



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 27, 2004

U.S. Army Corps of Engineers
Raleigh Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, NC 27615

Attention: Mr. Eric C. Alsmeyer
NCDOT Coordinator, Division 5

Subject: **Modification to Section 404 Individual Permit and Section 401 Water Quality Certification and Neuse Buffer Certificate** for Northern Wake Expressway from NC 55 west of Morrisville to 0.7 km northeast of I-40 in Wake and Durham Counties (TIP Nos. R-2000AA, R-2000AB; and R-2000AC); State Project No. 8.U401711; Federal Aid Project No. NHF-123-1(11). USACE Action ID No. 200021863 (Previous Action ID. No. 199920387 and Action ID No. 199601917), NCDENR-DWQ Project No. 030918; \$475.00 Debit WBS Element 34365.1.2

The North Carolina Department of Transportation (NCDOT) is currently constructing a portion of the Northern Wake Expressway in Wake and Durham Counties (R-2000 Sections AA, AB and AC). The United States Army Corps of Engineers (USACE) originally issued an Individual Permit for this project on October 10, 1996. The USACE issued a permit modification for the construction of this project on November 25, 2003. The North Carolina Division of Environment and Natural Resources, Division of Water Quality issued the 401 Water Quality Certification No. 3439 (NCDENR-DWQ Project No. 030918) for this project on October 7, 2003. This modification application contains revised permit drawing sheets for the following sections:

- Section AA: Stream/wetland revised sheets 4, 5, 9, 13, 17 and 18.
- Section AB: Stream/pond wetland revised sheets 15, 17, 24, 26, 27, 31, 32, 35, 43, 44, 45, 47, 65 and 66. Riparian buffer revised sheets 6, 7, 8 and new sheet 8A.
- Section AC: Stream/wetland revised sheets 6, 7 and 9. Riparian buffer revised sheet 10. Plan sheets 5 and 9.

USACE special permit condition A directs the permittee to ensure that the construction design plans for this project do not deviate from the permit plans attached to their authorization. It further directs the permittee to forward any deviation in the construction design plans to the USACE, Raleigh Regulatory Office prior to any active construction in waters and wetlands.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1500
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD.
PARKER LINCOLN BUILDING, SUITE 168
RALEIGH NC 27604

Personnel from NCDOT Division 5, Hydraulics Unit and Project Development and Environmental Analysis Unit-Office of Natural Environment completed a comprehensive review of the final roadway construction plan sheets and permit drawings in March 2004. The review identified all permit drawing and plan sheet discrepancies as well as other associated constructability concerns that could be identified during the pre-construction phase of this project. This review was forwarded to the USACE and NCDENR-DWQ on March 29, 2004. Please note that the contractor has initiated none of these issues outlined in this letter. This is not an after-the-fact notification; none of these sites are currently under construction at this time.

The issues and sites discussed in this letter do not compromise NCDOT’s compliance with the existing permit conditions. The sites have been evaluated for compliance with the avoidance/minimization criteria and are in compliance with all previous permit issues, including the following:

- Protected Species
- Aquatic Life passage
- FEMA compliance
- Cultural Resources

Summary of Impact Changes:

A summary of the changes in impact quantities is included as Table 1. This table presents the increase in stream and wetland impacts since the US Army Corps permits dated October 10, 1996 (Action ID 199601917) and November 25, 2003 (Action ID 20021863). There are no changes in impacts to the riparian buffers although design changes have been made in the buffers in Sections AB and AC. Impacts to wetlands and streams occur in the Neuse River Basin and the Cape Fear River Basin. All impacts in Section AA are in the Cape Fear River Basin (HU 03030002). In Section AB, Sites 1-8 are in the Cape Fear Basin and Sites 9 and 10 are in the Neuse River Basin (HU 03020201). All impacts in Section AC are in the Neuse River Basin. Please note that these changes outlined in this letter are associated with permit drawing and plan sheet discrepancies as well as other associated constructability concerns that could be identified during the pre-construction phase of this project.

Table 1. Stream and wetland impact quantities.

Section	Increased Stream Impact	Increased Wetland Impact	Decreased Wetland Impact	Increased Temp. Stream Impact
AA	370 linear feet	0.054 acre	0.00 acre	0.00 acre
AB	65 linear feet	0.000 acre	0.07 acre	0.07 acre
AC	0 linear feet	0.000 acre	0.00 acre	0.00 acre
Total	435 linear feet	0.054 acre	0.07 acre	0.07 acre

Summary of Mitigation:

The increased surface water and wetland impact quantities associated with permit drawing and plan sheet discrepancies as well as other associated constructability concerns that could be identified during the pre-construction phase of this project necessitate a reevaluation of mitigation associated with this project. The NCDOT has previously made payment to the

Ecosystem Enhancement Program (EEP) for impacts associated with the project. The NCDOT is proposing to make payment to the EEP for the increased impacts to wetlands and surface waters that are outlined in this letter. The acceptance letter from EEP for the mitigation is enclosed with this application. The mitigation required for these impacts is summarized below:

- The mitigation for the 435 linear feet of stream impacts will be provided by EEP.
- Impacts to non-riverine wetlands in Section AA, Site 4 (permit drawing 9) increased by 0.054 ac. In Section AB, Site 3 (permit drawing 24), 0.07 ac of mechanized clearing in a wetland was permitted and mitigated for in the previous permits. This site was mislabeled and misclassified as a wetland when indeed it was always a pond. The 0.07 ac is now shown in this permit modification application as temporary surface water impacts and we do not propose any mitigation for these temporary surface water impacts. Wetland impacts in the November 25, 2003 permit did not distinguish between riverine and non-riverine wetlands. NCDOT believes that the mechanized clearing impacts in wetlands (0.07 ac) already mitigated for offsets the increased non-riverine wetland impacts (0.054 ac).

Site Discussion

Following is a list of sites that exhibit permit drawing and plan sheet discrepancies as well as other associated constructability concerns that could be identified during the pre-construction phase of this project. Each site is referenced by project section (AA, AB or AC), permit site number and associated plan sheet/erosion control sheet. The status of each site (i.e. permit modification or plan revision), regulatory agency associated with each site and an impact review for each site is also presented below.

Section AA

Site 1 (Permit Drawing 4/Plan Sheets 7 and 8)

Issue: The permitted footprint of the stream depicted on the permit drawing appears to originate and terminate without any conveyance to a live stream. A recent field visit indicates that the jurisdictional limits of the stream were not correctly identified on the permit drawing dated 4/23/03.

Status: The permit drawing was modified (5/26/04) to depict the correct stream conveyance.

Regulatory Issue: Section 404, Section 401

Impact Review: The modification at this site will result in an additional 111 linear feet of stream impact.

Site 2 (Permit Drawing 5 /Plan Sheet 10/Erosion Control Sheet EC-8)

Issue: The plan sheet indicates the presence of rip rap along the streambank at the inlet of the culvert. This rip rap was not depicted on the permit drawing dated 4/23/03.

Status: The permit drawing was modified (5/26/04) to depict rip rap along the streambank.

Regulatory Issue: Section 404, Section 401

Issue: The tie in points of the temporary channel change as depicted on EC-8 are located outside of the permitted stream footprint as depicted on the permit drawing dated 4/23/03.

Status: The permit drawing was modified (5/26/04) to depict revised stream impact that will capture the tie in points of the temporary channel change.

Regulatory Issue: Section 404, Section 401

Impact Review: The modification at this site will result in an additional 128 linear feet of stream impact.

Site 3 (Permit Drawing 7/Plan Sheet 11)

Issue: The plan sheet indicates the presence of rip rap along the streambank at the inlet of the structure. This rip rap is not depicted on the permit drawing (undated).

Status: Plan sheet was revised to depict no rip rap along the streambank at the inlet of the structure.

Regulatory Issue: Section 404, Section 401. The revision of the plan sheet (to match the permit drawing) does not result in any change to jurisdictional impact.

Impact Review: No change in jurisdictional impacts.

Site 4 (Permit Drawing 9/Plan Sheet 12/Erosion Control Sheet EC-11)

Issue: The plan sheet indicates the presence of rip rap along the streambank at the inlet of the culvert. This rip rap is not depicted on the permit drawing (undated).

Status: Permit drawing was modified (6/28/04) to depict rip rap along the streambank.

Regulatory Issue: Section 404, Section 401

Issue: The tie in points of the temporary channel change as depicted on EC-11 are located outside of the permitted stream and wetland footprint as depicted on the permit drawing (undated).

Status: Permit drawing was modified (5/26/04) to depict revised stream and wetland impact that will capture the tie in points of the temporary channel change.

Regulatory Issue: Section 404, Section 401

Impact Review: The modification at this site will result in an additional 131 linear feet of stream impact and 0.054 acres of non-riverine wetland impact.

Site 6 (Permit Drawing 13/Plan Sheet 7)

Issue: The plan sheet indicates a tail ditch lined with rip rap and PSRM in an open gore area between three 450 mm RCPs on Ramp B, Loop B and the center line. The permit drawing (4/23/03) does not depict the tail ditch with rip rap and PSRM between the pipe structures.

Status: The permit drawing was modified (5/26/04) to depict the tail ditch with rip rap and PSRM between the pipe structures.

Regulatory Issue: Section 404, Section 401. Please note that this issue only reflects a discrepancy in construction within the permitted pond impact.

Impact Review: No additional impacts at this site.

Permit Drawings 17 and 18

Issue: The metric and English summary sheets have been modified (6/28/04) to depict revised stream and wetland impacts.

Section AB

Site 1 (Permit Drawing 11/Plan Sheet 5)

Issue: The plan sheet indicates a lateral ditch that ties into the stream at a perpendicular angle. The permit drawing (7/03) indicates the lateral ditch takes a sharp hook before it ties into the stream.

Status: Plan sheet has been revised to depict the lateral ditch taking a sharp hook before it ties into the stream.

Regulatory Issue: Section 404, Section 401. The revision of the plan sheet (to match the permit drawing) does not result in any change to jurisdictional impact. This issue only reflects a discrepancy in construction within the permitted wetland impact.

Impact Review: No change in jurisdictional impacts.

Site 2 (Permit Drawings 15 and 47/Plan Sheets 5 and 2-AS)

Issue: The plan sheet depicts rip rap at the outlet of a 400 mm corrugated steel pipe at Station 14+29 Rt YRPB. Permit drawing 15 (7/03) depicts a pre-formed scour hole at the outlet of the pipe structure.

Status: Plan sheet has been revised to depict a pre-formed scour hole at the outlet of the structure.

Regulatory Issue: None. The revision of the plan sheet does not result in any change to jurisdictional impact. This portion of the project is located in the Cape Fear River Basin.

Issue: Detail 3 on permit drawing 47 (7/03) indicates the pre-formed scour hole is located at Station 11+20 Lt Y19REV (which is incorrect).

Status: Permit drawing has been modified (6/9/04) to accurately depict the station as Station 14+29 Rt YRPB.

Regulatory Issue: None. The revision of the plan sheet does not result in any change to jurisdictional impact. This portion of the project is located in the Cape Fear River Basin.

Issue: The plan sheet depicts rip rap along the toe of the fill in the wetland and pond. This rip rap is not depicted on permit drawing 15 (7/03). Please note Plan Sheet 2-AS, which indicates this rip rap will be keyed in beyond the toe of the fill.

Status: Permit drawing has been modified (6/9/04) to depict rip rap along the toe of the fill in the wetland and pond.

Regulatory Issue: Section 404, Section 401. The modification of the permit drawing does not result in any change to jurisdictional impact.

Impact Review: No change in jurisdictional impacts.

Site 3 and 4 (Permit Drawing 17/Plan Sheet 5)

Issue: The plan sheet has been revised and the permit drawing has been modified to depict that a reinforced concrete box culvert will be temporarily extended with a temporary collar and 2 @ 1000 corrugated steel pipes to flow to a relocated channel. This temporary extension was not depicted on the either the permit drawing (7/03) or plan sheet.

Status: Permit drawing has been modified (6/9/04) and plan sheet revised to depict the temporary box culvert extension.

Regulatory Issue: Section 404, Section 401. The modification of the permit drawing does not result in any change to jurisdictional impact.

Impact Review: No change in jurisdictional impacts.

Site 3 (Permit Drawing 19/Plan Sheet 6)

Issue: The permit drawing (7/03) indicates that the entire stretch of stream will be considered fill in surface waters. However, the plan sheet does not indicate that the entire stretch of stream will be filled during construction of this project.

Status: Plan sheet has been revised to accurately depict extent of grading and fill in this stream associated with this project.

Regulatory Issue: Section 404, Section 401. The revision of the plan sheet accurately depicts extent of grading and fill in this stream associated with this project and does not result in any change to jurisdictional impact. The entire stream has been considered a stream loss.

Impact Review: No change in jurisdictional impacts.

Site 3 (Permit Drawing 24/Plan Sheet 5/Utility Construction Plan Sheet UC-2)

Issue: The permit drawing (7/03) depicts mechanized clearing in a wetland that will be required for the installation of a water line. However, a review of the site and plan sheets indicates that the impact should be reclassified as temporary impact to surface waters (pond).

Status: Permit drawing has been modified (6/9/04) to indicate temporary impact to surface waters.

Regulatory Issue: Section 404, Section 401.

Impact Review: The modification at this site will result in an additional 0.07 acre temporary impact in surface waters. The 0.07 acre mechanized clearing in wetland (as indicated on the summary sheets dated 7/03) will not occur at this site.

Site 3 (Permit Drawing 25/Plan Sheet 6)

Issue: The permit drawing (7/03) indicates the wetland will be filled during construction. However, the plan sheet does not indicate that the entire wetland will be filled during construction of this project.

Status: All reasonable efforts will be made to avoid excessive impacts to this wetland. Please note that the wetland is located directly adjacent to a 750 mm reinforced concrete pipe and a 3.0 m lateral base ditch.

Regulatory Issue: Section 404, Section 401. The entire wetland has been considered total loss.

Impact Review: No change in jurisdictional impacts.

Site 4 (Permit Drawing 26/Plan Sheets 5 and 7/Erosion Control Sheet EC-6)

Issue: The tie in point of the temporary channel change at the inlet of the structure as depicted on EC-6 is located outside of the permitted stream footprint as depicted on the permit drawing (7/03).

Status: Permit drawing has been modified (6/9/04) to depict a revised stream impact at the inlet of the structure that will capture the tie in point of the temporary channel change.

Regulatory Issue: Section 404, Section 401

Issue: The plan sheet depicts rip rap along both streambanks at the inlet of the structure and rip rap/channel improvement along the northeast streambank at the outlet of the structure. The rip rap and rip rap/channel improvement was not depicted on the permit drawing (7/03).

Status: The permit drawing has been modified (6/9/04) to depict rip rap and rip rap/channel improvement along the streambank.

Regulatory Issue: Section 404, Section 401. The additional rip rap depicted on the permit drawing does not result in any change to jurisdictional impact. The entire stream in the area of these issues has been considered a stream loss.

Impact Review: The modification at this site will result in an additional 20 linear feet of stream impact.

Site 4 (Permit Drawing 27/Plan Sheet 5)

Issue: The plan sheet depicts rip rap along both streambanks at the inlet of the structure. This rip rap is not depicted on the permit drawing (7/03).

Status: The permit drawing has been modified (6/9/04) to depict rip rap at the inlet of the structure.

Regulatory Issue: Section 404, Section 401. The additional rip rap depicted on the permit drawing does not result in any change to jurisdictional impact. The entire stream has been considered a stream loss.

Impact Review: No change in jurisdictional impacts.

Site 6 (Permit Drawing 31/Plan Sheets 6 and 7)

Issue: The plan sheets depicts a drop inlet and a 375 mm reinforced concrete pipe at 51+80-L-. The permit drawing (7/03) does not depict these structures.

Status: Permit drawing has been modified (6/9/04) to depict the structures.

Regulatory Issue: None. The modification of the permit drawing correctly depicts the stormwater system and does not result in any change to jurisdictional impact. Please note that this section of the project is located in the Cape Fear River Basin.

Issue: The permit drawing (7/03) indicates that the entire stretch of stream will be considered fill in surface waters. However, the plan sheet does not indicate that the entire stretch of stream will be filled during construction of this project.

Status: Plan sheet has been revised to accurately depict extent of grading and fill in this stream associated with this project.

Regulatory Issue: Section 404, Section 401. The revision of the plan sheet accurately depicts extent of grading and fill in this stream associated with this project and does not result in any change to jurisdictional impact. The entire stream has been considered a stream loss.

Impact Review: No change in jurisdictional impacts.

Site 6 (Permit Drawing 32/Plan Sheet 6)

Issue: The plan sheets depicts a 375 mm reinforced concrete pipe at 51+90-L-. The permit drawing (7/03) does not depict this structure.

Status: Permit drawing has been modified (6/9/04) to depict the pipe.

Regulatory Issue: None. The modification of the permit drawing correctly depicts the stormwater system and does not result in any change to jurisdictional impact. Please note that this section of the project is located in the Cape Fear River Basin.

Site 6 (Permit Drawing 35/Plan Sheet 8/ Erosion Control Sheet EC-5)

Issue: The tie in point of the temporary channel change at the inlet of the culvert as depicted on EC-5 is located outside of the permitted stream footprint as depicted on the permit drawing (7/03).

Status: Permit drawing has been modified (6/9/04) to depict revised stream impact at the inlet of the structure that will capture the tie in point of the temporary channel change.

Regulatory Issue: Section 404, Section 401

Impact Review: The modification at this site will result in an additional 45 linear feet of stream impact.

Site 6 (Permit Drawing 37/Plan Sheet 8)

Issue: The plan sheet indicates 50 m tons of rip rap and 12 sm of filter fabric liner along the relocated channel near the outlet of the culvert. This rip rap and fabric was not depicted on the permit drawing (7/03).

Status: Plan sheet has been revised to depict no rip rap or filter fabric along relocated channel near the outlet of the culvert.

Regulatory Issue: Section 404 and Section 401. Please note that the revision of the plan sheet does not result in any change to jurisdictional impact.

Impact Review: No change in jurisdictional impacts.

