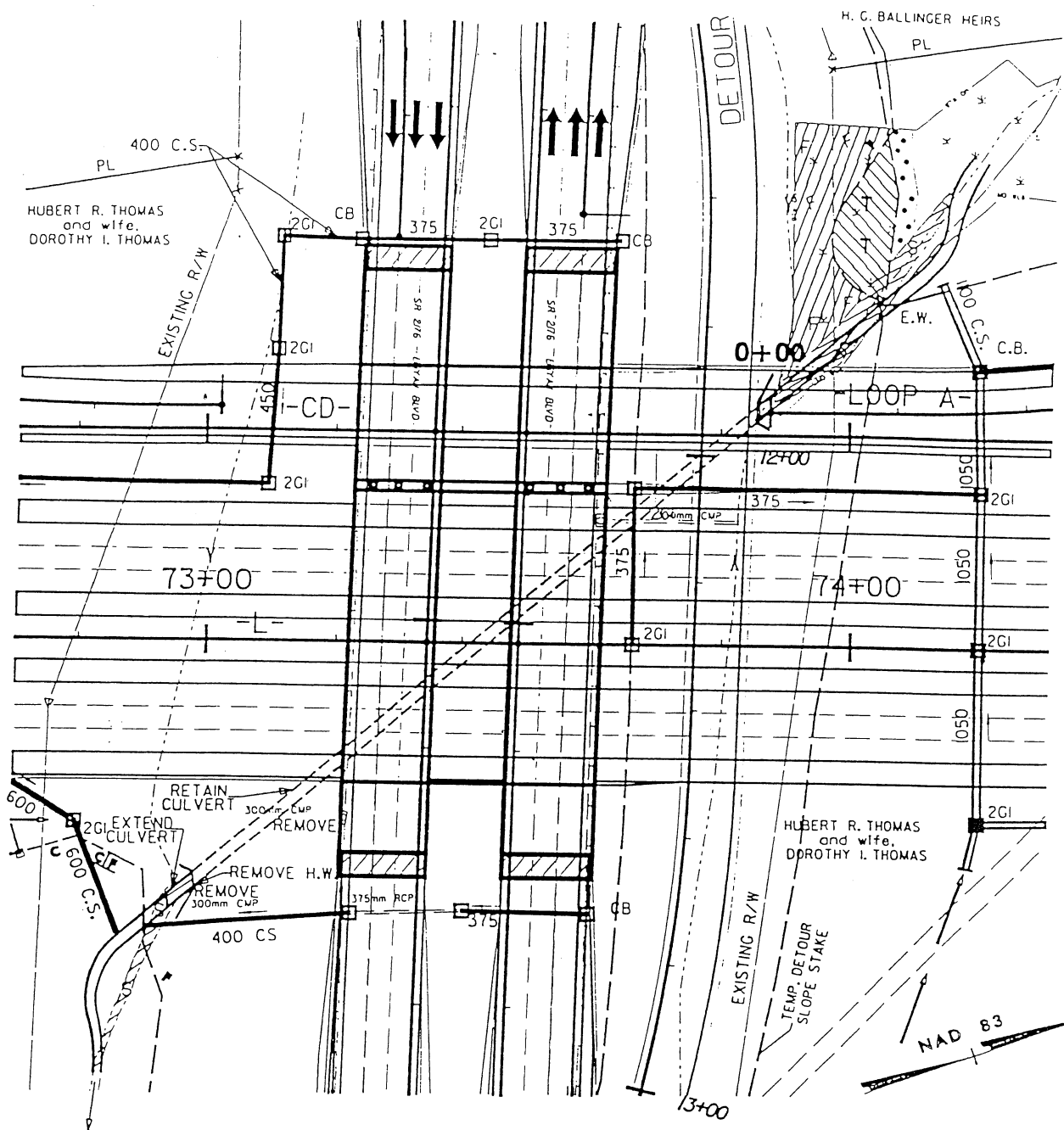


SCALE

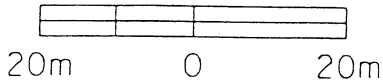


-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 B.U492 101 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




