



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 8, 2006

US Army Corps of Engineers
Regulatory Field Office
6508 Falls of Neuse Road, Suite 120
Raleigh, NC 27615

ATTENTION: Mr. Eric Alsmeyer
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide Permit 23 and 33 Application** for the widening of NC 98
(Holloway St.) from east of US 70 BYP to east of Junction Road in Durham County, Division 5,
Federal Project No. STP-98 (5), State Project No. 8.1352401, WBS Element No. 35011.1.1,
T.I.P. No. U-4010.

Please see the enclosed copies of the Categorical Exclusion (CE), Pre-construction Notification (PCN), permit drawings, and design plans for the subject project. The North Carolina Department of Transportation (NCDOT) proposes to widen NC 98 (Holloway Street) from just east of US 70 to east of Junction Road in Durham County. The project will widen the existing four-lane undivided roadway to a five-lane, 72-foot, curb and gutter facility. A 16-foot continuous center turn lane will be provided throughout the project. This includes a four-foot raised concrete median from North Hoover Road to Junction Road.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Neuse River Basin (sub-basin 03-04-01) in Durham County. This area is part of Hydrologic Cataloging Unit 03020201. An unnamed tributary (UT) of Little Lick Creek is the only water resource in the project area. The project will result in surface water impacts of 24 linear feet (<0.001 acres) to the UT of Little Lick Creek due to the extension of an existing pipe.

The UT of Little Lick Creek is an intermittent stream, approximately 1 foot wide and 1 foot deep at NC 98. The substrate is composed primarily of sand. The UT to Little Lick Creek is assigned Stream Index Number 27-9-(0.5) (8/1/98) by the N.C Division of Water Quality (NCDWQ), and has a best usage classification of WS-IV NSW. Best Management Practices for Protection of Surface Waters will be implemented.

Permanent Impacts: There will be 24 feet of permanent stream impacts due to the extension of the existing reinforced concrete pipe.

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

TELEPHONE: 919-715-1334
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

Temporary Impacts: There will be 10 feet of temporary impacts to the existing channel to provide adequate room for activities related to the construction and extension of the existing pipe.

Utility Impacts: There will be no utility impacts due to the widening of NC 98.

Buffer Impacts: Approximately 10 feet outside of the fill slope along the stream will be impacted due to clearing and construction of the fill slope. The linear buffer impacts will be less than 40 feet. Therefore, buffer impacts are exempt.

RESTORATION PLAN

Following extension of the pipe, all material used will be removed. The impact area associated with the pipe extension is expected to recover naturally, since the natural streambed and plant material will not be removed. NCDOT does not propose any additional planting in this area. Pre-project elevations will be restored. NCDOT will restore stream to its pre-project contours.

Schedule: The project calls for a letting of November 21, 2006 with a date of availability of January 2, 2006. It is expected that the contractor will choose to start construction as soon as possible.

Removal and Disposal Plan: The contractor will be required to submit a reclamation plan for the removal of and disposal of all material off-site at an upland location. The contractor will use excavation equipment for removal of any earthen material. Heavy-duty trucks, dozers, cranes and various other pieces of mechanical equipment necessary for construction of roadways and culverts will be used on site. All material placed in the stream will be removed from the stream at that time. The contractor will have the option of reusing any of the materials that the engineer deems suitable in the construction of project. After the erosion control devices are no longer needed, all temporary materials will become the property of the contractor.

AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

According to the Clean Water Act (CWA) §404(b)(1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the US. The following is a list of the project's jurisdictional stream avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/Minimization:

- In-stream activity will be limited.
- Use of 2:1 fill slopes in jurisdictional area.
- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of Best Management Practices (BMPs).

Compensation: Mr. Eric Alsmeyer with the U.S. Army Corp of Engineers (USACE) and Nicole Thompson with the North Carolina Division of Water Quality (NCDWQ) visited the project site on December 20, 2005 and determined that no mitigation would be required for the 24 feet of permanent stream impacts. In a letter to Mr. Alsmeyer dated January 3, 2006, the NCDOT confirmed that no mitigation would be required for the permanent stream impacts due to minimal function capacity.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of March 8, 2006, the United States Fish and Wildlife Service (USFWS) lists three federally protected species for Durham County, the bald eagle (*Haliaeetus leucocephalus*), smooth coneflower (*Echinacea laevigata*), and Michaux's sumac (*Rhus michauxii*).

Field surveys were conducted on October 14, 2005. Although appropriate habitat is present within the project right-of-way limits in the form of regularly maintained roadside shoulders, field or pasture edges, and utility easements, no individuals of smooth coneflower or Michaux's sumac were observed during the survey. A search of the North Carolina Natural Heritage Program, updated on March 31, 2005, revealed no occurrences of either species within 1 mile of the proposed project. Therefore, it can be concluded that the proposed project will have a Biological Conclusion of "No Effect" for smooth coneflower and Michaux's sumac.

The project area was also evaluated on October 14, 2005, for suitable bald eagle habitat. No water bodies large enough to support this species occur within 1 mile of the project area. No nests or eagles were seen. Suitable habitat for bald eagle did not exist in the project area. Therefore, it can be concluded that the proposed project will have a Biological Conclusion of "No Effect" for bald eagle.

Table 1. Species Under Federal Protection in Durham County

Common Name	Scientific Name	Federal Status	Habitat	Biological Conclusion
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	No	No Effect
Smooth Coneflower	<i>Echinacea laevigata</i>	E	Yes	No Effect
Michaux's Sumac	<i>Rhus michauxii</i>	E	Yes	No Effect

REGULATORY APPROVALS

Section 404 Permit: Application is hereby made for the Department of Army Section 404 for the issuance of a Nationwide Permits 23 and 33 authorizing for the above-described activities.

Section 401 Permit: We also hereby request a 401 General Water Quality Certification (WQC) 3403 and WQC 3366. The NCDOT will adhere to all general conditions of these WQCs. Therefore, written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H 0.0501(a) and 15A NCAC 2B 0.200 we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, as notification.

A copy of this permit application will be posted on the NCDOT Website at:
<http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information
please call Ms. Deanna Riffey at (919) 715-1409.

Sincerely,



Gregory V. Thorpe, Ph.D.
Environmental Management Director, PDEA

w/attachment

- Mr. John Hennessy, NCDWQ (2 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS
- Dr. David Chang, P.E., Hydraulics
- Mr. Mark Staley, Roadside Environmental
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. Jon Nance, P.E., Division Engineer
- Mr. Chris Murray, DEO

w/o attachment

- Mr. Jay Bennett, P.E., Roadway Design
- Mr. Majed Alghandour, P. E., Programming and TIP
- Mr. Art McMillan, P.E., Highway Design
- Mr. Scott McLendon, USACE, Wilmington
- Mr. Elmo Vance, PDEA Project Planning Engineer

USACE Action ID No. _____ DWQ No. _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:

- Section 404 Permit
- Section 10 Permit
- 401 Water Quality Certification
- Riparian or Watershed Buffer Rules
- Isolated Wetland Permit from DWQ
- Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23 & NW 33

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here:

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

II. Applicant Information

1. Owner/Applicant Information

Name: North Carolina Department of Transportation (NCDOT)
 Mailing Address: Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, NC 27699-1598

Telephone Number: 919-733-3141 Fax Number: 919-733-9794

E-mail Address: gthorpe@dot.state.nc.us

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____

Company Affiliation: _____

Mailing Address: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Widening of NC 98 (Holloway Street) East of US 70 to East of Junction Road
2. T.I.P. Project Number or State Project Number (NCDOT Only): U-4010
3. Property Identification Number (Tax PIN): _____
4. Location
County: Durham Nearest Town: Joyland
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers/names, landmarks, etc.): Highway 70 to Junction with NC 98 (Holloway Street)

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): 35° 59' 29" °N 78° 51' 46" °W
6. Property size (acres): Total project length is 0.37 miles
7. Name of nearest receiving body of water: Little Lick Creek
8. River Basin: Neuse
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Project area is located in an urbanized and mostly commercial setting.

10. Describe the overall project in detail, including the type of equipment to be used: See cover letter

11. Explain the purpose of the proposed work: The purpose of widening NC 98 (Holloway Street) is to improve traffic capacity and safety for motorist in the project area. Due to increased development along this route, future traffic growth will create longer travel times, dangerous passing situations, and an increase in accidents.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. There is no prior history of jurisdictional determinations for this project.

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application. There are no future permit requests anticipated for this project.

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: See cover sheet

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
None	None	None	No	NA	None
Total Wetland Impact (acres)					0.00

3. List the total acreage (estimated) of all existing wetlands on the property: None
4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width and then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
1	UT to Little Lick Creek	Pipe Extension	Intermittent	1 foot	24	<0.001
Total Stream Impact (by length and acreage)						<0.001

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
NA				
Total Open Water Impact (acres)				NA

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	<0.001
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	<0.001
Total Stream Impact (linear feet):	24

7. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): _____

Current land use in the vicinity of the pond: _____

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. See cover letter.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

No mitigation is proposed for <0.001 acres of stream impact.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): _____
Amount of buffer mitigation requested (square feet): _____
Amount of Riparian wetland mitigation requested (acres): _____
Amount of Non-riparian wetland mitigation requested (acres): _____
Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes No

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
 Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
 Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify Neuse)? Yes No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1			
2			
Total			

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. _____

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. _____

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes No

Is this an after-the-fact permit application? Yes No

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

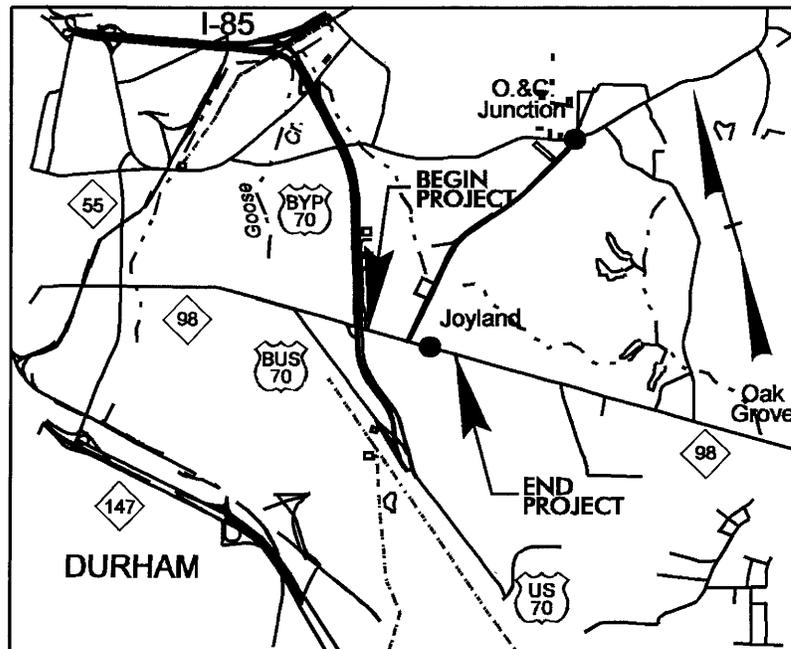
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

NORTH CAROLINA



NOT TO SCALE

VICINITY MAPS

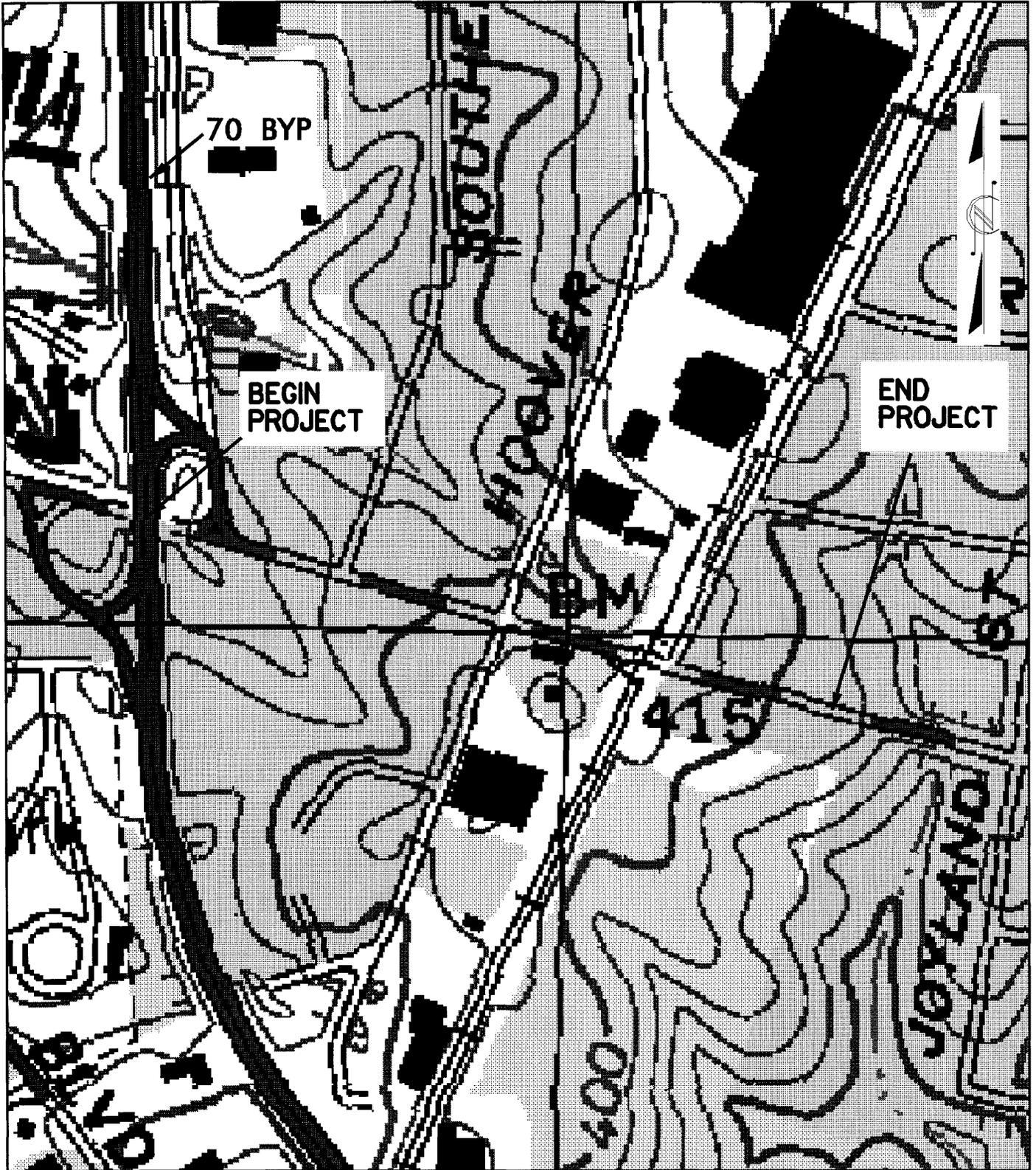
NCDOT

DIVISION OF HIGHWAYS

DURHAM COUNTY

PROJECT: 3501LL1 (U-4010)

**NC98 FROM EAST OF US70
TO EAST OF JUNCTION ROAD**



NOT TO SCALE

VICINITY MAPS

NCDOT

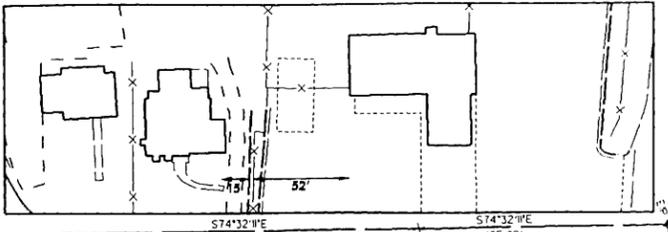
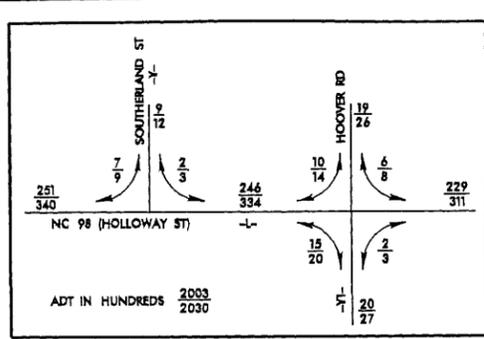
DIVISION OF HIGHWAYS

DURHAM COUNTY

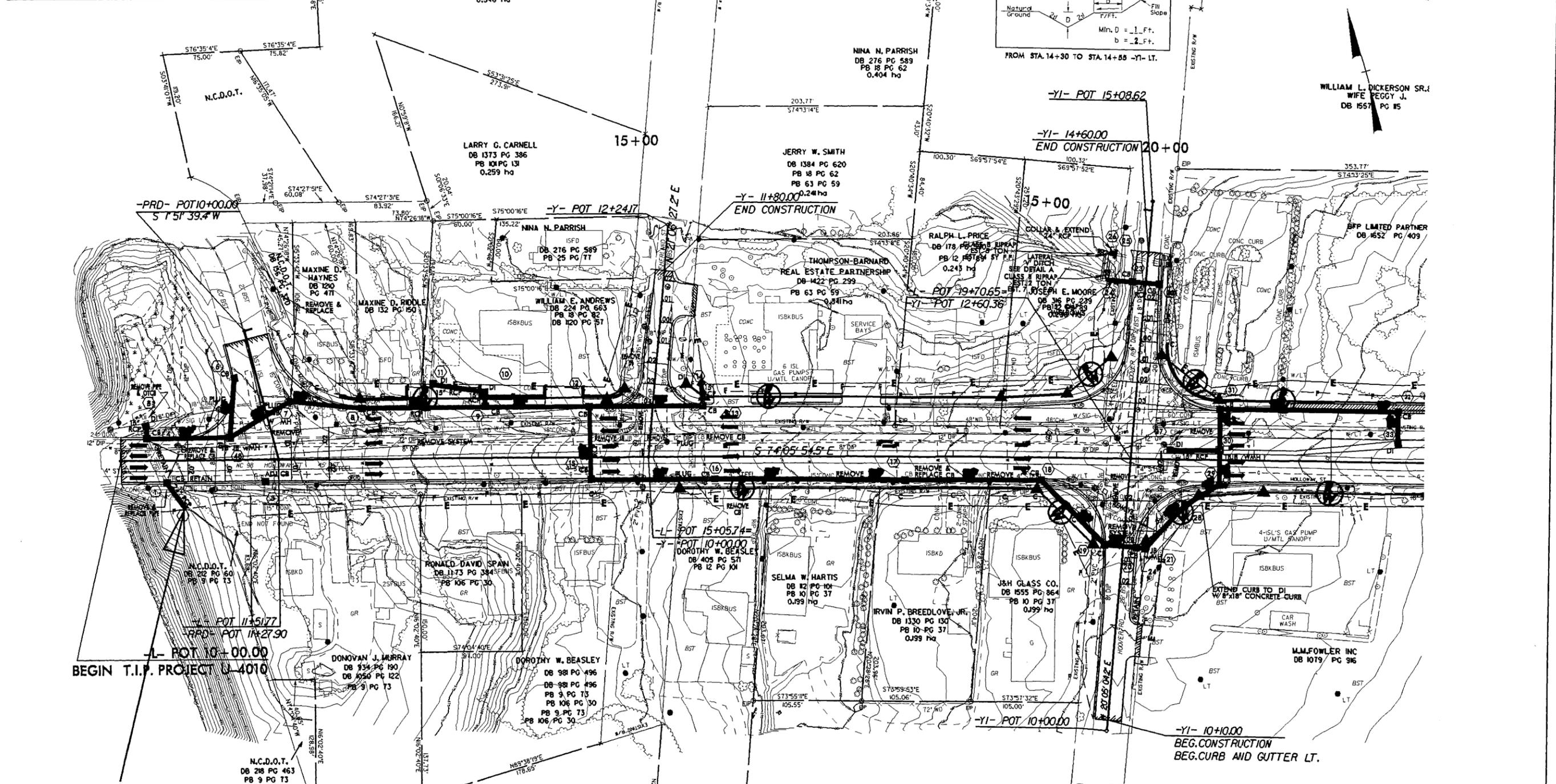
PROJECT: 35011.1.1 (U-4010)

NC98 FROM EAST OF US70
TO EAST OF JUNCTION ROAD

8/17/99
APR-2006 15:43
hydr-aules\4010\1015041.psh
man AT HY221555

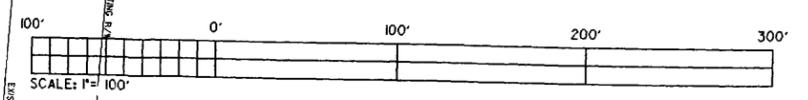


PROJECT REFERENCE NO.	SHEET NO.
U-4010	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