Site 9 (Stream Impact Permit Drawing 43), Site 1 (Buffer Impact Permit Drawing 6)/Plan Sheet 10

Issue: The plan sheet depicts a PFSH at the outlet of the lateral base ditch at 1+00 (inside loop A) -LPA54-. The PFSH was not depicted on the stream impact drawing (7/03) and the buffer impact permit drawing (4/03).

Status: Both stream impact and buffer impact permit drawings have been modified (6/9/04) to depict the PFSH.

Regulatory Issue: Riparian Buffer Authorization.

Issue: The plan sheet depicts a 600 mm reinforced concrete pipe and a PFSH at 2+70 (inside loop A) -LPA54-. The 600 mm reinforced concrete pipe and PFSH were not depicted on the stream impacts permit drawing (7/03) and the buffer impacts permit drawing (4/03).

Status: Both stream impacts and buffer impacts permit drawings have been modified (6/9/04) to depict the 600 mm reinforced concrete pipe and the PFSH.

Regulatory Issue: Riparian Buffer Authorization.

Impact Review: No change in jurisdictional impacts.

Site 10 (Wetland Impact Permit Drawing 44 (7/03)/Plan Sheet 11)

Issue: The wetland impact permit drawing (7/03) indicates mechanized clearing in a wetland and a portion of a pond. An examination of the plan sheet and background information indicates that the impact should be correctly described as excavation in wetland and pond.

Status: The wetland impact permit drawing has been revised (6/9/04) to depict excavation in wetland and pond.

Regulatory Issue: Section 404 and Section 401.

Impact Review: The modification at this site will result in 0.04 acre excavation in wetland. The 0.04 acre mechanized clearing in wetland (as indicated on the summary sheets) will not occur at this site. Please note that the wetland impact quantity has remained the same, it has only shifted from mechanized clearing in wetland to excavation in wetland.

Site 10 (Pond Impacts Permit Drawing 45), Site 2 (Buffer Impacts Permit Drawing 7)/Plan Sheet 11

Issue: The plan sheet depicts a special grade ditch and a PFSH at Station 5+20 -RPD54 Lt-. The special grade ditch and the PFSH were not depicted on the pond impacts permit drawing (7/03) and buffer impacts permit drawing (4/03).

Status: The pond impacts permit drawing (6/9/04) and buffer impacts permit drawing (6/9/04) have been modified to depict the special grade ditch and the PFSH.

Regulatory Issue: Riparian Buffer Authorization.

Issue: The pond impacts permit drawing (7/03) and buffer impacts permit drawing (4/03) depict a small amount of rip rap at the outlet of a 900 mm reinforced concrete pipe at Station 4+50 - RPD54 Lt-. The plan sheet indicates that an energy dissipater pad is located at the outlet of this structure.

Status: The pond impacts permit drawing (6/9/04) and buffer impacts permit drawing (6/9/04) have been modified to depict an energy dissipater pad.

Regulatory Issue: Section 404, Section 401 and Riparian Buffer Authorization.

Issue: The plan sheet depicts a drop inlet, catch basin and two 375 mm reinforced concrete pipes near Station 2+45 -LPA54-, a 450 mm corrugated steel pipe near Station 3+60 -RPD54 Rt-, two drop inlets, 375 mm reinforced concrete pipe and 400 mm corrugated steel pipe near 4+40 - RPD54 Lt-, base ditches near 2+30 -LPA54 Rt- and rock lined gore ditches. The pipes, structures, base ditches and rock lined gore ditches are not depicted on either of the pond impacts permit drawing (7/03) and buffer impacts permit drawing (4/03)

Status: The pond impacts permit drawing (6/9/04) and buffer impacts permit drawing (6/9/04) been modified to depict the pipes, structures, base ditches and rock lined gore ditches.

Regulatory Issue: Riparian Buffer Authorization.

Issue: The plan sheet depicts 1.2 m x 3.0 m paved ditches at the inlet of the 600 mm reinforced concrete pipe near 4+25 -RPD54 Rt-. The paved ditches are not depicted on either of the pond impacts permit drawing (7/03) and buffer impacts permit drawing (4/03).

Status: Plan sheets have been revised to delete the paved ditches.

Regulatory Issue: Riparian Buffer Authorization.

Impact Review: No change in jurisdictional impacts.

Site 11 (Stream Impacts Permit Drawing 46), Site 3 (Buffer Impacts Permit Drawing 8)/Plan Sheet 12

Issue: The stream impacts permit drawing (7/03) indicates that the channel is a non-jurisdictional stream (which is a correct description of the site). However, the summary sheets indicate that there is 0.07 acre fill in surface waters at this site.

Status: The wetland/stream impact summary sheets have been modified (6/20/04) to delete this site.

Regulatory Issue: Section 404 and Section 401.

Issue: The plan sheet indicates a PFSH at Station 70+40 Rt. The buffer impacts permit drawing (4/03) depicts a PFSH incorrectly labeled as a level spreader at this location.

Status: Buffer permit drawing has been modified (6/20/04) to correctly label the structure as a PFSH.

Regulatory Issue: Riparian buffer authorization.

Issue: The plan sheet depicts a median drop inlets and median 375 mm reinforced concrete pipe from 70+40 to 70+90 -L-. The drop inlets and pipe are not depicted on the buffer impacts permit drawing (4/03).

Status: The buffer impacts permit drawing (6/9/04) has been modified to depict the drop inlets and pipe.

Regulatory Issue: Riparian buffer authorization.

Issue: The plan sheet depicts a 375 mm reinforced concrete pipe, drop inlet and lateral v ditch from 69+50 to 70+40 –Lt-. The drop inlet, pipe and ditch are not depicted on the buffer impacts permit drawing (4/03).

Status: The buffer impacts permit drawing (6/9/04) has been modified to depict the drop inlet, pipe and ditch.

Regulatory Issue: Riparian buffer authorization.

Issue: The plan sheet depicts a correctly sized 450 mm reinforced concrete pipe at 70+40 –L- that flows to the PFSH. The structure is depicted as a 375 mm reinforced concrete pipe on the buffer impact permit drawing (4/03).

Status: The buffer impact permit drawing has been modified to depict the structure as a 450 mm reinforced concrete pipe.

Regulatory Issue: Riparian buffer authorization.

Impact Review: The summary sheets have been modified to delete the 0.07 acre fill in surface waters at this site.

Site 3 (NEW Buffer Impacts Permit Drawing 8A/Plan Sheet 12)

Issue: The plan sheet depicts a berm drain outlet, 400 mm corrugated steel pipe, two drop inlets, 450 reinforced concrete pipe, tail ditch outlet and a PFSH at Station 71+58-L-. These features, structures, pipes and the PFSH were not depicted on a buffer impacts permit drawing.

Status: A NEW buffer impacts permit drawing (6/9/04) has been created to depict this site.

Please note that NEW Buffer Permit Drawing 8A only depicts the 400 mm corrugated steel pipe, a drop inlet, 450 reinforced concrete pipe, tail ditch outlet and a PFSH.

Regulatory Issue: Riparian buffer authorization.

Impact Review: No change in jurisdictional impacts.

Permit Drawings 65 and 66

Issue: The metric and English wetland/surface water summary sheets have been modified (6/20/04) to depict revised stream and wetland impacts.

Section AC

Site II (Stream Impacts Permit Drawing 6), Site II (Buffer Impacts Permit Drawing 10)/Plan Sheet 12/Erosion Control Plan Sheet EC-13

Issue: The stream impacts permit drawing (11/26/02), buffer impacts permit drawing (11/26/02) and plan sheets indicate that two lateral grass swales will be constructed along the southern toe of fill. A recent review of the site has indicated that Class I rip rap must be placed at the terminal portions of the swales inside the riparian buffer.

Status: The stream impacts permit drawing and buffer impact permit drawings have been modified (3/18/04) to depict the placement of the Class I rip rap in the lateral grass swales.

Regulatory Issue: Riparian buffer authorization.

Impact Review: No change in jurisdictional impacts.

Site III (Wetland Impacts Permit Drawing 7/Plan Sheet 6)

Issue: The wetland impacts permit drawing (11/6/02) indicates a wetland within the limits of the roadway fill at Station 13+50 –RPC-. This wetland is not depicted on the plan sheet.

Status: The plan sheet has been revised to depict this wetland.

Regulatory Issue: Section 404 and Section 401.

Issue: The plan sheet indicates a 900 mm pipe at Station 13+50 –RPC- and a PFSH, drop inlet and 300 mm corrugated steel pipe at 13+70 –RPC-. The pipes, drop inlet and PFSH are not depicted on the permit drawing.

Status: The permit drawing has been modified (3/24/04) to depict these pipe and the PFSH.

Regulatory Issue: None. The 900 mm pipe does not convey a jurisdictional stream and the pipe, drop inlet and PFSH are not associated with a regulated riparian buffer zone.

Permit Drawing 9 (surface water and wetland impact sheet)

Issue: The summary sheet permit drawing (11/26/02) incorrectly identifies all three sites.

Status: The summary sheet has been modified (7/1/04) to correctly identify all sites in this section of the project.

Regulatory Issue: None.

Plan Sheets 7 and 9

Issue: Shoulder berm gutter has been designed from station 14+27 -Y2- Lt to station 15+38 -Y2- Lt to protect the guardrail and fill slope from erosion. A median drop inlet (2GI) was added at station 15+38 -Y2- Lt to pick the water carried by the should berm gutter and 400 mm pipe was also added to convey the water to an existing rip rapped ditch on the right side of -Y2-. This existing rip rapped ditch runs parallel from 14+80 -Y2- Rt to 15+55 -Y2- Rt and discharges into a ephemeral ditch. This ditch was previously determined not to be a jurisdictional stream or subject to the riparian buffer rule.

Status: The plan sheets have been revised to depict this issue.

Regulatory Issue: Riparian buffer authorization (change in horizontal and vertical location of stormwater outfall locations even those in areas not subject to the riparian buffer rule).

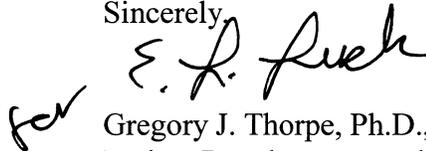
Impact Review: No change in jurisdictional impacts.

REGULATORY APPROVALS

Application is hereby made for the modification of the Department of Army Individual 404 Permit as required for the above-described activities. We are also hereby requesting a modification of the 401 Water Quality Certification and Neuse Buffer Certification from the NCDENR-DWQ. R-2000 AA, AB and AC has been designed to comply with the Riparian Buffer Mitigation Program (15A NCAC 2B .0242) and the Neuse River Basin Riparian Buffer Rules (15A NCAC 2B .0233). Therefore, as part of the Modification request, we respectfully request that the NCDENR-DWQ issue an Authorization Certificate pursuant to 15A NCAC 2B .0233 for the proposed use. In compliance with Section 143-215.3D(e) of the NCAA we have provided a method of debiting \$475, as noted in the subject line of this application, as payment for processing the Section 401 Water Quality Certification modification application. We are providing seven copies of this application to NCDENR-DWQ, for their use.

If you have any questions or need additional information, please call Ms. Rachelle Beaugard at (919) 715-1383.

Sincerely,



for Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Branch

cc: w/attachment
John Hennessy, NCDENR-DWQ
Travis Wilson, NCWRC
Becky Fox, USEPA-Whittier, NC
Ronald Mikulak, USEPA-Atlanta, GA
Gary Jordan, USFWS
David Chang, P.E., Hydraulics Unit
Greg Perfetti, P.E., Structure Design
John G. Nance, P.E., Division 5 Engineer
Chris Murray, Division 5 DEO
Tracy Parrot, P.E., Division 5 Construction Engineer
Wayne Currie, Division 5 Resident Engineer

w/o attachment

Jay Bennett, P.E., Roadway Design
Omar Sultan, Programming and TIP
Art McMillan, P.E., Highway Design
Mark Staley, Roadside Environmental
David Franklin, USACE, Wilmington
Beth Harmon, EEP



North Carolina Department of Environment and Natural Resources
Division of Ecosystem Enhancement

Michael F. Easley, Governor

William G. Ross Jr., Secretary

September 23, 2004

Mr. Eric Alsmeyer
US Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

Dear Mr. Alsmeyer:

Project: I-540 (Northern Wake Expressway)
DOT ID #: R-2000AA/AB/AC
County: Wake County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide compensation for the unavoidable 435 feet of stream impacts associated with the above referenced project.

The subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003; however, EEP intends to provide the appropriate amount of compensatory stream mitigation up to a 2:1 ratio in Cataloging Unit 3030002 of the Cape Fear River Basin.

If you have any questions or need additional information, please contact Ms. Beth Harmon at (919) 715-1929.

Sincerely,

James B. Stanfill
Strategic Planning Coordinator

cc: Phil Harris, P.E., Office of Natural Environment, NCDOT
John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: R-2000AA/AB/AC



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

September 23, 2004

Mr. Gregory J. Thorpe, Ph.D., Manager,
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

Subject: Project: I-540 (Northern Wake Expressway)
TIP Number: R-2000AA/AB/AC, Wake County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide compensation for the subject project. Based on the information supplied by you in a letter dated August 27, 2004, the impacts are located in CU 3030002 of the Cape Fear River Basin in the Central Piedmont Plain Eco-Region, and are as follows:

Stream Impacts: 435 feet

As stated in your letter, the subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The mitigation for the subject project will be provided in accordance with this agreement.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

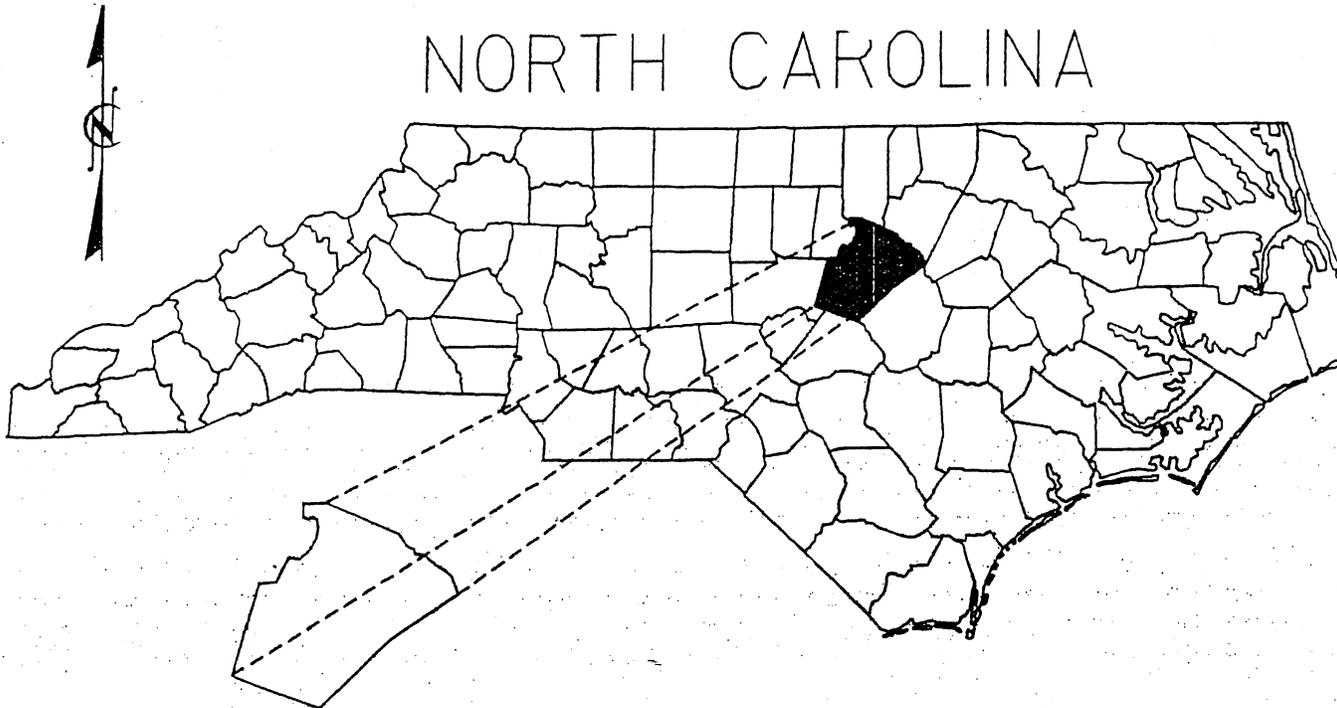
James B. Stanfill
Strategic Planning Coordinator

cc: Eric Alsmeyer, USACE-Raleigh
John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: R-2000AA/AB/AC

NC DENR Ecosystem Enhancement Program
1652 Mail Service Center, Raleigh, North Carolina 27699-1652
Phone: 919-715-1413 \ FAX: 919-715-2219 \ Internet: h2o.enr.state.nc.us/wrp/

