



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 2, 2004

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

ATTENTION: Mr. Eric Alsmeyer
NCDOT Coordinator

Dear Mr. Alsmeyer:

Subject: **Nationwide 23 and 33 applications**, for the improvements to SR 3153 (Hanes Mall Boulevard) from Kester Mill Road to west of Westgate Center Drive, Forsyth County. Federal Aid Project No. STP-3153(1), State Project No. 8.2625001 TIP Project No. U-3837.

Please find enclosed three copies of the project planning report. The NCDOT proposes to widen Hanes Mall Boulevard (SR 3153) from Kester Mill Road to West of Westgate Center Drive. The proposed project will widen the existing two-lane roadway to a four lane divided curb and gutter section. The purpose of the project is to correct the gap between the multilane sections of each end of Hanes Boulevard. The total project length is .88 miles.

Construction of the proposed project will necessitate in impacts to jurisdictional waters. This project is located in the Yadkin-Pee Dee River Basin within HUC 03040101. There will be a total of 58 feet of jurisdictional stream channel impacted and no impacts to wetlands. Impacts from this project will qualify for permitting under a Nationwide Permit 23 and 33. No compensatory mitigation is proposed due to the extent of impacts. This project has a let date of October 19, 2004.

Temporary Dewatering

In order to extend the 3 @ 8'X10' RCBC located in Little Creek at station -L-25+00RT temporary dewatering will be required. The construction sequence is shown on the construction phasing plan sheet, included with this letter, and is as follows:

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Phase 1

- 1) Construct impervious dikes A, diverting flow through barrel 2.
- 2) Utilize special stilling basin.
- 3) Construct barrel 1 extensions.
- 4) Remove impervious dikes A

Phase 2

- 5) Construct impervious dikes B, diverting flow through barrel 1
- 6) Utilize special stilling basin.
- 7) Construct barrels 2 and 3, and low flow bench at outlet of barrel 3
- 8) Complete Roadway

Restoration Plan: The materials used as temporary fill in the construction will be removed.

Federally Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of February 18, 2003, the United States Fish and Wildlife Service (USFWS) lists three federally protected species as occurring in Forsyth County. Table 1 lists the species, their status and biological conclusion. Since the original Categorical Exclusion was prepared no species have been added to or removed from the list.

Table 1. Federally-Protected Species for Forsyth County

Common Name	Scientific Name	Federal Status	Habitat Analysis	Biological Conclusion
Bog Turtle	<i>Clemmys muhlenbergii</i>	T(S/A)	NA	NA
Small-anthered bittercress	<i>Cardamine micranthera</i>	E	No	No Effect
Red cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect

“E” denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).

“T” denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or significant portion of its range).

Regulatory Approvals

Section 404 Permit: It is anticipated that the temporary dewatering will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing the extension of the culvert. All other aspects of this project are being processed by the Federal Highway Administration as a “Categorical Exclusion” in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an

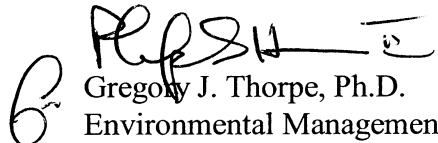
individual permit, but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certifications numbers 3361 and 3366 will apply to this project. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their records.

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/planning/pe/naturalunit/permit.html>

If you have any questions or need additional information, please contact Brett Feulner at (919) 715-1488.

Sincerely,


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

CC:

Mr. David Franklin, USACE, Wilmington
Mr. John Hennessy, DWQ (2 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Design Services

Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. S.P. Ivey, P.E., Division 9
Ms. Michele James, PDEA
Ms. Diane Hampton, Division 9 DEO

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:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Section 404 Permit | <input type="checkbox"/> Riparian or Watershed Buffer Rules |
| <input type="checkbox"/> Section 10 Permit | <input type="checkbox"/> Isolated Wetland Permit from DWQ |
| <input type="checkbox"/> 401 Water Quality Certification | |

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23 & 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 Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), 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: NCDOT

Mailing Address: Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27966-1548

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: Improvements to Hanes Mall Boulevard from Kester Mill Road to West of Westgate Center Drive.
2. T.I.P. Project Number or State Project Number (NCDOT Only): U-3837
3. Property Identification Number (Tax PIN): _____
4. Location
County: Forsyth Nearest Town: Winston Salem
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers, landmarks, etc.): The site is to Hanes Mall Boulevard from Kester Mill Road to West of Westgate Center Drive in Winston Salem
5. Site coordinates, if available (UTM or Lat/Long): UTM 17 560183E 3991763N
(Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
6. Property size (acres): _____
7. Nearest body of water (stream/river/sound/ocean/lake): Little Creek
8. River Basin: Yadkin-Pee Dee
(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/.](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: The area surrounding the relocation is developed commercial

10. Describe the overall project in detail, including the type of equipment to be used: Plans for relocation the road include grading, drainage, culvert extension, retaining wall structure, curb and gutter, signals, guard rail, and paving. Equipment used will include regular equipment utilized in new road construction

11. Explain the purpose of the proposed work: The purpose is to relieve congestion and improve safety.

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.

No Wetlands

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.

N/A

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. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must 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: _____

2. Individually list wetland impacts below:

Wetland Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Located within 100-year Floodplain** (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland***
1					

- * List each impact separately and identify temporary impacts. 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.
- ** 100-Year floodplains are identified through the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at <http://www.fema.gov>.
- *** List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

List the total acreage (estimated) of all existing wetlands on the property: _____

Total area of wetland impact proposed: _____

3. Individually list all intermittent and perennial stream impacts below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
1	Culvert Extensioin	58	Little Creek	30ft	Perrenial

- * List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, 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.
- ** Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at www.usgs.gov. Several internet sites also allow direct download and printing of USGS maps (e.g., www.topozone.com, www.mapquest.com, etc.).

Cumulative impacts (linear distance in feet) to all streams on site: 58 ft

4. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

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

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

5. 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.): _____

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.

The No-Build or “do nothing” alternative was considered but would not provide relief to congestion and would not improve the safety.

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 March 9, 2000, 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 NCWRP 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/newetlands/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.

NA

2. Mitigation may also be made by payment into the North Carolina Wetlands Restoration Program (NCWRP). Please note it is the applicant's responsibility to contact the NCWRP at (919) 733-5208 to determine availability and to request written approval of mitigation prior to submittal of a PCN. For additional information regarding the application process for the NCWRP, check the NCWRP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCWRP is proposed, please check the appropriate box on page three 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)

Does the project involve an expenditure of public (federal/state) funds or the use of public (federal/state) land?

Yes No

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

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.

Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)?

Yes No If you answered "yes", provide the following information:

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		3	
2		1.5	
Total			

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (both 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.

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.

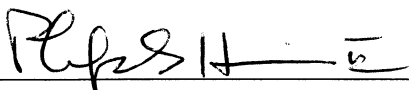
XIII. Violations (required by DWQ)

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. 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

3/25/04
Date

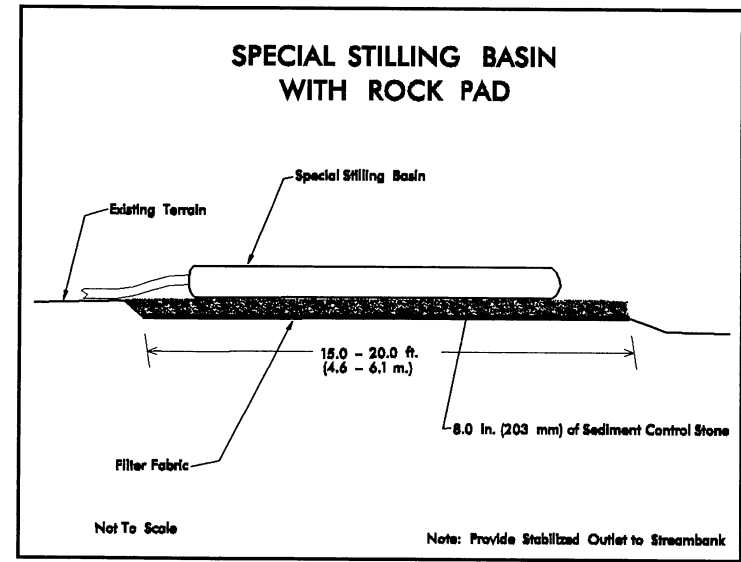
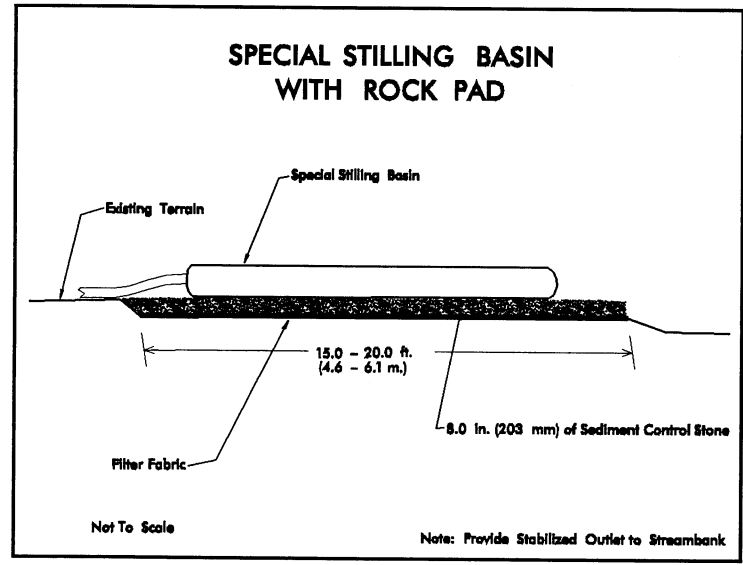
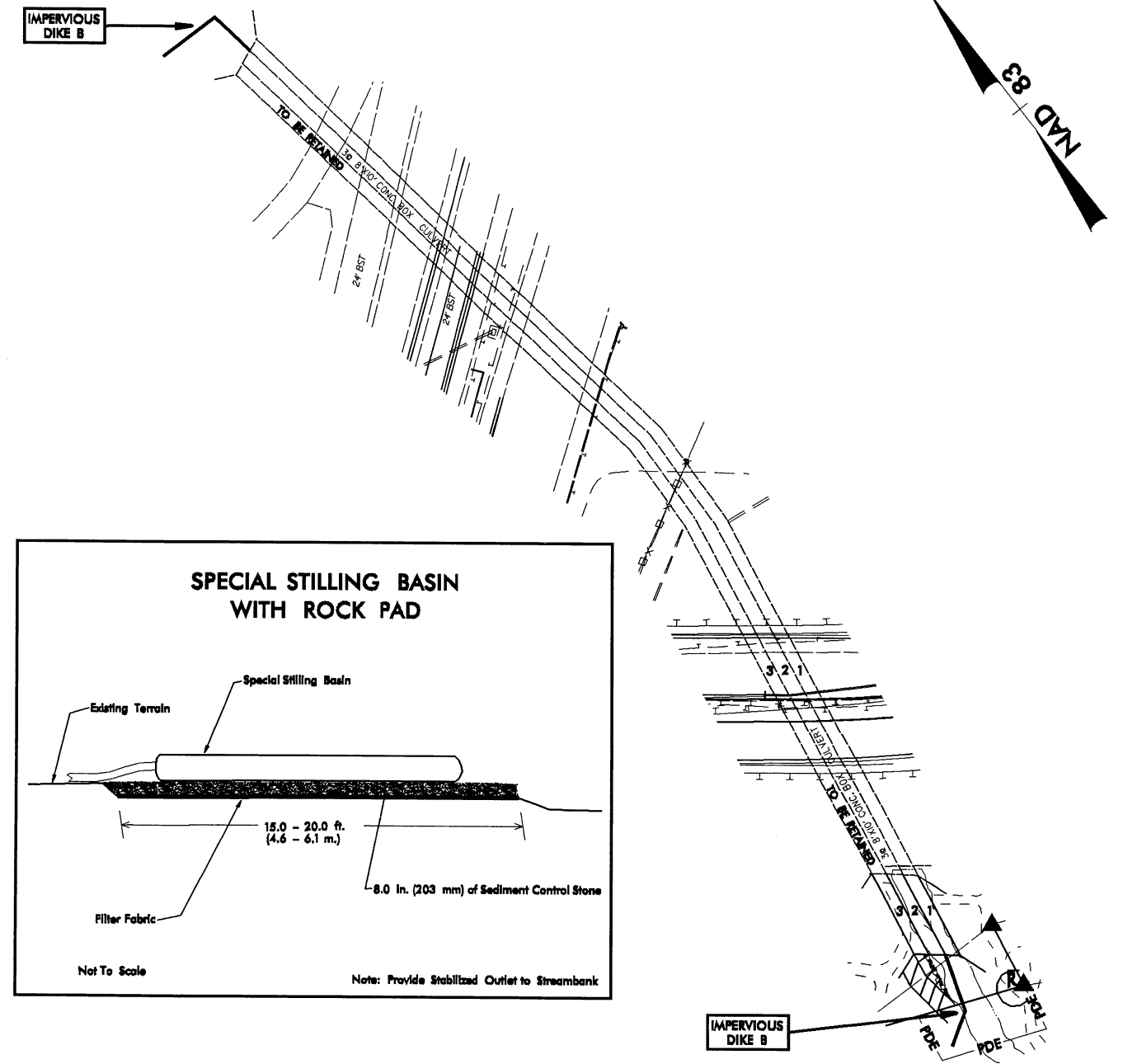
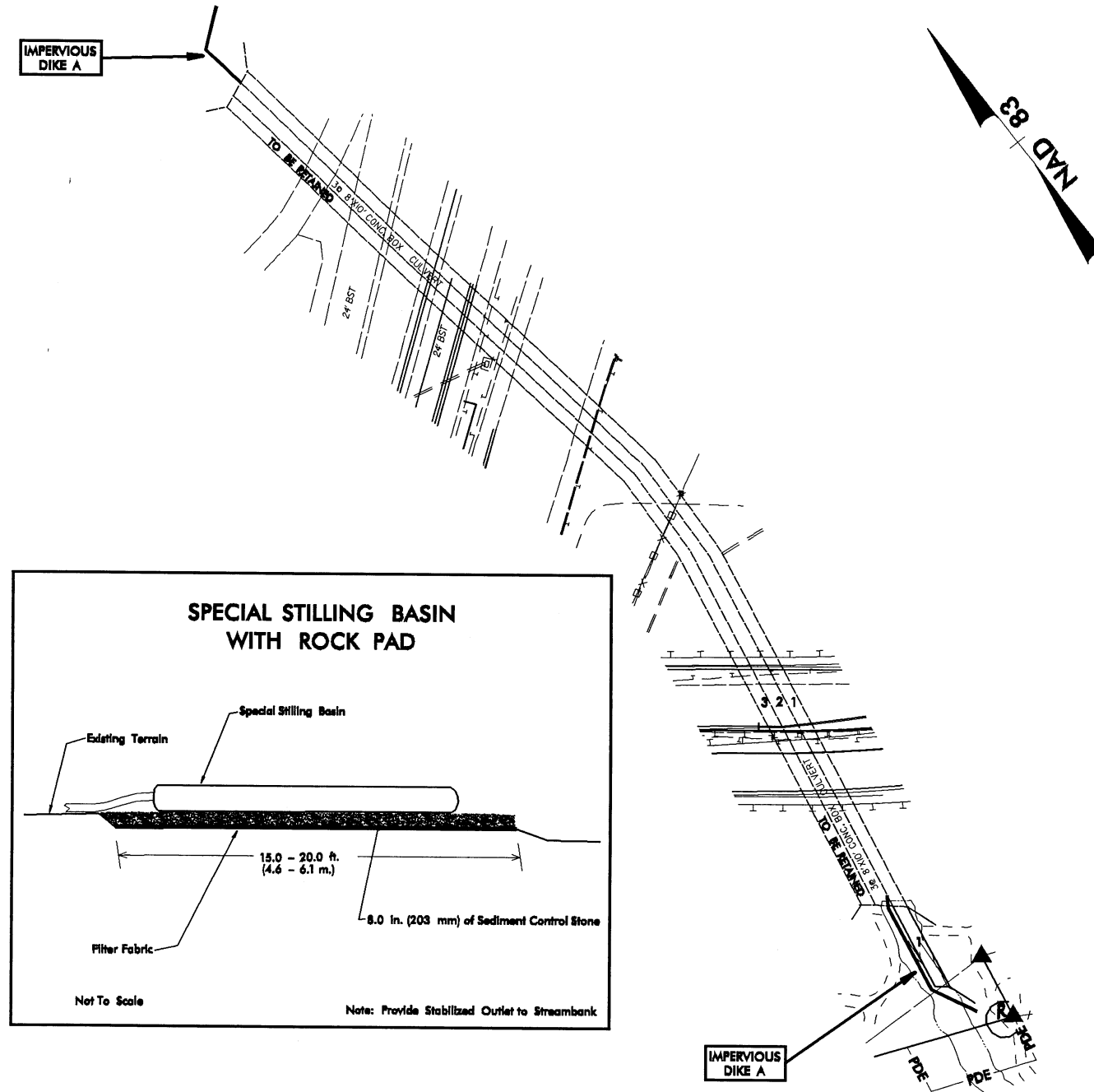
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

CULVERT CONSTRUCTION SEQUENCE STA. 24+21.46 -L-

PROJECT REFERENCE NO. U-3837	SHEET NO. EC-XX/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

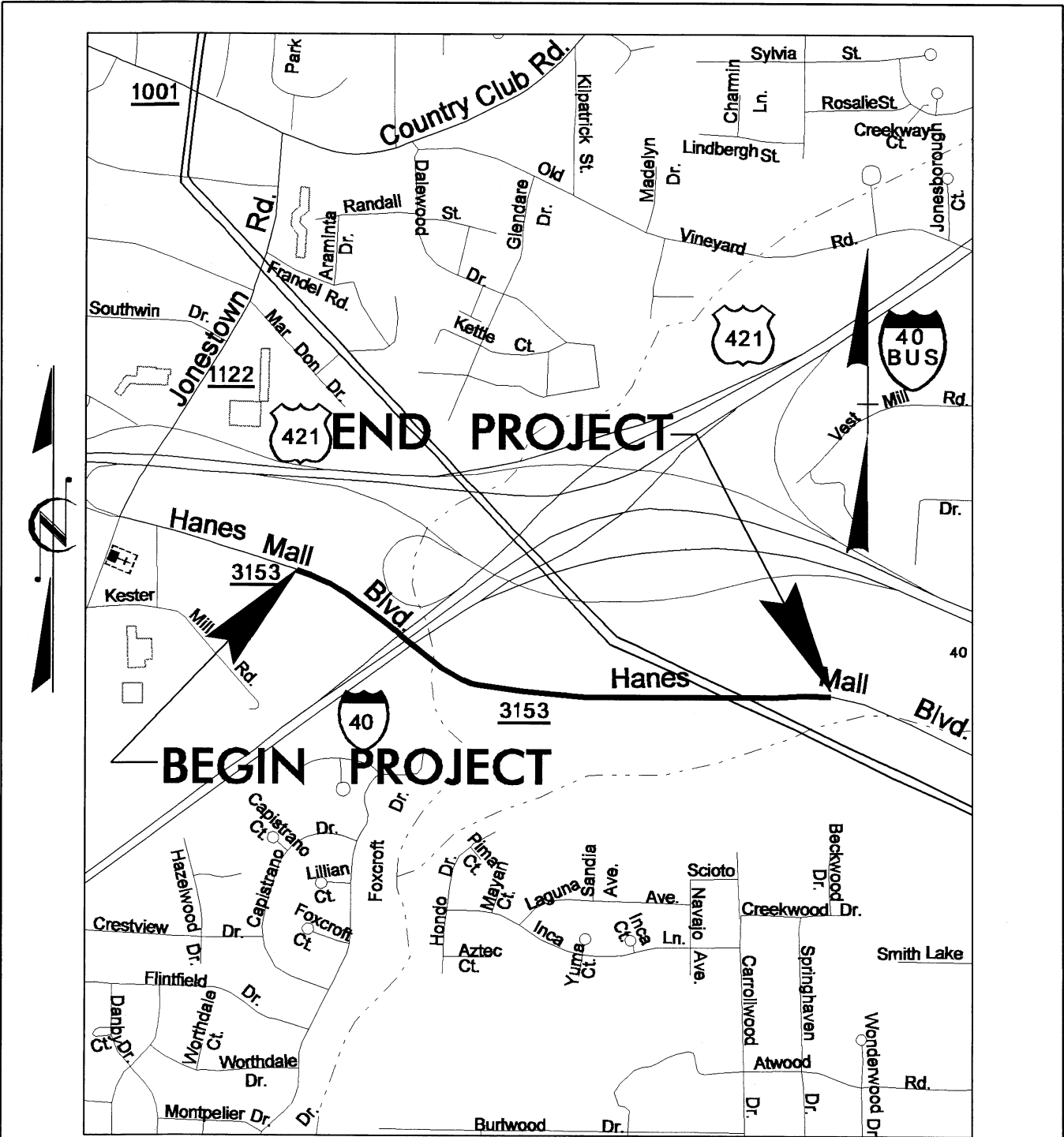
PHASE I

PHASE II

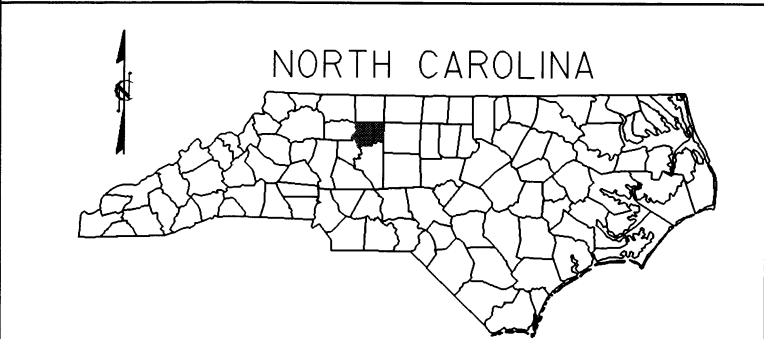


1. CONSTRUCT IMPERVIOUS DIKES A, DIVERTING FLOW THROUGH BARREL 2.
2. UTILIZE SPECIAL STILLING BASIN.
3. CONSTRUCT BARREL 1 EXTENSION.
4. REMOVE IMPERVIOUS DIKES A.

5. CONSTRUCT IMPERVIOUS DIKES B, DIVERTING FLOW THROUGH BARREL 1.
6. UTILIZE SPECIAL STILLING BASIN.
7. CONSTRUCT BARRELS 2 AND 3 EXTENSIONS, AND LOW FLOW BENCH AT OUTLET OF BARREL 3.
8. COMPLETE ROADWAY.



