



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 22, 2003

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTENTION: Mr. ~~John Hendrix~~ *Steve Lund*
NCDOT Coordinator

SUBJECT: Nationwide Permit 13, 23, and 33 Application for the proposed replacement of Bridge No. 103 on US 21 over Hunting Creek, in Iredell County. Federal Aid Project No. BRSTP-21(4), State Project No. 8.1823201, TIP No. B-3479.

Dear Sir:

Please find enclosed three copies of the Categorical Exclusion Report for the above referenced project, along with a project site map, permit drawings, and PCN form, and half sized plan sheets.

PROPOSED PROJECT

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 103 over Hunting Creek (DWQ Index # 12-108-16-(0.5) a Division of Water Quality "Class WS-III" Waters of the State. The project involves replacing the current bridge with a new bridge on new location to the east. The new structure will be approximately 320 feet in length and 30 feet wide. The travelway of 24 feet will be accommodated, with an offset of 3 feet on each side. Approach work will consist of resurfacing and widening the roadway and installing guardrails where appropriate.

IMPACTS TO WATERS OF THE UNITED STATES

No jurisdictional wetlands will be impacted by the proposed project. The construction of the bridge will require the use of temporary rock causeways, resulting in temporary surface water fill of 0.04 acres. Bridge bents will be the only permanent surface water impact from the subject activity. Reference elevations are available for the area of proposed placement of the rock causeways. The equipment to be used during project construction will likely include a rotary track backhoe and a track crane.

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

BRIDGE DEMOLITION

Bridge No. 103 has three spans totaling 326 feet in length. The structure has an asphalt-wearing surface and the remainder of the bridge, both superstructure and substructure, is composed of reinforced concrete. Thus, there is a potential for components of the bridge to be dropped into Waters of the United States during construction. The asphalt-wearing surface will be removed prior to demolition without dropping into the water. The resulting temporary fill associated with the reinforced concrete components of the bridge will be as much as 156 cubic yards. During construction, Best Management Practices for Bridge Demolition and Removal will be followed.

RESTORATION PLAN

The project schedule calls for a let date of 19 August 2003 with an estimated date of availability of approximately 41 days later. It is expected that the contractor will choose to start construction of the rock causeways shortly after that date. The temporary surface water fill resulting from the construction of the causeways will probably be in place for less than twelve (12) months.

The portion of the rip rap used for the construction of the causeways which results in temporary surface water fill will be removed after its purpose has been served. Any rip rap placed in or near the natural channel will be removed and pulled back, out of the natural channel.

All remaining causeway material located outside of the stream channel will be left in place for stabilization of the stream banks. The choice to stabilize the banks with rip rap was a last resort decision. Bioengineering techniques for stabilization were evaluated and determined to be ineffective due to the location of the eroded areas, directly under the bridge. The stream bank areas surrounding the bridge are stable, having abundant ground cover and no signs of erosion. Therefore, additional erosion areas resulting downstream of the bridge because of the use of rip rap, is unlikely. We understand that this bank stabilization can be permitted under Nationwide Permit 13.

After the temporary causeways are no longer needed, the contractor will use excavating equipment to remove the portion of the causeways within the stream channel. All of this removed causeway material will then be re-distributed amongst the remaining causeway material, which is to remain on the stream banks for stabilization.

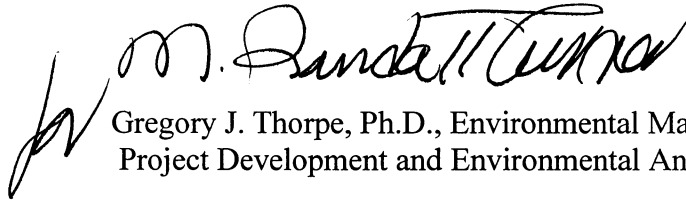
SUMMARY

It is anticipated that the construction of the temporary causeways 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 for these activities. NC DOT is also requesting a Nationwide Permit 13 for bank stabilization. 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). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002). 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.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Michael Turchy at (919) 715-1468 or maturchy@dot.state.nc.us

Sincerely,



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

w/attachment

Mr. John Dorney, Division of Water Quality (2 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Greg Perfetti, P.E., Structure Design

w/o attachment

Mr. David Franklin, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Ms. Debbie Barbour, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. M. L. Holder, P.E.
Ms. Trish Simon
Mr./Ms. (Appropriate PDEA Project Planning Engineer)

Office Use Only:

Form Version May 2002

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 checked="" type="checkbox"/> 401 Water Quality Certification | |

2. Nationwide, Regional or General Permit Number(s) Requested: NW 13, NW 23, NW 33

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

4. If payment into the North Carolina 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: North Carolina Department of Transportation

Mailing Address: 1548 Mail Service Center, Raleigh, North Carolina 27699-1548

Telephone Number: (919) 733-7844 Fax Number: (919) 715-1501

E-mail Address: _____

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: B-3479
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3479
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Iredell County Nearest Town: Houstonville
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers, landmarks, etc.): US 21 Crossing with Huntington Creek
- Site coordinates, if available (UTM or Lat/Long): 36° 01' 07"N, 80° 45' 39"W
5. 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): N/A
7. Nearest body of water (stream/river/sound/ocean/lake): Hunting 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/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Maintained Roadside, Mesic Mixed Hardwood Forest, Dry, - Mesic Oak- Hickory forest, Agriculture field.
10. Describe the overall project in detail, including the type of equipment to be used: Replacement of bridge structure with a temporary structure to replace the existing bridge to accommodate construction. Type of equipment will include cranes, graders, and bulldozers.

11. Explain the purpose of the proposed work: To replace a substandard bridge over Hunting Creek.

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.

N/A

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.

No

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: 0.04 acres of temporary rock fill.

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***
N/A					

- * 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: 0
 Total area of wetland impact proposed: 0

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	Temporary Work pad	~50'(.04ac)	Hunters Creek	~100ft	Perennial

- * 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: _____

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.)
N/A				

* 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 proposed project crosses Hunter's Creek perpendicularly to avoid additional impacts.
NCDOT will used Best Management practices to ensure construction impacts are kept minimal.