One
North Carolina
Naturally

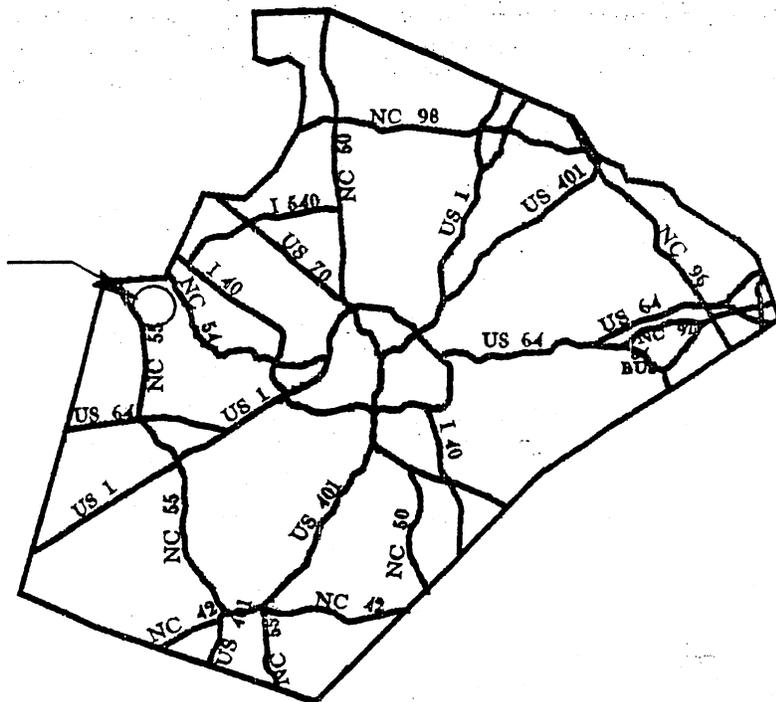
NORTH CAROLINA



WAKE COUNTY



SITE

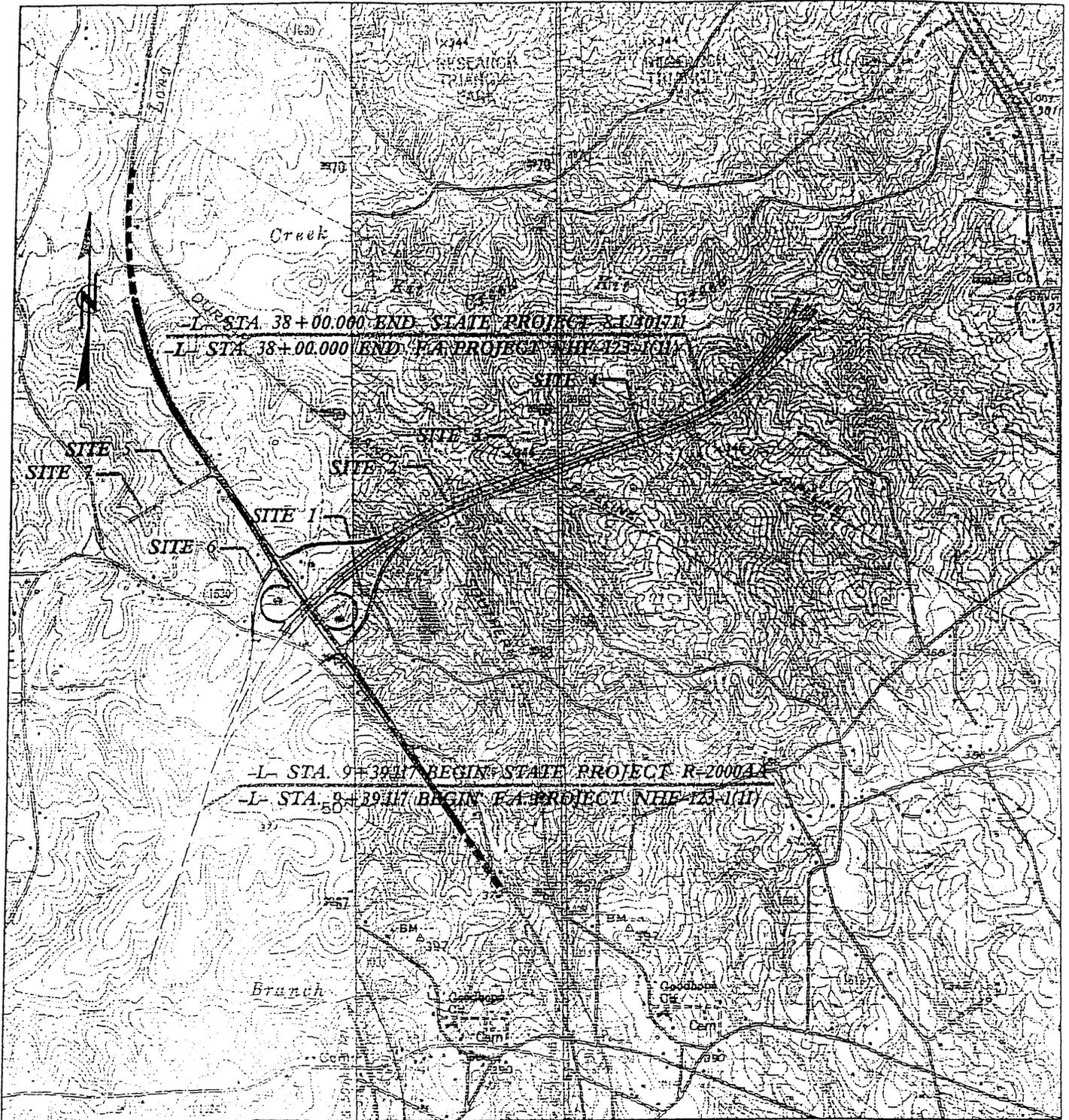


VICINITY MAP

WETLANDS & SURFACE WATER
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE COUNTY
PROJECT: 8.U401711 (R-2000A)
I-540
BETWEEN SR 1624 AND SR 16

SHEET 1 OF 19 DATE _____



SITE MAP

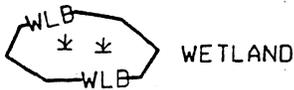
WETLANDS & SURFACE WATER
 N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

_____ COUNTY
 PROJECT: 8.U401711 (R-2000.AA)
 I-540
 BETWEEN SR 1624 AND SR 1630

SHEET 2 OF 19 DATE _____

LEGEND

— WLB — WETLAND BOUNDARY



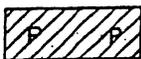
WETLAND



DENOTES FILL IN WETLAND



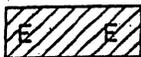
DENOTES FILL IN SURFACE WATER



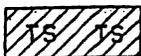
DENOTES FILL IN SURFACE WATER (POND)



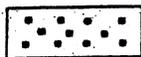
DENOTES TEMPORARY FILL IN WETLAND



DENOTES EXCAVATION IN WETLAND



DENOTES TEMPORARY FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING

← ← FLOW DIRECTION

— TB — TOP OF BANK

— WE — EDGE OF WATER

--- C --- PROP. LIMIT OF CUT

--- F --- PROP. LIMIT OF FILL

— △ — PROP. RIGHT OF WAY

--- NG --- NATURAL GROUND

--- PL --- PROPERTY LINE

— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

--- EAB --- EXIST. ENDANGERED ANIMAL BOUNDARY

--- EPB --- EXIST. ENDANGERED PLANT BOUNDARY

▽ WATER SURFACE

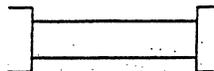
• • • LIVE STAKES

— BOULDER

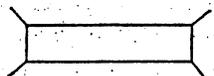
--- COIR FIBER ROLLS



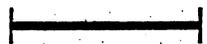
ADJACENT PROPERTY OWNER OR PARCEL NUMBER



PROPOSED BRIDGE



PROPOSED BOX CULVERT



PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTING STRUCTURES)



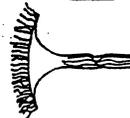
SINGLE TREE



WOODS LINE



DRAINAGE INLET



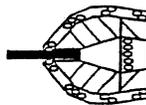
ROOTWAD



VANE



RIP RAP



RIP RAP ENERGY DISSIPATOR BASIN

--- BUFFER ZONE

--- BUFFER ZONE

WETLANDS & SURFACE WATER
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

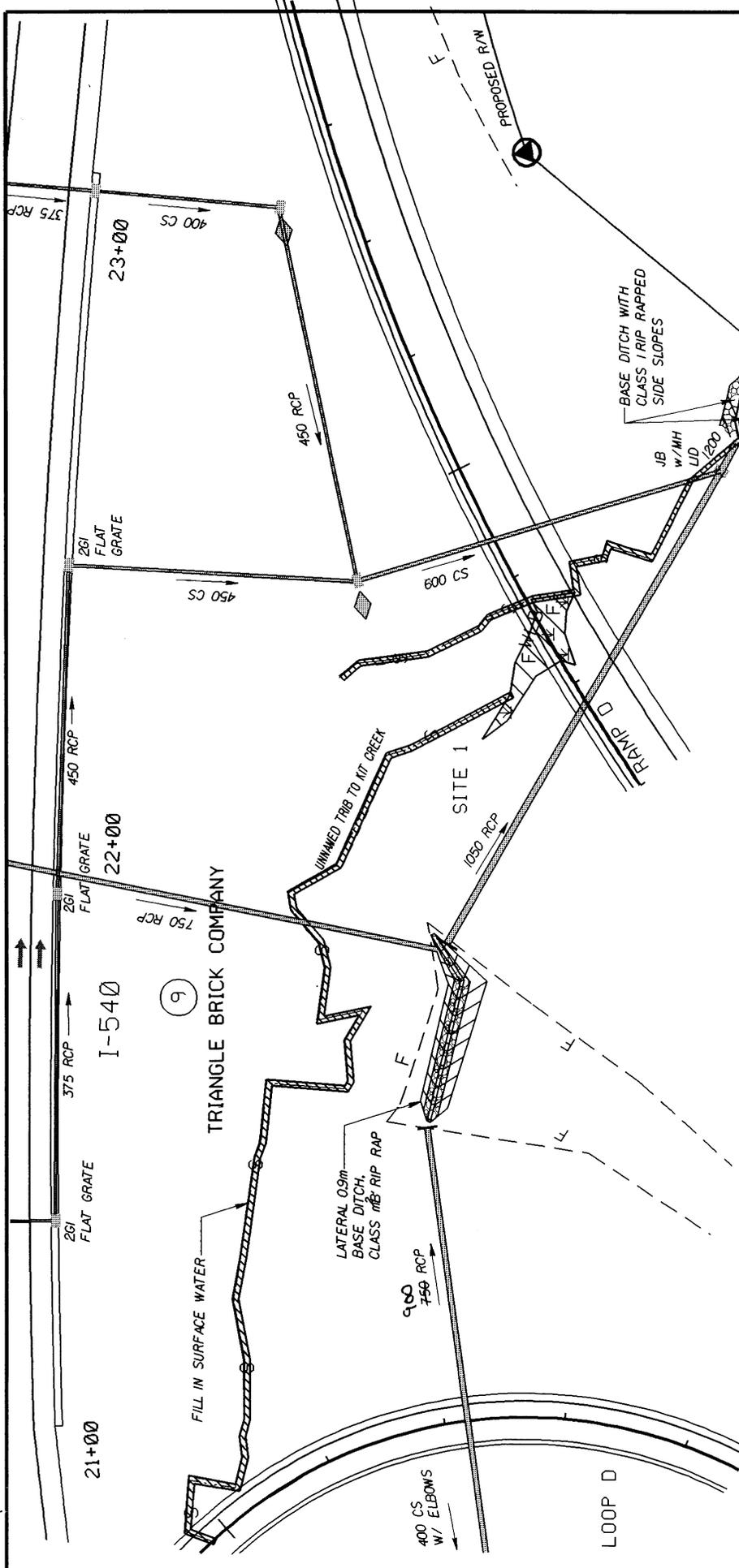
WAKE COUNTY

PROJECT: 8.U401711 (R-2000AA)

I-540

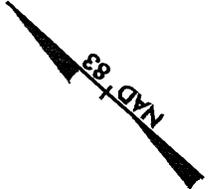
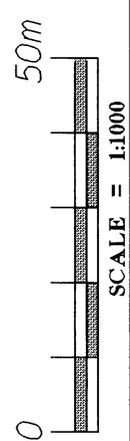
BETWEEN SR 1624 AND SR 1630

SHEET 3 OF 19 DATE

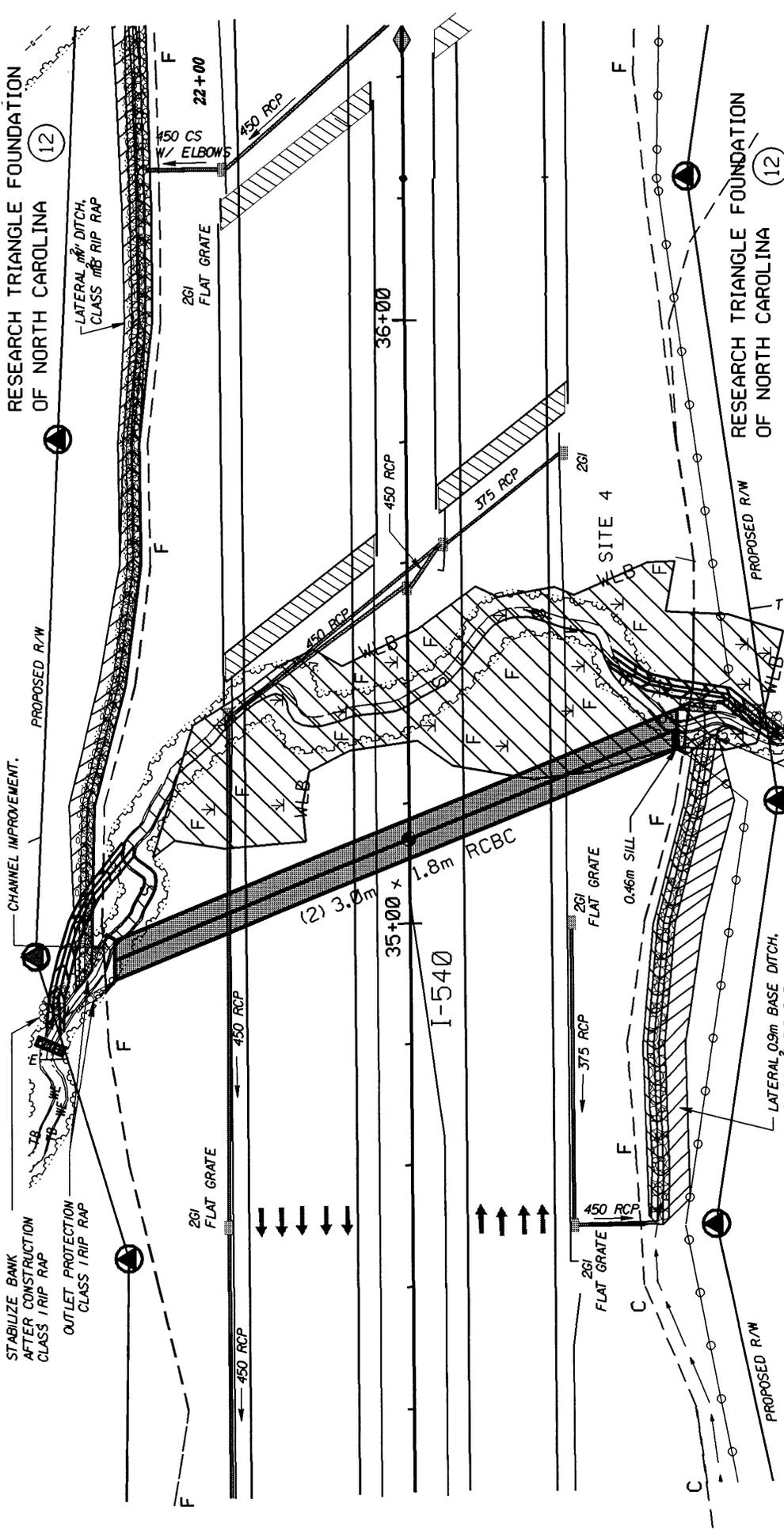


WETLANDS & SURFACE WATER
 N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE COUNTY
 PROJECT: 8.U401711 (R-2000AA)
 I-540
 BETWEEN SR 1624 AND SR 1630
 SHEET 4 OF 19 DATE 1/26/11

PLAN VIEW
 SITE 1



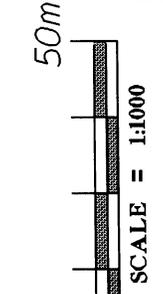
RESEARCH TRIANGLE FOUNDATION
OF NORTH CAROLINA (12)



WETLANDS & SURFACE WATER
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

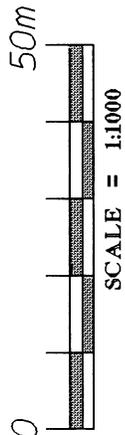
WAKE COUNTY
PROJECT: 8.U401711 (R-2000AA)
I-540
BETWEEN SR 1624 AND SR 1630

Rev. 9 OF 19 DATE 6/28/04
SHEET

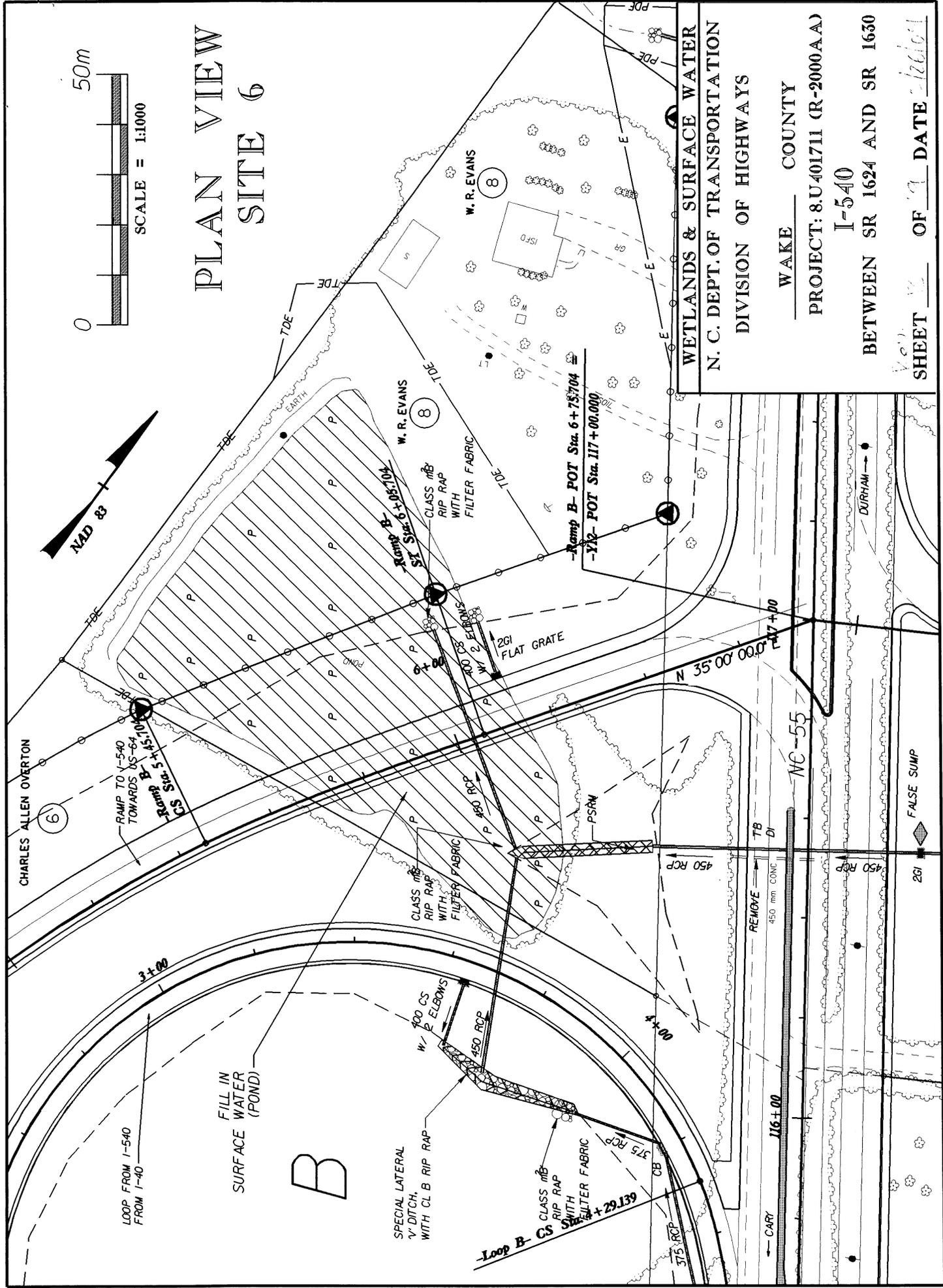
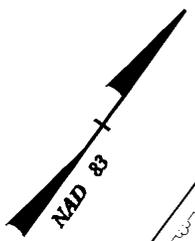


