STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 12, 2005

US Army Corps of Engineers
PO Box 1890
Wilmington, NC 28402

ATTENTION: Mr. Dave Timpy
NCDOT Coordinator

Dear Mr. Timpy:

Subject: Nationwide 23 application, for the widening of Curtis Road from US 17 to "A" Street on board USMC Base, New River Air Station Onslow County. Federal Aid Project No. STPNHS-17 (39), State Project No. 81262201, NCDOT Division 3, TIP Project No. U-4439, WBS Element 35032.1.1.

Please find enclosed a copy of the PCE, NRTR, permit drawings, ½ size plans, Jurisdictional Determination, and a copy of the EEP confirmation letter for the A Section of this project. The A section of this project is located within existing NCDOT right-of-way and covers the US 17 and Curtis Road intersection improvements only. These improvements consist of adding an additional turn lane with a four foot shoulder on US 17 southbound into the Marine Base and extending the length of the existing left turn lanes; widening US 17 Northbound to increase storage in the right turn lane into the base including a four foot paved shoulder; and widening the entrance at the base to accommodate the additional left turn lane into the base. These improvements will be constructed within the existing right of way. Permanent wetland impacts from U-4439A total 0.221 acres.

The B portion of this project is located on Camp Lejune Marine Base. Section B includes the widening of Curtis Road and begins east of the intersection of US 17 and Curtis Road and extends to A Street on the US Marine Corp Base. No jurisdictional impacts occur on this portion of the project.

Impacts to Waters of the U.S.
Impacts to wetlands are permanent. Wetland impacts consist of 0.074 acres of fill and 0.147 acres of mechanized clearing from the addition of the turn lane. The wetlands can be described as a bottomland hardwood and are described in section 4.1 in the attached NRTR. Wetlands were verified on October 9, 2002 by Dave Timpy. No temporary

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
2728 CAPITOL BOULEVARD
PARKER LINCOLN BUILDING, SUITE 168
RALEIGH NC 27699

impacts and no impacts to streams will occur. All impacts that occur in the A Section and occur within NCDOT right-of way.

Utilities
No impacts to wetlands are anticipated due to the relocation of utilities.

Avoidance, Minimization, and Mitigation
The NCDOT is commited to incorporating all reasonable and practicable design features to avoid and minimize wetland impacts, and to provide full compensatory mitigation of all remaining wetland impacts. Avoidance measures were taken during the planning and NEPA phases; minimization measures were incorporated as part of the project design and include:

- 3:1 slopes will be used in jurisdictional areas.
- Hand clearing will be used instead of mechanized clearing on the B section between stations –L- 24+75 to 27+25 RT

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 remaining, unavoidable impacts to 0.22 acres of jurisdictional wetlands will be offset by compensatory mitigation provided by the EEP program. A copy of the EEP confirmation letter is attached to the application.

Federally Protected Species
Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the Fish and Wildlife Service (FWS) lists thirteen federally protected species for Onslow County. A biological conclusion of "No Effect" or "None Required" was reached for all species in the attached NRTR. No habitat is in the project area for any of the thirteen federally protected species.

Regulatory Approvals
Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certification number 3403 will apply to this project. All general conditions of the Water Quality Certifications will be met therefore no written concurrence is required. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200 we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their notification.

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

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

Sincerely,

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

Cc: w/attachment

Mr. John Hennessy, NCDWQ (2 copies)	Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS	Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF	Mr. Bill Arrington, NCDCM
Dr. David Chang, P.E., Hydraulics	Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design	Mr. H. Allen Pope, P.E., Division Engineer

Mr. Mason Herndon, Division Environmental Officer

w/out attachment

Mr. Jay Bennett, P.E., Roadway Design	Mr. David Franklin, USACE, Wilmington
Mr. Omar Sultan, Programming and TIP	Ms. Marie Sutton, PDEA
Mr. Art McMillan, P.E., Highway Design	Ms. Beth Harmon, EEP

Ms. Laurie P. Smith, CPA, NCDOT, Program Management

Ecosystem Enhancement PROGRAM

March 16, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-4439, Curtis Road Widening, Onslow County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide non-riverine wetland mitigation for the subject project. Based on the information supplied by you in a letter dated February 11, 2005, the impacts are located in CU 03030001 of the White Oak River Basin in the Southern Outer Coastal Plain (SICP) Eco-Region, and are as follows:

Non-Riverine Wetland Impacts: 0.221 acre

The subject project is <u>not</u> listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The EEP is only committed to provide the mitigation needs for projects listed on Exhibit 2 during the first two years of the program; however Amendment 1 details how non-Exhibit 2 projects may be swapped for an appropriate project included on the Exhibit 2 list. Specifically, Amendment 1 states that:

> "Exhibit 2 may be modified if requested jointly by NCDENR and NCDOT, and approved in writing by the USACE. In no event may the total projected impacts of projects per cataloging unit on Exhibit 2 exceed the total projected impacts of projects per cataloging unit on Exhibit 2 as it existed at the time of the original execution of the MOA, July, 2003."

In this case, the NCDOT has not proposed to swap this project for an appropriate project included on the Exhibit 2 list. However, EEP currently has surplus riverine

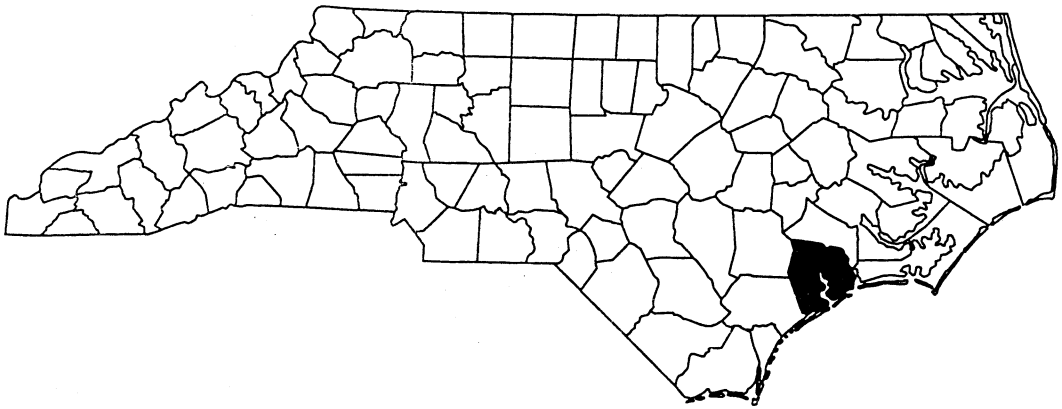
wetland and stream mitigation with sufficient assets to cover this years projected mitigation requirements plus the mitigation for the above referenced project. Therefore, the EEP agrees to accept this project and will provide compensatory non-riverine wetland and stream mitigation up to a 2:1 ratio in Cataloging Unit 03030001 of the White Oak River Basin.

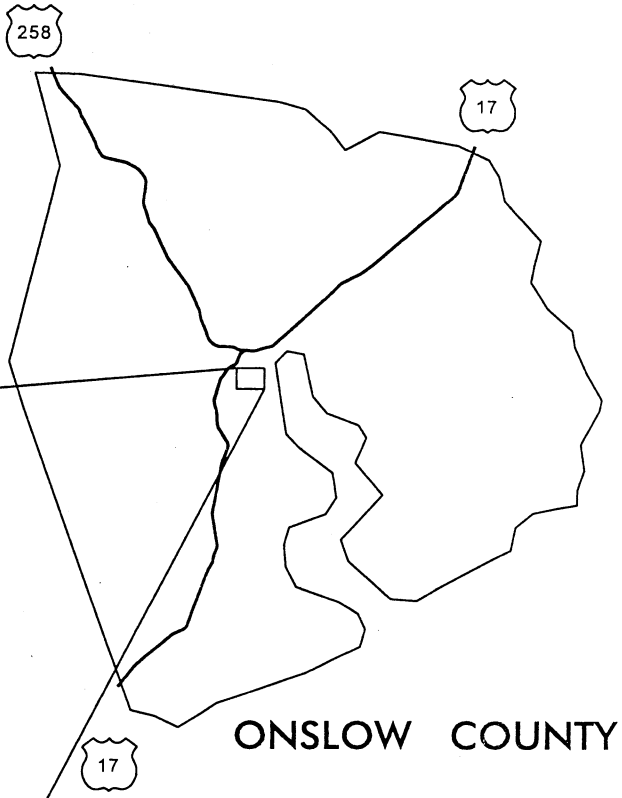
If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

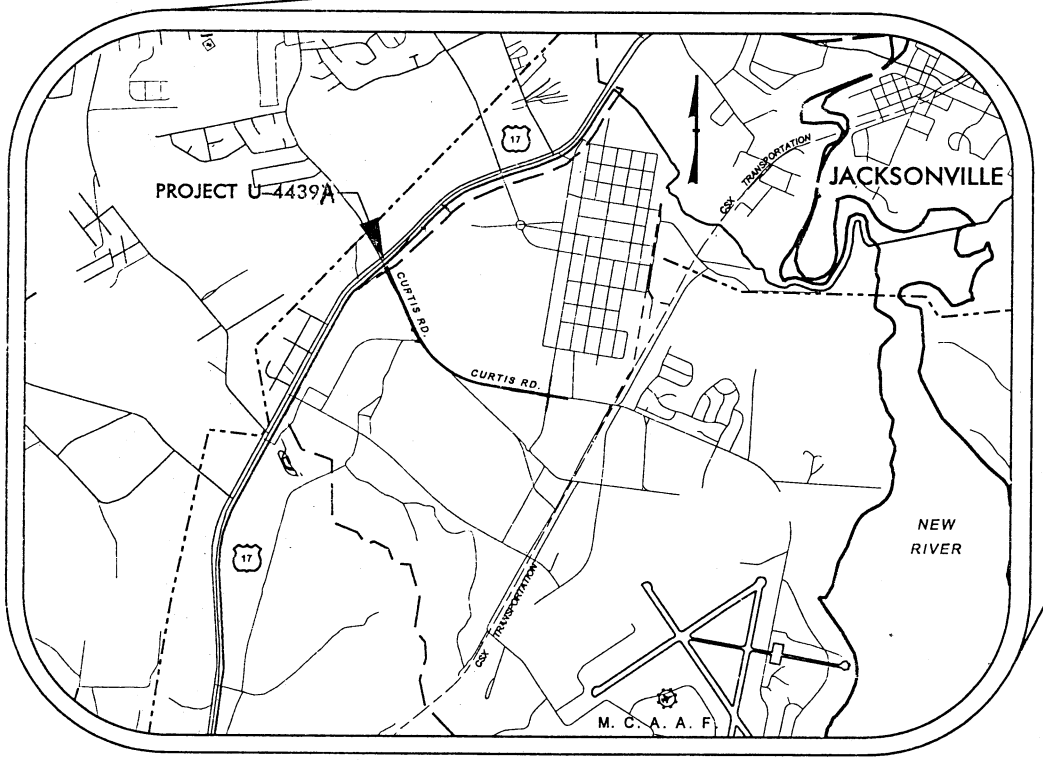
Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Dave Timpy, USACE-Wilmington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: U-4439



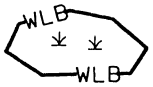




N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ONSLOW COUNTY
PROJECT 35032.3.2 (U-4439A)
US 17/CURTIS RD. INTERSECTION
IMPROVEMENTS WITHIN NCDOT RIGHT OF WAY
SHEET 1 OF 8 12-09-2004

LEGEND

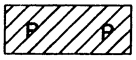
WLB —— WETLAND BOUNDARY



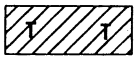
WETLAND

DENOTES FILL IN WETLAND

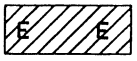
DENOTES FILL IN SURFACE WATER



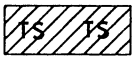
DENOTES FILL IN SURFACE WATER (POND)



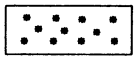
DENOTES TEMPORARY FILL IN WETLAND

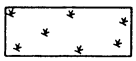


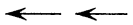
DENOTES EXCAVATION IN WETLAND



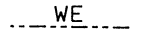
DENOTES TEMPORARY FILL IN SURFACE WATER


DENOTES MECHANIZED CLEARING

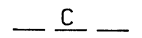

DENOTES WETLAND RESTORATION


FLOW DIRECTION

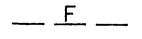
TOP OF BANK



EDGE OF WATER

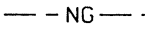


PROP. LIMIT OF CUT

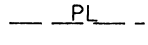


PROP. LIMIT OF FILL

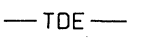

PROP. RIGHT OF WAY



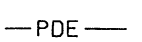
NATURAL GROUND



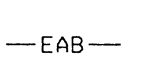
PROPERTY LINE



TEMP. DRAINAGE EASEMENT

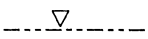


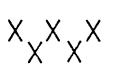
PERMANENT DRAINAGE EASEMENT



EXIST. ENDANGERED ANIMAL BOUNDARY

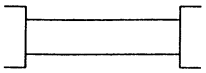
EXIST. ENDANGERED PLANT BOUNDARY

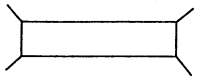

WATER SURFACE


LIVE STAKES


BOULDER

COIR FIBER ROLLS

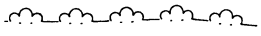

PROPOSED BRIDGE


PROPOSED BOX CULVERT

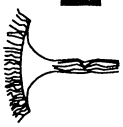

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)


SINGLE TREE

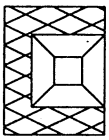

WOODS LINE


DRAINAGE INLET


ROOTWAD


RIP RAP

ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE


PREFORMED SCOUR HOLE

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
PROJECT 35032.3.2 (U-4439A)
US 17/CURTIS RD INTERSECTION
IMPROVEMENTS WITHIN NCDOT RIGHT OF WAY
SHEET 2 OF 8 12-09-2004

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	-Y1- 23+75 TO 30+50		0.074			0.147					
TOTALS:			0.074	0.000	0.000	0.147	0.000	0.000	0.000	0	0

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT 35032.3.2 (U-4439A)
US17/CURTIS RD INTERSECTION IMPROVEMENTS WITHIN NCDOT RIGHT OF WAY
NEW RIVER AIR STATION

SHEET 3 OF 8 12/9/04

Form Revised 3/22/01

PROPERTY OWNERS

PARCEL NO.	NAMES	ADDRESSES
1	CAMP LEJEUNE MARINE RESERVATION	Fredrick E. Cone Deputy AC/S Installations and Environment United States Marine Corps PSC Box 20004 Camp Lejeune, Nc 28542-0004

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
PROJECT 35032.3.2 (U-4439A)
US 17/CURTIS RD. INTERSECTION
IMPROVMENTS WITHIN NCDOT RIGHT OF WAY
SHEET 4 OF 8 12-09-2004

SITE 1 -Y1- STA. 23+75 TO 30+50 LT

ENGLISH

2,800 / 3,000	12,800 / 18,200	-L- CURTIS ROAD
2,600 / 4,600	2,200 / 3,200	19,600 / 28,000
-Y1- US 17	22,400 / 41,000	

Natural Ground, 3:1, D, 4:1 Fill Slope, Min. D = 1 Ft.