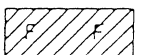
SCALE



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

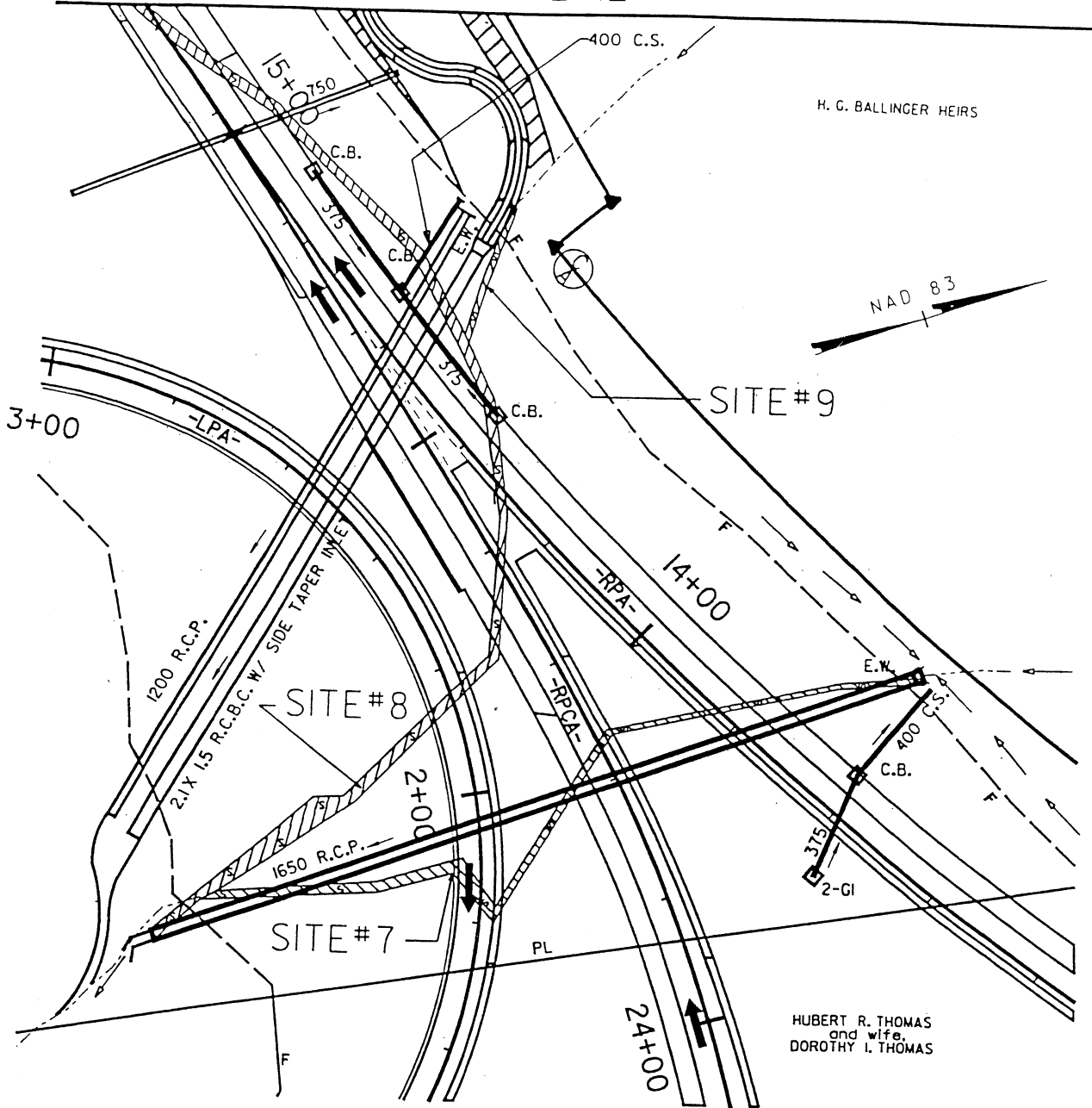
GREENSBORO WESTERN URBAN LOOP  
FROM NORTH OF WEST FRIENDLY AVENUE  
TO NORTH OF BRYAN BOULEVARD

