STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 22, 2004

U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
P.O. Box 1890
Wilmington, NC 28402-1890

ATTN.: Mr. Richard Spencer
NCDOT Coordinator

Dear Sir:

Subject: **Application for Individual Section 404 and 401 permits** for the NC 87 widening from NC 131 to NC 41 (NC 87 Business) Bladen County, North Carolina
Federal Aid Project No. NHF-17(7)
State Project No. 6.439001T
TIP No. R-2562 C & D, NCDOT Division 6
$475.00 Debit work order 6.439001T, WBS Element 34467.1.6

PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) proposes to improve a portion of existing NC 87 by constructing Sections C and D of Project R-2562, which is a 10.3-mile widening of existing NC 87 from NC 131 to SR 1191 (Old NC 41). It will be a high speed, four-lane divided roadway. The project area lies in the rural unincorporated section of Bladen County. Mixed residential, farmland, and forest land uses border on the northern and southern ends of the project area. This project runs along the boundary of two drainage basins, the Lumber River Basin and the Cape Fear River Basin, Hydrologic Units 03040203 and 03030005 respectively. This application consists of the cover letter, ENG Form 4345, 8 ½ x 11-inch permit drawings, mailing labels, half-sized plan sheets and meeting minutes.

Purpose of the Project:
The primary purpose of the proposed project is to upgrade this section of NC 87 to a modern, high speed, multi-lane facility. NC 87 is a primary northwest-southeast corridor and serves as a key economic development highway as well as a military access route and hurricane evacuation route for the coastal region of the state. A high speed, multi-lane roadway would facilitate progressive vehicular movement during military mobilizations, weather-related emergencies, and peak summer beach traffic.

Project Organization:
R-2562C and D are the final two sections of R-2562 that will be constructed. The completion of R-2562 will finish the widening between the Elizabethtown Bypass (R-522) and the existing 4-lane section 0.8 miles south of I-95 in Cumberland County.

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

Project Schedule:
Construction letting dates for sections C and D are scheduled for December 2004. Sections A and B have already been constructed.

Summary of Project Impacts:
Impacts to jurisdictional wetland acres on Project R-26562C and D total 4.58, consisting of:

Table 1A: Wetland Impacts			
	Non-Riverine	Riverine	**Total**
Fill	1.61	1.86	**3.47**
Excavation		0.01	**0.01**
Mechanized Clearing	0.45	0.65	**1.10**
Total	**2.06**	**2.52**	**4.58**

Impacts to jurisdictional streams and surface waters consist of:

Table 1B: Surface Water Impacts	
Fill in Streams (ac)	0.14
Fill in Pond (ac)	0.68
Stream Impacts (ft)	1,293

Summary of Mitigation:
The project has been designed to avoid and minimize impacts to jurisdictional areas throughout the NEPA and design processes. Detailed descriptions of these actions are presented in the mitigation portion of this application. Onsite mitigation will compensate for 0.27 acres of wetland impacts and 189 feet of stream impacts. Compensatory mitigation for the remaining 4.31 acres and 440 feet of impacts will be provided by the Ecosystem Enhancement Program (EEP).

NEPA DOCUMENT STATUS

A State Environmental Assessment (EA) was completed by the NCDOT in compliance with the National Environmental Policy Act. The document addressed R-2562 (sections A, B, C and D), a widening of NC 87 to a modern, high speed, multi-lane facility from the Elizabethtown Bypass to the beginning of multi-lanes southeast of I-95 in Bladen and Cumberland Counties.. The EA explains the purpose and need for the project, provides a description of the alternatives considered and characterizes the social, economic, and environmental effects. After the approval of the EA (July 1993) and Finding of No Significant Impact (FONSI) (March 1995), copies were provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

INDEPENDENT UTILITY

R-2562 C and D are in compliance with 23 CFR Part 771.111(f) which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

(1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;

(2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area; and

(3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

RESOURCE STATUS

Delineations:

Wetland delineations were conducted using the criteria specified in the 1987 Corps of Engineers Wetland Delineation Manual. Wetlands on the C-section were delineated in January 2004 by biologists from Stantec, and verified by the USACE (Richard Spencer) on January 29, 2004. NCDOT biologists delineated wetlands in section D in July and August 2001. Wetlands were field verified in August 2001 by the USACE (Richard Spencer). Stream status and mitigation requirements were determined at an environmental agency pre-application field review meeting on November 30, 1999 for the C-section and August 21, 2000 for the D-section. Agencies in attendance were the USACE (Dave Timpy), USFWS (Tom McCartney) and NCWRC (David Cox). The NCDWQ (John Hennessy) deferred to the USACE.

Table 1 is a list of verified impacts to jurisdictional wetland resources, which include impacts resulting from fill, excavation, mechanized clearing. The calculations and drawings by NCDOT Hydraulics Unit are presented in the attached permit drawings. See sheet 20 of 22 for impacts in Section C and sheet 25 of 25 for impacts in Section D.

Wetlands:

The impacted wetland areas are described in Table 2A (Section C) and 2B (Section D) by the Site Number, River Basin, impact area, Cowardin *et al.* classification, and riverine or non-riverine status. These wetland descriptions are reported and described further in the Environmental Assessment (July 1993).

Table 2A – R-2562C Wetland Impacts and Descriptions*

Site	Lumber or Cape Fear River Basin	Non- Riverine Wetland Impacts (acres)	Riverine Wetland Impacts (acres)	Cowardin *et al.* Description	EA Site Number
1	Lumber	-	0.003	PEM1	E-28C
2	Cape Fear	-	0.010	PEM1	E-28C
3	Cape Fear	0.008	-	PFO3	E-29
6	Lumber	0.530	-	PFO1	E-33
7	Lumber	1.500	1.180	PSS1	E-39
Total impacts within Lumber River Basin		2.030	1.183		
Total impacts within Cape Fear River basin		0.008	0.010		
Section C Totals		**2.038**	**1.193**		
		3.231			

Table 2B – R-2562D Wetland Impacts and Descriptions*					
Site	Lumber or Cape Fear River Basin	Non- Riverine Wetland Impacts (acres)	Riverine Wetland Impacts (acres)	Cowardin *et al.* Description	EA Site Number
1	Cape Fear	0.020	-	PSS6	E-42/W-42
2	Cape Fear	-	0.840	PFO1/4	DE-43/ DW-44
2	Cape Fear	-	0.070	PFO1/4	DE-43/ DW-44
2	Cape Fear	-	0.090	PFO1/4	DE-43/ DW-44
4	Cape Fear	0.070	-	PFO4	NA*
5	Cape Fear	0.180	-	PFO4	NA*
6	Cape Fear	0.080	-	PFO1	NA*
Total impacts within Lumber River Basin		-	-		
Total impacts within Cape Fear River basin		0.350	1.00		
Section D Totals		**0.350**	**1.00**		
		1.350			

**Wetland sites within Duplin were not described in the EA.*

Wetland areas are generally described in the EA by the Cowardin *et al.* wetland classification system. The wetland types are classified as PFO, PSS, or PEM with additional flora communities found in the project area.

PFO – Palustrine Forested
- 1 Broad-leaved Deciduous,
- 2 Needle-leaved Deciduous,
- 4 Needle-leaved Evergreen,
PSS – Palustrine Scrub Shrub
-6 Deciduous
PEM-Palustrine Emergent
-1 Persistent

Surface Waters:
The impacted streams are reported in Tables 2A and 2B according to stream name, mitigation requirements, area of impacts, DWQ stream class, river basin and DWQ index number. Descriptions of the major stream crossings area are reported in the Natural Systems Report (March 1992), and the EA (July 1993). Minor stream crossings are not described in the Natural Systems Report or the EA.

Table 2A – R-2562C Surface Water Impacts

Site	Stream Name and Intermittent (I) or Perennial (P)	Mitigation Required	Structure/ Size Type	Existing Channel impacted (feet)	Pond Impacts	DWQ Class	River Basin	DWQ Index number
1	Huckleberry Swamp (I)	Not Required	48" RCP	32	-	C-Sw	Lumber	14-22-6-2
3	UT to Cape Fear (I)	Not Required	24" RCP	210	-	C	CF	18-26
4	UT to Cape Fear (I)	Not Required	30" RCP	272	-	C	CF	18-26
5	UT to Cape Fear (P)	446	7'x5' RCBC	223	-	C	CF	18-41
6	Black Swamp (P)	434	8'x3' RCBC	217	-	C-Sw	Lumber	14-22-7
7	Reedy Meadow Swamp (P)	0	Bridge	0	-	C-Sw	Lumber	14-22-7-1
	Total	**880**		**954**	-			

Table 2A – R-2562D Surface Water Impacts

Site	Stream Name and Intermittent (I) or Perennial (P)	Mitigation Required	Structure / Size Type	Existing Channel impacted (feet)	Pond Impacts	DWQ Class	River Basin	DWQ Index number
2	UT to Bakers Creek (P)	189	10'x8 RCBC	189		C	CF	18-43
3	UT to Bakers Creek (I)	Not Required	36" RCBC	103		C	CF	18-43
7	-	-	-	-	0.22	-	CF	-
8	UT to Bakers Creek (I)	Not Required	30" RCP	34	0.46	C	CF	18-43
	Total	**189(Onsite)**		**339**	**.68**			

Temporary Impacts:
A temporary work bridge and top down construction will be utilized to construct the proposed bridge at Reedy Meadow Swamp and therefore eliminate temporary impacts. Furthermore, the limits of the permanent impacts are sufficient to allow for the installation of all pipes and box culverts and for fill on temporary access roads and work pads. All temporary impacts are included within the footprint of the permanent impacts.

THREATENED AND ENDANGERED SPECIES

Plants and animals with Federal classification of Endangered (E) or Threatened (T) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the U.S. Fish and Wildlife Service (FWS) lists 6 federally protected species for Bladen County. The NCDOT received concurrence from the US Fish and Wildlife Service in a letter dated February 17, 1999 that the project would not effect 5 of the 6 species listed. A copy of this letter is attached. The shortnose sturgeon has been added to the list of federally protected species that occur in Bladen County. Through email communication on March 3, 2004, Fritz Rohde, NC Division of Marine Fisheries, stated that the streams impacted by the project do not offer habitat for the Shortnose Sturgeon. Therefore the NCDOT concludes that the project will have no effect on the shortnose sturgeon. Re-surveys have been conducted by biologists from Stantec on June 2, 2004 to update previous surveys and to ensure that no protected species are present that would be impacted by the project.

Table 4 – Threatened and Endangered Species in Bladen County, NC

Scientific Name	Common Name	Federal Status*	Biological Conclusion
Alligator mississippiensis	American alligator	T(S/A)	No conclusion required
Picoides borealis	Red-cockaded woodpecker	E	No Effect
Acipenser brevirostrum	Shortnose sturgeon	E	No Effect
Schwalbea americana	American chaffseed	E	No Effect
Lysimachia asperulaefolia	Rough-leaved loosestrife	E	No Effect
Lindera melissifolia	Pondberry	E	No Effect

**Note: E-Endangered, T-Threatened, T(S/A)-Threatened due to similarity of appearance, not subject to Section 7 consultation*

CULTURAL RESOURCES

Historic Architecture:
The project alternatives were evaluated to determine the effect on properties listed on the National Register of Historic Places and the North Carolina Study List. The properties listed on the National Register are the Robeson House, Purdie Methodist Church, Purdie Place, and the DeVane MacQueen House. The W.H. WhiteHouse and the John A. McDowell House are listed on the study list. The DeVane MacQueen House is not located within Section C or D.

In compliance with GS-121-12(a), survey results for the National Register and State Study List, properties were forwarded the SHPO on July 9, 1992. On September 4, 1992, the SHPO, determined the this portion of the project May Affect the following properties:

- Robeson House (Walnut Grove)
- Purdie Methodist Church
- W.H. House

In consultation with SHPO, NCDOT committed to consider the following during the final design of the project:

- Walnut Grove Plantation- Any landscape material between the house and the right-of-Way will not be removed. A median crossover near the Beth Carr Presbyterian Church will be investigated during final design;
  All construction activities will be conducted within the existing right-of-way. A median crossover is located 1,200 feet from the Beth Carr Presbyterian Church. If the median crossover is located any closer to the Church, the Walnut Grove Plantation property would be affected.
- W.H. White House- The removal of any trees within the temporary construction easement will be avoided. Any landscaping materials removed by the temporary construction easement will be replaced. A median crossover in the vicinity property will be investigated during final design;
  The Right-of Way does encroach on the property, however the construction plans prohibit the removal of the large oak tree located in the right-of-way. A median crossover is located approximately 200 feet west of the property.
- Purdie Methodist Church- A median crossover between SR 1344 and SR 1342, and as close as possible to the church, will be investigated during the final design.
  A median crossover is located 1200 feet to the east at the closest intersection. An additional crossover is located 2000 feet to the west of the church

Archaeology:
There are no known archeological sites within the proposed project area. Based on present knowledge of the area, it is unlikely that any archeological resources eligible for the National Register of Historic Places will be affected by this project. Therefore, the State Historic Preservation Office recommended that no archeological investigations be conducted for this project.

UTILITY IMPACTS

All utilities relocations will occur within the project footprint or will use hand clearing only. No additional impacts will occur as a result of the utility relocations.

WILD AND SCENIC RIVERS

None of the streams or creeks are listed as a federal or state wild and scenic river.

ESSENTIAL FISH HABITAT

Based on the location, scope, and nature of impacts expected from this project, impacts to Essential Fish Habitat are not anticipated.

303(D) LIST

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of waters not meeting water quality standards or which have impaired uses. No streams affected by the project are on the 2002 303(d) list of impaired water bodies.

FEMA COMPLIANCE

There is no detailed flood insurance study involvement with any of the major stream crossings on this portion of the project. Therefore, coordination for compliance with FEMA will not be required.

INDIRECT AND CUMULATIVE EFFECTS ANALYSIS

An ICE study is being conducted by the NCDOT's Office of Human Environment and will be forwarded to the agencies upon its completion. The anticipated completion is July 2004.

MITIGATION OPTIONS

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

Avoidance:

All wetland areas not affected by the project will be protected from unnecessary encroachment. No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.

General avoidance measures incorporated into the project design of R-2562C & D

- Relocation of utility lines within roadway fill in jurisdictional areas where practical
- Elimination of the Tarheel Bypass avoided approximately 16 acres of wetland impacts.
- Elimination of the Dublin Bypass avoided approximately 12 acres of wetland impacts.

Site Specific Avoidance Measures
R-2562D

- Station 10+85-L-(Lt) The proposed ditch was eliminated outside the limits of the jurisdictional area.
- Site 9, Station 28+60-L3-(Rt) The mechanized clearing impacts were eliminated at this site.

Minimization:

Minimization has been employed in the project area by the proposed widening of the existing roadway and avoiding roadway construction on new location. Highway construction on new location in the coastal plain of North Carolina typically results in greater impacts to wetlands. Thus widening is considered the preferred solution from a minimization standpoint. Reduction of fill slopes and median widths at stream/wetland crossings will reduce unnecessary wetland takings.

General Minimization Measures

- Use of 3:1 side slopes in jurisdictional areas.
- All culverts will be buried below the streambed.

Site Specific Minimization Measures
R-2562C

- Site 1, Station 102+50-L- Drainage has been intercepted in the roadway median and side ditches and outlets into the 1050 cross pipe instead of discharging directly into the stream.
- Site 4, Station 119+80-L- The new cross pipe will be realigned to approximate Sta 119+80 to improve the outlet angle to the stream.
- Site 5, Station 146+62-L- The drainage has been intercepted in the roadway median and side ditches and outlets into the 1050 cross pipe instead of discharging directly into the stream

- Site 7, Station 176+94- 179+74 –L- The existing culvert will be replaced with a bridge that spans the entire stream and a portion of the wetlands. Removal of the causeway will result in the restoration of 0.27 acres of riverine wetlands. Bridging a portion of the wetlands will also eliminate the need for ditching in the area.

R-2562D

- Site 2, Station 10+46-Rt-Y2- The proposed special ditch was removed and an existing ditch was utilized.

Compensatory Mitigation:

Based upon the agreements stipulated in the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), it is understood that the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for NCDOT projects that are listed in Exhibit 1 of the subject MOA during the EEP transition period which ends on June 30, 2005.

Since the subject project is listed in Exhibit 1, the necessary compensatory mitigation to offset unavoidable impacts to waters that are jurisdictional under the federal Clean Water Act will be provided by the EEP. The offsetting mitigation will derive from an inventory of assets already in existence within the same 8-digit cataloguing unit. The Department has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The NCDOT will conduct onsite restoration for 0.27 acres of wetlands in the Lumber River Basin and 189 feet of stream restoration in the Cape Fear River Basin. The remaining, unavoidable impacts to 1.92 acres (1.01 ac in Cape Fear & 0.91 ac in Lumber) of jurisdictional riverine and 2.39 acres (0.36 ac in Cape Fear & 2.03 in Lumber) of non-riverine wetlands and 440 feet (223 feet Cape Fear & 217 feet in Lumber) of jurisdictional streams will be offset by compensatory mitigation provided by the EEP program. A copy of the EEP request letter is included in this application.

Onsite compensatory mitigation for this project will consist of the following.

Wetland Mitigation: Wetland impacts are shown table 2A and 2B on page 3 of this application. The existing culvert at R-2562C, Site 7 will be replaced with a 210 foot long bridge. The removal of the road fill will result in the restoration of 0.27 acres of riverine bottomland hardwood wetlands in the Lumber River Basin. The remaining unavoidable impacts to 1.92 acres of riverine wetlands and 2.39 acres of non-riverine wetlands will be mitigated through the use of EEP.

Fill material will be graded down to the elevation of the adjacent jurisdictional wetlands. Exact elevations will be determined during the construction by matching grades at cross sections of the adjacent wetlands. If the depth of excavation of the existing roadway surface layers fall below the adjacent wetland elevation and excess waste soil is not available onsite, clean sand will be added to bring the restored area to the correct elevation. The area will be disked as necessary to reduce compaction. Soil amendments may be added if needed. Wetland vegetation including bottomland hardwood species will be planted and are included in the Reforestation Sheet included with this application.

The removal of the old causeway is expected to enhance the natural hydrologic cycle for the surrounding wetlands. Water will be able to flow unimpeded beneath the new structure, allowing natural wetland hydrology to improve.

NCDOT will photo monitor the site for a period of one-year following completion of the project. The elevation of the mitigation site will be verified during construction of the project to ensure that the elevation matches the adjacent salt marsh. No hydrologic monitoring is proposed.

Stream Mitigation:
Stream impacts are shown in Table 3A and 3B on page 4 of this application. The existing culvert in the UT to Bakers Creek at Site 2 on the D-section is perched. Based on a phone call in April 2004 with Richard Spencer of the USACE, the impacts at Site 2, will be mitigated by replacing the existing perched culvert with a new culvert that will be buried below the stream bed. No natural stream design will be used at this site. The remaining 440 feet of stream impacts will be mitigated through the use of EEP.

Project Commitments

The following environmental commitments were agreed to in the NEPA process.

1. Construction related impacts of the proposed action on water resources will be minimized through erosion and sedimentation control measures as set forth in NCDOT Best Management Practice for the Protection of Surface Waters
This is a standard commitment on all NCDOT Projects

2. To reduce storm water runoff and the potential to introduce low levels of pollutant concentrations into surface water, grass swales will be used where practical.
Roadside ditches meet the criteria for grass swales.

3. Large fills and drainage features will be designed to preserve the natural environment.
Natural stream design was not a feasible option on this project.

4. The proposed project will be designed so the flood way can carry the 100-year flood without increasing the floodwater elevation more than one foot.
This is a standard commitment for all NCDOT Projects.

5. All unnecessary construction activity will be kept out of wetland areas.
All construction activity in jurisdictional areas occurs in the footprint of the permanent impacts. This is a standard commitment for all NCDOT Project.

6. A wetland mitigation plan for the project will be developed in conjunction with the permit application.
The details regarding wetland mitigation are addressed in the mitigation section of this application.

7. Underground storage tanks discovered within the right-of-way will be removed and any contamination will be remediated during construction.
This is a standard commitment for all NCDOT Projects.

8. Prior to right-of-way acquisition, the project area will be surveyed to determine if habitat is available for the Dismal Swamp Southeast shrew and the Mitchell satyr butterfly.
At the Time that the EA was written the Dismal Swamp Southeast Shrew was both federally and state listed. It is no longer listed and does not receive protection. Habitat for the Mitchell satyr butterfly consist of Carex dominated wetlands that are influenced by fire. There are no wetlands in the project area that are dominated by Carex.

REGULATORY APPROVALS

Application is hearby made for a Department of the Army Individual 404 Permit as required for the above-described activities. We are also hereby requesting a 401 Water Quality Certification from the Division of Water Quality. In compliance with Section 143-215.3D(e) of the NCAC, we will provide $475 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line). We are providing seven copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their review.

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

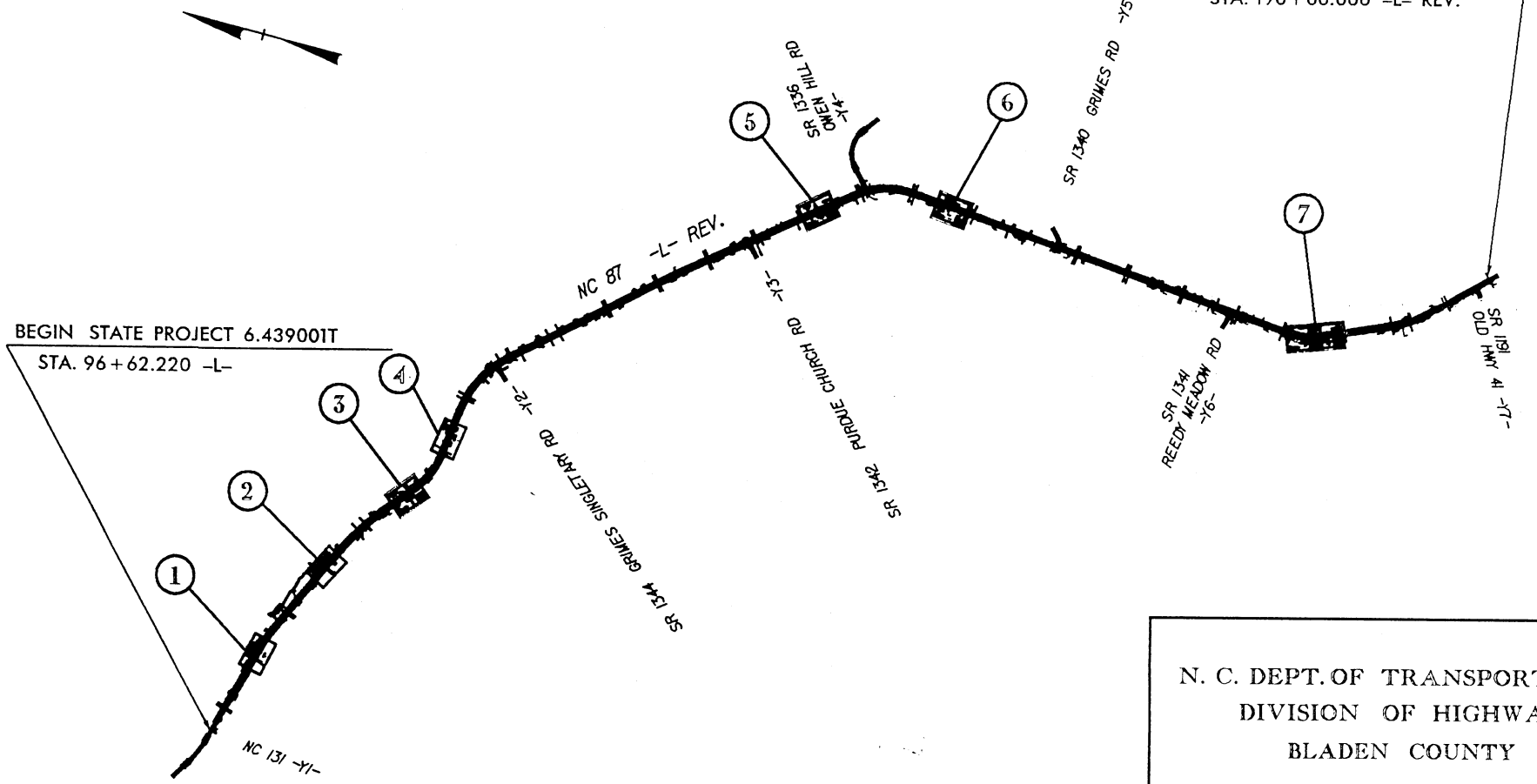
Sincerely,

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

cc: w/attachment
Mr. John Hennessy, NCDENR, DWQ (7 Copies)
Mr. Travis Wilson, NCWWRC
Ms. Becky Fox, USEPA
Mr. Ronald Mikulak, USEPA
Mr. Gary Jordan, USFWS
Mr. Greg Perfetti, P.E., Structure Design Unit
Mr. David Chang, P.E., Hydraulics Unit
Mr. Terry Gibson, P.E., Division 6 Engineer
Mr. Jim Rerko, Division 6, DEO

w/o attatchment
Mr. Jay Bennett, P.E., Roadway Design Unit
Mr. Omar Sultan, Programming and TIP
Mr. David Franklin, USACE
Mr. Mark Staley, Roadside Environmental
Ms. Cindy Sharer P.E., PDEA
Ms. Beth Harmon, EEP
Mr. Art McMillian, P.E., Highway Design

SITE MAP



SCALE 1:40000

(1) DENOTES SITE NUMBER

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY

PROJECT: 6.439001T (R-2562C)

NC 87 FROM NC 131
TO SR 1191

SHEET 1 OF 21

VICINITY MAP

NCDOT

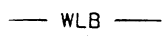
DIVISION OF HIGHWAYS

BLADEN COUNTY

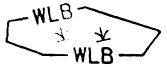
PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

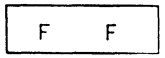
SHEET 2 OF 21



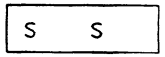
WETLAND BOUNDARY



WETLAND



DENOTES FILL IN WETLANDS



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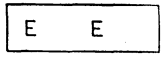
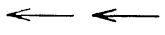
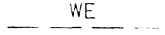


DENOTES EXCAVATION IN WETLANDS

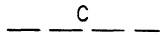
DENOTES MECHANIZED CLEARING



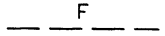
FLOW DIRECTION



EDGE OF WATER

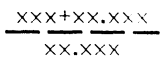


PROP. LIMIT OF CUT

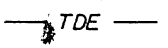


PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

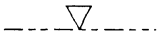


PROPERTY LINE

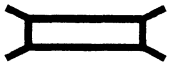


TEMP. DRAINAGE EASEMENT

PERM. DRAINAGE EASEMENT



WATER SURFACE

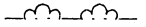


PROPOSED CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTING STRUCTURES)

SINGLE TREE



WOODS LINE

DRAINAGE INLET

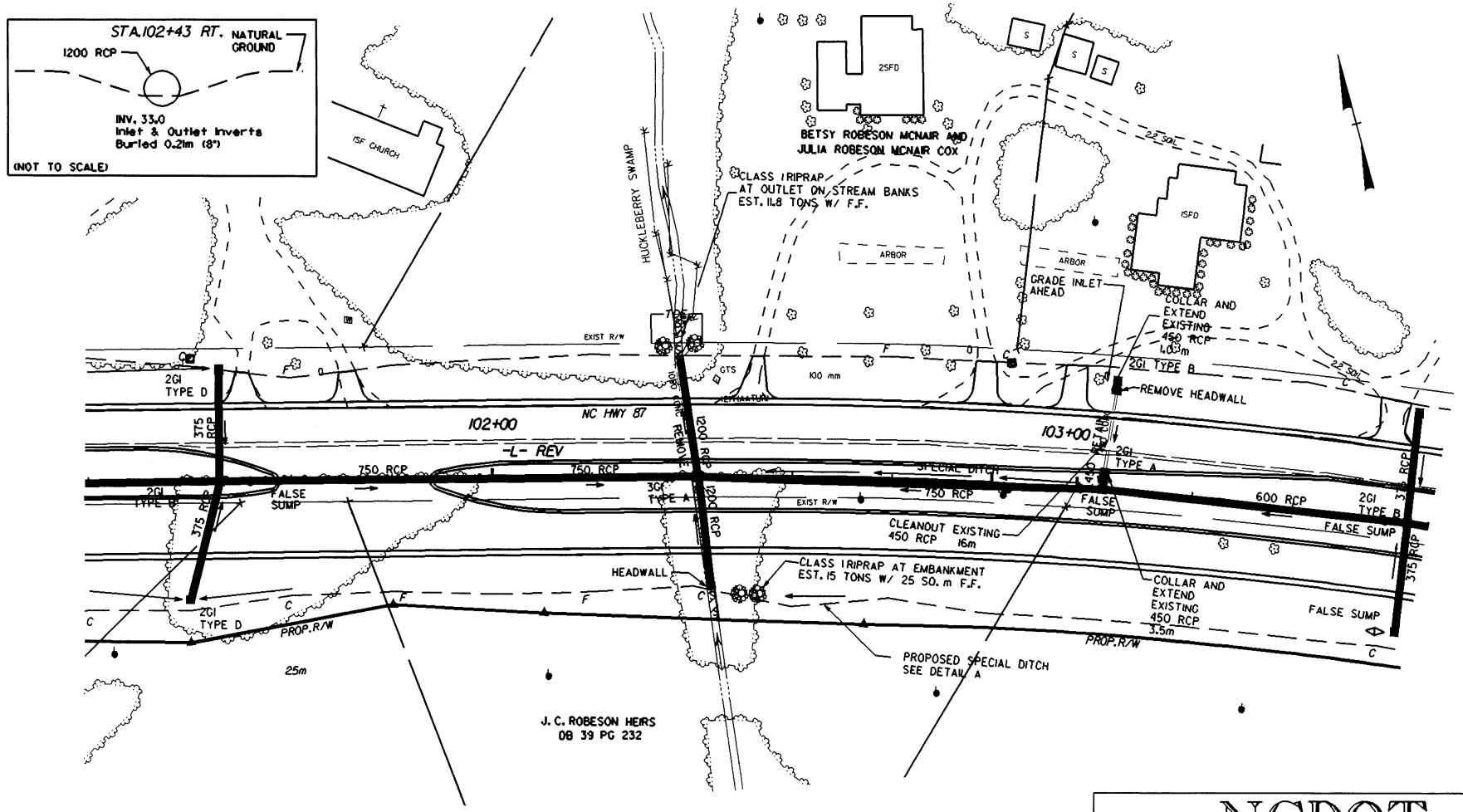
RIP RAP

LEGEND

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY

PROJECT: 6.439001T (R-2562C)
NC 87 FROM NC 131
TO SR 1191

SHEET 3 OF 21



PLAN VIEW

SITE 1

NCDOT

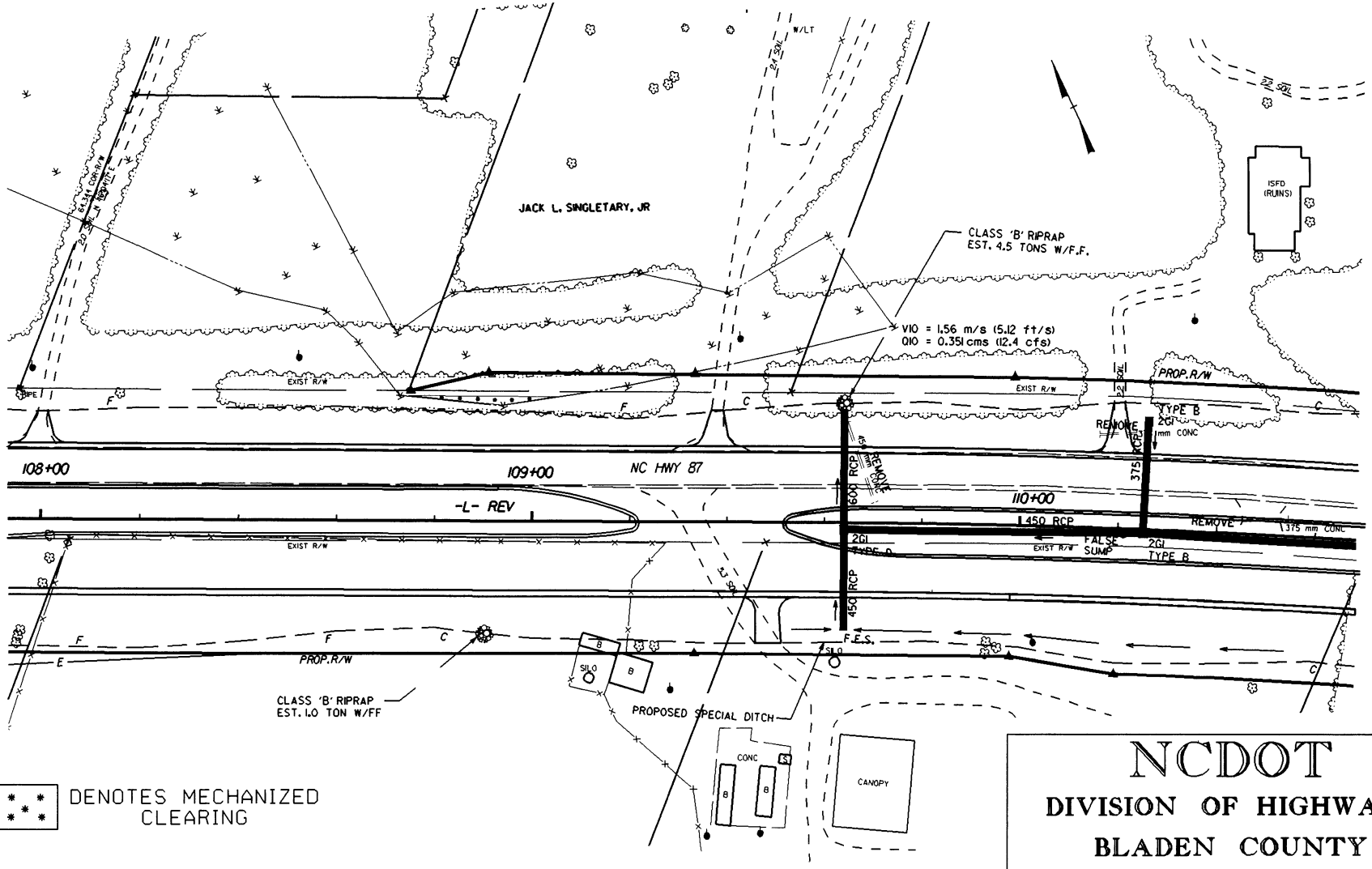
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 4 OF 21



DENOTES MECHANIZED CLEARING

PLAN VIEW

SITE 2

10m 0 20m

SCALE

NCDOT

DIVISION OF HIGHWAYS

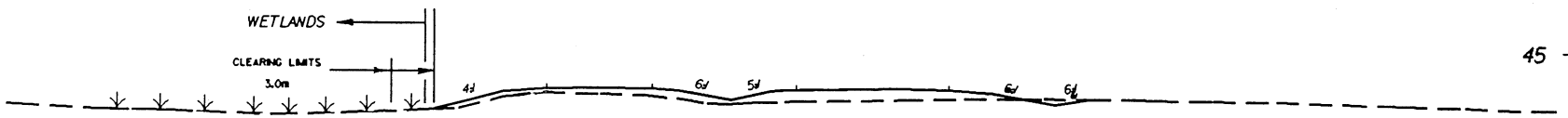
BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 5 **OF** 21

-L- REV.



45 45

35 35

TYPICAL SECTION FROM 108+80 to 109+20
(4:1 max side slopes, eliminate need for G/R & wider shoulder)

40 30 20 10 0 10 20 30 40

X-SECTION

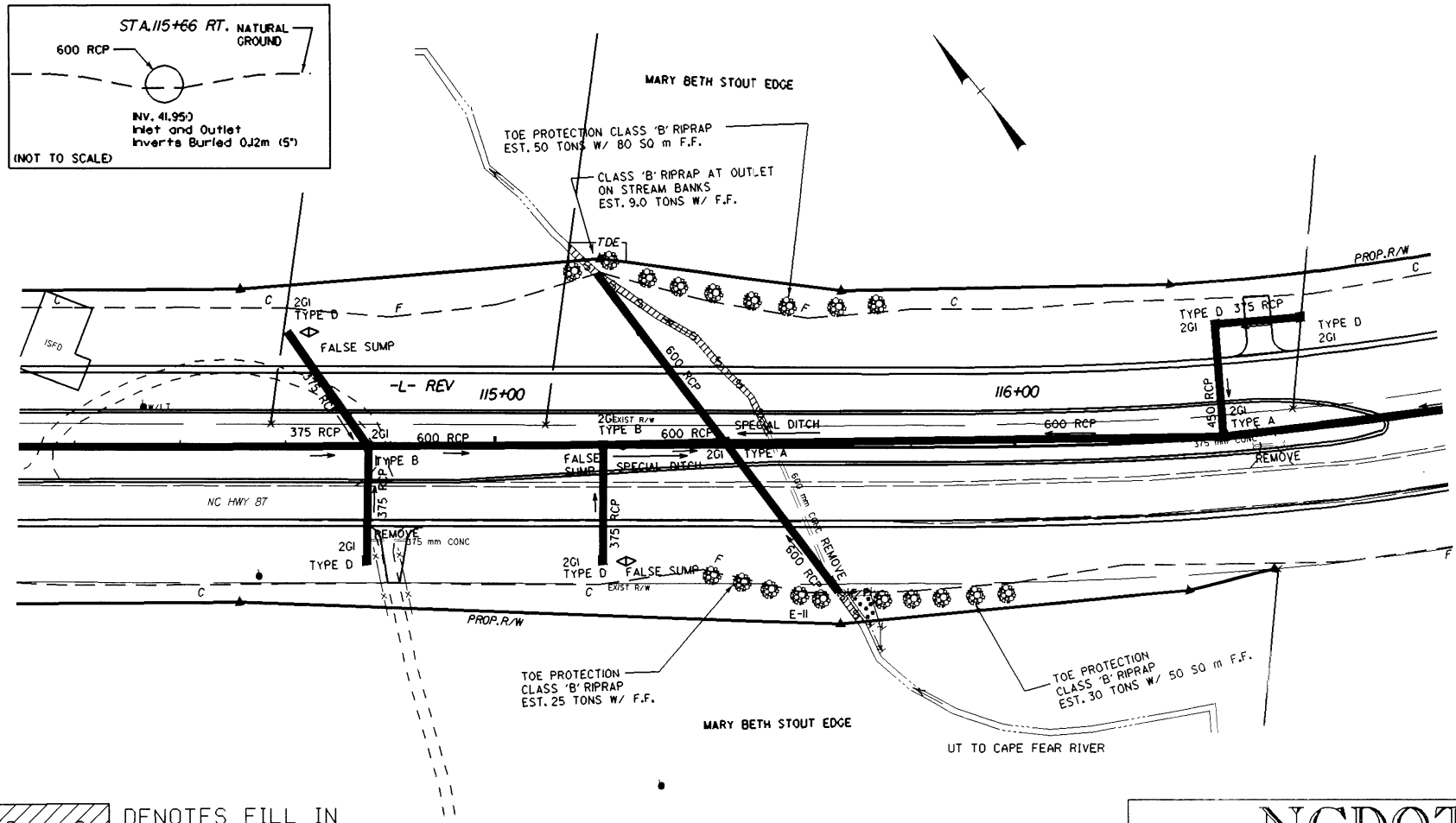
5m 0 10m
HORIZONTAL SCALE

5m 0 10m
VERTICAL SCALE

SITE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 6 OF 21



S S DENOTES FILL IN SURFACE WATER

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

10m 0 20m SCALE

PLAN VIEW

SITE 3

NCDOT

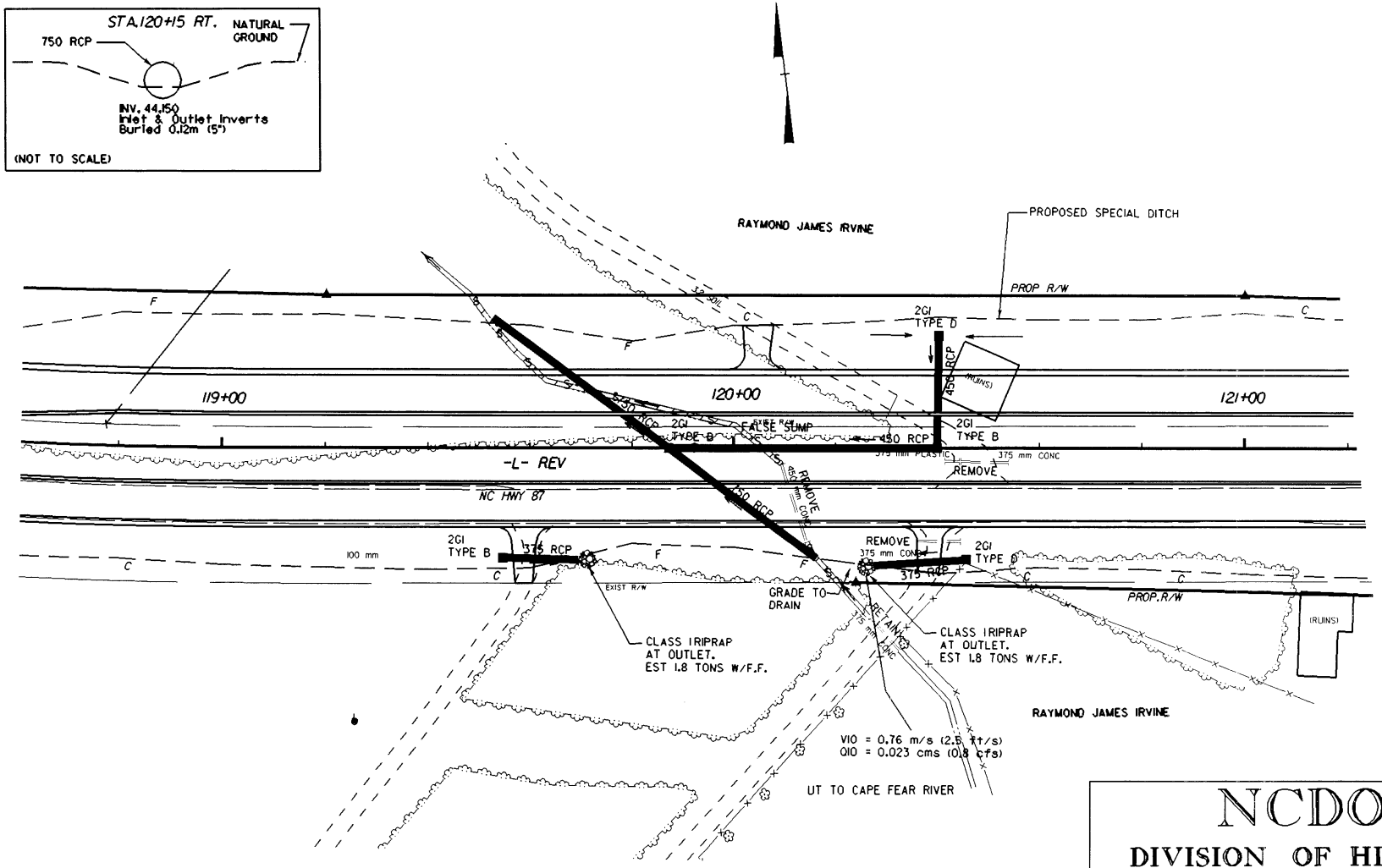
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET OF



DENOTES FILL IN SURFACE WATER

PLAN VIEW

SITE 4

10m 0 20m

SCALE

NCDOT

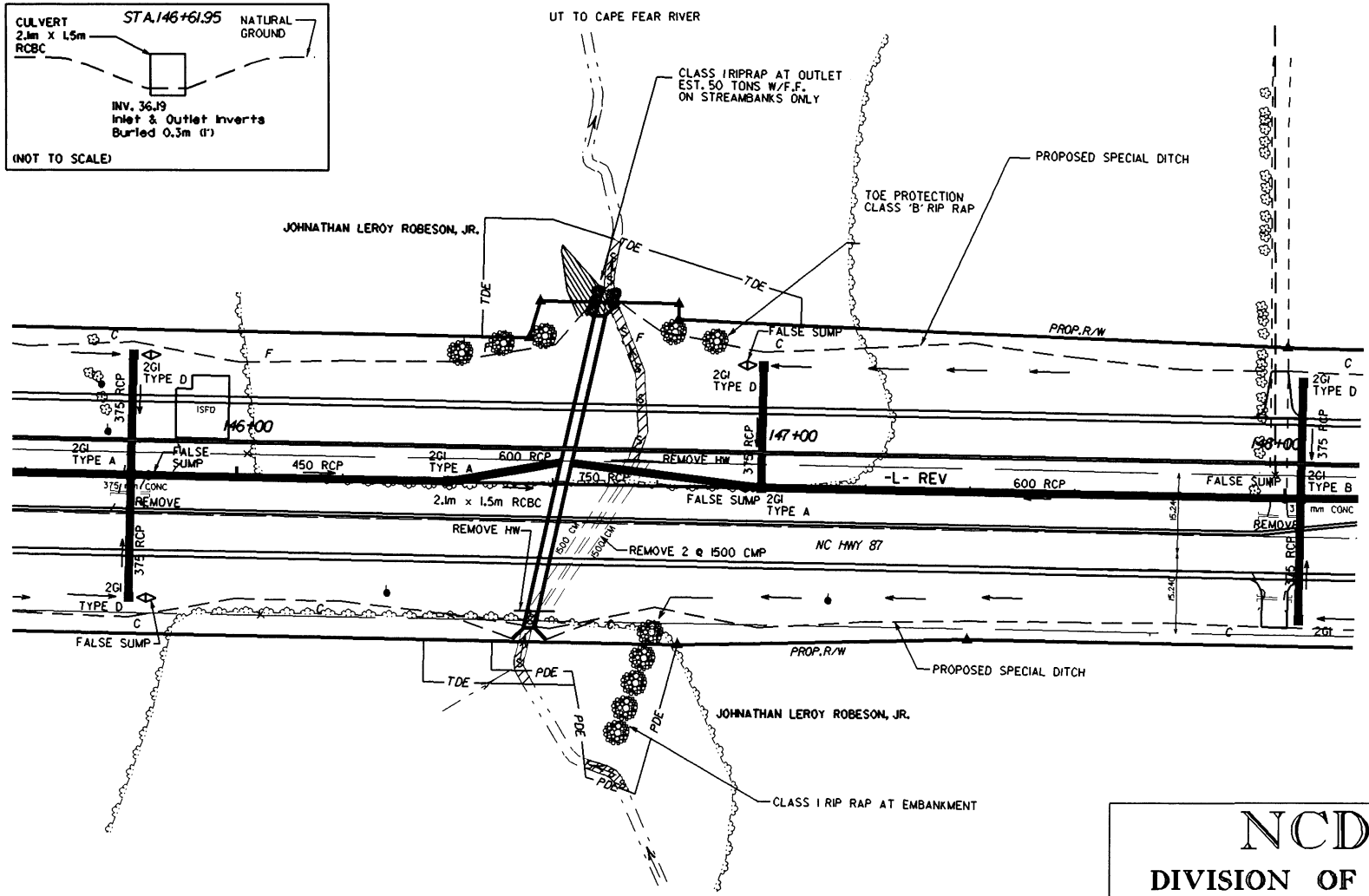
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET OF