VICINITY MAP

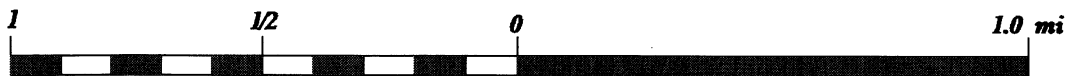


NCDOT
 DIVISION OF HIGHWAYS
 FORSYTH COUNTY
 PROJECT: 8.2625001 (U-3837)
 WINSTON-SALEM SR 3153 (HANES
 MALL BLVD) TO WEST
 OF WESTGATE CENTER DRIVE



WINSTON-SALEM, NC QUADRANGLE

VICINITY MAP



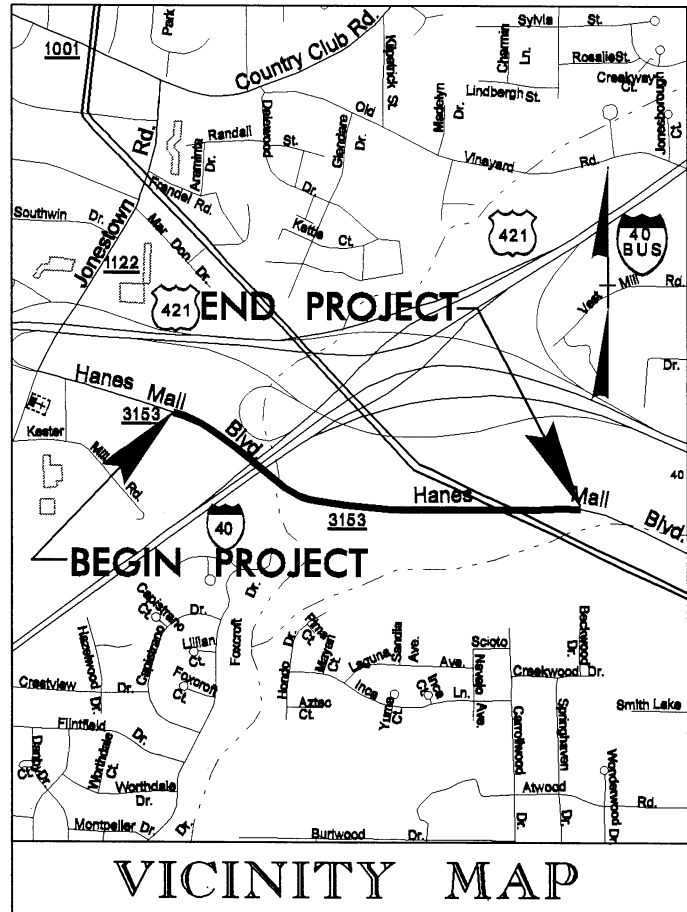
NORTH CAROLINA

NCDOT
 DIVISION OF HIGHWAYS
 FORSYTH COUNTY
 PROJECT: 8.2625001 (U-3837)
 WINSTON-SALEM SR 3153 (HANES
 MALL BLVD) TO WEST
 OF WESTGATE CENTER DRIVE

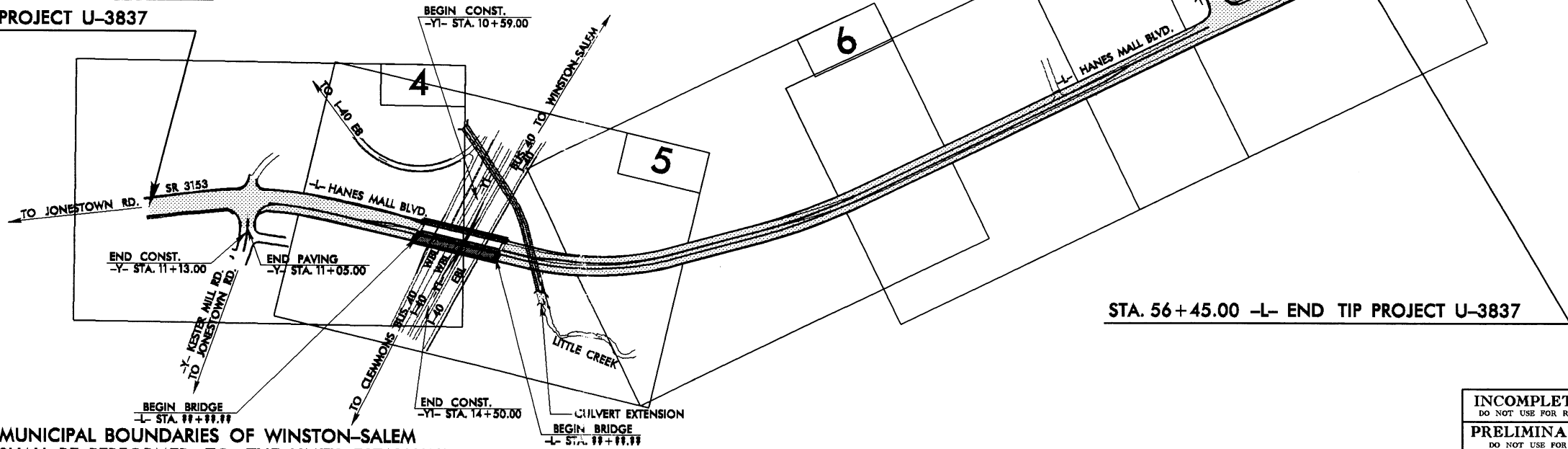
09/08/09

TIP PROJECT: U-3837

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



STA. 10+00.00 -L- BEGIN TIP PROJECT U-3837



STA. 56+45.00 -L- END TIP PROJECT U-3837

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WINSTON-SALEM
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____

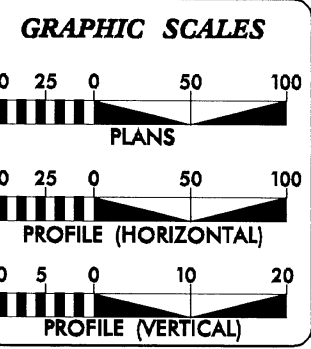
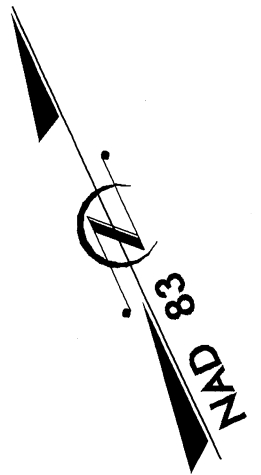
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

**LOCATION: WINSTON-SALEM - BRIDGE NO. 436 OVER I-40 ON SR 3153
(HANES MALL BLVD.) FROM WEST OF KESTER MILL ROAD
TO WEST OF WESTGATE CENTER DRIVE**
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB AND
GUTTER, SIGNALS, GUARDRAIL, RETAINING WALL,
STRUCTURE, AND CULVERT EXTENSION**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3837	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34988.1.1	STP-3153(1)	PE	
34988.2.1	STP-3153(1)	RW, UTILITIES	



DESIGN DATA

ADT 2004 =	18132
ADT 2025 =	30900
DHV =	11 %
D =	60 %
T =	10 % *
V =	50 MPH
* TTST 4 %	DUAL 6 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3837 =	
LENGTH STRUCTURE TIP PROJECT U-3837 =	
TOTAL LENGTH OF TIP PROJECT U-3837 =	0.880 mi

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

2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: OCTOBER 17, 2003	JAMES A. SPEER, PE PROJECT ENGINEER
LETTING DATE: OCTOBER 19, 2004	DANNY GARDNER PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER _____ P.E.

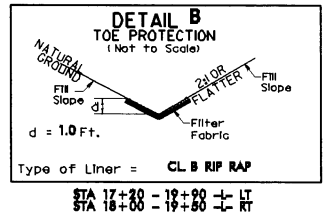
**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

04-SEP-2003 10:07
R:\P\9\U-3837\351
K:\a\leda - AT - H1187145

MARK A. & CATHERINE E. ENGLISH
 DB 2026 PG 567
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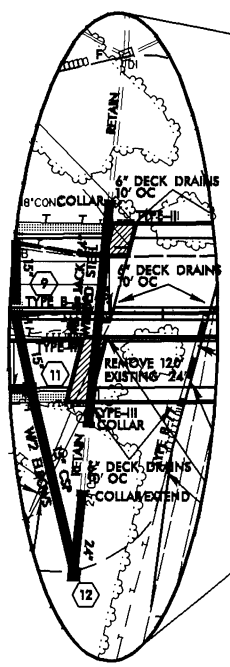
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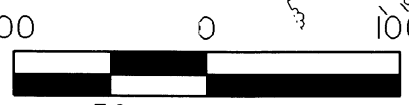
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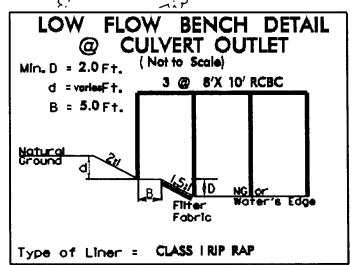
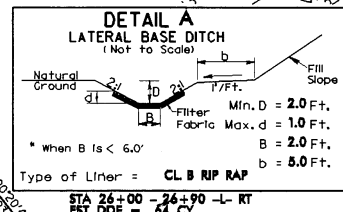


PLAN VIEW - SITE 1

DENOTES FILL IN SURFACE WATER



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 SCALE: 1" = 100' HORIZ.



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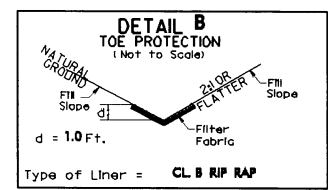
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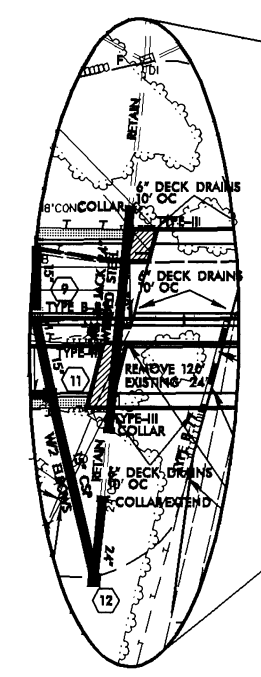
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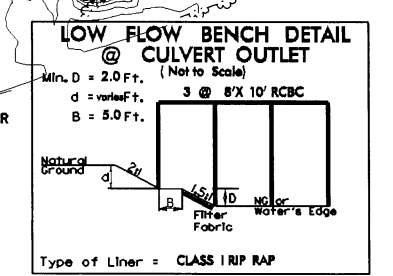
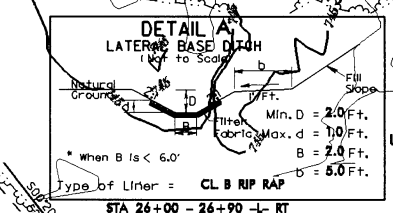
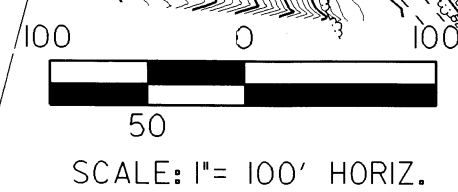


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PLAN VIEW - SITE 1

DENOTES FILL IN SURFACE WATER



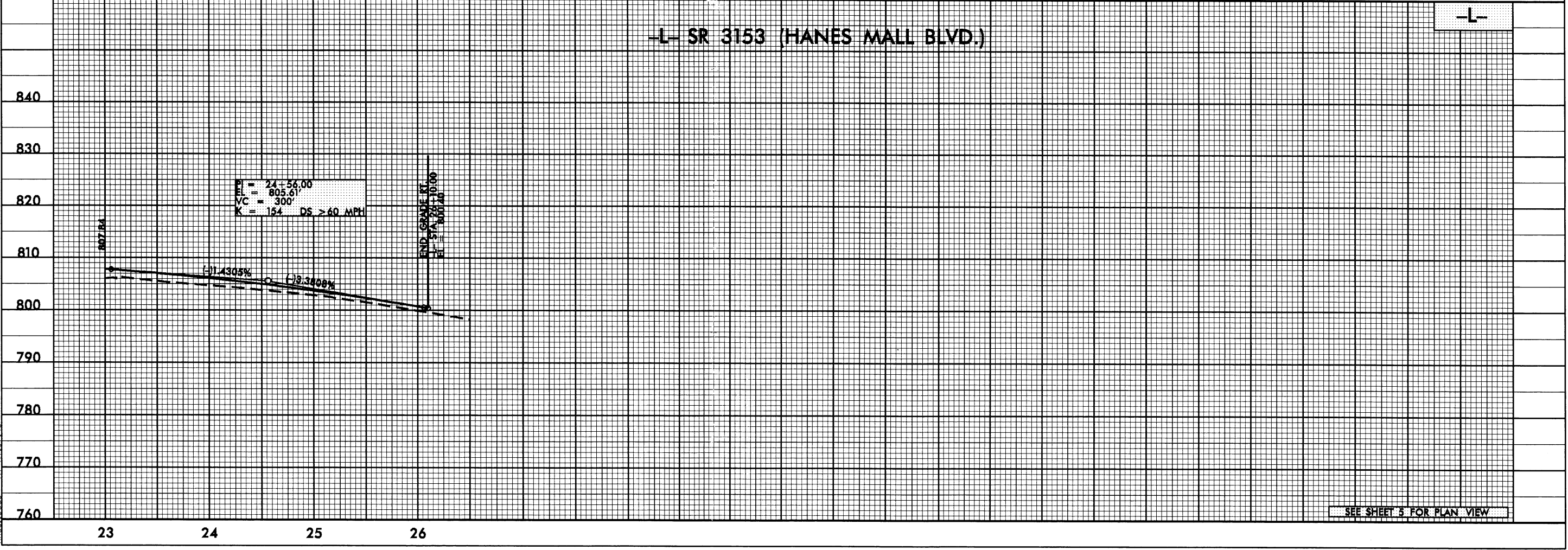
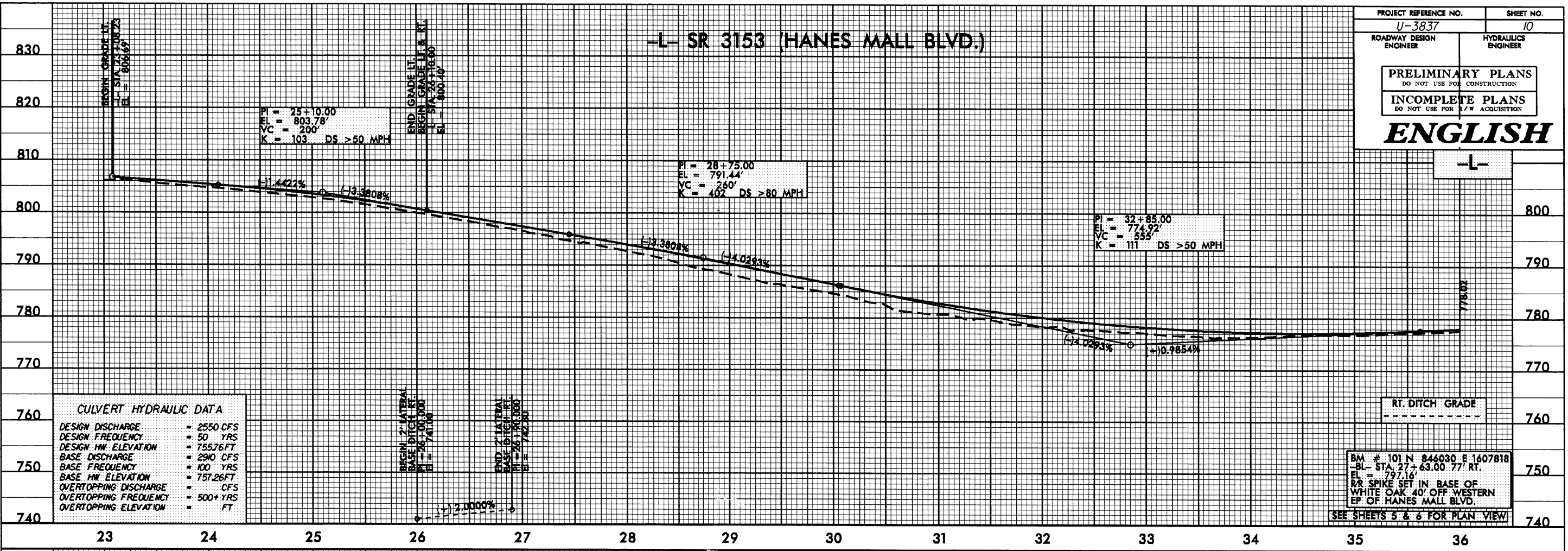
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CULVERT PROFILE FOR PERMIT DRAWINGS

NC DOT
DIVISION OF HIGHWAYS
FORSYTH COUNTY
PROJECT: 8.2625001 (U-3837)
WINSTON-SALEM SR 3153 (HANES MALL BLVD.) TO WEST OF WESTGATE CENTER DRIVE

SCALE: 1" = 100'
 SEPT. 8, 2003

STA 24+21.46 -L-
 3 @ 8' X 10' RCBC
 SKEW = 60°
 G.P. ELEVATION = 805.05'

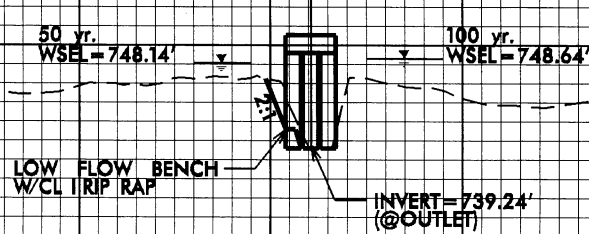
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 EL = 791.44'
 VC = 260'
 K = 402 DS > 80 MPH

PI = 25+10.00
 EL = 808.78'
 VC = 200'
 K = 103 DS > 50 MPH

SAG LOCATION
 STA 34+53.44
 EL = 777.12'

B.M. # 101 N 846030 E 1607818
 -BL- STA. 27+63.00 77' RT.
 EL = 797.16'
 IR SPIKE SET IN BASE OF
 WHITE OAK 40' OFF WESTERN
 EP OF HANES MALL BLVD.

NOTE:
 WATER SURFACE ELEVATIONS SHOWN ARE AT OUTLET
 AND WERE TAKEN FROM FEMA FLOOD PROFILE
 (ADJUSTED FROM NGVD29 TO NAVD88)

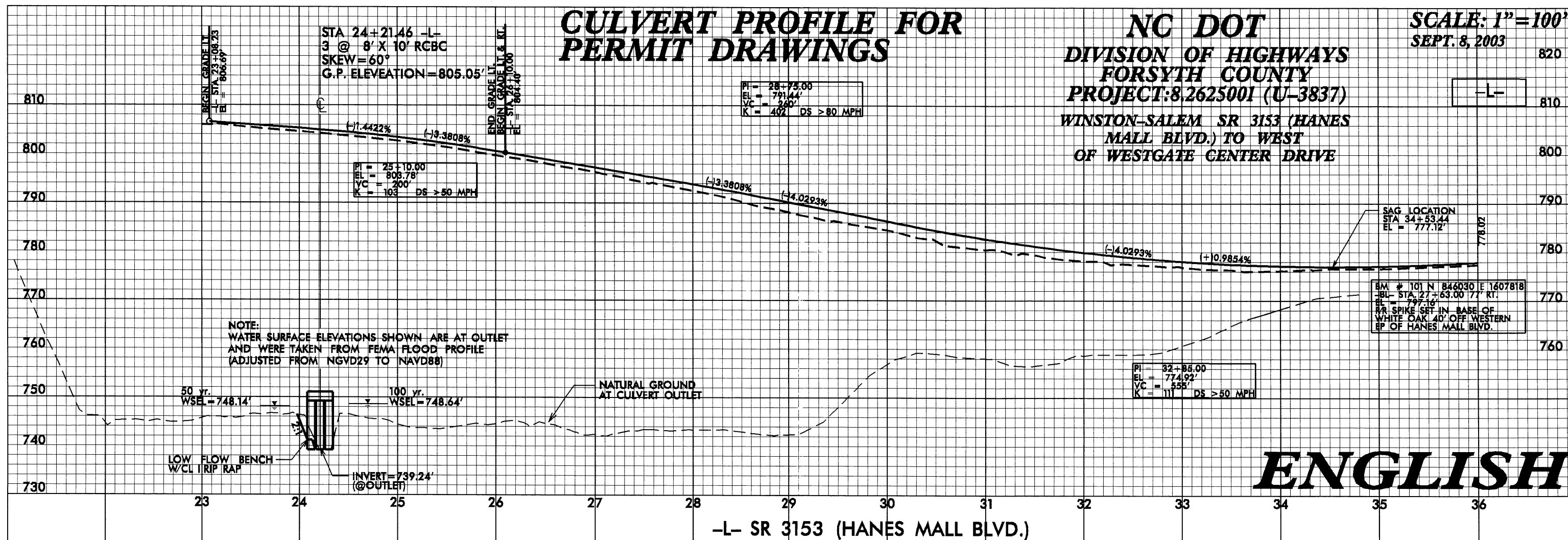


NATURAL GROUND AT CULVERT OUTLET

PI = 32+85.00
 EL = 774.92'
 VC = 555'
 K = 1111 DS > 50 MPH

ENGLISH

-L- SR 3153 (HANES MALL BLVD.)



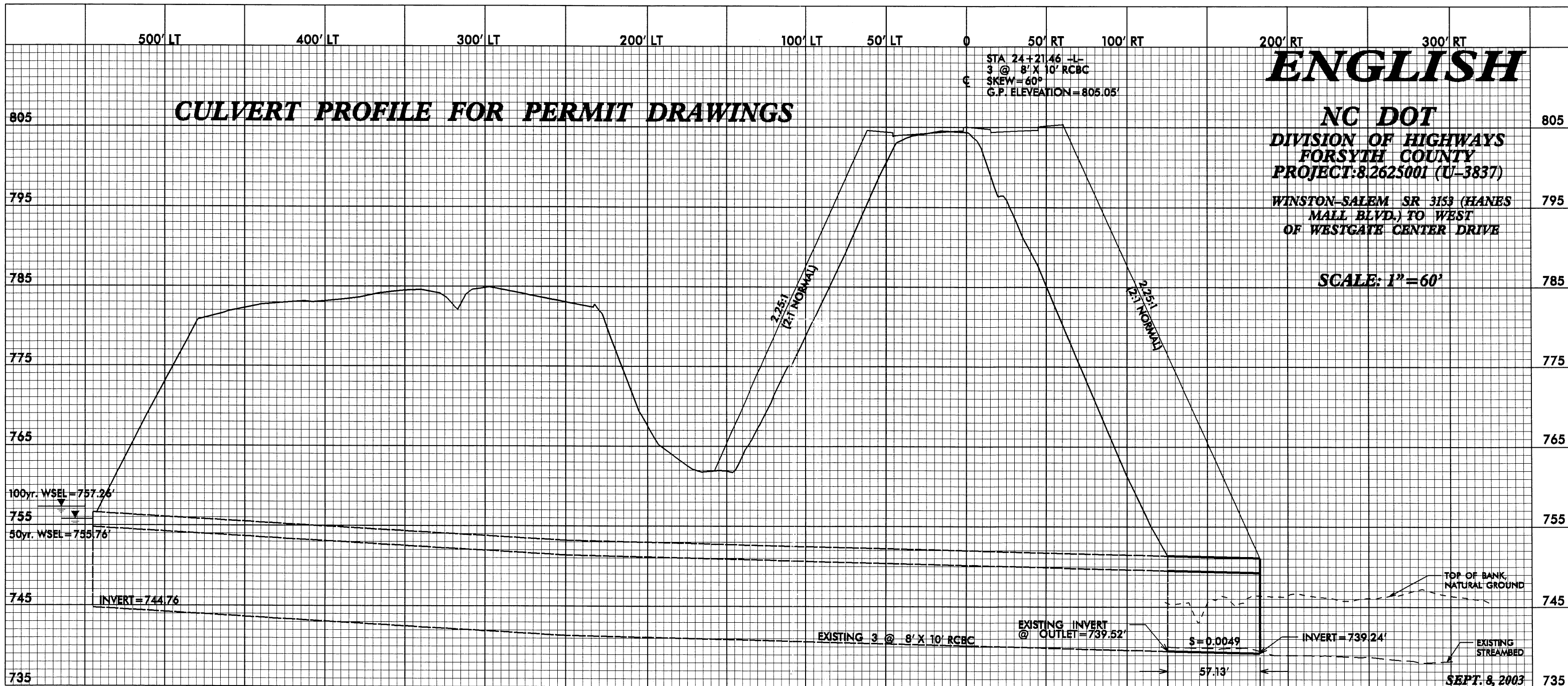
CULVERT PROFILE FOR PERMIT DRAWINGS

ENGLISH

NC DOT
DIVISION OF HIGHWAYS
FORSYTH COUNTY
PROJECT: 8.2625001 (U-3837)
WINSTON-SALEM SR 3153 (HANES MALL BLVD.) TO WEST OF WESTGATE CENTER DRIVE

SCALE: 1" = 60'

STA 24+21.46 -L-
3 @ 8' X 10' RCBC
SKEW = 60°
G.P. ELEVATION = 805.05'



SEPT. 8, 2003

Site No.	Property Owner Name	Property Owner Address
1	Lula B. Spainhour	1585 Hanes Mall Blvd., Winston-Salem, NC 27103

List of Property Owners

NC Dept. of Transportation
 Division of Highways
 Forsyth County
 Project: 8.2625001 (U-3837)

SR 3153 (Hanes Mall Blvd.) to West of
 Westgate Center Drive, Winston-Salem, NC

**Forsyth County
Improvements to SR 3153 (Hanes Mall Boulevard)
from Kester Mill Road to West of Westgate Center Drive
Federal Aid Project No. STP-3153 (1)
State Project No. 8.2625001
TIP No. U-3837**

CATEGORICAL EXCLUSION

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

N. C. DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

2/26/03
Date

Gregory J. Thorpe

for Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA, NCDOT

2/27/03
Date

Donald J. Voelker

for Donald J. Voelker
Acting Division Administrator, FHWA

Forsyth County
Improvements to SR 3153 (Hanes Mall Boulevard)
from Kester Mill Road to West of Westgate Center Drive
Federal Aid Project No. STP-3153 (1)
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TIP No. U-3837

CATEGORICAL EXCLUSION

February 2003

Documentation Prepared in
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**Forsyth County
Improvements to SR 3153 (Hanes Mall Boulevard)
from Kester Mill Road to West of Westgate Center Drive
Federal Aid Project No. STP-3153 (1)
State Project No. 8.2625001
TIP No. U-3837**

Commitments Developed Through Project Development and Design

A sidewalk will be included on the bridges as part of the TIP project. At the request of the City of Winston-Salem, a sidewalk will also be included along the roadway portion of the project at additional cost to the City. A municipal agreement between the City and NCDOT will give specific details of the additional sidewalk, such as location, cost participation requirements, and maintenance responsibility.

