STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 16, 2006

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

ATTN.: Mr. Steve Lund
NCDOT Coordinator

Subject: **APPLICATION REVISION for Individual Section 404 and 401 permits for TIP R-2616** for the proposed widening of US 601 from the South Carolina State Line to north of Marion Lee Road (SR 2105) south of Monroe in Union County; NCDOT Division 10. Federal Project No. STP-NHS-601(4), State Project No. 8.1690303, WBS Element 34485.1.1.

Dear Sir:

Please reference the July 21, 2005 Individual Permit and subsequent application modification dated October 7, 2005. Due to concerns noted by the North Carolina Division of Water Quality in a request for more information/ on hold notification dated October 17, 2005, changes in the permit drawings were necessary. A response to these concerns was sent to DWQ on February 7, 2006.

A complete set of revised hydraulic (permit) drawings, summary table, and roadway drawings are included in this modification. As impacts to wetlands have increased, an updated Ecosystem Enhancement Program mitigation acceptance letter is attached to this modification.

Below is a description of the changes for each site:

Site 2 (Permit application page 8): The temporary impacts to surface waters for this site have increased by 20 linear feet (from 20' to 40'). This change is necessary for the temporary de-watering activities for the installation of the box culverts.

Site 3 (Permit application page 12): The current sextuple barrel box culvert will be removed and replaced with a bridge. We have subtracted 39 linear feet of permanent

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
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FAX: 919-715-1501
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

stream impact from the total permanent stream impact for the project for using a spanning structure.

Sites 5 & 6 (Permit application page 18): On the previous impact summary table, the impacts for Sites 5 & 6 were separated into corresponding Left and Right sides of the road, and adjacent wetland impacts were shown with site 6. As the same stream is impacted on the Left and Right sides, the stream impacts have been combined into Site 5, and the wetland impacts are shown solely with Site 6.

The permanent impacts to wetlands have decreased by 0.0011 acre (from 0.015 to 0.004).

The temporary stream impacts have increased by 27 feet (from 11' to 38') due to the temporary de-watering activities for the installation of the box culvert.

Site 7 (Permit application page 18): The permanent stream impacts have increased by 23 feet (from 192' to 215') due to a calculation error.

Site 12 (Permit application page 27): The permanent stream impacts have been reduced by 30 feet (from 320' to 290') due to a calculation error.

Site 13 (Permit application page 29): The temporary stream impacts have increased by 20 feet (from 20' to 40'). This change is necessary for the temporary de-watering activities for the installation of the box culverts.

Site 14 (Permit application page 29): The temporary stream impacts have increased by 30 feet (from 20' to 50'). This change is necessary for the temporary de-watering activities for the installation of the box culverts.

Site 15 (Permit application page 29): The temporary stream impacts have increased by 5 feet (from 24' to 29'). This change is necessary for the temporary de-watering activities for the installation of the box culverts.

Site 16 (Permit application page 37): Due to the installation of a bottomless culvert, we have subtracted 40 feet of permanent stream impact, which will flow on natural substrate.

Site 19 (Permit application page 43): A pond with an adjacent fringe wetland will be drained, thus removing the hydrology from the system. This wetland impact was inadvertently omitted from the original application. This de-watering will result in 0.04 acre of permanent wetland impacts. This de-watering was classified as "excavation" on the attached impact summary table.

Site 22 (Permit application page 49): The permanent stream impacts have increased by 14 feet (from 446' to 460') and temporary impacts have increased by 10 feet (from 20' to 30') due to a calculation error.

Site 23 (Permit application page 51): The permanent wetland impacts have increased by 0.09 acre (from 0.02 to 0.110 acre) due to a calculation error.

Site 24 (Permit application page 53): The temporary stream impacts have increased by 10 feet (from 20' to 30'). This change is necessary for the temporary de-watering activities for the installation of the box culverts.

The above changes are summarized below:

- 0.119 acre of additional permanent fill in wetlands
- Stream impact changes are found below:

Stream totals for July 2005 Application	Stream totals after October 2005 Application Modification	Stream totals after February 2006 Application Modification
2,969'	-185' = 2,784'	7 feet of additional permanent stream impact minus 79 feet of culvert removal. = 2,712'

- 122 feet of additional temporary surface water impact

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Mr. Michael Turchy at maturchy@dot.state.nc.us or (919) 715-1468. A copy of this application will also be posted at http://www.doh.dot.state.nc.us/preconstruct/pe/.

Sincerely,

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

Cc list:

W/attachment
Mr. John Hennessy, NCDWQ (7 Copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Ms. Becky Fox, USEPA – Whittier, NC
Mr. Ronald Mikulak, USEPA – Atlanta, GA
Mr. Clarence W. Coleman, P.E., FHWA
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. B. G. Payne, P.E., Division Engineer, Div 10
Mr. Larry Thompson, DEO, Division 10

W/o attachment
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Carl Goode, PE, Human Environment Unit Head
Mr. Mark Pierce, P.E., PDEA Project Planning Eng

Ecosystem Enhancement PROGRAM

January 31, 2006

Mr. Steve Lund
U. S. Army Corps of Engineers
Asheville Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006

Dear Mr. Lund:

Subject: EEP Mitigation Acceptance Letter:

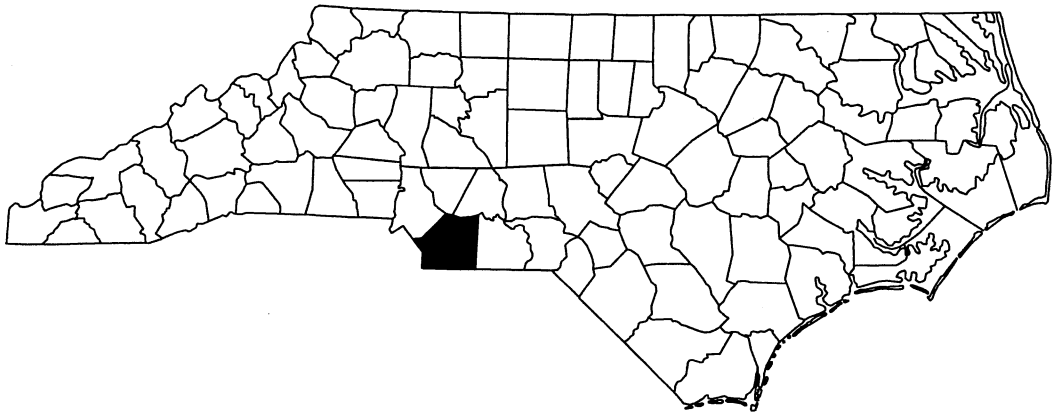
R-2616, US 601 Widening, Union County; Yadkin River Basin (CU 03040105); Southern Piedmont (SP) Eco-Region

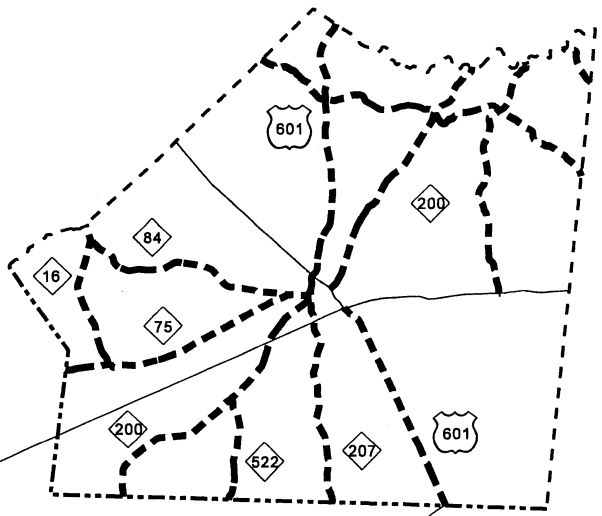
The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide mitigation for the unavoidable impacts associated with the above referenced project. The impacts as reported by the NCDOT are as follows:

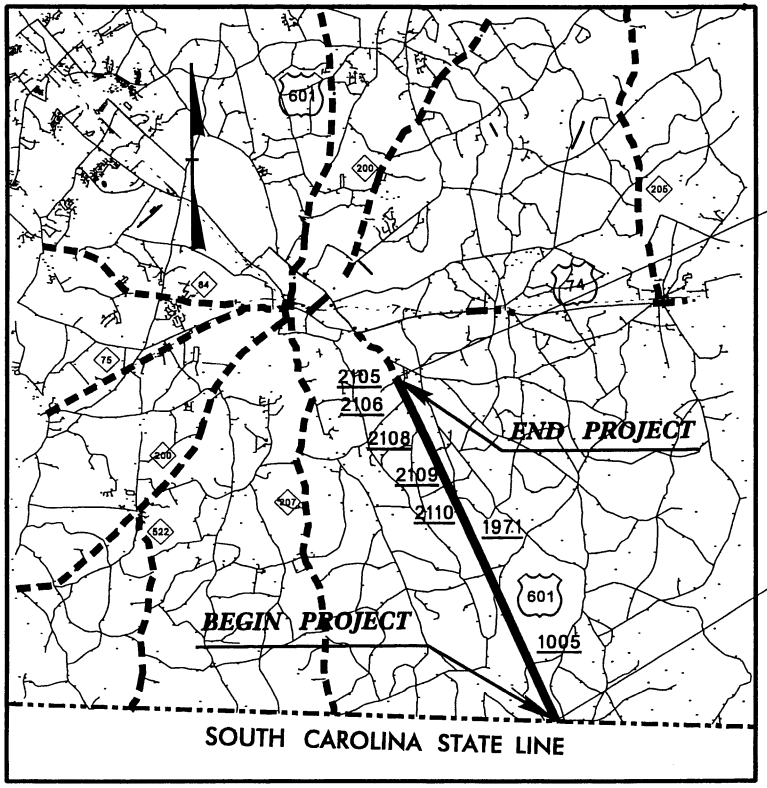
Riverine Wetland Impacts:	0.075 acre
Non-Riverine Wetland Impacts:	0.260 acre
Stream Impacts:	2,712 feet

This mitigation strategy letter replaces the mitigation strategy letter issued on July 19, 2005. The subject project is not 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. This project was accelerated and included in the NCDOT's Design Build Program.

Currently, EEP has surplus stream mitigation with sufficient assets to cover this years projected mitigation requirements plus the mitigation for the above referenced project. Therefore, the EEP intends to provide compensatory stream mitigation up to a 2:1 ratio in Cataloging Unit 03040105 of the Yadkin River Basin. Mitigation sites currently containing surplus stream mitigation assets consists of, but not inclusive of, the Camp Branch @ Bishop, Afton Run, Back Creek, and Helms Mitigation Sites.







N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
UNION COUNTY
PROJECT 34485.1.2 (R-2616 A&B)

US 601 FROM THE SOUTH
CAROLINA STATE LINE
TO NORTH OF
SR 2105 (MARION LEE RD.)

Permit Application Plansheet Page 1

WETLAND LEGEND

WLB — WETLAND BOUNDARY

WLB / WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES PERM. SURFACE WATER IMPACTS

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY FILL IN WETLAND

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY SURFACE WATER IMPACT

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

12"-48" PIPES

54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
UNION COUNTY
PROJECT 34485.1.2 (R-2616 A&B)

US 601 FROM THE SOUTH CAROLINA STATE LINE TO NORTH OF SR 2105 (MARION LEE RD.)

Permit Application Plansheet Page 2

IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW Impacts (ac)	Temp. SW Impacts (ac)	Exist. Chan. Impacts Permanent (ft)	Exist. Chan Impacts Temp. (ft)	Natural Stream Design (ft)
1	L 102+00 to 106+50	2 @ 54" RCP						0.02	0.01	223	75	
2	L 119+34	3 @ 10'X8' RCBC						0.08	0.01	166	40	
3	L 129+50	(2) 2 SPAN@65' BRIDGE							0.15		150	39**
4	L 148+91 LT	42" RCP						0.003	0.001	48	10	
5	L 180+30 RT & LT	48" RCP						0.01	0.003	164	38	
6	L 180+30 LT	48" RCP	0.006			0.003						
7	L 180+30 to 183+00 LT	Earthen Fill						0.03	0.004	215	10	
8	L 215+70 RT	24" RCP	0.006			0.003						
9	L 221+70 LT	Drain Pond						0.83				
10	L 231+30	54" RCP						0.01	0.001	170	22	
11	L 242+35	66" RCP						0.04	0.003	161	20	
12	L 248+30 to 251+09	48" RCP						0.04	0.003	290	22	
13	L 281+51	12'X10' RCBC						0.04	0.01	128	40	
14	L 288+06.5	2 @ 8'X7' RCBC						0.04	0.01	124	50	
15	L 290+00 to 294+30	2 @ 30" RCP						0.06	0.004	466	29	
16	L 315+56 *	16'X8' Bottomless Structure						0.01	0.08	25	240	40*
17	L 342+00 LT	Drain Pond						0.31				
18	L 349+50 RT	Earthen Fill & Drain Pond	0.040					0.89				
19	L 349+50 LT	Drain Pond			0.04***			0.47				
20	L 400+00 RT	Drain Pond						0.58				
21	L 422+00 LT	Drain Pond						0.45				
22	L 426+03 to 430+50	54" RCP						0.03	0.001	460	30	
23	L 474+07 to 476+41	24" RCP	0.110			0.005						
24	L 534+20	48" RCP						0.01	0.001	151	30	
25	L 549+60	36" RCP	0.030			0.027						
26	L 575+85 LT	24" RCP						0.29				
TOTALS:			0.19	0.00	0.04	0.04	0.00	4.24	0.29	2791	806	79

* Stream replacement by addition of bottomless culvert.

** Stream that is currently culverted that will be spanned.

*** Wetland adjacent to drained pond- dewatered wetland.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UNION COUNTY
WBS - 34485.122 (R-2616)

Permit Application Plansheet Page 3

Jan-06

5/28/99

R-2616A&B

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Application Plansheet Page 4

*S.U.E = SUBSURFACE UTILITY ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

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

RIGHT OF WAY

- Baseline Control Point
- Existing Right of Way Marker
- Exist. Right of Way Line w/Marker
- Prop. Right of Way Line with Proposed R/W Marker (Iron Pin & Cap)
- Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker
- Exist. Control of Access Line — C A
- Prop. Control of Access Line — C A
- Exist. Easement Line — E
- Prop. Temp. Construction Easement Line — E
- Prop. Temp. Drainage Easement Line — TDE
- Prop. Perm. Drainage Easement Line — PDE

HYDROLOGY

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

STRUCTURES

MAJOR

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

MINOR

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

UTILITIES

- Exist. Pole
- Exist. Power Pole
- Prop. Power Pole
- Exist. Telephone Pole
- Prop. Telephone Pole
- Exist. Joint Use Pole
- Prop. Joint Use Pole
- Telephone Pedestal
- U/G Telephone Cable Hand Hold
- Cable TV Pedestal
- U/G TV Cable Hand Hold
- U/G Power Cable Hand Hold
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole
- Telephone Booth
- Cellular Telephone Tower
- Water Manhole
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole
- Power Transformer
- Sanitary Sewer Manhole
- Storm Sewer Manhole
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box
- Fiber Optic Splice Box
- Television or Radio Tower
- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement — TS
- Recorded Water Line
- Designated Water Line (S.U.E.*)
- Sanitary Sewer — SS
- Recorded Sanitary Sewer Force Main — FSS
- Designated Sanitary Sewer Force Main (S.U.E.*) — FSS
- Recorded Gas Line — G
- Designated Gas Line (S.U.E.*) — G
- Storm Sewer — S
- Recorded Power Line — P
- Designated Power Line (S.U.E.*) — P
- Recorded Telephone Cable — T
- Designated Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Unknown Utility (S.U.E.*) — ?UTL
- Recorded Television Cable — TV
- Designated Television Cable (S.U.E.*) — TV
- Recorded Fiber Optics Cable — FO
- Designated Fiber Optics Cable (S.U.E.*) — FO
- Exist. Water Meter
- U/G Test Hole (S.U.E.*)
- Abandoned According to U/G Record — ATTUR
- End of Information — E.O.I.

BOUNDARIES & PROPERTIES

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Property Line Symbol — PL
- Exist. Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Property Number — 123
- Parcel Number — 6
- Fence Line — WW & ISBW
- Existing Wetland Boundaries — WLB
- High Quality Wetland Boundary — HQ WLB
- Medium Quality Wetland Boundaries — MQ WLB
- Low Quality Wetland Boundaries — LQ WLB
- Proposed Wetland Boundaries — WLB
- Existing Endangered Animal Boundaries — EAB
- Existing Endangered Plant Boundaries — EPB

BUILDINGS & OTHER CULTURE

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

TOPOGRAPHY

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

VEGETATION

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

RAILROADS

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH

revised 02/02/00

04/08/2005
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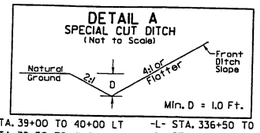
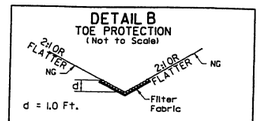
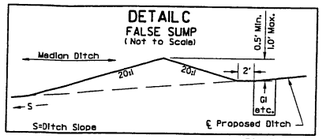
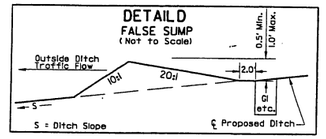
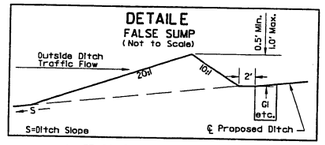
jonathan.hefner

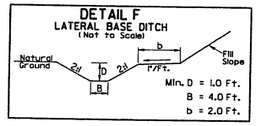


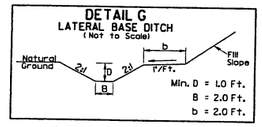


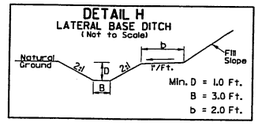


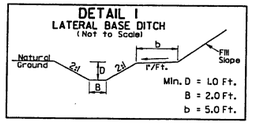


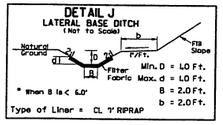


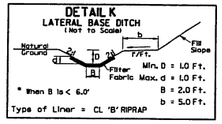


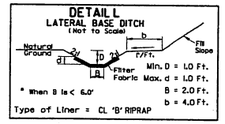


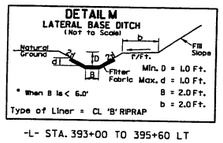


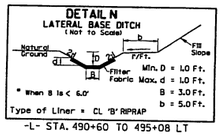


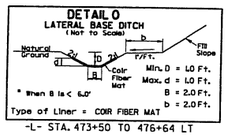


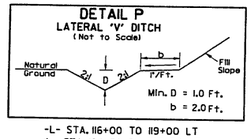


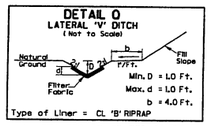


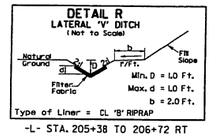


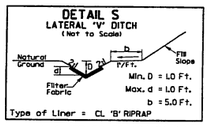


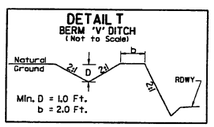


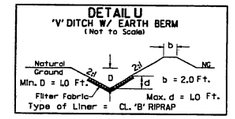


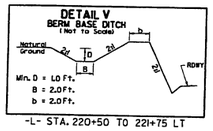


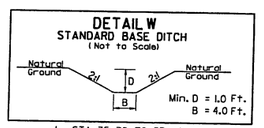


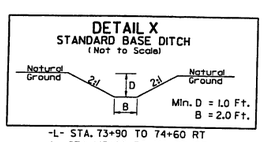


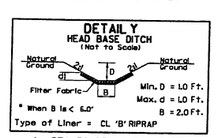


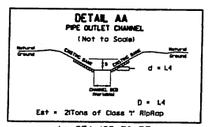


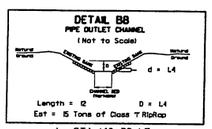


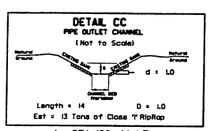


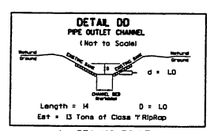


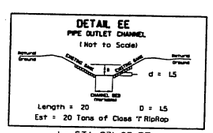


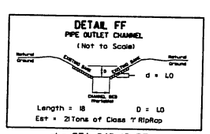


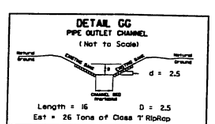


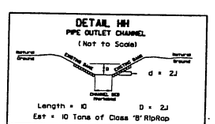


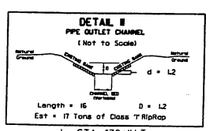


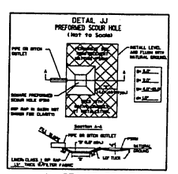












PROJECT REFERENCE NO.	SHEET NO.
R2616	3

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

Permit Application Plansheet Page 5

REVISIONS

8/17/

$$$$SYSTIME$$$$
$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

-L- STA. 39+00 TO 40+00 LT
-L- STA. 39+50 TO 41+00 RT
-L- STA. 43+00 TO 46+50 RT
-L- STA. 45+50 TO 47+50 LT
-L- STA. 48+00 TO 51+00 RT
-L- STA. 56+60 TO 57+00 RT
-L- STA. 75+00 TO 76+50 LT
-L- STA. 80+00 TO 84+00 LT
-L- STA. 80+00 TO 81+45 RT
-L- STA. 87+00 TO 87+70 LT
-L- STA. 88+50 TO 90+40 RT
-L- STA. 102+50 TO -Y2- 11+40 RT
-L- STA. 159+00 TO 160+00 LT
-L- STA. 177+00 TO 177+60 RT
-L- STA. 179+00 TO 180+00 RT
-L- STA. 187+00 TO 188+00 RT
-L- STA. 193+00 TO 194+00 RT
-L- STA. 208+50 TO 210+00 RT
-L- STA. 258+00 TO 260+00 LT
-L- STA. 263+00 TO 265+00 LT
-L- STA. 269+00 TO 271+58 LT
-L- STA. 336+50 TO 337+00 LT
-L- STA. 342+33 TO 344+00 LT
-L- STA. 380+50 TO 381+35 LT
-L- STA. 384+50 TO 385+72 LT
-L- STA. 443+50 TO 447+00 RT
-L- STA. 448+50 TO 449+70 LT
-L- STA. 449+70 TO 450+50 LT
-L- STA. 467+00 TO 469+54 RT
-L- STA. 480+00 TO 481+60 RT
-L- STA. 484+50 TO 485+00 RT
-L- STA. 516+00 TO 516+50 LT
-L- STA. 537+50 TO 538+00 RT
-L- STA. 538+00 TO 538+50 RT
-L- STA. 567+50 TO 568+16 RT
-L- STA. 568+16 TO 570+00 RT
-L- STA. 575+00 TO 575+92 RT
-Y7- STA. 26+00 TO 26+50 LT
-Y14- STA. 13+00 TO 13+60 RT
-Y16- STA. 7+50 TO 8+00 RT
-Y18- STA. 4+00 TO 4+50 LT

-L- STA. 103+00 TO 104+15 LT
-L- STA. 130+50 TO 135+50 LT
-L- STA. 135+13 TO 136+00 RT
-L- STA. 151+00 TO 153+50 LT
-L- STA. 167+76 TO 169+00 RT
-L- STA. 172+24 TO 173+32 RT
-L- STA. 214+50 TO 215+68 LT
-L- STA. 205+50 TO 206+21 LT
-L- STA. 230+00 TO 231+16 RT
-L- STA. 230+75 TO 233+00 LT
-L- STA. 238+36 TO 242+46 LT
-L- STA. 242+50 TO 243+50 RT
-L- STA. 250+26 TO 251+00 LT
-L- STA. 279+50 TO 281+00 RT
-L- STA. 312+00 TO 312+50 LT
-L- STA. 312+80 TO 316+50 LT
-L- STA. 331+30 TO 332+56 LT
-L- STA. 334+80 TO 335+60 LT
-L- STA. 349+00 TO 350+80 LT
-L- STA. 362+00 TO 363+00 RT
-L- STA. 362+50 TO 363+10 LT
-L- STA. 370+50 TO 372+00 LT
-L- STA. 396+80 TO 400+16 RT
-L- STA. 396+56 TO 401+50 LT
-L- STA. 430+00 TO 433+00 RT
-L- STA. 432+35 TO 433+50 LT
-L- STA. 437+46 TO 439+50 RT
-L- STA. 467+75 TO 468+80 LT
-L- STA. 516+50 TO 519+58 LT
-L- STA. 520+50 TO 524+00 RT
-L- STA. 530+78 TO 534+27 RT
-L- STA. 550+50 TO 551+25 RT
-L- STA. 552+70 TO 555+00 LT
-L- STA. 553+80 TO 555+50 RT
-L- STA. 562+00 TO 563+00 RT
-Y6- STA. 13+00 TO 15+00 RT
-Y9- STA. 11+10 TO 12+00 LT
-Y13- STA. 21+00 TO 21+74 LT

-L- 21+20 (MED)
-L- 23+00 (MED)
-L- 26+50 (MED)
-L- 31+40 (MED)
-L- 37+80 (MED)
-L- 44+00 (MED)
-L- 49+00 (MED)
-L- 57+00 (MED)
-L- 62+20 (MED)
-L- 64+50 (MED)
-L- 67+30 (MED)
-L- 70+50 (MED)
-L- 73+90 (MED)
-L- 81+62 (MED)
-L- 84+00 (MED)
-L- 87+80 (MED)
-L- 91+20 (MED)
-L- 96+61 (MED)
-L- 98+00 (MED)
-L- 115+60 (MED
-L- 120+40 (MED)
-L- 128+30 (MED)
-L- 137+35 (MED)
-L- 142+39 (MED)
-L- 146+50 (MED)
-L- 148+76 (MED)
-L- 158+70 (MED)
-L- 168+65 (MED)
-L- 173+45 (MED)
-L- 178+00 (MED)
-L- 203+61 (MED)
-L- 229+20 (MED)
-L- 234+00 (MED)
-L- 235+00 (MED)
-L- 238+90 (MED)
-L- 250+70 (MED)
-L- 262+20 (MED)
-L- 263+20 (MED)
-L- 269+10 (MED)
-L- 271+60 (MED)
-L- 276+50 (MED)
-L- 278+50 (MED)
-L- 284+70 (MED)
-L- 288+80 (MED)
-L- 290+80 (MED)
-L- 298+20 (MED)
-L- 302+90 (MED)
-L- 304+30 (MED)
-L- 305+40 (MED)
-L- 311+50 (MED)
-L- 326+10 (MED)
-L- 335+50 (MED)
-L- 349+60 (MED)
-L- 352+30 (MED)
-L- 354+00 (MED)
-L- 358+50 (MED)
-L- 362+50 (MED)
-L- 364+50 (MED)
-L- 371+20 (MED)
-L- 375+80 (MED)
-L- 380+20 (MED)
-L- 393+10 (MED)
-L- 404+50 (MED)
-L- 412+00 (MED)
-L- 412+70 (MED)
-L- 414+00 (MED)
-L- 415+75 (MED)
-L- 420+20 (MED)
-L- 430+50 (MED)
-L- 436+20 (MED)
-L- 438+00 (MED)
-L- 451+80 (MED)
-L- 454+20 (MED)
-L- 460+60 (MED)
-L- 463+30 (MED)
-L- 466+50 (MED)
-L- 468+90 (MED)
-L- 485+00 (MED)
-L- 498+90 (MED)
-L- 500+10 (MED)
-L- 502+50 (MED)
-L- 505+20 (MED)
-L- 511+70 (MED)
-L- 513+40 (MED)
-L- 516+50 (MED)
-L- 522+30 (MED)
-L- 528+60 (MED)
-L- 531+50 (MED)
-L- 534+10 (MED)
-L- 541+80 (MED)
-L- 546+90 (MED)
-L- 549+30 (MED)
-L- 561+40 (MED)
-L- 568+00 (MED)
-L- 573+90 (MED)
-L- 575+80 (MED)
-L- 581+00 (MED)

-L- 23+00 (LT)
-L- 26+50 (LT)
-L- 120+39 (LT)
-L- 128+30 (LT)
-L- 137+37 (LT)
-L- 229+00 (LT)
-L- 234+00 (LT)
-L- 244+50 (LT)
-L- 276+50 (LT)
-L- 288+80 (LT)
-L- 311+50 (LT)
-L- 324+50 (LT)
-L- 404+50 (LT)
-L- 485+00 (LT)
-L- 511+70 (LT)
-L- 516+50 (LT)
-L- 546+90 (LT)

-L- 23+00 (RT)
-L- 26+50 (RT)
-L- 120+41 (RT)
-L- 128+10 (RT)
-L- 137+35 (RT)
-L- 229+50 (RT)
-L- 278+50 (RT)
-L- 285+00 (RT)
-L- 290+80 (RT)
-L- 302+90 (RT)
-L- 364+50 (RT)
-L- 502+50 (RT)
-L- 541+80 (RT)

-L- STA. 37+80 TO 39+50 RT
-L- STA. 314+00 TO 316+00 LT

-L- STA. 149+50 TO 152+10 RT
-L- STA. 329+32 TO 331+50 RT
-L- STA. 379+20 TO 381+00 RT

-L- STA. 70+00 TO 71+15 RT
-L- STA. 180+50 TO 182+32 LT
-L- STA. 291+50 TO 294+00 LT

-L- STA. 426+28 TO 430+00 RT

-L- STA. 40+00 TO 40+65 LT

-L- STA. 249+50 TO 250+65 RT

-L- STA. 360+60 TO 361+96 RT

-L- STA. 393+00 TO 395+60 LT

-L- STA. 490+60 TO 495+08 LT

-L- STA. 473+50 TO 476+64 LT

-L- STA. 116+00 TO 119+00 LT
-L- STA. 184+50 TO 187+50 LT
-L- STA 335+62 TO 336+50 LT
-L- STA. 342+85 TO 344+50 RT
-L- STA. 363+30 LT TO -Y10- 6+20 RT
-L- STA. 476+37 TO 478+00 RT
-L- STA. 538+50 TO 539+03 LT
-L- STA. 559+50 TO 561+00 RT
-Y12- STA. 17+00 TO 18+91 RT
-Y12- STA. 17+50 TO 18+91 LT
-Y14- STA. 13+00 TO 13+80 LT

-L- STA. 356+50 TO 358+00 RT

-L- STA. 205+38 TO 206+72 RT
-L- STA. 237+50 TO 238+35 LT
-L- STA. 341+50 TO 342+85 RT
-L- STA. 475+50 TO 476+37 RT
-L- STA. 548+50 TO 549+50 RT
-L- STA. 560+50 TO 561+68 LT

-L- STA. 492+00 TO 494+84 RT
-L- STA. 494+84 TO 498+90 RT

-L- STA. 292+50 TO 293+00 RT
-L- STA. 293+00 TO 296+00 RT
-L- STA. 305+00 TO 307+40 RT
-L- STA. 375+70 TO 380+50 LT
-L- STA. 508+50 TO 511+65 LT
-L- STA. 557+75 TO 560+50 LT
-L- STA. 587+00 TO 592+62 LT

-L- STA. 559+00 TO 560+50 LT

-L- STA. 220+50 TO 221+75 LT

-L- STA. 35+70 TO 37+80 RT

-L- STA. 73+90 TO 74+60 RT
-L- STA. 145+90 TO 146+00 RT
-L- STA. 146+20 TO 146+20 RT
-L- STA. 363+10 TO 364+20 LT

-L- STA. 56+35 TO 56+60 RT
-L- STA. 88+50 TO 90+40 RT
-L- STA. 177+60 TO 177+70 RT
-L- STA. 449+66 TO 449+70 LT
-L- STA. 476+64 TO 477+00 LT
-L- STA. 583+00 TO 538+32 RT

-L- STA. 105+72 RT

-L- STA. 148+39 LT

-L- STA. 180+44 LT

-L- STA. 148+39 LT

-L- STA. 231+23 RT

-L- STA. 242+16 RT
-L- STA. 430+11 LT

-L- STA. 248+68 RT

-L- STA. 289+90 RT

-L- STA. 430+11 LT
-L- STA. 534+25 LT

-L- STA. 119+00 LT
-L- STA. 241+40 RT
-L- STA. 249+49 RT

-L- STA. 149+50 TO 152+13 RT

-L- STA. 312+00 TO 314+00 LT

-L- STA. 129+55 TO 132+27 RT
-L- STA. 132+50 TO 135+13 RT

SITE 1 -L- 102+40

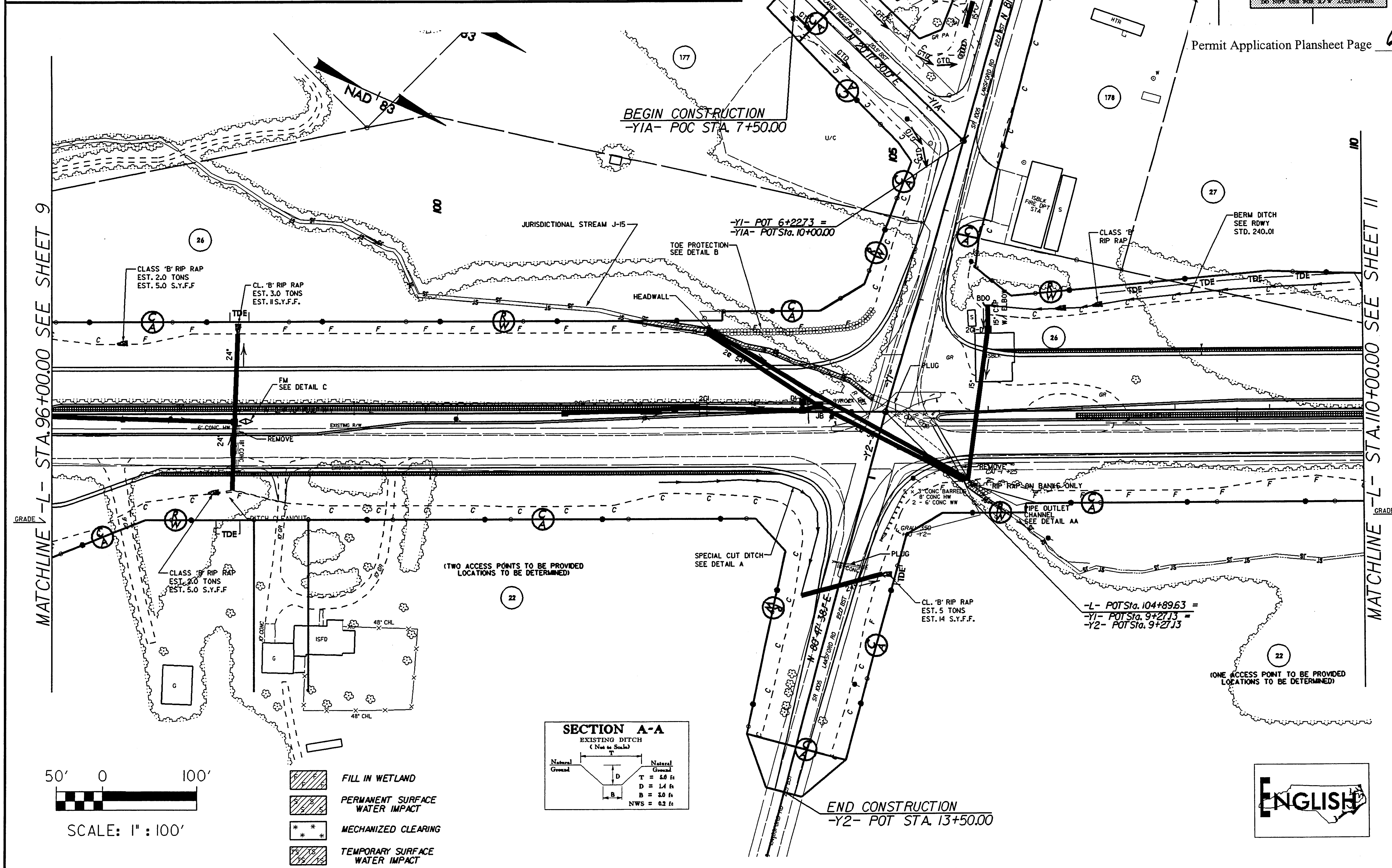
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	10

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 6



MATCHLINE SEE THIS SHEET
-Y1- STA. 4+00.00
NAD 83
BEGIN CONSTRUCTION
-Y1A- POC STA. 7+50.00
-Y1- POT 6+22.73 =
-Y1A- POT Sta. 10+00.00
JURISDICTIONAL STREAM J-15
TOE PROTECTION
SEE DETAIL B
HEADWALL
CLASS 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F
CL. 'B' RIP RAP
EST. 3.0 TONS
EST. 11 S.Y.F.F.
FM
SEE DETAIL C
REMOVE
CLASS 'B' RIP RAP
BERM DITCH
SEE RDWY
STD. 240.01
MATCHLINE -L- STA. 96+00.00 SEE SHEET 9
MATCHLINE -L- STA. 110+00.00 SEE SHEET 11
RIP RAP ON BANKS ONLY
PIPE OUTLET
CHANNEL
SEE DETAIL AA
SPECIAL CUT DITCH
SEE DETAIL A
(TWO ACCESS POINTS TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
(ONE ACCESS POINT TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
-L- POT Sta. 104+89.63 =
-Y1- POT Sta. 9+27.13 =
-Y2- POT Sta. 9+27.13
END CONSTRUCTION
-Y2- POT STA. 13+50.00
PLUG
DITCH CLEANOUT

SECTION A-A
EXISTING DITCH
(Not to Scale)

Natural Ground

T = 5.0 ft
D = 1.4 ft
B = 3.0 ft
NWS = 0.2 ft

50' 0 100'

SCALE: 1" : 100'

- FILL IN WETLAND
- PERMANENT SURFACE WATER IMPACT
- MECHANIZED CLEARING
- TEMPORARY SURFACE WATER IMPACT

ENGLISH

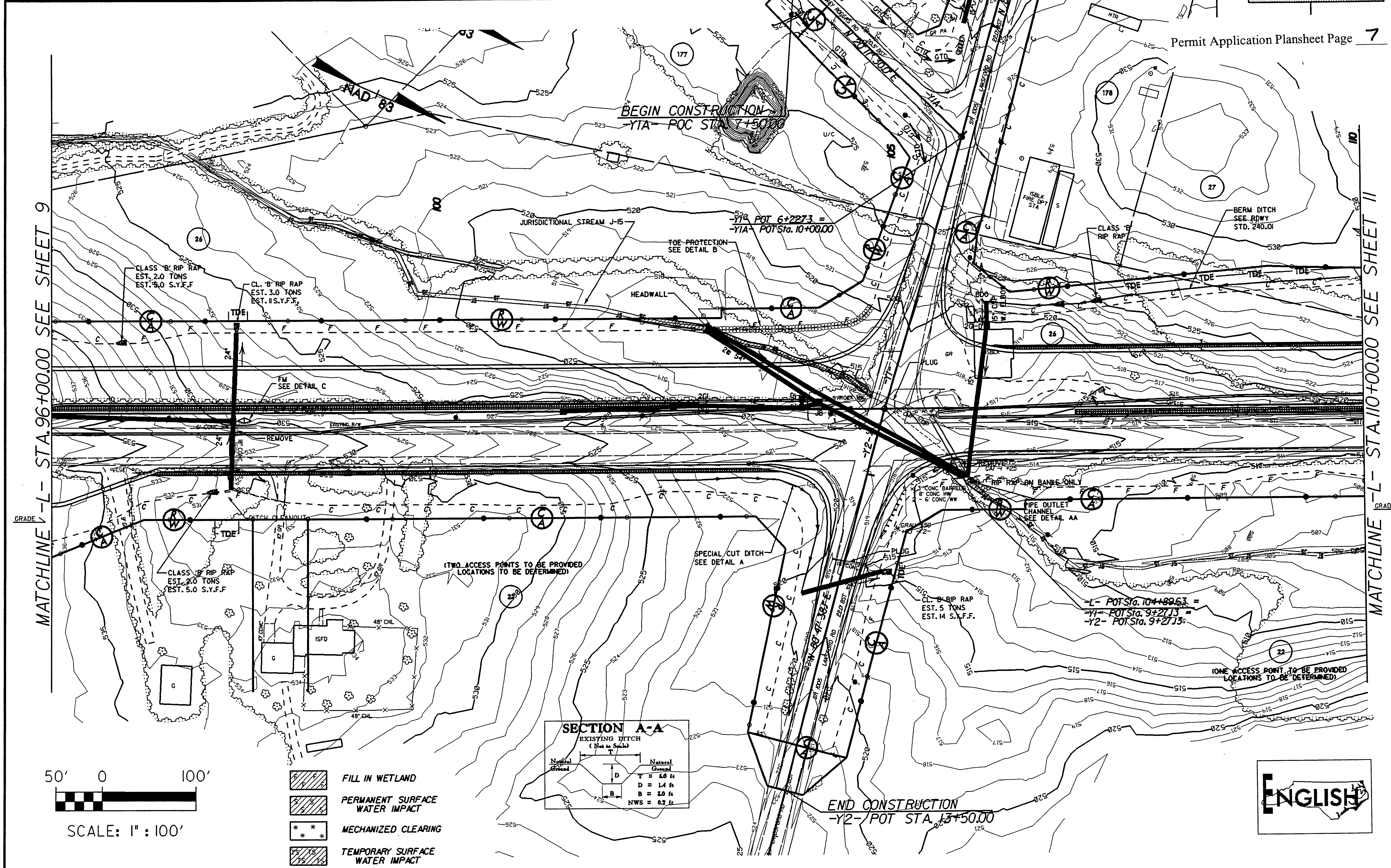
SITE 1 -L- 102+40

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 7



MATCHLINE -L- STA.96+00.00 SEE SHEET 9
MATCHLINE -L- STA.110+00.00 SEE SHEET 11
BEGIN CONSTRUCTION -Y1A- POC STA. 7+50.00
JURISDICTIONAL STREAM J-15
TOE PROTECTION SEE DETAIL B
HEADWALL
CLASS 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F
CL. 'B' RIP RAP EST. 3.0 TONS EST. 11 S.Y.F.F.
FM SEE DETAIL C
REMOVE
DITCH CLEANOUT
(TWO ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
SPECIAL CUT DITCH SEE DETAIL A
CL. 'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
RIP RAP ON BANKS ONLY
PIPE OUTLET CHANNEL SEE DETAIL AA
-L- POT Sta. 104+89.63 = -Y1- POT Sta. 9+27.13 = -Y2- POT Sta. 9+27.13
(ONE ACCESS POINT TO BE PROVIDED LOCATIONS TO BE DETERMINED)
BERM DITCH SEE RDWY STD. 240.01
CLASS 'B' RIP RAP
-Y1- POT 6+22.73 = -Y1A- POT Sta. 10+00.00
END CONSTRUCTION -Y2- POT STA. 13+50.00
FIRE DPT STA
PLUG
NAD 83

SECTION A-A
EXISTING DITCH
(Not to Scale)

T =	6.0 ft
D =	1.4 ft
B =	2.0 ft
NWS =	0.3 ft

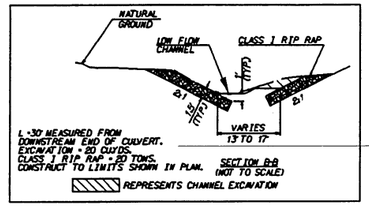
50' 0 100'

SCALE: 1" : 100'

- FILL IN WETLAND
- PERMANENT SURFACE WATER IMPACT
- MECHANIZED CLEARING
- TEMPORARY SURFACE WATER IMPACT

ENGLISH

SITE 2 -L- STA 119+34



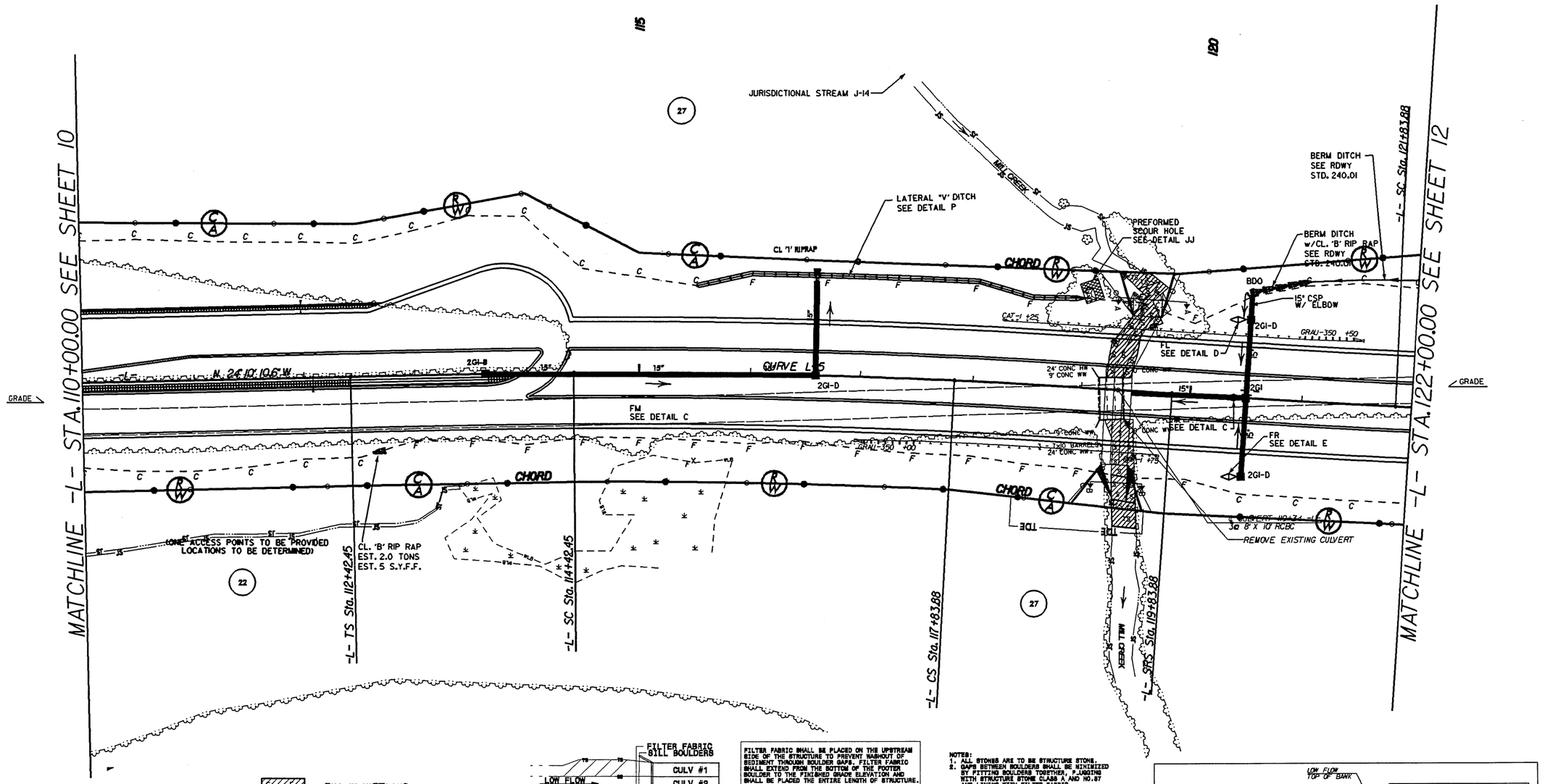
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 8

SECTION A-A



50' 0 100'

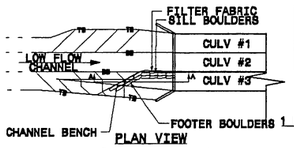
SCALE: 1" : 100'

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

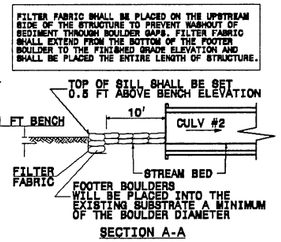
TEMPORARY SURFACE WATER IMPACT



PLAN VIEW

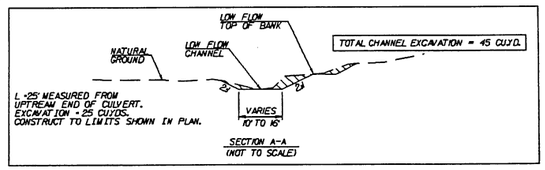
ROCK INLET SILL

SCALE: NTS



SECTION A-A

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' X 2' X 1'.



SECTION A-A
(NOT TO SCALE)

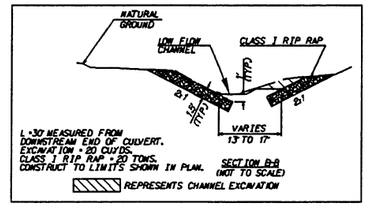
SITE 2 -L- STA 119+34

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

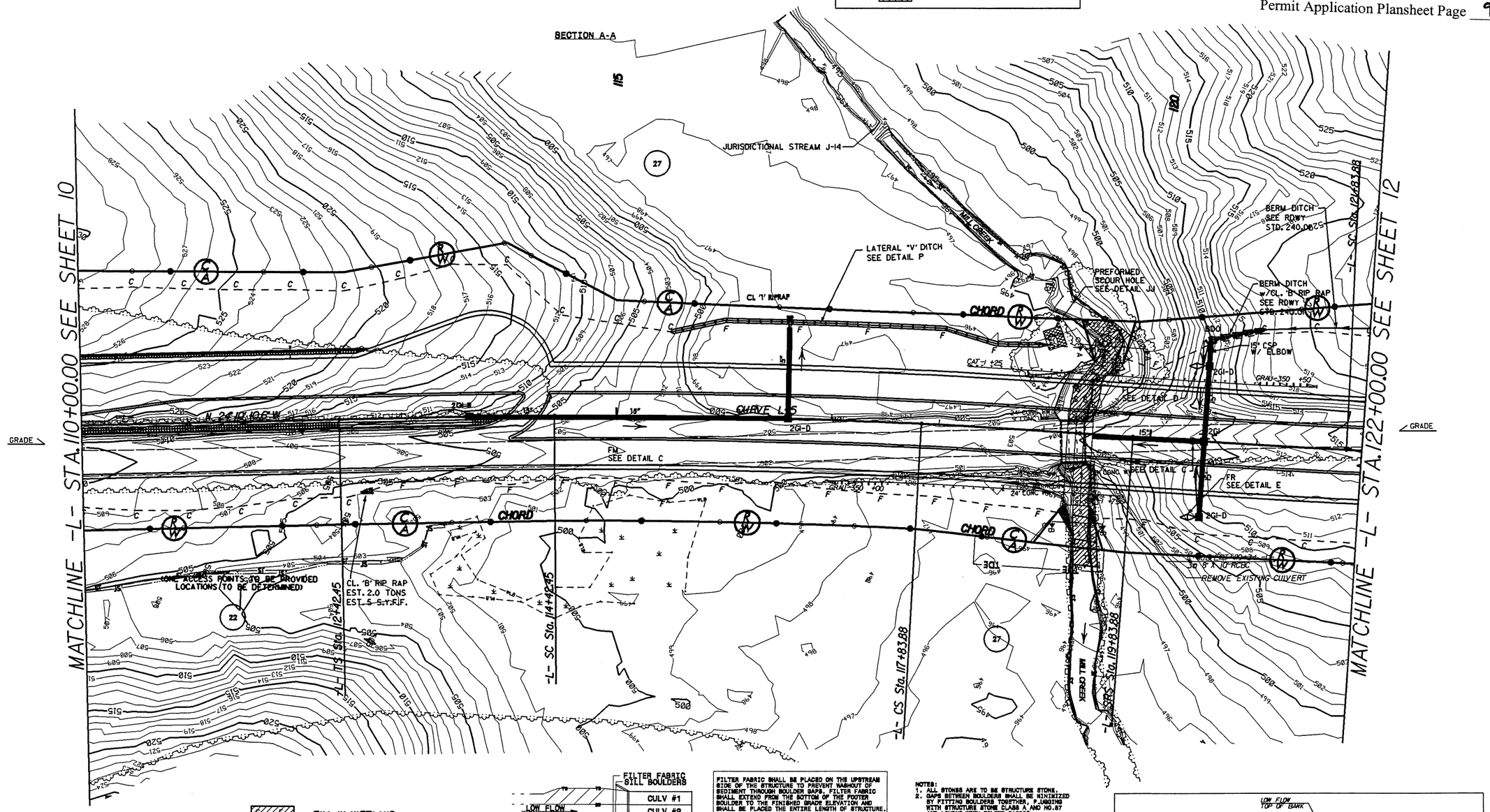
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

ENGLISH



Permit Application Plansheet Page 9



50' 0 100'

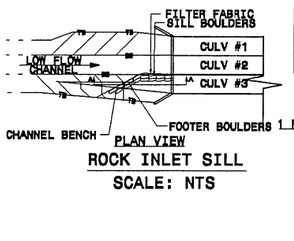
SCALE: 1" : 100'

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

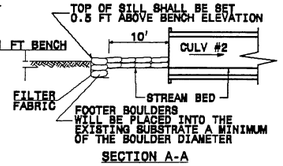


PLAN VIEW

ROCK INLET SILL

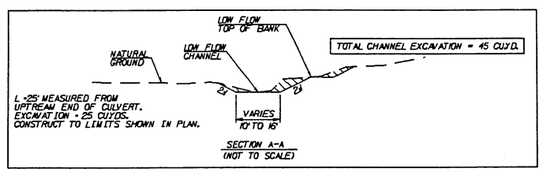
SCALE: NTS

FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.



SECTION A-A

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' x 2' x 1'.