SCALE AS SHOWN

SHEET 10 OF 20

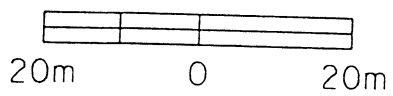
MARCH 1, 2001

MATCHLINE



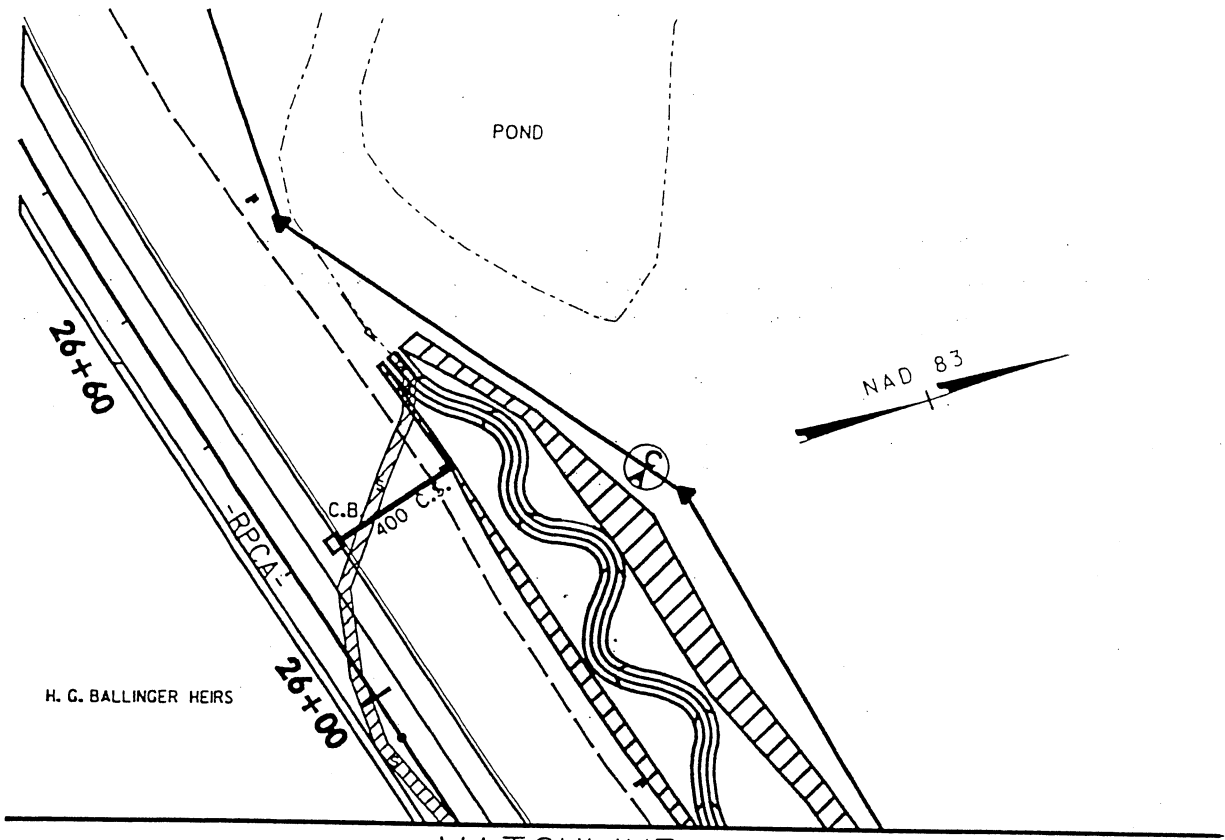
# SITE #7, #8, & #9

SCALE



 DENOTES FILL IN SURFACE WATER

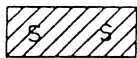
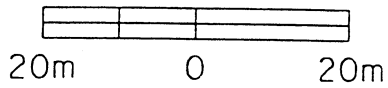
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY  
 8.U492 10 1 U-2524BB  
 GREENSBORO WESTERN URBAN LOOP  
 FROM NORTH OF WEST FRIENDLY AVENUE  
 TO NORTH OF BRYAN BOULEVARD  
 SCALE AS SHOWN  
 SHEET 11 OF 20 JANUARY 16, 2001