DENOTES FILL IN SURFACE WATER

PLAN VIEW

SITE 5

10m 0 20m

SCALE

NCDOT

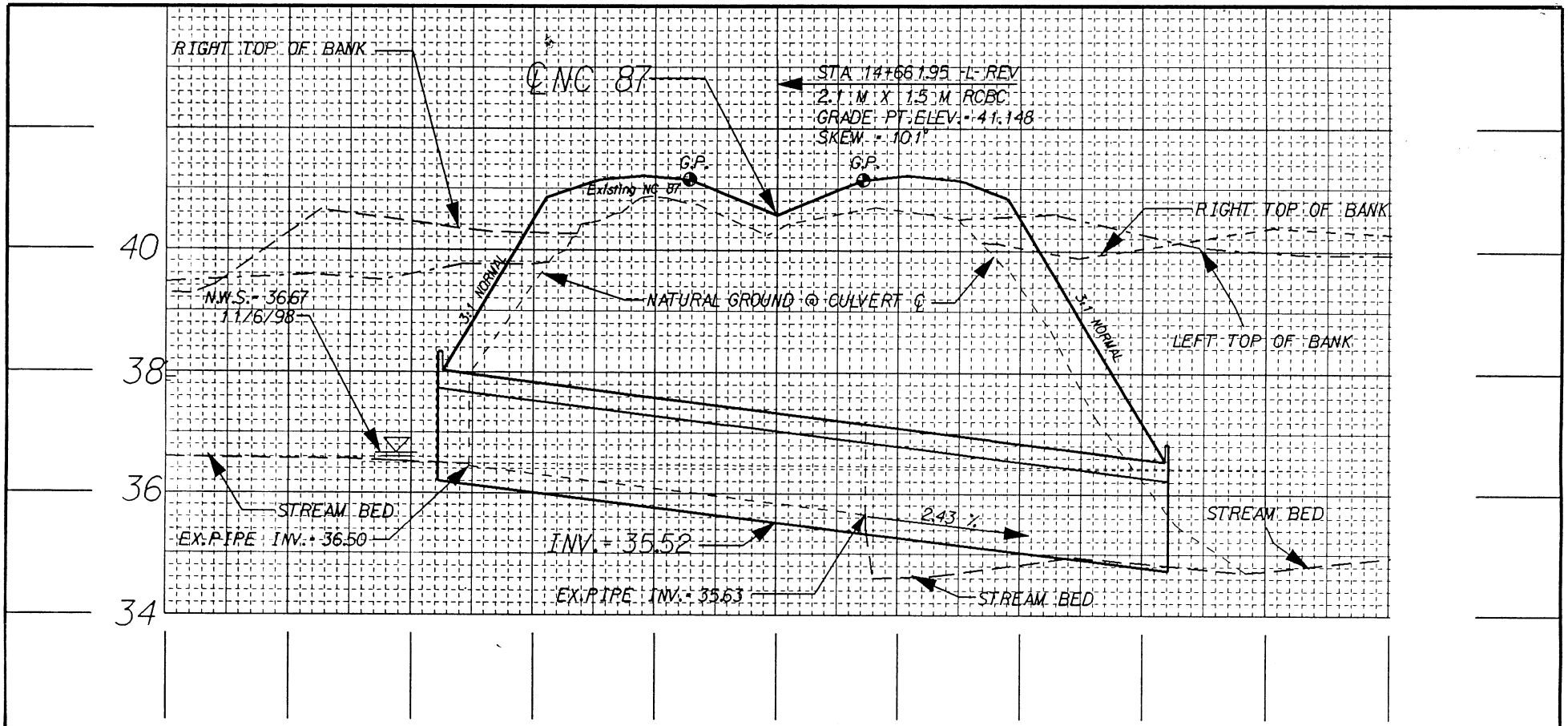
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 9 OF 21



BOX CULVERT PROFILE

SITE 5

5m 0 10m

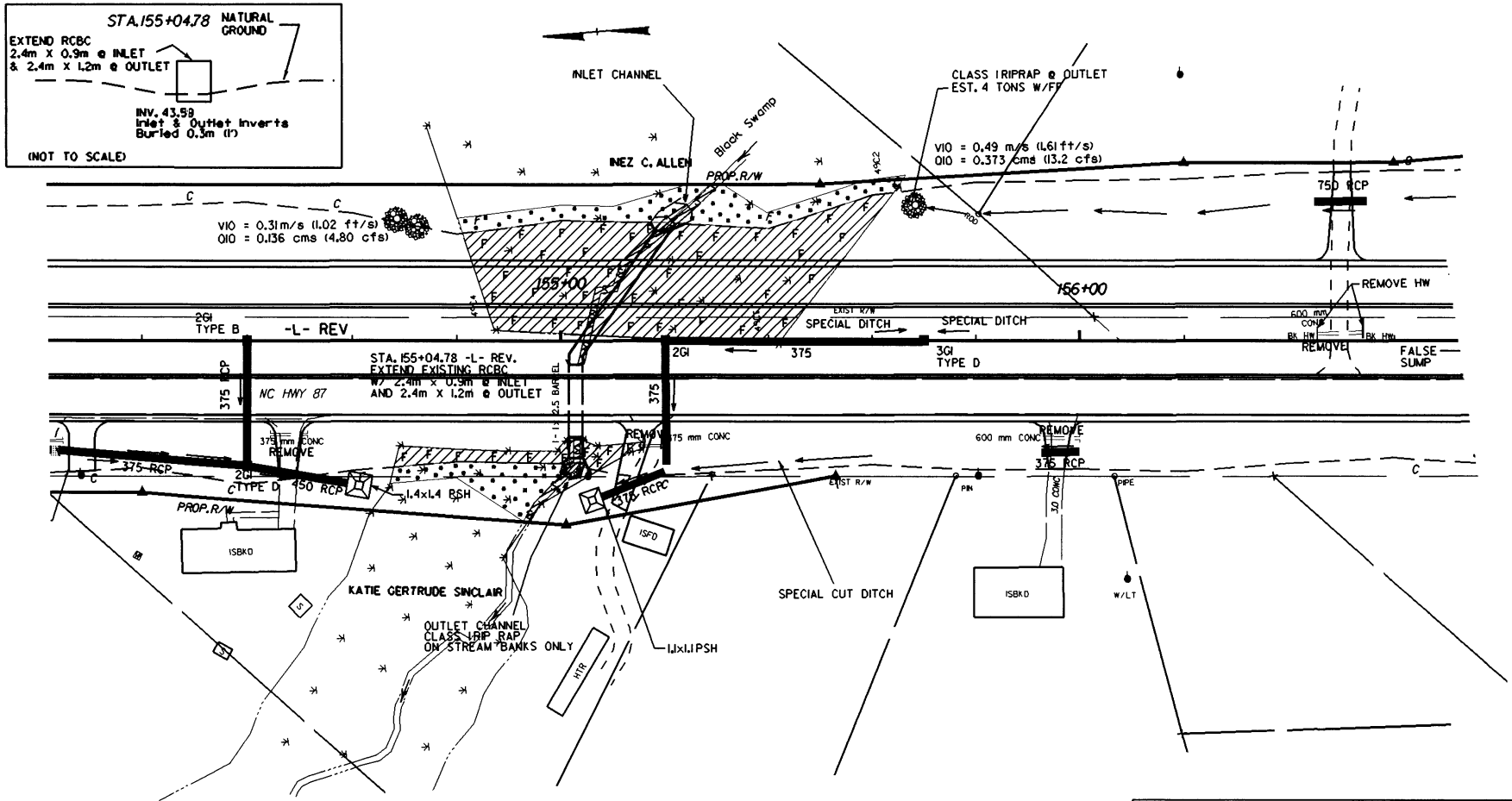
HORIZONTAL SCALE

1m 0 2m

VERTICAL SCALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 10 OF 21



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES FILL IN SURFACE WATER

PLAN VIEW

10m 0 20m SCALE

SITE 6

NCDOT

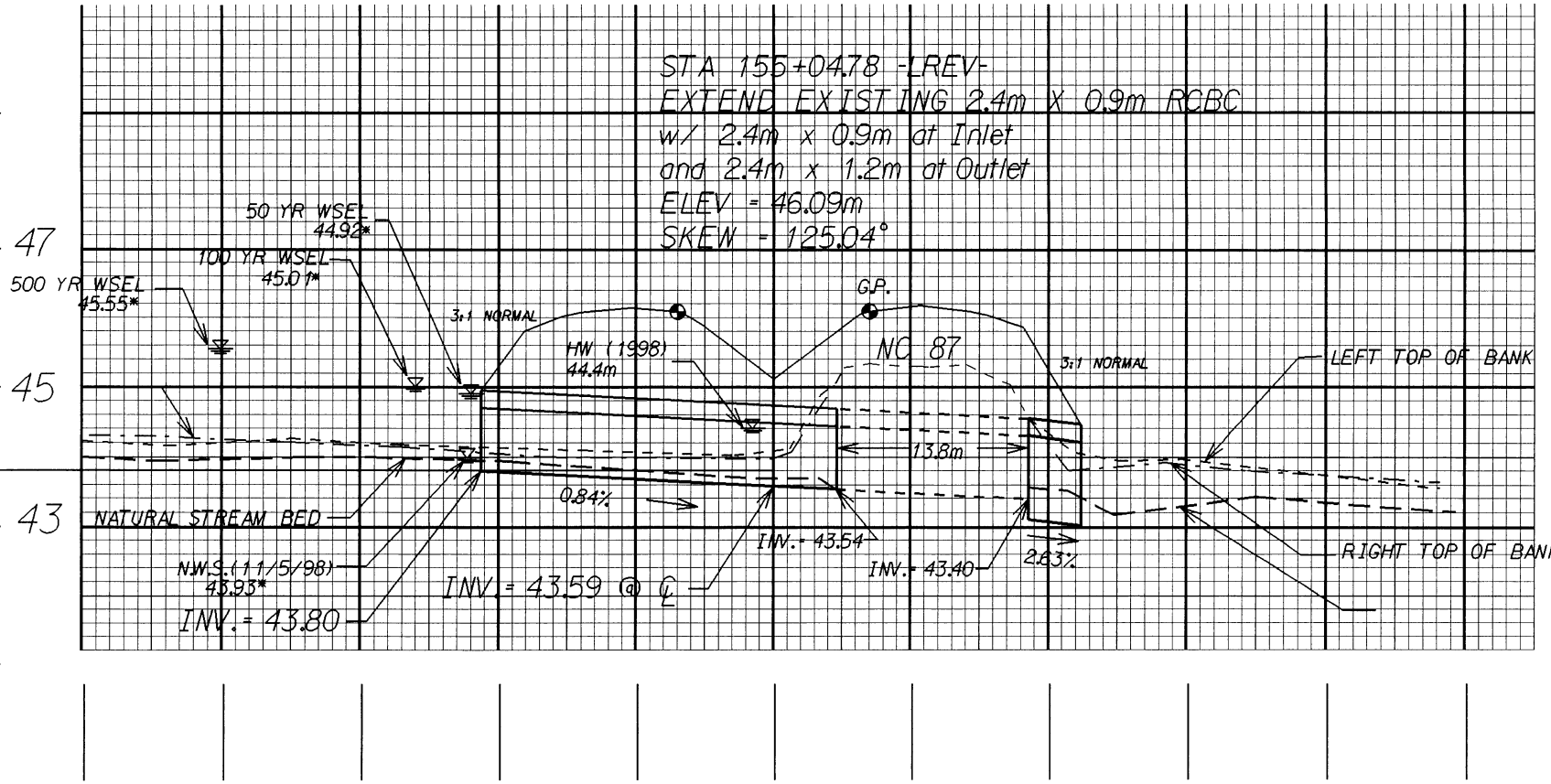
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 11 OF 21



BOX CULVERT PROFILE

SITE 6

5m 0 10m

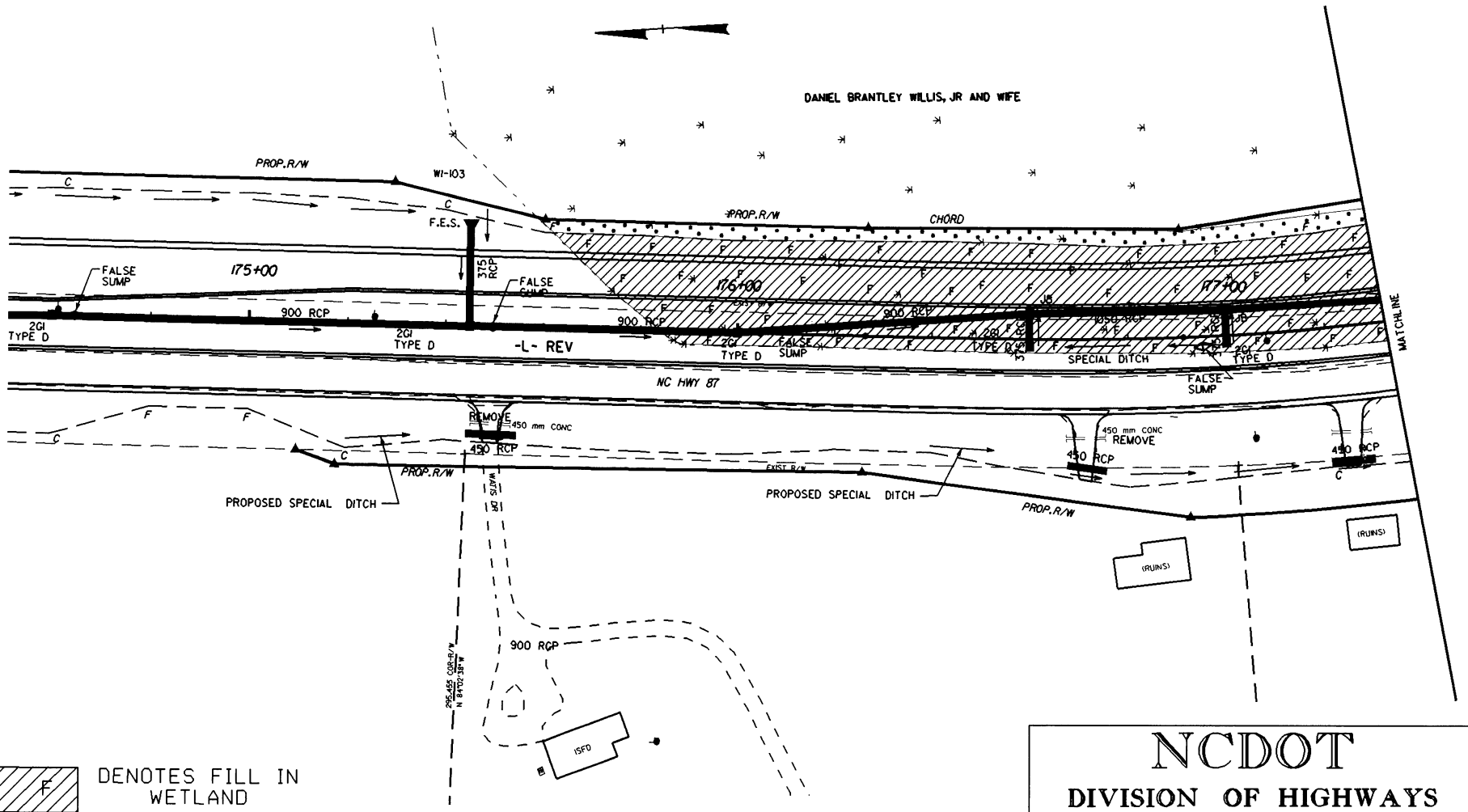
HORIZONTAL SCALE

1m 0 2m

VERTICAL SCALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 12 OF 21



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

10m 0 20m SCALE

PLAN VIEW

SITE 7

NCDOT

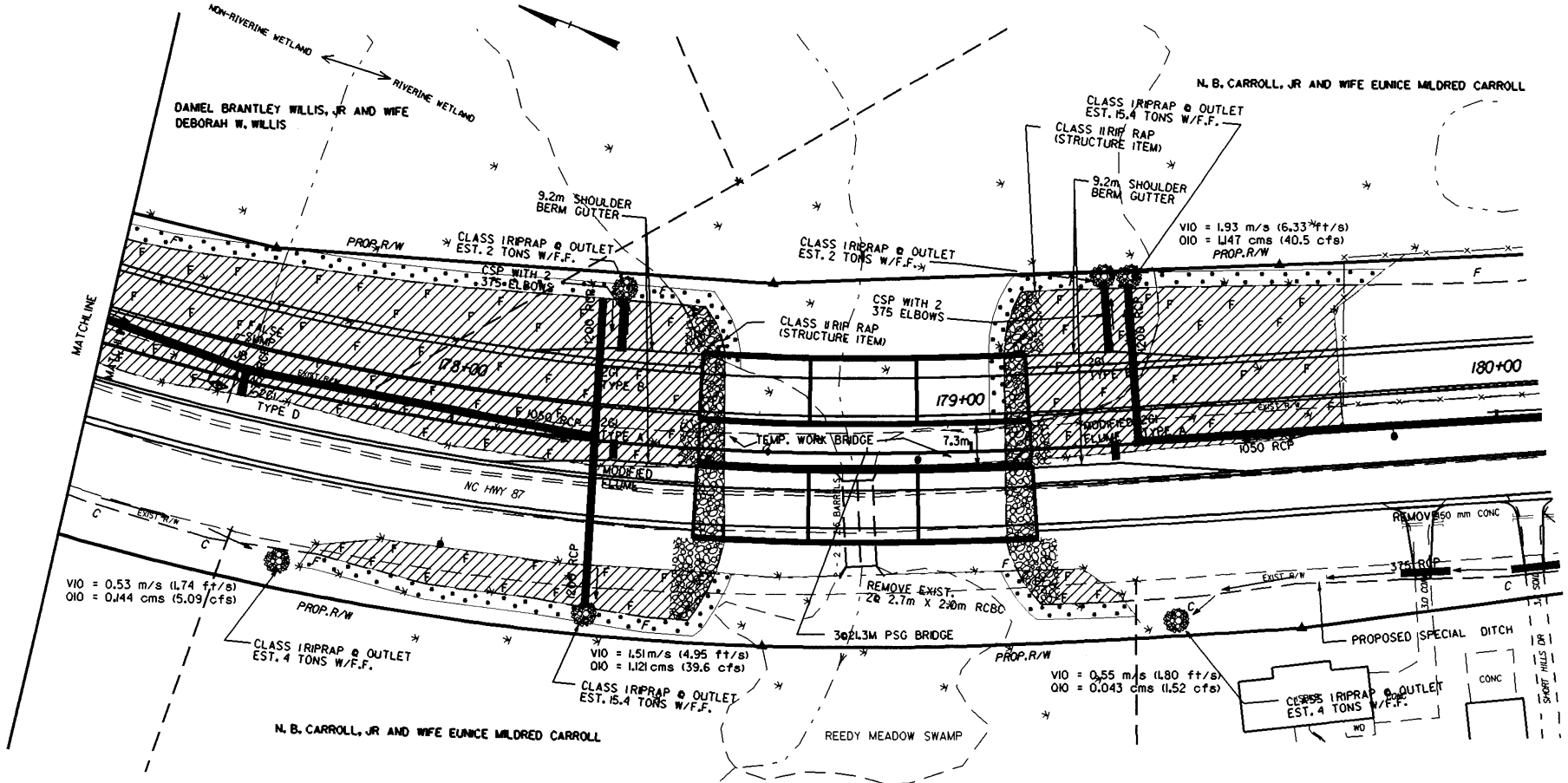
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 13 OF 21



DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

10m 0 20m

SCALE

PLAN VIEW

SITE 7

NCDOT

DIVISION OF HIGHWAYS

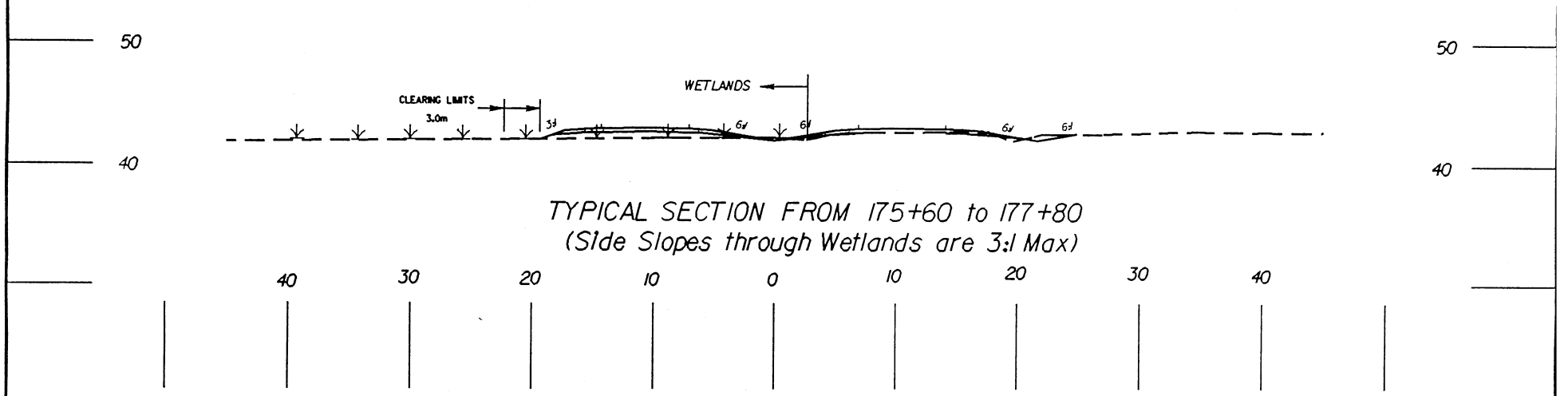
BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)

NC 87 FROM NC 131 TO SR 1191

SHEET 14 OF 21

-L- REV.



TYPICAL SECTION FROM 175+60 to 177+80
(Side Slopes through Wetlands are 3:1 Max)

X-SECTION

5m 0 10m
HORIZONTAL SCALE

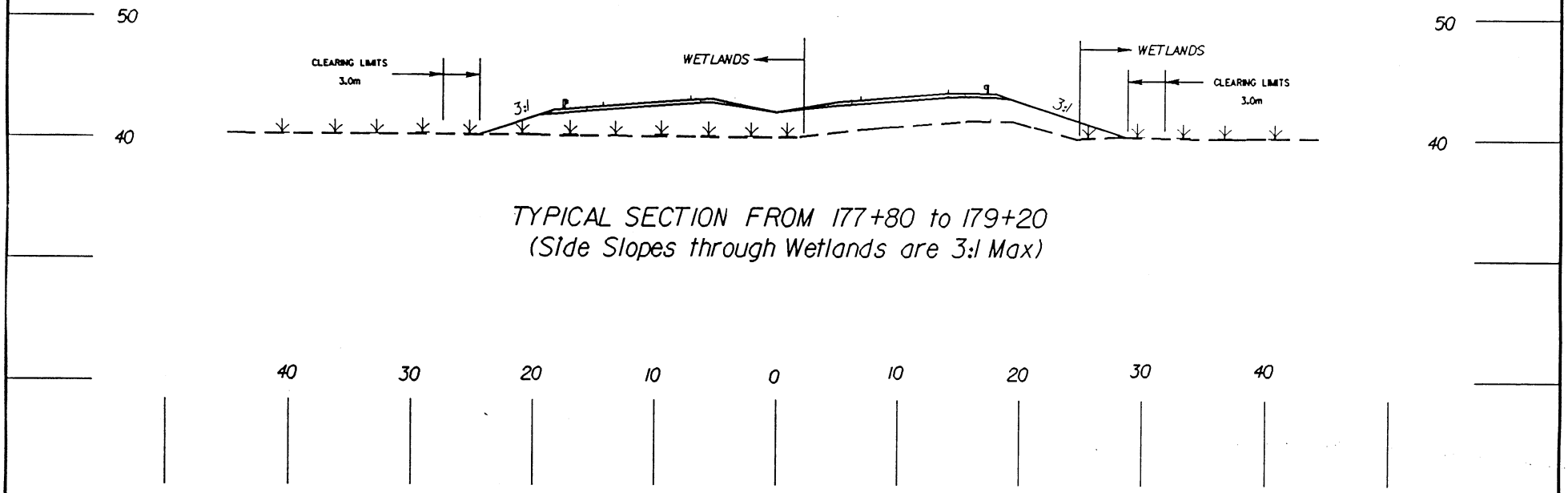
5m 0 10m
VERTICAL SCALE

SITE 7

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 15 OF 21

-L- REV.



TYPICAL SECTION FROM 177+80 to 179+20
(Side Slopes through Wetlands are 3:1 Max)

X-SECTION

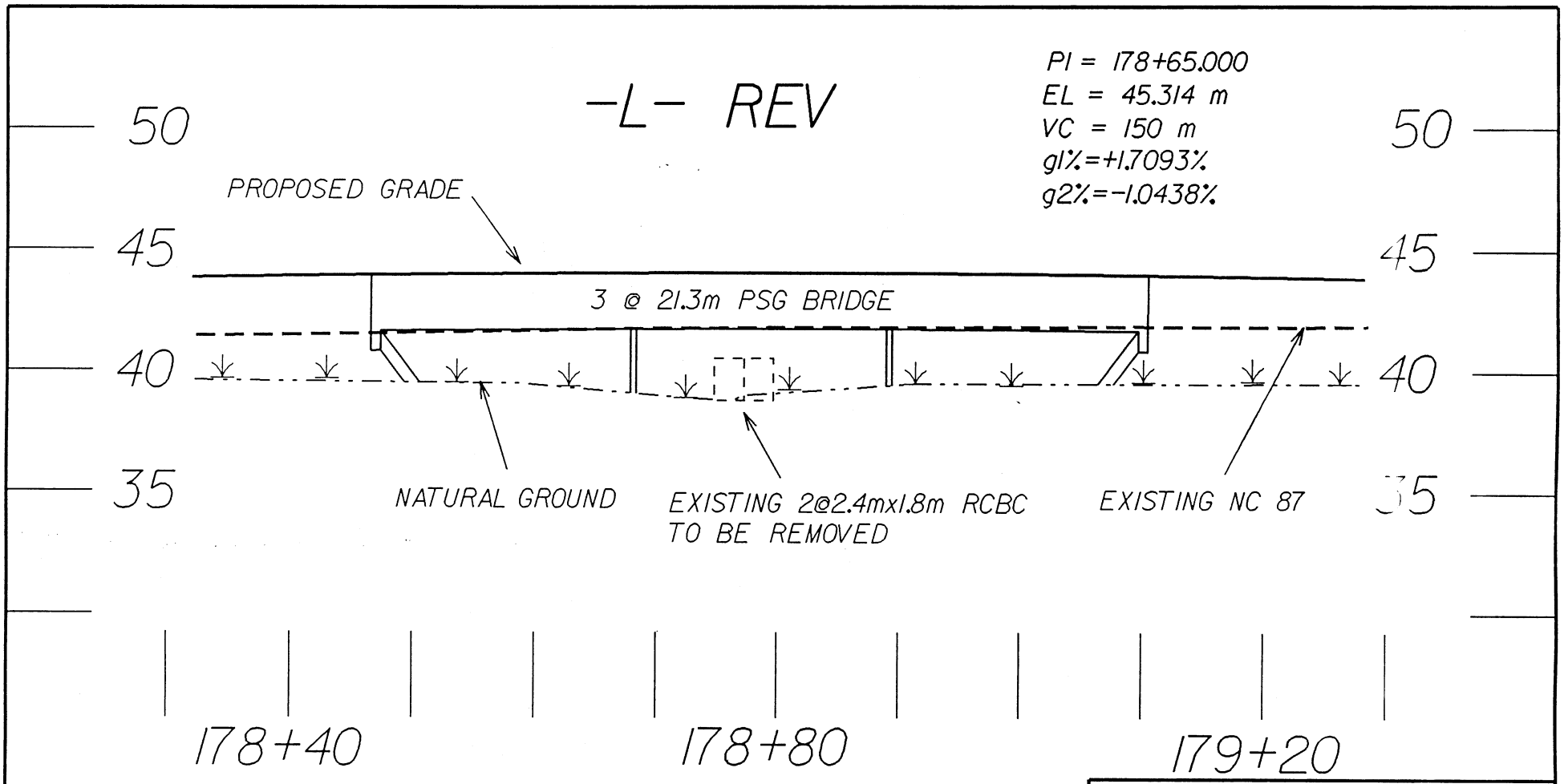
5m 0 10m
HORIZONTAL SCALE

5m 0 10m
VERTICAL SCALE

SITE 7

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 16 OF 21



PROFILE

5m 0 10m HORIZONTAL SCALE

2.5m 0 5m VERTICAL SCALE

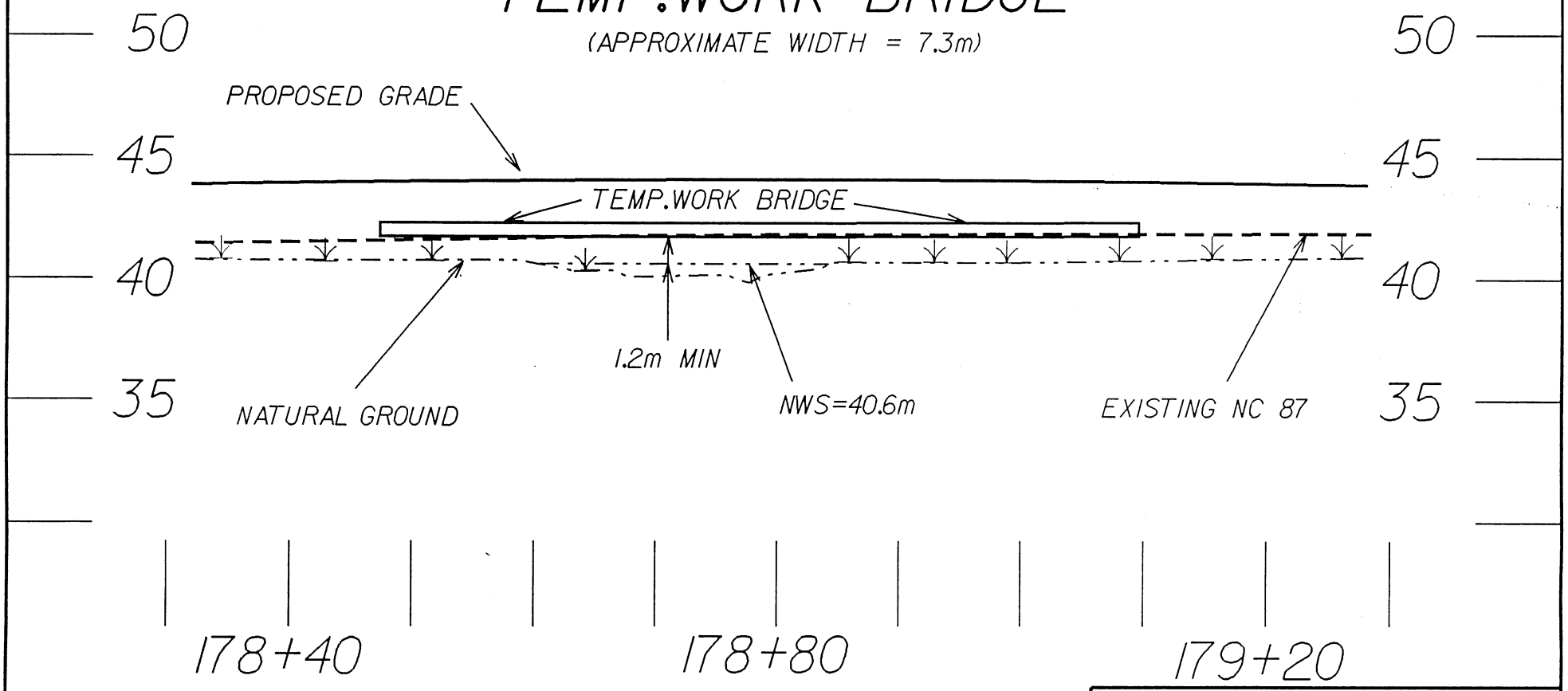
SITE 7

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 17 OF 21

TEMP. WORK BRIDGE

(APPROXIMATE WIDTH = 7.3m)



PROFILE

5m 0 10m HORIZONTAL SCALE

2.5m 0 5m VERTICAL SCALE

SITE 7

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 34467.1.1 (R-2562C)
NC 87 FROM NC 131 TO SR 1191

SHEET 18 OF 21

PROPERTY OWNERS

SITE	ADDRESS
1	ROBESON HEIRS RR 1 Box 2 Tar Heel, NC 28392-9701
1	BETSY R. MCNAIR & JULIA R. MCNAIR COX 13880 NC HWY 87 WEST Tar Heel, NC 28392
2	JACK L. SINGLETARY, JR. 1955 Tar Heel Road Tar Heel, NC 28392-9603
3	MARY BETH STOUT EDGE 16224 NC Hwy. 53 W White Oak, NC 28399-9701
4	RAYMOND J. IRVINE RR 1 Box 11 Tar Heel, NC 28392
5	JOHNATHAN L. ROBESON, JR. 6108 Owen Hill Road Tar Heel, NC 28392
6	INEZ C. ALLEN PO Box 185 Tar Heel, NC 28392-0185
6	KATIE GERTRUDE SINCLAIR c/o JOANN SMITH 162 J.D. Road St. Pauls, NC 28384
7	DANIEL B. JR. & DEBORAH W. WILLIS 9581 NC Hwy. 87 W Tar Heel, NC 28392-9704
7	N.B. JR. & EUNICE M. CARROLL 8865 NC Hwy. 87 W Tar Heel, NC 28392-9704

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.139001T (R-2562C)
NC 87 FROM NC 131
TO SR 1191

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From / To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)	Natural Stream Design (m)
1	102+41 -L- REV	1200 RCP				0.001	0.002			9.7	
2	108+70 to 109+30 -L- REV Lt					0.003					
3	115+44 -L- REV	600 RCP	0.001			0.002	0.008			64.0	
4	119+87 -L- REV	750 RCP					0.007			82.9	
5	146+62 -L- REV	1 @ 2.1m x 1.5m RCBC					0.012			68.0	
6	155+05 -L- REV	Extend 1 @ 2.4m x 1.0m RCBC	0.161			0.052	0.008			66.1	
7 *	175+60 to 177+63 -L- REV Lt		0.416			0.060					
7 **	177+63 to 179+80 -L- REV	3 @ 21.3m PSG Bridge	0.520			0.092					
TOTALS:			1.098	0.000	0.000	0.210	0.037	0.000	0.000	290.7	0.0

* Non-Riverine Wetland (Site 7)

** Riverine Wetland (Site 7)

The existing Site 7 crossing, a 2 @ 2.7m x 2.0 m RCBC, will be removed along with a portion of existing roadway fill.

The area of existing roadway fill removed from the riverine wetland is 0.109 ha.

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)
NC 87 WIDENING

Jun-04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From / To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1	102+41 -L- REV	48" RCP				0.003	0.01			32	
2	108+70 to 109+30 -L- REV Lt					0.01					
3	115+44 -L- REV	24" RCP	0.003			0.005	0.02			210	
4	119+87 -L- REV	30" RCP					0.02			272	
5	146+62 -L- R	1 @ 7' X 5' RCBC					0.03			223	
6	155+05 -L- REV	Extend 1 @ 8' x 3' RCBC	0.40			0.13	0.02			217	
7*	175+60 to 177+63 -L- REV Lt		1.03			0.15					
7**	177+63 to 179+80 -L- REV	3 @ 70' PSG Bridge	1.28			0.23					
TOTALS:			2.71	0.00	0.00	0.52	0.09	0.00	0.00	954	0

* Non-Riverine Wetland (Site 7)

** Riverine Wetland (Site 7)

The existing Site 7 crossing, a 2 @ 9' x 6' RCBC, will be removed along with a portion of existing roadway fill.
The area of existing roadway fill removed from the riverine wetland is 0.27 acres.

Form Revised 3/22/01

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

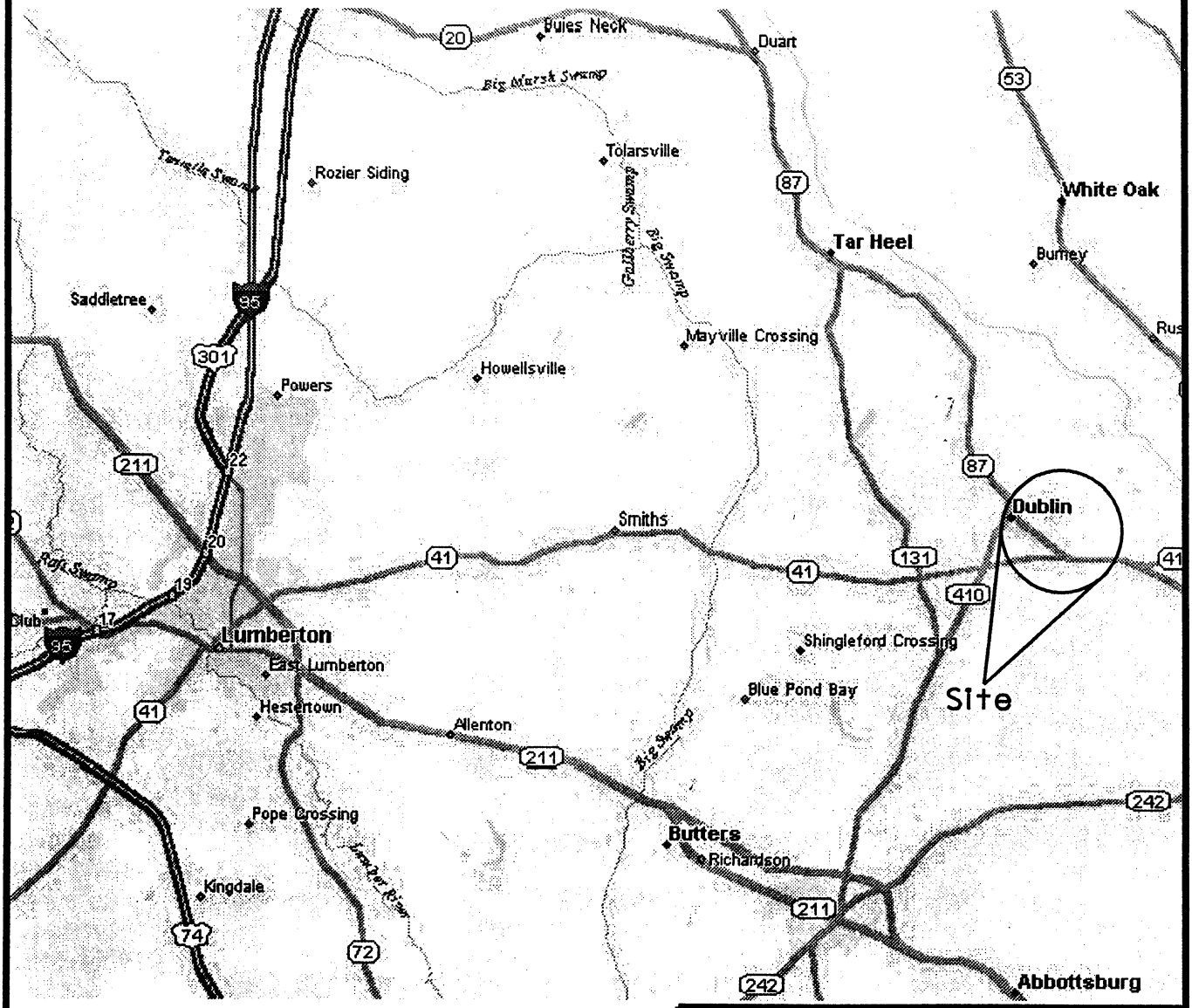
BLADEN COUNTY

PROJECT: 34467.1.1 (R-2562C)
NC 87 WIDENING

SHEET 21 OF 21

Jun-04

VICINITY MAP



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

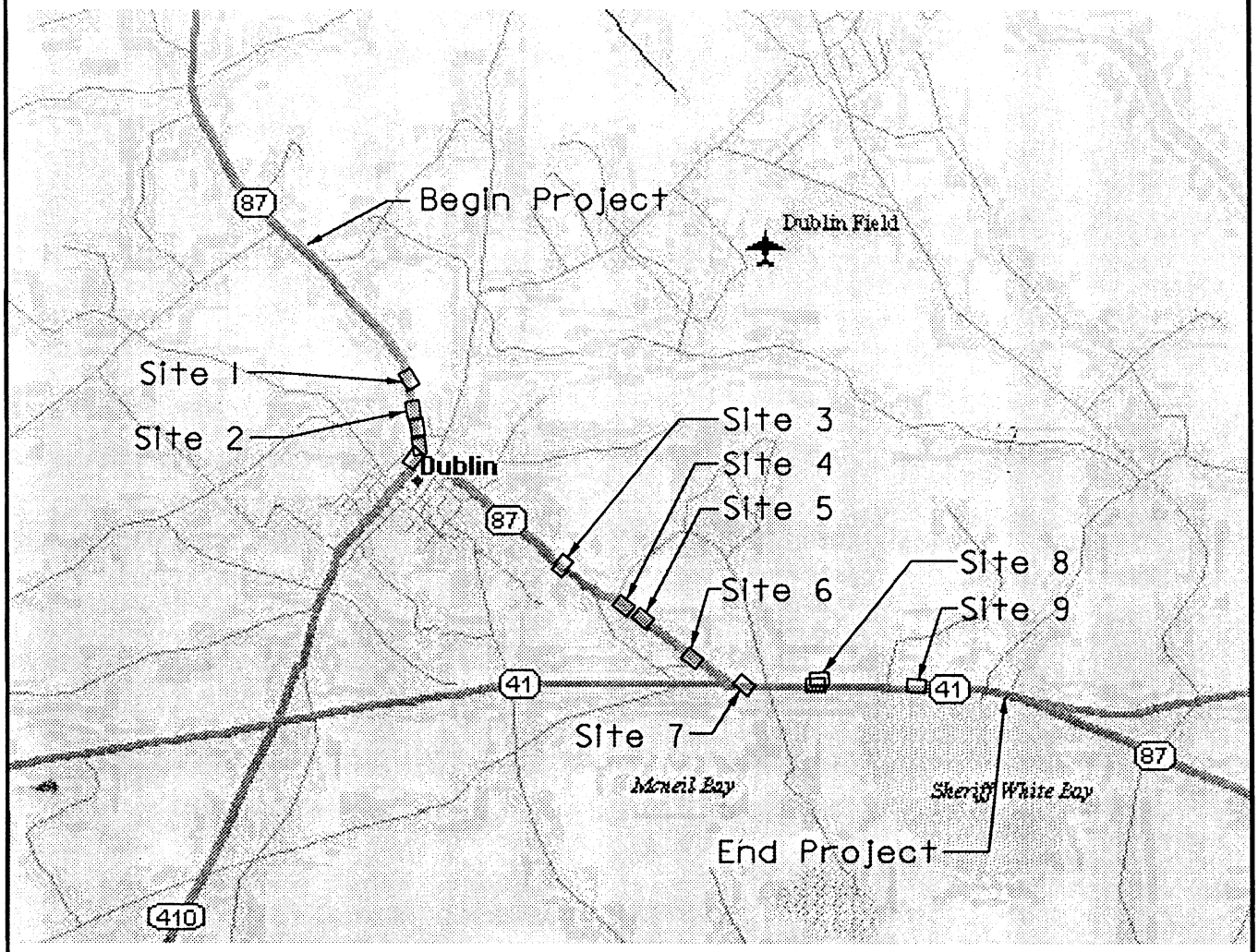
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO
NC41 / NC 87 BUS

SHEET 1 OF 26

SITE MAP



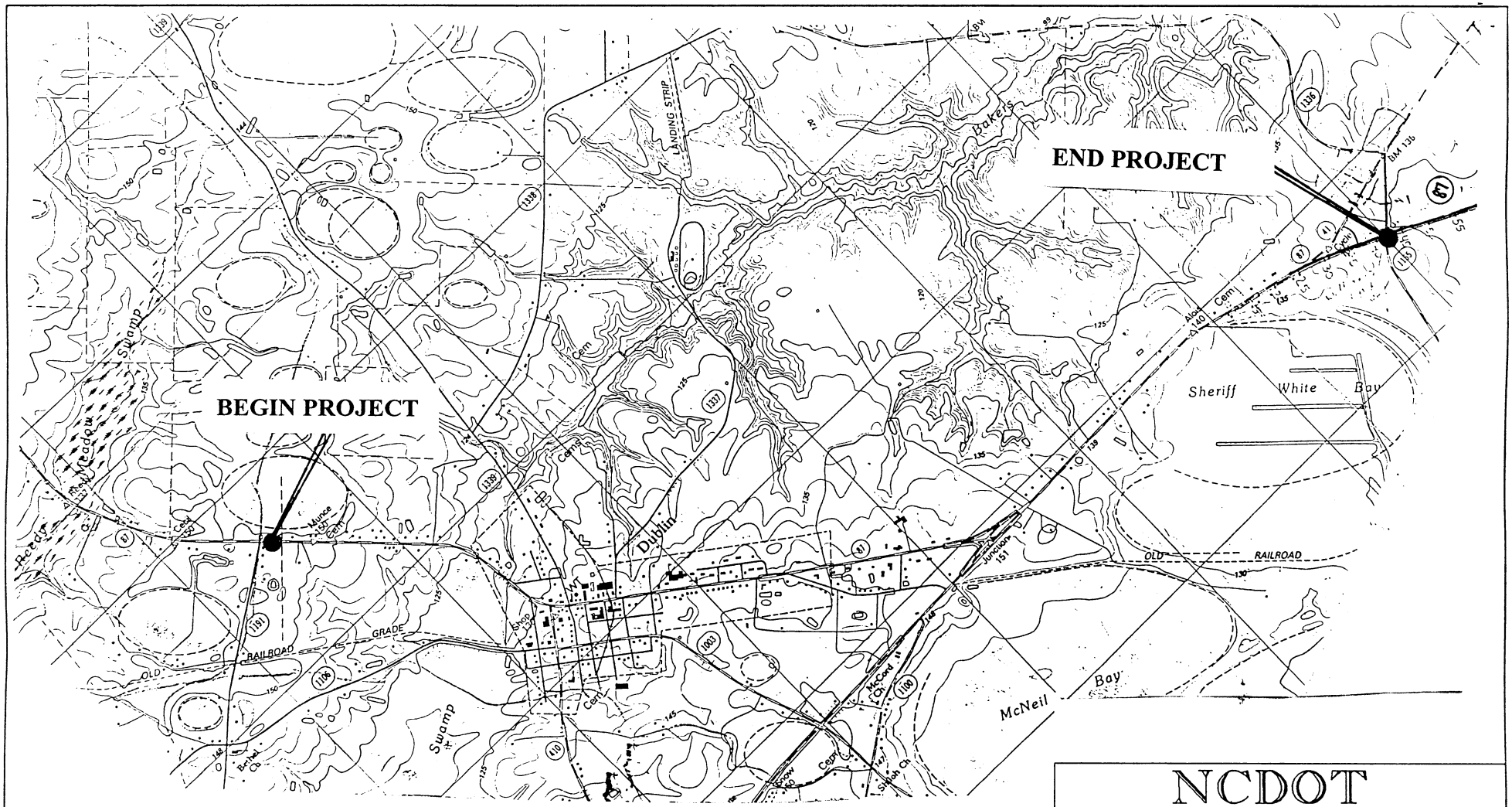
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO
NC41 / NC 87 BUS

SHEET 2 OF 26



VICINITY MAP

NCDOT

DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41/NC 87 BUSINESS

SHEET 3 OF 26

LEGEND

WLB WETLAND BOUNDARY

WETLAND

F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

P P DENOTES FILL IN SURFACE WATER (POND)

