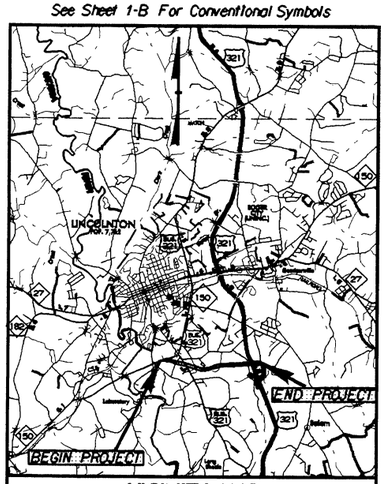
CONTRACT: C201142 TIP PROJECT: R-0617C

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
LINCOLN COUNTY

METRIC

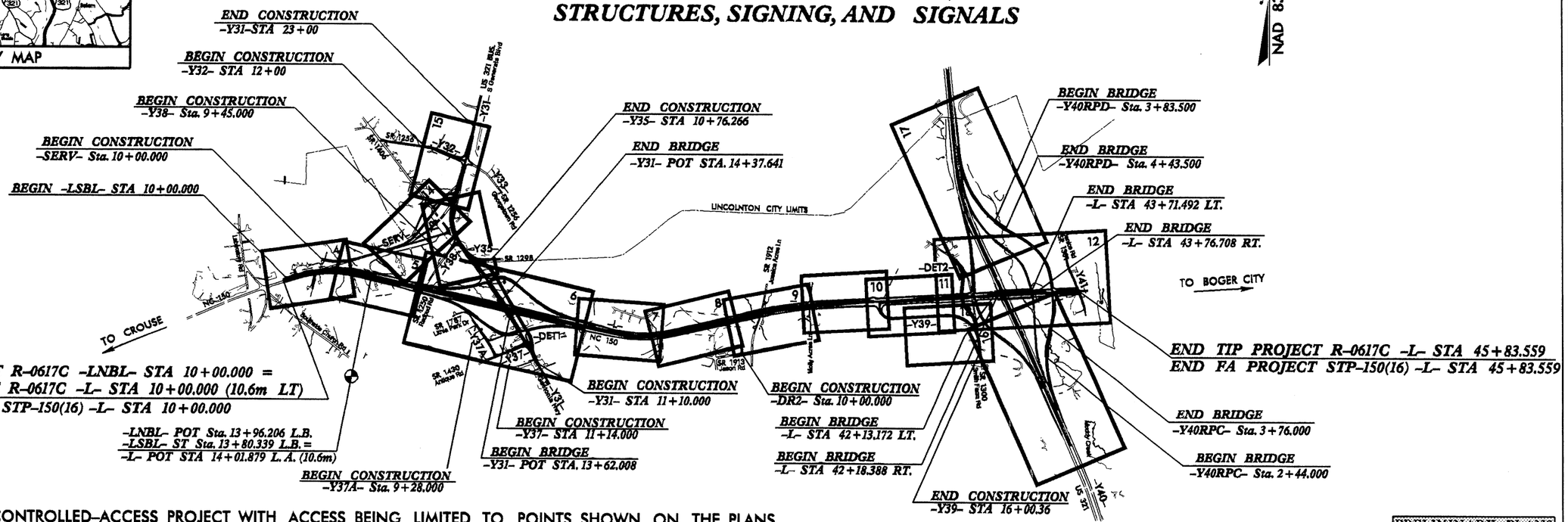
ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-0617C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34350.1.1	STP-150(3)	P.E.	
34350.2.4	STP-150(7)	ROW & UTIL.	
34350.3.8	STP-150(16)	CONST.	

LOCATION: *NC 150 FROM US 321 IN LINCOLNTON TO US 321 BYPASS*

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

NAD 83



THIS IS A LIMITED CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALE

PLANS 5 0 10

PROFILE (HORIZONTAL) 5 0 10

PROFILE (VERTICAL) 1 0 2

DESIGN DATA

ADT 2005 = 13,915
ADT 2025 = 22200
DHV = 10 %
D = 60 %
T = 15 % *
V = 100 km/h

* TTST 4 % DUAL 11%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJ R-0617C = 3.426 km
LENGTH STRUCTURE TIP PROJ R-0617C = 0.158 km
TOTAL LENGTH TIP PROJ R-0617C = 3.584 km

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 BIRCH RIDGE DR., NC, 27610

1995 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 27, 2001

LETTING DATE: JUNE 6, 2005

TONY HOUSER, PE
PROJECT ENGINEER

LEE ANN MOORE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

2/13/98

8-OCT-2004 8:39
rbaxton
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6/1/93

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

METRIC

PROJ. REFERENCE NO.	SHEET NO.
R-0617C	1B

CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

- Edge of Pavement
- Curb
- Prop. Slope Stakes Cut — C
- Prop. Slope Stakes Fill — F
- Prop. Woven Wire Fence
- Prop. Chain Link Fence
- Prop. Barbed Wire Fence
- Prop. Wheelchair Ramp — WCR
- Curb Cut For Future Wheelchair Ramp — CCFR
- Exist. Guardrail
- Prop. Guardrail
- Exist. Cable Guiderail
- Prop. Cable Guiderail
- 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 — CA
- Prop. Control of Access Line — CA
- 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
- 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 — T
- Cable TV Pedestal — C
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole
- Telephone Booth
- Water Manhole — W
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole — T
- Power Transformer
- Sanitary Sewer Manhole — S
- Storm Sewer Manhole — S
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box — S
- Fiber Optic Splice Box — F
- Television or Radio Tower
- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement — TS TS

- Recorded Water Line — W W
- Designated Water Line (S.U.E.*) — W W
- Sanitary Sewer — SS SS
- Recorded Sanitary Sewer Force Main — FSS FSS
- Designated Sanitary Sewer Force Main(S.U.E.*) — FSS FSS
- Recorded Gas Line — G G
- Designated Gas Line (S.U.E.*) — G G
- Storm Sewer — S S
- Recorded Power Line — P P
- Designated Power Line (S.U.E.*) — P P
- Recorded Telephone Cable — T T
- Designated Telephone Cable (S.U.E.*) — T T
- Recorded U/G Telephone Conduit — TC TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC TC
- Unknown Utility (S.U.E.*) — ?UTL ?UTL
- Recorded Television Cable — TV TV
- Designated Television Cable (S.U.E.*) — TV TV
- Recorded Fiber Optics Cable — FO FO
- Designated Fiber Optics Cable (S.U.E.*) — FO FO
- Exist. Water Meter
- U/G Test Hole (S.U.E.*) — ATTUR
- Abandoned According to U/G Record
- 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
- 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 2/25/97

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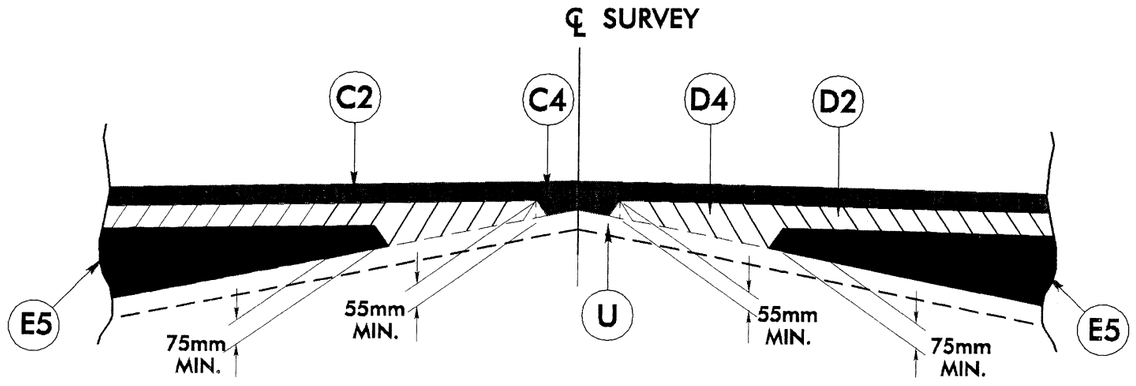
\\Raxton\ RXT_NCDOT\Projects\symbol.ash

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 96 kg PER SQ. METER IN EACH OF TWO LAYERS.	E5	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
C2	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 96 kg PER SQ. METER IN EACH OF TWO LAYERS.	J1	PROP. 250 mm AGGREGATE BASE COURSE.
C3	PROP. APPROX. 50 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 120 kg PER SQ. METER.	J2	PROP. 200 mm AGGREGATE BASE COURSE.
C4	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 2.40 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 40 mm IN DEPTH.	J3	PROP. 150 mm AGGREGATE BASE COURSE.
D1	PROP. APPROX. 70 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 171.5 kg PER SQ. METER.	K	SUBGRADE TO BE TREATED WITH LIME TO A DEPTH OF 200mm, AT A RATE OF 11KG/M2 (60% OF PROJECT) SUBGRADE TO BE TREATED WITH CEMENT TO A DEPTH OF 180mm, AT A RATE OF 30KG/M2 (40% OF PROJECT) SUBGRADE TO BE TREATED WITH AGGREGATE AT A RATE OF 135KG/M2 FOR 5% OF CEMENT AREA
D2	PROP. APPROX. 70 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 171.5 kg PER SQ. METER.		
D3	PROP. APPROX. 80 mm ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 196 kg PER SQ. METER.	P	PRIME COAT AT THE RATE OF 1.6 L PER SQ. METER.
D4	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 55 mm OR GREATER THAN 110 mm IN DEPTH.	R1	125 mm MONOLITHIC CONCRETE ISLAND.
E1	PROP. APPROX. 110 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 269.5 kg PER SQ. METER.	R2	MEDIAN BARRIER.
E2	PROP. APPROX. 75 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 183.75 kg PER SQ. METER.	T	EARTH MATERIAL.
E3	PROP. APPROX. 140 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 343 kg PER SQ. METER.	U	EXISTING PAVEMENT
E4	PROP. APPROX. 100 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 245 kg PER SQ. METER.	W	VARIABLE DEPTH ASPHALT PAVEMENT



Detail Showing Method of Wedging

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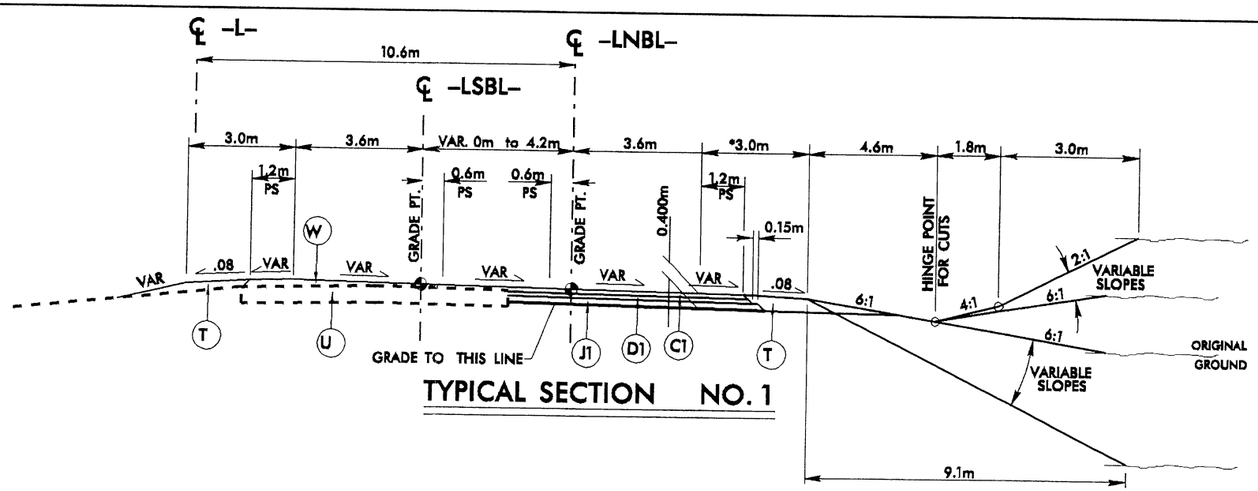
PROJECT REFERENCE NO.	SHEET NO.
R-0617C	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

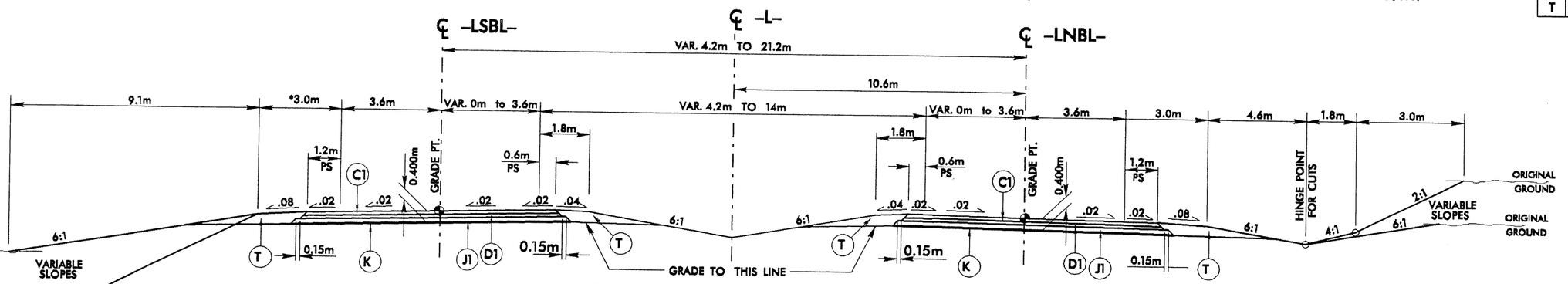
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	80mm S9.5C
C2	80mm S9.5B
D1	70mm I19.0C
D2	70mm I19.0B
E2	75mm B25.0B
K	LIME /CEMENT
J1	250mm ABC
J2	200mm ABC
R1	125mm ISLAND
T	EARTH MATERIAL



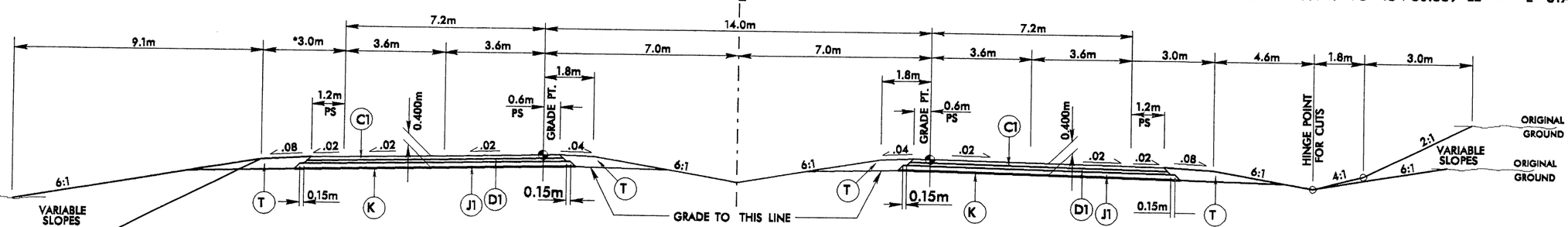
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1:
–LNBL– 10+00.000 TO 11+31.094
–LSBL– 10+00.000 TO 11+09.117