-L- STA 16+00 LT TO 18+00 LT
-SBLI- STA 13+00 RT TO 19+50 RT

U-4439 B

NAD 83

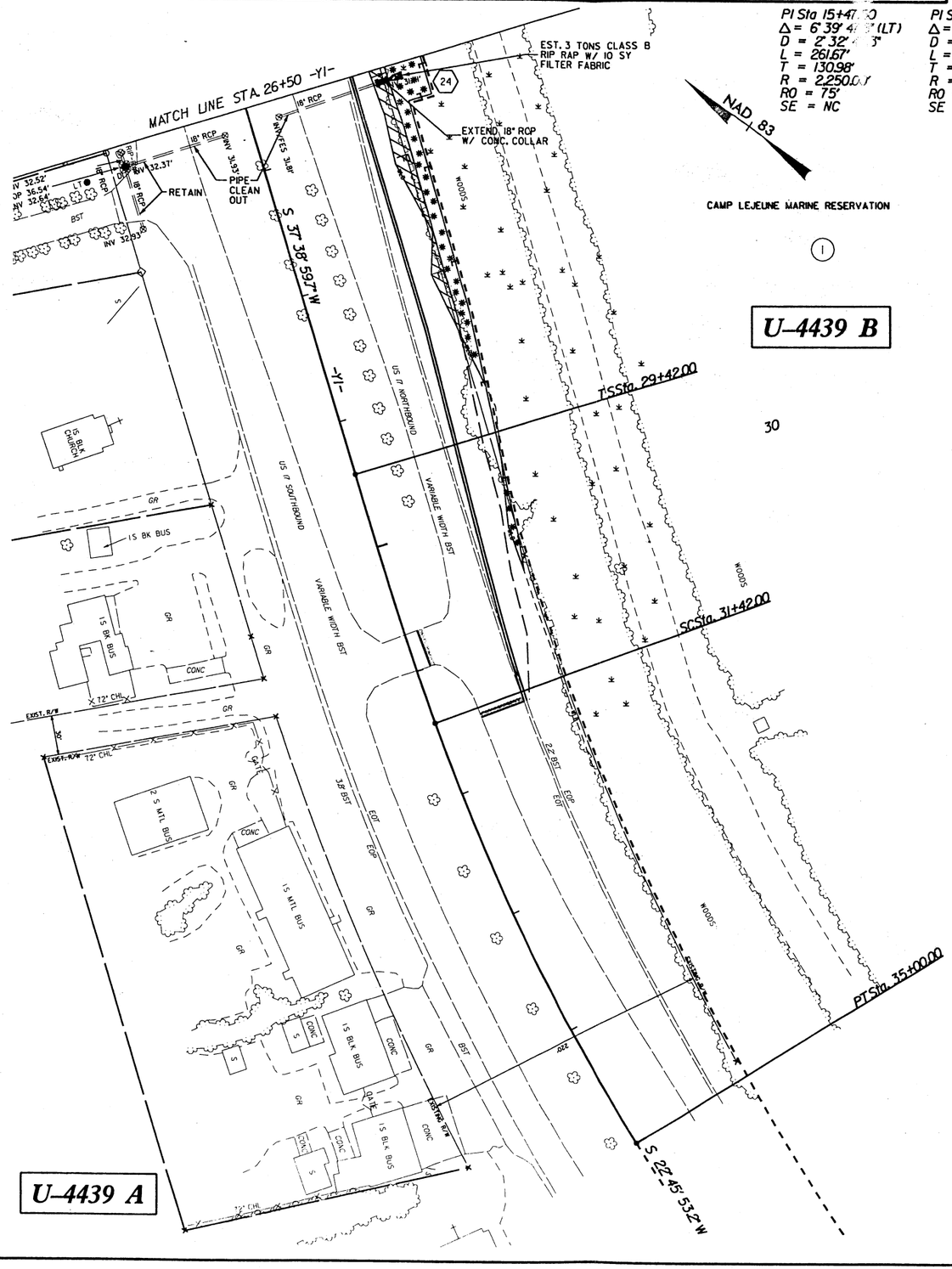
BEGIN STATE PROJECT U-4439A
-L- POT. STA. 10+00.00
-Y1- POT. STA. 21+86.51 (1)
CAMP LEJEUNE MARINE RESERVATION

EST. 3 TONS CLASS B RIP RAP W/ 10 SY FILTER FABRIC
EXTEND 18" RCP W/ CONC. COLLAR
SPECIAL CUT DITCH SEE DETAIL A
REMOVE HEADWALL 18" RCP
REMOVE EX. DI (PRECAST) & EXTEND 18" RCP W/ CONC. COLLAR
2GI TYPE D
REMOVE
RIPRAP DB W/ MH
15" CMP
0.5 BRICK PLANTER
L3' W X 11"H X 22.8' BRICK SIGN
EST. 2 TONS CLASS B RIP RAP W/ 7 SY FILTER FABRIC
EXTEND 18" RCP W/ CONCRETE COLLAR
SPECIAL CUT DITCH SEE DETAIL A
RETAIN
MATCH LINE STA. 26+50 -Y1-
-SBLI- POT Sta. 10+16.52
-Y1- POT Sta. 22+42.98
PC Sta. 14+16.52
PT Sta. 16+78.19
PC Sta. 17+78.19
-SBLI- PT Sta. 20+39.85 = -L- POT Sta. 20+38.00 w/12' RT
-SBLI-
S 35° 20' 19.0" E
S 42° 00' 06.9" E
S 37° 38' 59.7" W
CURTIS ROAD
CURTIS ROAD 40' BST
-L-
-Y1-
-SBLI-
3.8' BST EOP
EOT
EOP
5' CONC. HW
RIP RAP
8" CB
15" RCP
18" RCP
24" C&G
48" CONC
36" PVC FENCE
36" CONC
6' ACCESS EASEMENT DB 1088 PG 86
36' PLASTIC
15 BK BUS
WOOD POSTS
20' ACCESS EASEMENT DB 532 PG 289
74' C&G
3 ISL GAS PUMPS U/MTL CANOPY
SEPTIC TANK
PT Sta. 20+86.66
EXISTING R/W
12" RCP
DESTINATION UNKNOWN
SR 1130 (MAPLEHURST ROAD) VARIABLE WIDTH BST
42" CONC
1S BLK BUS
BST (POOR CONDITION)
GR
ACCESS EASEMENT VARIABLE WIDTH DB 532 PG 277
ELECTRIC R/W
FLAG POLES
CAMP LEJEUNE MARINE RESERVATION
U-4439 A
50' 0 100'
SCALE: 1" : 100'
F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

Sheet 5 of 8

SITE 1 -Y1- STA. 23+75 TO 30+50 LT

ENGLISH



6 of 8

SITE 1 -Y1- STA. 23+75 TO 30+50 LT

ENGLISH

2,800 / 5,000	12,800 / 18,200	-L- CURTIS ROAD
2,600 / 4,600	2,200 / 3,200	19,600 / 28,000
-Y1- US 17	22,400 / 41,000	

Natural Ground — 3:1 — D — 4:1 Fill Slope — Min. D = 1 Ft.

-L- STA 16+00 LT TO 18+00 LT
-SBLI- STA 13+00 RT TO 19+50 RT

U-4439 B

BEGIN STATE PROJECT U-4439A
-L- POT. STA. 10+00.00
-Y1- POT. STA. 21+86.51 (1)

CAMP LEJEUNE MARINE RESERVATION

U-4439 A

-SBU- POT Sta. 10+16.52
-Y1- POT Sta. 22+42.98

-SBU- PT Sta. 20+39.85 = -L- POT Sta. 20+38.00 ∠112° RT

PC Sta. 14+16.52

PT Sta. 16+78.09

PC Sta. 17+78.09

S 35° 20' 19.0" E

S 37° 38' 59.7" W

EST. 3 TONS CLASS B RIP RAP W/ 10 SY FILTER FABRIC

EXTEND 18" RCP W/ CONC. COLLAR

REMOVE HEADWALL-18"RCP

REMOVE EX. DI & EXTEND 18" RCP W/ CONC. COLLAR

2CI TYPE D (PRECAST)

REMOVE

RETAIN

EXTEND 18" RCP W/ CONCRETE COLLAR

SPECIAL CUT DITCH SEE DETAIL A

DETAIL A

CURTIS ROAD 40.8' BST

CAMP LEJEUNE MARINE RESERVATION

-SBU-

-L-

-Y1-

MATCH LINE STA. 26+50 -Y1-

50' 0 100'

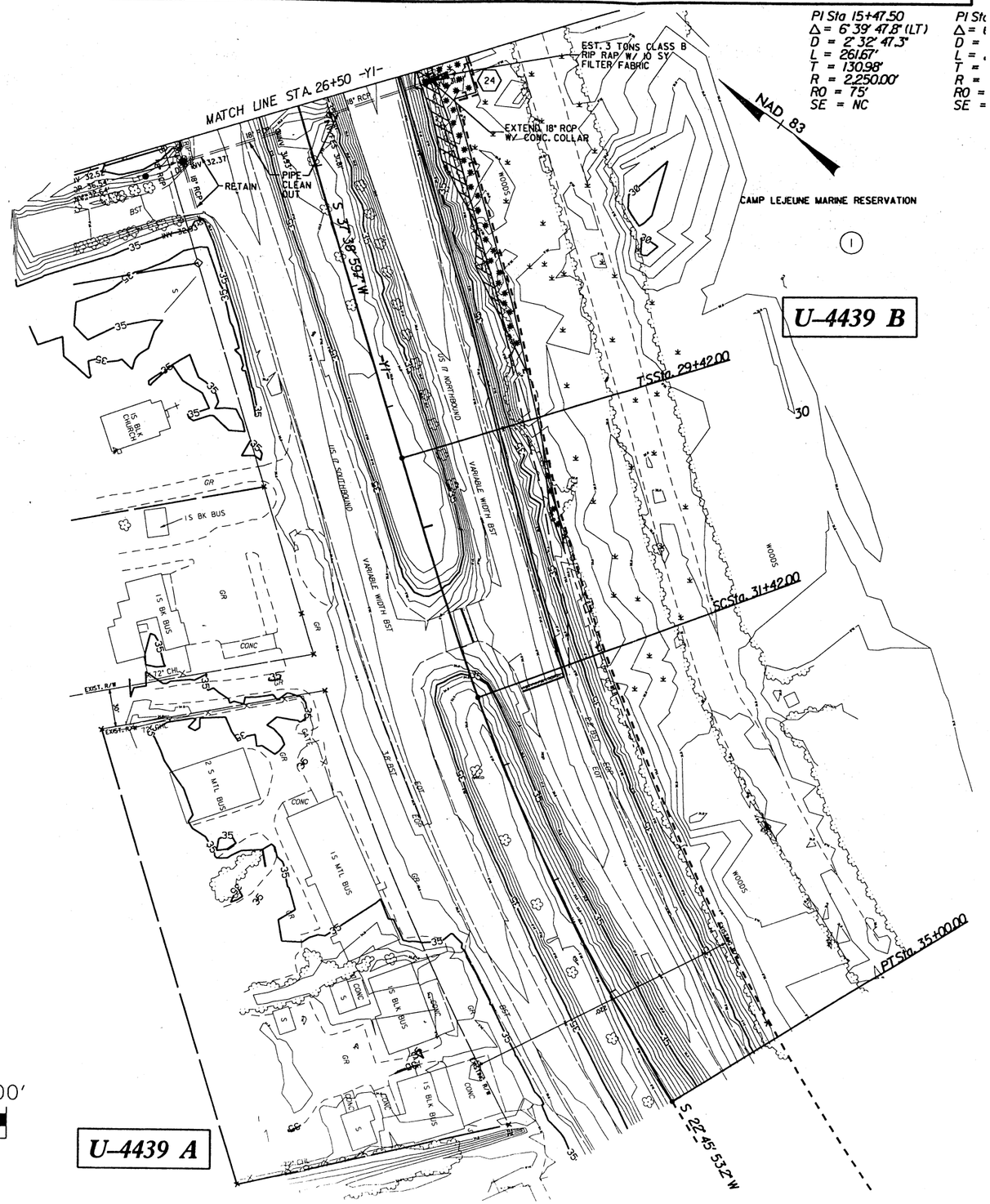
SCALE: 1" : 100'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SITE 1 -Y1- STA. 23+75 TO 30+50 LT

ENGLISH

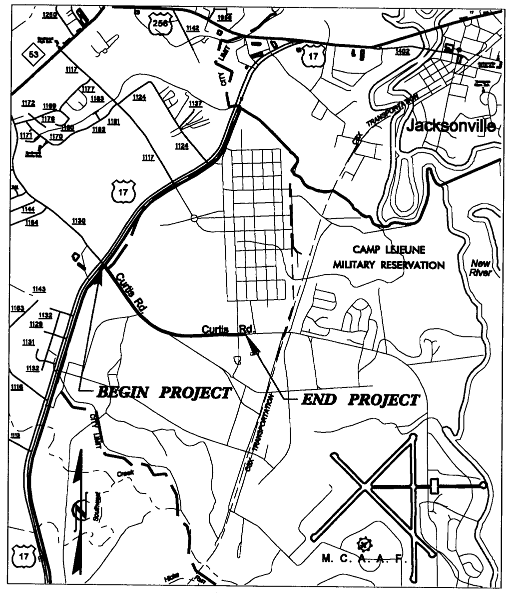


8 OF 8

TIP PROJECT: U-4439A&B

CONTRACT: C200851

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4439A&B	1	

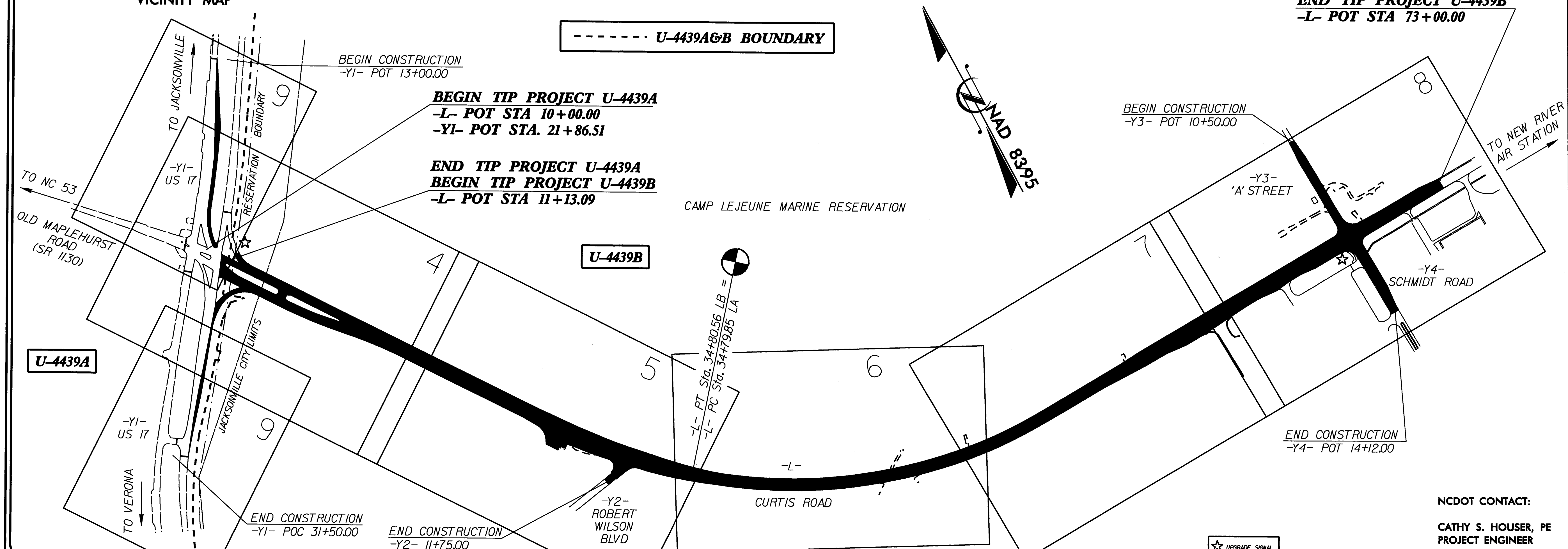
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35032.1.1	STPNHS-17(39)	PE
35032.3.2	STPNHS-17-(43)	CONST. (U-4439A)
35032.3.3	STPNHS-17-(51)	CONST. (U-4439B)

LOCATION:

U-4439A: US 17/CURTIS ROAD INTERSECTION IMPROVEMENTS WITHIN NCDOT RIGHT OF WAY

U-4439B: CURTIS ROAD FROM US 17 TO "A" STREET ON BOARD THE USMC BASE - NEW RIVER AIR STATION

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, AND SIGNING



NCDOT CONTACT:

CATHY S. HOUSER, PE
PROJECT ENGINEER
ROADWAY DESIGN UNIT

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2004 = 19,700
ADT 2024 = 28,000
DHV = 11 %
D = 70 %
T = 5 % *
V = 40 MPH

* TTST 2 % DUAL 3 %

PROJECT LENGTH

LENGTH OF TIP PROJECT U-4439A	= 0.021 mi.
LENGTH OF TIP PROJECT U-4439B	= 1.172 mi.
TOTAL LENGTH OF TIP PROJECT U-4439A&B	= 1.193 mi.