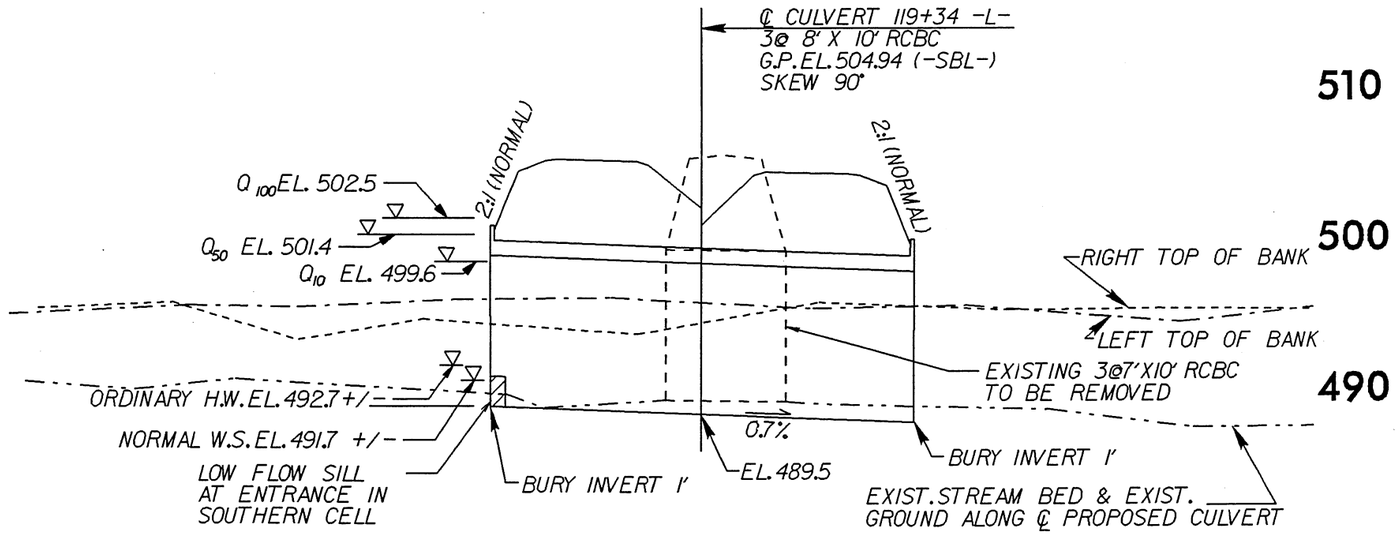
SECTION A-A
(NOT TO SCALE)

SITE 2 -L- STA 119+34

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	11B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 10



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

ENGLISH

SITE 2 -L- STA 119+34

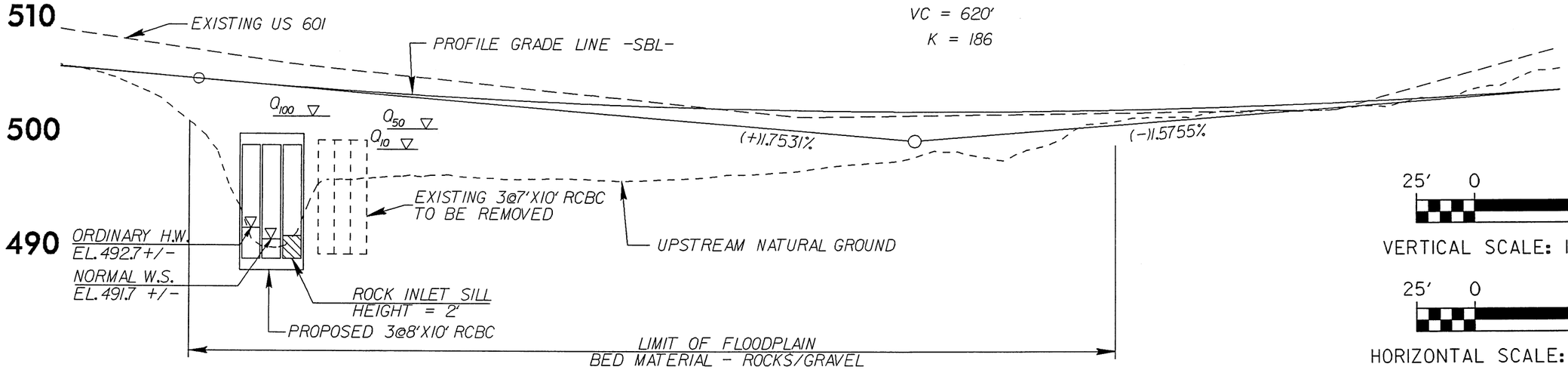
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	11A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 11

PI = 116+80.00
EL = 500.40'
VC = 620'
K = 186



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

ENGLISH

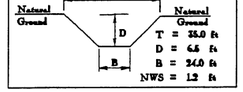
SITE 3 -L- STA. 129 + 50

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	12

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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

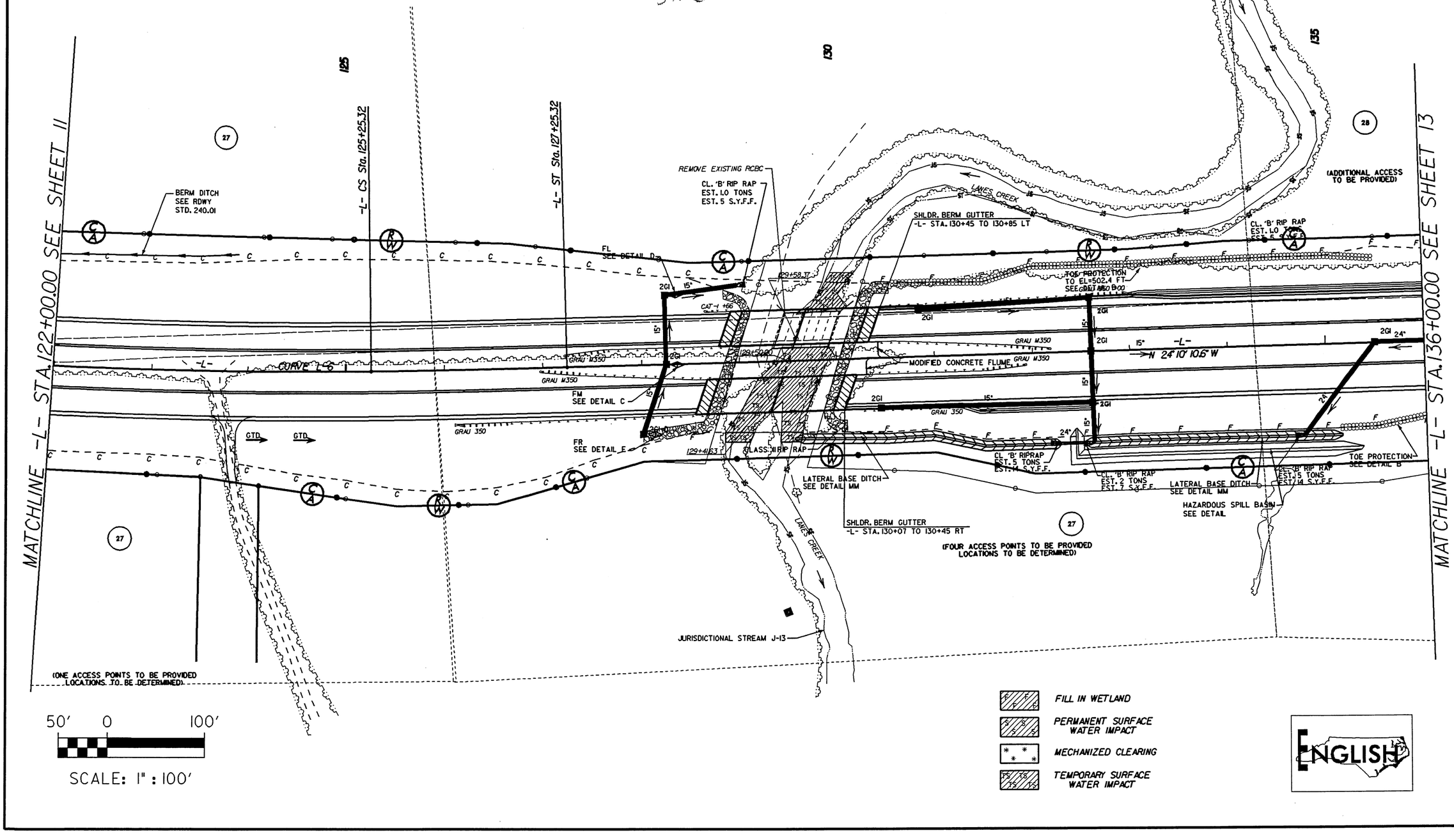
SECTION A-A
EXISTING DITCH
(Not to Scale)



NAD 83 model 1-16-17

Permit Application Plansheet Page 12

* 50' on either side



SITE 3 -L- STA. 129 + 50

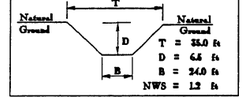
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

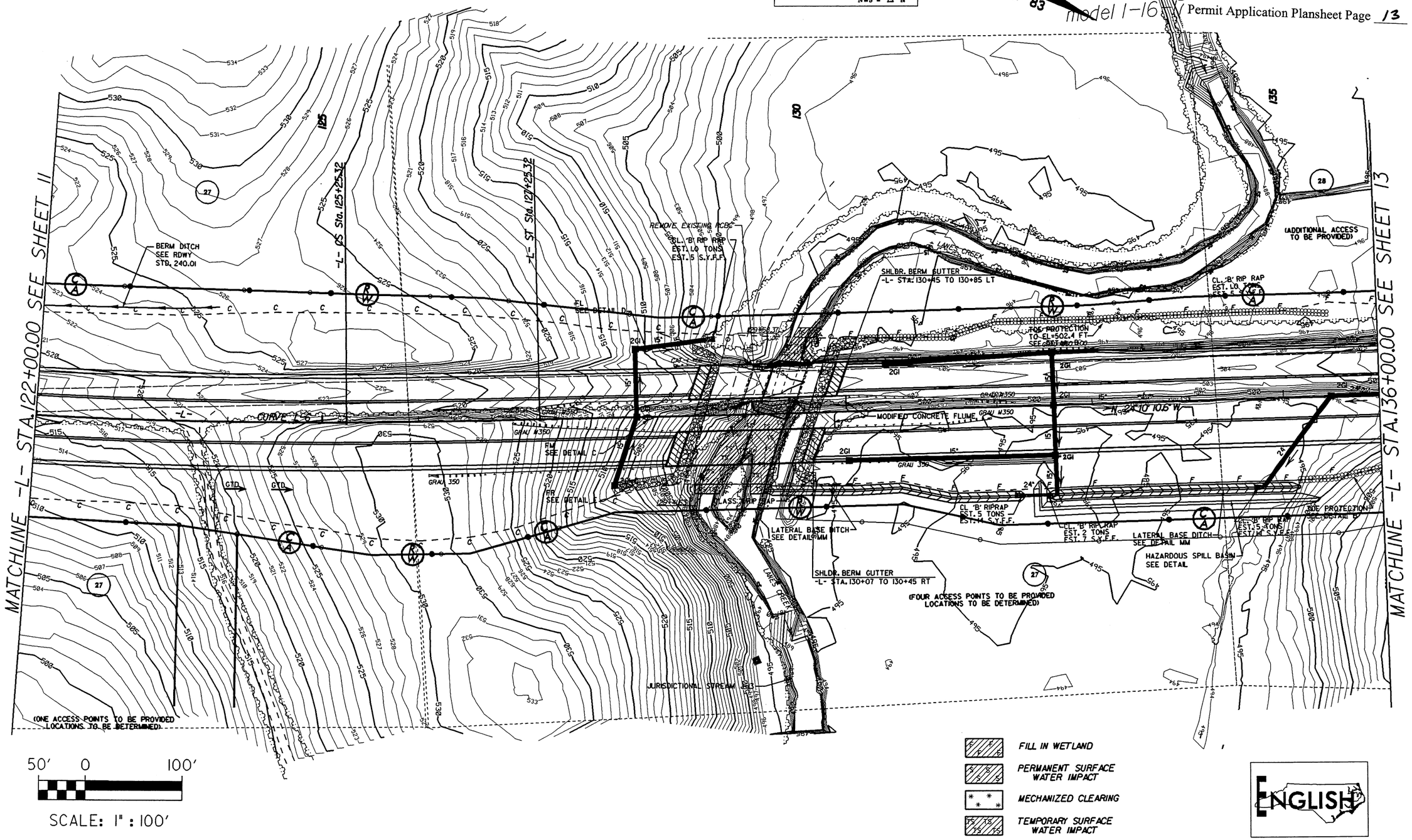
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83 model 1-16-17 Permit Application Plansheet Page 13

SECTION A-A
EXISTING DITCH
(Not to Scale)





SITE 3 -L- STA 129 + 50

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	12A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

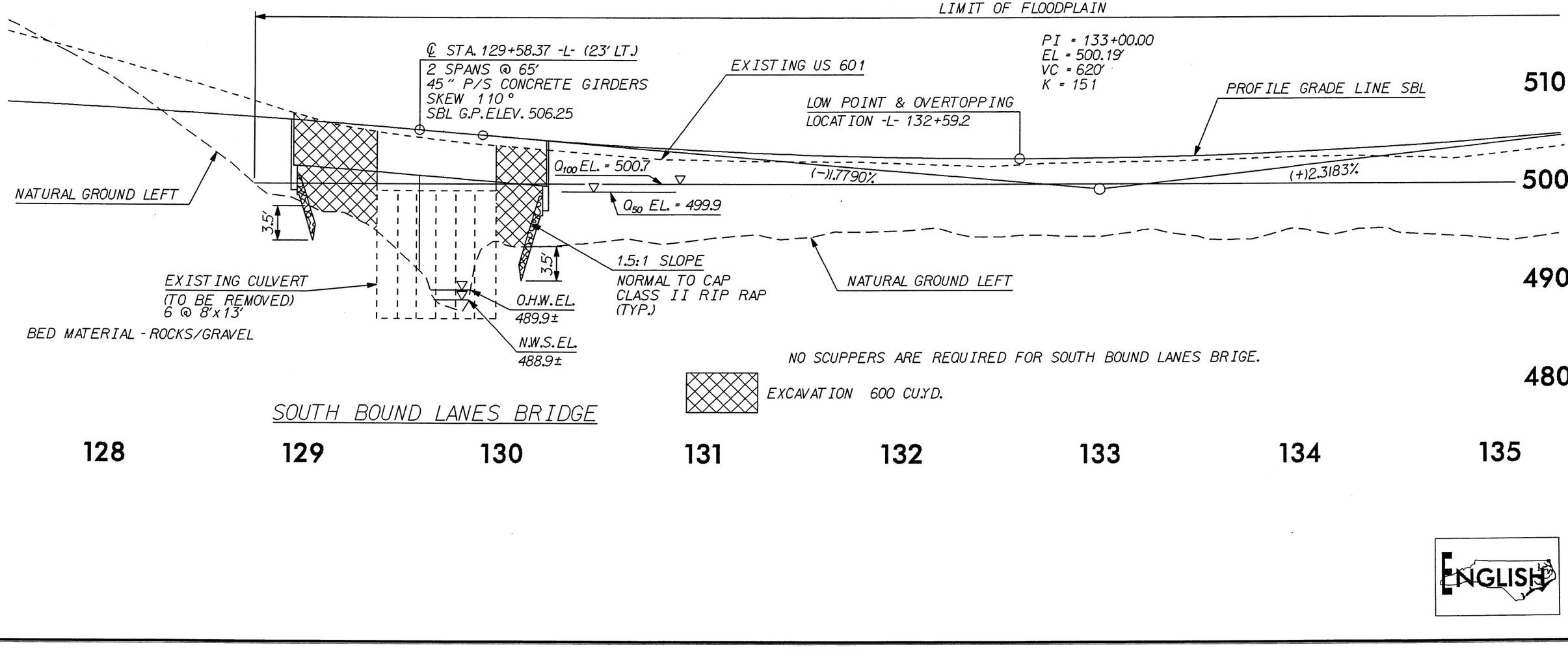
Permit Application Plansheet Page 14

25′ 0 50′

VERTICAL SCALE: 1" : 50′

25′ 0 50′

HORIZONTAL SCALE: 1" : 50′



ENGLISH

SITE 3 -L- STA 129 + 50

PROJECT REFERENCE NO.	SHEET NO.
R-2616 AAB	12B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

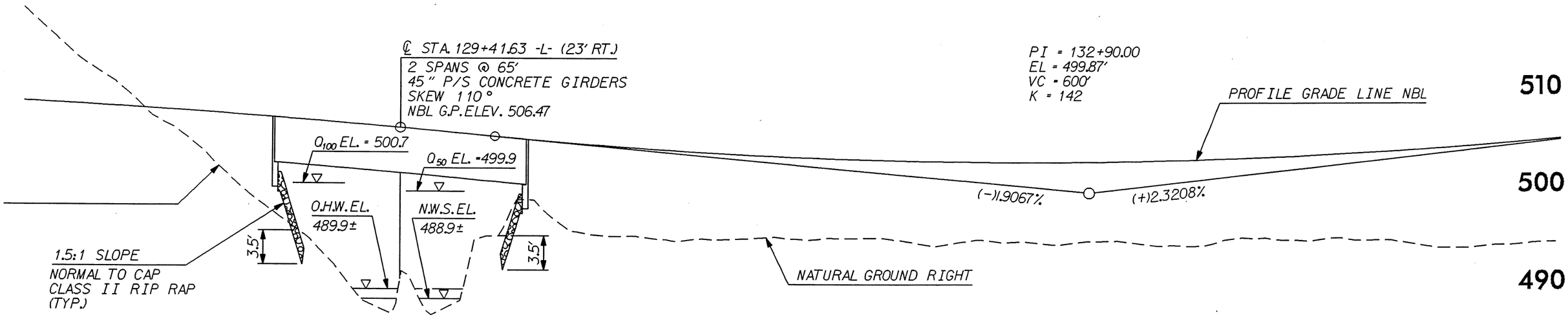
Permit Application Plansheet Page 15

25′ 0 50′

VERTICAL SCALE: 1" : 50′

25′ 0 50′

HORIZONTAL SCALE: 1" : 50′



BED MATERIAL - ROCKS/GRAVEL

NO SCUPPERS ARE REQUIRED FOR NORTH BOUND LANES BRIGE.

NORTH BOUND LANES BRIDGE

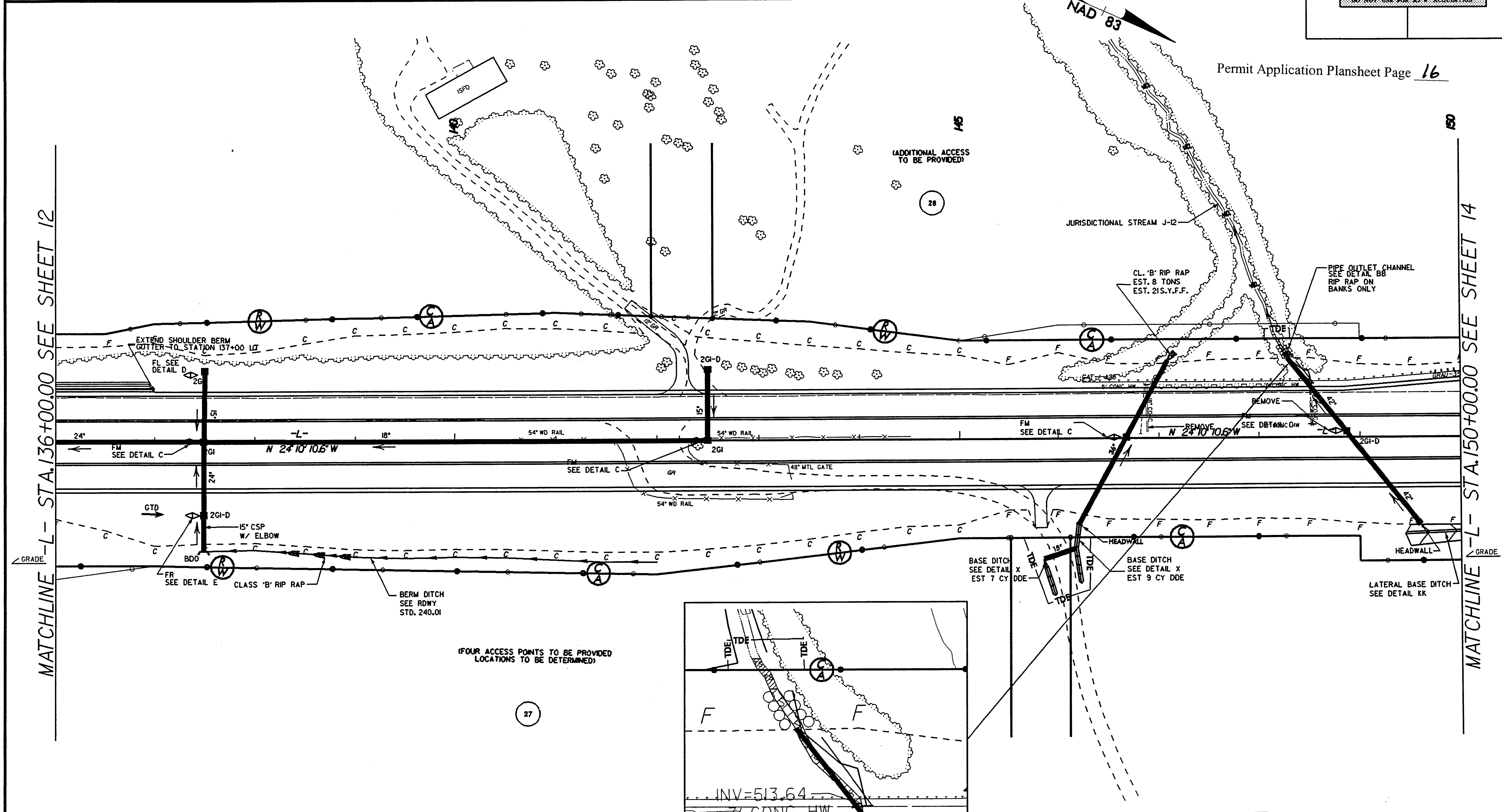
ENGLISH

SITE 4 -L- STA. 148 + 91

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 16



NAD 83
MATCHLINE -L- STA.136+00.00 SEE SHEET 12
MATCHLINE -L- STA.150+00.00 SEE SHEET 14
(ADDITIONAL ACCESS TO BE PROVIDED)
JURISDICTIONAL STREAM J-12
CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.
PIPE OUTLET CHANNEL
SEE DETAIL BB
RIP RAP ON
BANKS ONLY
EXTEND SHOULDER BERM
GUTTER TO STATION 137+00 LT
FL SEE DETAIL D
-L-
N 24°10'10.6" W
FM
SEE DETAIL C
54" WD RAIL
48" MTL GATE
2GI-D
2GI
15" CSP
W/ ELBOW
BDO
FR
SEE DETAIL E
CLASS 'B' RIP RAP
BERM DITCH
SEE RDWY
STD. 240.01
GTD
GRADE
REMOVE
HEADWALL
BASE DITCH
SEE DETAIL X
EST 7 CY DDE
BASE DITCH
SEE DETAIL X
EST 9 CY DDE
LATERAL BASE DITCH
SEE DETAIL KK
TDE
(FOUR ACCESS POINTS TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
INV=513.64
7' CONC HW
50' 0 100'
SCALE: 1" : 100'

SECTION A-A
EXISTING DITCH
(Not to Scale)

Natural Ground — Natural Ground

T = 3.0 ft
D = 0.6 ft
B = 1.0 ft
NWS = 0.0 ft

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION B-B
EXISTING DITCH
(Not to Scale)

Natural Ground — Natural Ground

T = 3.0 ft
D = 1.4 ft
B = 1.0 ft
NWS = 0.2 ft

ENGLISH

SITE 4 -L- STA. 148+91

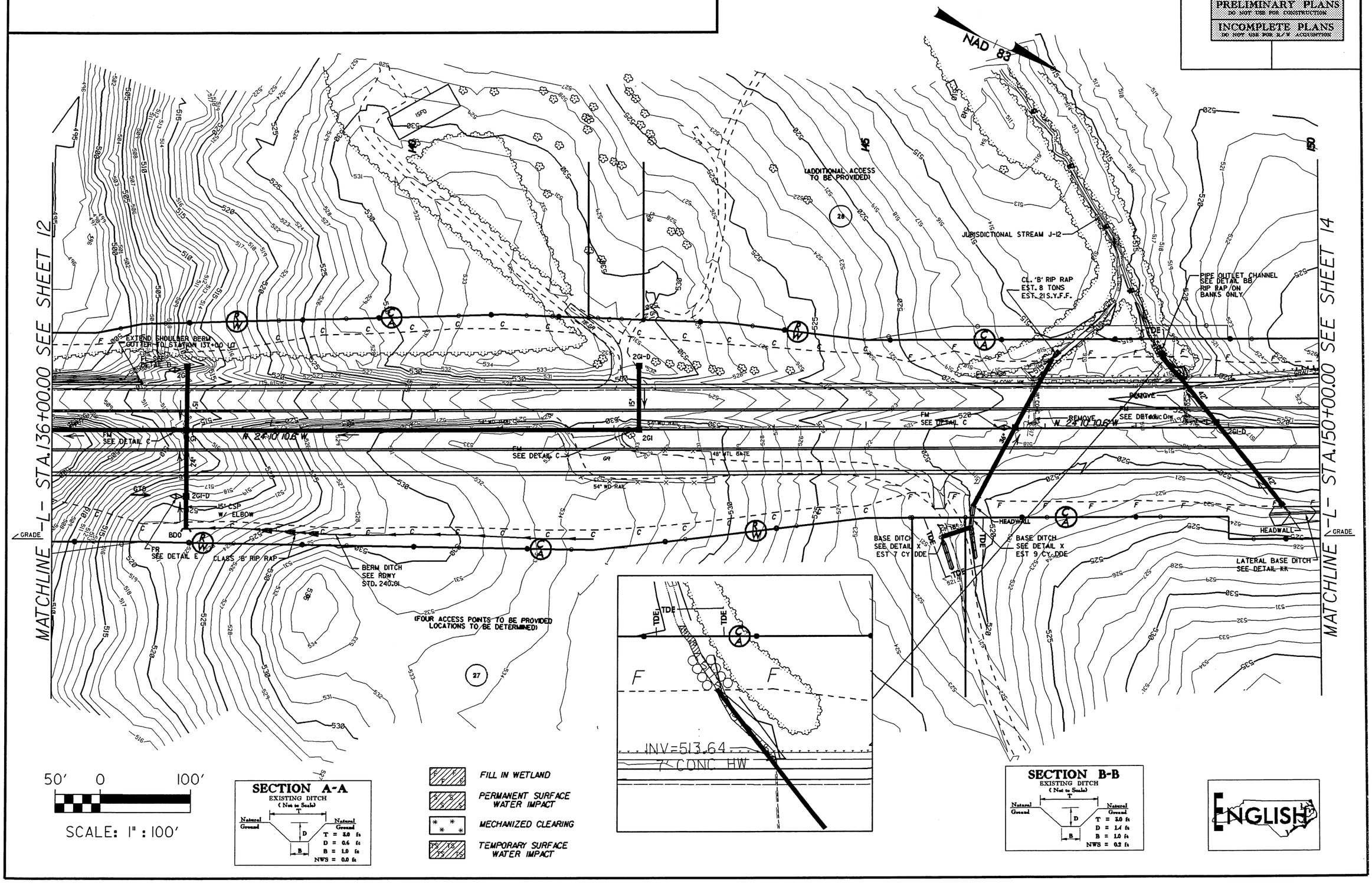
Permit Application Plansheet Page 17

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	13

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



50' 0 100'

SCALE: 1" : 100'

SECTION A-A
EXISTING DITCH
(Not to Scale)

T = 3.0 ft
D = 0.6 ft
B = 1.0 ft
NWS = 0.0 ft

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION B-B
EXISTING DITCH
(Not to Scale)

T = 5.0 ft
D = 1.4 ft
B = 1.0 ft
NWS = 0.2 ft

ENGLISH

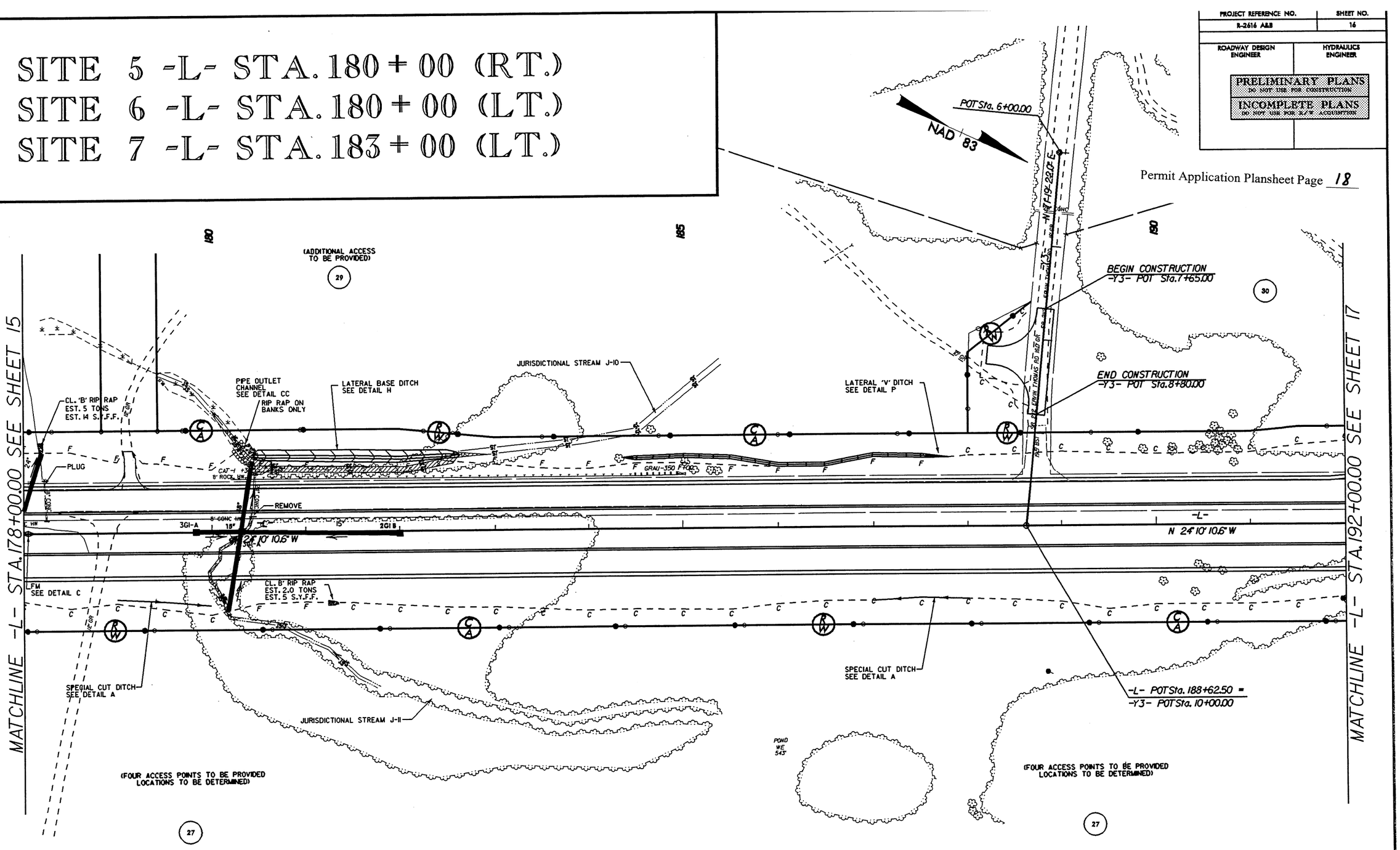
SITE 5 -L- STA. 180 + 00 (RT.)
SITE 6 -L- STA. 180 + 00 (LT.)
SITE 7 -L- STA. 183 + 00 (LT.)

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 18



50' 0 100'

SCALE: 1" : 100'

SECTION D-D
EXISTING DITCH
(Not to Scale)

T	= 2.0 ft
D	= 1.0 ft
B	= 2.0 ft
NWS	= 0.2 ft

SECTION A-A
EXISTING DITCH
(Not to Scale)

T	= 3.7 ft
D	= 0.6 ft
B	= 2.9 ft
NWS	= 0.0 ft

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION B-B
EXISTING DITCH
(Not to Scale)

T	= 4.0 ft
D	= 1.0 ft
B	= 2.0 ft
NWS	= 0.2 ft

SECTION C-C
EXISTING DITCH
(Not to Scale)

T	= 4.0 ft
D	= 1.0 ft
B	= 2.0 ft
NWS	= 0.2 ft

ENGLISH

SITE 5 -L- STA. 180 + 00 (RT.)
SITE 6 -L- STA. 180 + 00 (LT.)
SITE 7 -L- STA. 183 + 00 (LT.)

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 19

POT Sta. 5+00.00
NAD 83
-Y3- POT Sta. 7+65.00
BEGIN CONSTRUCTION
-Y3- POT Sta. 8+80.00
END CONSTRUCTION
-L- POT Sta. 188+62.50
-Y3- POT Sta. 10+00.00
N 24° 10' 10.6" W
MATCHLINE -L- STA. 178+00.00 SEE SHEET 15
MATCHLINE -L- STA. 192+00.00 SEE SHEET 17
(ADDITIONAL ACCESS TO BE PROVIDED)
PIPE OUTLET CHANNEL SEE DETAIL CC
RIP RAP ON BANKS ONLY
LATERAL BASE DITCH SEE DETAIL H
JURISDICTIONAL STREAM J-10
LATERAL 'V' DITCH SEE DETAIL B
CL. 'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
PLUG
REMOVE
CL. B RIP RAP EST/ 2.0 TONS EST. 5 S.Y.F.F.
SEE DETAIL C
SPECIAL CUT DITCH SEE DETAIL A
JURISDICTIONAL STREAM J-11
POND W.E. 543'
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)

50' 0 100'
SCALE: 1" : 100'

SECTION D-D
EXISTING DITCH
(Not to Scale)

T =	3.0 ft
D =	1.0 ft
B =	2.0 ft
NWS =	0.2 ft

SECTION A-A
EXISTING DITCH
(Not to Scale)

T =	2.7 ft
D =	0.6 ft
B =	2.9 ft
NWS =	0.0 ft

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

SECTION B-B
EXISTING DITCH
(Not to Scale)

T =	4.0 ft
D =	1.0 ft
B =	2.0 ft
NWS =	0.2 ft

SECTION C-C
EXISTING DITCH
(Not to Scale)

T =	4.0 ft
D =	1.0 ft
B =	2.0 ft
NWS =	0.2 ft

ENGLISH

SITE 8 -L- STA. 215 + 70

R-2616 A&B	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

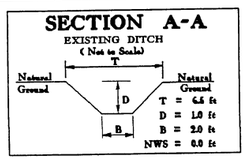
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

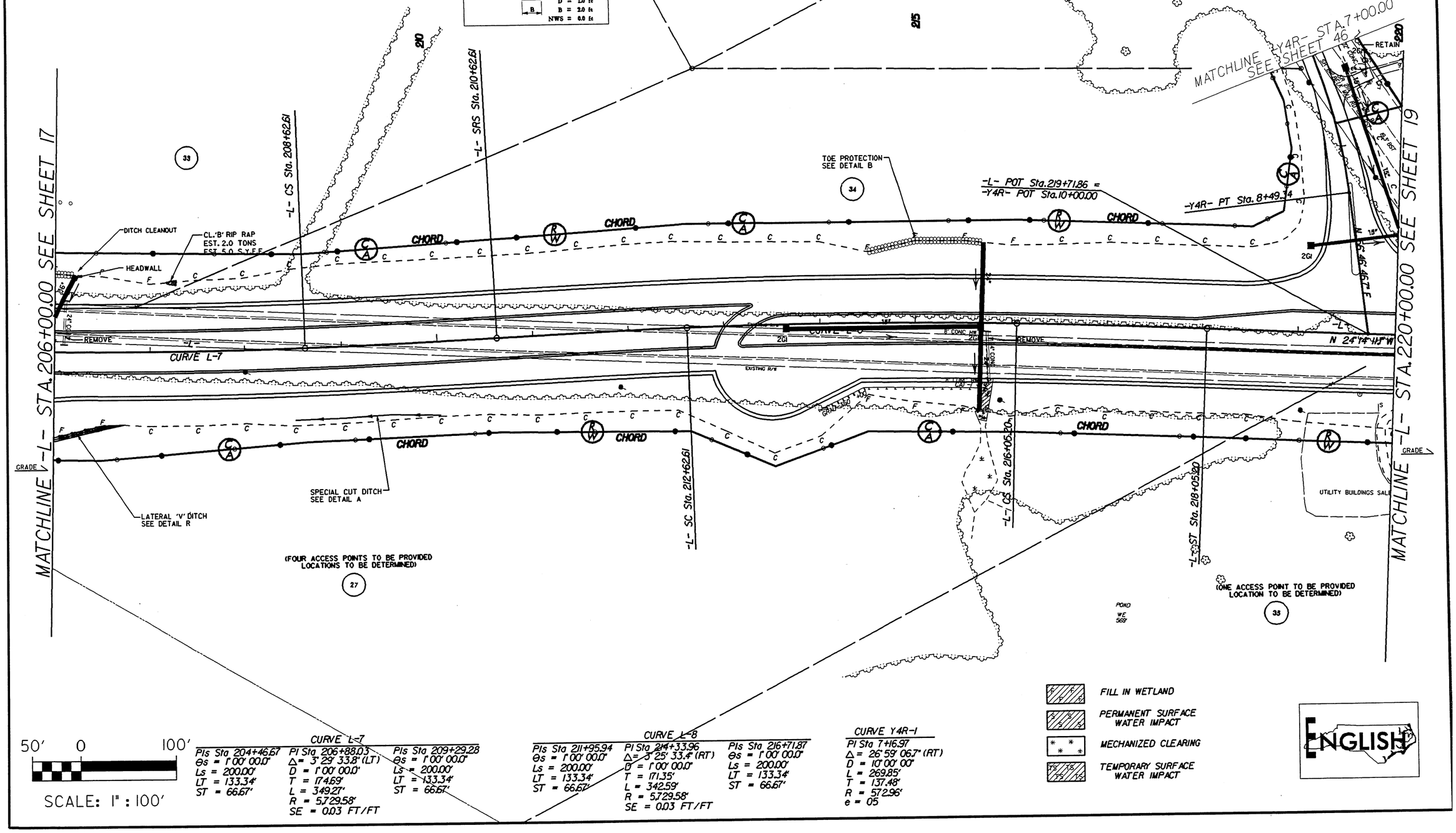
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 20

NAD 83

SECTION A-A
EXISTING DITCH
(Not to Scale)





50' 0 100'

SCALE: 1" : 100'

CURVE L-7

PIs Sta 204+46.67	PI Sta 206+88.03	PIs Sta 209+29.28
θs = 1°00'00.0"	Δ = 3°29'33.8" (LT)	θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 174.69'	LT = 133.34'
ST = 66.67'	L = 349.27'	ST = 66.67'
	R = 5729.58'	
	SE = 0.03 FT/FT	

CURVE L-8

PIs Sta 211+95.94	PI Sta 214+33.96	PIs Sta 216+71.87
θs = 1°00'00.0"	Δ = 3°25'33.4" (RT)	θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 171.35'	LT = 133.34'
ST = 66.67'	L = 342.59'	ST = 66.67'
	R = 5729.58'	
	SE = 0.03 FT/FT	

CURVE Y4R-1

PI Sta 7+16.97
Δ = 26°59'06.7" (RT)
D = 10°00'00"
L = 269.85'
T = 137.48'
R = 572.96'
e = 05

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

ENGLISH

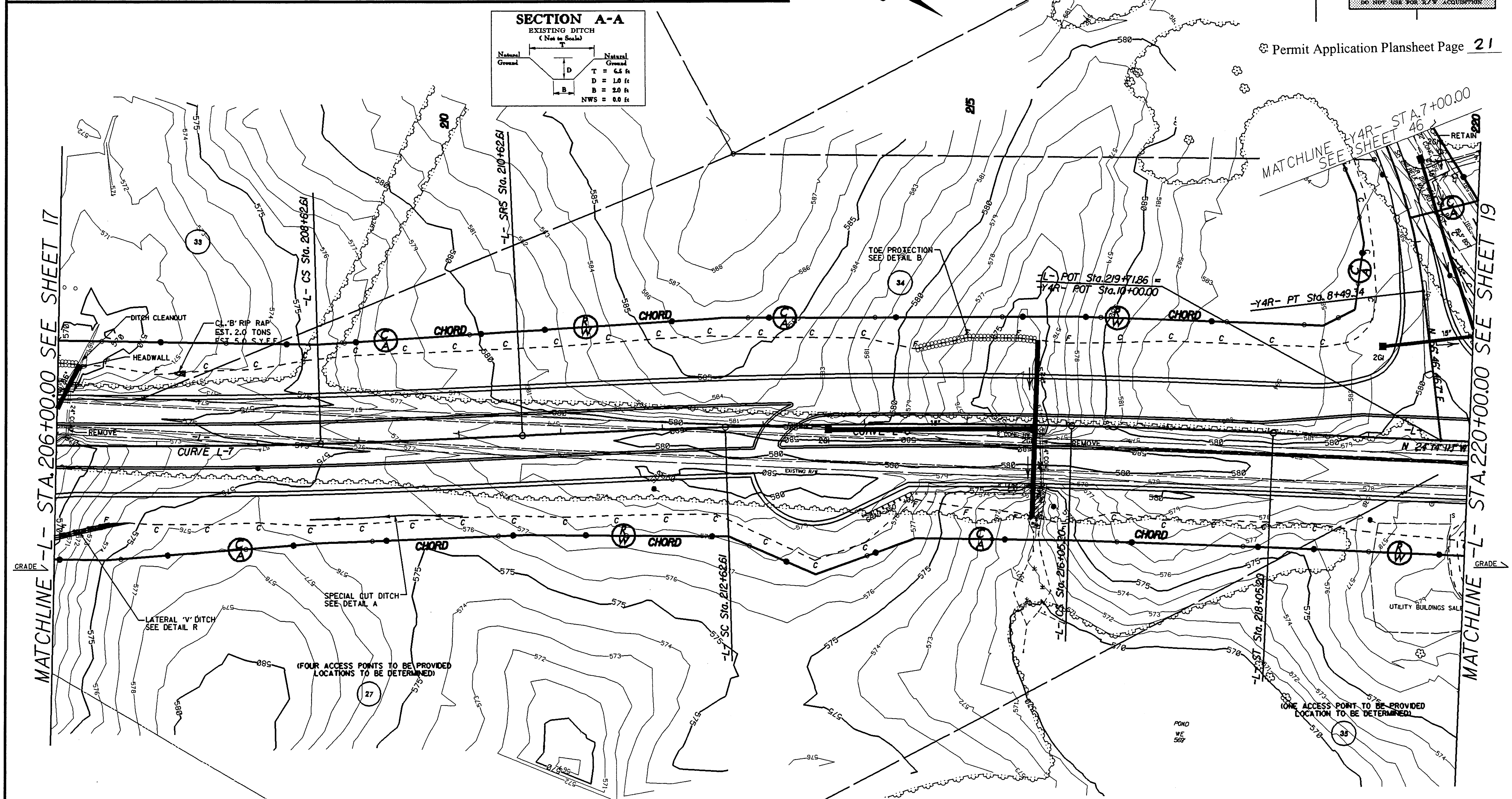
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SITE 8 -L- STA. 215 + 70

Permit Application Plansheet Page 21



50' 0 100'

SCALE: 1" : 100'

CURVE L-7

PIs Sta 204+46.67	PI Sta 206+88.03	PIs Sta 209+29.28
Θs = 1°00'00.0"	Δ = 3°29'33.8" (LT)	Θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 174.69'	LT = 133.34'
ST = 66.67'	L = 349.27'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	

CURVE L-8

PIs Sta 211+95.94	PI Sta 214+33.96	PIs Sta 216+71.87
Θs = 1°00'00.0"	Δ = 3°25'33.4" (RT)	Θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 171.35'	LT = 133.34'
ST = 66.67'	L = 342.59'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	

CURVE Y4R-1

PI Sta 7+16.97
Δ = 26°59'06.7" (RT)
D = 10°00'00"
L = 269.85'
T = 137.48'
R = 572.96'
e = 05

- FILL IN WETLAND
- PERMANENT SURFACE WATER IMPACT
- MECHANIZED CLEARING
- TEMPORARY SURFACE WATER IMPACT

ENGLISH

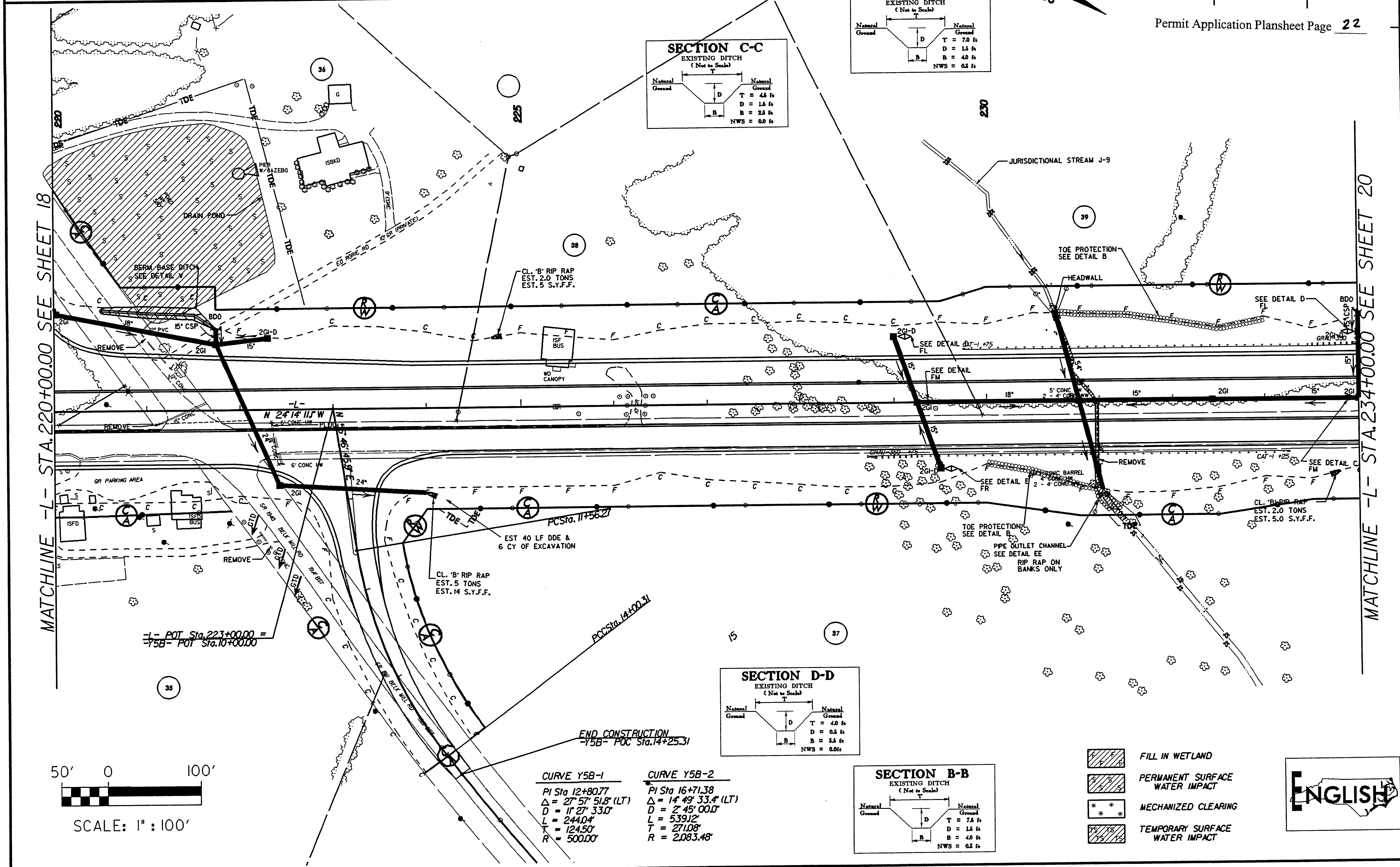
SITE 9 -L- STA. 221+00 LT.
SITE 10 -L- STA. 231+20

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 22



NAD 83
SECTION A-A
EXISTING DITCH
(Not to Scale)
Natural Ground
T = 7.0 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.5 ft
SECTION C-C
EXISTING DITCH
(Not to Scale)
T = 4.6 ft
D = 1.6 ft
B = 2.5 ft
NWS = 0.0 ft
SECTION D-D
EXISTING DITCH
(Not to Scale)
T = 4.0 ft
D = 0.5 ft
B = 3.5 ft
NWS = 0.0ft
SECTION B-B
EXISTING DITCH
(Not to Scale)
T = 7.5 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.5 ft
MATCHLINE -L- STA. 220+00.00 SEE SHEET 18
MATCHLINE -L- STA. 234+00.00 SEE SHEET 20
DRAIN POND
BERM BASE DITCH SEE DETAIL V
PIER W/GAZEBO
JURISDICTIONAL STREAM J-9
TOE PROTECTION SEE DETAIL B
HEADWALL
SEE DETAIL D
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
CL. 'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.
EST 40 LF DDE & 6 CY OF EXCAVATION
PIPE OUTLET CHANNEL SEE DETAIL EE
RIP RAP ON BANKS ONLY
REMOVE
N 24° 14' 11.5" W
-L- POT Sta. 223+00.00 = -Y5B- POT Sta. 10+00.00
PCSta. 11+56.27
PCCSta. 14+00.31
END CONSTRUCTION -Y5B- POC Sta. 14+25.31
CURVE Y5B-1
PI Sta 12+80.77
Δ = 27° 57' 51.8" (LT)
D = 11° 27' 33.0"
L = 244.04'
T = 124.50'
R = 500.00'
CURVE Y5B-2
PI Sta 16+71.38
Δ = 14° 49' 33.4" (LT)
D = 2° 45' 00.0"
L = 539.12'
T = 271.08'
R = 2,083.48'
50' 0 100'
SCALE: 1" : 100'
FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
ENGLISH

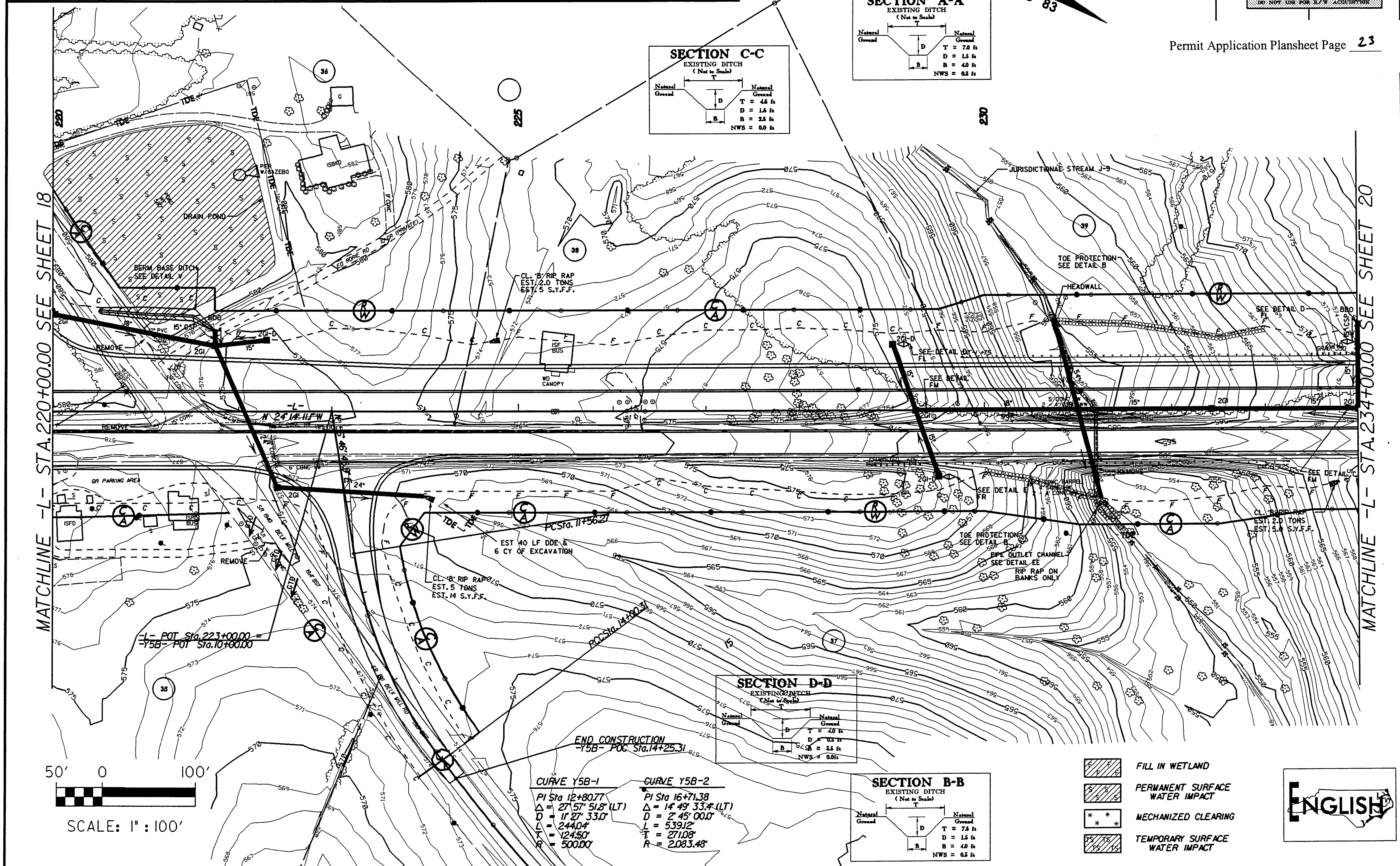
SITE 9 -L- STA. 221+00 LT.
SITE 10 -L- STA. 231+20

PROJECT REFERENCE NO.	SHEET NO.
R-2616 ARB	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 23



NAD 83
SECTION A-A
EXISTING DITCH
(Not to Scale)
T = 7.0 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.5 ft
SECTION C-C
EXISTING DITCH
(Not to Scale)
T = 4.5 ft
D = 1.5 ft
B = 2.5 ft
NWS = 0.0 ft
SECTION D-D
EXISTING DITCH
(Not to Scale)
T = 4.0 ft
D = 0.5 ft
B = 2.5 ft
NWS = 0.0 ft
SECTION B-B
EXISTING DITCH
(Not to Scale)
T = 7.5 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.5 ft
MATCHLINE -L- STA. 220+00.00 SEE SHEET 18
MATCHLINE -L- STA. 234+00.00 SEE SHEET 20
DRAIN POND
BERM BASE DITCH SEE DETAIL V
JURISDICTIONAL STREAM J-9
TOE PROTECTION SEE DETAIL B
HEADWALL
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
CL. 'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.
EST 40 LF DDE & 6 CY OF EXCAVATION
PIPE OUTLET CHANNEL SEE DETAIL EE
RIP RAP ON BANKS ONLY
-L- POT Sta. 223+00.00 = -Y5B- POT Sta. 10+00.00
END CONSTRUCTION -Y5B- POC Sta. 14+25.31
CURVE Y5B-1
PI Sta 12+80.77
Δ = 27° 57' 51.8" (LT)
D = 11° 27' 33.0"
L = 244.04'
T = 124.50'
R = 500.00'
CURVE Y5B-2
PI Sta 16+71.38
Δ = 14° 49' 33.4" (LT)
D = 2° 45' 00.0"
L = 539.12'
T = 271.08'
R = 2,083.48'
50' 0 100'
SCALE: 1" : 100'
FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
ENGLISH

SITE 11 -L- STA. 242+35

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	20

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 24

NAD 83

235 240 245

39 41 43

MATCHLINE -L- STA.234+00.00 SEE SHEET 19

MATCHLINE -L- STA.248+00.00 SEE SHEET 21

BERM DITCH SEE RDWY STD. 240.01

BERM DITCH SEE RDWY STD. 240.01

CLASS 'B' RIP RAP

LATERAL 'V' DITCH SEE DETAIL R

TOE PROTECTION SEE DETAIL B

JURISDICTIONAL STREAM J-8

HEADWALL

-L- SC Sta. 247+74.51

CHORD

SEE DETAIL D

BDO

2GI-D

2GI-A

SEE DETAIL C

FM

SEE DETAIL

FM

2GI

-L-

N 24°14'11"W

EXISTING R/W

5' CONC HW

REMOVE

7' CONC HW
2 - 6' CONC WW

CURVE L-9

GTD

PLUG

18" CONC

18" CSP

6' CONC BARREL
6' CONC HW
6' CONC WW

FLAG POLE

CONC PARKING AREA

CONC PARKING AREA

ISBK CHURCH

MTL CANOPY

-L- TS Sta. 238+17.11

-L- SC Sta. 240+17.11

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.

BEGIN SHLDR. BERM GUTTER
-L- STA. 238+50 RT

CL. 'B' RIP RAP
EST. 5.0 TONS
EST. 14 S.Y.F.F.

PREFORMED SCOUR HOLE
SEE DETAIL JJ

PIPE OUTLET CHANNEL
SEE DETAIL FF
RIP RAP ON
BANKS ONLY

END SHLDR. BERM GUTTER
-L- STA. 244+50 RT

-L- CS Sta. 243+74.51

-L- SC Sta. 245+74.51

GRADE TO DRAIN

HTR

ISFD

40 42 37

50' 0 100'

SCALE: 1" : 100'

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

ENGLISH

SITE 11 -L- STA. 242+35

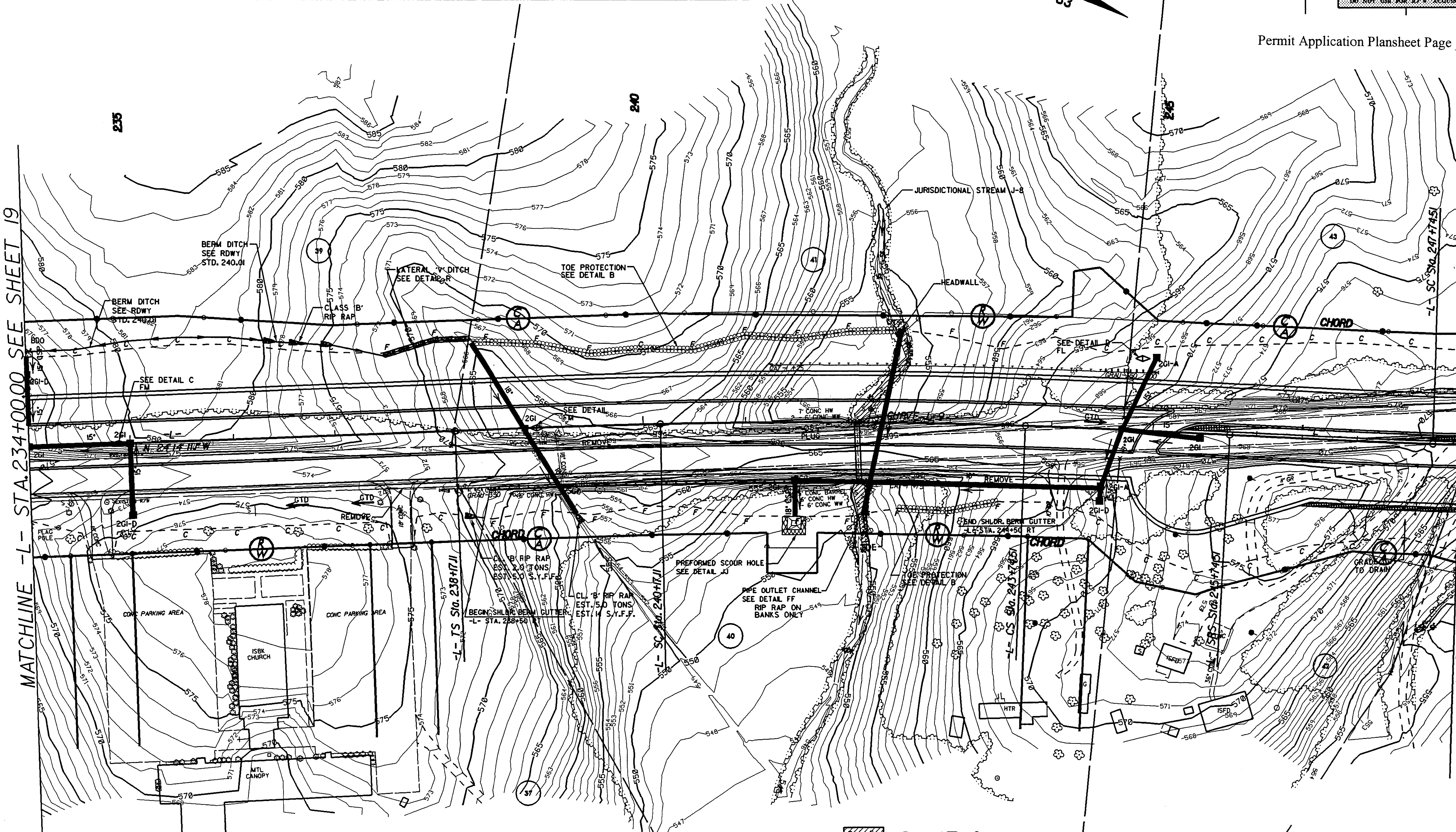
PROJECT REFERENCE NO.	SHEET NO.
R-2616 ABB	20

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 25



NAD 83
MATCHLINE -L- STA.234+00.00 SEE SHEET 19
MATCHLINE -L- STA.248+00.00 SEE SHEET 21
JURISDICTIONAL STREAM J-8
HEADWALL
TOE PROTECTION SEE DETAIL B
BERM DITCH SEE RDWY STD. 240.01
LATERAL 'V' DITCH SEE DETAIL
CLASS 'B' RIP RAP
SEE DETAIL C
CHORD
REMOVE
PLUG
ISBK CHURCH
CONC PARKING AREA
MTL CANOPY
FLAG POLE
PREFORMED SCOUR HOLE SEE DETAIL JJ
PIPE OUTLET CHANNEL SEE DETAIL FF RIP RAP ON BANKS ONLY
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.
CL. 'B' RIP RAP EST. 5.0 TONS EST. 14 S.Y.F.F.
BEGIN SHLDR. BERM GUTTER -L- STA. 238+50 RT
END SHLDR. BERM GUTTER -L- STA. 244+50 RT
-L- TS Sta. 238+17.11
-L- SC Sta. 240+17.11
-L- CS Sta. 243+74.51
-L- ST Sta. 245+74.51
GRADE TO DRAIN
HTR
ISFD

Legend	
F	FILL IN WETLAND
S	PERMANENT SURFACE WATER IMPACT
*	MECHANIZED CLEARING
TS	TEMPORARY SURFACE WATER IMPACT

50' 0 100'

SCALE: 1" : 100'

ENGLISH

SITE 11 -L- STA. 242+35

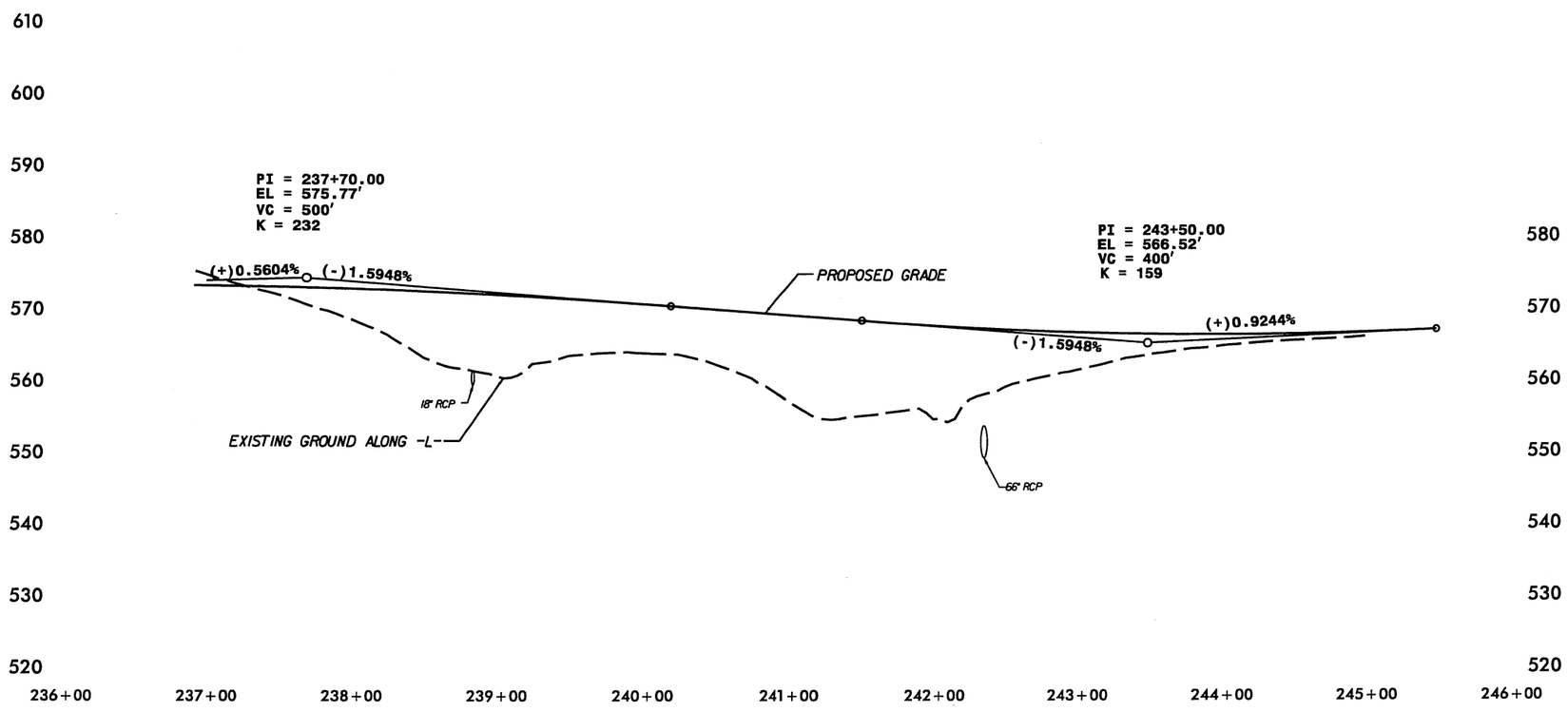
25 0 50 HORIZ.
5 0 10 VERT.