SITE 1

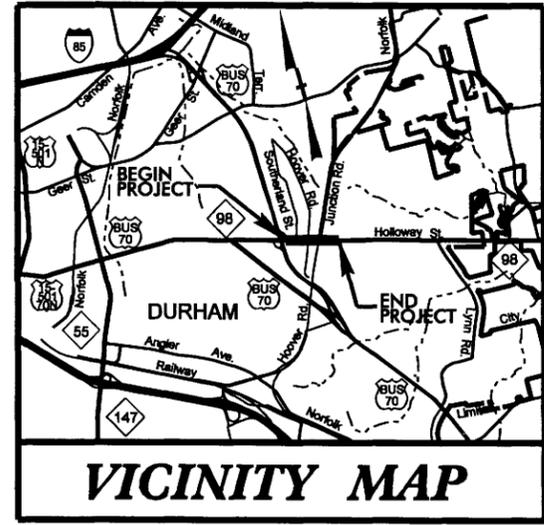
SURFACE WATER IMPACTS



4 of 5

CONTRACT: C201439 TIP PROJECT: U-4010

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

LOCATION: DURHAM - NC 98 (HOLLOWAY ST.) FROM EAST OF US 70 BYPASS TO EAST OF JUNCTION ROAD

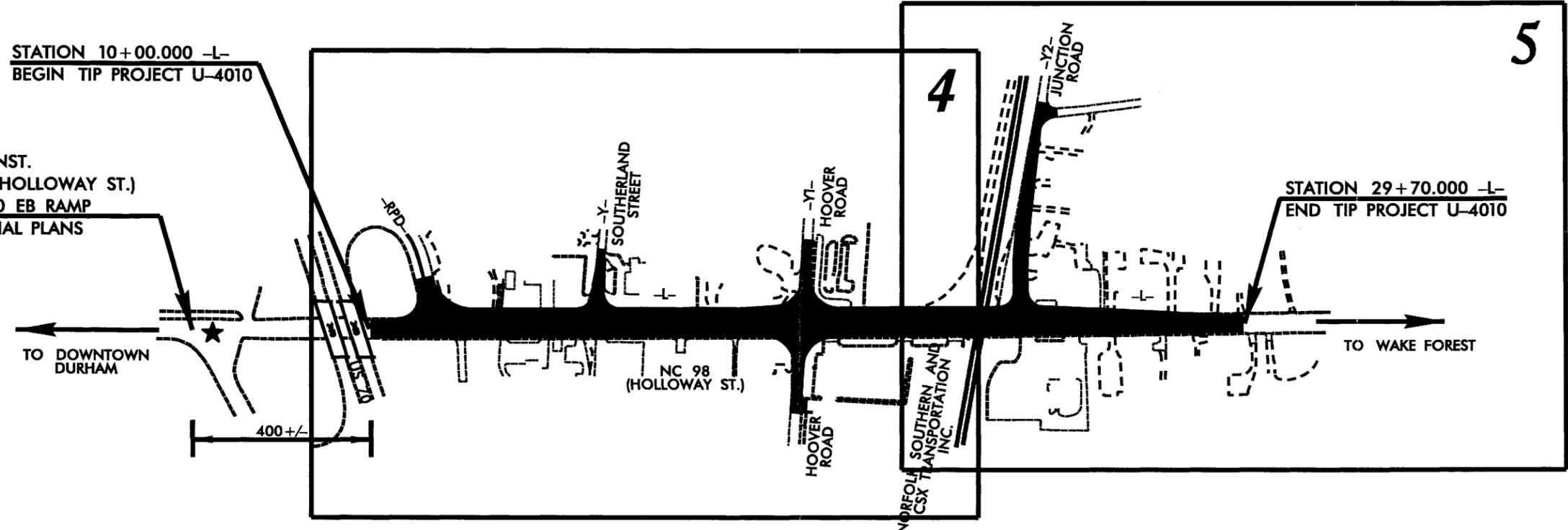
TYPE OF WORK: WIDENING, DRAINAGE, GRADING, PAVING, CURB & GUTTER AND SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4010	1	
STATE FUNDING	F.A. FUNDING	DESCRIPTION	
35011.1.1	STP-98(5)	FE	
35011.2.2	STP-98(5)	ROW, UTIL.	
35011.3.2	STP-98(21)	CONST.	



STATION 10+00.000 -L-
BEGIN TIP PROJECT U-4010

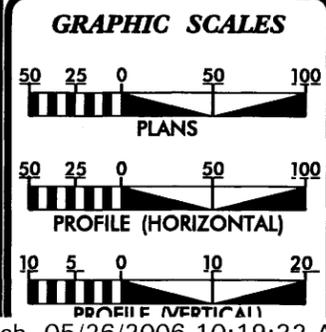
BEG. CONST.
NC 98 (HOLLOWAY ST.)
AT US 70 EB RAMP
SEE SIGNAL PLANS



★ PROPOSED OR UPGRADED TRAFFIC SIGNALS

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF DURHAM
CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH RAILROAD ON THE INSTALLATION OF SIGNAL EQUIPMENT AND ADJUSTMENT OF RAILROAD CROSSING

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2003 =	25,100
ADT 2030 =	34,000
DHV =	10 %
D =	60 %
T =	4 % *
V =	40 MPH

* (TTST 1% & DUAL 3%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4010 =	0.373 MI
TOTAL LENGTH OF TIP PROJECT U-4010 =	0.373 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 23, 2003

LETTING DATE:
NOVEMBER 21, 2006

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

3/15/06

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙
Property Corner	⊗
Property Monument	⊠
Parcel/Sequence Number	123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-w.l.b.-
Proposed Wetland Boundary	-w.l.b.-
Existing Endangered Animal Boundary	-e.a.b.-
Existing Endangered Plant Boundary	-e.p.b.-

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-j.s.-
Buffer Zone 1	-b.z. 1-
Buffer Zone 2	-b.z. 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Swamp Marsh	⊙
Proposed Lateral, Tail, Head Ditch	-----
False Sump	⊙

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	⊙
Switch	⊙
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	⊙
Proposed Control of Access	⊙
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Utility Easement	-PUE-

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Wheel Chair Ramp	⊙
Proposed Wheel Chair Ramp Curb Cut	⊙
Curb Cut for Future Wheel Chair Ramp	⊙
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	⊙

VEGETATION:

Single Tree	⊙
Single Shrub	⊙
Hedge	-----
Woods Line	-----
Orchard	⊙
Vineyard	⊙

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	⊙
Proposed Power Pole	⊙
Existing Joint Use Pole	⊙
Proposed Joint Use Pole	⊙
Power Manhole	⊙
Power Line Tower	⊙
Power Transformer	⊙
U/G Power Cable Hand Hole	⊙
H-Frame Pole	⊙
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	⊙
Proposed Telephone Pole	⊙
Telephone Manhole	⊙
Telephone Booth	⊙
Telephone Pedestal	⊙
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	⊙
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊙
TV Pedestal	⊙
TV Tower	⊙
U/G TV Cable Hand Hole	⊙
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

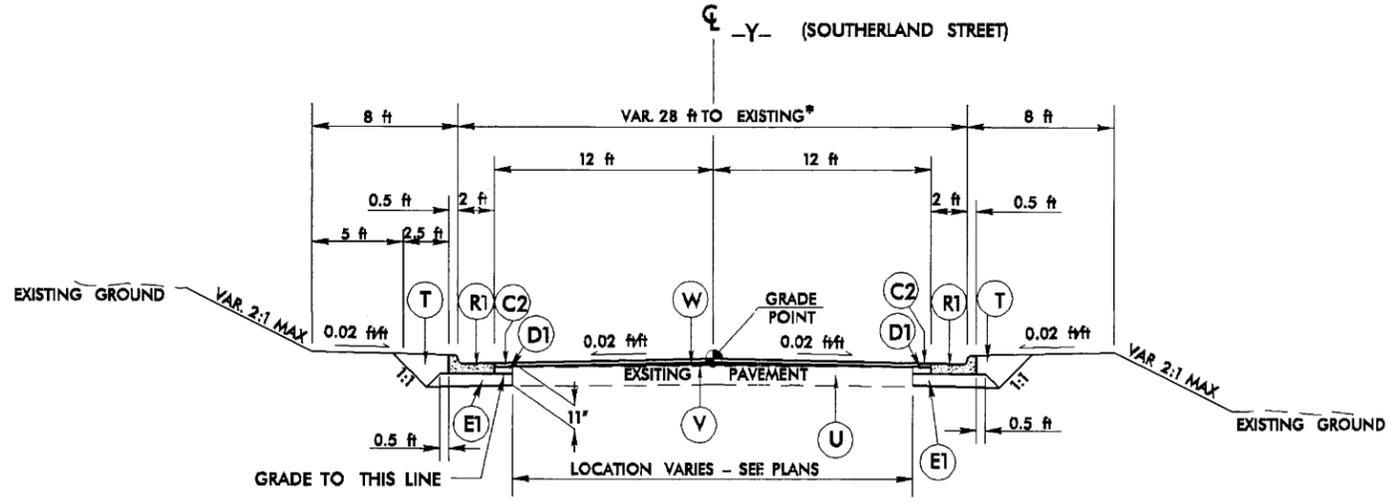
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊙
Utility Located Object	⊙
Utility Traffic Signal Box	⊙
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊙
A/G Tank; Water, Gas, Oil	⊙
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

5/28/99

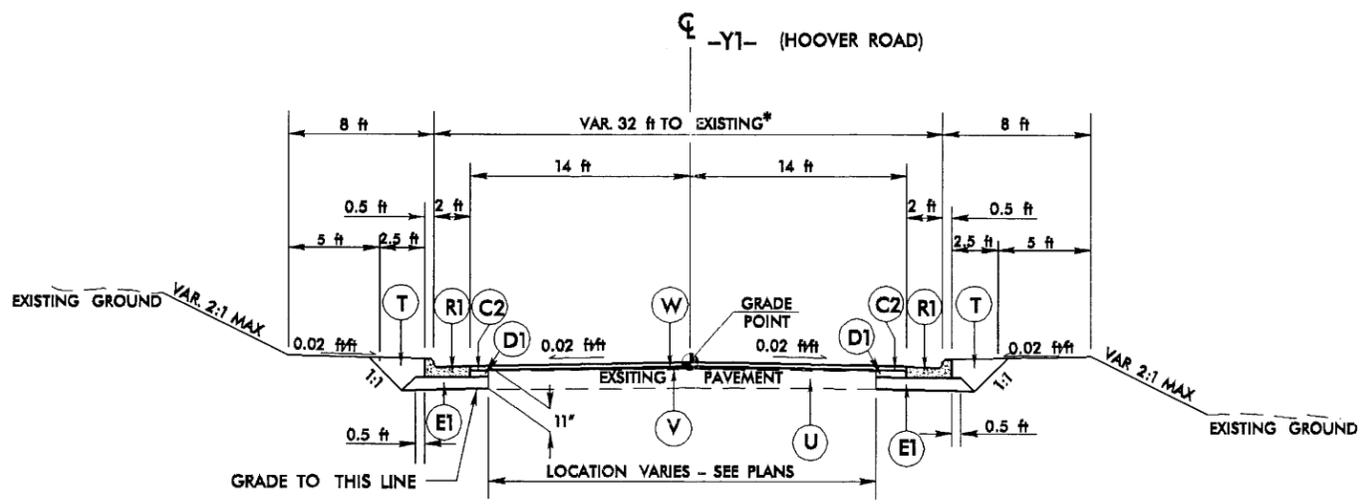
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TYPICAL SECTION NO. 2

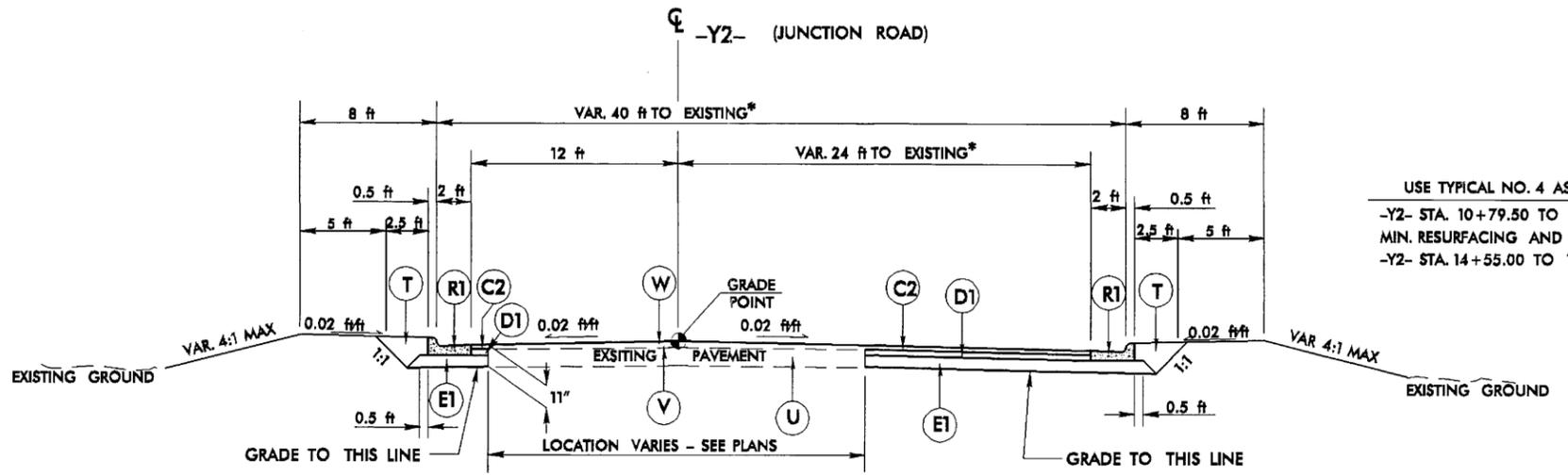
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 MIN. RESURFACING FROM
 -Y- STA. 11+48.00 TO 11+80.00

C2	3", TYPE S9.5B
D1	4", TYPE I19.0B
E1	4", TYPE B25.0B
E2	4 1/2", TYPE B25.0B
R1	2'-8" CONC. C & G
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING SEE SHEET 3-A
W	WEDGING



TYPICAL SECTION NO. 3

USE TYPICAL NO. 3 AS FOLLOWS:
 -Y1- STA. 10+10.00 TO STA. 11+78.07
 -Y1- STA. 13+37.71 TO STA. 14+53.70
 MIN. RESURFACING AND WIDENING FROM
 -Y1- STA. 14+53.70 TO 14+60.00



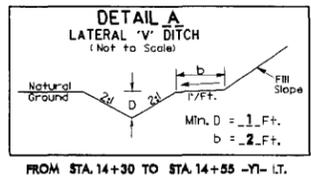
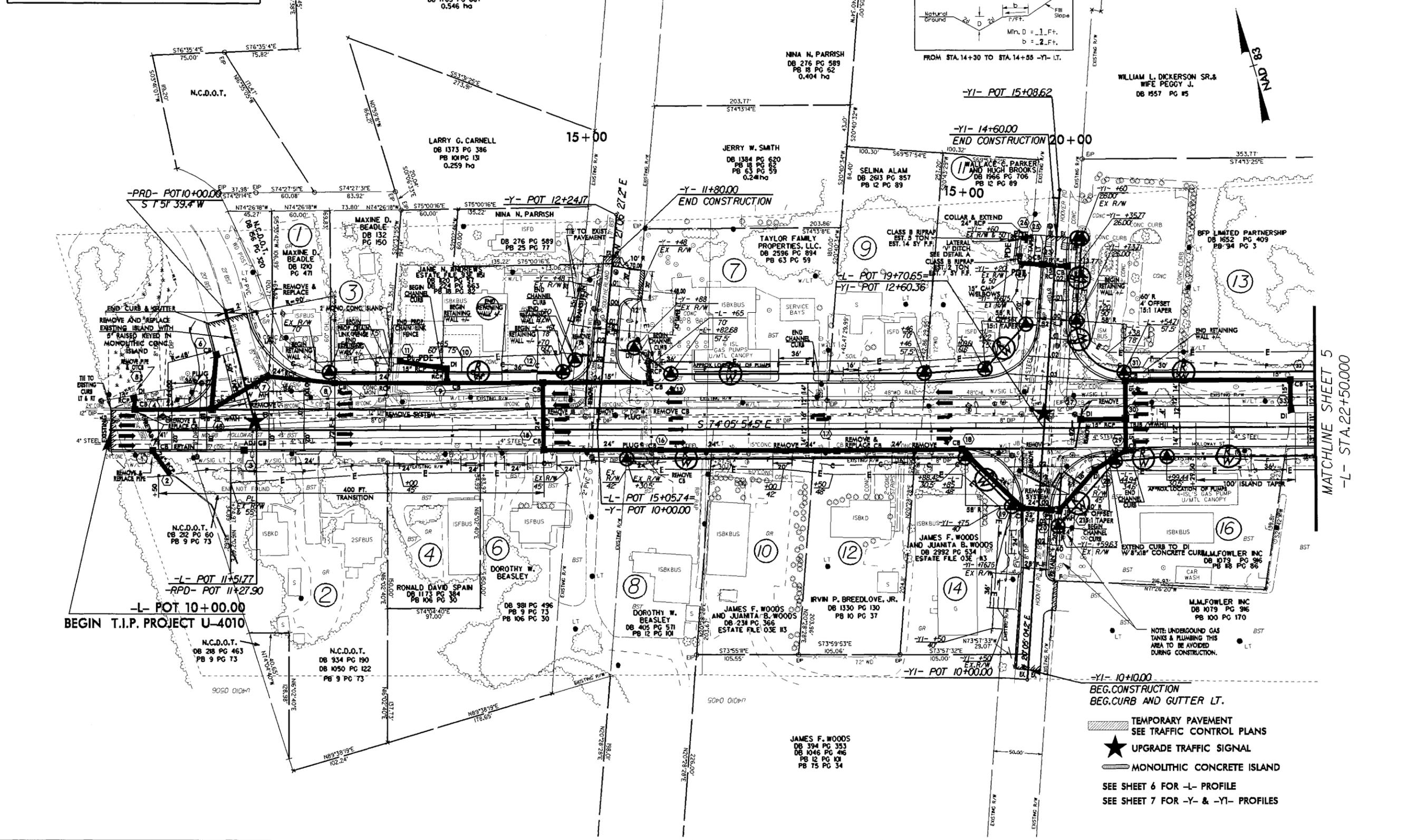
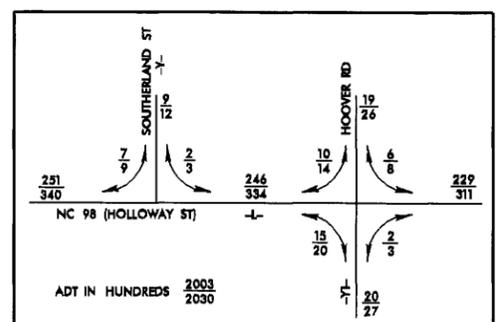
TYPICAL SECTION NO. 4

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 MIN. RESURFACING AND WIDENING FROM
 -Y2- STA. 14+55.00 TO 15+10.00

NOTES:
 * SEE PLANS FOR PAVEMENT TRANSITIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4010	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE SHEET 5
-L- STA. 22+50.000

-YI- 10+10.00
BEG. CONSTRUCTION
BEG. CURB AND GUTTER LT.