MATCHLINE

# SITE # 8

SCALE



DENOTES FILL IN SURFACE WATER

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GUILFORD COUNTY

B.U492 101

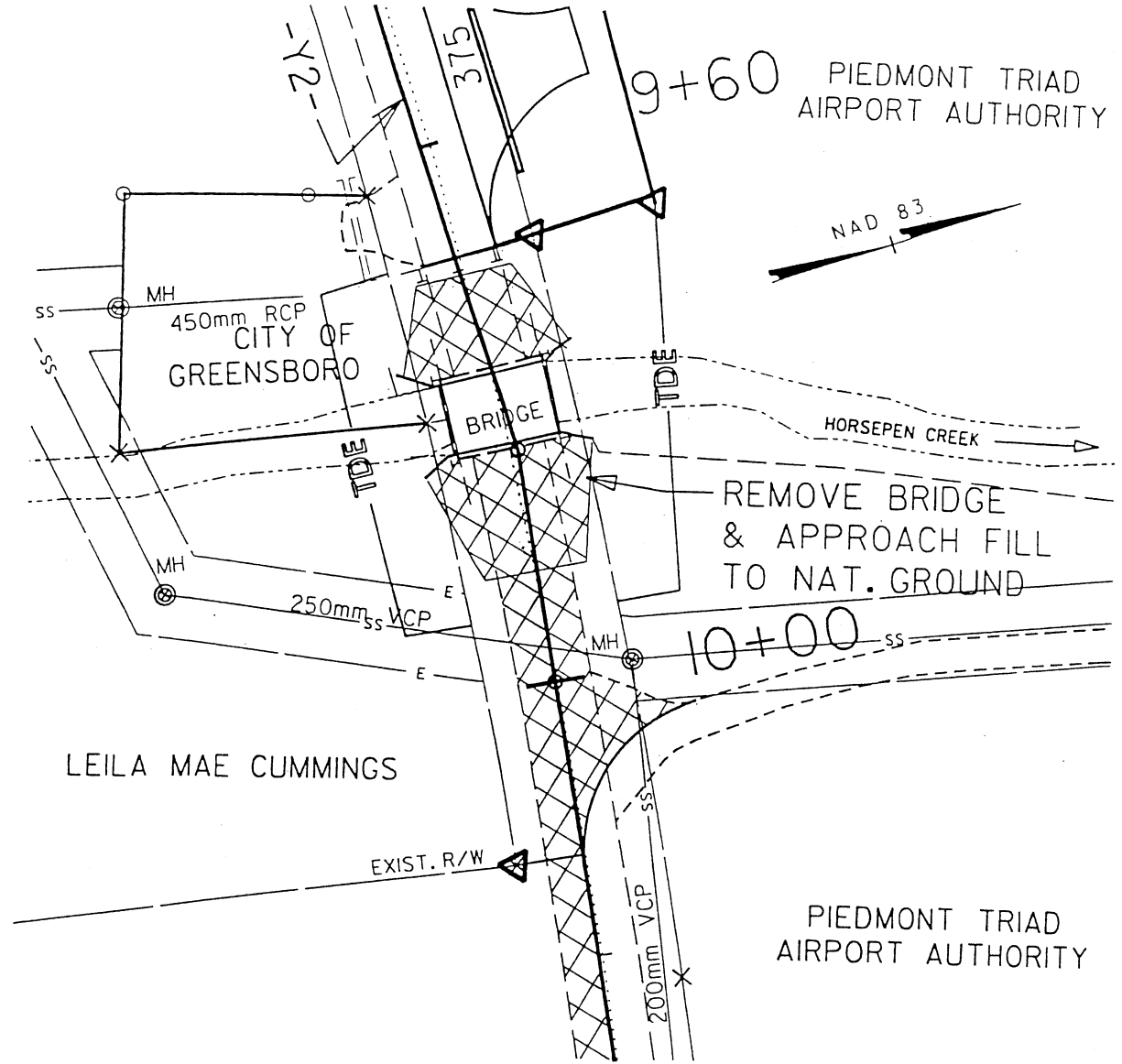
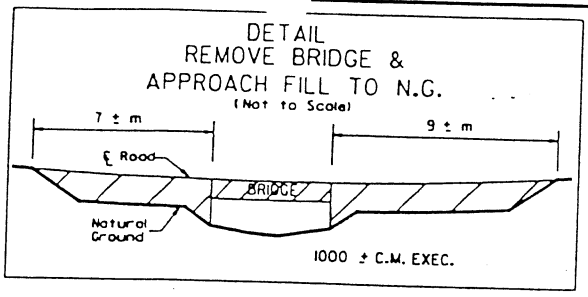
U-2524BB