PROJECT REFERENCE NO.	SHEET NO.
R-2616A&B	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 26



ENGLISH

SITE 12 -L- STA. 250+00

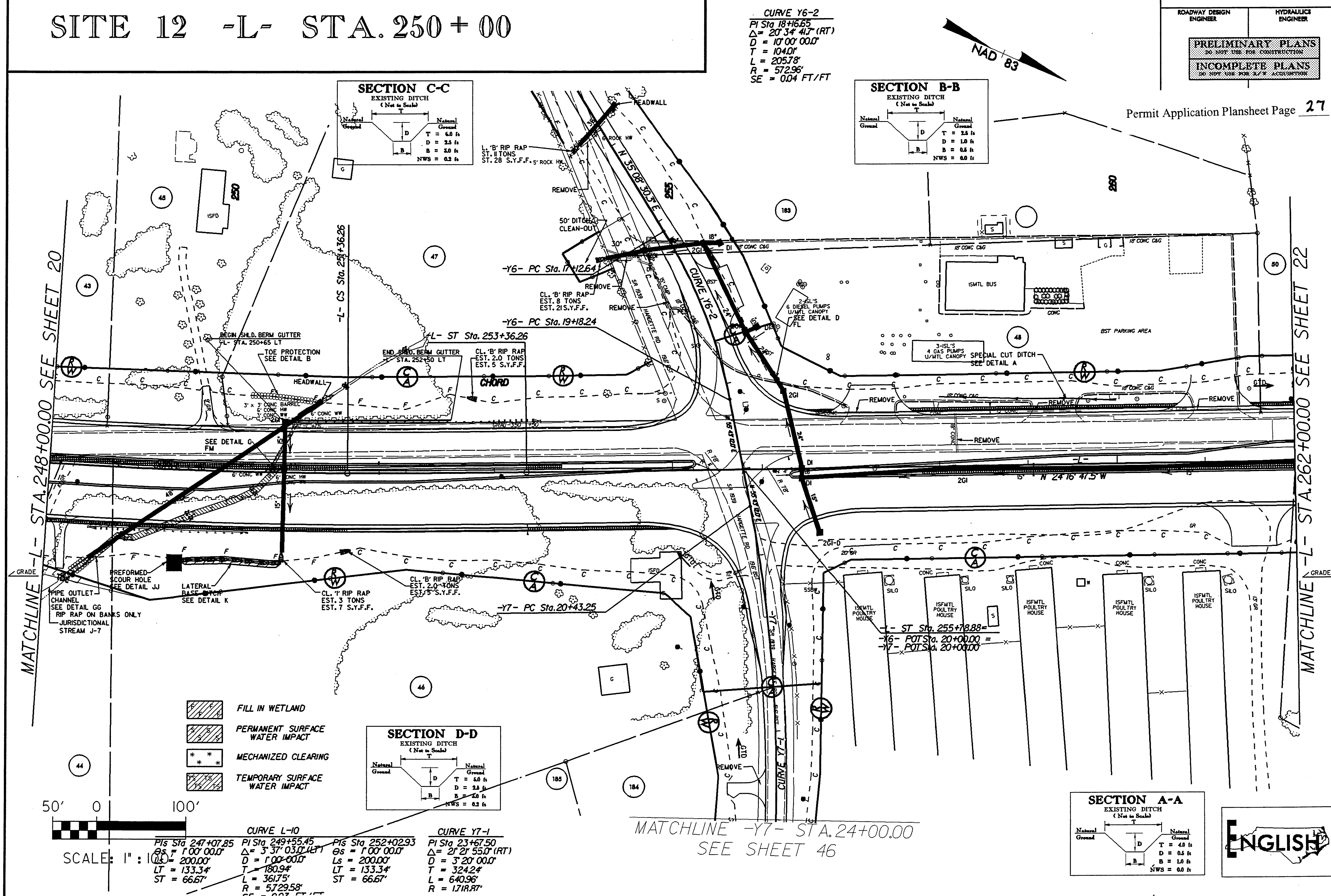
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	21

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS — DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 27



SITE 12 -L- STA. 250 + 00

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 28

NAD 83

CURVE Y6-2
PI Sta 18+16.65
Δ = 20° 34' 41.7" (RT)
D = 10° 00' 00.0"
T = 104.01'
L = 205.78'
R = 572.96'
SE = 0.04 FT/FT

SECTION C-C
EXISTING DITCH
(Not to Scale)
Natural Ground — T — Natural Ground
D
B
T = 6.0 ft
D = 2.5 ft
B = 2.0 ft
NWS = 0.5 ft

SECTION B-B
EXISTING DITCH
(Not to Scale)
Natural Ground — T — Natural Ground
D
B
T = 2.5 ft
D = 1.0 ft
B = 0.5 ft
NWS = 0.0 ft

MATCHLINE -L- STA. 248+00.00 SEE SHEET 20

MATCHLINE -L- STA. 262+00.00 SEE SHEET 22

-L- PC Sta. 25+36.26

-L- ST Sta. 253+36.26

-Y6- PC Sta. 17+12.64

-Y6- PC Sta. 19+18.24

-Y7- PC Sta. 20+43.25

-L- ST Sta. 255+78.88

-Y6- POT Sta. 20+00.00 =
-Y7- POT Sta. 20+00.00

BEGIN SHLD. BERM GUTTER
-L- STA. 250+65.47

END SHLD. BERM GUTTER
STA. 252+50.33

TOE PROTECTION
SEE DETAIL B

HEADWALL

CHORD

SEE DETAIL G
FM

PREFORMED SCOUR HOLE
SEE DETAIL JJ

LATERAL BASE DITCH
SEE DETAIL K

PIPE OUTLET CHANNEL
SEE DETAIL GG
RIP RAP ON BANKS ONLY
JURISDICTIONAL STREAM J-7

CL. 'B' RIP RAP
EST. 20 TONS
EST. 5 S.Y.F.F.

CL. 'I' RIP RAP
EST. 3 TONS
EST. 7 S.Y.F.F.

CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.

L 'B' RIP RAP
ST. 11 TONS
ST. 28 S.Y.F.F.

REMOVE

50' DITCH CLEAN-OUT

N 35° 08' 30" E

N 24° 16' 41" W

2-GI
6 DIESEL PUMPS
W/MTL CANOPY
SEE DETAIL D

3-ISL'S
4 GAS PUMPS
W/MTL CANOPY

SPECIAL CUT DITCH
SEE DETAIL A

ISMTL BUSS

BST PARKING AREA

ISMTL POULTRY HOUSE

SILO

CONC

18" CONC C&G

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION D-D
EXISTING DITCH
(Not to Scale)
Natural Ground — T — Natural Ground
D
B
T = 6.0 ft
D = 2.5 ft
B = 4.0 ft
NWS = 0.2 ft

SECTION A-A
EXISTING DITCH
(Not to Scale)
Natural Ground — T — Natural Ground
D
B
T = 4.0 ft
D = 0.5 ft
B = 1.0 ft
NWS = 0.0 ft

50' 0 100'

SCALE: 1" = 100'

CURVE L-10
PI Sta 247+07.85
θs = 1° 00' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

CURVE L-11
PI Sta 249+55.45
Δ = 3° 37' 03.0" (LT)
D = 1° 00' 00.0"
T = 180.94'
L = 361.75'
R = 5729.58'

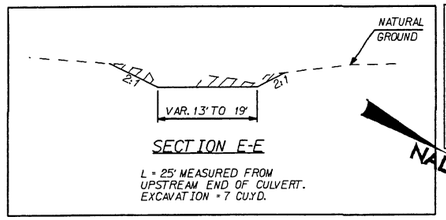
CURVE Y7-1
PI Sta 252+02.93
θs = 1° 00' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

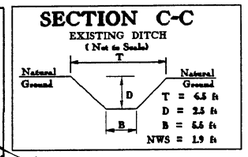
CURVE Y7-1
PI Sta 23+67.50
Δ = 21° 21' 55.0" (RT)
D = 3° 20' 00.0"
T = 324.24'
L = 640.96'
R = 1718.87'

MATCHLINE -Y7- STA. 24+00.00
SEE SHEET 46

ENGLISH

SITE 13 -L- STA. 281 + 51
SITE 14 -L- STA. 288 + 06.5
SITE 15 -L- STA. 290 + 00 - 294 + 30





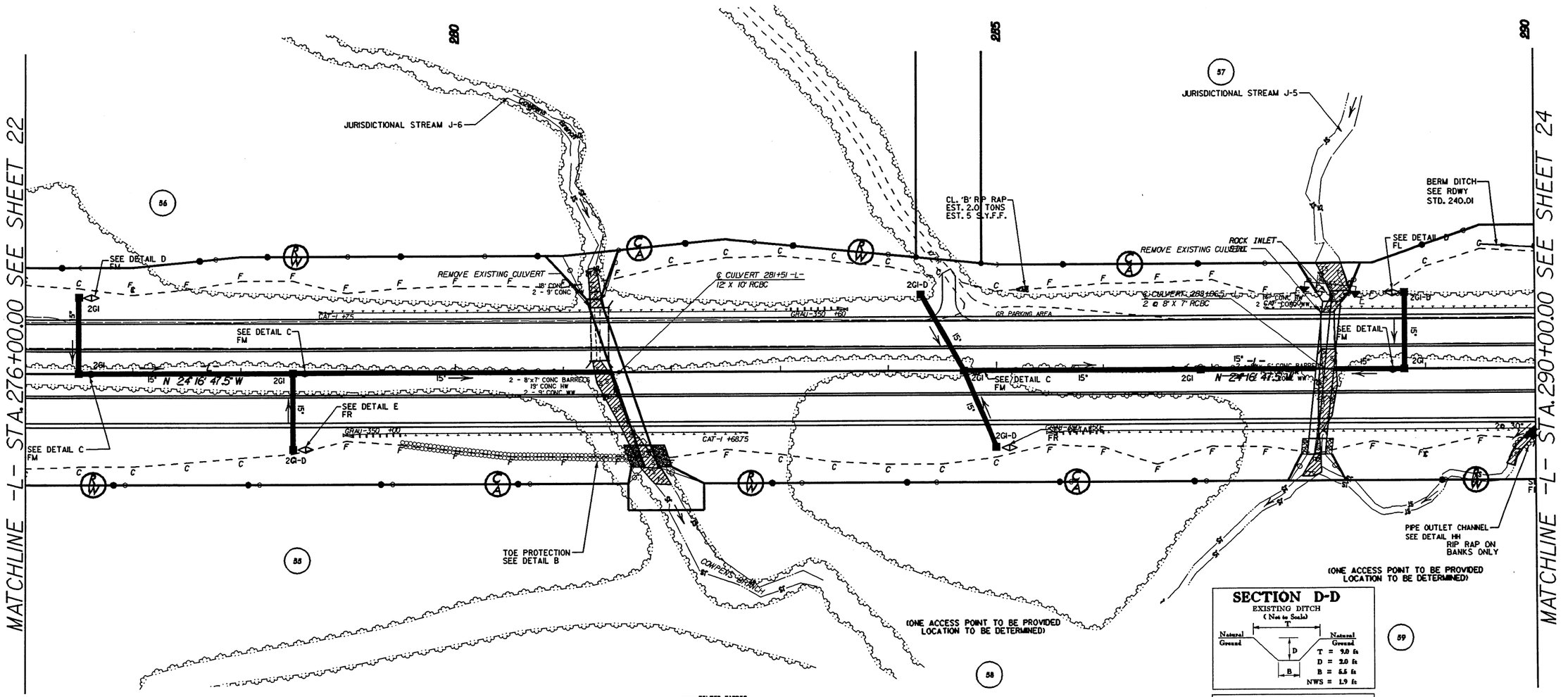
NAD 83

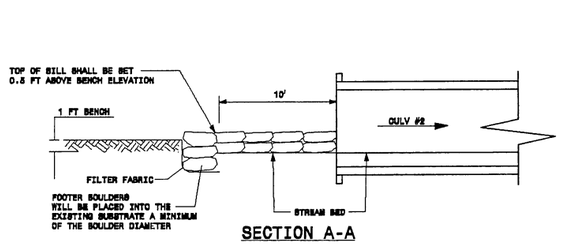
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

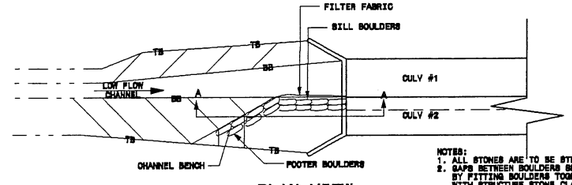
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 29





SECTION A-A



PLAN VIEW

ROCK INLET SILL
SCALE: NTS

FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' X 3' X 1'.

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

50' 0 100'

SCALE: 1" : 100'

ENGLISH

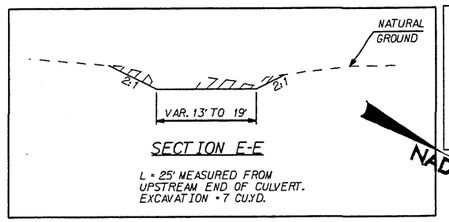
SITE 13 -L- STA. 281 + 51
SITE 14 -L- STA. 288 + 06.5
SITE 15 -L- STA. 290 + 00 - 294 + 30

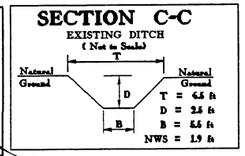
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

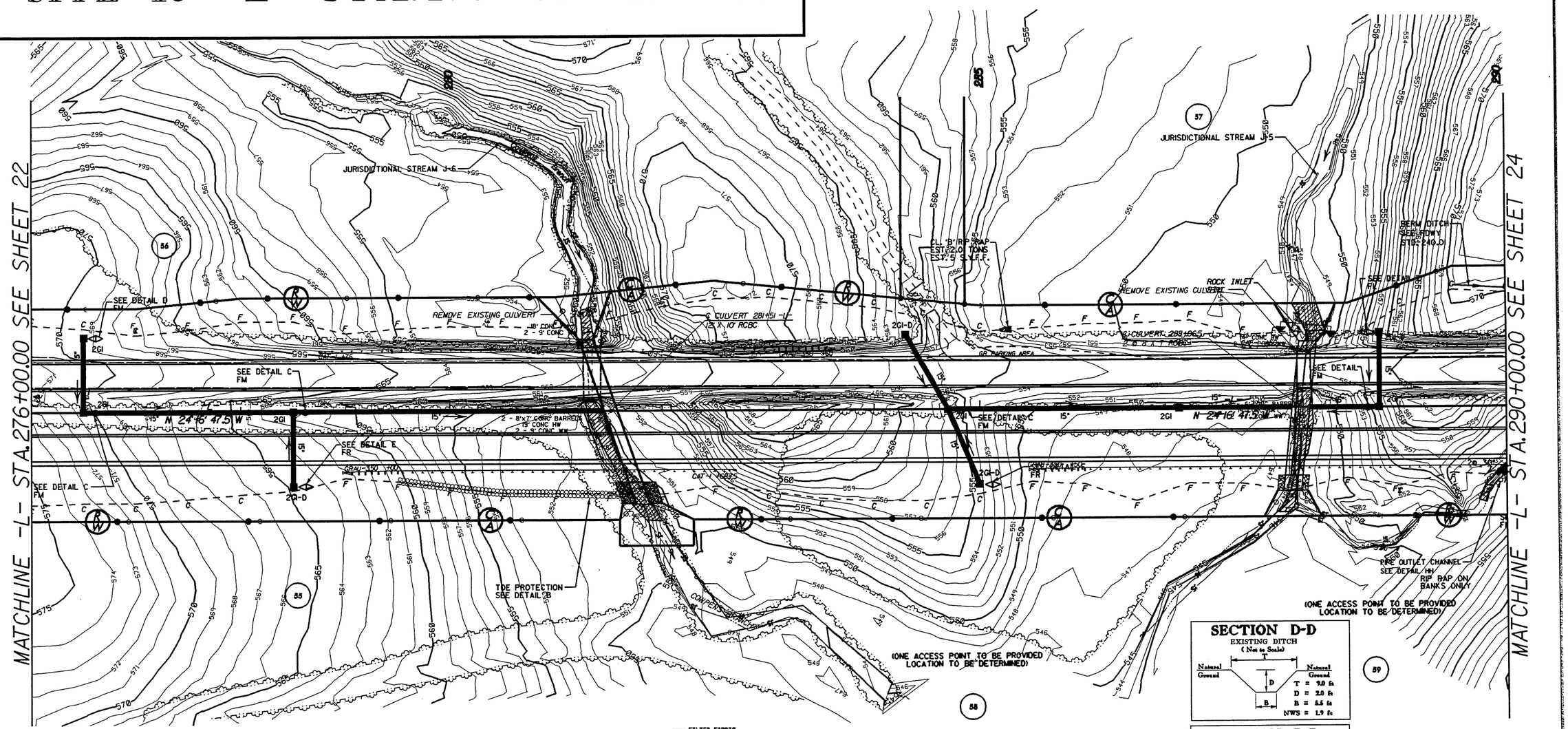
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

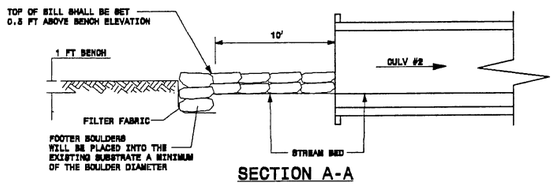
Permit Application Plansheet Page 30



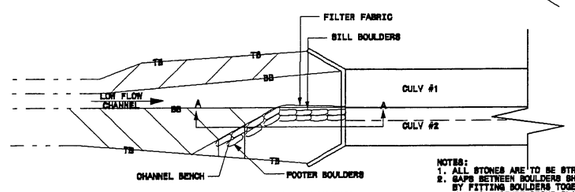


NAD 83





SECTION A-A

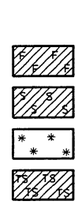


PLAN VIEW

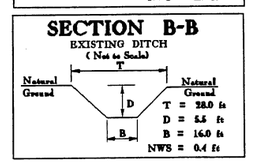
ROCK INLET SILL
SCALE: NTS

FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' X 3' X 1'.



FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT



50' 0 100'

SCALE: 1" : 100'

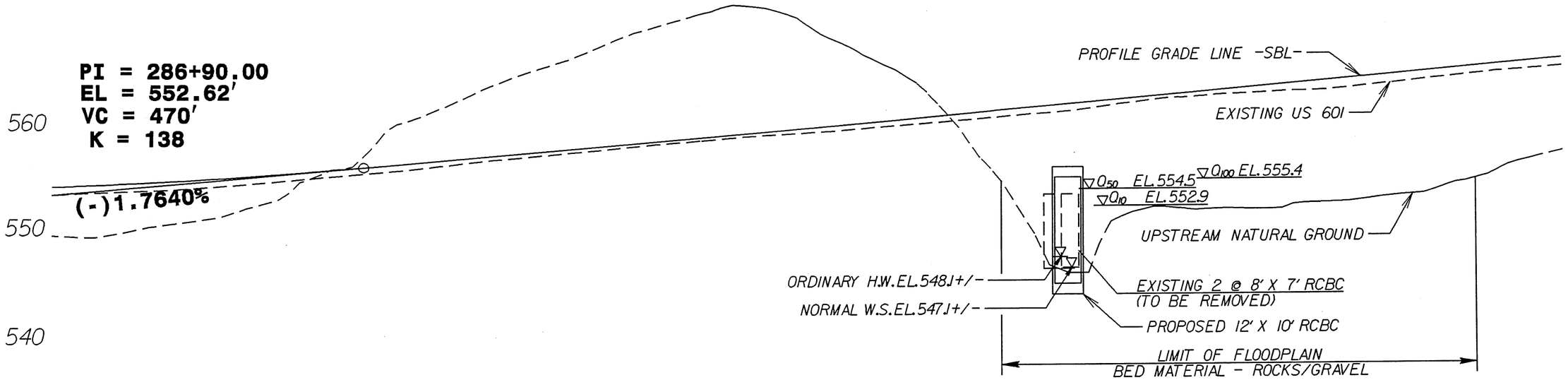
ENGLISH

SITE 13 -L- STA 281 + 51

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 31



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

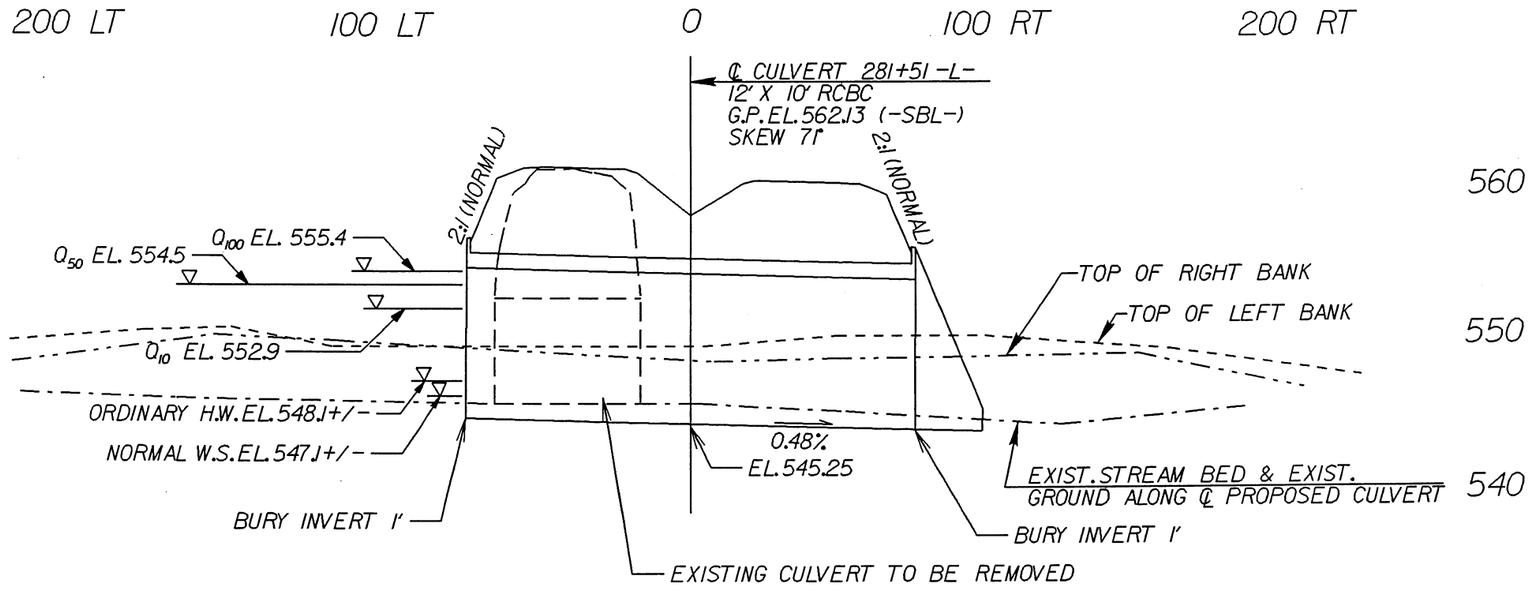
ENGLISH

SITE 13 -L- STA 281 + 51

PROJECT REFERENCE NO.	SHEET NO.
R-2616 ABB	23B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 32



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

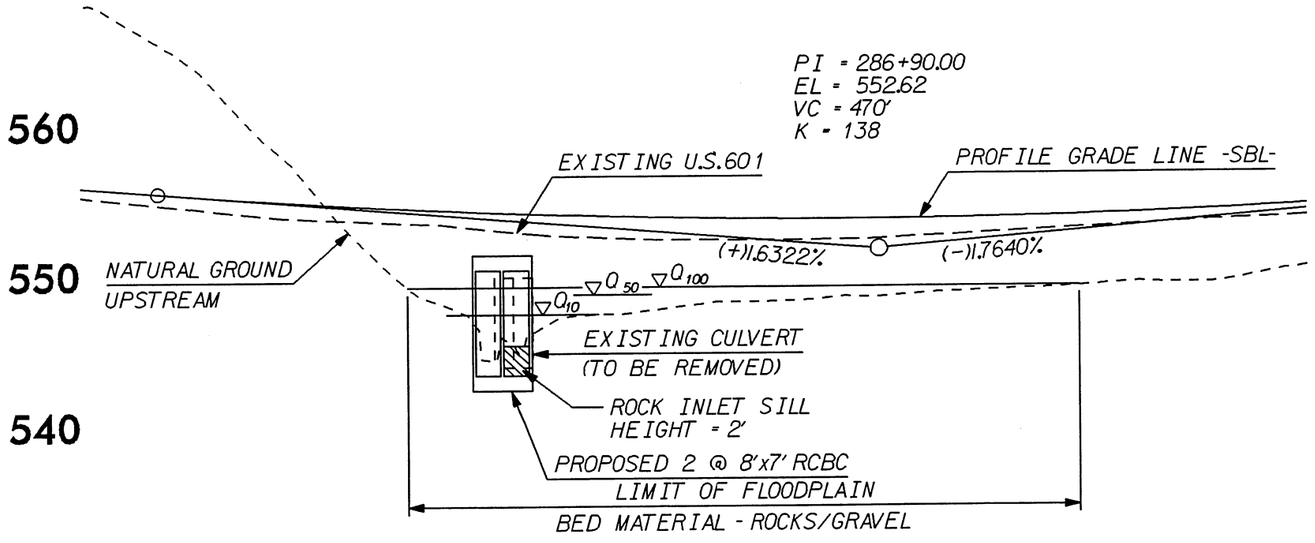
ENGLISH

SITE 14 -L- STA 288 + 06.5

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 33



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23D
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

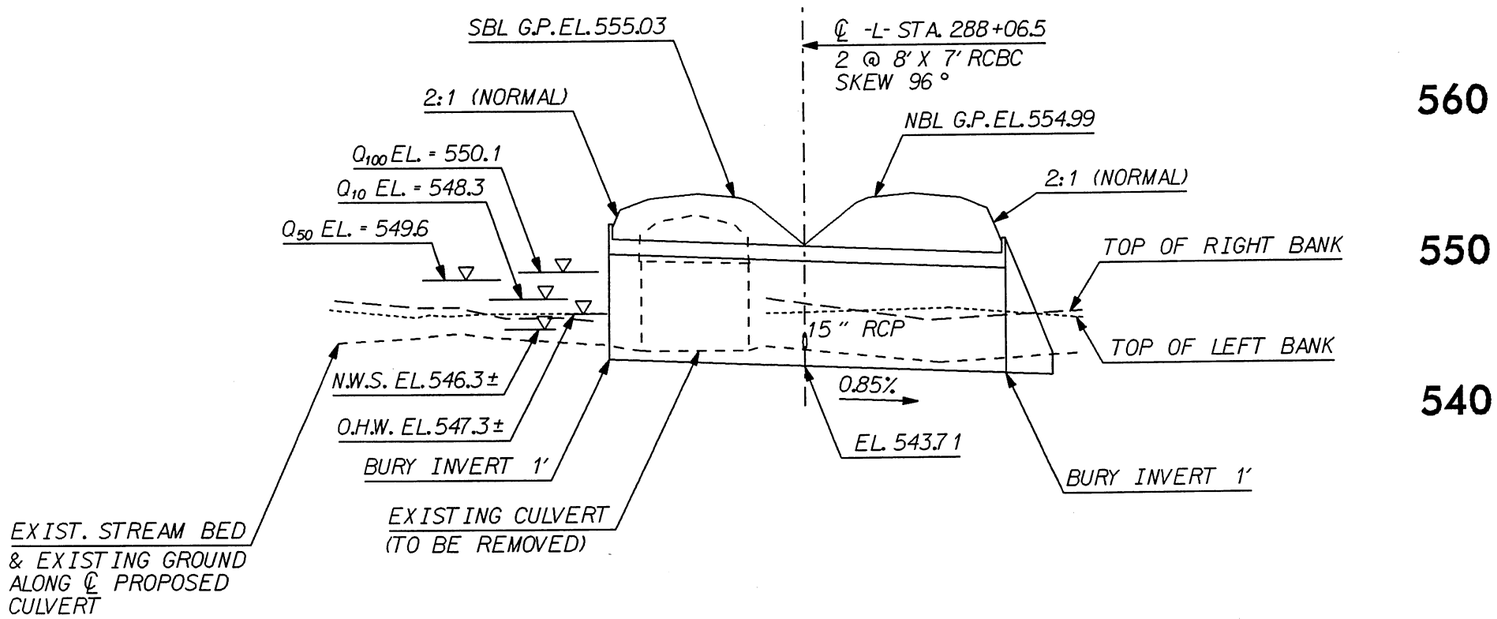
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 34

SITE 14 -L- STA 288 + 06.5

286 100 LT 0 100 RT



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

ENGLISH

SITE 15 -L- STA. 290+00 RT - 294+30 LT

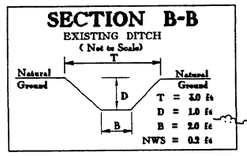
Permit Application Plansheet Page 35

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

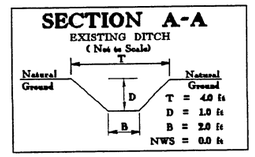
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

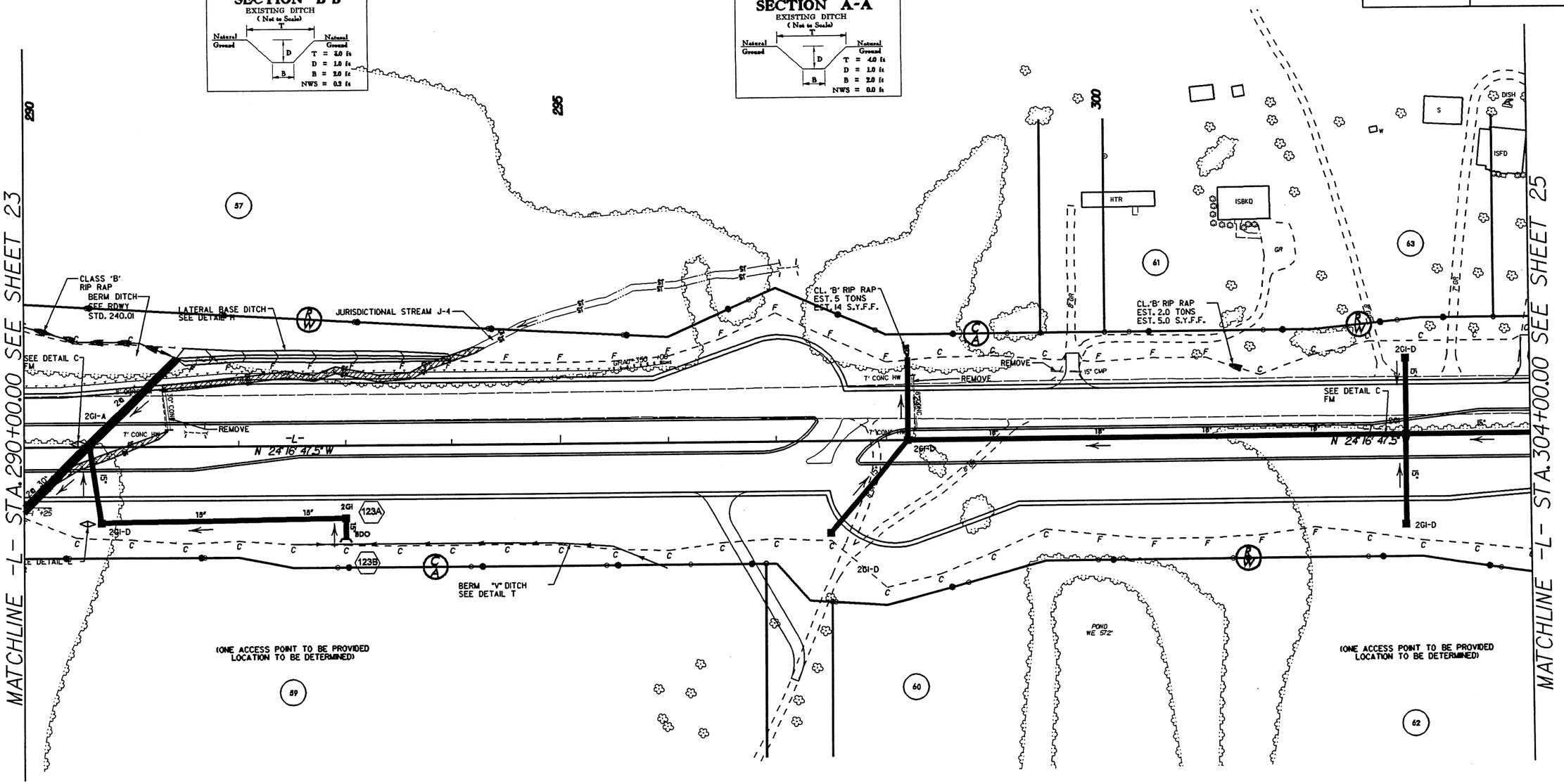
NAD 83

SECTION B-B
EXISTING DITCH
(Not to Scale)



SECTION A-A
EXISTING DITCH
(Not to Scale)

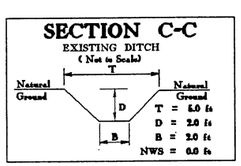




50' 0 100'

SCALE: 1" : 100'

SECTION C-C
EXISTING DITCH
(Not to Scale)



FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

ENGLISH

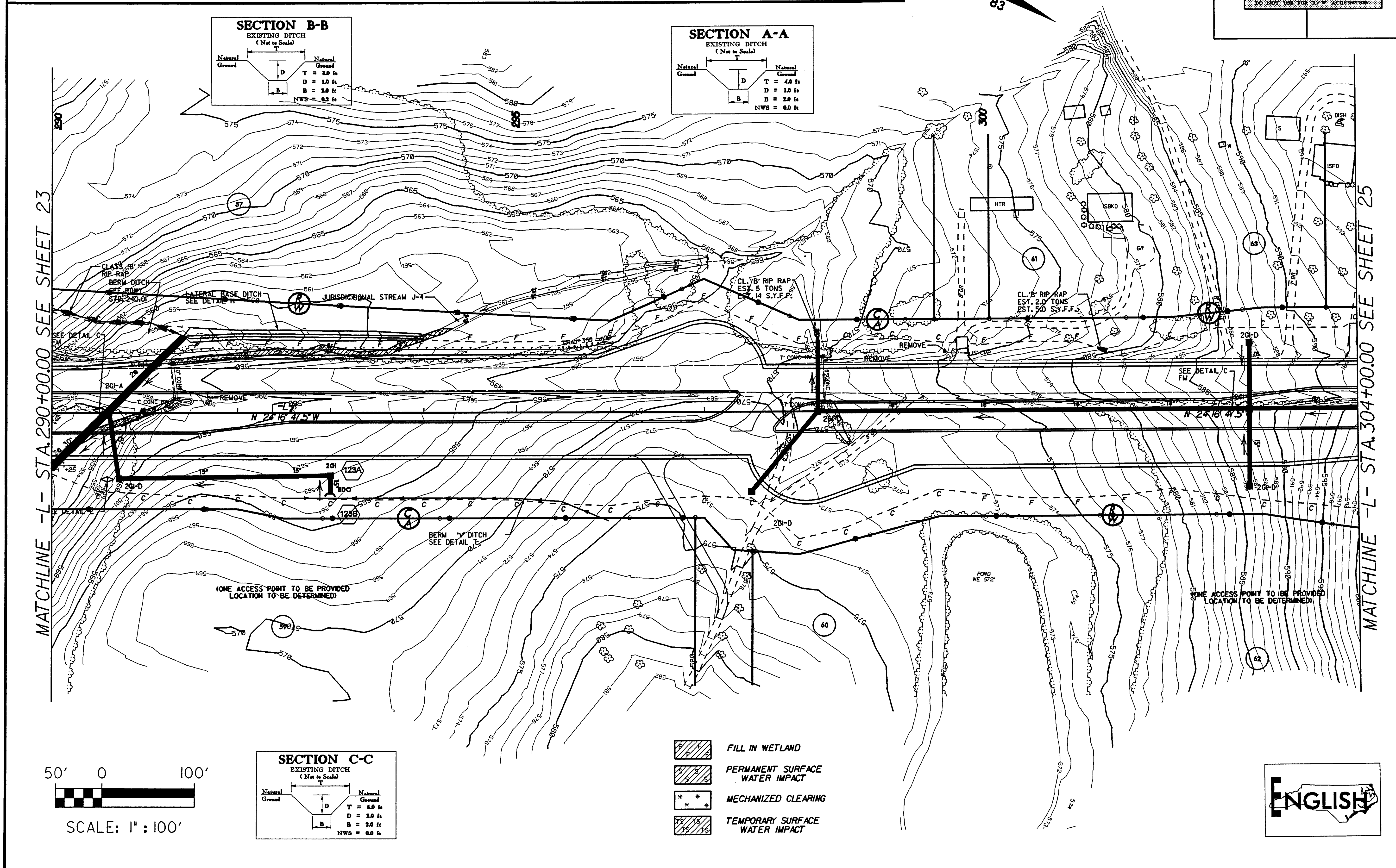
Permit Application Plansheet Page 36

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SITE 15 -L- STA. 290+00 RT - 294+30 LT



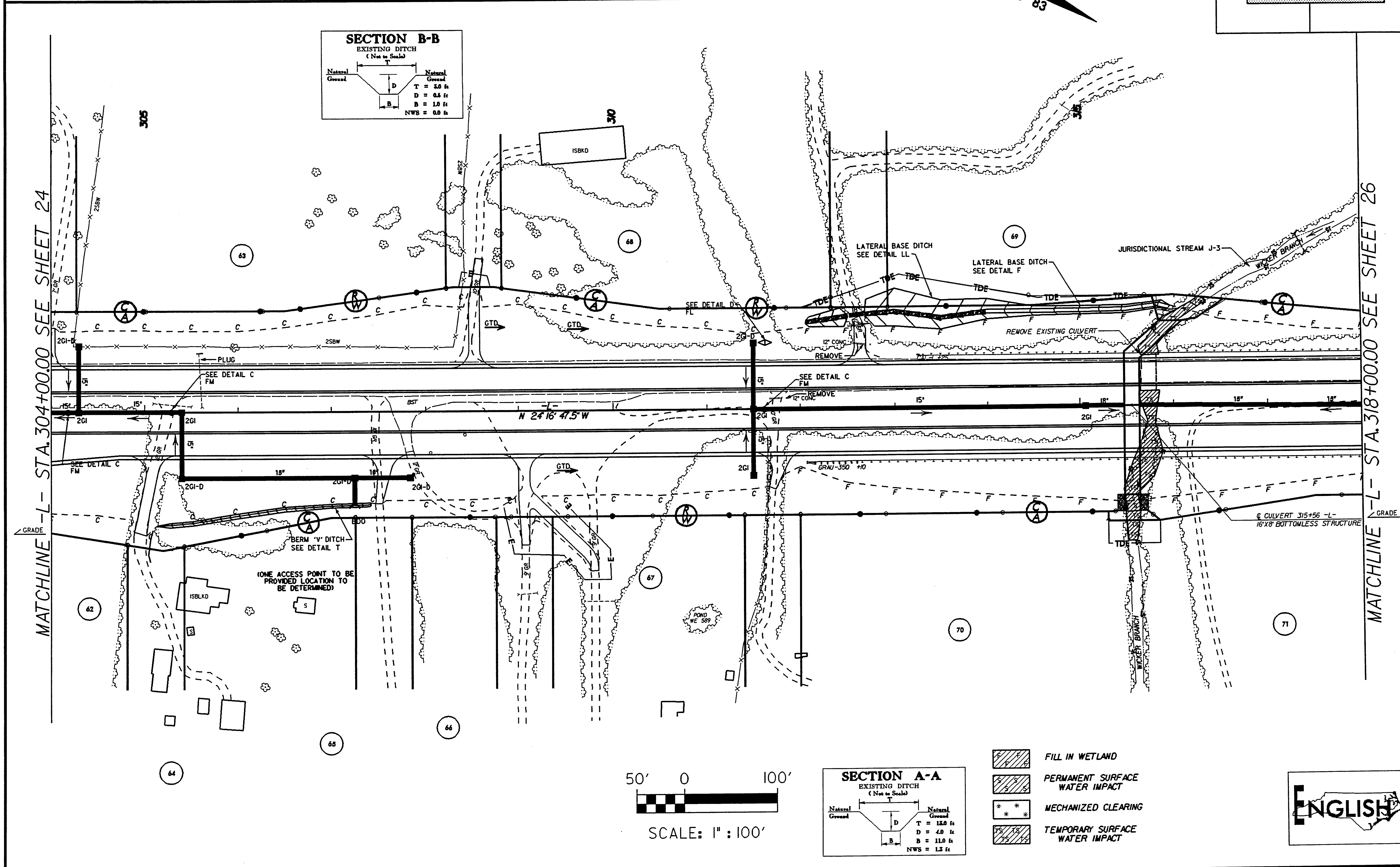
NAD 83
SECTION B-B
EXISTING DITCH
(Not to Scale)
Natural Ground
T = 3.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.2 ft
SECTION A-A
EXISTING DITCH
(Not to Scale)
T = 4.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.0 ft
SECTION C-C
EXISTING DITCH
(Not to Scale)
T = 6.0 ft
D = 2.0 ft
B = 2.0 ft
NWS = 0.0 ft
MATCHLINE -L- STA.290+00.00 SEE SHEET 23
MATCHLINE -L- STA.304+00.00 SEE SHEET 25
CLASS 'B' RIP RAP
BERM DITCH SEE ROW STA 240.01
LATERAL BASE DITCH SEE DETAIL H
JURISDICTIONAL STREAM J-4
CL.'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
CL.'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.
REMOVE
N 24°16'47.5"W
BERM "V" DITCH SEE DETAIL T
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
POND WE 572'
HTR
SBKD
ISFD
DISH
FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
50' 0 100'
SCALE: 1" : 100'
ENGLISH

SITE 16 -L- STA. 315 + 56

R-2616 A&B	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



NAD 83
SECTION B-B
EXISTING DITCH
(Not to Scale)
Natural Ground
T = 3.0 ft
D = 0.5 ft
B = 1.0 ft
NWS = 0.0 ft
MATCHLINE -L- STA.304+00.00 SEE SHEET 24
MATCHLINE -L- STA.318+00.00 SEE SHEET 26
LATERAL BASE DITCH SEE DETAIL LL
LATERAL BASE DITCH SEE DETAIL F
JURISDICTIONAL STREAM J-3
WICKER BRANCH
REMOVE EXISTING CULVERT
SEE DETAIL D FL
SEE DETAIL C FM
PLUG
12" CONC
REMOVE
N 24°16' 47.5" W
GRAU-350
BERM 'V' DITCH SEE DETAIL T
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
℄ CULVERT 315+56 -L-
16'X8' BOTTOMLESS STRUCTURE
POND WE 589
GRADE
50' 0 100'
SCALE: 1" : 100'
SECTION A-A
EXISTING DITCH
(Not to Scale)
T = 12.0 ft
D = 4.0 ft
B = 11.0 ft
NWS = 1.5 ft
FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
ENGLISH

SITE 16 -L- STA. 315+56

Permit Application Plansheet Page 38

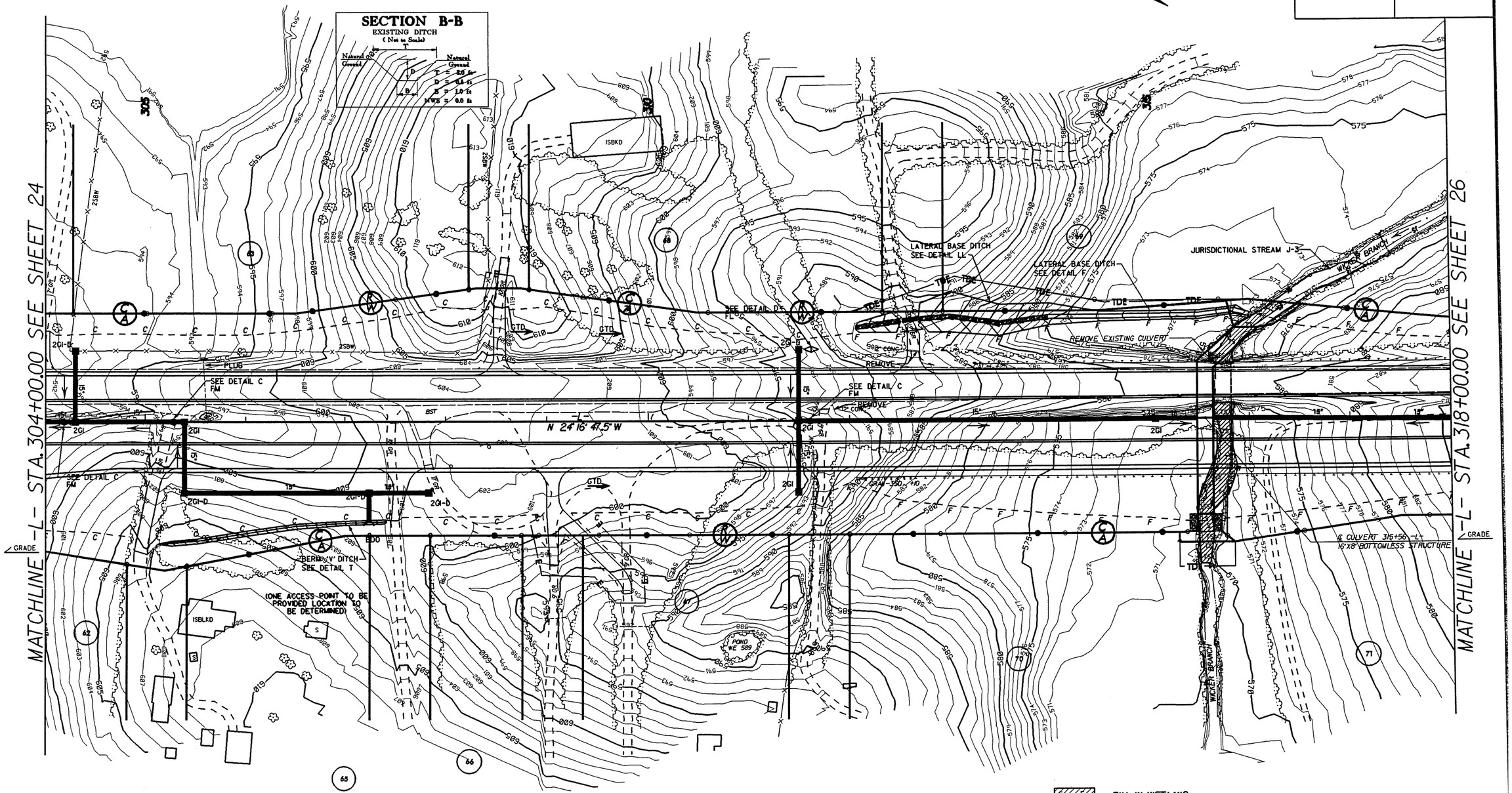
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	25

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83



SITE 16 -L- STA 315+56

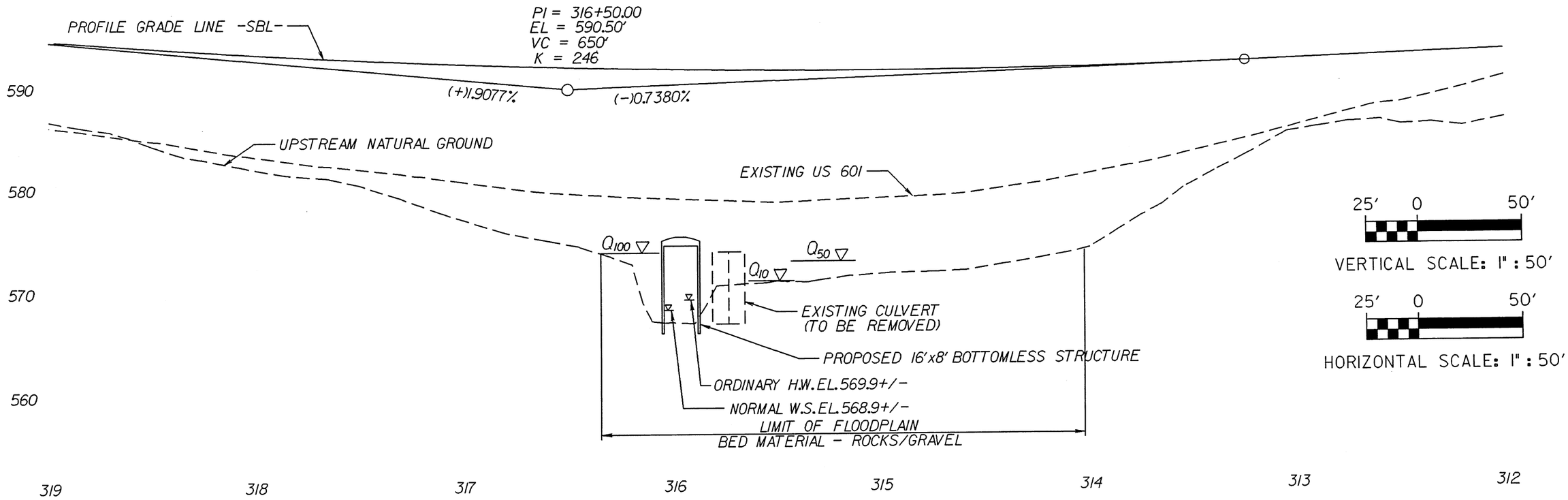
Permit Application Plansheet Page 39

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	25A

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



25' 0 50'

VERTICAL SCALE: 1" : 50'

25' 0 50'

HORIZONTAL SCALE: 1" : 50'

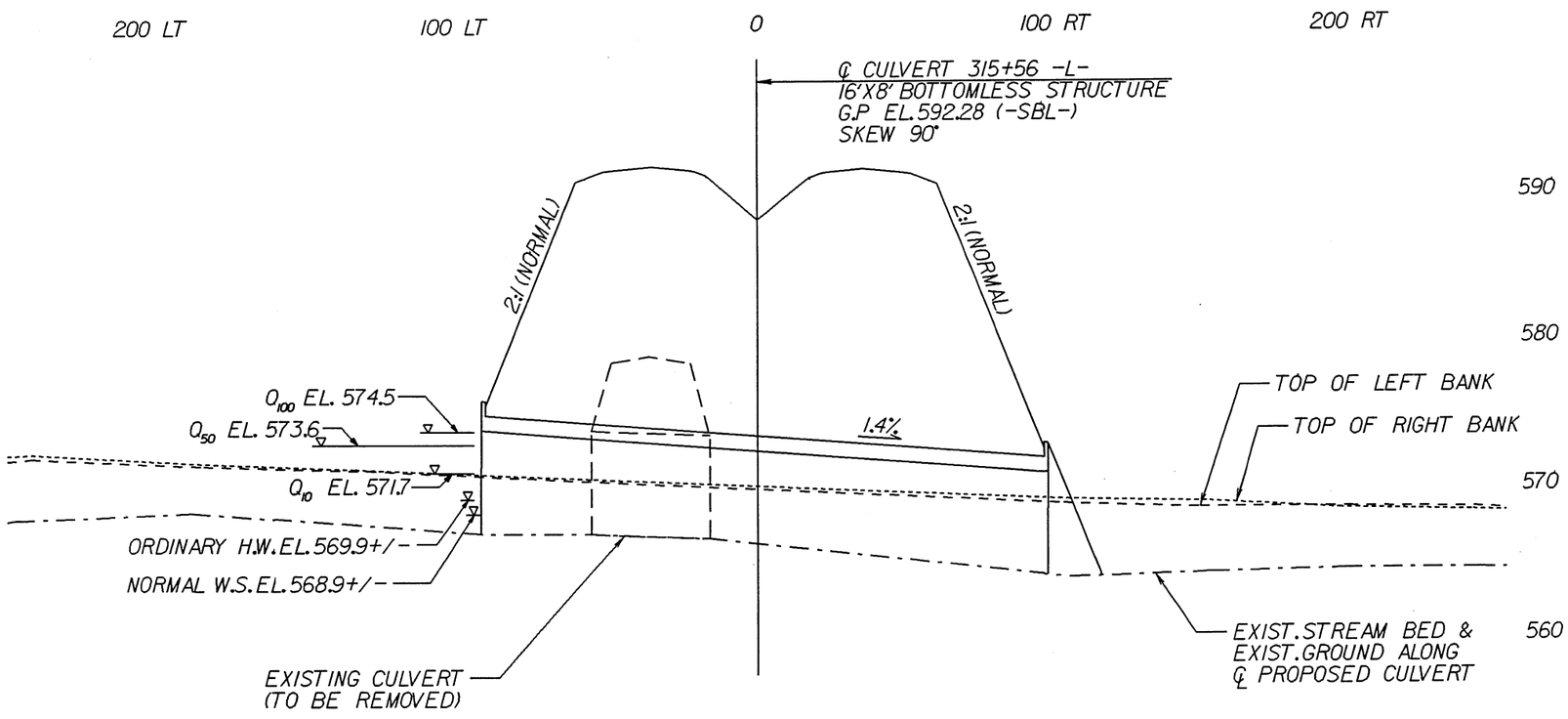
ENGLISH

SITE 16 -L- STA 315 + 56

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	25B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 40



25′ 0 50′

VERTICAL SCALE: 1" : 50′

25′ 0 50′

HORIZONTAL SCALE: 1" : 50′

ENGLISH

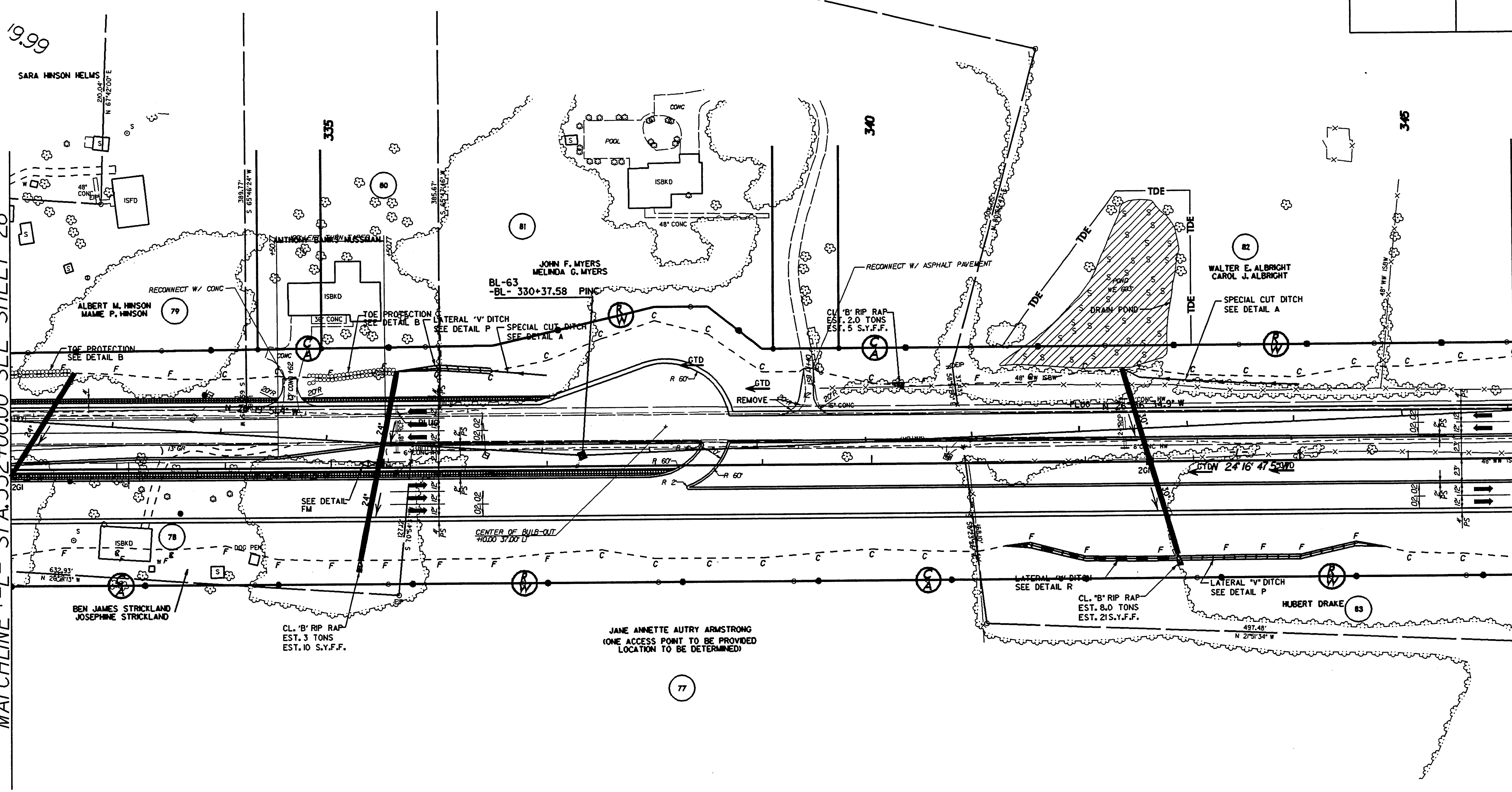
SITE 17 -L- STA. 342+00

Permit Application Plansheet Page 41

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



SARA HINSON HELMS
ALBERT M. HINSON
MAMIE P. HINSON
JOHN F. MYERS
MELINDA G. MYERS
WALTER E. ALBRIGHT
CAROL J. ALBRIGHT
BEN JAMES STRICKLAND
JOSEPHINE STRICKLAND
JANE ANNETTE AUTRY ARMSTRONG
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
HUBERT DRAKE
MATCHLINE -L- STA. 332+00.00 SEE SHEET 26
MATCHLINE -L- STA. 346+00.00 SEE SHEET 28
TOE PROTECTION SEE DETAIL B
RECONNECT W/ CONC
LATERAL 'V' DITCH SEE DETAIL P
SPECIAL CUT DITCH SEE DETAIL A
BL-63
-BL- 330+37.58 PINC
RECONNECT W/ ASPHALT PAVEMENT
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
DRAIN POND
SPECIAL CUT DITCH SEE DETAIL A
CENTER OF BULB-OUT
SEE DETAIL FM
CL. 'B' RIP RAP EST. 3 TONS EST. 10 S.Y.F.F.
LATERAL 'V' DITCH SEE DETAIL R
CL. 'B' RIP RAP EST. 8.0 TONS EST. 21 S.Y.F.F.
LATERAL 'V' DITCH SEE DETAIL P