- TEMPORARY PAVEMENT
SEE TRAFFIC CONTROL PLANS
- ★ UPGRADE TRAFFIC SIGNAL
- MONOLITHIC CONCRETE ISLAND
- SEE SHEET 6 FOR -L- PROFILE
- SEE SHEET 7 FOR -Y- & -YI- PROFILES

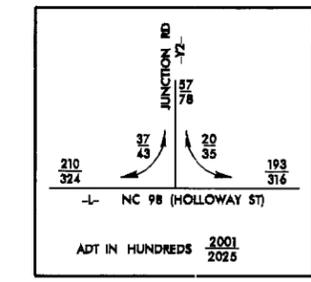
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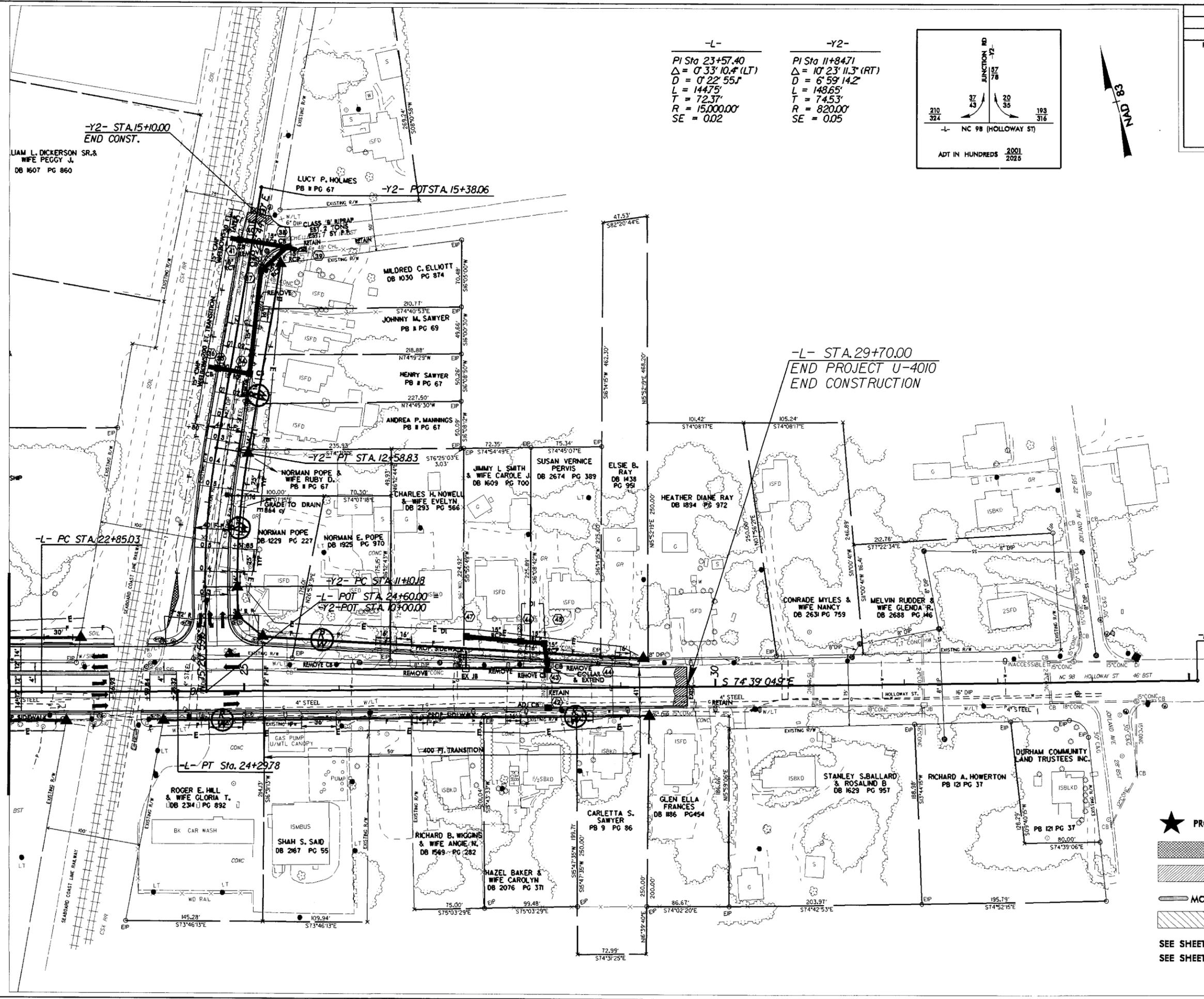
PROJECT REFERENCE NO. U-4010	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 PI Sta 23+57.40
 $\Delta = 0^\circ 33' 10.4" (LT)$
 $D = 0' 22' 55"$
 $L = 144.75'$
 $R = 15,000.00'$
 $SE = 0.02$

-Y2-
 PI Sta 11+84.71
 $\Delta = 10^\circ 23' 11.3" (RT)$
 $D = 6' 59' 14.2"$
 $L = 148.65'$
 $T = 74.53'$
 $R = 820.00'$
 $SE = 0.05$



MATCHLINE SHEET 4
-L- STA.22+50.000



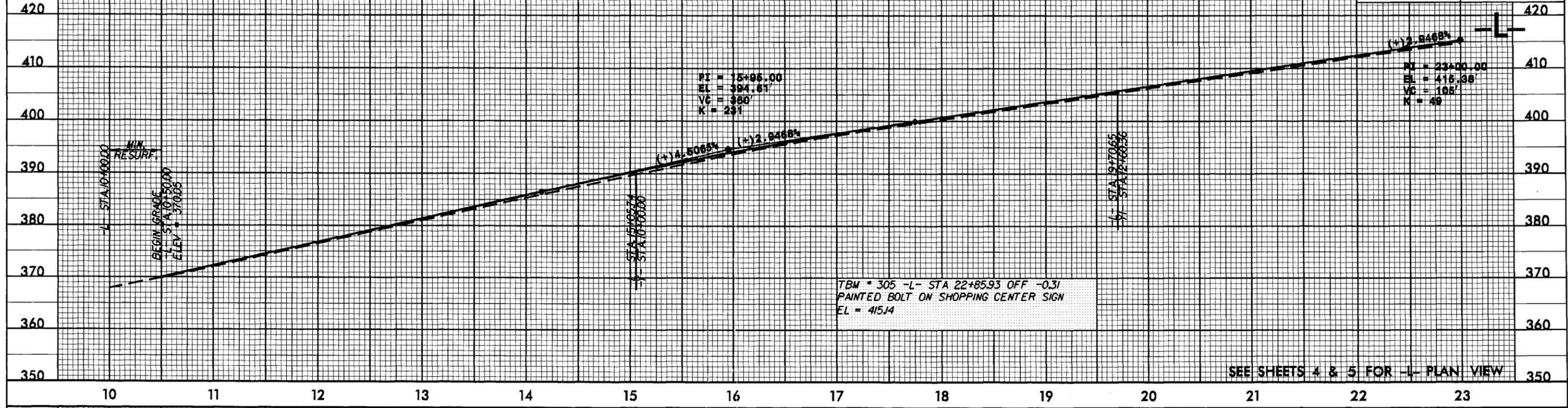
- ★ PROPOSED TRAFFIC SIGNAL
- [Hatched Box] PAVEMENT REMOVAL (OBLITERATE)
- [Diagonal Lines Box] TEMPORARY PAVEMENT SEE TRAFFIC CONTROL PLANS
- [Solid Box] MONOLITHIC CONCRETE ISLAND
- [Dashed Box] PAINT STRIPPING

SEE SHEET 6 FOR -L- PROFILE
 SEE SHEET 7 FOR -Y2- PROFILE

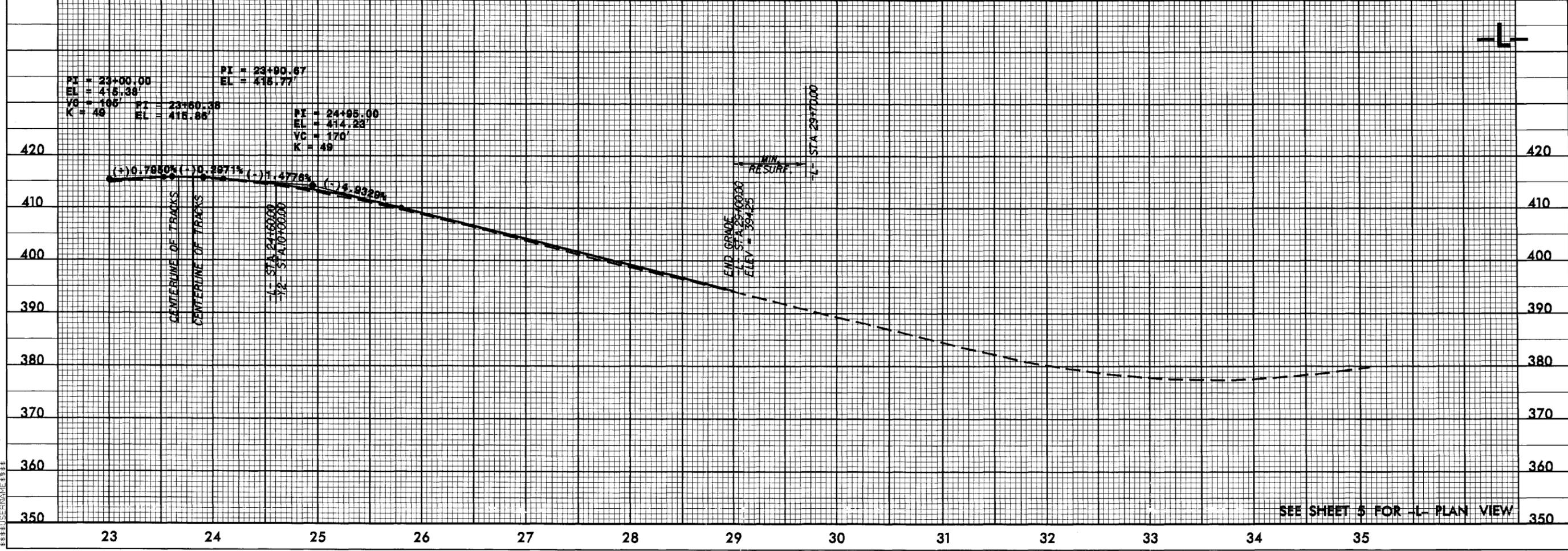
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PROJECT REFERENCE NO. U-4010	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEETS 4 & 5 FOR -L- PLAN VIEW

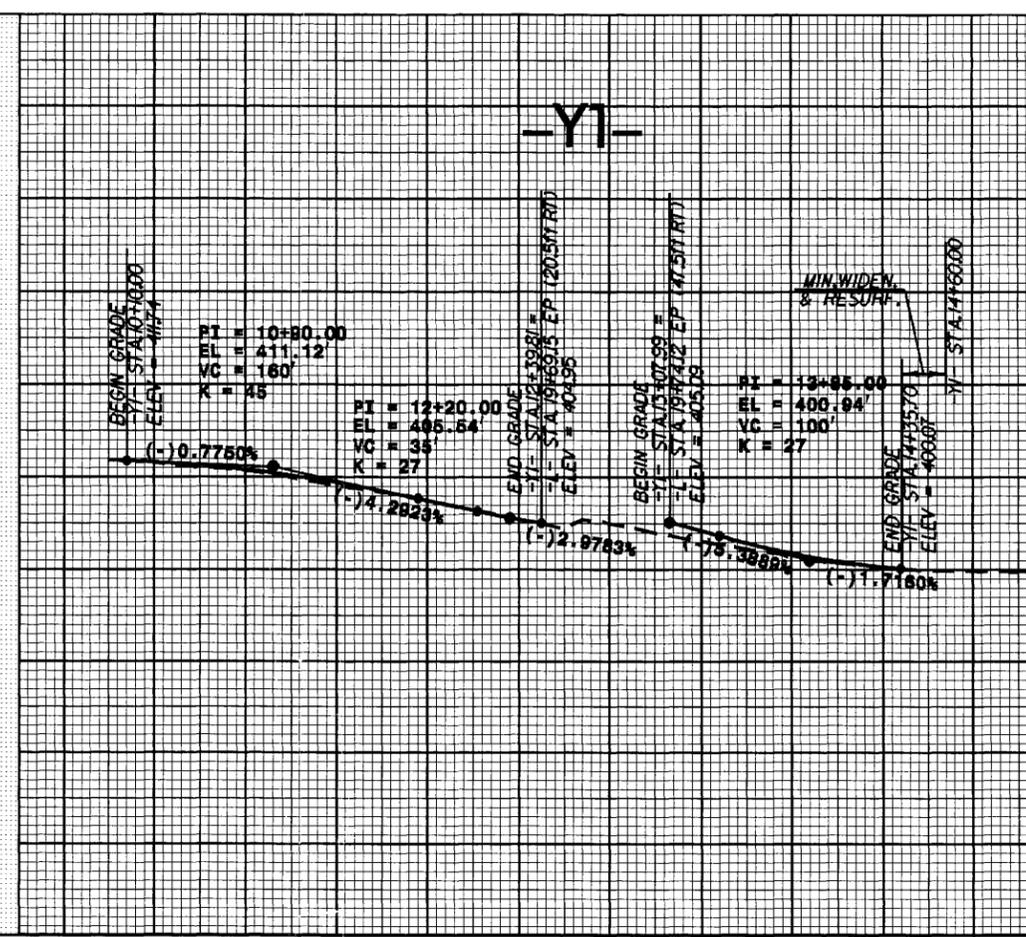
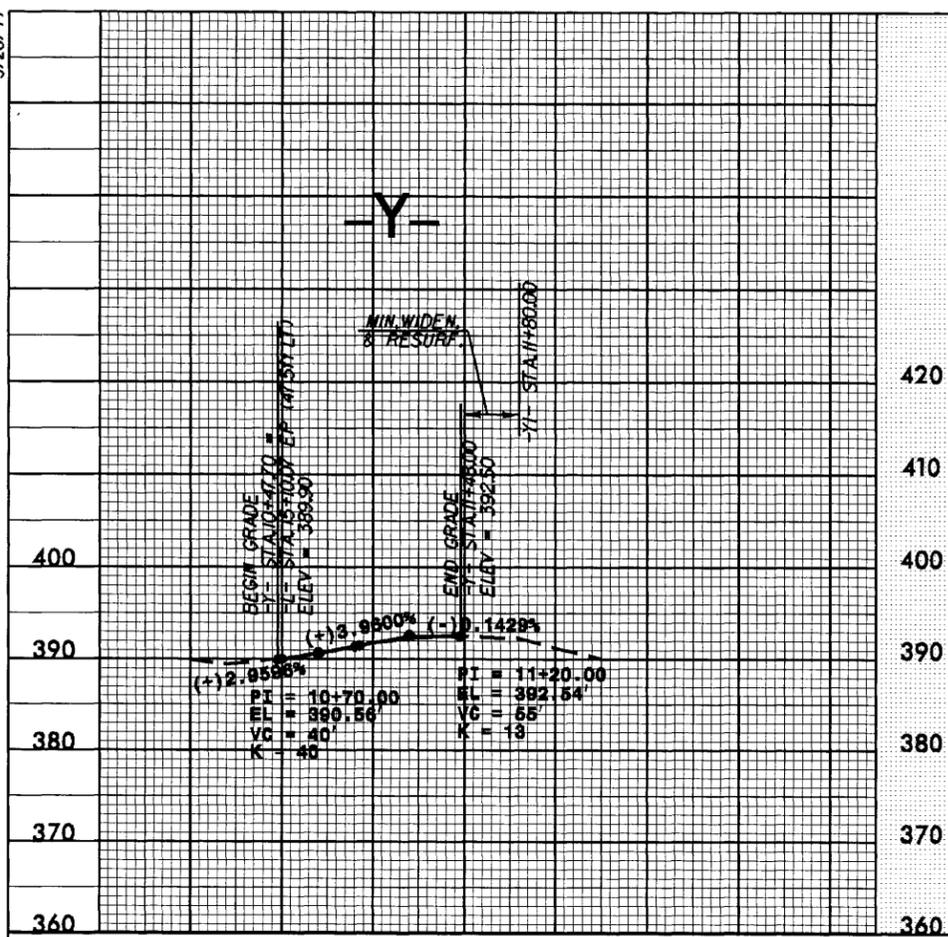


SEE SHEET 5 FOR -L- PLAN VIEW

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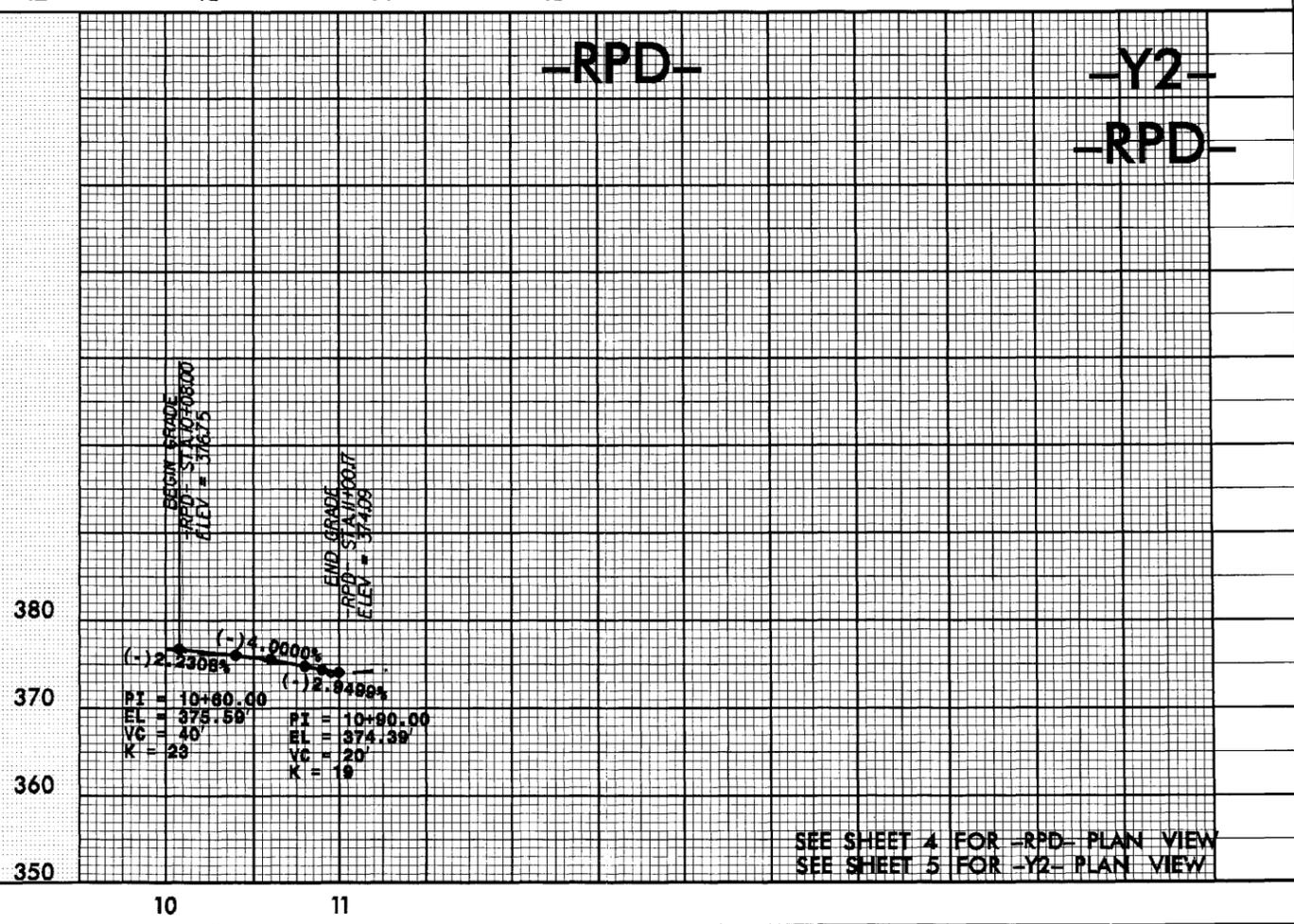
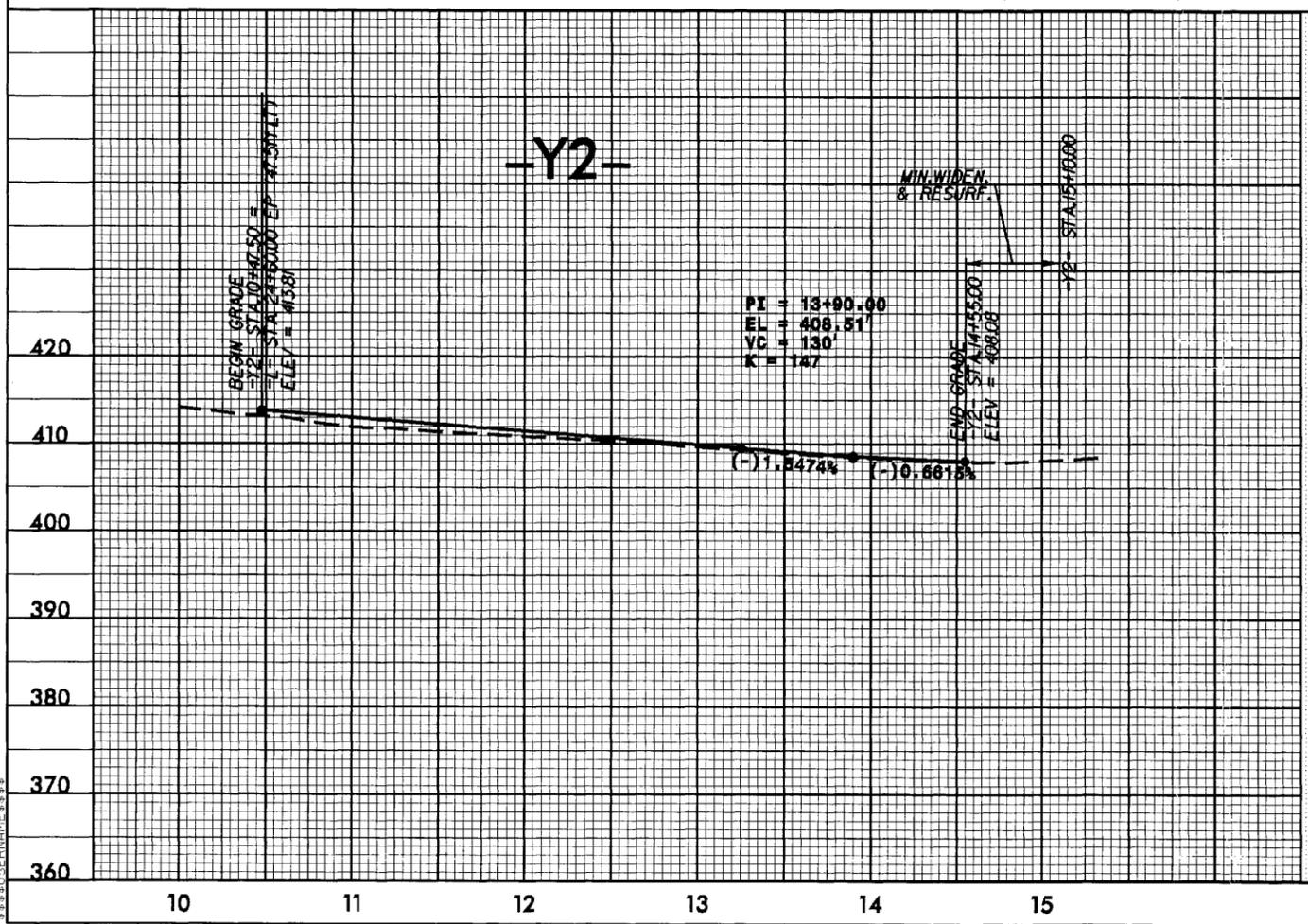
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PROJECT REFERENCE NO. U-4010	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y- & -YI-

SEE SHEET 4 FOR -Y- & -YI- PLAN VIEW



**-Y2-
-RPD-**

SEE SHEET 4 FOR -RPD- PLAN VIEW
SEE SHEET 5 FOR -Y2- PLAN VIEW

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Durham
NC 98 (Holloway Street)
East of US 70 to East of Junction Road
Durham County
State Project 8.1352401
Federal Aid Project No. STP-98(5)
T.I.P. No. U-4010

CATEGORICAL EXCLUSION

U.S. Department of Transportation

Federal Highway Administration

and

N.C. Department of Transportation

Division of Highways

Approved:

4/30/02 for William D. Gilmore, P. E.
Date for William D. Gilmore, P. E., Manager
Project Development and Environmental Analysis Branch, NCDOT

4/30/02 for Nicholas L. Graf, P.E.
Date for Nicholas L. Graf, P.E.
Division Administrator, FHWA

Durham
NC 98 (Holloway Street)
East of US 70 to East of Junction Road
Durham County
State Project 8.1352401
Federal Aid Project No. STP-98(5)
T.I.P. No. U-4010

ENVIRONMENTAL ASSESSMENT

April, 2002

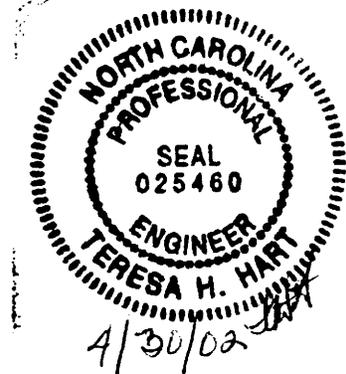
Documentation Prepared in Project Development and Environmental Analysis Branch By:

Michèle L. James

Michèle L. James, Project Development Engineer
Project Development and Environmental Analysis Branch

Teresa Hart

Teresa Hart, P. E., CPM, Unit Head
Project Development and Environmental Analysis Branch



PROJECT COMMITMENTS

Durham
NC 98 (Holloway Street)
East of US 70 to East of Junction Road
Durham County
State Project 8.1352401
Federal Aid Project No. STP-98(5)
T.I.P. No. U-4010

COMMITMENTS DEVELOPED THROUGH PROJECT DEVELOPMENT AND DESIGN

NCDOT Rail Division, Roadway Design, Project Development & Environmental Analysis

A 28-foot (8.5 meter) long concrete monolithic island, railroad crossing gates and related equipment will be provided at the NC 98 (Holloway Street) and Junction Road intersections. Coordination will be required with the CSX and Norfolk Southern Railroads.