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

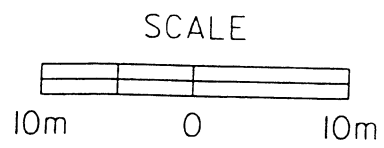
SCALE AS SHOWN

SHEET 12 OF 20

JANUARY 16, 2001



SITE #10



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

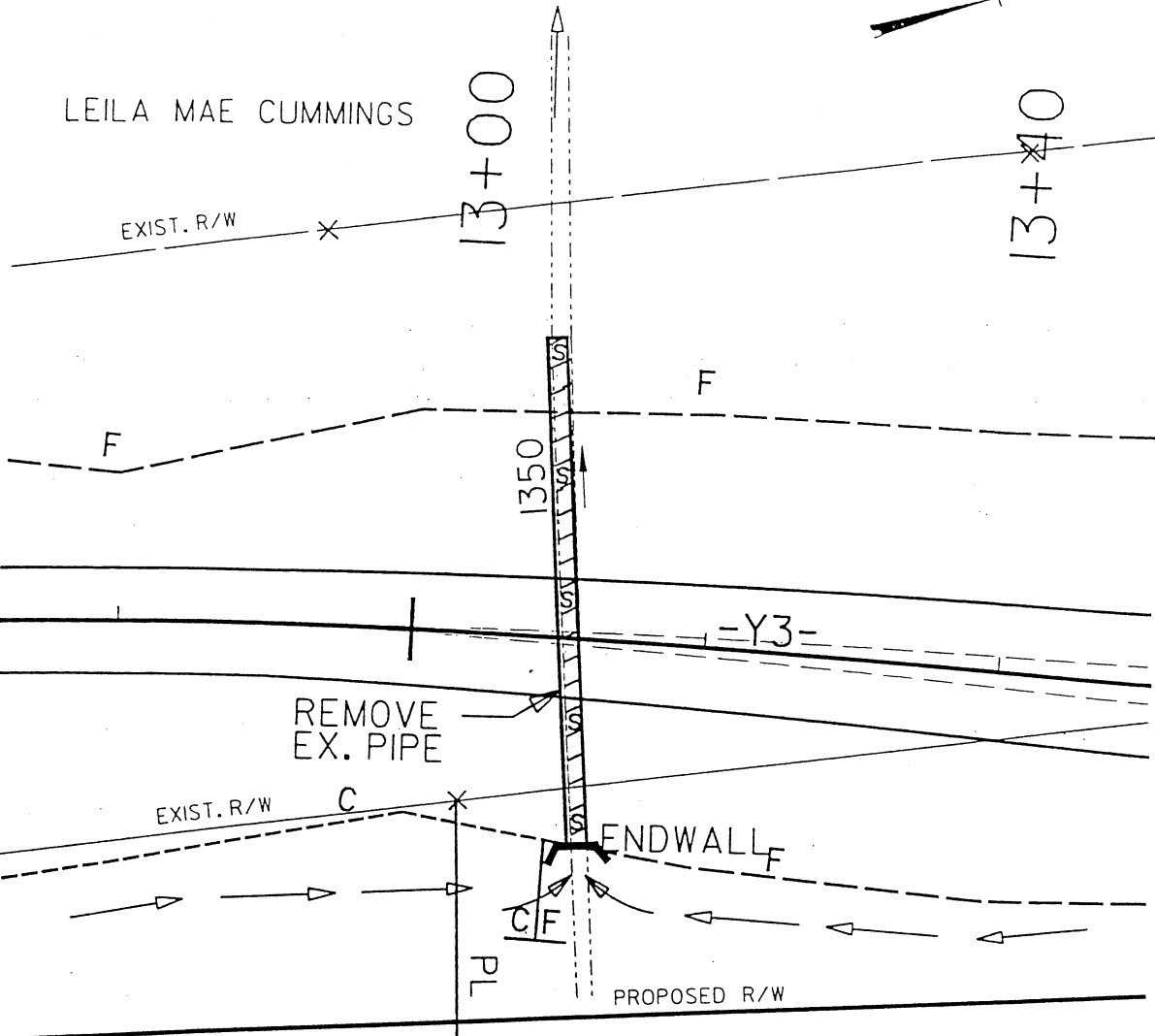
LEILA MAE CUMMINGS

EXIST. R/W

13+00

13+40

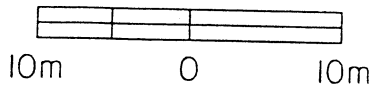
NAD 83



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

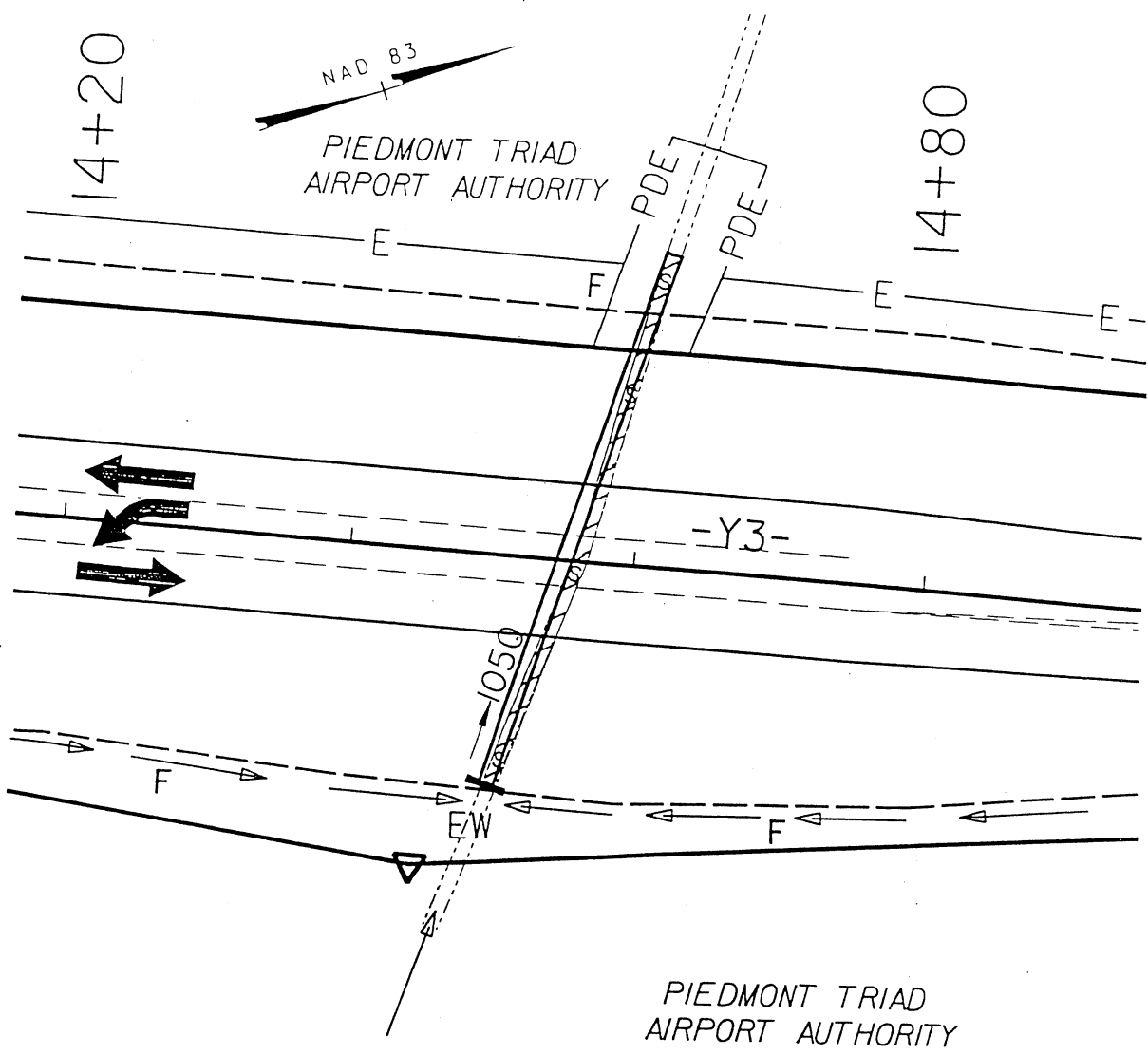
U-2524BB