F	FILL IN WETLAND
S	PERMANENT SURFACE WATER IMPACT
*	MECHANIZED CLEARING
TS	TEMPORARY SURFACE WATER IMPACT

50′ 0 100′

SCALE: 1" : 100′

ENGLISH

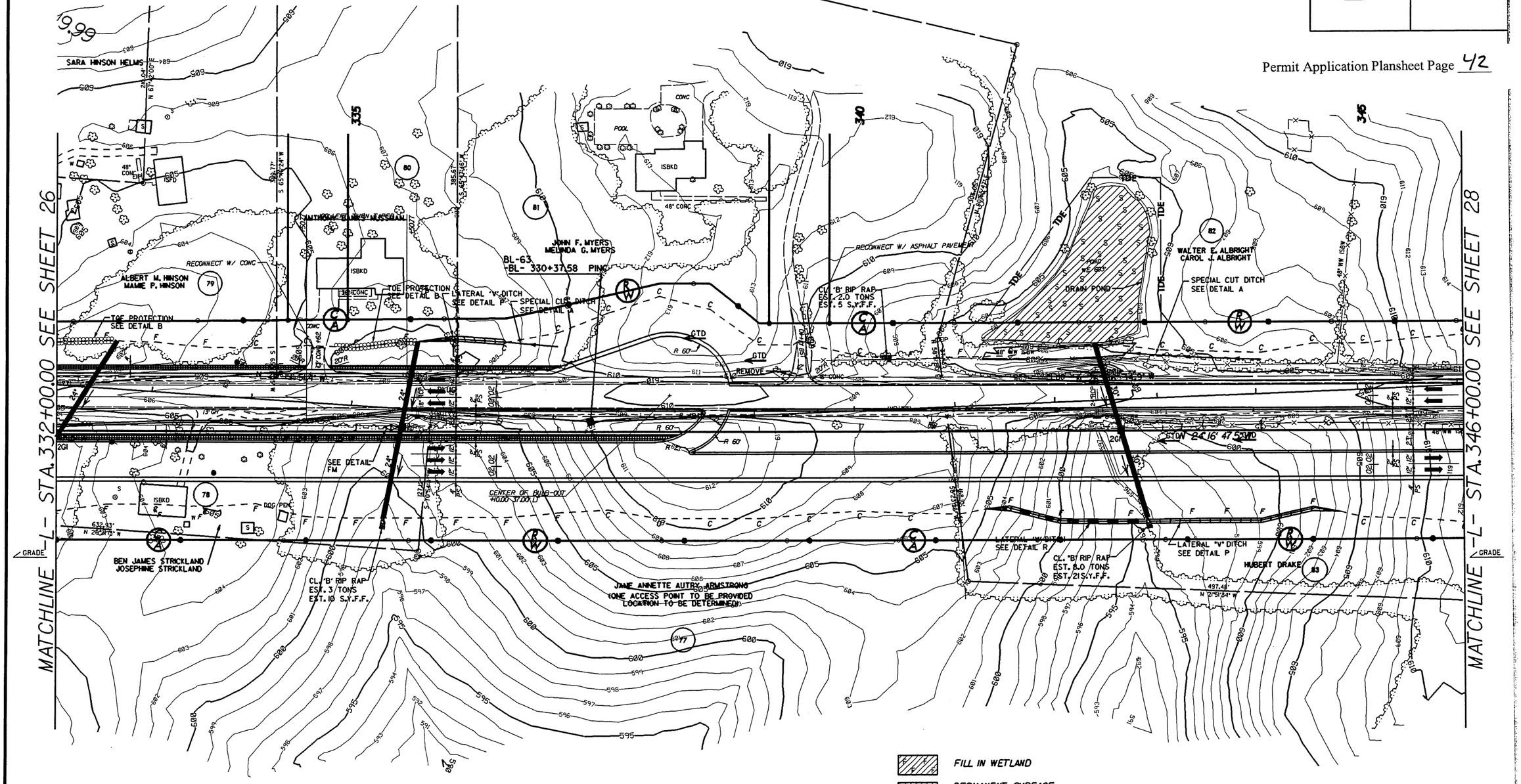
8/17/99

SITE 17 -L- STA. 342+00

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Application Plansheet Page 42



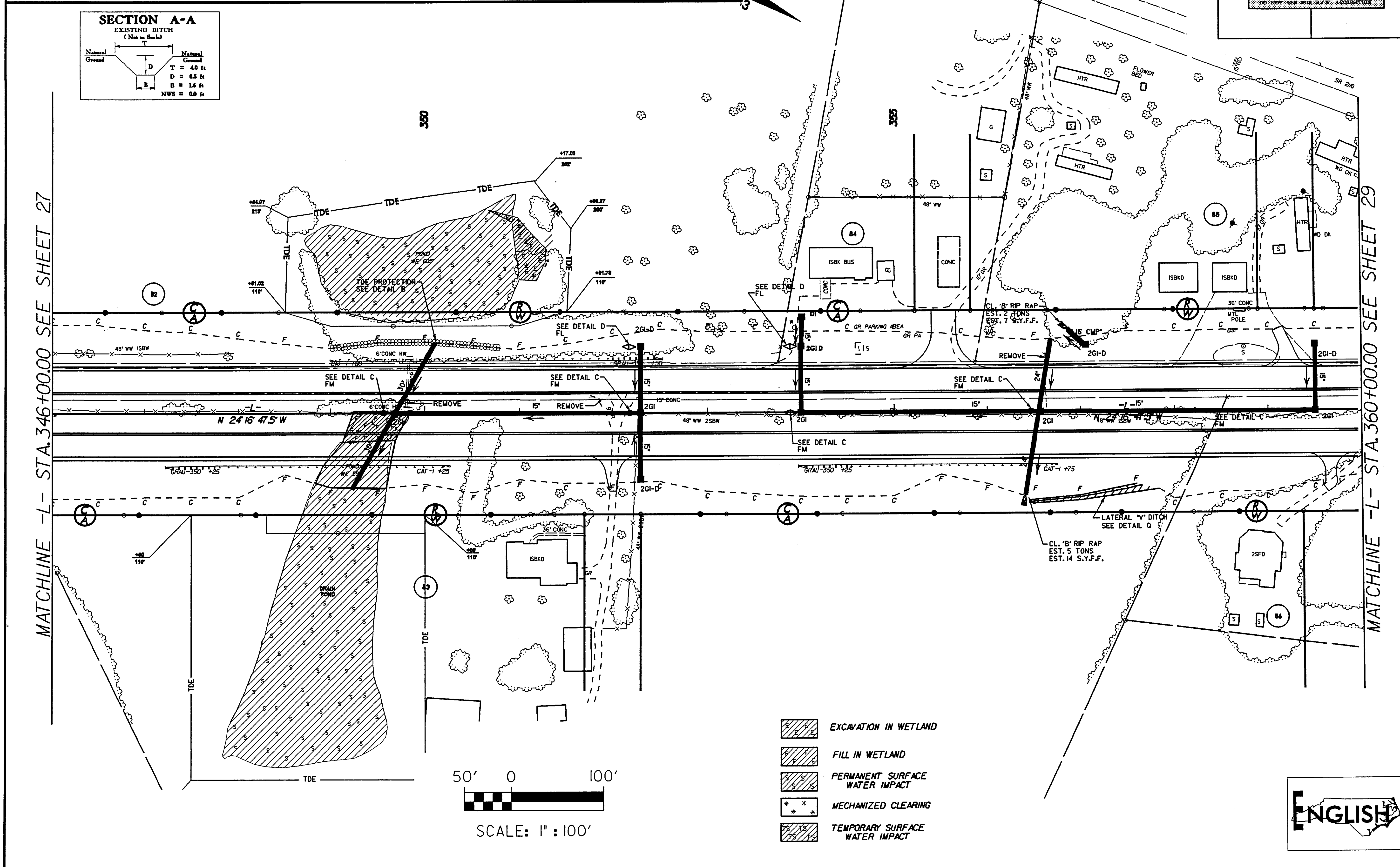
SITE 18 -L- STA. 349+50 RT
SITE 19 -L- STA. 349+50 LT

Permit Application Plansheet Page 43

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION



SECTION A-A
EXISTING DITCH
(Not to Scale)
Natural Ground
T = 4.0 ft
D = 0.5 ft
B = 1.5 ft
NWS = 0.0 ft
MATCHLINE -L- STA. 346+00.00 SEE SHEET 27
MATCHLINE -L- STA. 360+00.00 SEE SHEET 29
TDE PROTECTION SEE DETAIL B
SEE DETAIL C FM
SEE DETAIL D FL
N 24°16' 47.5" W
CL. 'B' RIP RAP EST. 2 TONS EST. 7 S.Y.F.F.
CL. 'B' RIP RAP EST. 5 TONS EST. 14 S.Y.F.F.
LATERAL "V" DITCH SEE DETAIL Q
REMOVE
EXCAVATION IN WETLAND
FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
50' 0 100'
SCALE: 1" : 100'
ENGLISH

SITE 18 -L- STA. 349+50 RT
SITE 19 -L- STA. 349+50 LT

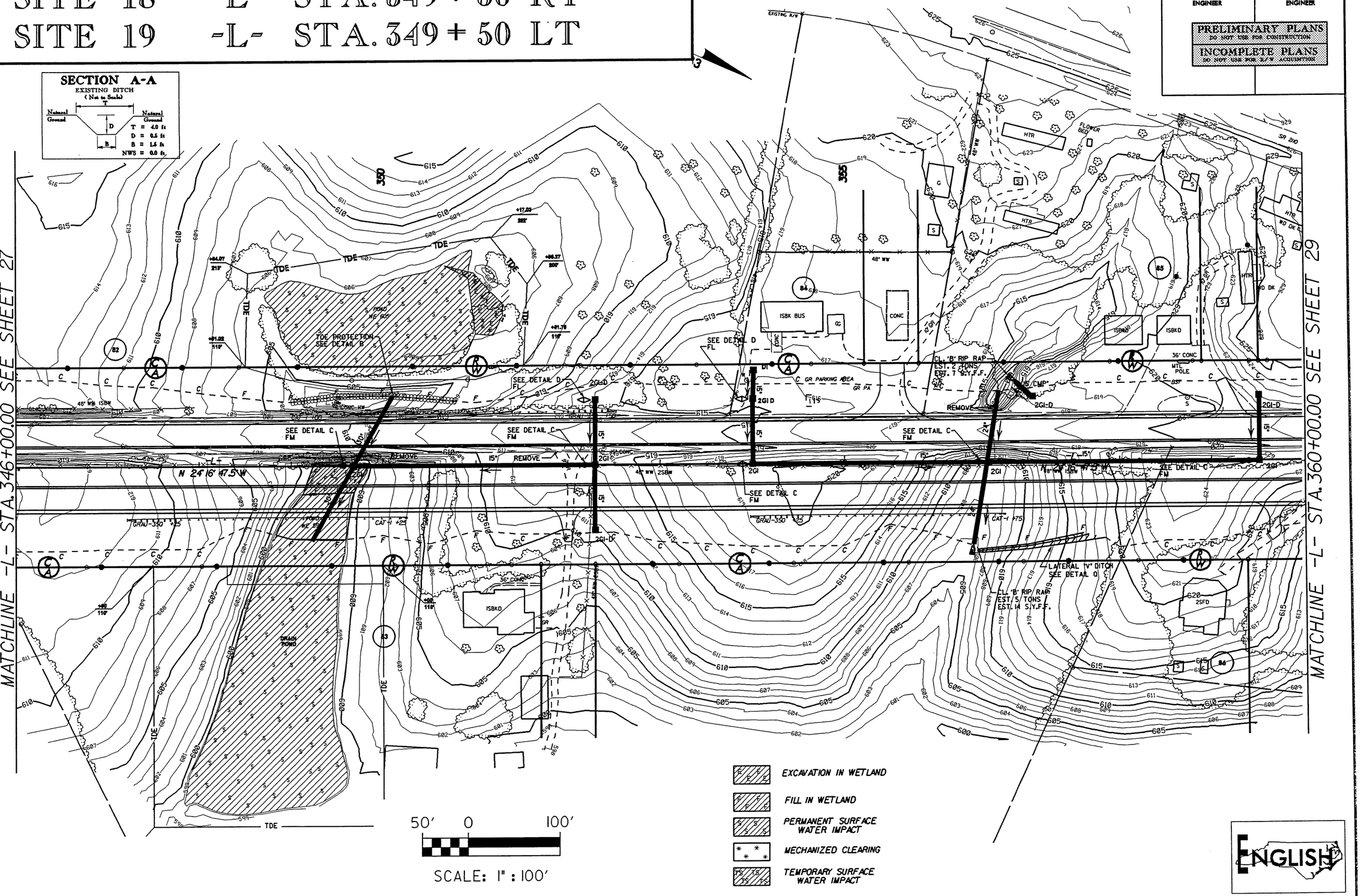
Permit Application Plansheet Page 44

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	28

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

SECTION A-A
EXISTING DITCH
(Not to Scale)



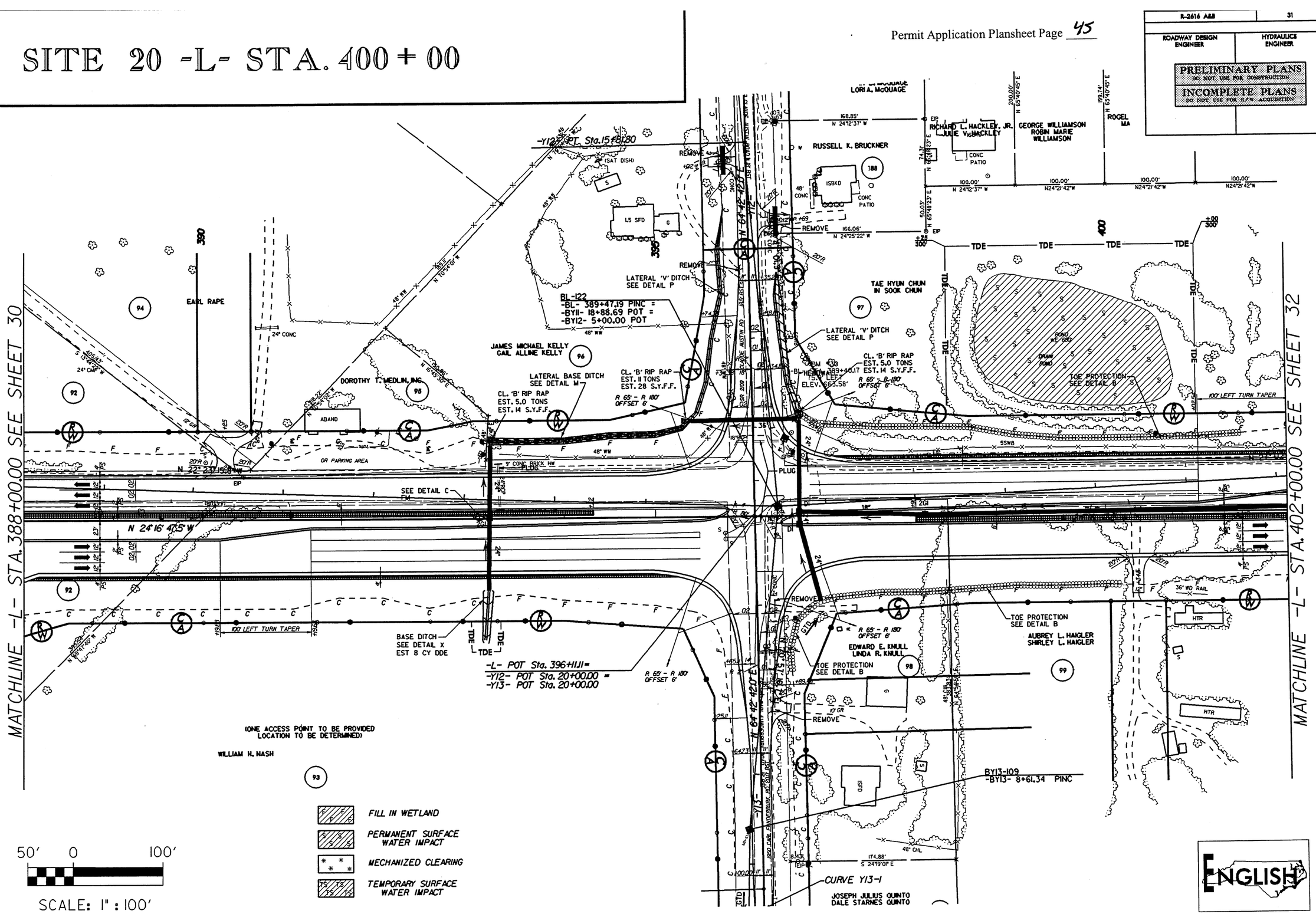
8/17/98

SITE 20 -L- STA. 400 + 00

Permit Application Plansheet Page 45

R-2616 AAB	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



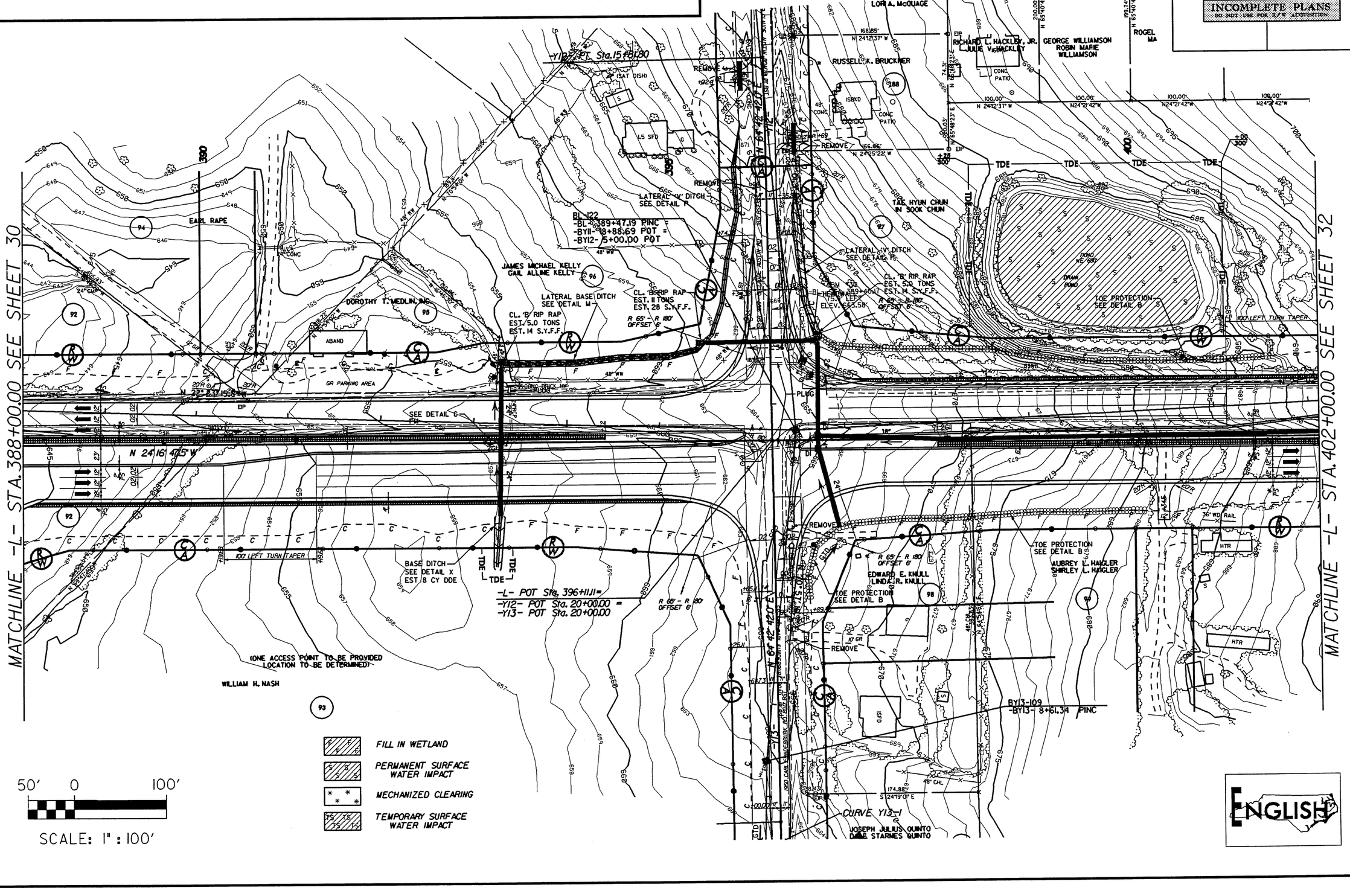
8/17/99

SITE 20 -L- STA. 400+00

Permit Application Plansheet Page 46

R-2616 A&B	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

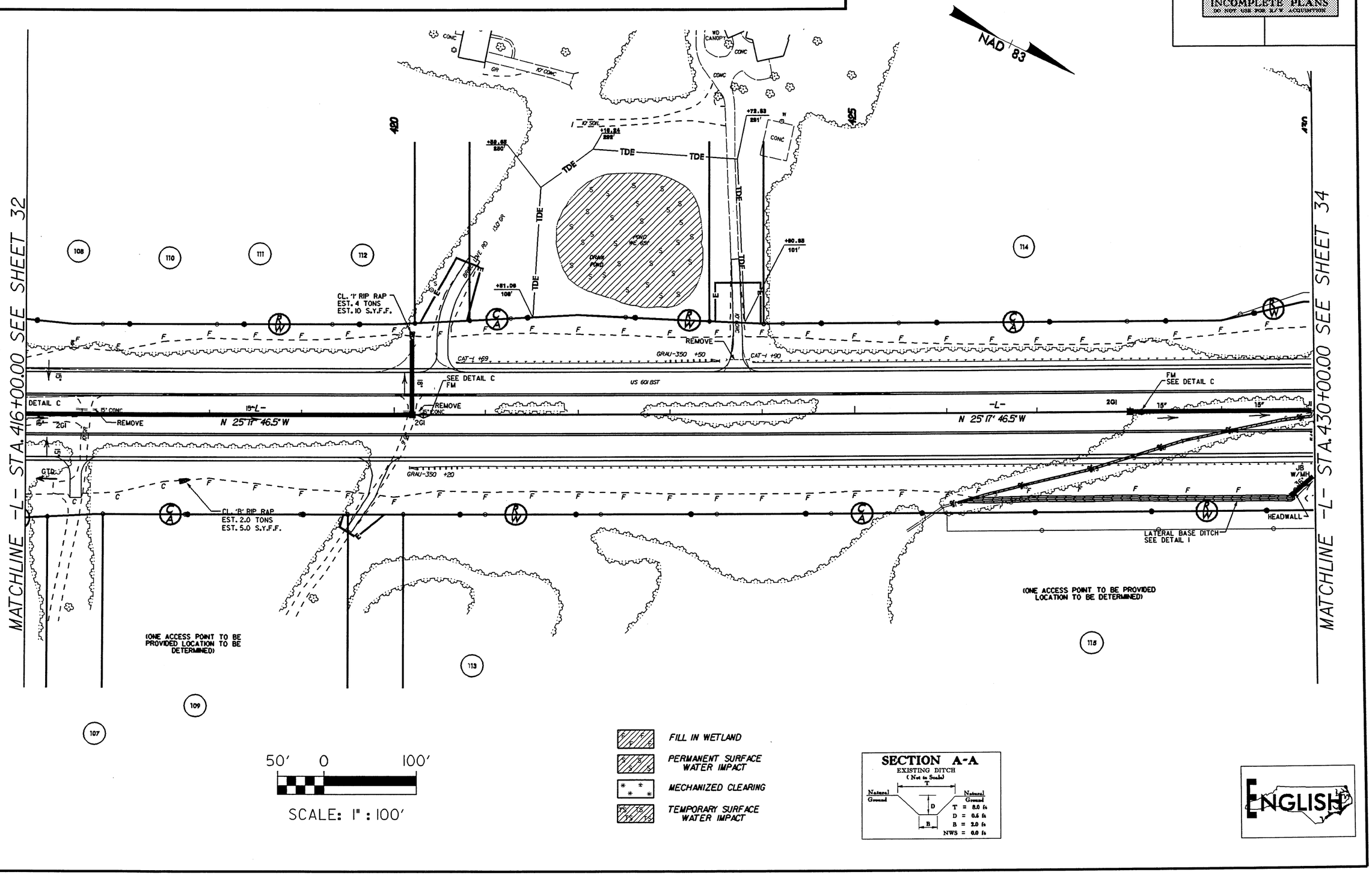


SITE 21 -L- STA. 422+00 LT.
SITE 22 -L- STA. 426+03 RT - 430+50 LT

Permit Application Plansheet Page 47

R-2616 A&B	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



50' 0 100'

SCALE: 1" : 100'

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION A-A
EXISTING DITCH
(Not to Scale)

T = 8.0 ft
D = 0.6 ft
B = 2.0 ft
NWS = 0.0 ft

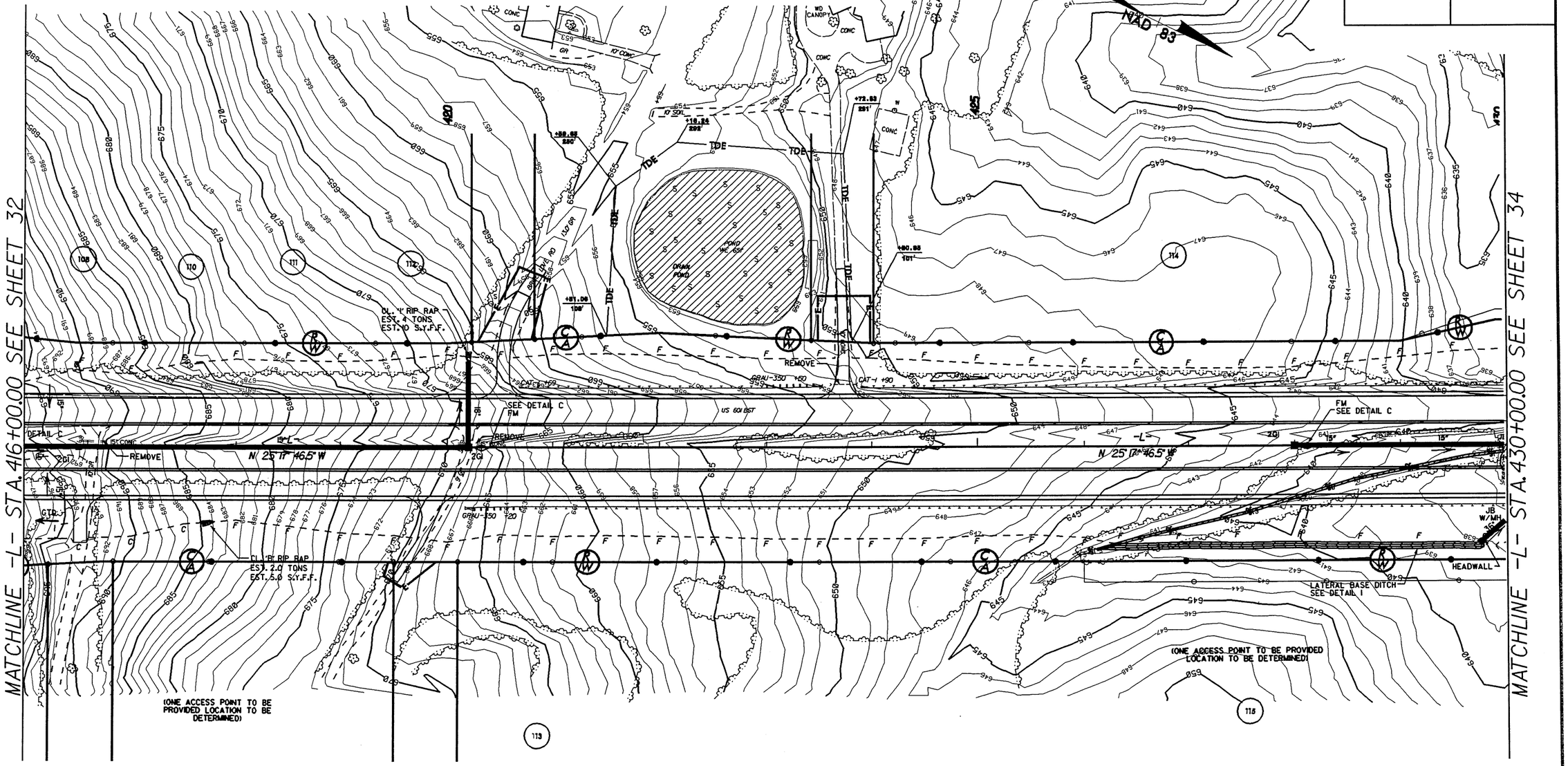
ENGLISH

SITE 21 -L- STA. 422+00 LT.
SITE 22 -L- STA. 426+03 RT - 430+50 LT

Permit Application Plansheet Page 48

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



50' 0 100'

SCALE: 1" : 100'

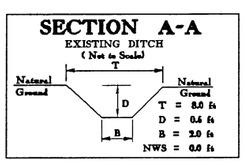
FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

SECTION A-A
EXISTING DITCH
(Not to Scale)



T = 8.0 ft
D = 0.6 ft
B = 2.0 ft
NWS = 0.0 ft

ENGLISH

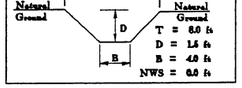
SITE 22 -L- STA. 430 + 50

Permit Application Plansheet Page 49

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

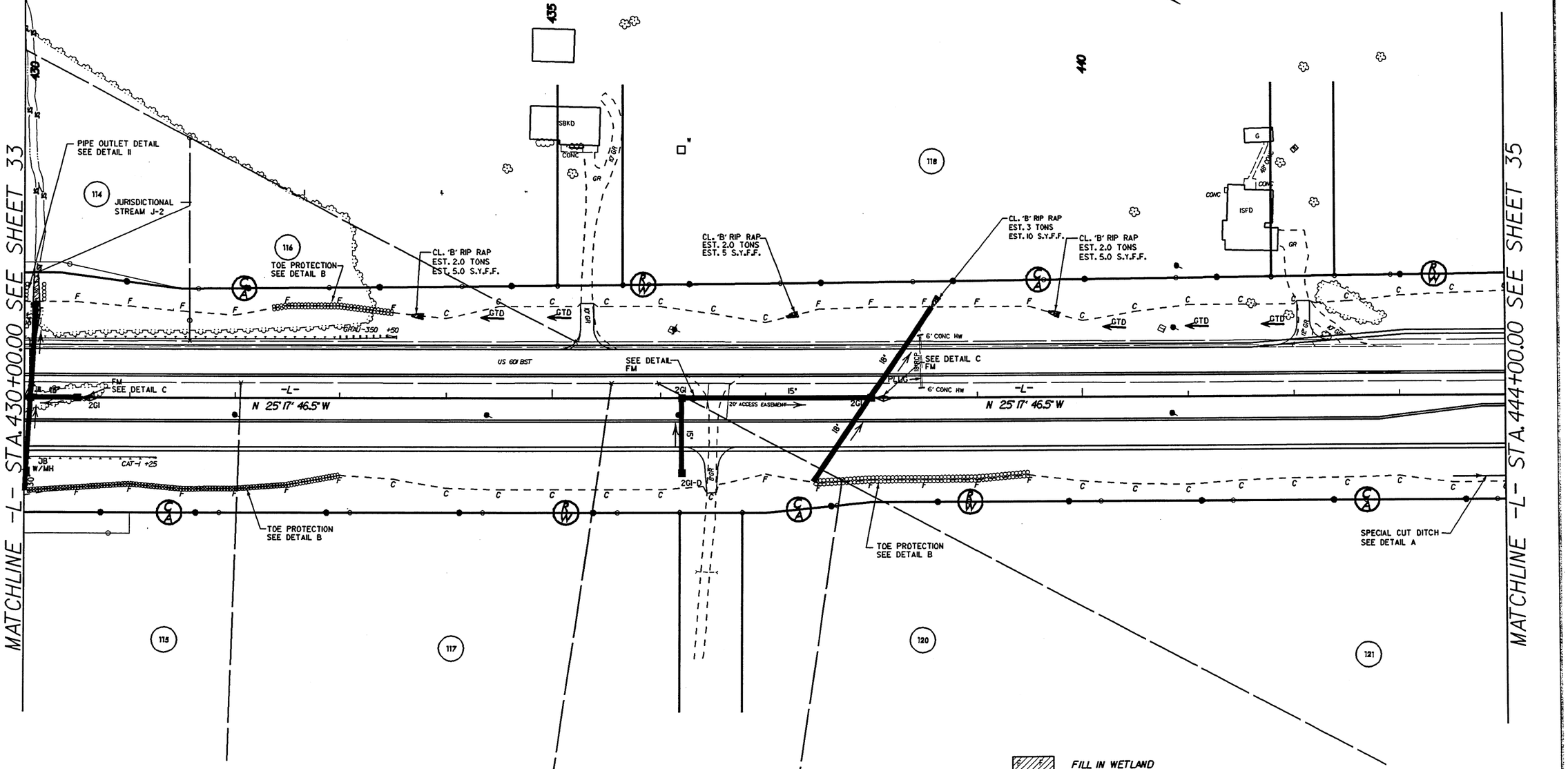
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SECTION A-A
EXISTING DITCH
(Not to Scale)



T = 8.0 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.0 ft

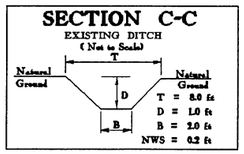
NAD 83



50' 0 100'

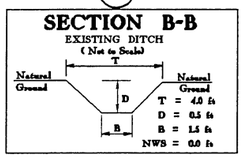
SCALE: 1" : 100'

SECTION C-C
EXISTING DITCH
(Not to Scale)



T = 8.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.2 ft

SECTION B-B
EXISTING DITCH
(Not to Scale)



T = 4.0 ft
D = 0.5 ft
B = 1.5 ft
NWS = 0.0 ft

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

ENGLISH

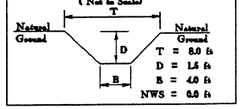
SITE 22 -L- STA. 430 + 50

Permit Application Plansheet Page 50

R-2616 A&B	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

SECTION A-A
EXISTING DITCH
(Not to Scale)



T = 8.0 ft
D = 1.5 ft
B = 4.0 ft
NWS = 0.0 ft

NAD 83

MATCHLINE -L- STA. 430+00.00 SEE SHEET 33

MATCHLINE -L- STA. 444+00.00 SEE SHEET 35

PIPE OUTLET DETAIL SEE DETAIL II

JURISDICTIONAL STREAM J-2

TOE PROTECTION SEE DETAIL B

CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.

CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.

CL. 'B' RIP RAP EST. 3 TONS EST. 10 S.Y.F.F.

CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.

SEE DETAIL FM

SEE DETAIL C FM

US 601 BST

N 25° 17' 46.5" W

20' ACCESS EASEMENT

TOE PROTECTION SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL 42A

SBKD

CONC

ISFD

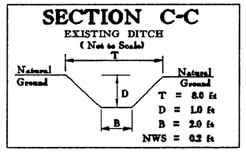
GR

GTD

JB W/MH

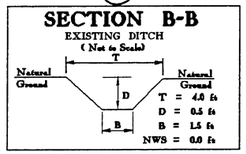
114 115 116 117 118 119 120 121

SECTION C-C
EXISTING DITCH
(Not to Scale)



T = 8.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.2 ft

SECTION B-B
EXISTING DITCH
(Not to Scale)



T = 4.0 ft
D = 0.5 ft
B = 1.5 ft
NWS = 0.0 ft

50' 0 100'

SCALE: 1" : 100'

FILL IN WETLAND

PERMANENT SURFACE WATER IMPACT

MECHANIZED CLEARING

TEMPORARY SURFACE WATER IMPACT

ENGLISH

SITE 23 -L- STA. 474+07 - STA. 476+41

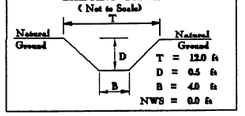
R-2616 A&B	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

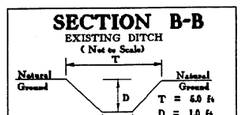
Permit Application Plansheet Page 51

SECTION E-E
EXISTING DITCH
(Not to Scale)

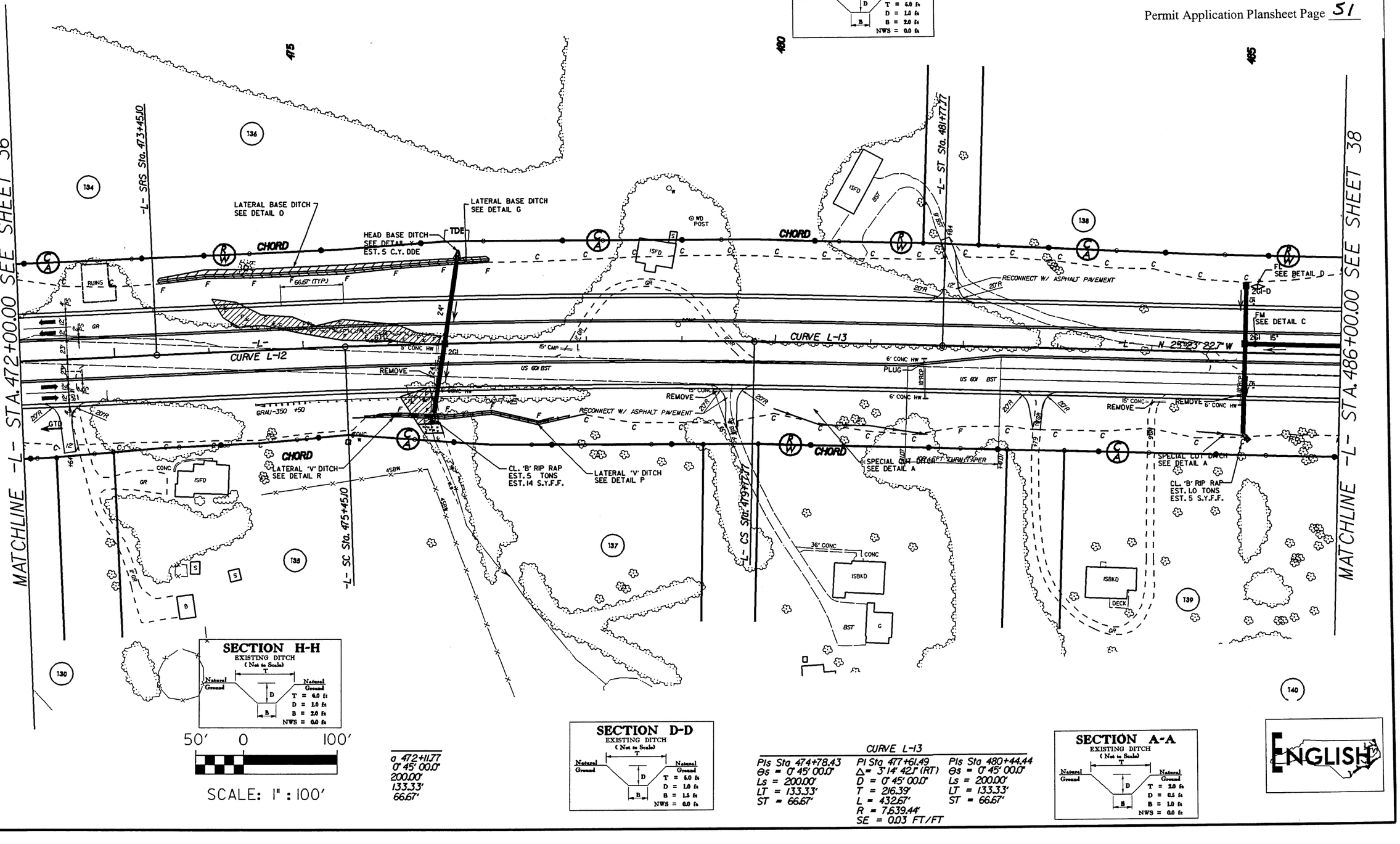


T = 12.0 ft
D = 0.5 ft
B = 4.0 ft
NWS = 0.0 ft

SECTION B-B
EXISTING DITCH
(Not to Scale)



T = 6.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.0 ft



SECTION H-H
EXISTING DITCH
(Not to Scale)

T = 6.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.0 ft

50' 0 100'

SCALE: 1" : 100'

a 472+11.77
0° 45' 00.0"
200.00'
133.33'
66.67'

SECTION D-D
EXISTING DITCH
(Not to Scale)

T = 5.0 ft
D = 1.0 ft
B = 1.5 ft
NWS = 0.0 ft

CURVE L-13

PIs Sta 474+78.43	PI Sta 477+61.49	PIs Sta 480+44.44
Θs = 0° 45' 00.0"	Δ = 3° 14' 42.5" (RT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	T = 216.39'	LT = 133.33'
ST = 66.67'	L = 432.67'	ST = 66.67'
	R = 7,639.44'	
	SE = 0.03 FT/FT	

SECTION A-A
EXISTING DITCH
(Not to Scale)

T = 2.0 ft
D = 0.5 ft
B = 1.0 ft
NWS = 0.0 ft

ENGLISH

SITE 23 -L- STA. 474+07 - STA. 476+41

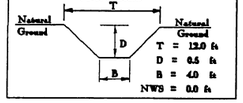
PROJECT REFERENCE NO.	SHEET
R-2616 A&B	37

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

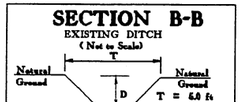
Permit Application Plansheet Page 52

SECTION E-E
EXISTING DITCH
(Not to Scale)



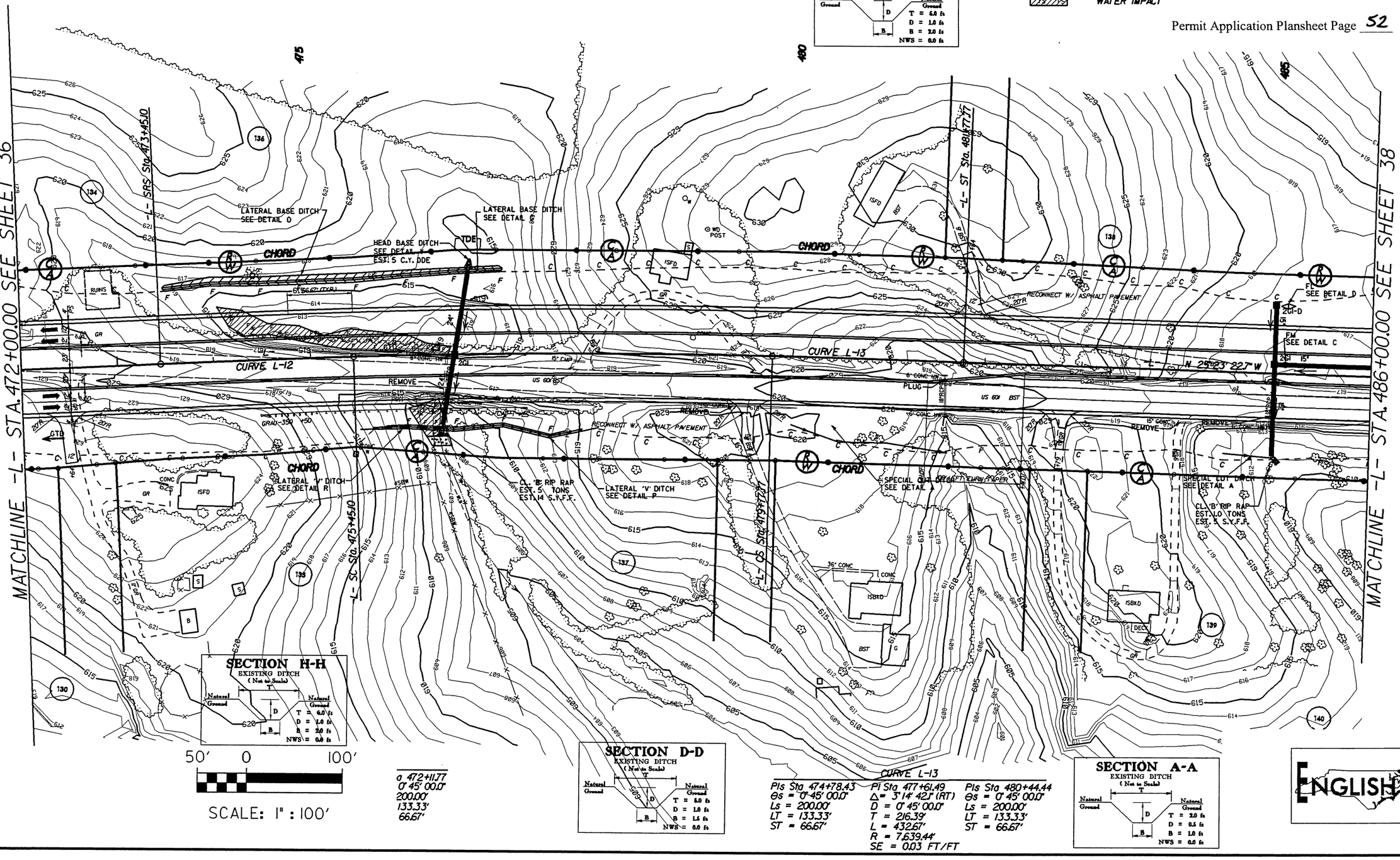
T = 12.0 ft
D = 0.5 ft
B = 4.0 ft
NWS = 0.0 ft

SECTION B-B
EXISTING DITCH
(Not to Scale)



T = 6.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.0 ft

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT



SECTION H-H
EXISTING DITCH
(Not to Scale)

T = 6.0 ft
D = 1.0 ft
B = 2.0 ft
NWS = 0.0 ft

50' 0 100'

SCALE: 1" : 100'

SECTION D-D
EXISTING DITCH
(Not to Scale)

T = 6.0 ft
D = 1.0 ft
B = 1.5 ft
NWS = 0.0 ft

o 472+11.77
0° 45' 00.0"
200.00'
133.33'
66.67'

CURVE L-13

Pi Sta 474+78.43	Pi Sta 477+61.49	Pi Sta 480+44.44
θs = 0°-45' 00.0"	Δ = 3°14' 42.5" (RT)	θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	T = 216.39'	LT = 133.33'
ST = 66.67'	L = 432.67'	ST = 66.67'
	R = 7,639.44'	
	SE = 0.03 FT/FT	

SECTION A-A
EXISTING DITCH
(Not to Scale)

T = 2.0 ft
D = 0.5 ft
B = 1.0 ft
NWS = 0.0 ft

ENGLISH

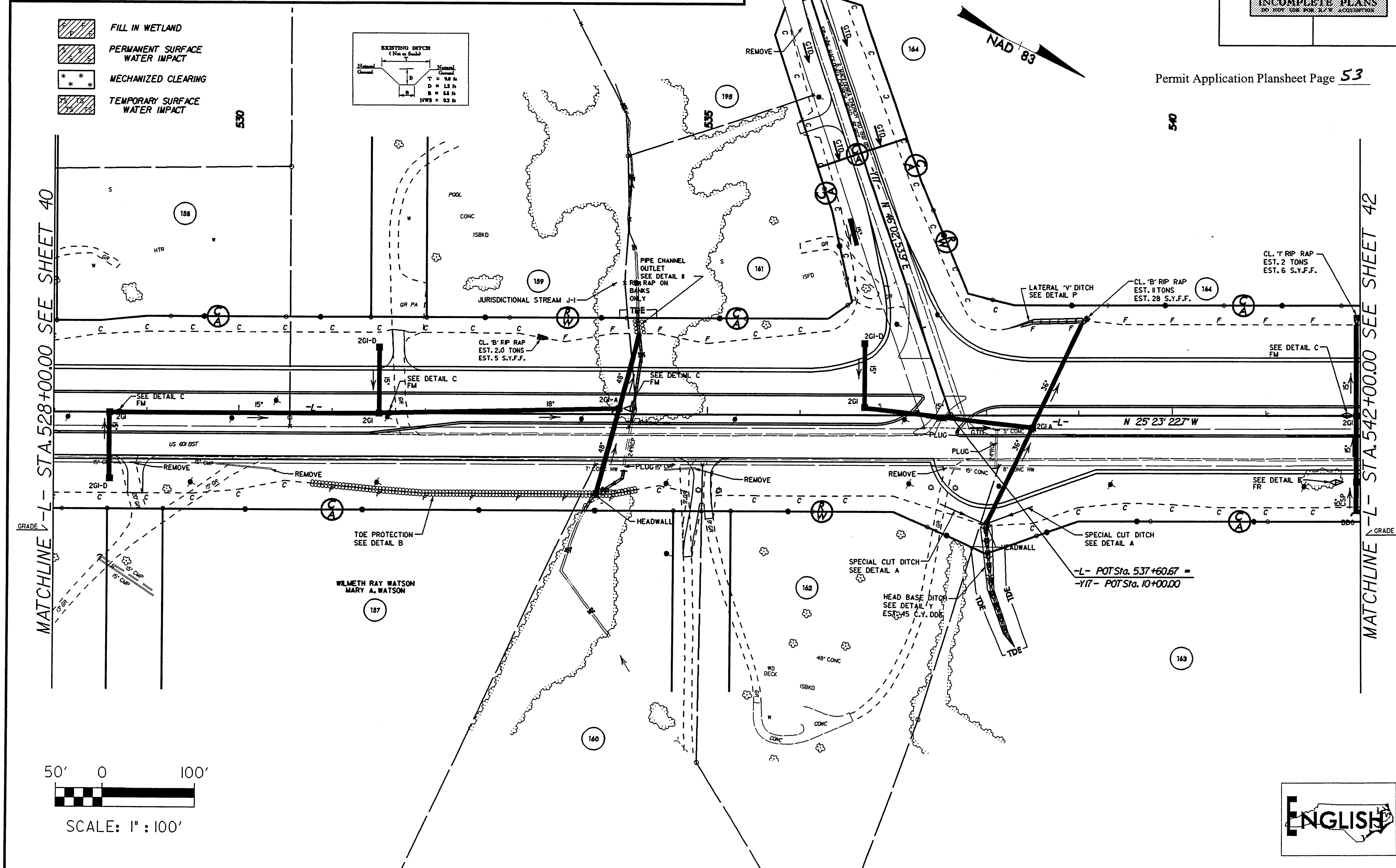
SITE 24 -L- STA. 534 + 20

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 53



FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT
EXISTING DITCH
NAD 83
-Y17- POT Sta. 5+00.00
BEGIN CONSTRUCTION -Y17- POT Sta. 5+25.00
REMOVE
PIPE CHANNEL OUTLET SEE DETAIL II RIP RAP ON BANKS ONLY
JURISDICTIONAL STREAM J-1
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
LATERAL 'V' DITCH SEE DETAIL P
CL. 'B' RIP RAP EST. 11 TONS EST. 28 S.Y.F.F.
CL. 'I' RIP RAP EST. 2 TONS EST. 6 S.Y.F.F.
SEE DETAIL C FM
N 25° 23' 22.7" W
US 601 BST
TOE PROTECTION SEE DETAIL B
HEADWALL
SPECIAL CUT DITCH SEE DETAIL A
HEAD BASE DITCH SEE DETAIL Y
-L- POT Sta. 537+60.67 = -Y17- POT Sta. 10+00.00
WILMETH RAY WATSON MARY A. WATSON
MATCHLINE -L- STA. 528+00.00 SEE SHEET 40
MATCHLINE -L- STA. 542+00.00 SEE SHEET 42
SCALE: 1" : 100'
ENGLISH

SITE 24 -L- STA. 534+20

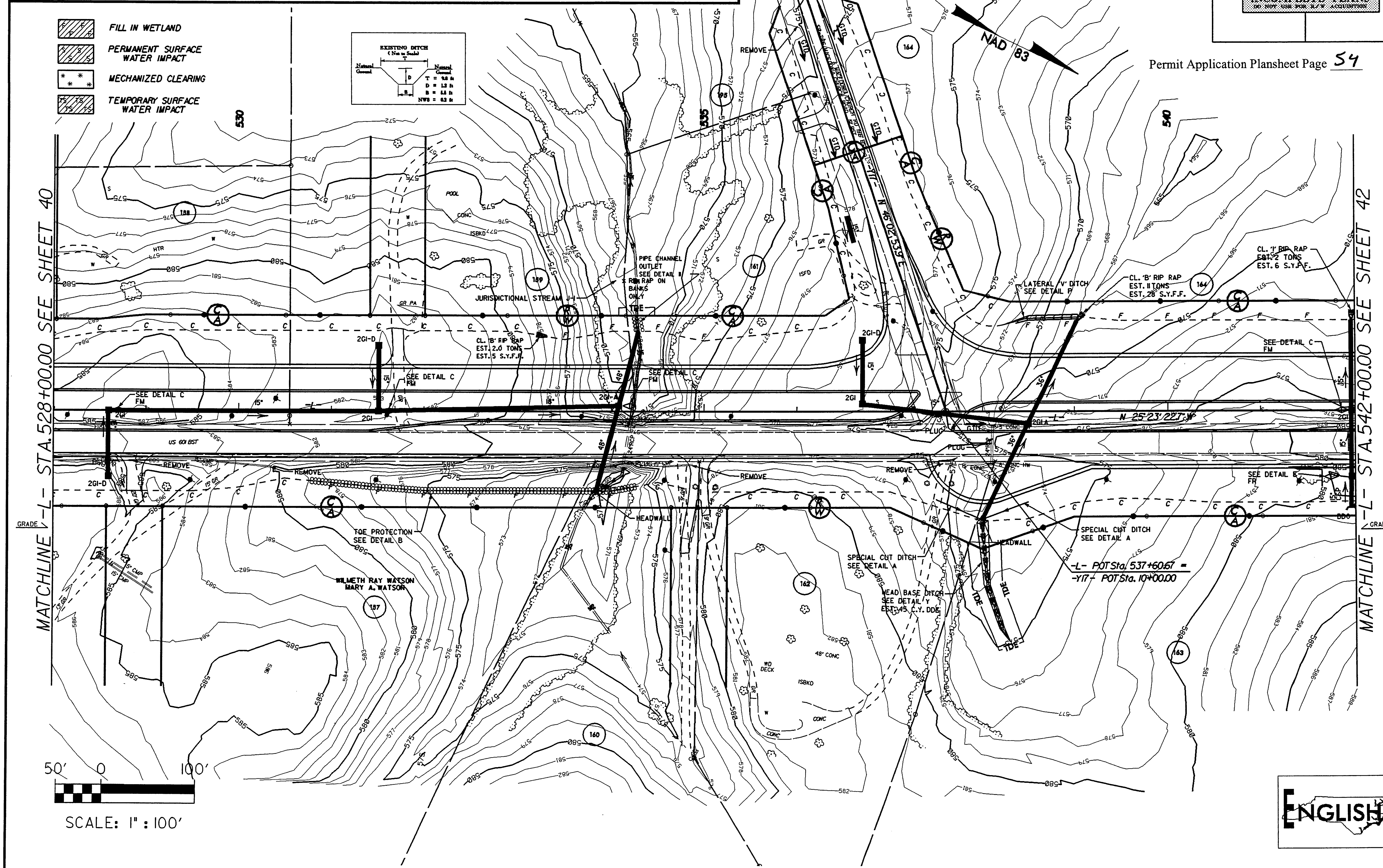
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 54

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT



MATCHLINE -L- STA. 528+00.00 SEE SHEET 40
MATCHLINE -L- STA. 542+00.00 SEE SHEET 42
-Y17- POT Sta. 5+00.00
BEGIN CONSTRUCTION -Y17- POT Sta. 5+25.00
NAD 83
EXISTING DITCH (Not to Scale)
JURISDICTIONAL STREAM
PIPE CHANNEL OUTLET SEE DETAIL II
RIP RAP ON BANKS ONLY
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
LATERAL 'V' DITCH SEE DETAIL P
CL. 'B' RIP RAP EST. 11 TONS EST. 28 S.Y.F.F.
CL. 'I' RIP RAP EST. 2 TONS EST. 6 S.Y.F.F.
SEE DETAIL C FM
US 601 BST
N 25°23'22.7" W
TOE PROTECTION SEE DETAIL B
WILMETH RAY WATSON MARY A. WATSON
HEADWALL
SPECIAL CUT DITCH SEE DETAIL A
HEAD BASE DITCH SEE DETAIL Y EST. 45 C.Y. DDE
-L- POT Sta. 537+60.67 = -Y17- POT Sta. 10+00.00
SCALE: 1" : 100'
ENGLISH

SITE 25 -L- STA. 549+60

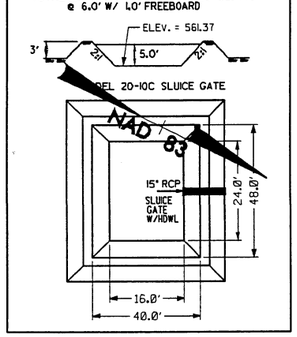
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	42