PLAN VIEW
SITE 4





PLAN VIEW SITE 6



WETLANDS & SURFACE WATER
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE COUNTY
PROJECT: 8.U401711 (R-2000AA)
I-540
BETWEEN SR 1624 AND SR 1630

SHEET 12 OF 19 DATE 12/6/01

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS			SURFACE WATER IMPACTS						
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)	
1	20+90 TO 22+55 -L-	site impacts approved	0.026				0.064				843	
1	20+90 TO 22+55 -L-	additional site impacts					0.008				111	
1	20+90 TO 22+55 -L-	total revised site impacts	0.026				0.072				954	
2	26+25 TO 26+80 -L-	(2) 9' w x 7' h RCBC site impacts approved					0.164				585	
2	26+25 TO 26+80 -L-	additional site impacts									128	
2	26+25 TO 26+80 -L-	total revised site impacts					0.164				713	
3	29+73 TO 30+72 -L-	66" RCP site impacts approved	0.302				0.036				474	
3	29+73 TO 30+72 -L-	66" RCP additional site impact										
3	29+73 TO 30+72 -L-	total revised site impacts	0.302				0.036				474	
4	35+00 TO 35+60 -L-	(2) 10' w x 6' h RCBC site impacts approved	0.537				0.058				476	
4	35+00 TO 35+60 -L-	additional site impacts	0.070				-0.016				131	
4	35+00 TO 35+60 -L-	total revised site impacts	0.607				0.000				607	
TOTALS:												

WETLAND & SURFACE WATER

ENGLISH

NCDOT
 DIVISION OF HIGHWAYS
 WAKE COUNTY
 PROJECT 8.U401711 (R-2000AA)
 I-540
 BETWEEN SR 1624 AND SR 1630

SHEET 18 OF 19 DATE 9/8/04
 Rev 9/8/04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER 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)	Natural Stream Design (m)		
1	20+90 TO 22+55 -L-	site impacts approved	0.011				0.026					257.0	
1	20+90 TO 22+55 -L-	site impacts with additional construction impact	0.011				0.026					290.0	
2	26+25 TO 26+80 -L-	(2) 2.7m x 2.1m RCBC site impacts approved					0.067					178.0	
2	26+25 TO 26+80 -L-	(2) 2.7m x 2.1m RCBC site impacts with additional construction impact					0.067					217.0	
3	29+73 TO 30+72 -L-	1650 RCP site impacts approved	0.122			0.007	0.014					144.0	
3	29+73 TO 30+72 -L-	1650 RCP site impacts with additional construction impact	0.122			0.007	0.014					144.0	
4	35+00 TO 35+60 -L-	(2) 3.0m x 1.8m RCBC site impacts approved	0.217			0.006	0.023					145.0	
4	35+00 TO 35+60 -L-	(2) 3.0m x 1.8m RCBC site impacts with additional construction impact	0.245				0.023					185.0	
TOTALS:													

WETLAND & SURFACE WATER

NCDOT

DIVISION OF HIGHWAYS
 WAKE COUNTY
 PROJECT 8.U401711 (R-2000AA)
 I-540
 BETWEEN SR 1624 AND SR 1630

SHEET **17** OF **19** DATE **9/8/07**
 Rev **9/8/07**

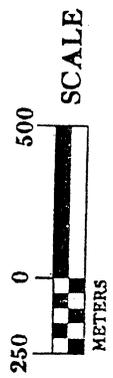


N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE AND DURHAM COUNTIES
 PROJECT: 8:U401711 (R-2000AB)

SHEET 2 OF 67 7/03

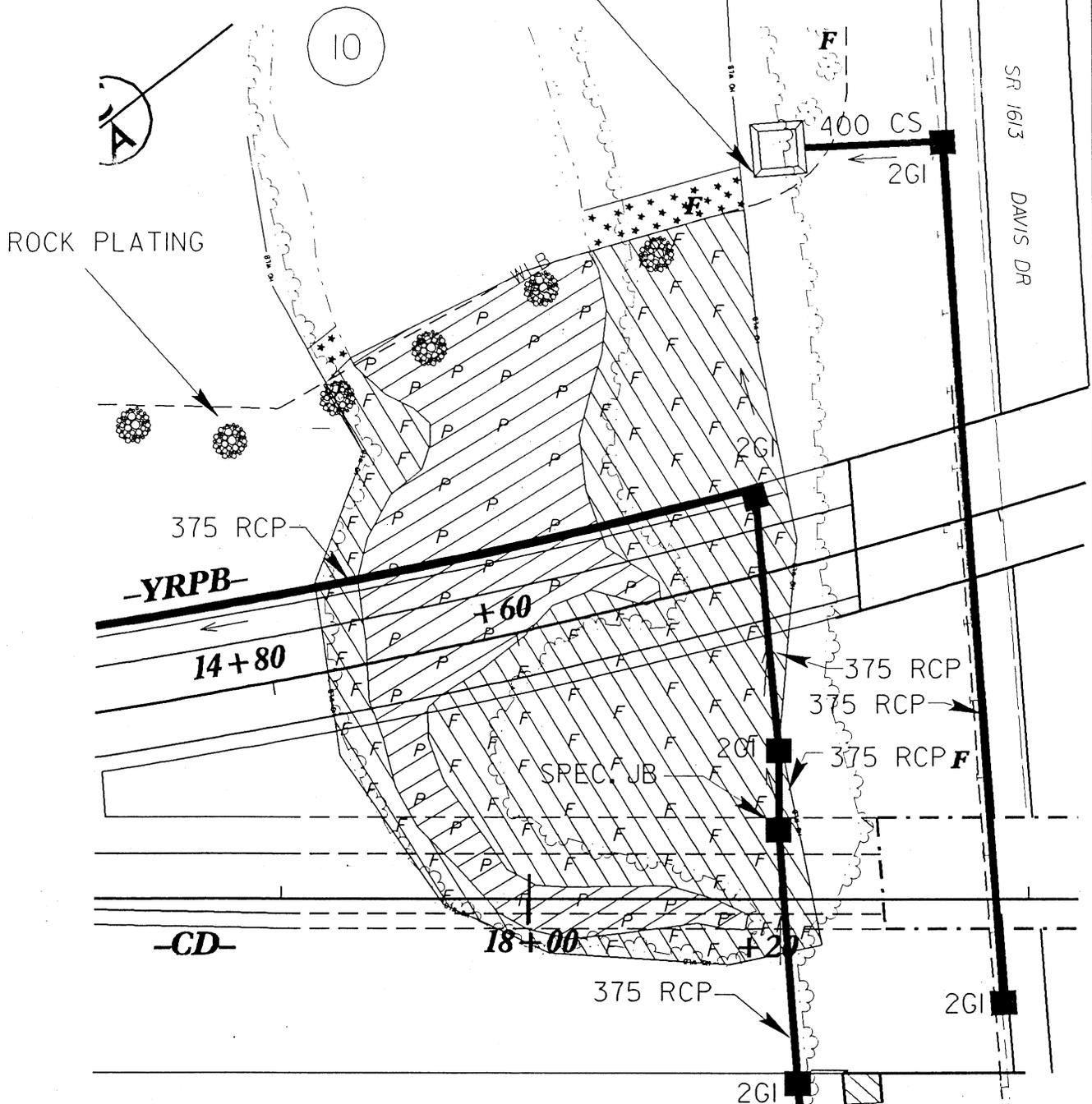
SITE MAP

WETLAND

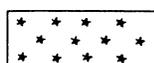
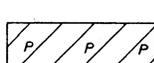


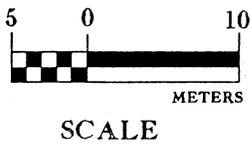
RESEARCH TRIANGLE FOUNDATION
OF NORTH CAROLINA

PREFORMED SCOUR HOLE
SEE DETAIL



PLAN VIEW SITE 2

-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLANDS
-  DENOTES FILL IN POND

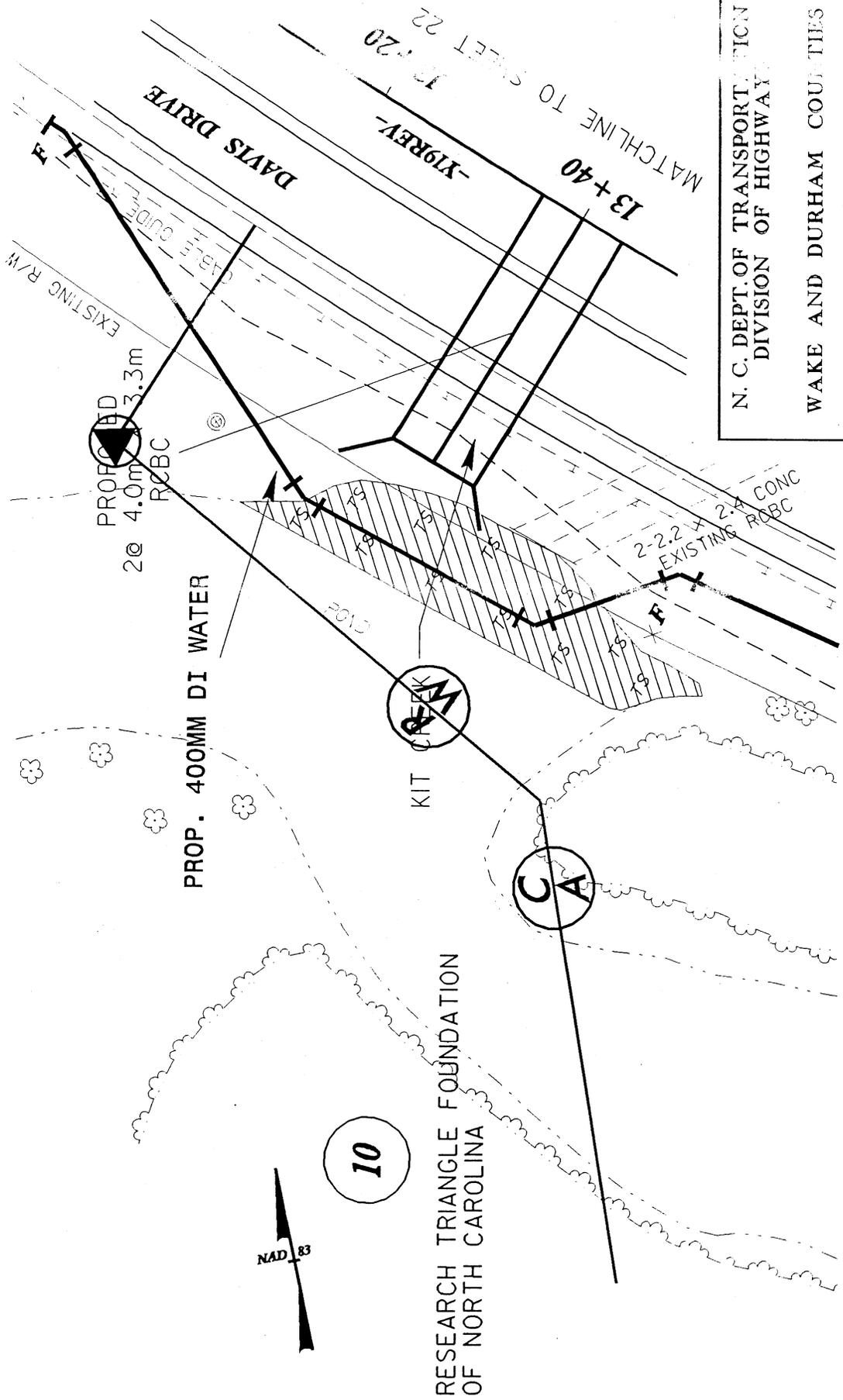


N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

Rev. SHEET 15 OF 67 6/9/04



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

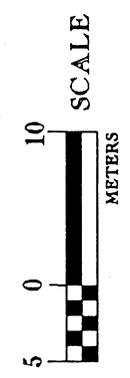
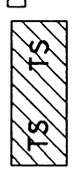
WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000/03)

Rev. SHEET 24 OF 67 6/9/04

PLAN VIEW
 SITE 3

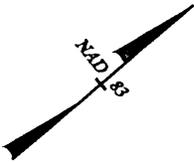
DENOTES TEMPORARY
 FILL IN SURFACE
 WATER



CHANNEL IMPROVEMENT
CLASS I RIP RAP
2:1 SIDE SLOPES

PLAN VIEW

SITE 4



2 @ 4.0m X 3.0m
RCBC

10

RESEARCH TRIANGLE FOUNDATION
OF NORTH CAROLINA

15+40

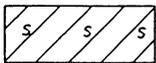
-YCFLY-
15+80

WAT CREEK

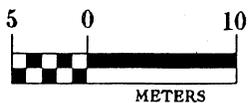
CLASS I
RIP RAP

LAT BASE DITCH

LAT. V DITCH



DENOTES FILL IN
SURFACE WATERS



SCALE

METERS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

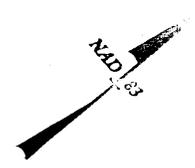
WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

Rev.
SHEET 26 OF 67

6/9/04

MATCHLINE TO SHEET 17



2 @ 4.0m X 3.0m RCBC

-CD-

19+00

+40

2GI,
TYPE
D

SWALE

45+00

+20

F.S.
2GI

-L-

450 RCP

2GI

EXISTING F/W

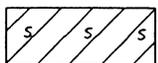
400 CS
W/ ELBOWS

RESEARCH TRIANGLE
FOUNDATION
OF NORTH CAROLINA

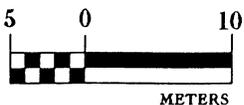
10

LAT. BASE DITCH

CLASS I RIP RAP



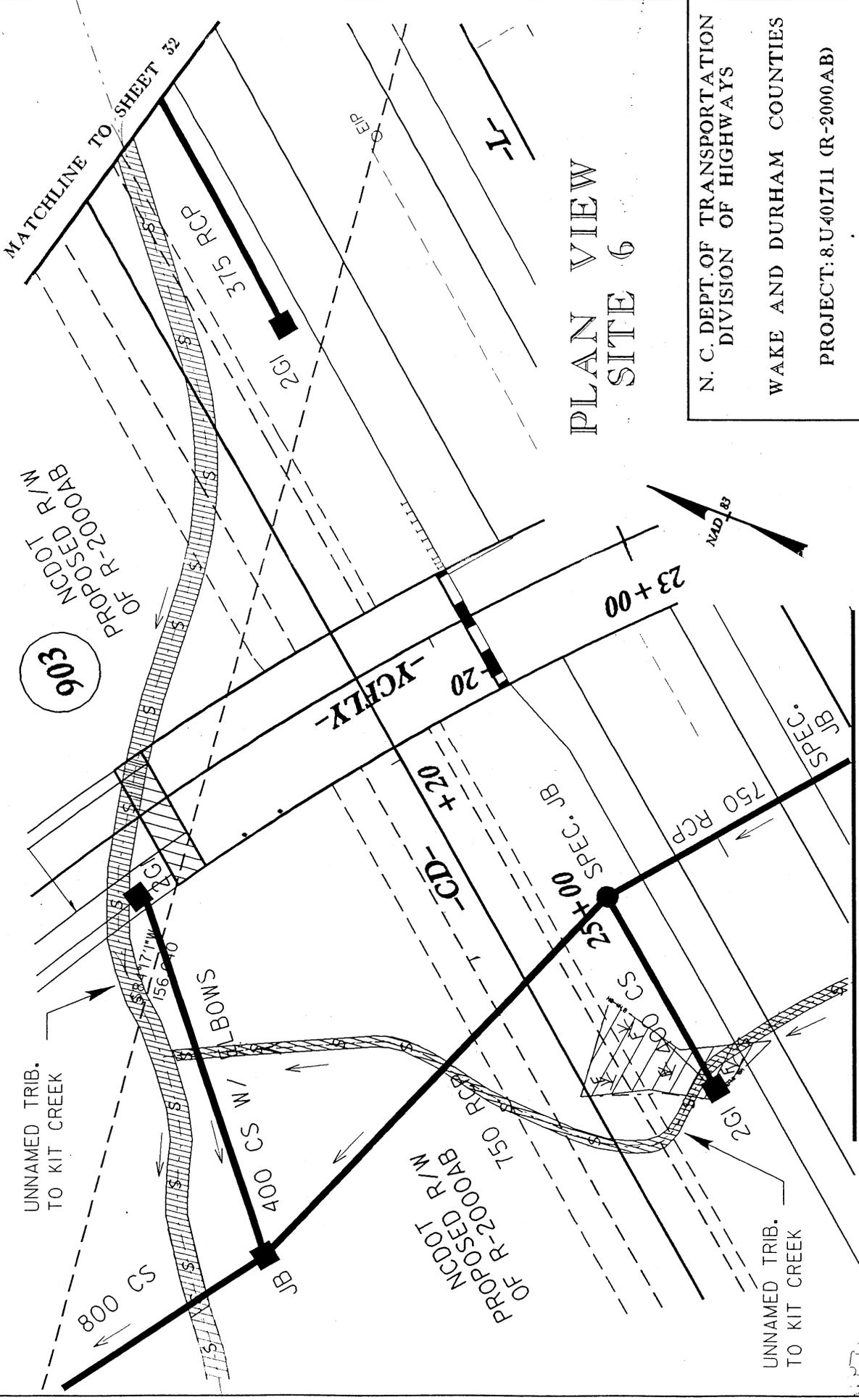
DENOTES FILL IN
SURFACE WATERS



PLAN VIEW
SITE 4

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE AND DURHAM COUNTIES
PROJECT: 8.U401711 (R-2000AB)