T T DENOTES TEMPORARY FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

TS TS DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB TOP OF BANK

WE EDGE OF WATER

C PROP. LIMIT OF CUT

F PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG NATURAL GROUND

PL PROPERTY LINE

TDE TEMP. DRAINAGE EASEMENT

PDE PERMANENT DRAINAGE EASEMENT

EAB EXIST. ENDANGERED ANIMAL BOUNDARY

EPB EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

E E CONSTRUCTION EASEMENT

LIVE STAKES

BOULDER

COIR FIBER ROLLS

5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

VANE

RIP RAP

RIP RAP ENERGY DISSIPATOR BASIN

BUFFER ZONE BUFFER ZONE

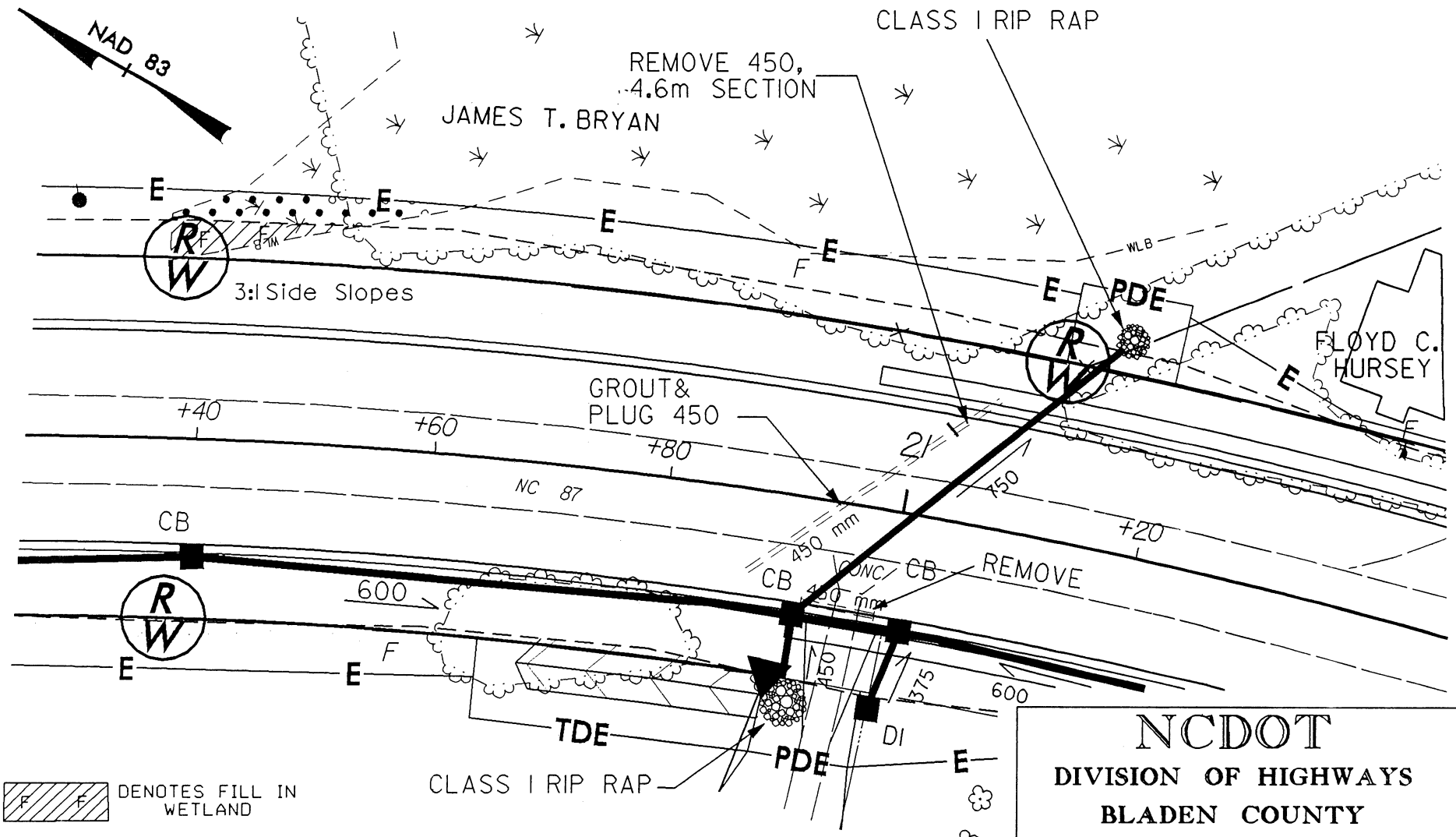
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC41 / NC 87 BUS

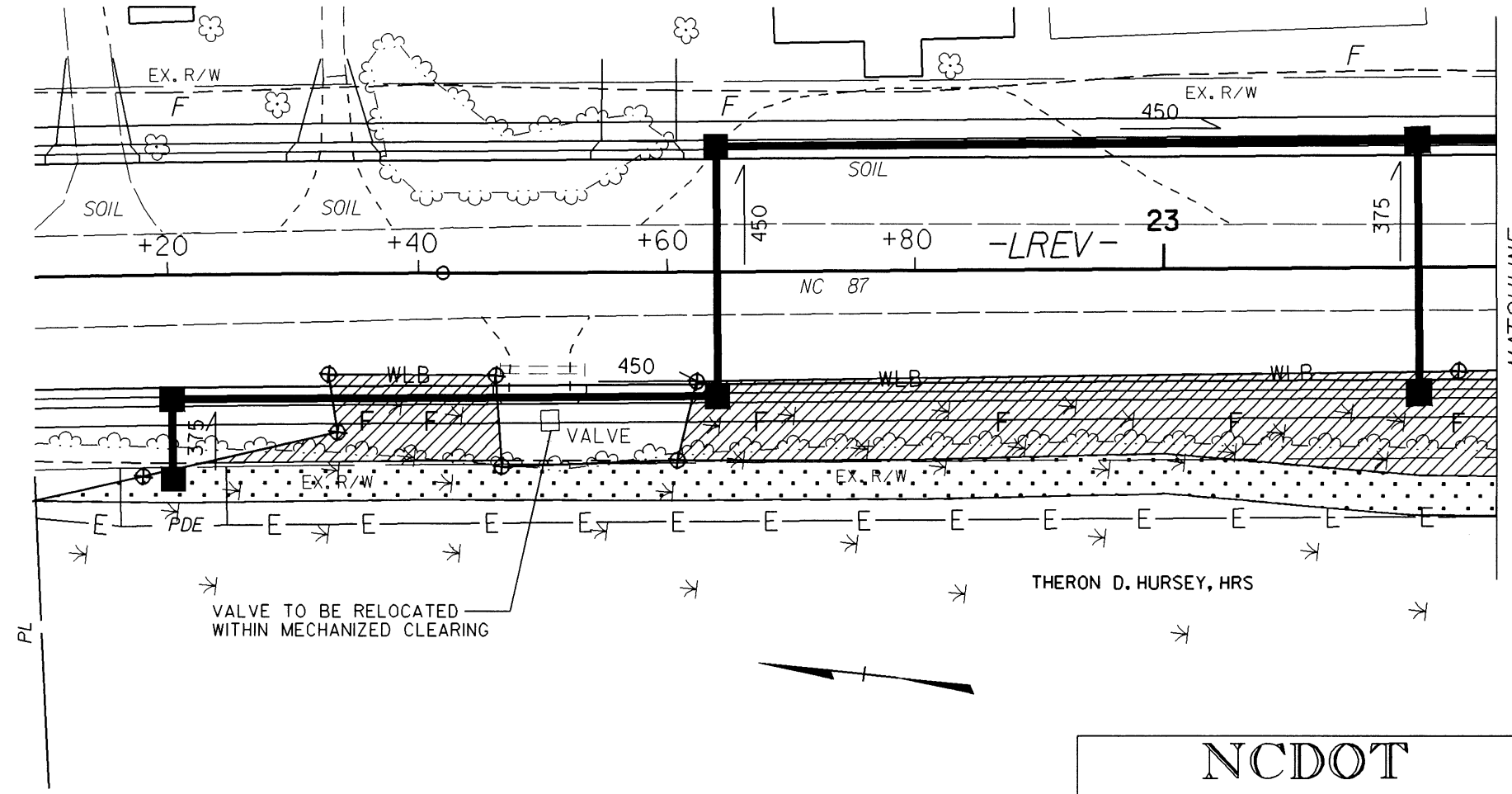
SHEET 4 OF 26



PLAN VIEW
SITE 1

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)
NC 87 FROM SR 1191 TO
NC 41 / NC 87 BUSINESS

SHEET 5 OF 24



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

5M 0 10M SCALE

PLAN VIEW
SITE 2

NCDOT

DIVISION OF HIGHWAYS

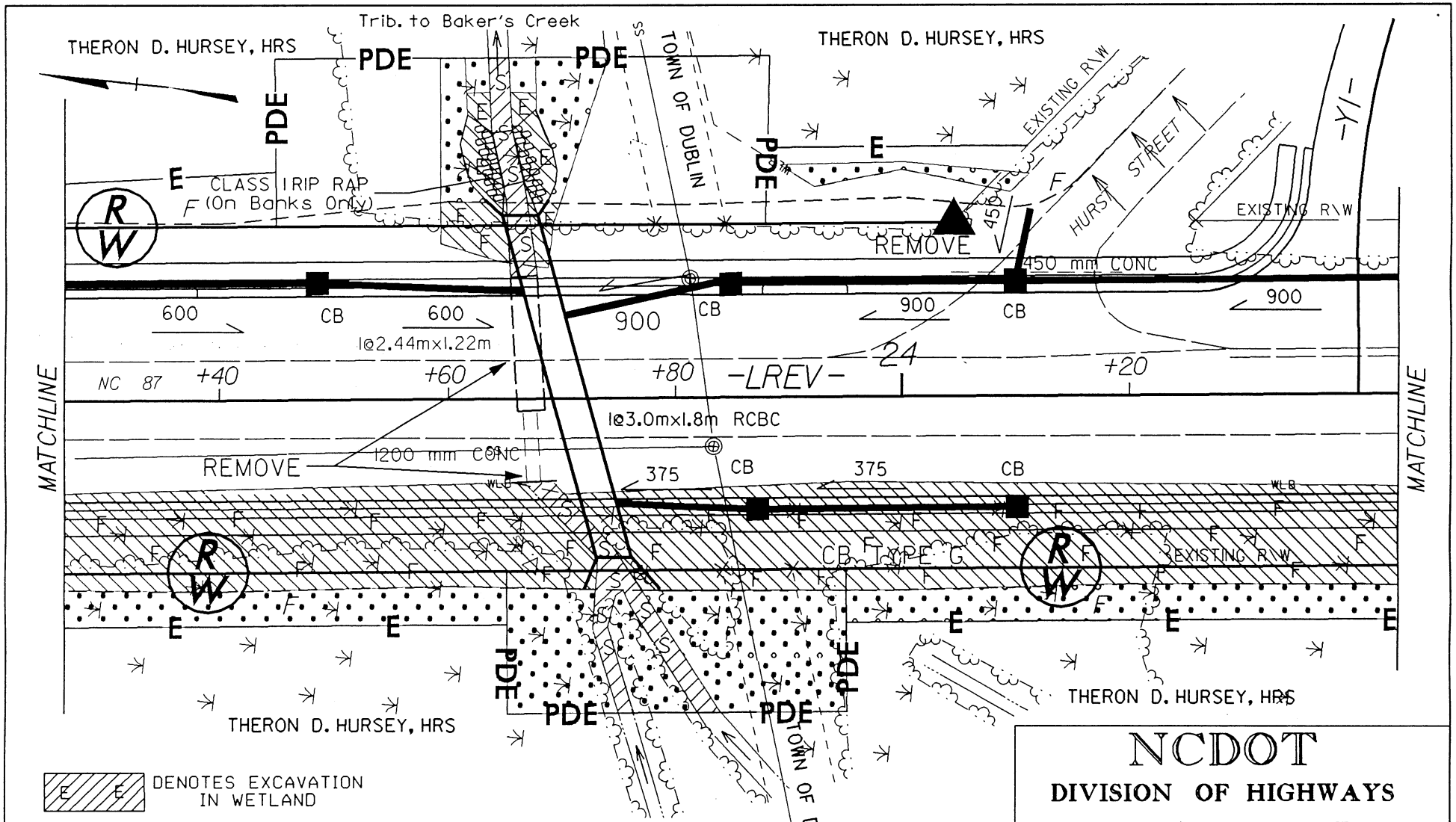
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO

NC 41 / NC 87 BUSINESS

SHEET 6 **OF** 26



DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PLAN VIEW

SITE 2

SCALE 5M 0 10M

NCDOT

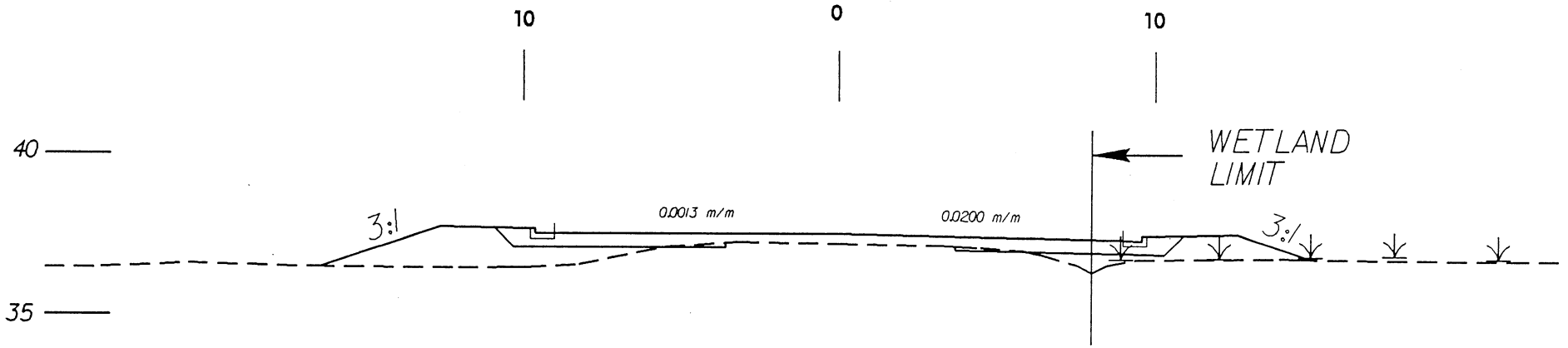
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

SHEET 7 OF 26



TYPICAL FROM 22+20 TO 25+40 -LREV- (RT)

X-SECTION

NCDOT

DIVISION OF HIGHWAYS

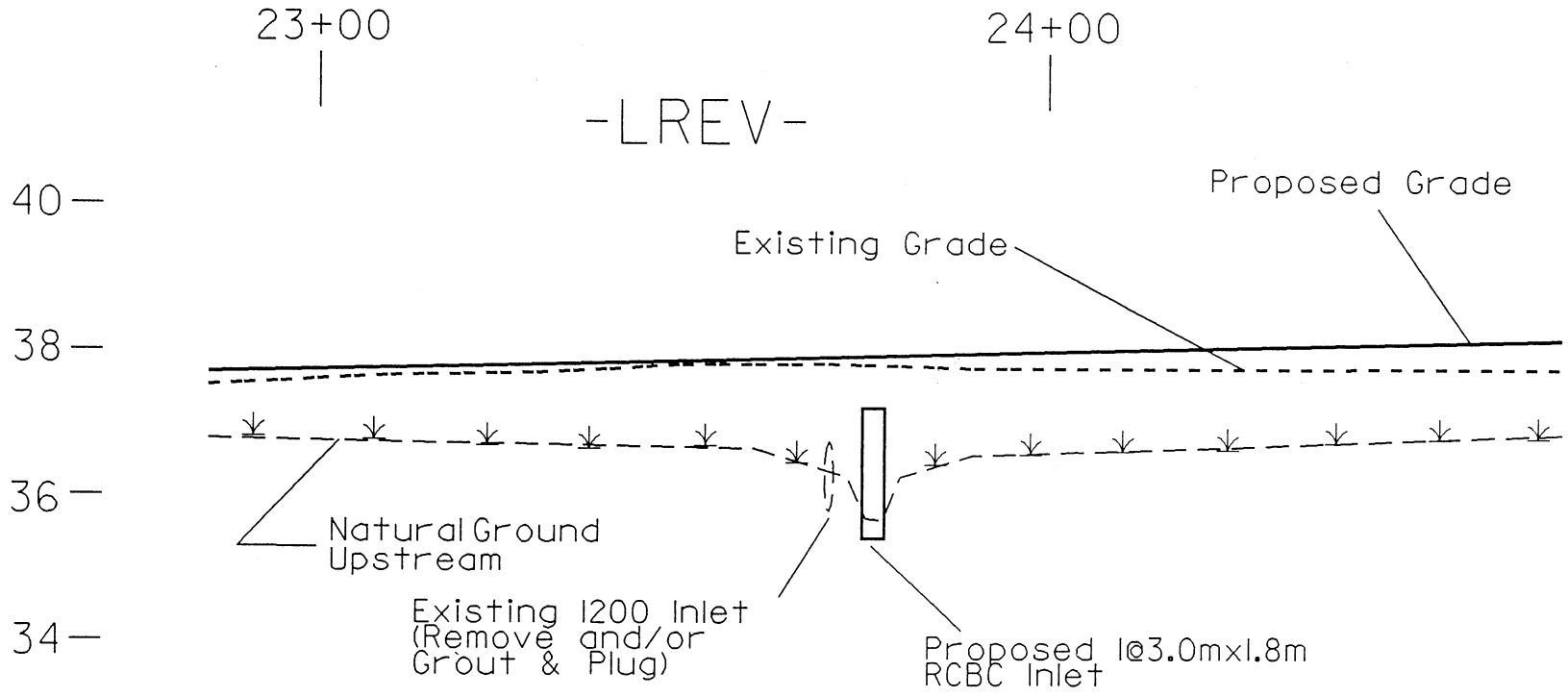
BLADEN COUNTY

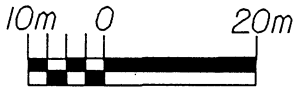
PROJECT: 6.439001T (R-562D)

NC 87 FROM SR 1191 TO

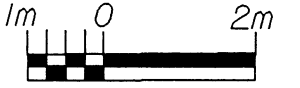
NC 41 / NC 87 BUSINESS

SHEET 8 OF 26





HORIZONTAL SCALE



VERTICAL SCALE

PROFILE VIEW
SITE 2

NCDOT

DIVISION OF HIGHWAYS

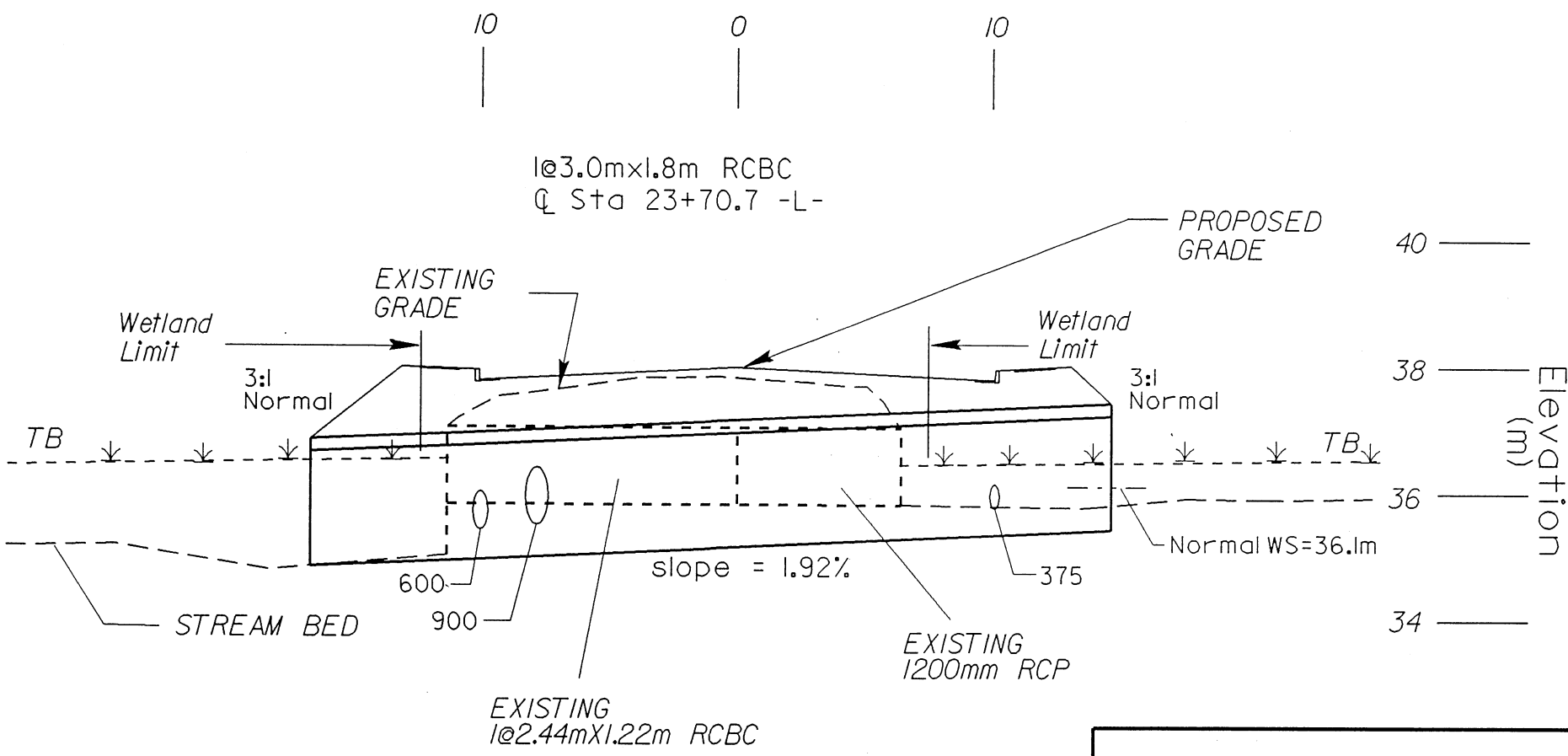
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO

NC 41 / NC 87 BUSINESS

SHEET 9 **OF** 26



SECTION VIEW
SITE 2

2.5M 0 5M
HORIZ. SCALE

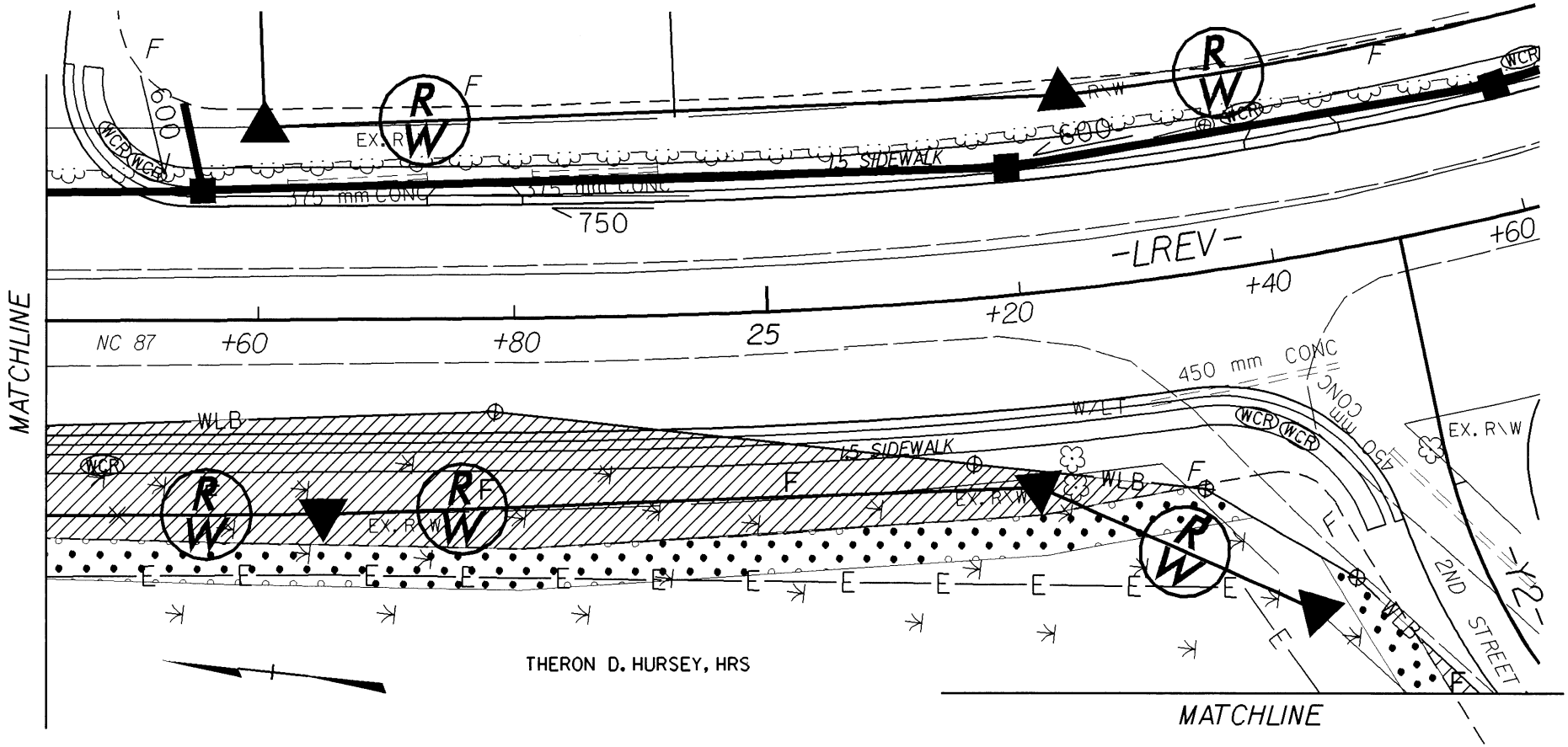
1M 0 2M
VERT. SCALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO
NC 41 / NC 87 BUSINESS

SHEET 16 OF 26

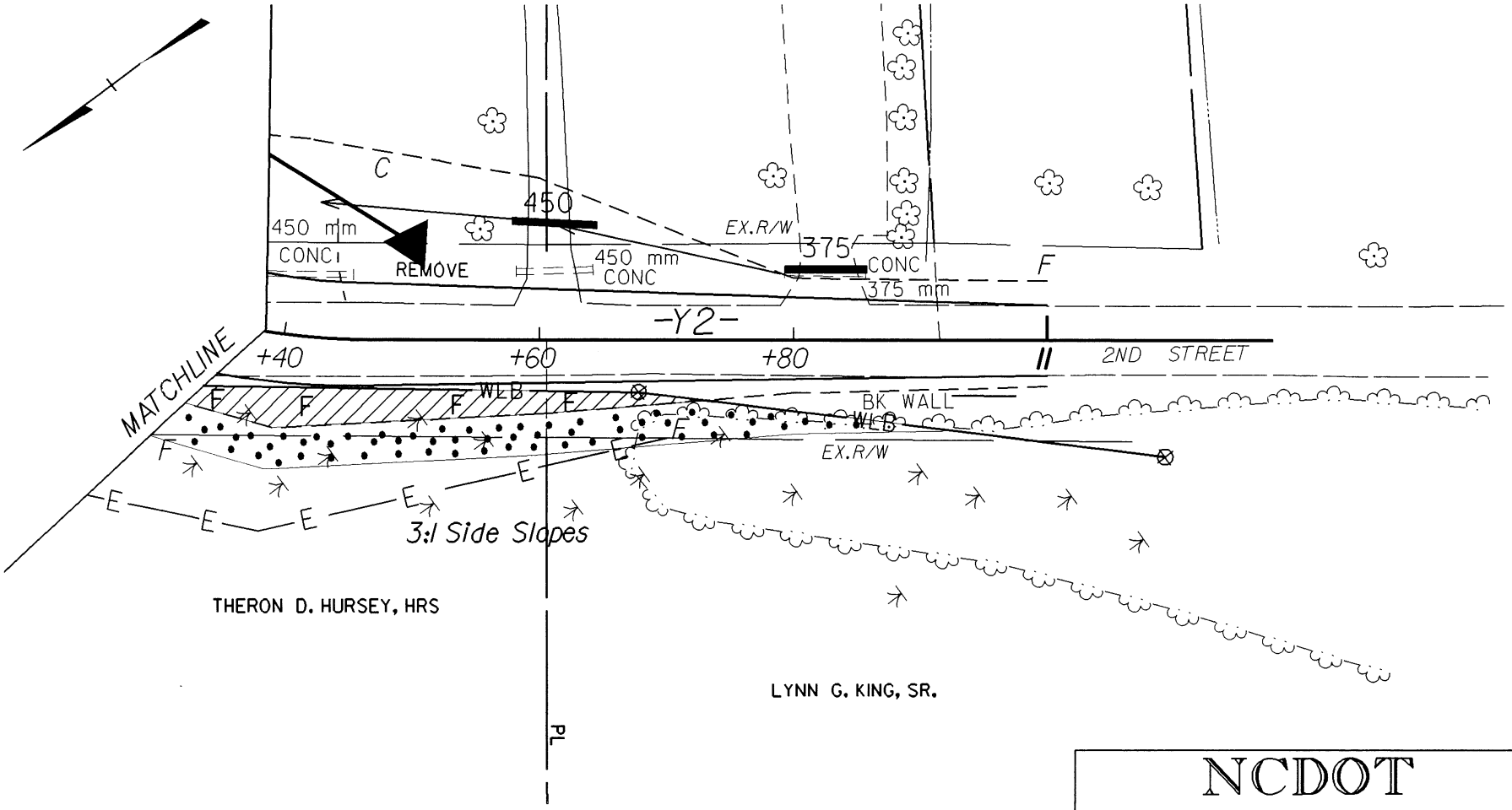


PLAN VIEW
SITE 2

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO
NC 41/NC 87 BUSINESS

SHEET 11 **OF** 26



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

5M 0 10M

SCALE

PLAN VIEW
SITE 2

NCDOT

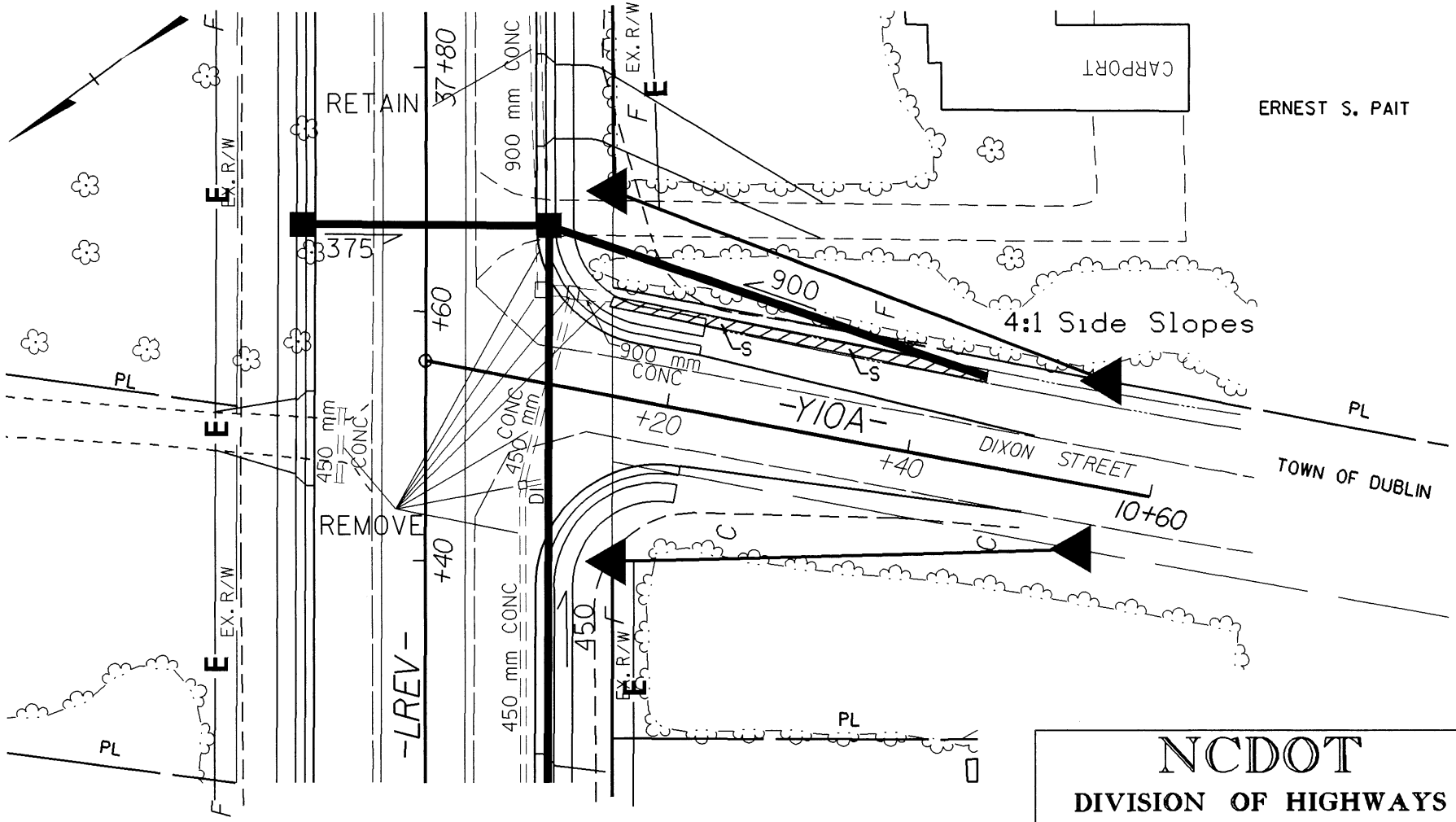
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

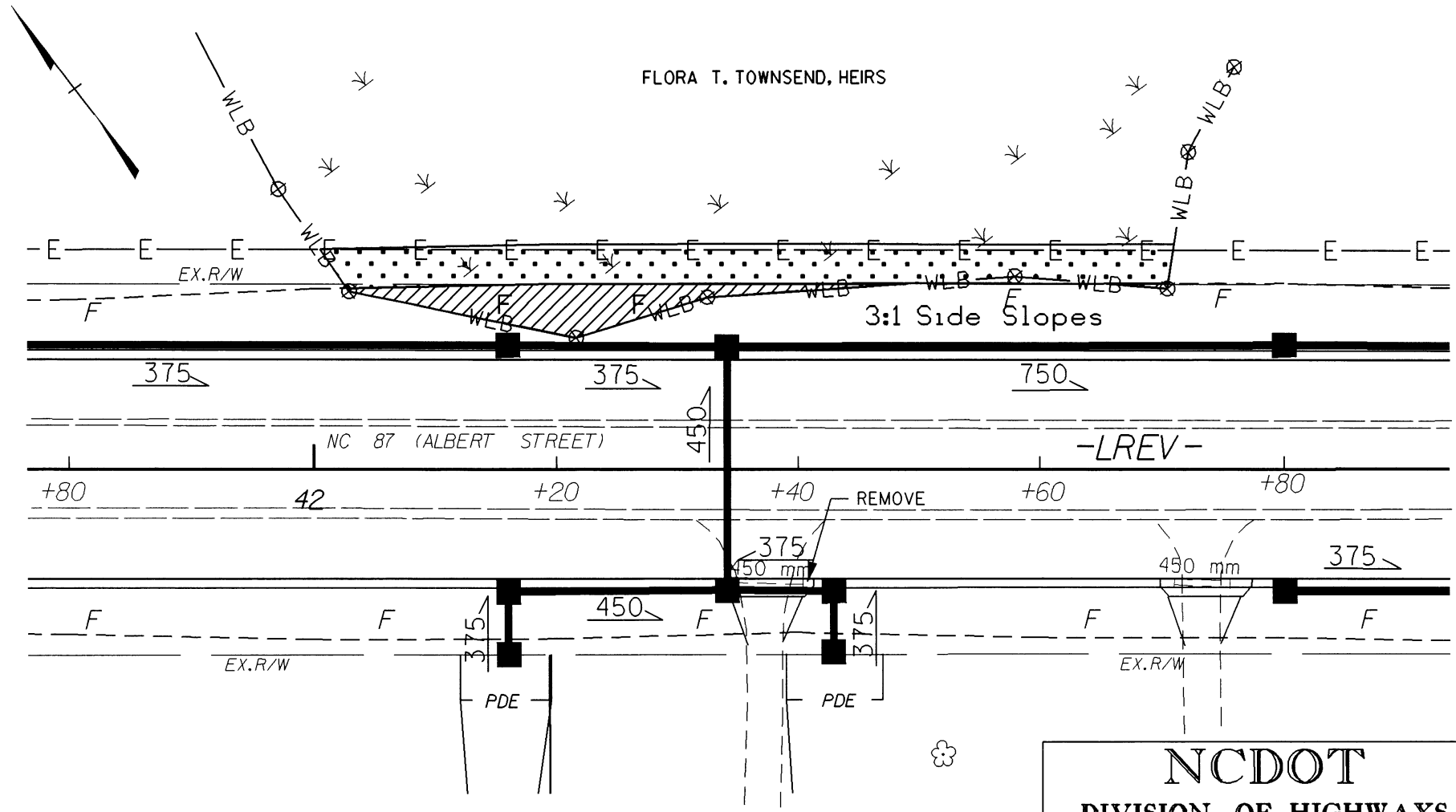
SHEET 12 OF 26



PLAN VIEW
SITE 3

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)
NC 87 FROM SR 1191 TO
NC 41 / NC 87 BUSINESS

SHEET 13 OF 26



DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

5M 0 10M

SCALE

PLAN VIEW

SITE 4

NCDOT

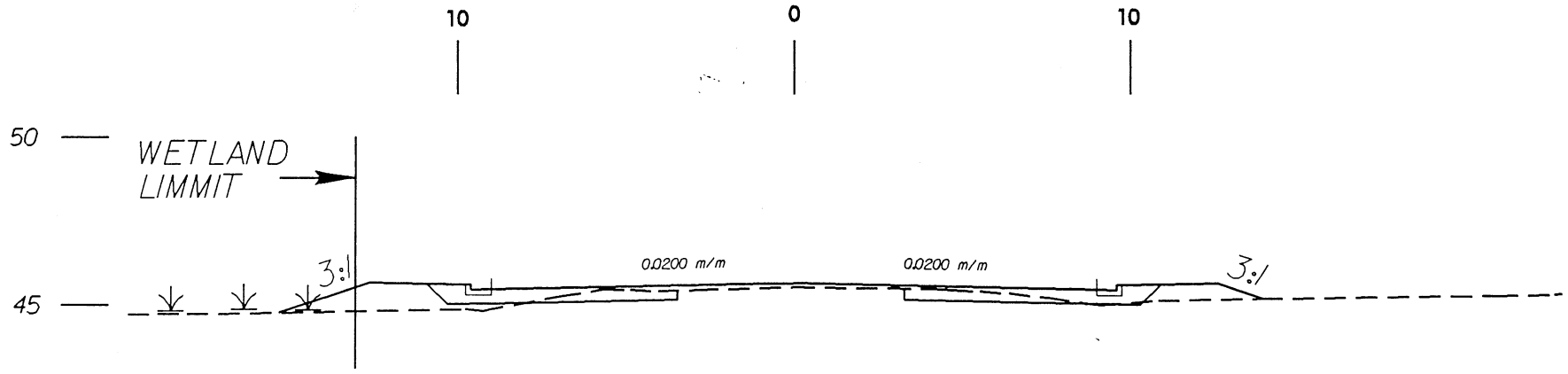
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

SHEET 14 OF 26



TYPICAL FROM 42+00 TO 42+70 -LREV- (LT)

X-SECTION

NCDOT

DIVISION OF HIGHWAYS

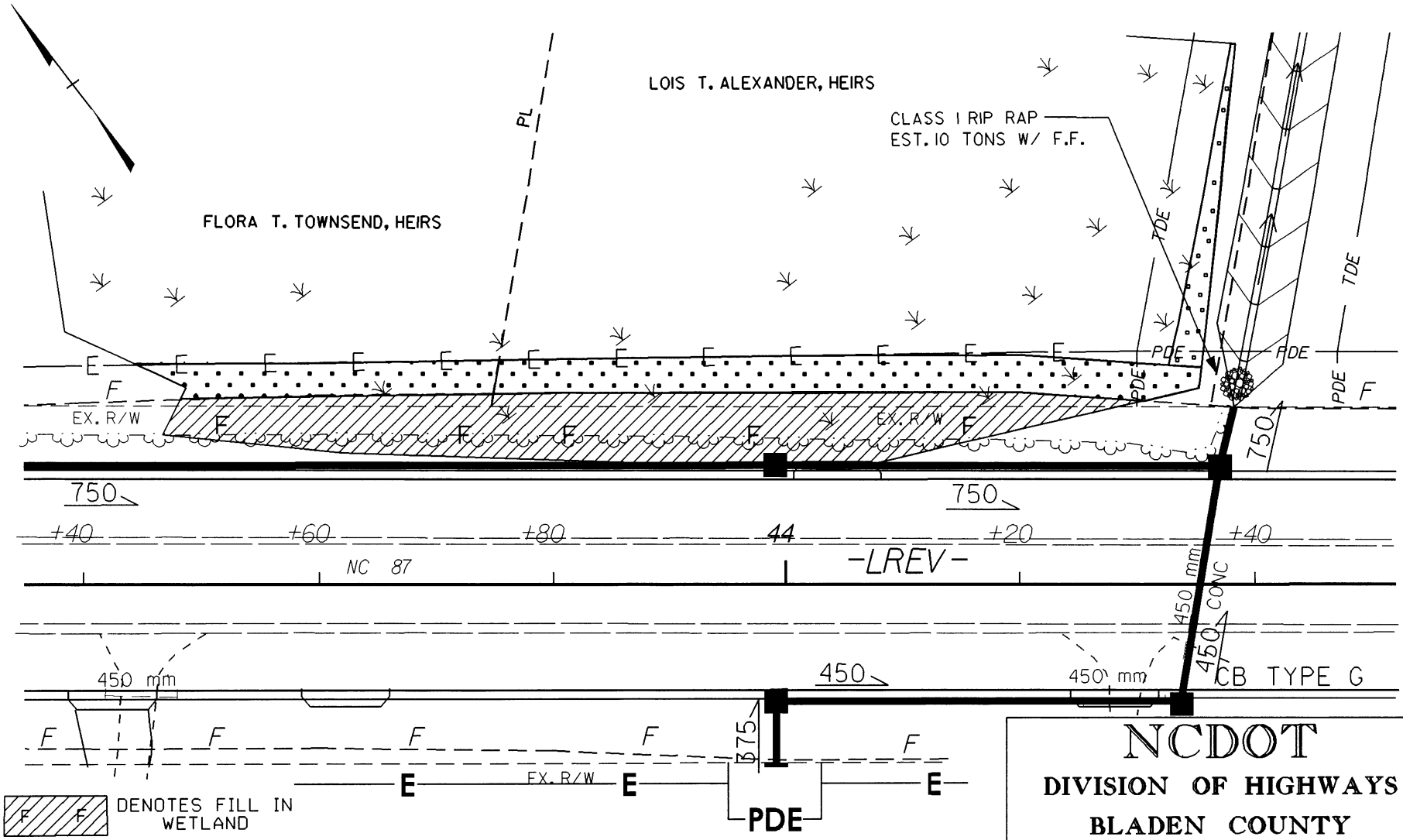
BLADEN COUNTY

PROJECT: 6.439001T (R-562D)

NC 87 FROM SR 1191 TO

NC 41 / NC 87 BUSINESS

SHEET 15 OF 26



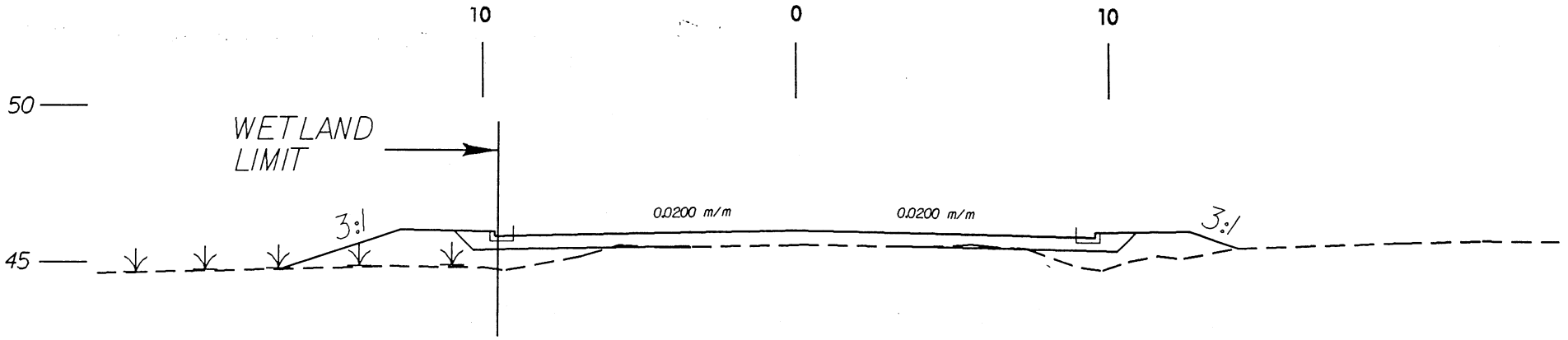
PLAN VIEW
SITE 5

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

SHEET 16 OF 26



TYPICAL FROM 43+50 TO 44+20 -LREV- (LT)

X-SECTION

NCDOT

DIVISION OF HIGHWAYS

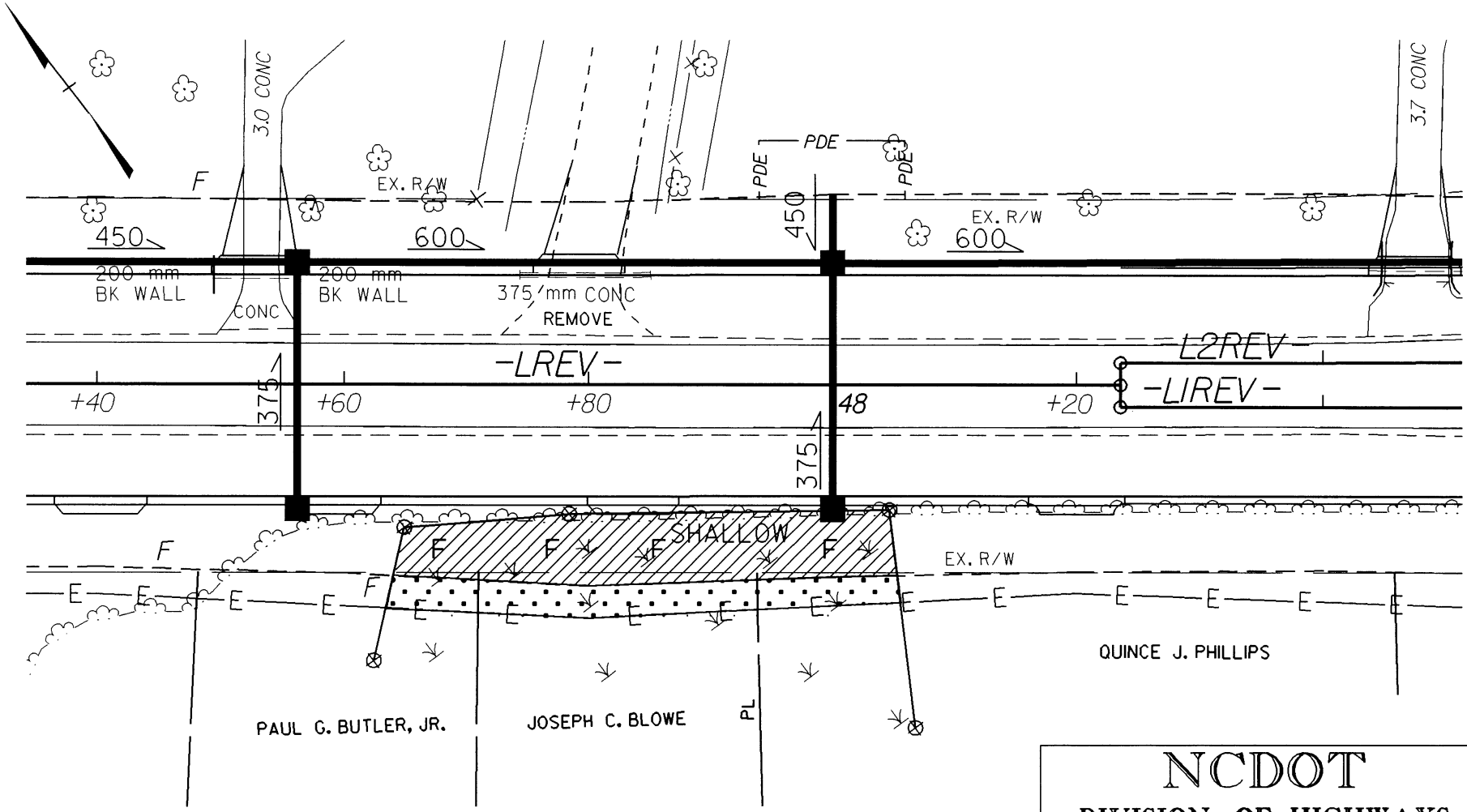
BLADEN COUNTY

PROJECT: 6.439001T (R-562D)