**Forsyth County
Improvements to SR 3153 (Hanes Mall Boulevard)
from Kester Mill Road to West of Westgate Center Drive
Federal Aid Project No. STP-3153 (1)
State Project No. 8.2625001
TIP No. U-3837**

I. INTRODUCTION

SR 3153 (Hanes Mall Boulevard) is located in Forsyth County. The project is included in the approved 2002-2008 Transportation Improvement Program (TIP) and in the 2004-2010 Draft TIP with a total estimated cost of \$5,840,000. The total estimated cost of the recommended improvements is \$7,933,200. Right of way and construction are scheduled in the 2004-2010 Draft TIP for fiscal years 2003 and 2004, respectively.

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

II. NEED FOR THE PROJECT

A. System Linkage

This section of SR 3153 (Hanes Mall Boulevard) is a two-lane section and connects two commercial areas which are bisected by I-40. At each end of the project, the roadway widens to a minimum of five lanes where existing shopping centers are located, thus leaving a two-lane gap as the roadway crosses over I-40. This section of SR 3153 has become a "choke point" for local drivers because of the reduction of the roadway to two lanes.

B. Capacity

For present conditions (year 2000), the average daily traffic volumes on SR 3153 (Hanes Mall Boulevard) range from 15,700 to 22,000 vehicles per day (vpd) (see Figure 3A). Based on traffic modeling and anticipated growth, the projected traffic volumes for the year 2025 will range from 30,900 to 38,000 vpd (see Figure 3B). Some of this traffic increase is expected due to planned development on the vacant parcels of land between Kester Mill Road and Westgate Center Drive that lie on both sides of SR 3153 (Hanes Mall Boulevard) within the project limits.

The level of service (LOS) of a roadway is a measure of its traffic carrying ability. Level of service range from LOS A to 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. 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 are

characterized by stop and go travel, this occurs at level of service F.

With the present traffic volumes, the two-lane facility operates at a LOS of E and will worsen to a LOS of F by the year 2025 with no improvements.

C. Purpose of the Project

The purpose of the project is to correct the gap between the multi-lane sections of each end of SR 3153. The widening will improve traffic capacity for the roadway by introducing additional through lanes and more storage for a center-turn lane.

III. EXISTING CONDITIONS

The project is located within the city limits of Winston-Salem (see Figure 1).

SR 3153 (Hanes Mall Boulevard) is classified as an Urban Local west of Bridge No. 436 and an Urban Collector, east of the bridge, in the Statewide Functional Classification System. SR 3153 (Hanes Mall Boulevard) connects SR 1122 (Jonestown Road) with US 158 (Stratford Road) in Winston-Salem. Currently, the traffic volumes range from 15,700 to 22,000 vpd and are expected to increase to a range of 30,900 to 38,000 vpd by the year 2025. Approximately 4 percent of the traffic is truck-tractor semi-trailers (TTST) and 6 percent is dual-tired vehicles (DUAL). The posted speed limit is 35 mph (60 km/h) in the vicinity of the bridge.

The project begins approximately 1000 feet (305 m) west of bridge No. 436 and ends approximately 3345 feet (1020 m) east of the bridge. The total length of the project is 0.88 mile (1.416 km).

SR 3153 (Hanes Mall Boulevard) is currently a two lane shoulder section with 12-foot lanes (3.6 m) currently exists within the project limits. At the west and east end of the project, a five-lane section with 12-foot (3.6 m) lanes currently exists.

Utilities are located within the existing right-of-way.

SR 3153 (Hanes Mall Boulevard) is not a designated bicycle route.

The only access control is where the bridge crosses I-40.

A three barrel eight foot (width) by ten foot (height) reinforced concrete box culvert exists at the southeast end of Bridge No. 436.

Bridge No. 436, located within the project limits, was completed in 1989. The bridge contains a four-span superstructure, including a concrete deck on I-beams and plate girders. The deck is 293 feet (89.3 m) long and 30 feet (9 m) wide. The substructure is composed of concrete end and interior bents. The vertical clearance for the bridge is 16 feet 10 inches (5.1 m) which is below the current standard of 17 feet. There are two travel lanes on the bridge. According to Bridge Maintenance Unit records,

the sufficiency rating of the bridge is 76.5 out of a possible 100. The bridge is not posted with weight restrictions for single vehicles or truck-tractor semi-trailers.

The vertical alignment is good and horizontal alignment is fair in the bridge vicinity. The pavement width on the approaches to the existing bridge is 24 feet (7.2 m). Grassed shoulders on the approaches to the bridge vary in width.

An overhead sign structure is located 43 feet (13.1 m) west of the bridge over Interstate 40.

The existing right of way width varies in the bridge area and has a minimum width of 80 feet (24 m) along the remaining portion of the project.

The Traffic Engineering Branch indicates that ten accidents were reported from September, 1999 to August, 2002, in the vicinity of the project. Six of the accidents were rear-end type.

There are no daily school bus crossings over the studied bridge according to the Transportation Director for Forsyth County.

Sidewalk exists on each end of the project, in front of established business. The existing bridge has no sidewalk. Also, there is an existing retaining wall at the entrance of the Hanes Point Shopping Center and at the east end of the project.

IV. ALTERNATIVES CONSIDERED

A. Reasonable and Feasible Alternatives

Three alternatives were considered for this project. Each alternative extends an existing culvert on one side under the southern bridge approach and involves some bridge widening.

Alternative 1: The roadway would be widened symmetrically to a five-lane, undivided, curb and gutter section with 12-foot (3.6 m) lanes. Bridge No. 436 would be widened symmetrically to five lanes with a total bridge width of 75 feet (22.6m). This would provide for five 12-foot (3.6m) lanes, an offset of 2 feet (0.6 m) on each side, and a 5.5-foot (1.7m) sidewalk on each side.

Alternative 2: (Recommended) The roadway will be widened to a four-lane, divided, curb and gutter section with 12-foot (3.6 m) lanes and a 16-foot (4.8 m) median. Bridge No. 436 would be widened 16.5 feet (5 m) to the north, converting this bridge to accommodate three lanes of westbound only traffic and a 5.5-foot (1.7 m) sidewalk on the outside. The inside lane will be dedicated for left turn storage and the other two as through lanes. The typical section for the existing bridge will become 46.5 feet (14.2 m) wide. Also, a two-lane bridge will be constructed south of the existing bridge for

eastbound traffic. The typical section will be 33.5 feet (10.2 m) wide to allow for two travel lanes. A 5.5-foot (1.7 m) sidewalk will be included on the outside of this bridge.

Alternative 3: The roadway would be widened to a five-lane, undivided, curb and gutter section with 12-foot (3.6 m) lanes that taper at the bridge. Bridge No. 436 would be widened symmetrically to a four lanes with a total bridge width of 63 feet (19 m). This would provide for four 12-foot (3.6m) lanes, an offset of 2 feet (0.6 m) on each side, and a 5.5-foot (1.7 m) sidewalk on each side.

The estimated costs for the three alternatives are listed in Table 1:

Table 1. Estimated Cost

COMPONENT	ALTERNATIVE 1	Recommended ALTERNATIVE 2	ALTERNATIVE 3
Structures	1,859,425	1,688,035	1,490,245
Bridge Removal	0	0	0
Roadway and Approaches	2,878,670	2,895,835	2,860,015
Mobilization and Miscellaneous	1,574,315	1,556,330	1,510,542
Engineering and Contingencies	987,590	959,800	939,198
Total Construction	7,300,000	7,100,000	6,800,000
Right of Way	845,300	832,200	845,300
Total Cost	\$8,145,300	\$7,932,200	\$7,645,300

B. Alternatives Eliminated From Further Consideration

The "do-nothing" alternative is not a practical alternative. It does not solve the two lane "gap" problem and does not improve the capacity.

Widening only on the north side was eliminated from consideration due to impacts to power lines, one business relocation, and the potential relocation of the I-40 ramps.

C. Capacity Analysis

The present (year 2000) and future traffic volumes (year 2025) for the mainline for two conditions were evaluated: “no-build” condition, which assumes that no improvements are made; and “build” condition, which assumes that the roadway is widened to either a five-lane undivided section or a four-lane divided section. Table 2 shows the level of service.

Table 2: Traffic Capacity Analysis (Mainline)

Section of SR 3153	2000		2025	
	No-Build	Build	No-Build	Build
Kester Mill Road to I-40	E	B	F	C
I-40 to Westgate Center Drive	E	B	F	D

Therefore, the proposed widening will help the overall traffic flow and eliminate the “choke point” created by the existing, two-lane facility.

D. Recommended Alternative

While all three widening alternatives allow for improvements to capacity by introducing additional travel lanes, the alternatives are not equal in all areas. In determining the best recommendation for the project, the following concerns were evaluated:

- **Design Constraints:** The existing bridge has a 16-foot, 10 inch (5.1 m) vertical clearance. This is not up to current standards of 17 feet (5.2 m). Widening of the bridge to the south will reduce this vertical clearance even more. Only Alternative 2 resolves this problem.
- **Safety:** To reduce accident potential of head-on collisions, a median is preferred for this section of roadway. Only Alternative 2 allows for this median.
- **Storage Capacity:** Currently, during certain times of the day, traffic in the westbound lane is backed up from motorists trying to turn left onto Kester Mill Road. An exclusive left turn lane is needed for storage.

Therefore, based on design constraints and safety considerations, Alternative 2 is recommended.

V. PROPOSED IMPROVEMENTS

Bridge No. 436 will be upgraded as recommended in Alternative 2 by phased construction of the existing bridge to allow for maintenance of traffic on-site. A travelway of 36 feet (10.8m) will be accommodated. The bridge will have an offset of 3 feet (1.0 m) on the inside and an offset of 2 feet (0.6 m) with a 5.5-foot (1.7 m) sidewalk on the outside, for a total bridge width of 46.5 feet (14.2 m). The bridge will exclusively accommodate the westbound traffic.

The new parallel bridge will be 293 feet (89 m) long, the same length of the existing bridge, and will accommodate eastbound traffic. This bridge will have an offset of 2 feet (0.6 m) on the inside and an offset of 2 feet (0.6 m) with a 5.5-foot (1.7 m) sidewalk on the outside, for a total bridge width of 33.5 feet (10.2m).

SR 3153 (Hanes Mall Boulevard) will be widened approximately 1000 feet (305 m) west of the existing bridge. Approximately 3345 feet (1020 m) of approach work will be required east of the I-40 bridge. The design speed will be 50 mph (80 km/h), with a posted speed of 45 mph (70 km/h).

The proposed minimum right of way width will be 100 feet (32.8 m).

Existing sidewalk affected by the project will be replaced. A sidewalk will be included on the bridges as part of the TIP project. At the request of the City of Winston-Salem, a sidewalk will also be included along the roadway portion of the project at an additional cost to the City. A municipal agreement between the City and NCDOT will give specific details of the additional sidewalk, such as location, cost participation requirements, and maintenance responsibility.

The signal at the west entrance to Target will be upgraded.

There will be no change of access control in the project area.

VI. HUMAN AND NATURAL ENVIRONMENTAL EFFECTS

A. Community, Social and Economic Resources

1. Community Profile

a. Study Area Description

The study area is a regional center of business activity and employment for the Triad Region and western North Carolina. Business activities are directly and indirectly related to retail, commercial and medical industries. Although residential subdivisions are found within the Project Study Area, none have direct access to SR 3153 (Hanes Mall Boulevard). Commercial activity in the study area is dominated by retail sales. The Hanes Mall Shopping Center is the major retail outlet served by the route. The Winston-Salem planning staff anticipates any future develop to be retail/commercial in nature.

The project will provide greater access to an area designated for commercial development, thereby alleviating future development pressures on rural resources. SR 3153 (Hanes Mall Boulevard) is an important local connector for Hanes Mall, numerous retailers, and hospitals. Improving the bridge along SR 3153 (Hanes Mall Boulevard) will create a more efficient route along a heavily developed retail corridor. The project will neither split nor isolate any residential communities and will not create new development patterns, which would separate residents from community facilities.

The project corridor is retail/commercial in nature and the completion of this project should have positive indirect impacts on local economic development efforts. While the project does not directly provide new site-specific access to existing businesses, it should facilitate greater accessibility and decreased congestion; thereby, promoting the City's long term goals of comprehensive development.

SR 3153 (Hanes Mall Boulevard) is a primary connector serving major retail operations in southwest Winston-Salem. It follows a west-northwesterly to east-southeasterly course. SR 3153 (Hanes Mall Boulevard) provides access to Interstate 40, Business 40 and US 421 (though not in the immediate project limits).

The Impact Assessment Area includes the areas within approximately ½ mile of the project. For the purposes of formulating the demographics of the area, U.S. Census block groups were used. Census

block groups that are within or touch the ½ mile radius of the project were examined. Certain areas of these census block groups that are only partially within ½ mile of the project were not used if the population from those block groups appeared to be out of the general project area. The census block groups used include areas that fall outside of the general ½ mile study area; however, it is the closest approximation of the Impact Assessment Area.

The 2000 Census reports the population of Forsyth County to be 306,067 persons. Approximately 69 percent is of Caucasian descent, while 26 percent is of African-American descent. The county also has total Hispanic population of approximately 6 percent. The demographic profile of the study area is similar to that of the county and the state of North Carolina (see Table 2). It is assumed that these represent a true picture of the regions in question especially as they represent the growing Hispanic population in the state.

As shown in Table 3, the study area age groups are similar to the statewide averages. The study area median age is 39.6 years, 3.6 percent larger than Forsyth County and 4.3 percent higher than the state average.

As noted in Table 4, the 1990 Census data (FN) indicates that the median household income for the demographic study area is \$25,547 per year. Additionally, the percent of persons living below the poverty level is comparable for study area, county and state respectively. This indicates that the study area is representative of the state and the county as a whole. The study area also shows a less than average rate of persons living 50 percent below than the county and state.

Table 3. Population by Race and Hispanic Origins

YEAR 2000	Study Area	%	Forsyth	%	North Carolina	%
TOTAL	10,377	100.0	306,067	100.0	8,049,313	100.0
Total Hispanic	568	5.5	19,577	6.4	378,963	4.7
White	6,847	66.0	209,552	68.5	5,804,656	72.1
Hispanic (White)	253	2.4	7,214	2.4	157,501	2.0
Black	2,770	26.7	78,388	25.6	1,737,545	21.6
Hispanic (Black)	26	0.3	1,347	0.4	14,244	0.2
American Indian	30	0.3	923	0.3	99,551	1.2
Hispanic (American Indian)	6	0.1	140	0.0	4,218	0.1
Asian/ Pacific Islander	262	2.5	3,268	1.1	117,672	1.5
Hispanic (Asian/Pacific Islander)	-	0.0	65	0.0	2,091	0.0
Other	468	4.5	13,936	4.6	289,889	3.6
Hispanic (Other)	283	2.7	10,811	3.5	200,909	2.5
Total minority	3,783	36.5	103,729	33.9	2,402,158	29.8

Table 4. 2000 Population by Age

YEAR 2000	Study Area	%	Forsyth	%	North Carolina	%
0-18	2,393	23.1	77,261	25.2	2,073,849	25.8
19-64	6,753	65.1	190,257	62.2	5,006,416	62.2
65 and above	1,231	11.9	38,549	12.6	969,048	12.0
TOTAL	10,337	100.0	306,067	100.0	8,049,313	100.0
Median age	39.6		36.0		35.3	

Table 5. Income Measures and Persons Living Below Poverty Level

YEAR 1990	Study Area	%	Forsyth	%	North Carolina	%
Median Household Income	\$25,547	95.9	\$30,449	114.3	\$26,647	100.0
Per Capita Income	\$12,411	96.3	\$16,151	125.3	\$12,885	100.0
Persons below Poverty line	477	10.7	27,102	10.5	829,855	13.0
Persons below 50% of poverty line	99	2.2	11,851	4.6	332,966	5.2

b. Housing Characteristics

The median home value for the study area in 1990 was \$53,021 or 23 percent less than the state average and 30 percent less than the county average (see Table 5). The homeownership rates and the median rent for the demographic study area, Forsyth County, and North Carolina are also shown in Table 5.

Table 6. Housing Characteristics

YEAR 1990	Study Area	Forsyth	North Carolina
Median Home Value	\$53,021	\$75,100	\$65,300
Homeownership rates	78.1%	63.5%	68.0%
Median rent	\$305	\$384	\$382

c. Business Activity

The study area is a regional center of business activity and employment for the Triad Region and western North Carolina. Business activities are directly or indirectly related to retail, commercial and medical concerns. The Hanes Mall Shopping Center complex, located east of the project, is the major retail outlet served by SR 3153 (Hanes Mall Boulevard). The Forsyth Medical Center and Forsyth Memorial Hospital are located west of the project area. Although not located in the study area, the medical center and hospital are considered significant employment centers and trip generators for SR 3153 (Hanes Mall Boulevard).

d. Police, Fire and Public Services

The City of Winston-Salem is served by 18 fire stations, and the study area is served by Station No. 2, which is less than one mile or one to two minutes driving time south of the Bridge No. 436. The study region traverses two sectors of the city as defined and patrolled by the Winston-Salem Police department.

2. Existing/Future Land Use and Present/Future Zoning

a. Residential

Although residential subdivisions are found within the Project Study area, none have direct access to SR 3153 (Hanes Mall Boulevard). The closest residential neighborhoods are located south and west of the project corridor. Planning authorities do not anticipate future access to SR 3153 (Hanes Mall Boulevard) due to opposition from the neighborhood from a past city led effort to provide a direct connection.

The primary access to SR 3153 (Hanes Mall Boulevard) is Stratford Road to the south and east, and Jonestown Road to the west.

b. Commercial

Commercial activity in the study area is dominated by retail sales. The Hanes Mall Shopping Center is the major retail outlet served by the route. Hanes Mall and thirteen large retailers provide significant employment and retail opportunities. East of the bridge, major retailers include: Target, Sam's Club, COSTCO, PetsMart, Lowe's, JC Penny, Ross, Rhodes Furniture, Toys R' Us, Home Depot, Kohl's, Babies R' Us and one strip mall. The 12 screen Wynnsong Cinemas, Wal-Mart and several smaller retail outlets in a strip mall are located on the western side of the bridge.

The project is located in the center of a high growth area, as some of the big box retailers have been added to the area as recently as December 2001. The tenure pattern of the undeveloped portions of the project area suggests that other commercial activity is slated for development including food services such as a Burger King and an Outback Steak House. This type of activity is expected to continue as it is supported by planners, the local zoning ordinance, and long term plans for the area.

c. Industrial

No industrial activity exists within the project limits. Although some of the parcels in the project study area are zoned for light-industrial use, the planning department indicated industrial activity is unlikely due to the sharp increase in land price associated with the recent commercial activity.

Regular capacity and high voltage electricity lines also traverse the project site running in a general north to south direction east of the Hanes Mall Boulevard bridge.

d. Future Development

The majority of the parcels along the corridor have been developed for retail/commercial uses, with the exception of two large undeveloped tracts east of and adjacent to the existing bridge. Planning staff anticipates any future develop to be retail/commercial in nature.

e. **Zoning**

The following zoning districts are found within the project study area:

Residential	Commercial/Industrial
Residential Mixed 18, Residential-9, Residential Mixed Use	General Business-Special, Highway Business-Special, Industrial Park General, General Business Business-Special, General Office, Commercial-Special Commercial

The majority of the parcels along the corridor are zoned for some variation of General-Business use. The notable exception is a 34-acre tract east of and adjacent to the bridge which is zoned Residential Mixed 18.

f. **Local/Regional Land Use and/or Development Plans**

The project is in line with the stated objectives of Winston-Salem's *The Legacy Comprehensive Plan*, which was formally recommended by the City-County Planning Board for approval by all the elected bodies in Forsyth County in March 2000. The Plan recommends the following goals:

- A Creative and Collaborative Approach to New Development
- Intensification of Urban Land Use to reduce pressure on rural resources
- The Provision of Mixed Use Services with local proximities
- Preservation of the Rural Landscape

The Winston Salem/Forsyth County Metropolitan Planning Organization's (MPO) Urban Area Long Range Transportation Plan Goals are stated as follows:

- Streets and Highways: Develop an efficient street and highway network which meets the short and long term needs and aspirations of Winston-Salem and Forsyth County.
- Public Transportation: Promote a safe, efficient and diverse public transportation system accessible to all segments of the urban area.
- Pedestrian and Bicycle Transportation: Develop a transportation system which allows for and encourages the use of walking and bicycling as viable, ecologically sound alternatives to motor vehicles.

- **Rail and Air Transportation:** Maximize rail and air travel and transport opportunities.
- **Environment:** Develop a transportation system which preserves and enhances the natural and built environments.
- **Financial:** Coordinate all transportation modes to make the most efficient use of limited public resources.

Improving the bridge, along with other future SR 3153 (Hanes Mall Boulevard) improvements, was rated as non-regionally significant in the May 1999 Winston-Salem/Forsyth County Urban Area Fiscally Constrained Transportation Plan project list.

g. Community/Neighborhood Description

The City of Winston Salem is a racially diverse and culturally rich community with a diverse economy. During the past 20 years the city has undergone a gradual transition from a manufacturing based economy (RJ Reynolds Tobacco, Sara Lee, Hanes) to a service economy with a focus on retail, finance, and medicine. Hanes Mall, Wachovia Bank corporate headquarters, Forsyth Medical Center, Forsyth Memorial Hospital and Wake Forest University Medical Center are major employers.

The project study area is primarily commercial in nature with residential neighborhoods located on the southern and western periphery. The project corridor is located along what local officials deem a high growth area for commercial development. The area is dominated by transportation infrastructure, retail trade and medicine and can be considered an important local and regional business center and employment hub.

SR 3153 (Hanes Mall Boulevard) is an important local connector for the east-west travel. The travelway consists primarily of four lanes; however, the current configuration of the I-40 bridge (2-lanes) creates congestion along the roadway, which causes a ripple effect throughout the area. The west approaches to the bridge consist of commercial development.

The roadway and area is served by one bus route (the west side connector, WC43) of the Winston-Salem Transit Authority (WSTA). A circular connector shuttles people to other buses that cross the city and facilitates access for the non-motorized public to the shopping centers. There are presently no bicycle lanes or pedestrian walkways across the bridge.

3. **Project Impact Assessment**

a. **Consistency with Local/Regional Plans**

The project is located in a high growth commercial area. A stated goal of the *Legacy Plan* is to "...provide for intensification of Urban Land Use to reduce pressure on rural resources". The project should provide greater access to an area designated for commercial development, thereby alleviating future development pressures on rural resources. The local planning authorities support the project, as it would facilitate the improved traffic flow through the area, improve access to vacant tracts, and improve access to existing retail establishments. The activity is consistent with the overall goals and objectives of the Winston-Salem/Forsyth County Comprehensive Plan. The project should also support the goals of the Winston Salem/Forsyth County MPO as it contributes to the development of an efficient street and highway network.

b. **Economic Development Opportunities**

SR 3153 (Hanes Mall Boulevard) is an important local connector for Hanes Mall, numerous retailers, and hospitals. Improving the bridge along Hanes Mall Boulevard should create a more efficient route along a heavily developed retail corridor. Completion of this project should have a positive effect on the future development of the commercial activity, as the improved access should increase the marketability of vacant tracts.

c. **Traffic Congestion and Safety**

The purpose of the project is to reduce the existing congestion and handle the expected increase in traffic due to population growth and economic development. The improvements to the Bridge No. 436 should reduce congestion and decrease transit time. The local government and business owners support the purpose and need for the project. Travel along the roadway would be safer with the additional lanes. The improvements should improve traffic congestion and safety for all vehicles, including school buses and emergency vehicles. Delivery trucks for the retail outlets presently use the bridge and this improvement should reduce the occurrence of accidents.

d. Accessibility and Parking

Accessibility, an important component of successful retail development, will be greatly improved. The dual bridges will improve the flow of traffic along the entire corridor. Businesses west of the bridge and vacant parcels west of Costco will probably receive the greatest benefit, as the improvement would create a continuous four-lane facility from Hanes Mall and an I-40 interchange, to the SR 3153 (Hanes Mall Boulevard) terminus at Jonestown Road. The project will have no permanent impacts on parking.

e. Transit Considerations

Though there may be a minimal increase in the travel times for this route during construction, the short nature of the circuit should make impacts negligible. The completion of the project should see a reduced travel time for the route and a reduction in the possibility of accidents because of the divided nature of the roadway.

f. Bicycle, Pedestrian and Greenway Considerations

The existing bridge creates a barrier between two retail/commercial areas (east and west of the bridge) that are within walking distance. Integrating bicycle/pedestrian routes into project planning has been considered as a part of the initial project design; a sidewalk will be added to the outside of each bridge to accommodate pedestrians. Bicycle accommodations will not be included as part of the project. The City of Winston-Salem has agreed to a cost sharing project with NCDOT to provide sidewalk along the project. There is no specific reference to greenway routes along the project corridor in the Winston-Salem Greenway Plan.¹

4. Business, Institutional and Residential Relocations and Impacts

Although additional right of way will be required, the project will not relocate any businesses or residences.

¹ Draft Greenway Plan. City of Winston Salem. <http://www.co.forsyth.nc.us/ccpb/GreenwayPlan.pdf> as at February 14, 2002

a. Community Stability and Neighborhood Cohesion

Impacts to communities and neighborhoods can include splitting neighborhoods, isolating portions of a community, generating new development or changing development patterns, changing property values or creating a barrier separating residents from community facilities.