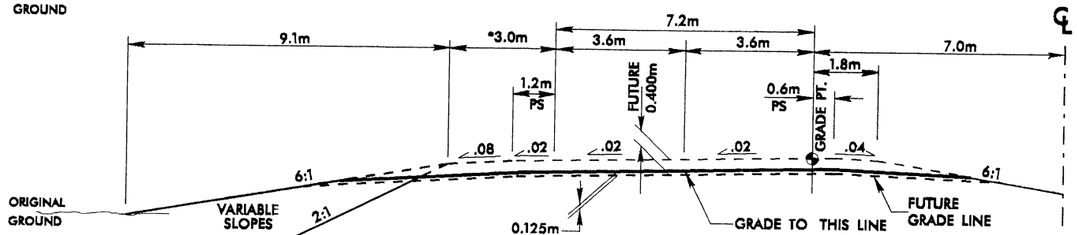
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:
–LNBL– STA 11+31.094 TO 13+96.206 LB = –L– STA. 14+01.879 LA
–LSBL– STA 11+09.117 TO 13+80.339 LB = –L– STA. 14+01.879 LA



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:
–L– STA 10+00.000 TO 14+01.879
(FUTURE CONSTRUCTION)
–L– STA 14+01.879 TO 42+18.388 (Bridge RT)
–L– STA 43+76.708 (Bridge RT) TO 45+20.000



TYPICAL SECTION NO. 3A

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3:
–L– STA. 10+40 TO –L– STA. 14+01.879
(TO BE CONSTRUCTED UNDER R-617C)
GRADING ONLY

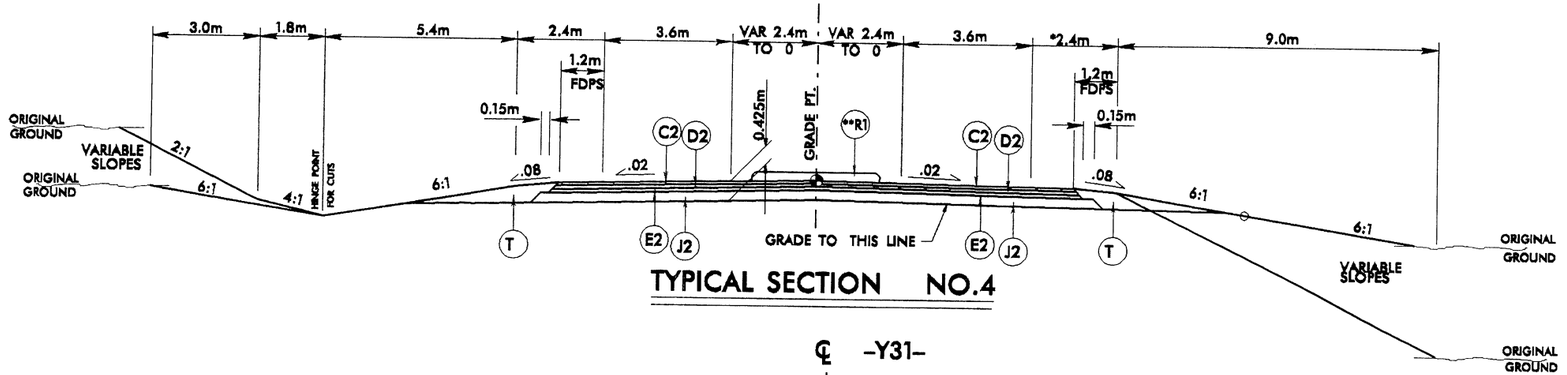
* ADD 1m FOR GUARDRAIL AS NEEDED

8-OCT-2004 14:49
\\Rb-section\...

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER	

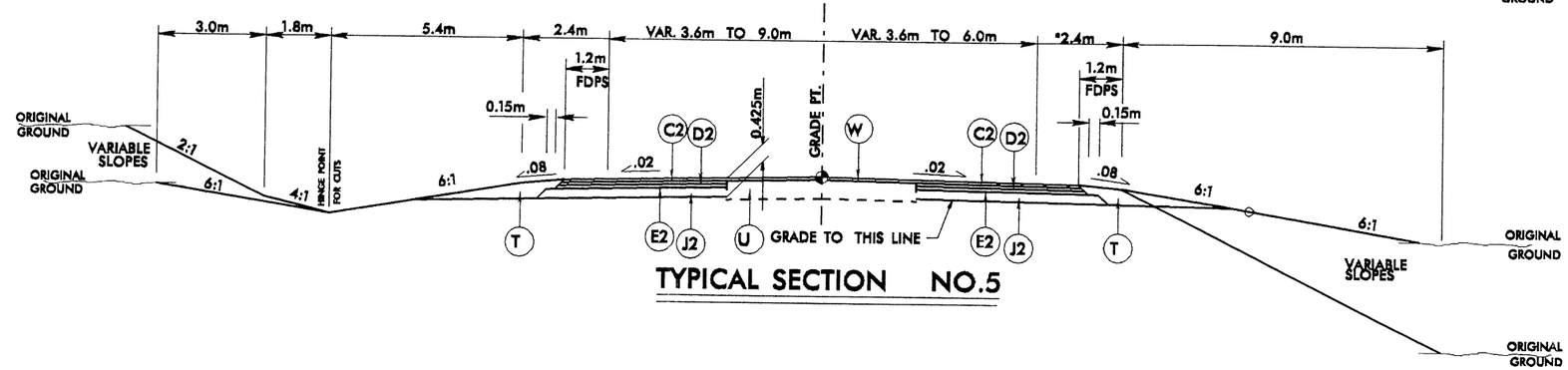
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

℄ –Y31–



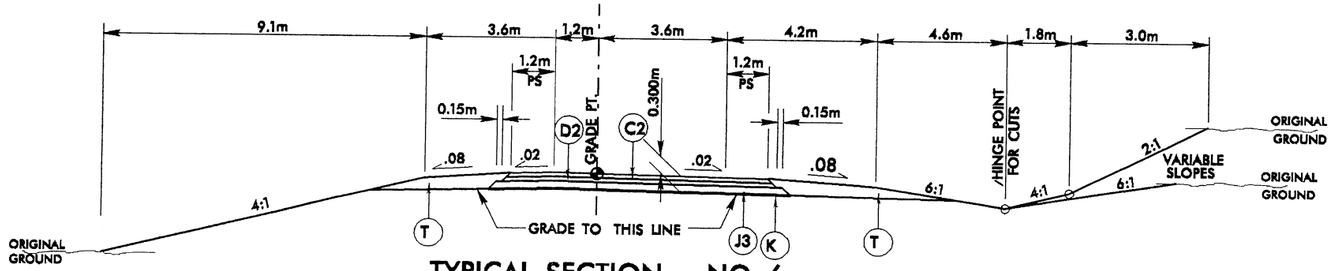
TYPICAL SECTION NO.4

℄ –Y31–



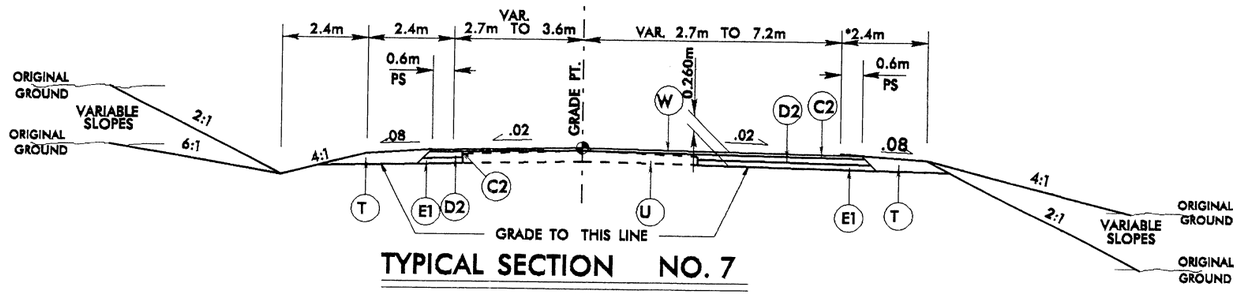
TYPICAL SECTION NO.5

℄ RAMPS @ –Y31–



TYPICAL SECTION NO. 6

℄ –Y32–



TYPICAL SECTION NO. 7

PAVEMENT SCHEDULE	
C2	80mm S9.5B
D2	70mm I19.0B
E1	110mm B25.0B
E2	75mm B25.0B
J2	200mm ABC
J3	150mm ABC
K	LIME /CEMENT
T	EARTH MATERIAL
W	WEDGING
U	EXISTING PAV.

USE TYPICAL SECTION NO. 4:

–Y31– STA 11+30.000 TO 13+62.000 (Bridge)
–Y31– STA 14+37.641 (Bridge) TO 21+50.000

(**R1) CONC. MONO ISLAND
–Y31– STA 11+96.207 TO 12+64.386
–Y31 STA. 15+51.200 TO 16+19.800

USE TYPICAL SECTION NO. 5:

–Y31– STA 11+00.000 TO 11+30.000
–Y31– STA 21+50.000 TO 23+00.000

USE TYPICAL SECTION NO. 6:

RAMPS A, B, C & D AT INTERCHANGES OF –Y31– :

RAMP A STA 0+00 TO 5+37.545
RAMP B STA 0+00 TO 3+18.566
RAMP C STA 0+00 TO 5+21.483
RAMP D STA 0+00 TO 2+86.441

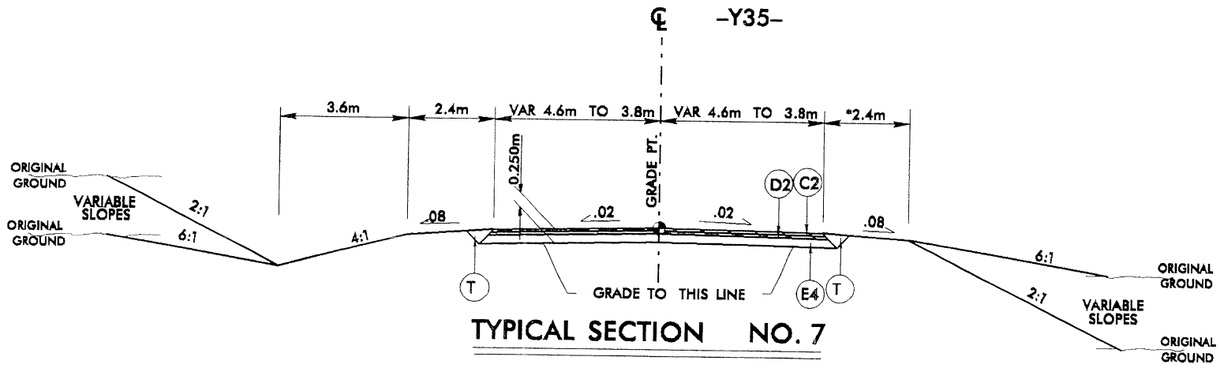
USE TYPICAL SECTION NO. 7:

–Y32– STA 12+00.000 TO 13+83.934

* ADD 1m FOR GUARDRAIL AS NEEDED

11-OCT-2006 14:50
MBeaton

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	2C
	R /W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
R /W REV.		

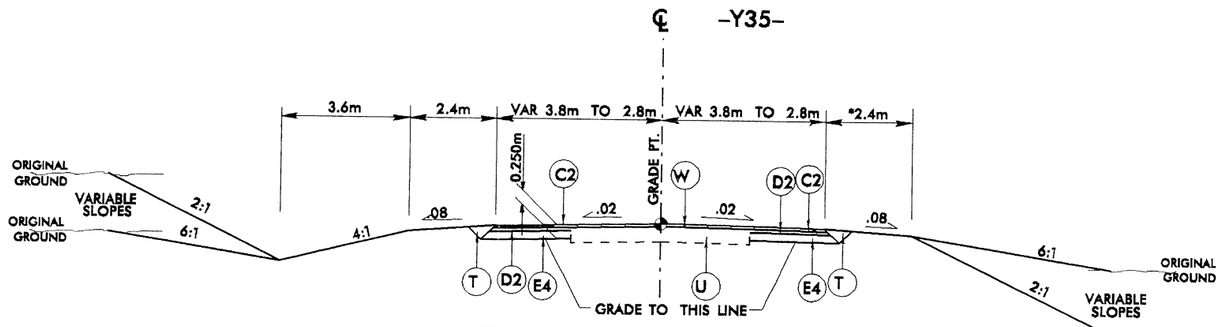


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7:

–Y35– STA 10+06.240 TO 10+60.000

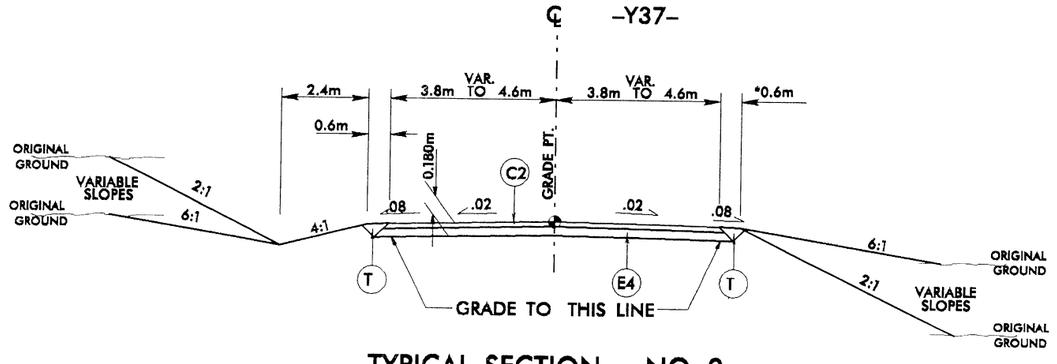
PAVEMENT SCHEDULE	
C2	80mm S9.5B
D2	70mm I19.0B
E4	100mm B25.0B
T	EARTH MATERIAL
W	WEDGING
U	EXISTING PAV.