NCDOT Right of Way (Utilities)

During the utility relocation stage of the project, NCDOT will request utility owners to relocate all aerial utilities to one side of the project. It will be up to the utility owners to adhere to this request.

Roadway Design, Program Development

The City of Durham requested sidewalks be constructed on both sides of the roadway throughout the project to accommodate existing and future pedestrian needs. The total estimated cost for the sidewalk is \$71,725 and is included in the construction cost of the project. NCDOT and the City of Durham will share in the cost of the sidewalks, based on NCDOT Pedestrian Policy Guidelines.

Roadway Design

Bicycle lanes were also requested by the City of Durham. Fourteen-foot (4.3 meter) wide outside lanes will be provided to accommodate bicycle traffic.

Most arms for traffic signals will be provided at Junction Road and Hoover Road.

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TABLES

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APPENDIX

Appendix A	- Comments Received from Federal, State and Local Agencies
Appendix B	- Grade Separation Agreement
Appendix C	- Hazardous Materials Evaluation

Durham
NC 98 (Holloway Street)
East of US 70 to East of Junction Road
Durham County
State Project 8.1352401
Federal Aid Project No. STP-98(5)
T.I.P. No. U-4010

SUMMARY

1. Description of Proposed Action

The North Carolina Department of Transportation (NCDOT), Division of Highways, proposes to widen NC 98 (Holloway Street) from just east of US 70 to east of Junction Road in Durham County. The proposed project will widen the existing 4-lane undivided roadway to a five-lane, 72-foot (22 meter), face to face, curb and gutter facility. A 16-foot (4.8 meter) continuous center turn lane will be provided throughout the project. This includes a 4-foot (1.2 meter) raised concrete median from North Hoover Road to Junction Road. Fourteen-foot (4.3 meter) wide outside lanes will be provided to accommodate bicycle traffic. The proposed 8-foot (2.4 meter) berm will allow for a 5-foot (1.5 meter) sidewalk on both sides of the roadway for the entire length of the project (See Figures 1 and 2). The total project length is 0.37 mile (0.60 kilometer).

The project is included in the approved 2002-2008 Transportation Improvement Program (TIP) with a total estimated cost of \$2,510,000. The current estimated cost is \$2,765,500. The project is scheduled for right of way acquisition and construction in FY 2002 and FY 2003, respectively.

2. Summary of Environmental Impacts

The proposed widening of NC 98 (Holloway Street) will provide an overall positive benefit for the City of Durham. This improvement will improve traffic flow, help reduce travel times, and improve safety along NC 98 (Holloway Street).

No adverse effect on the air quality of the surrounding area is anticipated as a result of the project. The proposed project will not impact any historic structures eligible for or listed on the National Register of Historic Places. The recommended alternative will not encroach upon any archaeological sites on or eligible for listing in the National Register. It is anticipated one residential and two business relocations will occur as a result of this proposed improvement.

It is anticipated right of way will be required from four sites having the potential for involvement with underground storage tanks or hazardous materials (See Appendix D). If further design studies indicate right of way from these properties are to be acquired, preliminary site

assessments for soil and groundwater contamination will be performed prior to right of way purchase. If contaminants are located on the proposed right of way, the current landowner or NCDOT will take appropriate action to decontaminate the area.

3. Special Permits Required

No impacts to jurisdictional surface waters or wetlands are anticipated from the proposed project. Therefore, construction activities will not require permits from various regulatory agencies in charge of protecting the water quality of public water resources.

4. Alternatives Considered

Two alternative cross-sections were studied for the proposed project. They are as follows: 1) widen symmetrically to a five-lane curb and gutter section, 2) widen asymmetrically (north side only) to a five-lane curb and gutter section. The asymmetrical 72-foot (22 meter) face to face, five-lane, curb and gutter cross section is recommended. The “no-build” alternative was considered, but rejected since the project will provide a safe, more efficient route in this area. Postponement of the project was also considered, and rejected because it would result in the continuing deterioration of traffic and safety conditions in the future as traffic demands increase.

5. Coordination

Several federal, state, and local agencies were consulted during the preparation of this environmental assessment. Written comments were received and considered during the preparation of this assessment from the following agencies noted with an asterisk (*).

- U. S. Army Corps of Engineers
- U. S. Fish and Wildlife Service
- U. S. Environmental Protection Agency
- U. S. Geological Survey
- *N. C. State Clearinghouse, Department of Administration
- *N. C. Department of Environment and Natural Resources
- *N. C. Department of Cultural Resources, Division of Archives and History
- *N. C. Wildlife Resources Commission
- *N. C. Department of Public Instruction
- *Durham County Public Schools
- Durham County Planning
- *City of Durham
- Triangle J Council of Governments

6. Additional Information

Additional Information concerning the proposal and assessment can be obtained by contacting the following:

William D. Gilmore, P. E., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548
Telephone (919) 733-3141

Nicholas L. Graf, P. E., Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601
Telephone: 919-856-4346

Durham
NC 98 (Holloway Street)
East of US 70 to East of Junction Road
Durham County
State Project 8.1352401
Federal Aid Project No. STP-98(5)
T.I.P. No. U-4010

No substantial environmental impacts are anticipated by construction of the project; therefore, the project is classified as a "categorical exclusion".

I. DESCRIPTION OF PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT), Division of Highways, proposes to widen NC 98 (Holloway Street) from just east of US 70 to east of Junction Road in Durham County. The proposed project will widen the existing 4-lane undivided roadway to a five-lane, 72-foot (22 meter) face to face, curb and gutter facility. A 16-foot (4.8 meter) continuous center turn lane will be provided throughout the project. This includes a 4-foot (1.2 meter) raised concrete median from North Hoover Road to Junction Road. Fourteen-foot (4.3 meter) wide outside lanes will be provided to accommodate bicycle traffic. The proposed 8-foot (2.4 meter) berm will allow for a 5-foot (1.5 meter) sidewalk on both sides of the roadway for the entire length of the project. (See Figures 1 and 2). The total project length is 0.37 mile (0.60 kilometer).

The project is included in the approved 2002-2008 Transportation Improvement Program (TIP) with an estimated total cost of \$2,510,000. This cost includes \$1,290,000 for right of way acquisition, \$1,050,000 for construction and \$170,000 for prior years cost. The current total estimated cost is \$2,765,500 which includes \$1,315,500 for right of way acquisition, \$1,378,275 for construction, and \$71,725 for sidewalks. The project is scheduled for right of way acquisition in FY 2002 and construction in FY 2003.

II. NEED FOR THE PROPOSED PROJECT

A. Purpose of Project

The purpose of widening NC 98 (Holloway Street) is to improve traffic capacity and safety for motorists in the project area. Due to increased development along this route, future traffic growth will create longer travel times, dangerous passing situations, and an increase in accidents. Therefore, improvements are warranted to accommodate traffic growth and insure safety. NC 98 (Holloway Street) is heavily used to access US 70.

B. Traffic/Truck Volumes

The 1995 Average Daily Traffic (ADT) volumes along this project vary from a low of 16,200 vehicles per day (vpd) to a high of 19,400 vpd. In the year 2025, these volumes are expected to vary from 31,600 vpd to 33,700 vpd over the length of the project (See Figures 3 and 3A).

The Level of Service (LOS) of a roadway is a measure of its traffic carrying ability. Levels of Service range from LOS A to LOS F. At signalized intersections, the ability of the intersection to handle traffic can also be described by Levels of Service A through F. Level of Service A represents unrestricted maneuverability and operating speeds. Level of Service B represents reduced maneuverability and normal operating speeds. Level of Service C represents restricted maneuvering and operating speeds close to the speed limit. This condition is considered acceptable. Level of Service D represents severely restricted maneuvering and unstable, low operating speeds. Level of Service E represents operating conditions at or near the capacity level. Breakdown conditions which are characterized by stop and go travel occur with Level of Service F.

With the present traffic volumes, the intersections along NC 98 (Holloway Street) are operating at LOS A at Junction and Southerland Roads, and LOS B at North Hoover Road.

To achieve acceptable Levels of Service, NCDOT's Congestion Management Section recommends the following intersection improvements in addition to the widening of NC 98 (Holloway Street):

- North Hoover Road – Widen to four lanes, north and south of NC 98 (Holloway Street).
- Southerland Road – No improvements.
- Junction Road – No improvements.

If the proposed improvements were made to NC 98 (Holloway Street), Southerland Road would be expected to operate at LOS A, while the North Hoover Road and Junction Road intersections would operate at LOS B in the design year 2025.

The proposed improvements to North Hoover Road will not be included as a part of this project.

North Hoover Road and Junction Road will remain signalized.

C. Accident Studies

During the period from April 1, 1997 to March 31, 2000, a total of 180 accidents were reported on the studied portion of NC 98 (Holloway Street). This resulted in an accident rate of 1941.8 accidents per 100 million vehicle miles (ACC/100MVM) compared to the statewide average for similar routes of 288.0 ACC/100 MVM. There were no fatalities during the period,

and 75 accidents resulted in injuries. The primary accident types were left turn and rear-end collisions with slowing or stopping vehicles. The proposed multi-lane cross section will reduce the potential for these types of accidents.

III. EXISTING ROADWAY INVENTORY

A. Existing Cross Section

The existing typical cross section of NC 98 (Holloway Street) is a 41.2 foot (12.6 meter) four-lane, undivided, curb and gutter section.

B. Right of way

The existing right of way width along NC 98 (Holloway Street) varies from 60 to 70 feet (18.3-21.3 meters).

C. Bridges

There are no existing bridges within the proposed project limits; however, the US 70 bridge is near the beginning of the project. The reason the widening does not include NC 98 (Holloway Street) west of the bridge is because the existing width between the outside piers is not wide enough.

D. Speed Limits

The existing speed limit along the studied section of NC 98 (Holloway Street) is 35 mph (60 km/h).

E. Access Control

The existing roadway has no control of access.

F. Intersections and Type of Control

All roads currently intersecting the project alignment are at-grade. The North Hoover Road and Junction Road intersections are signalized. The Southerland Road intersection is stop sign controlled.

G. Utilities

Durham County has water and sewer service. Public Service gas lines exist along NC 98 (Holloway Street). Overhead utility lines are present within the project limits. The project is expected to have a medium impact to utilities.

H. Buses

A Durham Area Transit Authority facility is located in the project vicinity. This facility houses forty buses and vans which run seven days a week, 7:30 AM until midnight.

Currently, 46 school buses travel the studied section NC 98 (Holloway Street) daily. These buses travel NC 98 (Holloway Street) both in the morning and afternoon.

I. Railroad Crossings

There are two railroad crossings along the studied section of NC 98 (Holloway Street), CSX and Norfolk Southern Railroads. Two trains travel both lines daily.

J. Drainage Structures

There are no drainage structures along the project corridor.

K. Project Terminals

At the western project terminal, NC 98 (Holloway Street) is a four-lane, undivided, curb and gutter shoulder section.

The eastern terminal is located just east of Junction Road. At this location, NC 98 (Holloway Street) is also a four-lane, undivided, curb and gutter roadway.

L. Sidewalks

No sidewalks exist within the project limits.

M. Route Classification

NC 98 (Holloway Street) is classified as an Urban Principal Arterial.

IV. PROPOSED IMPROVEMENTS

A. Length of Project

The total length of the proposed improvement is approximately 0.37 mile (0.60 kilometers).

B. Design Speed Proposed

The proposed design speed is 40 mph (65 km/h). Design speed is a correlation of physical features of a highway which influence vehicle operation and reflects the degree of safety and mobility desired along a highway. Design speed is not to be interpreted as the recommended or posted speed.

C. Cross Section

The recommended typical cross section is a five-lane, 72-foot (22 meter), face to face, curb and gutter facility which includes a 16-foot (4.8 meter) continuous center turn lane. A 4-foot (1.2 meter) raised concrete median will be provided from North Hoover Road to Junction Road. The inside lanes will be 12 feet (3.6 meter) wide. The outside lanes will be 14 feet (4.3 meter) wide to accommodate bicycle traffic. The 8-foot berm (2.4 meter) will accommodate a 5-foot (1.5 meter) sidewalk on both sides of the project (see Figure 4).

D. Right of way

The proposed additional right of way width is 18 feet (5.5 meters) on the north side of NC 98 (Holloway Street).

E. Access Control

No access control is proposed along the project.

F. Drainage Structures

No drainage structures are involved.

G. Parking

Parking will neither be provided for nor permitted along the project.

H. Sidewalks

The City of Durham requested sidewalks be constructed on both sides of the roadway throughout the project to accommodate existing and future pedestrian needs. The total estimated cost for the sidewalk is \$71,725 and is included in the construction cost of the project. NCDOT

and the City of Durham will share in the cost of the sidewalks, based on NCDOT Pedestrian Policy Guidelines.

I. Bicycles

Special bicycle provisions are recommended for the proposed project. Wide 14-foot (4.3 meters) lanes will be provided on the outside lanes to accommodate bicycle traffic.

J. Speed Limit

The recommended posted speed limit for the proposed project is 35 mph (60 km/h).

K. Intersection Treatment and Type of Control

The intersections of North Hoover Road and Junction Road with NC 98 (Holloway Street) will remain signalized and the Southerland Road intersection will remain stop sign controlled.

Junction Road will be realigned to the east at the NC 98 (Holloway Street) intersection. Exclusive left and right turn lanes are provided on southbound Junction Road and one lane on northbound Junction Road.

L. Rail Crossing

Evaluation of the railroad crossing was conducted during the project study. The criteria used in evaluating whether a railroad crossing warrants a grade separation is based on several considerations. The first is the exposure index, calculated by multiplying the number of trains per day by the number of vehicles per day using the associated highway. The guideline established for consideration of a grade separation is an exposure index of 15,000 for rural and 30,000 for urban conditions. However, other considerations such as existing topography, right-of-way cost, or other features of the physical situation which make separation impossible or impractical must also be evaluated prior to making a recommendation.

The exposure index of the CSX/Norfolk Southern Railroad intersection with NC 98 (Holloway Street) exceeds the threshold as outlined in NCDOT's Working Guidelines for Railroad Grade Separations. A grade separation was investigated; listed below are the findings from that study:

- (a) NCDOT needs to be at least 30 feet (23 foot clearance + 7 feet for bridge) higher than the existing tracks to span the railroad. A 9% +/- grade is needed to achieve this due to avoiding the existing bridge at US 70. In order to tie back in on the east side of Junction Road within a reasonable distance, a 10% grade is needed. The grades, vertical curvature, and resulting design speed are not acceptable.

- (b) The future U-71 project proposes to construct a single point urban interchange at the existing US 70/NC 98 (Holloway Street) interchange. A new bridge will be constructed on US 70 making the spacing to the existing tracks even less. Providing for a railroad grade separation on project U-4010 would conflict with the U-71 design.
- (c) Because of the vertical clearance needed to span the railroad, there would be heavy right of way impacts. Construction along both North Hoover and Junction Roads would increase tremendously. Junction Road would have to be relocated to an acceptable distance beyond the bridge, thus incurring more relocations. Also, the new height of NC 98 (Holloway Street) would push the construction limits approximately 80 – 90 feet beyond the existing edge of pavement. This would heavily impact all of the businesses being accessed by this road.
- (d) Signalized intersections are in close proximity to the railroad tracks on both sides of NC 98 (Holloway Street), thereby restricting the free flow of traffic.

It was decided a grade separation will not be included as part of this improvement project. The Grade Separation Agreement is included in Appendix B. During final design, coordination with the NCDOT Rail Division will be undertaken to design and implement appropriate measures to prevent illegal “run-around” movements when gate arms are down.

M. Estimate of Costs

*Construction	\$1,378,275
**Right of way	\$1,315,500
Sidewalk	<u>\$ 71,725</u>
Total Cost	\$2,765,500

* Includes engineering and contingencies

** Includes relocation and acquisition

V. ALTERNATIVES

Due to the nature of the project, the widening of an existing segment of roadway, no alternative corridors were considered. However, two design alternatives (asymmetrical and symmetrical) were evaluated for the widening of NC 98 (Holloway Street). Both alternatives include railroad track improvements and sidewalk.

In addition to the widening of NC 98 (Holloway Street), Junction Road will be slightly realigned to the east and widened at the NC 98 (Holloway Street) intersection. The proposed realignment will provide a greater separation between the intersection with NC 98 (Holloway Street) and the railroad tracks, allow sufficient room for providing the turning lanes on Junction Road, provide the space needed for the railroad crossing gates and related equipment, and will allow for the provision of a concrete monolithic island on NC 98 (Holloway Street). The

monolithic island is designed to prevent illegal “run-around” movements around the rail crossing gate arms. A 75-foot (22.9 meter) long island was investigated; however, for an island 75 feet (22.9 meters) long, Junction Road would have to be realigned even further to the east, resulting in 4-5 more relocations. This was not considered a viable option; therefore, a 28-foot long (8.5 meter) island was studied. The shorter island will still be considered a safety measure to prevent vehicles from trying to maneuver around the crossing gates in the event of a train crossing at NC 98 (Holloway Street).

A. Alternative 1A (Recommended)

The recommended alternative proposes to widen NC 98 (Holloway Street) asymmetrically from east of US 70 to east of Junction Road.

The recommendation for the proposed improvement is to widen NC 98 (Holloway Street) to a five-lane, 72-foot (22 meter), face to face, curb and gutter facility. This five-lane, curb and gutter facility, will include two 12-foot (3.7 meter) inside lanes, a 16-foot (52.5 meter) continuous center turn lane, and one 14-foot (4.3 meter) outside lane in each direction. A 4-foot (1.2 meter) raised concrete median will be provided from North Hoover Road to Junction Road. The additional right of way for the proposed project is 18 feet (5.5 meters) (See Figure 4).

Alternative 1A is recommended because it is less expensive, provides design benefits at the ramp junction at US 70 and it is preferred by the City of Durham over the other design alternative. This alternative will not relocate any non-profit organizations; however, one residence and two businesses will be relocated. The estimated cost of this alternative is \$2,765,000.

B. Alternative 1

This alternative proposes to widen NC 98 (Holloway Street) symmetrically to a 72-foot (22 meter), five-lane, curb and gutter facility. This five-lane facility would consist of two 12-foot (3.7 meter) inside lanes, a 16-foot (52.5 meter) continuous center turn lane, and one 14-foot (4.3 meter) outside lane in each direction. A 4-foot (1.2 meter) raised concrete median would be provided from North Hoover Road to Junction Road. Widening would be symmetrical. The total estimated cost for this improvement is \$2,765,000.