NC 87 FROM SR 1191 TO

NC 41 / NC 87 BUSINESS

SHEET 17 OF 26



F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

5M 0 10M SCALE

PLAN VIEW
SITE 6

NCDOT

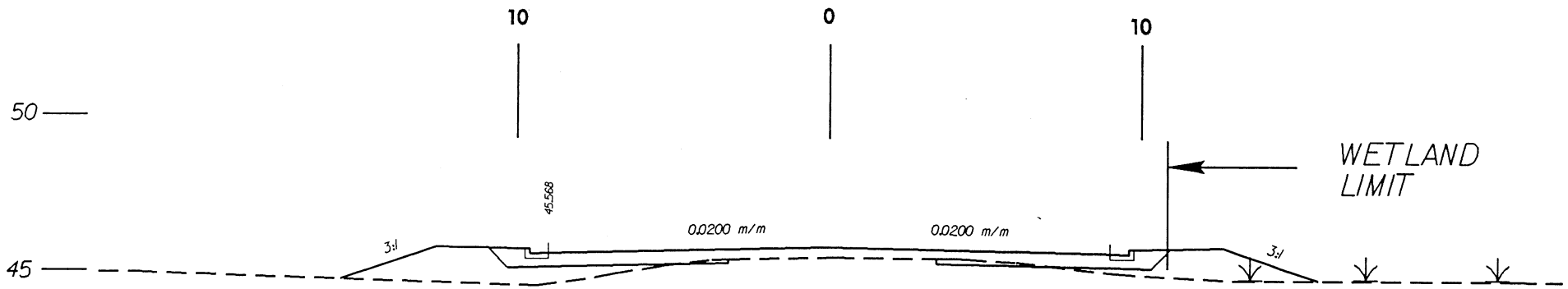
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

SHEET 18 OF 26



TYPICAL FROM 47+70 TO 48+00 -LREV- (RT)

X-SECTION

NCDOT

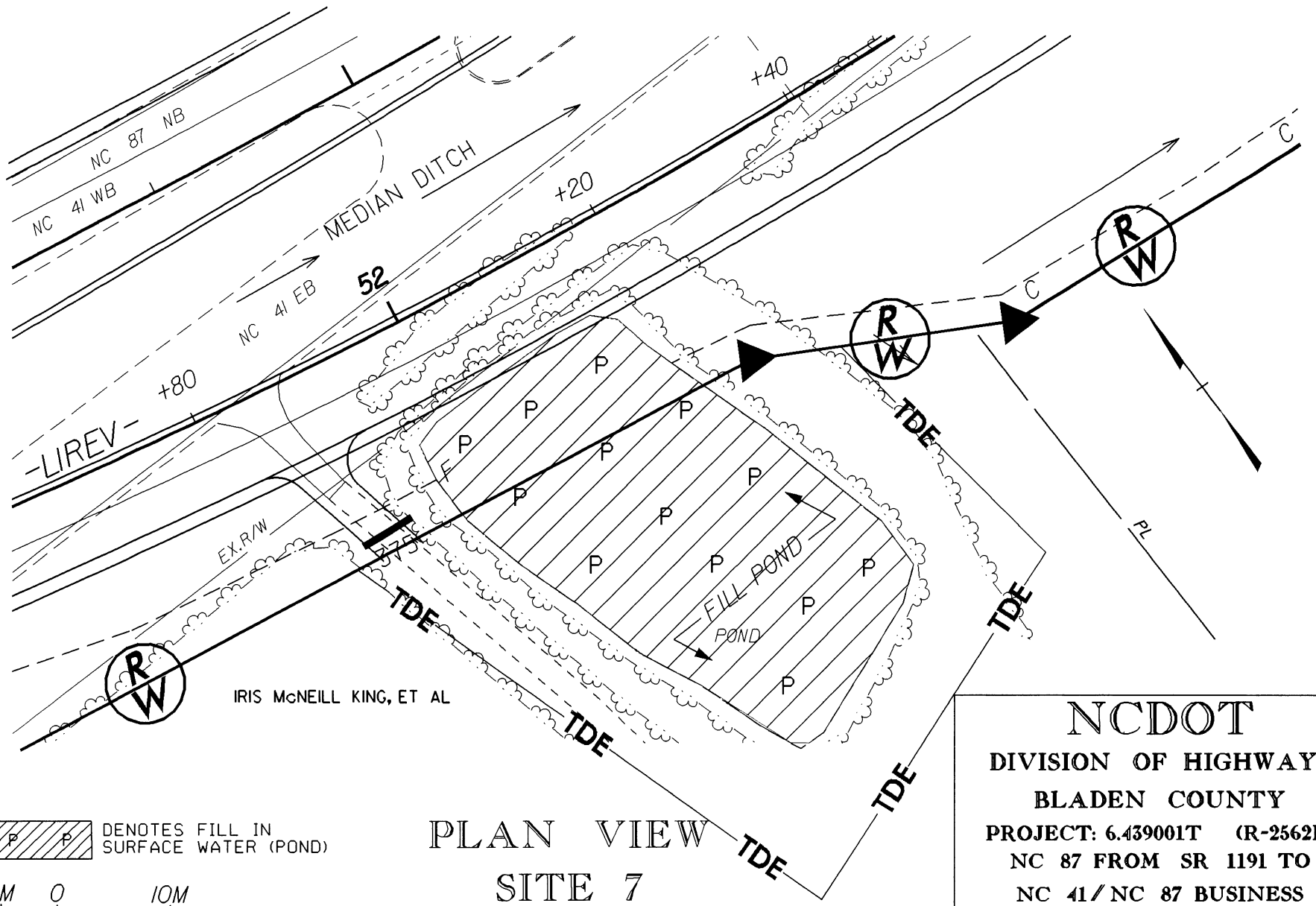
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-562D)

NC 87 FROM SR 1191 TO

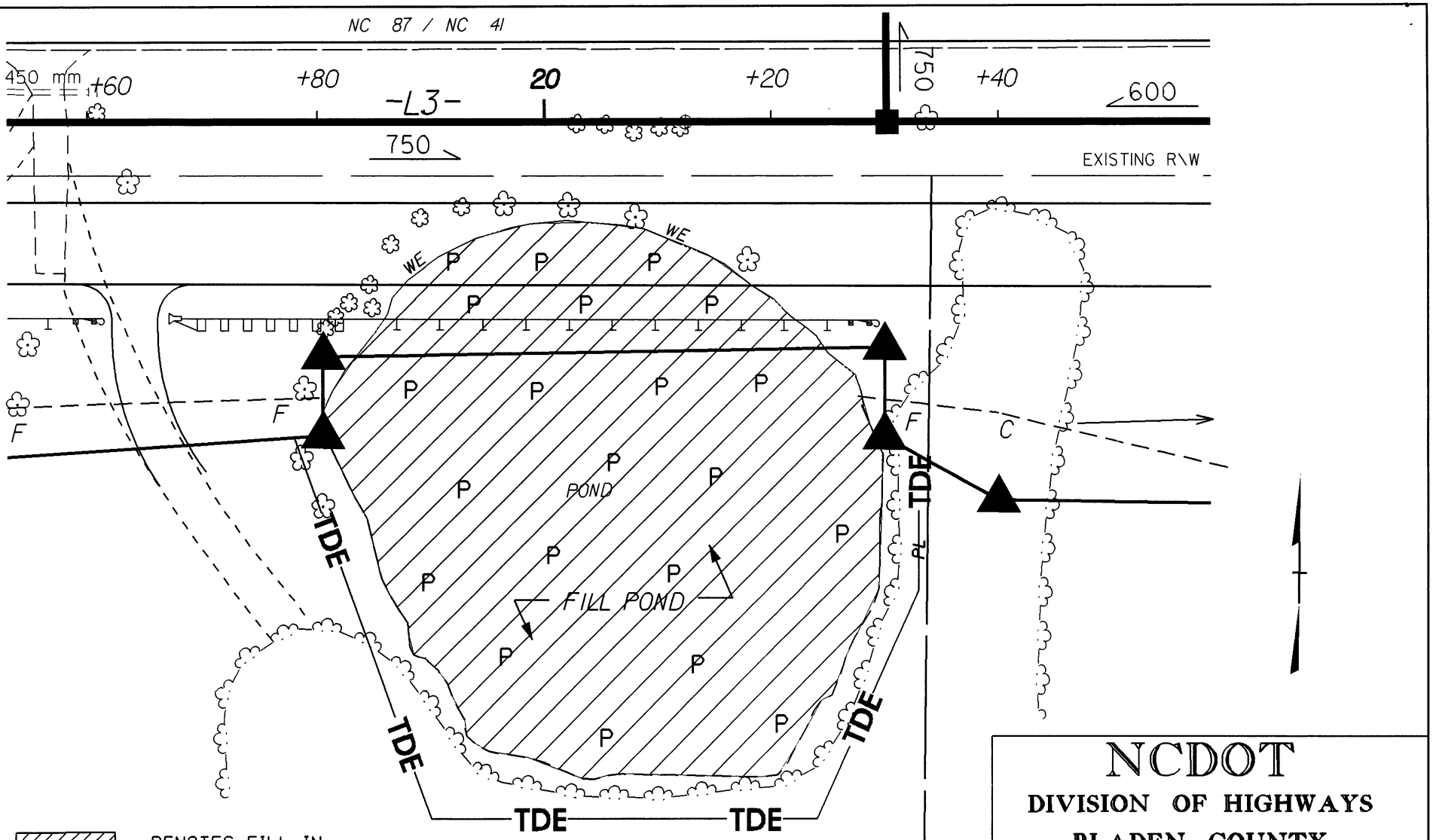
NC 41 / NC 87 BUSINESS



PLAN VIEW
SITE 7

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)
NC 87 FROM SR 1191 TO
NC 41 / NC 87 BUSINESS

SHEET 20 **OF** 26



PLAN VIEW
SITE 8

NCDOT

DIVISION OF HIGHWAYS

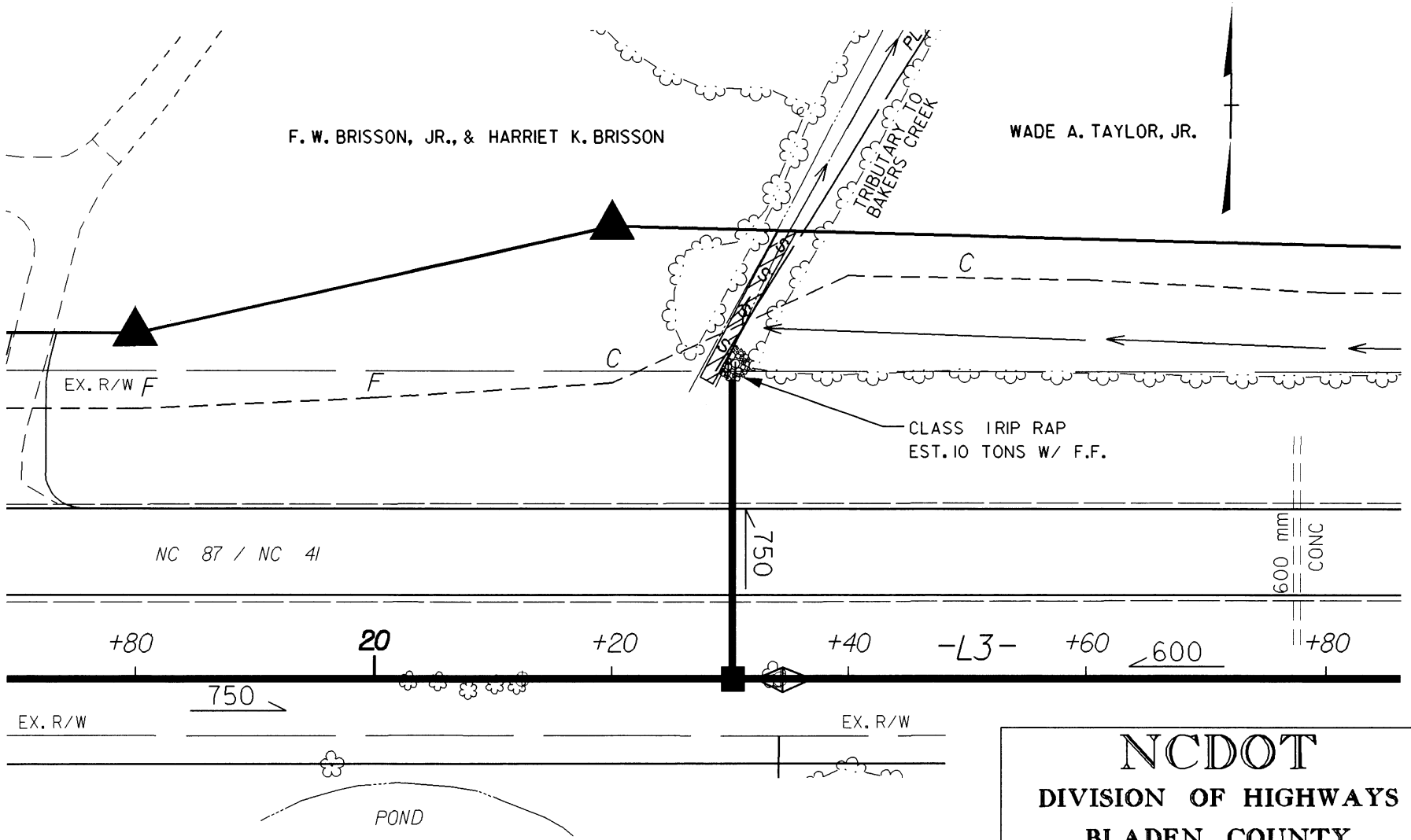
BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO

NC 41 / NC 87 BUSINESS

SHEET 21 OF 26

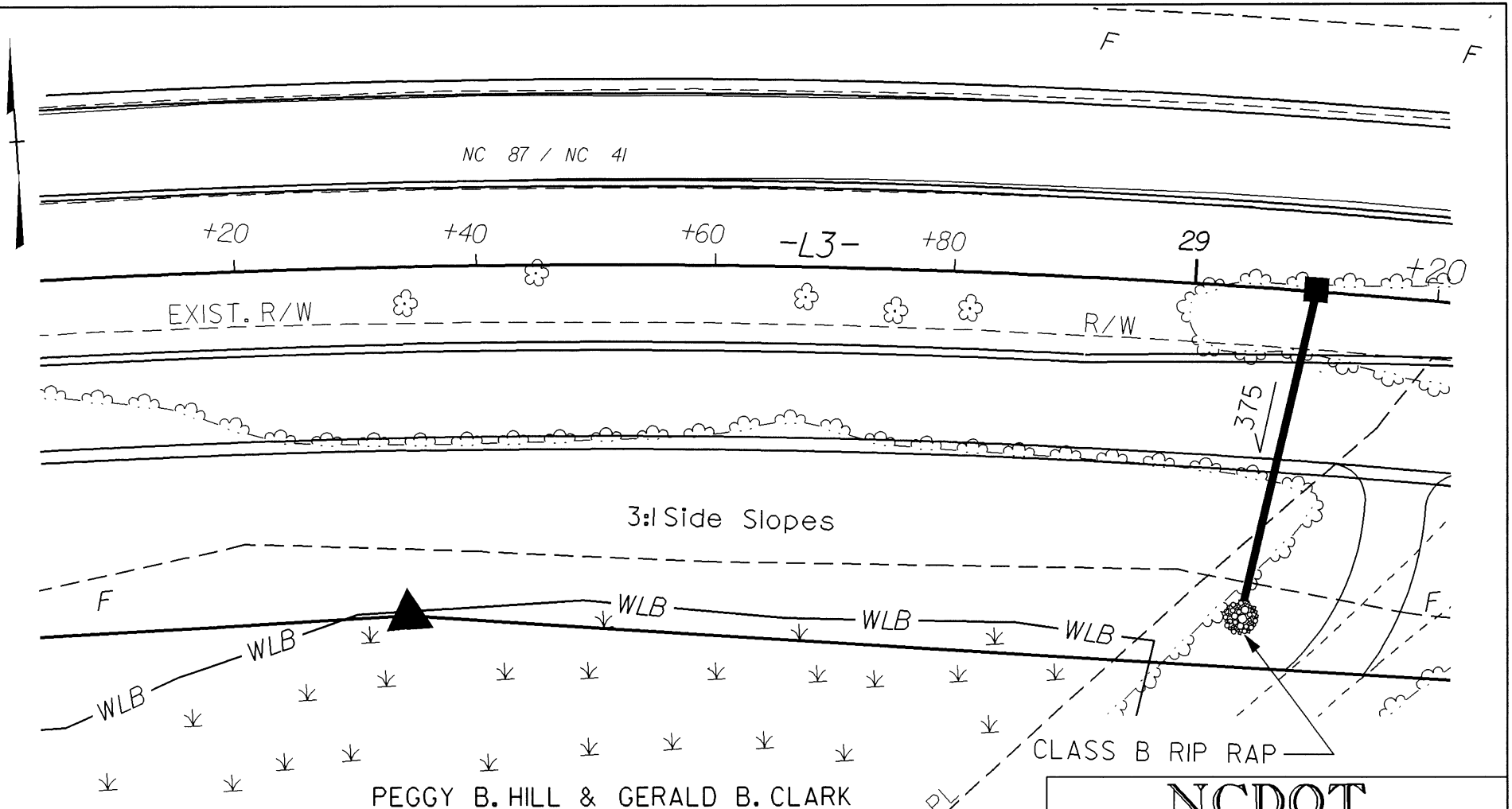


PLAN VIEW
SITE 8

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO NC 41 / NC 87 BUSINESS

SHEET 22 OF 26



PLAN VIEW
SITE 9

5M 0 10M
SCALE

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 6.439001T (R-2562D)
NC 87 FROM SR 1191 TO
NC 41 / NC 87 BUSINESS

SHEET 23 OF 26

PROPERTY OWNER

NAME AND ADDRESS

OWNER'S NAME	ADDRESS
LOIS T. ALEXANDER, HEIRS	123 Cashwell Dr. Goldsboro, NC 27534
JOSEPH C. BLOWE	108 W. Greenway Dr. S. Greensboro, NC 27403
F.W. BRISSON, JR. & HARRET K. BRISSON	Gen Del Dublin, NC 28332
JAMES T. BRYAN	PO Box 485 Dublin, NC 28332
PAUL G. BUTLER, JR.	PO Box 985 Elizabethtown, NC 28337
THERON D. HURSEY, HEIRS	PO Box 114 Dublin, NC 28332
IRIS MCNEILL KING, ET AL	PO Box 362 Dublin, NC 28332
LYNN G. KING, SR.	PO Box 362 Dublin, NC 28332
REJEAN LEBEL	RR 1 Box 71 Elizabethtown, NC 28337
WILLIAM G. MCDANIEL	8638 NC 87 W. Tar Heel, NC 28392
ERNEST S. PAIT	6777 NC 87 W. Dublin, NC 28332
ROSA LEE PARRISH	430 Lillian Circle Salisbury, NC 28147
QUINCE J. PHILLIPS	PO Box 66 Dublin, NC 28332
WADE A. TAYLOR, JR.	PO Box 865 Elizabethtown, NC 28337
TOWN OF DUBLIN	PO Box 36 Dublin, NC 28332
FLORA T. TOWNSEND, HEIRS	123 Cashwell Drive Goldsboro, NC 27534

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 6.439001T (R-2562D)

NC 87 FROM SR 1191 TO
NC41 / NC 87 BUS

SHEET 21 OF 26

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)	Natural Stream Design (m)
1	20+35 to 20+65 -LREV- (Lt)	N/A	0.003			0.005					
2	22+10 to 25+40 -LREV- (Rt)	N/A	0.224			0.118					
	10+95 -Y2- (Rt)	N/A	0.009			0.02					
	23+70 -LREV-	1@3.0mx1.8m RCBC	0.004		0.005	0.027	0.01			57.6	
3	10+55 to 10+85 -Y10A- (Lt)	900 RCP					0.003			31.3	
4	42+00 to 42+70 -LREV- (Lt)	N/A	0.008			0.022					
5	43+45 to 44+35 -LREV- (Lt)	N/A	0.04			0.032					
6	47+60 to 48+05 -LREV- (Rt)	N/A	0.022			0.013					
7	51+95 to 52+20 -L1REV- (Rt)	N/A						0.089			
8	19+80 to 20+30 -L3- (Rt)	N/A						0.184			
	20+25 -L3- (Lt)	750 RCP					0.002			14.4	
9	28+30 to 28+90 -L3- (Rt)	N/A				Eliminated					
TOTALS:			0.31	0	0.005	0.237	0.015	0.273	0	103.3	0

NCDOT

DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT 6.439001T (R-2562D)

SHEET 25 OF 26

Form Revised 3/22/01

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation In Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing (Method III) (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) (ac)	SURFACE WATER IMPACTS: Fill In SW (Pond) (ac)	SURFACE WATER IMPACTS: Temp. Fill In SW (ac)	SURFACE WATER IMPACTS: Existing Channel Impacted (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	20+35 to 20+65 -LREV- (Lt)	N/A	0.01			0.01					
2	22+10 to 25+40 -LREV- (Rt)	N/A	0.55			0.29					
	10+95 -Y2- (Rt)	N/A	0.02			0.05					
	23+70 -LREV-	1@10'x8' RCBC	0.01		0.01	0.07	0.03			189	
3	10+55 to 10+85 -Y10A- (Lt)	36" RCP					0.01			103	
4	42+00 to 42+70 -LREV- (Lt)	N/A	0.02			0.05					
5	43+45 to 44+35 -LREV- (Lt)	N/A	0.1			0.08					
6	47+60 to 48+05 -LREV- (Rt)	N/A	0.05			0.03					
7	51+95 to 52+20 -L1REV- (Rt)	N/A						0.22			
8	19+80 to 20+30 -L3- (Rt)	N/A						0.46			
	20+25 -L3- (Lt)	30" RCP					0.01			47	
9	28+30 to 28+90 -L3- (Rt)	N/A				Eliminated					
TOTALS:			0.76	0	0.01	0.58	0.05	0.68	0	339	0

Form Revised 3/22/01

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY
PROJECT 6.439001T (R-2562D)

SHEET 26 OF 26

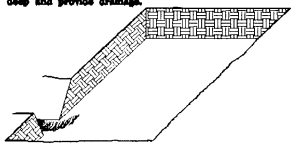
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2562C	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

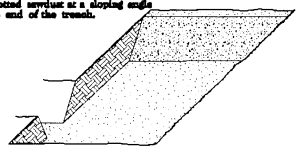
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

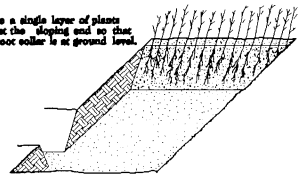
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 300mm deep and provide drainage.



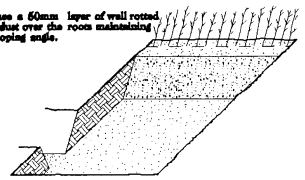
3. Backfill the trench with 50mm well rotted sawdust. Place a 50mm layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

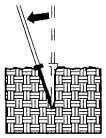


5. Place a 50mm layer of well rotted sawdust over the roots maintaining a sloping angle.

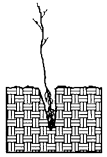


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

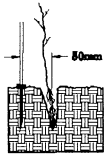
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



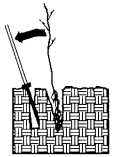
1. Insert planting bar as shown and pull handle toward planter.



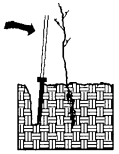
2. Remove planting bar and place seedling at correct depth.



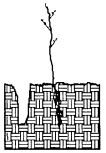
3. Insert planting bar 50mm toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 300mm long, 100mm wide and 25mm thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 250mm below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 1.8m TO 3.0m ON CENTER, RANDOM SPACING, AVERAGING 2.5m ON CENTER, APPROXIMATELY 1680 PLANTS PER HECTARE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	YELOW POPLAR	300mm - 460mm BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	300mm - 460mm BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	300mm - 460mm BR
25%	QUERCUS MICHAUXII	SWAMP CHESTNUT OAK	300mm - 460mm BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

Subject: Minutes from Interagency 4C Permit Review Meeting on February 18, 2004 for R-2562C in Bladen County
Updated on 5/10/04

Team Members:

Richard Spencer-USACE	(present)
Beth Barnes-NCDWQ	(absent)
Travis Wilson-NCWRC	(present)
Gary Jordan-USFWS	(absent)
Chris Militscher-EPA	(present)
Brett Feulner-PDEA	(present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Galen Cail, NCDOT Hydraulics
Libby Anderson, NCDOT Design Services

Beth Barnes was unable to attend this meeting but did provide comments, which are incorporated in these minutes. A separate meeting with Beth may be necessary to review her comments.

A separate meeting was held with Beth on 5/10/04 to review the permit. Comments/responses are incorporated in the minutes.

It was stated that the plans and permits were not complete and revisions are anticipated. This is due to both design changes and to modifications (reductions) in surface water and wetland impacts based on the field reverification meeting with Richard on 1/29/04. However, due to the approaching let date, it was felt necessary to go ahead with the review and discuss anticipated revisions.

It was stated that no rip rap should be placed in stream beds. Revise plans and details as needed.

It was stated that ditch and/or pipe velocities at wetland boundaries will need to be less that 2 fps. Otherwise, investigate using a preformed scour hole or other means to reduce. Show 10 yr discharge and velocities on permit drawings.

Site 1:

At the stream crossing Sta 102+40 Beth stated ....."what empties into the pipe and is it going directly into the impacted surface waters.....".

All the drainage in both 750 RCP's eventually goes to the stream. The drainage in the systems has been intercepted in the roadway median and side ditches. The system does not outlet directly into the stream but outlets into a drainage inlet at the 1200 cross pipe. This allows energy dissipation in the drainage inlet versus at the stream banks. The 1200 cross pipe is buried 20% of pipe diameter.

Site 3:

At the stream crossing Sta 115+45 Beth stated ....."is this (system) dumping directly into the wetland on the Mary Beth Stout Edge side of the road?"

The system outlets on the North side of the project. However, the 600 RCP Sta 115+20 will be relocated to outlet into the 600 cross pipe. This will eliminate the poor outlet angle to the stream and will allow energy dissipation in the inlet. The drainage in the systems has been intercepted in the roadway median and side ditches. The cross pipe is buried 20% of pipe diameter. Also from the 5/10/04 meeting, additional mechanized clearing impact will be shown, to R/W, in the wetland.

Site 4:

It was stated the cross pipe Sta 119+98 will be realigned to approximate Sta 119+80 to improve the outlet angle to the stream.

Site 5:

There are two different files locating the stream, which are not consistent. The accurate location of the stream needs to be surveyed to make sure proposed box culvert is correctly aligned with the stream.

On 2/23/04 the site was resurveyed to check the location of the stream. The data indicated the proposed culvert is aligned with the correct stream location. The incorrect location info has been deleted.

At the stream crossing Sta 146+62 Beth stated ....."does this (culvert) dump into the stream?"

The proposed 2.1m x 1.5m (7' x 5') box culvert will replace the existing 2 @ 1500 CSP pipes (2 @ 60"). The drainage system in the median will tie into the sides of the box culvert. The drainage in the systems has been intercepted in the roadway median and side ditches.

Site 6:

Make sure non-erosive velocities in ditches at wetland boundaries.

Site 7:

Beth stated ....."Due to fill and clearing, will there be greater impacts on the wetland system overall?"

Yes. There will be an increase in impacts to the wetland system. The limits of this wetland system have increased due to the reverification meeting on 1/29/04. It is proposed to bridge the surface water portion of the wetland and get some mitigation by removing some existing roadway fill.

The present plans show some proposed ditches through the wetlands. However, due to the proposed bridge the grade will have to be raised and may eliminate some, if not all, of the ditching. This will be assessed with the updated plans and any ditching will be eliminated to the extent practical.

Roadway and drainage designs were completed in March and April. The roadway vertical alignment was set to minimize the amount of fill in the wetland while at the same time providing a minimum of 1.5m (5') of clearance under the proposed bridge. This enables access for future bridge maintenance and inspection. Also, it is observed that the 1200mm (48") pipe outlet velocities in the wetlands are greater than 2 ft/s. There were attempts to outlet these pipes prior to the wetlands but this would have required raising the grade and thus filling in additional wetlands. Also, energy dissipaters were considered at the outlets, but were not utilized considering their inability to function with high groundwater and due to the fact a prescription of rip rap should be sufficient. The pipes were placed on a minimum grade of 0.3% and, as mentioned, Class I rip rap was proposed at the outlets. This will minimize outlet velocities and should provide outlet energy dissipation.

Subject: Draft Minutes from Interagency Permit Review Meeting on August 21, 2003 for R-2562D in Bladen County

Team Members:

Richard Spencer-USACE	(present)
John Hennessy-NCDWQ	(present)
Travis Wilson-NCWRC	(present)
Gary Jordan-USFWS	(absent)
Chris Militscher-EPA	(present)
Tim Bassette-PDEA	(absent)
Cindy Sharer-PDEA	(absent)
Elizabeth Lusk-PDEA	(present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Galen Cail, NCDOT Hydraulics
Virginia Mabry, NCDOT Design Services
Jim Rerko, NCDOT – DEO (Div 6)
Mark Laugisch, NCDOT Roadside Env

Richard wanted to know the status of the adjoining R-2562A, B and C. It was discussed that A and B are constructed and C is still in design. Richard stated R-2562 C and D will need to be permitted together. (IU)

Richard questioned when the JD had been done and whether the plans were approved before or after the JD. The permit drawings were dated 12/01. A copy of a memo dated 10/18/01 was presented which specified that the juridictional wetland and stream verification field meetings were held on 8/22/01 and 7/19/01 and 8/23/01, respectively. There was also a stream verification/avoidance/minimization field meeting held 8/28/01.

Richard questioned the approval status of the document? The Planning Engineer was not present and the question was left unanswered.

John questioned whether alignment shifts had been considered for avoidance/minimization in areas of wetland impacts. No one present could address and the question was left unanswered.

John questioned if any slopes in areas of wetland impacts could be steepened to 2:1. It was stated that 3:1 slopes are typical for this part of the state but the use of steeper slopes would be investigated. It was stated Geotech and the Division Construction office would be solicited for input.

Both Geotech and the Division Construction office were asked if 2:1 slopes could be used. Geotech recommended using 3:1 side slopes. However, if 2:1 slopes are used they will need to be plated with treated soils that will assist in erosion control and vegetation growth. The Division Construction office recommended using 3:1 slopes. Their experience in areas of this soil type has been if 2:1 slopes are constructed they eventually fail and produce a flatter slope anyway. They recommend constructing the 3:1 from the beginning and eliminate future maintenance and stability concerns.

Sheet 8/Site 2:

It was questioned why the energy dissipater Sta 23+87 –L- RT outlets into the wetland. It was determined the system could be taken to the left of –L- and the wetland impact avoided.
Richard recalled that the existing box culvert was "perched" above the stream bed. He questioned whether the culvert could be removed and replaced with a culvert that could be buried below the stream bed. It was stated this may be problematic for traffic phasing along existing NC 87 but it would be investigated.

Sheet 14/Site 5:

It was stated the ditch beside the wetland Sta 44+38 –LREV- LT had to be cleaned out to provide "daylight" for the outlet drainage. The ditch will be cleaned out at 0.0% grade. Richard stated the draining effects to the adjacent wetland would have to be quantified.

Sheet 15 & 17:

Jim questioned whether an additional wetland was observed between NC 41 and NC 87 that was not shown or that has not been delineated. PD & EA will need to investigate.

Sheet 18/Site 7:

Richard questioned whether the pond was "isolated" or not. He will investigate.

It was questioned whether the pond was a total take. It was discussed that less than half of the pond will be impacted and a total take was not anticipated.

Sheet 19/Site 8:

Richard questioned whether the pond was "isolated" or not. He will investigate.

It was questioned whether the pond was a total take. It was discussed that less than half of the pond will be impacted and a total take was not anticipated.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 22, 2004

Mr. William D. Gilmore, P.E.
EEP Transition Manager
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

Dear Mr. Gilmore:

Subject: NC 87 widening from NC 131 to NC 41, Bladen County, State Project No. 6.439001T, TIP No.R-2562.

The purpose of this letter is to request that the North Carolina Ecosystem Enhancement Program (EEP) provide confirmation that the EEP is willing to provide compensatory mitigation for the project in accordance with the Memorandum of Agreement (MOA) signed July 22, 2003 by the USACE, the NCDENR and the NCDOT.

The North Carolina Department of Transportation proposes to widen NC 87 from NC 131 and NC 41 Bladen County with the use of a temporary on-site detour. Jurisdictional impacts on this project occur in the Cape Fear and Lumber River Basin. This project is on the list of projects covered by EEP.

RESOURCES UNDER THE JURISDICTION OF SECTION 404 AND 401 OF THE CLEAN WATER ACT.

We have avoided and minimized the impacts to jurisdictional resources to the greatest extent possible as described in the permit application. A copy of the permit application can be found at http://www.ncdot.org/planning/pe/naturalunit/Applications.html. The remaining impacts to jurisdictional resources will be compensated for by mitigation provided by the EEP program. We estimate 4.31 acres of wetlands and 440 feet of stream will require mitigation.

The project is located in the Coastal Plain Physiographic Province in Bladen County in the Cape Fear and Lumber River basin in Hydrological Cataloguing Unit 03000005 and 03040203.

- The wetland impacts within the Cape Fear River Basin requiring mitigation consist of 1.01 acres of riverine wetland impacts and 0.36 acres of non-riverine wetland

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.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

impacts. Stream impacts requiring mitigation within the Cape Fear River Basin total 223 feet.

- The wetland impacts within the Lumber River Basin requiring mitigation consist of 0.91 acres of riverine wetland impacts and 2.03 acres of non-riverine wetland impacts. Stream impacts requiring mitigation within the Lumber River Basin total 217 feet.

Please send the letter of confirmation to Richard Spencer (USACE Coordinator) at U. S. Army Corps of Engineers, (PO Box 1890, Wilmington, NC 28402-1890). Mr. Spencer's FAX number is 910-251-4025. The current let date for the project is (December 12, 2004) for which the let review date is (November 2, 2004).

In order to satisfy regulatory assurances that mitigation will be performed; the NCDWQ requires a formal letter from EEP indicating their willingness and ability to provide the mitigation work requested by NCDOT. The NCDOT requests such a letter of confirmation be addressed to Mr. John Hennessy of NCDWQ, with copies submitted to NCDOT.

If you have any questions or need additional information please call Brett Feulner at 715-1488.

Sincerely,

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

cc

Mr. David Franklin, USACE
Mr. John Hennessy, DWQ
Mr. Travis Wilson, NCWWRC
Ms. Becky Fox, USEPA
Mr. Ronald Mikulak, USEPA
Mr. Gary Jordan, USFWS
Mr. John Sullivan III, P.E., FHWA
Mr. Greg Perfetti, P.E., Structure Design Unit
Mr. Jay Bennett, P.E., Roadway Design Unit
Mr. Art McMillian, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics Unit
Mr. Terry Gibson, P.E., Division 6
Mr. Omar Sultan, Programming and TIP
Mr. Mark Staley, Roadside Environmental
Ms. Cindy Sharer P.E., PDEA
Mr. Jim Rerko, Division 6, DEO

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

June 9, 1999

Mr. William D. Gilmore, P.E., Manager
Planning and Environmental Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, NC 27611

Attention: Tim Bassette

Dear Mr. Gilmore:

This responds to your letter of May 17, 1999, requesting comments or concurrence from the U.S. Fish and Wildlife Service (Service) on the updated Federal Protected Species Report on the survey for Michaux's sumac (*Rhus michauxii*) in the vicinity of the proposed widening of NC 87 from I-95 to NC 20 in Cumberland and Bladen Counties, North Carolina (TIP No. R-2562AA/AB). This report is provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

The Service has listed nine species as federally protected in Cumberland and Bladen Counties. On January 11, 1999, the NCDOT submitted a letter to the Service requesting concurrence with determinations of "No Effect" for eight of the species except Michaux's sumac, for which the NCDOT provided a biological conclusion of "Unresolved". By letter dated February 17, 1999, the Service granted concurrence for eight of the species but requested that the NCDOT conduct a second field survey for Michaux's sumac along the "AA" section of R-2562. The survey was to be completed in the spring months when the plant is more easily observed in a vegetative state. On April 30, 1999, the NCDOT conducted the field survey and concluded that construction of R-2562 section "AA" would have "No Effect" on Michaux's sumac.

The Service considers this updated report to be an accurate representation of the survey and results for this species, and its habitat. Based on the information provided, the Service concurs that this project, implemented as described, will not impact Michaux's sumac. Note, however, that this concurrence applies only to the referenced species up to the date of the report. Should additional information become available relative to other listed species, or the referenced species, additional surveys may be required.

The Service appreciates the opportunity to comment on this document. Please advise us of any changes in project plans. If you have any questions regarding these comments, contact Tom McCartney at (919) 856-4520, ext. 32.

Sincerely,

John M. Hefner
Ecological Services Supervisor

cc:
COE, Wilmington, NC (Timpy)
DWQ, Raleigh, NC (Hennessey)
FHWA, Raleigh, NC (Graf)
WRC, Creedmoor, NC (Cox)
EPA, Atlanta, GA (Bisterfield)

FWS/R4:TMcCartney:TM:06/08/99:919/856-4520 extension 32:\R-2562aa.esp

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN COUNTY

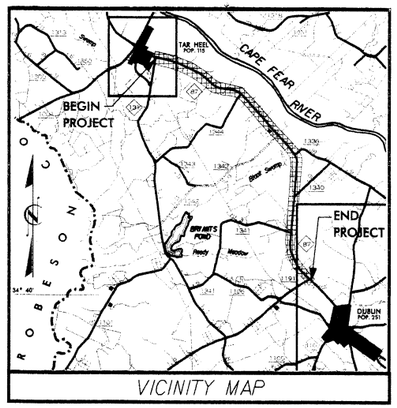
METRIC	STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
ALL DIMENSIONS IN THESE PLANS ARE IN METERS	N.C.	R-2562C	1	

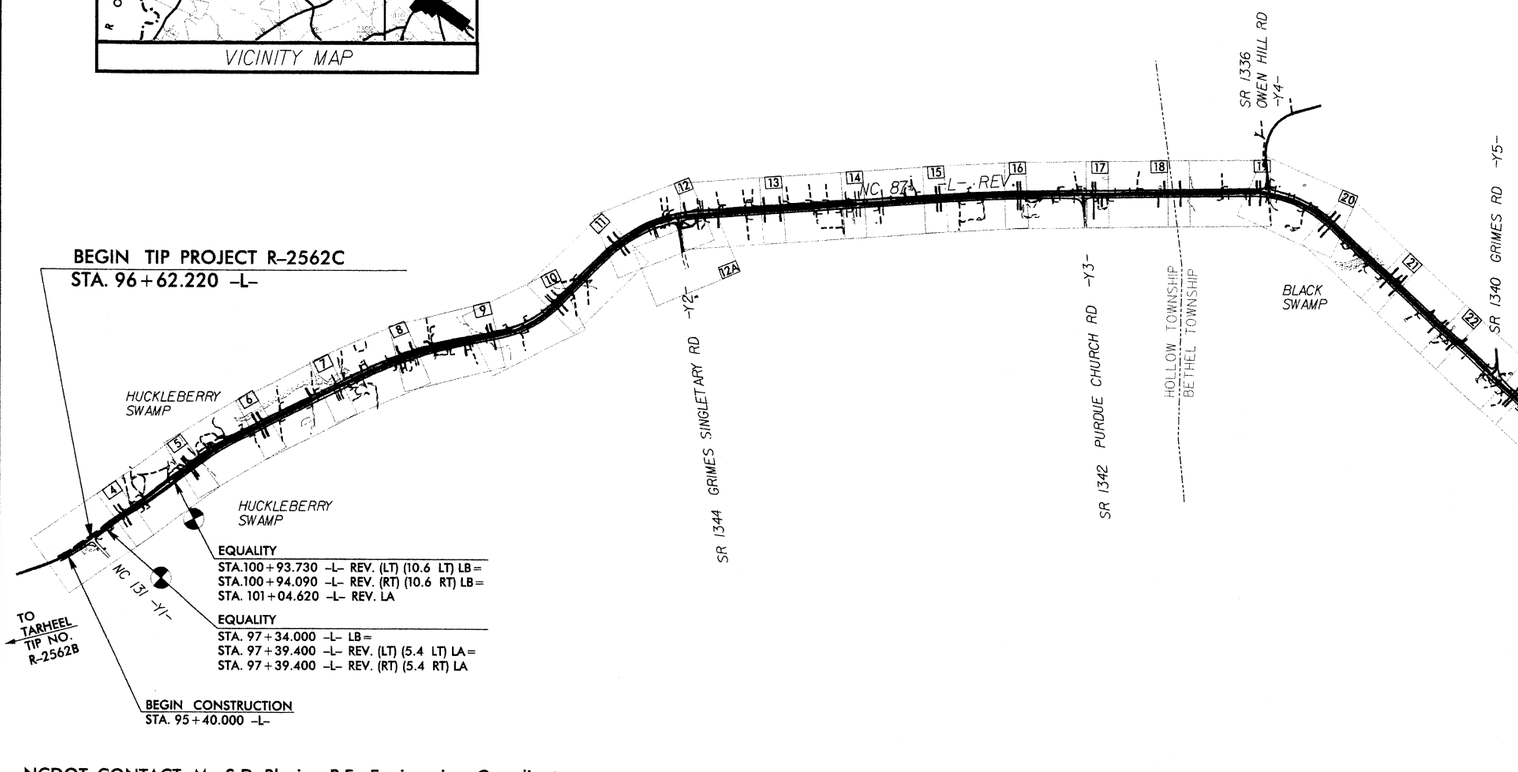
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34467.1.6		P.E.
34467.2.6		R /W, UTIL.
34467.3.7		CONST.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION: NC 87 FROM NC 131 TO SR 1191

TYPE OF WORK: GRADING, WIDENING, PAVING, DRAINAGE AND STRUCTURES





NCDOT CONTACT: Mr. S.D. Blevins, P.E., Engineering Coordinator

GRAPHIC SCALES

PLANS 5 0 10

PROFILE (HORIZONTAL) 5 0 10

PROFILE (VERTICAL) 2.5 0 5

DESIGN DATA

ADT 2005 = 5800 – 6600
ADT 2025 = 9200 – 10700
DHV = 11 %
D = 60 %
T = 14 % *
V = 100 km/h
* TTST=11% + DUALS=3%
FUNC CLASS = RURAL PRINCIPAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2562C = 9.242 km
LENGTH STRUCTURES TIP PROJECT R-2562C = 0.064 km
TOTAL LENGTH OF TIP PROJECT R-2562C = 9.306 km

Prepared In the Office of:
KCI Associates of North Carolina, P.A.
SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5210
• ENGINEERS • PLANNERS • ECOLOGISTS
for the:
DIVISION OF HIGHWAYS

1995 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 9-28-01

LETTING DATE: 12-21-04

MICHELLE R. BRAME, P.E.
PROJECT ENGINEER

LETTICIA M. GREGORY, E.I.T.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

CONTRACT: A304125

TIP PROJECT: R-2562C

6/24/09

REVISIONS
R/W REVISION, 1/25/04, REVISED ROW ON PARCELS 1 & 2.

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RALEIGH, NC 27609-5210 (919) 783-9214
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METRIC
5m 0 10m

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- CURVE DATA

PIs Sta 94+27.088
Θs = 2° 56' 17.7"
Ls = 60.000
LT = 40.006
ST = 20.005

PI Sta 95+12.876
Δ = 12° 50' 02.1" (LT)
L = 131.037
T = 65.794
R = 585.000
SE = 0.05

PIs Sta 95+98.124
Θs = 2° 56' 17.7"
Ls = 60.000
LT = 40.006
ST = 20.005

-L- REV (LT) CURVE DATA

PIs Sta 97+68.068
Θs = 1° 22' 07.4"
Ls = 43.000
LT = 28.668
ST = 14.334

PI Sta 98+05.403
Δ = 2° 55' 41.5" (RT)
L = 45.996
T = 23.003
R = 900.000
SE = 0.052

PI Sta 99+24.574
Δ = 6° 17' 29.4" (LT)
L = 192.163
T = 96.178
R = 1,750.000
SE = 0.030

PI Sta 100+44.896
Δ = 1° 35' 36.6" (RT)
L = 48.671
T = 24.337
R = 1,750.000
SE = 0.030

PIs Sta 100+77.397
Θs = 0° 24' 03.9"
Ls = 24.500
LT = 16.333
ST = 8.167

-L- REV (RT) CURVE DATA

PIs Sta 97+68.068
Θs = 1° 22' 07.4"
Ls = 43.000
LT = 28.668
ST = 14.334

PI Sta 98+20.681
Δ = 4° 52' 16.4" (RT)
L = 76.517
T = 38.281
R = 900.000
SE = 0.052

PI Sta 99+48.163
Δ = 5° 50' 19.9" (LT)
L = 178.338
T = 89.246
R = 1,750.000
SE = 0.030

PIs Sta 100+45.422
Θs = 0° 24' 03.9"
Ls = 24.500
LT = 16.333
ST = 8.167

NC GRID NAD '83

BEGIN CONSTRUCTION
POC STA. 95+40.000 -L-

CSSta. 95+78.119

STSta. 96+38.119

96+00

97+00

MINNIE F. MYERS CANADY
DB 179 PG 245

BEGIN STATE PROJECT R-2562C
POT STA. 96+62.220 -L- =
POT STA. 10+00.000 -Y1-

EQUALITY
POT STA. 97+34.000 -L- LB=
TS STA. 97+39.400 -L- REV. (LT) (5.4 LT) LA=
TS STA. 97+39.400 -L- REV. (RT) (5.4 RT) LA

+82.400 -L- REV (LT)
21m (68.898')

+34.000 -L-
15.496m (50.840')

+28.396 -L- REV (LT)
21m (68.898')

98+00

PROPOSED SPECIAL DITCH
SEE DETAIL A

TOWER GUY WIRE
1800 CHL

PROP. 12 PAVED SHLD.