Prepared for:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., NC, 27610

Prepared by:
MA ENGINEERING CONSULTANTS, INC.
598 E. CHATHAM STREET, SUITE 137
CARY, NORTH CAROLINA 27511
(919) 297-0220

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
MARCH 15, 2005

R.W. PORTER JR., PE
PROJECT ENGINEER

D.M. WAINWRIGHT, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

09/08/99

01/20/2005
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PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary — HQ WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Guage — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/9

SURVEY CONTROL SHEET U-4439A&B

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	1-C
Location and Surveys	

LOCALIZED CONTROL COORDINATES

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BL-10	361085.9080	2458532.4750	38.14	OUTSIDE PROJECT LIMITS	
11	BL-11	360624.9280	2459961.7680	37.86	10+25.85	22.92 RT
TL1		360285.7546	2459175.7159	UNKNOWN	14+25.48	44.57 RT
TL2		360133.1853	2459272.0859	UNKNOWN	16+05.69	54.31 RT
12	BL-12	360270.3950	2459311.5630	30.74	16+79.73	58.32 RT
13	BL-13	359450.2220	2459776.7540	29.30	24+54.87	37.67 RT
14	BL-14	359838.8120	2460196.0300	28.33	31+87.79	69.38 RT
15	BL-15	358370.6120	2460868.8140	31.74	39+91.87	35.76 RT
16	BL-16	358133.1390	2461631.6240	30.86	47+82.42	35.95 RT
17	BL-17	358134.4120	2462464.0020	24.30	56+89.94	34.88 RT
18	BL-18	358156.4450	2463174.7390	21.89	63+20.98	42.87 RT
4	U4439-4	358131.3290	2463642.4930	21.29	67+87.31	86.39 RT
19	BL-19	358177.5450	2464283.6860	20.33	73+49.93	63.27 RT

BY

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
100	BY-100	361790.2360	2459712.5130	28.98	OUTSIDE PROJECT LIMITS	
A11		360624.9282	2458961.7680	37.86	22+15.75	17.25 LT
101	BY-101	359797.5180	2458335.8140	33.78	32+55.35	13.31 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
200	BY1-200	358788.3390	2463614.9440	21.45	OUTSIDE PROJECT LIMITS	
A4		358131.3292	2463642.4930	21.29	OUTSIDE PROJECT LIMITS	
201	BY1-201	357682.9202	2463659.4140	19.76	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
202	BY1-202	358788.3390	2463614.9440	21.45	OUTSIDE PROJECT LIMITS	
A4		358131.3292	2463642.4930	21.29	10+86.32	22.49 RT
201	BY1-201	357682.9202	2463659.4140	19.76	15+55.02	26.29 RT

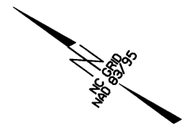
LOCALIZED BENCH MARKS

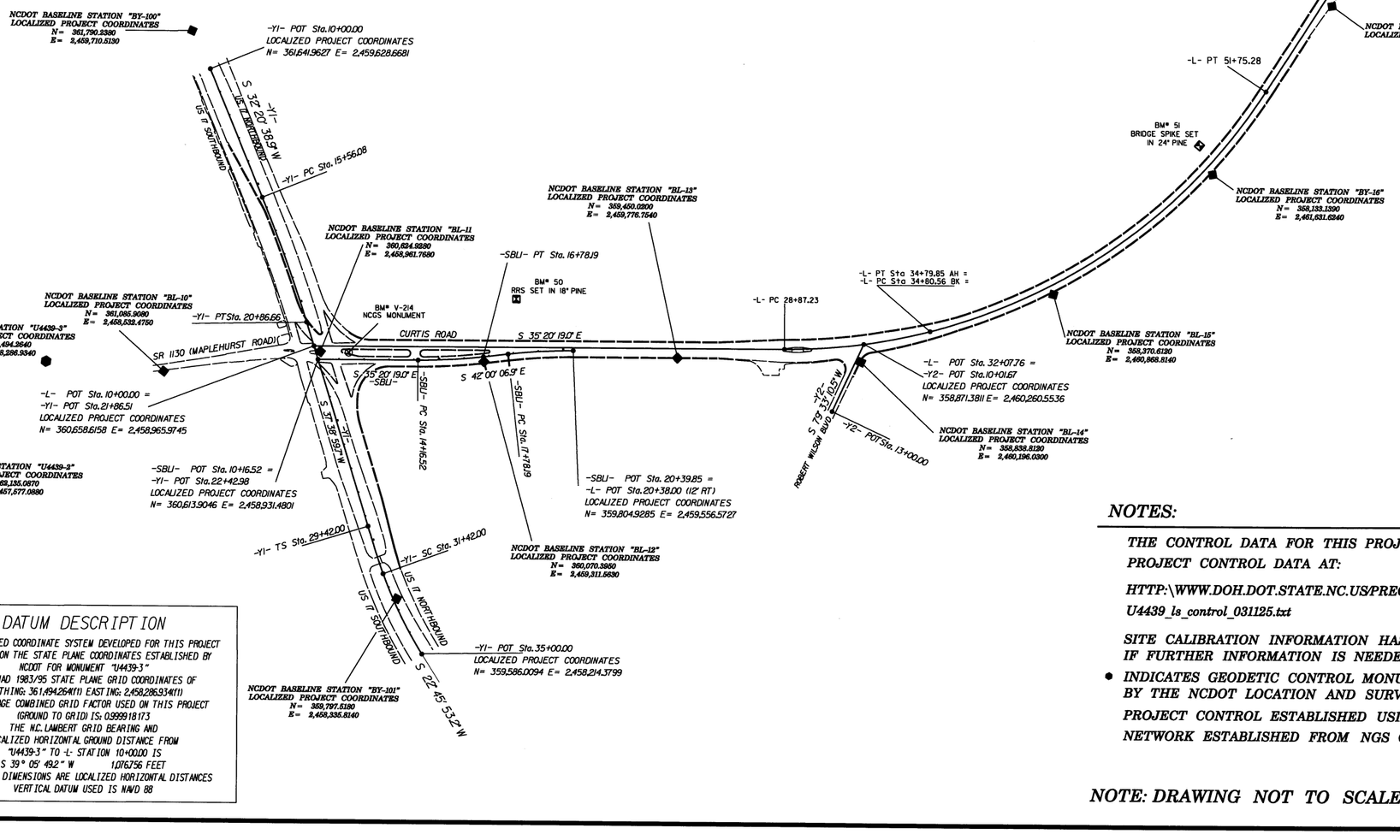
214 ELEVATION - 35.32
N 368531 E 2459025
L STATION 11+39.25 RIGHT
NCGS MON. (V-214)

50 ELEVATION - 38.11
N 360111 E 2459593
L STATION 18+09.194 LEFT
RRS SET IN 18" PINE

51 ELEVATION - 38.64
N 358245 E 2461696
L STATION 48+33.82 LEFT
BRIDGE SPIKE SET IN 24" PINE

52 ELEVATION - 21.83
N 358149 E 2464287
L STATION 72+33.87 RIGHT
BOX CUT IN CONC. SIDEWALK





DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4439-3" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 361,494.264(ft) EASTING: 2,458,286.934(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918173
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4439-3" TO -L- STATION 10+00.00 IS
S 39° 05' 49.2" W 1,076.756 FEET
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT U4439_ls_control_031125.txt

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

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING HARN MONUMENTS

NOTE: DRAWING NOT TO SCALE

01/20/2005
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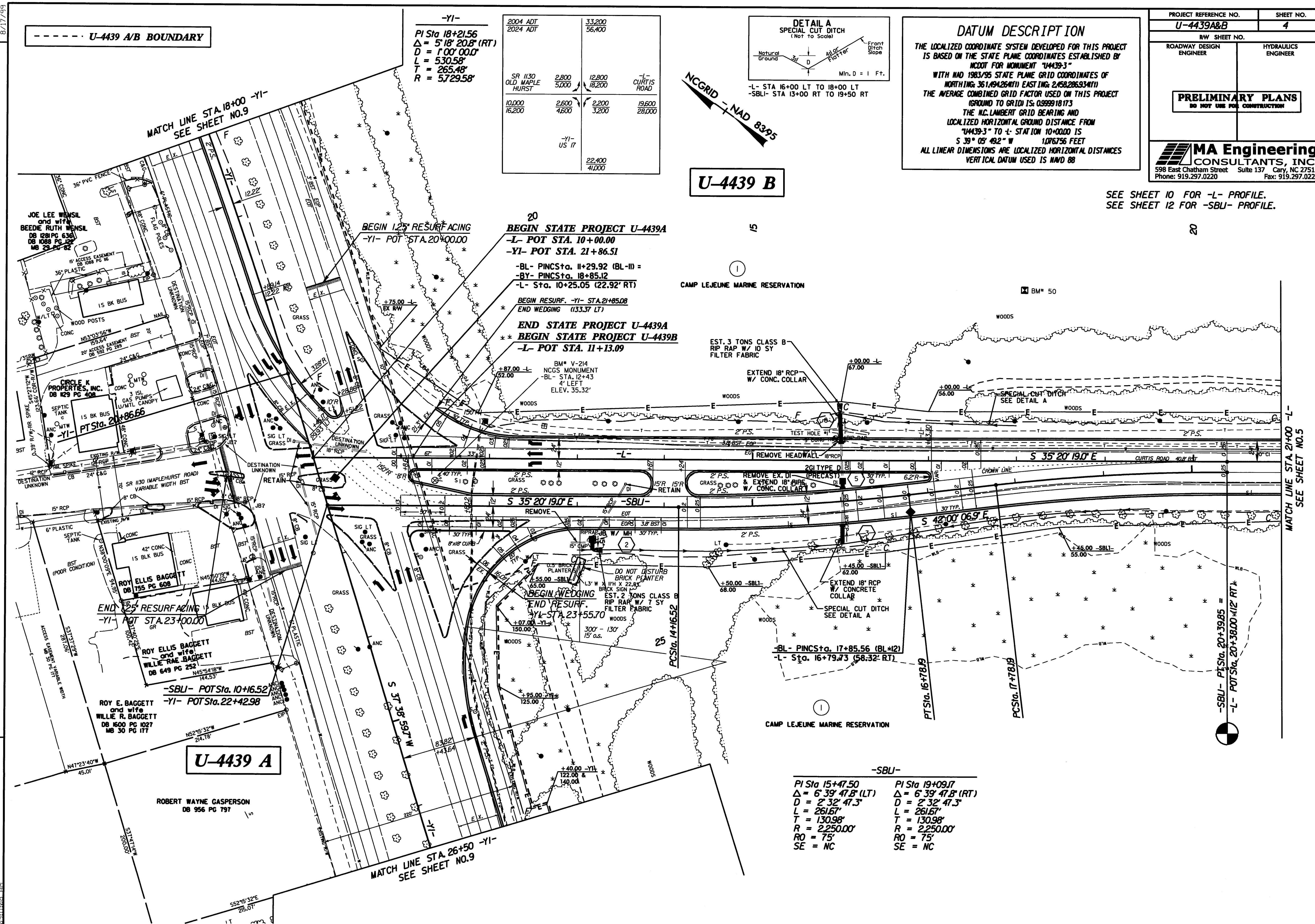

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4439-3" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 361,494.264(ft) EASTING: 2,458,286.934(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918173 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4439-3" TO -L- STATION 10+00.00 IS S 39° 05' 49.2" W 1,076.756 FEET ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

DETAIL A
SPECIAL CUT DITCH (Not to Scale)
Natural Ground — 3:1 — D — 4:1 or Flatter — Front Ditch Slope
Min. D = 1 Ft.
-L- STA 16+00 LT TO 18+00 LT
-SBLI- STA 13+00 RT TO 19+50 RT

2004 ADT / 2024 ADT

SR 1130 OLD MAPLE HURST	2,800 / 5,000	12,800 / 18,200	-L- CURTIS ROAD
10,000 / 16,200	2,600 / 4,600	2,200 / 3,200	19,600 / 28,000
	-YI- US 17	33,200 / 56,400 (north); 22,400 / 41,000 (south)	

-YI-
PI Sta 18+21.56
Δ = 5° 18' 20.8" (RT)
D = 1° 00' 00.0"
L = 530.58'
T = 265.48'
R = 5,729.58'

-SBLI-

PI Sta 15+47.50	PI Sta 19+09.17
Δ = 6° 39' 47.8" (LT)	Δ = 6° 39' 47.8" (RT)
D = 2° 32' 47.3"	D = 2° 32' 47.3"
L = 261.67'	L = 261.67'
T = 130.98'	T = 130.98'
R = 2,250.00'	R = 2,250.00'
RO = 75'	RO = 75'
SE = NC	SE = NC

REVISIONS

8/17/99

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8/17/99

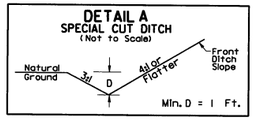
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