Rev.
SHEET 27 OF 67 6/9/09



PLAN VIEW
SITE 6

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

Rev. 31 OF 67 6/9/04
SHEET 31

903

PROPOSED R/W
OF R-2000AB

UNNAMED TRIB.
TO KIT CREEK

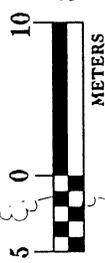
UNNAMED TRIB.
TO KIT CREEK

PROPOSED R/W
OF R-2000AB

UNNAMED TRIB.
TO KIT CREEK

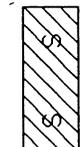
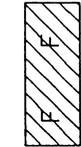
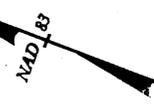
MATCHLINE TO SHEET 30

MATCHLINE TO SHEET 32



SS DENOTES FILL IN SURFACE WATER

FF DENOTES FILL IN WETLAND



6

Andover Partnership LLC

903

NCDOT
PROPOSED R/W
OF R-2000AB



450 RCP

750 RCP

750 RCP

UNNAMED TRIB.
TO KIT CREEK

-CD-

+20

26+00

375 RCP

375 RCP

MATCHLINE TO SHEET 53

MATCHLINE TO SHEET 51

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

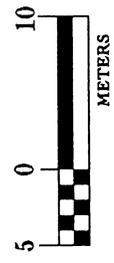
WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

Rev. SHEET 32 OF 67 6/19/09

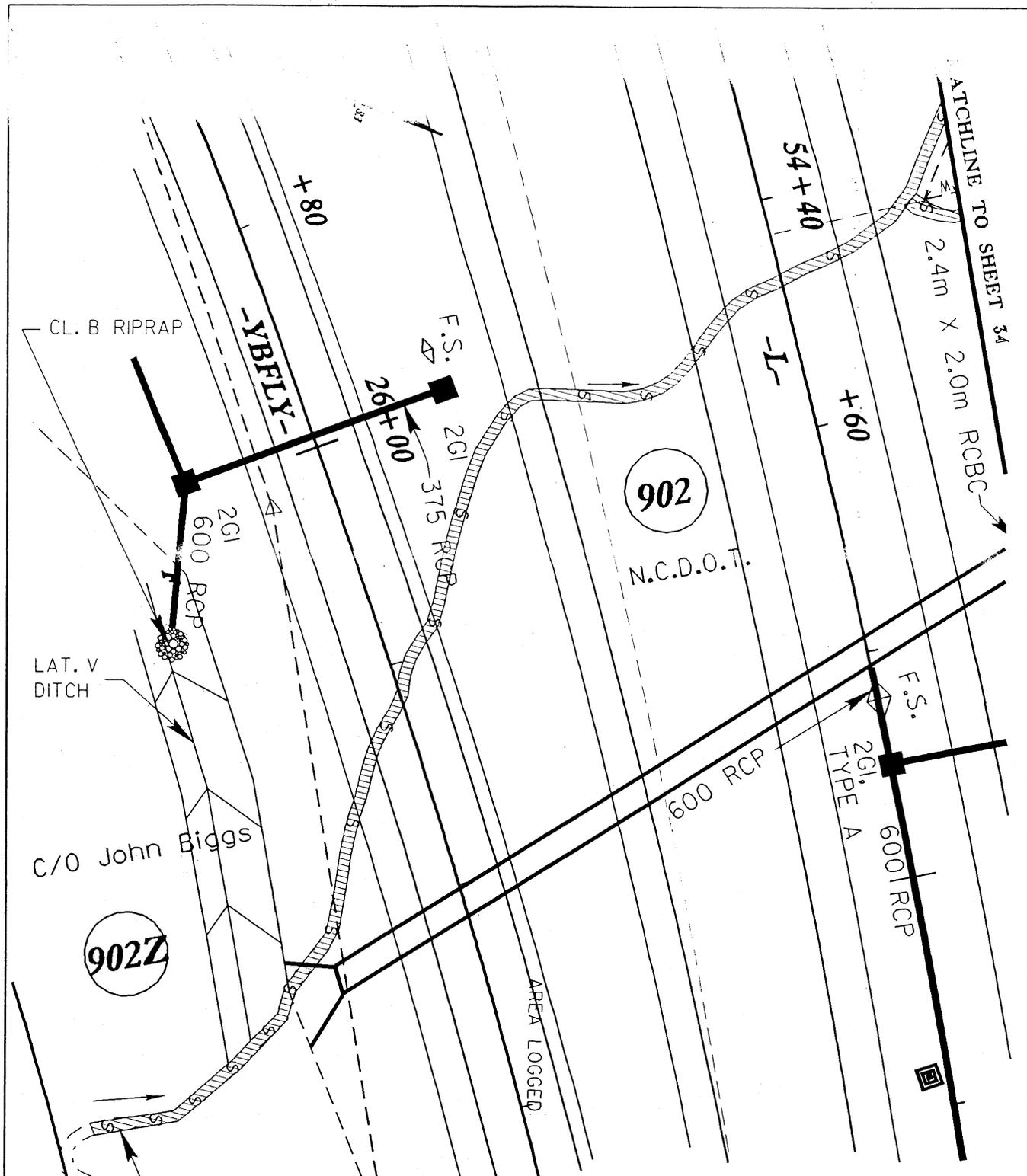
PLAN VIEW SITE 6

DENOTES FILL IN
SURFACE WATERS

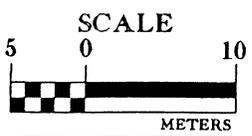


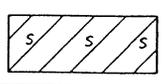
SCALE

METERS



PLAN VIEW
SITE 6



 DENOTES FILL IN SURFACE WATERS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB) -

Rev. SHEET 35 OF 67 6/19/00

ADJUSTED R/W FROM 1966
 902

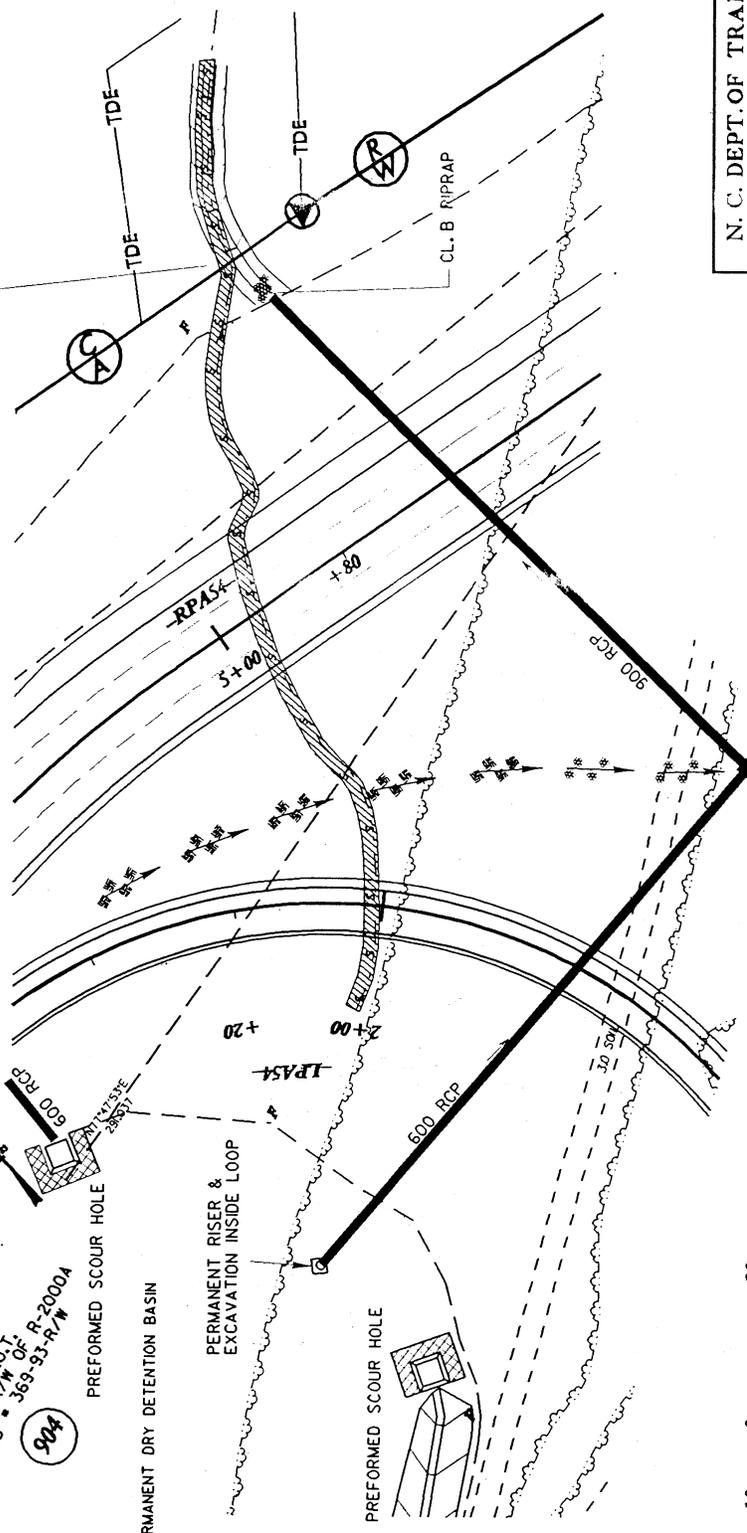
0.100 = 1.11 CM/S
 0.100 = 1.173 M/S

N.C.D.O.T.
 PROPOSED R/W OF R-2000A
 PSD = 188-95-R/W

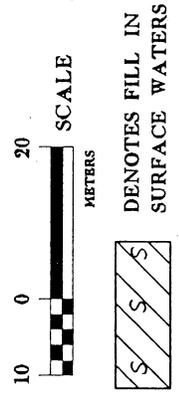
908

N.C.D.O.T.
 PROPOSED R/W OF R-2000A
 PSD = 369-93-R/W

904

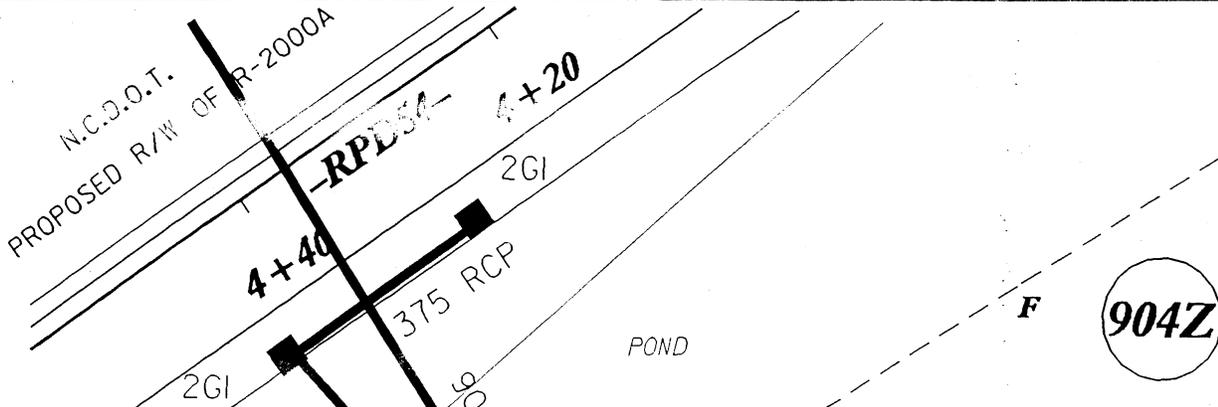


PLAN VIEW
 SITE 9
 STREAM IMPACTS



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE AND DURHAM COUNTIES
 PROJECT: 8.U401711 (R-2000AB)

Rev. 13 OF 67
 SHEET 13 OF 67
 efa/04



Duke Weeks



EDGE OF WATER

400 CSP
W/ 2 ELBOWS

ENERGY DISSIPATER

EXISTING POND TO BE DRAINED

PERMANENT DRY DETENTION BASIN

PERMANENT RISER

CL. B RIP RAP

1050 RCP

3.0M WIDE X 0.6M DEEP
WEIR SPILLWAY

PIER

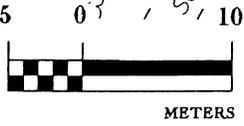
$Q(10) = 1.25 \text{ CMS}$
 $V(10) = 1.7 \text{ M/S}$

HQ WLB

HQ WLB

15

Jim Anderson



SCALE

PLAN VIEW
SITE 10
WETLAND IMPACTS



DENOTES EXCAVATION
IN WETLAND

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

Rev
SHEET 44 OF 67

6/9/04

WETLAND PERMIT IMPACT SUMMARY																			
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS												
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)								
3	-Y19REV- 13+40	2@13'x11' RCBC site impacts approved				0.07													
3	-Y19REV- 13+40	2@13'x11' RCBC additional site impacts				-0.07				0.07									
3	-Y19REV- 13+40	2@13'x11' RCBC total revised site impacts				0				0.07									
4	-L- 45+26	2@13'x10' RCBC site impacts approved												1030					
4	-L- 45+26	2@13'x10' RCBC additional site impacts												20					
4	-L- 45+26	2@13'x10' RCBC total revised site impacts												1050					
6	-L- 54+47	1@8'x7' RCBC site impacts approved												345					
6	-L- 54+47	1@8'x7' RCBC additional site impacts												45					
6	-L- 54+47	1@8'x7' RCBC total revised site impacts												390					
10	-RPD54- 4+60 Lt	Detention Spillway site impacts approved							0.04										
10	-RPD54- 4+60 Lt	Detention Spillway additional site impacts						0.04	-0.04										
10	-RPD54- 4+60 Lt	Detention Spillway total revised site impacts						0.04	0										
11		deleted								-0.07									
TOTALS:																			

** For Sites 3 and 10, the type of impacts were revised.

THIS TABLE ONLY SHOWS SITES IN WHICH JURISDICTIONAL CHANGES WERE MADE

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 PROJECT 8.U401711 (R-20000AB)
 WAKE & DURHAM COUNTY

SHEET **65A** OF **67** *Rev.*
 Sep-04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1	-L- 42+60 -YRPB- 15+20 -L- 43+15	48" RCP 24" RCP	0.11	0.01	0.01	0.01	0.04			761	
2	-YRPB- 14+60	Existing Lake	0.30		0.02		0.01	0.16		413	
3	From -L- 44+60 To -L- 55+20 Lt -YFLY- 15+67 -YFLY- 23+97 -Y19REV- 13+40	Extend 42" RCP 1 @ 10' x 10' RCBC 1 @ 10' x 9' RCBC 2 @ 13' x 11' RCBC	0.25				0.58			1975	410
4	-L- 45+26 -YFLY- 15+60 -Y19DET2- 10+52	2 @ 13' x 10' RCBC 2 @ 13' x 10' RCBC 60" RCP Ext.					0.46			1050	
5	-L- 49+67	24" RCP					0.01			98	
6	-L- 50+82 From -L- 50+20 To -L- 55+00 Lt -YRPA- 12+77 -L- 54+47	30" RCP 1 @ 10' x 9' RCBC 1 @ 8' x 7' RCBC	0.02				0.05 0.21			607 2060	889
7	-L- 60+85 Lt & Rt	24" RCP	0.11				0.01				
8	-L- 62+05	24" RCP	0.11				0.02				
9	-RPA54- 5+20 Lt	36" RCP					0.07	3.63		417	
10	-RPD54- 4+60 Lt -RPD54- 4+43	DETENTION SPILLWAY 36" RCP		0.04							
TOTALS:			0.90	0.00	0.05	0.06	1.49	3.79	0.07	8398	1299

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT 8.U401711 (R-2000AB)
WAKE & DURHAM COUNTY

Rev. 65 of 67
SHEET

6/20/04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS			SURFACE WATER 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)	Natural Stream Design (m)
1	-L- 42+60 -YRPB- 15+20 -L- 43+15	1200mm RCP 600mm RCP	0.043		0.004	0.004	0.014			232	
2	-YRPB- 14+60	Existing Lake	0.122			0.007	0.005	0.065		126	
3	From -L- 44+60 To -L- 50+20 LT -YBFLY- 15+67 -YCFLY- 23+97 -Y19REV- 13+40	1 - 3m x 3m RCBC 1 - 3m x 2.7m RCBC 2 - 4m x 3.3m RCBC	0.103				0.233			602	125
4	-L- 45+26 -YCFLY- 15+60 -Y19DET2- 10+52	2 - 4m x 3m RCBC 2 - 4m x 3m RCBC 1500 mm RCP Ext.					0.187			320	
5	-L- 49+67	600mm RCP					0.003			30	
6	-L- 50+82 From -L- 50+20 To -L- 55+00 LT -YRPA- 12+77 -L- 54+47	750mm RCP 1 - 3.0m x 2.7m RCBC	0.008				0.019	0.085		185	271
7	-L- 60+85 LT & RT	600mm RCP	0.043			0.003	0.002	0.013		36	
8	-L- 62+05	600mm RCP	0.044			0.006				119	
9	-RPA54- 5+20 LT	900mm RCP					0.027			127	
10	-RPD54- 4+60 LT -RPD54- 4+43	DETENTION SPILLWAY 900mm RCP			0.016			1.47			
TOTALS:			0.363	0	0.020	0.02	0.604	1.535	0.028	2560	396