EXIST R/W

6" & 4" GAS PIPELINE

INSTL RCP

750 CONC C&G

5'-0" WALK

25-19 BURIED CABLE

NC HWY 87 7.2 BST

S 75° 50' 10.2" E

45.80 COR-NAIL
S 75°47'10" E

167.948 COR-NAIL
S 75°47'10" E

6-22 BURIED CABLE

REMOVE TEMP. ASPHALT CURB

-L- REV. (LT)

PROP. R/W

15:1 TAPER

PROP. MONOLITHIC ISLAND

TYPE D C

2GI

375 RCP

INSTALL TBJB TO BE CONVERTED TO A 2GI (TYPE B) AFTER TRAFFIC IS SHIFTED

MATCH LINE -L- REV. (LT) STA. 98+31

SHEET 5

+55.819 -L-
13.883m (45.548')

+55.819 -L-
22.5m (73.819')

PROP. 750 CURB & GUTTER

PROP. 1.5 SIDEWALK

DO NOT DISTURB CANOPY

MTL CANOPY

3-GAS PUMPS

I.S. BK BUS

BEGIN PROP. 200X300 CONC. CURB
+32.666 -L-

+35.738 -L-
22.42m (73.559') +40.993 -L-
22.42m (73.560')

PROP. 200X300 CONC. CURB

+45.734 -L-
31.449m (103.178')

END PROP. 200X300 CONC. CURB
+60.000 -Y1-

+60.000 -Y1-
19.003m (62.345')

+63.509 -Y1-
15.240m (50.000')

REMOVE TEMP. ASPHALT CURB

+79.998 -L-
30.331m (99.109')

+00.000 -L-
21.5m (70.538')

+39.400 -L- REV (RT)
16.2055m (53.1676')

+82.400 -L- REV (RT)
16m (52.4934')

SCSta. 97+82.400
SCSta. 97+82.400

PRCSta. 98+28.396

DAVID S. CANADY
DEED BOOK 121 PAGE 605
MAP BOOK 9 PAGE 36
(1A)

MINNIE MYERS CANADY and husband
DAVID SPURGEON CANADY
DB 385 PG 859
(2)

WOODS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CECIL" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 102527.1910(m) EASTING: 633512.5250(m)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .999920685
THE N.C. LAMBERT GRID BEARING
LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CECIL" TO -L- STATION 96+62.220 IS
N 34 DEGREES 10 MINUTES 31.4 SECONDS W, 7647.4 m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

2005 ADT
2025 ADT

9500 / 15400 -L- NC 87 6600 / 10700

3200 / 5100 300 / 400

NC 131 -Y1-

3500 / 5500

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 32 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 1/15/04, REVISED ROW ON PARCELS 1, 2, 3 & 5. REMOVED EASEMENTS ON PARCELS 3 & 4.

KCI Associates
of North Carolina, P.A.
SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5210 (919) 783-9214
•ENGINEERS • PLANNERS • ECOLOGISTS

METRIC

5m 0 10m

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- REV (LT) CURVE DATA

PIs Sta 97+68.068
Θs = 1° 22′ 07.4″
Ls = 43.000
LT = 28.668
ST = 14.334

PI Sta 98+05.403
Δ = 2° 55′ 41.5″ (RT)
L = 45.996
T = 23.003
R = 900.000
SE = 0.052

PI Sta 99+24.574
Δ = 6° 17′ 29.4″ (LT)
L = 192.163
T = 96.178
R = 1,750.000
SE = 0.030

PI Sta 100+44.896
Δ = 1° 35′ 36.6″ (RT)
L = 48.671
T = 24.337
R = 1,750.000
SE = 0.030

PIs Sta 100+77.397
Θs = 0° 24′ 03.9″
Ls = 24.500
LT = 16.333
ST = 8.167

-L- REV (RT) CURVE DATA

PIs Sta 97+68.068
Θs = 1° 22′ 07.4″
Ls = 43.000
LT = 28.668
ST = 14.334

PI Sta 98+20.681
Δ = 4° 52′ 16.4″ (RT)
L = 76.517
T = 38.281
R = 900.000
SE = 0.052

PI Sta 99+48.163
Δ = 5° 50′ 19.9″ (LT)
L = 178.338
T = 89.246
R = 1,750.000
SE = 0.030

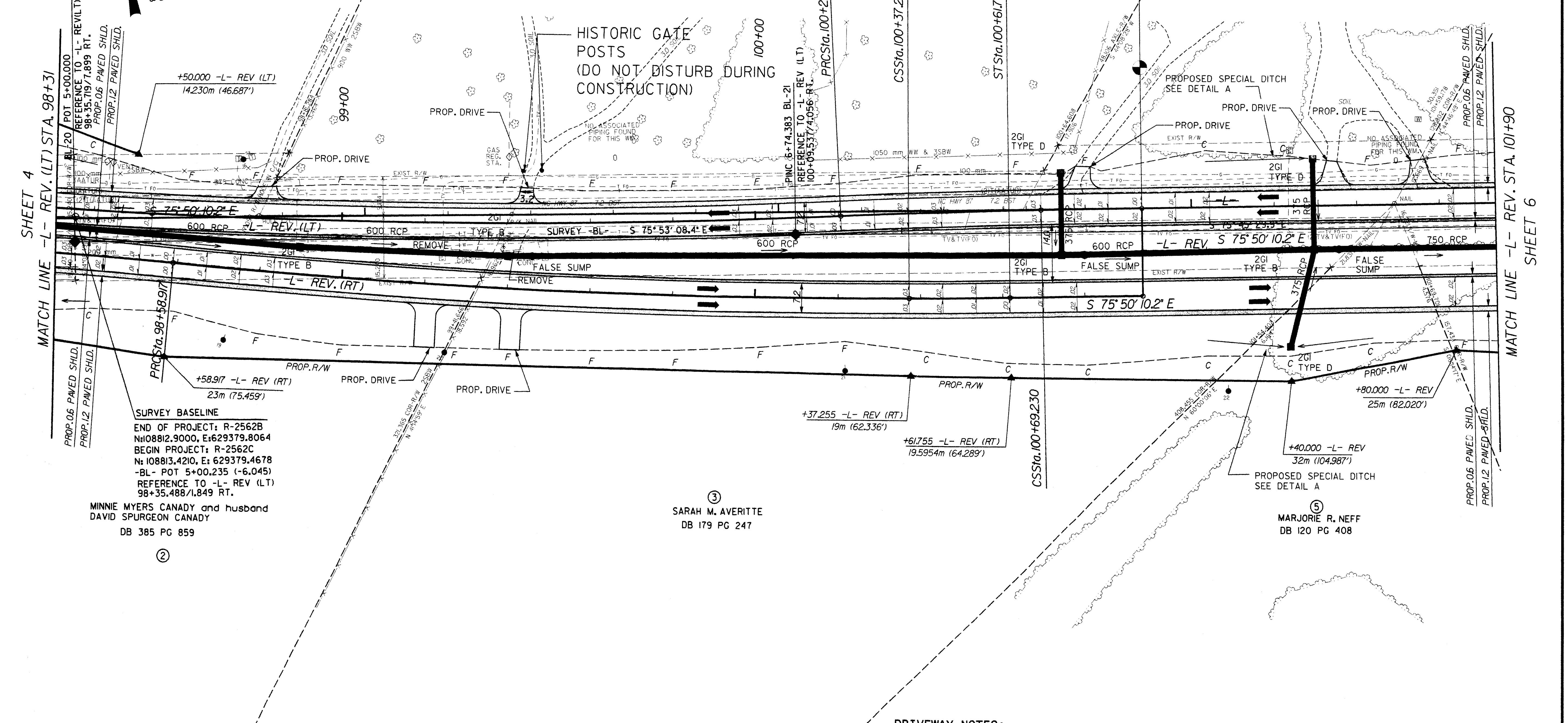
PIs Sta 100+45.422
Θs = 0° 24′ 03.9″
Ls = 24.500
LT = 16.333
ST = 8.167

EQUALITY
ST STA. 100+93.730 -L- REV. (LT) (10.6 LT) LB=
POT STA. 100+94.090 -L- REV. (RT) (10.6 RT) LB=
POT STA. 101+04.620 -L- REV. LA

① MINNIE F. MYERS CANADY
DB 179 PG 245

③ SARAH M. AVERITTE
DB 179 PG 247

④ BETH-CAR PRESBYTERIAN CHURCH
DB 9 PG 299



SURVEY BASELINE
END OF PROJECT: R-2562B
N:108812.9000, E:629379.8064
BEGIN PROJECT: R-2562C
N: 108813.4210, E: 629379.4678
-BL- POT 5+00.235 (-6.045)
REFERENCE TO -L- REV (LT)
98+35.488/1.849 RT.

MINNIE MYERS CANADY and husband
DAVID SPURGEON CANADY
DB 385 PG 859
②

③
SARAH M. AVERITTE
DB 179 PG 247

⑤
MARJORIE R. NEFF
DB 120 PG 408

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 32 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 3/25/04, REMOVED ROW ON PARCEL 8, GEORGE WILLIS ALLEN

KCI Associates of North Carolina, P.A.
SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5210 (919) 783-9214
• ENGINEERS • PLANNERS • ECOLOGISTS

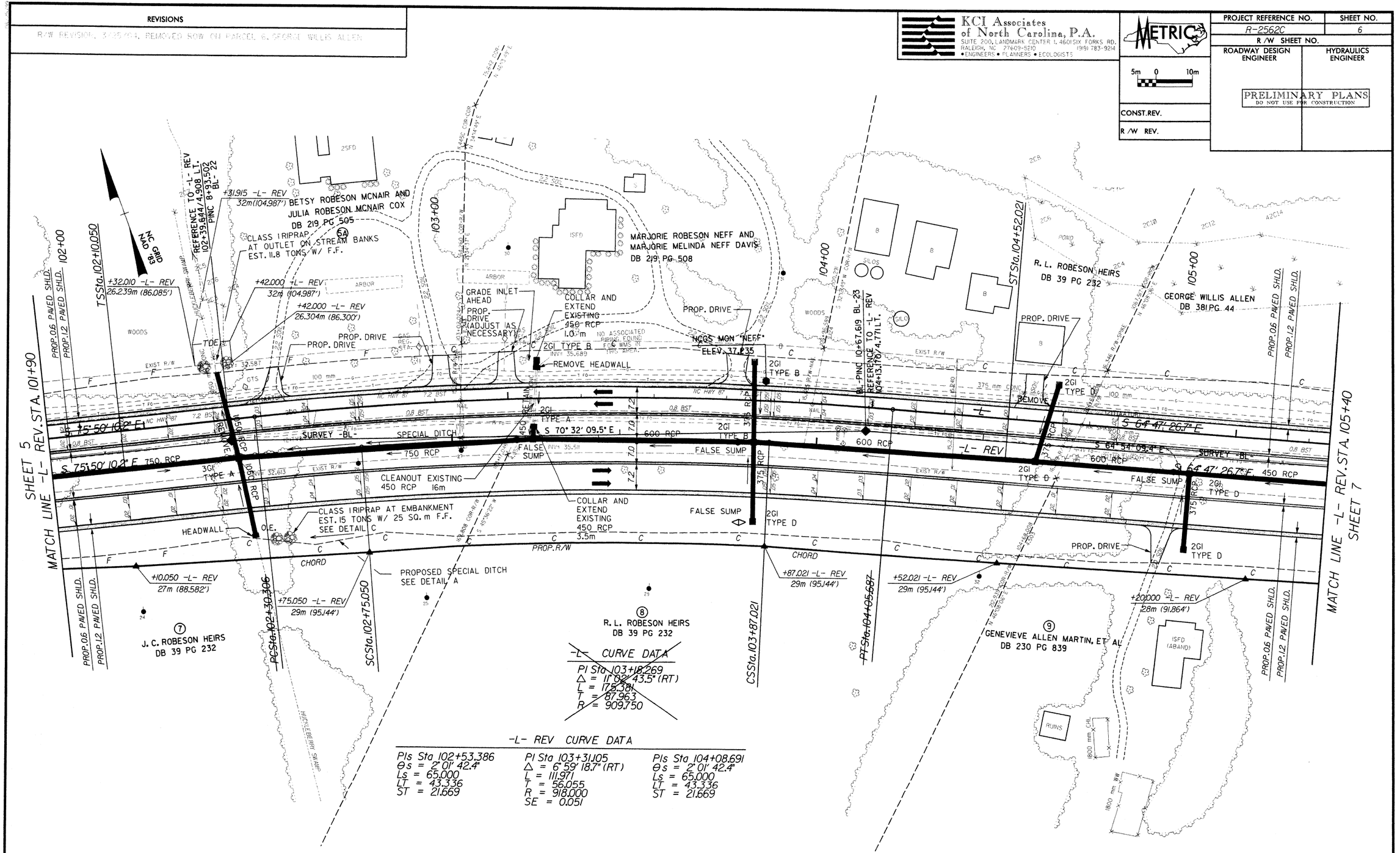
METRIC

5m 0 10m

CONST. REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 33 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 4/23/02, REMOVED TDE ON PARCEL 12
STATION & OFFSET CHANGES ON EASEMENT ON PARCELS 12 & 7
R/W REVISION, 3/25/04, REMOVED ROW ON PARCEL 6, GEORGE WILLIS ALLEN, & PARCEL 10, JAMES E. ALLEN

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METRIC
5m 0 10m

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

SHEET 6 MATCH LINE -L- REV. STA. 105+40

SHEET 8 MATCH LINE -L- REV. STA. 108+91

GEORGE WILLIS ALLEN
DB 381 PG 44

JAMES E. ALLEN
DB 191 PG 813

MICHAEL JONES & WIFE
JULIA DAVIS JONES
DB 229 PG 701

PROP. 06 PAVED SHLD.
PROP. 12 PAVED SHLD.
PROP. DRIVE
PROP. R/W
EXIST R/W
NO ASSOCIATED PIPING FOUND FOR THIS WM.
POND
NC HWY 87
7.2 BST
S 64° 54' 09.4" E
SURVEY -BL-
S 64° 47' 26.7" E
S 64° 52' 14.8" E
450 RCP
375 RCP
FALSE SUMP
2GI TYPE D
-L- REV
REMOVE
60 TAPER
CONC MON
TS ELEC
100 mm
200 mm
375 mm CONC
TV&TV(FO)

BL-24
PINC 12+91.815
REFERENCE TO -L- REV
108+37.305/5.046 LT.

BL-25
PINC 14+91.513
REFERENCE TO -L- REV
108+87.002/5.335 LT.

+75.000 -L- REV
26.355m (86.467')

+91.000 -L- REV
30m (98.425')

+80.000 -L- REV
27m (88.583')

+15.203 -L- REV
27.129m (88.006')

+55.000 -L- REV
31m (101.706')

+68.000 -L- REV
31m (101.706')

+45.998 -L- REV
27.253m (89.413')

CLASS 'B' RIPRAP
EST. 1.0 TON W/FF

⑨ GENEVIEVE ALLEN MARTIN, ET AL
DB 230 PG 839

⑪ MAXINE ALLEN CASEY HEIRS
DB 191 PG 823

⑫ EDDIE E. KNIGHT & WIFE
BARBARA G. KNIGHT
DB 322 PG 878
POND

⑬ BETSY ALLEN RICH
DB 224 PG 36

900 mm WD
1500 mm CMP
2SFD

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 33 FOR -L- REV. PROFILE

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METRIC

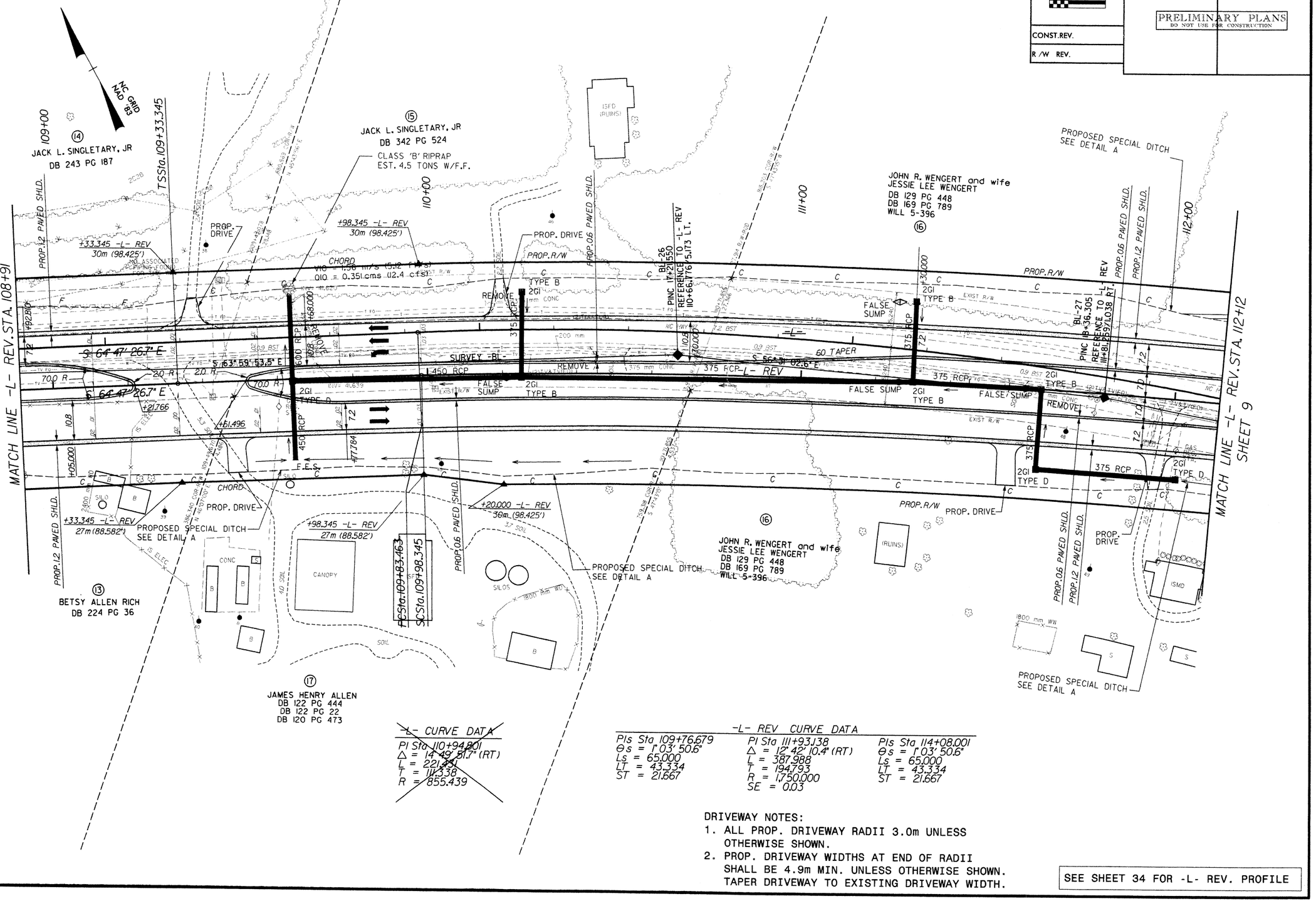
5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	8
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L- CURVE DATA

Pl Sta 110+94.801
Δ = 14° 49' 51.7" (RT)
L = 221.450
T = 111.338
R = 855.439

-L- REV CURVE DATA

Pls Sta 109+76.679	Pl Sta 111+93.138	Pls Sta 114+08.001
Θs = 1° 03' 50.6"	Δ = 12° 42' 10.4" (RT)	Θs = 1° 03' 50.6"
Ls = 65.000	L = 387.988	Ls = 65.000
LT = 43.334	T = 194.793	LT = 43.334
ST = 21.667	R = 1,750.000	ST = 21.667
	SE = 0.03	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 34 FOR -L- REV. PROFILE

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METRIC
5m 0 10m

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	9
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83

MATCH LINE -L- REV. STA. 112+12 SHEET 8

MATCH LINE -L- REV. STA. 115+70 SHEET 10

(16) JOHN R. WENGERT and wife
JESSIE LEE WENGERT
DB 129 PG 448
DB 169 PG 789
WILL 5-396

PROPOSED LATERAL 'V' DITCH SEE DETAIL B

PROP. 06 PAVED SHLD.

PROP. 12 PAVED SHLD.

113+00

PROP. DRIVE

PROP. DRIVE

FILL DITCH BETWEEN DRIVEWAYS

+86.333 -L- REV
30m (98.425')

PROP. R/W

GRADE TO DRAIN BACK

(19) JAMES FRED MARTIN ET AL
DB 183 PG 180

114+00

ROBERT K. MELVIN & WIFE
JEANNETTE H. MELVIN
DB 302 PG 647

(20) MARY S. EDGE AND
VAN M. STOUT
DB 284 PG 515

+51.333 -L- REV
30m (98.425')

CHORD

STSta. 114+51.333

(21) ROBERT KENNETH MELVIN, ET. AL
DB 290 PG 944

115+00

(22) MARY BETH STOUT EDGE
DB 102 PG 409
WILL 96-E PG 116

+20.000 -L- REV
36m (118.110')

TOE PROTECTION CLASS 'B' RIPRAP
EST. 50 TONS W/ 80 SQ m F.F.
SEE DETAIL M

+14.000 -L- REV
39m (127.952')

CLASS 'B' RIPRAP AT OUTLET ON STREAM BANKS
EST. 9.0 TONS W/ F.F.

+25.000 -L- REV
39m (127.952')

+66.442 -L- REV
30m (98.425')

TDE

PROP. 06 PAVED SHLD.

PROP. 12 PAVED SHLD.

TSSta. 115+66.442

EXIST R/W

450 RCP

COLLAR & EXTEND EXISTING 450, 18m

CLEAN OUT 450, 14m

PINC 9+60.938
REFERENCE TO -L- REV
113+05.868
12.613 RT.

BL-28

2GI TYPE D

FALSE SUMP

+14.000 -L- REV
35.476m (116.390')

+25.000 -L- REV
35.354m (115.991')

375 RCP

600 RCP

S 49° 57' 35.0" E

2GI TYPE B

SPECIAL DITCH

60 TAPER

SURVEY -BL-

S 50° 21' 49.2" E

COLLAR & EXTEND EXISTING 450, 15m

GRADE TO DRAIN BACK

REMOVE

CONC

2GI TYPE A

PROP. DRIVE

NO ASSOCIATED PIPING FOUND FOR THIS WING

CLASS 'B' RIPRAP @ OUTLET EST. 2.7 TONS W/ F.F.

+67.000 -L- REV
30m (98.425')

PROPOSED SPECIAL DITCH SEE DETAIL A

STA. 112+64 RT
DITCH CLEANOUT REQ'D
46m DOWNSTREAM OF 450 RCP
@ 0.73% TO DITCH INTERSECTION
@ ELEV. 45.813m
EST. 28 CU m DDE
SEE DETAIL E

+59.000 -L- REV
30m (98.425')

+59.000 -L- REV
78m (205.905')

+67.000 -L- REV
78m (205.905')

(16) JOHN R. WENGERT and wife
JESSIE LEE WENGERT
DB 129 PG 448
DB 169 PG 789
WILL 5-396

(19) JAMES FRED MARTIN ET AL
DB 183 PG 180

FILL DITCH BETWEEN DRIVEWAYS

+86.333 -L- REV
30m (98.425')

+51.333 -L- REV
30m (98.425')

(22) MARY BETH STOUT EDGE
DB 102 PG 409
WILL 96-E PG 116

TOE PROTECTION CLASS 'B' RIPRAP
EST. 25 TONS W/ F.F.
SEE DETAIL M

+66.442 -L- REV
34m (111.548')

-L- REV CURVE DATA

PIs Sta 109+76.679	PI Sta 111+93.138	PIs Sta 114+08.001
Θs = 1° 03' 50.6"	Δ = 12° 42' 10.4" (RT)	Θs = 1° 03' 50.6"
Ls = 65.000	L = 387.988	Ls = 65.000
LT = 43.334	T = 194.793	LT = 43.334
ST = 21.667	R = 1,750.000	ST = 21.667
	SE = 0.03	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 34 FOR -L- REV. PROFILE

REVISIONS

R/W REVISION, 3/8/04, REVISED TOE ON PARCEL 25.

R/W REVISION, 5/25/04, REVISED POW ON PARCEL 22, AND REMOVED POW ON PARCEL 24, EVELYN ROBESON WILSON

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METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	10
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- REV CURVE DATA

PI Sta 116+09.785
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

PI Sta 117+45.214
Δ = 25° 38' 17.2" (LT)
L = 223.735
T = 113.772
R = 500.000
SE = 0.076

PI Sta 118+76.852
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

~~-L- CURVE DATA~~
~~PI Sta 117+37.545~~
~~Δ = 33° 05' 11.6" (LT)~~
~~L = 303.171~~
~~T = 155.944~~
~~R = 525.000~~

NC GRID NAD 83

(22) MARY BETH STOUT EDGE
DB 102 PG 409
WILL 96-E PG 116

(23) MARY BETH STOUT EDGE
VAN M. STOUT
WILL 96-E PG 116
DB 154 PG 315

MATCH LINE -L- REV. STA. 115+70 SHEET 9

MATCH LINE -L- REV. STA. 118+90 SHEET 11

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.

CSSTA.115+81.662

116+00

SCSTA.116+31.442

+31.442 -L- REV
30m (98.425')

CHORD

PROP. DRIVE

TYPE D 3I5 RCP
2GI

TYPE D
2GI

PROP.R/W

117+00

600 RCP

450 RCP

2GI
TYPE A

70.0 R

450 RCP 2.0 R

REMOVE

+71.303

+1.540

2.0 R

+54.500

10.8

7.2

+22.272

375 mm CONC

BL-3I
PINC 23+54.70I
REFERENCE TO -L- REV
I6+97.I02 I9.843 RT.

TYPE B
2GI

375 RCP

+27.390

+18.000

+20.000

118+00

+55.177 -L- REV
30m (98.425')

CSSTA.118+55.177

+80.000

60 TAPER

EXIST R/W

PINC 24+87.967
PT R2562C-I
REFERENCE TO -L- REV
I8+22.058 I7.098 RT.

S 52° 53' 32.2" E

S 69° 34' 16.7" E

+31.442 -L- REV
29m (95.14')

+47.000 -L- REV
26.175m (85.878')

TOE PROTECTION
CLASS 'B' RIPRAP
EST. 30 TONS W/ 50 SQ m F.F.
SEE DETAIL M

NO ASSOCIATED PIPING FOR THIS INLET

SURVEY BL

PROP. DRIVE

(22) MARY BETH STOUT EDGE
DB 102 PG 409
WILL 96-E PG 116

EVELYN ROBESON WILSON
DB 232 PG 546

LACY ROBESON
DB 152 PG 765

(25) RAYMOND JAMES IRVINE
WILL 93-E PG 87
DB 19 PG 367
DB 233 PG 384

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 35 FOR -L- REV. PROFILE

REVISIONS

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METRIC
5m 0 10m

CONST. REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

-L- REV CURVE DATA

PIs Sta 116+09.785
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

PI Sta 117+45.214
Δ = 25° 38' 17.2" (LT)
L = 223.735
T = 113.772
R = 500.000
SE = 0.076

PIs Sta 118+76.852
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

(25) RAYMOND JAMES IRVINE
WILL 93-E PG 87
DB 19 PG 367
DB 233 PG 384

MATCH LINE -L- REV. STA. 118+90 SHEET 10

PT Sta. 118+84.773

+20.177 -L- REV
30m (98.425')

ST Sta. 119+20.177

119+00

120+00

121+00

+00.000 -L- REV
30m (98.425')

TS Sta. 121+34.651

+34.651 -L- REV
29m (95.144')

122+00

+99.651 -L- REV
29m (95.144')

PROP. 06 PAVED SHLD.
PROP. 12 PAVED SHLD.

CHORD

PROP. R/W

PROPOSED SPECIAL DITCH
SEE DETAIL A

PROP. DRIVE

2GI TYPE D

2GI TYPE B

FALSE SUMP

750 RCP

450 RCP

375 RCP

PINC 26+84.360
REFERENCE TO -L- REV
120+20.539 76.106 RT.

REMOVE

-L- REV

S 83° 02' 46.6" E

S 81° 47' 17.0" E

S 82° 07' 44.8" E

SURVEY -BL-

EXIST R/W

GRADE TO DRAIN

RETAINING WALL

NO ASSOCIATED RIPRAP FOUND FOR THESE WALLS

CLASS I RIPRAP AT OUTLET.
EST 1.8 TONS W/F.F.

+24.000 -L- REV
26.298m (86.279')

CLASS I RIPRAP AT OUTLET.
EST 1.8 TONS W/F.F.

RUINS

PC Sta. 121+61.40

SC Sta. 121+99.651

LATERAL 'V' DITCH
SEE DETAIL B

CLASS I RIPRAP AT OUTLET
EST 12.5 TONS W/F.F.

PINC 28+82.589
GPS MON R2562C-2
REFERENCE TO -L- REV
122+20.495 17.329 RT.

MATCH LINE -L- REV. STA. 122+44 SHEET 12

(25) RAYMOND JAMES IRVINE
WILL 93-E PG 87
DB 19 PG 367
DB 233 PG 384

-L- REV CURVE DATA

PIs Sta 121+77.991
Θs = 3° 04' 40.3"
Ls = 65.000
LT = 43.34
ST = 21.673

PI Sta 123+89.699
Δ = 34° 52' 41.1" (RT)
L = 368.286
T = 190.048
R = 605.000
SE = 0.069

PIs Sta 125+89.609
Θs = 3° 04' 40.3"
Ls = 65.000
LT = 43.34
ST = 21.673

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 35 FOR -L- REV. PROFILE

REVISIONS

R/W REVISION, 9-23-03. REVISED R/W ON PARCEL 29 & REVISED R/W AND CONSTRUCTION EASEMENT ON PARCEL 30 DUE TO THE REMOVAL OF THE DITCH ON PARCELS 33 & 34 (SHEET 13).

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METRIC

5m 0 10m

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83

123+00

124+00

125+00

(25) RAYMOND JAMES IRVINE
WILL 93-E PG 87
DB 19 PG 367
DB 233 PG 384

(26) ROGER SINGLETARY
DB 182 PG 718

(27) ROGER SINGLETARY
DB 192 PG 679

(28) RUDY RUDOLPH PAIT & RHONDA B. PAIT
DB 314 PG 122

PROPOSED LATERAL 'V' DITCH SEE DETAIL B

+25.000 -L- REV
29m (95.144')

+50.000 -L- REV
33m (108.267')

+60.000 -L- REV
33m (108.267')

+80.000 -L- REV
29m (95.144')

POC STA 125+16.046 -L- REV.=
POT STA 10+00.000 -Y2-

PROP. DRIVE

PROP.R/W

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.

SHEET 11 -L- REV. STA. 122+44

MATCH LINE -L- REV. STA. 125+80 SHEET 13

-L- REV

SURVEY -BL-

S 71° 42' 32.7" E

S 57° 54' 46.2" E

S 45° 48' 58.7" E

S 44° 05' 30.8" W

60 TAPER

SPECIAL DITCH

PROPOSED SPECIAL DITCH SEE DETAIL A

PROPOSED SPECIAL DITCH SEE DETAIL N

CLASS 'B' RIP RAP 3 TONS W/ 10 S.Y.F.F.

NO ELECTRONIC INFORMATION OBTAINED FROM CUT TELE LINE AT THIS LOCATION.

NO ASSOCIATED PIPING FOUND FOR WM& IN THIS AREA.

(29) NATHAN WILBUR SINGLETARY, JR.
DB 192 PG 681

(30) WILLIAM GRIMES
DB 278 PG 448

MATCH LINE -Y2- STA. 11+10 SHEET 12A

CSSta. 125+67.937

HTR (ABAND)

375 RCP

450 RCP

2GI TYPE B

PING 30+11.242 -BL- 33 REFERENCE TO -L- REV 123+58.96 RT. 16.726

PING 34+54.965 -BL- REFERENCE TO -L- REV 126+04.040 17.305 RT.

2005 ADT
2025 ADT

6600 / 10700 — NC 87 -L- REV — 6500 / 10500

150 / 300 — -Y2- SR 1344 — 60 / 100

210 / 400

-L- CURVE DATA
PI Sta 123+82.530
Δ = 41° 02' 01.8" (RT)
L = 422.543
T = 220.790
R = 590.000

-L- REV CURVE DATA

PIs Sta 121+77.991	PI Sta 123+89.699	PIs Sta 125+89.609
Θs = 3° 04' 40.3"	Δ = 34° 52' 41" (RT)	Θs = 3° 04' 40.3"
Ls = 65.000	L = 368.286	Ls = 65.000
LT = 43.34	T = 190.048	LT = 43.34
ST = 21.673	R = 605.000	ST = 21.673
	SE = 0.069	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y2- INTERSECTION DETAIL
SEE SHEET 36 FOR -L- REV. PROFILE
SEE SHEET 46 FOR -Y2- PROFILE

REVISIONS

R/W REVISION, 9/23/03, REVISED R/W AND CONSTRUCTION EASEMENT ON PARCEL 30 AND ADDED PROPOSED R/W AND CONSTRUCTION EASEMENT ON PARCEL 28 DUE TO THE REMOVAL OF THE DITCH ON PARCELS 33 & 34 (SHEET 13).

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METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	12A
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -Y2- STA. 11+10
SHEET 12

PROPOSED SPECIAL DITCH - SEE DETAIL N

-L- PROP R/W LT

+40.000 -Y2-
16.500m (54.134')

+50.000 -Y2-
13.294m (43.615')

END CONSTRUCTION
POT STA. 11+50.000 -Y2-

NC GRID NAD '83

30 WILLIAM GRIMES
DB 278 PG 448

28 RUDY RUDOLPH PAIT & RHONDA B. PAIT
DB 314 PG 122

1200 mm WW

WOODS

EXIST R/W

INV=43.059
600 mm RCP
INV=42.948

REVISIONS
R/W REVISION, 9/23/05, REVISED R/W ON PARCELS 28 & 30. REMOVED PDE ON PARCELS 33 & 34 AND ADDED PROPOSED R/W ON PARCELS 33 & 34.

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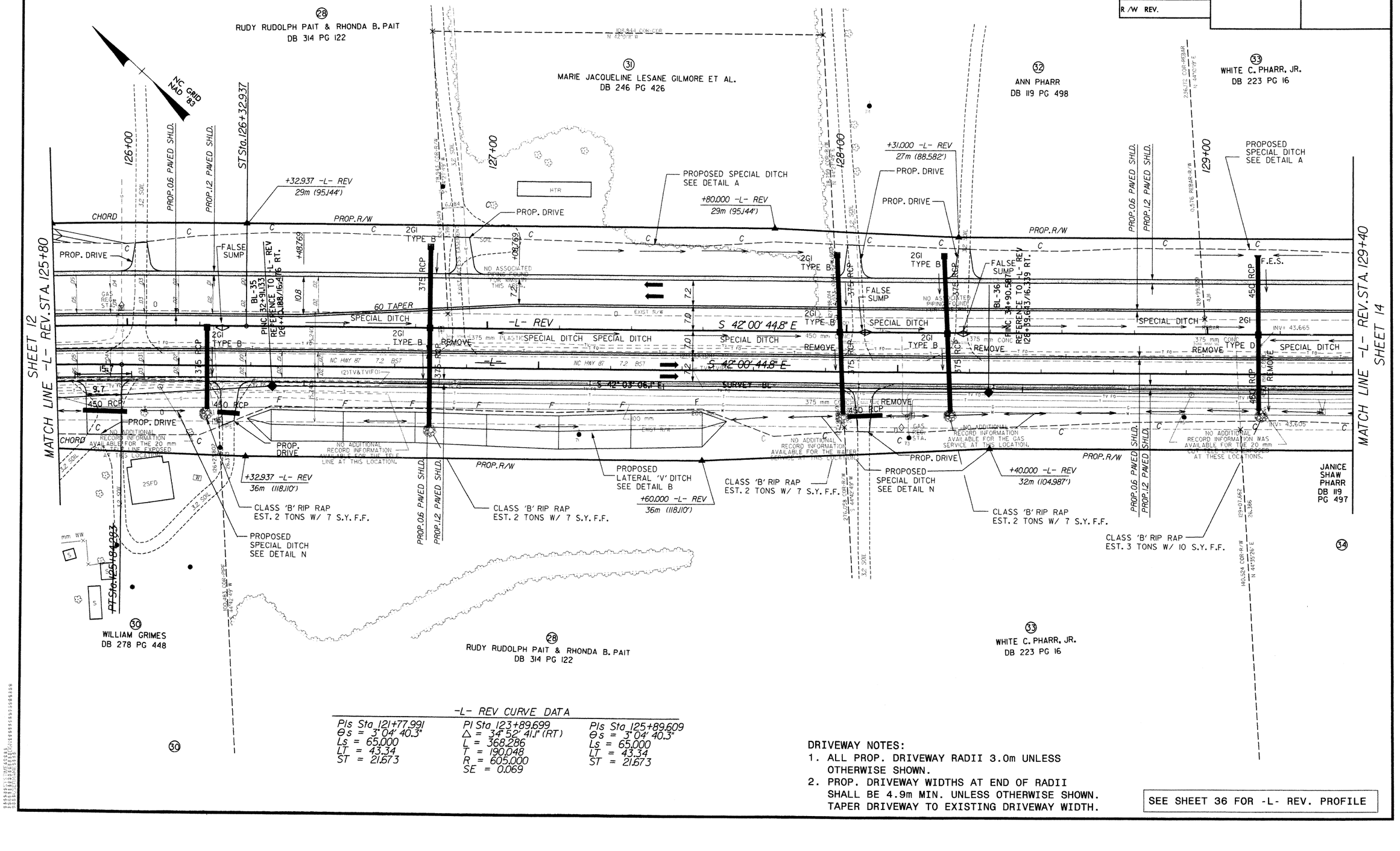
METRIC

5m 0 10m

CONST. REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L- REV CURVE DATA

PIs Sta 121+77.991	PI Sta 123+89.699	PIs Sta 125+89.609
Θs = 3° 04' 40.3"	Δ = 34° 52' 41.1" (RT)	Θs = 3° 04' 40.3"
Ls = 65.000	L = 368.286	Ls = 65.000
LT = 43.34	T = 190.048	LT = 43.34
ST = 21.673	R = 605.000	ST = 21.673
	SE = 0.069	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 36 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 9/23/03, ADDED PROPOSED R/W ON PARCELS 34, 93, & 94 DUE TO THE REMOVAL OF THE DITCH ON PARCELS 33 & 34 (SHEET 13).

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METRIC

5m 0 10m

CONST.REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

(33) WHITE C. PHARR, JR.
DB 223 PG 16

(35) DANNY R. & WIFE JAMIE M. BOWEN
DB 398 PG 632

(36) JAMES L. ALLEN, JR. & WIFE CYNTHIA JANE ALLEN
DB 311 PG 39

(37) JAMES L. ALLEN
DB 292 PG 863

(34) JANICE SHAW PHARR
DB 119 PG 497

(93) GURNEY F. ALLEN SR. & WIFE DORIS B. ALLEN
DB 283 PG 725

(94) GURNEY F. ALLEN SR. & WIFE DORIS B. ALLEN
DB 212 PG 320

GURNEY F. ALLEN SR. & WIFE DORIS B. ALLEN
DB 146 PG 793

MATCH LINE -L- REV. STA. 129+40 SHEET 13

MATCH LINE -L- REV. STA. 132+71.5 SHEET 15

130+00 131+00 132+00

PROP.06 PAVED SHLD. PROP.12 PAVED SHLD.

PROP. DRIVE PROPOSED SPECIAL DITCH SEE DETAIL A PROP.R/W

+20.000 -L- REV 27m (88.582')

2GI TYPE D 2GI TYPE B 2GI TYPE A

FALSE SUMP GAS REG. STA.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE GAS SERVICE AT THIS LOCATION.

PINC. 37 REFERENCE TO -L- REV 130+44.313 BL-37 15.258 16.558 RT.

NC HWY 87 7.2 BST

375 mm CONC REMOVE

450 RCP 60" TAPER

S 42°00'44.8" E -L- REV

S 41°57'28.2" E -L-

+65.766 70.0 R 2.0 R +49.000

+36.815

(2)TV&TV(FO) 200 mm TP

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE TELE LINE AT THIS LOCATION.

PROPOSED SPECIAL DITCH SEE DETAIL N

CLASS 'B' RIP RAP EST. 2 TONS W/ 7 S.Y. F.F.

CLASS 'B' RIP RAP EST. 5 TONS W/ 14 S.Y. F.F.

+47.000 +80.000 -L- REV 32m (104.987')

+105.000 -L- REV 26.22m (86.027')

PROP. DRIVE

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE GAS SERVICES AT THESE LOCATIONS.

PROPOSED SPECIAL DITCH SEE DETAIL A

ISBKD CONC

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 37 FOR -L- REV. PROFILE

REVISIONS
3 RE-LOCK, ADD LT. TURN LANE, REVISE SIDE SLOPES

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METRIC

5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.

NC GRID NAD 83

SHEET 14 -L- REV. STA. 132+71.5

MATCH LINE -L- REV. STA. 136+11.5 SHEET 16

(37) JAMES L. ALLEN
DB 292 PG 863

(38B) JOANN LONG
DB 252 PG 315

(38) BEATRICE PRIEST SAVAGE
DB 282 PG 772

(38C) MARIE LEIGH PAIT
DB 252 PG 312

133+00 134+00 135+00 136+00

PROP.12 PAVED SHLD.

PROP.06 PAVED SHLD.

PROP.R/W

PROP. DRIVE

+20.000 -L- REV
27m (88.582')

+14.000

2GI TYPE B

375 RCP

2GI TYPE D

2GI TYPE D

FALSE SUMP

600 RCP

BL-38 39+39.829 REFERENCE TO -L- REV 132+88.884 16.770 RT.

BL-39 41+65.598 REFERENCE TO -L- REV 135+14.652 16.359 RT.

+95.235

10.8

+12.000

-L- REV S 42° 00' 44.8" E

70.0 R

20 R

60 TAPER

EXIST R/W

REMOVE

NC HWY 87 T2 BST

S 42° 00' 44.8" E

S 42° 07' 04.1" E

SURVEY -BL-

GRADE TO DRAIN BACK

PROP. DRIVE

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE TELE LINE AT THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE WATER SERVICE AT THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE GAS SERVICE AT THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE TELE LINE AT THIS LOCATION.

DENNIE RAY PAIT
& WIFE MARIE P. PAIT
DB 181 PG 566

GURNEY F. ALLEN SR. &
WIFE DORIS B. ALLEN
DB 146 PG 793

+60.000 -L- REV
26.143m (85.771')

+00.000 -L- REV
28m (91.863')

+35.000 -L- REV
28m (91.863')

+60.000 -L- REV
26.124m (85.708')

(38A) MARY BETH STOUT EDGE
DB 267 PG 675

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 37 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 11/7/03, REVISED R/W ON PARCELS 38, 39, 40, & 41 STATION CHANGES ON TOE ON PARCEL 42 4/15/04, ADDED PARCEL 38C.

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METRIC
5m 0 10m

CONST. REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83

MATCH LINE -L- REV. STA. 136+11.5 SHEET 15

MATCH LINE -L- REV. STA. 139+49 SHEET 17

62.772 N42°05'51"W

76.374 N47°05'09"E

TSSta.136+66.883

137+00

38C MARIE LEIGH PAIT DB 252 PG 312

39 GLADWIN LEE PRIEST, JR. DB 257 PG 415

98.676 N41°32'05"W

40 GLADWIN LEE PRIEST, JR. DB 233 PG 668

PROP. 06 PAVED SHLD.
PROP. 12 PAVED SHLD.

+11.500 -L- REV
27m (88.583')

CHORD

PROP. R/W

2GI TYPE D

450 RCP

375 RCP

600 RCP

2GI TYPE D

FALSE SUMP

S 42°00'44.8" E

S 42°02'43.6" E

REMOVE

375 mm CONC.

BK HW

EXIST R/W

REMOVE HW

REMOVE DI

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE WATER SERVICE AT THIS LOCATION.

1200 mm CONC.

ISBKD

MARY BETH STOUT EDGE DB 267 PG 675

PCSta.136+89.011

SCSta.137+31.883

PROP. DRIVE

+59.135 -L- REV
25.977m (85.226')

PROP. DRIVE

+13.287 -L- REV
35.66m (116.998')

+00.000 -L- REV
27m (88.583')

PROPOSED SPECIAL DITCH SEE DETAIL A

138+00

+13.090 -L- REV
99.4m (326.115')

+23.534 -L- REV
99.4m (326.115')

TDE

DITCH CLEANOUT REQUIRED
68m DOWNSTREAM OF PIPE OUTLET
@ 0.15% TO PIPE INTERSECTION
@ ELEV. 42.949
EST 65 CU m DDE
SEE DETAIL H

CLASS 'B' RIPRAP @ OUTLET EST. 1.8 TONS W/ FF

+23.576 -L- REV
35.772m (117.362')

42 HERSCHEL S. EDGE AND WIFE MARY S. EDGE DB 219 PG 860

139+00

PROPOSED SPECIAL DITCH SEE DETAIL A

41 HERSHEL S. EDGE AND WIFE MARY S. EDGE DB 219 PG 869

+40.000 -L- REV
28m (91.864')

+20.000 -L- REV
38m (124.672')

HTR

BL-40 PINC 43+64.390 RT. REFERENCE TO -L- REV 137+03.500 16.183

BL-41 PINC 45+89.23 REFERENCE TO -L- REV 139+39.36 16.282 RT.

-L- REV

7.2

7.0

NO ASSOCIATED PIPING FOUND FOR THIS WM.

COULD NOT LOCATE END OF PIPE POSSIBLY BURIED OR DESTROYED

605 MON R2562C 2-2GI TYPE D

INV= 42.429

SPECIAL DITCH

NC HWY 87 7.2 BST

INV= 42.543

INV= 42.926

NO ADDITIONAL UTILITY RECORD INFORMATION AVAILABLE FOR THE TV LINE AT THIS LOCATION.

NO ADDITIONAL UTILITY RECORD INFORMATION AVAILABLE FOR THE WATER SERVICE AT THIS LOCATION.