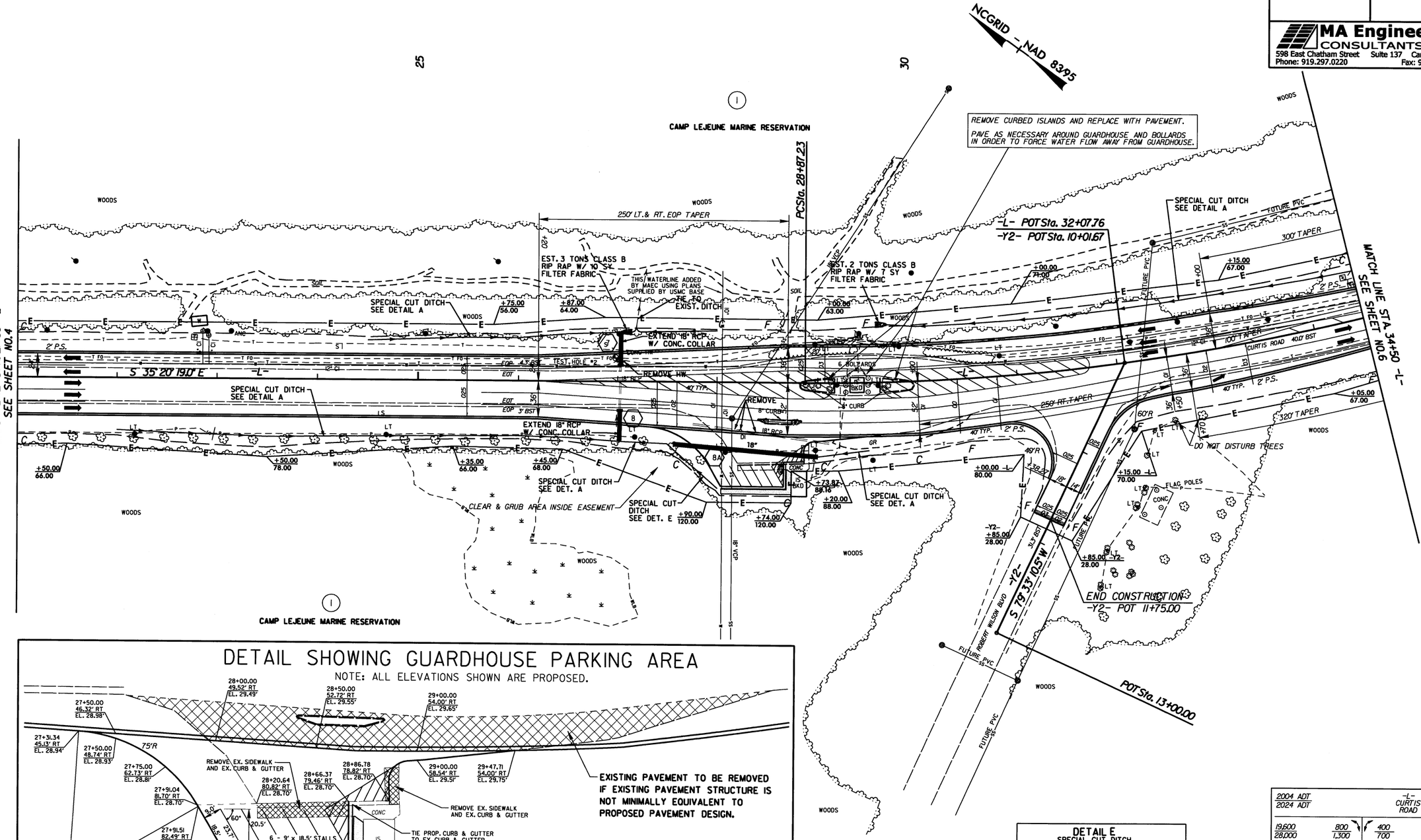
-L- STA 22+00 RT TO 27+50 RT
-L- STA 24+50 LT TO 28+00 LT
-L- STA 29+70 LT TO 50+00 LT

-L-
PI Sta 31+85.55
Δ = 14° 46' 51.8" (LT)
D = 2° 29' 28.3"
L = 593.33'
T = 298.32'
R = 2,299.93'
RO = 120'
SE = 0.03 ft/ft

SEE SHEET 10 FOR -L- PROFILE.
SEE SHEET 13 FOR -Y2- PROFILE.

NOTE: FUTURE PVC SANITARY SEWER MAIN LINES ARE SHOWN FROM NAVFAC DRAWING NO. 4442875.

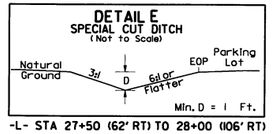
NCGRID - NAD 8395



DETAIL SHOWING GUARDHOUSE PARKING AREA

NOTE: ALL ELEVATIONS SHOWN ARE PROPOSED.

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 27+50 (62' RT) TO 28+00 (106' RT)

2004 ADT / 2024 ADT	-L- CURTIS ROAD		
19,600 / 28,000	800 / 1,300	400 / 700	19,200 / 27,400
-Y2- ROBERT WILSON BLVD	1,200 / 2,000		

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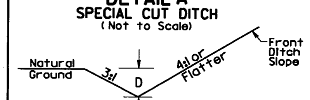
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 29+70 LT TO 50+00 LT

-L-

PI Sta 31+85.55	PI Sta 43+68.16
Δ = 14° 46′ 51.8″ (LT)	Δ = 42° 14′ 06.8″ (LT)
D = 2° 29′ 28.3″	D = 2° 29′ 28.0″
L = 593.33′	L = 1,695.43′
T = 298.32′	T = 888.31′
R = 2,299.93′	R = 2,300.00′
RO = 120′	RO = 90′
SE = 0.03 ft/ft	SE = 0.03 ft/ft

SEE SHEET 10 & 11 FOR -L- PROFILE.

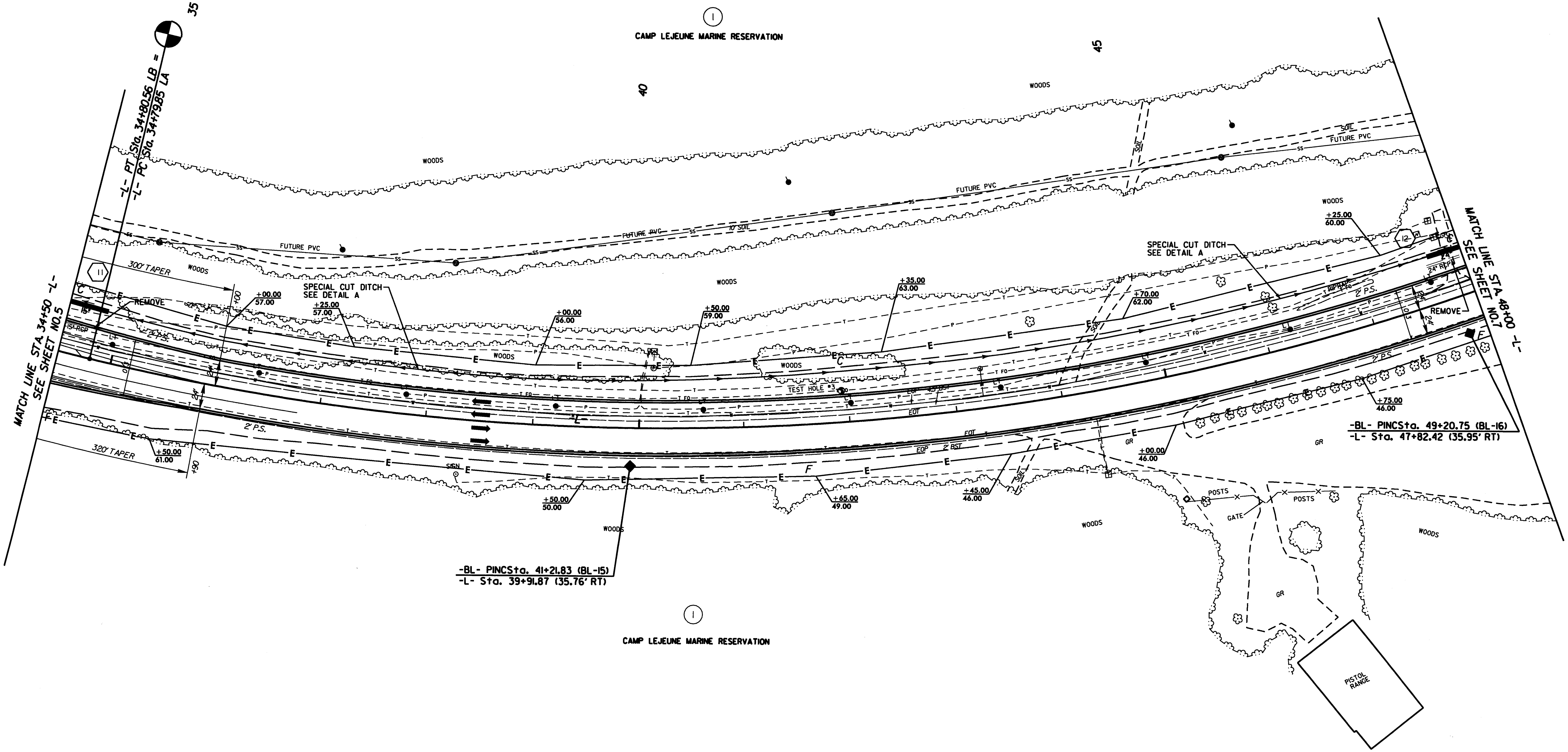
NOTE: FUTURE PVC SANITARY SEWER MAIN LINES ARE SHOWN FROM NAVFAC DRAWING NO. 4442875.

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

REVISIONS



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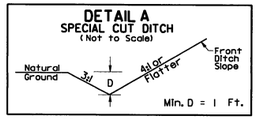
PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

REVISIONS 8/17/99

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 29+70 LT TO 50+00 LT
-L- STA 52+50 LT TO 67+50 LT
-L- STA 56+00 RT TO 60+00 RT

-L-
PI Sta 43+68.16
Δ = 42° 14' 06.8" (LT)
D = 2° 29' 28.0"
L = 1,695.43'
T = 888.31'
R = 2,300.00'
RO = 90°
SE = 0.03 ft/ft

SEE SHEET 11 FOR -L- PROFILE.

NOTE: FUTURE PVC SANITARY SEWER MAIN LINES ARE SHOWN FROM NAVFAC DRAWING NO. 4442875.

NCGRID - NAD 8395

50 55 60

PT Sta. 51+75.28

CAMP LEJEUNE MARINE RESERVATION

WOODS

FUTURE PVC

SOIL

BM= 51

SPECIAL CUT DITCH SEE DETAIL A

+95.00 53.00

+00.00 54.00

+05.00 62.00

100' TAPER

ELECTRIC BOX

REMOVE 24" RCP

2' P.S.

BARRICADE

CURTIS ROAD 400 BST

30' TYP.

N 87° 38' 42.4" E

MATCH LINE STA 48+00 -L- SEE SHEET NO.6

MATCH LINE STA 61+00 -L- SEE SHEET NO.8

+65.00 46.00

+75.00 46.00

+50.00 49.00

240' TAPER

+00.00 60.00

-BL- PINCS ta. 57+53.13 (BL-17)
-L- Sta. 56+09.94 (34.88' RT)

SPECIAL CUT DITCH SEE DETAIL A

100' TAPER

+00.00 79.00

END OF INFORMATION

RIPRAP

18" RCP

RETAIN

+50.00 82.00

24" C&G

BST

01/20/2005
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8/17/99

REVISIONS

2004 ADT / 2024 ADT			
	7,000 / 10,000		
-Y3- 'K' STREET			
4,400 / 6,200	1,200 / 1,600	-L- CURTIS ROAD	
19,200 / 27,400	3,200 / 4,600	1,200 / 1,800	14,000 / 20,000
-Y4- SCHMIDT ROAD			
	5,800 / 8,600		

NCGRID - NAD 8395

SEE SHEETS 11 & 12 FOR -L- PROFILE.
SEE SHEET 13 FOR -Y3- & -Y4- PROFILES.

NOTE: FUTURE PVC SANITARY SEWER MAIN LINES ARE SHOWN FROM NAVFAC DRAWING NO. 4442875.

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

RETAIN +40.00 52.00

BEGIN CONSTRUCTION -Y3- POT 10+50.00

+40.00 36.00

SPECIAL CUT DITCH SEE DETAIL A

+50.00 50.00

SPECIAL CUT DITCH SEE DETAIL A +50.00 62.00

END 2 P.S. BEGIN 2-6 C&G -Y3- 12+85 RT

REMOVE

REPLACE GRAVEL PATH ON -Y3- LEFT SHOULDER USING 3" INCIDENTAL STONE

CAMP LEJEUNE MARINE RESERVATION

-L- POT Sta. 68+03.16
-Y3- POT Sta. 15+60.00

SUBSTATION

REMOVE

SPECIAL CUT DITCH SEE DETAIL A

SUBSTATION BEGIN 2 P.S. END 2-6 C&G -Y3- 15+26.69 RT

+20.00 60.00

+33.00 57.00

+72.00 57.00

+57.00 70.00

+49.50 84.00

EST. 5 TONS CLASS B RIP RAP W/14 SY FILTER FABRIC

SPECIAL CUT DITCH SEE DETAIL A

+50.00 72.00

+10.00 50.00

END STATE PROJECT U-4439B -L- POT STA. 73+00.00

POT Sta. 74+55.32

MATCH LINE STA. 61+00 -L- SEE SHEET NO.7

N 87° 38' 42.4" E

150' FULL STORAGE

100' TAPER

400' FULL STORAGE

5' MONO. CONC. ISL.

EXCAVATION HOLE HERE NO UTILITY FOUND

180' FULL STORAGE

100' LT. & RT. TAPER

REMOVE -L- CURTIS ROAD 30' BST

REMOVE

REM. HW & PLUG & FILL W/FLOWABLE GROUT

RETAIN

SPECIAL CUT DITCH SEE DETAIL A

+79 76' RT

+89 76' RT

+15.00 -L- 69.00

REMOVE PIPE TO MATCH EX. DITCH SECTION SEE DETAIL B

+60.00 85.00

+73.00 -L- 73.00

-L- POT Sta. 68+09.54
-Y4- POT Sta. 10+00.00

-BL- POTS Sta. 74+95.73 (BL-19)
-L- Sta. 73+49.93 (63.27' RT)

-BL- PINCS Sta. 64+64.21 (BL-18)
-L- Sta. 63+20.98 (42.07' RT)

-BL- PINCS Sta. 69+32.63 (U4439-4) =
-BYI- PINCS Sta. 11+57.59
-L- Sta. 67+87.31 (86.39' RT)

+77.00 -Y4- 94.00

+05.00 -Y4- 40.00

REMOVE EXISTING ISLAND

SCHMIDT ROAD 30' BST

SANITARY SEWER PUMP STA. STATION

+22.00 40.00

+22.00 42.00

END CONSTRUCTION -Y4- POT 14+12.00

IS BK BUS

IS BK SCHOOL

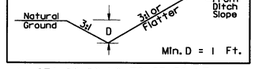
WOODS

BST

LT

CB

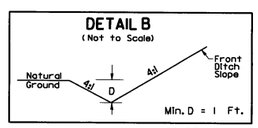
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1 Ft.

-L- STA 52+50 LT TO 67+50 LT
-L- STA 61+50 RT TO 63+00 RT
-L- STA 72+00 RT TO 73+00 RT
-L- STA 68+50 LT TO 73+00 LT
-Y3- STA 10+50 LT TO STA 15+00 LT
-Y3- STA 10+50 RT TO STA 12+80 RT

DETAIL B
(Not to Scale)



Min. D = 1 Ft.

-Y4- STA 10+98 RT TO 11+68 RT

01/20/2005
rdy\roadway\proj\u4439_rdy_psh08.dgn
08:11:43 EST

PROJECT REFERENCE NO.	SHEET NO.
U-4439A&B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

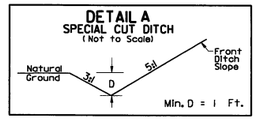
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

- - - - - - U-4439 A/B BOUNDARY

NCGRID - NAD 8395

SEE SHEET 13 FOR -Y1- DITCH PROFILES.