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8:

–Y35– STA 10+60.00 TO 10+76.267



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9:

–Y37– STA 11+14.000 TO 11+78.226

* ADD 1m FOR GUARDRAIL AS NEEDED

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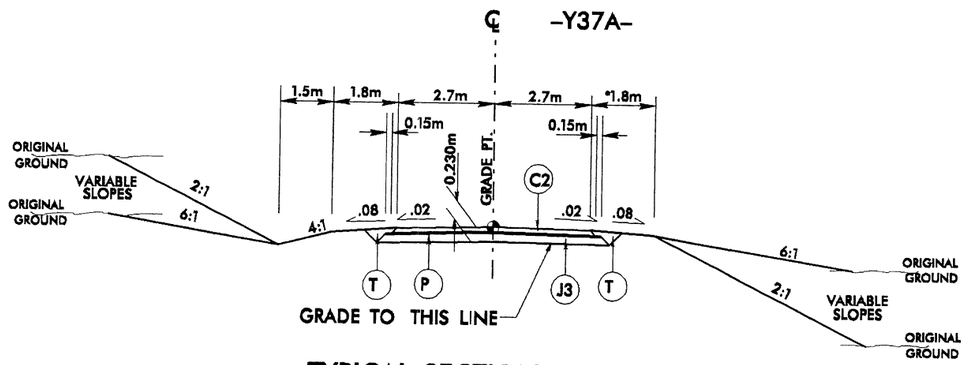
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	2D
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

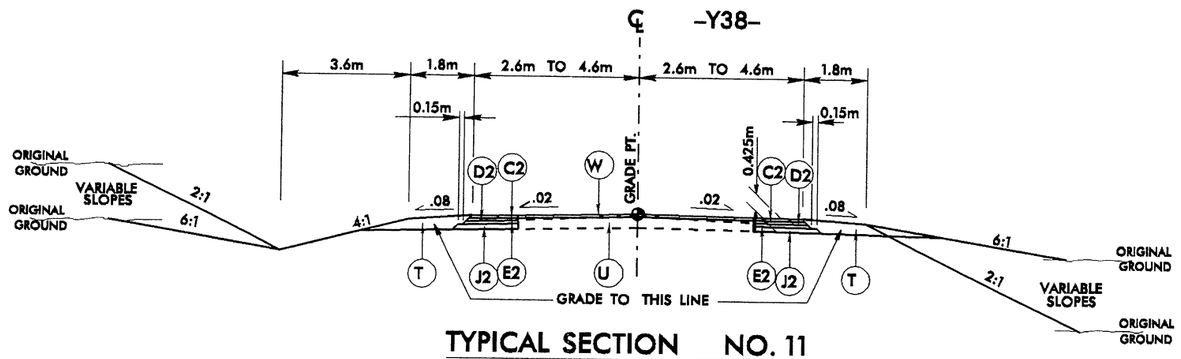
PAVEMENT SCHEDULE	
C2	80mm S9.5B
D2	70mm I19.0B
E2	75mm B25.0B
J2	200mm ABC
J3	150mm ABC
P	PRIME COAT
R2	MEDIAN BARRIER
T	EARTH MATERIAL
U	EXISTING PAV.



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10:

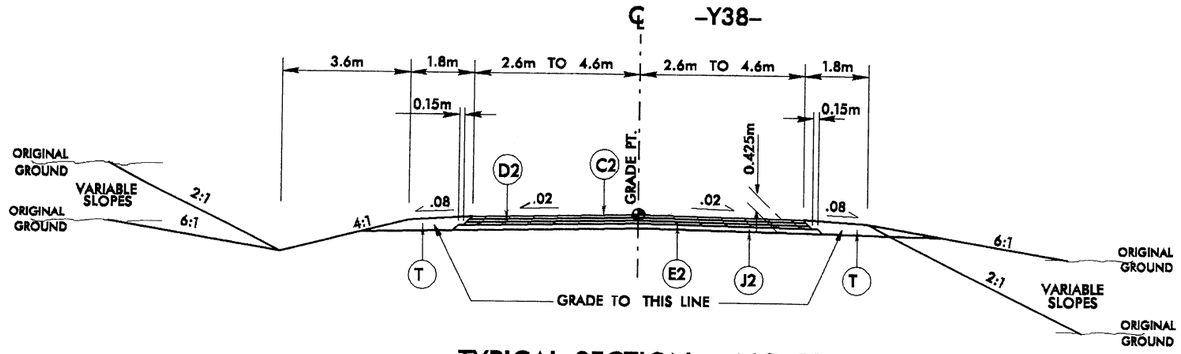
-Y37A- STA 9+28.000 TO 11+00.815



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11:

-Y38- STA 9+45.000 TO 9+60.000



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12:

-Y38- STA 9+60.000 TO 10+36.217

* ADD 1m FOR GUARDRAIL AS NEEDED

10/26/2016
4-OCT-2016 15:51
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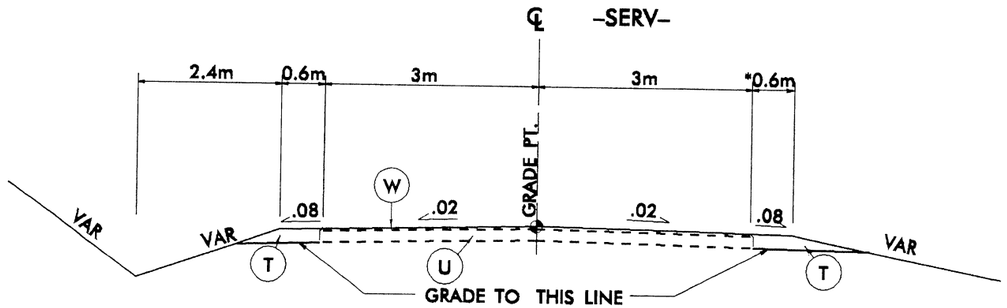
MBaston



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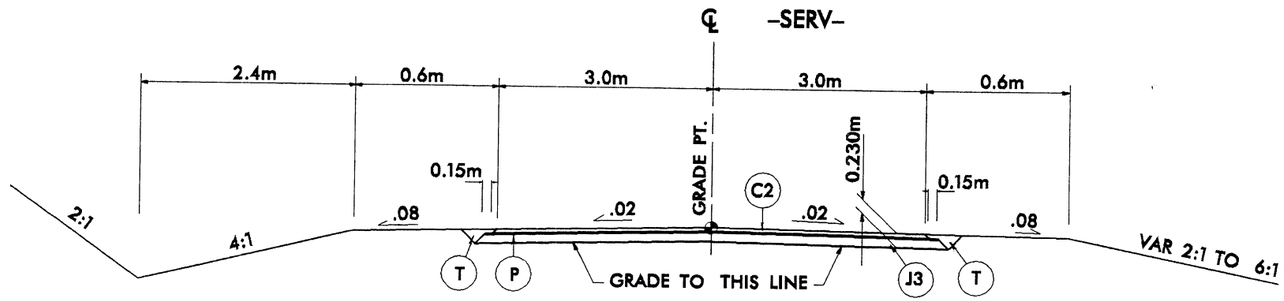

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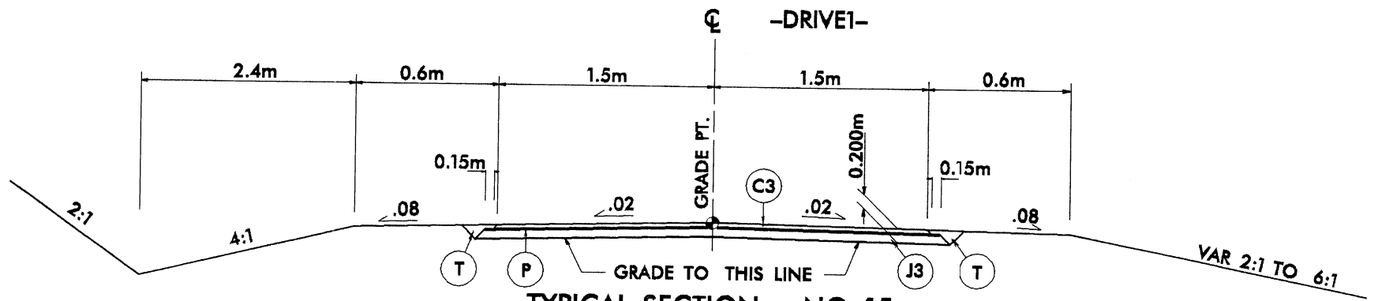
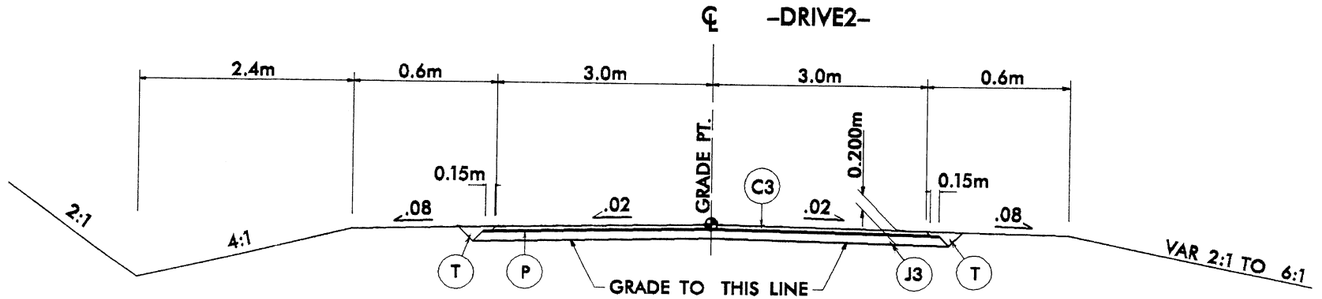


TYPICAL SECTION NO. 15



TYPICAL SECTION NO. 16

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	2E
	R /W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

USE TYPICAL SECTION NO. 13:
-SERV- STA 11+40.000 TO 13+60.000

PAVEMENT SCHEDULE	
C2	80mm S9.5B
C3	50mm S9.5B
J1	250mm ABC
J3	150mm ABC
P	PRIME COAT
T	EARTH MATERIAL
W	WEDGING

USE TYPICAL SECTION NO. 14:
-SERV- STA 10+00.000 TO 11+40.000
-SERV- STA 13+60.000 TO 17+03.502

USE TYPICAL SECTION NO. 15:
-DRIVE1- STA 10+06.607 TO 10+40.000

USE TYPICAL SECTION NO. 16:
-DRIVE2- STA 10+00.000 TO 10+91.654

* ADD 1m FOR GUARDRAIL AS NEEDED

11-OCT-2006 15:51
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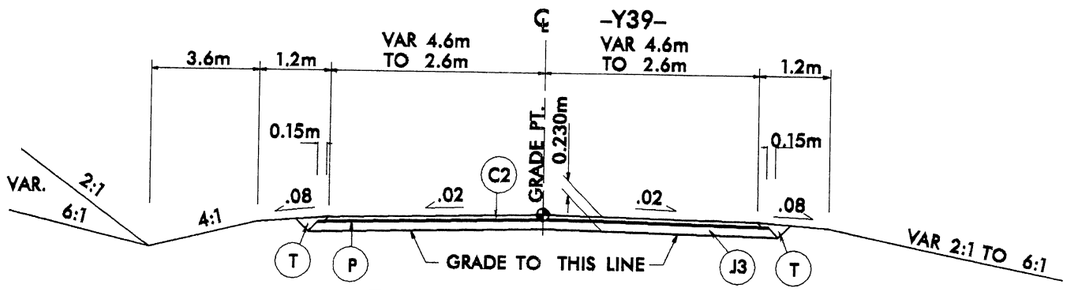
Operation: AT NORMAL

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

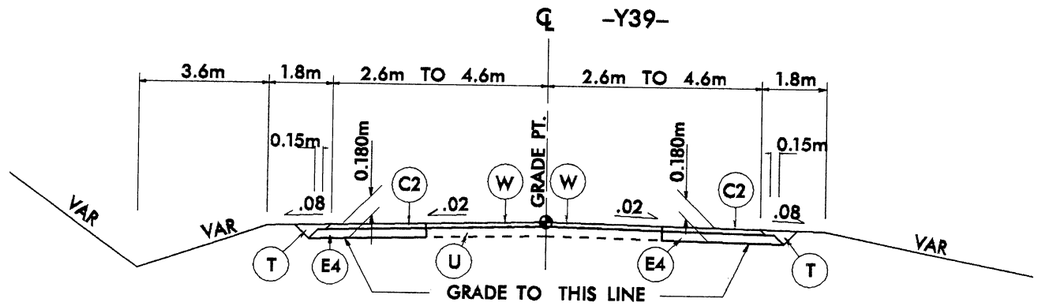
R/W REV.



TYPICAL SECTION NO. 17

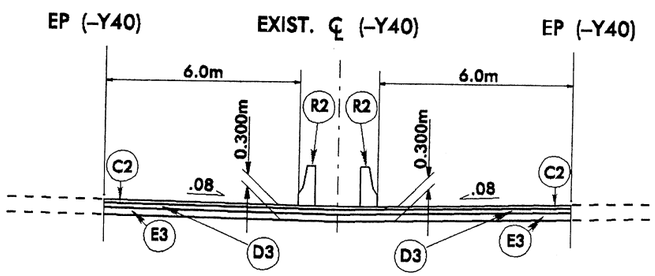
USE TYPICAL SECTION NO. 17:
–Y39– STA 10+14.200 TO 15+50.000

PAVEMENT SCHEDULE	
C2	80mm S9.5B
C3	50mm S9.5B
D3	80mm I19.0B
E3	140mm B25.0B
E4	100mm B25.0B
J3	150mm ABC
P	PRIME /COAT
R2	MED. BARRIER
T	EARTH MATERIAL
W	WEDGING



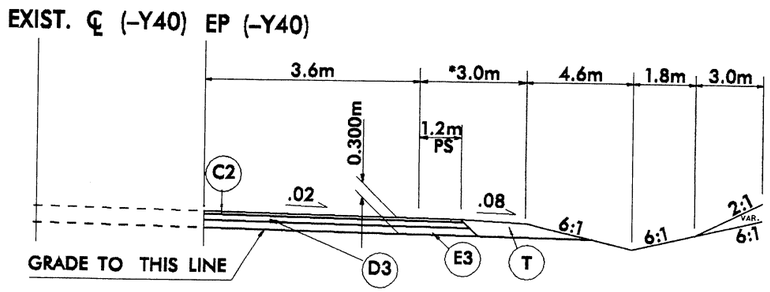
TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18:
–Y39– STA 15+50.000 TO 16+00.360



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19
FROM –Y40– STA. 17+16.978 TO STA. 17+69.701



TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20:
FROM –Y40– STA. 10+76.131 TO STA. 12+86.131
FROM –Y40– STA. 23+14.515 TO STA. 25+24.515