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

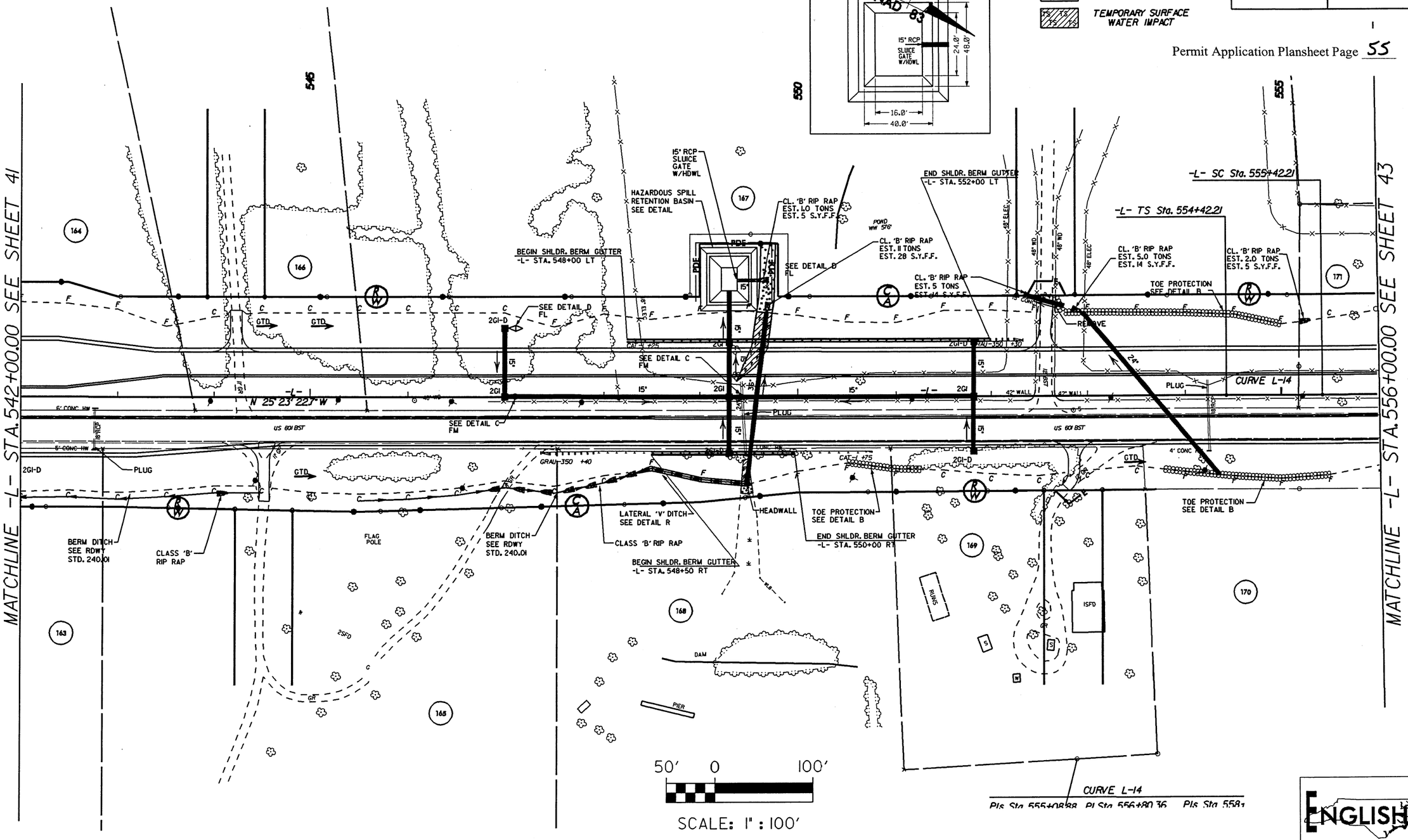
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 55

DETAIL OF HAZARDOUS SPILL RETENTION BASIN
TOTAL CAPACITY REQUIRED : 4789 cu. ft.
TOTAL CAPACITY PROVIDED : 4920 cu. ft.
@ 6.0' W/ 1.0' FREEBOARD



FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT



ENGLISH

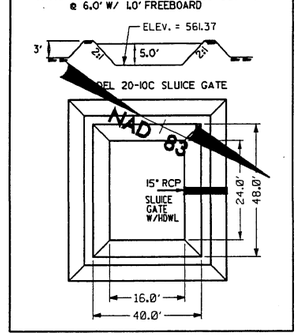
SITE 25 -L- STA. 549+60

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

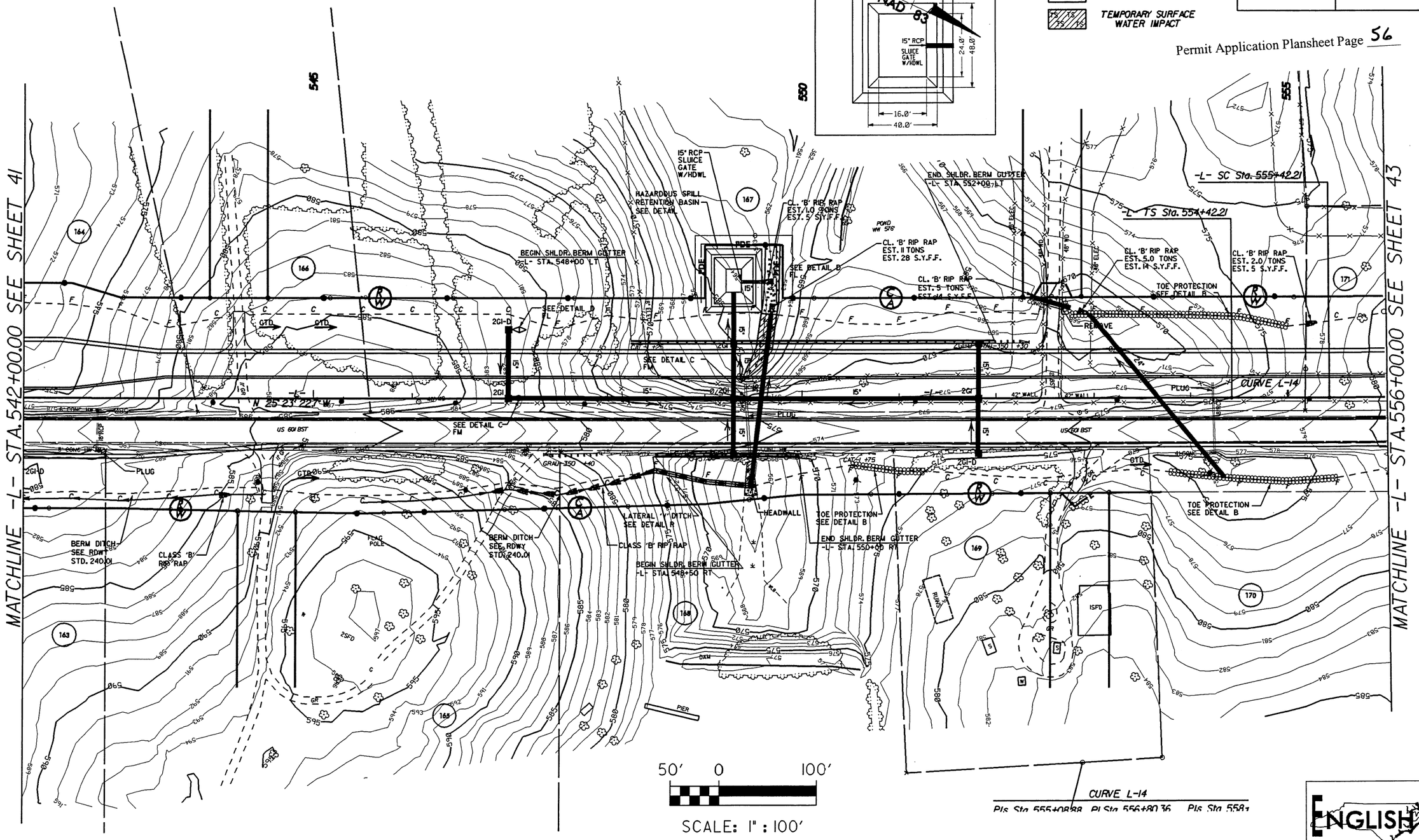
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Application Plansheet Page 56

DETAIL OF HAZARDOUS SPILL RETENTION BASIN
TOTAL CAPACITY REQUIRED : 4789 cu. ft.
TOTAL CAPACITY PROVIDED : 4920 cu. ft.
@ 6.0' W/ 1.0' FREEBOARD



FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT



ENGLISH

SITE 26 -L- STA. 575+85

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	44

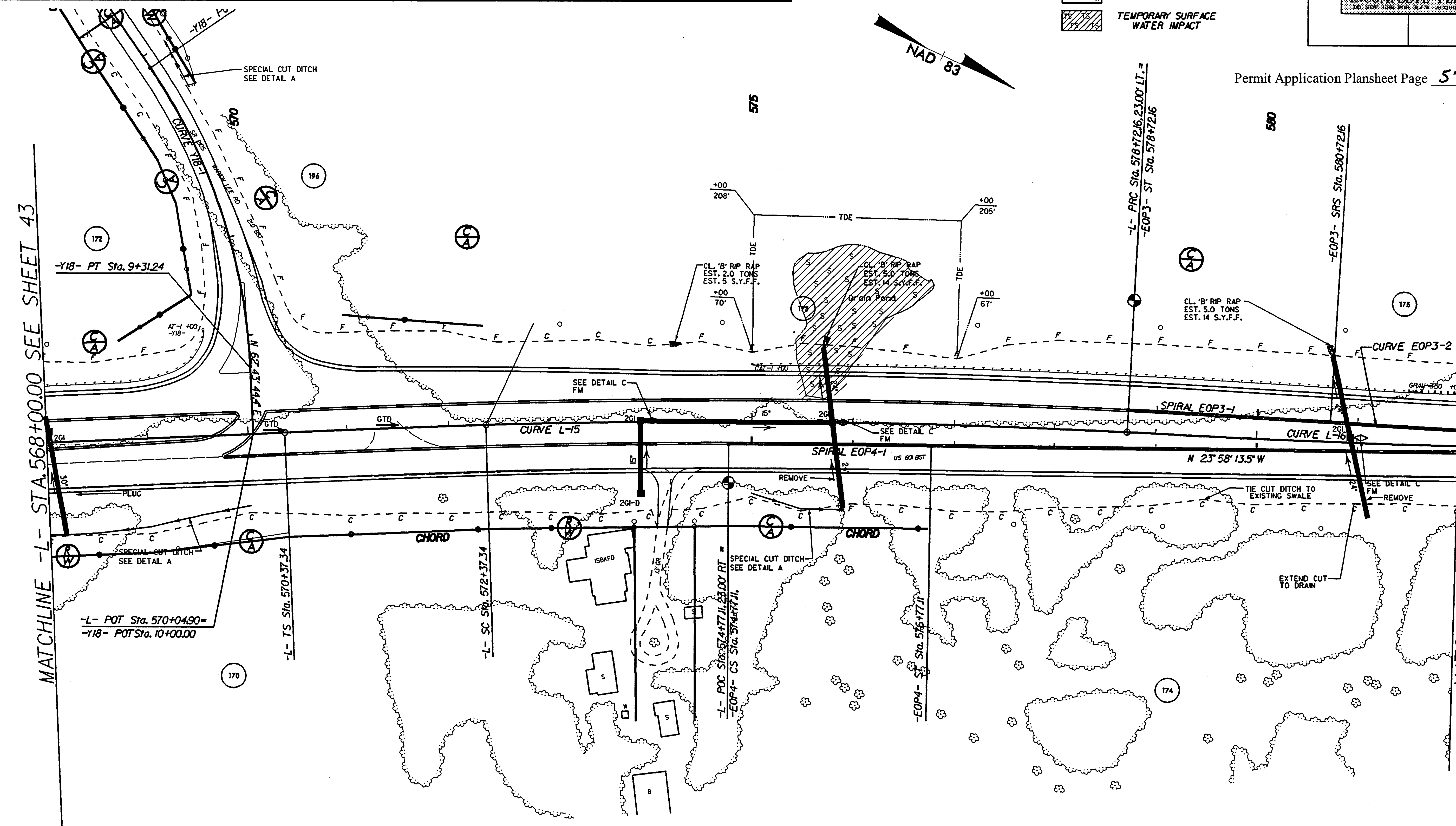
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

Permit Application Plansheet Page 57



NAD 83
MATCHLINE -L- STA. 568+00.00 SEE SHEET 43
MATCHLINE -L- STA. 582+00.00 SEE SHEET 45
SPECIAL CUT DITCH SEE DETAIL A
-Y18- PT Sta. 9+31.24
-L- POT Sta. 570+04.90=
-Y18- POT Sta. 10+00.00
-L- TS Sta. 570+37.34
-L- SC Sta. 572+37.34
CURVE L-15
CURVE Y18-1
SEE DETAIL C FM
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
CL. 'B' RIP RAP EST. 5.0 TONS EST. 14 S.Y.F.F.
TDE
SPIRAL EOP4-1
SEE DETAIL C FM
REMOVE
CHORD
-L- POC Sta. 574+77.11, 23.00' RT =
-EOP4- CS Sta. 574+77.11
-EOP4- ST Sta. 576+77.11
-L- PRC Sta. 578+72.16, 23.00' LT. =
-EOP3- ST Sta. 578+72.16
-EOP3- SRS Sta. 580+72.16
SPIRAL EOP3-1
CURVE EOP3-2
CURVE L-16
N 23°58' 13.5" W
TIE CUT DITCH TO EXISTING SWALE
EXTEND CUT TO DRAIN
PLUG
575
580
570

50' 0 100'

SCALE: 1" : 100'

ENGLISH

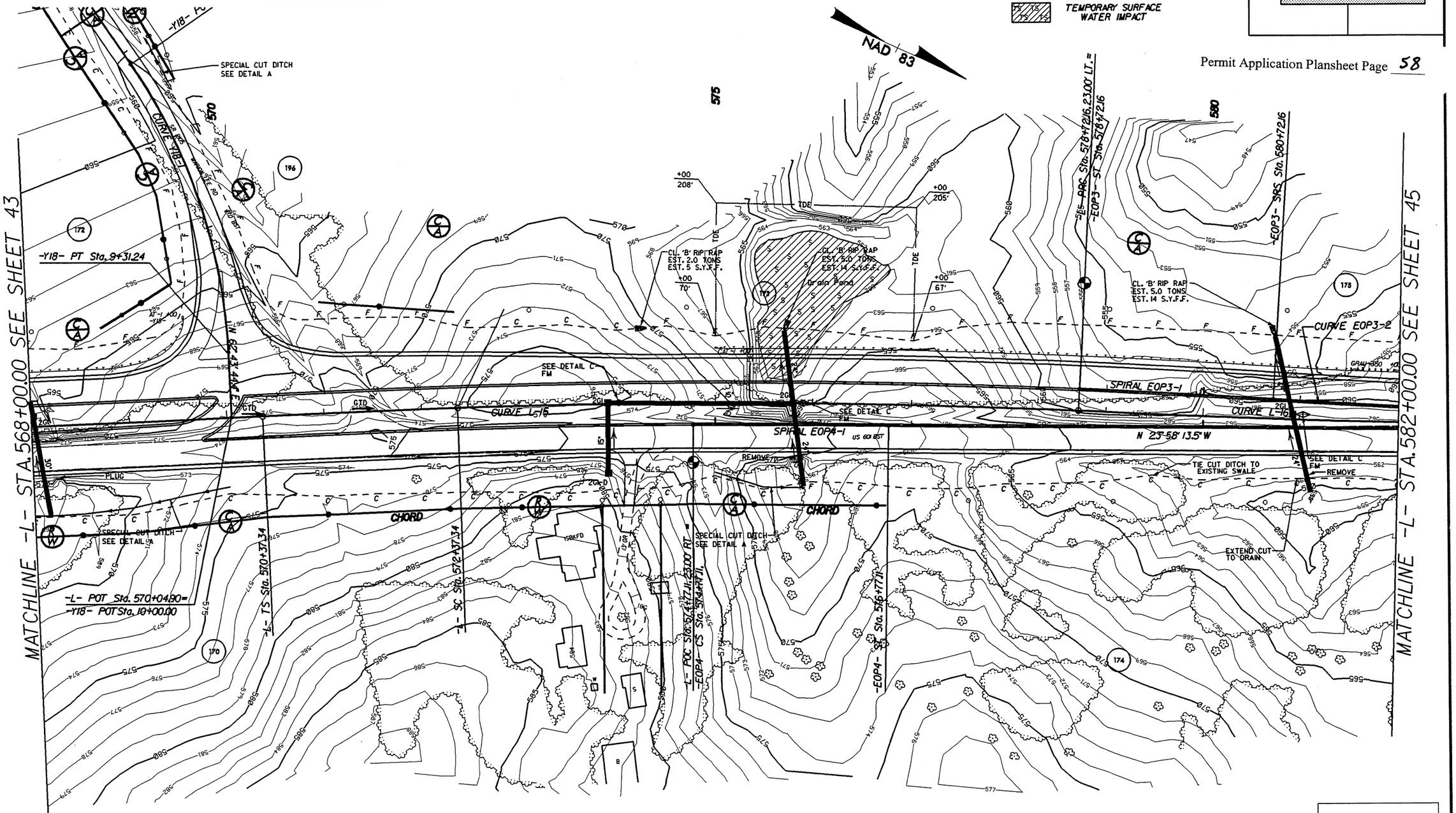
SITE 26 -L- STA. 575 + 85

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

FILL IN WETLAND
PERMANENT SURFACE WATER IMPACT
MECHANIZED CLEARING
TEMPORARY SURFACE WATER IMPACT

Permit Application Plansheet Page 58



05/08/99

CONTRACT: TIP PROJECT: R-2616

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

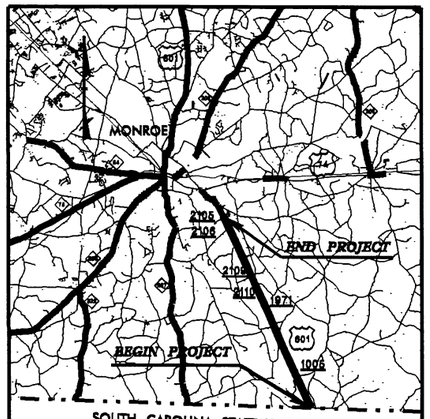
UNION COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2616	1	

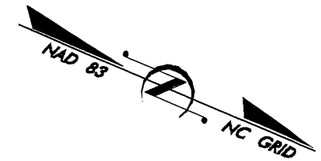
WBS NO.	F.A. PROJ. NO.	DESCRIPTION
34485.1.2	STP-NHS-601(4)	P.E.
34485.2.4	STP-601(18)	R/W, Utilities

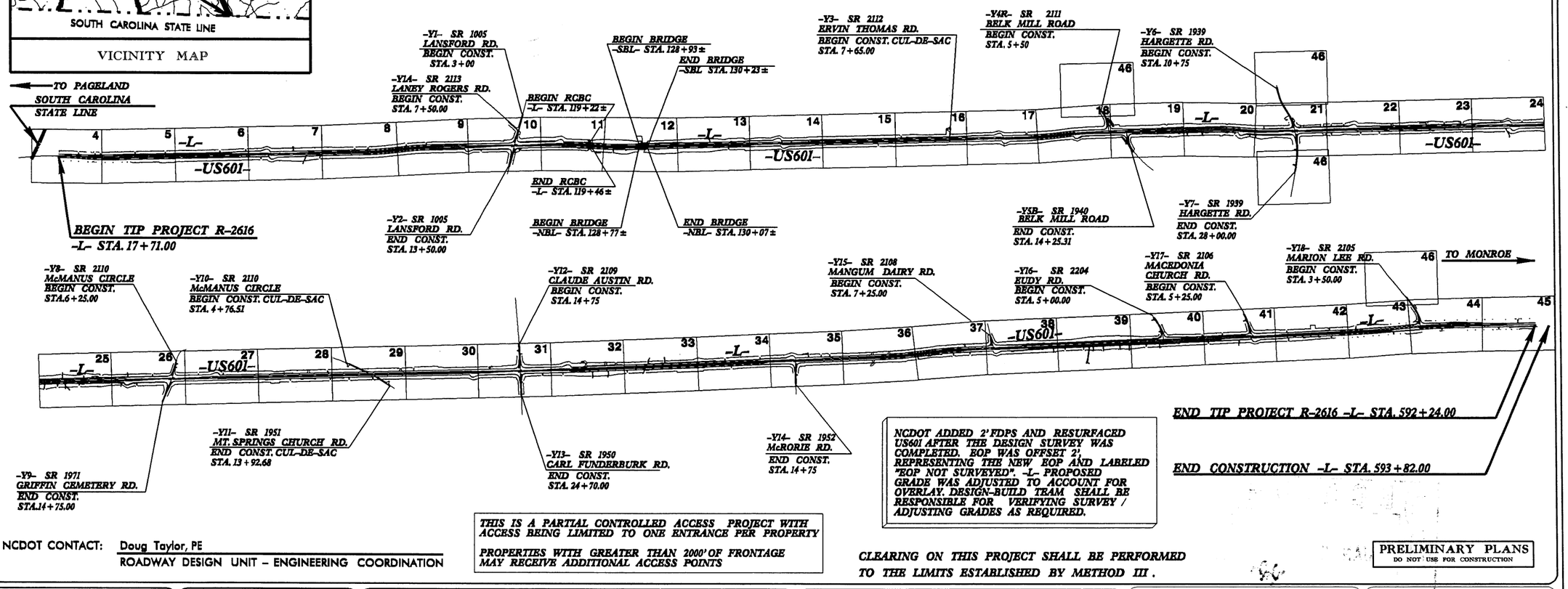
LOCATION: US 601 FROM NORTH OF THE SOUTH CAROLINA STATE LINE TO NORTH OF SR 2105 (MARION LEE RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, SIGNING, GUARDRAIL, CULVERTS AND STRUCTURE



VICINITY MAP





NCDOT ADDED 2' FDPS AND RESURFACED US601 AFTER THE DESIGN SURVEY WAS COMPLETED. EOP WAS OFFSET 2', REPRESENTING THE NEW EOP AND LABELED "EOP NOT SURVEYED". -L- PROPOSED GRADE WAS ADJUSTED TO ACCOUNT FOR OVERLAY. DESIGN-BUILD TEAM SHALL BE RESPONSIBLE FOR VERIFYING SURVEY / ADJUSTING GRADES AS REQUIRED.

NCDOT CONTACT: Doug Taylor, PE
ROADWAY DESIGN UNIT – ENGINEERING COORDINATION

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 25 0 50 100
PROFILE (HORIZONTAL) 50 25 0 50 100
PROFILE (VERTICAL) 10 0 10 20

DESIGN DATA

ADT 2002 = 12,000
ADT 2025 = 23,800
DHV = 10 %
D = 60%
T = 24% *
V = 60 MPH
* TTST 17 % + DUAL 7 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2616A&B = 10.852± MI.
LENGTH OF STRUCTURES, TIP PROJECT R-2616A&B = 0.029± MI.
TOTAL LENGTH OF TIP PROJECT R-2616A&B* = 10.881 MI.

*NOTE: LENGTH BASED ON NBL -L-

Prepared In the Office of:
RALPH WHITEHEAD ASSOCIATES, INC.
for the North Carolina Department of Transportation

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: October 3, 2005

LETTING DATE: June 20, 2006

JOHN N. JOHNSON, P.E.
PROJECT ENGINEER

GERALD BARBOUR
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

19-JAN-2006 11:11
r:\roadway\proj\r-2616_rdy_tsh.dgn
$$$$USERNAME$$$$

8/17/99

REVISIONS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2616-13"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 418037.380(ft) EASTING: 1562547.518(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986650
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2616-13" TO -L- STATION POC 17+71.00 IS S 23°56'23.87" E 29.167.77'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

THE DESIGN BUILD TEAM WILL COORDINATE THE ALIGNMENT OF R-2616 WITH THE EXISTING ALIGNMENT OF SCDOT PROJECT NO. BNH-PDCB(004)

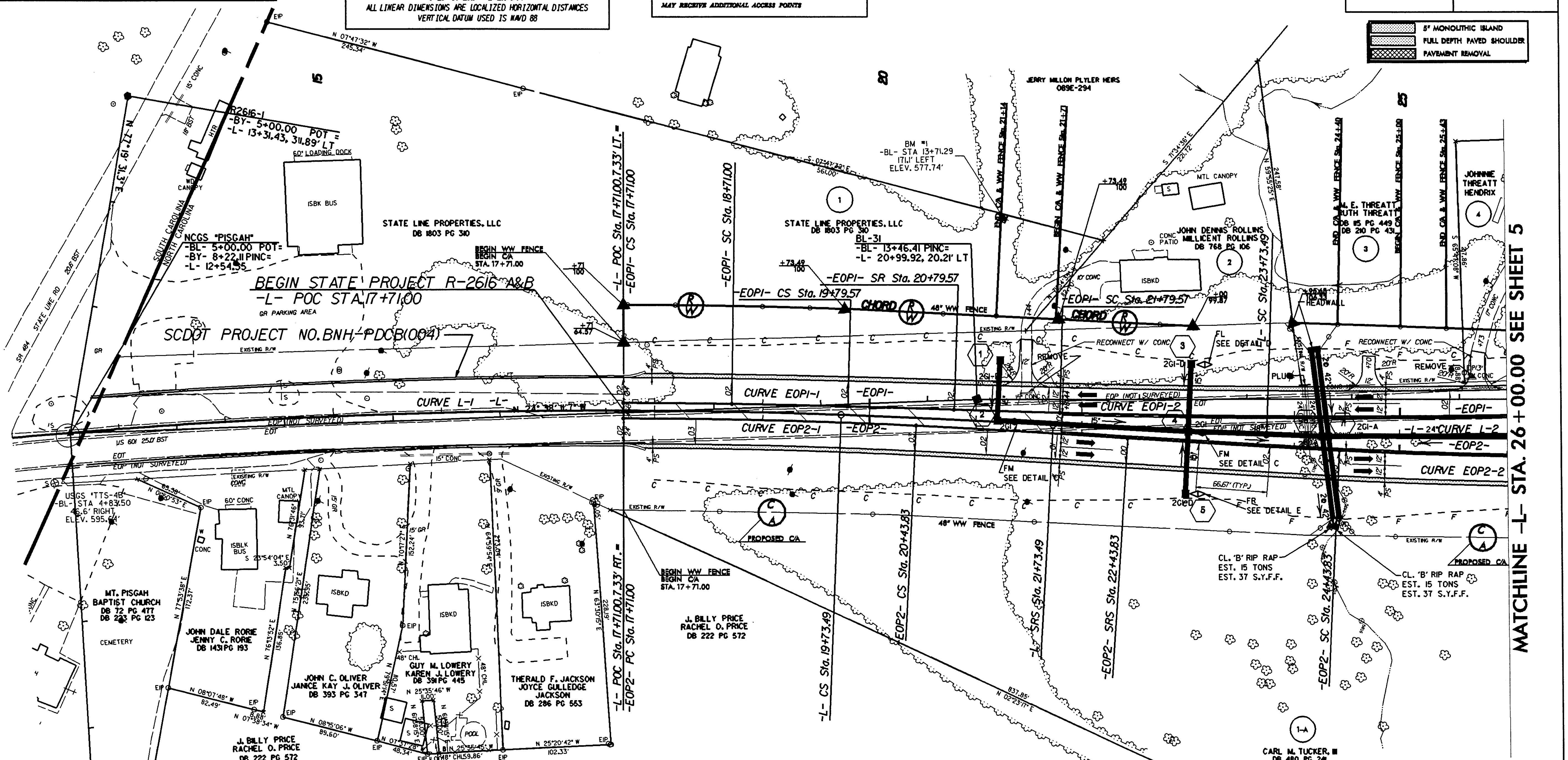
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



CURVE EOP1-2

PIs Sta 21+46.23	PI Sta 24+35.54	PIs Sta 27+24.74
Θs = 0° 17' 11.3"	Δ = 2° 55' 57.5" (LT)	Θs = 0° 17' 11.3"
Ls = 100.00'	D = 0° 34' 22.6"	Ls = 100.00'
LT = 66.67'	L = 511.84'	LT = 66.67'
ST = 33.33'	T = 255.98'	ST = 33.33'
	SE = 0.02 FT./FT.	

CURVE EOP2-2

PIs Sta 23+77.16	PI Sta 26+25.99	PIs Sta 28+74.71
Θs = 0° 57' 17.7"	Δ = 3° 28' 40.8" (LT)	Θs = 0° 57' 17.7"
Ls = 200.00'	D = 0° 57' 17.7"	Ls = 200.00'
LT = 133.34'	T = 182.16'	LT = 133.34'
ST = 66.67'	L = 364.22'	ST = 66.67'
	R = 6,000.00'	
	SE = 0.03 FT./FT.	

CURVE EOP1-1

PIs Sta 18+16.87	PI Sta 19+25.28	PIs Sta 20+12.90
Θs = 0° 17' 11.3"	Δ = 0° 37' 19.3" (RT)	Θs = 0° 17' 11.3"
Θs = 0° 28' 31.0"	D = 0° 34' 22.6"	Ls = 100.00'
Ls = 100.00'	L = 108.57'	LT = 66.67'
LT = 54.13'	T = 54.28'	ST = 33.33'
ST = 45.87'	R = 10,000.00'	
	SE = NC (MATCH SCDOT)	

CURVE EOP2-1

PI Sta 19+07.44	PIs Sta 20+10.49
Δ = 2° 35' 58.8" (RT)	Θs = 0° 57' 10.3"
D = 0° 57' 10.3"	Ls = 200.00'
T = 136.44'	LT = 133.34'
L = 272.83'	ST = 66.67'
R = 6,013.00'	
SE = 0.03 FT./FT.	

CURVE L-1

PI Sta 15+70.76	PIs Sta 20+40.15
Δ = 7° 40' 37.3" (RT)	Θs = 0° 57' 06.1"
D = 0° 57' 06.1"	Ls = 200.00'
T = 403.94'	LT = 133.34'
L = 806.66'	ST = 66.67'
R = 6,020.33'	

CURVE L-2

PIs Sta 23+06.82	PI Sta 25+09.22	PIs Sta 27+11.56
Θs = 1° 00' 00.0"	Δ = 2° 42' 50.8" (LT)	Θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 135.73'	LT = 133.34'
ST = 66.67'	L = 271.41'	ST = 66.67'
	R = 5,729.58'	

SEE SHEET 47 FOR -L- PROFILE.

19-JAN-2006 11:13
r:\roadway\proj\R2616_RDY_psh04.dgn

8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

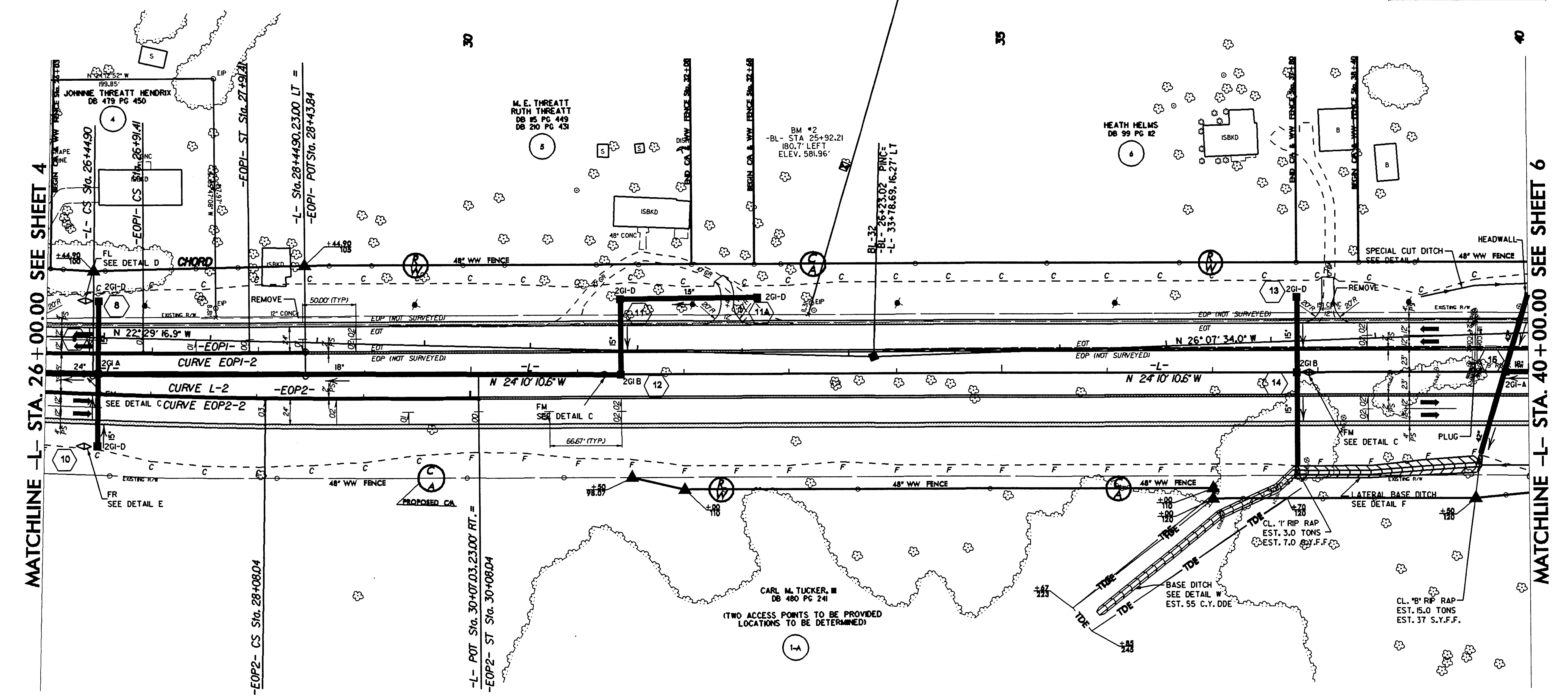
PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

- 8" MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL



CURVE EOP1-2

PIs Sta 21+46.23	PI Sta 24+35.54	PIs Sta 27+24.74
Θs = 0° 17' 11.3"	Δ = 2° 55' 57.5" (LT)	Θs = 0° 17' 11.3"
Ls = 100.00'	D = 0° 34' 22.6"	Ls = 100.00'
LT = 66.67'	L = 511.84'	LT = 66.67'
ST = 33.33'	T = 255.98'	ST = 33.33'
	R = 10,000.00'	
	SE = 0.02 FT./FT.	

CURVE EOP2-2

PIs Sta 23+77.16	PI Sta 26+25.99	PIs Sta 28+74.71
Θs = 0° 57' 17.7"	Δ = 3° 28' 40.8" (LT)	Θs = 0° 57' 17.7"
Ls = 200.00'	D = 0° 57' 17.7"	Ls = 200.00'
LT = 133.34'	T = 182.16'	LT = 133.34'
ST = 66.67'	L = 364.22'	ST = 66.67'
	R = 6,000.00'	
	SE = 0.03 FT./FT.	

CURVE L-2

PIs Sta 23+06.82	PI Sta 25+09.22	PIs Sta 27+11.56
Θs = 1° 00' 00.0"	Δ = 2° 42' 50.8" (LT)	Θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 135.73'	LT = 133.34'
ST = 66.67'	L = 271.41'	ST = 66.67'
	R = 5,729.58'	

SEE SHEET48 FOR -L- PROFILE.

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kvnoland AT RD212417

8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 49 FOR -L- PROFILE.

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kvnoland AT RD212417

8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

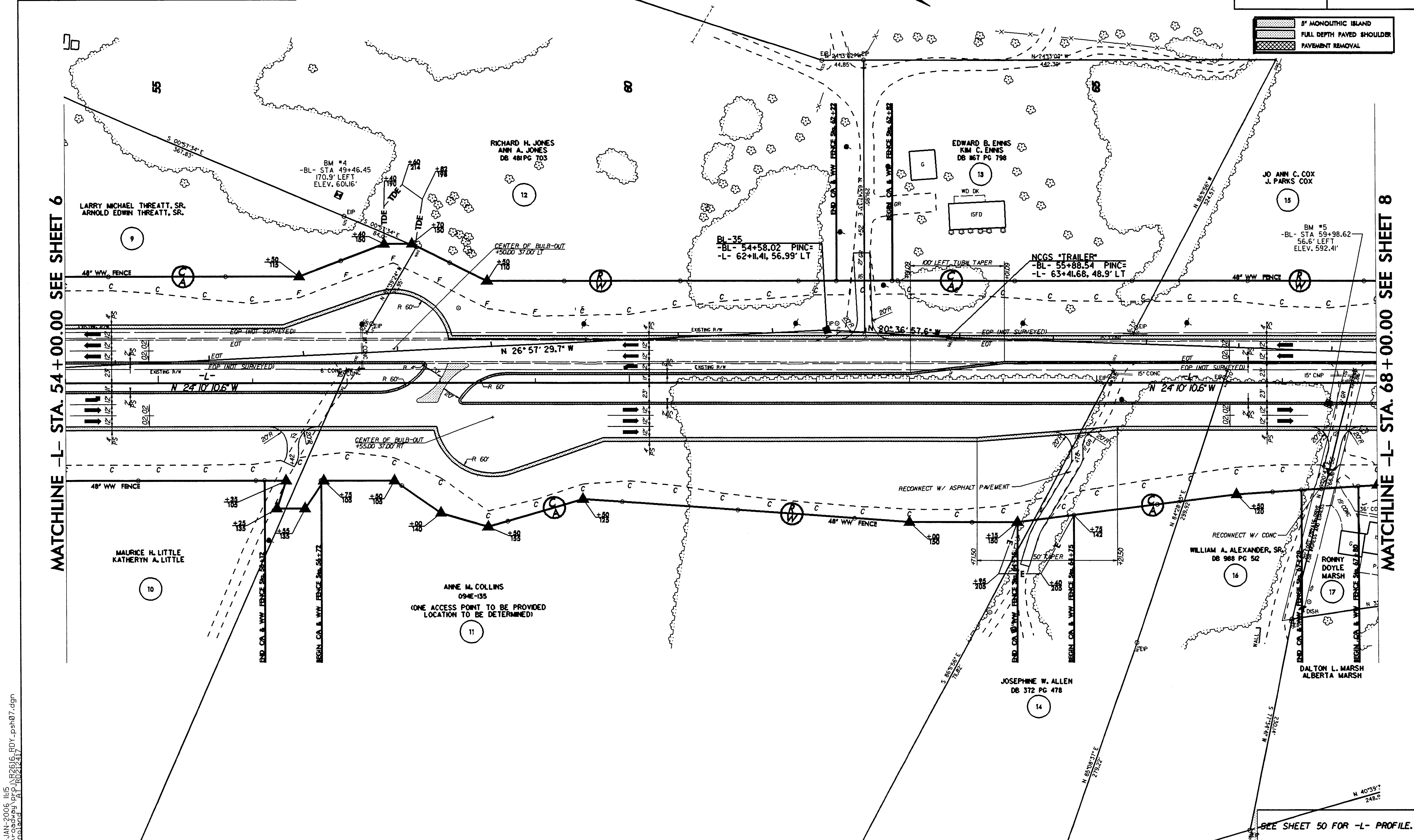
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL



NAD 83
MATCHLINE -L- STA. 54+00.00 SEE SHEET 6
MATCHLINE -L- STA. 68+00.00 SEE SHEET 8
LARRY MICHAEL THREATT, SR.
ARNOLD EDWIN THREATT, SR.
RICHARD H. JONES
ANN A. JONES
DB 481 PG 703
EDWARD B. ENNIS
KIM C. ENNIS
DB 1167 PG 798
JO ANN C. COX
J. PARKS COX
BM #4
-BL- STA 49+46.45
170.9' LEFT
ELEV. 601.16'
BM #5
-BL- STA 59+98.62
56.6' LEFT
ELEV. 592.41'
BL-35
-BL- 54+58.02 PINC=
-L- 62+11.41, 56.99' LT
NCGS "TRAILER"
-BL- 55+88.54 PINC=
-L- 63+41.68, 48.9' LT
100' LEFT TURN TAPER
CENTER OF BULB-OUT
+50.00 37.00' LT
CENTER OF BULB-OUT
+55.00 37.00' RT
N 26° 57' 29.7" W
N 24°10' 10.6" W
N 20° 36' 57.6" W
48" WW FENCE
RECONNECT W/ ASPHALT PAVEMENT
RECONNECT W/ CONC
50' TAPER
MAURICE H. LITTLE
KATHERYN A. LITTLE
ANNE M. COLLINS
094E-135
(ONE ACCESS POINT TO BE PROVIDED
LOCATION TO BE DETERMINED)
JOSEPHINE W. ALLEN
DB 372 PG 478
WILLIAM A. ALEXANDER, SR.
DB 988 PG 512
RONNY DOYLE MARSH
DALTON L. MARSH
ALBERTA MARSH

SEE SHEET 50 FOR -L- PROFILE.

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REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

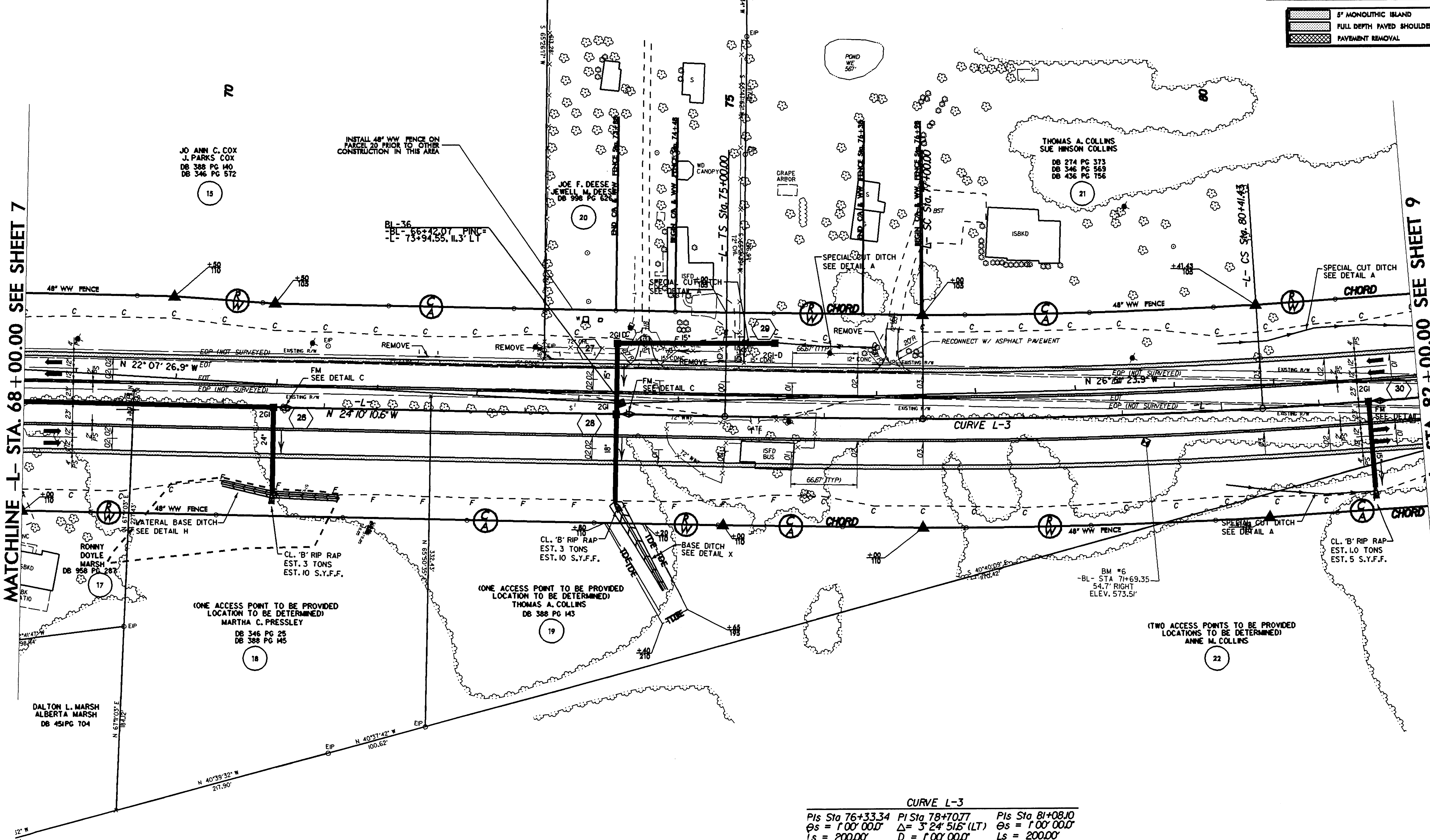
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL


MATCHLINE -L- STA. 68+00.00 SEE SHEET 7
MATCHLINE -L- STA. 82+00.00 SEE SHEET 9
JO ANN C. COX
J. PARKS COX
DB 388 PG 140
DB 346 PG 572
15
INSTALL 48" WW FENCE ON PARCEL 20 PRIOR TO OTHER CONSTRUCTION IN THIS AREA
JOE F. DEESE
JEWELL M. DEESE
DB 998 PG 626
20
BL-36
-BL- 66+42.07 PINC=
-L- 73+94.55, 11.3' LT
-L- TS Sta. 75+00.00
-L- SC Sta. 77+00.00
-L- CS Sta. 80+41.43
THOMAS A. COLLINS
SUE HINSON COLLINS
DB 274 PG 373
DB 346 PG 569
DB 436 PG 756
21
POND
GRAPE ARBOR
1SBKD
SPECIAL CUT DITCH
SEE DETAIL A
48" WW FENCE
CHORD
REMOVE
RECONNECT W/ ASPHALT PAVEMENT
EOP (NOT SURVEYED)
EXISTING R/W
N 22° 07' 26.9" W
N 24° 10' 10.6" W
N 26° 04' 23.9" W
FM
SEE DETAIL C
CURVE L-3
GATE
ISFD BUS
66.67' (TYP)
2GI
2GI-D
26
27
28
29
30
LATERAL BASE DITCH
SEE DETAIL H
CL. 'B' RIP RAP
EST. 3 TONS
EST. 10 S.Y.F.F.
BASE DITCH
SEE DETAIL X
CL. 'B' RIP RAP
EST. 1.0 TONS
EST. 5 S.Y.F.F.
RONNY DOYLE MARSH
DB 958 PG 287
17
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
MARTHA C. PRESSLEY
DB 346 PG 25
DB 388 PG 145
18
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
THOMAS A. COLLINS
DB 388 PG 143
19
BM #6
-BL- STA 71+69.35
54.7' RIGHT
ELEV. 573.51'
(TWO ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
ANNE M. COLLINS
22
DALTON L. MARSH
ALBERTA MARSH
DB 451 PG 704
N 40°37'42" W
100.62'
N 40°39'32" W
217.90'
70
75
80

CURVE L-3

PIs Sta 76+33.34	PI Sta 78+70.77	PIs Sta 81+08.10
θs = 1° 00' 00.0"	Δ = 3° 24' 51.6" (LT)	θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 170.77'	LT = 133.34'
	L = 341.43'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT./FT.	

SEE SHEET 51 FOR -L- PROFILE.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

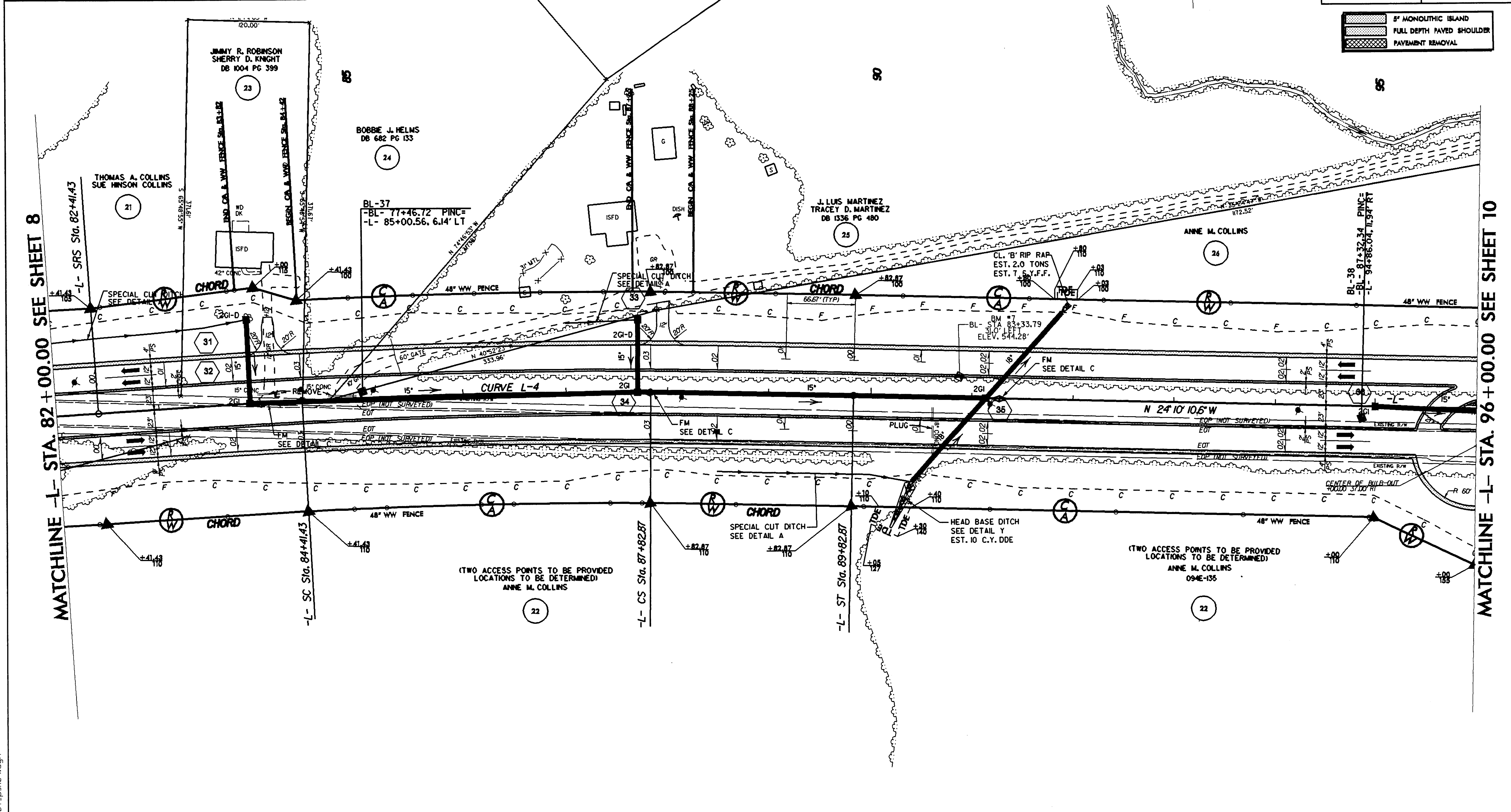
REVISIONS

8/17/99

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL


MATCHLINE -L- STA. 82+00.00 SEE SHEET 8
MATCHLINE -L- STA. 96+00.00 SEE SHEET 10
NAD 83
THOMAS A. COLLINS
SUE HINSON COLLINS
JIMMY R. ROBINSON
SHERRY D. KNIGHT
DB 1004 PG 399
BOBBIE J. HELMS
DB 682 PG 133
J. LUIS MARTINEZ
TRACEY D. MARTINEZ
DB 1336 PG 480
ANNE M. COLLINS
BL-37
-BL- 77+46.72 PINC=
-L- 85+00.56, 6.14' LT
CURVE L-4
N 24° 10' 10.6" W
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 7.5 Y.F.F.
BM #7
-BL- STA 83+33.79
ELEV. 544.28'
HEAD BASE DITCH
SEE DETAIL Y
EST. 10 C.Y. DDE
SPECIAL CUT DITCH
SEE DETAIL A
(TWO ACCESS POINTS TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
ANNE M. COLLINS
-L- SC Sta. 84+41.43
-L- CS Sta. 87+82.87
-L- ST Sta. 89+82.87
-L- SRS Sta. 82+41.43
48" WW FENCE
CHORD

CURVE L-3		
PIs Sta 76+33.34	PI Sta 78+70.77	PIs Sta 81+08.10
Θs = 1° 00' 00.0"	Δ = 3° 24' 51.6" (LT)	Θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 170.77'	LT = 133.34'
	L = 341.43'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03	

CURVE L-4		
PIs Sta 83+74.77	PI Sta 86+12.20	PIs Sta 88+49.53
Θs = 1° 00' 00.0"	Δ = 3° 24' 51.6" (RT)	Θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 170.77'	LT = 133.34'
ST = 66.67'	L = 341.43'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03	

SEE SHEET 52 FOR -L- PROFILE.

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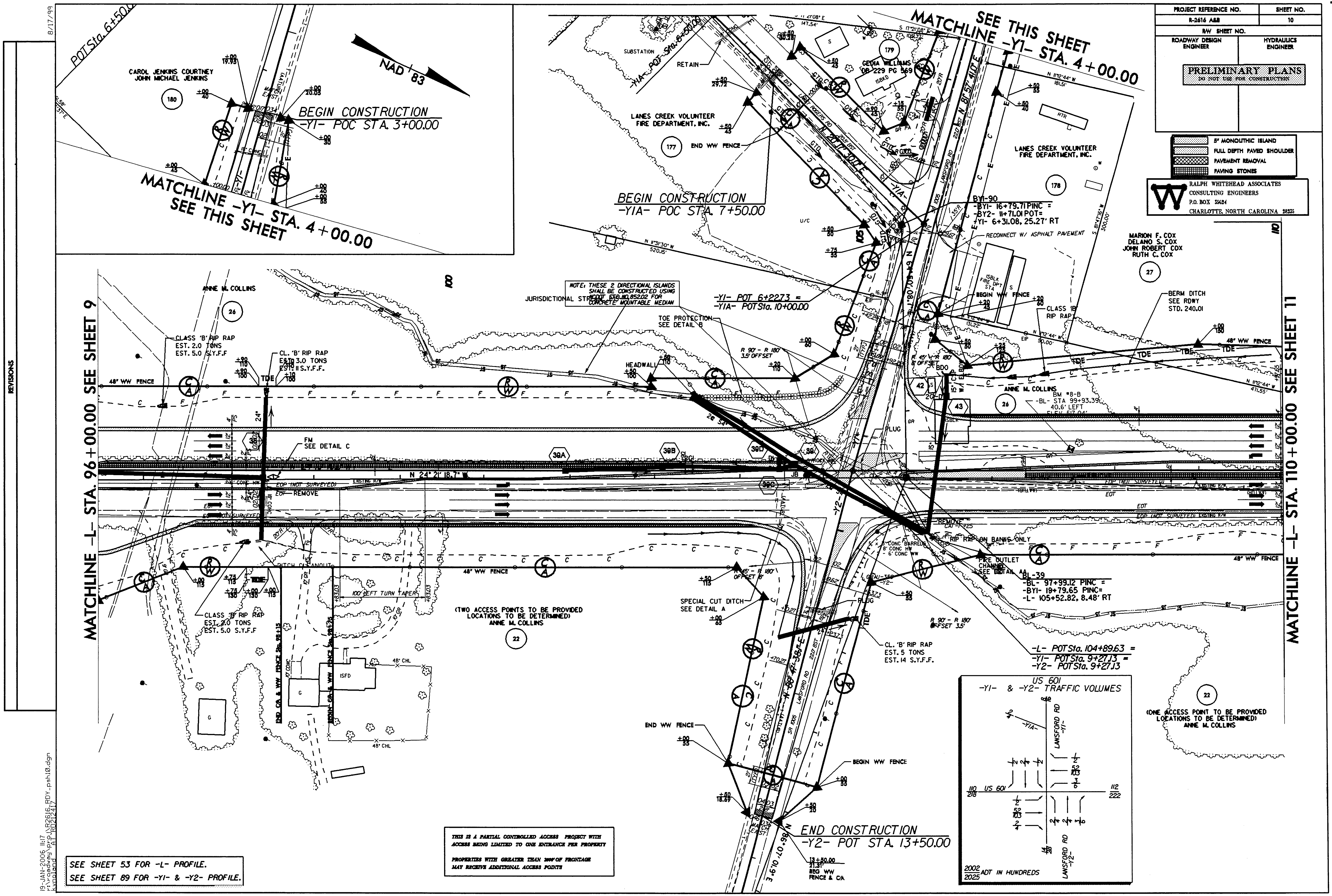
kvnoland AT R0212417


PROJECT REFERENCE NO. R-2616 A&B
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235
MATCHLINE -L- STA. 96+00.00 SEE SHEET 9
MATCHLINE -L- STA. 110+00.00 SEE SHEET 11
MATCHLINE -Y1- STA. 4+00.00 SEE THIS SHEET
BEGIN CONSTRUCTION -Y1- POC STA. 3+00.00
BEGIN CONSTRUCTION -Y1A- POC STA. 7+50.00
END CONSTRUCTION -Y2- POT STA. 13+50.00
CAROL JENKINS COURTNEY
JOHN MICHAEL JENKINS
NAD 83
LANES CREEK VOLUNTEER FIRE DEPARTMENT, INC.
GEVIA WILLIAMS DB 229 PG 569
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
ANNE M. COLLINS
NOTE: THESE 2 DIRECTIONAL ISLANDS SHALL BE CONSTRUCTED USING 10'0" STD. NO. 852.02 FOR CONCRETE MOUNTABLE MEDIAN
-Y1- POT 6+22.73 = -Y1A- POT Sta. 10+00.00
-BY1- 16+79.71 PINC = -BY2- 11+71.01 POT= -Y1- 6+31.08, 25.27' RT
BL-39
-BL- 97+99.12 PINC = -BY1- 19+79.65 PINC= -L- 105+52.82, 8.48' RT
-L- POT Sta. 104+89.63 = -Y1- POT Sta. 9+27.13 = -Y2- POT Sta. 9+27.13
(TWO ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED) ANNE M. COLLINS
(ONE ACCESS POINT TO BE PROVIDED LOCATIONS TO BE DETERMINED) ANNE M. COLLINS
US 601
-Y1- & -Y2- TRAFFIC VOLUMES
2002 / 2025 ADT IN HUNDREDS
SEE SHEET 53 FOR -L- PROFILE.
SEE SHEET 89 FOR -Y1- & -Y2- PROFILE.
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY
PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

8/17/99

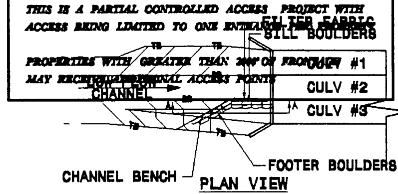
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

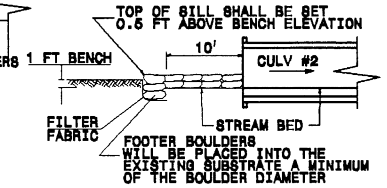
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY.