The project would not split nor isolate any residential communities. The project would not create new development patterns, which would separate residents from community facilities. Additionally, the project would not encourage new residential development as the planning department indicates that land prices have risen sharply and have made residential development impractical. The residential neighborhood south-west of the project corridor does not presently have direct access to the area and the planning authorities do not anticipate future access being sought because of past opposition from the neighborhood.

b. Tax Base and Employment Changes

The project will increase access and reduce congestion along the corridor, which probably will increase the viability of existing businesses and increase the marketability of vacant parcels. The results should be increased employment and increased tax base from new construction.

c. Farmland Impacts

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the impact of land acquisition and construction projects on prime and important farmland soils. North Carolina Executive Order Number 96, Preservation of Prime Agricultural and Forest Lands, requires all state agencies to consider the impact of land acquisition and construction projects on prime farmland soils, as designated by the U.S. Natural Resources Conservation Service (NRCS). These soils are determined by the NRCS based on criteria such as crop yield and level of input of economic resources. Land that is planned or zoned for urban development is not subject to the same level of preservation afforded other rural, agricultural areas.

The project corridor and project area is located within an urban area and no farmlands would be impacted because of this project.

d. Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964, and related statutes, requires there be no discrimination in Federally-assisted programs on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, provides that “each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The Executive Order makes clear that its provisions apply fully to American Indian populations and Indian tribes. Environmental justice refers to the equitable treatment of people of all races, cultures, and income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

No Environmental Justice issues were identified during investigations.

e. Secondary/Cumulative Impacts

Secondary effects are indirect impacts that are caused by or result from the project, although these may be later in time or further removed in distance, but are still reasonably foreseeable. Cumulative effects are the results of the incremental impacts of the project when added to other past, present and reasonably foreseeable future activities, regardless of which entities undertake these other activities. Cumulative effects can result from individually minor but collectively significant activities taking place over a period of time.

One unintended consequence of roadway improvements can be - depending upon local land development regulations, development demand, water/sewer availability, and other factors - encouragement of unplanned development and sprawl. Improvements to levels of service, better accommodation of merging and exiting traffic, and reductions in travel times can have land development impacts outside of the project area.

The project corridor is retail/commercial in nature and the completion of this project should have positive indirect impacts on local economic development efforts. While the project does not directly provide new site-specific access to existing businesses, it will facilitate greater accessibility and decreased congestion thereby promoting the City’s long term goals of:

- Intensification of urban land use to reduce pressure on rural resources
- [Fostering] The provision of mixed use services with local proximities

B. Air and Noise

The project is located in Forsyth County, which is within the Greensboro-Winston-Salem-High Point nonattainment area for ozone (O₃) and the Winston-Salem nonattainment area for carbon monoxide (CO) as defined by the EPA. The 1990 Clean Air Act Amendments (CAAA) designated these areas as “moderate” nonattainment areas for O₃ and CO. However, due to improved monitoring data, these areas were redesignated as “maintenance” for O₃ on November 8, 1993 and for CO on November 7, 1994. 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 Forsyth County. The Winston-Salem/Forsyth County Urban Area 2025 Long Range Transportation Plan (LRTP) and the 2002-2008 Metropolitan Transportation Improvement Program (MTIP) have been determined to conform to the intent of the SIP. The USDOT air quality conformity approval of the LRTP was May 28, 2002 and the USDOT air quality conformity approval of the MTIP was May 28, 2002. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. There have been no significant changes in the project’s design concept or scope as used in the conformity analyses.

The noise transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive traffic noise to receptors nearby. Based on past project experience, the project’s impact on noise and air quality will be insignificant.

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.

C. Historic Architectural and Archaeological Resources

The State Historic Preservation Office (HPO) recommended no architectural or archaeological surveys be conducted in connection with this project.

D. Natural Resources

The project study area lies within the Piedmont physiographic region in the north-central part of North Carolina. The topography in this section of Forsyth County is gently sloping to rolling. Commercial and natural forest areas are the major land uses in this area. Project elevation ranges from 750 to 800 ft (229-244 m) above mean sea level.

1. Soils

There are seven soil phases occurring within the project boundaries. Descriptions of the individual soil phases are presented in Table 6.

Table 7. Soil Phases found within Project Study Area.

Soil type	Slope	Hydric Soil	Hazards	Description
Ch, Chewacla loam	0-2%	Inclusions of Wehadkee	Flooding and High Water Table	Somewhat poorly drained soil on flood plains. Infiltration is moderate, and surface runoff is slow.
PaD, Pacolet fine sandy loam	10-15%	No	Erosion	Well-drained soil on uplands with moderate permeability. Infiltration is moderately slow, and surface runoff is very rapid.
PaF, Pacolet fine sandy loam	15-45%	No	Erosion	Well-drained soil on uplands with moderately slow infiltration and very rapid surface runoff.
WIC, Wilkes soils	6-10%	No	Erosion	Well-drained soil on uplands with moderately slow permeability. Infiltration is moderate, and surface runoff is rapid.
PcD2, Pacolet clay loam	10-15%	No	Slope	Well-drained soil on uplands with slow infiltration and very rapid surface runoff.
PcC2, Pacolet clay loam	6-10%	No	Erosion	Well drained soil on fairly narrow, upper side slopes on uplands with slow infiltration and rapid surface runoff.
PaC, Pacolet fine sandy loam	6-10%	No	Erosion	Well-drained soil on uplands with moderate infiltration, moderate permeability and rapid surface runoff.

Soil core samples taken throughout the project area did not exhibit hydric characteristics, such as low chroma colors and gleying. Therefore, hydric soil indicators, as defined in the "Corps of Engineers Wetland Delineation Manual", 1987, were not observed within the project study area.

2. Waters Impacted and Characteristics

One stream, Little Creek, will be directly impacted by the proposed project. Little Creek is located in sub-basin 03-07-04 of the Yadkin-Pee Dee River Basin.

Little Creek is a perennial stream flowing south under SR 3153 (Hanes Mall Boulevard) through a triple barrel culvert. Little Creek flows into Muddy Creek approximately 3.4 mi (5.5 km) downstream of the project area. The channel of Little Creek is approximately 30.0 ft (9 m) wide and has an average

depth of 7.0 ft (2.1 m). On the day of the site visit, streamflow was moderate and measured approximately 15.0 ft (4.6 m) wide and 2.0 in (5.1 cm) deep. The substrate is composed mostly of gravel, sand and silt.

3. Best Usage Classification

Streams are assigned a best usage classification by the DWQ. The classification of Little Creek [Index no. 12-94-11] is C. Class C uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. **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.**

4. Water Quality

The DWQ has initiated a basinwide approach to water quality management for the 17 river basins within the state. The basinwide approach allows for more intensive sampling of biological, chemical and physical data that can be used in basinwide assessment and planning. Benthic macroinvertebrates are intensively sampled for specific river basins. Benthic macroinvertebrates have proven to be a good indicator of water quality because they are sensitive to subtle changes in water quality, have a relatively long life cycle, are nonmobile (compared to fish) and are extremely diverse. The overall species richness and presence of indicator organisms help to assess the health of streams and rivers. All basins are reassessed every five years to detect changes in water quality and to facilitate National Pollution Discharge Elimination System (NPDES) permit review. **There are no 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 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 project.**

Nonpoint 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 nonpoint source pollution in North Carolina. Pesticides, chemical fertilizers and land application of animal wastes can be transported via runoff to receiving streams and may potentially elevate concentrations of toxic compounds and nutrients. Animal wastes can also be a source of bacterial contamination and can elevate biochemical oxygen demand. Drainage ditches in poorly drained soils enhance the transportation of stormwater into surface waters (NCDEHNR-DEM, 1993).

5. 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. Descriptions of the terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and common names (when applicable) are provided for each animal and plant species described. Plant taxonomy generally follows Radford, et al. (1968). Animal taxonomy follows Martof, et al. (1980), Menhinick (1991), Potter, et al. (1980) and Webster, et al. (1985). Subsequent references to the same organism will include the common name only. 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.

6. Biotic Communities

Five communities can be found within the project study area: Maintained/Disturbed, Piedmont/Low Mountain Alluvial Forest, Mesic/Mixed Hardwood Forest, Dry Oak/Hickory Forest and Piedmont Perennial Stream. Community boundaries within the study areas are well defined without a significant transition zone between them, and terrestrial faunal species likely to occur within the study area will exploit all communities for shelter and foraging opportunities or as movement corridors.

7. Maintained/Disturbed Community

This is the most common community type found within the project boundaries, occurring along the shoulder of Hanes Mall Boulevard including the fill slopes and the powerline easement that occurs along the north side of the project area. 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 varies along the length of the project, but averages 10.0 ft (3.0 m). Vegetation occurring along the road shoulder includes various grasses, ragweed, rose pink, pussy-toes, fescue and goldenrod. The fill slopes are extensive and consist of vegetation including loblolly and Virginia pine, red

maple, tulip poplar, sycamore, sweetgum, winged elm, bradford pear, Tree of Heaven, persimmon, smooth sumac, boxelder, flowering dogwood, black cherry, pokeweed, smartweed, evening primrose, wooly mullein, white sweet clover, blackberry and poison ivy.

The powerline easement is comprised of species similar to those found on the fill slopes including sycamore, sweetgum, eastern red cedar, tulip poplar, red maple, Virginia pine, mimosa and black cherry. Herbaceous species include lespezeza, broomsedge, beggar ticks, goldenrod, panic grass, mint and poison ivy.

8. Piedmont/Low Mountain Alluvial Forest (Piedmont)

This community is located adjacent to the banks of Little Creek and extends to the Mesic/Mixed Hardwood Forest. Dominant species within the alluvial forest include white ash, green ash, ironwood, silky dogwood, box elder, tag alder, hazelnut, black willow, hackberry, redbud, elderberry, Chinese privet, indigo bush, goldenrod, Joe-pye-weed, false nettle, jewelweed, bedstraw, Japanese grass, panic grass, arrow arum, Jack-in-the-pulpit, royal fern, Virginia creeper, grape, multiflora rose, blackberry, cross vine, Japanese honeysuckle and greenbrier.

Portions of the alluvial forest appear to include wetlands due to the prevalence of hydrophytic vegetation. However, hydric soils and hydrologic indicators are not present. Soil core samples revealed a Munsell color notation of 2.5 Y 5/3 with mottles of 7.5 YR 5/8. This area is approximately 50.0 ft (15.2 m) wide and 75.0 ft (22.9 m) long.

9. Mesic/Mixed Hardwood Forest (Piedmont Subtype)

The Mesic/Mixed Hardwood Forest community is adjacent to the Piedmont Alluvial Forest and continues upslope to the Dry Oak/Hickory Forest. This community primarily includes white ash, American beech, red oak, red maple, sweetgum, tulip poplar and blackgum. Virginia pine, scarlet oak, white oak, pignut and mockernut hickory and eastern red cedar occur along the upslope perimeter. The understory is primarily composed of hazelnut, flowering dogwood, Chinese privet, strawberry bush, maple leaf viburnum, black haw, green coneflower, false solomon's seal, groundnut, solomon's seal, Jack-in-the-pulpit, bellwort, Christmas fern, bedstraw, grape, poison ivy, greenbrier and Virginia creeper.

10. Dry Oak/Hickory Forest

The Dry Oak/Hickory Forest is upslope of the Mesic/Mixed Hardwood Forest. This community primarily includes American beech, scarlet oak, white oak, red maple, eastern red cedar, blackgum, mockernut hickory, running pine and pipsissewa.

11. Piedmont Perennial Stream

Little Creek is the only perennial stream occurring within the project study corridor. It flows south under SR 3153 (Hanes Mall Boulevard) through a box culvert through the Piedmont Alluvial Forest. The bank and channel of Little Creek are well developed, however erosion is occurring in areas where the creek meanders. Fish were observed in Little Creek, but were not identified.

12. Wildlife

Wildlife associated with the communities present within the project vicinity include: white-tailed deer, eastern mole, opossum, muskrat and raccoon.

The alluvial forest may be inhabited by reptiles and amphibians such as eastern box turtle, five-lined skink, Eastern garter snake, spotted salamander and spring peeper.

Avian species utilizing the project vicinity include: American robin, northern cardinal, northern mockingbird, song sparrow, rufous-sided towhee, red-bellied woodpecker, tufted titmouse, American crow, mourning dove, indigo bunting and blue grosbeak.

13. Summary of Anticipated Impacts

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies impacts to the natural resources in terms of area impacted and ecosystems affected. Temporary and permanent impacts are considered here as well.

Calculated impacts to terrestrial resources reflect the relative abundance of communities present within the study area. Project construction will result in clearing and degradation of portions of these communities. The project area consists of maintained/disturbed areas including commercial and paved areas, a power line easement and forested areas. Table 7 summarizes potential quantitative losses to biotic communities, resulting from project construction. Estimated impacts are derived using asymmetrical widening for the entire length of the project utilizing a study corridor width of 250 feet (76.2 m) with 200 feet (61.0 m) on the south side of SR 3153 (Hanes Mall Boulevard) and 50.0 ft (15.2 m) on the north side. Actual right-of-way impacts will be less (when based on a proposed 100-foot right-of-way). All existing paved areas have been excluded from the impact calculations.

Table 8. Anticipated Impacts to Biotic Communities

COMMUNITY	IMPACTS*
Maintained/Disturbed	5.8 (2.4)
Piedmont Low Mountain Alluvial Forest	1.6 (0.6)
Mesic/Mixed Hardwood Forest	1.6 (0.6)
Dry Oak/Hickory Forest	2.0 (0.8)
TOTAL COMMUNITY IMPACTS:	11.0 (4.4)

Note: *Values cited are in acres (hectares).

If the culvert at Little Creek is extended, it will result in a loss of approximately 80.0 ft (24.4 m) of natural stream bottom. Stream impacts often associated with culverts include alteration of flow, scour at culvert outlets, degradation of adjacent streambanks and headcutting. Loss of natural stream channel will eliminate the existing substrate and associated fauna. Many of these aquatic organisms are slow to recover, or repopulate an area, because they require a stabilized substrate for attachment. Substrate stability may take a long time to develop; therefore, changes in community composition will occur.

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.

14. 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).

b. Characteristics of Wetlands and Surface Waters

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. **Based on these criteria, jurisdictional wetlands are not present within the project boundaries.**

Little Creek is a jurisdictional surface water under Section 404 of the Clean Water Act (33 U.S.C. 1344). As noted earlier, it is anticipated that 80 ft. of stream will be impacted due to the culvert extension.

c. 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). Due to the scope of this project, minimal impacts are expected to occur. **Therefore, a Nationwide Permit 23 will most likely be applicable for the proposed project.**

A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality Certification is required prior to the issuance of the Section 404 permit. Section 401 of the Clean Water Act requires that the state issue or deny water certification for any federally permitted or licensed activity that may result in a discharge to Waters of the U.S.

d. Mitigation

The COE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological and physical integrity of Waters of the United States, specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization and compensatory mitigation) must be considered sequentially.

e. **Avoidance**

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to Waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the COE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology and logistics in light of overall project purposes. Avoidance of the stream is not possible. All three alternatives under consideration would involve some widening on the south side. Widening only on the north side was eliminated from consideration due to power lines, one business relocation, and the potential relocation of the I-40 ramps.

f. **Minimization**

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to Waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, R/W widths, fill slopes and/or road shoulder widths. Other practical mechanisms to minimize impacts to Waters of the United States crossed by the proposed project include: strict enforcement of sedimentation controls and BMP's for the protection of surface waters during the entire life of the project; reduction of clearing and grubbing activity; reduction/elimination of direct discharge into streams; reduction of runoff velocity; re-establishment of vegetation on exposed areas, judicious pesticide and herbicide usage; minimization of "in-stream" activity; and litter/debris control. Minimization specific to this project included rejecting alternatives that would widen the existing bridge entirely to the south. In addition, no temporary bridging will be required. Slopes will be minimized in the area of the culvert extension.

g. **Compensatory Mitigation**

Compensatory mitigation is not normally considered until anticipated impacts to Waters of the United States have been avoided **and** minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States. Such actions should be undertaken in areas

adjacent to or contiguous to the discharge site. Due to the minimal impacts associated with this widening project, mitigation will likely not be required. However, the final decision lies with the COE.

h. 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 USFWS. Other species may receive additional protection under separate state laws.

i. 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 7, 2002, the USFWS lists three federally-protected species for Forsyth County.

Table 9. Federally-Protected Species for Forsyth County

Scientific Name	Common Name	Status
<i>Clemmys muhlenbergii</i>	Bog turtle	Threatened Due to Similarity of Appearance ¹
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered****
<i>Cardamine micranthera</i>	Small-anthered bittercress	Endangered

Note: ****Historic record- obscure and incidental record.

Threatened due to similarity of appearance ---a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section consultation.

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 threatened with extinction throughout all or a significant portion of its range.

¹ In the November 4, 1997, Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T, and the southern population from (Virginia south to Georgia) was listed as T(S/A). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. In addition to its official status as T(S/A), the USFWS considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

General field surveys were conducted in May, August and September by NCDOT biologists.

Clemmys muhlenbergi (bog turtle)

**Threatened Due to
Similarity of Appearance
(southern population)**

The bog turtle is a small semi-aquatic reptile, measuring 3.0 – 4.5 in (7.5-11.4 cm) in length, with a weakly keeled, dark brown carapace and a blackish plastron with lighter markings along the midline. There is a conspicuous orange or yellow blotch on each side of the head. This species exhibits sexual dimorphism; the males have concave plastrons and longer, thicker tails, while females have flat plastrons and shorter tails.

The bog turtle is found in the eastern United States, in two distinct regions. The northern population, in Massachusetts, Connecticut, southern New York, New Jersey, Pennsylvania, Maryland, and Delaware is listed as Threatened and protected by the Endangered Species Act. The southern population, occurring in Virginia, North Carolina, South Carolina, Tennessee, and Georgia is listed as Threatened Due to Similarity of Appearance.

Preferred bog turtle habitat consists of fens, sphagnum bogs, swamps, marshy meadows and pastures. Areas with clear, slow-flowing water, soft mud substrate, and an open canopy are ideal. Clumps of vegetation such as tussock sedge and sphagnum moss are important for nesting and basking. This species hibernates from October to April, hiding just under the frozen surface of mud. The diet consists of beetles, moth and butterfly larvae, caddisfly larvae, snails, nematodes, millipedes, seeds and carrion.

The primary threats to the bog turtle are loss of habitat (from increased residential and commercial development as well as draining, clearing and filling wetlands) and illegal collecting for the pet trade. Nest predation and disease may also play a role in the population decrease.

This species is listed as Threatened Due to Similarity of Appearance, and is therefore not protected under Section 7 of the Endangered Species Act. However, in order to control the illegal trade of individuals from the protected northern population, federal regulations are maintained on the commercial trade of all bog turtles. No survey is required for this species.

Picoides borealis (red-cockaded woodpecker) Endangered

The red-cockaded woodpecker (RCW) once occurred from New Jersey to southern Florida and west to eastern Texas. It occurred inland in Kentucky, Tennessee, Arkansas, Oklahoma, and Missouri. The RCW is now found only in coastal states of its historic range and inland in

southeastern Oklahoma and southern Arkansas. In North Carolina moderate populations occur in the sandhills and southern coastal plain. The few populations found in the piedmont and northern coastal plain are believed to be relics of former populations.

The adult RCW has a plumage that is entirely black and white except for small red streaks on the sides of the nape in the male. The back of the RCW is black and white with horizontal stripes. The breast and underside of this woodpecker are white with streaked flanks. The RCW has a large white cheek patch surrounded by the black cap, nape, and throat.

The RCW uses open old growth stands of southern pines, particularly longleaf pine, for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are ≥ 60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 500 acres (200 hectares). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies 12.0-100.0 ft (from 3.6-30.3 m) above the ground and average 30.0-50.0 ft (9.1-15.2 m) high. They can be identified by a large incrustation of running sap that surrounds the tree. The large incrustation of sap is believed to be used as a defense by the RCW against possible predators. A clan of woodpeckers usually consists of one breeding pair and the offspring from previous years. The RCW lays its eggs in April, May, and June and hatch 10 to 12 days later. Clutch size ranges in number from 3-5 eggs. All members of the clan share in raising the young. Red-cockaded woodpeckers feed mainly on insects but may feed on seasonal wild fruits.

BIOLOGICAL CONCLUSION

NO EFFECT

Based on field surveys, suitable nesting habitat in the form of large pine trees with little understory is not present within the project vicinity. The project vicinity is comprised of maintained, alluvial and mixed hardwood communities. A review of the NCNHP database of rare species and unique habitats on September 20, 2001 has no record of the presence of red-cockaded woodpecker within the project vicinity. Therefore, project construction will not affect the red-cockaded woodpecker.

Cardamine microanthera (small-anthered bittercress) Endangered

Flowers Present: April - May

Small-anthered bittercress is a slender, erect, perennial herb with fibrous roots. This herb has single (rarely more) simple or branched stems. The stem leaves are alternate, mostly unlobed, crenate, and cuneate. The flowers which are borne in April and May have four white petals, six stamens, and small, round anthers.

Small-anthered bittercress is found in seepages, moist woods, and on streambanks along a few streams in Forsyth and Stokes counties. North Carolina populations are presently confined to Little Peter's Creek, Peter's Creek, Elk Creek, and another unnamed tributary to the Dan River in Stokes County. This herb can be found on gravelly sand bars and in the moist soil of rock crevices. Small-anthered bittercress occurs in soils of the Rion, Pacolet, and Wateree series, where slopes are 25 to 60 percent. Areas that are fully or partially shaded by shrubs and trees are preferred.

BIOLOGICAL CONCLUSION

NO EFFECT

Based on field surveys, suitable habitat in the form of moist woods is present within the alluvial forest community. However, this area floods intermittently thereby producing heavy sediment deposition. Invasive species, such as Japanese grass and Japanese honeysuckle, are limiting factors for the survival of small-anthered bittercress. These species are present throughout the alluvial forest. During the survey, no plants of the genus *Cardamine* were observed. A review of the NCNHP database of rare species and unique habitats on 20 September 2001 has no record of the presence of small-anthered bittercress within the project vicinity. Therefore, project construction will not affect the small-anthered bittercress.

j. Federal Species of Concern and State Listed Species

There is one Federal Species of Concern (FSC) listed for Forsyth County. A mussel, the brook floater (*Alasmidonta Heterodon*) is the only Federal Species of concern listed for Forsyth 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.

E. Flood Hazard Evaluation

The project is located in the Yadkin-Pee Dee River Basin. Forsyth County is currently participating in the National Flood Insurance Regular Program. The crossing of Little Creek is located in a designated flood hazard zone where a detailed study has been performed. The proposed minor encroachment will not impact the flood hazard zone. A copy of the Flood Boundary and Floodway Map for Forsyth County, North Carolina showing the 100 and 500-year flood fringes is included in Figure 5. The floodplain at this crossing consists primarily of woodlands. No flood history information was available for the subject crossing

F. 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 the project limits by the Geotechnical Unit of NCDOT. No potential sites for underground storage tanks (UST's) were identified in the project vicinity. As a result of this study, this project was considered to have a low risk for hazardous materials involvement.

G. Geodetic Survey Markers

This project will not impact geodetic survey markers.

VII. COMMENTS AND COORDINATION

A. Comments Solicited From Agencies

Input concerning the effects of the proposed on the environment was requested from the appropriate Federal, State, and Local agencies in preparing this Categorical Exclusion. 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
- Forsyth County Public Schools
- *City of Winston-Salem

*Denotes agencies from which input was received.

B. Citizens' Informational Workshop

A Citizens' Informational Workshop was held on April 4, 2001 at the Little Creek Recreation Center to obtain comments and/or suggestions about the proposed project from the public. Seven citizens attended to express their interest in the project. The consensus of those attending the workshop was Bridge No. 436 and SR 3153 (Hanes Mall Boulevard) need to be upgraded to improve capacity and safety.

C. Public Hearing

The opportunity for a public hearing will be given, following the circulation of the document. If held, the public hearing will provide more 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

This Categorical Exclusion was prepared by the North Carolina Department of Transportation and the Federal Highway Administration. The following personnel were instrumental in the preparation of this document.

A. North Carolina Department of Transportation

1. Gregory J. Thorpe, Ph.D., Environmental Management Director,
Project Development and Environmental Analysis Branch

Manager responsible for highway planning and environmental impact analyses, 15 years of experience.
2. Mr. Robert P. Hanson, P. E., Assistant Manager, Project Development and
Environmental Analysis Branch

Manager responsible for managing highway planning and environmental impact analyses, 16 years of experience.
3. Mr. Charles R. Cox, P. E., Project Development Engineer Unit Head,
Project Development and Environmental Analysis Branch

Engineer responsible for managing highway planning and environmental impact analyses, 14 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, 15 years of experience.
5. Mr. James Speer, P. E., Project Engineer, Roadway Design Unit.