CLASS 'B' RIPRAP EST. 5 TONS W/ FF

EUGENE ADDISON PRIEST, JR AND WIFE VIVIAN J. PRIEST DB 208 PG 833

59.089 COR PIPE N 41°01'24" W

+01.000 -L- REV
25.627m (84.078')

+25.000 -L- REV
31m (101.706')

43 PROP. R/W N. B. CARROLL, ET AL DB 220 PG 472

LATERAL 'V' DITCH SEE DETAIL B

+95.648 -L- REV
31m (101.706')

CSSta.138+95.648

CHORD

CLASS 'B' RIPRAP @ OUTLET EST. 1.8 TONS W/ FF

+17.000 -L- REV
31m (101.706')

+40.000 -L- REV
26.145m (85.777')

PTSta.139+17.143

-L- CURVE DATA
PI Sta 138+03.103
Δ = 3° 04' 37.5" (RT)
L = 228.132
T = 114.092
R = 4,318.000

-L- REV CURVE DATA

PIs Sta 137+10.217	PI Sta 138+13.776	PIs Sta 139+17.315
θs = 0° 25' 48.2"	Δ = 2° 10' 01" (RT)	θs = 0° 25' 48.2"
Ls = 65.000	L = 163.765	Ls = 65.000
LT = 43.333	T = 81.892	LT = 43.333
ST = 21.667	R = 4,330.000	ST = 21.667
	SE = 0.02	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 38 FOR -L- REV. PROFILE

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METRIC
5m 0 10m

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	17
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD 83

MATCH LINE -L- REV. STA. 139+49 SHEET 16

MATCH LINE -L- REV. STA. 142+61.5 SHEET 18

(42) HERSCHEL S. EDGE AND WIFE
MARY S. EDGE
DB 219 PG 860

(902) WILLIAM S. SOBAT AND WIFE
KIMBERLEY A. SOBAT
DB 350 PG 630

(43) N. B. CARROLL, ET AL
DB 220 PG 472

PURDIE METHODIST CHURCH
DB 256 PG 840,
DB 120 PG 83

140+00 141+00 142+00

STSta.139+60.648
PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.
+60.648 -L- REV
28m (91.864')
CHORD
PROP.R/W
PROP. DRIVE
2GI TYPE D
2GI TYPE B
375 RCP
SPECIAL DITCH
S 38°59'07.3" E
-L- REV
60 TAPER
REMOVE
100 mm
200 mm
375mm CONC
NO ADDITIONAL UTILITY RELOCATION INFORMATION AVAILABLE FOR THE TV LINE AT THIS LOCATION.
NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE TELE LINE AT THIS LOCATION.
NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE WATER SERVICE AT THIS LOCATION.
NO ASSOCIATED PIPING FOUND FOR THIS WM.
FALSE SUMP
NCGS MON "PURDIE"
PINC 48 REFERENCE POINT 142+05.10 -L- REV 16.838 RT.
ISBKD
CEMETERY
ISF CHURCH
2SF PURDIE UNITED METHODIST CHURCH
SOIL
EXIST EASEMENT
PEPHUE RICHARDSON CEMETERY RD
NC HWY 87
EXIST R/W
PROP.R/W
+74.407
+27.031
+02.000
+15.000 -L- REV
26.113m (85.672')
PROPOSED SPECIAL DITCH SEE DETAIL A
+82.000 -L- REV
32m (104.987')
+42.000 -Y3-
17m (55.774')
-Y3- CURVE DATA
PI Sta 10+51.007
Δ = 1°02'33.0" (LT)
L = 56.805
T = 28.403
R = 3122.000
NORMAL CROWN
END CONSTRUCTION
POT STA.10+71.90 -Y3-
+80.000 -Y3-
6.096m (20.000')
PCSta.10+22.604
PROPOSED SPECIAL DITCH SEE DETAIL A
+61.500 -L- REV
29m (95.144')
+42.000 -L- REV
29m (95.144')
+80.000 -Y3-
6.096m (20.000')
PTSta.10+79.409
S 46°52'16" W
S 47°54'44" W
POT STA 142+14.671 -L- REV. =
POT STA.10+00.000 -Y3-

2005 ADT
2025 ADT
6500 / 10500 — NC 87 -L- REV — 6500 / 10500
100 / 100
100 / 100
SR 1342 -Y3-
200 / 200

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y3- INTERSECTION DETAIL
SEE SHEET 38 FOR -L- REV. PROFILE
SEE SHEET 46 FOR -Y3- PROFILE

REVISIONS
R/W REVISION, 4/15/04, ADDED PARCEL 46A AND REVISED PARCEL 46.

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METRIC
5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	18
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

POND

(42) HERSCHEL S. EDGE AND WIFE
MARY S. EDGE
DB 219 PG 860

143+00 144+00 145+00 146+00

CLASS B RIP RAP @ OUTLET
EST. 4.5 TONS W/ F.F.

+20.000 -L- REV
28m (91.863')

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.
PROP.R/W
EXIST R/W

2GI TYPE B
2GI TYPE D
2GI TYPE A
FALSE SUMP
PROP. DRIVE
EXTEND 450.3m
CLEANOUT 450.16m
REMOVE
60" RCP
450 RCP
600 RCP
375 RCP
375 mm CONC
60 TAPER
NC HWY 87 7.2 BST
INVS. 42.769
INV= 42.275
PINC REFERENCE TO -L- REV 50+37.327 -L- RT. 144+07.261 16.046m
S 38°59'07.3" E
S 38°12'38.9" E
SURVEY TIE
100 mm
200 mm
TV&TV(FO)
GAS REG. STA.
ISBKD
ISFD
S
W
K
+80.000 -L- REV
26.077m (85.554')
+61.500 -L- REV
29m (95.144')
900 mm WD
+00.000 -L- REV
26.050m (85.466')
+40.000 -L- REV
30m (98.425')
PROPOSED SPECIAL DITCH
SEE DETAIL A
NO ADDITIONAL UTILITY RECORD INFORMATION AVAILABLE FOR THE GAS SERVICES AT THESE LOCATIONS.
NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE TV LINE AT THIS LOCATION.
ANCHOR UNIT TYPE 350
STEEL BEAM GUARDRAIL
SPECIAL CUT DITCH
SEE DETAIL A
S 54°40'21" E
108.050 COR-SQ. ROD
S 52°55'39" E
1" PIPE-LOR
HOLLOW TOWNSHIP
BETHEL TOWNSHIP
42.770
S 36°59'08" E
49.378
N 42°27'54" E
200.803 COR-R/W
N 45°00'25" E

(45) C. J. ALLEN
DB 119 PG 575

(46) WILMA K. BEDSOLE
DB 120 PG 139
DB 219 PG 871

(46A) LOUIS DAN & C KATHLEEN M. BORDEAUX
DB 537 PG 734

MATCH LINE -L- REV. STA. 142+61.5 SHEET 17

MATCH LINE -L- REV. STA. 146+10 SHEET 19

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 39 FOR -L- REV. PROFILE

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METRIC

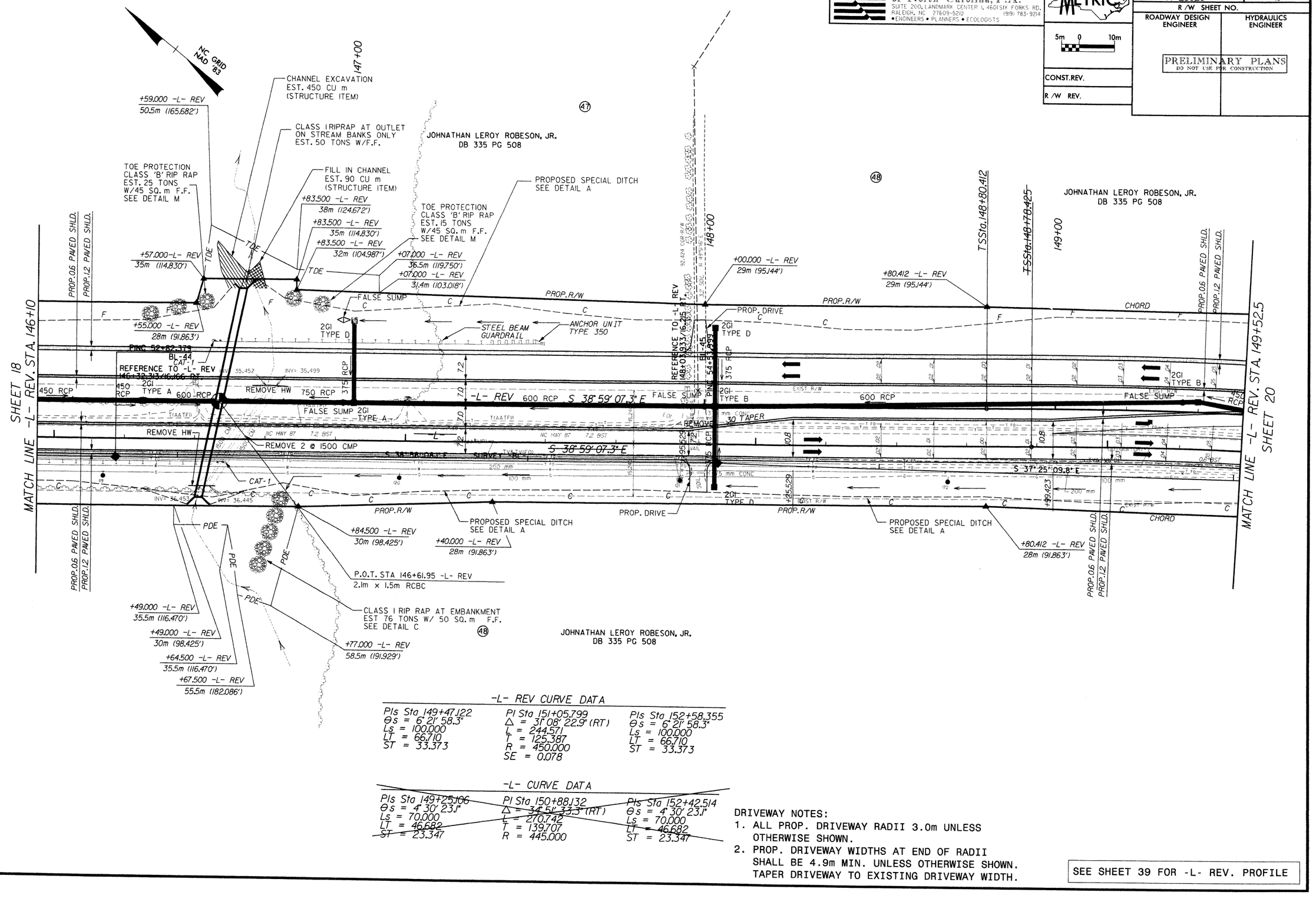
5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	19
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.



-L- REV CURVE DATA

PIs Sta 149+47.122	PI Sta 151+05.799	PIs Sta 152+58.355
Θs = 6° 21' 58.3"	Δ = 31° 08' 22.9" (RT)	Θs = 6° 21' 58.3"
Ls = 100.000	L = 244.571	Ls = 100.000
LT = 66.710	T = 125.387	LT = 66.710
ST = 33.373	R = 450.000	ST = 33.373
	SE = 0.078	

-L- CURVE DATA

PIs Sta 149+25.106	PI Sta 150+88.132	PIs Sta 152+42.514
Θs = 4° 30' 23.1"	Δ = 34° 51' 33.3" (RT)	Θs = 4° 30' 23.1"
Ls = 70.000	L = 270.742	Ls = 70.000
LT = 46.682	T = 139.707	LT = 46.682
ST = 23.347	R = 445.000	ST = 23.347

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 39 FOR -L- REV. PROFILE

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METRIC

5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	20
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

NC. GRID NAD '83

END CONSTRUCTION POT STA. 10+80.000 -Y4-

11+00 150+00 151+00 152+00

+80.000 -Y4- 6.096m (20.000')
+70.000 -Y4- 10m (32.808')
+40.000 -Y4- 12m (39.370')
+41.000 -Y4- 18m (59.055')
+60.000 -L- REV 29m (95.144')
+20.000 -L- REV 33m (108.267')
+43.000 -L- REV 30m (98.425')
+30.000 -L- REV 30m (98.425')
+60.000 -L- REV 33m (108.267')
+24.983 -L- REV 33m (108.267')
+75.000 -L- REV 27m (88.583')

PROP. DRIVE

N 47° 10' 22.2" E

PROP.R/W

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.

49 JOSEPH WALTER BRYAN AND BESSIE C. BRYAN DB 268 PG 292

LATERAL 'V' DITCH SEE DETAIL B

NCGS MON "DIG GUM"

EXIST R/W

30 TAPER

SPECIAL DITCH

2 GI TYPE A

2 GI TYPE B

2 GI TYPE D

375 RCP 450 RCP 600 RCP

FALSE SUMP

-L- REV

-L- SURVEY -BL-

S 24° 04' 04.4" E

S 11° 06' 56.5" E

REMOVE

GROUT & PLUG

GRADE AHEAD TO STA. 151+80

S 1° 16' 15.1" W

CHORD

+24.983 -L- REV 25.996m (85.289')

PROPOSED SPECIAL DITCH SEE DETAIL A

+40.000 -L- REV 29m (95.144')

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.

MATCH LINE -L- REV. STA. 149+525 SHEET 19

MATCH LINE -L- REV. STA. 152+83 SHEET 21

POC STA. 149+95.101 -L- REV. =
POT STA. 10+00.000 -Y4-

PROP. DRIVE

50 OSCAR D. MONROE AND FRANCIS C. MONROE DB 391 PG 343

SC STA. 149+80.412

+80.412 -L- REV 28m (91.863')

PROPOSED SPECIAL DITCH SEE DETAIL A

48 JOHNATHAN LEROY ROBESON, JR. DB 335 PG 508

CS STA. 149+48.425

CS STA. 152+24.983

CS STA. 152+49.167

51 JOSEPH STEPHENSON BRITT DB 313 PG 622 DB 287 PG 047 DB 290 PG 472

-L- CURVE DATA

PIs Sta 149+25.106	PI Sta 150+88.132	PIs Sta 152+42.514
θs = 4° 30' 23.1"	Δ = 34° 51' 33.3" (RT)	θs = 4° 30' 23.1"
Ls = 70.000	L = 270.742	Ls = 70.000
LT = 46.682	T = 139.707	LT = 46.682
ST = 23.347	R = 445.000	ST = 23.347

-L- REV CURVE DATA

PIs Sta 149+47.122	PI Sta 151+05.799	PIs Sta 152+58.355
θs = 6° 21' 58.3"	Δ = 31° 08' 22.9" (RT)	θs = 6° 21' 58.3"
Ls = 100.000	L = 244.571	Ls = 100.000
LT = 66.710	T = 125.387	LT = 66.710
ST = 33.373	R = 450.000	ST = 33.373
	SE = 0.078	

2005 ADT
2025 ADT

SR 1336 -Y4-

2200 / 3300
1500 / 2300
700 / 1000
6500 / 10500
5800 / 9200

-L- REV NC 87

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y4- INTERSECTION DETAIL
SEE SHEET 40 FOR -L- REV. PROFILE
SEE SHEET 46 FOR -Y4- PROFILE

NC GRID
NAD '83

REVISIONS

KCI Associates of North Carolina, P.A.
SUITE 800, LANDMARK CENTER I, GORMAN PARKS RD.
RALEIGH, NC 27609-5501 (919) 783-9214
• ENGINEERS • PLANNERS • SURVEYORS •

METRIC
5m 0 10m

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	21
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

(52) INEZ C. ALLEN
DB 292 PG 858
DB 269 PG 225

(53) J. A. GRIMES, JR. AND WIFE
PANSY HESTER GRIMES
DB 190 PG 625

MATCH LINE -L- REV. STA. 152+83 SHEET 20

153+00 | 154+00 | 155+00 | 156+00

ST Sta. 152+89.67
ST Sta. 153+24.983

PROP. 06 PAVED SHLD.
PROP. 12 PAVED SHLD.

+90.000 -L- REV
27m (88.583')

+24.983 -L- REV
30m (98.425')

PROP. R/W

FALSE SUMP

REFERENCE TO -L- REV
BL-50 PINC 59+40.600
55+03.135/16.668 RT.

2GI TYPE D

600 RCP

SPECIAL DITCH

2GI TYPE B

-L- REV

FALSE SUMP

S 4°53'12.2" W

375 RCP

REMOVE

S 4°44'06.4" W SURVEY -B-

2GI TYPE B

375 RCP

2GI TYPE D

450 RCP

PROP. DRIVE

+20.000 -L- REV
29m (95.144')

PROPOSED SPECIAL DITCH
SEE DETAIL A

PROP. R/W

ISBKD

(56) KATIE GERTRUDE SINCLAIR
DB 255 PG 675

CLASS 'B' RIP RAP @ OUTLET
EST. 4.5 TONS W/F.F.

+24.983 -L- REV
29m (95.144')

CHORD

PROPOSED SPECIAL DITCH
SEE DETAIL A

(51) JOSEPH STEPHENSON BRITT
DB 313 PG 622
DB 287 PG 047
DB 290 PG 472

(55) MARY BETH EDGE
VAN MARTIN STOUT
DB 164 PG 671

CLASS 'B' RIPRAP AT TRANSITION EST. 20 TONS W/F.F.

STA. 155+04.84 -L- REV.
2.4m x 1.0m RCBC

CAT-1

BL-50 PINC 61+40.136
REFERENCE TO -L- REV
55+03.259/16.475 RT.

T2-2
ELEV=44.992

ANCHOR UNIT TYPE 350
STEEL BEAM GUARDRAIL

T2-1
ELEV=44.107

S 71°55'05.3" E
60.782

+50.000 -L- REV
30m (98.425')

STEEL BEAM GUARDRAIL
ANCHOR UNIT TYPE 350

S 22°09'43.2" E
54.952

3GI TYPE D

375 RCP

REMOVE

600 mm CONC

PROP. DRIVE
BL-50 PINC 61+40.136
ELEV=45.035

1.4x1.4 PSH

375 RCP

PROP. DRIVE

1.1x1.1 PSH

+01.000 -L- REV
35.186m (115.441')

(57) STANLEY JONES REGAN
DB 313 PG 503

PROPOSED SPECIAL DITCH
SEE DETAIL A

CLASS I RIPRAP @ OUTLET
EST. 4 TONS W/F.F.

(54) GRACE GRIMES WILSON AND HUSBAND J. L. WILSON, JR.
DB 190 PG 637

+20.000 -L- REV
34m (111.549')

PROPOSED SPECIAL DITCH
SEE DETAIL A

REMOVE

S 4°49'40.1" W

375 RCP

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE GAS LINE AT THIS LOCATION

PROP. DRIVE

+53.000 -L- REV
25.932m (85.078')

ISBKD

SPECIAL CUT DITCH
SEE DETAIL N

ZEB S. REGAN AND WIFE
BEULAH MAE REGAN
DB 313 PG 748

ELIZABETH REGAN WALKER
DB 284 PG 521

S 0°50'38" W
70.435 CONC CUR

MATCH LINE -L- REV. STA. 156+40 SHEET 22

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 40 FOR -L- REV. PROFILE

KCI Associates of North Carolina, P.A.
SUITE 250, LANDMARK CENTER II, FOURTH FLOOR, NORTH BLVD.
RALEIGH, NC 27609-5291 (919) 783-9214
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METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

-L- REV CURVE DATA
PI Sta 157+04.436
Δ = 0°00' 32.9" (RT)
L = 1.118 m
T = 0.559 m
R = 7,000.000 m
NORMAL CROWN

~~-L- CURVE DATA~~
~~PI Sta 156+81.474~~
~~Δ = 0°00' 32.9" (RT)~~
~~L = 1.118 m~~
~~T = 0.559 m~~
~~R = 7,000.000 m~~

MATCH LINE -L- REV. STA. 156+40 SHEET 21

MATCH LINE -L- REV. STA. 159+91.5 SHEET 23

+60.000 -L- REV
34m (111.549')

+50.000 -L- REV
42m (137.795')

+80.000 -L- REV
42m (137.795')

CLASS 'B' RIP RAP
EST. 0.9 TONS W/ F.F.

CLASS 'B' RIP RAP
EST. 0.9 TONS W/ F.F.

157+00

158+00

159+00

PROP.R/W

PROP.06 PAVED SHLD.

PROP.12 PAVED SHLD.

54 GRACE GRIMES WILSON AND HUSBAND
J. L. WILSON, JR.
DB 190 PG 637

58 JOSEPH STEPHENSON BRITT
DB 279 PG 769

59 TONY J. HYATT
DB 297 PG 598

750 RCP

600 RCP

375 RCP

PROP. DRIVE

REMOVE HW

2GI TYPE B

2GI TYPE D

FALSE SUMP

S 4°53'12.2" W

-L- REV

SURVEY -BL-

BL-51 PI STA 60+64.178
REFERENCE TO -L- REV
157+28.80 15.940 RT

BL-4 PI STA 65+83.908
REFERENCE TO -L- REV
GRID MON 156+46.14 16.801 RT.

NC HWY 87 7.2 BST

S 5°07'24.6" W

PCSta.157+03.877

PCSta.156+80.995

PTSta.156+82.032

PTSta.157+04.994

ELIZABETH
REGAN WALKER
DB 284 PG 521

GRACE GRIMES WILSON AND HUSBAND
J. L. WILSON, JR.
DB 190 PG 637

JOSEPH STEPHENSON BRITT
DB 222 PG 684

JACK W. GRIMES AND WIFE
ANNETTE S. GRIMES
DB 214 PG 590

ISBKD

CONC.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THIS LOCATION.

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 41 FOR -L- REV. PROFILE

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METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	23
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

-Y5- CURVE DATA
PI Sta 10+37.520
Δ =47° 44' 10.0" (LT)
L = 41.658 m
T = 22.124 m
R = 50.000 m
NORMAL CROWN

SHEET 22 -L- REV. STA. 159+91.5

MATCH LINE -L- REV. STA. 163+31.5 SHEET 24

59 TONY J. HYATT
DB 297 PG 598

60 BALLARD EDISON CARROLL
DB 285 PG 765

61 LEON SAMUEL GRIMES AND WIFE
JANIE B. GRIMES
DB 366 PG 793

62 KIFKO, INC.
DB 285 PG 768

63 GARY L. KINLAW
DB 314 PG 189

64 RICHARD WALTERS AND WIFE
RACHEL PRIEST WALTERS
DB 392 PG 551

65 MARY S. EDGE
DB 285 PG 732

66 CHARLIE COLEMAN CROMARTIE, JR AND WIFE
LINDA KAY CROMARTIE
DB 286 PG 805

CLASS 'B' RIP RAP @ OUTLET
EST. 0.9 TONS W/ F.F.

PROPOSED SPECIAL DITCH
SEE DETAIL A

CLASS 'B' RIP RAP @ OUTLET
EST. 2.7 TONS W/ F.F.

END CONSTRUCTION
POT STA. 10+75.456 -Y5-

PT Sta. 10+57.054

PC Sta. 10+15.396

N 47° 03' 45.0" E

+80.000 -Y5-
9.44m (30.000')

+70.000 -Y5-
14m (45.932')

+60.000 -Y5-
20m (65.617')

+60.000 -L- REV
28m (91.863')

+28.147 -L- REV
36.310m (119.127')

+20.000 -L- REV
29m (95.144')

+00.000 -L- REV
26.027m (85.390')

+20.000 -L- REV
26.077m (85.554')

+60.000 -L- REV
29m (95.144')

SPECIAL CUT DITCH
SEE DETAIL A

PROPOSED SPECIAL DITCH
SEE DETAIL A

PROP. DRIVE

USC&GS MON "16-REW"

FILL DITCH BETWEEN DRIVES

GROUT & PLUG

375 RCP

450 RCP

600 RCP

2GI TYPE A

2GI TYPE B

2GI TYPE D

PROP.R/W

EXIST R/W

PROP.06 PAVED SHLD.

PROP.12 PAVED SHLD.

SPECIAL DITCH

60 TAPER

-L- REV

S 04° 53' 45.1" W

S 4° 37' 22.2" W

S 4° 57' 40.7" W

SURVEY -BL-

REMOVE

PIN: 6714.40.168
REFERENCE TO -L- REV
161+03.280/16.058 RT.

BL-52
REFERENCE TO -L- REV.
158+94.858 BL-53
162+57.980/16.234 RT.

ISBKD

ISFD

GAS REG. STA.

POT STA. 162+06.847 -L- REV =
POT STA. 10+00.000 -Y5-

2005 ADT
2025 ADT

200/300 SR 1340 -Y5-

70/100 130/200

5800/9200 NC 87 -L- REV 5900/9300

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y5- INTERSECTION DETAIL
SEE SHEET 41 FOR -L- REV. PROFILE
SEE SHEET 47 FOR -Y5- PROFILE

REVISIONS
R/W REVISION, 3/30/04, REMOVED R/W ON PARCELS 67 & 68 ON THE RIGHT SIDE. REMOVED TEE ON PARCELS 67 & 68 ON THE RIGHT SIDE.

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METRIC

5m 0 10m

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	24
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

SHEET 23 MATCH LINE -L- REV. STA. 163+31.5

SHEET 25 MATCH LINE -L- REV. STA. 166+60

164+00 165+00 166+00

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.

PROP.R/W

RICHARD WALTERS AND WIFE
RACHEL PRIEST WALTERS
DB 392 PG 551
(64)

WILLIAM G. MCDANIEL
DB 290 PG 520
(67)

WILLIAM G. MCDANIEL
DB 243 PG 347
(68)

+60.000 -L- REV.
28m (91.863')

+00.000 -L- REV.
30m (98.425')

+20.000 -L- REV.
28m (91.863')

PROPOSED SPECIAL DITCH
SEE DETAIL A

60 TAPER

-L- REV

PI #54
L= 1749.210
REFERENCE TO -L- REV
164+82.352/16.483 RT.

EXIST R/W

NC HWY 87 7.2 BST

S 4° 53' 45.1" W

S 4° 56' 29.9" W

S 5° 00' 04.9" W

SURVEY -BL-

REMOVE

PROP. DRIVE

ISBKD

1900 mm CONC

450 RCP

30' TYPE D

SPECIAL DITCH

PROPOSED SPECIAL CUT DITCH
SEE DETAIL N

CLASS 'B' RIPRAP @ OUTLET
EST. 2.7 TONS W/F.F.

F.E.S.

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 42 FOR -L- REV. PROFILE

KCI Associates of North Carolina, P.A.
SUITE 200, LANDMARK CENTER II, WOLFLE FORKS RD.
RALEIGH, NC 27609-6403 PHONE: 781-9514
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METRIC
5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	25
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.
R /W REV.

NC GRID
NAD '83

SHEET 24
LINE -L- REV. STA. 166+60
MATCH LINE

LINE -L- REV. STA. 170+11
SHEET 26
MATCH LINE

167+00 168+00 169+00 170+00

(68) WILLIAM G. MCDANIEL
DB 243 PG 347

(69) REBECCA WILLIS SPADE
DB 303 PG 482

(70) KENNETH ROBERT WILLIS AND WIFE
KATHY LOUISE WILLIS
DB 293 PG 828

(71) EDNA W. CANADY
DB 270 PG 634

JERRY PHILIP WILSON AND WIFE
CAROL PHILLIPS WILSON
DB 360 PG 669

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.
PROP.R/W
EXIST R/W
PROP. DRIVE
PROPOSED SPECIAL DITCH SEE DETAIL A
FILL DITCH BETWEEN DRIVEWAYS
PROPOSED SPECIAL CUT DITCH SEE DETAIL N
SPECIAL DITCH -L- REV.
S 4°53'45.1"W SPECIAL DITCH
S 4°53'45.1"W
BL-58 PINC 173+43.350 REFERENCE TO -L- REV. 167+06.472/16.826 RT.
BL-56 PINC 173+67.303 REFERENCE TO -L- REV. 169+30.423/16.774 RT.
+00.000 -L- REV. 28m (91.863')
+65.000 -L- REV 26.178m (85.886')
+04.000 -L- REV 30m (98.425')
NC HWY 87 7.2 BST
TIAATUM
REMOVE 750 mm CONC PIPE
S 4°52'56.8"W
SURVEY -BL-
375 RCP
600 RCP
2GI TYPE D
FALSE SUMP
NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE GAS SERVICE AT THIS LOCATION.
NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR THE WATER SERVICE AT THIS LOCATION.
NO ASSOCIATED BUILDINGS OUND THIS WAY
ISPOLD
CONC
32 CONC
100 min
200 min

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 42 FOR -L- REV. PROFILE

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METRIC

5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	26
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

NC GRID NAD '83

MATCH LINE -L- REV. STA. 170+11 SHEET 25

MATCH LINE -L- REV. STA. 173+51 SHEET 27

(70) KENNETH ROBERT WILLIS AND WIFE
KATHY LOUISE WILLIS
DB 293 PG 828

(72) JOSEPH WALTER BRYAN AND WIFE
CECEILE K. BRYAN
DB 166 PG 120

(73) JOSEPH WALTER BRYAN AND WIFE
~~CECEILE K. BRYAN~~
DB 251 PG 450

(74) DANIEL BRANTLEY WILLIS, JR AND WIFE
DEBORAH W. WILLIS
DB 242 PG 741

(71) EDNA W. CANADY
DB 270 PG 634

(75) DAVID ELBERT WILLIS
DB 242 PG 738

(76) DAVID ELBERT WILLIS
DB 242 PG 738

(77) CLYDE BALDWIN SUGGS
DB 302 PG 063

POT STA. 173+26.257 -L- REV.=
POT STA. 10+00.000 -Y6-

END CONSTRUCTION
POT STA. 10+70.000 -Y6-

PROPOSED SPECIAL DITCH
SEE DETAIL A

+60.000 -L- REV. 30m (98.425')
+40.000 -L- REV. 28m (91.863')
+20.000 -L- REV. 30m (98.425')
+40.000 -L- REV. 27m (88.583')
+80.000 -L- REV. 30m (98.425')
+60.000 -Y6- 9.144m (30.000')
+40.000 -L- REV. 26.236m (86.076')

PROP. DRIVE
PROP. 06 PAVED SHLD.
PROP. 12 PAVED SHLD.
PROP. R/W
EXIST R/W
SPECIAL DITCH
FALSE SUMP
REMOVE
ISBKD
CANOPY
POND
NC HWY 87 7.2 BST
SURVEY BL
NO ADDITIONAL OPTIONAL LOCATION AVAILABLE FOR THE GAS LINE AT THIS LOCATION.
NEED WIDEN RD

S 04°53'45.1"W 600 RCP -L- REV
S 04°53'45.1"W
S 4°51'37.8"W
S 4°56'23.3"W
N 72°40'46.4"W -Y6-

REFERENCE TO -L- REV. PI STA. 171+55.4 PT 4/17/027 RT. PI STA. 172+82.053 PT 4/17/027 RT.

REFERENCE TO -L- REV. PI STA. 173+79+44.415 PT 4/17/027 RT. PI STA. 173+07.866/16.383 RT.

BL-58 PINE

2005 ADT
2025 ADT

NC 87 -L- REV

5900 / 9300		5900 / 9300
150 / 200		150 / 200
	-Y6- SR 1341	
300 / 400		

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y6- INTERSECTION DETAIL
SEE SHEET 43 FOR -L- REV. PROFILE
SEE SHEET 47 FOR -Y6- PROFILE

REVISIONS
R/W REVISION, 4/6/04, REVISED R/W ON PARCELS 74, 77 & ADDED PARCEL 77A.

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METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	27
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

-L- REV CURVE DATA

PIs Sta 176+69.676
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

PI Sta 177+76.959
Δ = 19° 26' 07.5" (LT)
L = 169.606
T = 85.626
R = 500.000
SE = 0.078

PIs Sta 178+94.304
Θs = 5° 43' 46.5"
Ls = 100.000
LT = 66.702
ST = 33.365

MATCH LINE -L- REV. STA. 173+51 SHEET 26

MATCH LINE -L- REV. STA. 176+91.5 SHEET 28

74 DANIEL BRANTLEY WILLIS, JR AND WIFE DEBORAH W. WILLIS DB 242 PG 741

77 CLYDE BALDWIN SUGGS DB 302 PG 063

77A WAITUS BURDEN MCKOY DB 143 PG 208

PROPOSED SPECIAL DITCH SEE DETAIL A

+08.000 -L- REV. 29m (95.144')

+29.000 -L- REV. 29m (95.144')

+60.000 -L- REV. 22m (72.178')

+26.333 -L- REV. 22m (72.178')

+91.333 -L- REV. 22m (72.178')

+10.000 -L- REV. 26.262m (86.161')

+18.000 -L- REV. 29m (95.144')

+26.333 -L- REV 28m (91.863')

PROP. DRIVE

PROP. R/W

EXIST R/W

PROP.06 PAVED SHLD.

PROP.12 PAVED SHLD.

3.2 SOIL

2GI TYPE D

2GI TYPE B

375 RCP

900 RCP

450 RCP

1050 RCP

FALSE SUMP

60 TAPER

-L- REV

NC HWY 87 7.2 BST

S 4° 53' 45.1" W

S 4° 54' 08.0" W

S 4° 52' 34.1" W

S 2° 10' 45.3" W

REMOVE 450 mm CONC

GRADE TO DRAIN

NO ASSOCIATED PIPING FOUND FOR THIS WM.

DO NOT DISTURB VEGETATION AS DIRECTED BY THE ENGINEER

SPECIAL DITCH

F.E.S.

JB

ISFD

(RUINS)

BL-60 BL-PINC 82+53.899 REFERENCE TO -L- REV 176+17.020 176.847 RT.

PI -L- REV 60+99.251 BL-59 REFERENCE TO -L- REV. 174+62.372 16.900 RT.

TS Sta.176+26.333

SC Sta.176+91.333

CS Sta.176+44.468

CHORD

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 43 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 4/1/04, REVISED R/W ON PARCELS 74, 78 & 79 AND ADDED PARCELS 77A & 78A.

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METRIC

5m 0 10m

CONST. REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC GRID NAD '83

-L- REV CURVE DATA

PIs Sta 176+69.676
Θs = 3° 43' 27.2"
Ls = 65.000
LT = 43.343
ST = 21.675

PI Sta 177+76.959
Δ = 19° 26' 07.5" (LT)
L = 169.606
T = 85.626
R = 500.000
SE = 0.078

PIs Sta 178+94.304
Θs = 5° 43' 46.5"
Ls = 100.000
LT = 66.702
ST = 33.365

~~-L- CURVE DATA~~
~~PI Sta 177+68.110~~
~~Δ = 28° 53' 21.2" (LT)~~
~~L = 242.022~~
~~T = 123.642~~
~~R = 480.000~~

MATCH LINE -L- REV. STA. 176+91.5 SHEET 27

MATCH LINE -L- REV. STA. 180+30 SHEET 29

(74) DANIEL BRANTLEY WILLIS, JR AND WIFE
DEBORAH W. WILLIS
DB 242 PG 741

NON-RIVERINE WETLAND — RIVERINE WETLAND

ILA ROBERTS KING
WILL 85-E PG 73
DB 100 PG 521

(78) N. B. CARROLL, JR AND WIFE EUNICE MILDRED CARROLL
DB 119 PG 563
DB 69 PG 455
DB 133 PG 416
DB 148 PG 792

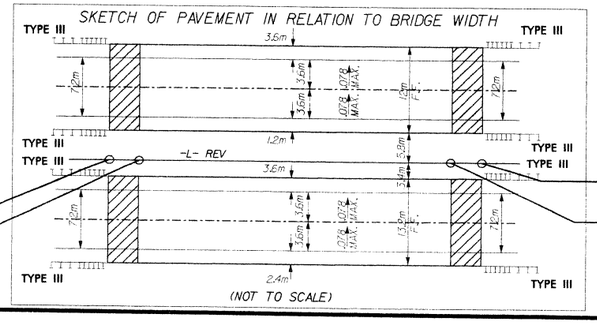
(77A) WAITUS BURDEN MCKOY
DB 143 PG 208

(79) JACQUELINE WILLIAMS
WILL 85E PG 73
DB 189 PG 867

(78A) SARAH MCDANIEL
DB 356 PG 321

PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.
PROP. R/W
177+00
178+00
179+00
180+00
+60.939 -L- REV. 32m (104.987')
+91.333 -L- REV 37m (121.39')
+60.000 -L- REV. 26m (85.301')
9.2m SHOULDER BERM GUTTER
CLASS IIRIP RAP (STRUCTURE ITEM)
CLASS I RIPRAP @ OUTLET EST. 2 TONS W/F.F.
CLASS I RIPRAP @ OUTLET EST. 4 TONS W/F.F.
CLASS I RIPRAP @ OUTLET EST. 15.4 TONS W/F.F.
CSP WITH 2 375 ELBOWS
BEGIN APPROACH SLAB Sta.178+39.88
BEGIN BRIDGE Sta.178+47.5
CS Sta.178+60.939
PI Sta.178+86.490
END BRIDGE Sta.179+11.5
END APPROACH SLAB Sta.179+19.12
ST Sta.179+60.939
CHORD
1050 RCP
1200 RCP
375 CSP
2GI TYPE A
2GI TYPE B
2GI TYPE D
MODIFIED FLUME
FALSE SUMP
M-350
GRAU-350
CAT-1
TYPE III
SURVEY BL
S 23° 59' 36.1" E
S 23° 23' 38" E
S 13° 04' 58.7" E
S 2° 10' 45.3" W
REMOVE 450 mm CONC
PROP. DRIVE
375 RCP PROP. DRIVE 375 RCP
SPECIAL CUT DITCH SEE DETAIL N
SPECIAL DITCH 2GI TYPE A
PROPOSED SPECIAL DITCH SEE DETAIL N
REMOVE EXIST. 2@ 2.7m X 2.0m RCBC
REEDY MEADOW SWAMP
POND
(RUINS)
CONC
ISM
G
WD
W/LT
900 mm WD
1200 mm WD
900 mm BK WALL
SMART HILLS DR
N. B. CARROLL, JR AND WIFE EUNICE MILDRED CARROLL
DB 119 PG 563
DB 69 PG 455
DB 133 PG 416
DB 148 PG 792

SKETCH OF PAVEMENT IN RELATION TO BRIDGE WIDTH



BEGIN APPROACH SLAB
Sta. 178+39.880 -L- REV

BEGIN BRIDGE
Sta. 178+47.500 -L- REV

END APPROACH SLAB
Sta. 179+19.120 -L- REV

END BRIDGE
Sta. 179+11.500 -L- REV

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 44 FOR -L- REV. PROFILE

REVISIONS

-L- REV (LT) CURVE DATA

PIs Sta 183+59.358	PI Sta 184+56.689	PIs Sta 185+53.637
Θs = 4° 28' 34.4"	Δ = 11° 25' 28.4" (LT)	Θs = 4° 28' 34.4"
Ls = 100.000	L = 127.614	Ls = 100.000
LT = 66.688	T = 64.019	LT = 66.688
ST = 33.353	R = 640.000	ST = 33.353
	SE = 0.067	

-L- REV (RT) CURVE DATA

PIs Sta 183+33.742	PI Sta 184+31.073	PIs Sta 185+28.020
Θs = 4° 28' 34.4"	Δ = 11° 25' 28.4" (LT)	Θs = 4° 28' 34.4"
Ls = 100.000	L = 127.614	Ls = 100.000
LT = 66.688	T = 64.019	LT = 66.688
ST = 33.353	R = 640.000	ST = 33.353
	SE = 0.067	

KCI Associates of North Carolina, P.A.

METRIC

5m 0 10m

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	29
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

NC GRID NAD '83

EQUALITY

POT STA. 182+49.799 -L- REV LB =
POT STA. 182+60.600 -L- REV (LT) (10.6 LT) LA=
POT STA. 182+61.041 -L- REV (RT) (10.6 RT) LA

(78) N. B. CARROLL, JR AND WIFE EUNICE MILDRED CARROLL
DB 119 PG 563
DB 69 PG 455
DB 133 PG 416
DB 148 PG 792

(80) CHARLES KENNETH CARROLL AND WIFE BETTY T. CARROLL DB 357 PG 236

(81) STEVE FOSTER CARROLL AND WIFE GAIL S. CARROLL DB 171 PG 543

(82) N. B. CARROLL AND WIFE EUNICE CARROLL DB 335 PG 813

SHEET 28 MATCH LINE -L- REV. STA. 180+30

MATCH LINE -L- REV. (LT) STA. 183+85.5 SHEET 30

181+00 182+00 183+00

TSSta.182+67.054 PCSta.182+74.408 TSSta.182+92.671 SCSta.183+67.054

+79.000 -L- REV. (LT) 22m (72.178')

+40.000 -L- REV. 26m (85.302')

+60.000 -L- REV. (LT) 19m (62.336')

+91.803 -L- REV. 28m (91.863')

+21.620 -L- REV 25.948m (85.131')

+40.000 -L- REV. 28m (91.863')

+00.000 -L- REV. (LT) 36.396m (119.409')

+80.000 -L- REV. (LT) 41m (134.514')

PROPOSED SPECIAL DITCH SEE DETAIL A

PROP.06 PAVED SHLD. PROP.12 PAVED SHLD.

PROP.R/W

SPECIAL DITCH -L- REV

1050 RCP 900 RCP 450 RCP 375 RCP

2GI TYPE A 2GI TYPE B 2GI TYPE D

S 23° 59' 36.1" E -L- REV (LT)

S 24° 06' 53.9" E SURVEY -BL-

-L- REV (RT) S 38° 46' 57.9" E

BL-5 74+34.352 PINC 89+08.254 REFERENCE TO -L- REV(LT) 182+73.814/26.948 RT

BL-63 PINC 89+08.254 REFERENCE TO -L- REV(LT) 182+73.814/26.948 RT

FALSE SUMP

REMOVE 375 RCP

PROP. DRIVE

ISBKD CONC POOL

SOIL

1200 mm WW & 2SBW

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 44 FOR -L- REV. PROFILE

REVISIONS
R/W REVISION, 4/7/04, REVISED R/W ON PARCELS 81 & 83

KCI Associates of North Carolina, P.A.
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• ENGINEERS • PLANNERS • ECOLOGISTS

METRIC

5m 0 10m

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	30

R /W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- CURVE DATA
PI Sta 183+88.174
△ = 20°22'37.3" (LT)
L = 225.130
T = 113.767
R = 633.016

NC GRID NAD 83

EQUALITY
POT STA. 186+35.401 -L- REV (LT) (5.4 LT) LB=
POT STA. 186+41.594 -L- REV (RT) (5.4 RT) LB=
POT STA. 186+46.994 -L- REV LA

(83) N. B. CARROLL, JR AND WIFE EUNICE MILDRED CARROLL
DB 119 PG 563
DB 69 PG 455
DB 133 PG 416
DB 148 PG 792

(81) STEVE FOSTER CARROLL & WIFE GAIL S. CARROLL
DB 171 PG 543

(84) CURTIS W. BRISSON
DB 148 PG 792
DB 122 PG 248
DB 111 PG 218

(85) KATHY B. JACKSON
DB 394 PG 48

(86) LENDRA GARNER DOVE AND HUSBAND KENNETH WAYNE DOVE
DB 194 PG 777

(87) LENDRA GARNER DOVE
DB 302 PG 705

(88) RANDY WAYNE GARNER AND WIFE SANDRA PAIT GARNER
BB 392 PG 453

SCSta.183+92.62
CSSta.184+94.667
CSSta.185+20.284
PTSta.184+99.537
STSta.185+94.667
STSta.186+20.284
184+00
185+00
186+00

SHEET 29 -L- REV.(LT) STA. 183+85.5
MATCH LINE
SHEET 31 -L- REV. STA. 187+00
MATCH LINE

+40.000 -L- REV. (LT) 18m (59.055')
+20.000 -L- REV. (LT) 16m (52.493')
+60.000 -L- REV. (LT) 23m (75.459')
+20.000 -L- REV (LT) 40m (131.233')
+00.000 -L- REV (LT) 31.940m (104.790')
+00.000 -L- REV (LT) 34m (111.550')
+20.284 -L- REV (LT) 27m (88.583')
+60.000 -L- REV (LT) 36m (118.110')
+70.000 -L- REV (LT) 26.039m (85.430')
+77.765 -L- REV (LT) 26.088m (85.590')
+77.000 -L- REV(LT) 66m (216.435')
+69.000 -L- REV(LT) 66m (216.435')

PROPOSED SPECIAL CUT DITCH SEE DETAIL N
SPECIAL LATERAL BASE DITCH SEE DETAIL F
LATERAL 'V' DITCH SEE DETAIL B
PROPOSED SPECIAL DITCH SEE DETAIL A
CLASS 'B' RIPRAP AT OUTLET EST. 0.9 TONS W/ F.F.
STA 185+74 -L-REV(LT) DITCH CLEANOUT REQUIRED 42m DOWNSTREAM OF SPECIAL DITCH @ 0.62% TO ELEV. 46.0m EST. 25 CU. m DDE SEE DETAIL J

PROP. DRIVE
PROP.R/W
PROP.06 PAVED SHLD.
PROP.12 PAVED SHLD.
REMOVE
2GI TYPE D
2GI TYPE A
750 RCP
750 RCP w/ PIPE END SECTIONS
300 RCP
375 mm CONC
1200 mm MTL
1200 mm BK WALL
15:1 TAPER
F.E.S.
-L- REV (LT)
-L- REV (RT)
-L- REV.
SURVEY -BL-
FALSE SUMP
CLEANOUT 450, 16m
EXTEND 450, 5m
NO ASSOCIATED PIPING FOUND FOR WMS IN THIS AREA.
GRADE TO DRAIN
CHORD
PROPOSED MONOLITHIC ISLAND
ISFD
GAZEBO
CANOPY
G
B
TOE
BST
NC HWY 87
7.2 BST
S 44° 22' 13.4" E
S 48° 41' 58.2" E
S 43° 36' 57" E
N 44° 17' 55" W
S 44° 17' 55" E

-L- REV (LT) CURVE DATA

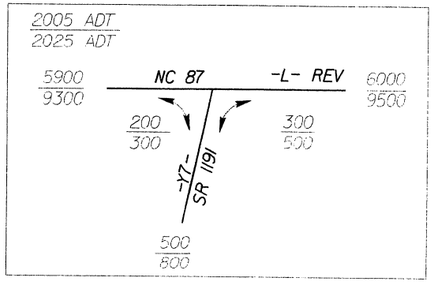
PIs Sta 183+59.358	PI Sta 184+56.689	PIs Sta 185+53.637
Θs = 4°28'34.4"	△ = 11°25'28.4" (LT)	Θs = 4°28'34.4"
Ls = 100.000	L = 127.614	Ls = 100.000
LT = 66.688	T = 64.019	LT = 66.688
ST = 33.353	R = 640.000	ST = 33.353
	SE = 0.067	

-L- REV (RT) CURVE DATA

PIs Sta 183+33.742	PI Sta 184+31.073	PIs Sta 185+28.020
Θs = 4°28'34.4"	△ = 11°25'28.4" (LT)	Θs = 4°28'34.4"
Ls = 100.000	L = 127.614	Ls = 100.000
LT = 66.688	T = 64.019	LT = 66.688
ST = 33.353	R = 640.000	ST = 33.353
	SE = 0.067	

DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 45 FOR -L- REV. PROFILE



REVISIONS

R/W REVISION, 4/1/04, REVISED R/W ON PARCEL 83
6/6/04, REMOVED TDE ON PARCEL 83 AND PARCEL 92

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METRIC

5m 0 10m

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562C	31

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SHEET 30
MATCH LINE -L- REV. STA. 187+00

188+00

189+00

190+00

(83) N. B. CARROLL, JR AND WIFE EUNICE MILDRED CARROLL
DB 119 PG 563
DB 69 PG 455
DB 133 PG 416
DB 148 PG 792

+80.000 -L- REV. (LT)
31m (101.706')

PROP. 12 PAVED SHLD.

PROP. R/W

SPECIAL LATERAL BASE DITCH
SEE DETAIL F

EXIST R/W

1200 mm MTL

-L- REV

S 44° 22' 13.4" E

NC HWY 87 7.2 BST

S 44° 23' 50.1" E

SURVEY -BL-

-L-

S 44° 22' 13.4" E

CLEANOUT 450, 15M

COLLAR AND EXTEND 450, 9m

450 RCP
REV= 45.401

450 RCP
REV= 45.460

F.E.S.

BL-166
PINC 95-16.454
REFERENCE TO -L- REV
188+87.021, 5.889 RT.

POT STA. 189+06.466 -L- REV.=
POT STA. 10+00.000 -Y7-

PROPOSED SPECIAL CUT DITCH
SEE DETAIL N

+75.000 -L- REV
23m (75.459')

END STATE PROJECT R-2562C
POT STA. 190+00.000 -L- REV.

COMPLETE DITCH UNDER
PROJECT R-2562C

ROSA LEE PARRISH
DB 134 PG 441
DB 292 PG 279
(92)

+36.000 -L- REV
23m (75.459')

+36.000 -L- REV
15.240m (50.000')

63.935
N45°41'21"E

GRADE TO DRAIN BACK FROM DRIVEWAY

PROP. DRIVE

PROP. DRIVE

PROP. DRIVE

PROP. R/W

NO ASSOCIATED PIPING FOUND FOR WMS IN THIS AREA.