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS



ROCK INLET SILL
SCALE: NTS

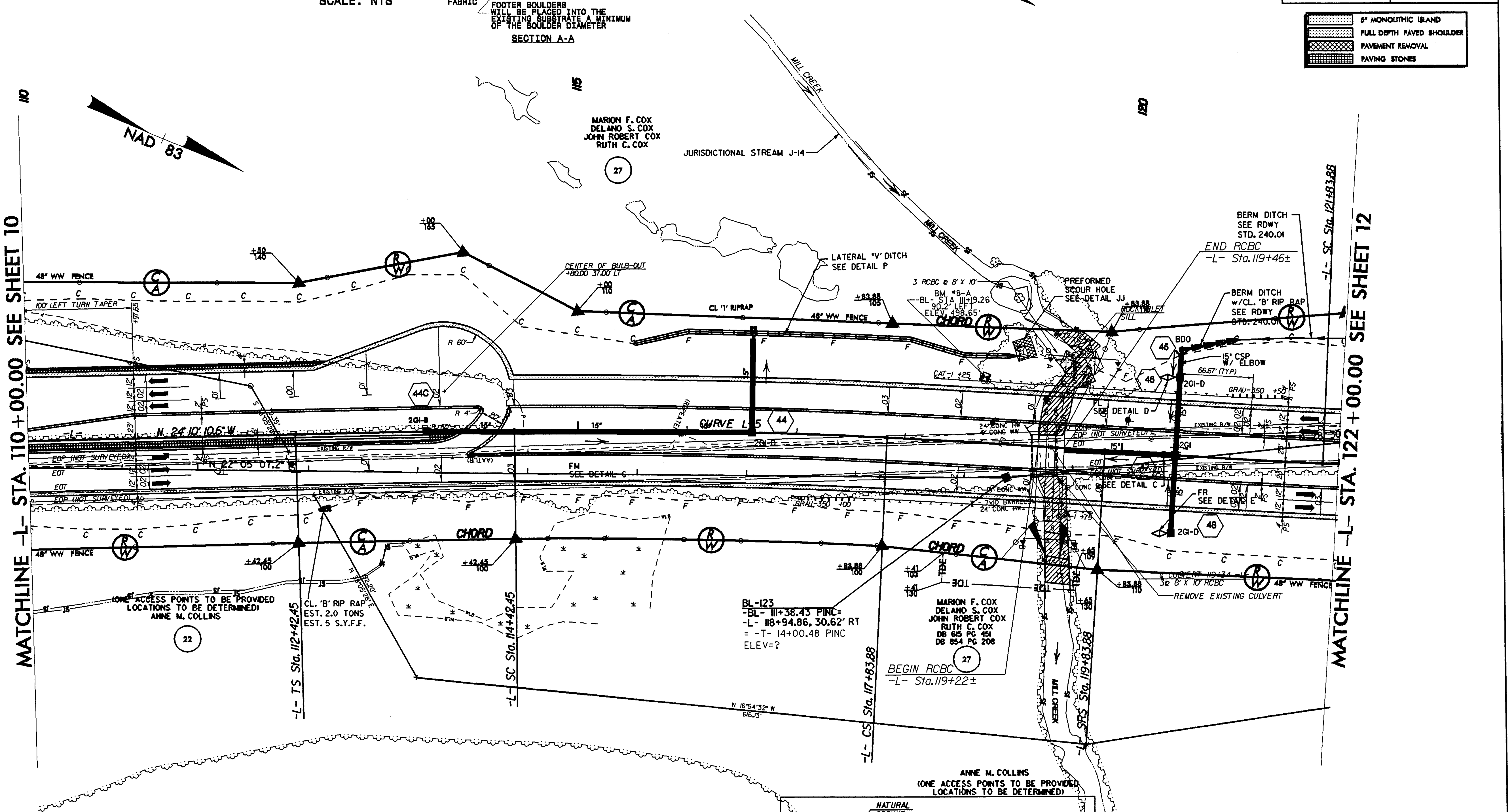
FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.



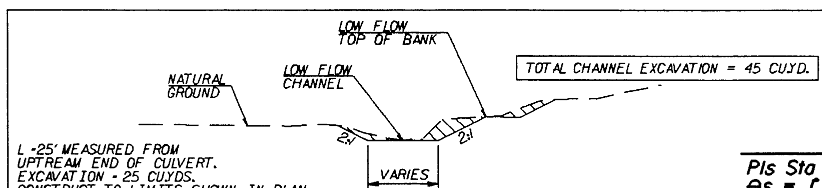
SECTION A-A

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' x 2' x 1'.

	5" MONOLITHIC ISLAND
	FULL DEPTH PAVED SHOULDER
	PAVEMENT REMOVAL
	PAVING STONES



ANNE M. COLLINS
(ONE ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)



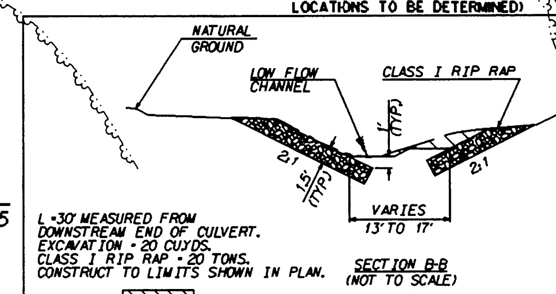
TOTAL CHANNEL EXCAVATION = 45 CU.YD.

L -25' MEASURED FROM UPTREAM END OF CULVERT.
EXCAVATION - 25 CU.YDS.
CONSTRUCT TO LIMITS SHOWN IN PLAN.

SECTION A-A
(NOT TO SCALE)

CURVE L-5

PIs Sta 113+75.79	PI Sta 116+13.22	PIs Sta 118+50.55
θs = 1°00' 00.0"	Δ = 3°24' 51.6" (RT)	θs = 1°00' 00.0"
Ls = 200.00'	D = 1°00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 170.77'	LT = 133.34'
ST = 66.67'	L = 341.43'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	



L -30' MEASURED FROM DOWNSTREAM END OF CULVERT.
EXCAVATION - 20 CU.YDS.
CLASS I RIP RAP - 20 TONS.
CONSTRUCT TO LIMITS SHOWN IN PLAN.

SECTION B-B
(NOT TO SCALE)

REPRESENTS CHANNEL EXCAVATION

SEE SHEET 54 FOR -L- PROFILE.

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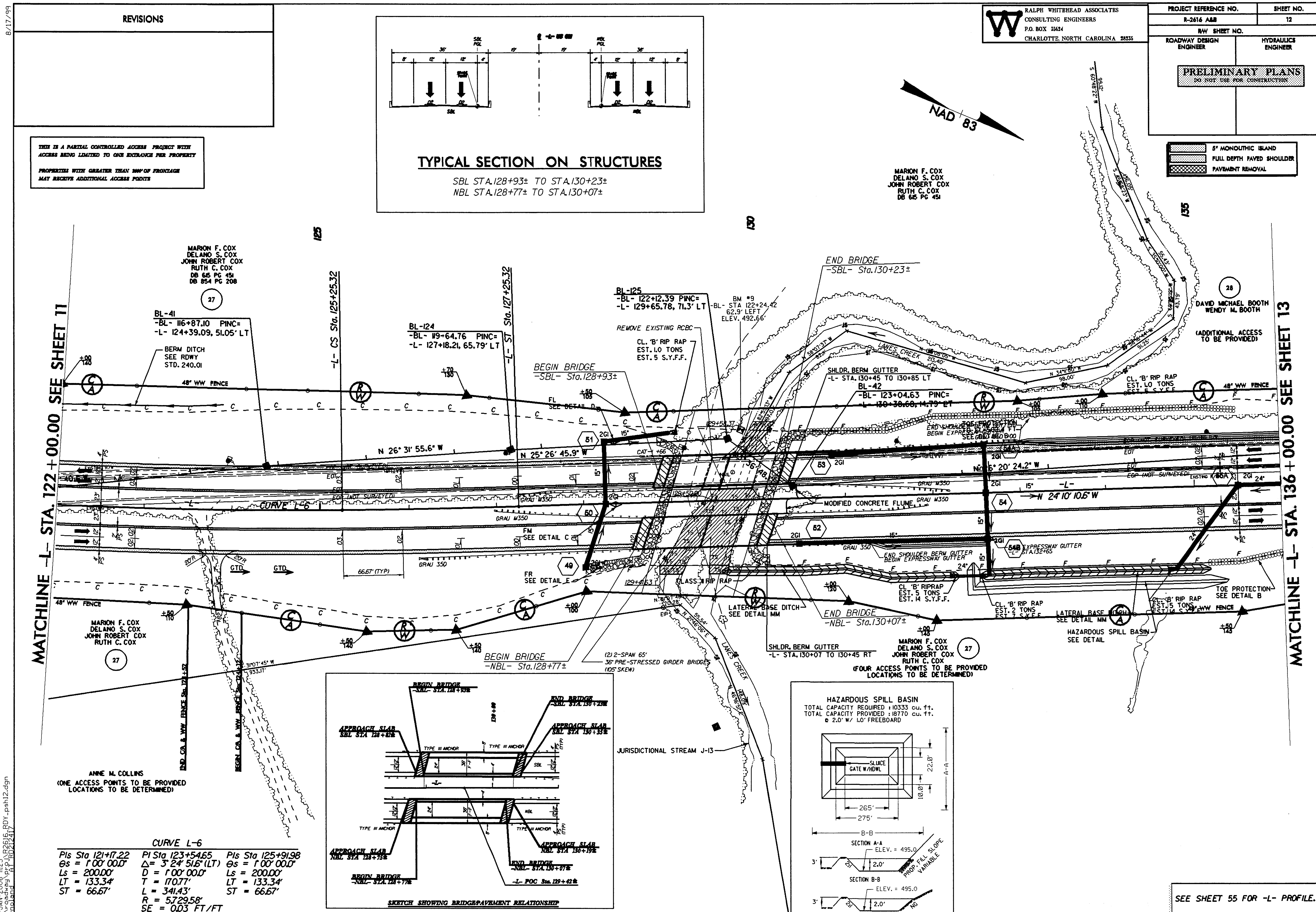
kmoreland AT R0212417

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


REVISIONS
8/17/99
TYPICAL SECTION ON STRUCTURES
SBL STA.128+93± TO STA.130+23±
NBL STA.128+77± TO STA.130+07±
NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
DB 615 PG 451
DB 854 PG 208
MATCHLINE -L- STA. 122+00.00 SEE SHEET 11
MATCHLINE -L- STA. 136+00.00 SEE SHEET 13
BL-41
-BL- 116+87.10 PINC=
-L- 124+39.09, 51.05' LT
BERM DITCH SEE RDWY STD. 240.01
BL-124
-BL- 119+64.76 PINC=
-L- 127+18.21, 65.79' LT
-L- CS Sta. 125+25.32
-L- ST Sta. 127+25.32
BL-125
-BL- 122+12.39 PINC=
-L- 129+65.78, 71.3' LT
BM #9
-BL- STA 122+24.42
62.9' LEFT
ELEV. 492.66'
REMOVE EXISTING RCBC
CL. 'B' RIP RAP
EST. 1.0 TONS
EST. 5 S.Y.F.F.
BEGIN BRIDGE
-SBL- Sta.128+93±
END BRIDGE
-SBL- Sta.130+23±
SHLDR. BERM GUTTER
-L- STA. 130+45 TO 130+85 LT
BL-42
-BL- 123+04.63 PINC=
-L- 130+38.68, 14.79' LT
LANES CREEK
DAVID MICHAEL BOOTH
WENDY M. BOOTH
(ADDITIONAL ACCESS TO BE PROVIDED)
48" WW FENCE
N 26° 31' 55.6" W
N 25° 26' 45.9" W
N 24° 10' 10.6" W
CURVE L-6
MODIFIED CONCRETE FLUME
GRAU M350
SEE DETAIL C
SEE DETAIL E
CLASS II RIP RAP
LATERAL BASE DITCH SEE DETAIL MM
END BRIDGE
-NBL- Sta.130+07±
BEGIN BRIDGE
-NBL- Sta.128+77±
(2) 2-SPAN 65'
36" PRE-STRESSED GIRDER BRIDGES
(105° SKEW)
SHLDR. BERM GUTTER
-L- STA. 130+07 TO 130+45 RT
CL. 'B' RIPRAP
EST. 5 TONS
EST. 14 S.Y.F.F.
CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y.F.F.
TOE PROTECTION SEE DETAIL B
HAZARDOUS SPILL BASIN SEE DETAIL
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
END CA & WW FENCE Sta. 123+57
BEGIN CA & WW FENCE Sta. 124+30
ANNE M. COLLINS
(ONE ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
JURISDICTIONAL STREAM J-13
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
APPROACH SLAB SBL STA 128+83±
APPROACH SLAB SBL STA 130+33±
APPROACH SLAB NBL STA 128+75±
APPROACH SLAB NBL STA 130+19±
TYPE III ANCHOR
-L- POC Sta. 129+42±
HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED : 10333 cu. ft.
TOTAL CAPACITY PROVIDED : 18770 cu. ft.
@ 2.0' W/ 1.0' FREEBOARD
SLUICE GATE W/HDWL
SECTION A-A
SECTION B-B
ELEV. = 495.0
PROP. FILL SLOPE VARIABLE

CURVE L-6

PIs Sta 121+17.22	PI Sta 123+54.65	PIs Sta 125+91.98
θs = 1°00'00.0"	Δ = 3°24'51.6" (LT)	θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 170.77'	LT = 133.34'
ST = 66.67'	L = 341.43'	ST = 66.67'
	R = 5729.58'	
	SE = 0.03 FT/FT	

SEE SHEET 55 FOR -L- PROFILE.

19-JAN-2006 11:25
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8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

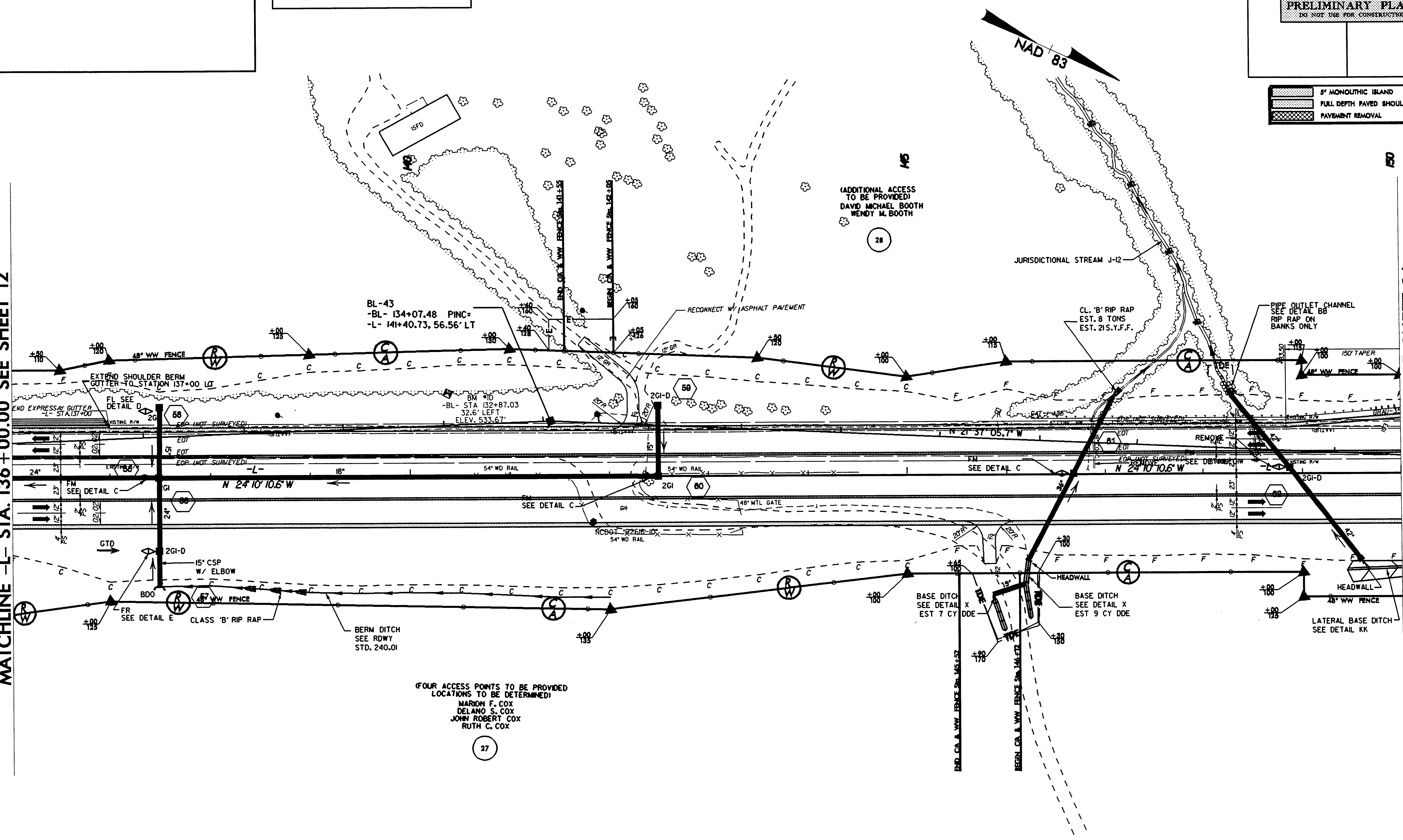
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

	6" MONOLITHIC ISLAND
	FULL DEPTH PAVED SHOULDER
	PAVEMENT REMOVAL



NAD 83
MATCHLINE -L- STA. 136+00.00 SEE SHEET 12
MATCHLINE -L- STA. 150+00.00 SEE SHEET 14
(ADDITIONAL ACCESS TO BE PROVIDED)
DAVID MICHAEL BOOTH
WENDY M. BOOTH
28
JURISDICTIONAL STREAM J-12
BL-43
-BL- 134+07.48 PINC=
-L- 141+40.73, 56.56' LT
RECONNECT W/ ASPHALT PAVEMENT
CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.
PIPE OUTLET CHANNEL
SEE DETAIL BB
RIP RAP ON
BANKS ONLY
EXTEND SHOULDER BERM
GUTTER TO STATION 137+00 LT
FL SEE DETAIL D
END EXPRESSWAY GUTTER
-L- STA.137+00
BM #10
-BL- STA 132+87.03
32.6' LEFT
ELEV. 533.67'
N 21° 37' 05.7" W
N 24°10'10.6" W
54" WD RAIL
FM
SEE DETAIL C
48" MTL GATE
NCDOT R2616-10
15" CSP
W/ ELBOW
FR
SEE DETAIL E
CLASS 'B' RIP RAP
BERM DITCH
SEE RDWY
STD. 240.01
48" WW FENCE
BASE DITCH
SEE DETAIL X
EST 7 CY DDE
BASE DITCH
SEE DETAIL X
EST 9 CY DDE
HEADWALL
LATERAL BASE DITCH
SEE DETAIL KK
150' TAPER
(FOUR ACCESS POINTS TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
27

SEE SHEET 56 FOR -L- PROFILE.

19-JAN-2006 11:26
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REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

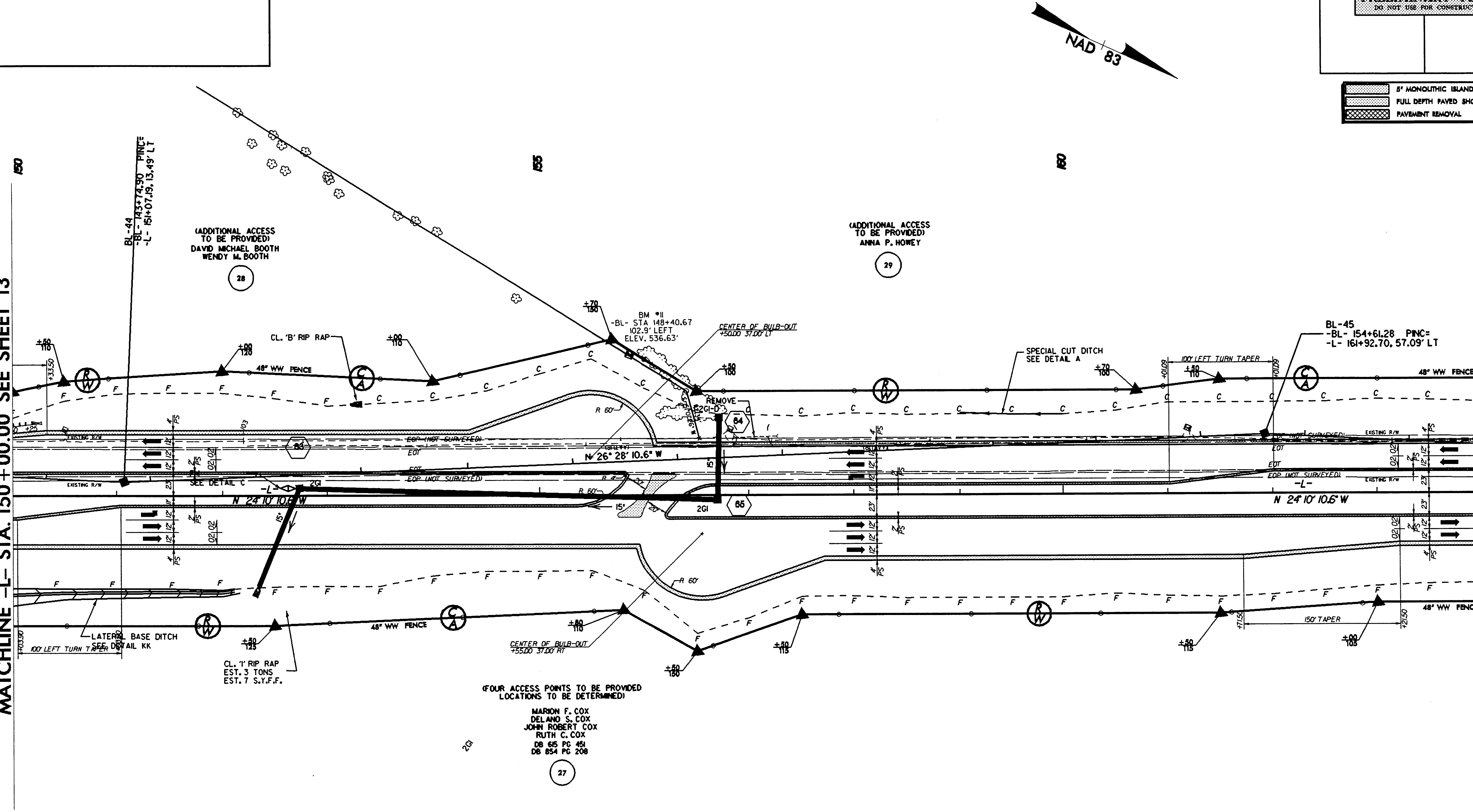
PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL


NAD 83
MATCHLINE -L- STA. 150+00.00 SEE SHEET 13
MATCHLINE -L- STA. 164+00.00 SEE SHEET 15
BL-44
-BL- 143+74.90 PINC=
-L- 151+07.19, 13.49' LT
(ADDITIONAL ACCESS TO BE PROVIDED)
DAVID MICHAEL BOOTH
WENDY M. BOOTH
28
(ADDITIONAL ACCESS TO BE PROVIDED)
ANNA P. HOWEY
29
BM #11
-BL- STA 148+40.67
102.9' LEFT
ELEV. 536.63'
CENTER OF BULB-OUT +50.00 37.00' LT
CL. 'B' RIP RAP
48" WW FENCE
SPECIAL CUT DITCH
SEE DETAIL A
100' LEFT TURN TAPER
BL-45
-BL- 154+61.28 PINC=
-L- 161+92.70, 57.09' LT
REMOVE
2GI-D
N 26° 28' 10.6" W
SEE DETAIL C
N 24°10' 10.6" W
EXISTING R/W
EOP (NOT SURVEYED)
EOT
2GI
63
64
65
R 60'
LATERAL BASE DITCH
SEE DETAIL KK
100' LEFT TURN TAPER
CL. 'I' RIP RAP
EST. 3 TONS
EST. 7 S.Y.F.F.
CENTER OF BULB-OUT +55.00 37.00' RT
150' TAPER
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
DB 615 PG 451
DB 854 PG 208
27

SEE SHEET 57 FOR -L- PROFILE.

19-JAN-2006 11:26
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kmoreland AT RD212417

8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

5' MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL

I65 I70 I75

(ADDITIONAL ACCESS TO BE PROVIDED)
ANNA P. HOWEY
DB 933 PG 622
29

JURISDICTIONAL STREAM J-II

MATCHLINE -L- STA. 164+00.00 SEE SHEET 14

MATCHLINE -L- STA. 178+00.00 SEE SHEET 16

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F

CL. 'B' RIP RAP
EST. 3 TONS
EST. 10 S.Y.F.F.

DITCH CLEANOUT

-BL- 163+51.44 PINC=
-L- 170+81.71, 11.76' LT

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.

CL. 'B' RIP RAP
EST. 3TONS
EST. 10 S.Y.F.F.

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.

48" WW FENCE

EXISTING R/W
EOP (NOT SURVEYED)
EOT
6' CONC HW
PLUG
-L-
N 21° 15' 02.3" W
N 24° 10' 10.6" W
N 27° 12' 52.8" W

2GI-D
2GI
2GI-A
FM SEE DETAIL C

66 67 68A

TOE PROTECTION SEE DETAIL B

TOE PROTECTION SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL A

HEAD BASE DITCH SEE DETAIL Y
EST. 5 C.Y. DDE

GTD

(FOUR ACCESS POINTS TO BE PROVIDED
LOCATIONS TO BE DETERMINED)
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
27

BEG. CA & WW FENCE Sta. 174+34

BEGIN CA & WW FENCE Sta. 174+34

BM #12
-BL- STA. 169+92.53
480.5' RIGHT
ELEV. 549.45'

SEE SHEET 58 FOR -L- PROFILE.

19-JAN-2006 11:27
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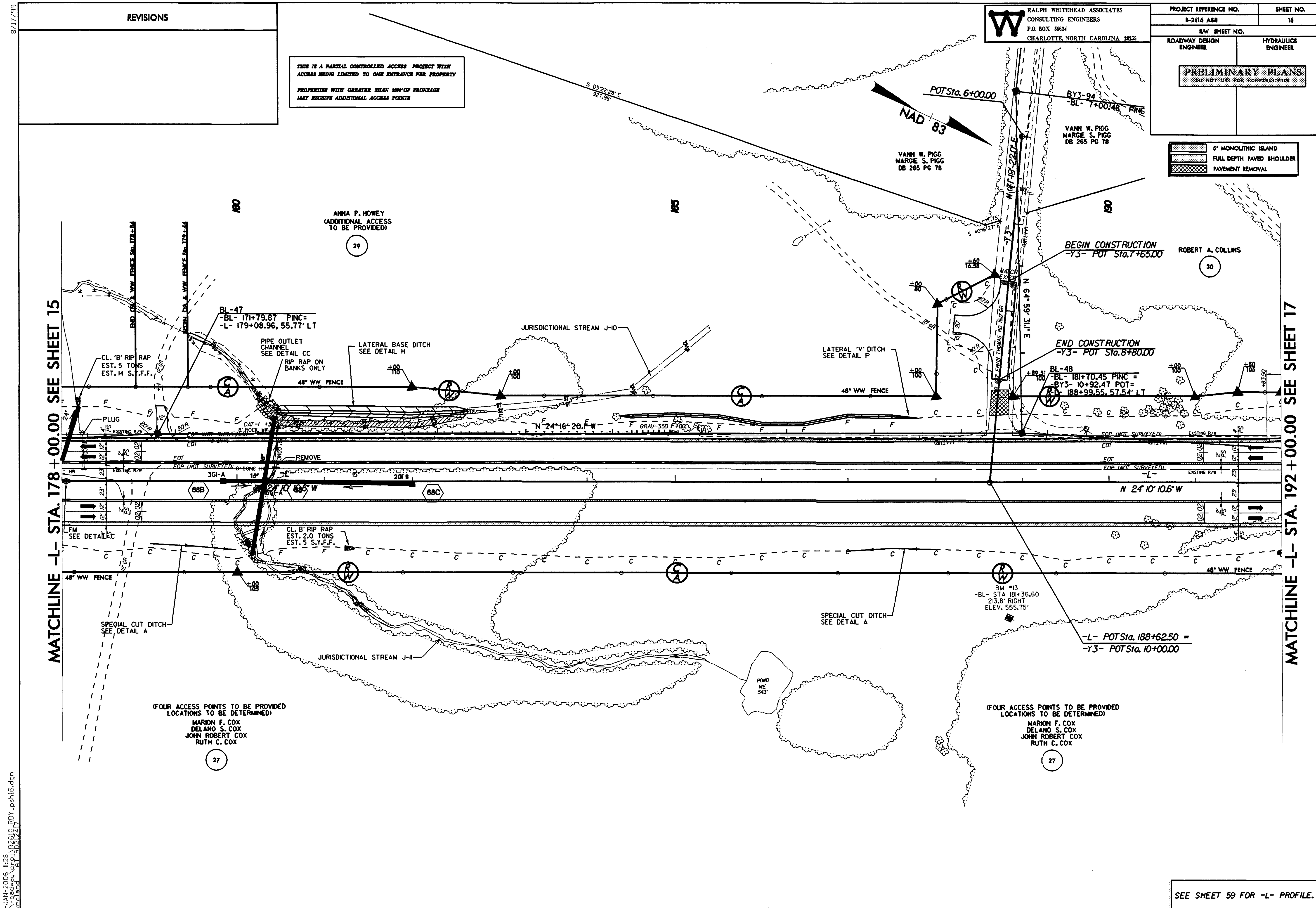
kyngland AT RD21417



REVISIONS
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235
PROJECT REFERENCE NO.
SHEET NO.
R-2616 A&B
16
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS
5' MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
NAD 83
POT Sta. 6+00.00
BY3-94
-BL- 7+00.48 RING
VANN W. PIGG
MARGIE S. PIGG
DB 265 PG 78
ANNA P. HOWEY
(ADDITIONAL ACCESS TO BE PROVIDED)
29
ROBERT A. COLLINS
30
BEGIN CONSTRUCTION
-Y3- POT Sta. 7+65.00
END CONSTRUCTION
-Y3- POT Sta. 8+80.00
BL-48
-BL- 181+70.45 PINC =
-BY3- 10+92.47 POT=
-L- 188+99.55, 57.54' LT
BL-47
-BL- 171+79.87 PINC=
-L- 179+08.96, 55.77' LT
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
PLUG
PIPE OUTLET CHANNEL
SEE DETAIL CC
RIP RAP ON BANKS ONLY
LATERAL BASE DITCH
SEE DETAIL H
JURISDICTIONAL STREAM J-10
LATERAL 'V' DITCH
SEE DETAIL P
48" WW FENCE
N 24°16' 20.1" W
N 24°10' 10.6" W
-L-
REMOVE
3GI-A
2GI B
68B
68C
CL. B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.
FM
SEE DETAIL C
SPECIAL CUT DITCH
SEE DETAIL A
JURISDICTIONAL STREAM J-11
POND
WE 543'
BM #13
-BL- STA 181+36.60
213.8' RIGHT
ELEV. 555.75'
-L- POT Sta. 188+62.50 =
-Y3- POT Sta. 10+00.00
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX
27
MATCHLINE -L- STA. 178+00.00 SEE SHEET 15
MATCHLINE -L- STA. 192+00.00 SEE SHEET 17
SEE SHEET 59 FOR -L- PROFILE.
8/17/99
19-JAN-2006 11:28
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8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

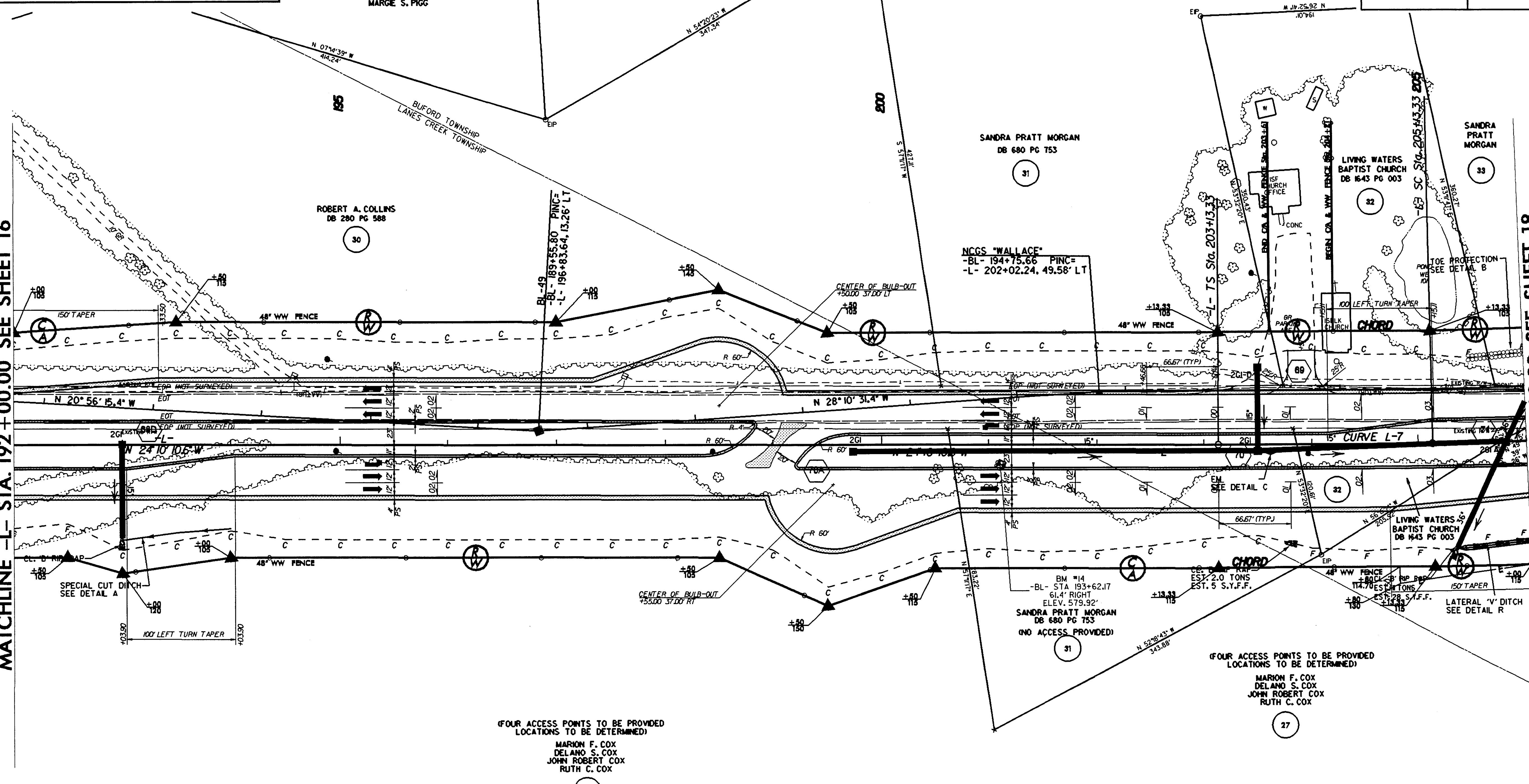
PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

- 6" MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL



NAD 83
VANN W. PIGG
MARGIE S. PIGG
BUFORD TOWNSHIP
LANES CREEK TOWNSHIP
ROBERT A. COLLINS
DB 280 PG 588
SANDRA PRATT MORGAN
DB 680 PG 753
LIVING WATERS BAPTIST CHURCH
DB 1643 PG 003
SANDRA PRATT MORGAN
MATCHLINE -L- STA. 192+00.00 SEE SHEET 16
MATCHLINE -L- STA. 206+00.00 SEE SHEET 18
NCGS "WALLACE"
-BL- 194+75.66 PINC=
-L- 202+02.24, 49.58' LT
-BL-49
-BL- 189+55.80 PINC=
-L- 196+83.64, 13.26' LT
CENTER OF BULB-OUT +50.00 37.00' LT
CENTER OF BULB-OUT +55.00 37.00' RT
48" WW FENCE
150' TAPER
100' LEFT TURN TAPER
N 20° 56' 15.4" W
N 24° 10' 10.6" W
N 28° 10' 31.4" W
CURVE L-7
CHORD
-L- TS Sta. 203+13.33
-L- SC Sta. 205+13.33
SPECIAL CUT DITCH SEE DETAIL A
SEE DETAIL C
TOE PROTECTION SEE DETAIL B
LATERAL 'V' DITCH SEE DETAIL R
BM #14
-BL- STA 193+62.17
61.4' RIGHT
ELEV. 579.92'
SANDRA PRATT MORGAN
DB 680 PG 753
(NO ACCESS PROVIDED)
(FOUR ACCESS POINTS TO BE PROVIDED LOCATIONS TO BE DETERMINED)
MARION F. COX
DELANO S. COX
JOHN ROBERT COX
RUTH C. COX

CURVE L-7

PIs Sta 204+46.67	PI Sta 206+88.03	PIs Sta 209+29.28
θs = 1° 00' 00.0"	Δ = 3° 29' 33.8" (LT)	θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 174.69'	LT = 133.34'
ST = 66.67'	L = 349.27'	ST = 66.67'
	R = 5729.58'	
	SE = 0.03 FT/FT	

SEE SHEET 60 FOR -L- PROFILE.

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REVISIONS

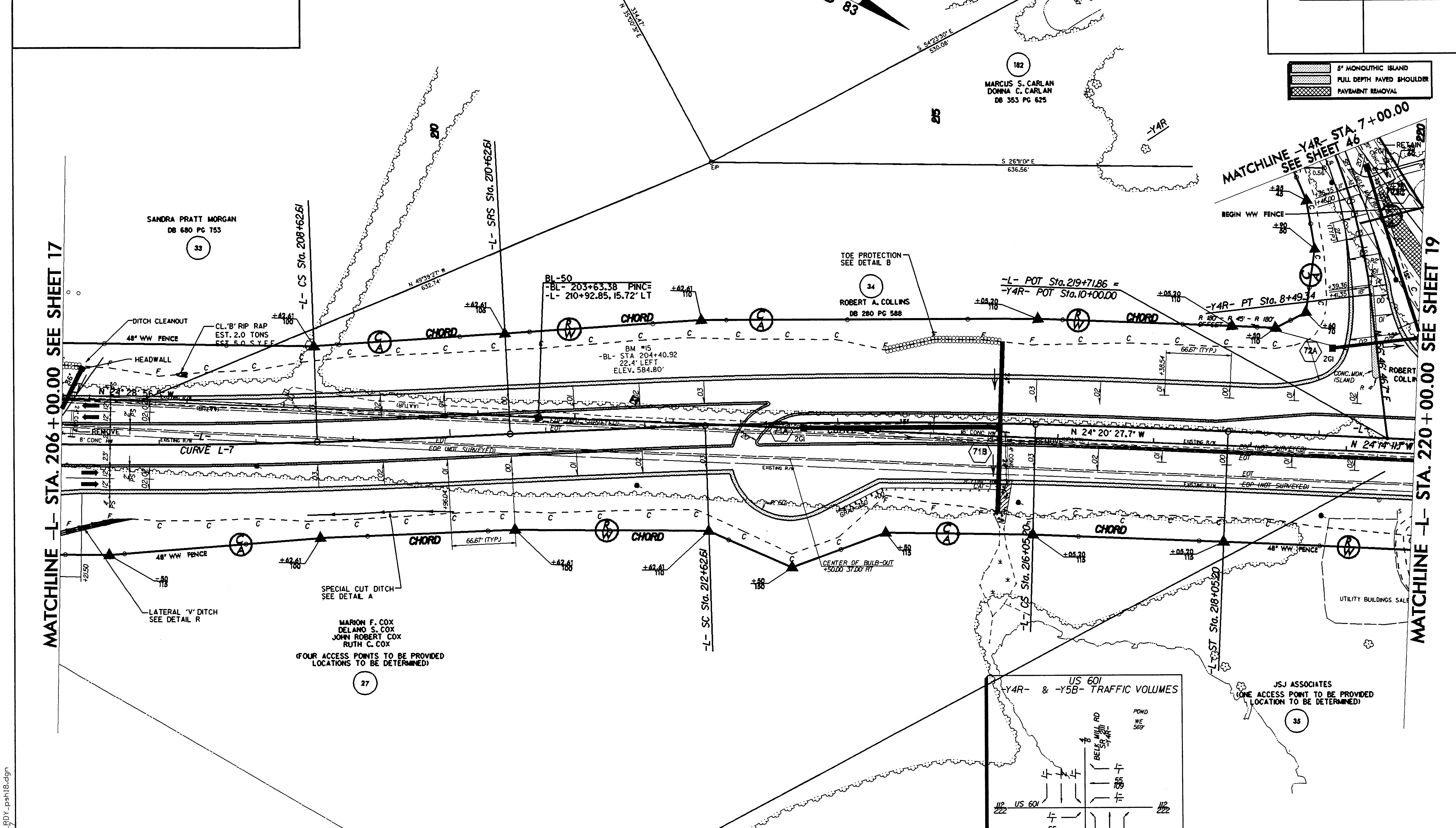
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



CURVE L-7		
PIs Sta 204+46.67	PI Sta 206+88.03	PIs Sta 209+29.28
θs = 1°00'00.0"	Δ = 3°29'33.8" (LT)	θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 174.69'	LT = 133.34'
ST = 66.67'	L = 349.27'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	

CURVE L-8		
PIs Sta 211+95.94	PI Sta 214+33.96	PIs Sta 216+71.87
θs = 1°00'00.0"	Δ = 3°25'33.4" (RT)	θs = 1°00'00.0"
Ls = 200.00'	D = 1°00'00.0"	Ls = 200.00'
LT = 133.34'	T = 171.35'	LT = 133.34'
ST = 66.67'	L = 342.59'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	

CURVE Y4R-1
PI Sta 7+16.97
Δ = 26°59'06.7" (RT)
D = 10°00'00"
L = 269.85'
T = 137.48'
R = 572.96'
e = 05

SEE SHEET 61 FOR -L- PROFILE.

19-JAN-2006 12:11
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REVISIONS

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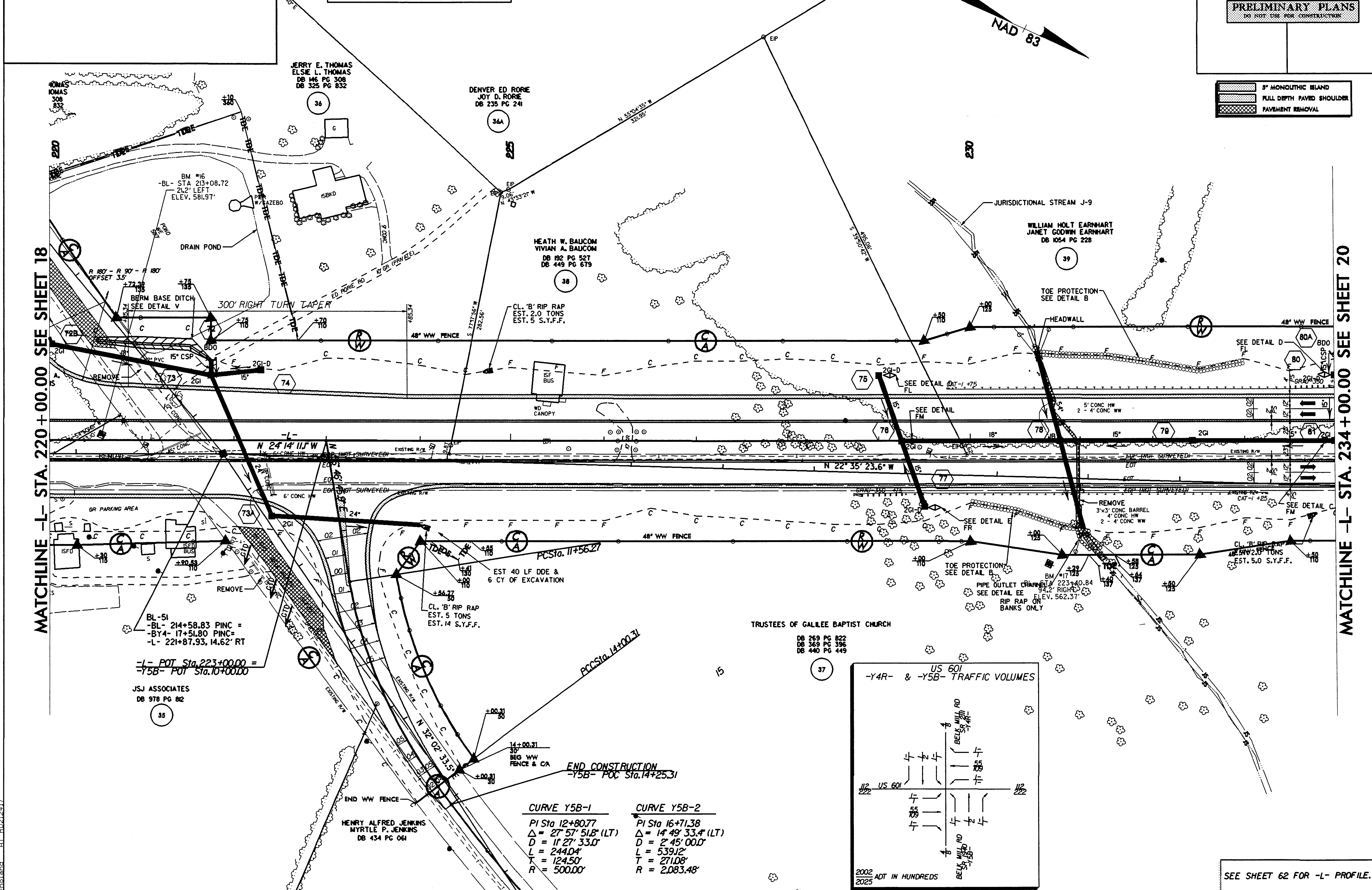
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
MATCHLINE -L- STA. 220+00.00 SEE SHEET 18
MATCHLINE -L- STA. 234+00.00 SEE SHEET 20
JERRY E. THOMAS
ELSIE L. THOMAS
DB 146 PG 308
DB 325 PG 832
DENVER ED RORIE
JOY D. RORIE
DB 235 PG 241
HEATH W. BAUCOM
VIVIAN A. BAUCOM
DB 192 PG 527
DB 449 PG 679
WILLIAM HOLT EARNHART
JANET GODWIN EARNHART
DB 1054 PG 228
JURISDICTIONAL STREAM J-9
TOE PROTECTION
SEE DETAIL B
BM #16
-BL- STA 213+08.72
21.2' LEFT
ELEV. 581.97'
DRAIN POND
BERM BASE DITCH
SEE DETAIL V
300' RIGHT TURN TAPER
48" WW FENCE
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.
HEADWALL
N 24° 14' 11.1" W
N 22° 35' 23.6" W
REMOVE
3'x3' CONC BARREL
4' CONC HW
2 - 4' CONC WW
EST 40 LF DDE &
6 CY OF EXCAVATION
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
PCSta. 11+56.27
PCCSta. 14+00.31
BL-51
-BL- 214+58.83 PINC =
-BY4- 17+51.80 PINC=
-L- 221+87.93, 14.62' RT
-L- POT Sta.223+00.00 =
-Y5B- POT Sta.10+00.00
JSJ ASSOCIATES
DB 978 PG 812
TRUSTEES OF GALILEE BAPTIST CHURCH
DB 269 PG 822
DB 369 PG 396
DB 440 PG 449
BM #17 STA 223+40.84
94.2' RIGHT
ELEV. 562.37'
PIPE OUTLET CHANNEL
SEE DETAIL EE
RIP RAP ON BANKS ONLY
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.
END WW FENCE
BEG WW FENCE & C/A
END CONSTRUCTION
-Y5B- POC Sta.14+25.31
HENRY ALFRED JENKINS
MYRTLE P. JENKINS
DB 434 PG 061
CURVE Y5B-1
PI Sta 12+80.77
Δ = 27° 57' 51.8" (LT)
D = 11° 27' 33.0"
L = 244.04'
T = 124.50'
R = 500.00'
CURVE Y5B-2
PI Sta 16+71.38
Δ = 14° 49' 33.4" (LT)
D = 2° 45' 00.0"
L = 539.12'
T = 271.08'
R = 2,083.48'
US 601
-Y4R- & -Y5B- TRAFFIC VOLUMES
BELK MILL RD
US 601
2002
2025
ADT IN HUNDREDS

SEE SHEET 62 FOR -L- PROFILE.

19-JAN-2006 12:10
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REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

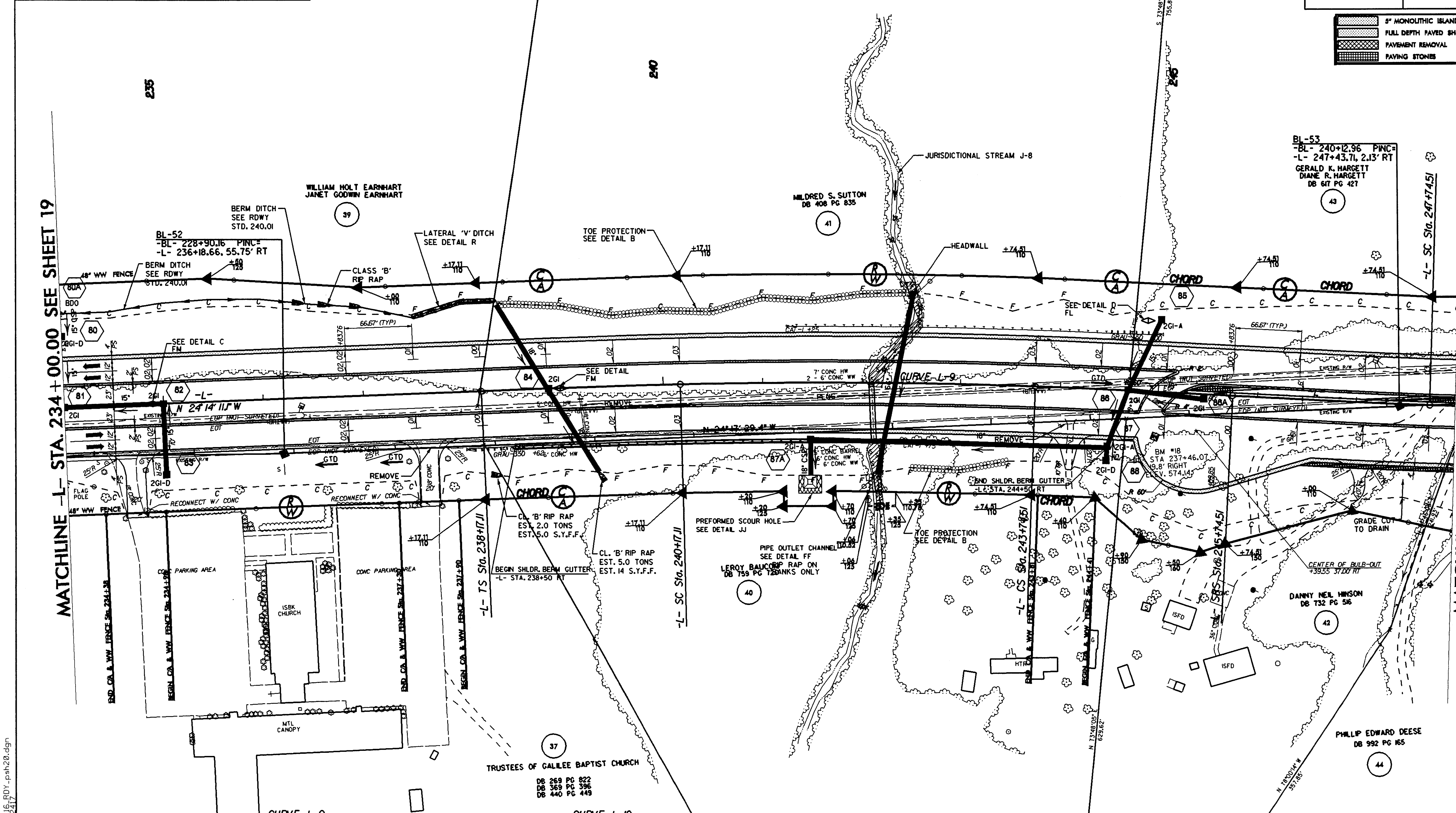
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Legend
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES



CURVE L-9		
PIs Sta 239+50.44	PI Sta 241+95.87	PIs Sta 244+41.18
Θs = 1°00' 00.0"	Δ = 3° 34' 26.5" (RT)	Θs = 1°00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 178.76'	LT = 133.34'
ST = 66.67'	L = 357.40'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03	

CURVE L-10		
PIs Sta 247+07.85	PI Sta 249+55.45	PIs Sta 252+02.93
Θs = 1°00' 00.0"	Δ = 3° 37' 03.0" (LT)	Θs = 1°00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	T = 180.94'	LT = 133.34'
ST = 66.67'	L = 361.75'	ST = 66.67'
	R = 5,729.58'	
	SE = 0.03 FT/FT	

SEE SHEET 63 FOR -L- PROFILE.

19-JAN-2006 12:10
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kynoland AT RO212417

8/17/95

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY TOE SEE
PROPERTIES WITH GREATER THAN 200M OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES

NAD 83

MATCHLINE -L- STA. 248+00.00 SEE SHEET 20

MATCHLINE -L- STA. 262+00.00 SEE SHEET 22

SEE SHEET 46
MATCHLINE -Y6- STA. 15+00.00

MATCHLINE -Y7- STA. 24+00.00
SEE SHEET 46

CURVE Y6-2
PI Sta 18+16.65
Δ= 20° 34' 41.7" (RT)
D = 10° 00' 00.0"
T = 104.01'
L = 205.78'
R = 572.96'
SE = 0.04 FT/FT

CURVE L-10
PIs Sta 247+07.85
θs = 1° 00' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 249+55.45
Δ= 3° 37' 03.0" (LT)
D = 1° 00' 00.0"
T = 180.94'
L = 361.75'
R = 5729.58'
SE = 0.03 FT/FT

PIs Sta 252+02.93
θs = 1° 00' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

CURVE Y7-1
PI Sta 23+67.50
Δ= 21° 21' 55.0" (RT)
D = 3° 20' 00.0"
T = 324.24'
L = 640.96'
R = 1718.87'
SE = 0.07 FT/FT

-L- CS Sta. 251+36.26
-L- ST Sta. 253+36.26
-Y6- PC Sta. 17+12.64
-Y6- PC Sta. 19+18.24
-Y7- PC Sta. 20+43.25
-L- ST Sta. 255+76.88=
-Y6- POT Sta. 20+00.00 =
-Y7- POT Sta. 20+00.00

BL=54
-BL- 248+62.02 PINC
-BY5- 18+03.36 PINC=
-L- 255+93.15, 11.53' LT

BY5-100
-BY5- 20+42.02 PINC=
-Y7- 22+28.20, 15.98' LT

BM #19
-BL- STA. 248+25.66
77.2' LEFT
ELEV. 577.73'

NCDOT "R2616-II"

AMANDA DAWN WATSON
DB 1638 PG 631

GERALD K. HARGETT
DIANE R. HARGETT
DB 617 PG 427

GERALD K. HARGETT
DIANE R. HARGETT

CHARLES A. BROADWAY
KIMBERLY BROADWAY
DONNIE R. COUCK
LINDA R. COUCK
DB 1335 PG 531

P. L. WRIGHT
LEEZER P. WRIGHT

COMMUNITY CAFE, INC.
DB 1208 PG 461
DB 1260 PG 617

BURL H. GRIFFIN
DOROTHY H. GRIFFIN
DB 158 PG 35
DB 160 PG 513

PHILLIP EDWARD DEESE

EFFIE Y. HARRELL
DB 95 PG 515

KIMBERLY D. WILLIAMS

RAEFORD L. STRAWN
LINDA M. STRAWN

TRIPLE C FARMS, LLC

US 601 -Y6- & -Y7- TRAFFIC VOLUMES
2002 / 2025 ADT IN HUNDREDS

SEE SHEET 64 FOR -L- PROFILE.
SEE SHEET 90 FOR -Y6- & -Y7- PROFILE.

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kmgland
AT R0212417

8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

6" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES

MATCHLINE -L- STA. 262+00.00 SEE SHEET 21

MATCHLINE -L- STA. 276+00.00 SEE SHEET 23

P. L. WRIGHT
LEEZER P. WRIGHT
DB 162 PG 179
50

ROSA M. DEESE
DB 987 PG 502
53

WALTER D. ALDRIDGE
BEVERLY M. ALDRIDGE
DB 967 PG 889
54

ROY L. WALTERS
ELAINE R. WALTERS
56

RAEFORD L. STRAWN
LINDA M. STRAWN
DB 643 PG 794
51

TRIPLE C FARMS, LLC
49

ROCKY D. PHIFER
PEPSI J. PHIFER
DB 886 PG 465
52

ANNE M. BALICOM
094E-135
55

BL-55
-BL- 256+92.66 PINC=
-L- 264+23.79, 13.85' LT

BL-56
-BL- 266+92.06 PINC=
-L- 274+22.17, 59.04' LT

SPECIAL CUT DITCH
SEE DETAIL A

CENTER OF BULB-OUT
+15.00 37.00' LT

CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y.F.F.

RECONNECT W/ ASPHALT PAVEMENT

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.

48" WW FENCE

BM #20
-BL- STA 260+80.13
29Lt' RIGHT
ELEV. 580.99'

POND
WE
582'

N 26° 52' 11.2" W

N 24° 16' 47.5" W

SEE SHEET 65 FOR -L- PROFILE.

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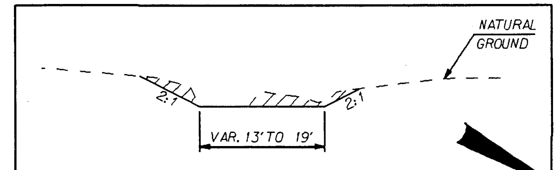
kyoland AT R0212417

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS



SECTION E-E

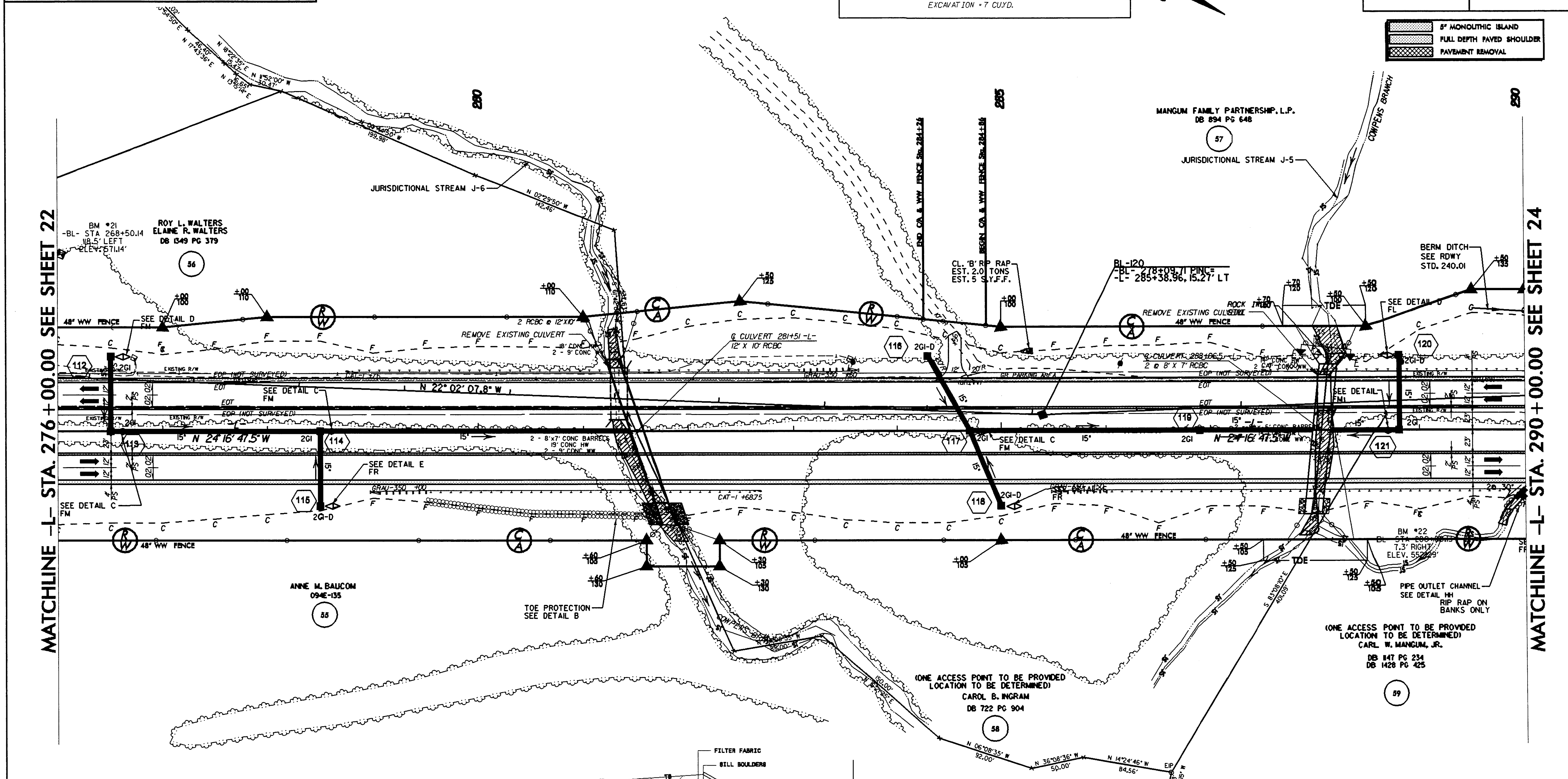
L = 25' MEASURED FROM UPSTREAM END OF CULVERT.
EXCAVATION = 7 CU.YD.