TABLE 1: COMPARISON OF COSTS OF ALTERNATIVES

ALTERNATIVE	RIGHT OF WAY	CONSTRUCTION	TOTAL
1	\$1,268,500	\$1,600,000	\$2,868,500
1A	\$1,315,500	\$1,450,000	\$2,765,500

Note: The total cost of each alternative includes \$71,725 for sidewalks.

TABLE 2: COMPARISON OF RELOCATEES

ALTERNATIVE	ESTIMATED COST	RESIDENTIAL RELOCATEES	BUSINESS RELOCATEES	TOTAL RELOCATEES
1	\$2,868,500	1	2	3
1A	\$2,765,500	1	2	3

C. Alternative Modes of Transportation

No alternative mode of transportation is considered to be a practical alternative to this highway project. Highway transportation is the dominant mode of transportation in the project area, and the project involves widening an existing highway. Currently, public transportation is provided in Durham. Staggering work hours, car-pooling, and van-pooling could relieve some congestion on NC 98 (Holloway Street); however, these congestion management measures are not within the control of NCDOT and will not meet the transportation improvements necessary for the growing residential and industrial areas surrounding Durham.

D. Postponement of Project

Postponement of the project would result in continuing deterioration of traffic and safety conditions in the future as traffic demands increase. Therefore, this alternative is not recommended.

E. “No Build “ Alternative

The “no build” alternative was considered but rejected since the project will provide a safer, more efficient route in Durham County.

VI. SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS

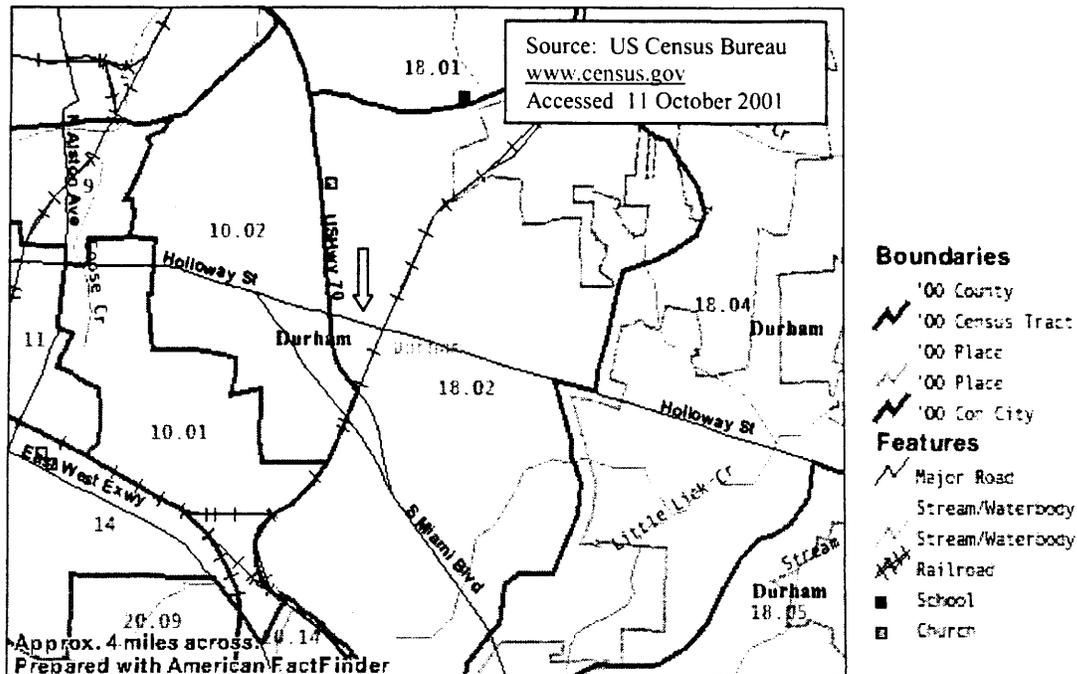
A. STUDY AREA DESCRIPTION

The primary study area is identified as the two US Census Tracts 10.02 and 18.02. These two tracts incorporate the communities and populations most directly affected by the widening project proposed for Holloway Street. The study area is composed of entire Census Tracts in order to facilitate data collection and analysis. TIP project U-4010 falls exclusively in Tract 18.02; however, Tract 10.02 is immediately adjacent and may be affected by westerly traffic on Holloway Street.

Much of the analysis is based on information obtained from the Northeast Durham Plan. The part of Durham County detailed in this plan is that section bordered by I-85 in the north, US 70 to the west, and NC 98 or Holloway Street to the south. The Wake County line forms the eastern border. While Northeast Durham does not directly correspond with the Census Tracts

used to designate the study area, the Northeast Durham Plan does provide essential data needed to describe the community and how it may be affected by this transportation improvement.

The NCDOT plans to widen Holloway Street from just east of US 70 to just east of Junction Road and the Norfolk Southern/CSX Railroad. The right-of-way will be extended on the north side of Holloway Street. The project will include the addition of a center turn lane, and will improve traffic flow on this 0.37-mile stretch of highway. The existing width is four lanes with curb and gutter and a speed limit of 35 mph. Following the improvements, the road will be 68 feet wide with five lanes and curb and gutter, and it will have a design speed limit of 35 mph. Also, included in the improvements will be wide outside lanes to accommodate bicycle traffic.



B. Community Profile

Demographics

Historically, the City of Durham and Durham County have been home to a greater percentage of minorities than the state of North Carolina as a whole. This is supported by data from the most recent Census (2000), which shows that 57.6% of the City's population and 51.9% of the County's population is non-white. The corresponding percentage of minorities in the State is 29.8%. The study area for this particular project has an even greater percentage of minorities, with over 85% of the population considered non-white. The largest groups are the African Americans, which make up 64.2% of the population in the study area, and Hispanics, which make up 19.8% of the population.

Table 3. Population by Race, 2000

Race	Study Area		City of Durham		Durham County		North Carolina	
	Population	%	Population	%	Population	%	Population	%
White	1,792	14.4%	79,277	42.4%	107,371	48.1%	5,647,155	70.2%
Black or African American	7,999	64.2%	81,370	43.5%	87,516	39.2%	1,723,301	21.4%
American Indian or Alaska Native	15	0.1%	455	0.2%	531	0.2%	95,333	1.2%
Asian	35	0.3%	6,782	3.6%	7,311	3.3%	112,416	1.4%
Native Hawaiian or Pacific Islander	0	0.0%	58	0.0%	65	0.0%	3,165	0.0%
Hispanic or Latino	2,469	19.8%	16,012	8.6%	17,039	7.6%	378,963	4.7%
Other Race	17	0.1%	360	0.2%	436	0.2%	9,015	0.1%
Two or More Races	133	1.1%	2,721	1.5%	3,045	1.4%	79,965	1.0%
Total	12,460	100.0%	187,035	100.0%	223,314	100.0%	8,049,313	100.0%

Source: US Census Bureau, 2000

Note: Study Area includes Census Tracts 10.02 and 18.02

The study area appears to have a greater percentage of residents in the younger age groups than the City of Durham, Durham County and North Carolina. Almost 34% of the total population in the study area is "19 years and under", while the City, County and State have only 26.3-27.2% under the age of 20. Additionally, the percentage of the population in the 20-44 age group is relatively high in the study area, as in the City of Durham and Durham County. The percentages of the population included in the "45-64 years" and "65 or more years" cohorts are relatively low in the study area, the City and the County. In fact, the percentage of the population over the age of 45 living in the study area is about half of the corresponding percentage in the State.

Table 4. Population by Age, 2000

Age	Study Area		City of Durham		Durham County		North Carolina	
	Population	%	Population	%	Population	%	Population	%
19 yrs & under	4,212	33.8%	49,742	26.6%	58,773	26.3%	2,193,360	27.2%
20-44 yrs	5,371	43.1%	86,115	46.0%	98,767	44.2%	3,078,043	38.2%
45-64 yrs	2,050	16.5%	33,763	18.1%	44,200	19.8%	1,808,862	22.5%
65 or more yrs	827	6.6%	17,415	9.3%	21,574	9.7%	969,048	12.0%
Total	12,460	100.0%	187,035	100.0%	223,314	100.0%	8,049,313	100.0%

Source: US Census Bureau, 2000

Note: Study Area includes Census Tracts 10.02 and 18.02

2. Income, Poverty Status and Unemployment

The median household income for Durham County is typically higher than the average median household income for North Carolina. The most recent Census data (1997) shows that Durham County has a median household income of just over \$40,000.00, while North Carolina's average is almost \$5,000.00 less. It does appear that income is growing at a similar rate for both the County and the State, as the percentage of growth is approximately 31-33%.

Table 5. Median Household Income, 1990-1997

Area	Median Household Income		Change	
	1990	1997	Amount	%
Durham County	\$30,526.00	\$40,007.00	\$9,481.00	31.1%
North Carolina	\$26,647.00	\$35,320.00	\$8,673.00	32.5%

Source: US Census Bureau, 1990 & 2000

Note: The 1990 Census provides median household income for the year 1989

The percentage of the population that lives below the poverty level is approximately 12-13% for both Durham County and North Carolina. From 1990-1997, the percentage of County residents in this category grew slightly (0.5%), while the percentage actually decreased (0.4%) in the State.

Table 6. Percentage of Population below Poverty Level, 1990-1997

Area	Percentage Below Poverty Level		Change	
	1990	1997	Amount	%
Durham County	11.9%	12.4%	0.5%	4.2%
North Carolina	13.0%	12.6%	-0.4%	-3.1%

Source: US Census Bureau, 1990 & 2000

The unemployment rates for both Durham County and North Carolina have decreased somewhat in the past decade. The unemployment rate in Durham County tends to be lower than that of the rest of the State, and is approximately 2.3% at present. The unemployment rate for the State is currently 3.6%.

Table 7. Unemployment Rate, 1990-2000

Area	Unemployment Rate		Change	
	1990	2000	Amount	%
Durham County	2.7%	2.3%	-0.4%	-14.8%
North Carolina	4.2%	3.6%	-0.6%	-14.3%

Source: Employment Security Commission of North Carolina, 2001

Tables 5-7 include data for Durham County and the state of North Carolina. Information for the City of Durham and the study area is not included because the 2000 Census report is not complete at the time of this study.

3. Housing Characteristics

The predominant land use along Holloway Street from US 70 to Junction Road is commercial, with some light industry and residential interspersed throughout. The residential uses are located along Holloway Street just west of US 70, and just east of Junction Road. In addition, there are single-family neighborhoods located on minor streets that intersect with Holloway Street between US 70 and Junction Road.

Recent data on home values and contract rents is limited. Data is available from the 1990 Census for both Durham County and North Carolina. The median home value in Durham County in 1990 was \$85,500.00, while North Carolina's median value was \$65,800.00. The 2000 Supplemental Surveys conducted by the US Census Bureau find that the median home value (estimate) now in North Carolina is \$108,356.00. This indicates a growth rate of almost 65%. The median contract rent for Durham County in 1990 was \$355.00, while the median for the State was \$284.00. The Supplemental Surveys show a growth rate of 98.6% in median contract rent for the State, as the rent was estimated at \$564.00 in 2000.

The draft of the Northeast Durham Plan, created by the Durham City/County Planning Department, suggests that the housing in Northeast Durham is skewed more heavily toward owner-occupied, detached units that in the remainder of the City and County. Northeast Durham, as defined in the Plan, is bounded by US 70, I-85, the Wake County line, and NC 98 or Holloway Street. However, rental units are concentrated in the western and southern urban fringe of Northeast Durham, where the project area is located. As seen in Table 7, the City of Durham and Durham County have homeownership rates well below the state average of 69.4%.

Table 8. Homeownership Rate, 1990-2000

Area	Homeownership Rate		Change	
	1990	2000	Amount	%
Northeast Durham	N/A	78.3%	N/A	N/A
City of Durham	44.2%	48.9%	4.7%	10.6%
Durham County	53.0%	54.3%	1.3%	2.5%
North Carolina	68.0%	69.4%	1.4%	2.1%

Source: US Census Bureau, 1990 & 2000

Note: The homeownership rate for Northeast Durham (2000) was taken from the draft of the Northeast Durham Plan (2001).

4. Business Activity and Employment Centers

There are no major employment centers in the immediate vicinity of TIP project U-4010. As mentioned in the Northeast Durham Plan, and noted in a field visit to the project area, there are some low-employment generating industries and businesses along

the rail corridor and Junction Road. Primarily though, this part of Durham acts more as a “bedroom community” for surrounding employment centers. Many Durham County residents travel from or through the study area to work locations in the Research Triangle Park (south) or in downtown Durham (west).

5. Public Services

The Durham Fire Department Station No. 8 is located on Holloway Street approximately a mile east of the intersection with Junction Road. There is also a Durham Police Substation along this same stretch of roadway. These are both served by the 9-1-1 Emergency Communications center for the Durham metropolitan area, which relays emergency service, fire and police department responses across the area.

6. Land Use and Development

The predominant land use along Holloway Street from US 70 to Junction Road is commercial. There are some industrial uses along US 70 and the Norfolk Southern/CSX Railroad. The majority of residential uses are on the west side of US 70 and the east of Junction Road. These neighborhoods are typically medium density residential with 4.1 to 8 units per acre. The surrounding neighborhoods tend to be lower density, with 1 to 4 units per acre.

The area immediately around the proposed TIP project is fairly urbanized and almost fully developed. This development spreads out to the urban growth boundary that is formed roughly by Fletcher’s Chapel Road and Stallings Road. Outside of this boundary, the land is generally subject to regulations that protect the Falls Lake watershed in the Neuse River Basin, and therefore it is less developed.

The Northeast Durham Plan, drafted by the Durham City/County Planning Department, is one of sixteen “small area” plans in the County. The widening project on Holloway Street is located in Northeast Durham, on the very southwestern border of the district. The plan will serve as a guide in making future land use decisions. Currently, the plan has been recommended for adoption by the Planning Committee to the Board of County Commissioners and Durham City Council. The plan is scheduled to go before these elected bodies in November 2001.

7. Community Description

The Northeast Durham district of Durham County is approximately 24,000 acres, which is about 13% of the total land area of the County. The western portion of the district is urbanized and part of the City of Durham, while the eastern portion is relatively rural.

The residential neighborhoods in Northeast Durham are primarily composed of owner-occupied, single family homes. Those areas immediately surrounding the project area have higher concentrations of renter-occupied homes, and the housing stock is typically older and in decline.

There are several noteworthy community groups in the area. The Merrick-Moore Civic Club meets at Mt. Zion Church in the vicinity of Cheek Road just north of the project site. The Northeast Durham Homeowners Organization and the Gorman Neighborhood Association are also active in the community.

D. Project Impact Assessment

1. Social and Psychological

According to planning staff in Durham, the neighborhoods in the general vicinity of the proposed improvements are gradually shifting from a Black or African American majority, as Hispanics make up an increasing percentage of the local population. The total population in the study area (Census Tracts 10.02 and 18.02) has grown at a similar rate as the County and State in the last decade. However, the populations in Northeast Durham and the City of Durham have grown at rates of 32.3% and 36.9% respectively in comparison to 22.8% in the County. It would be reasonable to assume that the growth in the more rural sections of Northeast Durham will continue, as more available land is developed. The neighborhoods immediately adjacent to the proposed project will most likely not be subject to the same type of growth because the land is already urbanized. The addition of a center turn lane, therefore, will not create any substantial impact on total population. Likewise, the proposed improvements will not affect the interaction of these neighborhoods with the community in general. The quality of life will remain much the same as it is today.

2. Physical Aspects

The proposed widening of the 0.3-mile segment of Holloway Street between US 70 and Junction Road will not generate any substantial noise or physical intrusions. The proposed improvement will require another 18 feet of right-of-way, but the turn lane will not produce any more noise than that generated by the current four-lanes of traffic. The reason for this is that the transportation improvement will not necessarily induce more traffic (more noise). It will serve to alleviate current congestion on the road.

3. Visual Environment

The project area is located in an urbanized and mostly commercial setting. The current four-lane road has curb and gutter facilities with multiple access points. The addition of a center turn lane will not significantly alter the aesthetics of the roadway, as the proposed improvement will also have curb and gutter facilities and multiple access points. Likewise, there will not be any significant effect on the limited landscaping and vegetation that is currently present. If anything, the transportation improvement may serve as an impetus for planting vegetation along the street.

The primary impact on the visual environment will be the continuous sidewalk to be constructed on the north side of the street. This change will be aesthetically positive in that it is replacing the deteriorated and ineffective sidewalk in place at present.

4. Land Use Patterns and Compatibility

The Durham City/County Planning Department's Northeast Durham Future Land Use Map proposes the development of neighborhood and community centers. These centers would serve as employment and service nodes for residents, and would support commercial, office and industrial uses. The proposed widening project would facilitate transportation to and from these centers upon future development. The project in itself would not be responsible for changes in land use.

The Planning Department also suggests inter-connectivity between existing and future developments by supporting the inclusion of projects that are part of the TIP program of the NCDOT. The expansion of the capacity of NC 98 not only from US 70 to Junction Road, but from Junction Road to the Wake County line, is one such priority. The Northeast Durham Plan encourages a Corridor Study for NC 98 as an implementation measure to support the goal of promoting better access to transportation arteries, providing more jobs and decreasing congestion.

5. Economic Conditions

The widening project on Holloway Street will have an impact on several businesses in the immediate project area. It is possible impacts to two gas stations will include the relocation of gas pumps, tanks, monitoring wells, and canopies. Nonetheless, the project length is so short (0.37-mile (0.60 kilometer)) that the effects on the City's tax base will be minimal.

In the long run, the impact should be positive. The addition of a center turn lane will improve traffic flow and may even improve access to businesses. It may also improve visibility of certain businesses that will be located more closely to the road. In addition, the improvement should help to facilitate development of the neighborhood centers proposed at the intersection of US 70 and Holloway Street, and at NC 98 and Lynn Road, where Midland Terrace Road will be extended to NC 98 from the north.

6. Mobility and Access

The expected increase in population and traffic may put a burden on the street network in years to come. In 1999, the section of Holloway Street between US 70 and Junction Road experienced an average daily traffic count of approximately 21,000 vehicles per day. This average is expected to rise to 31,600-33,700 vehicles per day by 2025. In order to accommodate this growth, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization has identified several problem areas. One such area is the portion of Holloway Street or NC 98 from east of US 70 to east of Junction Road. Improvements to this project area and others will allow for better access to major transportation arteries such as US 70 and I-85.

The addition of a center turn lane on Holloway Street will not contribute to changes in commuting patterns of automobiles, though it will improve the accessibility to businesses and parking on Holloway Street. It will decrease driving time for individual commuters, and it will also expedite public transportation along NC 98. The Planning Department advises bus stops for all neighborhood and community service centers proposed on the Future Land Use Map. ACCESS vans (public transportation for the handicapped) will be available during normal working hours to assist anyone with physical disabilities.

There are also plans to include a continuous sidewalk on the north side of Holloway Street when the road is widened. This will enhance the pedestrian accessibility to local businesses. Additionally, it will assist in providing pedestrian links to future neighborhood centers located in the corridor. Currently, the businesses located on Holloway Street are not particularly pedestrian-oriented, but this can be remedied by providing linkages to the sidewalk installed with this transportation improvement.

The Durham Urban Trails and Greenways Master Plan and the Regional Bicycle Plan recommend locating bicycle routes along major thoroughfares such as NC 98. The outside lanes will be 14 feet wide, which will accommodate bicyclists.

7. Provisions of Public Services

Since the project will not impact population growth in the study area, there will be no impact on public amenities such as schools or recreation facilities. Additionally, there will be no displacement of public facilities or places of worship.

8. Safety

The addition of a center turn lane from US 70 to just east of Junction Road will improve safety for vehicles, pedestrians and bicyclists. Automobiles will be able to access residences and businesses without interrupting the normal flow of traffic. This includes emergency vehicles, which will be able to respond more quickly and safely on Holloway Street.

Pedestrian safety will be improved by replacing the beaten pathways with a continuous concrete sidewalk and bicycle safety will be improved by the addition of bicycle lanes.

9. Displacements

It is the policy of the NCDOT to provide assistance and counseling to those affected by transportation improvements as required under the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act. Furthermore, the North Carolina Board of Transportation offers programs that address relocation assistance, moving payments and replacement housing payments or rent subsidies for residents and businesses that are impacted by transportation improvements.

The widening project will affect one residence and two businesses on Holloway Street. The NCDOT easement encroaches upon the canopy of the Triangle Gas Station on the southeast corner of Holloway Street and Junction Road. Additionally, the extended right-of-way will encroach upon the canopy of the gas station on the northeast corner of Holloway Street and Southerland Street.

10. Secondary and Cumulative Impacts

Secondary impacts are those impacts that may indirectly come about because of an event such as the proposed transportation project on Holloway Street. Secondary impacts tend to occur over a longer period of time and can take place away from the immediate project area. An example would be the deterioration of air quality due to new highway construction. With increased development and traffic caused by a new highway, the air quality in the entire region may diminish over time. This could be considered a secondary effect. Closely related is the concept of cumulative impacts, which are the collective effects of an event such as this widening project.

Only minor secondary and cumulative impacts are created by this project. As previously mentioned, a direct impact of the additional turn lane will be improved traffic flow on Holloway Street between US 70 and Junction Road. The project will not necessarily induce more traffic, but it will mainly serve to relieve congestion that is already a factor on this stretch of road. The widening will not induce additional development either. Rather, it will most likely help to accomplish the planning goals mentioned in the Northeast Durham Plan.