+25.000 -L- REV
22.5m (73.818')

+40.000 -L- REV
22.5m (73.818')

(88) RANDY WAYNE GARNER AND WIFE
SANDRA PAIT GARNER
DB 392 PG 453

ISFD

HTR

CANOPY

FILL DITCH BETWEEN DRIVEWAYS

(89) B. E. CARROLL
DB 141 PG 535

+70.000 -L- REV
28m (91.863')

+50.000 -Y7-
9.209m (30.213')

CANOPY

25BKD

3.0 CONC

900 mm CONC

RETAIN

EXIST R/W

65.925 CON R/W
N 33°37'56" W

END CONSTRUCTION
POT STA. 10+55.452 -Y7-

S 57° 20' 19.0" W

-Y7-

RETAIN

(90) EVA C. KING
DB 122 PG 634

+50.000 -Y7-
9.209m (30.213')

ISFD

MTL BUS

+25.000 -L- REV
24m (78.740')

(91) B. E. CARROLL
DB 246 PG 628
DB 120 PG 391
DB 301 PG 312
DB 299 PG 486

END CONSTRUCTION
POT STA. 190+36.000 -L- REV.

S 44° 30' 20.3" E

REMOVE

375 RCP

+30.000 -L- REV
15.240m (50.000')

+30.000 -L- REV
24m (78.740')

PROP. DRIVE

E. T. ROBESON
DB 288 PG 124
MAP 7 PG 62

36.577 ROD-ROD
S 44°17'55" E

ROD

12.927 ROD-COR
S 39°45'27" E

27.700 COR-ROD
S 39°45'55" E

ROD

43.962 ROD-ROD
N 39°39'12" E

19.272 ROD-ROD
S 50°32'09" W

LARRY T. GARNER AND WIFE
PAULETTE C. GARNER
DB 392 PG 277

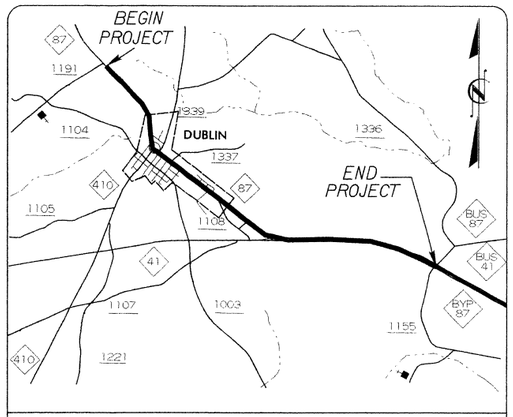
DRIVEWAY NOTES:
1. ALL PROP. DRIVEWAY RADII 3.0m UNLESS OTHERWISE SHOWN.
2. PROP. DRIVEWAY WIDTHS AT END OF RADII SHALL BE 4.9m MIN. UNLESS OTHERWISE SHOWN. TAPER DRIVEWAY TO EXISTING DRIVEWAY WIDTH.

SEE SHEET 2-B FOR -Y7- INTERSECTION DETAIL
SEE SHEET 45 FOR -L- REV. PROFILE
SEE SHEET 47 FOR -Y7- PROFILE

R-2562D

PROJECT: 6.429006T

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



SKETCH MAP SHOWING THE VICINITY OF PROJECT R-2562D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BLADEN COUNTY

LOCATION: NC 87 FROM SR 1191 TO NC 41 /NC 87 BUS.

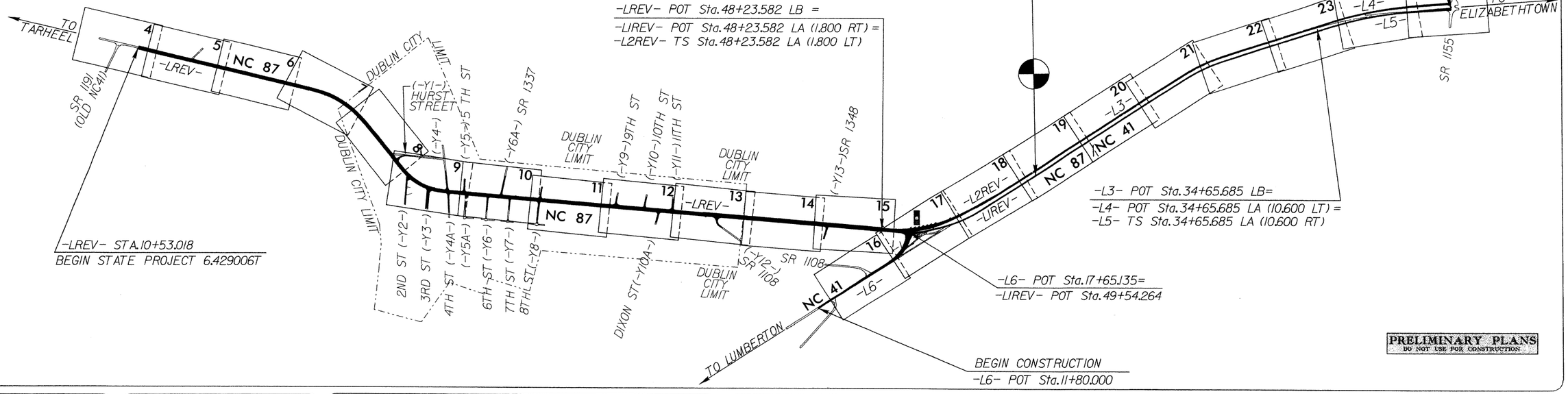
TYPE OF WORK: GRADING, DRAINAGE, PAVING & SIGNALS

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2562D	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
6.429001T		P.E.
6.429006T		R/W, UTIL.
?		CONST.



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

5 0 10
PLANS

5 0 10
PROFILE (HORIZONTAL)

1 0 2
PROFILE (VERTICAL)

DESIGN DATA

ADT 2002 = 11975
ADT 2022 = 19823
DHV = 11 %
D = 55 %
T = 13 % *
V = 100 km/h

* TTST 4 % DUAL 9 %

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 6.429006T = 6.736 km
TOTAL LENGTH STATE PROJECT 6.429006T = 6.736 km

NOTE : THE EAST BOUND LANE WAS USED TO COMPUTE THE PROJECT LENGTH.

Prepared for the North Carolina Department of Transportation In the Office of:
WETHERILL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION
559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 24, 2002

LETTING DATE: OCTOBER 16, 2007

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB MAY PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: CATHY S. HOUSER, PE
NCDOT PROJECT ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26696 ENGINEER JEFFREY L. KECK

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

DATUM DESCRIPTION

THE LOCALOZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "CECIL"
WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 102527.1910(M) EASTING: 633512.5230(M)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID IS: .999920685
THE N.C. LAMBERT GRID BEARING
LOCALIZED HORIZONTAL GROUND DISTANCE FROM "CECIL TO -LREV- STATION 10+00.000 IS
S 44 18 33.237 E 505.567
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

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559 Jones Franklin Rd. Suite 164
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

METRIC
5 0 10

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	4
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — NOT FOR CONSTRUCTION SEAL — 21116 — ENGINEER BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — NOT FOR CONSTRUCTION SEAL — 26696 — ENGINEER JEFFREY L. RECK

REVISIONS
06/20/03 (ABP) REVISED EXISTING ROW FROM 50' TO 30' ON PARCELS 2 & 3 AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY

NAD 83

R-2562C -L- REV STA 190+00.000 END STATE PROJECT =
-LREV- STA 10+53.018 BEGIN STATE PROJECT R-2562D

188+00 189+00 190+00 10

-LREV- POT Sta. 10+00.000

STA. 10+84.000 -LREV- LT
DITCH CLEANOUT REQUIRED
62m DOWNSTREAM OF 450 RCP
@ 0.00% TO ELEV. 44.96m
EST. 12 CM DDE, SEE DETAIL D

+90.000 -LREV-
53.000m (173.885')

+76.000 -LREV-
53.000m (173.885')

+76.000 -LREV-
53.000m (173.885')

+76.000 -LREV-
23.000m (75.459')

+76.000 -LREV-
23.000m (75.459')

+89.018 -LREV-
23.000m (75.459')
BEGIN R/W
LEFT

+83.016 -LREV-
24.000m (78.740')
BEGIN R/W
RIGHT

1 N. B. CARROL, JR. & WIFE EUNICE MILDRED CARROL

POT STA. 189+06.466 -L- REV.=
POT STA. 10+00.000 -Y7-

PROP.R/W R-2562C

PROP.EDGE OF PAVEMENT R-2562C

-L- REV

PROP SLOPE STAKE R-2562C

PROPOSED SPECIAL DITCH
SEE DETAIL A

S 44° 22' 13.4" E

2.0 OFFSET
BL 66

NC HWY 67 7.2 BST

NC 57 6.7 BST

-LREV-

ROSA LEE PARRISH
DB 134 PG 441
DB 292 PG 279
CLASS B RIP RAP
EST. 11.70 TONS
W/ F.F.

REMOVE R/W
450 mm

EXISTING R/W

24.000 R/W

MATCH -LREV- STA. 11+20.000

B. E. CARROLL
DB 246 PG 628
DB 120 PG 391
DB 301 PG 312
DB 299 PG 486

E. T. ROBESON
DB 288 PG 124
MAP 7 PG 62
2

EVA C. KING
DB 122 PG 634

NO ASSOCIATED PIPING FOUND FOR WMS IN THIS AREA.

END CONSTRUCTION
POT STA. 10+55.452 -Y7-

S 57° 20' 19.0" W

139.121
N44°21'31"W

107.227
N46°54'59"E

SEE SHEET 26 FOR -LREV- PROFILE

23-JUL-2003 08:
r:\raleigh\projects\2562D\Design\Roadway\R-2562D_ROY_PSH_04.DGN
BMay

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

METRIC
5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	5
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — 21116 — ENGINEER BOB A MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER JEFFREY L KECK

PRELIMINARY PLANS NOT APPROVED FOR CONSTRUCTION

CONST.REV.

R /W REV.

REVISIONS

06/20/03 (ABP)
REVISED EXISTING ROW FROM 50' TO 30' ON ALL PARCELS AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.
ALSO SUBDIVIDED PARCEL 4

NAD 83

(1) N. B. CARROL, JR. & WIFE EUNICE MILDRED CARROL

ROSA LEE PARRISH
DB 134 PG 441
DB 292 PG 279

(4A) JAMES B. HEHL
DB 469 PG 651

(4) JUDITH R. HEHL
DB 250 PG 626
MAP 8 PG 75

(5) ALICE R. PERRY
DB 219 PG 623

(2) E. T. ROBESON
DB 288 PG 124
MAP 7 PG 62

(2) E. T. ROBESON
DB 288 PG 124
MAP 7 PG 62

CATHRYN R. ATKINSON
DB 282 PG 523

MATCH TO SHEET NO.4

MATCH TO SHEET NO.6

-LREV- STA.11+20.000

-LREV- STA.14+60.000

+60.000 -LREV- 24.000m (78.740')

PROPOSED SPECIAL DITCH SEE DETAIL A

+50.000 -LREV- 24.000m (78.740')

+60.000 -LREV- 15.250m (50.033')

+00.000 -LREV- 15.269m (50.095')

+10.000 -LREV- 24.000m (78.740')

+20.000 -LREV- 24.000m (78.740')

BEGIN EXPRESSWAY GUTTER -LREV- STA.12+60.000

END EXPRESSWAY GUTTER -LREV- STA.13+28.000

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR (2) 5 mm KNOWN CABLES DEPICTED ON R-2562C AT THESE LOCATIONS.

-LREV- 5 mm CABLE S 44° 22' 13.4" E

NC HWY 87 BST

BL-67 -LREV- STA.11+74.521 (5.330 m LT)

+80.000 -LREV- 24.000m (78.740')

+20.000 -LREV- 32.000m (104.987')

PROPOSED BOULEVARD DITCH

BL-68 -LREV- STA.13+63.504 (5.535 m LT)

NO ASSOCIATED PIPING FOUND FOR WMS IN THIS AREA.

R/W EASEMENT (20')

DB 282 PG 523

67.389 N25°11'53"W

2GI TYPE B

2GI TYPE D

FALSE SUMP

CEMETERY

ISFD

ISFD ABAND

ISBLD

CONC HTR

POND

ANTENNA

(PWR.)

REMOVE

EXISTING R/W

SEE SHEET 26 FOR -LREV- PROFILE

23-JUL-2003 10:27
User: BMAY
Design: BMAY 25620_RDY_PSH_05.DGN

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	6
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA ENGINEER 21116 BOB A. MAY

HYDRAULICS ENGINEER: NORTH CAROLINA ENGINEER 26696 JEFFREY L. KECK

PRELIMINARY PLANS — NOT TO BE USED FOR CONSTRUCTION

METRIC 5 0 10

CONST.REV.

R /W REV.

NAD 83

REVISIONS

06/20/03 (ABP)
REVISED EXISTING ROW FROM 50' TO 30' ON ALL PARCELS AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.
REVISED MATCHLINES AT PI 5 & 15
ADDED DRIVEWAY TO PARCEL 7

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(11) OSCAR E. BRYAN
DB 385 PG 584
DB 216 PG 356
DB 199 PG 145
DB 259 PG 403
DB 259 PG 406
MAP 12 PG 102

N. B. CARROL, JR. &
WIFE EUNICE MILDRED CARROL
(1)

(5) ALICE R. PERRY
DB 219 PG 623

(6) WILLIE F. ALLEN
DB 173 PG 301
DB 174 PG 666

(8) BENNETT S. RUSS, ET AL
DB 164 PG 121

(9) JAMES BRITT
DB 328 PG 27
DB 266 PG 905

STA. 15+44.000 -LREV- LT
DITCH CLEANOUT REQUIRED
52m DOWNSTREAM OF DITCH JCN
@ 0.40% TP ELEV. 42.685
EST. 40 CM DDE, SEE DETAIL D

CLASS B RIP RAP AT
DITCH JCN & PIPE OUTFALL
EST. 4.5 TONS W/ F.F.

+38.893 -LREV-
24.000m (78.74')

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

PROP. SPECIAL DITCH
SEE DETAIL A

+42.000 -LREV-
74.000m (242.78')

+54.000 -LREV-
73.000m (239.50')

+51.000 -LREV-
24.000m (78.74')

+00.000 -LREV-
21.000m (68.898')

+80.000 -LREV-
24.000m (78.740')

BL-70
-LREV- STA.17+34.291
(5.597 m LT)

GPS MON R2562D-6

S 44° 22' 13.4" E

NC HWY 87 BST

-LREV-

MATCH TO SHEET NO.5

MATCH TO SHEET NO.7

-LREV- STA.14+60.000

-LREV- STA.18+00.000

PROP. BOULEVARD DITCH

+90.000 -LREV-
32.000m (104.987')

BL-69
-LREV- STA.15+47.767
(5.107 m LT)

(2) E. T. ROBESON
DB 288 PG 124
MAP 7 PG 62

(7) DANIEL L. GRIMSLEY, ET AL
DB 154 PG 840
DB 155 PG 271
MAP 7 PG 67

(10) ALVANIA ALVAREZ

(12) KENNETH H. BUCK
DB 292 PG 505

(13) JAMES BRITT
DB 279 PG 101

(14) CARRIE J. PHILLIPS, ET AL
DB 373 PG 936

(15) DAVID HURSEY, II
DB 261 PG 406

SEE SHEET 27 FOR -LREV- PROFILE

6/10/2003

28-JUL-2003 10:27
R:\Roadway\R2562D_ROY_PSH_06.DGN
Bhsay Rx: BHAY1

REVISIONS

06/20/03 (ABP)
REVISED EXISTING R/W FROM 50'TO 30'ON ALL PARCELS AND REVISED PROPOSED R/W, EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAMES ON PARCELS 15,17,19,& 20

6/20/03

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	7
R /W SHEET NO.	

METRIC
5 0 10

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — NOT FOR CONSTRUCTION — SEAL 21116 — ENGINEER BOB A MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — SEAL 26696 — ENGINEER JEFFREY L. RECK

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NAD 83

(11) OSCAR E. BRYAN
DB 385 PG 584
DB 216 PG 356
DB 199 PG 145
DB 259 PG 403
DB 259 PG 406
MAP 12 PG 102

(16) JAMES T. BRYAN
DB 216 PG 355
MAP 12 PG 102

(15) DAVID HURSEY, II
DB 415 PG 794

(15) DAVID HURSEY, II
DB 261 PG 406

(19) WILLIAM A. HURSEY

(15) THERON D. HURSEY, III
DB 218 PG 232

MATCH TO SHEET NO.6

MATCH TO SHEET NO.8

-LREV- STA 18+00.000

-LREV- STA.21+40.000

-LREV- TS Sta.18+77.501
BEGIN 750 mm C&G

-LREV- SC Sta.19+52.501

-LREV- POC Sta.20+96.215
BEGIN SIDEWALK

-LREV- POC Sta.20+91.637
BEGIN SIDEWALK

BL-71
-LREV- STA.18+33.391
(4.824 m LT)

BL-72
-LREV- STA.19+32.627
(5.940 m LT)

BL-73
-LREV- 20+32.283
(5.672 m LT)

BL-74
-LREV- STA.21+28.683
(6.330 m LT)

-LREV-

PIs Sta 19+27.520	PI Sta 20+61.908	PIs Sta 21+91.982
θs = 4° 52' 59.4"	Δ = 27° 55' 37.1" (RT)	θs = 4° 52' 59.4"
Ls = 75.0	L = 214.464	Ls = 75.0
LT = 50.019	T = 109.407	LT = 50.019
ST = 25.017	R = 440.000	ST = 25.017
	SE = .05	

CLASS I RIP RAP
EST. 10.0 TONS
W/ F.F.

CLASS B RIP RAP
EST. 2.7 TONS
W/ F.F.

CLASS I RIP RAP
EST. 1.8 TONS
W/ 6.7 SM F.F.
FILL EXISTING SWALE

REMOVE 450, 4.6m SECTION

REMOVE PIPE & HW

GROUT & PLUG 450, 24.3m

PROPOSED 'V' DITCH
SEE DETAIL D

PROP. BOULEVARD DITCH
SEE DETAIL ?

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR GAS SERVICE AT THIS LOCATION.

DO NOT DISTURB

RETAIN EXIST R/W

DUBLIN CITY LIMIT

SEE SHEET 27 FOR -LREV- PROFILE

23-JUL-2003 10:57 25620.RDY_PSH.87.DGN
BMiss

REVISIONS

06/20/03 (ABP) REVISED EXISTING ROW FROM 50' TO 30' ON ALL PARCELS AND REVISED PROPOSED ROW EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAMES ON PARCELS 17,19,20,& 21 AND REVISED PROPERTY LINES ON PARCELS 5,17,17A & 19)

5/20/03

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	8
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA SEAL 21116 ENGINEER BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA SEAL 26696 ENGINEER JEFFREY L. RECA

PRELIMINARY PLANS — NOT USE FOR CONSTRUCTION

METRIC

5 0 10

CONST.REV.

R /W REV.

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NAD 83

HURST ST 300/300 — 246/206 — 56/94 — 5345/8960 — 5130/8869 — NC 87 — -Y1- 2002/2022 ADT

MATCH TO SHEET NO.7

-LREV- STA.21+40.000

MATCH TO SHEET NO.9

-LREV- STA.24+80.000

-LREV- TS Sta.24+64.946

TOWN OF DUBLIN DB 227 PG 787

WILLIAM A. HURSEY DB 483 PG 331

DAVID HURSEY, II DB 124 PG 9

DAVID HURSEY, II DB 415 PG 794

DAVID HURSEY, II DB 415 PG 799

FLOYD C. HURSEY DB 415 PG 799

DAVID P. BRISSON DB 333 PG 399 MAP 9 PG 141

LAURA BUTLER BLOUNT DB 215 PG 779

3.048 (10') DRAINAGE EASEMENT DB 333 PG 399 MAP 9 PG 141

6.096 (20') EASEMENT TOWN OF DUBLIN DB 227 PG 787

-LREV- CS Sta.21+66.965

-LREV- ST Sta.22+41.965

-LREV- POT Sta.10+60.000 BEGIN CONSTRUCTION

-LREV- POC Sta.10+80.000

-LREV- POC Sta.10+97.000

-Y1- POC STA.11+05.246 END C&G, END SIDEWALK

-Y1- POT Sta.11+26.195 = -LREV- POT Sta.24+40.000

BL-75 -LREV- STA.22+29.787 (5.954 m LT)

BY18-76 BL-76 -LREV- STA.23+91.307 (5.411 m LT)

EXTEND BOX CULVERT W/ 1650 (SEE DETAIL SHT. 2-F)

8m ENERGY DISSIPATOR

6m ENERGY DISSIPATOR

SEE SPECIAL DETAIL

EXTEND BOX CULVERT W/ 1650 (SEE DETAIL SHT. 2-F)

This end of culvert is under the existing road.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR GAS SERVICE AT FOOTBRIDGE THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICE AT THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR GAS LINE AT THIS LOCATION.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICE AT THIS LOCATION.

-LREV-

Pls Sta 19+27.520 Θs = 4° 52' 59.4" Ls = 75.0 LT = 50.019 ST = 25.017	Pl Sta 20+61.908 Δ = 27° 55' 37.1" (RT) L = 214.464 T = 109.407 R = 440.000 SE = .05	Pls Sta 21+91.982 Θs = 4° 52' 59.4" Ls = 75.0 LT = 50.019 ST = 25.017
Pls Sta 25+04.971 Θs = 6° 15' 01.6" Ls = 60.0 LT = 40.025 ST = 20.023	Pl Sta 26+08.758 Δ = 33° 53' 57.0" (LT) L = 162.704 T = 83.811 R = 275.000 SE = .04	Pls Sta 27+07.673 Θs = 6° 15' 01.6" Ls = 60.0 LT = 40.025 ST = 20.023

-Y1-

Pl Sta 10+89.020
Δ = 44° 06' 54.5" (LT)
L = 53.897
T = 28.364
R = 70.000
SE = .04

SEE SHEET 28 FOR -LREV- PROFILE
SEE SHEET 41 FOR -Y1- PROFILE

23-JUL-2003 10:27
r:\projects\2562d\roadway\sheets\2562d_rdy_psh_08.dgn
BMay

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	9
R /W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS NOT FOR CONSTRUCTION UNTIL SEALED
NORTH CAROLINA ENGINEER BOB A. MAY 21116
NORTH CAROLINA ENGINEER JEFFREY L. BECK 21116

CONST.REV.

R /W REV.

REVISIONS

8/23/02 (BAW) R/W REVISION, REVISED -X5- PROPOSED RIGHT OF WAY AND CONSTRUCTION EASEMENTS ON PARCELS 31 & 34, AND REVISED PROPOSED DRAINAGE EASEMENTS ON PARCELS 25,125A & 130
06/20/03 (ABB) REVISED EXISTING R/W FROM -Y5- TO -Y5A- ON MOST PROPERTY LINES ON PARCELS 29,31,33 & 34.
7/30/03 (BAW) REVISED PROPOSED DRAINAGE EASEMENTS ALONG -Y5- ON PARCELS 25,125A & 130

NAD 83

MATCH TO SHEET NO.8

-LREV- STA 24+80.000

-Y1-

N 52° 33' 43.3" W

HURSEY STREET SR 1339

5.6 BST

EXISTING R/W

DAVID HURSEY, II
DB 415 PG 794
(17C)

BY18- 181
POT 5+00.000

Pls Sta 25+04.971 PI Sta 26+08.758 Pls Sta 27+07.673
Θs = 6° 15' 01.6" Δ = 33° 53' 57.0" (LT) Θs = 6° 15' 01.6"
Ls = 60.0 L = 162.704 Ls = 60.0
LT = 40.025 T = 83.811 LT = 40.025
ST = 20.023 R = 275.000 ST = 20.023
SE = 0.04

-LREV-

BL-77
BY19- 77
-LREV- STA.25+25.350
(5.643 m LT)

LAURA BUTLER BLOUNT
DB 215 PG 779
(22)

-LREV- SC Sta.25+24.946

+24.946 -LREV-
18.000m (59.055')

ENTERPRENTUER INC.
DB 148 PG 802
(132)

-Y2- POT Sta.10+00.000 =
-LREV- POC Sta.25+50.000

+75.000 -LREV-
15.240m (50.000')

B. E. CARROLL, ET AL
DB 360 PG 841
(23A)

-Y2-
PI Sta 10+31.797
Δ = 35° 15' 42.0" (LT)
L = 30.772
T = 15.891
R = 50.000
SE = 0.04

+20.000 -Y2-
15.240m (50.000')

+34.000 -LREV-
23.000m (82.021')

-Y2- PC Sta.10+15.906

-Y2- POC Sta.10+29.000

+25.000 -Y2-
13.278m (43.563')

FLOYD C. HURSEY
DB 415 PG 799
(17A)

+40.000 -Y2-
15.500m (50.853')

-Y2- PT Sta.10+46.678

BY19- 191
-Y2- STA.10+64.586
(3.847 m RT)

+70.000 -Y2-
7.710m (25.295')

MARIE C. STORMS
(126)

-Y2- POT Sta.10+95.000

-Y2- POT Sta.11+17.657

-Y2- POT Sta.11+00.000
END CONSTRUCTION

+65.000 -LREV-
17.000m (55.774')

-Y1- POC STA.10+21.300
END C&G
END SIDEWALK

+98.000 -LREV-
19.000m (32.336')

FLOYD C. HURSEY
DB 415
PG 795
(17B)

+50.000 -Y2-
7.620 (25.000')

+98.000 -LREV-
22.000m (72.178')

CLASS B RIP RAP
EST. 2.7 TONS W/ F.F.
EACH AT 2 LOCATIONS
(124)

+98.000 -LREV-

+75.000 -Y2-
7.652m (25.105')

PROPOSED SPECIAL DITCH SEE DETAIL A

COUNTY OF BLADEN
DB 396 PG 464
(24)

+12.000 -LREV-
18.000m (59.055')

-Y3- POT Sta.10+25.000

+35.000 -LREV-
15.240m (50.000')

+14.883 -Y3-
12.500m (41.010')

RESET FRAME, GRATE & HOOD TO 39.889 AT EP

-Y3- POT Sta.10+22.992
END SIDEWALK
NCDOT

-Y3- POT Sta.10+00.000 =
-LREV- POS Sta.26+41.506
(12.836 m LT)

-Y3- POT Sta.10+00.000 =
-LREV- POC Sta.26+47.182

-Y4- POT Sta.10+70.000

+72.000 -Y4-
7.907m (25.942')

-Y4- POT Sta.10+77.525
END C&G
END SIDEWALK

+20.000 -LREV-
15.240m (50.000')

-LREV- CS Sta.26+87.650

+87.650 -LREV-
15.240m (50.000')

BL-78
BY20- 78
-LREV- 26+41.506
(12.836 m LT)

BL-79
BY21- 79
-LREV- 27+38.058
(3.795 m LT)

BY20- 201
-Y3- STA.10+74.761 (7.461 m RT)

BOBBY RAY DOWLESS
DB 434 PG 159
MAP A-62 PG 629
(125A)

END C&G
-Y3- STA.10+80.000

ASSUMED LOC. OF EXIST R/W

-Y3- POT Sta.10+80.000
END CONSTRUCTION
-Y3- POT Sta.10+98.400

-Y3- POT Sta.11+00.000 =
-LREV- POS Sta.27+41.337

-Y5- POT Sta.10+20.000
BEGIN CONSTRUCTION

-Y5- POT Sta.10+35.000

ARTHUR BUTLER
(29)

-Y5- POT Sta.10+48.291
END C&G
END SIDEWALK

+32.900 -Y5-
7.415 (24.426')
8.853 (29.05')

+38.900 -Y5-
9.021 (29.597')

W. A. GRIMES, JR.
DB 126 PG 635

-LREV- ST Sta.27+47.650

+51.000 -LREV-
15.240m (50.000')

REMOVE SIDEWALK

-Y5- POT Sta.10+63.247
END C&G
END SIDEWALK

+74.000 -LREV-
15.240m (50.000')

+74.000 -LREV-
19.000m (62.336')
15.240m (50.000')

+58.000 -LREV-
15.240m (50.000')

-Y4A- POT Sta.10+21.163
END C&G
END SIDEWALK

-Y4A- POT Sta.10+30.000

+40.000 -LREV-
7.415m (24.327')

-Y4A- POT Sta.10+50.000
END CONSTRUCTION

-Y4A- POT Sta.10+00.000
-LREV- POS Sta.27+42.761

-Y4- POT Sta.10+00.000
BEGIN CONSTRUCTION

-Y4- POT Sta.10+20.000

+55.000 -Y4-
7.499m (24.603')

-Y4- POT Sta.11+00.000 =
-LREV- POS Sta.27+41.337

-Y4- POT Sta.10+20.000
BEGIN CONSTRUCTION

+98.802-LREV-
108.150 (354.82')
113.200 (371.39')
115.200 (377.95')

+13.852-LREV-
88.475 (290.27')

CLASS I RIP RAP
EST. 9.1 TONS W/ F.F.

+08.316-LREV-
113.830 (373.46')

+14.839-LREV-
105.280 (366.50')

+08.050-LREV-
111.830 (366.90')
105.930 (347.54')

+14.270-LREV-
97.739 (320.67')

-Y4- POT Sta.10+00.000

-LREV- SC Sta.28+20.000

-Y5- POT Sta.10+65.676 =
-LREV- POT Sta.28+19.987

DO NOT DISTURB BUILDING

MATCH TO SHEET NO.10

-Y4-, -Y4A-

2002 ADT / 2022 ADT	SR 1339 FOURTH ST.	
5825 / 9975	915 / 1685	1562 / 2638
FOURTH ST.	111 / 188	446 / 754
	423 / 577	5355 / 9050

-Y5-, -Y5A-

2002 ADT / 2022 ADT	FIFTH ST	
NC 87	50- / 50-	50- / 50-
FIFTH ST	56 / 94	5355 / 9050
	112 / 188	5355 / 9050

-Y2-

2002 ADT / 2022 ADT	SECOND ST	
5130 / 8869	56 / 94	5130 / 8869
	112 / 188	56 / 94

-Y3-

2002 ADT / 2022 ADT	NC 410 THIRD ST.	
5130 / 8869	1573 / 2727	5825 / 9975
	3815 / 6585	2242 / 3858

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SEE SHEET 28 FOR -LREV- PROFILE
SEE SHEET 41 FOR -Y2-, -Y3, & -Y4- PROFILE
SEE SHEET 42 FOR -Y4A- & Y5- PROFILE

23-JUL-2003 15:34
[Roadway Design]
Bldg: R-2562D_RDY_PSH_09.DGN

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	10
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER: SOUTH CAROLINA SEAL 21116 ENGINEER BOB A WAY

HYDRAULICS ENGINEER: SOUTH CAROLINA SEAL 26696 ENGINEER JEFFREY L KECK

PRELIMINARY PLANS NOT FOR CONSTRUCTION

METRIC 5 0 10

CONST.REV.

R /W REV.

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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RALEIGH, NC 27609-5310
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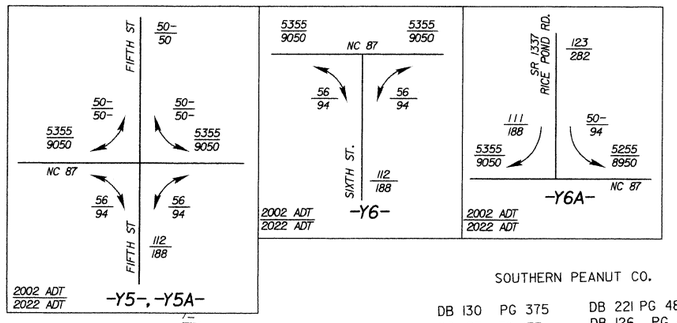
(919) 783-9214

REVISIONS

6/20/03 (BAW) REVISED -Y5-,PROPOSED RIGHT OF WAY AND CONSTRUCTION EASEMENTS ON PARCELS 31& 34.
06/30/03 (GMP) REVISED -Y6A- POT Sta.10+00.000 = -LREV- POT Sta.28+30.414
8/27/02 (BAW) REVISED -Y5-,-Y5A-,-Y6-,-Y6A- POT Sta.10+00.000 = -LREV- POT Sta.28+23.221
REVISED EXISTING ROW FROM 50'TO 30' ON MOST PARCELS AND REVISED PROPOSED ROW,EASEMENTS AND AREAS ACCORDINGLY.



SOUTHERN PEANUT CO.

DB 130	PG 375	DB 221	PG 488
DB 197	PG 177	DB 126	PG 427
DB 122	PG 673	DB 131	PG 345
DB 197	PG 175	DB 112	PG 602
DB 137	PG 236	DB 114	PG 403
DB 213	PG 129	DB 116	PG 50
DB 209	PG 586	DB 143	PG 7
DB 229	PG 265	DB 137	PG 235
MAP 9	PG 144	DB 207	PG 704
		MAP 2	PG 2B

ALBERT F. BUTLER
DB 272 PG 455
DB 309 PG 560
MAP 2 PG 2

GASTON E. KING, ET UX
DB 254 PG 507

CHARLIE T. CARROLL, II
DB 371 PG 431

HILDA H. KINLAW
DB 260 PG 310
DB 260 PG 313

CHURCH OF DUBLIN
DB 192 PG 765
DB 125 PG 625
DB 122 PG 669
MAP 2 PG 2

DUBLIN DEVELOPMENT CORP.
DB 137 PG 237
MAP 2 PG 2

JAMES T. HALL
DB 165 PG 768
MAP A-59 PG 599
MAP 2 PG 2

TILDA MARIE B. SUTTON
DB 345 PG 721
DB 293 PG 856
MAP A-59 PG 599

-Y6A- POT Sta.10+00.000
-Y6A- POT Sta.10+20.000 BEGIN CONSTRUCTION
-Y6A- POT Sta.10+30.000
-Y6A- POT Sta.10+79.795 END C&G END SIDEWALK
-Y6A- POT Sta.11+00.845 = -LREV- POT Sta.29+96.539
-Y6- POT Sta.10+00.000 = -LREV- POT Sta.29+34.971
-Y6- POT Sta.10+30.000 END CONSTRUCTION
-Y6- POT Sta.10+80.000
-Y7- POT Sta.10+00.000 = -LREV- POT Sta.30+40.994
-Y7- POT Sta.10+60.000 END CONSTRUCTION
-Y5A- POT Sta.10+80.000 END CONSTRUCTION
-Y5A- POT Sta.10+00.000 = -LREV- POT Sta.28+30.414
-LREV- STA.28+20.000
-LREV- STA.31+60.000
-Y5A- STA.10+89.309 (3.234 m RT)
BY22- 222
BY23- 231 POT 6+01.767
BY25- 251 POT 5+98.494
BL-80 BY22- 80 -LREV- STA.28+23.221 (8.355 m RT)
BL-81 BY23- 81 -LREV- 29+38.067 (7.533 m LT)
BL-82 BY24- 82 -LREV- STA.29+92.209 (7.605 m RT)
BL-83 BY25- 83 -LREV- 30+38.076 (7.587 m LT)
BY24- 241 -Y6A- 10+13.646 (4.288 m) RT

SEE SHEET 29 FOR -LREV- PROFILE
SEE SHEET 42 FOR -Y5A- & -Y6- PROFILE
SEE SHEET 43 FOR -Y6A- & -Y7- PROFILE

28-JUL-2003 10:27
C:\projects\2562D\Roy\2562D_ROY_PSH_10.DGN
BAway RY BRATT

REVISIONS

8/30/02 (BAM)
RW REVISION REVISED TCE AND ADDED PDE ON PARCEL NO.53. (BAM)
06/20/03 (ABP)
REVISED EXISTING ROW FROM 50' TO 30' ON MOST PARCELS AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAMES ON PARCELS 47, 48, & 50.

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

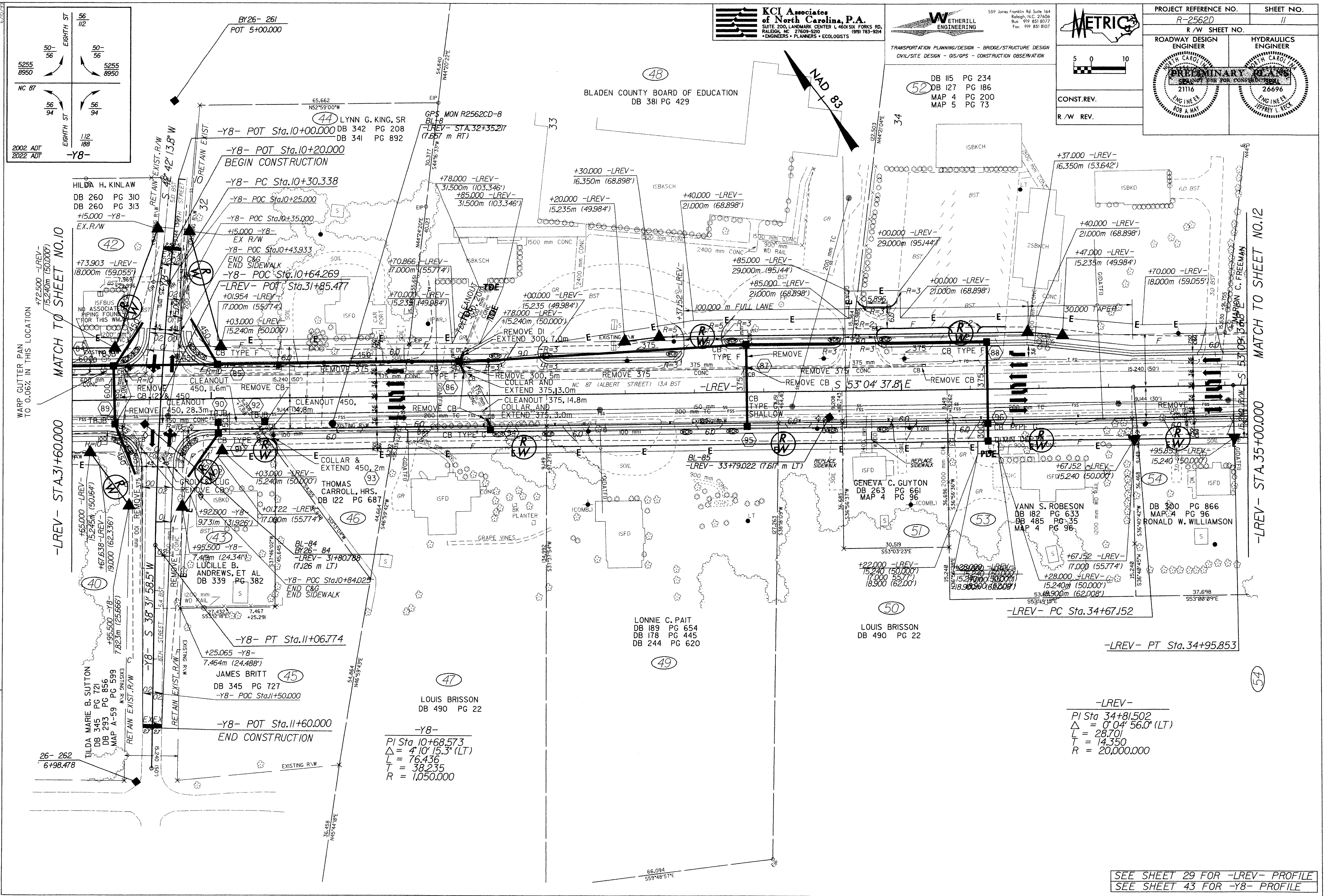
METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 21116 BOB A. MAY	SEAL 26696 JEFFREY L. RECK

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.



-Y8-
PI Sta 10+68.573
Δ = 4° 10' 15.3" (LT)
L = 76.436
T = 38.235
R = 1,050.000

-LREV-
PI Sta 34+81.502
Δ = 0° 04' 56.0" (LT)
L = 28.701
T = 14.350
R = 20,000.000

SEE SHEET 29 FOR -LREV- PROFILE
SEE SHEET 43 FOR -Y8- PROFILE

28-JUL-2003 10:27
r:\Roadway\Proj\R-2562D_RDY_PSH_11.DGN

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METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	12

R /W SHEET NO.

ROADWAY DESIGN ENGINEER — SEAL 21116 BOB A. MAY

HYDRAULICS ENGINEER — SEAL 26696 JEFFREY L. RECK

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

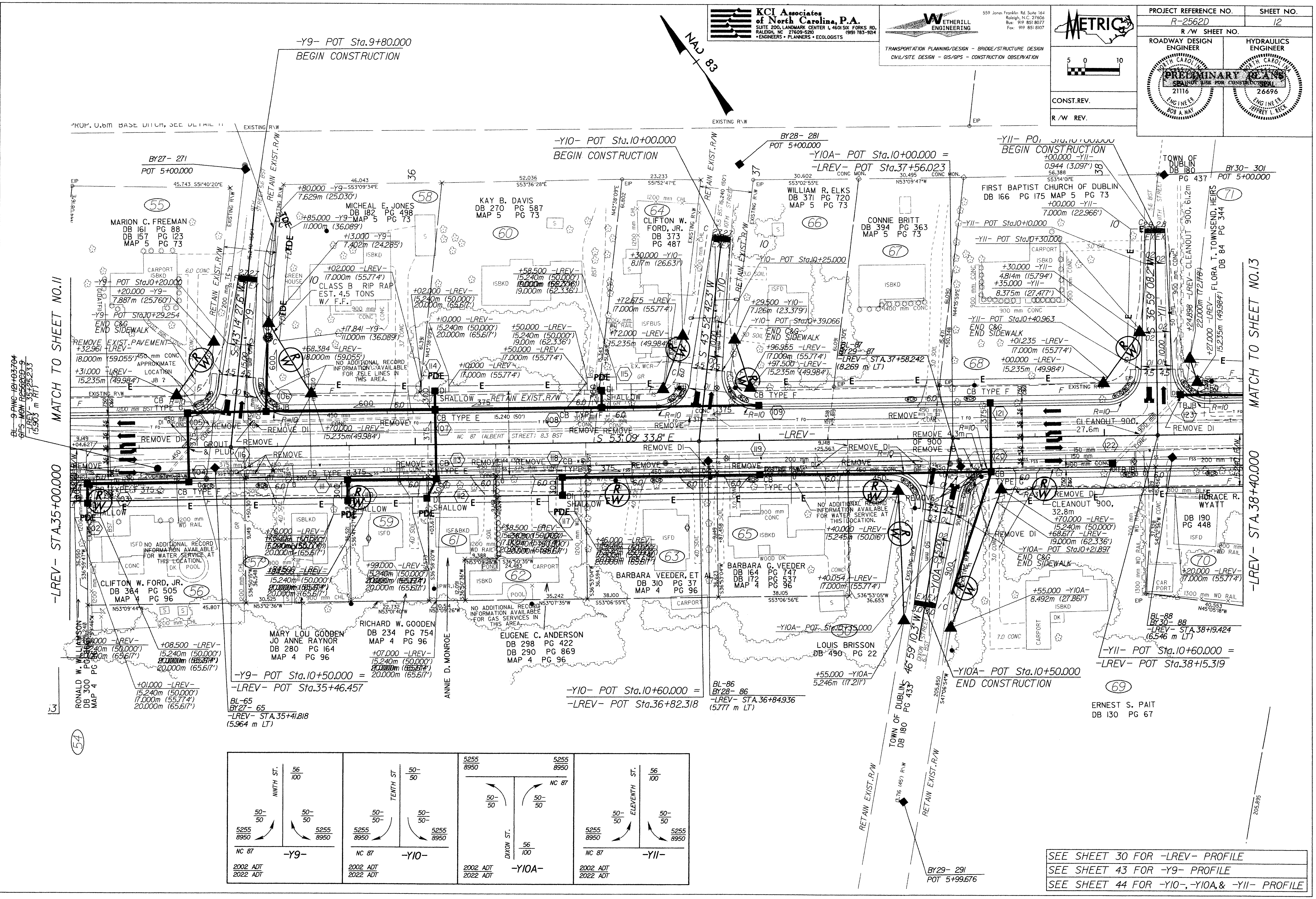
CONST.REV.

R /W REV.

REVISIONS

(BAM)
R/W REVISION ADDED 6.0 DRIVEWAY AND EX.WHEELCHAIR RAMP ON PARCEL NO 64.
06/20/03 (ABP)
REVISED EXISTING ROW FROM 50' TO 30' ON MOST PARCELS AND REVISED PROPOSED ROW,EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAMES ON PARCELS 57 & 61
REVISED PROPERTY LINE ON PARCEL 54

29-JUL-2003 10:11
r:\Roadway\Proj\R-2562D_RDY_PSH_12.DGN
BMay AT BMAY1



SEE SHEET 30 FOR -LREV- PROFILE
SEE SHEET 43 FOR -Y9- PROFILE
SEE SHEET 44 FOR -Y10-, -Y10A & -Y11- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	13
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — SEAL 21116 — ENGINEER — BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — SEAL 26696 — ENGINEER — JEFFREY L. RECK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

METRIC — 5 0 10

CONST.REV.

R /W REV.

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REVISIONS

06-30-03 (ABP) REVISED EXISTING ROW FROM 50' TO 30' ON PARCELS 70,72,& 73 AND REVISED PROPOSED ROW,EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAME ON PARCEL 72

5/20/98

5255 / 8950 — 5030 / 8570
235 / 465 — 50- / 94
SR 1108 OLD 87
246 / 559
2002 ADT / 2022 ADT
-Y12-

NAD 83

FLORA T. TOWNSEND, HEIRS
DB 84 PG 344

71

39 — 40 — 41

74 J. B. ELKINS, JR.
DB 189 PG 633

DAVID G. KIRBY
DB 304 PG 879
76

-LREV-
PI Sta 39+65.15
Δ = 0° 02' 28.1" (RT)
L = 14.361
T = 7.181
R = 20,000.000

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

MATCH TO SHEET NO.12

-LREV- STA.38+40.000

+00.000 -LREV-
18.000m (59.055')

-LREV- PC Sta.39+57.97

-Y12- POT Sta.10+00.000 =
-LREV- POT Sta.40+30.000

-LREV- POT Sta 41+49.173
END SIDEWALK

BL-90
-LREV- STA 41+68.317
(6.758 m LT)

MATCH TO SHEET NO.14

-LREV- STA.41+80.000

EXISTING R/W — RETAIN EXIST.R/W — CB TYPE E — CB TYPE G — CB TYPE F — REMOVE

S 53° 09' 33.8" E

S 53° 07' 05.7" E

NC 87 (ALBERT STREET) 8.3' BST

EX R/W 15.240m (50.000')

+54.065 -LREV-
17.000m (55.774')

CLASS B RIP RAP AT OUTFALL EST. 1.8 TONS W/ F.F.