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/ncwetlands/strmgide.html>.

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

N/A

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.

N/A

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.

N/A

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).

N/A

M. Randall Jones

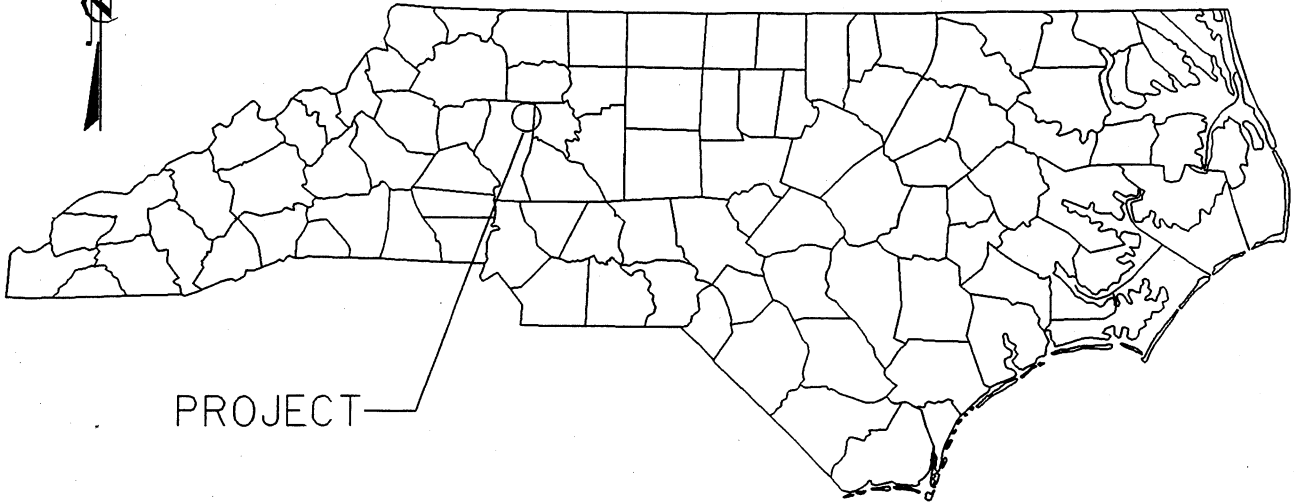
Applicant/Agent's Signature

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

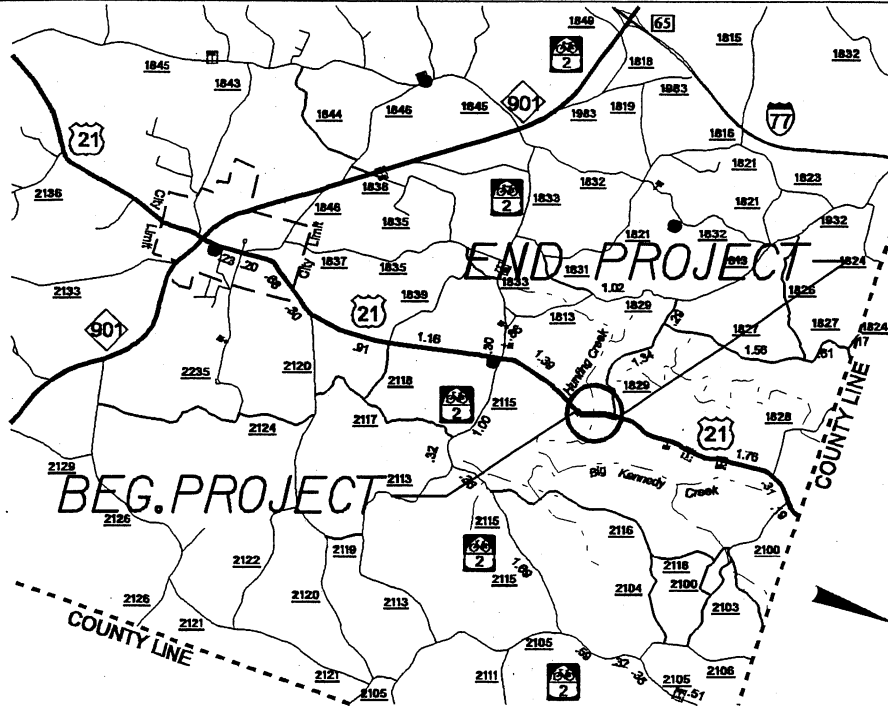
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Date

NORTH CAROLINA



PROJECT



VICINITY MAPS

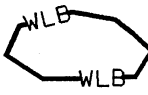


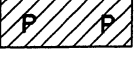
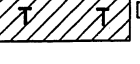
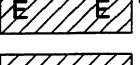
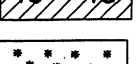
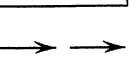
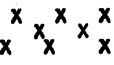

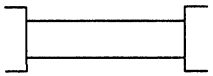
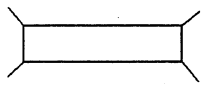


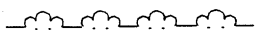
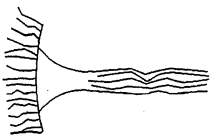
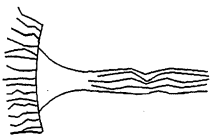



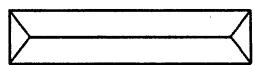
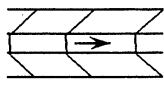
NCDOT
DIVISION OF HIGHWAYS
IREDELL COUNTY
PROJECT: 8.1823201 (B-3479)

BRIDGE NO. 103
ON US 21 OVER
HUNTING CREEK

SHEET 1 OF 9

8/28/02

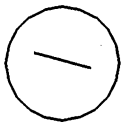
WETLAND LEGEND

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

NCDOT
DIVISION OF HIGHWAYS
IREDELL COUNTY
PROJECT: 8.1823201 (B-3479)