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

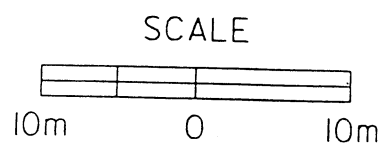
SCALE AS SHOWN

SHEET 14 OF 20

JANUARY 16, 2001



# SITE #12

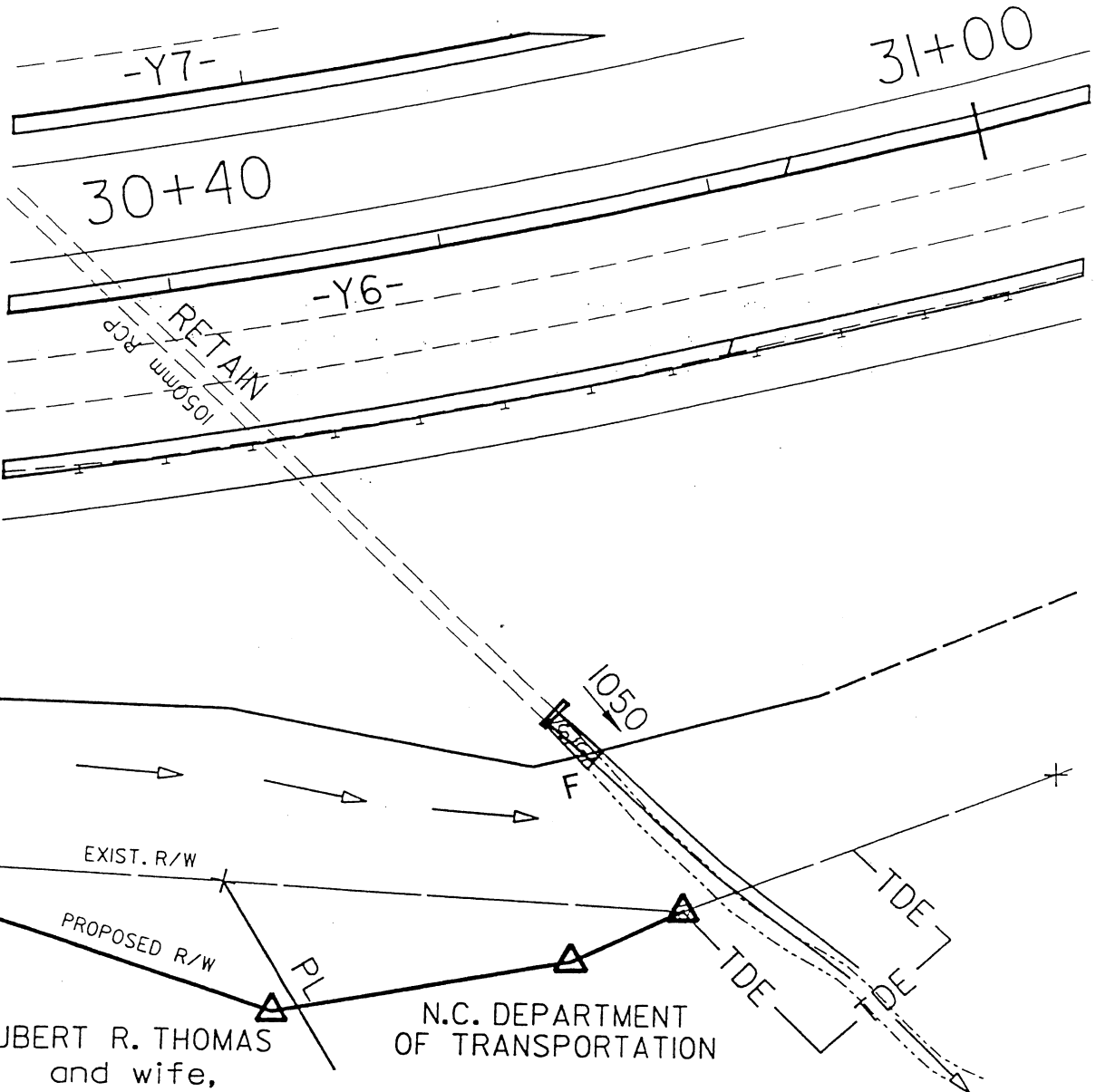


 DENOTES FILL IN SURFACE WATER

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 15 OF 20 JANUARY 16, 2001



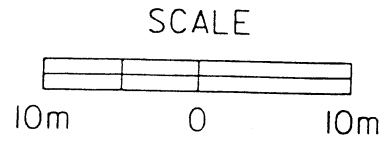
NAD 83



HUBERT R. THOMAS  
and wife,  
DOROTHY I. THOMAS

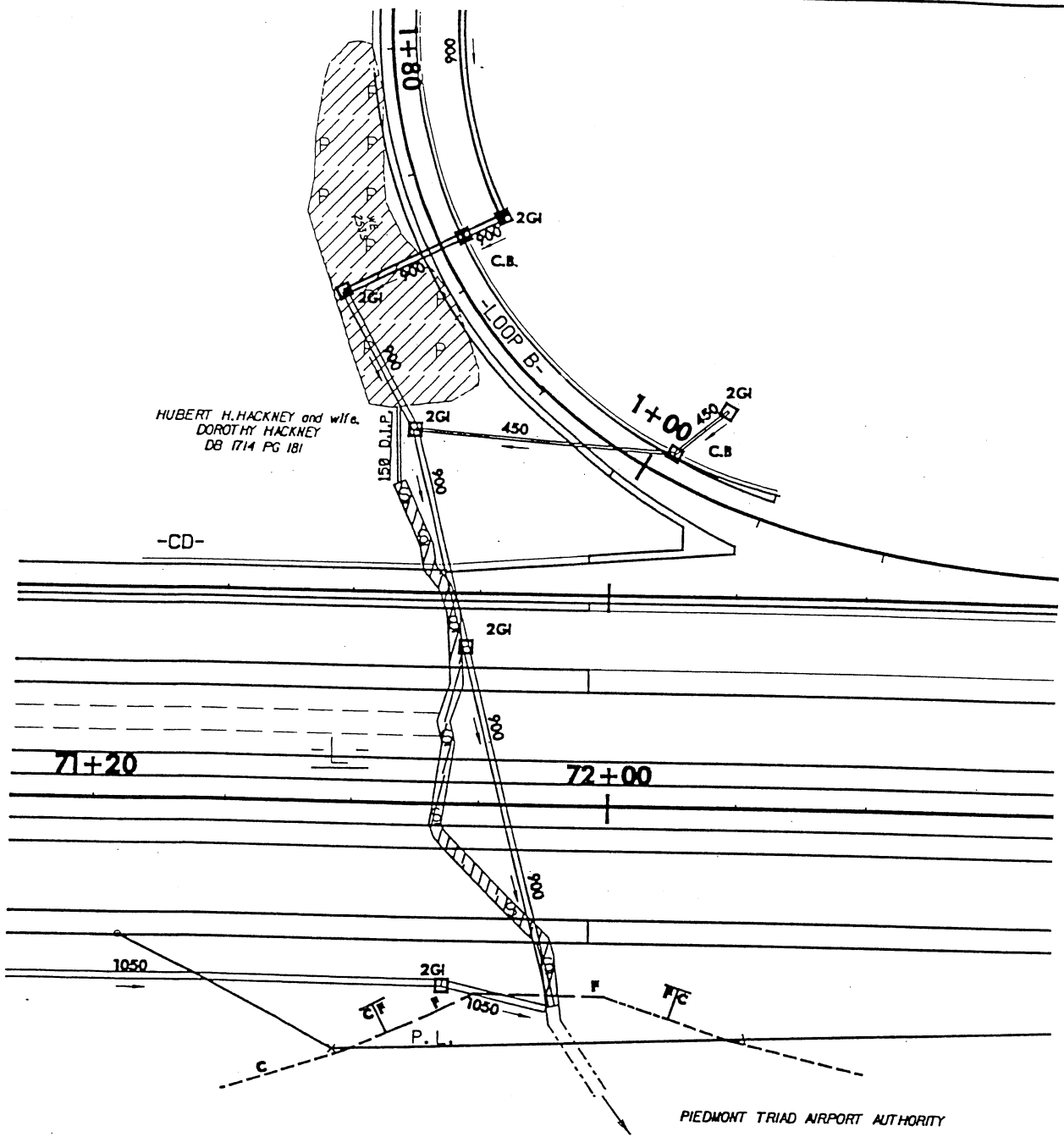
N.C. DEPARTMENT  
OF TRANSPORTATION

# SITE #14



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

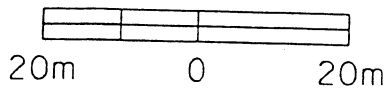


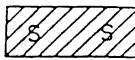
PIEDMONT TRIAD AIRPORT AUTHORITY

# 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.U492 101

U-252488

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

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)	
1	54+20 -L-	3 @ 3.7 x 2.4 RCBC	0	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

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	0	46	0
12	14+55 -Y3-	1050 RCP	0	0	0	0	0	<0.01	0	0	48	0
13	24+84 RT -Y6-	N/A	<0.01	0	0	0	0	<0.01	0	0	0	0
14	30+40 -Y6-	1050 RCP	0	0	0	0	0	<0.01	0	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	0
		TOTALS	0.03	0.02	0	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
<b>TOTAL INTERMITTENT IMPACTS</b>	
	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