RETAIN EXIST. R/W

GRADE TO DRAIN

PROPOSED SPECIAL DITCH SEE DETAIL A

BL-89
BY31- 89
-LREV- STA 39+68.402
(6.061 m LT)

-LREV- PT Sta.39+72.332

-Y12- PT Sta.10+52.718
-Y12- POT Sta.10+67.718

-Y12- POT Sta.10+80.000
END CONSTRUCTION

-Y12-
PI Sta 10+38.724
Δ = 59° 25' 07.8" (LT)
L = 31.112
T = 17.119
R= 30.000
SE = .04

-LREV-
+48.000 -LREV-
15.245m (50.016')

+48.073 -LREV-
17.000m (55.774')
-Y12- POT Sta.10+19.000
END C&G
END SIDEWALK

-Y12- PC Sta.10+21.606
-Y12- POT Sta.10+30.000

+52.000 -LREV-
9.216m (30.236')

-Y12- POT Sta.11+53.895

BY31- 311
-Y12- STA.11+23.881
(4.853 m LT)

S 22° 32' 13.5" E

+39.500 -LREV-
15.240m (50.000')
+39.500 -LREV-
17.000m (55.774')
+39.500 -LREV-
19.500m (63.976')
+46.500 -LREV-
19.500m (63.976')
+46.500 -LREV-
15.240m (50.000')

+46.500 -LREV-
17.000m (55.774')

-LREV- POT Sta 41+51.966
END SIDEWALK

HORACE R. WYATT
DB 960 PG 448

KIMBERLY W. VILAS

JAMES A. BRITT
DB 97 PG 403

HILTON BRITT
DB 114 PG 487
DB 156 PG 839

JAMES B. SMITH
DB 377 PG 132

JURDIE V. BUTLER, JR.
DB 213 PG 632

HOUSTON N. BRISSON
DB 133 PG 681

MILDRED M. BUTLER
DB 121 PG 464

ISBKD — ISFD — 2SFD — 1SFD — CARPORT — DK — WOOD DK — G — ANTENNA — METER & POLE — TV AMP — SHED

1000 mm CONC — 1480 mm CONC — 1200 mm CONC — 1300 mm WD RAIL — 960 mm WD RAIL — 200 mm TC — 150 mm & 50 mm (COMMON TRENCH) — 1220 mm CONC MONITOR (LT)

DUBLIN CITY LIMIT

PAVEMENT REMOVAL

SEE SHEET 30 FOR -LREV- PROFILE
SEE SHEET 44 FOR -Y12- PROFILE

28-JUL-2003 10:11
r:\projects\2562d\roadway\plan\2562d_roy_psh.13.dgn
BMay RR (BMAY)

REVISIONS

06/20/03 (ABP) REVISED EXISTING ROW FROM 50' TO 30' ON PARCEL 83 AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAME ON PARCEL 83

5/01/03

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	14
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — 21116 — ENGINEER BOB A MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER JEFFREY L. RECK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

METRIC

5 0 10

CONST.REV.

R /W REV.

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NAD 83

MATCH TO SHEET NO.13

MATCH TO SHEET NO.15

-LREV- STA.41+80.000

-LREV- STA.45+20.000

FLORA T. TOWNSEND, HEIRS
DB 84 PG 344
71

LOIS T. ALEXANDER, HEIRS
DB 84 PG 341
DB 187 PG 228
81

HOUSTON N. BRISSON
DB 126 PG 252
DB 186 PG 631
84

MILDRED M. BUTLER
DB 121 PG 464
77

MARVIN E. SKINNER
DB 205 PG 778
78

MARGARET HESTER, ET AL
DB 176 PG 755
79

KIRBY LEE BUTLER
DB 256 PG 820
80

ALMA MCDANIEL, HEIRS
DB 127 PG 391
WF 90-E-58
82

PAULINE CARROLL
DB 130 PG 588
DB 137 PG 99
DB 137 PG 594
DB 137 PG 595
83

JOSEPH H. HESTER
DB 194 PG 566

STA. 44+38 -LREV- LT
DITCH CLEANOUT REQUIRED
ELEV 44.20 AT THE OUTLET OF 750 RCP
AND CONTINUING APPROXIMATLY 105m
ON A 0.0% GRADE TO TIE INTO EXISTING
DITCH GRADE
DDE = 230 CM
PROPOSED 0.6m BASE DITCH, SEE DETAIL G

BL-91
-LREV- STA.43+67.794
(6.362 m LT)

CLASS I RIP RAP
EST. 10 TONS W/ F.F.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR TELE. LINE AT THIS LOCATION.

SEE SHEET 31 FOR -LREV- PROFILE

23-JUL-2003 (dl)
Roadway Design
r:\projects\r-2562d_rdy_psh.14.dgn

REVISIONS

06/20/03 (ADD) NEEDED ON PARCEL 127 AND ABANDONED THE REST
REVISED NAME ON PARCEL 129

29-JUL-2003 10:11
rjones
Design: RY DRAFT: R-2562D_ROY_PSH_16.DGN

BEGIN CONSTRUCTION
-L6- POT Sta.11+80.000

-L6- PT Sta.11+20.029

+40.000 -L6-
19.000m (62.336')

216.000 M UNIFORM TAPER

-L6- L2+20.000

+40.000 -L6-
15.073m (49.452')

N 89° 09' 05.8" E

-L6-
PI Sta 11+13.942
Δ = 0° 05' 59.2" (LT)
L = 12.174
T = 6.087
R = 6,990.000

-L6- STA.12+60.000 MATCH TO SHEET NO.16

NAD 83

METRIC
5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	16
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA SEAL 21116 ENGINEER ROB A. MAY

HYDRAULICS ENGINEER
NORTH CAROLINA SEAL 26696 ENGINEER JEFFREY L. KECK

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CONST.REV.

R /W REV.

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MA.

PAUL G. BUTLER, JR.
DB 251 PG 389
MAP 7 PG 90

JOSEPH
DB 251 PG 393
MAP 7 PG 90

QUINCE J. PHILLIPS
DB 252 PG 177
DB 276 PG 820
DB 291 PG 422
DB 232 PG 894
DB 165 PG 52
DB 165 PG 54
DB 288 PG 179
DB 251 PG 214
MAP 7 PG 90

84.656 N15°54'26"E
17.069 S5°10'46"E 10.536
29.634 N82°55'08"W
83.409 S40°38'26"W
20.661 S55°12'23"E

-L6- TS Sta.15+58.095

+32.000 -L6-
22.383m (73.435')

PROP. SPECIAL DITCH SEE DETAIL A

-L6- SC Sta.16+18.095

+15.000 -L6-
20.000m (65.617')

-L6- STA.16+20.000 MATCH TO SHEET NO.17

RETAIN PIPE

RESURFACE AS NEEDED TO TIE

REMOVE

CLASS B RIP RAP EST. 4.5 TONS W/ F.F.

PAINTED ISLAND

108 M UNIFORM TAPER

+31.000 -L6-
15.303m (50.207')

+60.000 -L6-
15.336m (50.315')

-L6- 16+09.710
OFF 1.800 RT.

DITCH CLEANOUT REQUIRED
STA. 15+29 -L6- RT TO
STA. 15+75 -L6- RT
ELEV. 43.80m
EST. 30 CM DDE +15.000 -L6-
25.000m (82.021')
SEE DETAIL D

+80.000 -L6-
55.000m (180.446')

+72.000 -L6-
66.000m (216.515')

+07.000 -L6-
15.276m (50.118')

+10.270 -L6-
17.805m (58.415')

+00.000 -L6-
20.000m (65.618')

BY 33- 332
(5.434 m RT)

-L6- STA.12+60.000 MATCH TO INSET SHEET NO.16

PROP. SPECIAL DITCH SEE DETAIL A

+41.656 -L6-
19.000m (62.336')

216.000 M UNIFORM TAPER

EXISTING R\W

CLASS B RIP RAP EST. 2.7 TONS W/ F.F.

+90.000 -L6-
15.240m (50.000')

TO BE ABANDONED

+83.000 -L6-
15.290m (50.180')

+98.060 -L6-
15.246m (50.806')

+40.000 -L6-
15.201 (49.872')

PROPOSED 'V' DITCH
SEE DETAIL D

W. F. McNEILL, JR., HEIRS
DB 119 PG 370
DB 121 PG 662
DB 130 PG 345
DB 153 PG 453

+90.000 -L6-
58.000m (190.229')

+04.000 -L6-
56.000m (183.727')

+60.000 -L6-
EX R/W

SEE SHEET 40 FOR -L6- PROFILE

REVISIONS

06/20/03 (ABP) REVISED EXISTING ROW FROM 50' TO 30' ON PARCEL 83 AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.
REVISED EXISTING NAMES ON PARCELS 83, 85 & 85
REVISED PROPERTY LINES ON PARCELS 83, 85, 87 & 89

6/10/03

-LREV-
PIs Sta. 49+47.604 PI Sta. 49+87.207
Θs = 5° 55' 37.7" Δ = 7° 44' 35.0" (LT)
Ls = 60.000 L = 39.191
LT = 40.022 T = 19.625
ST = 20.020 R = 290.000

NAD 83

-Y13- POT Sta.10+00.000 = -LREV- POT Sta.45+65.387 (PWR.)

MATCH TO SHEET NO.14

-LREV- STA.45+20.000

MATCH TO SHEET NO.17

-LREV- STA.48+60.000

-LREV- POT Sta.48+23.582 LB =
-LIREV- POT Sta.48+23.582 LA (OFF 1.8 RT) =
-L2REV- TS Sta.48+23.582 LA (OFF 1.8 LT)

DITCH INSET

94 CLARICE L. BUTLER DB 251 PG 744 DB 251 PG 746 DB 278 PG 771 | DB 308 PG 844 DB 308 PG 846 DB 157 PG 16 MAP 7 PG 73

PROPOSED 'V' DITCH SEE DETAIL D

48+71.000 -L2REV- 112.645m (369.570')
48+83.000 -L2REV- 110.206m (361.568')

1200 mm WD RAIL

+09.000 -L2REV- EST. 45 TONS W/FF

CLASS 'B' RIPRAP

-L2REV- SC Sta. 47+47.296 (155.301')

-L2REV- CS Sta. 47+61.472 (156.301')

r2562d model2827

METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	15

R /W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — SEAL 21116 — ENGINEER — ROB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — SEAL 26696 — ENGINEER — JEFFREY L. KECK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

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Raleigh, N.C. 27606
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DB 251 PG 746
DB 278 PG 769
DB 278 PG 771
DB 308 PG 844
DB 308 PG 846
DB 157 PG 16
MAP 7 PG 73

Q. J. PHILLIPS, ET UX
DB 251 PG 214
DB 130 PG 378
MAP 7 PG 73

KENNETH N. TATUM
DB 293 PG 704
MAP 7 PG 73

COLONIAL DRIVE (NOT OPEN)

LEONARD DWIGHT
DB 497 PG 4

PAULINE CARROLL
DB 130 PG 588
DB 137 PG 99
DB 137 PG 594
DB 137 PG 595

PEGGY B. MCQUEEN
DB 360 PG 344

WADIS P. BUTLER
DB 194 PG 206
DB 201 PG 115
MAP 7 PG 90

WILLIAM R. KINLAW
DB 246 PG 204
DB 278 PG 767
DB 193 PG 560
DB 201 PG 117
MAP 7 PG 90

JULIA B. BUTLER & BARBARA B. BLOWE
DB 282 PG 241
MAP 7 PG 90

PAUL G. BUTLER, JR.
DB 251 PG 389
MAP 7 PG 90

JOSEPH C. BLOWE
DB 251 PG 393
MAP 7 PG 90

QUINCE J. PHILLIPS
DB 252 PG 177
DB 276 PG 820
DB 291 PG 422
DB 232 PG 894
DB 165 PG 52
DB 165 PG 54
DB 288 PG 179
DB 251 PG 214
MAP 7 PG 90

CHARITA B. BRITT
DB 263 PG 59
MAP 7 PG 90

HOUSTON N. BRISSON
DB 126 PG 252
DB 186 PG 631

PAULINE CARROLL

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

CLASS B RIP RAP EST. 2.4 TONS W/ F.F.

BL-92 BY32- 92 -LREV- STA.45+49.767 (6.927 m LT)

BL-93 -LREV- STA.47+37.296 (6.108 m LT)

BY32- 321 POT 5+93.745

5030/8570 — 50/50 — SR 1348 C ST. — 56/94 — 2002 ADT 2022 ADT — -Y13-

SEE SHEET 31 FOR -LREV- PROFILE
SEE SHEET 31 FOR -LIREV- PROFILE
SEE SHEET 33 FOR -L2REV- PROFILE
SEE SHEET 44 FOR -Y13- PROFILE

23-JUL-2003 10:11
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Bentley Systems, Inc.

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R2562D	17
R /W SHEET NO.	

CONST.REV.

R /W REV.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — 21116 — ENGINEER BOB A MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER JEFFREY L. RECK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Phone 919 851 8077
Fax 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

KCI Associates of North Carolina, P.A.
SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5220
•ENGINEERS • PLANNERS • ECOLOGISTS
(919) 783-9214

REVISIONS

06/20/03 (ABP)
SHOW NEEDED ON PARCELS 127 & 128 AND ABANDONED THE REST
AND NAME ON PARCEL 129.
REVISED TEMPORARY DRAINAGE EASEMENT

NAD 83

-L6- STA. 16+20.000 MATCH TO SHEET NO. 16

-LIREV- STA. 48+60.000 MATCH TO SHEET NO. 15

MATCH TO SHEET NO. 18 -LIREV- STA.52+00.000

CLASS 'B' RIPRAP EST. 4.5 TONS W/FF

+69.000 -L2REV- SEE INSET
20.000m (65.62FT)
+69.000 -L2REV- SH 15
20.000m (65.62FT) FOR DITCH
+69.000 -L2REV-
14.724m (48.30FT)

-L2REV- SC Sta. 48+83.582

+00.000 -L2REV- -L2REV- STA 49+50.00
18.000m (59.055') END CURB & GUTTER

-L2REV- STA 49+30.00

-L6- POT Sta.17+65.135=
-LIREV- POT Sta.49+54.264

CLASS B RIP RAP EST. 2.7 TONS W/ F.F.

GRADE TO DRAIN.

+60.000 -L2REV-
21.000m (68.898')

+08.000 -L2REV-
24.000m (78.740')

94
CLARICE L. BUTLER
DB 251 PG 744
DB 251 PG 746
DB 278 PG 769
DB 278 PG 771
DB 308 PG 844
DB 308 PG 846
DB 157 PG 16
MAP 7 PG 73

+31.000 -L2REV-
73.000m (239.501')

+42.000 -L2REV-
66.601m (218.507')

STA. 50+11.00 -L2REV- LT
DITCH CLEANOUT REQUIRED
52m DOWNSTREAM OF 450 RCP
@ 0.27% TO ELEV. 44.07m
EST. 12 CM DDE, SEE DETAIL G

PROP. SPECIAL DITCH
SEE DETAIL A

CLASS B RIP RAP
EST. 2.7 TONS W/ F.F.

-LIREV- TS Sta.49+07.581

BL-94
-LREV- STA 49.09.344
(6.866 m LT)

+23.000 -L2REV-
24.000m (78.740')

96
CHARITA B. BRITT
DB 263 PG 59
MAP 7 PG 90

CAROL B. SMITH
DB 257 PG 891
MAP 7 PG 90

97

+23.366 -LIREV-
13.483m (44.235')

+40.000 -L6-
28.673m (94.072')

81
LOIS T. ALEXANDER, ESTATE
DB 84 PG 341
DB 187 PG 228

-L2REV- CS Sta.51+02.128

+40.000 -L2REV-
22.000 (72.178')

QUINCE J. PHILLIPS
DB 252 PG 177
DB 276 PG 820
DB 291 PG 422
DB 232 PG 894
DB 165 PG 52
DB 165 PG 54
DB 288 PG 179
DB 251 PG 214 MAP 7 PG 90

95

+00.000 -L6-
21.000m (68.898')

PROP. SPECIAL DITCH
SEE DETAIL A

CLASS B RIP RAP
EST. 2.7 TONS
W/ F.F.

PROP. LATERAL DITCH
SEE DETAIL B

216.000m UNIFORM TAPER

+20.000 -L2REV-
18.620 (61.089')

-L2REV- SC Sta.51+62.128

CLASS B RIP RAP
EST. 2.7 TONS W/ F.F.

RETAIN EXIST. R/W

71.100 M UNIFORM TAPER

125 MM MONOLITHIC CONC. ISLAND

76.000m FULL LANE

-LIREV-

40.000 UNIFORM TAPER

108 M UNIFORM TAPER

PAINTED ISLAND

REMOVE DI

FILL SUMP AND GRADE TO DRAIN.

USC&G MON
" JUNCTION "

+60.000 -L6-
25.000m(98.425')

-LIREV- SC Sta.49+67.581

-LIREV- CS Sta.50+06.772

-LIREV- 50+31.570

+73.883
R=141

S 72° 42' 56.1" E

FALSE SUMP

-LIREV- SC Sta.51+40.295

MEDIAN DITCH
SEE DETAIL F

-L6- PT Sta.17+50.513

+60.000 -L6-
25.000m (82.021')

TO BE ABANDONED

-LIREV- ST Sta.50+66.772

-LIREV- TS Sta.50+80.295

NO ASSOCIATED PIPING FOUND FOR THIS WM.

BL-95
BY33- 95
-LI- STA.13+80.359
(-6.030 m RT)

BY33- 331
-LI- STA.11+82.501
(5.615 m RT)

+44.651 -LIREV-
20.787m (68.199')

+89.000 -LIREV-
27.000m (88.583')

+97.000 -LIREV-
25.994m (85.282')

+09.000 -LIREV-
63.000m (206.693')

1200 mm CONC

ISBKD CARPORT

ROCK FILL IN POND
W/ FENCING
SEE DETAIL E

LYNN G. KING, SR.
DB 144 PG 654
DB 144 PG 656
128

S 89° 14' 03" W
45.760

129
LYNN G. KING, JR.
DB 378 PG 484
DB 378 PG 488

127
W. F. McNEILL, JR., HEIRS
DB 119 PG 370
DB 121 PG 662
DB 130 PG 345
DB 153 PG 453

-L6-

PIs Sta 15+98.143		PI Sta 16+86.834	
Os = 8° 35' 39.7"		Δ = 37° 56' 05.6" (LT)	
Ls = 60.000		L = 132.418	
LT = 40.047		T = 68.738	
ST = 20.043		R = 200.000	

-LIREV-

PIs Sta 49+47.604	PI Sta 49+87.207	PIs Sta 50+26.793	PIs Sta 51+20.299	PI Sta 52+13.086	PIs Sta 53+05.278
Os = 5° 55' 37.7"	Δ = 7° 44' 35.0" (LT)	Os = 5° 55' 37.7"	Os = 2° 38' 39.9"	Δ = 12° 46' 46.2" (LT)	Os = 2° 38' 39.9"
Ls = 60.000	L = 39.191	Ls = 60.000	Ls = 60.000	L = 144.979	Ls = 60.000
LT = 40.022	T = 19.625	LT = 40.022	LT = 40.004	T = 72.791	LT = 40.004
ST = 20.020	R = 290.000	ST = 20.020	ST = 20.004	R = 650.000	ST = 20.004

-L2REV-

PIs Sta 48+63.587	PI Sta 49+94.064	PIs Sta 51+28.154	PI Sta 52+63.547	PIs Sta 53+92.951
Os = 2° 50' 51.7"	Δ = 20° 44' 42.4" (LT)	Os = 1° 13' 27.6"	Δ = 8° 15' 56.4" (LT)	Os = 1° 44' 05.6"
Ls = 60.000	L = 218.546	Os = 2° 50' 52.8"	L = 202.488	Ls = 85.000
LT = 40.005	T = 110.483	Ls = 60.000	T = 101.420	LT = 56.669
ST = 20.005	R = 603.600	LT = 33.998	R = 1,403.600	ST = 28.336
		ST = 26.026		

PAVEMENT REMOVAL

SEE SHEET 32 FOR -LIREV- PROFILE
SEE SHEET 34 FOR -L2REV- PROFILE
SEE SHEET 40 FOR -L6- PROFILE

NC 87 — 5030 / 8570 — 111 / 188 — NC 41/87 — 11975 / 19823 — 7173 / 12327 — NC 41 — 7285 / 12515 — 2002 ADT / 2022 ADT

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REVISIONS

06/20/03 (ABP)
REVISED TEMPORARY DRAINAGE EASEMENT AND NAME ON PARCEL 129

6/10/03

NAD 83

MATCH TO SHEET NO. 17

MATCH TO SHEET NO. 19

-L1REV- STA. 52 + 00.000

-L1REV- STA. 55 + 60.000

(81)
LOIS T. ALEXANDER, ESTATE
DB 84 PG 341
DB 187 PG 228

52

53

54

55

DENNIS A. INMAN
DB 404 PG 598

-L2REV- CS Sta.53+64.615

J. L. McDANIEL
DB 404 PG 592

(98)

945 TANK

ISFD

DAVID McDANIEL
DB 251 PG 607

(99)

ISBKD

1200 mm CONC

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR TELE LINE AT THIS LOCATION.

+30.611 -L2REV-
19.849m (65.121')

+64.615 -L2REV-
21.000m (68.898')

+49.615 -L2REV-
22.000m (72.178')

(100)
SARAH G. SUTTON, HEIRS
DB 105 PG 252

-L2REV- ST Sta.54+49.615

(102)
W. J. KING, JR.
DB 173 PG 01
DB 226 PG 3

HTR
WOOD DK

1200 mm CHL

ISFD ABAND

ISFBUS

1200 mm WD

PROPOSED SPECIAL DITCH
SEE DETAIL A

PROPOSED SPECIAL DITCH
SEE DETAIL A
CHORD

RETAIN EXIST.R/W

REMOVE

2GI TYPE D

2GI TYPE B

2GI TYPE D SUMP

FALSE SUMP

GRADE TO DRAIN EXISTING DITCH

MEDIAN DITCH
SEE DETAIL E

PROPOSED BOULEVARD DITCH

-L1REV-

-L2REV-

BL-96
-L1- STA.15+92.804
(1.746 m LT)

BL-97
-L1- STA.18+07.931
(12.020 m LT)

N 89° 12' 57.8" E

ROCK FILL IN POND WITH FENCING SEE DETAIL E

TDE

POND

+25.790 -L1REV-
18.000m (59.055')

+47.000 -L1REV-
27.000m (88.583')

+39.000 -L1REV-
46.228m (151.759')

-L1REV- CS Sta.52+85.274

+85.274 -L1REV-
28.000m (91.864')

-L1REV- ST Sta.53+45.274

+45.274 -L1REV-
34.000m (111.549')

(129)
LYNN G. KING, JR.
DB 378 PG 484
DB 378 PG 488

(127)
W. F. McNEILL, JR., HEIRS
DB 119 PG 370
DB 121 PG 662
DB 130 PG 345
DB 153 PG 453

(101)
LYNN G. KING, SR.
DB 241 PG 704

-L1REV-

PIs Sta 51+20.299	PI Sta 52+13.086	PIs Sta 53+05.278
Θs = 2° 38' 39.9"	Δ = 12° 46' 46.2" (LT)	Θs = 2° 38' 39.9"
Ls = 60.000	L = 144.979	Ls = 60.000
LT = 40.004	T = 72.791	LT = 40.004
ST = 20.004	R = 650.000	ST = 20.004

-L2REV-

PIs Sta 51+28.154	PI Sta 52+63.547	PIs Sta 53+92.951
Θs = 1° 13' 27.6"	Δ = 8° 15' 56.4" (LT)	Θs = 1° 44' 05.6"
Θs = 2° 50' 52.8"	L = 202.488	Ls = 85.000
Ls = 60.000	T = 101.420	LT = 56.669
LT = 33.998	R = 1,403.600	ST = 28.336
ST = 26.026		

SEE SHEET 32 FOR -L1REV- PROFILE
SEE SHEET 34 FOR -L2REV- PROFILE

METRIC
5 0 10

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	18
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21116 ENGINEER BOB A. MAY

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26696 ENGINEER JEFFREY L. TECK

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

KCI Associates of North Carolina, P.A.
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28-JUL-2003 10:11
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BWay RT BRAY

REVISIONS

(BAW) 6/02/03 R/W REVISION REVISED PROPOSED TEMPORARY DRAINAGE EASEMENT ON PARCEL NO.104.
(ABP) 06/20/03 REVISED PROPOSED R/W FROM 50' TO 30' ON PARCEL 104 AND REVISED PROPOSED ROW,EASEMENTS AND AREAS ACCORDINGLY.
REVISED EXISTING R/W FROM 50' TO 30' ON PARCEL 103 & 104
REVISED NAMES ON PARCELS 103 & 104

6/02/03

METRIC
5 0 10
CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	19
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — 21116 — ENGINEER — BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER — JEFFREY L. RICK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

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559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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RALEIGH, NC 27609-5210 (919) 783-9214
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NAD 83

JACQUELIN K. SESSOMS
DB 226 PG 26
103

F. W. BRISSON, JR., & HARRIET K. BRISSON
DB 218 PG 588
105

WADE A. TAYLOR, JR.
DB 147 PG 500
DB 208 PG 289
106

-L3- POT Sta.19+35.644 LA =
-LIREV- POT Sta.56+21.880 LB OFF 7.000 RT=
-L2REV- POT Sta.56+12.292 LB OFF 7.000 LT

-LIREV- STA.55+60.000 MATCH TO SHEET NO.18

-L3- STA.22+20.000 MATCH TO SHEET NO.20

PROPOSED SPECIAL DITCH SEE DETAIL A

+20.000 -L3- 42.000m (137.795')

+80.000 -L3- 29.000m (95.144')

+40.000 -L3- 35.000m (114.829')

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

JAN J. CHAUNCEY
DB 285 PG 922
WF 90-E-169
108

SS IRIP RAP EST. 10 TONS W/ F.F.

REMOVE 600 mm CONC

-L2REV- N 89°12'57.8" E

-LIREV- N 89°12'57.8" E

-L3- N 89°12'57.8" E

BL-98 -L3- STA.20+13.063 (4.812 m LT)

(2)T(AATUR) NC 87/41 BST

FILL WITH GROUT

FALSE SUMP

EXISTING R/W

MODIFIED BOULEVARD DITCH SEE SHEET 36 FOR PROFILE STA. 20+60 TO 22+80 -L3- (RT)

60.0 TAPER

+10.000 -LIREV- 34.000m (111.549')

+76.812 -L3- 27.760m (91.076')

+81.180 -L3- 30.000m (98.425')

+80.500 -L3- 20.500m (67.257')

+80.500 -L3- 27.500m (90.223')

+30.000 -L3- 27.500m (90.223')

+30.000 -L3- 29.559m (64.170')

+33.879 -L3- 29.633m (97.221')

+33.000 29.150 (95.641')

+33.735 -L3- 41.581m (136.421')

+90.000 61.000 (200.141')

+24.000 61.000 (200.141')

60.369m (198.061')

101
LYNN G. KING, SR.
DB 241 PG 704

104
MARGARET LEBEL, WIDOW
DB 237 PG 482

107
SYLVIA B. CAMPBELL, ET VIRE
DB 295 PG 797
DB 288 PG 779
DB 288 PG 782
PLAT A-60-PG 602

SEE SHEET 33 FOR -LIREV- PROFILE
SEE SHEET 35 FOR -L2REV- PROFILE
SEE SHEET 35 FOR -L3- PROFILE

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Design: R-2562D_RDY_PSH_19.DGN

REVISIONS

06/20/03 (ASP) REVISED EXISTING ROW FROM 50' TO 30' ON PARCELS 110,111,114 & 115 AND REVISED PROPOSED ROW,EASEMENTS AND AREAS ACCORDINGLY.
REVISED NAMES ON PARCELS 111 & 114

5/01/02

23-JUL-2003 (ajl)
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METRIC

5 0 10

CONST.REV.

R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	20

R /W SHEET NO.

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — SEAL 21116 — ENGINEER ROY A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — SEAL 26696 — ENGINEER JEFFREY L. KECK

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus. 919 851 8077
Fax. 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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NAD 83

-L3- STA.22+20.000 MATCH TO SHEET NO.19

-L3- STA.25+60.000 MATCH TO SHEET NO.21

WADE A. TAYLOR, JR.
DB 147 PG 500
DB 208 PG 289
(106)

(109) DONALD R. OGDEN
DB 293 PG 336

JAN J. CHAUNCEY
DB 285 PG 922
WF 90-E-169
(108)

(110) EDNA J. CARTER, WIDOW
DB 369 PG 299
DB 364 PG 27

(111) RAY SURLEY
DB 445 PG 437

DAVID W. JOHNSON, (LIFE ESTATE)
DB 293 PG 476
DB 284 PG 505
DB 382 PG 68

(110) OLIVE K. HESTER (LIFE ESTATE)
DB 210 PG 272
(112)

(113) HUGH A. CLARK
DB 137 PG 507
DB 278 PG 163
DB 185 PG 267
DB 185 PG 270
DB 336 PG 206
PLAT A-51 PG 518

(107) SYLVIA B. CAMPBELL, ET VIRE
DB 295 PG 797
DB 288 PG 779
DB 288 PG 782
PLAT A-60-PG 602

(114) BOBBY PRIEST JESSUP
DB 295 PG 91

PEGGY B. HILL & GERALD B. CLARK
DB 278 PG 147
PLAT A-51 PG 518
(116)

(115)

S 89° 06' 55" E 82.025

N 3° 44' 02" E 43.148

S 89° 16' 39" E 55.455

S 2° 37' 44" E 1.127

N 3° 30' 02" E 39.03

S 74° 55' 43" E 48.099

+12.000 -L3- 100.000m (328.083')

+25.000 -L3- 100.000m (328.083')

S 89° 18' 57" W 19.779

N 12° 52' 42" E 56.144

N 12° 42' 27" E 53.268

S 85° 50' 46" E 15.728

S 89° 12' 35" W 27.432

+23.745 -L3- 37.957m (124.531')

+09.920 -L3- 37.801m (124.019')

+00.000 -L3- 34.000m (111.549')

+25.000 -L3- 35.000m (114.829')

STA. 24+15.000 -L3- LT
DITCH CLEANOUT REQUIRED
FROM EL. 41.20 @ PIPE OUTLET
CONTINUE APPROX. 70m ALONG
A 0.3% GRADE TO EL. 41.0
DDE = 126 CM SEE DETAIL D

MODIFIED BOULEVARD DITCH
SEE SHEET 36 FOR PROFILE
STA. 23+60 TO 25+20 -L3- (LT)

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

N 89° 12' 57.8" E

BL-99 -L3- STA.22+27.848 (4.854 m LT)

BL-100 -L3- STA.24+42.370 (4.415 m LT)

100.0 FULL LANE

60.0 TAPER

MODIFIED BOULEVARD DITCH
SEE SHEET 36 FOR PROFILE
STA.20+60 TO 22+80 -L3- (RT)

MODIFIED BOULEVARD DITCH
SEE SHEET 36 FOR PROFILE
STA. 23+60 TO 25+20 -L3- (RT)

DO NOT DISTURB FENCE

+30.000 -L3- 36.699m (120.404')

+20.000 -L3- 31.000m (101.706')

+20.000 -L3- 34.000m (111.549')

CLASS B RIP RAP
EST. 4.5 TONS W/ F.

SPECIAL DITCH (SEE PROFILE)

USC&G MON " JUNCTION AZ "

GRADE TO DRAIN

REMOVE

FALSE SUMP

2GI TYPE D

2GI TYPE B

L=18.0

R=50

R=2.08

EXISTING R\W

12 PS

0.6 PS

(2)T(AATUR)

ISFD

ISFD ABAND

ISFBUS

ISBKD

ISBKBUS

CAR PORT

GAS TANK

GR

SOIL

DK

S

G

LT

(PWR.)

(COMB.)

1200 mm CHL

900 mm CONC

1800 mm WD RAIL

1400 mm WD RAIL

800 mm CHL & SSBW

300 mm

375 mm CONC PIPE

450 mm

600

GATE

MTL GATE

LANDSCAPE TIMBERS

300 (12") PECAN TREE

SEE SHEET 35 FOR -L3- PROFILE

REVISIONS

06/20/03 (ABP)
REVISED EXISTING ROW FROM 50 TO 30 ON PARCELS 115 & 116 AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R2562D	21
CONST.REV.	R /W SHEET NO.	
R /W REV.	ROADWAY DESIGN ENGINEER: NORTH CAROLINA, ENGINEER, BOB A. MAY, 21116	HYDRAULICS ENGINEER: NORTH CAROLINA, ENGINEER, JEFFREY L. RECK, 26696

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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NAD 83

MATCH TO SHEET NO.20

-L3- STA 25+60.000

MATCH TO SHEET NO.22

-L3- STA.29+00.000

26 27 28 29

S 89° 20' 17" W
87.152
EIP EIP
N 0° 47' 29" W 38.035
N 89° 59' 0" W 77.279

(113) HUGH A. CLARK
DB 137 PG 507
DB 278 PG 163
DB 185 PG 267
DB 185 PG 270
DB 336 PG 206
PLAT A-51 PG 518

(117) CARL E. CLARK
DB 256 PG 200
DB 278 PG 161

DO NOT DISTURB 60" OAK

+60.000 -L3-
25.840m (84.777')

BL-101
-L3- STA 26+57.068
(4.609 m LT)

+20.000 -L3-
25.840m (84.777')

+48.757 -L3-
27.791m (91.178')

PROPOSED SPECIAL DITCH
SEE DETAIL A

+80.000 -L3-
30.000m (98.425')

+33.757 -L3-
29.000m (95.144')

BL-102
-L3- STA 28+71.342
(4.397 m LT)

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA

RETAIN EXISTING R/W

EXISTING R\W

150 mm

1500 mm WW

900 mm WW

ISFD

HTR

(PWR.)

40' SOIL

10' SOIL

FALSE SUMP

2GI TYPE D

2GI TYPE A

DI SHALLOW TYPE D

GROUT PLUG 450 mm CONC

52 (60") OAK TREE CAT-1

14.67 TYPICAL

(2)T(AATUR)

NC 87 / NC 41 8.2 BST

300 mm

R=900.480

R=860.856

TYPE 350

N 89° 12' 57.8" E

375

450

0.6 PS

12 PS

3.6 3.6

1.40

R=3 3.6 R=3

65.599 (TOTAL TO R/W)
S 11° 54' 30" E

CLASS B RIP RAP
EST. 2.7 TONS W/ F.F.

TOE

+20.000 -L3-
29.000m (95.144')

+98.500 -L3-
29.000m (95.144')

+98.500 -L3-
33.000m (108.268')

+07.000 -L3-
29.000m (95.144')

+07.000 -L3-
33.000m (108.268')

+48.757 -L3-
29.000m (95.144')

+33.757 -L3-
29.000m (95.144')

-L3- TS Sta.27+48.757

-L3- SC Sta.28+33.757

CHORD

+91.000

50' SOIL

MTL GATE

(115) JOHN P. & PEGGY B. HILL
DB 155 PG 72
S 89° 06' 32" W
94.641

(116) PEGGY B. HILL & GERALD B. CLARK
DB 278 PG 147
PLAT A-51 PG 518

PEGGY B. HILL & GERALD B. CLARK
DB 278 PG 147
PLAT A-51 PG 518

(118)

-L3-

PIs Sta 28+05.432	PI Sta 28+93.915	PIs Sta 29+82.187
Θs = 3° 02' 37.8"	Δ = 8° 36' 02.7" (RT)	Θs = 3° 02' 37.8"
Ls = 85.000	L = 120.089	Ls = 85.000
LT = 56.675	T = 60.158	LT = 56.675
ST = 28.341	R = 800.000	ST = 28.341
	SE = 0.06	

SEE SHEET 36 FOR -L3- PROFILE

28-JUL-2003 10:08
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BMay

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	22
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — NOT FOR CONSTRUCTION — SEAL 21116 — ENGINEER BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — NOT FOR CONSTRUCTION — SEAL 26696 — ENGINEER JEFFREY L. BECK

METRIC

5 0 10

CONST.REV.

R /W REV.

WETHERILL ENGINEERING
359 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

KCI Associates of North Carolina, P.A.
SUITE 200, LANDMARK CENTER 1, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5210 (919) 783-9214
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REVISIONS

06.20.03 (ABP)
REVISED EXISTING ROW FROM 50' TO 30' ON PARCEL 116 AND REVISED PROPOSED ROW, EASEMENTS AND AREAS ACCORDINGLY.

5/02/03

NAD 83

MATCH TO SHEET NO.21

-L3- ST A.29+00.000

MATCH TO SHEET NO.23

-L3- ST A.32+40.000

117

119 FRANCISCUS LEERKES, ET UX
DB 393 PG 323

120

BYRON E. MELVIN, JR.
DB 400 PG 725
DB 400 PG 728
PLAT A-150 PG 1501

CLASS B RIP RAP AT TRANSITION EST. 20 TONS W/ F.F.

+53.846 -L3-
29.000m (95.144')

+80.000 -L3-
26.011m (85.338')

-L3- ST Sta. 30+38.846

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

PROPOSED SPECIAL DITCH SEE DETAIL A

RETAIN EXIST.R/W

REMOVE

2GI TYPE D

2GI TYPE B

FALSE SUMP

-L3- S 76° 05' 43.9" E

CLASS B RIP RAP EST. 1.8 TONS W/F.F.

CLASS B RIP RAP EST. 1.8 TONS W/ F.F.

60.0 TAPER

100.0 FULL LANE

+38.846 -L3-
30.000m (98.425')

+53.846 -L3-
30.000m (98.425')

-L3- CS Sta. 29+53.846

BL-103
-L3- STA. 30+40.183
(5.168 m LT)

BL-104
-L3- STA. 32+17.133
(4.759 m LT)

+20.000 -L3-
30.000m (98.425')

NC 87 / NC 41 BST

CEMETERY

ISFD ABAND

118

MARVIN & STEVEN W. TATUM
DBA QUALITY FARMS
DB 342 PG 531

120

N. W. HESTER, JR., ET AL
DB 125 PG 65
DB 31 PG 637
DB 339 PG 546
MC A55 PG 557
WF 90-E-160
WF 93-E-160

-L3-

PIs Sta 28+05.432	PI Sta 28+93.915	PIs Sta 29+82.187
Θs = 3° 02' 37.8"	Δ = 8° 36' 02.7" (RT)	Θs = 3° 02' 37.8"
Ls = 85.000	L = 120.089	Ls = 85.000
LT = 56.675	T = 60.158	LT = 56.675
ST = 28.341	R = 800.000	ST = 28.341
	SE = 0.06	

SEE SHEET 36 FOR -L3- PROFILE

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

METRIC
5 0 10

CONST.REV.
R /W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2562D	23
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION — 21116 — ENGINEER — ROB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER — JEFFREY L. REECK

REVISIONS

6.10.39

NAD 83

-L4- TS Sta.34+83.627

-L4- SC Sta.35+68.627

MATCH TO SHEET NO.22

-L3- STA.32+40.000

MATCH TO SHEET NO.24

-L5- STA.35+80.000

120 N. W. HESTER, JR., ET AL
DB 31 PG 637
DB 339 PG 546
MC A55 PG 557
WF 90-E-160
WF 93-E-160

J. A. GRIMES, JR.
DB 163 PG 776

NASH W. HESTER, SR., HEIRS
DB 148 PG 339

ALTON WHITTED TAYLOR
DB 242 PG 66
DB 185 PG 490

AGNES H. TAYLOR
DB 163 PG 773

SARAH H. THORNTON
DB 134 PG 178
WF 90-E-160
WF 93-E-158

BL-105
-L3- STA.34+26.804
(4.360 m LT)

+00.000 -L3-
25.846m (84.797')

+40.000 -L4-
28.500m (93.504')

+83.627 -L4-
25.500m (83.661')

+05.000 -L4-
(7.900m (58.727')

+68.627 -L4-
25.500m (83.661')

+20.000 -L4-
25.500m (83.661')

+80.000 -L3-
26.000m (85.302')

+42.014 -L3-
26.000m (85.302')

BOULEVARD DITCH
SEE DETAIL ?

RETAIN EXIST.R/W

EXISTING R\W

NO ADDITIONAL RECORD INFORMATION AVAILABLE FOR WATER SERVICES IN THIS AREA.

BEGIN EXISTING CONTROLLED ACCESS
-L3- POT Sta.34+41.999
38.096m (124.987')

-L3- POT Sta.34+65.685 LB=
-L4- POT Sta.34+65.685 LA (10.6 LT) =
-L5- TS Sta.34+65.685 LA (10.6 RT)

-L5- SC Sta.35+50.685

-L4-

PIs Sta 35+40.295	PI Sta 37+44.896	PIs Sta 39+48.311
Θs = 1° 23' 40.8"	Δ = 11° 31' 46.8" (RT)	Θs = 1° 23' 40.8"
Ls = 85.000	L = 351.349	Ls = 85.000
LT = 56.668	T = 176.270	LT = 56.668
ST = 28.335	R = 1,746.000	ST = 28.335
	SE = 0.03	

-L5-

PIs Sta 35+22.353	PI Sta 37+24.444	PIs Sta 39+25.371
Θs = 1° 24' 38.9"	Δ = 11° 29' 50.5" (RT)	Θs = 1° 24' 38.9"
Ls = 85.000	L = 346.351	Ls = 85.000
LT = 56.668	T = 173.759	LT = 56.668
ST = 28.335	R = 1,726.000	ST = 28.335
	SE = 0.03	

SEE SHEET 37 FOR -L3- PROFILE
SEE SHEET 37 FOR -L4- PROFILE
SEE SHEET 38 FOR -L5- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2562D	24
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA SEAL 21116 ENGINEER BOB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA SEAL 26696 ENGINEER JEFFREY L. RECK

PRELIMINARY PLANS NOT FOR CONSTRUCTION

METRIC 5 0 10

CONST.REV.

R/W REV.

WETHERILL ENGINEERING
559 Jones Franklin Rd Suite 164
Raleigh, N.C. 27606
Bus. 919 851 8077
Fax. 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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REVISIONS

NAD 83

36 37 38

(120)
N. W. HESTER, JR., ET AL
DB 31 PG 637
DB 339 PG 546
MC A55 PG 557
WF 90-E-160
WF 93-E-160

CLARK BROTHERS, INC.
DB 309 PG 834
PLAT A-128 PG 1287

BEGIN EXISTING CONTROLLED ACCESS
-L4- POC Sta.36+99.823
26.460m (86.811')

+30.000 -L4-
31.000m (91.864')

BOULEVARD DITCH SEE DETAIL ?

ABANDONED (OLD) NC 87

MODIFIED BOULEVARD DITCH
SEE SHEET 38 FOR PROFILE
STA. 37+80 TO 38+00 -L4- (LT)

BLEND TO EXISTING DITCH

RIP RAP CUT/FILL TRANSITION

-L4- CS Sta.39+19.976

MATCH TO SHEET NO.23

MATCH TO SHEET NO.25

-L4-

-L5-

EXISTING R/W

EXISTING C/A

1500 mm WW & ISBW

RETAIN EXIST.R/W

R=493.683

R=508.398

R=1707.8999

150 mm

T FO(AATUR)

(2)T(AATUR)

FSS

T FO

12 PS

0.6 PS

NC 87 NB / NC 41 WB 8.5 BST

NC 87 SB / NC 41 EB 8.5 BST

450

600

750

300 mm

375 mm CONC

2GI TYPE D FALSE SUMP

REMOVE DI FALSE SUMP

REMOVE

SPECIAL DITCH

SIGN

REMOVE 28.333 77.762

-L5- STA.35+80.000

-L5- STA.39+20.000

-L5- CS Sta.38+97.036

BL- 106
-L4- STA.36+40.679
(16.509 m RT)

BL-107
-L4- STA.38+41.353
(27.891 m RT)

MODIFIED BOULEVARD DITCH
SEE SHEET 38 FOR PROFILE
STA. 36+80 TO 38+00 -L4- (RT)

SARAH H. THORNTON
DB 134 PG 178
WF 90-E-160
WF 93-E-158

S 47° 17' 17" W
163.522

CLARK BROTHERS, INC.
DB 309 PG 834
PLAT A-128 PG 1287

-L4-

PIs Sta 35+40.295	PI Sta 37+44.896	PIs Sta 39+48.311
Θs = 1° 23' 40.8"	Δ = 11° 31' 46.8" (RT)	Θs = 1° 23' 40.8"
Ls = 85.000	L = 351.349	Ls = 85.000
LT = 56.668	T = 176.270	LT = 56.668
ST = 28.335	R = 1,746.000	ST = 28.335
	SE = 0.03	

-L5-

PIs Sta 35+22.353	PI Sta 37+24.444	PIs Sta 39+25.371
Θs = 1° 24' 38.9"	Δ = 11° 29' 50.5" (RT)	Θs = 1° 24' 38.9"
Ls = 85.000	L = 346.351	Ls = 85.000
LT = 56.668	T = 173.759	LT = 56.668
ST = 28.335	R = 1,726.000	ST = 28.335
	SE = 0.03	

SEE SHEET 37 FOR -L4- PROFILE
SEE SHEET 39 FOR -L5- PROFILE

28-JUL-2022 (08:34)
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PROJECT REFERENCE NO.	SHEET NO.
R-2562D	25
R /W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA — 21116 — ENGINEER — ROB A. MAY

HYDRAULICS ENGINEER — NORTH CAROLINA — 26696 — ENGINEER — JEFFREY L. BECK

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

METRIC — 5 0 10

CONST.REV.

R /W REV.

REVISIONS

WETHERILL ENGINEERING
4601 Six Forks Road Suite 401 Raleigh, N.C. 27609 Tel: 919 881-0113 Fax: 919 881-0117
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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END STATE PROJECT R-2562D
-L4- POT Sta. 41+08.271 =
-L5- POT Sta. 41+02.419 (25.600 RT)

NAD 83

CLARK BROTHERS, INC.
DB 309 PG 834
PLAT A-128 PG 1287

-L4- ST Sta. 40+04.976

CLASS I RIP RAP AT OUTFALL EST 10 TONS W/ F.F.

RETAIN EXIST. R/W

EXISTING C/A

1500 mm WW & ISBW

1500 mm CONC DRAIN

750 mm CONC

MATCH TO SHEET NO. 24

-L5- STA 39+20.000

12 PS

06 PS

BEGIN 50 M UNIFORM TAPER -L5- 39+22.416

SPECIAL DITCH

750

2GI TYPE B

38.4

FALSE SUMP

50 M UNIFORM TAPER

130 M FULL LANE

S 61° 46' 35.5" E

-L4-

-L5-

R=23

+01.797

R=6

R=20

R=15

NC 97 NB 124 PMT

NC 97 SB 64 PMT

COLLAR & EXTEND EXIST 750 2m

107.383 M FULL LANE

-L5- ST Sta. 39+82.036

BL-108
-L4- STA 40+42.469
(32.031 m RT)

HTR

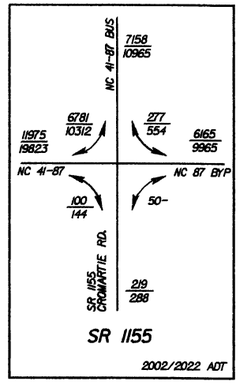
WD RAIL

WD TRAIL

CONC

SR 1155 CHAMPATIE RD.

CLARK BROTHERS, INC.
DB 309 PG 834
PLAT A-128 PG 1287



SR 1155

2002/2022 ADT

-L4-

PIs Sta 35+40.295	PI Sta 37+44.896	PIs Sta 39+48.311
Θs = 1° 23' 40.8"	Δ = 11° 31' 46.8" (RT)	Θs = 1° 23' 40.8"
Ls = 85.000	L = 351.349	Ls = 85.000
LT = 56.668	T = 176.270	LT = 56.668
ST = 28.335	R = 1,746.000	ST = 28.335
	SE = 0.03	

-L5-

PIs Sta 35+22.353	PI Sta 37+24.444	PIs Sta 39+25.371
Θs = 1° 24' 38.9"	Δ = 11° 29' 50.5" (RT)	Θs = 1° 24' 38.9"
Ls = 85.000	L = 346.351	Ls = 85.000
LT = 56.668	T = 173.759	LT = 56.668
ST = 28.335	R = 1,726.000	ST = 28.335
	SE = 0.03	

SEE SHEET 38 FOR -L4- PROFILE
SEE SHEET 39 FOR -L5- PROFILE

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