BRIDGE NO.103
ON US 21 OVER
HUNTING CREEK

SHEET 2 OF 9 8 / 28 / 02



KATIE B. PATTERSON

23+00

25+00

EXISTING R/W

GRADE TO DRAIN

WD POS F

CONC END BENT HW EXTENDED

MTL

330'

24'

15"

15" CSP W/ELBOWS

CLASS 'B' RIP RAP

4' X 4' PSH

TEMPORARY CAUSEWAY

261

15" CSP W/ELBOWS

CLASS 'B' RIP RAP

MATCHLINE -A-

HUNTING CREEK

R IS C OF CREEK

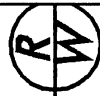
TB

TB

TB

TB

TB



NCDOT

DIVISION OF HIGHWAYS
IREDELL COUNTY

PROJECT: 8.1825201 (B-3479)

BRIDGE NO. 103

ON US 21 OVER

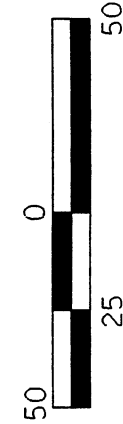
HUNTING CREEK

3 OF 9

SHEET

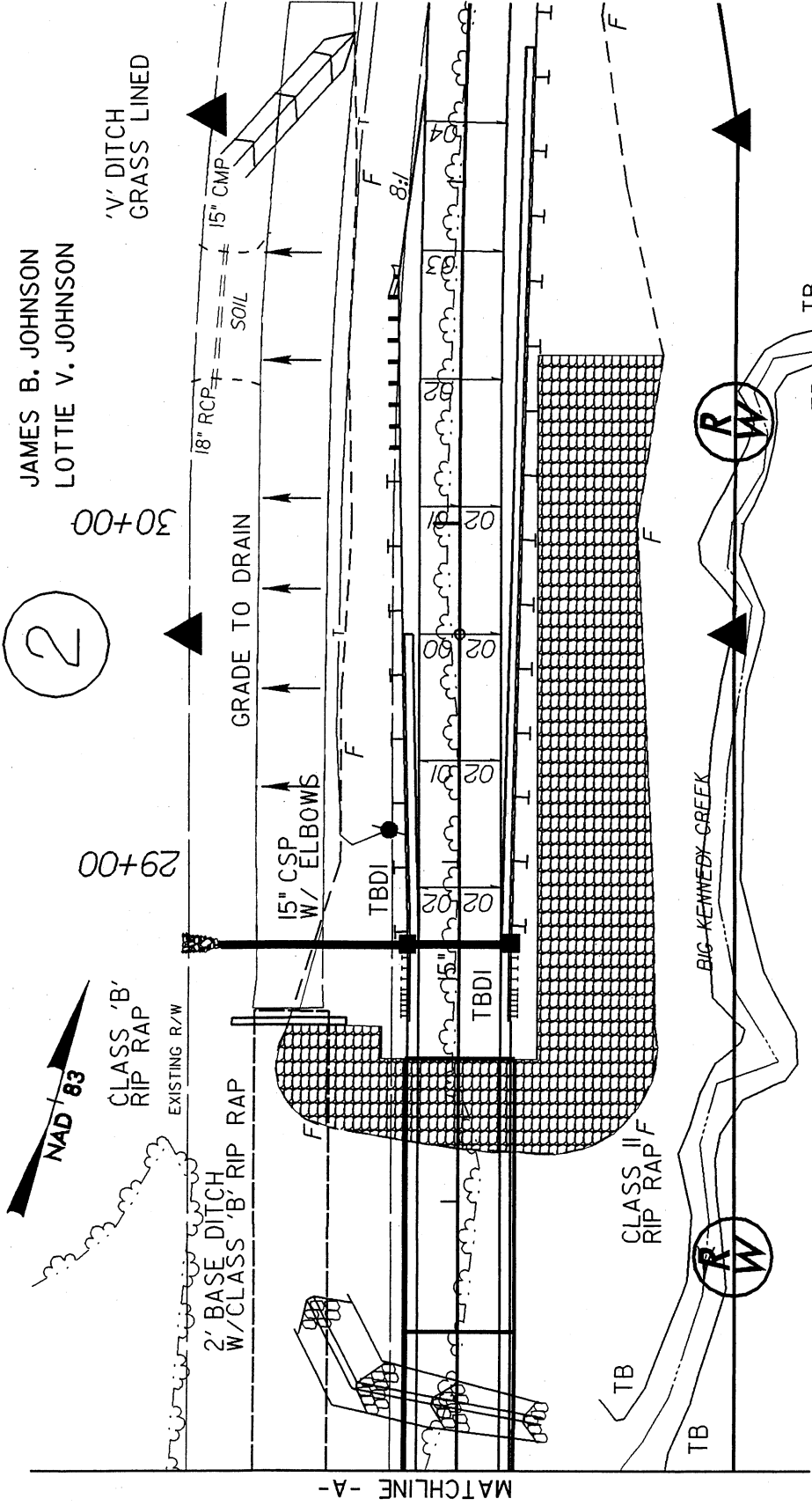
5/14/03

TS
DENOTES TEMPORARY
FILL IN SURFACE
WATER



SCALE: 1" = 50' HORIZ.

PLAN VIEW



JAMES B. JOHNSON
 LOTTIE V. JOHNSON

2

'V' DITCH
 GRASS LINED

18" RCP
 SOIL

GRADE TO DRAIN

15" CSP
 W/ ELBOWS

TBDI

30+00

29+00

CLASS II F
 RIP RAP

BIG KENNEDY CREEK

TB

TB



SCALE: 1" = 50' HORIZ.