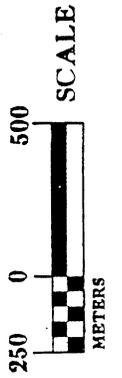
N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE AND DURHAM COUNTIES
 PROJECT: 8-U401711 (R-2000AB)
 SHEET **66** OF **67**



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE AND DURHAM COUNTIES
 PROJECT: 8.U401711 (R-3000AB)

SITE MAP

BUFFER



SHEET 1 OF 12

BUFFER LEGEND

— WLB — WETLAND BOUNDARY

 WETLAND

 ALLOWABLE IMPACTS ZONE 1

 ALLOWABLE IMPACTS ZONE 2

 MITIGABLE IMPACTS ZONE 1

 MITIGABLE IMPACTS ZONE 2

— BZ — RIPARIAN BUFFER ZONE

— BZ1 — RIPARIAN BUFFER ZONE 1
30 ft (9.2m)

— BZ2 — RIPARIAN BUFFER ZONE 2
20 ft (6.1m)

→ 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

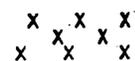
— TDE — TEMP. DRAINAGE EASEMENT

— PDE — PERMANENT DRAINAGE EASEMENT

— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

— EPB — EXIST. ENDANGERED PLANT BOUNDARY

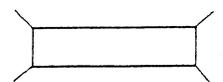
—▽— WATER SURFACE

 LIVE STAKES

 BOULDER

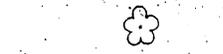
— CORE FIBER ROLLS

 PROPOSED BRIDGE

 PROPOSED BOX CULVERT

 PROPOSED PIPE CULVERT
12'-48' PIPES
54' PIPES & ABOVE

(DASHED LINES DENOTE EXISTING STRUCTURES)

 SINGLE TREE

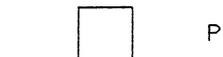
 WOODS LINE

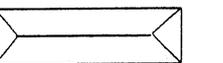
 DRAINAGE INLET

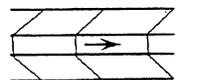
 ROOTWAD

 RIP RAP

 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

 PREFORMED SCOUR HOLE (PSH)

 LEVEL SPREADER (LS)

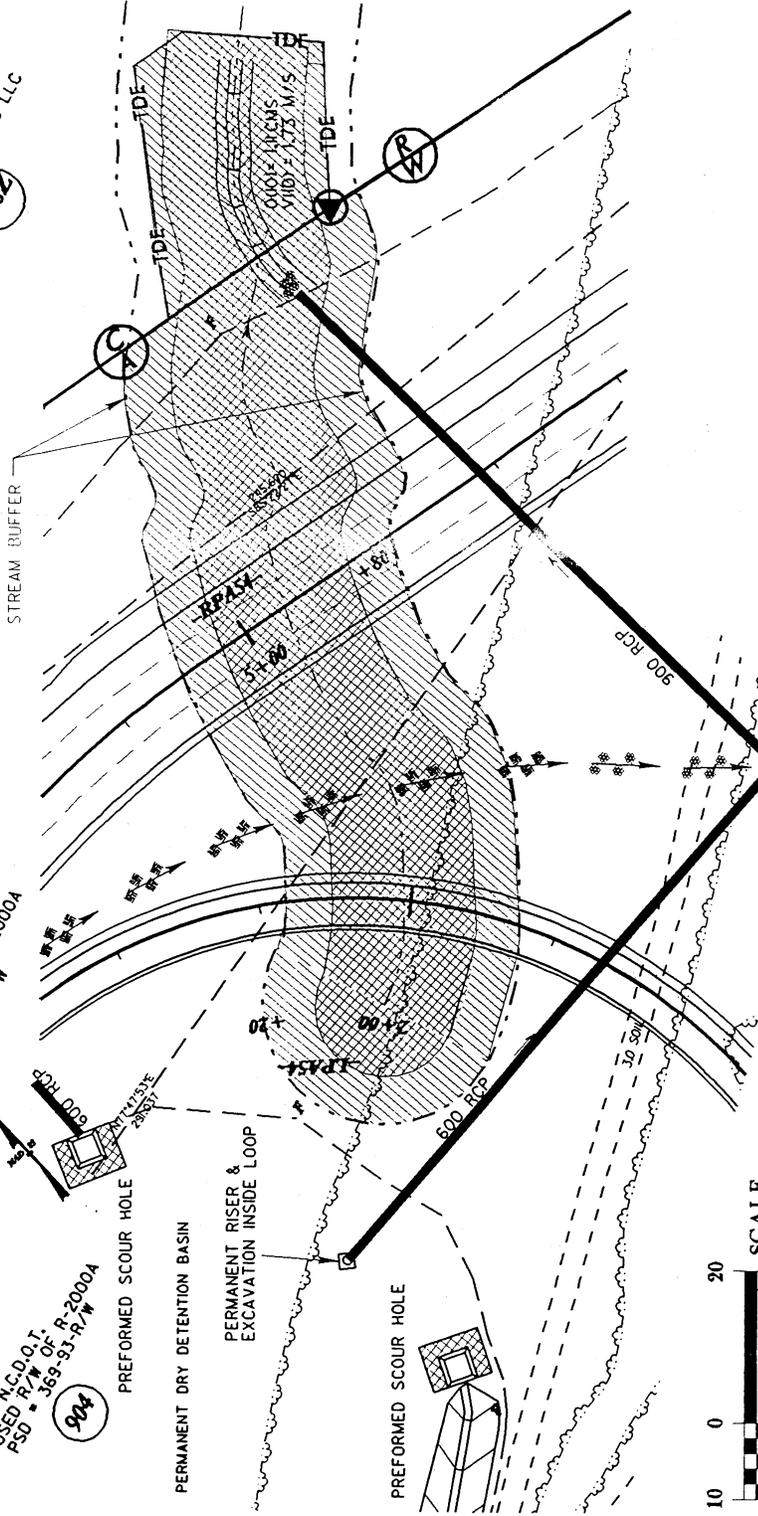
 GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE & DURHAM COUNTY
PROJECT: 8.U401711 (R-2000AB)

Arvill Investments LLC
9082

N.C.D.O.T.
PROPOSED R/W OF R-2000A
PSD # 188-95-R/W
908

N.C.D.O.T.
PROPOSED R/W OF R-2000A
PSD # 369-93-R/W
904



PLAN VIEW SITE 1 BUFFER IMPACTS



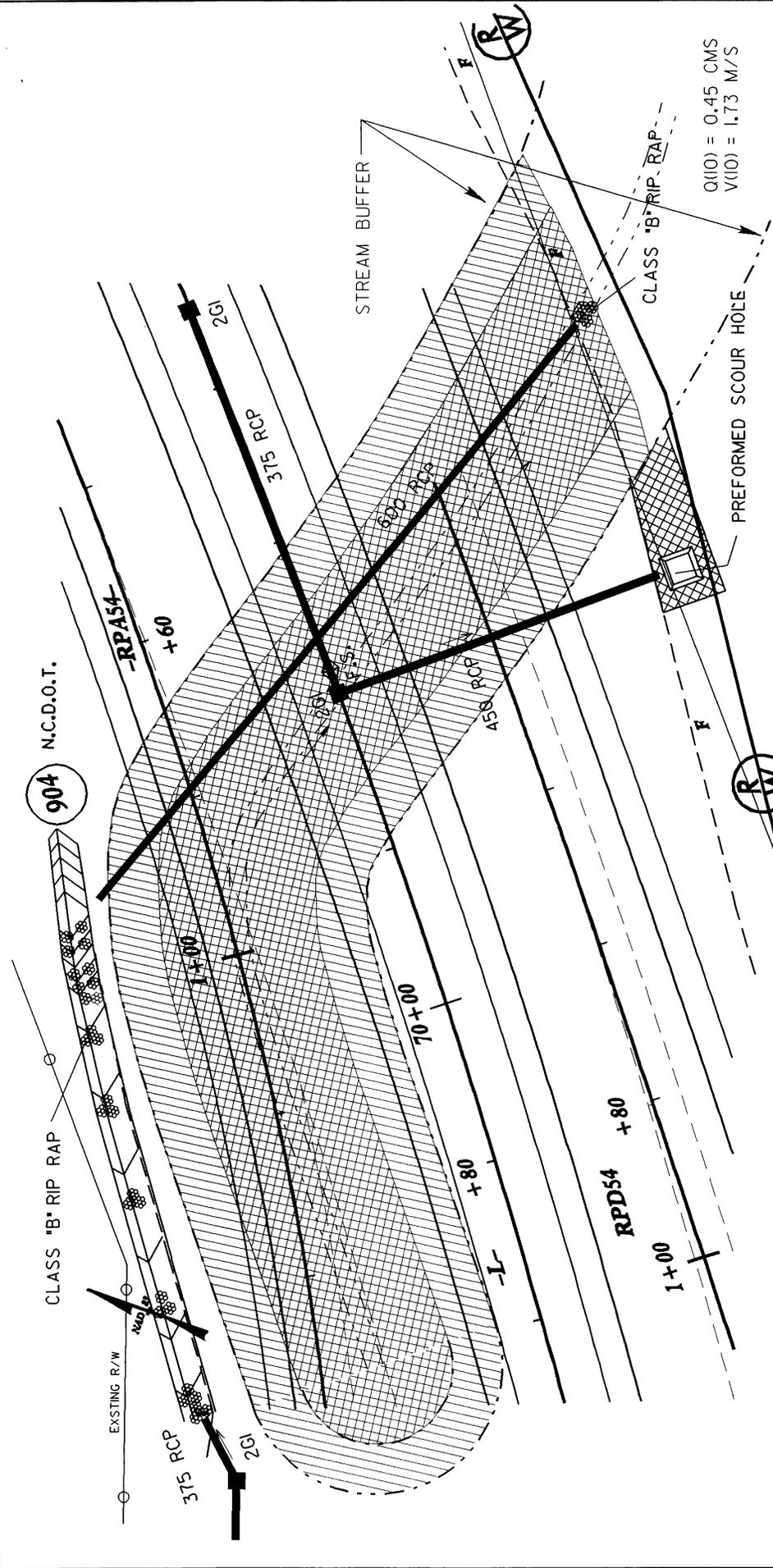
-  DENOTES ZONE 2 BUFFER IMPACT
-  DENOTES ZONE 1 BUFFER IMPACT

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000A/B)

Rev. 6 OF 12
SHEET 6 OF 12
6/9/04



Duke Weeks &
Anvil Investments LLC

904Z

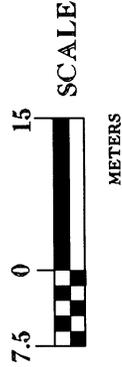
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000.AB)

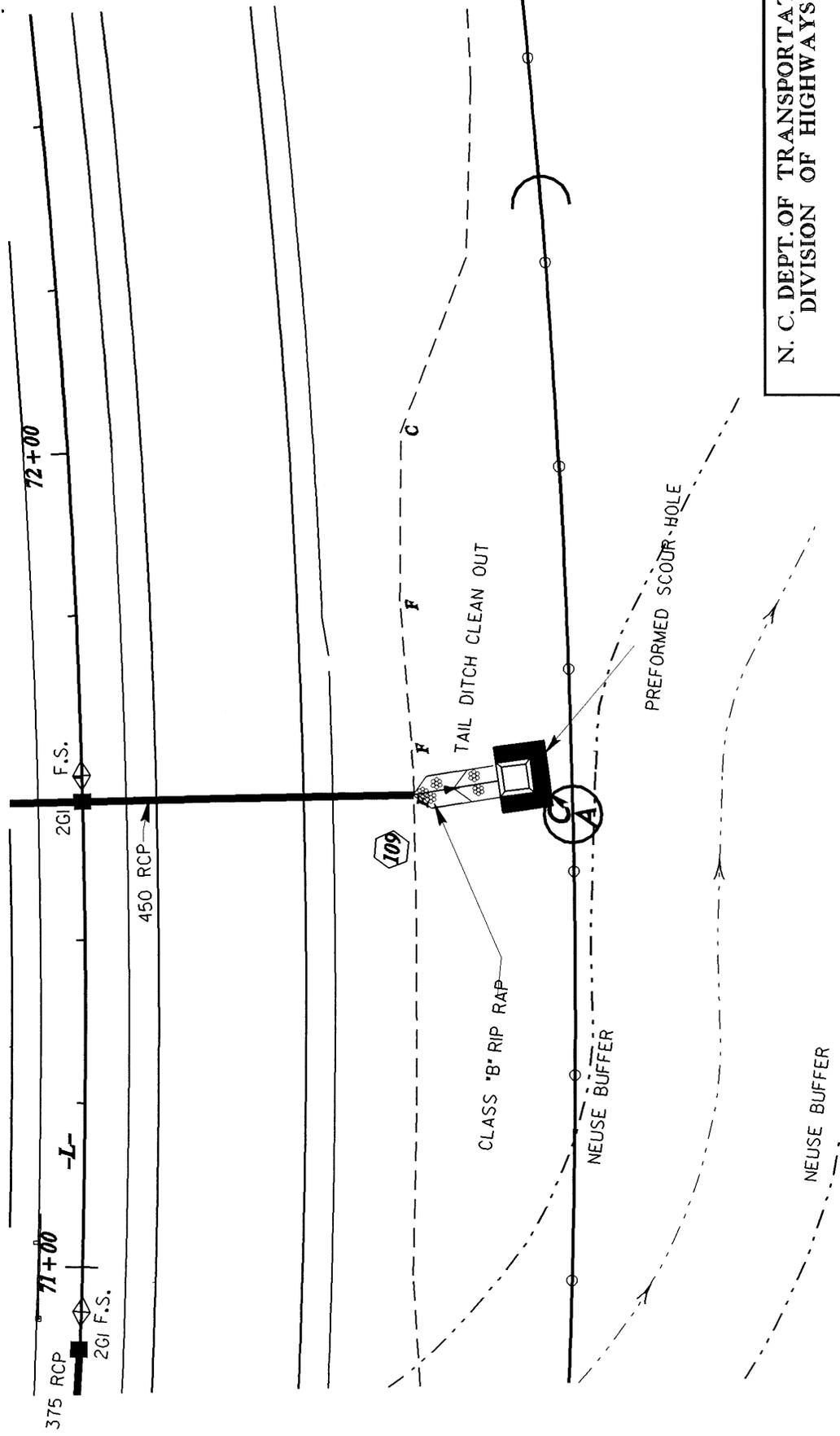
PLAN VIEW
SITE 3

-  DENOTES ZONE 1
BUFFER IMPACT
-  DENOTES ZONE 2
BUFFER IMPACT



Rev. 8 OF 12 6/20/04
SHEET

BUFFER IMPACTS



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

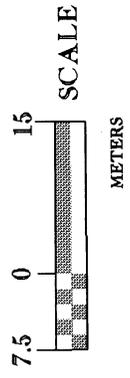
WAKE AND DURHAM COUNTIES

PROJECT: 8.U401711 (R-2000AB)

NEW SHEET 8A OF 12 6/9/09

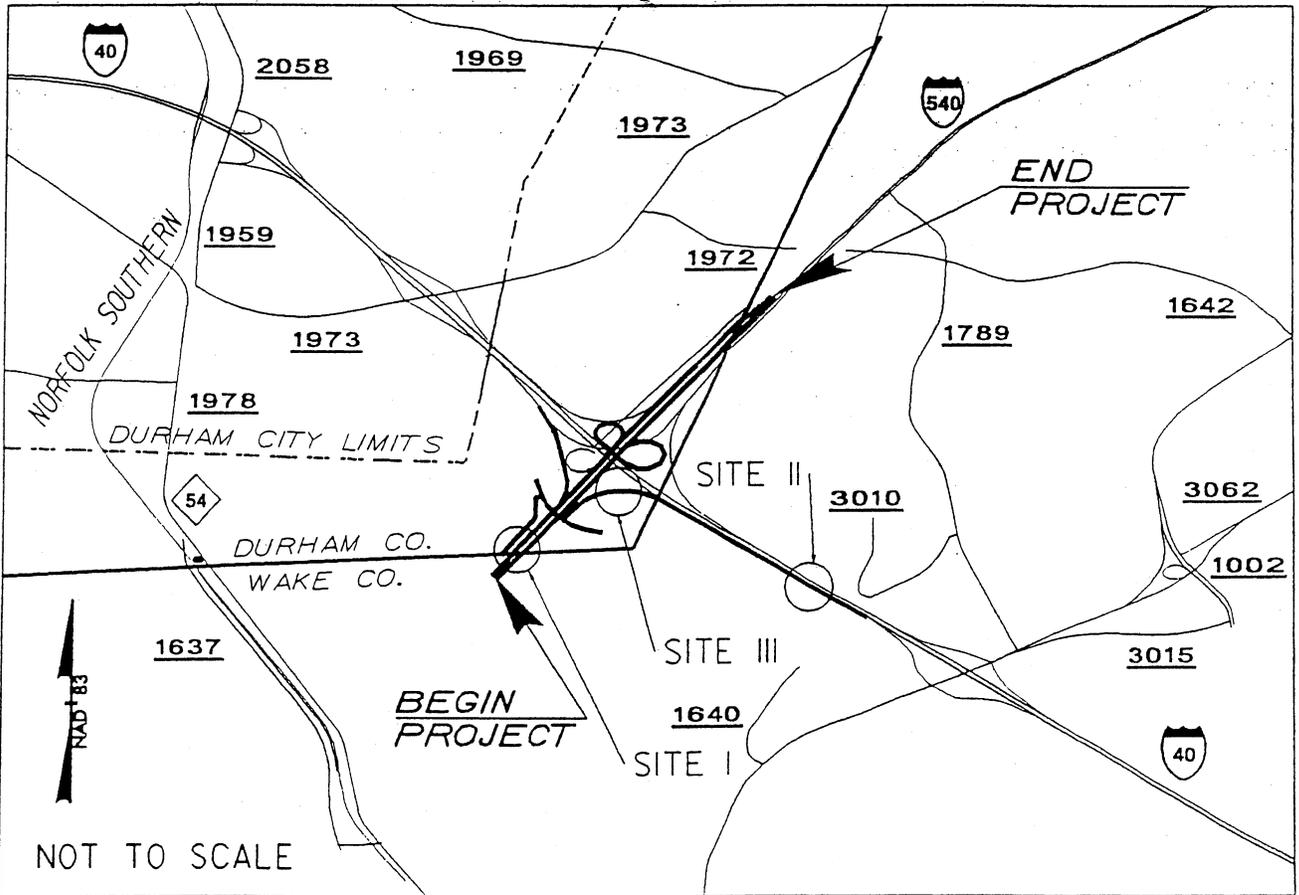
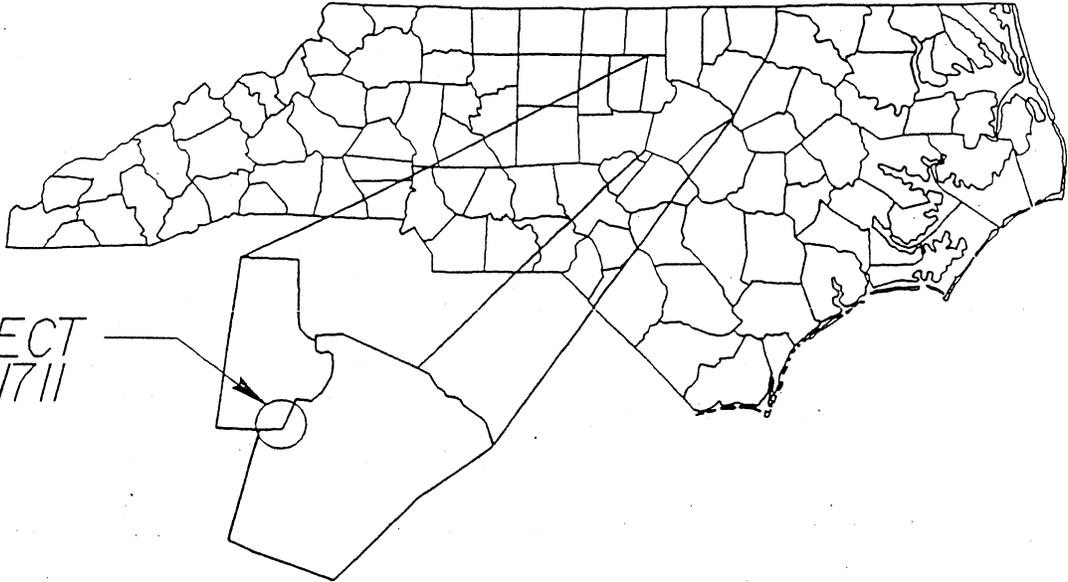
PLAN VIEW
 SITE 3