* ADD 1m FOR GUARDRAIL AS NEEDED

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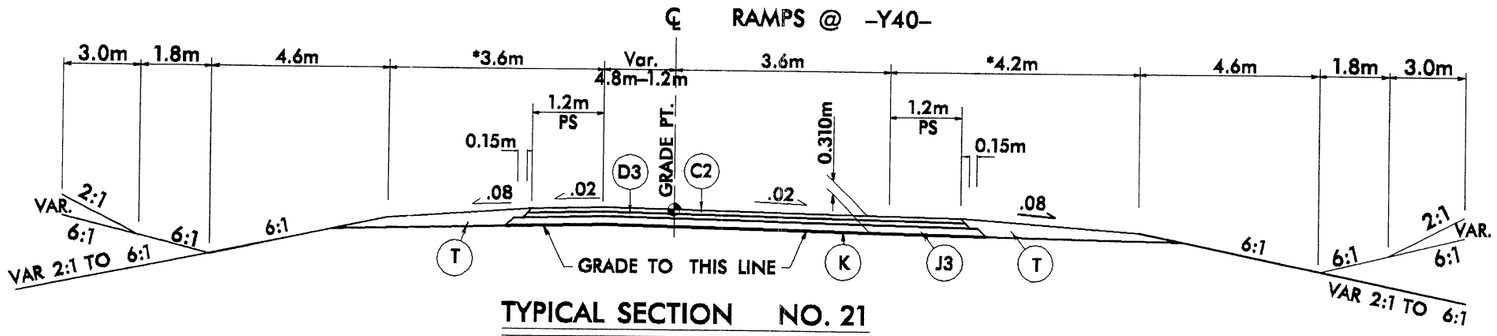
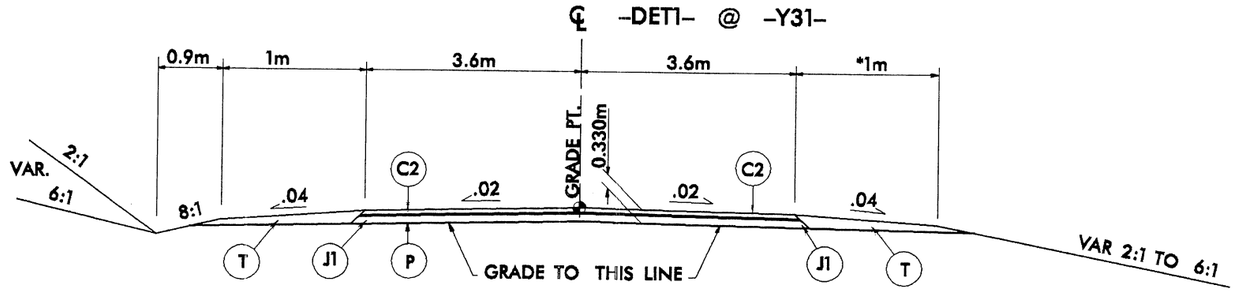


TYPICAL SECTION NO. 21

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	2G
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

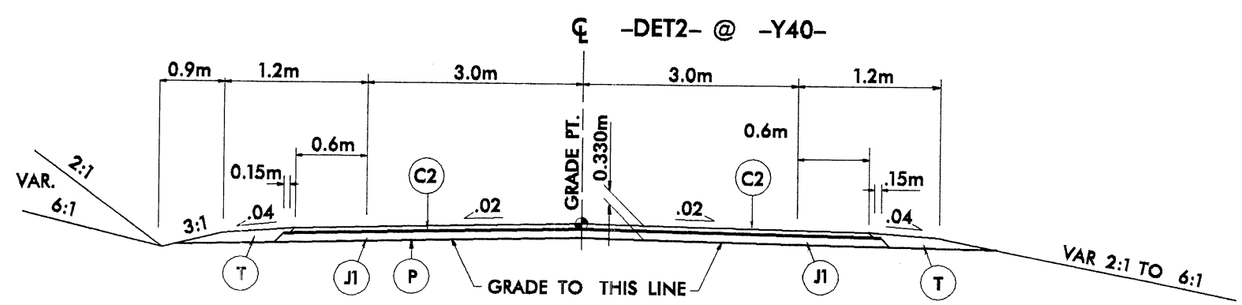
USE TYPICAL SECTION NO. 21:
RAMPS A, B, C & D AT INTERCHANGES OF –Y40–
RAMP A STA 0+00 TO 3+75.970
RAMP B STA 0+00 TO 5+08.879
RAMP C STA 0+00 TO 2+44 (BEGIN BRIDGE)
RAMP C STA 3+76 (END BRIDGE) TO 5+27.872
RAMP D STA 0+00 TO 3+78 (BEGIN BRIDGE)
RAMP D STA 4+50 (END BRIDGE) TO 8+05.223

PAVEMENT SCHEDULE	
C2	80mm S9.5B
D3	80mm I19.0B
J1	250mm ABC
J3	150mm ABC
K	LIME/CEMENT
P	PRIME COAT
T	EARTH MATERIAL
W	WEDGING



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22:
–DET1– 10+00.000 TO 16+76.824



TYPICAL SECTION NO. 23

USE TYPICAL SECTION NO. 23:
–DET2– 10+00.000 TO 13+33.450

* ADD 1m FOR GUARDRAIL AS NEEDED

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C-A	PC Sta. 10+05.457	
	PT Sta. 10+16.816	
	N 85° 29' 46.8" E	16.776m
C-B	PC Sta. 10+33.592	
	PT Sta. 10+48.831	
	S 50° 56' 44.0" E	11.511m
C-C	PC Sta. 10+60.349	
	PT Sta. 10+67.450	
	N 41° 46' 25.0" E	7.517m
C-D	PC Sta. 10+74.967	
	PT Sta. 10+82.468	
	S 46° 16' 13.9" E	5.124m
C-E	PC Sta. 10+87.591	
	PT Sta. 10+96.183	
	N 35° 16' 45.8" E	4.610m
C-F	PC Sta. 11+00.792	
	PT Sta. 11+13.571	
	S 1° 42' 43.7" W	1.000m
C-G	PC Sta. 11+14.571	
	PT Sta. 11+25.978	
	N 50° 56' 35.9" E	5.871m
C-H	PC Sta. 11+31.852	
	PT Sta. 11+42.220	
	S 10° 11' 54.6" E	6.265m
C-I	PC Sta. 11+48.485	
	PT Sta. 11+64.431	
	N 39° 08' 41.6" E	4.153m
C-J	PC Sta. 11+68.585	
	PT Sta. 11+77.858	
	S 52° 10' 16.8" E	9.341m
C-K	PC Sta. 11+87.199	
	PT Sta. 11+96.151	
	N 42° 20' 28.9" E	9.014m
C-L	PC Sta. 12+05.165	
	PT Sta. 12+14.105	
	S 35° 12' 30.3" E	7.842m
C-M	PC Sta. 12+21.947	
	PT Sta. 12+33.940	
	N 58° 51' 56.1" E	6.815m
C-N	PC Sta. 12+40.125	
	PT Sta. 12+49.601	
	S 12° 26' 18.9" E	9.220m
C-O	PC Sta. 12+58.827	
	PT Sta. 12+69.796	
	N 41° 51' 43.2" E	7.762m
C-P	PC Sta. 12+77.558	
	PT Sta. 12+86.778	
	S 32° 29' 22.0" E	7.566m
C-Q	PC Sta. 12+94.344	
	PT Sta. 13+08.573	
	N 45° 38' 18.8" E	4.717m
C-R	PC Sta. 13+13.290	
	PT Sta. 13+21.064	
	S 45° 16' 27.7" E	4.924m
C-S	PC Sta. 13+25.989	
	PT Sta. 13+39.479	
	N 38° 04' 34.6" E	6.803m
C-T	PC Sta. 13+48.282	
	PT Sta. 13+55.752	
	S 56° 19' 28.3" E	7.325m
C-U	PC Sta. 13+63.078	
	PT Sta. 13+71.787	
	N 40° 30' 32.7" E	7.159m
C-V	PC Sta. 13+78.946	
	PT Sta. 13+95.168	
	S 46° 56' 27.6" E	21.081m
	POT Sta. 14+16.249	

FOR -L- AND -RP B- DESIGN, SEE ROADWAY SHEETS
FOR CROSS VANE DETAIL, SEE SHEET 2-...

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BEGIN NATURAL CHANNEL -STREAM- STA. 10+05.457 -L- STA. 14+85.346 42.866m (LT)

CROSS VANE STA 10+35.500
CROSS VANE STA 10+57.800
CROSS VANE STA 10+74.700
CROSS VANE STA 11+86.900
CROSS VANE STA 12+04.900
CROSS VANE STA 12+21.600
CROSS VANE STA 12+39.800
CROSS VANE STA 12+58.500
CROSS VANE STA 12+77.300
CROSS VANE STA 12+94.000
CROSS VANE STA 13+48.000
CROSS VANE STA 13+39.800
CROSS VANE STA 14+09.75

1.5m MIN BANKFULL BENCH (TYP)

'V' DITCH W/ CL. 'B' RIP RAP
CL. 'B' RIP RAP
CL. 'I' RIP RAP
0.6m BASE TAIL DITCH
ENDWALL
-Y3IRPB- TSSta.0+00.000 = -L- POTSta.16+00.000 (14.2 RT)
-Y3IRPB- SCSta.0+80.000
400 CSP W/2 ELBS
600 CSP W/2 ELBS
2GI(B) FL GR EX.DP.
0.6m PS
FS-3
S 76° 52' 00.0" E
450

1200 mm RW
1500 mm RCP CLASS IV W/ MECHANICAL JOINTS INSTALL

END NATURAL CHANNEL -STREAM- STA 14+62.20 = -RP 'B'- STA 2+22.695 24.840m (LT)
SPEC. DITCH GRADE

EXISTING GROUND ALONG STREAM CENTERLINE
PROPOSED BANKFULL
PROPOSED GRADE LINE
PROPOSED CHANNEL INVERT

	PI Sta	Δ	L	T	R
C-A	10+11.602	54° 14' 08.5" (LT)	11.359	6.145	12.000
C-B	10+41.603	43° 39' 29.1" (RT)	15.240	8.011	20.000
C-C	10+64.648	81° 22' 50.9" (LT)	7.102	4.299	5.000
C-D	10+79.626	85° 57' 21.1" (RT)	7.501	4.659	5.000
C-E	10+93.389	98° 27' 00.3" (LT)	8.591	5.798	5.000
C-F	11+17.370	146° 25' 57.9" (RT)	12.779	16.578	5.000
C-G	11+25.472	130° 43' 07.8" (LT)	11.407	10.901	5.000
C-H	11+40.308	118° 48' 29.4" (RT)	10.368	8.456	5.000
C-I	11+63.677	130° 31' 23.7" (LT)	15.946	15.192	7.000
C-J	11+74.435	88° 33' 01.5" (RT)	9.273	5.850	6.000
C-K	11+92.744	85° 29' 14.3" (LT)	8.952	5.545	6.000
C-L	12+11.389	102° 27' 00.8" (RT)	8.940	6.224	5.000
C-M	12+29.393	85° 53' 33.6" (LT)	11.993	7.446	8.000
C-N	12+47.091	108° 39' 45.0" (RT)	9.483	6.966	5.000
C-O	12+68.577	125° 41' 58.0" (LT)	10.969	9.750	5.000
C-P	12+84.151	105° 38' 54.8" (RT)	9.220	6.593	5.000
C-Q	13+04.207	101° 54' 19.2" (LT)	14.229	9.863	8.000
C-R	13+18.211	89° 05' 13.5" (RT)	7.774	4.921	5.000
C-S	13+34.970	96° 36' 57.7" (LT)	13.490	8.982	8.000
C-T	13+52.912	85° 35' 57.1" (RT)	7.470	4.630	5.000
C-U	13+68.402	83° 09' 58.9" (LT)	8.709	5.324	6.000
C-V	13+89.474	92° 56' 50.9" (RT)	16.222	10.528	10.000

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606
For Division of Highways

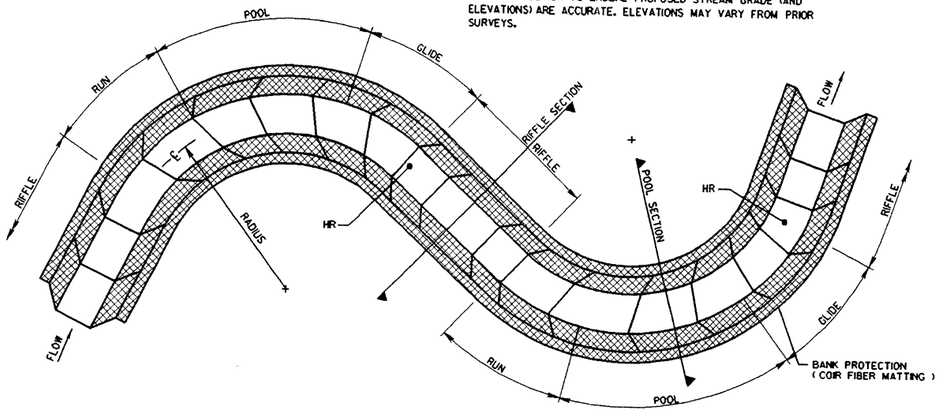
PLOT: 2006/05/25
USER: rkoon
ST: RP0617C01.dgn

METRIC	PROJECT REFERENCE NO.	SHEET NO.
0	R-0617C	21
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

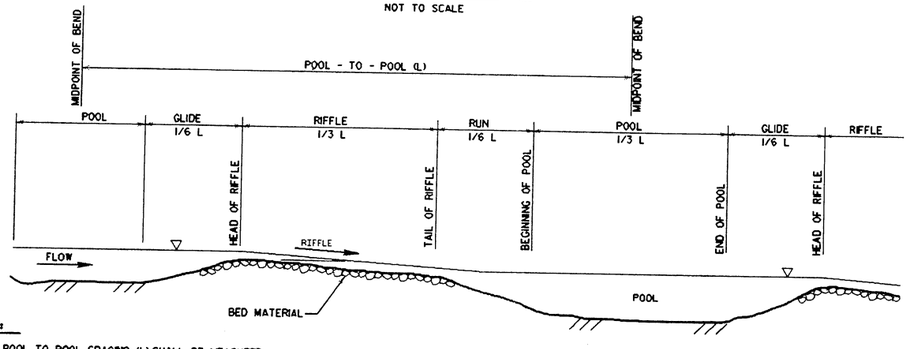
NOTES:

1. THE CONTRACTOR SHALL LAYOUT THE CHANNEL ALIGNMENT WHICH SHALL CONSIST OF STAKING OUT THE CENTER OF EACH RADIUS, SCRIBING THE CENTER LINE OF THE CHANNEL FOR EACH BEND USING THE INDICATED RADIUS, AND SCRIBING CENTERLINE OF THE TANGENT SECTIONS BY CONNECTING SUCCESSIVE BENDS WITH A STRAIGHT LINE.
2. FIELD ADJUSTMENTS OF THE ALIGNMENT MAY BE REQUIRED TO AVOID CERTAIN OBSTACLES. APPROVAL BY THE ENGINEER OF THE STAKE-OUT ALIGNMENT SHALL BE REQUIRED PRIOR TO INITIATION OF THE CONSTRUCTION OF THE CHANNEL.
3. LOCATE ROCK VANES ACCORDING TO PLAN SHEET.
4. BEGIN AND END STREAM ELEVATIONS SHOULD BE CHECKED PRIOR TO CONSTRUCTION TO ENSURE PROPOSED STREAM GRADE (AND ELEVATIONS) ARE ACCURATE. ELEVATIONS MAY VARY FROM PRIOR SURVEYS.



TYPICAL PLAN

NOT TO SCALE



NOTES:

1. THE POOL TO POOL SPACING (L) SHALL BE MEASURED AS THE DISTANCE FROM THE MIDPOINT OF THE UPSTREAM BEND TO THE MIDPOINT OF THE DOWNSTREAM BEND.
2. REFER TO MORPHOLOGICAL MEASUREMENT TABLE AND PLAN SHEET FOR DIMENSIONS. NOTE THAT POOL TO POOL SPACING VARIES.