PLAN VIEW

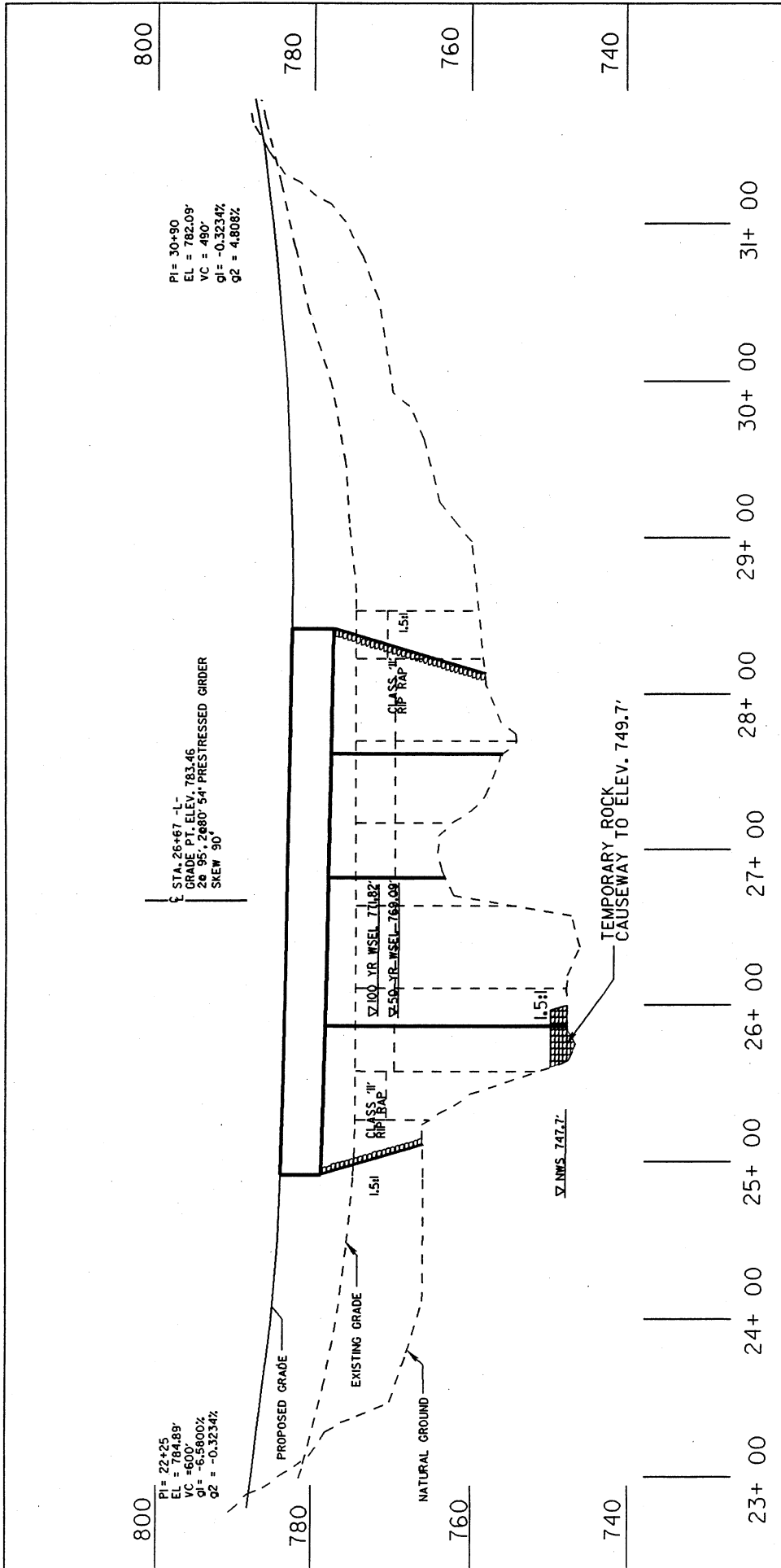
NCDOT
 DIVISION OF HIGHWAYS
 IREDELL COUNTY
 PROJECT: 8.1823201 (B-3479)
 BRIDGE NO. 103
 ON US 21 OVER
 HUNTING CREEK