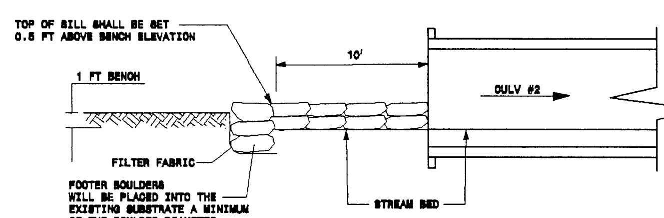
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

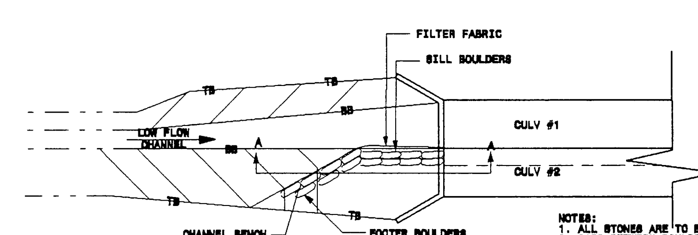
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

	5" MONOLITHIC ISLAND
	FULL DEPTH PAVED SHOULDER
	PAVEMENT REMOVAL





SECTION A-A



FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF STRUCTURE.

PLAN VIEW

ROCK INLET SILL

SCALE: NTS

NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER SHALL BE UTILIZED IN SAND BED MATERIAL.
5. FOOTER BOULDERS AND SILL BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ACCEPTABLE BOULDERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3' x 2' x 1'.

SEE SHEET 66 FOR -L- PROFILE.

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REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

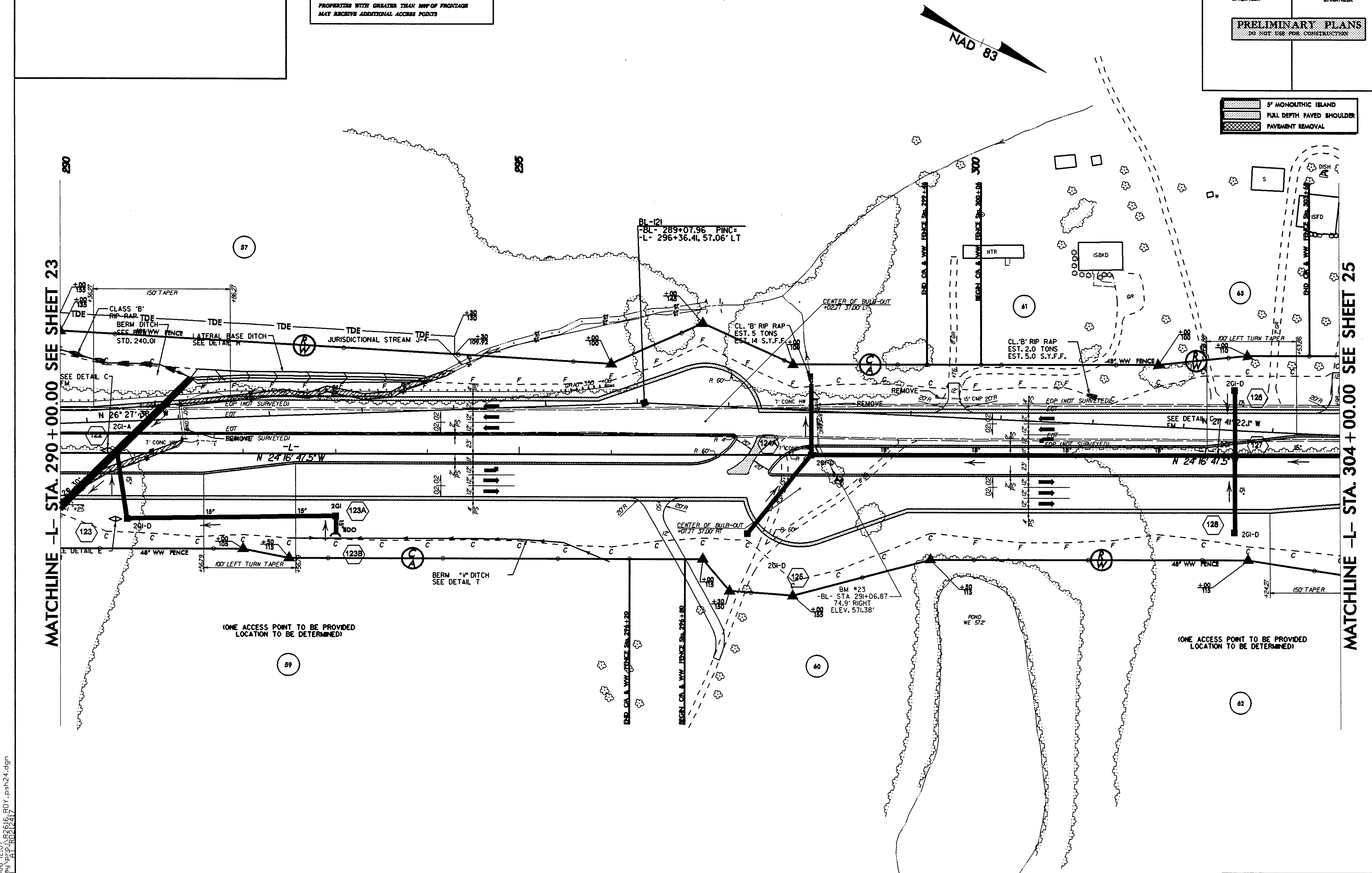
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

(pattern)	5" MONOLITHIC ISLAND
(pattern)	FULL DEPTH PAVED SHOULDER
(pattern)	PAVEMENT REMOVAL



NAD 83
290
295
300
MATCHLINE -L- STA. 290+00.00 SEE SHEET 23
MATCHLINE -L- STA. 304+00.00 SEE SHEET 25
BL-121
-BL- 289+07.96 PINC=
-L- 296+36.41, 57.06' LT
150' TAPER
CLASS 'B' RIP RAP
BERM DITCH
SEE STD. 240.01
LATERAL BASE DITCH
SEE DETAIL H
JURISDICTIONAL STREAM
SEE DETAIL C
N 26° 27' 38" W
N 24° 16' 41.5" W
-L-
EOP (NOT SURVEYED)
EOT
7' CONC HW
REMOVE
2GI-A
2GI-D
2GI
BDO
48" WW FENCE
100' LEFT TURN TAPER
BERM "V" DITCH
SEE DETAIL T
CENTER OF BULB-OUT
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.
15" CMP
BM #23
-BL- STA 291+06.87
74.9' RIGHT
ELEV. 571.38'
POND
END C/A & WW FENCE
BEGIN C/A & WW FENCE
HTR
ISBKD
ISFD
DISH
GR
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
57
59
60
61
62
63
122
123
123A
123B
124A
125
126
127
128

SEE SHEET 67 FOR -L- PROFILE.

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REVISIONS

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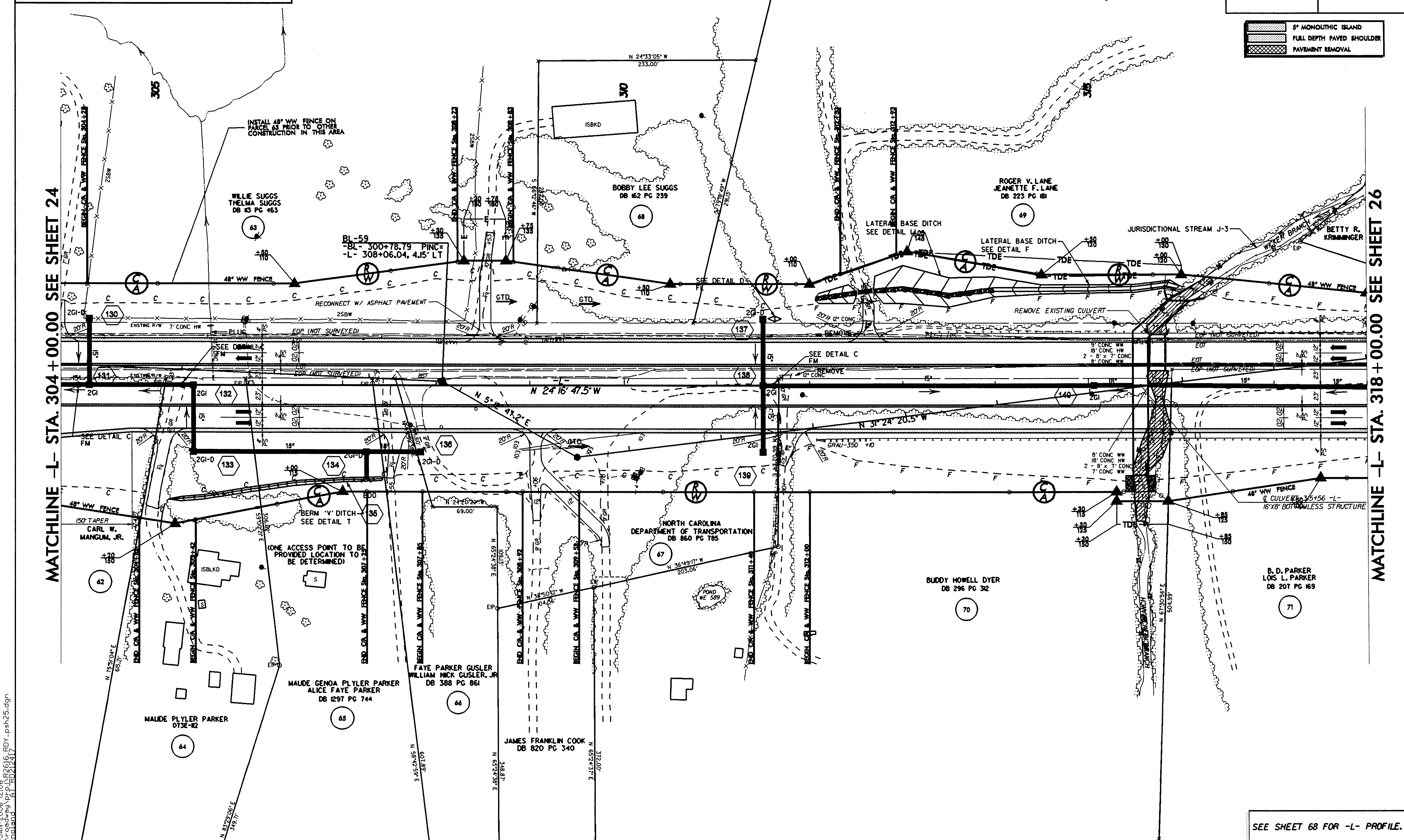
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

- 5" MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL


NAD 83
MATCHLINE -L- STA. 304+00.00 SEE SHEET 24
MATCHLINE -L- STA. 318+00.00 SEE SHEET 26
INSTALL 48" WW FENCE ON PARCEL 63 PRIOR TO OTHER CONSTRUCTION IN THIS AREA
WILLIE SUGGS
THELMA SUGGS
DB 13 PG 463
BOBBY LEE SUGGS
DB 162 PG 239
ROGER V. LANE
JEANETTE F. LANE
DB 223 PG 181
BETTY R. KRIMMINGER
BL-59
-BL- 300+78.79 PINC=
-L- 308+06.04, 4.15' LT
N 24°33'05" W
233.00'
LATERAL BASE DITCH
SEE DETAIL F
JURISDICTIONAL STREAM J-3
REMOVE EXISTING CULVERT
48" WW FENCE
RECONNECT W/ ASPHALT PAVEMENT
SEE DETAIL C
SEE DETAIL D
N 24°16'47.5" W
N 31°24'20.5" W
BERM 'V' DITCH
SEE DETAIL T
CARL W. MANGUM, JR.
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 860 PG 785
BUDDY HOWELL DYER
DB 296 PG 312
B. D. PARKER
LOIS L. PARKER
DB 207 PG 169
MAUDE GENOA PLYLER PARKER
ALICE FAYE PARKER
DB 1297 PG 744
FAYE PARKER GUSLER
WILLIAM NICK GUSLER, JR
DB 388 PG 861
JAMES FRANKLIN COOK
DB 820 PG 340
MAUDE PLYLER PARKER
POND
WE 589
8' CONC WW
18' CONC WW
2 - 8' x 7' CONC
7' CONC WW
16'X8' BOTTOMLESS STRUCTURE

SEE SHEET 68 FOR -L- PROFILE.

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PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

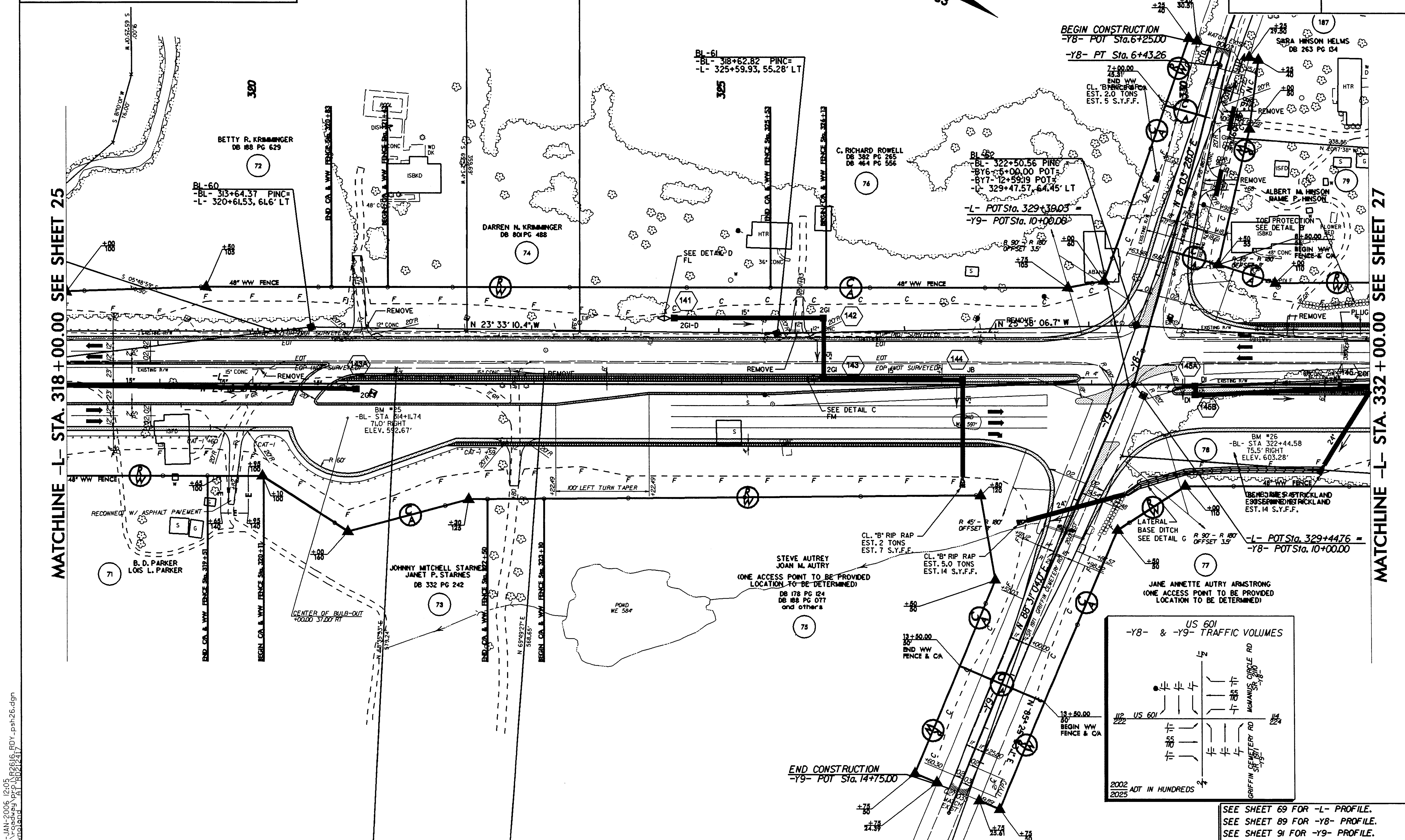
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

REVISIONS

8" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS


NAD 83
MATCHLINE -L- STA. 318+00.00 SEE SHEET 25
MATCHLINE -L- STA. 332+00.00 SEE SHEET 27
BETTY R. KRIMMINGER DB 188 PG 629
DARREN N. KRIMMINGER DB 801 PG 488
C. RICHARD ROWELL DB 382 PG 265 DB 464 PG 556
SARA HINSON HELMS DB 263 PG 134
ALBERT M. HINSON RAMIE P. HINSON
B. D. PARKER LOIS L. PARKER
JOHNNY MITCHELL STARNES JANET P. STARNES DB 332 PG 242
STEVE AUTREY JOAN M. AUTRY
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
DB 178 PG 124 DB 188 PG 077 and others
JANE ANNETTE AUTRY ARMSTRONG
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
BL-60 -BL- 313+64.37 PINC= -L- 320+61.53, 61.6' LT
BL-61 -BL- 318+62.82 PINC= -L- 325+59.93, 55.28' LT
BL-62 -BL- 322+50.56 PINC= -BY6- 5+00.00 POT= -BY7- 12+59.19 POT= -L- 329+47.57, 64.45' LT
BEGIN CONSTRUCTION -Y8- POT Sta. 6+25.00
-Y8- PT Sta. 6+43.26
-L- POT Sta. 329+39.03 = -Y9- POT Sta. 10+00.00
-L- POT Sta. 329+44.76 = -Y8- POT Sta. 10+00.00
END CONSTRUCTION -Y9- POT Sta. 14+75.00
N 23° 33' 10.4" W
N 23° 38' 06.7" W
BM #25 -BL- STA 314+11.74 71.0' RIGHT ELEV. 592.67'
BM #26 -BL- STA 322+44.58 75.5' RIGHT ELEV. 603.28'
SEE DETAIL C FM
SEE DETAIL D FL
CENTER OF BULB-OUT +00.00 37.00' RT
100' LEFT TURN TAPER
CL. "B" RIP RAP EST. 2 TONS EST. 7 S.Y.F.F.
CL. "B" RIP RAP EST. 5.0 TONS EST. 14 S.Y.F.F.
CL. "B" RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
LATERAL BASE DITCH SEE DETAIL G
TOE PROTECTION SEE DETAIL B
RECONNECT W/ ASPHALT PAVEMENT
POND WE 584'
48" WW FENCE
REMOVE
US 601 -Y8- & -Y9- TRAFFIC VOLUMES
2002 2025 ADT IN HUNDREDS
McMANUS CIRCLE RD
GRIFFIN CEMETERY RD

SEE SHEET 69 FOR -L- PROFILE.
SEE SHEET 89 FOR -Y8- PROFILE.
SEE SHEET 91 FOR -Y9- PROFILE.

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REVISIONS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 33634
CHARLOTTE, NORTH CAROLINA 28233

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

5' MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES

NAD 83

SAM H. McMANUS
DORIS DEAS McMANUS
DB 425 PG 603

MATCHLINE -L- STA. 332+00.00 SEE SHEET 26

MATCHLINE -L- STA. 346+00.00 SEE SHEET 28

SARA HINSON HELMS
DB 263 PG 134

ANTHONY BANKS NUSSMAN
DB 366 PG 434
80

JOHN F. MYERS
MELINDA G. MYERS
DB 794 PG 772
DB 1731 PG 442
81

ALBERT M. HINSON
MAMIE P. HINSON
DB 137 PG 314
79

WALTER E. ALBRIGHT
CAROL J. ALBRIGHT
82

BEN JAMES STRICKLAND
JOSEPHINE STRICKLAND
DB 358 PG 007
DB 193 PG 652
78

JANE ANNETTE AUTRY ARMSTRONG
(ONE ACCESS POINT TO BE PROVIDED
LOCATION TO BE DETERMINED)
DB 188 PG 077
DB 193 PG 319
77

HUBERT DRAKE
83

BL-63
-BL- 330+37.58 PINC=
-L- 337+32.72, 10.25' LT

RECONNECT W/ CONC

RECONNECT W/ ASPHALT PAVEMENT

100' LEFT TURN TAPER

TOE PROTECTION
SEE DETAIL B

LATERAL 'V' DITCH
SEE DETAIL P

SPECIAL CUT DITCH
SEE DETAIL A

CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.

DRAIN POND

48" WW FENCE

REMOVE

GTD

GTDN 24°16'47.5"WD

N 20° 19' 51.4" W

N 26° 36' 34.9" W

SEE DETAIL FM

CENTER OF BULB-OUT
+10.00 37.00' LT

CL. 'B' RIP RAP
EST. 3 TONS
EST. 10 S.Y.F.F.

LATERAL 'B' DITCH
SEE DETAIL R

CL. 'B' RIP RAP
EST. 8.0 TONS
EST. 21 S.Y.F.F.

LATERAL 'V' DITCH
SEE DETAIL P

SEE SHEET TO FOR -L- PROFILE.

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kyngland AT RD12417

REVISIONS

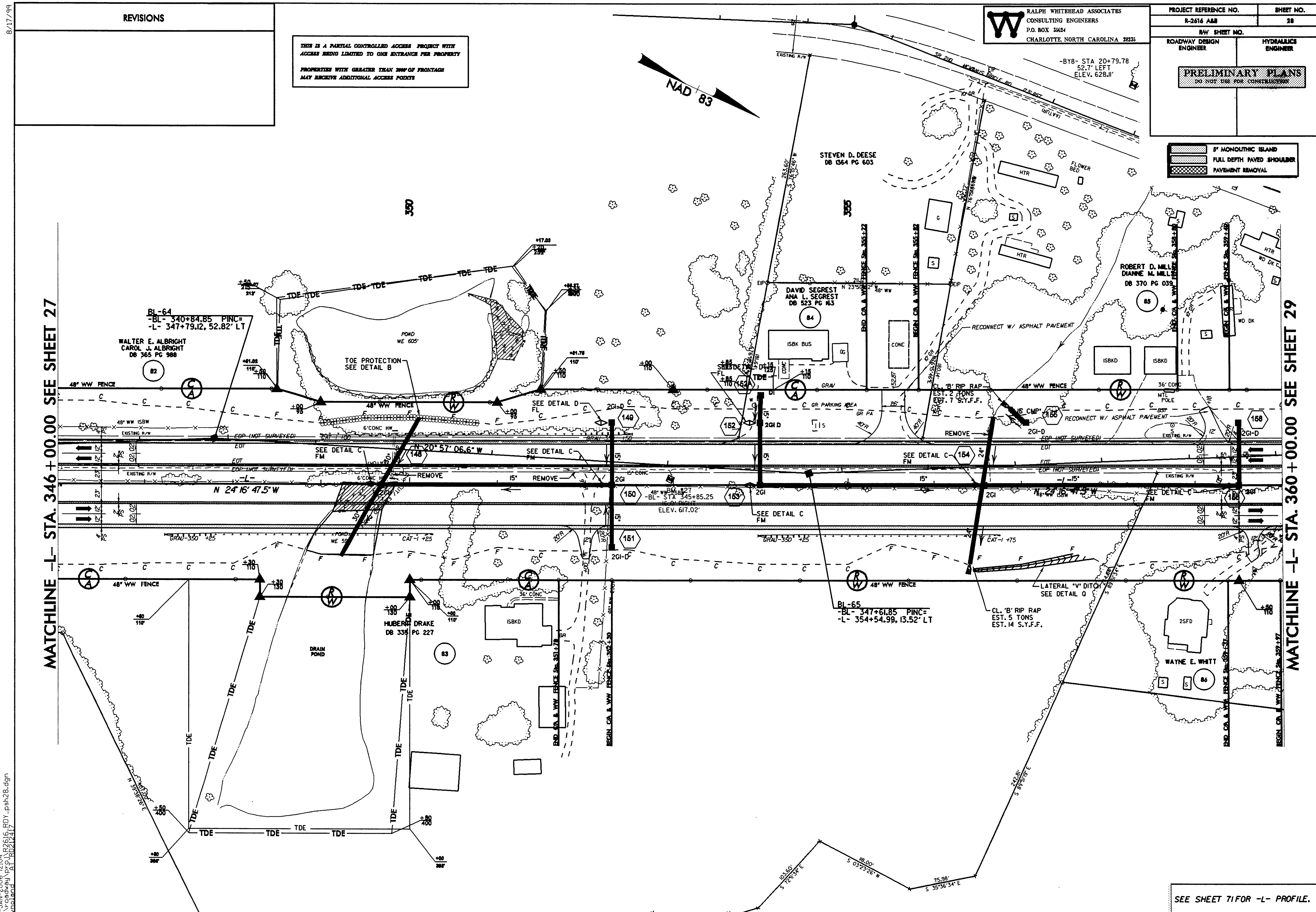
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
NAD 83
-BY8- STA 20+79.78
52.7' LEFT
ELEV. 628.11'
MATCHLINE -L- STA. 346+00.00 SEE SHEET 27
MATCHLINE -L- STA. 360+00.00 SEE SHEET 29
BL-64
-BL- 340+84.85 PINC=
-L- 347+79.12, 52.82' LT
WALTER E. ALBRIGHT
CAROL J. ALBRIGHT
DB 365 PG 988
TOE PROTECTION
SEE DETAIL B
POND
WE 605'
STEVEN D. DEESE
DB 1364 PG 603
DAVID SEGREST
ANA L. SEGREST
DB 523 PG 163
ROBERT D. MILLS
DIANNE M. MILLS
DB 370 PG 039
RECONNECT W/ ASPHALT PAVEMENT
CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y.F.F.
N 20°57' 06.6" W
N 24°16' 47.5" W
-BL- STA 345+85.25
ELEV. 617.02'
SEE DETAIL C
SEE DETAIL D
REMOVE
48" WW FENCE
LATERAL 'V' DITCH
SEE DETAIL O
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
BL-65
-BL- 347+61.85 PINC=
-L- 354+54.99, 13.52' LT
HUBERT DRAKE
DB 335 PG 227
DRAIN POND
WAYNE E. WHITT
2SFD
ISBKD
ISBK BUS
HTR
TDE

SEE SHEET 71 FOR -L- PROFILE.

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REVISIONS

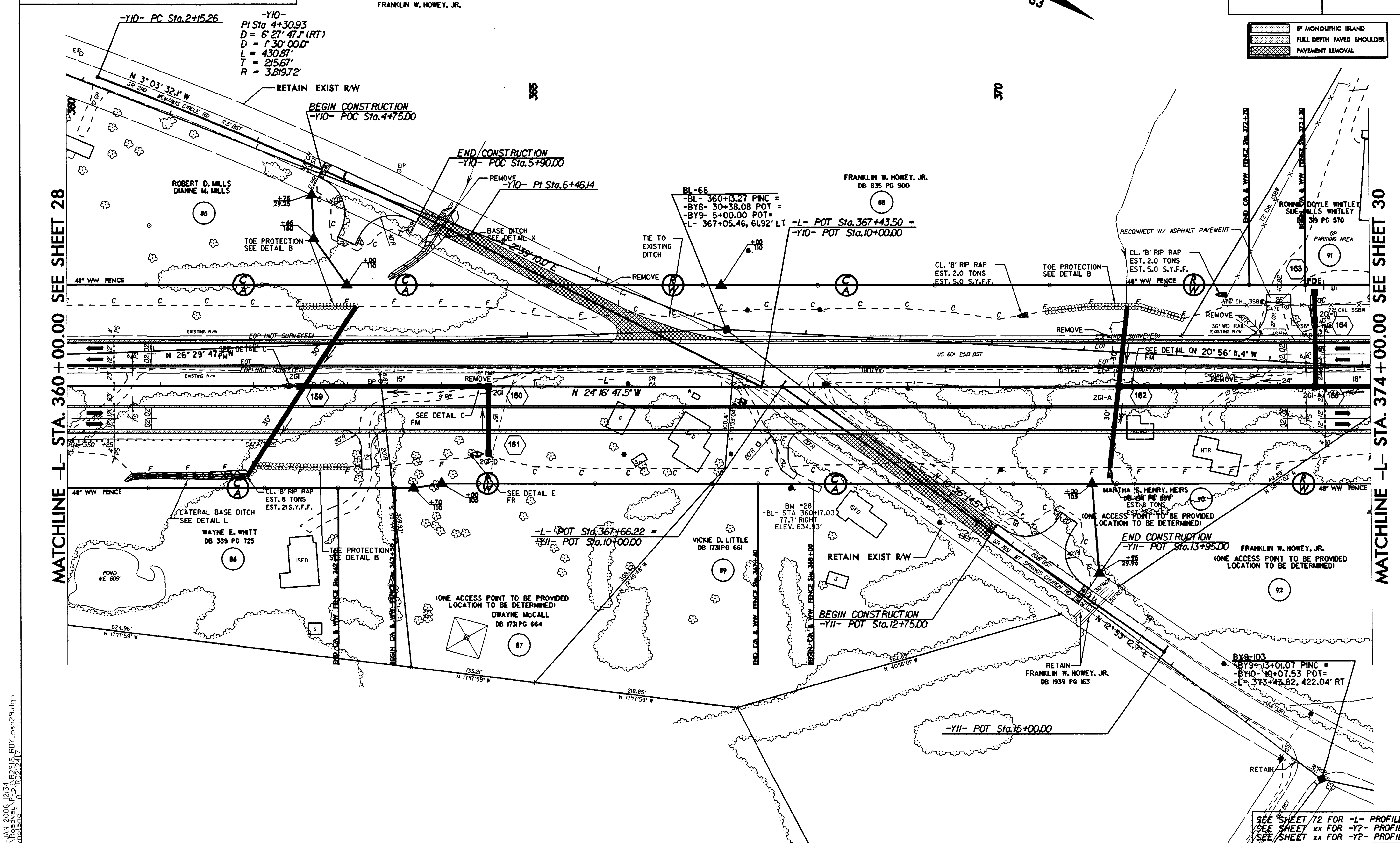
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
FRANKLIN W. HOWEY, JR.
-Y10- PC Sta.2+15.26
-Y10-
PI Sta 4+30.93
D = 6° 27' 47.5" (RT)
D = 1° 30' 00.0"
L = 430.87'
T = 215.67'
R = 3,819.72'
N 3° 03' 32.1" W
RETAIN EXIST R/W
BEGIN CONSTRUCTION
-Y10- POC Sta.4+75.00
END CONSTRUCTION
-Y10- POC Sta.5+90.00
-Y10- PI Sta.6+46.14
REMOVE
BASE DITCH
SEE DETAIL X
ROBERT D. MILLS
DIANNE M. MILLS
85
TOE PROTECTION
SEE DETAIL B
BL-66
-BL- 360+13.27 PINC =
-BY8- 30+38.08 POT =
-BY9- 5+00.00 POT=
-L- 367+05.46, 61.92' LT
-L- POT Sta.367+43.50 =
-Y10- POT Sta.10+00.00
TIE TO EXISTING DITCH
FRANKLIN W. HOWEY, JR.
DB 835 PG 900
88
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.
RECONNECT W/ ASPHALT PAVEMENT
RONNIE DOYLE WHITLEY
SUE MILLS WHITLEY
DB 319 PG 570
91
163
164
165
48" WW FENCE
N 26° 29' 47.1" W
US 601 25.0' BST
SEE DETAIL C
-L-
N 24° 16' 47.5" W
159
160
161
162
SEE DETAIL ON 20° 56' 11.4" W
SEE DETAIL E
CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.
LATERAL BASE DITCH
SEE DETAIL L
WAYNE E. WHITT
DB 339 PG 725
86
POND
TOE PROTECTION
SEE DETAIL B
-L- POT Sta.367+66.22 =
-Y11- POT Sta.10+00.00
VICKIE D. LITTLE
DB 1731 PG 661
89
BM #28
-BL- STA 360+17.03
77.7' RIGHT
ELEV. 634.13'
RETAIN EXIST R/W
BEGIN CONSTRUCTION
-Y11- POT Sta.12+75.00
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
DWAYNE McCALL
DB 1731 PG 664
87
MARTHA S. HENRY, HEIRS
90
END CONSTRUCTION
-Y11- POT Sta.13+95.00
FRANKLIN W. HOWEY, JR.
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
92
RETAIN
FRANKLIN W. HOWEY, JR.
DB 1939 PG 163
BY8-103
-BY9- 13+01.07 PINC =
-BY10- 10+07.53 POT=
-L- 373+43.82, 422.04' RT
-Y11- POT Sta.15+00.00
RETAIN
MATCHLINE -L- STA. 360+00.00 SEE SHEET 28
MATCHLINE -L- STA. 374+00.00 SEE SHEET 30

SEE SHEET 72 FOR -L- PROFILE.
SEE SHEET xx FOR -Y?- PROFILE.
SEE SHEET xx FOR -Y?- PROFILE.

19-JAN-2006 12:34
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8/17/99

REVISIONS

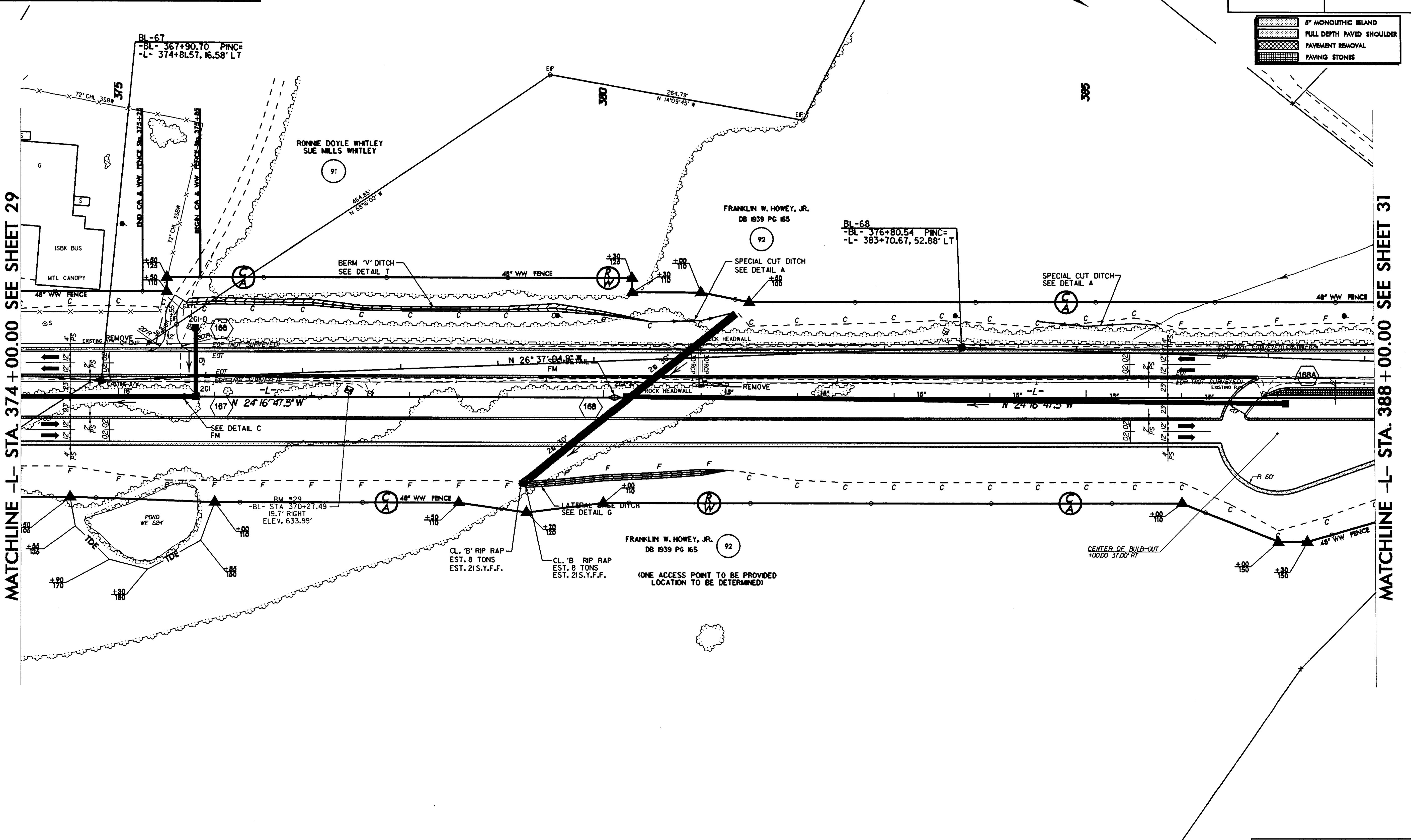
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES
MATCHLINE -L- STA. 374+00.00 SEE SHEET 29
MATCHLINE -L- STA. 388+00.00 SEE SHEET 31
BL-67
-BL- 367+90.70 PINC=
-L- 374+81.57, 16.58' LT
BL-68
-BL- 376+80.54 PINC=
-L- 383+70.67, 52.88' LT
RONNIE DOYLE WHITLEY
SUE MILLS WHITLEY
91
FRANKLIN W. HOWEY, JR.
DB 1939 PG 165
92
BERM 'V' DITCH
SEE DETAIL T
48" WW FENCE
SPECIAL CUT DITCH
SEE DETAIL A
ISBK BUS
MTL CANOPY
N 24°16'47.5" W
N 26°37'04.8" W
SEE DETAIL C
FM
REMOVE
ROCK HEADWALL
BM #29
-BL- STA 370+27.49
19.7' RIGHT
ELEV. 633.99'
POND
WE 624'
TDE
LATERAL BASE DITCH
SEE DETAIL G
CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.
(ONE ACCESS POINT TO BE PROVIDED
LOCATION TO BE DETERMINED)
CENTER OF BULB-OUT
+00.00 37.00' RT
R 60'
375
380
385
464.85'
N 58°16'02" W
264.79'
N 14°09'45" W
335.43'
N 86°55'40" W
406.49'
S 13°44'22" E

SEE SHEET 73 FOR -L- PROFILE.

19-JAN-2006 12:02
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kingland AT R021417

REVISIONS

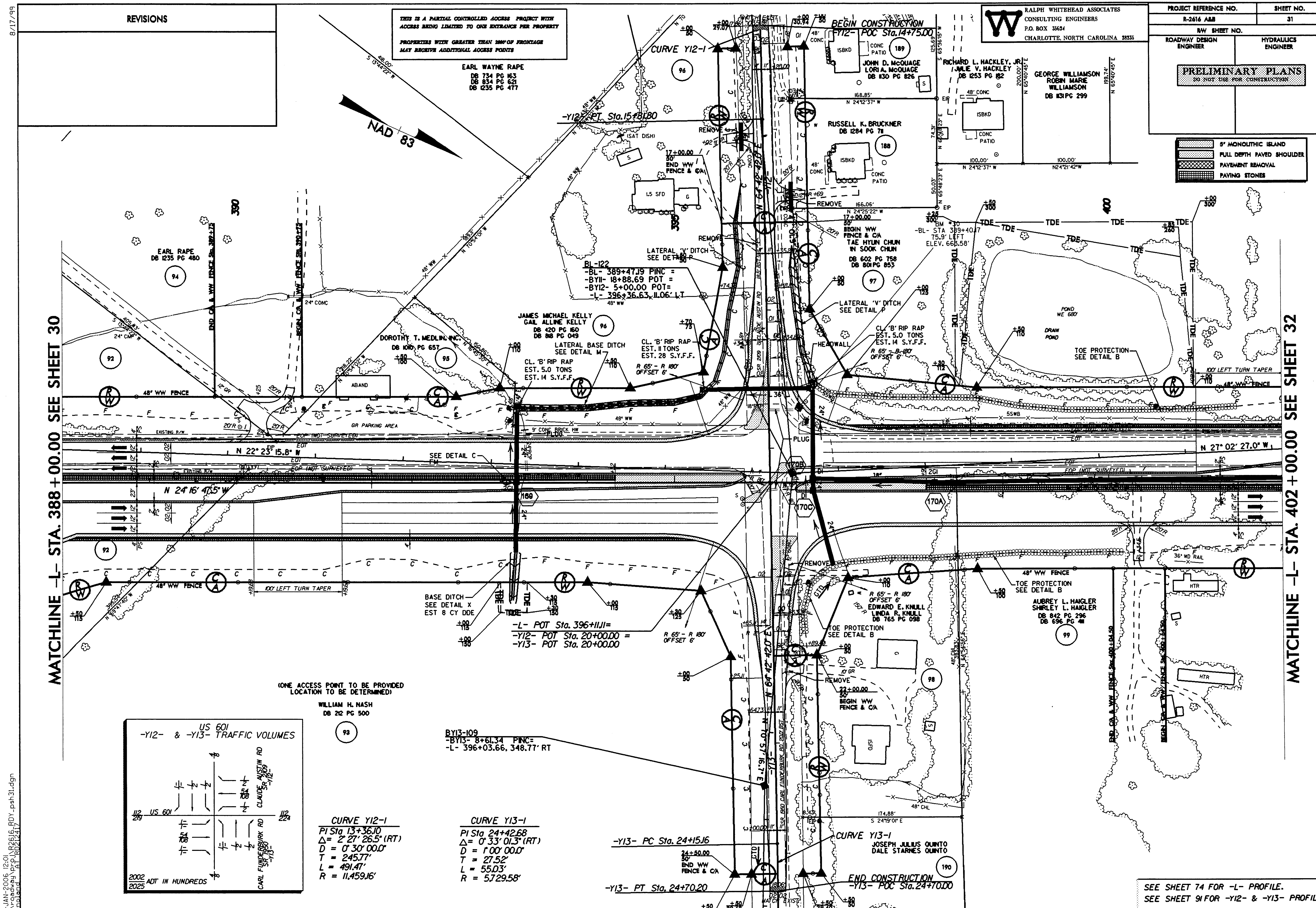
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	31
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS


NAD 83
MATCHLINE -L- STA. 388+00.00 SEE SHEET 30
MATCHLINE -L- STA. 402+00.00 SEE SHEET 32
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
PAVING STONES
EARL WAYNE RAPE
DB 734 PG 163
DB 834 PG 621
DB 1235 PG 477
EARL RAPE
DB 1235 PG 480
BEGIN CONSTRUCTION
-Y12- POC Sta.14+75.00
CURVE Y12-1
-Y12- PT Sta.15+81.80
JOHN D. McQUAGE
LORI A. McQUAGE
DB 1130 PG 826
RICHARD L. HACKLEY, JR.
JULIE V. HACKLEY
DB 1253 PG 182
GEORGE WILLIAMSON
ROBIN MARIE WILLIAMSON
DB 1131 PG 299
RUSSELL K. BRUCKNER
DB 1284 PG 711
TAE HYUN CHUN
IN SOOK CHUN
DB 602 PG 758
DB 801 PG 853
BL-122
-BL- 389+47.19 PINC =
-BY11- 18+88.69 POT =
-BY12- 5+00.00 POT=
-L- 396+36.63, 11.06' LT
JAMES MICHAEL KELLY
GAIL ALLINE KELLY
DB 420 PG 160
DB 818 PG 049
DOROTHY T. MEDLIN, INC.
DB 1010 PG 657
LATERAL BASE DITCH
SEE DETAIL M
CL. 'B' RIP RAP
EST. 5.0 TONS
EST. 14 S.Y.F.F.
CL. 'B' RIP RAP
EST. 11 TONS
EST. 28 S.Y.F.F.
LATERAL 'V' DITCH
SEE DETAIL P
TOE PROTECTION
SEE DETAIL B
N 22° 23' 15.8" W
N 24° 16' 47.5" W
N 27° 02' 27.0" W
SEE DETAIL C
BASE DITCH
SEE DETAIL X
EST 8 CY DDE
-L- POT Sta. 396+11.11=
-Y12- POT Sta. 20+00.00 =
-Y13- POT Sta. 20+00.00
EDWARD E. KNULL
LINDA R. KNULL
DB 765 PG 098
AUBREY L. HAIGLER
SHIRLEY L. HAIGLER
DB 842 PG 296
DB 696 PG 411
(ONE ACCESS POINT TO BE PROVIDED
LOCATION TO BE DETERMINED)
WILLIAM H. NASH
DB 212 PG 500
BY13-109
-BY13- 8+61.34 PINC=
-L- 396+03.66, 348.77' RT
-Y13- PC Sta. 24+15.16
CURVE Y13-1
-Y13- PT Sta. 24+70.20
END CONSTRUCTION
-Y13- POC Sta.24+70.00
JOSEPH JULIUS QUINTO
DALE STARNES QUINTO
US 601
-Y12- & -Y13- TRAFFIC VOLUMES
CLAUDE AUSTIN RD SR 1109 -Y12-
CARL FUNDERBURK RD SR 1150 -Y13-
2002
2025 ADT IN HUNDREDS

CURVE Y12-1	
PI Sta	13+36.10
Δ =	2° 27' 26.5" (RT)
D =	0° 30' 00.0"
T =	245.77'
L =	491.47'
R =	11,459.16'

CURVE Y13-1	
PI Sta	24+42.68
Δ =	0° 33' 01.3" (RT)
D =	1° 00' 00.0"
T =	27.52'
L =	55.03'
R =	5,729.58'

SEE SHEET 74 FOR -L- PROFILE.
SEE SHEET 91 FOR -Y12- & -Y13- PROFILE.

8/17/99

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REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

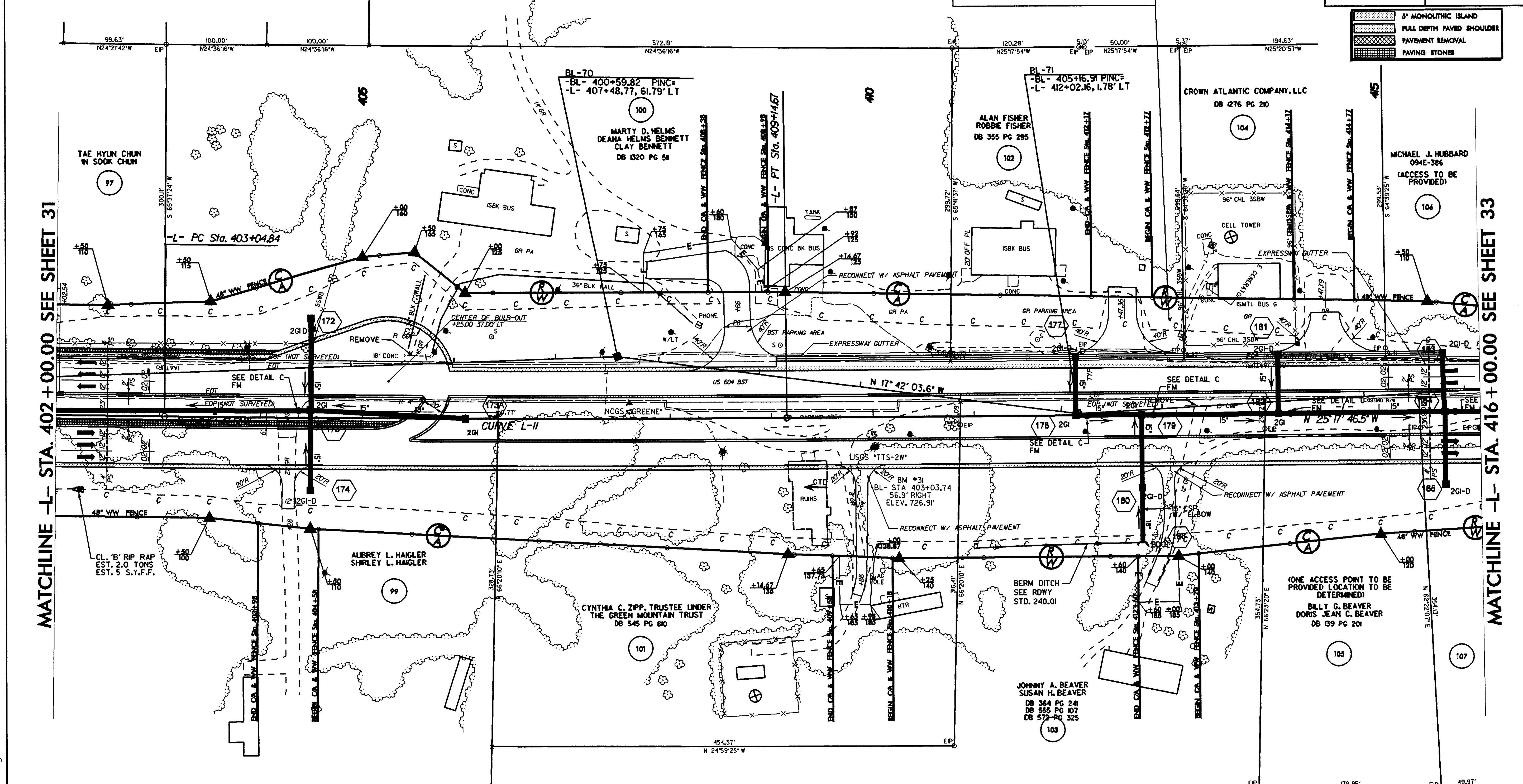
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE TO CONTRACTOR:
THIS WELL IS REQUIRED TO BE PROTECTED FROM DAMAGES BY ANY CONSTRUCTION ACTIVITIES

	5" MONOLITHIC ISLAND
	FULL DEPTH PAVED SHOULDER
	PAVEMENT REMOVAL
	PAVING STONES



MATCHLINE -L- STA. 402+00.00 SEE SHEET 31
MATCHLINE -L- STA. 416+00.00 SEE SHEET 33
TAE HYUN CHUN
IN SOOK CHUN
-L- PC Sta. 403+04.84
BL-70
-BL- 400+59.82 PINC=
-L- 407+48.77, 61.79' LT
MARTY D. HELMS
DEANA HELMS BENNETT
CLAY BENNETT
DB 1320 PG 511
-L- PT Sta. 409+14.67
ALAN FISHER
ROBBIE FISHER
DB 355 PG 295
BL-71
-BL- 405+16.91 PINC=
-L- 412+02.16, 1.78' LT
CROWN ATLANTIC COMPANY, LLC
DB 1276 PG 210
MICHAEL J. HUBBARD
094E-386
(ACCESS TO BE PROVIDED)
CELL TOWER
EXPRESSWAY GUTTER
RECONNECT W/ ASPHALT PAVEMENT
CURVE L-11
N 17° 42' 03.6" W
N 25° 17' 46.5" W
US 604 BST
NCGS "GREENE"
USGS "TTS-2W"
BM #31
BL- STA 403+03.74
56.9' RIGHT
ELEV. 726.91'
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.
AUBREY L. HAIGLER
SHIRLEY L. HAIGLER
CYNTHIA C. ZIPP, TRUSTEE UNDER
THE GREEN MOUNTAIN TRUST
DB 545 PG 810
BERM DITCH
SEE RDWY
STD. 240.01
JOHNNY A. BEAVER
SUSAN H. BEAVER
DB 364 PG 241
DB 555 PG 107
DB 572 PG 325
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
BILLY G. BEAVER
DORIS JEAN C. BEAVER
DB 139 PG 201

CURVE L-11
PI Sta 406+09.76
Δ = 1°00' 59.0" (LT)
D = 0°10' 00.0"
T = 304.92'
L = 609.83'
R = 34,377.47'
SE = NC

SEE SHEET 75 FOR -L- PROFILE.

8/17/99

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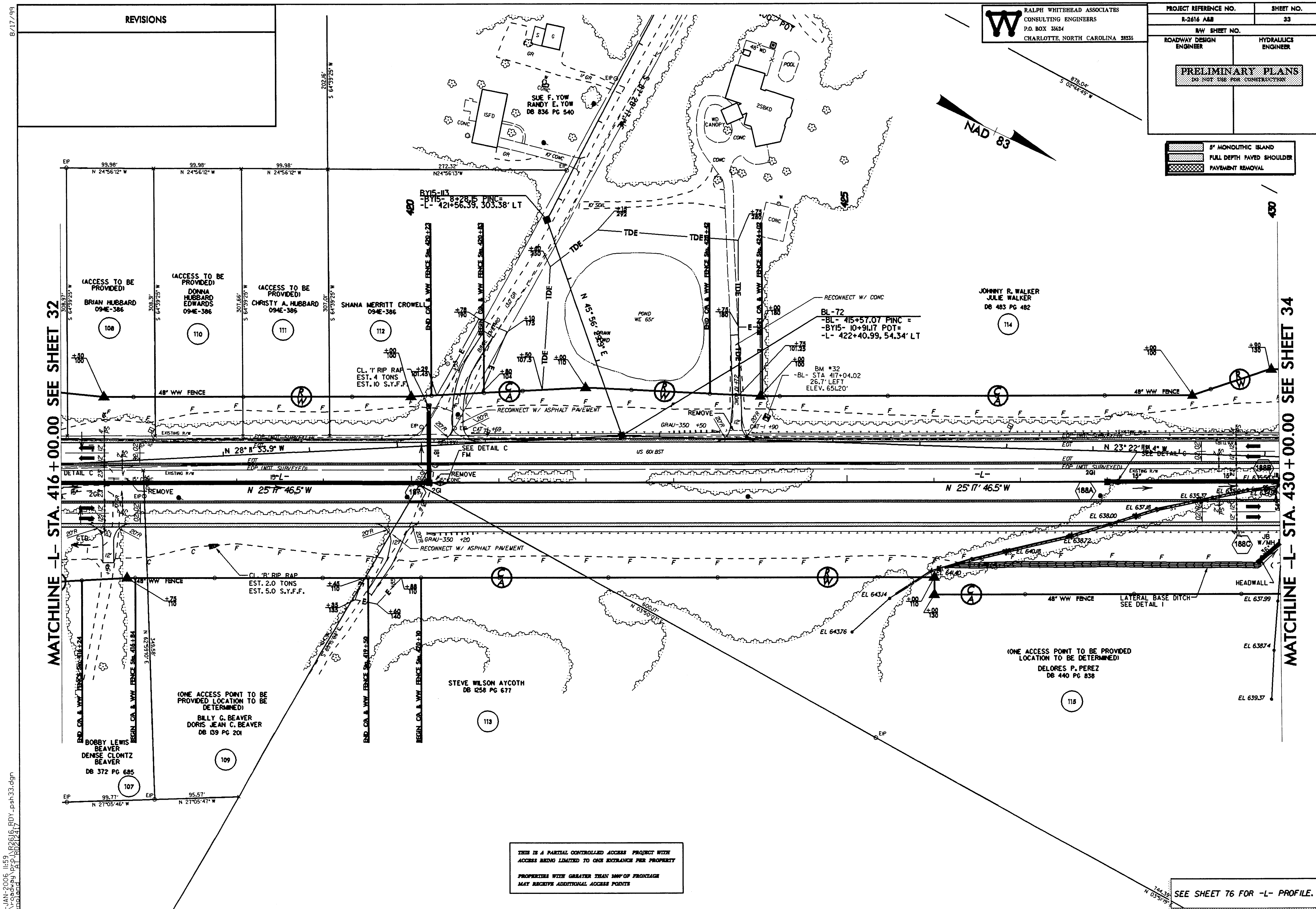
REVISIONS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

- 5" MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL



NAD 83
MATCHLINE -L- STA. 416+00.00 SEE SHEET 32
MATCHLINE -L- STA. 430+00.00 SEE SHEET 34
SUE F. YOW
RANDY E. YOW
DB 836 PG 540
(ACCESS TO BE PROVIDED)
BRIAN HUBBARD
094E-386
108
(ACCESS TO BE PROVIDED)
DONNA HUBBARD EDWARDS
094E-386
110
(ACCESS TO BE PROVIDED)
CHRISTY A. HUBBARD
094E-386
111
SHANA MERRITT CROWELL
094E-386
112
JOHNNY R. WALKER
JULIE WALKER
DB 483 PG 482
114
BY15-113
-BY15- 8+28.15 PINC=
-L- 421+56.39, 303.38' LT
BL-72
-BL- 415+57.07 PINC =
-BY15- 10+91.17 POT=
-L- 422+40.99, 54.34' LT
BM #32
-BL- STA 417+04.02
26.7' LEFT
ELEV. 651.20'
RECONNECT W/ CONC
RECONNECT W/ ASPHALT PAVEMENT
CL. 'I' RIP RAP
EST. 4 TONS
EST. 10 S.Y.F.F.
POND
48" WW FENCE
SEE DETAIL C
N 28° 11' 33.9" W
N 23° 22' 14" W
US 601 BST
N 25° 17' 46.5" W
REMOVE
188A
188B
188C
HEADWALL
LATERAL BASE DITCH
SEE DETAIL I
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
BILLY G. BEAVER
DORIS JEAN C. BEAVER
DB 139 PG 201
109
BOBBY LEWIS BEAVER
DENISE CLONTZ BEAVER
DB 372 PG 685
107
STEVE WILSON AYCOTH
DB 1258 PG 677
113
(ONE ACCESS POINT TO BE PROVIDED LOCATION TO BE DETERMINED)
DELORES P. PEREZ
DB 440 PG 838
115

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 1000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

SEE SHEET 76 FOR -L- PROFILE.