BUFFER IMPACTS



NORTH CAROLINA

PROJECT
8.U401711



VICINITY MAPS

WETLAND AND STREAM IMPACTS

DIVISION OF HIGHWAYS
WAKE/DURHAM COUNTY

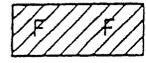
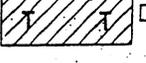
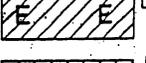
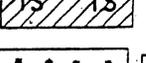
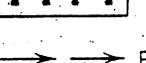
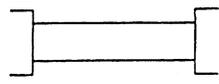
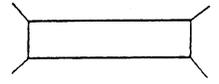
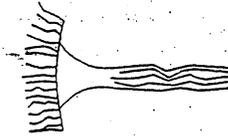
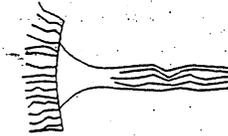
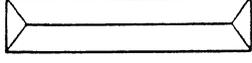
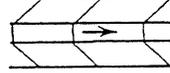
PROJECT: 8.U401711 (R-2000AC)

I-540 (NORTHERN WAKE EXPRESSWAY)
FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
NORTHEAST OF I-40

SHEET 1 OF 9

11/26/02

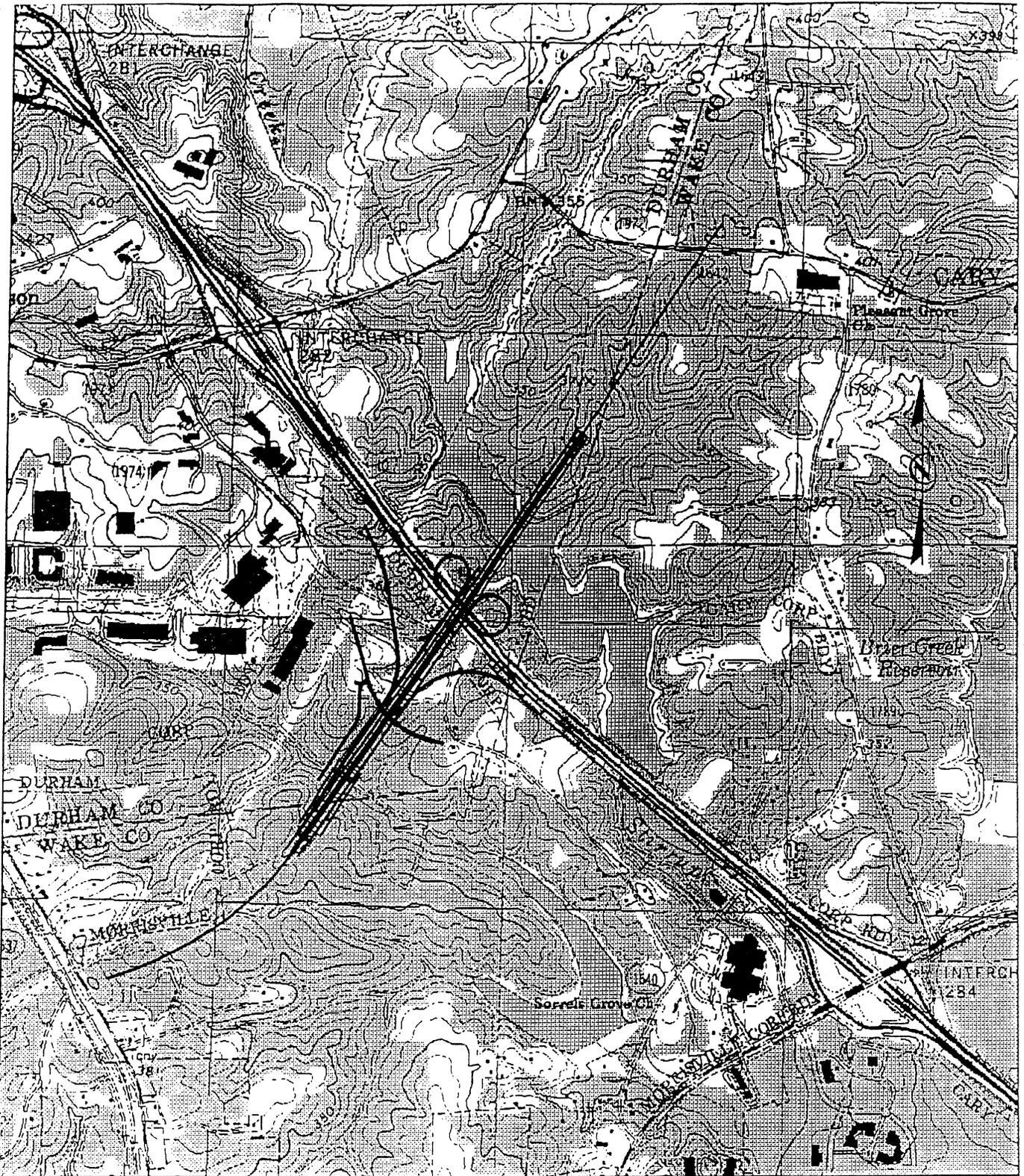
WETLAND LEGEND

<p>— WLB — WETLAND BOUNDARY</p> <p> WETLAND</p> <p> DENOTES FILL IN WETLAND</p> <p> DENOTES FILL IN SURFACE WATER</p> <p> DENOTES FILL IN SURFACE WATER (POND)</p> <p> DENOTES TEMPORARY FILL IN WETLAND</p> <p> DENOTES EXCAVATION IN WETLAND</p> <p> DENOTES TEMPORARY FILL IN SURFACE WATER</p> <p> DENOTES MECHANIZED CLEARING</p> <p>→ → → FLOW DIRECTION</p> <p>— TB — TOP OF BANK</p> <p>— WE — EDGE OF WATER</p> <p>— C — PROP. LIMIT OF CUT</p> <p>— F — PROP. LIMIT OF FILL</p> <p>▲ PROP. RIGHT OF WAY</p> <p>— NG — NATURAL GROUND</p> <p>— PL — PROPERTY LINE</p> <p>— TDE — TEMP. DRAINAGE EASEMENT</p> <p>— PDE — PERMANENT DRAINAGE EASEMENT</p> <p>— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY</p> <p>— EPB — EXIST. ENDANGERED PLANT BOUNDARY</p> <p>▽ WATER SURFACE</p> <p> LIVE STAKES</p> <p> BOULDER</p> <p>— — — CORE FIBER ROLLS</p>	<p> PROPOSED BRIDGE</p> <p> PROPOSED BOX CULVERT</p> <p> PROPOSED PIPE CULVERT</p> <p>(DASHED LINES DENOTE EXISTING STRUCTURES)</p> <p style="text-align: right;">12"-48' PIPES 54" PIPES & ABOVE</p> <p> SINGLE TREE</p> <p> WOODS LINE</p> <p> DRAINAGE INLET</p> <p> ROOTWAD</p> <p> RIP RAP</p> <p> ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE</p> <p> PREFORMED SCOUR HOLE</p> <p> LEVEL SPREADER (LS)</p> <p> DITCH / GRASS SWALE</p>
--	---

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE / DURHAM COUNTY

PROJECT: 8.U401711 (R-2000.AC)
 I-540 (NORTHERN WAKE EXPRESSWAY)
 FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
 NORTHEAST OF I-40

 SHEET 2 OF 9 11 / 26 / 02



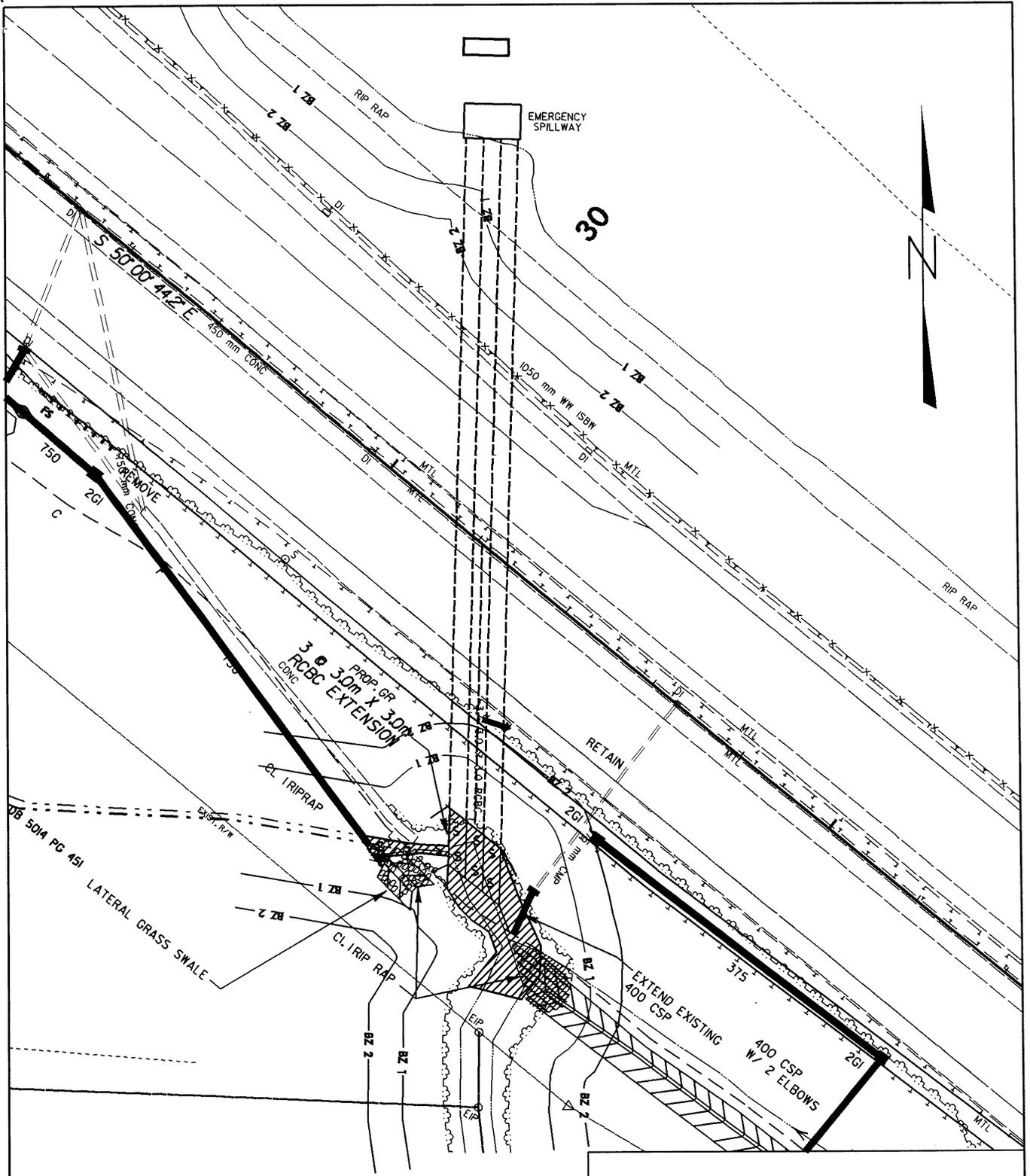
LOCATION MAPS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE / DURHAM COUNTIES

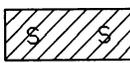
PROJECT: 8.U401711 (R-2000AC)

I-540 (NORTHERN WAKE EXPRESSWAY)
FROM 0.9 KM SOUTHWEST OF I-40 TO
0.7 KM NORTHEAST OF I-40

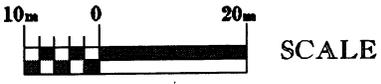
SHEET 3 OF 9 11/26/02



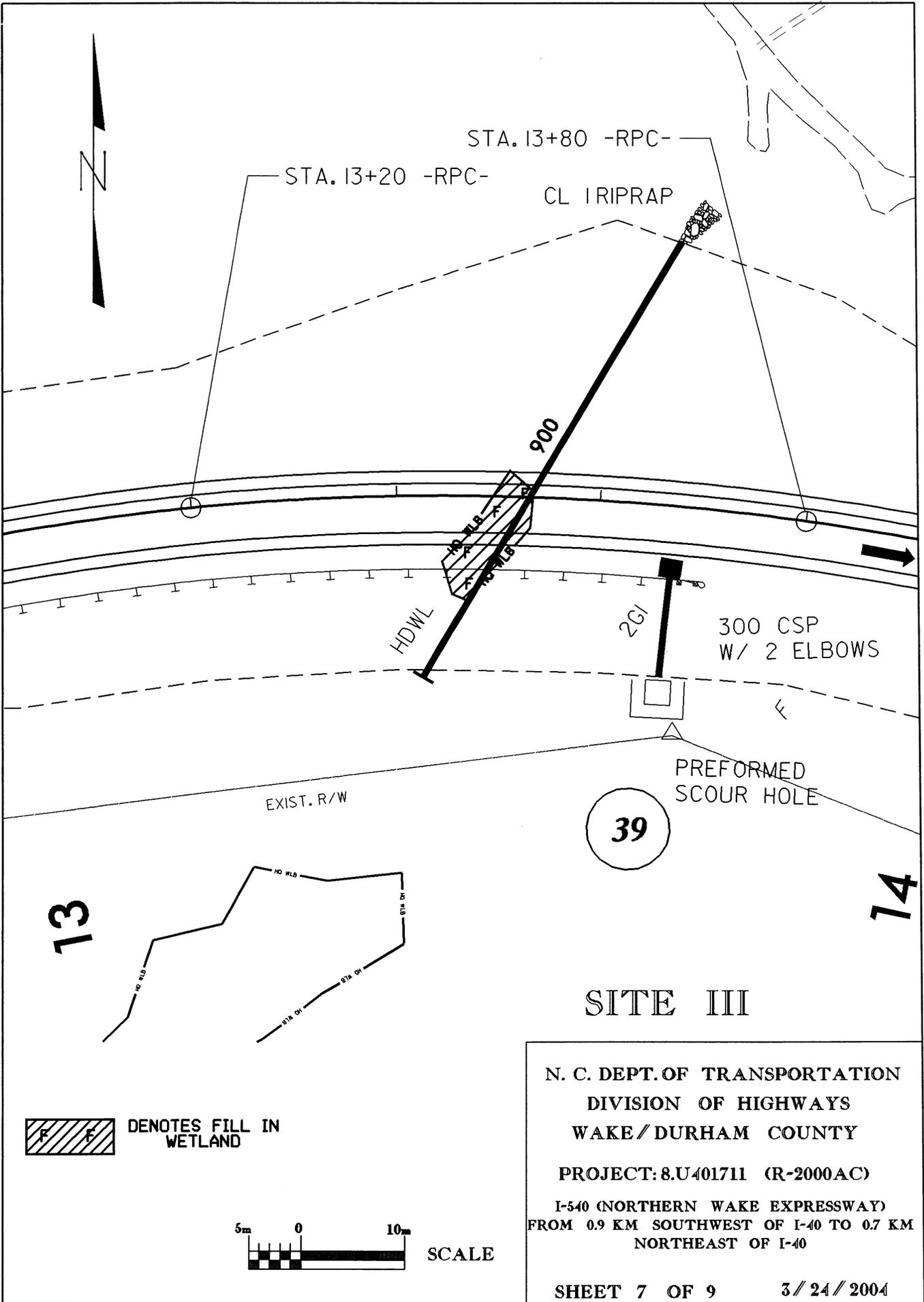
PLAN VIEW

 DENOTES FILL IN SURFACE WATER

SITE II



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE/DURHAM COUNTY
 PROJECT: 8.U401711 (R-2000AC)
 I-540 (NORTHERN WAKE EXPRESSWAY)
 FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
 NORTHEAST OF I-40