Engineer responsible for managing the preliminary highway design preparation, 18 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, 4 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, 28 years of experience.
8. **Ms. Mary Pope Furr, Architectural Historian, Project Development and Environmental Analysis Branch**

Historian responsible for assessing potential impacts to Historic Architectural Resources, 7 years of experience.
9. **Dr. Gary Glover, Archaeology, Project Development and Environmental Analysis Branch**

Archaeologist responsible for assessing potential impacts to archaeological resources, 24 years of experience.
10. **Mr. Michael Summers, Traffic Engineering Branch.**

Engineer responsible for traffic analysis and review, 26 years of experience.
11. **Mr. Charles Sturdivant, Project Development and Environmental Analysis Branch**

Illustrator responsible for all graphics for the Project Development and Environmental Analysis Branch, 28 years of experience.
12. **Mr. Robert Deaton, Community Planner, Project Development and Environmental Analysis Branch.**

Planner responsible for preparing the Community Impact Assessment, 11 years of experience.

B. Federal Highway Administration

1. **Ms. Emily Lawton, Operations Engineer, Federal Highway Administration.**

Manager responsible for NCDOT-TIP federal aid projects, 12 years experience.

2. **Mr. Felix Davila, Area Engineer, Federal Highway Administration.**

Engineer responsible for NCDOT-TIP federal aid projects, 15 years of experience.

MJ/pr

BEGIN PROJECT

CASUAL FURNITURE WORLD

SHOP

SHOP

KESTER MILL ROAD

CARMIKE CINEMA 12

WAL-MART
PARKING LOT

I-40 WEST BOUND

I-40 EAST BOUND

PROPOSED RIGHT-OF-WAY

EXISTING RIGHT-OF-WAY

BRIDGE NO. 436

LITTLE CREEK

EXISTING CULVERT




NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

IMPROVEMENTS
TO SR 3153 (HANES MALL BOULEVARD)
FROM KESTER MILL ROAD TO WEST OF
WESTGATE CENTER DRIVE
WINSTON-SALEM, FORSYTH COUNTY
TIP NO. U-3837



FIGURE 2

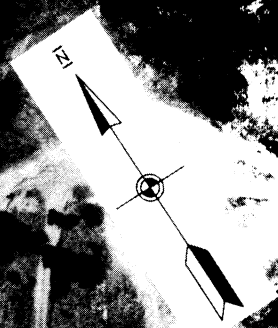
MATCH LINE A

 NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

IMPROVEMENTS
TO SR 3153 (HANES MALL BOULEVARD)
FROM KESTER MILL ROAD TO WEST OF
WESTGATE CENTER DRIVE
WINSTON-SALEM, FORSYTH COUNTY
TIP NO. U-3837

0 50 100
FIGURE 2

US 421 SOUTHBOUND



ING CULVERT

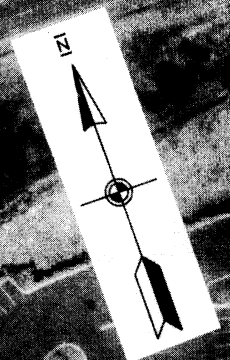
PROPOSED RIGHT-OF-WAY

EXISTING RIGHT-OF-WAY

SR 3153 (HANES MALL BOULEVARD)

MATCHLINE A

MATCHLINE B



SHOP

TARGET

LINENS'N THINGS

SHOP
SHOP

KOHL'S

SHOP

HANES POINT SHOPPING CENTER


END PROJECT

PROPOSED RIGHT-OF-WAY

PROPOSED UPGRADE FOR SIGNAL

EXISTING RIGHT-OF-WAY

MATCH LINE B

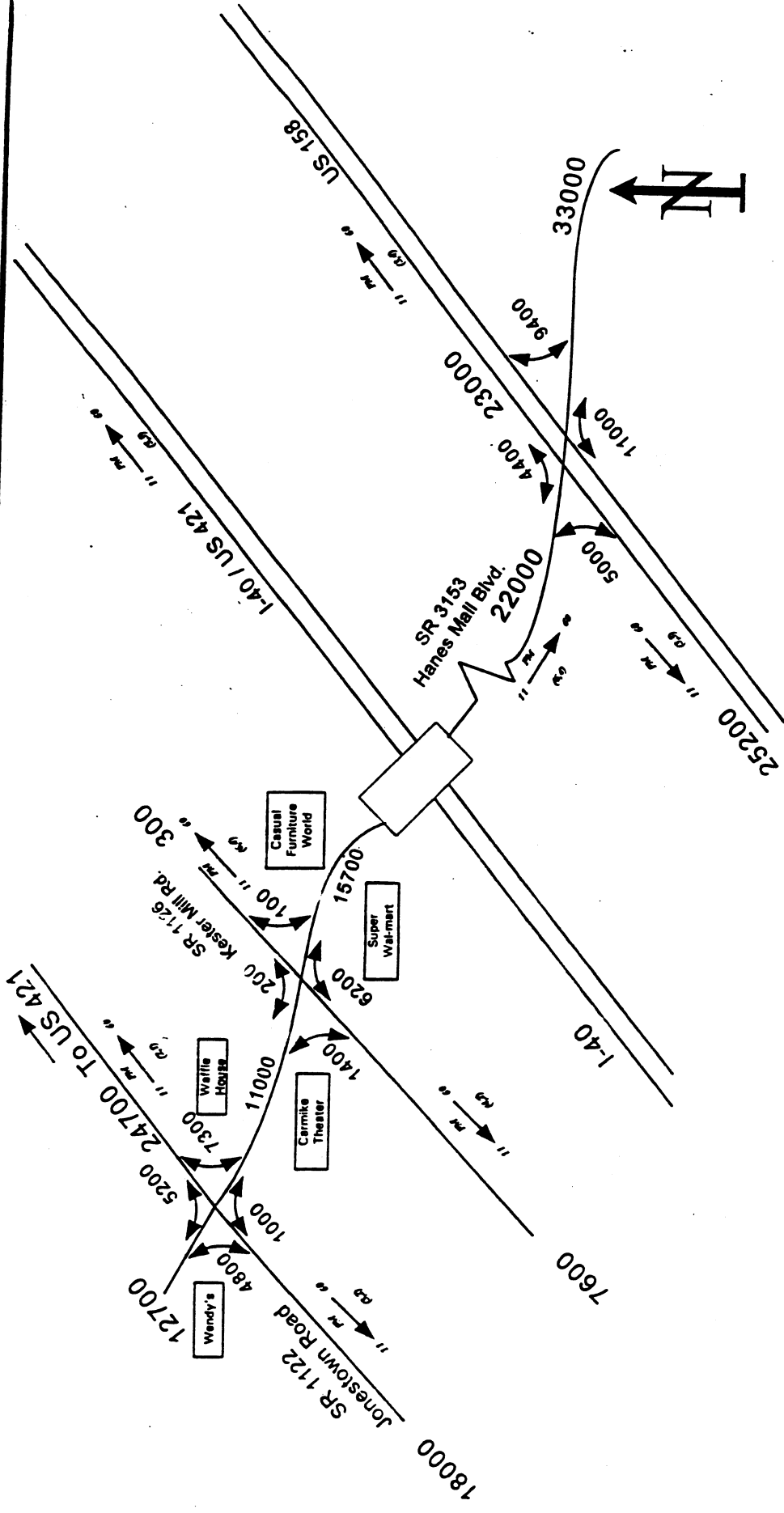
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

IMPROVEMENTS
TO SR 3153 (HANES MALL BOULEVARD)
FROM KESTER MILL ROAD TO WEST OF
WESTGATE CENTER DRIVE
WINSTON-SALEM, FORSYTH COUNTY
TIP NO. U-3837

0 feet 100
SCALE

FIGURE 2

HOTEL



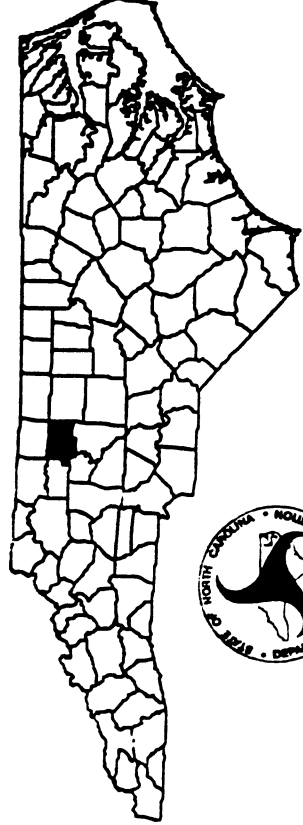
2000 ESTIMATED ADT



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

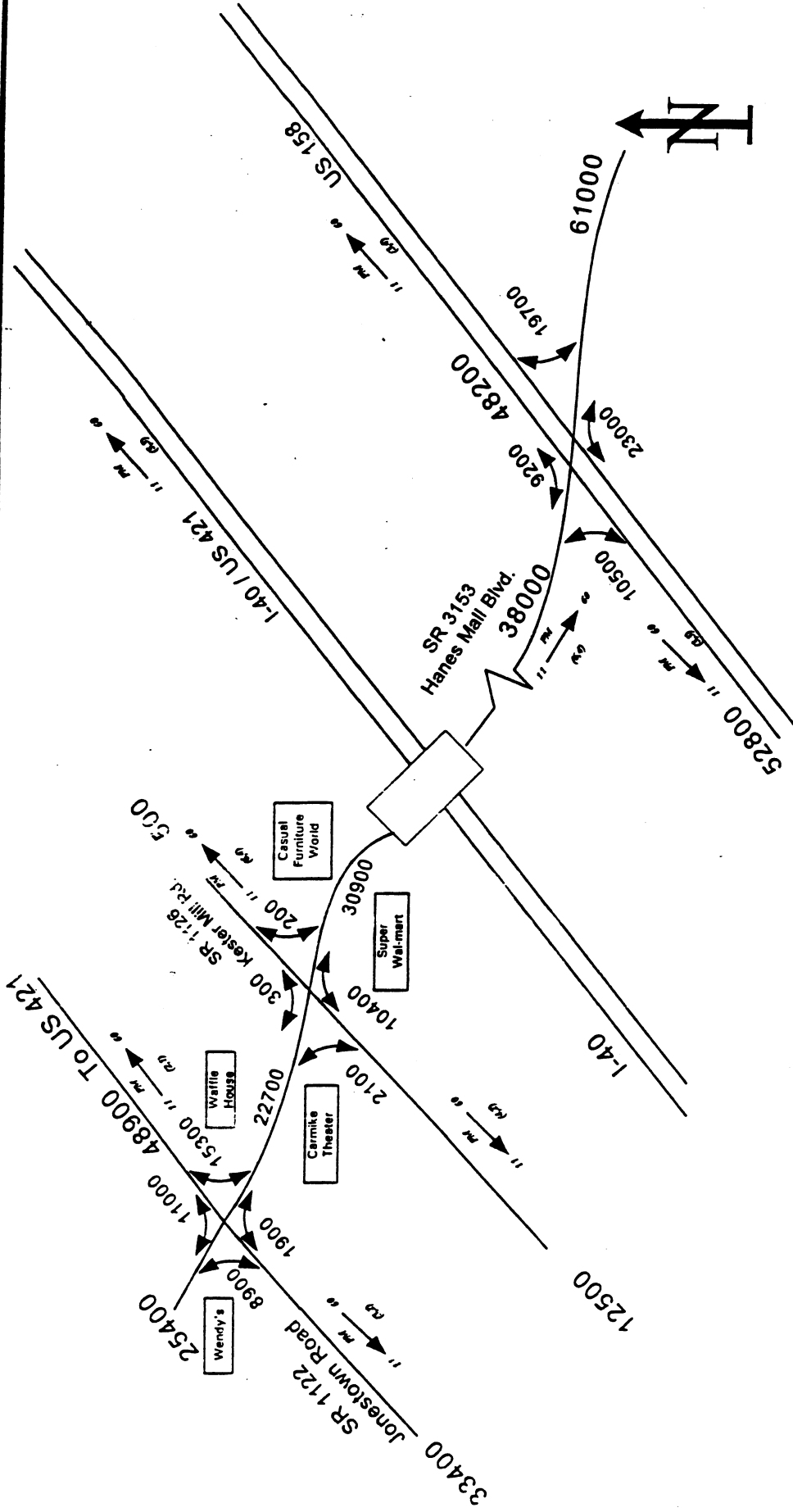
BRIDGE NO. 456
OVER I-40 AND SR 3153
(HANES MALL BOULEVARD)
IMPROVEMENTS FROM KESTER MILL ROAD TO WEST OF WESTGATE CENTER DRIVE
FORSYTH COUNTY
TIP PROJECT NO. U-3637

FIGURE 3A



LEGEND

- ### VPD—# OF VEHICLES PER DAY
- ###- MUCH LESS THAN ## VPD
- X MOVEMENT PROHIBITED
- DIHV $\xrightarrow{\text{PM}}$ $\xrightarrow{\text{D}}$ (d.t) D
INDICATES THE DIRECTION D.
REVERSE FLOW FOR AM PEAK.
- DIHV DESIGN HOURLY VOLUME (%) = K30
- K30 - 30TH HIGHEST HOURLY VOLUME
- DIRECTIONAL SPLIT (%)
- PM PEAK PERIOD
- DUALS, TT-ST'S (%)



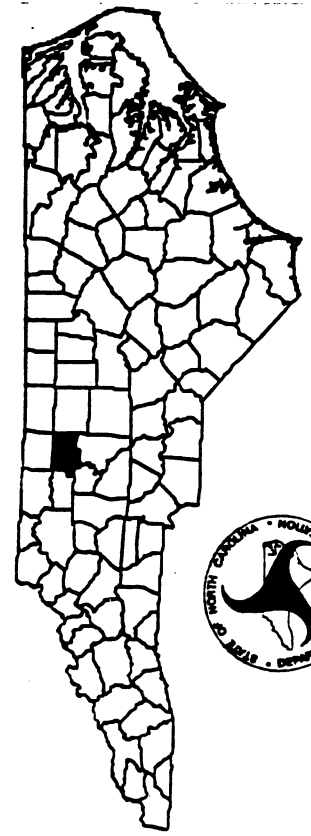
2025 ESTIMATED ADT



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

BRIDGE NO. 436
OVER I-40 AND SR 3153
(HANES MALL BOULEVARD)
IMPROVEMENTS, FROM KESTER MILL ROAD TO WEST OF WESTGATE CENTER DRIVE
FORSYTH COUNTY
TIP PROJECT NO. U-3837

FIGURE 3B



LEGEND

- ### VPD—# OF VEHICLES PER DAY
- ### MUCH LESS THAN ## VPD
- X MOVEMENT PROHIBITED
- DIRV - PM (d, t) → D
- DIRV DESIGN HOURLY VOLUME (%) - K30
- K30 - 30TH HIGHEST HOURLY VOLUME
- D DIRECTIONAL SPLIT (%)
- PM PEAK PERIOD
- DUALS, TT-ST'S (%)
- NOTE: DIRV → D INDICATES THE DIRECTION D. REVERSE FLOW FOR AM PEAK.

U-3837

PROPOSED ROADWAY TYPICAL SECTION

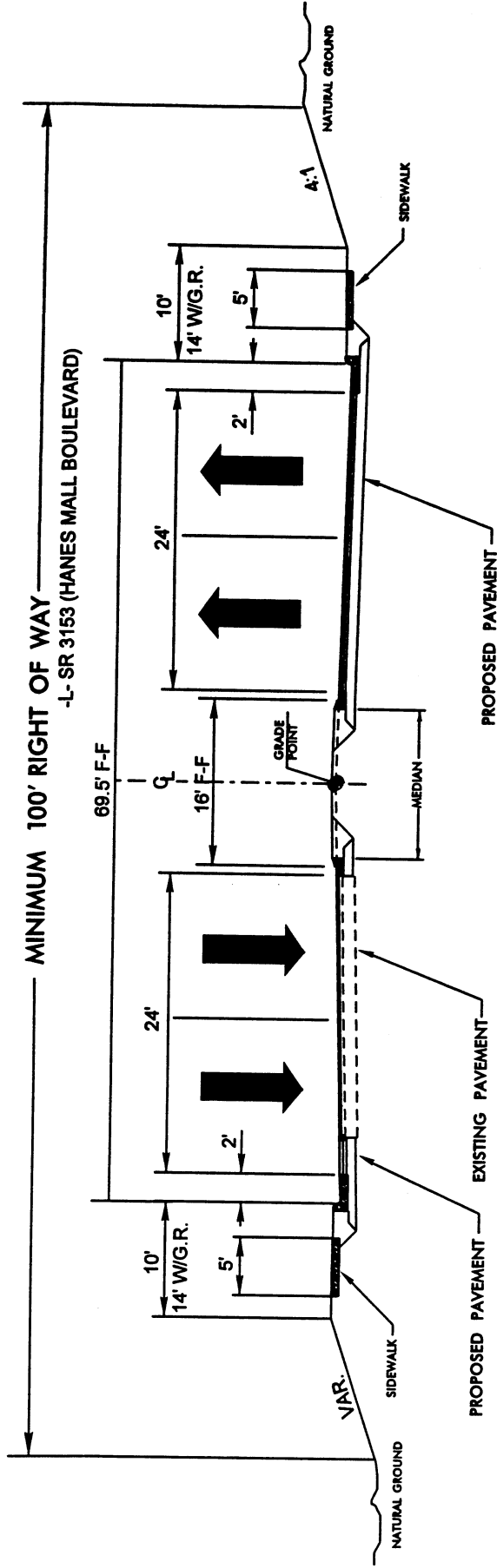
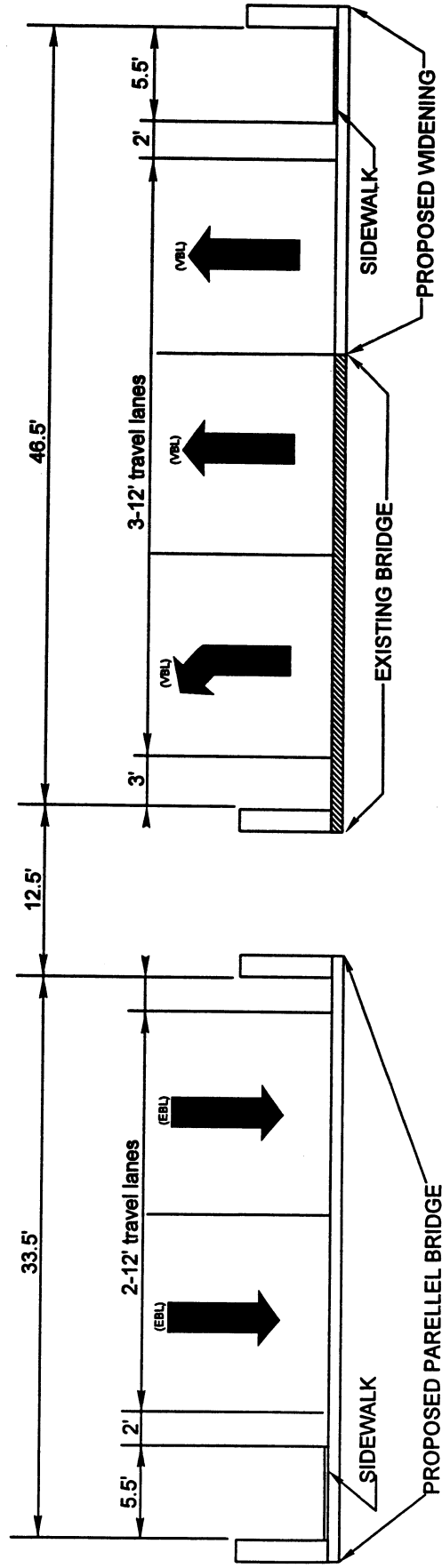


FIGURE 4A

U-3837

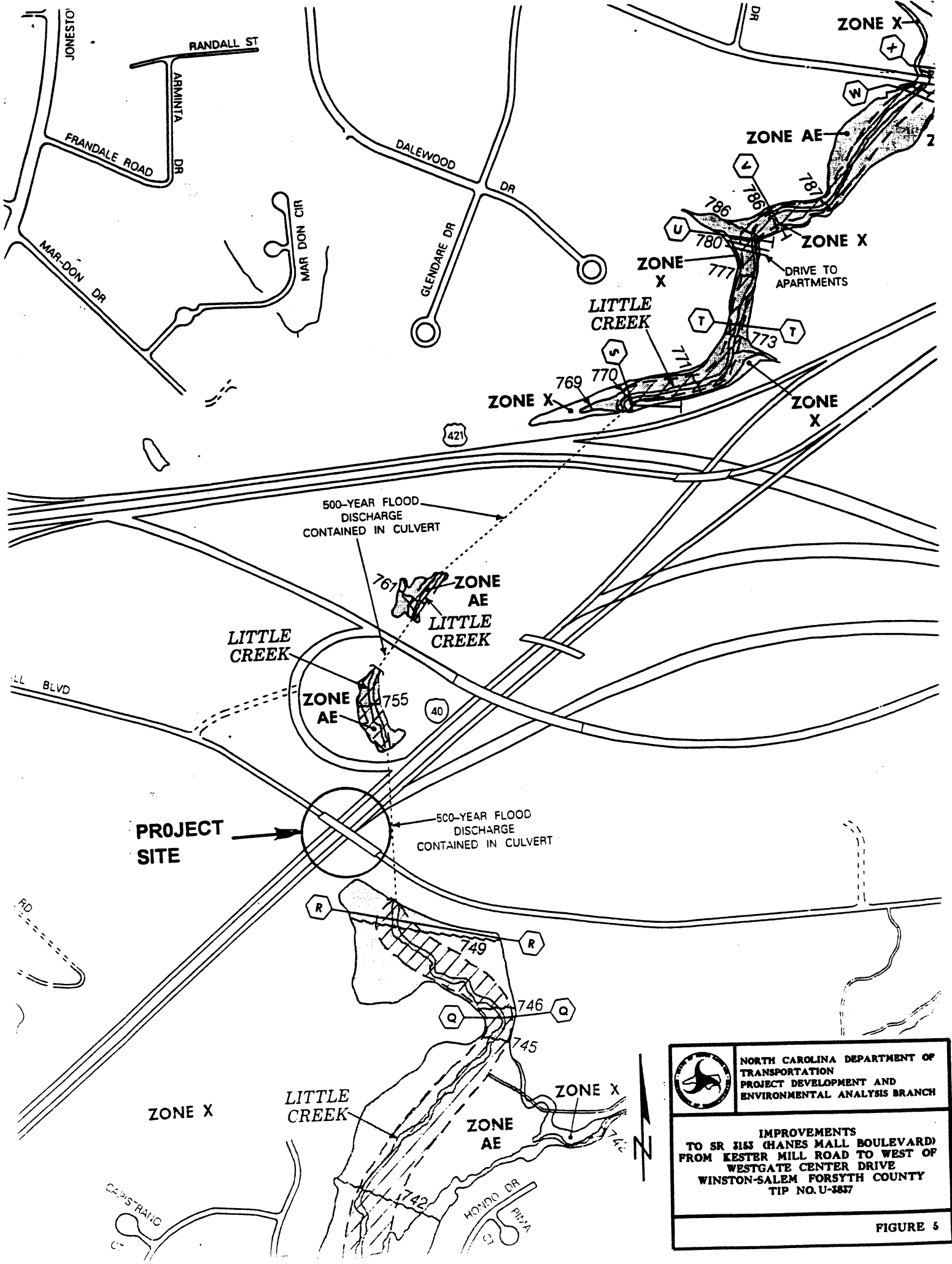
PROPOSED BRIDGE TYPICAL SECTION



Hanes Mall Boulevard (SR 3153)

Bridge No. 436 over I-40

FIGURE 4B

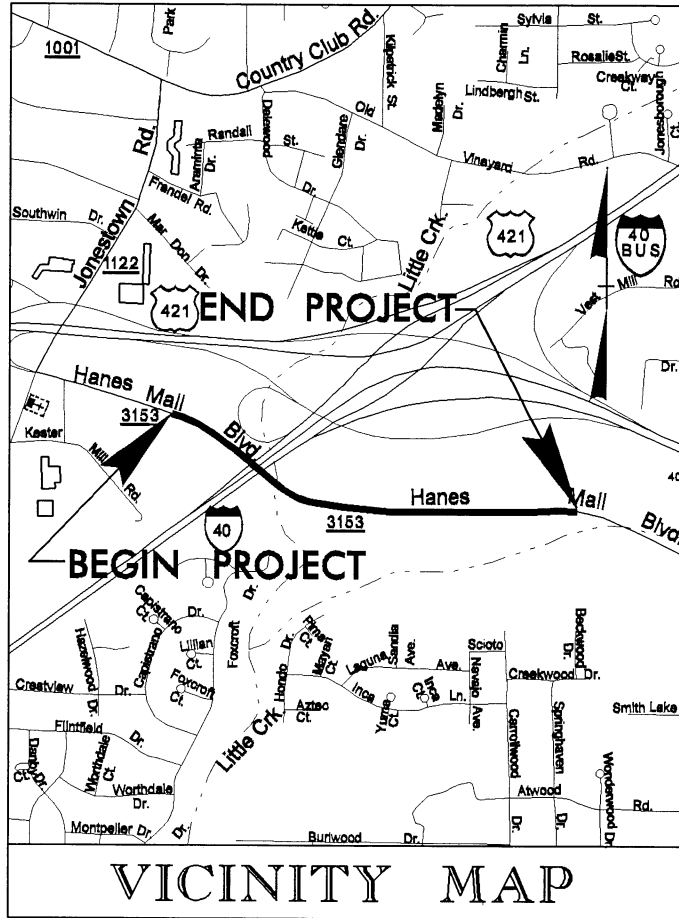


	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH</p>
<p>IMPROVEMENTS TO SR 3153 (HANES MALL BOULEVARD) FROM KESTER MILL ROAD TO WEST OF WESTGATE CENTER DRIVE WINSTON-SALEM FORSYTH COUNTY TIP NO. U-3837</p>	
<p>FIGURE 5</p>	