4 9

SHEET

OF

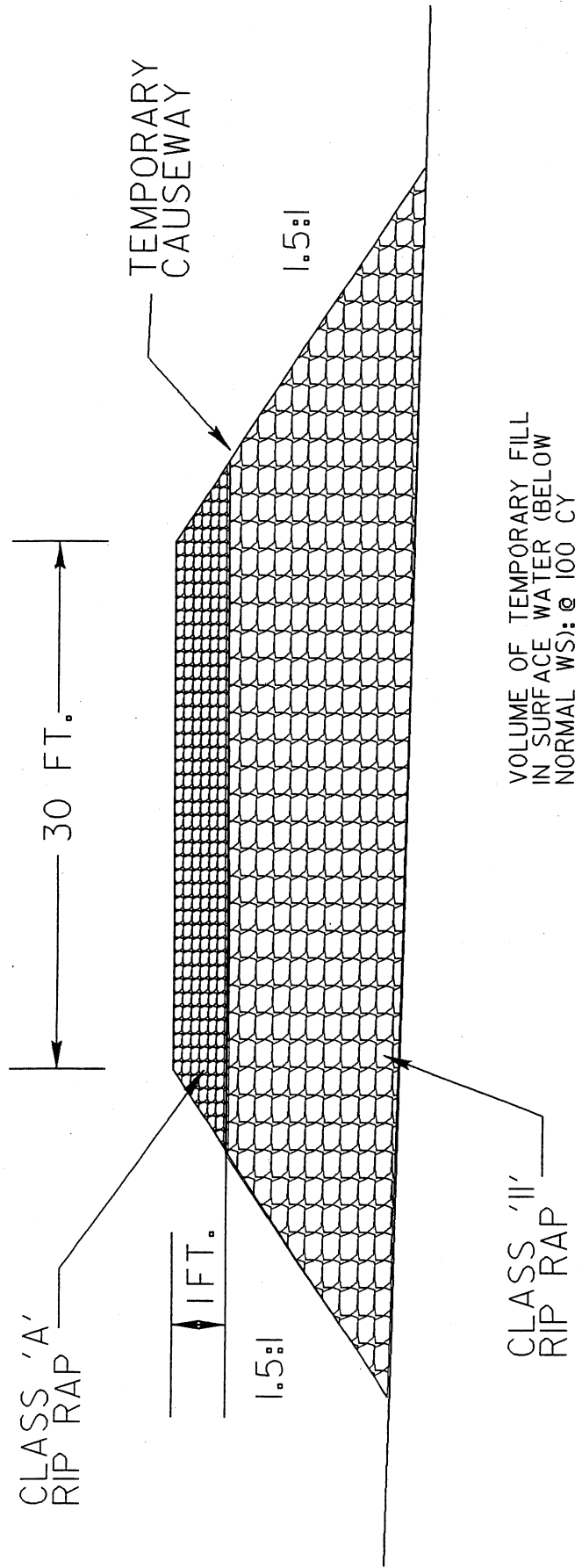
5/14/03



PROFILE

NCDOT
 DIVISION OF HIGHWAYS
 IREDELL COUNTY
 PROJECT: 8.1823201 (B-3479)
 BRIDGE NO. 103
 ON US 21 OVER
 HUNTING CREEK

SHEET **5** OF **9** 8/28/02



VOLUME OF TEMPORARY FILL
IN SURFACE WATER (BELOW
NORMAL WS): @ 100 CY

TYPICAL SECTION
(NOT TO SCALE)

NCDOT
DIVISION OF HIGHWAYS
IREDELL COUNTY
PROJECT: 8.1823201 (B-3479)
BRIDGE NO. 103
ON US 21 OVER
HUNTING CREEK

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	KATIE B. PATTERSON	4273 HARMONY HWY HARMONY, NC 28634
2	JAMES B. JOHNSON LOTTIE V. JOHNSON	4563 HARMONY HWY HAMPTONVILLE, NC 27020

NCDOT

DIVISION OF HIGHWAYS

IREDELL COUNTY

PROJECT: 8.1823201 (B-3479)

BRIDGE NO.103

ON US 21 OVER

HUNTING CREEK

SHEET

8

OF

9

8/28/02



Property Owner Contact Report

P# B-3479

Owner Name/ Business	Owner First Name	Address	City/Town	State	Zip Code	Contact/ Relationship	Home Phone	Contacted By	Contact Date	How Contacted	Comments
Huie	Gale	4530 Harmony Hwy	Hamptonville	NC	27020	Gale Huie Self		James Johnson	2-28-01	Person/Letter	
Johnson	James L. V.	4563 Harmony Hwy	Hamptonville	NC	27020	Kevin Huie Nephew	(704) 546-5434	Pat Tuttle	02/04/00	Phone/Letter	Positive
Patterson	Katie B.	4273 Harmon Hwy	Harmony	NC	28634	A. L. Patterson	(704) 546-2332	Pat Tuttle	02/04/00	Phone/Letter	Positive

989

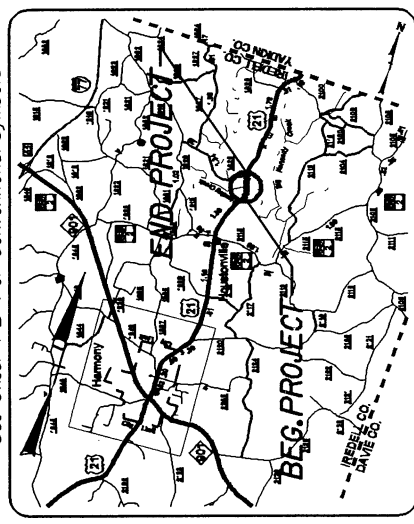
STATE	N.C.	STATE PROJECT REFERENCE NO.	B-3479	SHEET NO.	1	TOTAL SHEETS	
STATE PROJECT NO.	8.1823201	F.A. PROJ. NO.	BRSTP-21(4)	DESCRIPTION	PE		
	8.1823202	BRSTP-21(4)			RAW UTIL.		

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

LOCATION: BRIDGE NO. 103 ON US 21 OVER HUNTING CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