STA. 13+80 -RPC-

STA. 13+20 -RPC-

CL RIPRAP

900

HDWL

2G1

300 CSP
W/ 2 ELBOWS

EXIST. R/W

PREFORMED
SCOUR HOLE

39

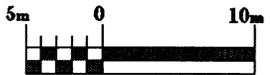
13

14

SITE III



DENOTES FILL IN
WETLAND



SCALE

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE/DURHAM COUNTY
 PROJECT: 8.U401711 (R-2000AC)
 I-540 (NORTHERN WAKE EXPRESSWAY)
 FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
 NORTHEAST OF I-40
 SHEET 7 OF 9 3/24/2004

WETLAND PERMIT IMPACT SUMMARY

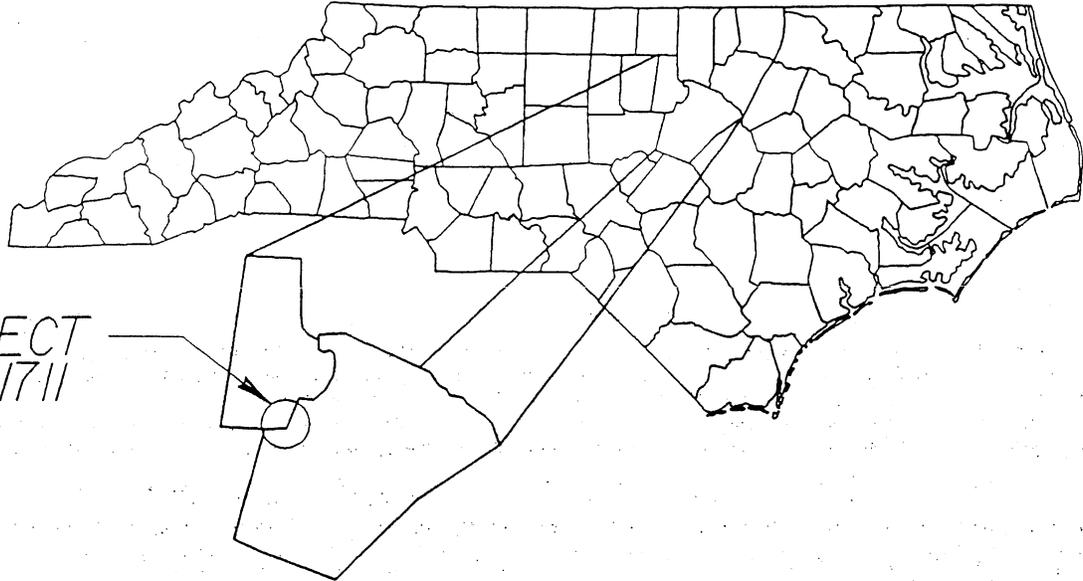
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS								
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Cleaning (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)	Natural Stream Design (m)				
I	13+44 -RPC- TO 13+54 -RPC-	NA	0.0005												
I	73+80 -L- TO 75+90 -L-	2@ 3.0m x 2.4m RCBC				0.122				176					
	73+80 -L- TO 75+90 -L-	TRIBUTARY				0.015				151					
II	30+50 -Y3- RT.	3@ 3.0m x 3.0m RCBC EXTENSION				0.032				32					
TOTALS:			0.0005	0	0	0.169	0	0	0	359	0	0	0	0	0

NCDOT

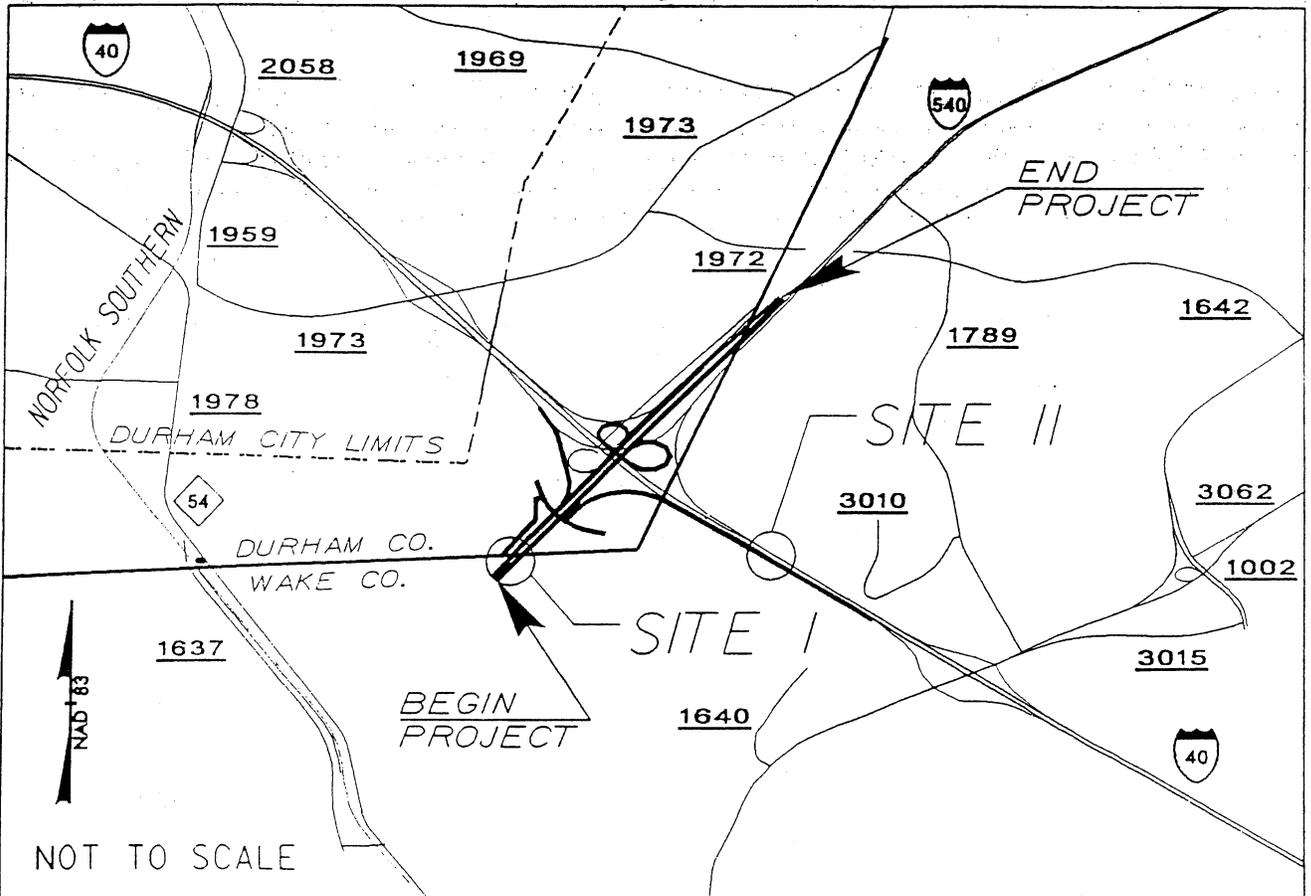
DIVISION OF HIGHWAYS
 WAKE/DURHAM COUNTY
 PROJECT 8.U401711 (R-2000AC)
 I-540 (NORTHERN WAKE EXPRESSWAY)
 FROM 0.9KM SOUTHWEST OF I-40 TO
 0.7KM NORTHEAST OF I-40

Rev. 7/1/04
 SHEET 9 OF 9

NORTH CAROLINA



PROJECT
8.U401711



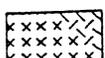
NEUSE RIVER BUFFER VICINITY MAPS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE/DURHAM COUNTY
PROJECT: 8.U401711 (R-2000AC)
I-540 (NORTHERN WAKE EXPRESSWAY)
FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
NORTHEAST OF I-40

BUFFER LEGEND

—WLB— WETLAND BOUNDARY

 WETLAND

 ALLOWABLE IMPACTS ZONE 1

 ALLOWABLE IMPACTS ZONE 2

 MITIGABLE IMPACTS ZONE 1

 MITIGABLE IMPACTS ZONE 2

—BZ— RIPARIAN BUFFER ZONE

—BZ1— RIPARIAN BUFFER ZONE 1
30 ft (9.2m)

—BZ2— RIPARIAN BUFFER ZONE 2
20 ft (6.1m)

— — — 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

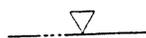
—PL— PROPERTY LINE

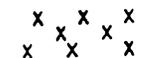
—TDE— TEMP. DRAINAGE EASEMENT

—PDE— PERMANENT DRAINAGE EASEMENT

—EAB— EXIST. ENDANGERED ANIMAL BOUNDARY

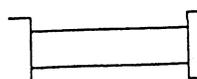
—EPB— EXIST. ENDANGERED PLANT BOUNDARY

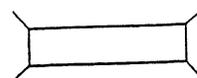
 WATER SURFACE

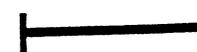
 LIVE STAKES

 BOULDER

— — — CORE FIBER ROLLS

 PROPOSED BRIDGE

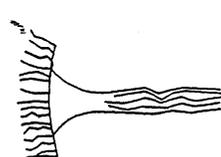
 PROPOSED BOX CULVERT

 PROPOSED PIPE CULVERT
12"-48"
PIPES
54" PIPES
& ABOVE

(DASHED LINES DENOTE EXISTING STRUCTURES)

 SINGLE TREE

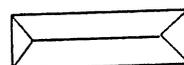
 WOODS LINE

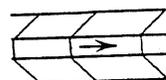
 DRAINAGE INLET

 RIP RAP

 ADJACENT PROPERTY OWNER
OR PARCEL NUMBER
IF AVAILABLE

 PREFORMED SCOUR HOLE (PSH)

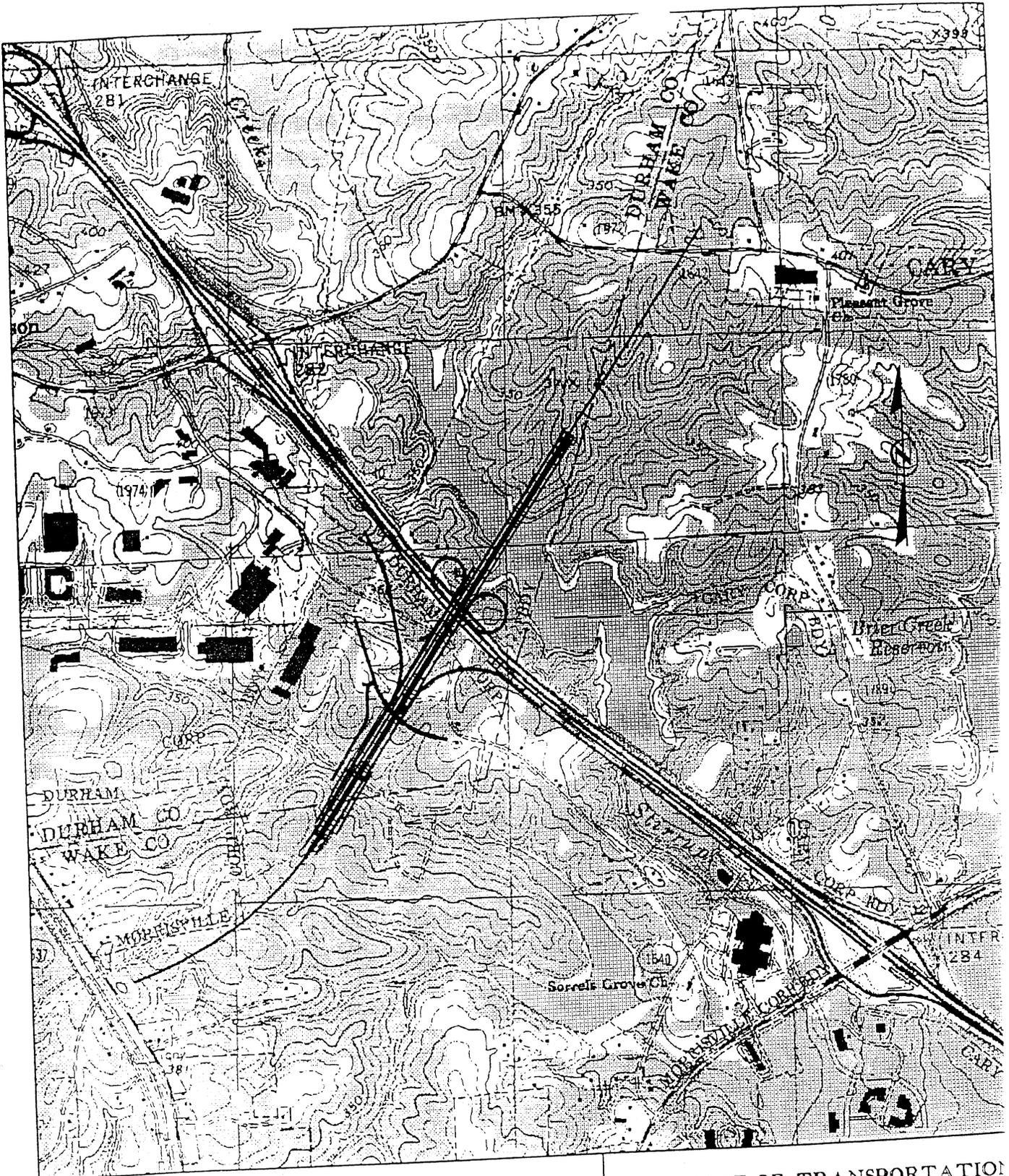
 LEVEL SPREADER (LS)

 GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE/DURHAM COUNTY

PROJECT: 8.U401711 (R-2000AC)

I-540 (NORTHERN WAKE EXPRESSWAY)
FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 K
NORTHEAST OF I-40

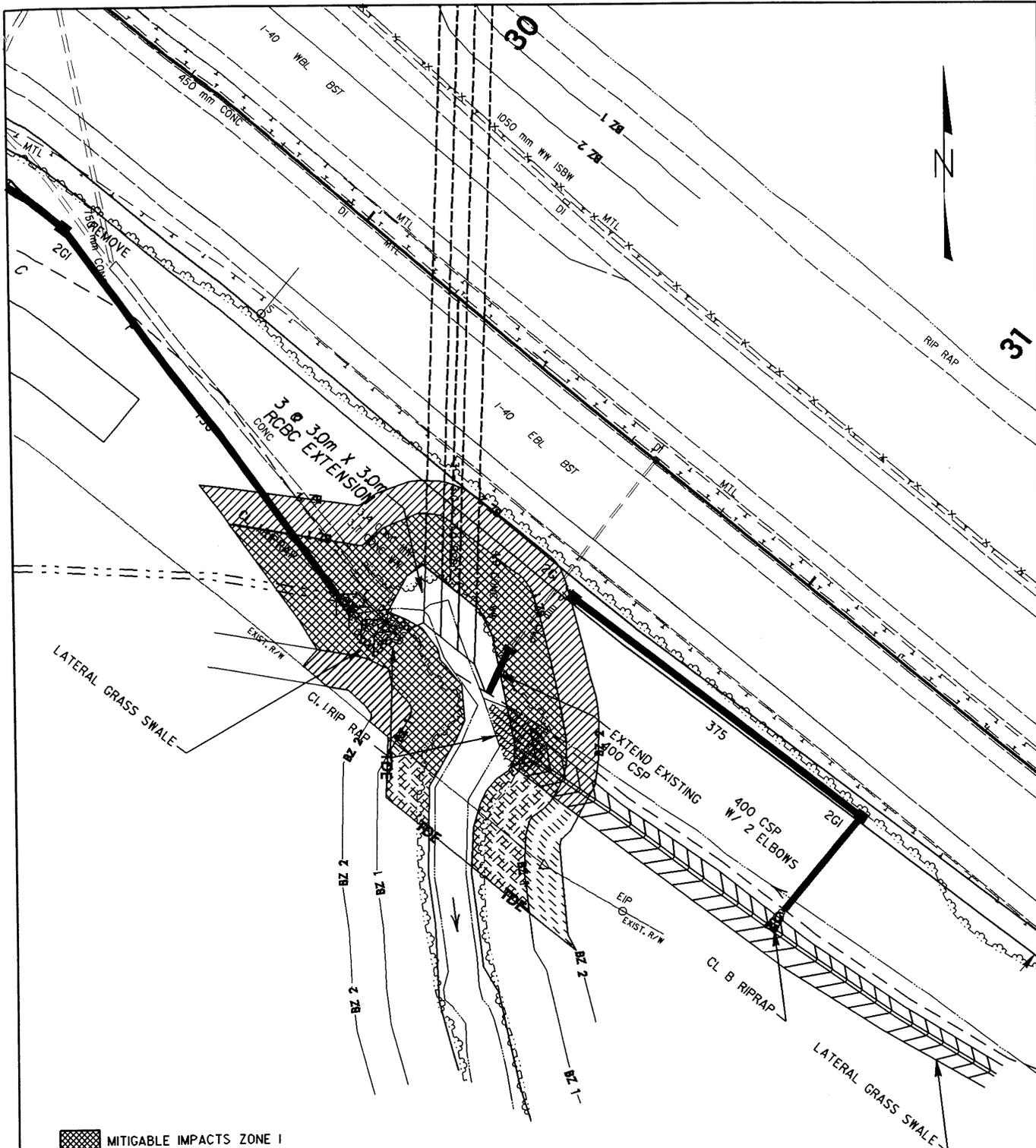


LOCATION MAPS

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE/DURHAM COUNTIES
 PROJECT: 8.U401711 (R-2000AC)

I-540 (NORTHERN WAKE EXPRESSWAY)
 FROM 0.9 KM SOUTHWEST OF I-40
 0.7 KM NORTHEAST OF I-40

SHEET 3 OF 14 H/26/00



-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2
-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2

SITE II
PLAN VIEW
 SCALE= 1:1000

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE/DURHAM COUNTY
PROJECT: 8.U401711 (R-2000AC)
I-540 (NORTHERN WAKE EXPRESSWAY)
FROM 0.9 KM SOUTHWEST OF I-40 TO 0.7 KM
NORTHEAST OF I-40