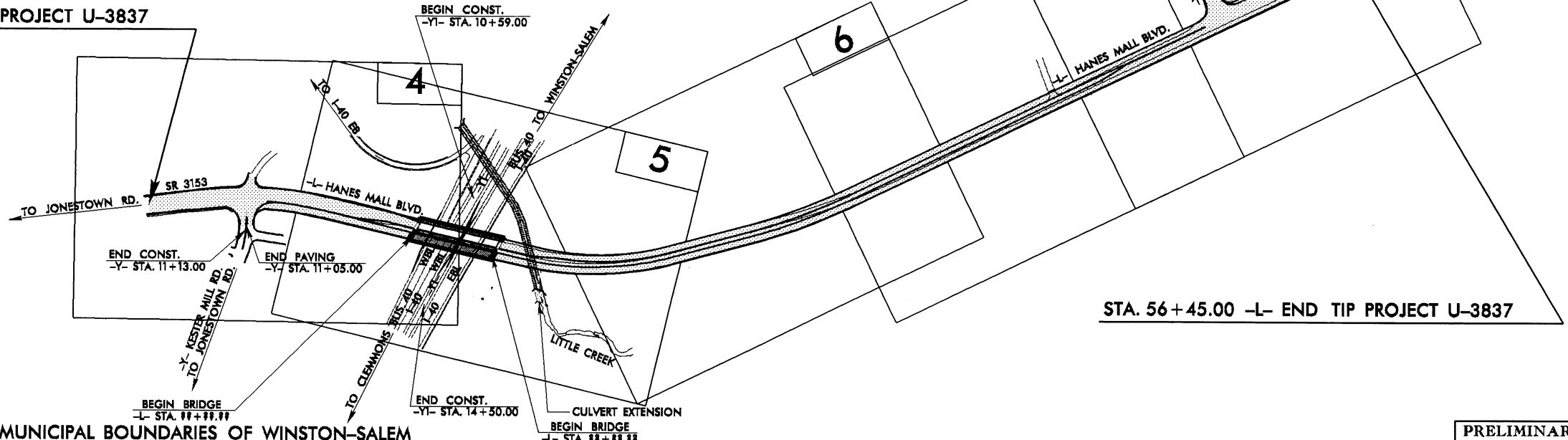
09/08/99

CONTRACT: C201013 TIP PROJECT: U-3837

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



STA. 10+00.00 -L- BEGIN TIP PROJECT U-3837



STA. 56+45.00 -L- END TIP PROJECT U-3837

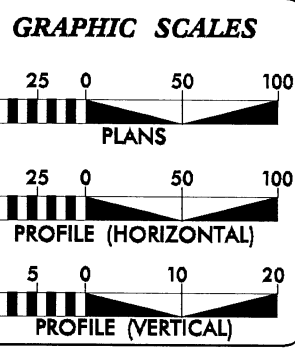
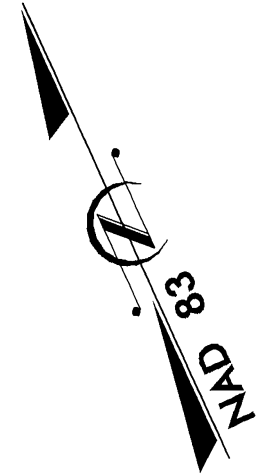
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WINSTON-SALEM
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
FORSYTH COUNTY

**LOCATION: WINSTON-SALEM - BRIDGE NO. 436 OVER I-40 ON SR 3153
(HANES MALL BLVD.) FROM WEST OF KESTER MILL ROAD
TO WEST OF WESTGATE CENTER DRIVE**
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB AND
GUTTER, SIGNALS, GUARDRAIL, RETAINING WALL,
STRUCTURE, AND CULVERT EXTENSION**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3837	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34988.1.1	STP-3153(1)	PE	
34988.2.1	STP-3153(1)	RW, UTILITIES	



DESIGN DATA

ADT 2004 =	18132
ADT 2025 =	30900
DHV =	11 %
D =	60 %
T =	10 % *
V =	50 MPH
* TTST 4 %	DUAL 6 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3837 =	
LENGTH STRUCTURE TIP PROJECT U-3837 =	
TOTAL LENGTH OF TIP PROJECT U-3837 =	0.880 mi.

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **OCTOBER 23, 2003**

LETTING DATE: **OCTOBER 19, 2004**

JAMES A. SPEER, PE
PROJECT ENGINEER

DANNY GARDNER
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER P.E.

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED DIVISION ADMINISTRATOR

DATE

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C -----
Prop. Slope Stakes Fill	----- F -----
Prop. Woven Wire Fence	-----○-----
Prop. Chain Link Fence	-----□-----
Prop. Barbed Wire Fence	-----◇-----
Prop. Wheelchair Ramp	-----WCR-----
Curb Cut for Future Wheelchair Ramp	-----CCFR-----
Exist. Guardrail	----- -----
Prop. Guardrail	----- -----
Equality Symbol	-----⊕-----
Pavement Removal	-----X-----

RIGHT OF WAY

Baseline Control Point	-----◆-----
Existing Right of Way Marker	-----△-----
Exist. Right of Way Line w/Marker	-----△-----
Prop. Right of Way Line with Proposed RW Marker (Iron Pin & Cap)	-----▲-----
Prop. Right of Way Line with Proposed (Concrete or Granite) RW Marker	-----⊙-----
Exist. Control of Access Line	-----⊙-----
Prop. Control of Access Line	-----⊙-----
Exist. Easement Line	-----E-----
Prop. Temp. Construction Easement Line	-----E-----
Prop. Temp. Drainage Easement Line	-----TDE-----
Prop. Perm. Drainage Easement Line	-----PDE-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----BZ-----
Flow Arrow	-----→-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	-----CONC-----
Bridge Wing Wall, Head Wall and End Wall	-----CONC WW-----

MINOR	
Head & End Wall	-----CONC HW-----
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	-----CB-----
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	-----●-----
Exist. Power Pole	-----●-----
Prop. Power Pole	-----○-----
Exist. Telephone Pole	-----●-----
Prop. Telephone Pole	-----○-----
Exist. Joint Use Pole	-----●-----
Prop. Joint Use Pole	-----○-----
Telephone Pedestal	-----
UG Telephone Cable Hand Hold	-----
Cable TV Pedestal	-----
UG TV Cable Hand Hold	-----
UG Power Cable Hand Hold	-----
Hydrant	-----
Satellite Dish	-----
Exist. Water Valve	-----
Sewer Clean Out	-----
Power Manhole	-----
Telephone Booth	-----
Cellular Telephone Tower	-----
Water Manhole	-----
Light Pole	-----
H-Frame Pole	-----
Power Line Tower	-----
Pole with Base	-----
Gas Valve	-----
Gas Meter	-----
Telephone Manhole	-----
Power Transformer	-----
Sanitary Sewer Manhole	-----
Storm Sewer Manhole	-----
Tank; Water, Gas, Oil	-----
Water Tank With Legs	-----
Traffic Signal Junction Box	-----
Fiber Optic Splice Box	-----
Television or Radio Tower	-----
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----W-----
Designated Water Line (S.U.E.*)	-----W-----
Sanitary Sewer	-----SS-----
Recorded Sanitary Sewer Force Main	-----FSS-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----FSS-----
Recorded Gas Line	-----G-----
Designated Gas Line (S.U.E.*)	-----G-----
Storm Sewer	-----S-----
Recorded Power Line	-----P-----
Designated Power Line (S.U.E.*)	-----P-----
Recorded Telephone Cable	-----T-----
Designated Telephone Cable (S.U.E.*)	-----T-----
Recorded U/G Telephone Conduit	-----TC-----
Designated U/G Telephone Conduit (S.U.E.*)	-----TC-----
Unknown Utility (S.U.E.*)	-----?UTL-----
Recorded Television Cable	-----TV-----
Designated Television Cable (S.U.E.*)	-----TV-----
Recorded Fiber Optics Cable	-----FO-----
Designated Fiber Optics Cable (S.U.E.*)	-----FO-----
Exist. Water Meter	-----
UG Test Hole (S.U.E.*)	-----
Abandoned According to U/G Record	-----ATTUR-----
End of Information	-----E.O.I-----

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----
Exist. Iron Pin	-----
Property Corner	-----
Property Monument	-----
Property Number	-----
Parcel Number	-----
Fence Line	-----X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----WLB-----
Medium Quality Wetland Boundaries	-----MO WLB-----
Low Quality Wetland Boundaries	-----LO WLB-----
Proposed Wetland Boundaries	-----WLB-----
Existing Endangered Animal Boundaries	-----EAB-----
Existing Endangered Plant Boundaries	-----EPB-----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	-----R/W-----
Guard Post	-----GP-----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

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

RAILROADS

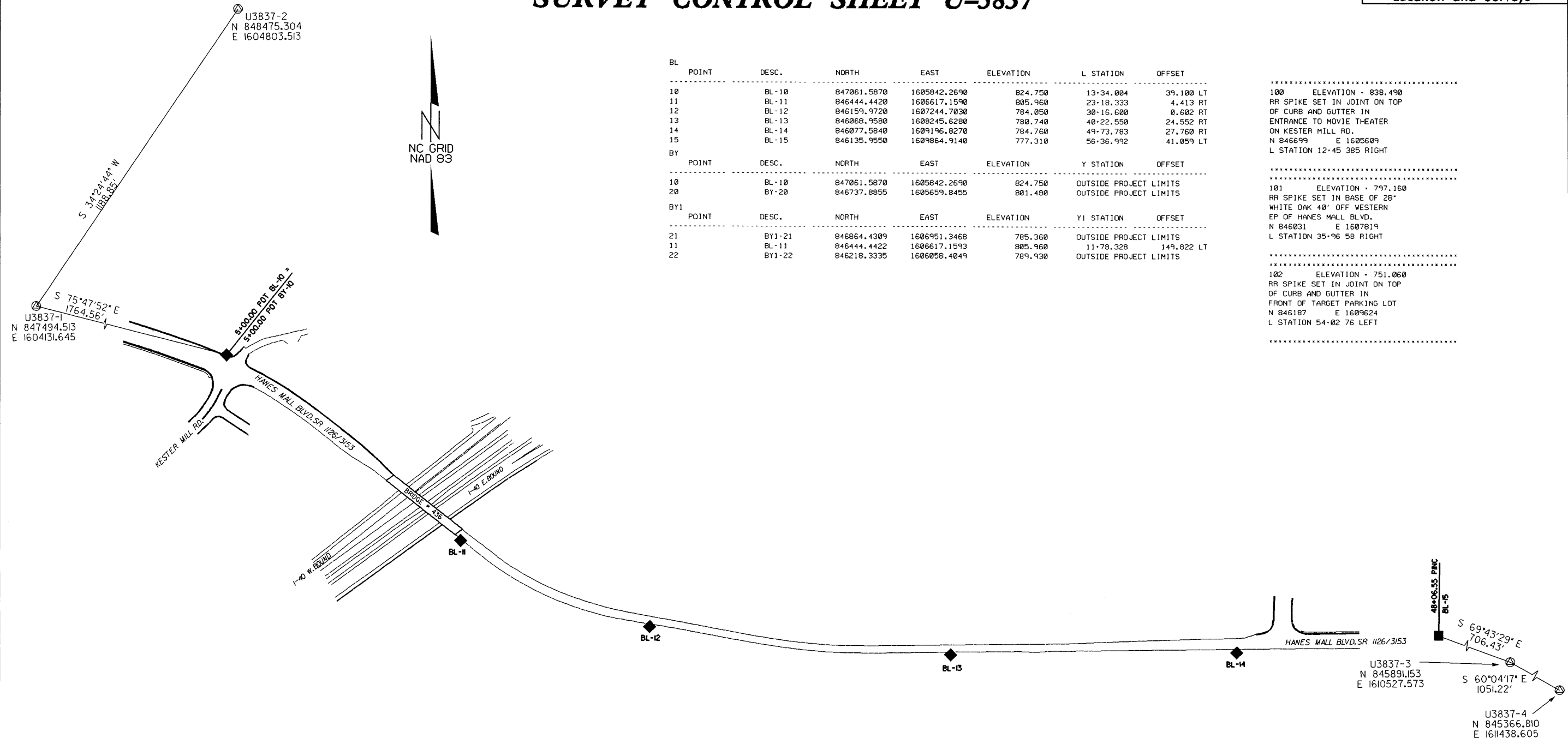
Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

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SURVEY CONTROL SHEET U-3837

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BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BL-10	847061.5870	1605842.2690	824.750	13+34.804	39.100 LT
11	BL-11	846444.4420	1606617.1590	805.960	23+18.333	4.413 RT
12	BL-12	846159.9720	1607244.7030	784.050	30+16.600	0.602 RT
13	BL-13	846068.9580	1608245.6280	780.740	40+22.550	24.552 RT
14	BL-14	846077.5840	1609196.8270	784.760	49+73.783	27.760 RT
15	BL-15	846135.9550	1609864.9140	777.310	56+36.992	41.059 LT

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
10	BL-10	847061.5870	1605842.2690	824.750	OUTSIDE PROJECT LIMITS	
20	BY-20	846737.8855	1605659.8455	801.480	OUTSIDE PROJECT LIMITS	

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
21	BY1-21	846864.4309	1606951.3468	785.360	OUTSIDE PROJECT LIMITS	
11	BL-11	846444.4422	1606617.1593	805.960	11+78.328	149.822 LT
22	BY1-22	846218.3335	1606058.4049	789.930	OUTSIDE PROJECT LIMITS	

.....

100 ELEVATION - 838.490
RR SPIKE SET IN JOINT ON TOP
OF CURB AND GUTTER IN
ENTRANCE TO MOVIE THEATER
ON KESTER MILL RD.
N 846699 E 1605609
L STATION 12+45 385 RIGHT

.....

101 ELEVATION - 797.160
RR SPIKE SET IN BASE OF 28"
WHITE OAK 40' OFF WESTERN
EP OF HANES MALL BLVD.
N 846031 E 1607819
L STATION 35+96 58 RIGHT

.....

102 ELEVATION - 751.060
RR SPIKE SET IN JOINT ON TOP
OF CURB AND GUTTER IN
FRONT OF TARGET PARKING LOT
N 846187 E 1609624
L STATION 54+02 76 LEFT

.....

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3837-1" WITH STATE PLANE GRID COORDINATES OF NORTHING: 847494.513(f1) EASTING: 1604131.645(f1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993920 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3837-1" TO L- STATION 10+00.00 IS S 75°29'47" E 1425.32' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT U3837_CONTROL_LS_031009.TXT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/U3837_CONTROL_LS_031009.TXT)

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

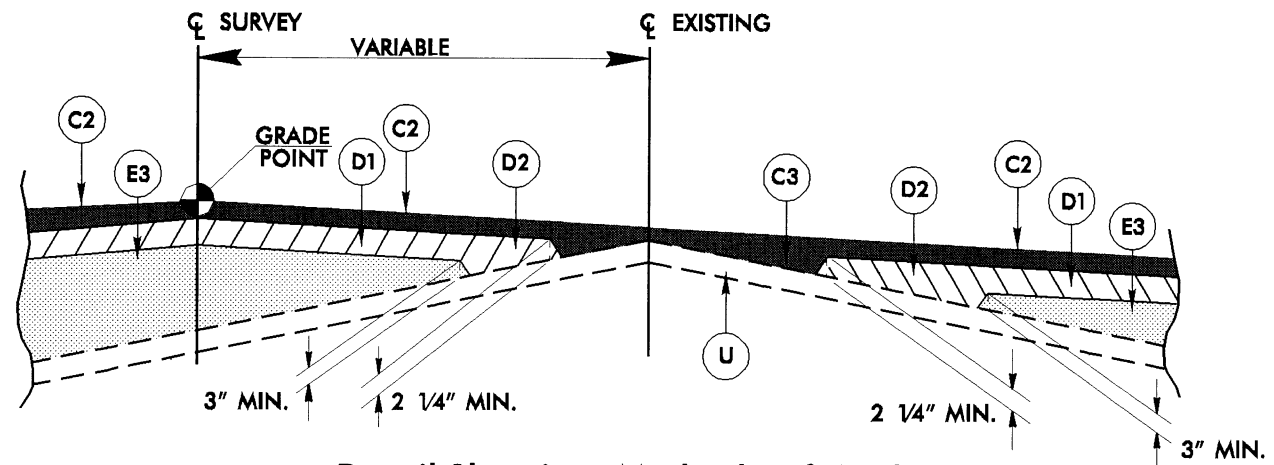
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116 South
116 South

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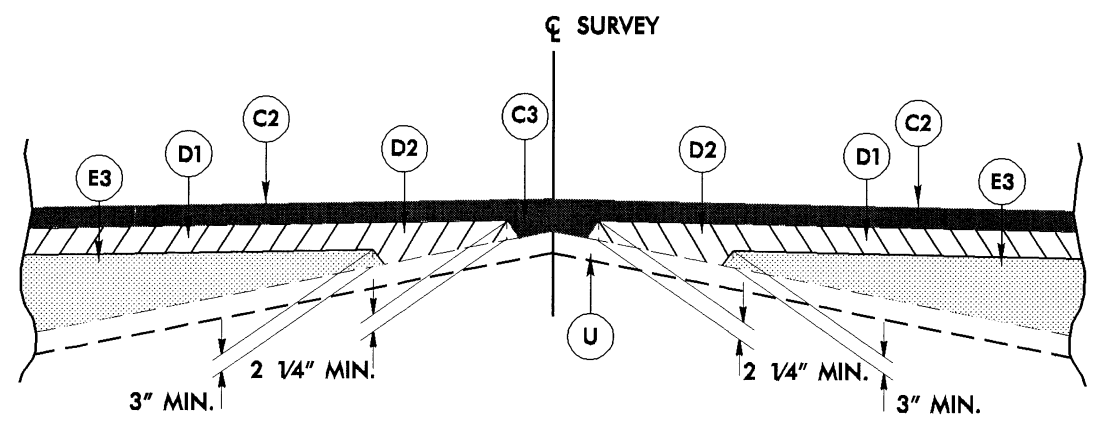
PROJECT REFERENCE NO. U-3837	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 80.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 80.5C, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 80.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 466 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 427.5 LBS. PER SQ. YD.
E2	PROP. APPROX. 7½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 427.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 6½" IN DEPTH.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-6" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND. (KEYED IN)
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

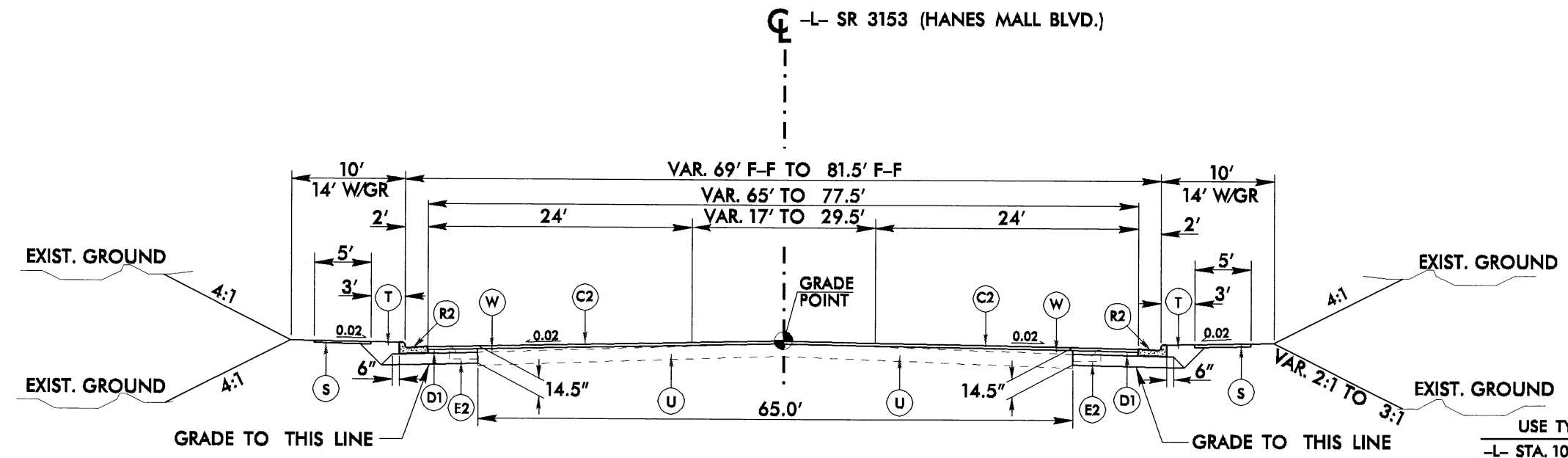
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Detail Showing Method Of Wedging



Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

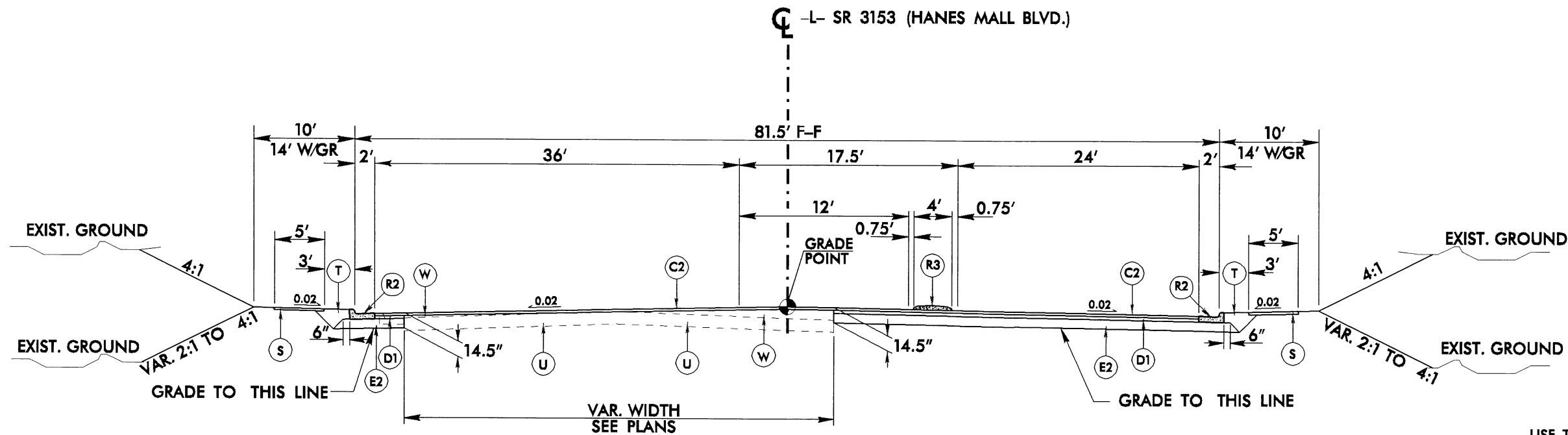
USE TYPICAL SECTION NO. 1
-L- STA. 10+00.00 TO STA. 13+38.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 1 TO TYPICAL SECTION NO. 2 -L- STA. 13+38.00 TO STA. 14+45.00