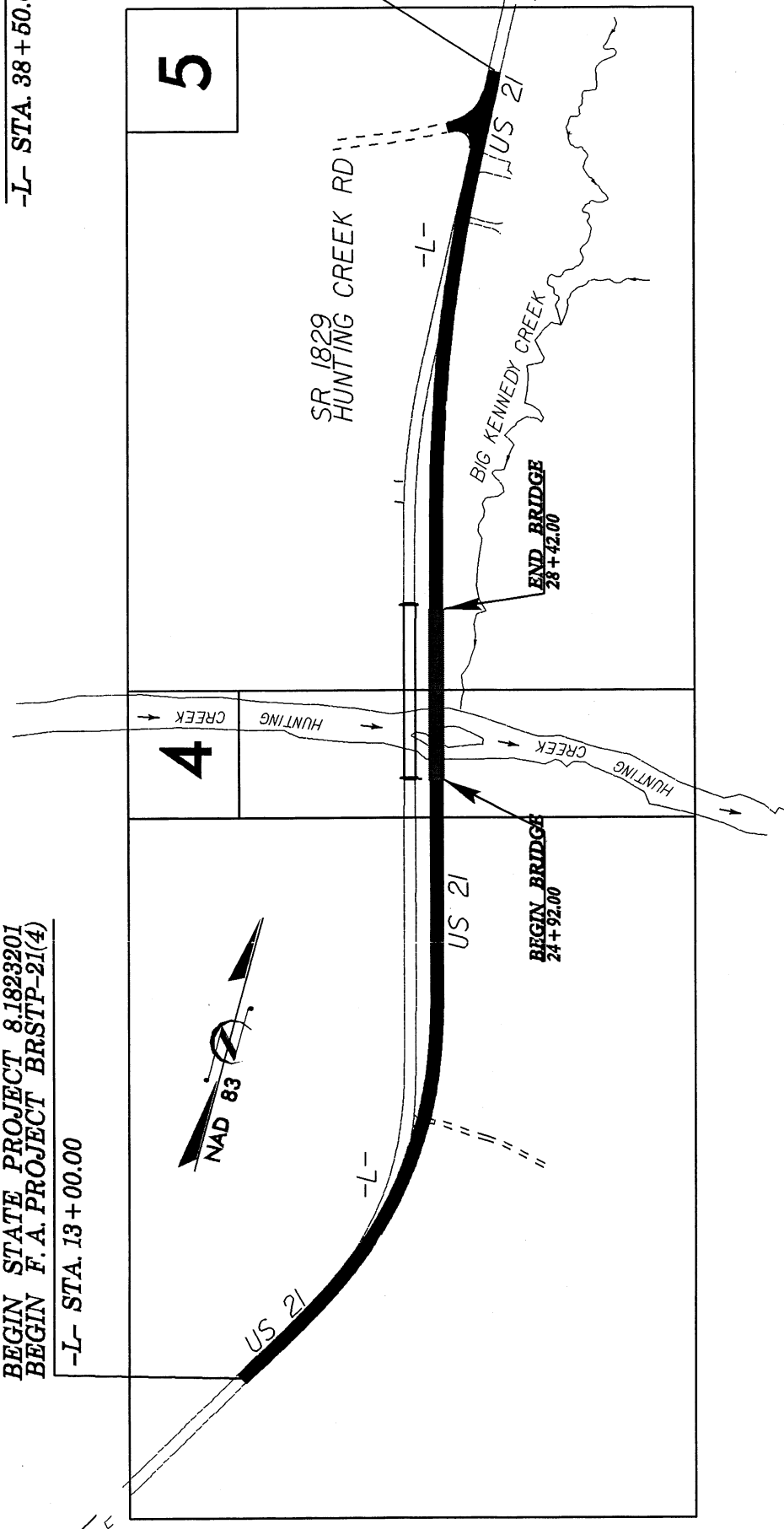


VICINITY MAP

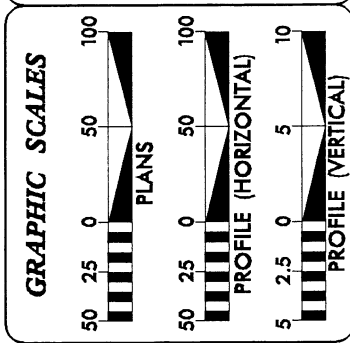
TO HOUSTONVILLE

BEGIN STATE PROJECT 8.1823201
BEGIN F.A. PROJECT BRSTP-21(4)
-L- STA. 13 + 00.00

END STATE PROJECT 8.1823201
END F.A. PROJECT BRSTP-21(4)
-L- STA. 38 + 50.00



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2002	=	1214
ADT 2025	=	2100
DHV	=	11 %
D	=	60 %
T	=	4 % *
V	=	50 MPH**

* TTST 1% + DUAL 3%
** DESIGN EXCEPTION FOR DESIGN SPEED

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT BRSTP-21(4)	=	0.417 MILES
LENGTH STRUCTURE F.A. PROJECT BRSTP-21(4)	=	0.066 MILES
TOTAL LENGTH OF STATE PROJECT 8.1823202	=	0.483 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	JULY 24, 2002
LETTING DATE:	AUGUST 19, 2003

PROJECT ENGINEER	SUE R. FLOWERS
PROJECT DESIGN ENGINEER	ANTHONY C. WEST

HYDRAULICS ENGINEER		DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
ROADWAY DESIGN ENGINEER		STATE DESIGN ENGINEER
ROADWAY DESIGN ENGINEER		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED		DATE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E. = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

BUILDINGS & OTHER CULTURE

Buildings	-----	-----	-----
Foundations	-----	-----	-----
Area Outline	-----	-----	-----
Gate	-----	-----	-----
Gas Pump Vent or UG 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	-----
Guard Post	-----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

VEGETATION

Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----
Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	-----
Prop. Slope Stakes Fill	-----
Prop. Woven Wire Fence	-----
Prop. Chain Link Fence	-----
Prop. Barbed Wire Fence	-----
Prop. Wheelchair Ramp	-----
Curb Cut for Future Wheelchair Ramp	-----
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	-----
Pavement Removal	-----

UTILITIES

MINOR	-----
Head & End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Boxes	-----
Paved Ditch Gutter	-----
Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
Sanitary Sewer	-----
Recorded Sanitary Sewer Force Main	-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----
Recorded Gas Line	-----
Designated Gas Line (S.U.E.*)	-----
Storm Sewer	-----
Recorded Power Line	-----
Designated Power Line (S.U.E.*)	-----
Recorded Telephone Cable	-----
Designated Telephone Cable (S.U.E.*)	-----
Recorded UG Telephone Conduit	-----
Designated UG Telephone Conduit (S.U.E.*)	-----
Unknown Utility (S.U.E.*)	-----
Recorded Television Cable	-----
Designated Television Cable (S.U.E.*)	-----
Recorded Fiber Optics Cable	-----
Designated Fiber Optics Cable (S.U.E.*)	-----
Exist. Water Meter	-----
UG Test Hole (S.U.E.*)	-----
Abandoned According to UG Record	-----
End of Information	-----

BOUNDARIES & PROPERTIES

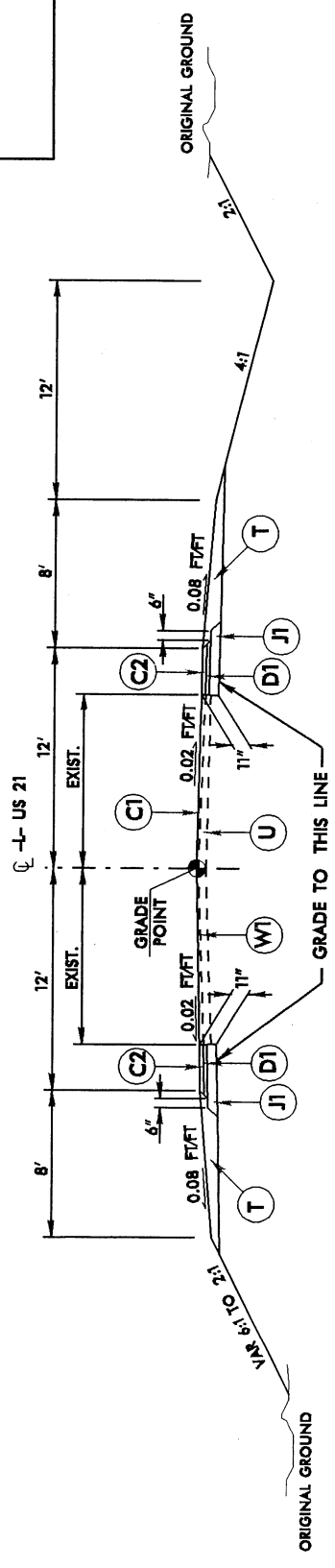
State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----
Exist. Iron Pin	-----
Property Corner	-----
Property Monument	-----
Property Number	-----
Parcel Number	-----
Fence Line	-----
Existing Wetland Boundaries	-----
Proposed Wetland Boundaries	-----
Existing Endangered Animal Boundaries	-----
Existing Endangered Plant Boundaries	-----
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	-----
Prop. Temp. Construction Easement Line	-----
Prop. Temp. Drainage Easement Line	-----
Prop. Perm. Drainage Easement Line	-----
Stream or Body of Water	-----
River Basin Buffer	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----
MAJOR	-----
Bridge, Tunnel, or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----