The most prominent land use along this part of Holloway Street is commercial, with a few residential uses on Holloway Street, and light industrial uses along US 70 and the rail corridor. The transportation improvement will not directly affect the type of land use on Holloway Street, but it may indirectly aid in the transformation of this commercial strip into more pedestrian-friendly and bicycle-friendly development as encouraged in the Plan.

The Northeast Durham Plan identifies a number of locations as sites for neighborhood or community service centers. These centers would provide a mix of uses, including commercial, office and industrial. The sidewalk network and bicycle lanes will be extended within these service centers, and along other major thoroughfares in the county to facilitate the objectives of the Plan. This, in conjunction with the proposal to provide several direct connections to the Research Triangle Park and I-85, will help to create safer and more efficient multi-modal transportation options on Holloway Street and other major roads.

11. Environmental Justice

Federal programs, under the statutes of Title VI of the Civil Rights Act of 1964, have requirements to protect individuals from discrimination on the basis of race, color, national origin, age, sex, disability, and religion. Furthermore, Executive Order 12898 "directs that programs, policies, and activities not have a disproportionately high and

adverse human health and environmental effect on minority and low-income populations”.

While there is a disproportionate number of minorities in the study area and project area, there are no substantial environmental justice issues in regards to this transportation improvement. The TIP project is designed to improve traffic flow and safety, which will in turn improve access to a number of businesses and residences. Though several businesses will be relocated, the benefits for the community as a whole outweigh the negative factors.

12. Farmland Impacts

The Farmland Protection Policy Act (FPPA) is designed to minimize the degree to which federally sponsored programs contribute to the “unnecessary and irreversible conversion of farmland to non-agricultural uses,” and ensure that these programs are consistent with state, local and private programs to protect farmland.

The TIP project is located in an urbanized area, and the addition of a center turn lane will not disrupt any agricultural uses.

13. Historic and Cultural Resources

There are no significant archaeological or historical sites recorded in the project area. The likelihood of the project encountering any significant archaeological sites is low, given the limited scope of the project and the extensive modern development in the project area. There are no sites or properties listed on the National Register of Historic Places within the project’s area of potential effect. The State Historic Preservation Office recommended no archaeological investigation for this project. See Appendix A for concurrence form and letter dated November 14, 2000 from the State Historic Preservation Office.

E. Air Quality Analysis

The project is located in Durham County, which is within the Raleigh-Durham nonattainment area for ozone (O₃) and carbon monoxide (CO) as defined by the EPA. The 1990 Clean Air Act Amendments (CAAA) designated these areas as “moderate” nonattainment area for O₃ and CO. However, due to improved monitoring data, these areas were redesignated as “maintenance” for O₃ on June 17, 1994 and “maintenance” for CO on September 18, 1995. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Durham County. The Durham-Chapel Hill-Carrboro 2025 Long Range Transportation Plan (LRTP) and the 2000-2006 Metropolitan Transportation Improvement Program (MTIP) has been determined to conform to the intent of the SIP. The USDOT air quality conformity of the LRTP was February 29, 2000 and the USDOT air quality conformity on the MTIP was February 29, 2000. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. There has been no significant changes in the project’s design concept or scope, as used in the conformity analyses.

This project is limited in scope with no additional through traffic lanes or change in speed limit is planned. Furthermore, the project will not increase traffic volumes. Also, the noise transmission reduction provided to the interior of the structures within the project limits should be sufficient to moderate any intrusive traffic noise. Therefore, the project's impact on noise and air quality will not be significant.

If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise of Title 23 of the Code of Federal Regulations, Part 772, and for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

F. Ecological Analysis

The project study area lies within the Piedmont physiographic region in the north-central part of North Carolina. The topography in this section of Durham County is gently rolling. Commercial and residential uses are the major land uses in this area.

Project elevation is between 370.0 and 400.0 ft (112.8 and 121.9 m) above mean sea level (msl).

1. Soils

Four soil map units occur within project vicinity: three White Store sandy loams with varied slopes and White Store Urban land complex. Table 3 lists study area soils and their characteristics.

Table 9. Soils within the Project Study Area

Map Unit	Soil	Percent Slope	Drainage Class	Hydric Classification
WsB	White Store sandy loam	2-6	Moderately well	Non-hydric
WwC	White Store-Urban land complex	0-10	Not available	Non-hydric
WsC	White Store sandy loam	6-10	Moderately well	Non-hydric
WsE	White Store sandy loam	10-25	Moderately well	Non-hydric

White Store sandy loam (2-6% slopes) occurs on broad ridges on uplands. Surface runoff is medium and infiltration is moderate. The main limitations are erosion resulting from runoff, high shrink-swell potential and very slow permeability.

White Store-Urban land complex (0-10% slopes) consists of White Store soil and Urban land, which is mainly White Store soil material. As much as 30 percent of each mapped area is covered by streets, houses and other structures. About 30 percent is an undisturbed White Store soil. About 25 percent is a White Store soil that in places has been covered with fill material and in other places has had as much as two-thirds of the original soil material removed. The rest is fill or places where the original soil material has been cut away. The fill material is commonly a mixture of sandy loam and clay.

White Store sandy loam (6-10% slopes) occurs on narrow side slopes on uplands. Surface runoff is rapid and infiltration is moderate. The main limitations are the slope, the erosion resulting from runoff, the high shrink-swell potential and the very slow permeability.

White Store sandy loam (10-25% slopes) occurs on side slopes adjacent to major drainageways in uplands. Surface runoff is rapid and infiltration is moderate. The main limitations are the slope, the erosion resulting from runoff, the high shrink-swell potential and the very slow permeability.

2. Water Resources

The project area lies within sub-basin 03-04-01 of the Neuse River Basin; however, surface waters are not present within project boundaries. Therefore, no surface waters will be directly impacted by the proposed project. The closest surface water to the project lies approximately 400.0 ft (121.9 m) east of the project limits and is piped under NC 98. This unnamed tributary (Ut) to Little Lick Creek has a best usage classification by the DWQ of WS-IV NSW. Class WS-IV are those waters protected as water supplies which are generally in moderately to highly developed watersheds; point source dischargers of treated wastewater are permitted pursuant to rules .0104 and .0211 of 15A NCAC 2B .0100; local programs to control nonpoint source and stormwater discharge of pollution are required; suitable for all Class C uses. Class C uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. The supplemental classification of **NSW** denotes Nutrient Sensitive Waters which require limitations on nutrient inputs.

The project lies within the Falls Lake Protected Watershed within the Neuse River Basin. A protected area is only located within WS-IV watersheds. WS-IV refers to those waters used as sources of water supply for drinking, culinary or food processing purposes for those users where a WS-I, WS-II or WS-III classification is not feasible. A protected area is defined as land within five miles and draining to the normal pool elevation of water supplies, or within ten miles upstream and draining to a river intake.

Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) nor Outstanding Resource Waters (ORW) occur within 1.0 mi (1.6 km) of project study area.

3. Water Quality

Benthic macroinvertebrates are small bottom dwelling organisms, found in streams and rivers and are often used as indicators of water quality. Many benthic macroinvertebrates have stages in their life cycle that can last from six months to a year, therefore, the adverse effects of a toxic spill will not be overcome until the next generation. Different taxa of macroinvertebrates have different tolerances to pollution, thereby, long term changes in water quality conditions can be identified by population shifts from pollution sensitive to pollution tolerant organisms (and vice versa). Overall,

the species present, the population diversity and the biomass are reflections of long term water quality conditions.

The Division of Water Quality (DWQ) has initiated a basinwide approach to water quality management for the 17 river basins within the state. To accomplish this goal the DWQ collects biological, chemical and physical data that can be used in basinwide assessment and planning. All basins are reassessed every five years. Prior to the implementation of the basinwide approach to water quality management, the Benthic Macroinvertebrate Ambient Network assessed water quality by sampling for benthic macroinvertebrate organisms at fixed monitoring sites throughout the state. **There are not any biological sampling sites located within 1.0 mi (1.6 km) of this project.**

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) Program. Any discharger is required to register for a permit. **There are no permitted dischargers located within 1.0 mi (1.6 km) of this roadway project.**

Non-point source discharge refers to runoff that enters surface waters through stormwater or snowmelt. Agricultural activities may serve as a source for various forms of nonpoint source pollutants. Land clearing and plowing disturb soils to a degree where they are susceptible to erosion, which can lead to sedimentation in streams. Sediment is the most widespread cause of non-point source pollution in North Carolina. Pesticides, chemical fertilizers and land application of animal wastes can be transported via runoff to receiving streams and potentially elevate concentrations of toxic compounds and nutrients. Animal wastes can also be a source of bacterial contamination and elevate biochemical oxygen demand (BOD). Drainage ditches on poorly drained soils enhances the transportation of stormwater into surface waters (DEM, 1993).

4. Biotic Resources

Biotic resources include aquatic and terrestrial ecosystems. This section describes those ecosystems encountered in the study area, as well as, the relationships between fauna and flora within these ecosystems. Composition and distribution of biotic communities throughout the project area are reflective of topography, hydrologic influences and past and present land uses in the study area. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Common names (when applicable) are provided for each animal and plant species described. Fauna observed during the site visit are denoted with an asterisk (*). Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

5. Terrestrial Communities

One terrestrial community, maintained/disturbed, is present in the project study area. This community includes maintained road shoulders and maintained commercial and residential areas. The maintained/disturbed community includes highly maintained

road shoulders along NC 98 (Holloway Street) and commercial and residential areas. Significant soil disturbance and compaction, along with frequent mowing or herbicide application keep this community in an early successional state.

Road shoulders act as buffers between the roadway and surrounding communities by filtering stormwater runoff and reducing runoff velocities. The width of the road shoulder is approximately 5.0 ft (1.5 m). Vegetation occurring along the road shoulder includes bead grass, clover, common plantain, goldenrod, gill over ground, wild strawberry, fescue, black-eyed Susan, ragweed, dandelion, sneeze-weed and poison ivy. Chinese privet, pokeweed, kudzu, lamb's quarters, grape, trumpet vine and wild yam occur in the less maintained portions of the road shoulders.

Occurring in the residential and commercial areas are species including: sweetgum, willow oak, loblolly pine, silver maple, black walnut, ash, hickory, tulip poplar, eastern red cedar, peach tree, crape myrtle, boxwoods, juniper shrubs and yucca.

Wildlife associated with the communities present within the project vicinity include: eastern mole, opossum, muskrat, gray squirrel and raccoon.

Avian species utilizing the project vicinity include: blue jay, northern cardinal, Carolina wren, rufous-sided towhee and pigeon*.

6. Summary of Anticipated Impacts

Construction of the project will have various impacts on biotic resources. Any construction related activities in or near these resources have the potential to impact biological functions. Calculated impacts to terrestrial resources reflect the relative abundance of the community present within the study area. Project construction will result in clearing and degradation of portions of this community. The project area consists of paved parking lots and maintained/disturbed areas including residential and commercial areas. Table 4 summarizes potential quantitative losses to the maintained/disturbed community, resulting from project construction. Estimated impacts are derived using the entire proposed ROW width.

Table 10. Anticipated Impacts to Biotic Communities

Community	Alternate 1	Alternate 1A
Maintained/Disturbed	1.17 (0.47)	1.16 (0.47)
Total:	1.17 (0.47)	1.16 (0.47)

Note: Values cited are in acres (hectares).

Plant communities found within the proposed project area serve as nesting and sheltering habitat for various wildlife. However, due to the size and scope of this project, it is anticipated that impacts to fauna will be minimal.

Areas modified by construction (but not paved) will become road shoulders and early successional habitat. Reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by the creation of more early successional habitat. Animals temporarily displaced by construction activities will repopulate areas suitable for the species.

7. Jurisdictional Topics

a. Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States," as defined in Section 33 of the Code of Federal Register (CFR) Part 328.3. Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Any action that proposes to place fill into these areas falls under the jurisdiction of the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act (33 U.S.C. 1344). Potential wetland communities were investigated pursuant to the 1987 "Corps of Engineers Wetland Delineation Manual". The three parameter approach is used where hydric soils, hydrophytic vegetation and prescribed hydrologic characteristics must **all** be present for an area to be considered a wetland. **No wetlands or surface waters are present within the project area.**

b. Permits

Encroachment into jurisdictional surface water because of project construction is often times inevitable. Factors that determine Section 404 Nationwide Permit (NWP) applicability include hydrology, juxtaposition with a major resource, whether the impacts occur as part of the widening of an existing facility, or as the result of new location construction. Although an individual site may qualify under NWP authorizations, overall, cumulative impacts from a single and complete project may require authorization under an Individual Permit (IP).

A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality Individual Certification is required prior to the issuance of the section 404 permit. Section 401 Certifications allows surface waters to be temporarily impacted for the duration of the construction or other land manipulations. **No wetlands or surface waters are present within the project area. Consequently, a section 404 permit and corresponding 401 water quality certification are not required for the proposed project.**

c. Federally Rare and Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities. Federal law (under the provisions of the Endangered Species Act of

1973, as amended requires that any action, likely to adversely affect a species classified as federally-protected, be subject to review by the U.S. Fish and Wildlife Service (USFWS). Other species may receive additional protection under separate state laws.

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. **As of February 26, 2001 the USFWS lists the following federally-protected species for Durham County (Table 5).** A brief description of each species' characteristics and habitat follows.

Table 12. Federally-Protected Species for Durham County

Scientific Name	Common Name	Status
<i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened (proposed for delisting)
<i>Echinacea laevigata</i>	Smooth coneflower	Endangered
<i>Rhus michauxii</i>	Michaux's sumac	Endangered

Threatened species are species that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Endangered is defined as a species that is in danger of extinction throughout all or a significant portion of its range.

***Haliaeetus leucocephalus* (bald eagle) Threatened**

Eagle nests are found in close proximity to water (within a half mile) with a clear flight path to the water, in the largest living tree in an area, and having an open view of the surrounding land. Human disturbance can cause an eagle to abandon otherwise suitable habitat. The breeding season for the bald eagle begins in December or January. Fish are the major food source for bald eagles. Other sources include coots, herons, and wounded ducks. Food may be live or carrion.

BIOLOGICAL CONCLUSION

NO EFFECT

Potential habitat for bald eagles is not present in the project area. There are not any bodies of water within a half mile of the project and the project area is highly disturbed and populated by commercial and residential areas. NCDOT biologists visited the site on October 4, 2000. No bald eagles were observed during the survey. A review of the NCNHP database of rare species and unique habitats, on January 31, 2001, revealed no bald eagles within the project region. Therefore, project construction will not affect the bald eagle.

***Echinacea laevigata* (smooth coneflower) Endangered**

Flowers Present: June - early July

Smooth coneflower is a perennial herb that grows from simple or branched rhizomes. This herb has a smooth stem and few leaves.

Habitat for the smooth coneflower is found in areas of meadows, open woodlands, glades, cedar barrens, roadsides, power line rights-of-way, clearcuts, and dry limestone bluffs. Plants usually grow in soil derived from calcareous parent material. North Carolina populations are found in soils derived from Diabase, a circumneutral igneous rock. Optimal sites are in areas with abundant sunlight and little competition from other herbaceous plants.

BIOLOGICAL CONCLUSION

NO EFFECT

Potential habitat for smooth coneflower is present within the road shoulder portions of the project area. On the day of the survey, a known site of smooth coneflower was visited. A plant by plant survey for smooth coneflower, within areas of potential habitat was conducted on October 4, 2000 by NCDOT biologists. No species within the genus *Echinacea* was observed during the survey. A review of the NCNHP database of rare species and unique habitats, on January 31, 2001, revealed no smooth coneflower within the project region. Therefore, project construction will not affect smooth coneflower.

***Rhus michauxii* (Michaux's sumac) Endangered**

Best Search Time: During the growing season (June - September)

Michaux's sumac is a dioecious shrub growing to a height of 1.0–2.0 ft (0.3–0.6 m). Plants flower in June, producing a terminal, erect, dense cluster of 4-5 parted greenish-yellow to white flowers.

This species prefers sandy, rocky, open woods and roadsides. Its survival is dependent on disturbance (mowing, clearing, fire) to maintain an open habitat. It is often found with other members of its genus as well as with poison ivy. There is no longer believed to be an association between this species and specific soil types.

Michaux's sumac is endemic to the inner Coastal Plain and Piedmont physiographic provinces of Virginia, North Carolina, South Carolina and Georgia. Most populations occur in North Carolina. This species is threatened by loss of habitat. Since its discovery, 50 percent of Michaux's sumac habitat has been lost due to its conversion to silvicultural and agricultural purposes and development. Fire suppression and herbicide drift have also negatively impacted this species.

BIOLOGICAL CONCLUSION

NO EFFECT

Potential habitat for Michaux's sumac is present only within the road shoulder portions of the project area. A plant by plant survey for Michaux's sumac, within areas of potential habitat was conducted on October 4, 2000 by

NCDOT biologists. No Michaux's sumac was observed during the survey. A review of the NCNHP database of rare species and unique habitats, on January 31, 2001, revealed no Michaux's sumac within the project region. Therefore, project construction will not affect Michaux's sumac.

e. Federal Species of Concern and State Listed Species

There are ten Federal Species of Concern (FSC) listed for Durham County. Federal Species of Concern are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Federal Species of Concern are defined as those species which may or may not be listed in the future. These species were formally candidate species, or species under consideration for listing for which there was insufficient information to support a listing of Endangered, Threatened, Proposed Endangered and Proposed Threatened. Organisms which are listed as Endangered (E), Threatened (T), Significantly Rare (SR) or Special Concern (SC) by the North Carolina Natural Heritage Program (NCNHP) list of rare plant and animal species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Tables 11 and 12 list Federal Candidate and State listed species, the species state status and the existence of suitable habitat for each species in the study area. This species list is provided for information purposes as the status of these species may be upgraded in the future.

Table 10. Federal Species of Concern for Durham County

Scientific Name	Common Name	State Status	Habitat
<i>Etheostoma collis lepidinon</i>	Carolina Darter	SC	No
<i>Lythrurus matutinus</i>	Pinewoods shiner	SR	No
<i>Fusconaia masoni</i>	Atlantic pigtoe	T (PE)	No
<i>Gomphus septima</i>	Septima's clubtail dragonfly	SR*	No
<i>Lampsilis cariosa</i>	Yellow lampmussel	T (PE)	No
<i>Lasmigona subviridis</i>	Green floater	E	No
<i>Somotogyrus virginicus</i>	Panhandle pebblesnail	SR	No
<i>Delphinium exaltatum</i>	Tall larkspur	E-SC	No
<i>Juglans cinerea</i>	Butternut	W5*	No
<i>Monotropsis odorata</i>	Sweet pinesap	C	No
<i>Plagiochila columbiana</i>	A liverwort	W2*	No

“*”-----Historic record (Last observed in Johnston County more than twenty years ago.)

“E”-----An Endangered species is one whose continued existence as a viable component of the State's flora is determined to be in jeopardy.

“T”----- A Threatened species is one which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

“C”----- A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.

“SR”----- A Significantly Rare species is one which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the NC Natural Heritage Program to need monitoring.

“SC”----- “Any species of plant in NC which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]” (GS 19B 106:202.12).

“(PE)”---Species has been proposed by a Scientific Council as a status that is different from the current status, but the status has not yet been adopted by the WRC and by the General Assembly as law.

“W2” A Watch Category 2 (rare, but taxonomically questionable) includes species with questionable taxonomy.

“W5” A Watch Category 5 (rare because of severe decline) includes species which have declined sharply in NC, but which do not appear yet to warrant site-specific monitoring.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the NCNHP database of rare species and unique habitats on January 31, 2001 revealed no records of North Carolina rare and/or protected species in or near the project study area.

Table 12. Federal Species of Concern for Durham County

Scientific Name	Common Name	State Status	Habitat
<i>Etheostoma collis lepidinion</i>	Carolina Darter	SC	No
<i>Lythrurus matutinus</i>	Pinewoods shiner	SR	No
<i>Fusconaia masoni</i>	Atlantic pigtoe	T (PE)	No
<i>Gomphus septima</i>	Septima's clubtail dragonfly	SR*	No
<i>Lampsilis cariosa</i>	Yellow lampmussel	T (PE)	No
<i>Lasmigona subviridis</i>	Green floater	E	No
<i>Somotogyrus virginicus</i>	Panhandle pebblesnail	SR	No
<i>Delphinium exaltatum</i>	Tall larkspur	E-SC	No
<i>Juglans cinerea</i>	Butternut	W5*	No
<i>Monotropsis odorata</i>	Sweet pinesap	C	No
<i>Plagiochila columbiana</i>	A liverwort	W2*	No

“*”-----Historic record (Last observed in Johnston County more than twenty years ago.)

“E”-----An Endangered species is one whose continued existence as a viable component of the State's flora is determined to be in jeopardy.

“T”----- A Threatened species is one which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

“C”----- A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.

“SR”----- A Significantly Rare species is one which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the NC Natural Heritage Program to need monitoring.

“SC”----- “Any species of plant in NC which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]” (GS 19B 106:202.12).

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“W5” A Watch Category 5 (rare because of severe decline) includes species which have declined sharply in NC, but which do not appear yet to warrant site-specific monitoring.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the NCNHP database of rare species and unique habitats on January 31, 2001 revealed no records of North Carolina rare and/or protected species in or near the project study area.