TYPICAL PROFILE

NOT TO SCALE

MORPHOLOGICAL MEASUREMENT TABLE

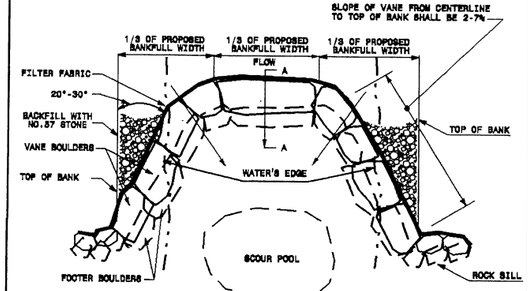
VARIABLES	EXISTING CHANNEL	PROPOSED REACH 1	REFERENCE REACH
LOCATION	UT TO LITHIA BRANCH	UT TO LITHIA BRANCH	SILAS CREEK
1) STREAM TYPE	G4	B4	B4c/1
2) DRAINAGE AREA	38 Ha	38 Ha	855 Ha
3) BANKFULL WIDTH	1.7m	2.4m	7.8m
4) BANKFULL MEAN DEPTH	0.34m	0.22m	0.52m
5) WIDTH/DEPTH RATIO	5	11	15
6) BANKFULL CROSS-SECTIONAL AREA	0.58m^2	0.54 m^2	4.06 m^2
7) BANKFULL MEAN VELOCITY	1.1mps	1.2 mps	1.4 mps
8) BANKFULL DISCHARGE, cfs	0.65 cms	64 cms	5.64 cms
9) BANKFULL MAX. DEPTH	0.49m	0.35m	0.82m
10) WIDTH OF FLOODPRONE AREA	3m	5m	11m
11) ENTRENCHMENT RATIO	1.9	2.0	1.4
12) MEANDER LENGTH	15 - 50m	17 - 29m	51m
13) RATIO OF MEANDER LENGTH TO BANKFULL WIDTH	8.9 - 29.8	7.0 - 12.0	6.6
14) RADIUS OF CURVATURE	3 - 13m	5 - 10m	6 - 17m
15) RATIO OF RADIUS OF CURVATURE TO BANKFULL WIDTH	1.8 - 7.8	2.0 - 4.0	0.8 -3.6
16) BELT WIDTH	10m	7 - 15m	13.3m
17) MEANDER WIDTH RATIO	6.0	3.0 - 6.0	1.7
18) SINUOSITY (STREAM LENGTH/VALLEY LENGTH	1.05	1.32	1.07
19) VALLEY SLOPE	2.98%	3.08%	0.88%
20) AVERAGE SLOPE	2.84%	1.91%	0.82%
21) POOL SLOPE	0.00%	0.38%	0%
22) RATIO OF POOL SLOPE TO AVERAGE SLOPE	0.0 - 0.1	0.20	0
23) MAXIMUM POOL DEPTH	0.68m	0.55m	0.80m
24) RATIO OF POOL DEPTH TO AVERAGE BANKFULL DEPTH	1.99	2.50	1.54
25) POOL WIDTH	2.66m	3.66m	7.95m
26) RATIO OF POOL WIDTH TO BANKFULL WIDTH	1.6	1.5	1.0
27) POOL TO POOL SPACING	9 - 19m	9m	0m
28) RATIO OF POOL TO POOL SPACING TO BANKFULL WIDTH	5.5 - 11.5	3.5	0.0

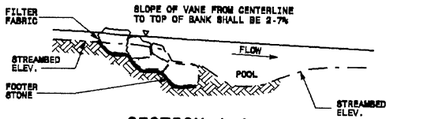
ROCK CROSS VANE

SCALE: NTS

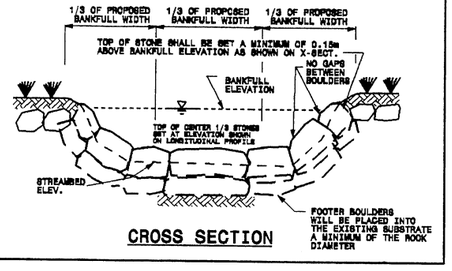
NOTES:
1. ALL STONES ARE TO BE STRUCTURE STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, PLUGGING WITH STRUCTURE STONE CLASS A AND NO.57 AND LINING WITH FILTER FABRIC.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE DESIGNER.
4. A DOUBLE FOOTER BOULDER SHALL BE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

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.

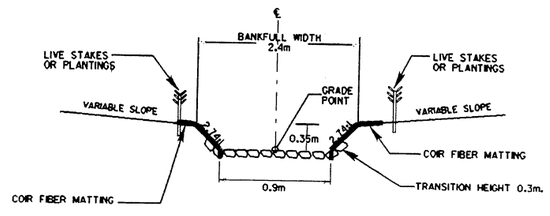




SECTION A-A

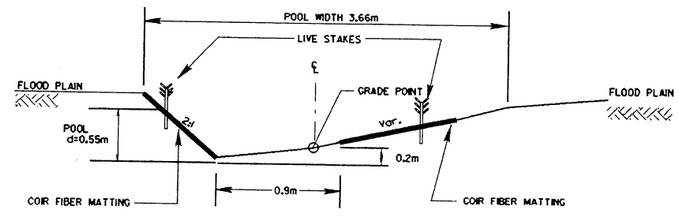


CROSS SECTION



TYPICAL RIFFLE SECTION

NOT TO SCALE



TYPICAL POOL SECTION

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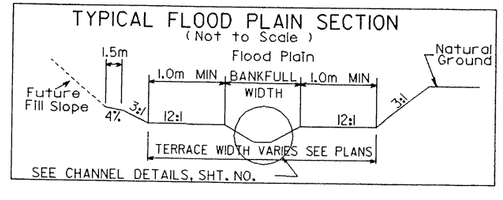

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606
For Division of Highways

11-OCT-2004 16:56
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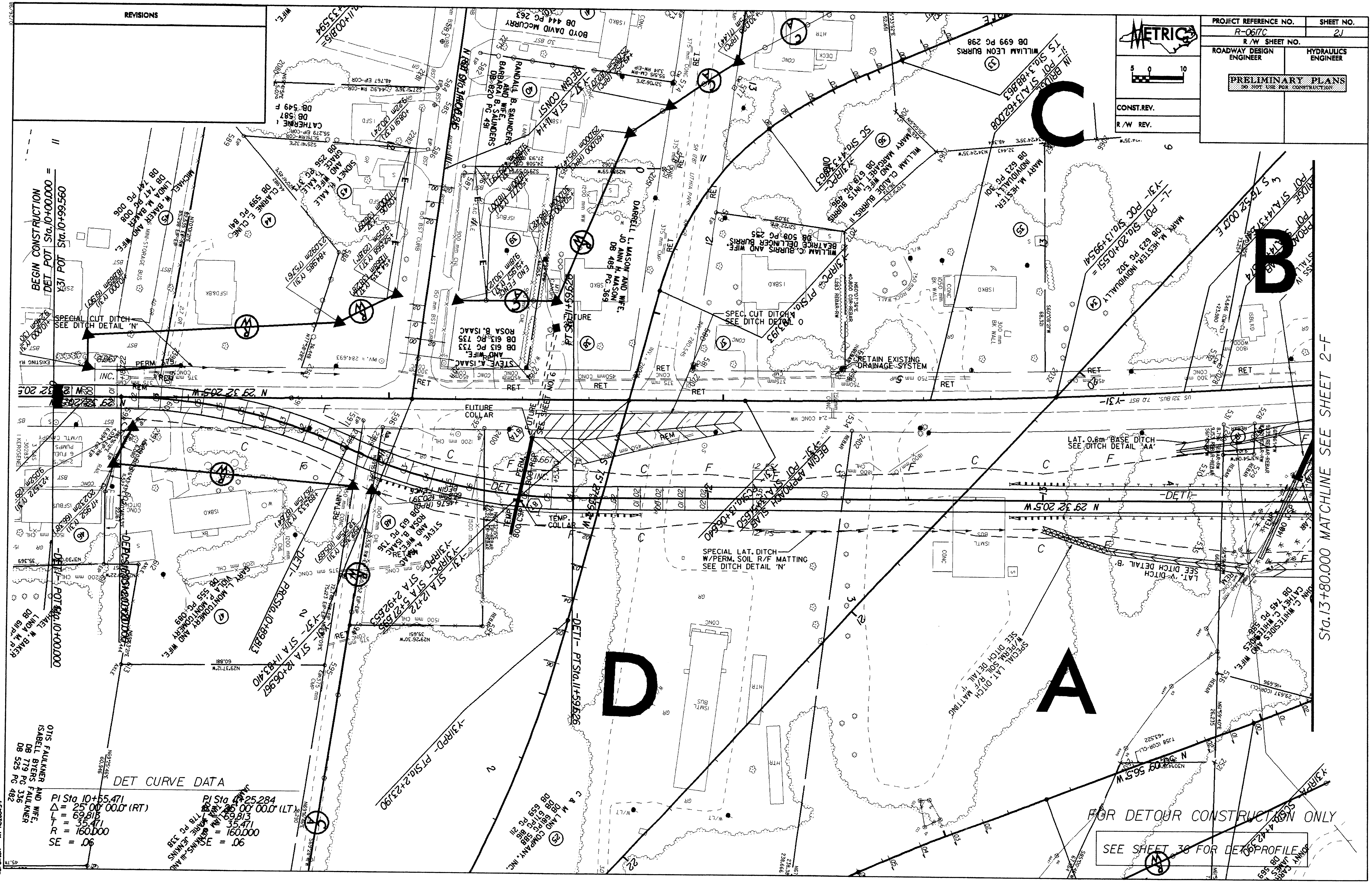
Paxton AT AD206439


REVISIONS
METRIC
PROJECT REFERENCE NO. R-0617C
SHEET NO. 2J
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
CONST.REV.
R/W REV.
BEGIN CONSTRUCTION DET POT Sta.10+00.000 =
Y31 POT Sta.10+99.560
SPECIAL CUT DITCH SEE DITCH DETAIL 'N'
SPEC. CUT DITCH SEE DITCH DETAIL O
RETAIN EXISTING DRAINAGE SYSTEM
LAT. 0.6m BASE DITCH SEE DITCH DETAIL 'AA'
LAT. 'V' DITCH SEE DITCH DETAIL 'B'
SPECIAL LAT. DITCH W/PERM. SOIL R/F MATTING SEE DITCH DETAIL 'N'
SPECIAL LAT. DITCH W/PERM. SOIL R/F MATTING SEE DITCH DETAIL 'I'
FUTURE COLLAR
TEMP. COLLAR
-Y31- POC Sta.13+99.541 =
-L- POT Sta.20+10.551
IN BRIDGE -L- POT STA.13+62.008
-L- POT Sta.3+88.863
SC Sta.4+33.065
-Y31- POT STA.13+51.650
BEGIN APPROACH SLAB
-DET1- PT Sta.11+59.626
-DET1- PC Sta.10+89.813
-Y37- STA 11+83.410
-Y37- STA 12+06.967
-Y31RPD- PT Sta.2+23.190
-Y31RPC- STA 5+27.595
-Y31RPD- STA 2+92.653
-Y31- STA 12+72
BEGIN CONST -Y37- STA 11+14
N 29°32'20.5" W
N 60°09'56.5" W
S 76°52'00.0" E
US 321 BUS. 7.0 BST -Y31-
SR 1787 LITHIA PARK
WILLIAM LEON BURRIS DB 699 PG 298
BOYD DAVID MCCURRY DB 444 PG 263
RANDALL B. SAUNDERS AND WIFE, BARBARA B. SAUNDERS DB 820 PG 491
CATHERINE I DB 587 DB 549 P
SIDNEY E. KALE AND WIFE, GRACE H. KALE DB 256 PG 371
CLARINE E. CLINE DB 599 PG 841
MICHAEL W. BAKER AND WIFE, LINDA M. BAKER DB 747 PG 008 DB 747 PG 006
DARRELL L. MASON AND WIFE, JO ANN H. MASON DB 485 PG 369
STEVE A. ISAAC AND WIFE, ROSA B. ISAAC DB 613 PG 733 DB 613 PG 735
WILLIAM C. BURRIS AND WIFE, BEATRICE DELLINGER BURRIS DB 508 PG 235
WILLIAM CLAUDE BURRIS, II AND WIFE, MARY MARGARET LINTS BURRIS DB 679 PG 496
MARY M. HESTER, INDIVIDUALLY DB 623 PG 301
MARY M. HESTER, INDIVIDUALLY DB 623 PG 302
GARY L. MONTGOMERY AND WIFE, VIOLA P. MONTGOMERY DB 555 PG 089
STEVE A. ISAAC AND WIFE, ROSA B. ISAAC DB 613 PG 736
MICHAEL W. BAKER LINDA M. P. DB 611 P
OTIS FAULKNER AND WIFE, ISABELL BYERS FAULKNER DB 779 PG 336 DB 525 PG 482
C & M LAND COMPANY, INC. DB 659 PG 211 DB 681 PG 588 DB 671 PG 816
JOHN C. WHITESIDES AND WIFE, CATHEY C. WHITESIDES DB 745 PG 586
JONNY CAREY JAMES DB 569
DET CURVE DATA
PI Sta 10+55.471
Δ = 25° 00' 00.0" (RT)
L = 69.813
T = 35.471
R = 160.000
SE = .06
PI Sta 11+25.284
Δ = 25° 00' 00.0" (LT)
L = 69.813
T = 35.471
R = 160.000
SE = .06
FOR DETOUR CONSTRUCTION ONLY
SEE SHEET 36 FOR DET PROFILE
Sta.13+80.000 MATCHLINE SEE SHEET 2-F
A
B
C
D

REVISIONS

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-0617C	2K
	R/W SHEET NO.	
CONST. REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Sta.13+80.000 MATCHLINE SEE SHEET 2-E

Sta.17+65

MATCHLINE SEE SHEET 2-F

LINCOLNTON CITY LIMITS

0.6 m BASE TOP DITCH
18 m EASEMENT
EST DDBB 9[illegible] DRANEY JR.
SEE DITCH DET PG 844

SPECIAL CUT DITCH
SEE DITCH DETAIL 'N'

ADAM L. LEDFORD AND WIFE,
BARBARA H. LEDFORD
DB 973 PG 829

CHARLIE W. CALLAWAY
DB 768 PG 664

JOHNNY C. WHITESIDES
DB 1185 PG 468

JAMES WHITESIDES, JR. AND WIFE,
RAMONA G. WHITESIDES
DB 609 PG 542

JAMES WHITESIDES, JR. AND WIFE,
RAMONA G. WHITESIDES
DB 609 PG 542
DB 1185 PG 468

CLAUDE S. CARPENTER AND WIFE,
MINNIE C. CARPENTER
DB 408 PG 237

JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 871 PG 046

FRANKLIN PARKMEYER
DB 463 PG 308

MIKE MCCARTHY
DB 906 PG 862

WILLIE ANN RICHARDSON
DB 918 PG 959

DET CURVE DATA

PI Sta 15+05.188	PI Sta 15+96.717
Δ = 36° 58' 55.8" (LT)	Δ = 29° 15' 27.3" (RT)
L = 103.274	L = 81.703
T = 53.508	T = 41.763
R = 160.000	R = 160.000

FOR DETOUR CONSTRUCTION ONLY

SEE SHEET 36 FOR DET PROFILE

11-OCT-2004 15:28
M:\Roadway\R-0617C\R-0617C_2K.dgn
MDBenton

METRIC	PROJECT REFERENCE NO.	SHEET NO.
0 0 10	R-0617C	2L
	R/W SHEET NO.	
CONST. REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISIONS

*** SEE SHEET ***

MATCHLINE

BEGIN CONSTRUCTION -DET2- PCSta 10+00.000

-DET2- PCSta 10+74.151

-DET2- PRCSta 10+74.151

-DET2- PTSta 13+33.909

END CONSTRUCTION

-DET2- PCSta 13+56.478

-Y40RPB-

-Y40RPA-

-Y39-

-Y40RPB-

-Y40RPA-

-DET2- PTSta 12+08.652

N 18° 34' 00.1" W

S 3° 34' 00.1" E

N 86° 25' 59.9" E

SMITH FARM RD (SR 1157)

DONALD OI

LARRY AND PEGGY COFFEY

DONALD EDWIN CHAMNYKE HUSS, JR. MICHAEL AS TENANTS IN COMMON DB 671 PG 655

DONALD EDWIN CHAMNYKE HUSS, JR. MICHAEL AS TENANTS IN COMMON DB 901 PG 02

COLLEEN HUSS PARKER DB 741 PG 092

COLLEEN HUSS PARKER DB 531 PG 317

JOE W. ROSEMAN JR. AND SANDRA L. ROSEMAN DB 555 PG 389 DB 595 PG 156

DAVID M. BLACK AND LYNN L. BLACK DB 647 PG 184 DB 613 PG 242 DB 587 PG 410

DB 881 PG 963 DB 946 PG 903

CL 'B' RIP RAP EST. 1.8 M TONS 5.9 S.M. FF

SPECIAL LAT. 'V' DITH SEE DITCH DETAIL

TEMP. 400 CSP

DET

DET2

PI Sta 10+38.302	PI Sta 11+41.064	PI Sta 12+73.768
Δ = 35° 24' 16.2" (LT)	Δ = 58° 17' 20.3" (RT)	Δ = 65° 44' 10.5" (LT)
L = 74.151	L = 122.080	L = 137.678
T = 38.302	T = 66.913	T = 77.537
R = 120.000	R = 120.000	R = 120.000

FOR DETOUR CONSTRUCTION ONLY
SEE SHEET 37 FOR -DET2- PROFILE

B

A

E-617-2004.dgn

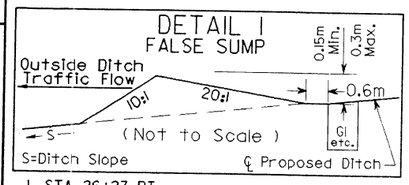
10/26/98

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	2M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

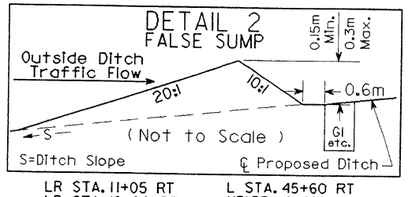
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 1
FALSE SUMP



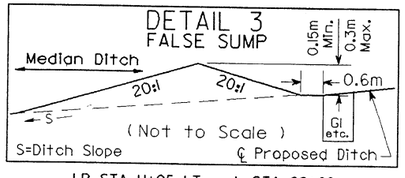
L STA. 26+27 RT
L STA. 31+00 RT
Y31RP 'A' STA. 3+00 RT
Y31RP 'A' STA 1+89 RT
Y39 STA. 13+60 LT
Y40 STA. 11+30 LT
Y40 STA. 13+60 LT
Y40 STA. 17+10 LT
Y40 STA. 17+90 LT
Y40 STA. 19+25 LT
Y40 STA. 20+10 LT
Y40 STA. 21+70 LT
Y40 RP 'B' STA. 1+52 LT
Y40 RP 'B' STA. 3+35 LT
Y40 RP 'B' STA. 3+35 RT
Y40 RP 'D' STA. 4+80 RT
Y40 RP 'D' STA. 4+60 LT
SERV STA. 10+87 LT

DETAIL 2
FALSE SUMP



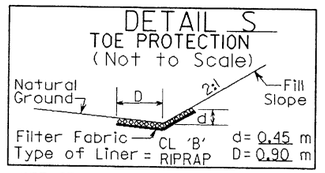
LR STA. 11+05 RT
LR STA. 12+00 RT
L STA. 13+20 RT
L STA. 16+50 LT
L STA. 18+80 RT
L STA. 19+80 RT
L STA. 26+50 LT
L STA. 31+00 LT
L STA. 31+95 RT
L STA. 29+60 LT
L STA. 45+60 RT
Y31RP 'C' STA. 2+82 LT
Y31RP 'C' STA. 2+82 RT
Y40 STA. 21+80 RT
Y40 RP 'A' STA. 2+40 LT
Y40 RP 'A' STA. 2+40 RT
DET2 STA 10+60 RT
DET2 STA 12+14 RT
SERV STA 10+20 RT
Y40 RP 'D' STA. 2+60 RT
Y40 RP 'D' STA. 2+60 LT
Y40 STA 11+20 RT

DETAIL 3
FALSE SUMP



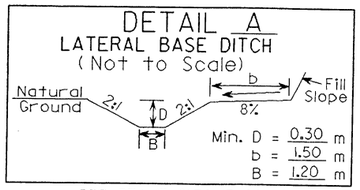
LR STA. 11+05 RT
L STA. 13+20
L STA. 14+90
L STA. 16+40
L STA. 17+60
L STA. 20+60
L STA. 22+37 M
L STA. 26+50 M
L STA. 29+60
L STA. 31+00 M
L STA. 35+10
L STA. 42+07 M

DETAIL S
TOE PROTECTION
(Not to Scale)



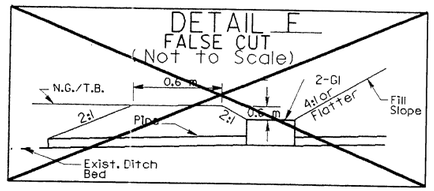
DET STA. 13+05 TO 14+00 RT
LR STA. 10+00 LT
L STA. 34+20 TO 34+80 RT
L STA. 34+60 TO 35+10 LT
L STA. 35+20 TO 35+70 RT
L STA. 39+00 TO 39+30 LT
Y31RP'A' STA. 4+20 TO 5+20 RT
Y40 RP'D' STA. 3+20 TO 3+80 RT
SERV STA 10+45 TO 10+87 LT

DETAIL A
LATERAL BASE DITCH
(Not to Scale)

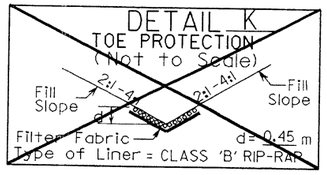


DET STA. 13+81 TO 13+96 LT

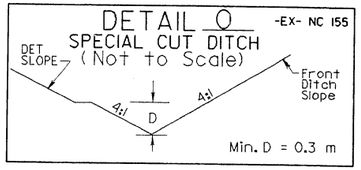
DETAIL F
FALSE CUT
(Not to Scale)



DETAIL K
TOE PROTECTION
(Not to Scale)

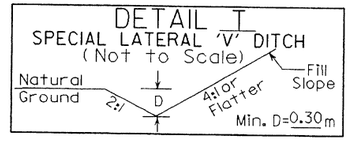


DETAIL Q
SPECIAL CUT DITCH
(Not to Scale)
-EX- NC 155



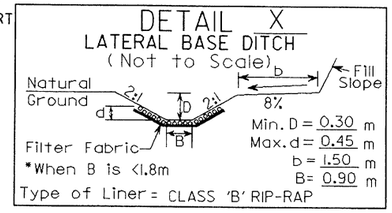
DET STA. 11+47 TO STA. 12+10 LT

DETAIL T
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



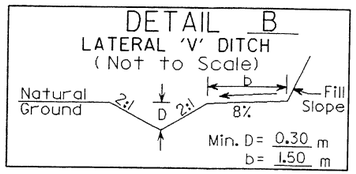
L STA. 27+03 TO 27+60 LT
Y31 STA. 11+40 TO 12+00 LT
Y31 STA. 15+60 TO 16+05 RT
Y31 STA. 16+60 TO 17+00 RT
Y31 STA. 19+00 TO 19+60 LT
Y35 STA. 10+10 TO 10+60 LT
Y39 STA. 10+40 TO 11+00 LT
Y39 STA. 12+80 TO 13+15 LT
Y31RP 'A' STA. 3+20 TO 4+00 LT
Y31RP 'A' STA. 3+30 TO 4+20 RT
Y31RP 'C' STA. 4+50 TO 5+00 RT
Y40 RP 'C' STA. 1+68 TO 2+22 LT
DET2 STA 10+80 TO 11+40 RT
DET2 STA 12+14 TO 12+50 RT
SERV STA 16+00 TO 16+65 RT

DETAIL X
LATERAL BASE DITCH
(Not to Scale)



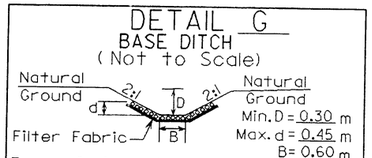
L STA. 43+40 TO 44+50 LT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



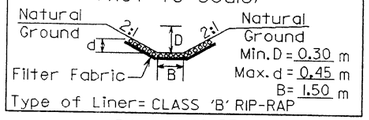
L STA. 39+30 TO 39+92 LT
Y31 STA. 12+30 TO 12+50 LT
Y31 STA. 14+75 TO 15+00 RT
Y31 STA. 18+10 TO 18+20 RT
Y39 STA. 12+60 TO 13+05 RT
Y40 RP 'C' STA. 4+35 TO 5+12 RT
Y40 RP 'D' STA 7+20 TO 7+82 RT
DET STA 13+20 TO 14+20 RT

DETAIL G
BASE DITCH
(Not to Scale)



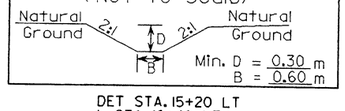
L STA. 39+60 RT
L STA. 42+68 TO 42+93 LT
Y31 RP 'A' STA. 4+40 LT
Y40 RP 'C' STA. 3+16 TO 3+40 RT

DETAIL L
BASE DITCH
(Not to Scale)



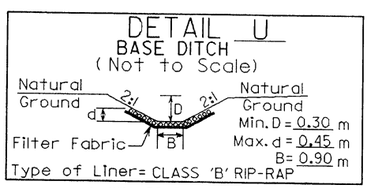
Y31STA. 14+70 RT

DETAIL P
BASE DITCH
(Not to Scale)



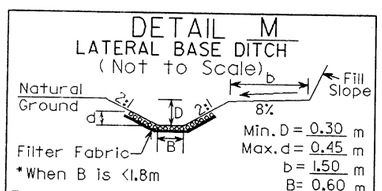
DET STA. 15+20 LT
L STA. 16+40 LT
L STA. 27+00 LT
L STA. 37+40 RT
Y39 STA. 13+00 RT

DETAIL U
BASE DITCH
(Not to Scale)



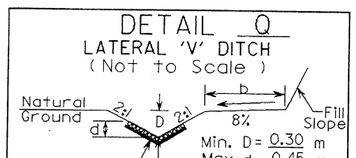
L STA. 32+05 LT
L STA 31+55 TO 31+70 RT
L STA. 43+12 TO 43+40 LT
Y31 STA. 12+38 RT
Y40 RP 'D' STA. 2+85 LT

DETAIL M
LATERAL BASE DITCH
(Not to Scale)



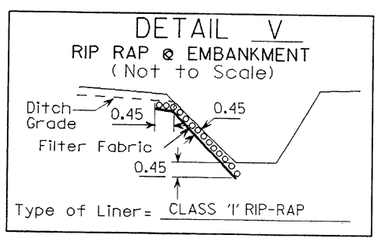
L STA. 31+20 TO 31+48 RT
Y31 STA. 13+00 TO 13+80 LT
Y31 STA. 14+20 TO 14+75 RT
Y31 STA. 17+80 TO 18+10 RT
Y31 RP 'B' STA. 2+25 TO 2+60 LT
Y40 STA. 12+60 TO 13+00 LT
Y40 STA. 13+00 TO 13+40 LT
Y40 RP 'C' STA. 1+05 TO 1+75 RT
Y40 RP 'C' STA. 3+60 TO 4+35 RT
SERV STA 10+20 TO 10+45 LT

DETAIL Q
LATERAL 'V' DITCH
(Not to Scale)



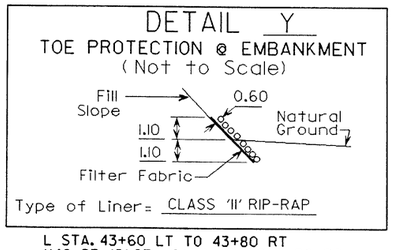
L STA. 31+70 TO 32+00 RT
L STA. 38+55 TO 38+95 RT
L STA. 39+92 TO 40+40 LT
Y39 STA. 13+05 TO 13+60 RT
Y40 RP 'C' STA. 0+70 TO 1+03 RT
Y40 RP 'D' STA. 1+35 TO 1+55 LT

DETAIL V
RIP RAP @ EMBANKMENT
(Not to Scale)



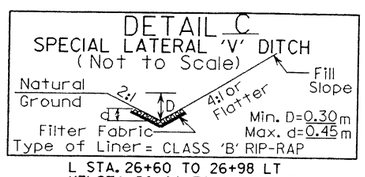
L STA. 42+93 LT (EST. 25 mTONS)

DETAIL Y
TOE PROTECTION @ EMBANKMENT
(Not to Scale)



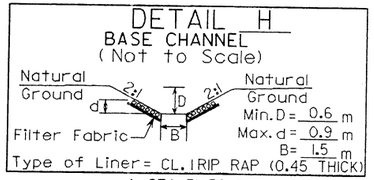
L STA. 43+60 LT TO 43+80 RT
Y40 RP 'C' STA. 2+20 LT TO 2+20 RT
Y40 RP 'C' STA. 3+75 LT TO 3+75 RT
Y40 RP 'D' STA. 4+40 LT TO 4+20 RT

DETAIL C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



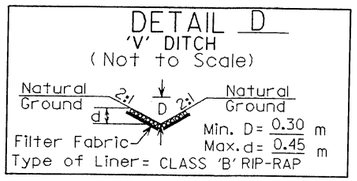
L STA. 26+60 TO 26+98 LT
Y31 STA. 20+00 TO 20+60 LT

DETAIL H
BASE CHANNEL
(Not to Scale)



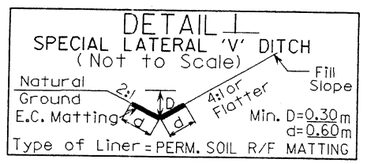
L STA. 31+50 RT

DETAIL D
'V' DITCH
(Not to Scale)



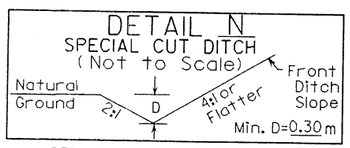
L STA. 11+05 LT
LR STA. 13+20 LT
L STA. 14+90 LT