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-Y1- STA 13+00 MED TO 15+00 MED
-Y1- STA 15+50 MED TO 17+00 MED

MATCH LINE STA. 26+50 -Y1-
SEE SHEET NO.4

18" RCP
EX
RETAIN
PIPE CLEAN OUT
S 37° 38' 59.7" W
+80.00 -Y1-
122.09 Lt & 140.06 Rt
EXTEND 18" RCP W/ CONC. COLLAR
EST. 3 TONS CLASS B RIP RAP W/ 10 SY FILTER FABRIC
+50.00
120.00
+50
83.28'
-Y1-
TSS Sta. 29+42.00
DANIEL L. KAMIN
PLUM POINTE LLC.
DB 6009 PG 808
MB 30 PG 177
TRUSTEES OF MAPLE HURST PRIMITIVE BAPTIST CHURCH
DB 228 PG 640
15 BLK CHURCH
5' PLASTIC
US 17 NORTHBOUND
US 17 SOUTHBOUND
VARIABLE WIDTH BST
2' P.S.
300' TAPER
+15.00
EX R/W
WOODS
ACEY FRANKLIN TAYLOR
DB 440 PG 359
15 BK BUS
GR
W/LT
CONC
72' CHL
END 1.25" RESURFACING
SCS Sta. 31+42.00
END CONSTRUCTION & 1.25" RESURFACING
-Y1- POC 31+50.00
EXIST. R/W
66'
72' CHL
70.51'
F
24' BST
EOP
EOT
-Y1-
PI Sta 33+21.62
Δ = 11° 38' 06.6" (LT)
D = 3° 15' 00.0"
L = 358.00
T = 179.62'
R = 1,762.95'
-Y1- Sta. 32+55.35 (13.3' LT)
-BY- POT Sta 29+22.63 (BY-10)
PT Sta. 35+00.00
S 22° 45' 53.2" W
2 S MTL BUS
PHILLIP R. PIERCE and wife LOIS C. PIERCE
DB 692 PG 259
MB 4 PG 13
S 37° 34' 00" W
375.00'
CONC
IS BLK BUS
S
AC2
S 48° 20' 58" E
222.35'
U-4439 A

CAMP LEJEUNE MARINE RESERVATION

U-4439 B

-Y1-
PIs Sta 30+75.35
Θs = 3° 15' 00.0"
Ls = 200.00'
LT = 133.36'
ST = 66.69'

30

-BY- POT Sta 5+00.00 (BY-10)

W/TEL/TV

NCGRID - NAD 8395

POT Sta 10+00.00

10

WOODS

EOP
EOT
35' BST
18" RCP
S 35° 20' 38.9" W
M45°55'58"W
209.40' COR-R/W
36" POSTS
PT&C/L
CONC
0.50' R/W-EIP
PW/LT
GR
BUS TR
ANNE L. ARAGONA
DB 1583 PG 615
BST
15" RCP
220'
US 17 NORTHBOUND
IS MTL BUS
UTILITY
72" CHESTNUT BARBED WIRE
EXIST. R/W
8" DRAIN TILE
S46°12'28"E
209.69' COR-R/W
0.31' R/W-EIP
RETAIN
15" RCP
36" POSTS
W/LT
L72' EIP-R/W
S45°34'28"E
208.25' COR-EIP
BEN ARAGONA
DB 1822 PG 900
BUS TR
IS BK BUS
GRACE LOCKLEAR GRANT
DB 745 PG 496
S32°36'56"W
96.15'
S32°36'33"W
103.57'
L83' EIP-R/W
EIP
IS F
IS D
S45°34'29"E
209.16' COR-EIP
IS BK BUS
2 MTL BUS
RETAIN
18" RCP
S
VARIABLE WIDTH BST
GIRISH PATEL and wife SUDHA PATEL
DB 1807 PG 743
PROPANE TANK
DUMPSTER
8' CB
2.38' EIP-R/W
IS BK BUS
N45°42'50"W
210.58' COR-EIP
AC UNIT
CONC
IS F
BST
EIP
CASHION AND LENNING, INC.
DB 1533 PG 1009
N32°48'13"E
50.00'
S46°W 48"E
94.75'
S45°41'47"E
216.83'
72" WD
JBR CONC
FLAG POLES
S31°39'09"E
100.00'
JOE LEE WENSIL and wife BEEDIE RUTH WENSIL
DB 1281 PG 636
DB 1088 PG 122
MB 29 PG 82
N45°04'23"W
84.58'
E x.
C
F
-Y1-
PI Sta 18+21.56
Δ = 5° 18' 20.8" (RT)
D = 1° 00' 00.0"
L = 530.58'
T = 265.48'
R = 5,729.58'
U-4439 A

U-4439 B

SPECIAL CUT DITCH SEE DETAIL A

300' TAPER (100' EACH LANE)

RETAIN & PIPE CLEAN OUT

PCS Sta 15+56.08

EST. 3 TONS CLASS B RIP RAP W/ 10 SY FILTER FABRIC

PIPE CLEAN OUT

EX END 18" RCP W/ CONC. COLLAR

SPECIAL CUT DITCH SEE DETAIL A

15

MATCH LINE STA. 18+00 -Y1-
SEE SHEET NO.4

BEGIN CONSTRUCTION & 1.25" RESURFACING
-Y1- POT 13+00.00

CAMP LEJEUNE MARINE RESERVATION

U-4439 B

REVISIONS

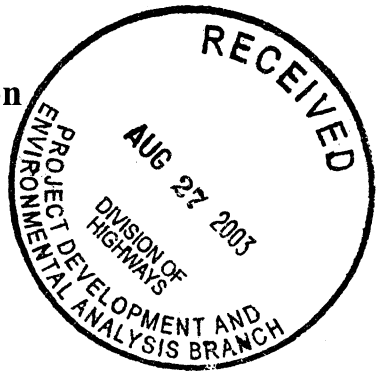
8/17/99

01/20/2005
C:\projects\proj\u4439_rdy_psh09.dgn
psh09.dgn

4 BF

U.S. ARMY CORPS OF ENGINEERS
Wilmington District

Action ID: 200300032 **County:** Onslow County



Notification of Jurisdictional Determination

Property Owner:
Gregory J. Thorpe, Ph.D, Manager
North Carolina Dept of Transportation
Project Development & Environmental Analysis
1548 Mail Service Center
Raleigh, N.C. 27699-1548
ATTN: Rachel Beauregard

Authorized Agent: none

Size and Location of Property (waterbody, Highway name/number, town, etc.): TIP Project No. U-4439, US 17/Curtis Road Intersection, Onslow County, North Carolina.

Basis for Determination: Onsite field inspection of selected wetland sites.

Indicate Which of the Following apply:

◊ There are wetlands on the above described property which we strongly suggest should be delineated and surveyed. The surveyed wetland lines must be verified by our staff before the Corps will make a final jurisdictional determination on your property.

◊ On **October 9, 2002**, the undersigned inspected the Section 404 jurisdictional line as determined by the NCDOT and/or its representatives for the subject NCDOT project/corridor. Wetland Site One, located on US 17 at Curtis Road, was inspected and was found to accurately reflect the limits of Corps jurisdiction. The Corps believes that this jurisdictional delineation, as submitted by NCDOT in it's letter dated July 23, 2003 can be relied on for planning purposes and impact assessment at this location.

◊ The wetlands on your lot have been delineated and the limits of the Corps jurisdiction have been explained to you. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

◊ There are no wetlands present on the above described property which are subject to the permit requirements of section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

◊ The project is located in one of the 20 Coastal Counties. You should contact the nearest State Office of Coastal Management to determine their requirements.

Placement of dredged or fill material in wetlands on this property without a Department of the Army permit is in most cases a violation of Section 301 of the Clean Water Act (33 USC 1311). A permit is not required for work on the property restricted entirely to existing high ground. If you have any questions regarding the Corps of Engineers regulatory program, please contact Mr. Dave Timpy at 910-251-4634.

Project Manager Signature _____

Date August 26, 2003 **Expiration Date** August 26, 2008

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: U-4439
Applicant/Owner: NCDOT
Investigator: Mason Herndon

Date: 10-3-02
County: Onslow
State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: _____
Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Acer Rubrum	tree	FACW-
2. Persea borbonia	t/s	FACW
3. Myrica cerifera	shrub	FAC+
4. Athyrium filix femina	shrub	FAC
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Sta A-1 to A-7

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Tarhunta

Drainage Class: _____

Field Observations

Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 2/1	N/A	N/A	
12+	B	10YR 5/1			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- X Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: U-4439
Applicant/Owner: NCDOT
Investigator: Mason Herndon

Date: 10-3-02
County: Onslow
State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: _____
Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Salix Nigra	shrub	OBL
2. Juncus effusus	herb	FACW
3. Arundinaria gigantea	herb	FACW
4. Smilacia cannabina	herb	FACW+
5. Hydrocotyle umbellata	herb	OBL
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Sta A-7 to A-11 and Sta A-17 - 18 (Powerline)

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 3 (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Tarhundra

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 2/1			
4+	B	10YR 2/1	10YR 5/3	few/distinct	

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors

___ Concretions
X High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
X Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: U-4439 Applicant/Owner: NCDOT Investigator: Mason Herndon	Date: 10-3-02 County: Onslow State: NC
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Acer Rubrum	tree	FACW-
2. Persea borbonia	t/s	FACW
3. Liquidambar styraciflua	tree	FAC+
4. Berchemia Scandens	vine	FACW
5. Myrica cerifera	shrub	FAC+
6. Athyrium filix-femina	herb	FAC
7. Woodwardia aerolata	herb	OBL
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: Sta A-11 to A-17

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Tarhunta

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 2/1	N10	N/A	
10+	B	10YR 2/2	N10	N/A	

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors

___ Concretions
X High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
X Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: U-4439
Applicant/Owner: NCDOT
Investigator: Mason Herndon

Date: 10-4-02
County: Onslow
State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: _____
Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Acer Rubrum	tree	FACW-
2. Liquidambar styraciflua	T	FAC+
3. Persea borbonia	T/S	FACW
4. Magnolia virginia	T/S	FACW+
5. Pinus taeda	T	FAC
6. Salix nigra	T	OBL
7. Arundinaria gigantea	herb	FACW
8. Athyrium felix femina	herb	FACW
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Sta B-1 to B-25
B-1 next to outfall pipe

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Woodington

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR2/1	NA	NA	fine sandy loam
10+	B	10YR 4/1	NA	NA	fine sandy loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors

Concretions
X High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
X Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: U-4439
Applicant/Owner: NCDOT
Investigator: Mason Herndon

Date: 10-4-02
County: Onslow
State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: B
Transect ID: _____
Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Typha latifolia	herb	OBL
2. Liquidambar styraciflua	shrub	FAC+
3. Juncus effusus	herb	FACW
4. Polygonum sp	herb	FAC-OBL
5. Myrica cerifera	herb	FAC+
6. Hydrocotyle umbellata	herb	OBL
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Fescue present, powerline ROW, Sta B-25 to B-27

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)
Depth to Free Water in Pit: _____(in.)
Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Woodington

Drainage Class: _____
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 2/1	N/A	N/A	fine sandy loam
4-8	B	10YR 3/1	N/A	N/A	fine sandy loam
8+	Bb	10YR 5/4	10YR 3/1	streak/few/distinct	fine loamy sand

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors

___ Concretions
X High Organic Content in Surface Layer in Sandy Soils
X Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: Area significantly disturb by powerline ROW, rutted by vehicles

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	(Yes) No	(Circle)

Remarks:

Approved by HQUSACE 3/92

09/08/99

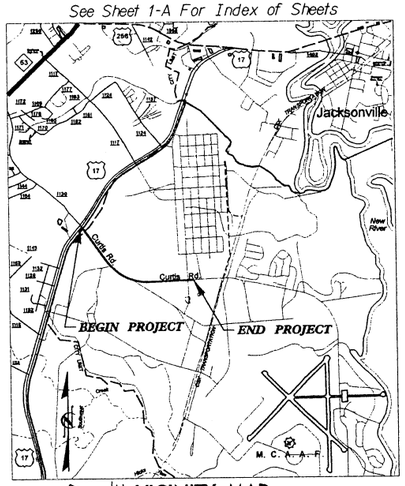
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4439	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
35032.1.1	STPNHS-17(39)	PE	

03-0032

TIP PROJECT: U-4439

PROJECT: 35032.1.1

See Sheet 1-A For Index of Sheets



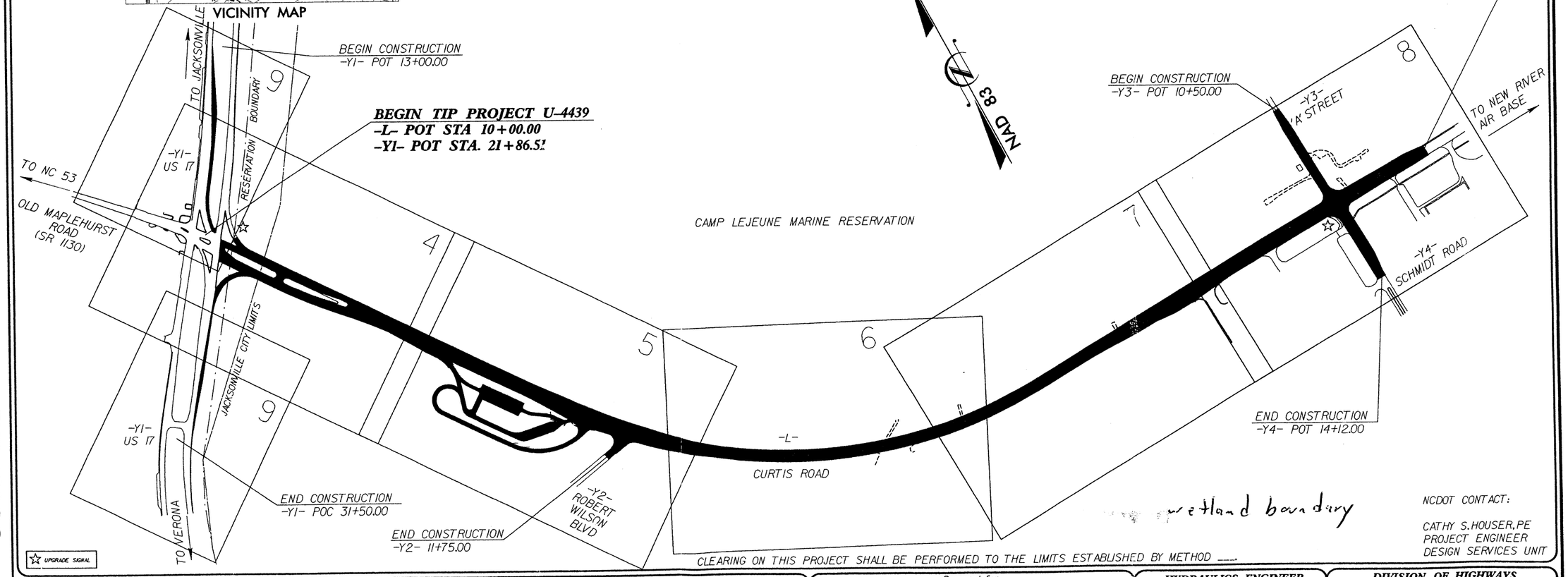
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

LOCATION: ***CURTIS ROAD FROM US 17 TO "A" STREET ON BOARD THE USMC BASE – NEW RIVER AIR STATION***

TYPE OF WORK: ***GRADING, DRAINAGE, PAVING, SIGNALS, AND SIGNING***



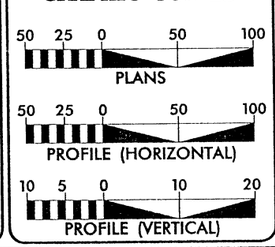
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.

wetland boundary

NCDOT CONTACT:

CATHY S. HOUSER, PE
PROJECT ENGINEER
DESIGN SERVICES UNIT

GRAPHIC SCALES



DESIGN DATA

ADT 2004 = 19,700
ADT 2024 = 28,000
DHV = 11 %
D = 70 %
T = 5 % *
V = 40 MPH

* TTST 2 % DUAL 3 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4439 = 1.193 +/- mi

TOTAL LENGTH OF TIP PROJECT U-4439 = 1.193 +/- mi

Prepared for:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., NC, 27610
Prepared by:
MA ENGINEERING CONSULTANTS, INC.
598 E. CHATHAM STREET, SUITE 137
CARY, NORTH CAROLINA 27511
(919) 297-0220

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 16, 2003

LETTING DATE: MAY 5, 2004

R.W. PORTER JR., PE
PROJECT ENGINEER

D.M. WAINWRIGHT, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

07/09/2003
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03-00 32

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4439	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

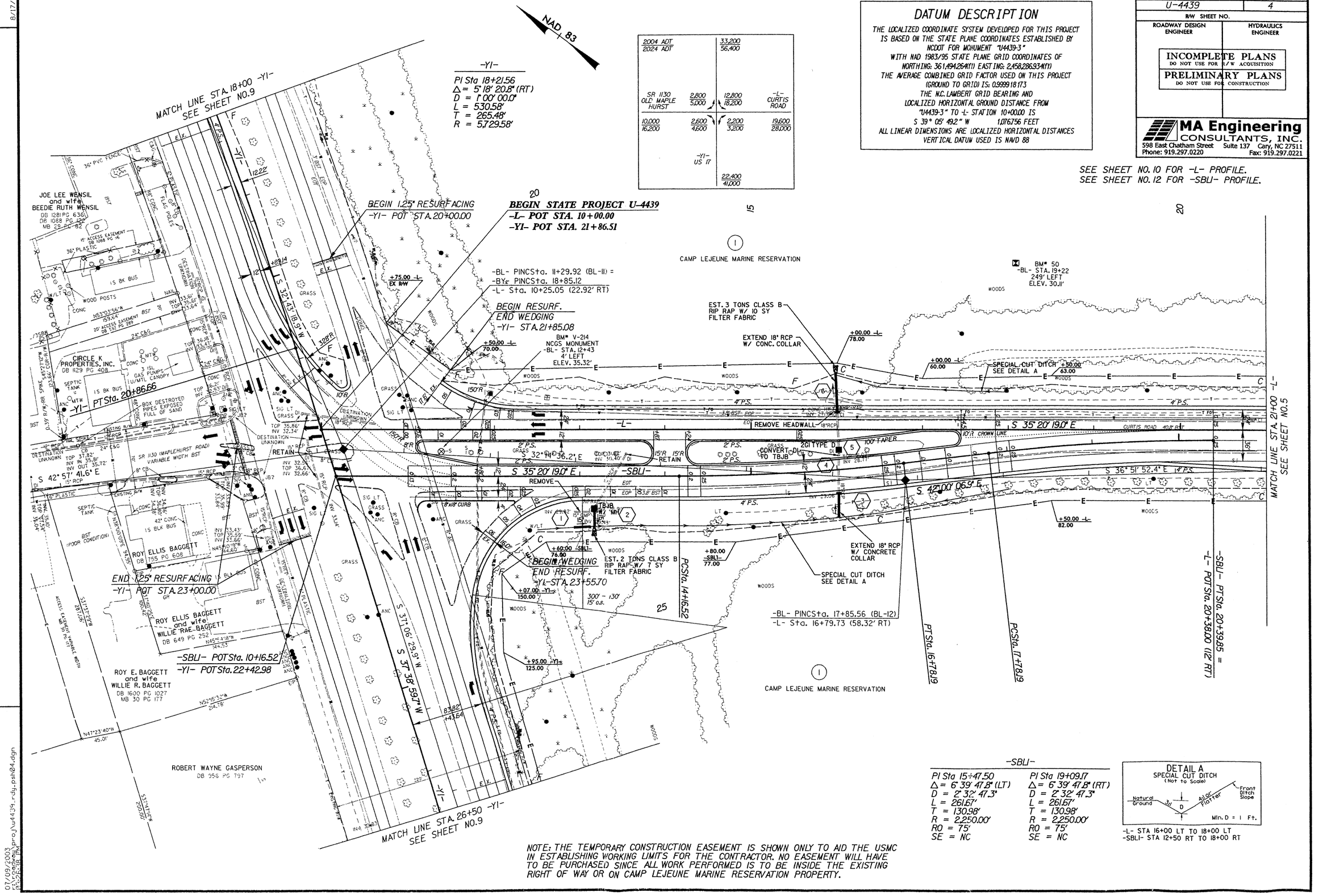
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U4439-3" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 361,494.264(ft) EASTING: 2,458,286.934(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918173
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U4439-3" TO -L- STATION 10+00.00 IS
S 39° 05' 49.2" W 1,076.756 FEET
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

SEE SHEET NO. 10 FOR -L- PROFILE.
SEE SHEET NO. 12 FOR -SBLI- PROFILE.



-SBLI-

PI Sta 15+47.50	PI Sta 19+09.17
Δ = 6° 39' 47.8" (LT)	Δ = 6° 39' 47.8" (RT)
D = 2° 32' 47.3"	D = 2° 32' 47.3"
L = 261.67'	L = 261.67'
T = 130.98'	T = 130.98'
R = 2,250.00'	R = 2,250.00'
RO = 75'	RO = 75'
SE = NC	SE = NC

-L- STA 16+00 LT TO 18+00 LT
-SBLI- STA 12+50 RT TO 18+00 RT

NOTE: THE TEMPORARY CONSTRUCTION EASEMENT IS SHOWN ONLY TO AID THE USMC IN ESTABLISHING WORKING LIMITS FOR THE CONTRACTOR. NO EASEMENT WILL HAVE TO BE PURCHASED SINCE ALL WORK PERFORMED IS TO BE INSIDE THE EXISTING RIGHT OF WAY OR ON CAMP LEJEUNE MARINE RESERVATION PROPERTY.

07/09/2003
R:\Projects\Proj\u4439_rdy_psh04.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4439	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

REVISIONS

8/17/99

SEE SHEET NO. 14 FOR -Y1- SPECIAL CUT DITCH PROFILE.

10

-BY- POT Sta. 5+00.00 (BY-100)

POT Sta. 10+00.00

NAD 83

W/TEL/TV

WOODS

EOP

15" RCP

INV 25.28'

INV 25.54'

438.81'

S 32° 43' 18.9" W

S 36° 20' 38.9" W

36" POST

60' R/W-EIP

INV 26.68'

INV 26.68'

PT&C/LT

N45°55'58"W 209.40' COR-R/W

CONC

GR

PW/LT

ANNE L. ARAGONA
DB 1583 PG 615

BST

15" RCP

US 17 NORTHBOUND

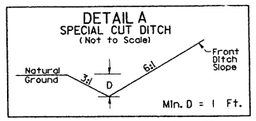
EXISTING R/W

BEGIN CONSTRUCTION & 1.25" RESURFACING -Y1- POT 13+00.00

1

CAMP LEJEUNE MARINE RESERVATION

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-Y1- STA 13+00 MED TO 15+00 MED
-Y1- STA 15+50 MED TO 17+00 MED

15" RCP

CONC

15 MTL BUS

UTILITY

72" CHAIN LINK BARBED WIRE

8" DRAIN TILE

S 46°12'28"E 209.63' COR-R/W

0.3' R/W-EIP

RETAIN

INV 28.32'

INV 29.46'

18" RCP

INV 29.23'

6' PLASTIC

E.P.

SPECIAL CUT DITCH SEE DETAIL A

C

F

+0.25

4 P.S.

300' TAPER (100' EACH LANE)

VARIABLE WIDTH BST

EXISTING R/W

15

BEN ARAGONA
DB 1822 PG 900

36" POSTS

W/LT

1.72' EIP-R/W

EOP

S 32°25' 50"W 99.72'

208.25' COR-EIP

S 45°34'28"E

PCS Sta. 15+56.08

-Y1-

PI Sta. 18+21.56
Δ = 5°18' 20.8" (RT)
D = 1°00' 00.0"
L = 530.58'
T = 265.48'
R = 5,729.58'

BUS TR

15 BK BUS

GRACE LOCKLEAR GRANT
DB 745 PG 496

EST. 3 TONS CLASS B RIP RAP W/ 10 SY FILTER FABRIC

1.83' EIP-R/W

EIP

INV 29.56'

INV 30.13'

INV 33.58'

TOP 33.05'

TOP 33.58'

RETAIN

23

EXTEND 18" RCP W/ CONC. COLLAR

S 32°25' 50"W 109.57'

S 45°34'23"E 209.16' COR-EIP

15 BK BUS

GIRISH PATEL and wife SUDHA PATEL
DB 1807 PG 743

PROPANE TANK

DUMPSTER

8" CB

2.38' EIP-R/W

TOP 34.79'

INV 30.73'

N45°42'50"W 210.58' COR-EIP

AC UNIT

CASHION AND LENNING, INC.
DB 1533 PG 1009

N27°08'11"E 50.00'

S45°41'47"E 24.83'

72" WO

FLAG POLES

S46°W 48°E 94.75'

N45°04'23"W 114.58'

S 43°39' 00.00'

JOE LEE WENSIL and wife BEEDIE RUTH WENSIL
DB 1281 PG 636
DB 1088 PG 122
MB 29 PG 82

MATCH LINE STA. 18+00 -Y1-
SEE SHEET NO. 4

SPECIAL CUT DITCH SEE DETAIL A

SPECIAL CUT DITCH SEE DETAIL A

-Y1-
PI Sta 30+75.35
Δs = 3°15' 00.0"
Ls = 200.00'
LT = 133.36'
ST = 66.69'

30

MATCH LINE STA. 26+50 -Y1-
SEE SHEET NO. 4

EST. 2 TONS CLASS B RIP RAP W/ 7 SY FILTER FABRIC

24

EXTEND 18" RCP W/ CONC. COLLAR

NAD 83

1

CAMP LEJEUNE MARINE RESERVATION

RETAIN

S 37° 38' 59.7" W

-Y1-

+50.00
120.00

+50

83.28'

TSS Sta. 29+42.00

+15.00
EX R/W

300' TAPER

4 P.S.

S 37° 06' 29.9" W

SCS Sta. 31+42.00

END CONSTRUCTION & 1.25" RESURFACING -Y1- POC 31+50.00

END 1.25" RESURFACING

-Y1-
PI Sta 33+21.62
Δ = 11° 38' 06.6" (LT)
D = 3° 15' 00.0"
L = 358.00
T = 179.62'
R = 1,762.95'

-BY- POT Sta. 29+22.63 (BY-101)
-Y1- Sta. 32+55.35 (13.31' LT)

PI Sta. 35+00.00

S 22° 45' 53.2" W

TRUSTEES OF MAPLE HURST PRIMITIVE BAPTIST CHURCH
DB 228 PG 640

15 BK CHURCH

DANIEL C. KAMIN
PLUM POINTE LLC.
DB 1600 PG 808
MB 30 PG 177

INV 33.97'

INV 33.37'

BST

6" PLASTIC

US 17 SOUTHBOUND

VARIABLE WIDTH BST

15 BK BUS

W/LT

72" CHL

ACEY FRANKLIN TAYLOR
DB 440 PG 359

15 MTL BUS

CONC

GR

EXIST. R/W

EXIST. C/L

72" CHL

S 46°20' 58"E 222.39'

PHILLIP R. PIERCE and wife LOIS C. PIERCE
DB 692 PG 259
MB 4 PG 13

S 37°41' 10"W 379.00'

15 BLK BUS

NOTE: THE TEMPORARY CONSTRUCTION EASEMENT IS SHOWN ONLY TO AID THE USMC IN ESTABLISHING WORKING LIMITS FOR THE CONTRACTOR. NO EASEMENT WILL HAVE TO BE PURCHASED SINCE ALL WORK PERFORMED IS TO BE INSIDE THE EXISTING RIGHT OF WAY OR ON CAMP LEJEUNE MARINE RESERVATION PROPERTY.

07/09/2003
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.WIDENING OF SR 1130 AND INTERSECTION IMPROVEMENTS AT SR 1130 ONSLOW COUNTY, NORTH CAROLINA

NATURAL RESOURCES TECHNICAL REPORT
TIP NO. U-4439
STATE PROJECT NO. 8.1262201
FEDERAL AID PROJECT NO. STPNHS-17(39)

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

RACHELLE BEAUREGARD, ENVIRONMENTAL BIOLOGIST
July 30, 2003

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

The following Natural Resources Technical Report (NRTR) is submitted to assist in the preparation of a Programmatic Categorical Exclusion (CE) for the proposed project. The project is located near the New River Air Station, in the City of Jacksonville, Onslow County.

1.1 Project Description

The project involves widening the existing SR 1130 (Curtis Road) by adding an outside lane for outgoing and incoming traffic for the New River Air Station, and intersection improvements at SR 1130 and US 17.

1.2 Purpose

The purpose of this technical report is to inventory, catalog and describe the various natural resources likely to be impacted by the proposed action. This report also attempts to identify and estimate the probable consequences of the anticipated impacts to these resources. Recommendations are made for measures, which will minimize resource impacts. These descriptions and estimates are relevant only in the context of existing preliminary design concepts. If design parameters and criteria change, additional field investigations will need to be conducted.

1.3 Methodology

Research was conducted prior to field investigations. Information sources used in this pre-field investigation of the study area include: U.S. Geological Survey (USGS) quadrangle map (Jacksonville North 1997) and Natural Resource Conservation Service soils information for Onslow County (USDA 1992).

Water resource information was obtained from publications of the North Carolina Department of Environment and Natural Resources, Division of Water Quality (NCDENR-DWQ 1997) and Geographic Information Systems database (NCDOT July 2001).

Information concerning the occurrence of federal and state protected species in the study area was obtained from the United States Fish and Wildlife Service (USFWS) list of protected species and candidate species (January 29, 2003) and the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats and NCNHP publications (Amoroso 2002, LeGrand and Hall 2001).

The corridor studied for this project was within the NCDOT existing right-of-way along US 17 approximately 1800 feet north of the US 17 and Curtis Road intersection and approximately 1700 feet south of the intersection. General field surveys were conducted along the proposed study corridor by NCDOT biologist Rachelle Beauregard in December 2002 and May 2003. Plant communities and their associated wildlife were identified and recorded. Wildlife identification involved using one or more of the following observation techniques:

active searching and capture, visual observations (binoculars), and identifying characteristic signs of wildlife (sounds, scat, tracks, nests and burrows).

Jurisdictional wetland determinations were performed utilizing delineation criteria prescribed in the "Corps of Engineers Wetland Delineation Manual" (USACE 1987) and rated using the "Guidance for Rating the Values of Wetlands in North Carolina" (Division of Environmental Management 1995). Jurisdictional surface water determinations were performed using guidance provided by N.C. Division of Water Quality (DWQ), "Field Location of Streams, Ditches, and Ponding" (NCDENR-DWQ 1997) and NCDWQ Stream Classification Form (NCDENR-DWQ 1999).

1.4 Qualification of Field Investigators

Investigator: Rachelle Beauregard, Environmental Biologist, NCDOT.
Education: B.S. Fisheries and Wildlife Science, North Carolina State University.
Experience: Biologist, Dr. J.H. Carter III and Associates, Inc., March 1997 – January 2001.
NC Department of Transportation, March 2001- present.