G. Hazardous Materials

A geology and hazardous materials evaluation was conducted by investigation of the project area to determine if any hazards such as underground storage tanks, hazardous waste sites, dumps, landfills, or other similar sites which may impact construction of the project, cause delays, or create other liabilities. A field reconnaissance survey was conducted along existing NC 98 (Holloway Street) within the project limits by the Geotechnical Unit of NCDOT. Four potential sites for underground storage tanks (UST's) were identified in the project vicinity (See Appendix C for listing). As a result of this study, this project was considered to have a low risk for hazardous materials involvement.

H. Geodetic Survey Markers

This project will not impact geodetic survey markers.

I. Greenways

The project will not impact any existing or proposed greenways.

VII. COMMENTS AND COORDINATION

Input concerning the effects of the project on the environment was requested from the appropriate Federal, State, and Local agencies in preparing this Environmental Assessment. Listed below are the agencies which were contacted:

- U. S. Army Corps of Engineers
- U. S. Fish and Wildlife Service
- U. S. Environmental Protection Agency
- U. S. Geological Survey
- *N. C. State Clearinghouse, Department of Administration
- *N. C. Department of Environment and Natural Resources
- *N. C. Department of Cultural Resources, Division of Archives and History
- *N. C. Wildlife Resources Commission
- *N. C. Department of Public Instruction
- *Durham County Public Schools
- Durham County Planning
- *City of Durham
- Triangle J Council of Governments

* Denotes agencies from which input was received

A. Citizens' Informational Workshop

A Citizens' Informational Workshop was held on November 14, 2000 at the Durham Memorial Baptist Church to obtain comments and/or suggestions about the proposed project

from the public. Approximately 7 citizens attended to express their interest in the project. Some of those attending lived on or in the vicinity of NC 98 (Holloway Street) and were concerned about the impacts the proposed project would have on their property. The consensus of those attending the workshop was NC 98 (Holloway Street) needs to be widened to improve capacity and safety. Many expressed the need for sidewalks.

B. Public Hearing

A public hearing will be held concerning this project following the circulation of this document. This public hearing will provide more detailed information to the public about the detailed information to the public about the proposed improvements. The public will be invited to make additional comments or voice concerns regarding the proposed project.

VIII. LIST OF PREPARERS

The North Carolina Department of Transportation and the Federal Highway Administration prepared this Environmental Assessment. The following personnel were instrumental in the preparation of this document.

A. North Carolina Department of Transportation

1. Mr. William D. Gilmore, P. E., Manager, Project Development and Environmental Analysis Branch

Engineer responsible for highway planning and environmental impact analyses, 30 years of experience.
2. Mr. Robert P. Hanson, P. E., Assistant Manager, Project Development and Environmental Analysis Branch.

Engineer responsible for managing highway planning and environmental impact analyses, 15 years of experience.
3. Mrs. Teresa A. Hart, P. E., CPM, Project Development Engineer Unit Head, Project Development and Environmental Analysis Branch.

Engineer responsible for managing highway planning and environmental impact analyses, 15 years of experience.
4. Ms. Michele L. James, Project Planning Engineer, Project Development and Environmental Analysis Branch.

Engineer responsible for conducting highway planning and environmental impact analyses, 14 years of experience.
5. Mr. Ron Allen, P. E., Project Engineer, Roadway Design Unit.

Engineer responsible for preparing the preliminary highway design, 16 years of experience.
6. Ms. Lynn Smith, Environmental Biologist, Project Development and Environmental Analysis Branch.

Biologist responsible for assessing the potential impacts to Natural Resources, 3 years of experience.

7. Mr. Stephen Walker, Transportation Engineer, Project Development and Environmental Analysis Branch.

Engineer responsible for preparing the Traffic Noise and Air Quality Assessments, 27 years of experience.
8. Mrs. Emily F. Kravitz, Architectural Historian, Project Development and Environmental Analysis Branch.

Historian responsible for assessing potential impacts to Historic Architectural Resources, 2 years of experience.
9. Mr. Shane Peterson, Archaeologist, Project Development and Environmental Analysis Branch.

Archaeologist responsible for assessing potential impacts to archaeological resources, 3 years of experience.
10. Mr. Jake Riggsbee, Area Engineer, Federal Highway Administration

Area Engineer responsible for NCDOT-TIP federal-aid projects, 20 years experience.
11. Mr. Michael Summers, Traffic Engineering Branch

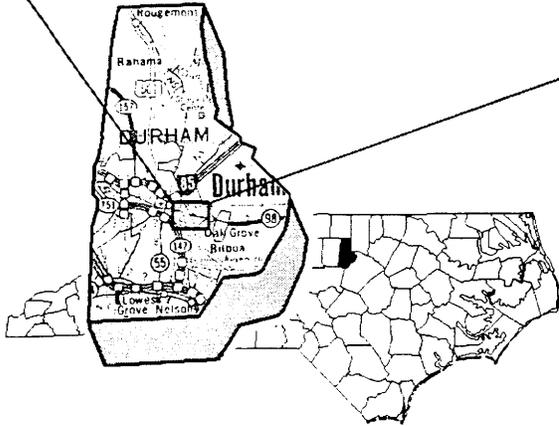
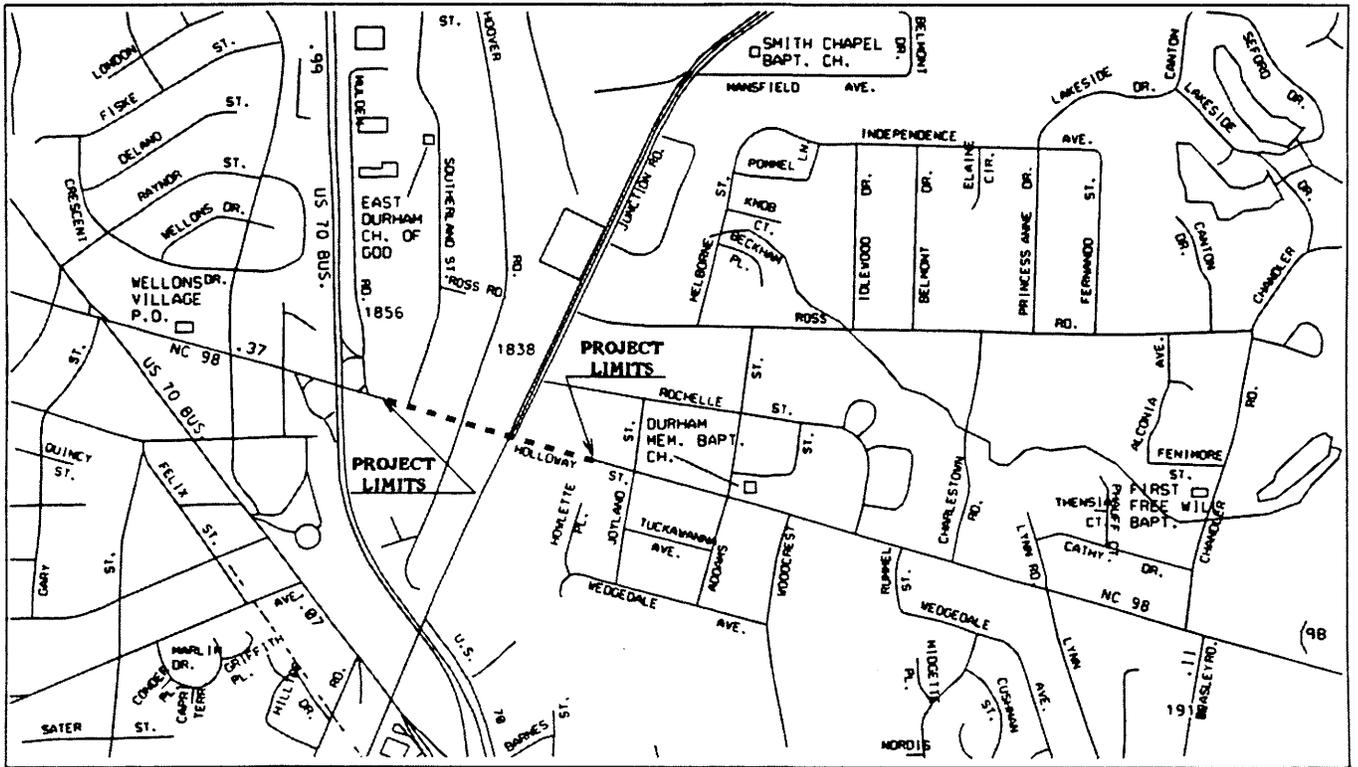
Plan Review Project Engineer responsible for traffic analysis and review, 26 years experience.
12. Mr. Charles Sturdivant, Project Development and Environmental Analysis Branch

Illustrator responsible for all graphics for the Project Development and Environmental Analysis Branch, 28 years experience.
13. Mr. Bob Deaton, Project Development and Environmental Analysis Branch

Community Planner responsible for community impact assessments, 10 years of experience.

MJ/plr

FIGURES



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH</p>
<p>DURHAM NC 98 (HOLLOWAY STREET) EAST OF US 70 TO EAST OF JUNCTION ROAD DURHAM COUNTY U-4010</p>	
<p>FIGURE 1</p>	



BEGIN PROJECT

END PROJECT

LEGEND

- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY


 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

DURHAM
 NC 98 (HOLLOWAY STREET)
 EAST OF US 70
 TO EAST OF JUNCTION ROAD
 DURHAM COUNTY
 L-4010

FIGURE 2

US 70 BYPASS

RESIDENTIAL

LOCKAMY TRUCK CENTER

SOUTHERN STREET

ETNA

RESIDENCES

NORTH HOOVER ROAD

SKIP'S RESTAURANT

NORFOLK SOUTHERN RAILROAD
(CSX RAILROAD)

JUNCTION ROAD

GRILLE

RESIDENCES

NC 98 (HOLLOWAY STREET)

LOCKAMY CAR & TRUCK SALES

RESIDENTIAL

J&H GLASS

BP GAS STATION

TRIANGLE GAS STATION

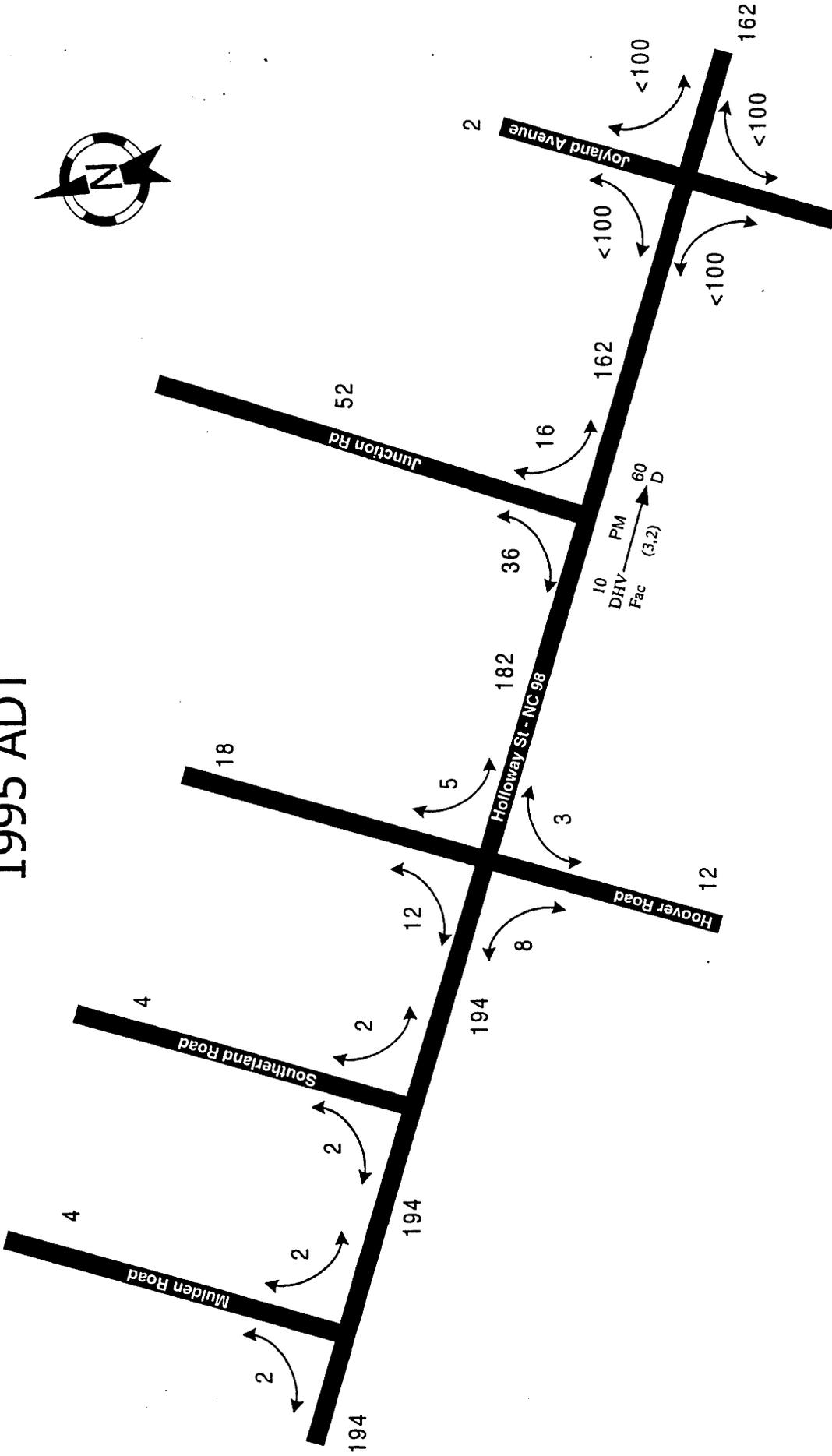
FOUR SEASONS AUTO CARE

LIN X OF DURHAM

JOYLAND CENTER

FOOD LION

1995 ADT



ADT's in 100's

Not to Scale



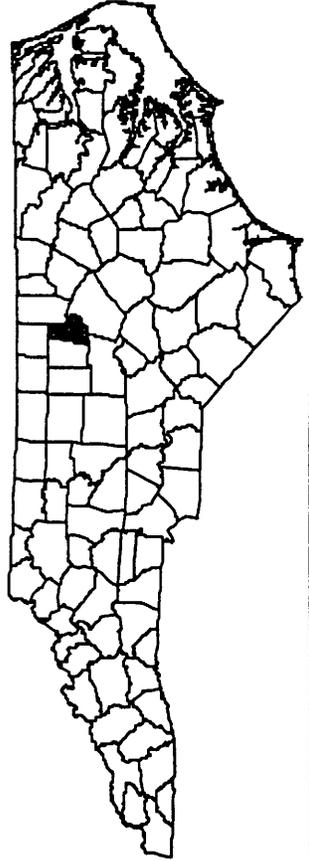
NC 98 (Holloway St)

Durham County DIVISION 5

TIP # U-4010 January 2001

WORK ORDER # 8.1352401

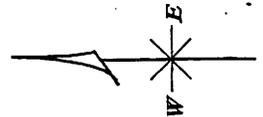
FIGURE 3



LEGEND

- XXXX - VEHICLES PER DAY
- DHV - DESIGN HOURLY VOLUME (%)
- D - DIRECTIONAL FLOW (%)
- PM - PM PEAK PERIOD
- (X,X) - DUALS, TTST (%)

NOTE: DHV - INDICATES THE DIRECTION D.
 REVERSE FLOW FOR AM PEAK.



2025 ADT

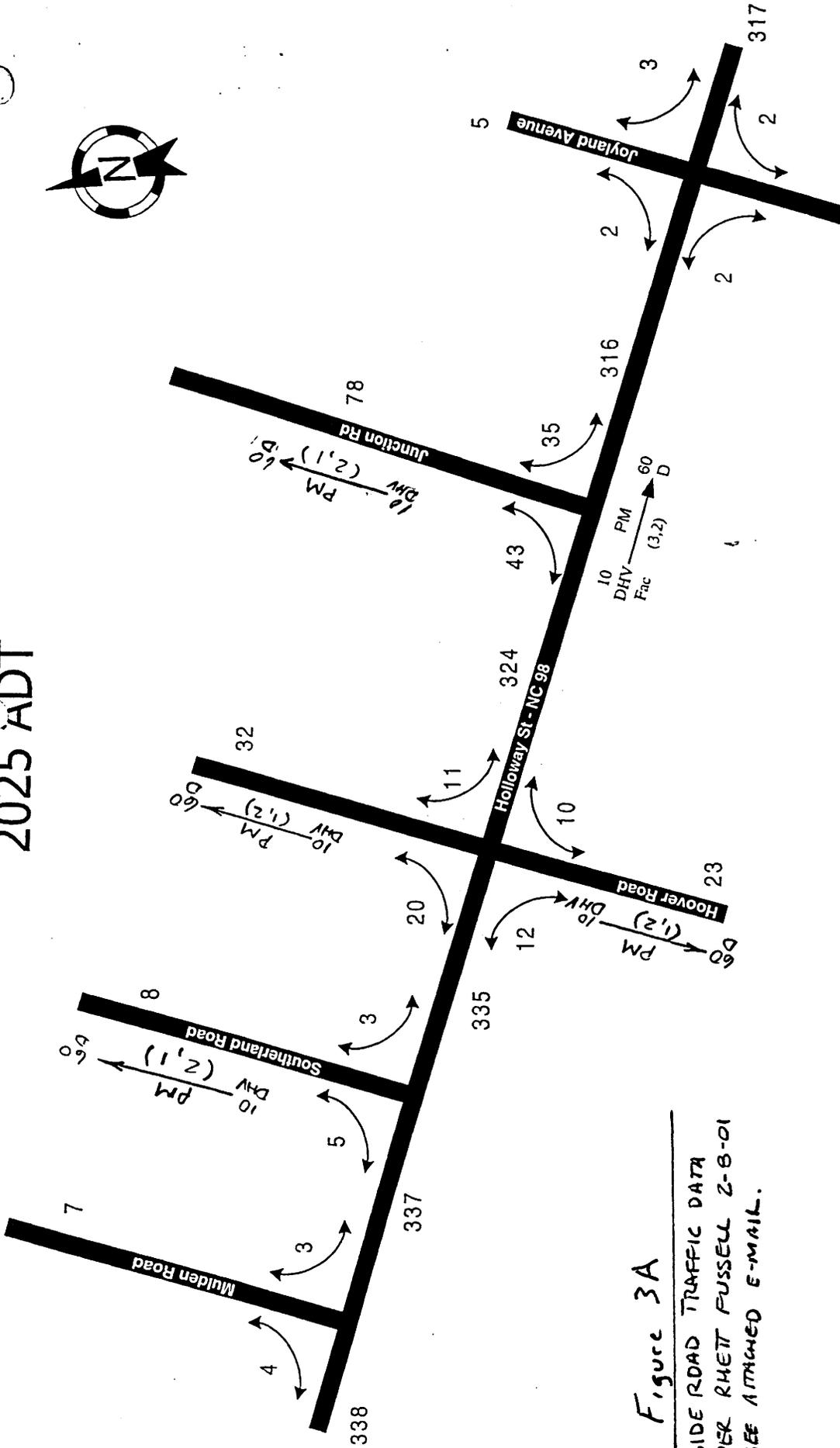


Figure 3A
 SIDE ROAD TRAFFIC DATA
 PER RHETT FUSSELL 2-8-01
 SEE ATTACHED E-MAIL.

ADT's in 100's

Not to Scale

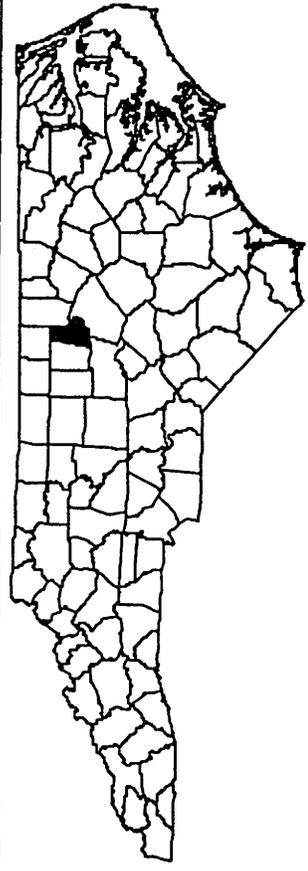
STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

NC 98 (Holloway St)

Durham County DIVISION 5

TIP # U-4010 January 2001

WORK ORDER # 8.1352401



LEGEND

XXX VPD—VEHICLES PER DAY
 DHV DESIGN HOURLY VOLUME (%)
 D DIRECTIONAL FLOW (%)
 PM PM PEAK PERIOD
 (K,X) DUALS, TTST (%)

NOTE: DHV → D INDICATES THE DIRECTION D. REVERSE FLOW FOR AM PEAK.

APPENDIX A

DURHAM



1 8 6 9
CITY OF MEDICINE

**City of Durham
Transportation Division**

Department of Public Works
101 City Hall Plaza
Durham, North Carolina 27701

Phone: (919) 560-4366

Fax: (919) 560-4561

www.ci.durham.nc.us

October 6, 2000

Ms. Michele James
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Holloway Street (NC 98) TIP Project No. U-4010

Dear Ms. James:

This letter is in reference to the scoping meeting held on October 5, 2000 by NCDOT staff regarding the widening of Holloway Street (U-4010). Per your request following this meeting, I have listed below the City of Durham's requests for this project. These items were mentioned at the meeting on Thursday.