DETAIL I
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



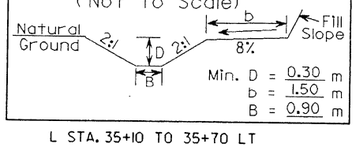
Y31 STA. 17+60 TO 17+80 RT
Y39 STA. 12+40 TO 12+60 RT
Y39 STA. 12+60 TO 12+80 LT
Y39 STA. 13+60 TO 13+80 RT
Y39 STA. 13+60 TO 13+80 LT
DET STA 13+00 TO 13+20 RT

DETAIL N
SPECIAL CUT DITCH
(Not to Scale)



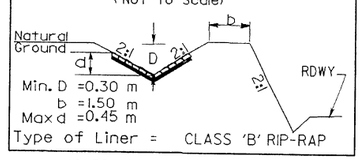
DET STA. 15+00 TO 15+20 RT
DET STA. 15+00 TO 15+40 LT
DET STA. 15+55 TO 16+20 RT
L STA. 27+80 TO 28+40 LT
L STA. 31+95 TO 32+40 RT
L STA. 36+80 TO 37+60 LT
L STA. 40+40 TO 41+00 LT
L STA. 44+90 TO 45+20 RT
L STA. 45+60 TO Y41STA. 11+40 LT
Y31STA. 19+40 TO 19+80 RT
SERV STA 10+20 TO 10+40 RT
Y32 STA. 12+20 TO 13+00 RT
Y39 STA. 15+60 TO 16+00 RT
Y39 STA. 15+60 TO 16+00 LT
Y40 RP 'D' STA. 4+60 TO 7+60 LT
Y40 RP 'D' STA. 4+80 TO 7+20 RT
DET STA 14+60 TO 15+20 RT
DET STA 15+00 TO 15+40 LT
DET STA 15+54 TO 16+20 RT
DET STA 10+00 TO 10+80 LT
DET STA 12+00 TO 13+00 RT

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



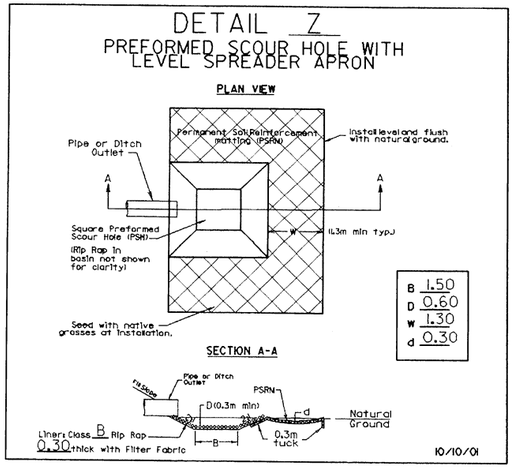
L STA. 35+10 TO 35+70 LT

DETAIL W
BERM 'V' DITCH w/LINER
(Not to Scale)



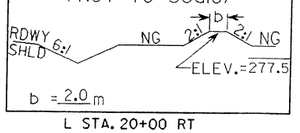
Y40 RP 'D' STA. 7+40 TO 7+60 LT

DETAIL Z
PREFORMED SCOUR HOLE WITH
LEVEL SPREADER APRON



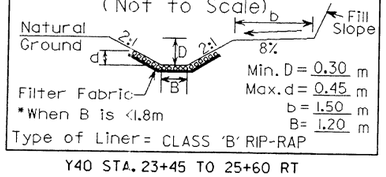
Y40 RP 'D' STA. 4+30 LT
Y40 RP 'D' STA. 3+50 LT

DETAIL E
EARTH BERM
(Not to Scale)



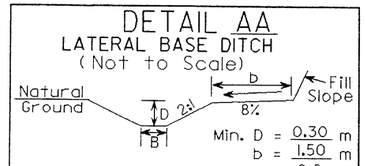
L STA. 20+00 RT

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



Y40 STA. 23+45 TO 25+60 RT

DETAIL AA
LATERAL BASE DITCH
(Not to Scale)



Y40 RP 'D STA. 7+60 TO 7+95 LT
DET STA 13+40 TO 13+81 LT

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xtan
A1 RW086439

REVISIONS
REVISION DATE: 6/3/02, THE PROPOSED R/W WAS REVISED ON PARCELS 1 AND 2. REVISED OFFSET DISTANCE OF R/W MONUMENT ON PARCEL 4, COMBINED PARCEL 2B WITH PARCEL 2

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "PANEL 37" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 190969.712(m) EASTING: 406720.289(m)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998431951
THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PANEL 37" TO -L- STATION 10+00.000 IS 3,487.600m S 89 21'17.25" W
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

METRIC 5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CONST. REV.
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DRIVE2- POT Sta.10+00.000
END FUTURE LANE GRADING STA 10+40
TOE PROTECTION EST. M TONS CL. 'B' RIP RAP W/ S.M. FF SEE DITCH DETAIL S
+32.330 (L) 25.170m (82.579')
+30.635 (L) 20.424m (67.00')
-LNBL- TS Sta.10+22.282=
-LSBL- POT Sta.10+00.000
BEGIN FENCE
CL. 'B' RIP RAP EST. 2.7 M TONS W/ 8.4 S.M. FF
+00.000 (L) 42.000m (137.79')
+00.609 (L) 30.710m (100.754')
'V' DITCH W/ CL. 'B' RIP RAP 14m @ 6.0% SEE DITCH DETAIL D EST. DDE = 40 C.M. EST. 13.2 M TONS W/ 30.9 S.M. FF
+25.000 (L) 31.353m (102.86')
+25.000 (L) 42.000m (137.79')
-DRIVE1- POT Sta.10+00.000
-LNBL- POC Sta.11+40.000
-SERV- PC Sta.10+15.663
-SERV- POT Sta.10+00.000
BEGIN CONSTRUCTION
+71.282 (L) 46.529m (152.65')
+70.000 (L) 32.288m (105.93')
+52.370 (L) 28.733m (94.27')
+00.000 (SERV) 9.337m (30.63')
CLASS 'B' RIP RAP EST. 2.7 M TONS W/ 5.6 S.M. FF
LAT. 0.6m BASE DITCH W/ CLASS 'B' RIP RAP EST. 96.4 M TONS W/ 143.3 S.M. FF SEE DITCH DETAIL 'M'
+44.814 (SERV) 40.475m (132.79')
CL. 'I' RIP RAP EST. 23.6 M TONS W/ 41.8 S.M. FF
TOE PROTECTION SEE DITCH DETAIL 'S' CLASS 'B' RIP RAP EST. 40 M. TONS W/ 80 S.M. FF
+96.449 (SERV) 24.026m (78.80')
CL. 'B' RIP RAP EST. 0.9 M TONS W/ 4.2 S.M. FF
TIE TO EXISTING
SPECIAL CUT DITCH SEE DITCH DETAIL 'N'
+88.527 30.718m (100.78')
-LNBL- SC Sta.11+12.290
-LSBL- TS Sta.10+55.120
-DRIVE2- POT Sta.10+39.477
-LSBL- POT Sta.10+36.315
+12.290 (L) 34.257m (112.391')
+30.000 (L) 35.565 (116.68')
+10.236 (L) 25.298m (82.99')
+06.203 (L) 30.800m (100.39')
+37.000 (L) 35.676 (117.05')
+60.000 (L) 35.400 (116.14')
+46.357 (L) 35.682 (117.07')
-DRIVE1- PC Sta.10+20.527
-DRIVE1- PT Sta.10+31.805
-LSBL- SC Sta.11+45.120
+40.000 (DRIVE1) 6.000 (19.69')
+40.000 (DRIVE1) 7.800 (22.97')
+40.000 (DRIVE1) 3.479 (11.41')
+40.000 (DRIVE1) 1.877 (6.16')
-DRIVE1- POT Sta.10+67.804
+20.000 (L) 30.000m (98.42')
MATCHLINE -SERV- STA 11+00 SEE SHEET 5
MATCHLINE -L- STA 12+60 SEE SHEET 5
MATCHLINE -LSBL- STA 13+00 SEE SHEET 5
-LNBL- STA 10+00.000 = BEG TIP PROJ R-0617C
-L- STA 10+00.000 (10.6m LT) BEG TIP PROJ R-0617C
N 72° 30' 15.0" E
N 72° 30' 13.5" E
S 17° 33' 26.0" W
S 17° 23' 06.7" E
NC 150/US 321 BUS. 7.3 BST
RETAIN
FUTURE
2GI(B)
FS-1
FS-2
FS-3
2GI(B) TEMP.
GRAU-350
-SERV-
PI Sta 0+91.642
Δ = 28° 25' 21.0" (LT)
L = 148.820
T = 75.974
R = 300.000
SE = .04
-LNBL-
PIs Sta 10+82.309: θs = 5° 16' 05.9", Ls = 90.000, LT = 60.027, ST = 30.024, RO = 22.500
PIs Sta 11+98.986: Δ = 20° 05' 34.7" (RT), L = 171.627, T = 86.704, R = 489.400, SE = .08
PIs Sta 13+13.934: θs = 5° 16' 05.9", Ls = 90.000, LT = 60.027, ST = 30.024, RO = 22.500
-LSBL-
PIs Sta 11+15.153: θs = 5° 51' 35.3", Ls = 90.000, LT = 60.033, ST = 30.030, RO = 22.500
PIs Sta 12+18.396: Δ = 18° 54' 36.0" (RT), L = 145.218, T = 73.276, R = 440.000, SE = .08
PIs Sta 13+20.369: θs = 5° 51' 35.3", Ls = 90.000, LT = 60.033, ST = 30.030, RO = 22.500
-DRIVE1-
PI Sta 10+26.233
Δ = 21° 32' 22.1" (RT)
L = 11.278
T = 5.706
R = 30.000
-L-
PIs Sta 10+82.316: θs = 5° 09' 23.8", Ls = 90.000, LT = 60.025, ST = 30.023, RO = 22.500
PIs Sta 12+01.876: Δ = 20° 18' 57.4" (RT), L = 177.290, T = 89.586, R = 500.000, SE = .08
PIs Sta 13+19.603: θs = 5° 09' 23.8", Ls = 90.000, LT = 60.025, ST = 30.023, RO = 22.500
OBLITERATE PAVEMENT
FOR -L- PROFILE SEE SHEET 19
FOR -LNBL- PROFILE SEE SHEET 37
FOR -LSBL- PROFILE SEE SHEET 37
FOR -SERV- PROFILE SEE SHEET 39
FOR -DRIVE1- PROFILE SEE SHEET 38

8-OCT-2004 15:43
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REVISIONS
REVISION DATE: 6/3/02, CHANGED PARCEL 10, JACK H. CHAPMAN AND HENRY LEE CHAPMAN TO STEVE CHAPMAN. ADDED ADDITIONAL TOPOGRAPHY TO PARCEL 11

METRIC

5 0 10

CONST. REV.
R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE SEE SHEET 4 -SERV- STA. 11+00

MATCHLINE SEE SHEET 14 -SERV- STA. 12+60

MATCHLINE SEE SHEET 6 -L- STA. 16+20

-SERV- PT Sta. 11+64.487

-SERV- POT Sta. 12+00.000

N 72° 12' 33.2" E

+30.318 (L)
43.446m (142.54')
& 38.216m (125.38')

+22.680 (L)
43.844m (143.84')
& 38.616m (126.69')

+12.899 (L)
39.634m (130.03')

-LSBL- CS Sta. 12+90.339

'V' DITCH W/ CL. 'B' RIP RAP
15m @ 3.0%
EST. DDE = 10 C.M.
EST. 19.8 M TONS
W/ 52.4 S.M. FF
SEE DITCH DETAIL D

+38.247 (L)
37.868m (124.23')

+39.676 (L)
28.916m (94.87')

-L- ST Sta. 13+79.580

+01.879 (L)
32.000m (104.98')

'V' DITCH W/ CL. 'B' RIP RAP
7m @ 5.0%
EST. DDE = 15 C.M.
EST. 9.3 M TONS
W/ 24.5 S.M. FF
SEE DITCH DETAIL D

CL. 'B' RIP RAP
EST. 1.8 M TONS
W/ 5.9 S.M. FF

+80.000 (L)
50.000m (164.04')

+80.000 (L)
40.000m (131.23')

+32.500 (L)
77.308m (253.63')

+30.000
65.000m (213.25')

CROSS VANE (TYP) -Y31RPB- TS Sta. 0+00.000 =
SEE NATURAL CHANNEL DETAIL, SHEET 2
-L- POT Sta. 16+00.000 (14.2 RT)

STREAM BUFFER ZONE

1.5m MIN BANKFULL BENCH (TYP)

15m MIN (TYP)

0.9m BASE DITCH
CLASS 'I' RIP RAP
EST. 51.7 M. TONS
W/ 87.0 S.M. F.F.

-LSBL- PI Sta. 13+18.502
-L- PI Sta. 15+00.338
Δ = 72° 42' 15.0" (RT)
D = 15.000
T = 10.000
L = 19.031
SE = 1.19
ELBS

400' CSP
W/ 2 ELBS

SPECIAL BJB
W/ SLAB
SEE SPEC. DETAIL

TREM HEADWALL

1200 RCP CLASS III

CAT-I

FS-3

FS-2

2GI(B)

-LNBL-

-L-

-LSBL-

S 76° 52' 00.0" E

S 75° 44' 52" E
226.65m

S 76° 18' 43" E
63.343

S 82° 29' 45" E
S.B.R.