STRUCTURES

Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
Sanitary Sewer	-----
Recorded Sanitary Sewer Force Main	-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----
Recorded Gas Line	-----
Designated Gas Line (S.U.E.*)	-----
Storm Sewer	-----
Recorded Power Line	-----
Designated Power Line (S.U.E.*)	-----
Recorded Telephone Cable	-----
Designated Telephone Cable (S.U.E.*)	-----
Recorded UG Telephone Conduit	-----
Designated UG Telephone Conduit (S.U.E.*)	-----
Unknown Utility (S.U.E.*)	-----
Recorded Television Cable	-----
Designated Television Cable (S.U.E.*)	-----
Recorded Fiber Optics Cable	-----
Designated Fiber Optics Cable (S.U.E.*)	-----
Exist. Water Meter	-----
UG Test Hole (S.U.E.*)	-----
Abandoned According to UG Record	-----
End of Information	-----

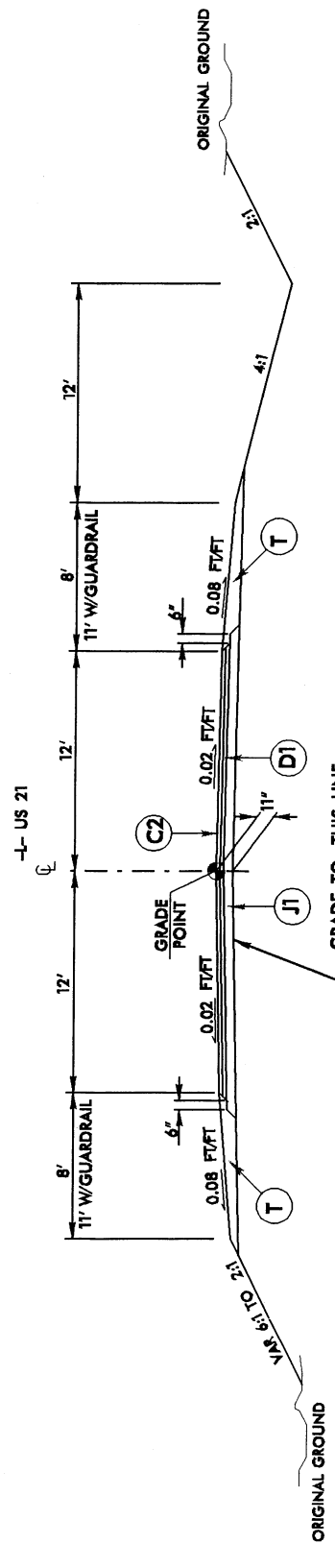
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I18.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I18.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, 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 5 1/2" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE.
J2	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
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.



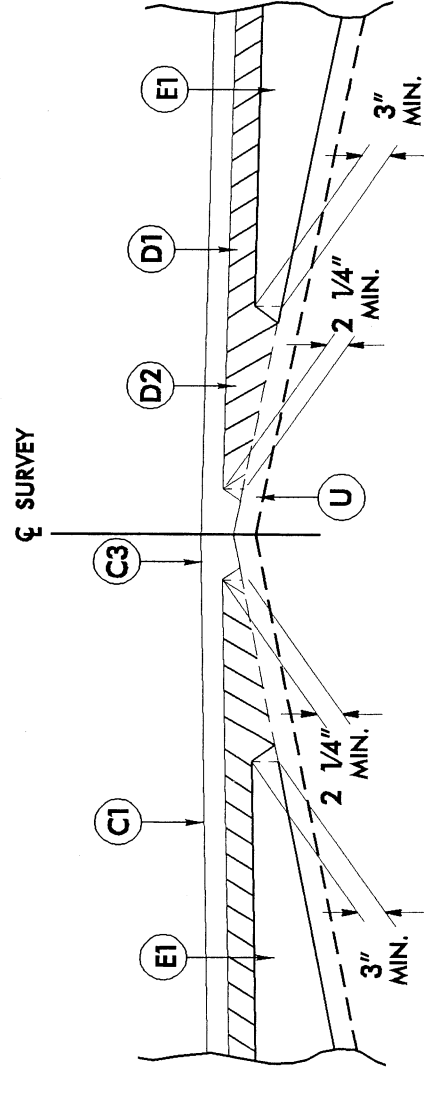
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
- STA. 13+00.00 TO 18+60.00
- STA. 33+30.00 TO 38+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
- STA. 18+60.00 TO 24+92.00 (BEGIN BRIDGE)
- STA. 28+42.00 (END BRIDGE) TO 33+30.00