- Include sidewalks on both sides of the project with a utility strip;
- Include 14 foot outside lanes for bicycles;
- Install concrete panel/rubberized crossing at the railroad tracks;
- Study the feasibility of mast arms for traffic signals at Junction Road, Hoover Road, and US 70;
- Study the feasibility of locating overhead utilities on one side of the project;
- As City utilities are located in the area, please coordinate project design with Mr. Stuart Carson, P.E. [City of Durham Engineering Division at (919) 560-4326];
- Please notify adjacent property owners by mail of the upcoming workshop and public hearing;
- Please keep the project on current schedule

The City of Durham appreciates the opportunity to be involved in the planning for this project and looks forward to continued updates as the project moves toward implementation. Your continued coordination of this TIP project with the City of Durham and the Durham-Chapel Hill-Carrboro MPO will be greatly appreciated. If you should have any questions, please do not hesitate to give me a call at (919) 560-4366.

Michele James
October 6, 2000
Page 2 of 2

Sincerely,

A handwritten signature in black ink, appearing to read "H. Wesley Parham", with a long horizontal flourish extending to the right.

H. Wesley Parham, P.E.
Senior Transportation Engineer

cc: Ms. Kathryn Kalb, P.E.
Mr. Mark D. Ahrendsen
Mr. Stuart Carson, P.E.
Mr. Ron Allen, P.E., NCDOT Roadway Design



Hand

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

November 14, 2000

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook *for David Brook*
Deputy State Historic Preservation Officer

Re: NC 98 (Holloway Street) from East of US 70 to East of Junction Road,
TIP No. U-4010, Durham County, ER 01-7531

We regret that April Montgomery of our staff was unable to attend the October 5, 2000, meeting of the minds concerning the above project. Based upon our review of the information provided, we offer our preliminary comments regarding this project.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area.

There are no recorded archaeological sites within the proposed project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources would be affected and no investigations would be recommended. If, however, the replacement is to be in a new location, please forward a map to this office indicating the location of the new alignment so we may evaluate potential effects of replacement upon archaeological resources.

Having provided this information, we look forward to the receipt of either a Categorical Exclusion or Environmental Assessment which indicates how NCDOT addressed our comments.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919/733-4763.

cc: N. Graf
M. P. Furr

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
ARCHAEOLOGY	421 N. Blount St., Raleigh NC	4619 Mail Service Center, Raleigh NC 27699-4619	(919) 733-7342 • 715-2671
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Widening of NC 98 from East of US 70 to East of Junction Road

On December 21, 2000, representatives of the

- X North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- X North Carolina State Historic Preservation Office (SHPO)

Reviewed the subject project at

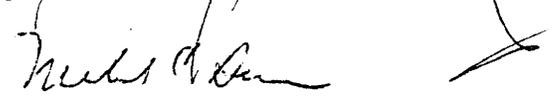
- Scoping meeting
- X Photograph review session/consultation
- Other

All parties present agreed

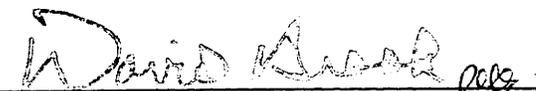
- There are no properties over fifty years old within the project's area of potential effect.
- XX There are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effect.
- There are properties over fifty years old (list attached) within the project's area of potential effect, but based on the historical information available and the photographs of each property, properties identified as #1 - 29 are considered not eligible for the National Register and no further evaluation of them is necessary.
- XX There are no National Register-listed properties located within the project's area of potential effect.

Signed:


 Representative, NCDOT 12/21/00
Date


 FHWA, for the Division Administrator, or other Federal Agency 12/21/00
Date


 Representative, SHPO 12/21/00
Date


 State Historic Preservation Officer 12/21/00
Date



M. James

North Carolina
Department of Administration

James B. Hunt, Jr., Governor

Katie G. Dorsett, Secretary

December 13, 2000

Mr. William Gilmore
N.C. Dept. of Transportation
Project Dev. & Env. Analysis
Transportation Bldg. - 1548 MSC
Raleigh NC 27699-1548

Dear Mr. Gilmore:

Subject: Scoping - Proposed Improvements to NC 98 (Holloway St.) From East of US 70 to East of Junction Rd. in Durham; TIP #U-4010

The N. C. State Clearinghouse has received the above project for intergovernmental review. This project has been assigned State Application Number 01-E-4220-0363. Please use this number with all inquiries or correspondence with this office.

Review of this project should be completed on or before 01/19/2001. Should you have any questions, please call (919)807-2425.

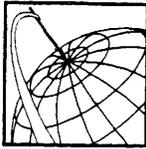
Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

PLEASE NOTE NEW MAILING ADDRESS
EFFECTIVE IMMEDIATELY

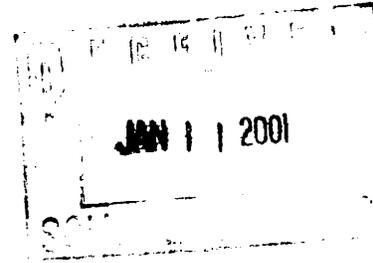
**N.C. STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
1302 MAIL SERVICE CENTER
RALEIGH, NC 27699-1302**



DURHAM PUBLIC SCHOOLS

Office of Administrative Services

January 10, 2001



Mr. Gerald H. Knott, AIA
Section Chief, School Planning
Department of Public Instruction
301 N. Wilmington Street
Raleigh, NC 27601-2825

Dear Mr. Knott:

Your letter to Dr. Denlinger of December 13, 2000 was sent to me for a reply. I have reviewed the information that you furnished and feel that there will be some impact on our school bus routes, but that we should be able to work with the necessary people to operate during the period of construction.

Please feel free to contact me with future developments of this project.

Sincerely,

Henry Kirby
Executive Director of Transportation

c. Calvin Dobbins

Michelle James



Public Schools of North Carolina

State Board of Education
Phillip J. Kirk, Jr., Chairman

<http://www.dpi.state.nc.us>

Department of Public Instruction
Michael E. Ward, State Superintendent

January 11, 2001

MEMORANDUM

TO: Mr. William H. Gilmore, NC Department of Transportation

FROM: Gerald H. Knott, Section Chief, School Planning 

SUBJECT: NC 98 (Holloway Street), From East of US 70 to East of Junction Road, Durham, Durham County, Federal Aid Project No. STP-(98)5, State Project No. 8.1352401, TIP Project No. U-4010

Enclosed is the response from Durham Public Schools to our impact inquiry.

/ed
Enclosure

301 N. Wilmington Street, Raleigh, North Carolina 27601-2825

Telephone (919) 715-1000

An Equal Opportunity/Affirmative Action Employer



M. James

North Carolina
Department of Administration

Michael F. Easley, Governor

Gwynn T. Swinson, Secretary

January 29, 2001

Mr. William Gilmore
N.C. Dept. of Transportation
Project Dev. & Env. Analysis
Transportation Bldg. - 1548 MSC
Raleigh, NC 27699-1548

Dear Mr. Gilmore:

Re: SCH File # 01-E-4220-0363; Scoping Proposed Improvements to NC 98 (Holloway St.) From East of US 70 to East of Junction Rd. in Durham ~~TRIP # 1010~~

The above referenced project has been reviewed through the State Clearinghouse Intergovernmental Review Process. Attached to this letter are comments made by agencies reviewing this document.

Should you have any questions, please do not hesitate to call me at (919) 807-2425.

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region J

North Carolina
Department of Environment and Natural Resources

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



MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *VM*
Environmental Review Coordinator

RE: 01E-0363 Improvements to NC 98, Durham County

DATE: January 29, 2001

The Department of Environment and Natural Resources has reviewed the proposed information. The attached comments are for the applicant's information and consideration.

Thank you for the opportunity to review.

Attachments

RECEIVED

JAN 29 2001

NC STATE CLEARINGHOUSE

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919 - 733-4984 \ FAX: 919 - 715-3060 \ Internet: www.enr.state.nc.us/ENR/

AN EQUAL OPPORTUNITY \ AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED / 10% POST CONSUMER PAPER



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Melba McGee
Office of Legislative and Intergovernmental Affairs, DENR

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program 

DATE: January 25, 2001

SUBJECT: Request for information from the N. C. Department of Transportation (NCDOT) regarding fish and wildlife concerns for NC 98 (Holloway Street), from east of US 70 to east of Junction Road, Durham County, North Carolina. TIP No. U-4010, SCH Project No. 01-E-0363.

This memorandum responds to a request from Mr. William D. Gilmore of the NCDOT for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists on the staff of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed improvements. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

We have no specific concerns regarding this project. However, to help facilitate document preparation and the review process, our general informational needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with:

The Natural Heritage Program
N. C. Division of Parks and Recreation
1615 Mail Service Center
Raleigh, N. C. 27699-1615
(919) 733-7795

and;

**NCDA Plant Conservation Program
P. O. Box 27647
Raleigh, N. C. 27611
(919) 733-3610**

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.
3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed.
4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.
5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).
6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.
7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.
8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.
9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages for this project. If we can further assist your office, please contact me at (919) 528-9886.

cc: USFWS, Raleigh

INTERGOVERNMENTAL REVIEW – PROJECT COMMENTS

Project Number: 01-E-0363 Due Date: _____

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit- whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.	N/A	60 days (90 days)
<input type="checkbox"/>	Complex Source Permit required under 15 A NCAC 2D.0800		
<input checked="" type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (land Quality Sect.) At least 30 days before beginning activity. A fee of \$30 for the first acre and \$2000 for each additional acre or part must accompany the plan.	<i>DOT'S Program</i>	20 days (30 days)
<input type="checkbox"/>	The Sedimentation Pollution control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		(30 days)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/>	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument need to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C.0100.		
<input type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
*	Other comments (attach additional pages as necessary, being certain to cite comment authority)		

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(828) 251-6208

Mooreville Regional Office
919 North Main Street
Mooreville, NC 28115
(704) 663-1699

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 395-3900

Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301
(910) 486-1541

Raleigh Regional Office
3800 Barrett Drive, P.O. Box 27687
Raleigh, NC 27611
(919) 571-4700

Winston-Salem Regional Office
585 Woughtown Street
Winston-Salem, NC 27107
(336) 771-4600

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number 012-0363
County

Inter-Agency Project Review Response

Project Name _____ Type of Project _____

- The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 15A NCAC 18C .0300et. seq.). For information, contact the public Water Supply Section, (919) 733-2460.
- This project will be classified as a non-community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.
- If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Branch at (919) 726-8970.
- The soil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 726-8970.
- The applicant should be advised that prior to the removal or demolition of dilapidated structures, an extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. The information concerning rodent control, contact the local health department or the Public Health Pest Management Section at (919) 733-6407.
- The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 15A NCAC 18A .1900 et. seq.) For information concerning septic tank and other on-site waste disposal methods, contact the On-Site Wastewater Section at (919) 733-2875.
- The applicant should be advised to contract the local health department regarding the sanitary facilities required for this project.
- If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Plan Review Branch, 1330 St. Mary's, Raleigh, North Carolina, (919) 733-2460.

[Signature]
Reviewer

[Signature]
Section/Branch

1/16/01
Date

RELOCATION REPORT

North Carolina Department of Transportation
AREA RELOCATION OFFICE

E.I.S. CORRIDOR DESIGN

PROJECT:	8.1352401	COUNTY	Durham	Alternate 1 of 2 Alternates
I.D. NO.:	U-4010	F.A. PROJECT	STP-(98)	
DESCRIPTION OF PROJECT:	NC 98 (Holloway Street) from east of US 70 Bypass to east of Junction Road			

ESTIMATED DISPLACED					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	0	my 1 0	my 1 0	0	N/A	N/A	N/A	N/A	N/A	
Businesses	0	my 2 3	my 2 3	1	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale	
Non-Profit	0	0	0	0	0-20M	N/A	\$ 0-150	N/A	0-20M	N/A
					20-40M	N/A	150-250	N/A	20-40M	N/A
					40-70M	N/A	250-400	N/A	40-70M	N/A
					70-100M	N/A	400-600	N/A	70-100M	N/A
					100 UP	N/A	600 UP	N/A	100 UP	N/A
					TOTAL	N/A		N/A	N/A	N/A

ANSWER ALL QUESTIONS		Explain all "YES" answers.
Yes	No	
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
	X	6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
	X	8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? TWELVE (12)

REMARKS (Respond by number)	
3. No change to business community.	
4. (a) The Grill – small take out restaurant, 900 sq ft with storage building in back – approximately 2 employees (minority)	
(b) Triangle Convenience & Gas – 3 island pumps, 5 underground storage tanks – 1000 sq ft with 3 employees.	
(c) Exxon Convenience & Gas Station – 4 island pumps 5 underground storage tanks – 1300 sq ft with three employees.	
11. Good availability for Public Housing.	
12. Strong housing market. Much growth & development.	
14. Strong market in the City of Durham and surrounding areas. Commercial Realtors (MLS)	

Leonard G. Scarborough Relocation Agent	October 10, 2000 Date	 Approved by	10/11/00 Date
--------------------------------------------	--------------------------	-----------------------------------------------------------------------------------------------------	------------------

RELOCATION REPORT

North Carolina Department of Transportation
AREA RELOCATION OFFICE

E.I.S. CORRIDOR DESIGN

PROJECT:	8.1352401	COUNTY	Durham	Alternate	2	of	2	Alternate
I.D. NO.:	U-4010	F.A. PROJECT	STP-(98)					
DESCRIPTION OF PROJECT:	NC 98 (Holloway Street) from east of US 70 Bypass to east of Junction Road							

ESTIMATED DISPLACEDS					INCOME LEVEL								
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Residential	0	<i>my 1 0</i>	<i>my 1 0</i>	0	N/A	N/A	N/A	N/A	N/A				
Businesses	0	<i>my 2 0</i>	<i>my 2 0</i>	1	VALUE OF DWELLING				DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	0	0	0	0	0-20M	N/A	\$ 0-150	N/A	0-20M	N/A	\$ 0-150	N/A	
					20-40M	N/A	150-250	N/A	20-40M	N/A	150-250	N/A	
					40-70M	N/A	250-400	N/A	40-70M	N/A	250-400	N/A	
					70-100M	N/A	400-600	N/A	70-100M	N/A	400-600	N/A	
					100 UP	N/A	600 UP	N/A	100 UP	N/A	600 UP	N/A	
					TOTAL	N/A		N/A	N/A	N/A	N/A	N/A	

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
	X	8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? TWELVE (12)

REMARKS (respond by number)							
3. No change to business community.							
4. (a) The Grill – small take out restaurant, 900 sq ft with storage building in back – approximately 2 employees (minority)							
(b) Triangle Convenience & Gas – 3 island pumps, 5 underground storage tanks – 1000 sq ft with 3 employees.							
(c) Etna Convenience & Gas Station – 6 island pumps, 5 underground storage tanks – 1000 sq ft with three employees.							
11. Good availability for Public Housing.							
12. Strong housing market. Much growth & development.							
14. Strong market in the City of Durham and surrounding areas. Commercial Realtors (MLS)							

Leonard G. Scarborough	October 10, 2000		<i>Leonard G. Scarborough</i>
Relocation Agent	Date		Approved by Date <i>10/11/00</i>

APPENDIX B

**GRADE SEPARATION AGREEMENT
FOR
TIP NO. U-4010**

- Project Title:** Railroad Grade Separation over NC 98 (Holloway Street) from East of US 70 to east of Junction Road, Durham, Durham County, Federal Aid Project STP-98(5), State Project No. 8.1352401, TIP Project No. U-4010
- Project Description:** Widen section of NC 98 (Holloway Street) to a multi-lane facility.
- Alternatives:** Four lane divided or a five lane symmetrical and a asymmetrical curb and gutter facility. The total project length is approximately 0.3 mile.
- Existing Conditions:**
- a. Two Railroad tracks –
 - 1.) CSX Transportation – Max. speed 10 mph
 - 2.) Norfolk Southern Railways – Max. speed 35 mph
 - b. Not on High Speed Rail Corridor
 - c. Two trains per/day travel both lines.
 - d. Existing traffic - 21,000 vpd
 - e. Exposure Index – 84,000

Findings Regarding Grade Separation:

- (a) NCDOT needs to be at least 30 feet (23 ft. clearance + 7 ft. for bridge) higher than the existing tracks to span the railroad. A 9% +/- grade is needed to achieve this due to avoiding the existing bridge at US 70. In order to tie back in on the east side of Junction Road within a reasonable distance, a 10% grade is needed. The grades, vertical curvature, and resulting design speed are not acceptable in our opinion.

- (b) The future U-71 project proposes to construct a single point urban interchange at the existing US 70 & NC 98 interchange. A new bridge will be constructed on US 70 making the spacing to the existing tracks even less. Providing for a grade separation under U-4010, would conflict with the U-71 design.
- (c) Because of the vertical clearance needed to span the railroad, there would be heavy R/W impacts. Construction along both Hoover and Junction Roads would increase tremendously. Junction Road would have to be relocated to an acceptable distance beyond the bridge, thus incurring more relocations. Also, the new height of NC 98 would push the construction limits approximately 80 – 90 feet beyond the existing edge of pavement. This will heavily impact all of the businesses being accessed by this road.
- (d) Signalized intersections are in close proximity to the railroad tracks on both sides of NC 98, thereby restricting the free flow of traffic.

Agreement:

On December 21, 2000, representatives of Roadway Design Unit and Project Development and Environmental Analysis Branch (PDEA) reviewed the above referenced project and all parties present agree a...

Grade separation should be included as part of this improvement project.

Grade separation should not be included as part of this improvement project.

In addition the following comment is also noted:

The Roadway Design Unit will coordinate with the Rail Division during final design to implement measures to prevent illegal "run-around" movements when gate arms are down.

Signed:

John E. Alford
Representative, Roadway Design

1-26-01
Date

Robt. Haran
Representative, PDEA

1/24/01
Date

cc: Paul Worley, Rail Division
Ron Allen, P. E., Roadway Design
Teresa Hart, P.E., CPM, PDEA

APPENDIX C

Underground Storage Tank (UST) Facilities

Based on the field reconnaissance survey, we have identified four facilities along the proposed project corridor with UST involvement. Three of the facilities are currently active and the other is a former gas station. The UST systems (tanks, dispensers and pump islands, product lines) were measured, when possible, with reference to the existing centerline of the existing road at each site. Listed below is a brief description of the sites including their location, their NC Division of Waste Management (DWM) Facility I.D. Number (assigned if the USTs are registered), and any other available information:

1) Lockamy Truck Center

2215 Holloway Street, Facility ID: Unknown
Durham, NC 27703 (Northwest Quadrant of Southerland Street and Holloway Street)

UST Owner: Mrs. Janie Andrew (Durham)

This facility is a former service station. The USTs were reportedly removed from the facility years ago. DOT personnel contacted the UST owner for the UST closure report, but has not received the requested document.

2) Pantry 3162 (ETNA 281)

2301 Holloway Street, Facility ID: 0-016343
Durham, NC 27703 (Northeast Quadrant of Southerland Street and Holloway Street)

UST Owner: The Pantry Inc.
P.O. Box 1410/1801 Douglas Drive,
Sanford, NC 27330-1410

This facility is an active service station with five 10,000 gallon USTs on the property. The facility was recently upgraded per DENR regulations. There are at least 10 monitoring wells located on the property, which is a clear indication of groundwater contamination. The UST area is approximately 60 ft from the centerline of the Holloway Street. Two of the wells are situated in the close vicinity of the proposed project area. Based on the current preliminary engineering plan, the UST system on this property is likely out of project limits. Every effort should be made to keep that way.

TIP: U-4010

3) Joylland BP (The Family Fare)

2406 Holloway Street, Facility ID: 0-002268
Durham, NC 27703 (Southeast Quadrant of S. Hoover Road and Holloway Street)

UST Owner: M.M. Fowler, Inc.
4220 Neal Road,
Durham, NC 27705-2322

This facility is an active service station with five 10,000 gallon USTs on the property. The facility was recently upgraded per DENR regulations and is reportedly in good condition. The UST area is approximately 85 ft from the centerline of the Holloway Street. Based on the current preliminary engineering plan, the UST system on this property is likely out of project limits. Every effort should be made to keep that way.

4) Latin American Food/ Buy & Go (former Triangle)

2502 Holloway Street, Facility ID: 0-029947
Durham, NC 27507 (Southeast Quadrant of Junction Road and Holloway Street)

UST Owner: Cary Oil Company, Inc.
P.O. Box 4649/8015 Chapel Hill Road,
Cary, NC 27519-4649

This facility is an active service station with five USTs on the property. The facility was recently upgraded per DENR regulations. The UST area is approximately 45 ft from the centerline of the Holloway Street. Based on the current preliminary engineering plan, the UST system on this property is likely out of project limits. Every effort should be made to keep that way.

RCRA/CERCLA Facilities

Based on the field reconnaissance and a review of the Geographical Information Service (GIS) map, no Superfund sites were identified in the project study area.

Landfills and Other Potentially Contaminated Properties

The Geographical Information Service (GIS) was consulted for the project study area. The research shows that no regulated or unregulated landfills or dumpsites occur within the project limits.