1.5 Terminology

The definitions used for area descriptions contained in this report are as follows:

- Study Corridor (Study Area) – area bounded by the proposed construction limits for the project.
- Project Vicinity – denotes an area extending 0.5 mile (mi) (0.8 kilometers (km)) on all sides of the study area.
- Project Region – is equivalent to an area represented by a 7.5 minute USGS quadrangle map with the project occupying the central position.

2.0 PHYSICAL RESOURCES

Water resources located within the project area are discussed below.

2.1 Regional Characteristics

Onslow County lies in the Coastal Plain physiographic province of North Carolina. The topography within the project vicinity is characterized as relatively flat with rolling hills. Elevations in the project area range from approximately 20 to 35 ft (6.1 to 10.7 m) above mean sea level (msl).

2.2 Water Resources

The project is located in the White Oak River Basin. The project area is located in subbasin 03-05-03 (NCDENR-DWQ 1997) and in cataloging unit HU 03030001. No surface waters will be impacted by construction within the study area.

Edward's Creek has been assigned a best usage classification of SC HQW NSW [index #19-13 Division of Water Quality (NCDENR-DWQ 2001)]. Class C water resources are used for aquatic life propagation and survival and secondary recreation. Class HQW, High Quality Waters, are waters that posses special qualities including excellent water quality, native of special trout waters, Critical Habitat areas, or WS-I or WS-II water supplies. The NSW supplemental classification is intended for waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. In general, management strategies for point and non-point source pollution control require control of nutrients (nitrogen and/or phosphorus usually) such that excessive growths of vegetation are reduced or prevented and there is no increase in nutrients over target levels. **Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominantly undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mi (1.6 km) of project study area.**

3.0 BIOTIC RESOURCES

Biotic resources include aquatic and terrestrial communities. This section describes those communities encountered in the study area as well as the relationships between fauna and flora within these communities. Composition and distribution of biotic communities throughout the project are reflective of topography, hydrologic influences and past and present land uses in the study area. Descriptions of the terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and the common names (when applicable) are included for each described plant and animal species. Plant taxonomy follows Radford, et al. (1968) and Weakley (2000). Animal Taxonomy follows Martof et al. (1980), Webster et al. (1985), National Geographic (1987) and Rohde et al. (1994). Subsequent references to the same organism will include the common name only. Spoor evidence or tracks equate to observation of the species. Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

3.1 Terrestrial Communities

3.1.1 Maintained/Disturbed

The study area is dominantly made up of the maintained/disturbed community. This community contains roadside shoulders, grassed medians and commercial landscapes. These landscapes receive frequent mowing, general maintenance, and disturbance.

Vegetation associated with the maintained/disturbed community include fescue (*Festuca* sp.), Bermuda grass (*Cynodon dactylon*), crabgrass (*Digitaria* sp.), clover (*Trifolium* spp.), dandelion (*Taraxacum officinale*), foxtail grass (*Sertaria italica*) and bead grass (*Paspalum* sp.).

3.1.2 Pond Pine Woodland

A small portion of the project area consists of the Pond Pine Woodland community. This area has been disturbed over the years. Vegetation associated within this community at this site include red maple (*Acer rubrum*), red bay (*Persia borbonia*), wax myrtle (*Myrica cerifera*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), loblolly bay (*Pinus taeda*), black willow (*Salix nigra*) and giant cane (*Arundinaria gigantea*)

3.2 Aquatic Communities

No aquatic communities exist in the study area.

3.3 Wildlife

Many faunal species are highly adaptive and may populate or exploit the entire range of biotic communities located within the project area. Each species present fills its own ecological niche and there are often complex interactions between all species present. Examples of these relationships include symbiotic, competitive and predator/prey relationships.

Mammals that commonly exploit habitats found within the study area include: gray squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*) and eastern mole (*Scalopus aquaticus*).

Birds commonly found within the study area include American robin (*Turdus migratorius*), Carolina chickadee (*Poecile carolinensis),* downy woodpecker (*Picoides pubescens*) and northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), turkey vulture (*Cathartes aura*), morning dove (*Zenaida macroura*), northern cardinal (*Cardinalis cardinalis*) and Carolina wren (*Thryothorus ludovicianus*) (National Geographic 1987).

The reptiles that can be expected to utilize the terrestrial community within the project area include anole (Anolis carlinensis)five-lined skink (*Eumeces fasciatus*), eastern garter snake (*Thamnophis sirtalis*), and rat snake (*Elaphe obsoleta*) (Martof et al. 1980).

3.4 Summary of Anticipated Terrestrial Impacts

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions.

Plant communities found along the proposed project area serve as nesting and sheltering habitat for various wildlife. Project construction may reduce habitat for faunal species, thereby diminishing faunal numbers. Habitat reduction concentrates wildlife into smaller areas of refuge, thus causing some species to become more susceptible to disease, predation and starvation.

Areas modified by construction (but not paved) will become road shoulders and early successional habitat. Increased traffic noise and reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by the creation of more early successional habitat. Animals temporarily displaced by construction activities will repopulate areas suitable for the species. This temporary displacement of animals may result in an increase of competition for the remaining resources.

4.0 JURISDICTIONAL TOPICS

This section provides descriptions, inventories and impact analysis pertinent to two important issues--waters of the United States, and rare and protected species.

4.1 Waters of the United States

The U.S. Army Corps of Engineers (USACE) promulgated the definition of "Waters of the United States" under 33 CFR §328.3(a). Waters of the United States include most interstate and intrastate surface waters, tributaries, and wetlands. Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions are considered "wetlands" under 33 CFR §328.3(b). Wetlands generally include swamps, marshes, bogs, and similar areas. Any action that proposes to place dredged or fill materials into Waters of the United States falls under the jurisdiction of the USACE, and must follow the statutory provisions under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

Two jurisdictional wetland areas occur with in the study area. They are located on the Camp Lejuene Marine Base along US 17. The wetlands have been disturbed and are found within the Pond Pine Woodland community. The wetlands consist of red maple (*Acer rubrum*), red bay (*Persia borbonia*), wax myrtle (*Myrica cerifera*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), loblolly bay (*Pinus taeda*), black willow (*Salix nigra*) and giant cane (*Arundinaria gigantea*).

Impacts to these wetlands will be minimal from this project. Impacts are approximately 0.04 ac within the cut/fill line long US 17 south of the intersection.

4.1.1 Permits

In accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344), a Section 404 Nationwide Permit 23 from the USACE is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality General Certification (WQC) is required prior to the issuance of the Section 404 Nationwide 23. The corresponding WQC number for a NWP 23 is WQC #3403.

4.2 Rare and Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action, likely to adversely affect a species classified as federally-protected, be subject to review by the USFWS. Other species may receive additional protection under separate state laws.

4.2.1 Federally-Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the United States Fish and Wildlife Service (USFWS) lists 12 federally protected species for Onslow County. Table 1 lists the species, their status and biological conclusion.

Table 1. Federally-Protected Species for Onslow County

Common Name	Scientific Name	Federal Status	Biological Conclusion
American alligator	*Alligator mississippiensis*	T(S/A)	not required
seabeach amaranth	*Amaranthus pumilus*	T	No Effect
loggerhead turtle	*Caretta caretta*	T	No Effect
golden sedge	*Carex lutea*	E	No Effect
piping plover	*Charadrius melodus*	T	No Effect
green sea turtle	*Chelonia mydas*	T	No Effect
leatherback sea turtle	*Dermochelys coriacea*	E	No Effect
eastern cougar	*Felis concolor couguar*	E	No Effect
bald eagle	*Haleaeetus leucephalus*	T	No Effect
rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	No Effect
red-cockaded woodpecker	*Picoides borealis*	E	No Effect
Cooley's meadowrue	*Thalictrum cooleyi*	E	No Effect

"E" denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).
"T" denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or significant portion of its range).
"T(S/A)" denotes Threatened due to similarity of appearance (a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

Alligator mississippiensis (American alligator) **Threatened (Due to Similarity of Appearance)**

The alligator is a large aquatic reptile, measuring 1.8-5.8 meters in length, with a broadly rounded snout, heavy body, laterally compressed tail, and a dark gray or blackish color. Young are black with conspicuous yellow crossbands; the banding may occasionally persist on adults, although very faintly. Unlike the American crocodile, the fourth tooth on the lower jaw of the alligator fits in a notch in the upper jaw and is not exposed when the jaws are closed.

The alligator is found rivers, streams, canals, lakes, swamps, bayous, and coastal marshes. Adult animals are highly tolerant of salt water, but the young are apparently more sensitive, with salinities greater than 5 parts per thousand considered harmful. The diet consists of anything of suitable size, including mammals, reptiles, amphibians, birds, fish, and crustaceans.

Nesting takes place in late spring and early summer, with the female building a mound of grass and other vegetation that may be two feet high and six feet across. The nest is usually constructed near the water, in a shaded location. The clutch of 30-60 (average 35) eggs is laid in a cavity near the top of the mound, and is incubated by the heat from the decaying vegetation. The female usually remains near the nest until the eggs hatch. Hatching takes place in about nine weeks, at which time the young begin calling to alert the female to excavate the nest.

The primary threats to the alligator in the past have been loss of habitat and overhunting. The legal protections in recent years have allowed this species to increase significantly, and it is now considered biologically secure.

BIOLOGICAL CONLUSION **NOT REQUIRED**

This species is listed as Threatened Due to Similarity of Appearance, and is therefore not protected under Section 7 of the Endangered Species Act. However, in order to control the illegal trade of other protected crocodilians such as the American crocodile, federal regulations (such as hide tagging) are maintained on the commercial trade of alligators. No streams are located in the study area and the study area is not suitable to support the alligator and no survey is required for this species. Also, a search of the NCNHP database July 21, 2003 found no occurrence of this species within the project vicinity.

Caretta caretta (loggerhead turtle) **Threatened**

Loggerhead turtles can be distinguished from other sea turtles by its unique reddish-brown color. The loggerhead is characterized by a large head and blunt jaws. Otherwise they have 5 or more costal plates with the first touching the nuchal and 3 to 4 bridge scutes.

The loggerhead nests on suitable beaches from Ocracoke inlet, North Carolina through Florida and on a small scale off of the Gulf States. There are also major nesting grounds on the eastern coast of Australia. It lives worldwide in temperate to subtropical waters. Loggerheads

nest nocturnally between May and September on isolated beaches that are characterized by fine grained sediments. It is mainly carnivorous feeding on small marine animals.

BIOLOGICAL CONLUSION **NO EFFECT**

There are no beaches located within the project site. The nearest beach is approximately 18 miles away, therefore the project will have "no effect" on the loggerhead turtle. Also, a search of the NCNHP database July 21, 2003 found no occurrence of this species within the project vicinity.

Carex lutea (Golden sedge) **Endangered**

Golden sedge is a perennial sedge known only from North Carolina. Fertile culms (stems) may reach one meter (39 inches (in)) or more in height. The yellowish green leaves are grasslike, with those of the culm mostly basal and up to 28 centimeters (cm) (11 in) long, while those of the vegetative shoots reach a length of 65 cm (26 in). Fertile culms produce two to four flowering spikes (multiple flowering structure with flowers attached to the stem), with the terminal (end) spike being male and the one to three (usually two) lateral spikes being female. Lateral spikes are subtended by leaflike bracts (a much-reduced leaf). Golden sedge is most readily identified from mid-April to mid-June during flowering and fruiting. It is distinguished from other *Carex* species that occur in the same habitat by its bright yellow color (particularly the pistillate (female) spikes), by its height and slenderness, and especially by the out-curved beaks of the crowded perigynia, the lowermost of which are reflexed.

Golden sedge grows in sandy soils overlying coquina limestone deposits, where the soil pH is unusually high for this region, typically between 5.5 and 7.2. Soils supporting the species are very wet to periodically shallowly inundated. The species prefers the ecotone (narrow transition zone between two diverse ecological communities) between the pine savanna and adjacent wet hardwood or hardwood/conifer forest plants. Most plants occur in the partially shaded savanna/swamp where occasional to frequent fires favor an herbaceous ground layer and suppress shrub dominance. Other species with which this sedge grows include tulip poplar (*Liriodendron tulipifera*), pond cypress (*Taxodium ascendens*), red maple (*Acer rubrum* var. *trilobum*), wax myrtle (*Myrica cerifera* var. *cerifera*), colic root (*Aletris farinosa*), and several species of beakrush (*Rhynchospora* spp.). At most sites, golden sedge shares its habitat with Cooley's meadowrue (*Thalictrum cooleyi*), federally listed as endangered, and with Thorne's beakrush (*Rhynchospora thornei*), a species of management concern. All known populations are in the northeast Cape Fear River watershed in Pender and Onslow Counties, North Carolina.

BIOLOGICAL CONCLUSION **NO EFFECT**

The study area does not contain an ecotone between a pine savanna and adjacent wet hardwood forest. The wetlands within the study area immediately transition to the maintained/disturbed community. Other *Carex* species were present but no species of *Carex lutea* was found. A search of the NCNHP database July 21, 2003 found no occurrence of this species within the project vicinity.

Charadrius melodus (Piping plover) **Threatened**

The piping plover is a small shorebird resembling a sandpiper, weighing 42-56 g, with a length of 15-20 cm. Their plumage is white below and brownish gray above, with a black band across the forehead and a black ring around the neck. The black marking may be indistinct during the winter. The legs are yellow, and the bill is yellow in summer and dark in the winter. Chicks are precocial and covered with a sandy-colored down. This plover's call is a clear "peep-lo". This bird's movement pattern during foraging is like that of most plovers, running in short starts and stops.

Preferred habitat consists of large sandflats or mudflats for foraging in close proximity to a sandy beach for roosting and nesting. Piping plovers nest on sandy or gravelly beaches in sparsely vegetated areas that are slightly higher in elevation than the surrounding beach. The nest is a shallow scrape in the sand, often with shell fragments in it, and a clutch usually consists of four eggs. The eggs hatch in May and the young fledge about a month later. Parents will often try to distract predators from the nest by feigning a broken wing. Migration to the wintering grounds occurs in early September.

BIOLOGICAL CONCLUSION **NO EFFECT**

There are no beaches located within the project site. The nearest beach is approximately 18 miles away, therefore the project will have "no effect" on the piping plover. Also, a search of the NCNHP database on July 21, 20003 found no occurrence of this species within the project vicinity.

Chelonia mydas (green sea turtle) **Threatened**

The distinguishing factors found in the green sea turtle are the single clawed flippers and a single pair of elongated scales between the eyes. This sea turtle has a small head and a strong, serrate, lower jaw.

The green sea turtle is found in temperate and tropical oceans and seas. Nesting in North America is limited to small communities on the east coast of Florida requiring beaches with minimal disturbances and a sloping platform for nesting (they do not nest in NC). The green sea turtle can be found in shallow waters. They are attracted to lagoons, reefs, bays, Mangrove swamps and inlets where an abundance of marine grasses can be found, marine grasses are the principle food source for the green turtle.

BIOLOGICAL CONCLUSION **NO EFFECT**

There are no beaches located within the project site. The nearest beach is approximately 18 miles away, therefore the project will have "no effect" on the green sea turtle. Also, a search of the NCNHP database on July 21, 2003 found no occurrence of this species within the project vicinity.

Dermochelys coriacea (leatherback sea turtle) **Endangered**

The leatherback sea turtle is the largest of the marine turtles. Unlike other marine turtles, the leatherback has a shell composed of tough leathery skin. The carapace has 7 longitudinal ridges and the plastron has 5 ridges. The leatherback is black to dark brown in color and may have white blotches on the head and limbs.