8/17/99

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8/17/99

REVISIONS

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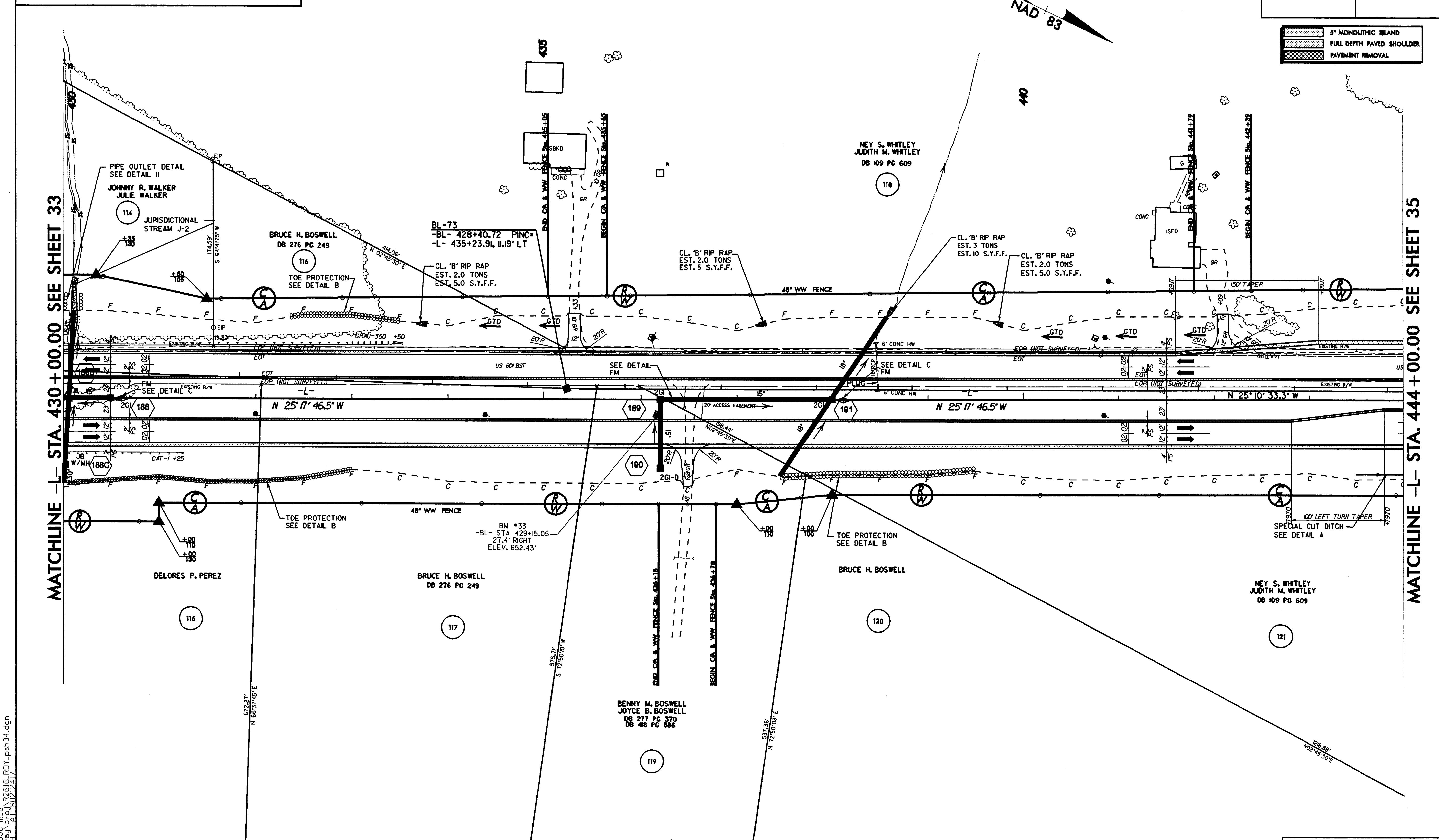
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
MATCHLINE -L- STA. 430+00.00 SEE SHEET 33
MATCHLINE -L- STA. 444+00.00 SEE SHEET 35
PIPE OUTLET DETAIL SEE DETAIL II
JOHNNY R. WALKER JULIE WALKER
JURISDICTIONAL STREAM J-2
BRUCE H. BOSWELL DB 276 PG 249
TOE PROTECTION SEE DETAIL B
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5.0 S.Y.F.F.
BL-73
-BL- 428+40.72 PINC=
-L- 435+23.91, 11.19' LT
NEY S. WHITLEY JUDITH M. WHITLEY DB 109 PG 609
CL. 'B' RIP RAP EST. 3 TONS EST. 10 S.Y.F.F.
48" WW FENCE
150' TAPER
US 601 BST
N 25° 17' 46.5" W
N 25° 10' 33.3" W
SEE DETAIL C
SEE DETAIL FM
20' ACCESS EASEMENT
BM #33
-BL- STA 429+15.05
27.4' RIGHT
ELEV. 652.43'
DELORES P. PEREZ
BRUCE H. BOSWELL
100' LEFT TURN TAPER
SPECIAL CUT DITCH SEE DETAIL A
BENNY M. BOSWELL JOYCE B. BOSWELL DB 277 PG 370 DB 418 PG 886

SEE SHEET 77 FOR -L- PROFILE.

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REVISIONS

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PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

▨	5" MONOLITHIC ISLAND
▨	FULL DEPTH PAVED SHOULDER
▨	PAVEMENT REMOVAL

US 601
-Y14- TRAFFIC VOLUMES

2002/2025 ADT IN HUNDREDS

SEE SHEET 78 FOR -L- PROFILE.
SEE SHEET 91 FOR -Y14- PROFILE.

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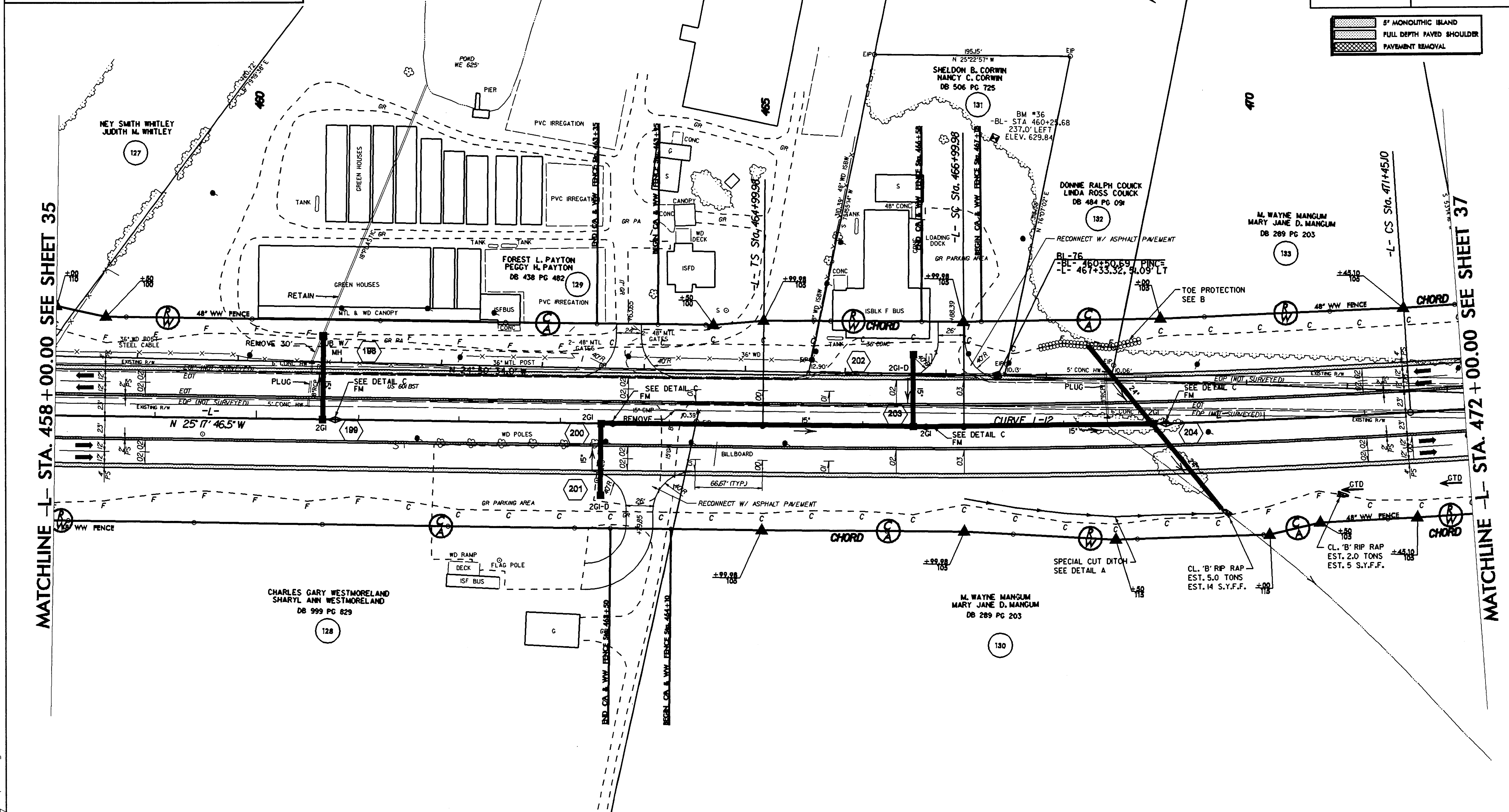
PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

REVISIONS

8/17/99


5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
NAD 83
MATCHLINE -L- STA. 458+00.00 SEE SHEET 35
MATCHLINE -L- STA. 472+00.00 SEE SHEET 37
NEY SMITH WHITLEY
JUDITH M. WHITLEY
127
FOREST L. PAYTON
PEGGY H. PAYTON
DB 438 PG 482
129
SHELDON B. CORWIN
NANCY C. CORWIN
DB 506 PG 725
131
DONNIE RALPH COUICK
LINDA ROSS COUICK
DB 484 PG 091
132
M. WAYNE MANGUM
MARY JANE D. MANGUM
DB 289 PG 203
133
CHARLES GARY WESTMORELAND
SHARYL ANN WESTMORELAND
DB 999 PG 829
128
M. WAYNE MANGUM
MARY JANE D. MANGUM
DB 289 PG 203
130
BM #36
-BL- STA 460+25.68
237.0' LEFT
ELEV. 629.84
BL-76
-BL- 460+50.69 PINC=
-L- 467+33.32, 51.09' LT
-L- TS Sta. 464+99.98
-L- SC Sta. 466+99.98
-L- CS Sta. 471+45.10
N 25° 17' 46.5" W
CURVE L-12
GREEN HOUSES
POND
PIER
PVC IRREGATION
TOE PROTECTION
SEE B
RECONNECT W/ ASPHALT PAVEMENT
SEE DETAIL C
SPECIAL CUT DITCH
SEE DETAIL A
CL. 'B' RIP RAP
EST. 5.0 TONS
EST. 14 S.Y.F.F.
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.
BILLBOARD
GR PARKING AREA
48" WW FENCE
CHORD

CURVE L-12

PIs Sta 466+33.31	PI Sta 469+22.60	PIs Sta 472+11.77
θs = 0° 45' 00.0"	Δ = 3° 20' 18.2" (LT)	θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	T = 222.62'	LT = 133.33'
ST = 66.67'	L = 445.12'	ST = 66.67'
	R = 7,639.44'	
	SE = 0.03 FT/FT	

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

SEE SHEET 79 FOR -L- PROFILE.

19-JAN-2006 11:57
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8/17/99

REVISIONS

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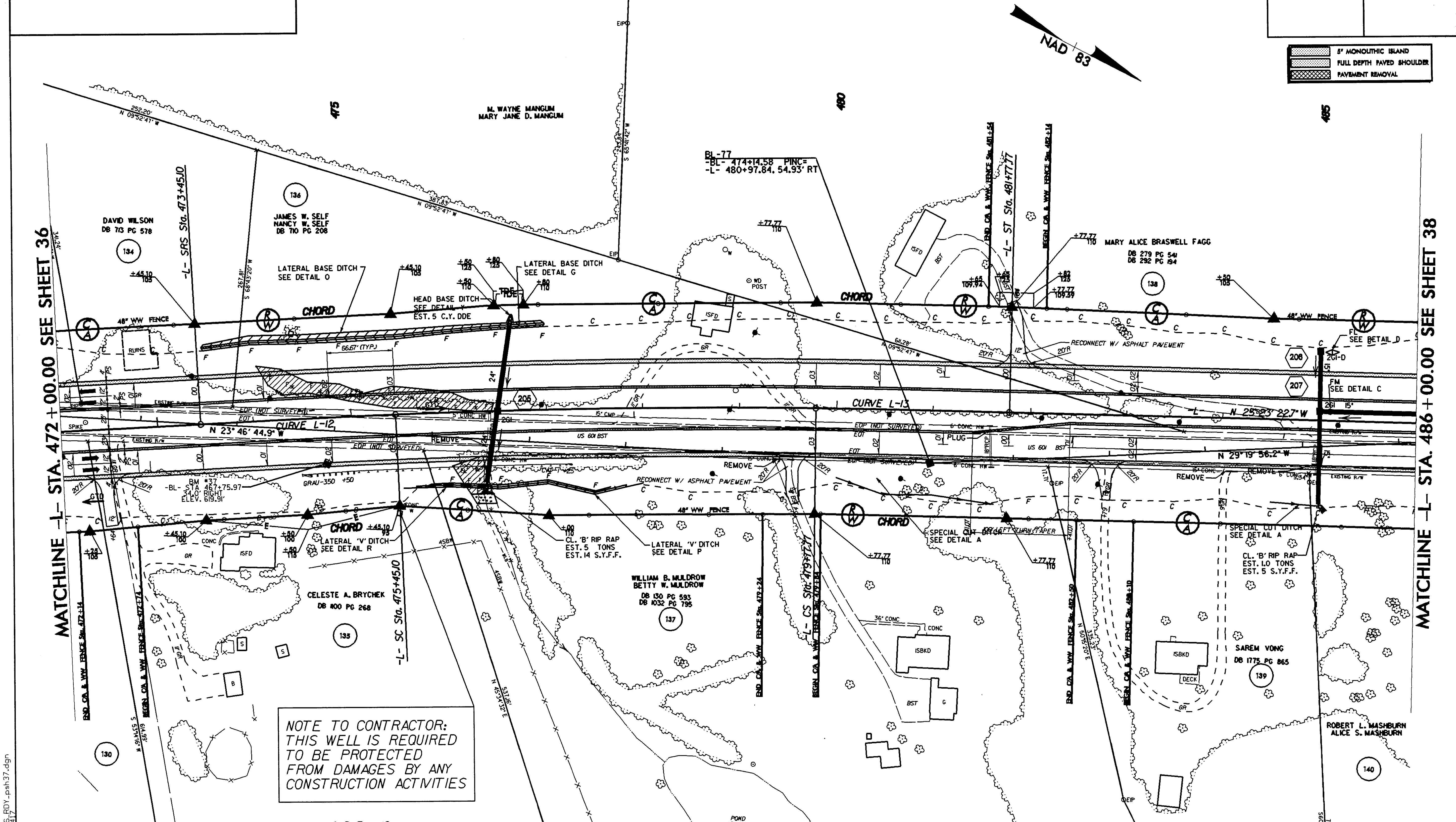
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL



NAD 83
475
480
485
M. WAYNE MANGUM
MARY JANE D. MANGUM
DAVID WILSON
DB 713 PG 578
134
JAMES W. SELF
NANCY W. SELF
DB 710 PG 208
136
-BL- 474+14.58 PINC=
-L- 480+97.84, 54.93' RT
MARY ALICE BRASWELL FAGG
DB 279 PG 541
DB 292 PG 194
138
MATCHLINE -L- STA. 472+00.00 SEE SHEET 36
MATCHLINE -L- STA. 486+00.00 SEE SHEET 38
LATERAL BASE DITCH
SEE DETAIL O
LATERAL BASE DITCH
SEE DETAIL G
HEAD BASE DITCH
SEE DETAIL Y
EST. 5 C.Y. DDE
CHORD
48" WW FENCE
CURVE L-12
CURVE L-13
N 23° 46' 44.9" W
N 25°23' 22.7" W
N 29° 19' 56.2" W
US 601 BST
REMOVE
RECONNECT W/ ASPHALT PAVEMENT
BM #37
-BL- STA 467+75.97
34.0' RIGHT
ELEV. 619.91'
LATERAL 'V' DITCH
SEE DETAIL R
CL. 'B' RIP RAP
EST. 5 TONS
EST. 14 S.Y.F.F.
LATERAL 'V' DITCH
SEE DETAIL P
SPECIAL CUT DITCH
SEE DETAIL A
CL. 'B' RIP RAP
EST. 1.0 TONS
EST. 5 S.Y.F.F.
SEE DETAIL D
SEE DETAIL C
CELESTE A. BRYCHEK
DB 800 PG 268
135
WILLIAM B. MULDROW
BETTY W. MULDROW
DB 130 PG 593
DB 1032 PG 795
137
SAREM VONG
DB 1775 PG 865
139
ROBERT L. MASHBURN
ALICE S. MASHBURN
140
130
M. WAYNE
MANGUM
MARY JANE
D. MANGUM
NOTE TO CONTRACTOR:
THIS WELL IS REQUIRED
TO BE PROTECTED
FROM DAMAGES BY ANY
CONSTRUCTION ACTIVITIES
POND
WE 602'

CURVE L-12

PIs Sta 466+33.31	PI Sta 469+22.60	PIs Sta 472+11.77
Θs = 0° 45' 00.0"	Δ = 3° 20' 18.2" (LT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	T = 222.62'	LT = 133.33'
ST = 66.67'	L = 445.12'	ST = 66.67'
	R = 7,639.44'	
	SE = 0.03 FT/FT	

CURVE L-13

PIs Sta 474+78.43	PI Sta 477+61.49	PIs Sta 480+44.44
Θs = 0° 45' 00.0"	Δ = 3° 14' 42.1" (RT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	T = 216.39'	LT = 133.33'
ST = 66.67'	L = 432.67'	ST = 66.67'
	R = 7,639.44'	
	SE = 0.03 FT/FT	

SEE SHEET 80 FOR -L- PROFILE.

19-JAN-2006 11:56
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RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

8/17/99

REVISIONS

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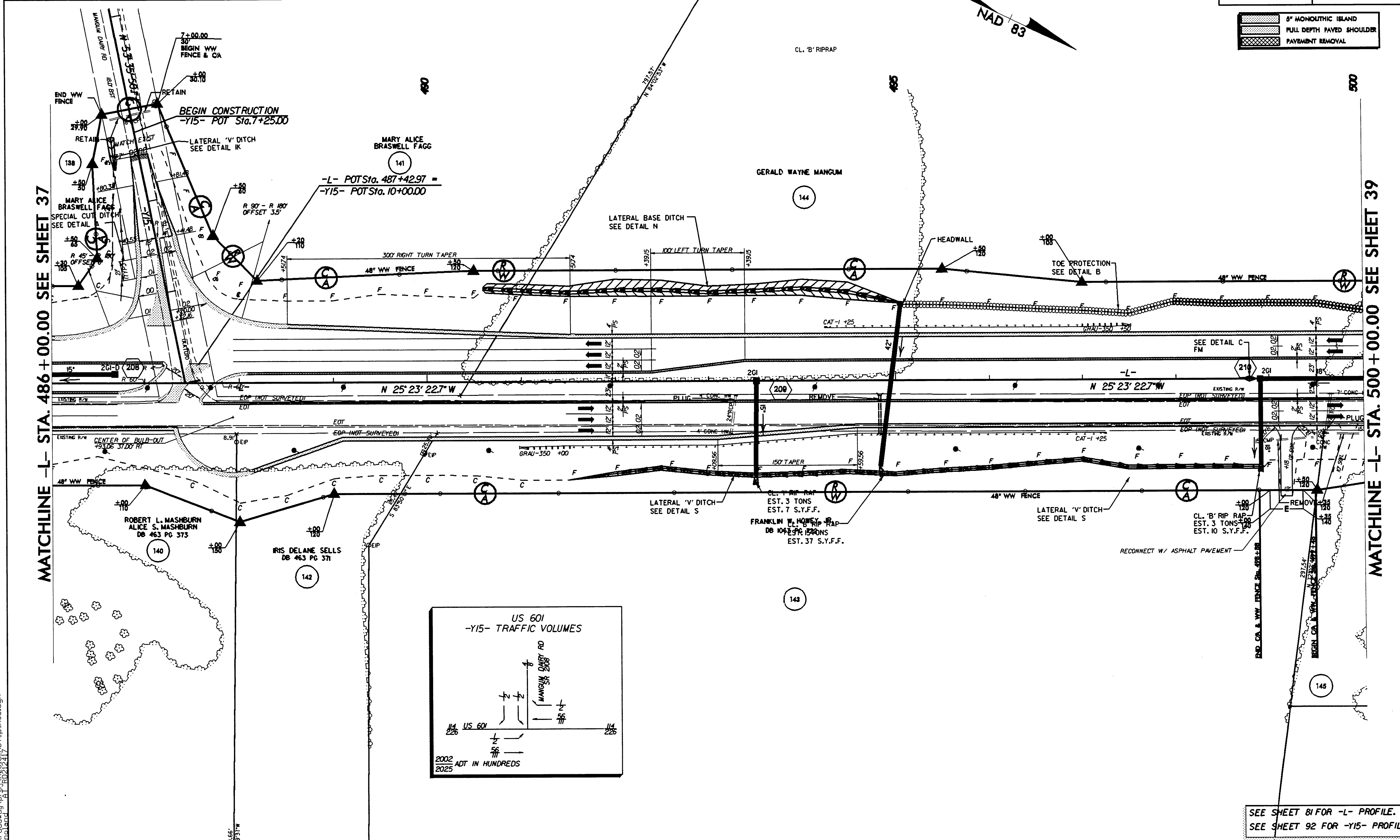
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
MATCHLINE -L- STA. 486+00.00 SEE SHEET 37
MATCHLINE -L- STA. 500+00.00 SEE SHEET 39
BEGIN CONSTRUCTION
-Y15- POT Sta. 7+25.00
-L- POT Sta. 487+42.97 =
-Y15- POT Sta. 10+00.00
MARY ALICE BRASWELL FAGG
GERALD WAYNE MANGUM
LATERAL BASE DITCH SEE DETAIL N
300' RIGHT TURN TAPER
100' LEFT TURN TAPER
HEADWALL
TOE PROTECTION SEE DETAIL B
48" WW FENCE
N 25° 23' 22.7" W
SEE DETAIL C FM
ROBERT L. MASHBURN
ALICE S. MASHBURN
DB 463 PG 373
IRIS DELANE SELLS
DB 463 PG 371
LATERAL 'V' DITCH SEE DETAIL S
CL. 'I' RIP RAP
EST. 3 TONS
EST. 7 S.Y.F.F.
CL. 'B' RIPRAP
CL. 'B' RIP RAP
EST. 3 TONS
EST. 10 S.Y.F.F.
RECONNECT W/ ASPHALT PAVEMENT
US 601
-Y15- TRAFFIC VOLUMES
MANGUM DAIRY RD SR 2008
2002
2025 ADT IN HUNDREDS

SEE SHEET 81 FOR -L- PROFILE.
SEE SHEET 92 FOR -Y15- PROFILE.

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8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL

NAD 83

BL-80
-BL- 500+26.51 PINC=
-L- 507+06.04, 10.75' RT

500 505 510

MATCHLINE -L- STA. 500+00.00 SEE SHEET 38

MATCHLINE -L- STA. 514+00.00 SEE SHEET 40

-L- POT Sta. 506+06.13 =
-DRI- POT Sta. 10+00.00

GERALD WAYNE MANGUM
DB 526 PG 119
144

LARRY T. MILLS
DB 1719 PG 497
149

ANNA P. HOWEY AND
SARAH ANN HOWEY DIETRICH
FAMILY LIMITED PARTNERSHIP
DB 887 PG 889
148

BL-81
-BL- 506+83.27 PINC=
-L- 513+52.97, 61.75' RT

BERM 'V' DITCH
SEE DETAIL T

48" WW FENCE

ISFD

48" CONC

N 25° 23' 22.7" W

N 28° 07' 03.4" W

N 24° 20' 19.9" W

PLUG

6' CONC HW

RECONNECT W/ CONC

RECONNECT W/ ASPHALT PAVEMENT

DB 1843 PG 001
ARMANDO F. LOPEZ
ESTHER ACEVEDO SOLANO
ANTONIA A. PASTOR
ANDRES R. LOPEZ
145

ROBIN ARLENE LEE
DB 1368 PG 395
146

CELSO RIBON HERNANDEZ
DB 1358 PG 491
147

JUAN L. REYES
DB 1351 PG 145
150

JOHN STACY MAJOR, JR.
DB 1340 PG 133
DB 1338 PG 694
151

OLIN T. TAYLOR
SANDRA A. TAYLOR
DB 466 PG 263
152

BENNY R. LONG
DB 1667 PG 236
192

HARLAN K. BENNICK
SUSAN R. BENNICK
DB 1406 PG 776
193

CURVE DRI-1
PI Sta 13+26.65
Δ = 13° 51' 28.0" (RT)
D = 28° 38' 52.4"
L = 48.37'
T = 24.30'
R = 200.00'

-DRI- PC Sta. 13+02.36
-DRI- PI Sta. 13+50.71
-DRI- POT Sta. 13+86.69

NCGS "YELLOW"
-BL- 501+16.10 PINC=
-L- 507+85.91, 51.35' RT

BM #40
-BL- STA 506+35.02
11.5' RIGHT
ELEV. 640.75'

SEE SHEET 82 FOR -L- PROFILE.
SEE SHEET 90 FOR -DRI- PROFILE

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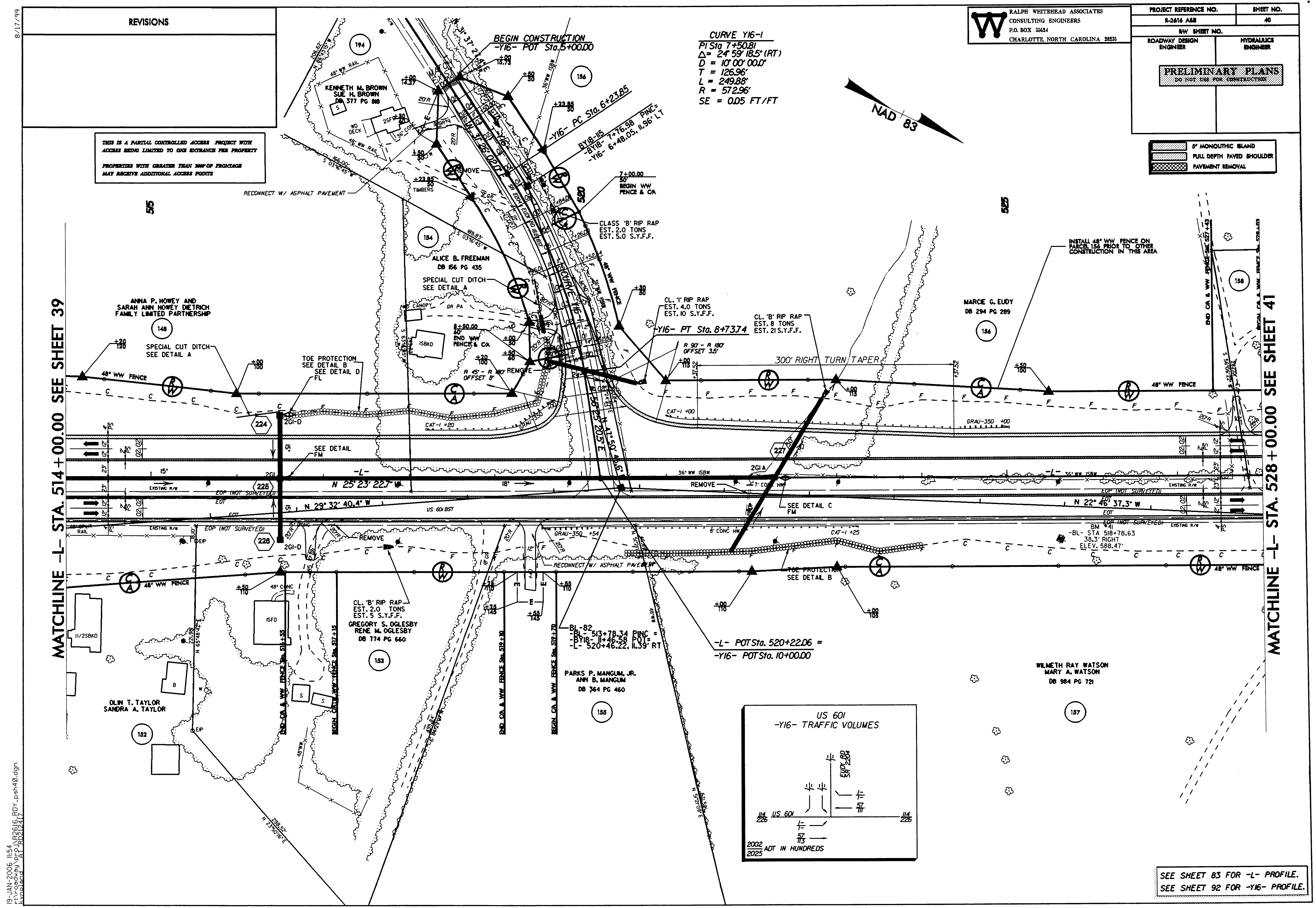
kmoland



REVISIONS
RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235
PROJECT REFERENCE NO.
R-2616 A&B
SHEET NO.
40
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5' MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
NAD 83
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY
PROPERTIES WITH GREATER THAN 300' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS
CURVE Y16-1
PI Sta 7+50.81
Δ = 24° 59' 18.5" (RT)
D = 10° 00' 00.0"
T = 126.96'
L = 249.88'
R = 572.96'
SE = 0.05 FT/FT
BEGIN CONSTRUCTION
-Y16- POT Sta. 5+00.00
-Y16- PC Sta. 6+23.85
BY18-115
-BY18- 7+76.98 PINC=
-Y16- 6+48.05, 11.96' LT
-Y16- PT Sta. 8+73.74
KENNETH M. BROWN
SUE H. BROWN
DB 377 PG 818
ALICE B. FREEMAN
DB 156 PG 435
ANNA P. HOWEY AND
SARAH ANN HOWEY DIETRICH
FAMILY LIMITED PARTNERSHIP
MARCIE G. EUDY
DB 294 PG 289
GREGORY S. OGLESBY
RENE M. OGLESBY
DB 774 PG 660
PARKS P. MANGUM, JR.
ANN B. MANGUM
DB 364 PG 460
WILMETH RAY WATSON
MARY A. WATSON
DB 984 PG 721
OLIN T. TAYLOR
SANDRA A. TAYLOR
RECONNECT W/ ASPHALT PAVEMENT
SPECIAL CUT DITCH
SEE DETAIL A
TOE PROTECTION
SEE DETAIL B
SEE DETAIL D
CLASS 'B' RIP RAP
EST. 2.0 TONS
EST. 5.0 S.Y.F.F.
CL. 'I' RIP RAP
EST. 4.0 TONS
EST. 10 S.Y.F.F.
CL. 'B' RIP RAP
EST. 8 TONS
EST. 21 S.Y.F.F.
CL. 'B' RIP RAP
EST. 2.0 TONS
EST. 5 S.Y.F.F.
300' RIGHT TURN TAPER
INSTALL 48" WW FENCE ON PARCEL 156 PRIOR TO OTHER CONSTRUCTION IN THIS AREA
7+00.00
50'
BEGIN WW FENCE & C/A
8+50.00
50'
END WW FENCE & C/A
N 25° 23' 22.7" W
N 29° 32' 40.4" W
N 22° 46' 37.3" W
US 601 BST
SEE DETAIL FM
SEE DETAIL C FM
BM 41
-BL- STA 518+78.63
38.3' RIGHT
ELEV. 588.47'
BL-82
-BL- 513+78.34 PINC =
-BY18- 11+46.58 POT=
-L- 520+46.22, 11.39' RT
-L- POT Sta. 520+22.06 =
-Y16- POT Sta. 10+00.00
MATCHLINE -L- STA. 514+00.00 SEE SHEET 39
MATCHLINE -L- STA. 528+00.00 SEE SHEET 41
US 601
-Y16- TRAFFIC VOLUMES
EUDY RD SR 2204
2002
2025 ADT IN HUNDREDS
SEE SHEET 83 FOR -L- PROFILE.
SEE SHEET 92 FOR -Y16- PROFILE.
8/17/99
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8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

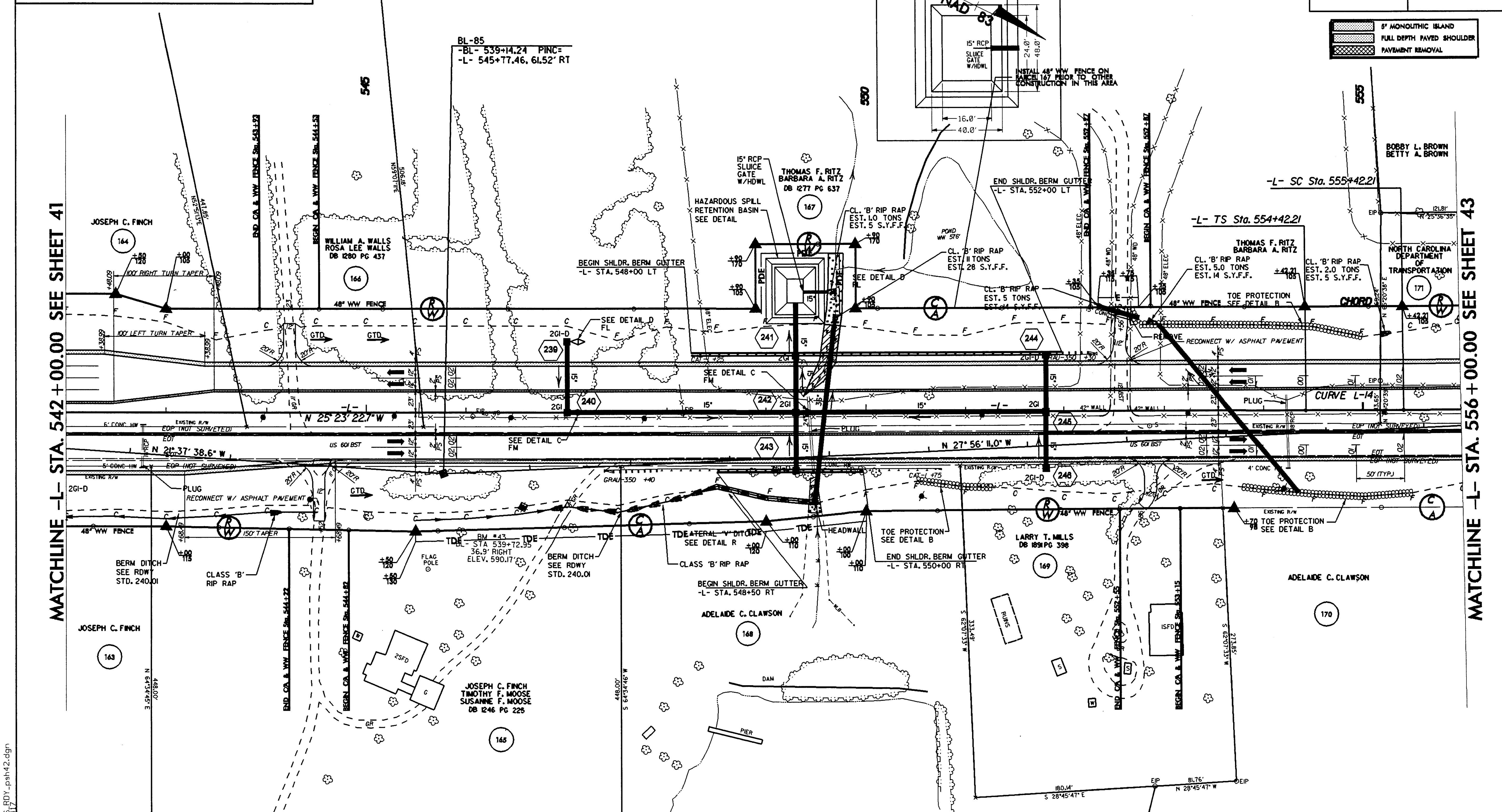
PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

- 5" MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL



DETAIL OF HAZARDOUS SPILL RETENTION BASIN
TOTAL CAPACITY REQUIRED : 4789 cu. ft.
TOTAL CAPACITY PROVIDED : 4920 cu. ft.
@ 6.0' W/ 1.0' FREEBOARD
ELEV. = 561.37
MODEL 20-10C SLUICE GATE
15" RCP
SLUICE GATE W/HDWL
16.0'
40.0'
24.0'
48.0'
NAD 83
INSTALL 48" WW FENCE ON PARCEL 167 PRIOR TO OTHER CONSTRUCTION IN THIS AREA
BL-85
-BL- 539+14.24 PINC=
-L- 545+77.46, 61.52' RT
MATCHLINE -L- STA. 542+00.00 SEE SHEET 41
MATCHLINE -L- STA. 556+00.00 SEE SHEET 43
JOSEPH C. FINCH
164
100' RIGHT TURN TAPER
100' LEFT TURN TAPER
END C/A & WW FENCE Sta. 543+93
END C/A & WW FENCE Sta. 544+53
WILLIAM A. WALLS
ROSA LEE WALLS
DB 1280 PG 437
166
48" WW FENCE
HAZARDOUS SPILL RETENTION BASIN SEE DETAIL
THOMAS F. RITZ
BARBARA A. RITZ
DB 1277 PG 637
167
CL. 'B' RIP RAP EST. 1.0 TONS EST. 5 S.Y.F.F.
BEGIN SHLDR. BERM GUTTER -L- STA. 548+00 LT
SEE DETAIL B
CL. 'B' RIP RAP EST. 11 TONS EST. 28 S.Y.F.F.
CL. 'B' RIP RAP EST. 5 TONS
END SHLDR. BERM GUTTER -L- STA. 552+00 LT
-L- TS Sta. 554+42.21
-L- SC Sta. 555+42.21
BOBBY L. BROWN
BETTY A. BROWN
THOMAS F. RITZ
BARBARA A. RITZ
CL. 'B' RIP RAP EST. 5.0 TONS EST. 14 S.Y.F.F.
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
171
TOE PROTECTION SEE DETAIL B
CHORD
REMOVE
RECONNECT W/ ASPHALT PAVEMENT
SEE DETAIL D
SEE DETAIL C
239
240
241
242
243
244
245
246
N 25° 23' 22.7" W
N 21° 37' 38.6" W
N 27° 56' 11.0" W
US 601 BST
EOP (NOT SURVEYED)
CURVE L-14
PLUG
RECONNECT W/ ASPHALT PAVEMENT
150' TAPER
BERM DITCH SEE RDWY STD. 240.01
CLASS 'B' RIP RAP
BM #43 -BL- STA 539+72.95 36.9' RIGHT ELEV. 590.17'
FLAG POLE
LATERAL 'V' DITCH SEE DETAIL R
CLASS 'B' RIP RAP
BEGIN SHLDR. BERM GUTTER -L- STA. 548+50 RT
HEADWALL
TOE PROTECTION SEE DETAIL B
END SHLDR. BERM GUTTER -L- STA. 550+00 RT
LARRY T. MILLS
DB 1891 PG 398
169
ADELAIDE C. CLAWSON
170
ADELAIDE C. CLAWSON
168
JOSEPH C. FINCH
163
END C/A & WW FENCE Sta. 544+22
BEGIN C/A & WW FENCE Sta. 544+82
JOSEPH C. FINCH
TIMOTHY F. MOOSE
SUSANNE F. MOOSE
DB 1246 PG 225
165
2SFD
RUINS
1SFD
DAM
PIER
N 28°45'47" W
S 28°45'47" E

CURVE L-14

PIs Sta 555+08.88	PI Sta 556+80.36	PIs Sta 558+51.82
θs = 0° 15' 00.0"	Δ = 1° 22' 52.9" (LT)	θs = 0° 15' 00.0"
Ls = 100.00'	D = 0° 30' 00.0"	Ls = 100.00'
LT = 66.67'	L = 276.27'	LT = 66.67'
ST = 33.33'	T = 138.14'	ST = 33.33'
	R = 11,459.16'	
	SE = 0.02 FT/FT	

SEE SHEET 85 FOR -L- PROFILE.

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8/17/99

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

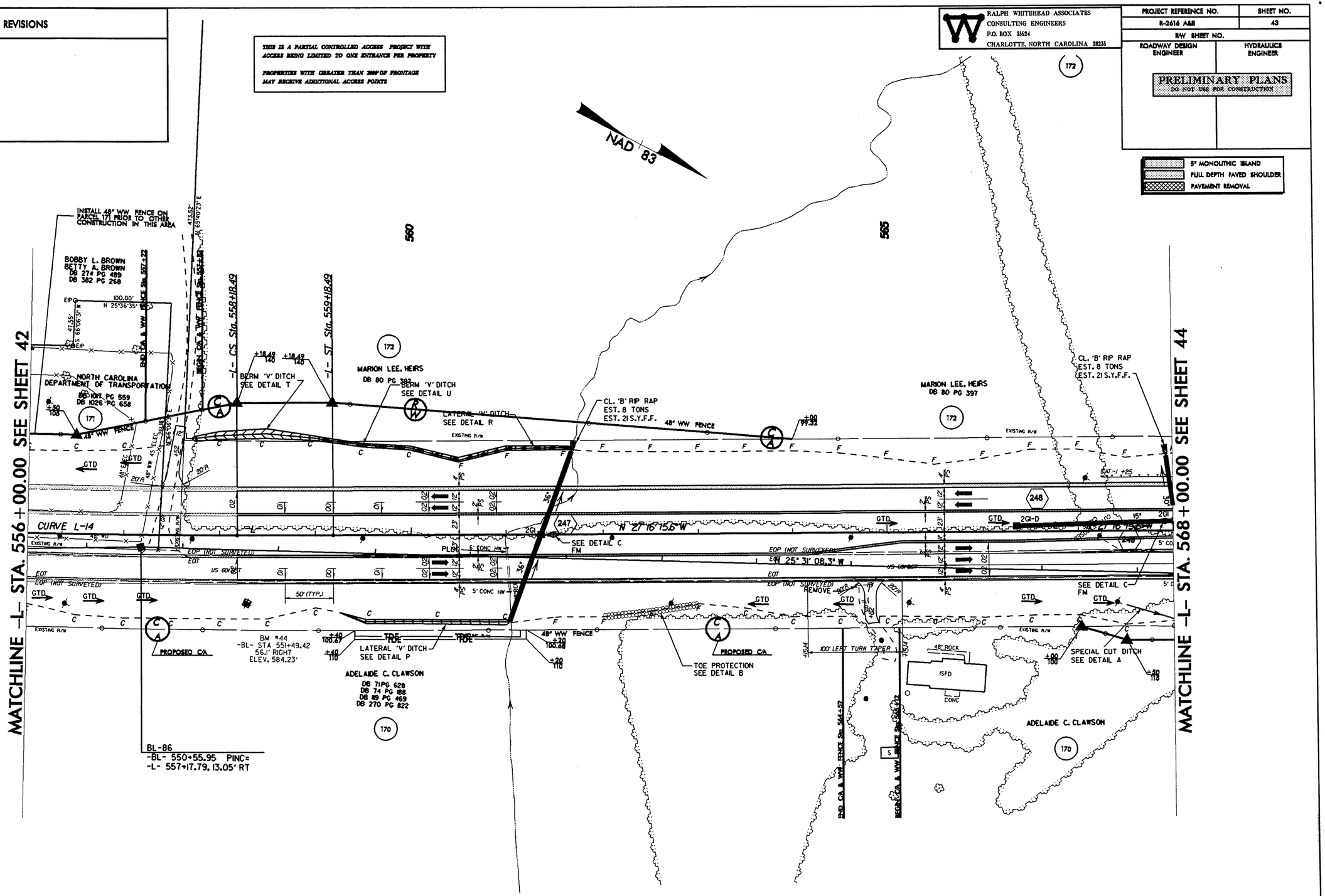
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL



CURVE L-14

PIs Sta 555+08.88	PI Sta 556+80.36	PIs Sta 558+51.82
Θs = 0° 15' 00.0"	Δ = 1° 22' 52.9" (LT)	Θs = 0° 15' 00.0"
Ls = 100.00'	D = 0° 30' 00.0"	Ls = 100.00'
LT = 66.67'	L = 276.27	LT = 66.67'
ST = 33.33'	T = 138.14'	ST = 33.33'
	R = 11,459.16'	
	SE = 0.02 FT/FT	

SEE SHEET 86 FOR -L- PROFILE.

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kynoland

PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

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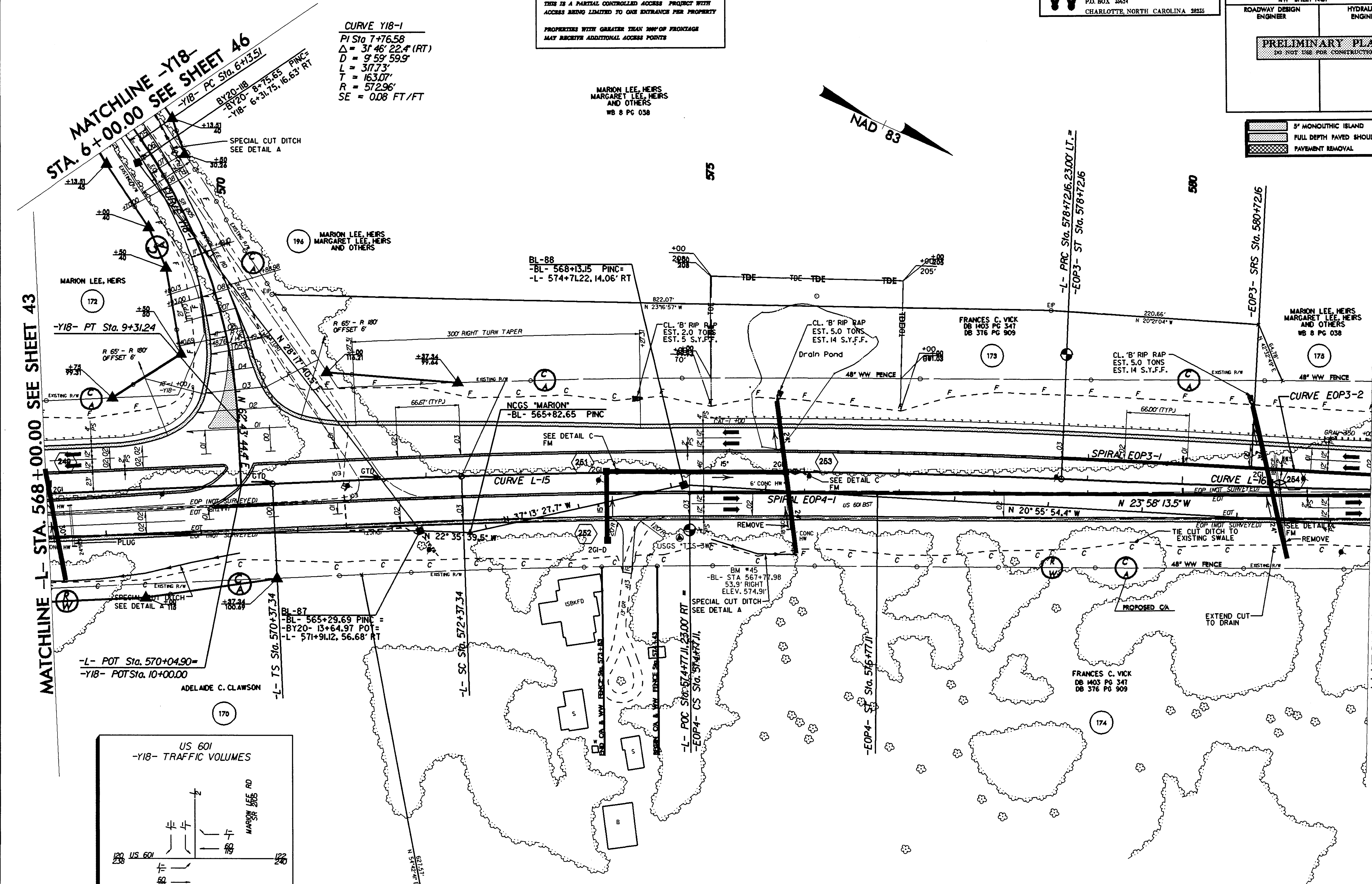
PROPERTIES WITH GREATER THAN 2000' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS

5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL

CURVE Y18-1
PI Sta 7+76.58
Δ = 31° 46' 22.4" (RT)
D = 9° 59' 59.9"
L = 317.73'
T = 163.07'
R = 572.96'
SE = 0.08 FT/FT


MATCHLINE -Y18- STA. 6+00.00 SEE SHEET 46
MATCHLINE -L- STA. 568+00.00 SEE SHEET 43
MATCHLINE -L- STA. 582+00.00 SEE SHEET 45
NAD 83
-Y18- PC Sta. 6+13.51
BY20-118
-BY20- 8+75.65 PINC=
-Y18- 6+31.75, 16.63' RT
SPECIAL CUT DITCH SEE DETAIL A
MARION LEE, HEIRS MARGARET LEE, HEIRS AND OTHERS WB 8 PG 038
MARION LEE, HEIRS
-Y18- PT Sta. 9+31.24
300' RIGHT TURN TAPER
BL-88
-BL- 568+13.15 PINC=
-L- 574+7L22, 14.06' RT
CL. 'B' RIP RAP EST. 2.0 TONS EST. 5 S.Y.F.F.
CL. 'B' RIP RAP EST. 5.0 TONS EST. 14 S.Y.F.F.
Drain Pond
FRANCES C. VICK DB 1403 PG 347 DB 376 PG 909
-L- PRC Sta. 578+72.16, 23.00' LT. = -EOP3- ST Sta. 578+72.16
-EOP3- SRS Sta. 580+72.16
48" WW FENCE
CURVE EOP3-2
NCGS "MARION" -BL- 565+82.65 PINC
SEE DETAIL C FM
SPIRAL EOP3-1
CURVE L-15
CURVE L-16
SPIRAL EOP4-1
N 37° 13' 27.7" W
N 20° 55' 54.4" W
N 23° 58' 13.5" W
N 22° 35' 39.5" W
REMOVE
TIE CUT DITCH TO EXISTING SWALE
USGS "TTS-3WC"
BM #45 -BL- STA 567+77.98 53.9' RIGHT ELEV. 574.91'
SPECIAL CUT DITCH SEE DETAIL A
PROPOSED C/A
EXTEND CUT TO DRAIN
BL-87
-BL- 565+29.69 PINC =
-BY20- 13+64.97 POT=
-L- 571+91.12, 56.68' RT
-L- POT Sta. 570+04.90=
-Y18- POT Sta. 10+00.00
ADELAIDE C. CLAWSON
-L- TS Sta. 570+37.34
-L- SC Sta. 572+37.34
-L- POC Sta. 574+77.11, 23.00' RT = -EOP4- CS Sta. 574+77.11
-EOP4- ST Sta. 576+77.11
N 54°42'41" E 627.57'

US 601
-Y18- TRAFFIC VOLUMES

MARION LEE RD SR 1265
US 601
2002 / 2025 ADT IN HUNDREDS

CURVE L-15		SPIRAL EOP4-1	CURVE L-16	SPIRAL EOP3-1	CURVE EOP3-2		
PIs Sta 571+70.67	Δ = 4° 57' 09.5" (RT)	PIs Sta 575+43.78	PI Sta 581+37.94	PIs Sta 579+38.83	PIs Sta 581+58.83	PI Sta 584+33.03	PIs Sta 587+07.17
Θs = 0° 45' 00.0"	D = 0° 45' 00.0"	Θs = 0° 45' 08.2"	Δ = 2° 24' 07.5" (LT)	Θs = 0° 44' 51.9"	Θs = 0° 19' 30.0"	Δ = 2° 18' 30.1" (LT)	Θs = 0° 19' 30.0"
Ls = 200.00'	T = 330.38'	Ls = 200.00'	D = 0° 30' 00.0"	Ls = 200.00'	Ls = 130.00'	D = 0° 30' 00.0"	Ls = 130.00'
LT = 133.33'	L = 660.35'	LT = 133.33'	T = 240.24'	LT = 133.33'	LT = 86.67'	L = 461.67'	LT = 86.67'
ST = 66.67'	R = 7,639.44'	ST = 66.67'	L = 480.42'	ST = 66.67'	ST = 43.33'	T = 230.87'	ST = 43.33'
	SE = 0.03 FT/FT		R = 11,459.16'			R = 11,459.16'	
						SE = 0.02 FT/FT	

SEE SHEET 87 FOR -L- PROFILE.
SEE SHEET 92 FOR -18- PROFILE.

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2616 A&B	45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

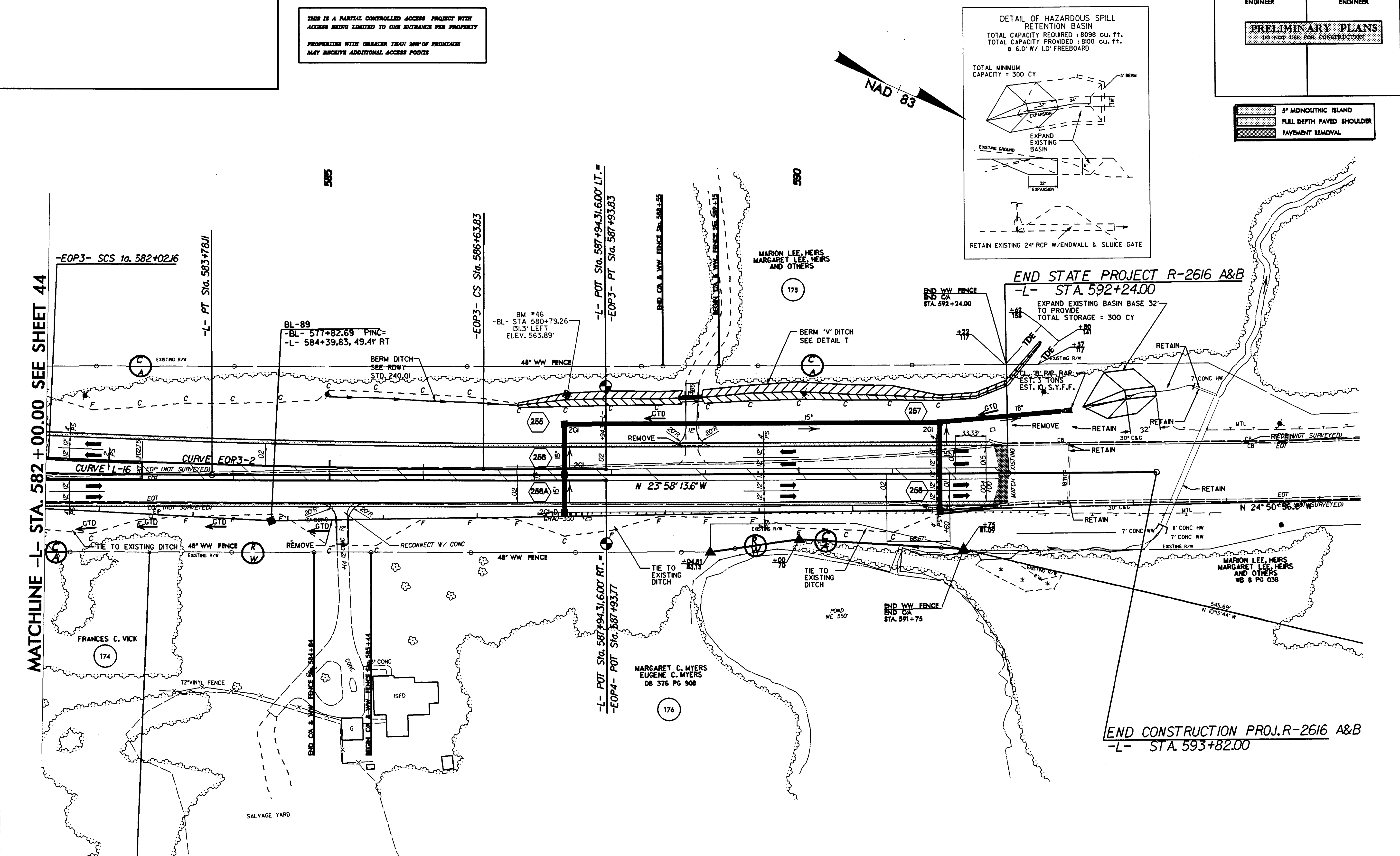
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RALPH WHITEHEAD ASSOCIATES
CONSULTING ENGINEERS
P.O. BOX 35624
CHARLOTTE, NORTH CAROLINA 28235

REVISIONS

THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE ENTRANCE PER PROPERTY

PROPERTIES WITH GREATER THAN 200' OF FRONTAGE MAY RECEIVE ADDITIONAL ACCESS POINTS


DETAIL OF HAZARDOUS SPILL RETENTION BASIN
TOTAL CAPACITY REQUIRED : 8098 cu. ft.
TOTAL CAPACITY PROVIDED : 8100 cu. ft.
@ 6.0' W/ 1.0' FREEBOARD
TOTAL MINIMUM CAPACITY = 300 CY
EXPAND EXISTING BASIN
RETAIN EXISTING 24" RCP W/ENDWALL & SLUICE GATE
NAD 83
5" MONOLITHIC ISLAND
FULL DEPTH PAVED SHOULDER
PAVEMENT REMOVAL
MATCHLINE -L- STA. 582+00.00 SEE SHEET 44
END STATE PROJECT R-2616 A&B
-L- STA. 592+24.00
END CONSTRUCTION PROJ. R-2616 A&B
-L- STA. 593+82.00
EXPAND EXISTING BASIN BASE 32' TO PROVIDE TOTAL STORAGE = 300 CY
BL-89
-BL- 577+82.69 PINC=
-L- 584+39.83, 49.41' RT
BM #46
-BL- STA 580+79.26
131.3' LEFT
ELEV. 563.89'
BERM DITCH SEE RDWY STD. 240.01
BERM 'V' DITCH SEE DETAIL T
48" WW FENCE
N 23° 58' 13.6" W
N 24° 50' 56.6" W
MARION LEE, HEIRS
MARGARET LEE, HEIRS
AND OTHERS
MARGARET C. MYERS
EUGENE C. MYERS
DB 376 PG 908
FRANCES C. VICK
SALVAGE YARD
POND
WE 550'

CURVE L-16				

CURVE EOP3-2

Pls Sta 581+58.83	PI Sta 584+33.03	Pls Sta 587+07.17
Θs = 0°19' 30.0"	Δ = 2° 18' 30.1" (LT)	Θs = 0°19' 30.0"
Ls = 130.00'	D = 0° 30' 00.0"	Ls = 130.00'
LT = 86.67'	L = 461.67'	LT = 86.67'
ST = 43.33'	T = 230.87'	ST = 43.33'
	R = 11,459.16'	
	SE = 0.02 FT/FT	

CURVE L-16

PI Sta 581+37.94
Δ = 2° 24' 07.5" (LT)
D = 0° 30' 00.0"
T = 240.24'
L = 480.42'
R = 11,459.16'

SEE SHEET 88 FOR -L- PROFILE.

8/17/99
19-JAN-2006 11:50
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