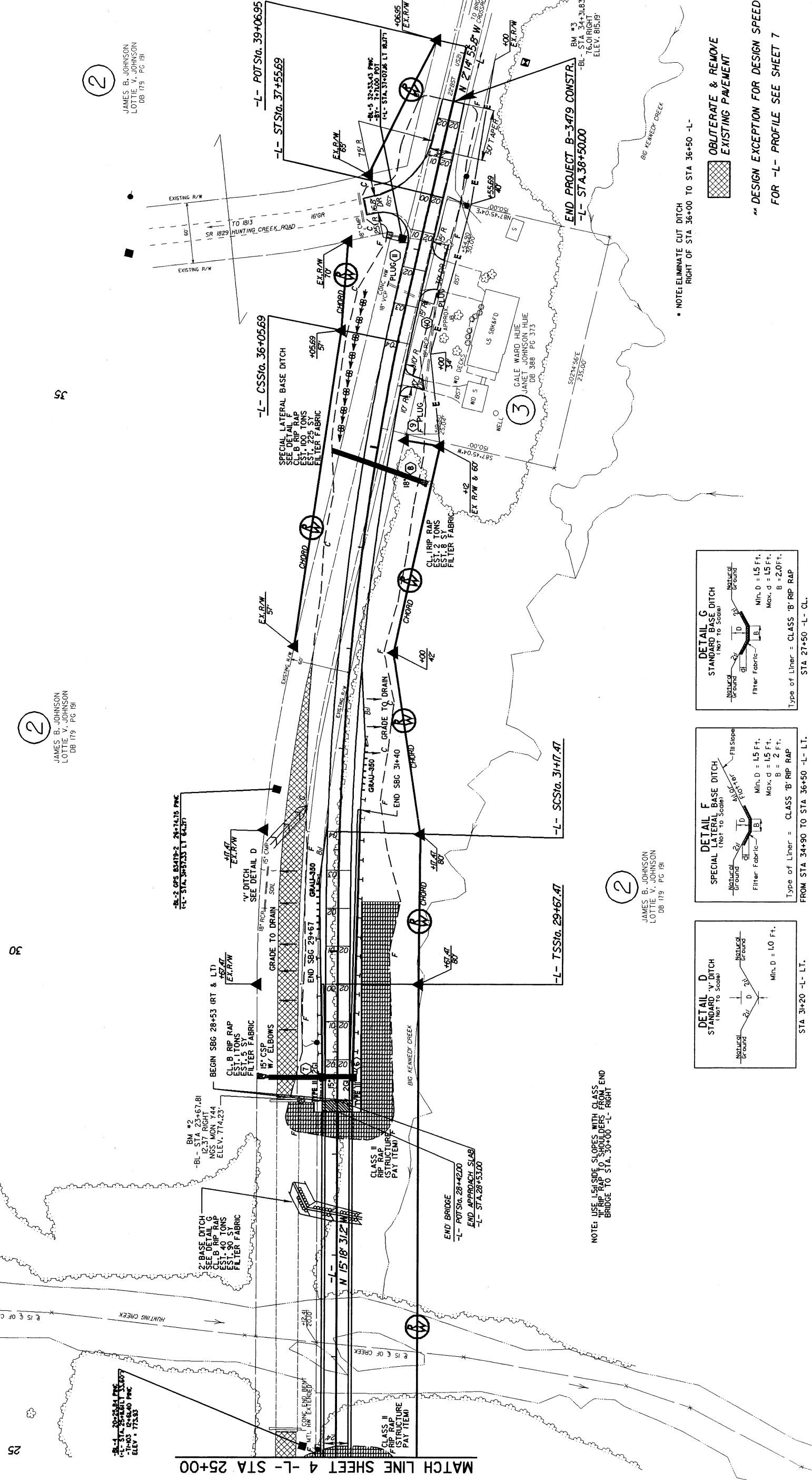
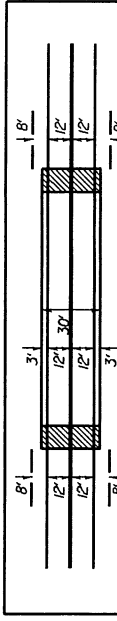
Detail Showing Method of Wedging

PROJECT REFERENCE NO.	B-3479	SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
PRELIMINARY PLANS <small>NO PART OF THESE PLANS TO BE CONSIDERED FOR CONSTRUCTION</small>			

-L-
 PIS Sta 30+67.47
 $\Delta s = 1.32' 05.0"$
 $D = 2' 02" 46.6"$
 $L = 488.22'$
 $T = 244.73'$
 $R = 2,800.00'$
 $SE = .04$

PIS Sta 36+55.70
 $\Delta s = 1.32' 05.0"$
 $D = 2' 02" 46.6"$
 $L = 488.22'$
 $T = 244.73'$
 $R = 2,800.00'$
 $SE = .04$

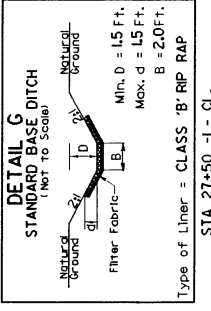
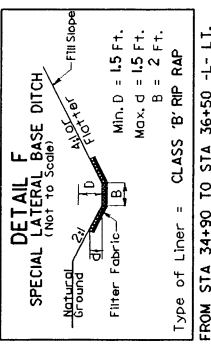
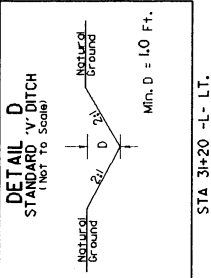
SKETCH SHOWING BRIDGE PAVEMENT IN RELATION TO BRIDGE



2
 JAMES B. JOHNSON
 LOTTIE V. JOHNSON
 DB 179 PG 191

2
 JAMES B. JOHNSON
 LOTTIE V. JOHNSON
 DB 179 PG 191

2
 JAMES B. JOHNSON
 LOTTIE V. JOHNSON
 DB 179 PG 191



NOTE: ELIMINATE CUT DITCH RIGHT OF STA 36+00 TO STA 36+50 -L-
 TYPE OF LINER = CLASS 'B' RIP RAP
 FROM STA 34+90 TO STA 36+50 -L- LT.
 STA 31+20 -L- LT.
 TYPE OF LINER = CLASS 'B' RIP RAP
 FROM STA 27+50 -L- CL.

NOTE: DESIGN EXCEPTION FOR DESIGN SPEED FOR -L- PROFILE SEE SHEET 7