Leatherbacks are distributed world-wide in tropical waters of the Atlantic, Pacific, and Indian oceans. Leatherbacks prefer deep waters and are often found near the edge of the continental shelf. In northern waters they are reported to enter into bays, estuaries, and other inland bodies of water. Leather back nesting requirements are very specific, they need sandy beaches backed with vegetation in the proximity of deep water and generally with rough seas. Beaches with a suitable slope and a suitable depth of coarse dry sand are necessary for the leatherback to nest. Major nesting areas occur in tropical regions and the only nesting population in the United States is found in Martin County, Florida. Leatherback nesting occurs from April to August.

BIOLOGICAL CONCLUSION **NO EFFECT**

There are no beaches located within the project site. The nearest beach is approximately 18 miles away, therefore the project will have "no effect" on the leatherback sea turtle. Also, a search of the NCNHP database on July 21, 2003 found no occurrence of this species within the project vicinity.

Felis concolor cougar (eastern cougar) **Endangered**

Cougars are tawny colored with the exception of the muzzle, the backs of the ears, and the tip of the tail, which are black. In North Carolina the cougar is thought to occur in only a few scattered areas, possibly including coastal swamps and the southern Appalachian mountains. The eastern cougar is found in large remote wilderness areas where there is an abundance of their primary food source, white-tailed deer. A cougar will usually occupy a range of 25.0 miles and they are most active at night.

BIOLOGICAL CONCLUSION **NO EFFECT**

No suitable habitat exits in the project area and no signs of the eastern cougar were found. The project area is located in a highly developed area and does not contain any large remote wilderness areas. Therefore, this project will have "no effect" on this species. Also, a search of the NCNHP database on July 21, 2003 found no occurrence of this species within the project vicinity.

Haliaeetus leucocephalus (bald eagle) **Threatened**

Adult bald eagles can be identified by their large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. In flight bald eagles can be identified by their flat wing soar.

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

BIOLOGICAL CONCLUSION **NO EFFECT**

No suitable habitat in the form of tall trees in close proximity to water are present within the project area. The area is mostly disturbed by commercial businesses, the Marine Corp Base and a busy highway. Therefore, this project will have "no effect" on this species. Also, a search of the NCNHP database on July 21, 2003 found no occurrence of this species within the project vicinity.

Picoides borealis (red-cockaded woodpecker) **Endangered**

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

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are $\geq$ 60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 200.0 hectares (500.0 acres). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 3.6-30.3 m (12-100 ft) above the ground and average 9.1- 15.7 m (30-50 ft) high. They can be identified by a large incrustation of running sap that surrounds the tree. The RCW lays its eggs in April, May, and June; the eggs hatch in approximately 10 to 12 days.

BIOLOGICAL CONCLUSION **NO EFFECT**

No old growth pine stands occur on the project area and no RCW cavity trees were found. No active clusters are located within a half mile of the project area, therefore this project will have "no effect" on this species. Also, a search of the NCNHP on July 21, 2003 found no occurrence of this species within the project vicinity.

Amaranthus pumilus (seabeach amaranth) **Threatened**

Seabeach amaranth is an annual legume that grows in clumps containing 5 to 20 branches and are often over a foot across. The trailing stems are fleshy and reddish-pink or reddish in color. Seabeach amaranth has thick, fleshy leaves that are small, ovate-spatulate, emarginate and rounded. The leaves are usually spinach green in color, cluster towards the end of a stem, and have winged petioles. Flowers grow in axillary fascicles and the legume has smooth, indehsicent fruits. Seeds are glossy black. Both fruits and flowers are relatively inconspicuous and born along the stem.

Seabeach amaranth is endemic to the Atlantic Coastal Plain beaches. Habitat for seabeach amaranth is found on barrier island beaches functioning in a relatively dynamic and natural manner. Seabeach amaranth grows well in overwash flats at the accreting ends of islands and the lower foredunes and upper strands of noneroding beaches. Temporary populations often form in blowouts, sound-side beaches, dredge spoil, and beach replenishment. This species is very intolerant to competition and is not usually found in association with other species. Threats to seabeach amaranth include beach stabilization projects, all terrain vehicles (ATV's), herbivory by insects and animals, beach grooming, and beach erosion.

BIOLOGICAL CONCLUSION **NO EFFECT**

There are no beaches located within the project site. The nearest beach is approximately 18 miles away, therefore the project will have "no effect" on seabeach amaranth. Also, a search of the NCNHP database on July 21, 2003 found no occurrence of this species within the project vicinity.

Lysimachia asperulaefolia (rough-leaved loosestrife) **Endangered**

Rough-leaved loosestrife is a perennial herb having slender stems and whorled leaves. This herb has showy yellow flowers which usually occur in threes or fours. Fruits are present from July through October.

Rough-leaved loosestrife is endemic to the coastal plain and sandhills of North and South Carolina. This species occurs in the ecotones or edges between longleaf pine uplands and pond pine pocosins (areas of dense shrub and vine growth usually on a wet, peat, poorly drained soil), on moist to seasonally saturated sands and on shallow organic soils overlaying sand. It has also been found to occur on deep peat in the low shrub community of large Carolina bays (shallow, elliptical, poorly drained depressions of unknown origins). The areas it occurs in are fire maintained. Rough-leaved loosestrife rarely occurs in association with hardwood stands and prefers acidic soils.

BIOLOGICAL CONCLUSION **NO EFFECT**

No suitable habitat for rough-leaved loosestrife occurs on the project area. The project area contains no ecotones and the area is fire suppressed and highly disturbed. Therefore, the project will have "no effect' on this species. Also, a search of the NCNHP database July 21, 2003 found no occurrence of this species within the project vicinity.

Thalictrum cooleyi (Cooley's meadowrue) **Endangered**

Cooley's meadowrue is a rhizomatous perennial plant with stems that grow to one meter in length. Stems are usually erect in direct sunlight but are lax and may lean on other plants or trail along the ground in shady areas. Leaves are usually narrowly lanceolate and unlobed, some two or three lobed leaves can be seen. The flowers lack petals. Fruits mature from August to September.

Cooley's meadowrue occurs in moist to wet bogs, savannas and savanna-like openings, sandy roadsides, rights-of-ways, and old clearcuts. This plant is dependent on some form of disturbance to maintain its habitat. All known populations are on circumneutral, poorly drained, moderately permeable soils of the Grifton series. Cooley's meadowrue only grows well in areas with full sunlight.

BIOLOGICAL CONCLUSION **NO EFFECT**

No habitat exists on the project site. The project site does not contain any wet bogs, savannas or old clearcuts and the right-of-way is highly disturbed by commercial lawn maintenance. Therefore the project will have "no effect" on this species. Also, a search of the NCNHP database July 21, 2003 found no occurrence of this species within the project vicinity.

4.2.2 Federal Species of Concern and State Listed Species

There are 23 Federal Species of Concern (FSC) listed for Onslow County as of January 29, 2003. Federal Species of Concern are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Federal Species of Concern are defined as those species which may or may not be listed in the future. These species were formally candidate species, or species under consideration for listing for which there was insufficient information to support a listing of Endangered, Threatened, Proposed Endangered, and Proposed Threatened. Organisms which are listed as Endangered, Threatened, Significantly Rare, or Special Concern by the NCNHP list of rare plant and animal species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Table 3 lists Federal Species of Concern, species state status, and the existence of suitable habitat for each species in the study area. This species list is provided for information purposes as the status of these species may be upgraded in the future.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. As of a July 21, 2003 review of the NCNHP database of the rare species and unique habitats revealed no records of North Carolina rare and/or protected species in or near the project study area.

Table 2 Federal Species of Concern for Onslow County.

Scientific Name	Common name	NC Status	Habitat
Aimophila aestivalis	Bachman's sparrow	SC	No
Ammodramus henslowii	Henslow's sparrow	SR	No
Asplenium heteroresiliens	Carolina spleenwort	E	No
Carex chapmanii	Chapman's sedge	W1	No
Carex lutea	golden sedge	E	No
Dichanthelium sp. 1	Hirst's panic grass	E	No
Dionea muscipula	venus flytrap	C-SC	No
Heterdon simus	southern hognose smake	SR(PSC)	Yes
Laterallus jamaicensis	black rail	SR	No
Litsea aestivalis	pondspice	C	No
Lobelia boykinii	Boykin's lobelia	C	No
Myriophyllum laxum	loose watermilfoil	T	No
Ophisaurus mimicus	mimic glass lizard	SC(PT)	Yes
Oxypolis ternata	Savanna cowbane	W1	No
Parnassia caroliniana	Carolina grass-of-parnassus	E	No
Passerina ciris ciris	eastern painted bunting	SR	No
Procambarus plumimanus	Croatan crayfish	W3	Yes
Rana capito capito	Carolina gopher frog	SC(PT)	Yes
Rhexia aristosa	awned meadowbeauty	T	No
Rhynchospora thornei	Thorne's beaksedge	E	No
Solidago pulchra	Carolina goldenrod	E	No
Solidago verna	spring-flowering goldenrod	T	No
Tofieldia glabra	Carolina asphodel	C	No

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

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

"SC"--A Special Concern species is one which requires monitoring but may be taken or collected and sold under regulations adopted under the provisions of Article 25 of Chapter 113 of the General Statutes (animals) and the Plant Protection and Conservation Act (plants). Only propagated material may be sold of Special Concern plants that are also listed as Threatened or Endangered.

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

"SR"--A Significantly Rare species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is generally more common elsewhere in its range, occurring peripherally in North Carolina.

"W2"--A Watch Category 2 species is a species rare to uncommon, but probably not in trouble.

"W3"--A Watch Category 3 species is a species that is poorly known; perhaps needs listing in upcoming years.

"W5"--A Watch Category 5 species is a species with increasing amounts of threats to its habitat; populations may or may not be known to be declining.

"*"--Historic record (last observed in the county more than 50 years ago).

"**"--Obscure record (the date and/or location of observation is uncertain).

(Amoroso, 1997; LeGrand, 1997)

6.0 REFERENCES

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CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**U-4439**
State Project No.	**8.1262201**
Federal Project No.	**STPNHS-17(39)**
WBS Element	**35032.1.1**

A. Project Description: (Include project scope and location and refer to the attached project location map.)

Widening and/or improvement of Curtis Road (SR 1130) from US 17 to "A" Street at the US Marine Corps Base at the New River Air Station in Jacksonville. This document covers the US 17-Curtis Road intersection improvements only. These improvements consist of adding an additional left turn lane with a four-foot paved shoulder on US 17 Southbound into the Marine Base and extending the length of the existing left turn lanes; widen US 17 Northbound to increase storage in the right turn lane into the base including a four-foot paved shoulder; and widening the entrance at the base to accommodate the additional left turn into the base. These improvements will be constructed within the existing right of way. See Figure 1 for project location and Figure 2 for intersection geometry.

B. Purpose and Need:

Reduce congestion on US 17 caused by the USMC Gate on Curtis Road, and improve capacity on SR 1130.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).

   a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
   b. Widening roadway and shoulders without adding through lanes
   c. Modernizing gore treatments
   (d.) **Constructing lane improvements (merge, auxiliary, and turn lanes)**
   e. Adding shoulder drains
   f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
   g. Providing driveway pipes
   h. Performing minor bridge widening (less than one through lane)
   i. Slide Stabilization
   j. Structural BMP's for water quality improvement

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

   a. Installing ramp metering devices
   b. Installing lights
   c. Adding or upgrading guardrail
   d. Installing safety barriers including Jersey type barriers and pier protection
   e. Installing or replacing impact attenuators
   f. Upgrading medians including adding or upgrading median barriers
   g. **Improving intersections including relocation and/or realignment**
   h. Making minor roadway realignment
   i. Channelizing traffic
   j. Performing clear zone safety improvements including removing hazards and flattening slopes
   k. Implementing traffic aid systems, signals, and motorist aid
   l. Installing bridge safety hardware including bridge rail retrofit

3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

   a. Rehabilitating, reconstructing, or replacing bridge approach slabs
   b. Rehabilitating or replacing bridge decks
   c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
   d. Replacing a bridge (structure and/or fill)

4. Transportation corridor fringe parking facilities.

5. Construction of new truck weigh stations or rest areas.

6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.

10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.

11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

13. Acquisition and construction of wetland, stream and endangered species mitigation sites.

14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information: (Include Environmental Commitments and Permits Required.)

This document covers the work within DOT Right of Way. Within DOT's right of way there are 0.082 acres of wetlands. The Marine Corps Base is preparing the environmental document for work located on their property.

NCDOT will acquire permits for the entire project including work on the Marine Base.

For the US 17/Curtis Road intersection improvements, a Section 404 Nationwide Permit 23 from the USACE is likely and a Section 401 Water Quality General Certification from NCDWQ. It has not been determined what permits will be needed for the remainder of the improvements to Curtis Road.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

ECOLOGICAL		YES	NO
(1)	Will the project have a substantial impact on any unique or important natural resource?		x
(2)	Does the project involve habitat where federally listed endangered or threatened species may occur?		x
(3)	Will the project affect anadromous fish?		x
(4)	If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	X	
(5)	Will the project require the use of U. S. Forest Service lands?		x
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		x
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?		x
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		x
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		x

PERMITS AND COORDINATION		YES	NO
(10)	If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?		x
(11)	Does the project involve Coastal Barrier Resources Act resources?		x
(12)	Will a U. S. Coast Guard permit be required?		x
(13)	Will the project result in the modification of any existing regulatory floodway?		x

		YES	NO
(14)	Will the project require any stream relocations or channel changes?		x
	SOCIAL, ECONOMIC, AND CULTURAL RESOURCES	**YES**	**NO**
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		x
(16)	Will the project require the relocation of any family or business?		x
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		x
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	x	
(19)	Will the project involve any changes in access control?		x
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		x
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		x
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	x	
(23)	Is the project anticipated to cause an increase in traffic volumes?		x
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	x	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	N/A	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		x
(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	x	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?		x

(29)	Will the project affect any archaeological remains which are important to history or pre-history?		x
(30)	Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)?		x
(31)	Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?		x
(32)	Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers?		x

F. Additional Documentation Required for Unfavorable Responses in Part E
(Discussion regarding all unfavorable responses in Part E should be provided below. Additional supporting documentation may be attached, as necessary.)

Wetland impacts are 0.082 ac within the project study area covered by this Programmatic Categorical Exclusion.

G. CE Approval

TIP Project No.	U-4439
State Project No.	8.1262201
Federal-Aid Project No.	STPNHS-17(39)
WBS Element	35032.1.1

Project Description: (Include project scope and location. Attach location map.)

Widening and/or improvement of Curtis Road (SR 1130) from US 17 to "A" Street at the US Marine Corps Base at the New River Air Station in Jacksonville. This document covers the US 17-Curtis Road intersection improvements only. These improvements consist of adding an additional left turn lane with a four-foot paved shoulder on US 17 Southbound into the Marine Base and extending the length of the existing left turn lanes; widen US 17 Northbound to increase storage in the right turn lane into the base including a four-foot paved shoulder; and widening the entrance at the base to accommodate the additional left turn into the base. These improvements will be constructed within the existing right of way. See Figure 1 for project location and Figure 2 for intersection geometry.

Categorical Exclusion Action Classification: (Check one)

__x__ TYPE II(A)
_____ TYPE II(B)

Approved:

_____ Date

_____
Assistant Manager
Project Development and Environmental Analysis Branch

_____ Date

_____
Project Development Unit Head
Project Development and Environmental Analysis Branch

_____ Date

_____
Project Development Engineer
Project Development and Environmental Analysis Branch

For Type II(B) projects only:

_____ Date

_____
Division Administrator
Federal Highway Administration