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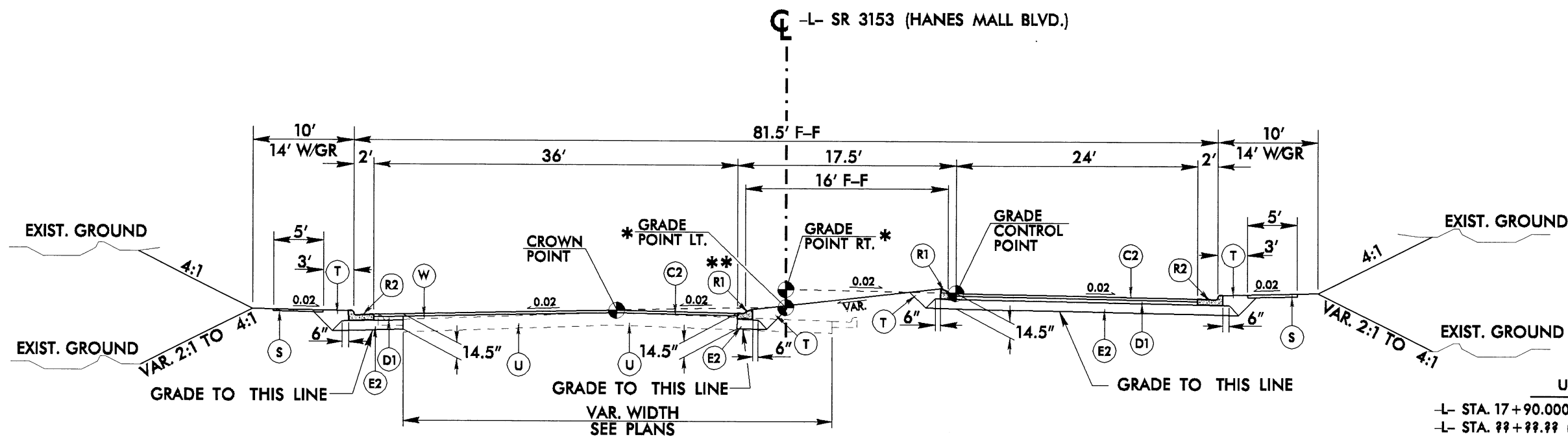
PROJECT REFERENCE NO. U-3837		SHEET NO. 2-A	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
PAVEMENT SCHEDULE			
C1	1 1/2" TYPE 69.5C		
C2	3" TYPE 69.5C		
C3	VAR. DEPTH TYPE 69.5C		
D1	4" TYPE 119.0C		
D2	VAR. DEPTH TYPE 119.0C		
E1	4" TYPE B25.0C		
E2	7 1/2" TYPE B25.0C		
E3	VAR. DEPTH TYPE B25.0C		
R1	1'-8" CONCRETE CURB AND GUTTER		
R2	2'-8" CONCRETE CURB AND GUTTER		
R3	8" MONOLITHIC CONCRETE ISLAND (KEYED IN)		
S	4" CONCRETE SIDEWALK		
T	EARTH MATERIAL		
U	EXISTING PAVEMENT		
W	VAR. DEPTH ASPH. PVMT. (SEE WEDGING DETAIL)		



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 14+45.00 TO STA. 17+50.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 2 TO TYPICAL SECTION NO. 3 -L- STA. 17+50.00 TO STA. 17+90.00



TYPICAL SECTION NO. 3

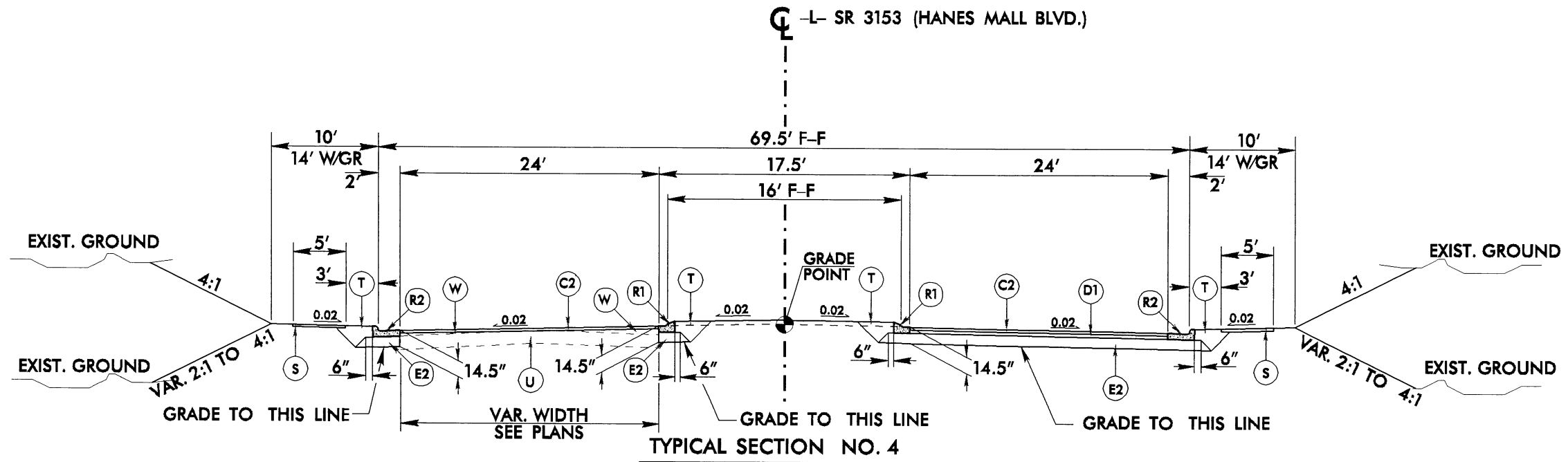
USE TYPICAL SECTION NO. 3
-L- STA. 17+90.00 TO STA. ??+?? (BEG BRIDGE)
-L- STA. ??+?? (END BRIDGE) TO -L- STA 24+15.24

NOTE: TRANSITION FROM TYPICAL SECTION NO. 3 TO TYPICAL SECTION NO. 4 -L- STA. 24+15.24 TO STA. 27+15.24
*NOTE: THERE IS A SEPARATE GRADE FOR THE LEFT AND RIGHT -L- STA. 17+50.00 TO -L- STA. 26+10.00
**NOTE: TRANSITION R1 TO R2 AT BRIDGE APPROACHES SEE PLAN VIEW FOR LOCATIONS AND DETAIL SHEET 2-E

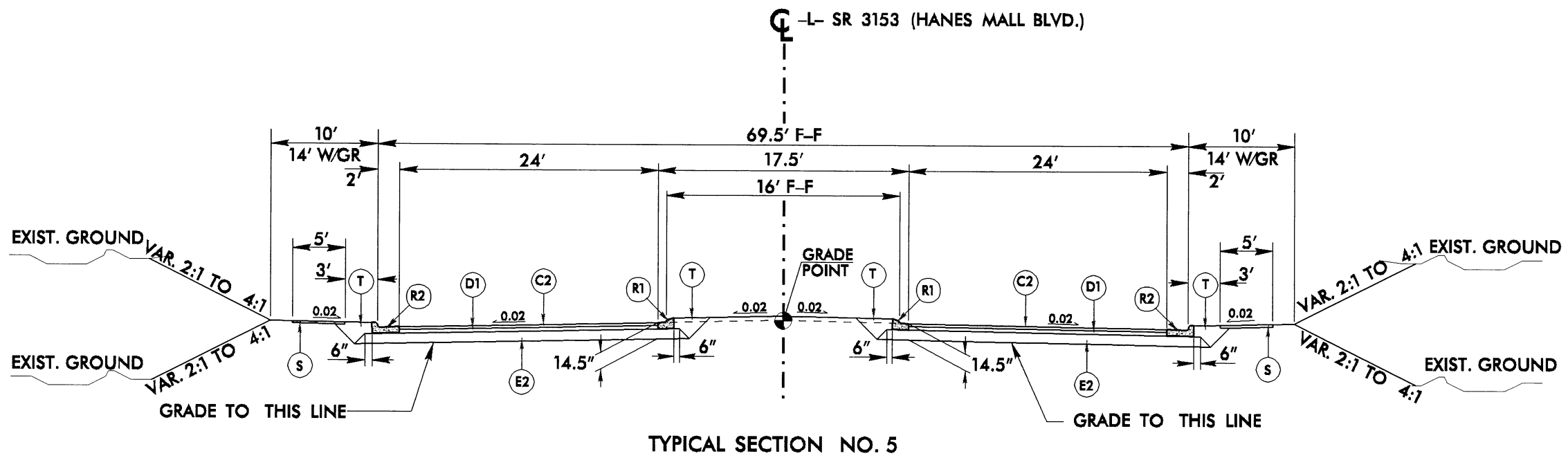
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author: ajr

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PROJECT REFERENCE NO.		SHEET NO.	
U-3837		2-B	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
PAVEMENT SCHEDULE			
C1	1 1/2" TYPE 89.5C		
C2	3" TYPE 89.5C		
C3	VAR. DEPTH TYPE 89.5C		
D1	4" TYPE I19.0C		
D2	VAR. DEPTH TYPE I19.0C		
E1	4" TYPE B25.0C		
E2	7 1/2" TYPE B25.0C		
E3	VAR. DEPTH TYPE B25.0C		
R1	1'-8" CONCRETE CURB AND GUTTER		
R2	2'-6" CONCRETE CURB AND GUTTER		
R3	8" MONOLITHIC CONCRETE ISLAND (KEYED IN)		
S	4" CONCRETE SIDEWALK		
T	EARTH MATERIAL		
U	EXISTING PAVEMENT		
W	VAR. DEPTH ASPH. PVMT. (SEE WEDGING DETAIL)		



USE TYPICAL SECTION NO. 4
-L- STA. 27+15.24 TO STA. 35+30.00

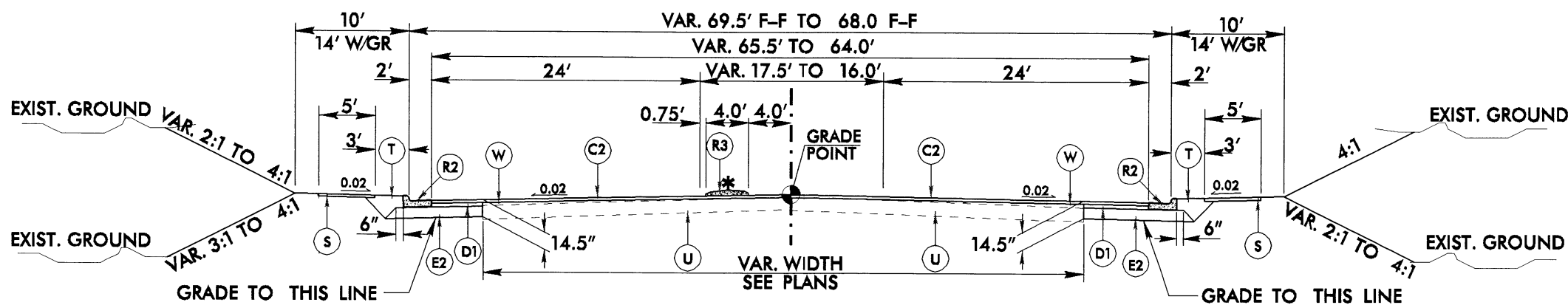


USE TYPICAL SECTION NO. 5
-L- STA. 35+30.00 TO STA. 47+30.00

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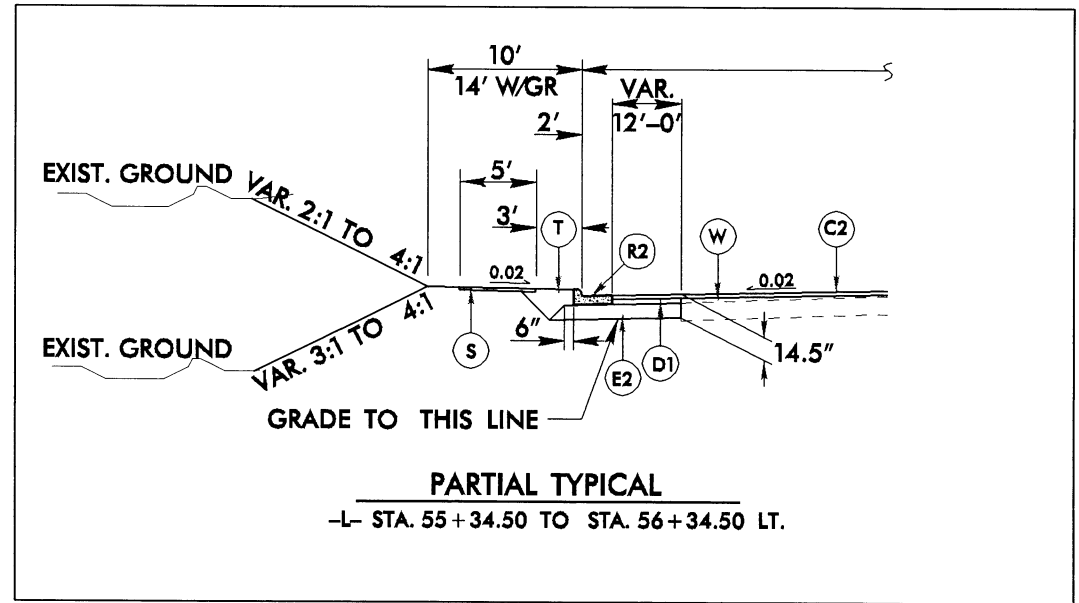
☉ -L- SR 3153 (HANES MALL BLVD.)



TYPICAL SECTION NO. 6

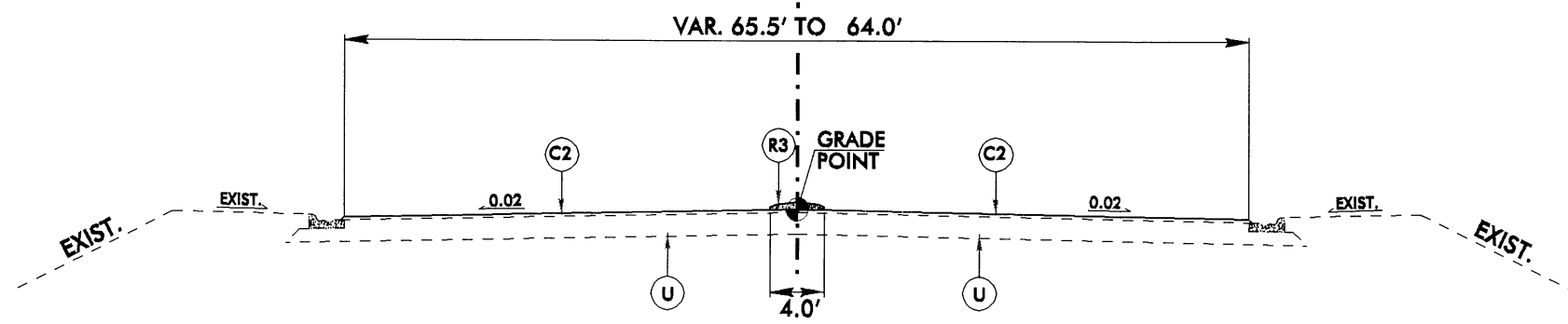
USE TYPICAL SECTION NO. 6
 -L- STA. 47+30.00 TO STA. 55+34.50

* MONO. CONC. ISLAND FROM -L- STA. 47+30.00 TO STA. 50+62.00



PARTIAL TYPICAL
 -L- STA. 55+34.50 TO STA. 56+34.50 LT.

☉ -Y- KESTER MILL ROAD



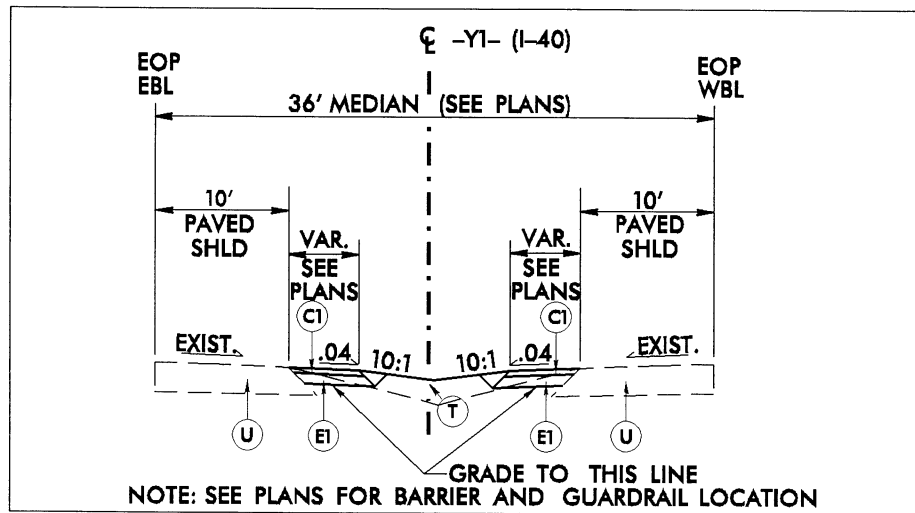
TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
 -Y- STA. 10+91.00 TO STA. 11+05.00

PROJECT REFERENCE NO. U-3837	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PAVEMENT SCHEDULE	
C1	1 1/2" TYPE 88.8C
C2	3" TYPE 88.8C
C3	VAR. DEPTH TYPE 88.8C
D1	4" TYPE I19.0C
D2	VAR. DEPTH TYPE I19.0C
E1	4" TYPE B25.0C
E2	7 1/2" TYPE B25.0C
E3	VAR. DEPTH TYPE B25.0C
R1	1'-8" CONCRETE CURB AND GUTTER
R2	2'-8" CONCRETE CURB AND GUTTER
R3	8" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH ASPH. PVMT. (SEE WEDGING DETAIL)

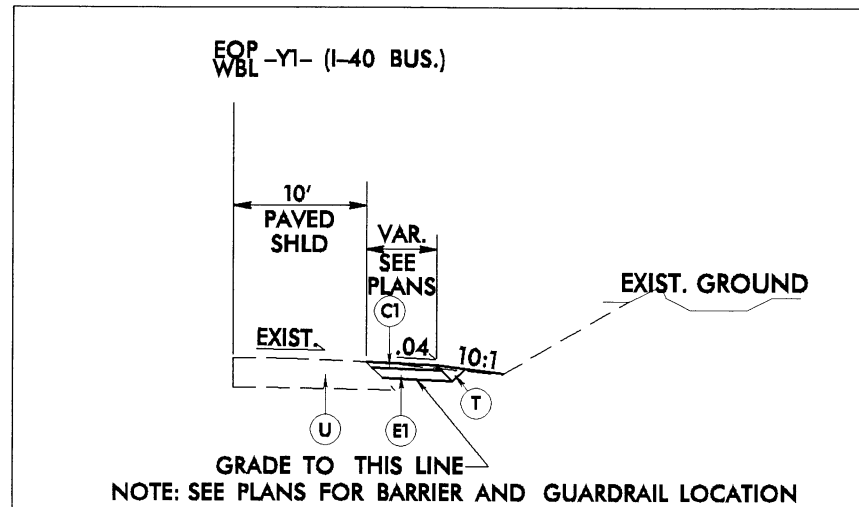
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 author: A111020202

PROJECT REFERENCE NO. U-3837		SHEET NO. 2-D	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
PAVEMENT SCHEDULE			
C1	1 1/2" TYPE 89.5C		
C2	3" TYPE 89.5C		
C3	VAR. DEPTH TYPE 89.5C		
D1	4" TYPE I19.0C		
D2	VAR. DEPTH TYPE I19.0C		
E1	4" TYPE B25.0C		
E2	7 1/2" TYPE B25.0C		
E3	VAR. DEPTH TYPE B25.0C		
R1	1'-6" CONCRETE CURB AND GUTTER		
R2	2'-6" CONCRETE CURB AND GUTTER		
R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)		
S	4" CONCRETE SIDEWALK		
T	EARTH MATERIAL		
U	EXISTING PAVEMENT		
W	VAR. DEPTH ASPH. PVMT. (SEE WEDGING DETAIL)		



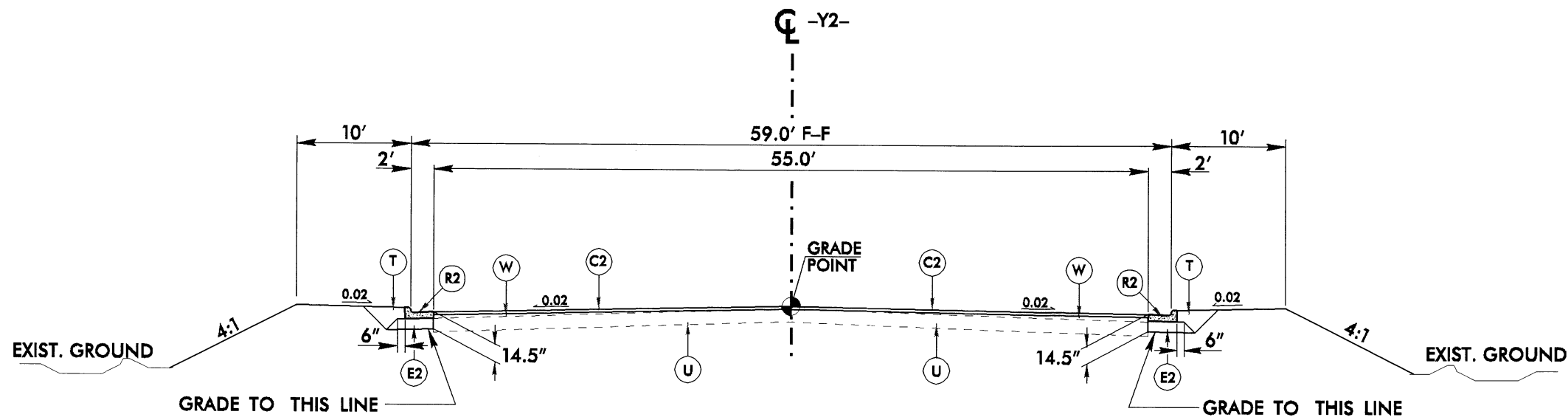
PARTIAL TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
-Y1- STA. 10+59.00 TO STA. 13+63.00 MEDIAN



PARTIAL TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
-Y1- STA. 11+60.00 TO STA. 14+01.00 RT.



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
-Y2- STA. 10+10.00 TO STA. 10+18.00

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS			
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	TYPE 350	CAT-1	TYPE III	TYPE B-83	TYPE B-77	EA	G	NG						
-L-	10+50.00	12+50.00	RT.	200			11+50.00		14	14	50		1		1	1												
-L-	15+89.00	19+89.00	RT.	400			17+00.00		7.5	14	375		7.5		1		1											
-L-	22+80.00	30+30.00	RT.	750				30+30.00	7.5	14		325		6.5		1	1											
-L-	30+72.00	33+47.00	RT.	275			30+72.00		14	14	50		1		1	1												
-L-	45+92.00	47+67.00	RT.	175			47+10.00		14	14	50		1		1	1												
-L-	49+50.00	53+00.00	RT.	350			50+50.00		14	14	50		1		1	1												
-L-	17+51.50	20+14.00	LT.	262.5				17+51.50	7.5	14		243.75		4.875		1	1											
-L-	23+04.50	30+04.50	LT.	700			29+00.00		7.5	14	325		6.5		1		1											
-L-	33+03.00	34+28.00	LT.	125			33+10.00		14	14	50		1		1	1												
-L-	46+25.00	48+00.00	LT.	175			47+00.00		14	14	50		1		1	1												
-L-	18+80.00	20+01.50	MED. LT.	125				20+01.50	3	MEDIAN		96.5					1							1	1			
-L-	18+80.00	19+86.00	MED. RT.	112.5			19+86.00		2	MEDIAN	87.25						1											
-L-	22+92.00	24+94.00	MED. LT.	200			22+92.00		3	MEDIAN	78						1								1	1		
-L-	23+01.00	24+94.00	MED. RT.	187.5				23+01.00	2	MEDIAN		175					1											
-Y1-	12+93.77	13+31.27	RT.	37.5				12+93.77																				
-Y1-	11+22.68	11+97.68	RT.	75			11+22.68				50		1		1													
-Y1-	11+05.70	11+68.20	RT.	62.5			11+68.20																					
-Y1-	12+64.18	13+95.43	RT.	137.5				12+64.18																				
-Y1-	11+29.09	11+66.59	LT.	37.5			11+66.59																					
-Y1-	12+62.58	14+43.83	LT.	187.5				12+62.58																				
SUBTOTALS				4575											9	8	6	2	6					2	2			
DEDUCTIONS FOR ANCHORS																												
9 GRAU-350 @ 50'				-450																								
8 CAT-1 @ 6.25'				-50																								
6 TYPE III @ 18.75'				-112.5																								
2 TYPE B-83 @ 25'				-50																								
6 TYPE B-77 @ 25'				-112.5																								
PROJECT TOTALS				3800												9	8	6	2	6					2	2		
SAY				3825																								
ADDITIONAL GUARDRAIL POST 10 EA.																												

SUMMARY OF "ASPHALT" PAVEMENT REMOVAL IN SQUARE YARDS

LINE	STATION TO STATION	LOCATION	LENGTH	WIDTH	SQUARE YARDS
-L-	17+90.00 TO 19+91.00	LT			115.74
-L-	23+05.00 TO 30+20.00	LT			436.43
-L-	32+17.00 TO 35+50.00	LT & RT			212.31
-L-	35+50.00 TO 46+50.00	LT & RT			3067.70
TOTAL					3832.18
SAY					3850

SUMMARY OF "CHAIN LINK FENCE"

LINE	STATION TO STATION	LOCATION	FABRIC (LF)	END BRACE	CORNER BRACE	LINE BRACE	LINE POST	TERMINAL POST
-L-	19+37.50 TO 20+14.00	LT.	110	1	1		10	2
-L-	15+55.00 TO 17+55.00	LT.	215		3		19	3
-L-	23+04.55 TO 23+55.00	LT.	120	1			10	1
-L-	22+79.80 TO 22+83.00	RT.	135	1	1		12	2
TOTAL			580				51	8

SUMMARY OF "CONCRETE BARRIER"

LINE	STATION TO STATION	LOCATION	TYPE A-77 BARRIER (LF)	TYPE T-77 BARRIER (LF)	TYPE M-XII BARRIER (LF)
-Y1-	STA. 11+98 TO STA. 12+15	RT.	17		
-Y1-	STA. 12+46 TO STA. 12+94	RT.		23	25
-Y1-	STA. 11+68 TO STA. 11+86	MED. RT.		18	
-Y1-	STA. 12+17 TO STA. 12+64	MED. RT.	22		25
-Y1-	STA. 11+67 TO STA. 11+84	MED. LT.	17		
-Y1-	STA. 12+15 TO STA. 12+63	MED. LT.		23	25
TOTAL			56	64	75
PROJECT TOTAL					195 LF

SUMMARY OF "WOVEN WIRE FENCE"

LINE	STATION TO STATION	LOCATION	FABRIC (LF)	END BRACE	CORNER BRACE	LINE BRACE	4" POST	5" POST
-L-	15+80.00 TO 19+53.89	RT.	455	1	1	1	29	8
TOTAL			455				29	8

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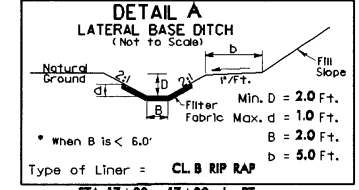
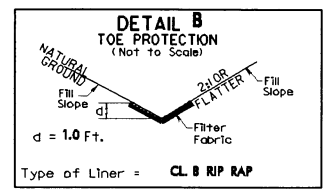
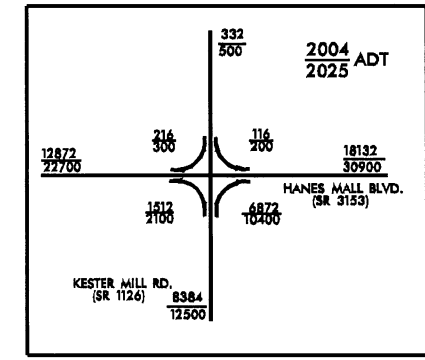
DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	EMBT + %	BORROW	WASTE
SUMMARY NO. 1 (LT.)				
-L- STA 10+00.00 TO STA 20+01.47 (BEGIN BRIDGE)	161	4435	4274	
TOTAL SUMMARY NO. 1	161	4435	4274	
SUMMARY NO. 2 (LT.)				
-L- STA 22+92.18 (END BRIDGE) TO STA 56+34.50	3634	19796	16162	
-Y2- STA 10+10.00 TO STA 10+65.00	70	6		64
TOTAL SUMMARY NO. 2	3704	19802	16162	64
SUMMARY NO. 3 (RT.)				
-L- STA 10+00.00 TO STA 20+01.47 (BEGIN BRIDGE)	236	15712	15476	
-Y- STA 10+65.00 TO STA 11+05.00	11	22	11	
TOTAL SUMMARY NO. 3	247	15734	15487	
SUMMARY NO. 4 (RT.)				
-L- STA 22+92.18 (END BRIDGE) TO STA 55+34.50	932	100021	99089	
TOTAL SUMMARY NO. 4	932	100021	99089	
SUMMARY TOTALS	5044	139992	135012	
LOSS DUE TO CLEARING AND GRUBING	-500		500	
WASTE IN LIEU OF BORROW			-64	-64
PROJECT SUB TOTAL	4544	139992	135448	
5% TO REPLACE TOPSOIL IN BORROW PIT			+6773	
GRAND TOTAL	4544		142221	
SAY	4600		142300	
UNDERCUT CONTINGENCY = 500 CY				
GRADE POINT UNDERCUT CONTINGENCY = 500 CY				
SELECT GRANULAR MATERIAL CONTINGENCY = 1000 CY				
CLASS IV SUBGRADE STABILITY CONTINGENCY = 360 TONS				
FABRIC FOR SOIL STABILIZATION = 1000 SY				
PAVEMENT STRUCTURE VOLUME = 2460 CY				

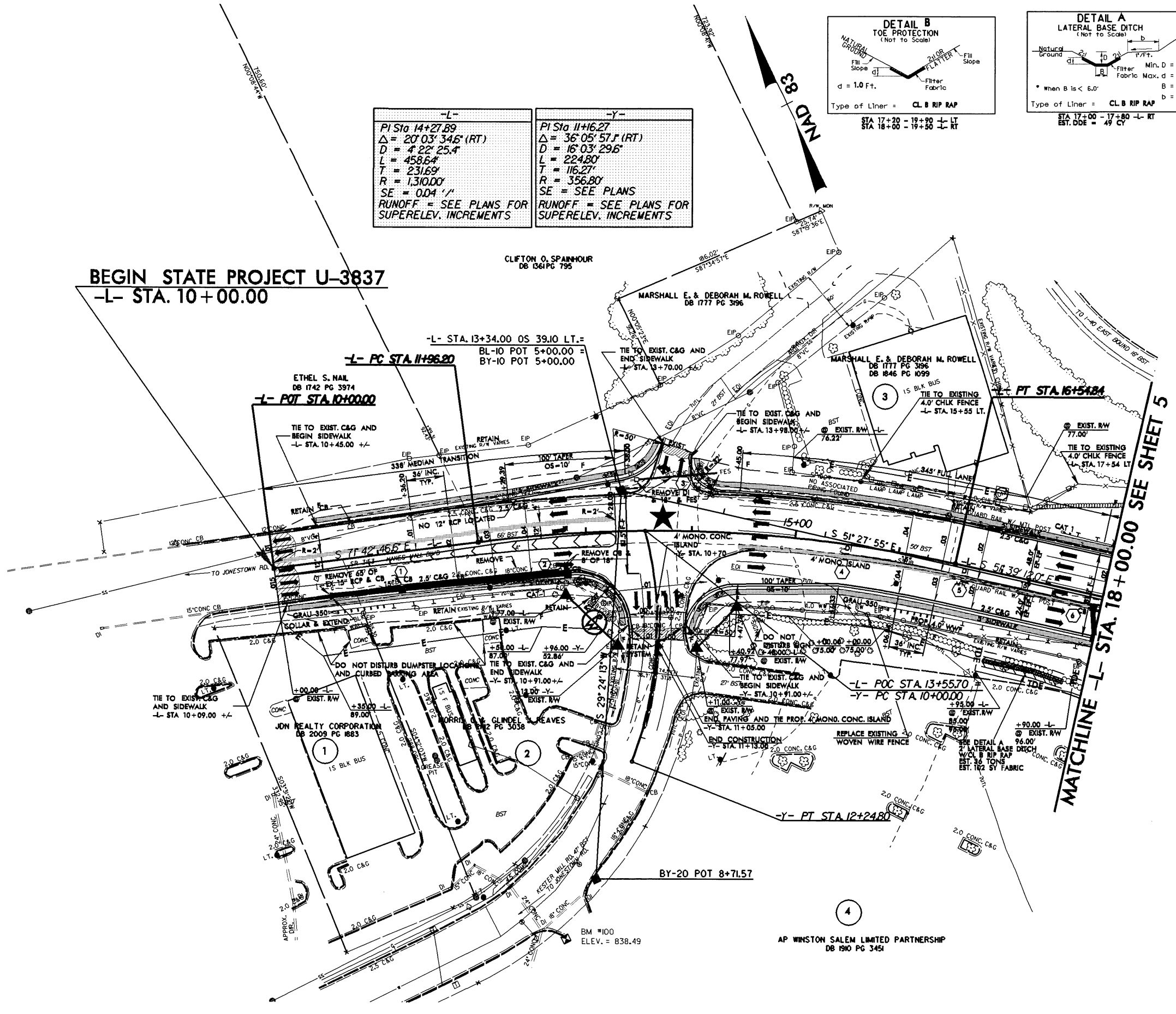
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

PROJECT REFERENCE NO.		SHEET NO.	
U-3837		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			



-L-	-Y-
PI Sta 14+27.89	PI Sta 11+16.27
$\Delta = 20' 03' 34.6''$ (RT)	$\Delta = 36' 05' 57.1''$ (RT)
D = 4' 22' 25.4"	D = 16' 03' 29.6"
L = 458.64'	L = 224.80'
T = 231.69'	T = 116.27'
R = 1,310.00'	R = 356.80'
SE = 0.04' /'	SE = SEE PLANS
RUNOFF = SEE PLANS FOR SUPERELEV. INCREMENTS	RUNOFF = SEE PLANS FOR SUPERELEV. INCREMENTS

BEGIN STATE PROJECT U-3837
-L- STA. 10+00.00



MATCHLINE -L- STA. 18+00.00 SEE SHEET 5

DENOTES PAINTED ISLAND (SEE PAVEMENT MARKING PLANS)

SIGNALIZED INTERSECTION

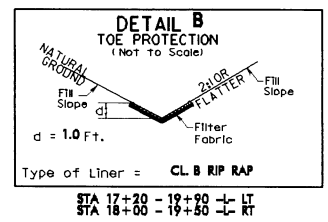
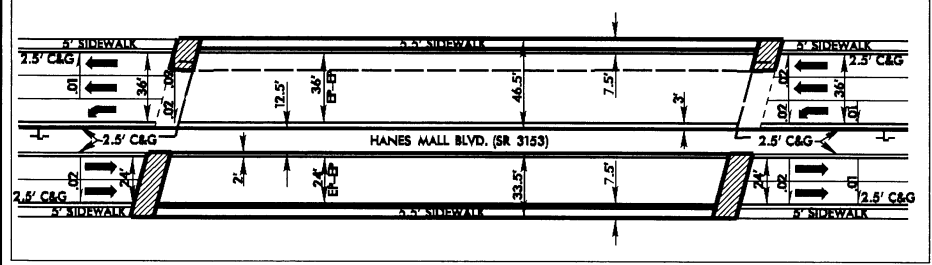
SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 12 FOR -Y- PROFILE

REVISIONS
R/W REVISION (DWG) 01-12-04 - ADDED UPDATED TOPO AND NOTES ON PARCEL 1 (JDN REALTY CORPORATION) AND PARCEL 2 (MORRIS G. & GLINDEL J. REAVES).
ADDED NOTE ON PARCEL 4 (AP WINSTON SALEM LIMITED PARTNERSHIP).

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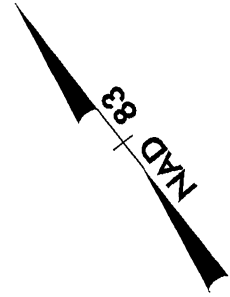
PROJECT REFERENCE NO.	SHEET NO.
U-3837	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SKETCH SHOWING RELATIONSHIP OF PAVEMENT WIDTH TO BRIDGE WIDTH



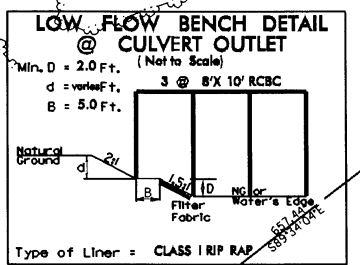
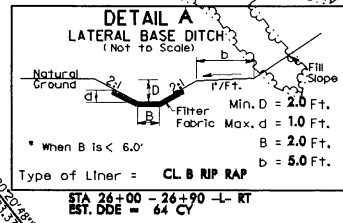
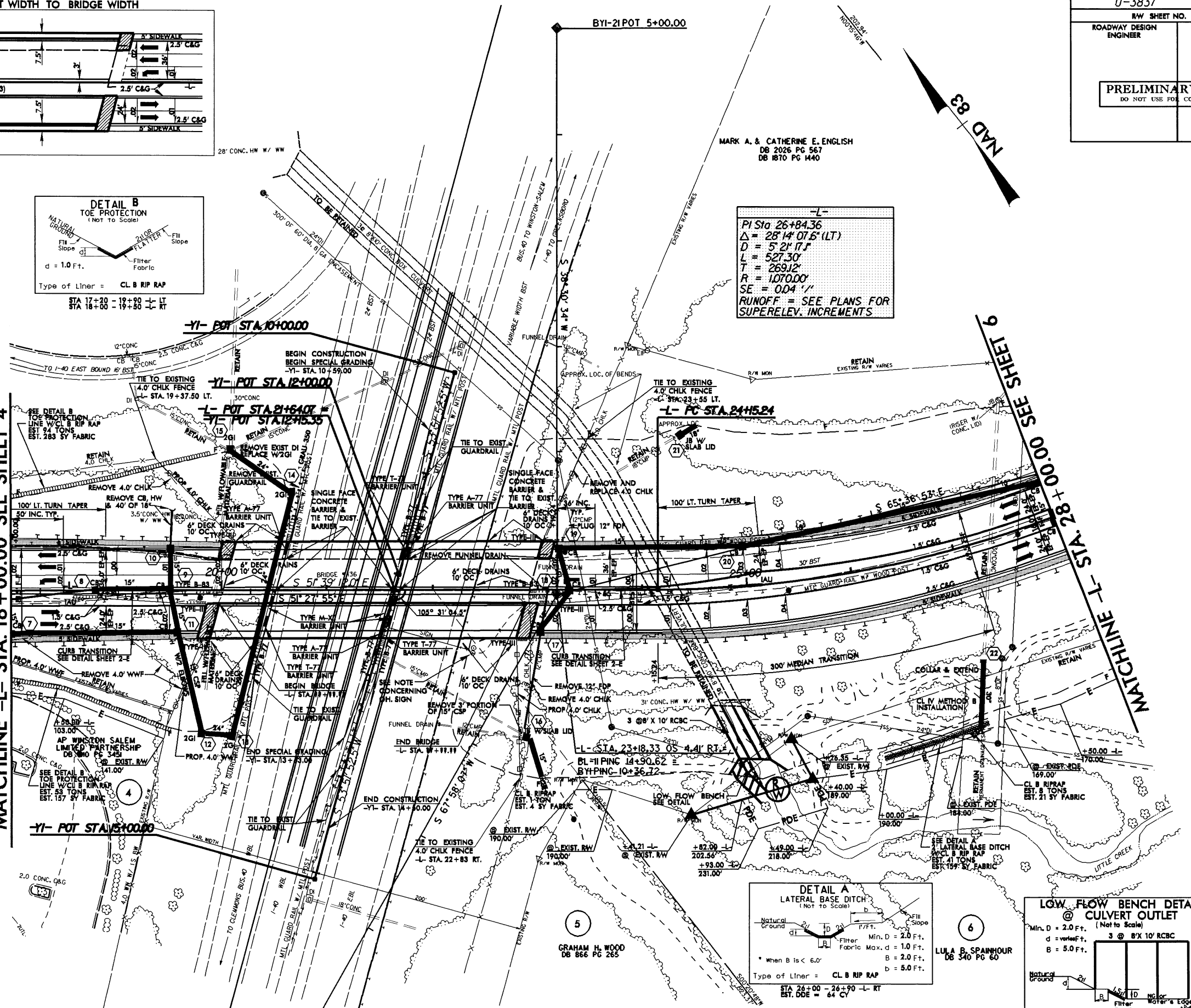
MARK A. & CATHERINE E. ENGLISH
DB 2026 PG 567
DB 1870 PG 140

PI Sta 26+84.36
Δ = 28' 14" 07.6' (LT)
D = 5' 21" 17.1"
L = 527.30'
T = 269.12'
R = 1070.00'
SE = 004.11"
RUNOFF = SEE PLANS FOR SUPERELEV. INCREMENTS



MATCHLINE -L- STA. 18 + 00.00 SEE SHEET 4

MATCHLINE -T- STA. 28 + 00.00 SEE SHEET 6



NOTE: SEE -YI- CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

NOTE: -YI- STA. 12+50 OVERHEAD SIGN TO BE REMOVED AND RESET. SEE SIGNING PLANS

SEE SHEETS 9 & 10 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-7 FOR STRUCTURE PLANS
SEE SHEETS C-1 THRU C-7 FOR CULVERT PLANS

REVISIONS

8/17/99

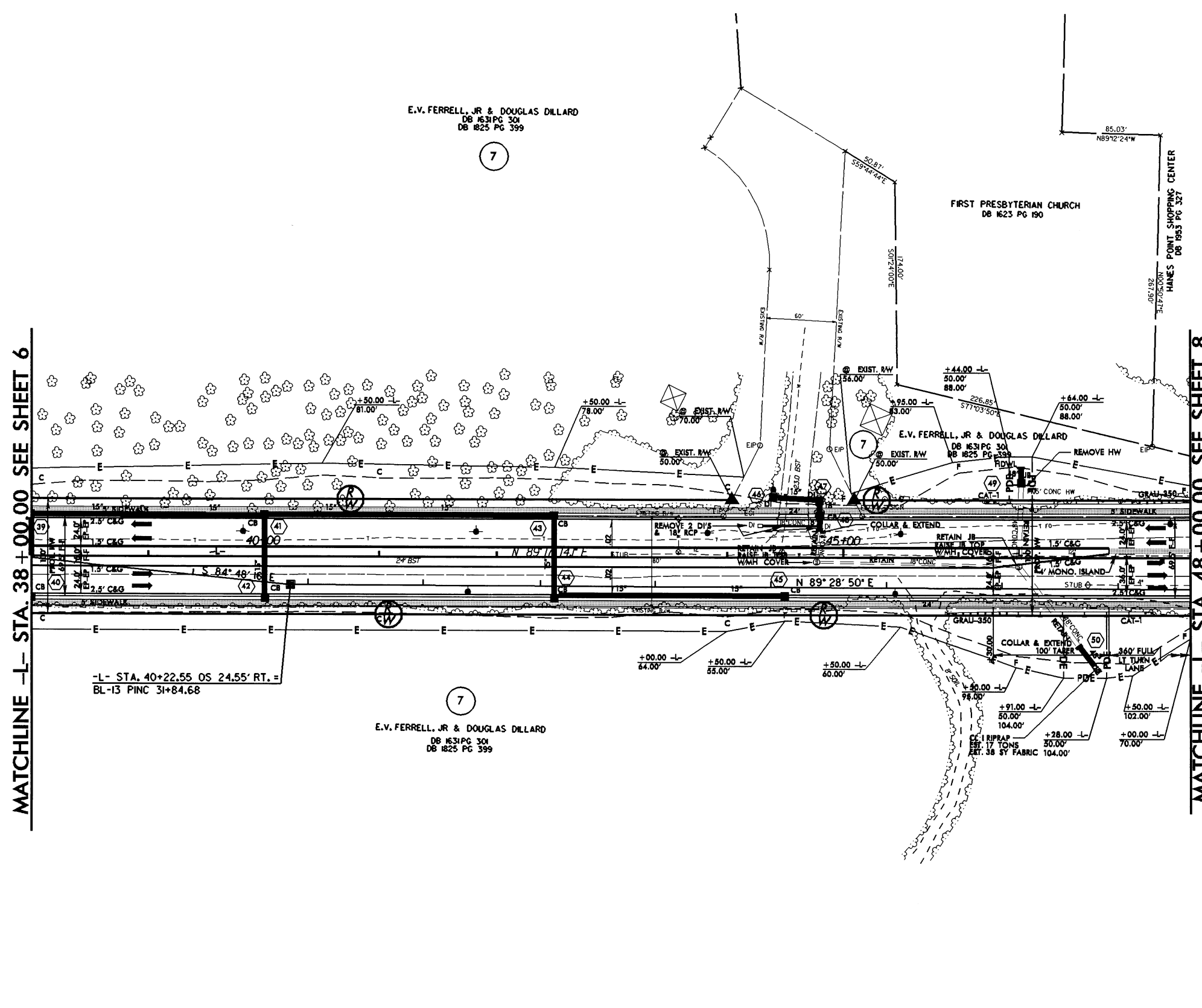
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11/10/2002 10:30:21

PROJECT REFERENCE NO. U-3837	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE -L- STA. 38+00.00 SEE SHEET 6

MATCHLINE -L- STA. 48+00.00 SEE SHEET 8



REVISIONS

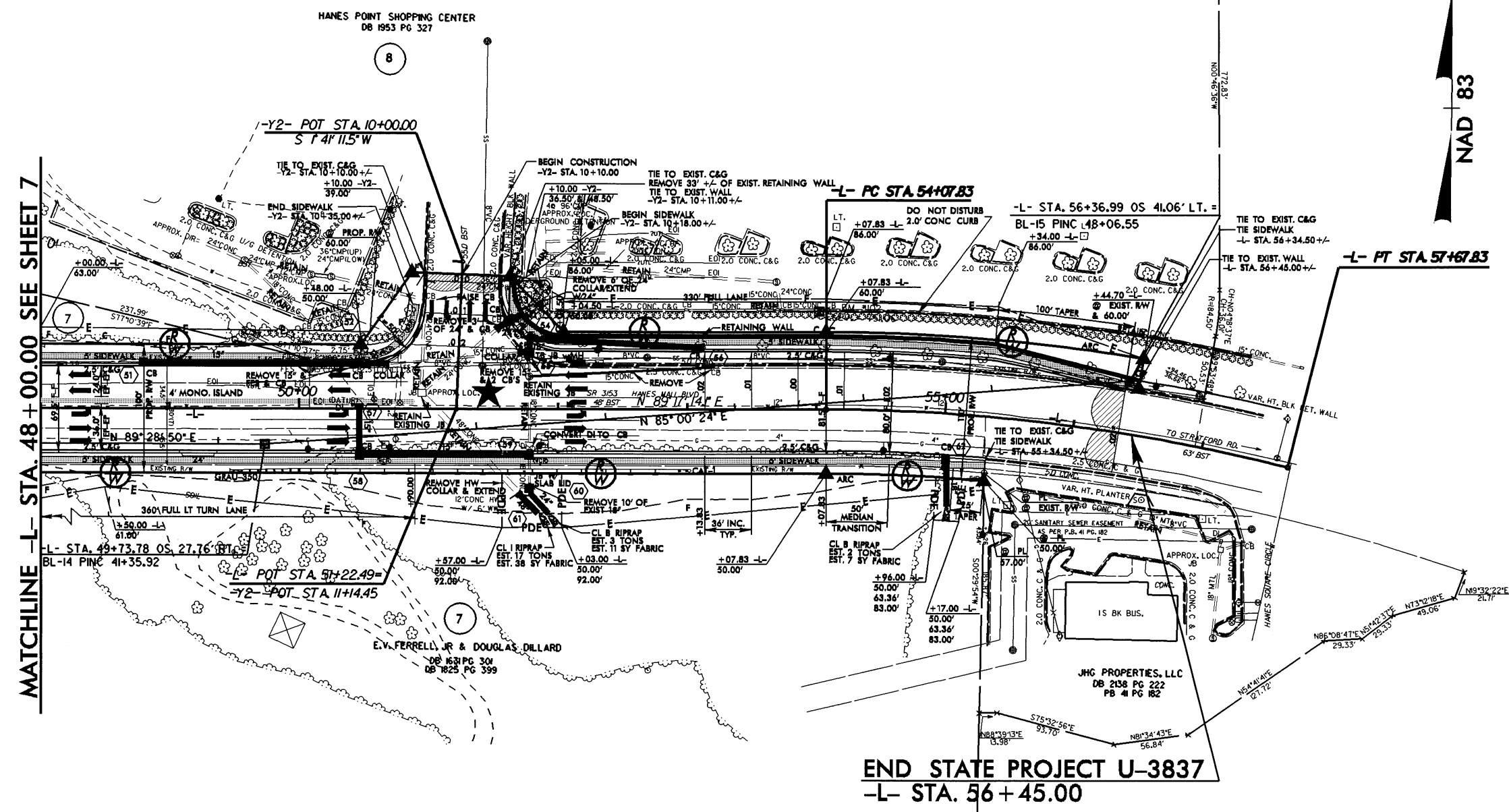
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 336 number
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SEE SHEET 11 FOR -L- PROFILE

PROJECT REFERENCE NO. U-3837	SHEET NO. 8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 PI Sta 55+88.78
 $\Delta = 14' 21" 35.4 (RT)$
 $D = 3' 59" 19.8'$
 $L = 360.00'$
 $T = 180.95'$
 $R = 1,436.40'$
 $SE = 0.02 \text{ '1'}$
 RUNOFF = SEE PLANS FOR
 SUPERELEV. INCREMENTS



END STATE PROJECT U-3837
 -L- STA. 56 + 45.00



MATCHLINE -L- STA. 48 + 00.00 SEE SHEET 7

REVISIONS
 R/W REVISION (DWG) 01-12-04 - INCREASED THE TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 8 (HANES POINT SHOPPING CENTER) TO ALLOW THE USE OF TEMPORARY SHEETING FOR THE CONSTRUCTION OF THE MODULAR BLOCK RETAINING WALL.

★ **SIGNALIZED INTERSECTION**
 SEE SHEET 11 FOR -L- PROFILE
 SEE SHEET 12 FOR -Y2- PROFILE
 SEE SHEET 12 FOR WALL PROFILE

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 JEBaughner AT: RD203021