14.566 (COR-CL)
+64.009

GRAU-350

HEADWALL

BEGIN FENCE TIE TO HEADWALL

END FENCE TIE TO HEADWALL

+89.580 (L)
40.405m (132.56')

-LNBL- CS Sta. 12+83.909

-LNBL- ST Sta. 13+73.909

-LSBL- ST Sta. 13+80.339 L.B. =
-L- POT Sta. 14+01.878 L.A. (10.6 LT)

-LNBL- POT Sta. 13+96.206 L.B. =
-L- POT Sta. 14+01.879 L.A. (10.6 RT)

-Y31RPC- POT Sta. 0+00.000 =
-L- POT Sta. 15+94.00 (14.2 LT)

+66.745 (L)
37.378m (122.63')

+18.366 (L)
36.307m (119.11')

+12.455 (L)
65.998m (216.53')

-SERV-

PI Sta 0+91.642
Δ = 28° 25' 21.0" (LT)
L = 148.820
T = 75.974
R = 300.000
SE = .04

-L-

PIs Sta 10+82.316	PI Sta 12+01.876	PIs Sta 13+19.603
θs = 5° 09' 23.8"	Δ = 20° 18' 57.4" (RT)	θs = 5° 09' 23.8"
Ls = 90.000	L = 177.290	Ls = 90.000
LT = 60.025	T = 89.586	LT = 60.025
ST = 30.023	R = 500.000	ST = 30.023
RO = 22.500	SE = .08	RO = 22.500

(7) R.F. HOYLE AND WIFE, CLARA HOYLE
DB 246 PG 276

(8) THOMAS ANDREW DEAL AND WIFE, VIRGINIA HOOVER DEAL
DB 356 PG 92

(9) HOWARD LEE SUMMITT AND WIFE, JEWELL L. SUMMITT
DB 356 PG 230

(10) STEVE CHAPMAN
DB 493 PG 062

(11) THOMAS HOOVER DEAL AND WIFE, CHERRY WATSON DEAL
DB 735 PG 438

(12) GARY H. CHAPMAN AND WIFE, SHERRY R. CHAPMAN
DB 795 PG 382

(13) FRANK HELMS JR. AND WIFE, GERLENE C. HELMS
DB 375 PG 089

6-941 REBAR-RW
17.193 REBAR-REBAR
S 44° 50' 22" E

FOR -L- PROFILE SEE SHEET 19
FOR -SERV- PROFILE SEE SHEET 39

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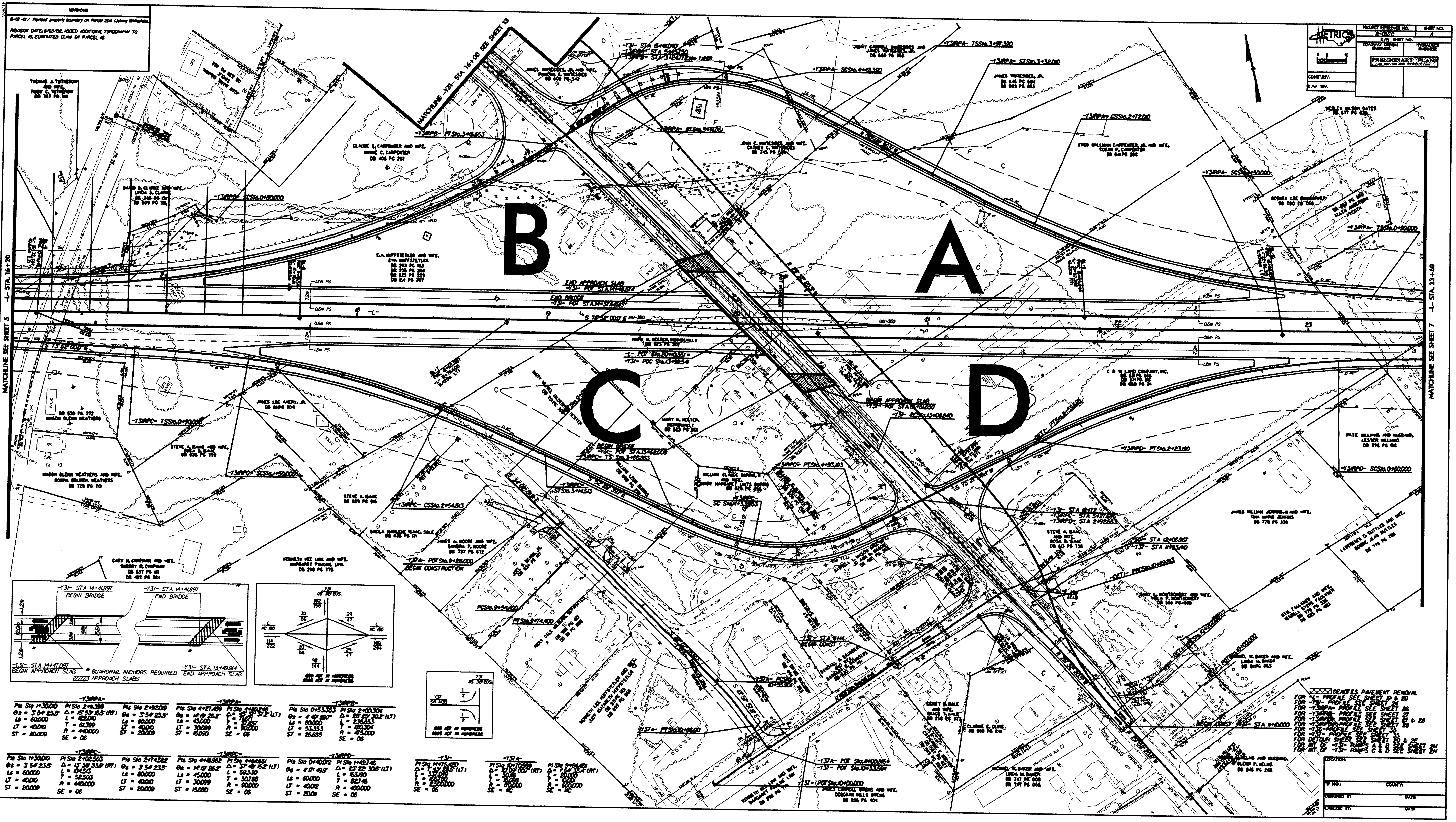

-Y3RPA-

PIs Sta 1+30.010	PI Sta 2+11.399	PIs Sta 2+92.019	PIs Sta 4+27.489	PI Sta 4+80.846	
θs = 3°54' 23.5"	Δ = 15°53' 16.5" (RT)	θs = 3°54' 23.5"	θs = 14°19' 26.2"	Δ = 45°51' 37.2" (LT)	
Ls = 60.000	L = 122.010	Ls = 60.000	Ls = 43.000	T = 71.071	
LT = 40.010	T = 61.399	LT = 40.010	LT = 30.099	L = 71.857	
ST = 20.009	R = 440.000	ST = 20.009	ST = 15.090	R = 90.000	
	SE = .06			SE = .06	

-Y3RPB-

PIs Sta 0+53.353	PI Sta 2+00.304
θs = 4°49' 29.7"	Δ = 28°25' 30.2" (LT)
Ls = 80.000	L = 236.653
LT = 53.353	T = 120.304
ST = 26.685	R = 475.000
	SE = .06

-Y3RPC-

PIs Sta 1+30.010	PI Sta 2+02.503	PIs Sta 2+74.522	PIs Sta 4+18.962	PI Sta 4+64.651
θs = 3°54' 23.5"	Δ = 13°38' 33.9" (RT)	θs = 3°54' 23.5"	θs = 14°19' 26.2"	Δ = 37°48' 15.2" (LT)
Ls = 60.000	L = 104.513	Ls = 60.000	Ls = 45.000	L = 59.330
LT = 40.010	T = 52.503	LT = 40.010	LT = 30.099	T = 30.788
ST = 20.009	R = 440.000	ST = 20.009	ST = 15.090	R = 90.000
	SE = .06			SE = .06

-Y3RPD-

PIs Sta 0+40.012	PI Sta 1+42.746
θs = 4°17' 49.9"	Δ = 23°22' 30.6" (LT)
Ls = 60.000	L = 163.190
LT = 40.012	T = 82.746
ST = 20.011	R = 400.000
	SE = .06

-Y31-

PI Sta 14+75.480
Δ = 7°43' 59.5" (LT)
L = 337.095
T = 168.780
R = 2500.000
SE = .06

-Y37A-

PI Sta 10+70.999	PI Sta 9+64.401
Δ = 10°08' 00.0" (RT)	Δ = 7°34' 35.4" (RT)
L = 30.015	L = 20.000
T = 15.026	T = 10.001
R = 170.000	R = 600.000
SE = NC	SE = NC

REVISIONS
REVISION DATE: 6/03/02, ADJUSTED OFFSET DISTANCE OF R/W MONUMENT LEFT OF -L- STATION 26+17.600

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-0617C	7
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

LAWERENCE D. SUTTLES
DB 807 PG 631
DB 499 PG 575

DEBBIE HOFFMAN WALTERS AND HUSBAND, MELVIN ROBERT WALTERS
DB 768 PG 409

JAMES MORGAN CHAMBERS
DB 495 PG 366

PHILIP WAYNE THOMAS AND WIFE, RUTH CAROLYN THOMAS
DB 541 PG 161

MELVIN ROBERT WALTERS AND WIFE, DEBBIE HOFFMAN WALTERS
DB 539 PG 031

(24) RODNEY LEE BUMGARNER
DB 790 PG 066

(50) LESTER E. WILLIAMS AND WIFE, KATIE J. B. WILLIAMS
DB 357 PG 378

(51) MONROE HOUK AND WIFE, CLARA HOUK
DB 256 PG 271

(49) LAWERENCE D. SUTTLES AND WIFE, BOBBIE JEAN SUTTLES
DB 778 PG 768

(52) CARRIE REEP
DB 302 PG 229

(53) SCOTT T. HULL AND WIFE, SHEILA C. HULL
DB 956 PG 219

-Y3IRPA- POTSta.0+00.000=
-L- POT Sta.24+23.000 (14.2 RT)

-Y3IRPD- ST Sta.0+00.000=
-L- STA.23+75.531 (14.2 LT)

-L- TSSta.24+82.209

-L- SCSta.25+72.209

-L- STA. 23+60

-L- STA. 26+90

MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 8

+08.287 (L) 62.229m (204.16')

+23.000 (L) 48.200m (157.48')

+05.249 (L) 48.42lm (158.86')

+82.209 (L) 43.936m (144.14')

+82.209 (L) 51.500m (168.96')

+17.60 (L) 35.93m (117.88')

+40.000 (L) 32.000m (104.98')

BL-11 PINC 17+58.42 -L- 23+16.92 RT (1.92m)

BL-12 PINC 18+59.72 -L- 24+74.43 (2.50m LT)

BL-13 PINC 19+32.09 -L- 25+19.67 (0.04m RT)

BL-14 PINC 20+65.270 -L- 26+82.760 (3.635m LT)

SPEC. LATERAL 'V' DITCH W/ CL.'B' RIP RAP SEE DITCH DETAIL C EST. 50.2 M TONS W/ 132.8 S.M. FF

CL.'B' RIP RAP EST. 2.7 M TONS W/ 8.4 FF

-L-

PIs Sta. 25+42.234	PI Sta. 26+46.528	PIs Sta. 27+49.791
θs = 5°09'23.8"	Δ = 16°54'32.4" (LT)	θs = 5°09'23.8"
Ls = 90.000	L = 147.559	Ls = 90.000
LT = 60.025	T = 74.320	LT = 60.025
ST = 30.023	R = 500.000	ST = 30.023
RO = 22.500	SE = .08	RO = 22.500

FOR -L- PROFILE SEE SHEET 20 & 21

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REVISIONS
R/W REVISION 10/11/02 LM REVISED PROPOSED R/W AND ADDED TCE TO PARCEL 55, JERRY F. CARPENTER, AND WIFE

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST. REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WARNING
ABANDONED TIN MINE AREA
-L- STA. 29+50.000 TO 30+60.000 +/-
SEE SPECIAL PROVISIONS BEFORE WORKING IN THIS LOCATION

MINNIE CARPENTER HOUK
DB 521PG 215

TERRY C. MULLEN AND WIFE,
DONNA W. MULLEN
DB 679 PG 606

SPEC. LATERAL 'V' DITCH
W/ CL.'B' RIP RAP
SEE DITCH DETAIL C
SEE SHEET 7 FOR
QUANTITIES

+90.000 (L)
36.928m (121.15')
46.000m (150.91')

(54)

MELVIN ROBERT WALTERS
AND WIFE,
DEBBIE HOFFMAN WALTERS
DB 539 PG 031

0.6m BASE HEAD DITCH
20m ø 4.50%
DDE = 40 C.M.
SEE DITCH DETAIL P

+05.000 (L)
37.489m (122.99')
46.000m (150.91')

SPEC. LATERAL 'V' DITCH
SEE DITCH DETAIL T

+09.768 (L)
32.000m (104.98')

-L- STSta. 28+09.768

(55)

JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 585 PG 183

SPEC. CUT DITCH
SEE DITCH DETAIL N

(56)

DOROTHY CARPENTER MARTIN AND HUSBAND,
DWIGHT MARTIN
DB 521PG 230

(57)

CAROLE L. GROVE
DB 766 PG 574

+98.287 (L)
37.234m (122.15')

MATCHLINE SEE SHEET 7

-L- STA. 26+90

-L- STA. 30+40

MATCHLINE SEE SHEET 9

1.2m PS

11.25 INC.

0.6m PS

CAT-1

5.72 COR-CL

ST 23+26.691

750 CLASS III

1800 mm

28

29

30

METER BOX

N 75° 54' 39.9" E

2GI(B)

FS-2

FS-3

41A

41

41B

BL-16
PINC 23+42.49
-L- 28+59.98
(1.766m LT)

15 m TAPER

PERMANENT
SOIL R/F MATTING
35 m²

+00.000 (L)
40.000m (131.23')

+00.000 (L)
36.000m (118.11')

+60.000
36.000m (118.11')

+80.000
28.000m (91.86')

+20.000
31.500m (103.35')

+40.000 (L)
43.000m (141.08')

CL.'B' RIP RAP
EST. 7.3 M TONS
W/ 17.6 S.M. FF

-L- CSSta. 27+19.768

BL-15
PINC 22+00.614
-L- 28+17.677
(3.78m LT)

CHARLES FRANKLIN ROYSTER AND WIFE,
PATTID. ROYSTER
DB 916 PG 610

JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 585 PG 183

ISBLK BUS

W/LT

CONC DOCK

CONC

CONC WALK

15 MTL BUS

1850 mm CHL 358W

200 mm - 1200 mm BK WALL

700 mm BK WALL

-L-		
PIs Sta 25+42.234	PI Sta 26+46.528	PIs Sta 27+49.791
θs = 5°09'23.8"	Δ = 16°54'32.4" (LT)	θs = 5°09'23.8"
Ls = 90.000	L = 147.559	Ls = 90.000
LT = 60.025	T = 74.320	LT = 60.025
ST = 30.023	R = 500.000	ST = 30.023
RO = 22.500	SE = .08	RO = 22.500

WARNING
ABANDONED TIN MINE AREA
-L- STA. 29+50.000 TO 30+60.000 +/-
SEE SPECIAL PROVISIONS BEFORE WORKING IN THIS LOCATION

FOR -L- PROFILE SEE SHEET 21

1-OCT-2004 8:44
R:\2004\2004-0617\2004-0617-085.pdh
JBraxton

REVISIONS
R/W REVISION 10/11/02 LM REVISED PROPOSED R/W AND ADDED TCE TO PARCEL 55, JERRY F. CARPENTER, AND WIFE
R/W REVISION 8/19/04 JB ADJUSTED PROPOSED TCE FLAGGING TO PARCEL 55, JERRY F. CARPENTER, AND WIFE

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST. REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE SEE SHEET 8

MATCHLINE SEE SHEET 10

-L- STA. 30+40

-L- STA. 33+80

-L- TSSta. 30+86.426

-L- SCSta. 31+76.426

-DR2- POTSta. 10+91.654
END CONSTRUCTION

-DR2- PTSta. 10+78.336

-DR2- PCSta. 10+58.141

-DR2- POTSta. 10+00.000
BEGIN CONSTRUCTION

BY38-72
POT 5+00.000

BY38-73
POT 1+02.347

BY38
PINC 31+99.807

BL-17
PINC 24+24.409
-L- 30+41.453
(0.899m LT)

BL-18
PINC 24+75.681
-L- 30+92.732
(0.522m LT)

BL-19
PINC 25+47.958
-L- 31+65.022
(0.602m LT)

BL-20
PINC 26+47.402
-L- 32+64.515
(0.956m LT)

57 CAROLE L. GROVE
DB 766 PG 574

58 DAVID M. CALDWELL
DB 597 PG 035

59 JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 549 PG 802
DB 541 PG 359
DB 493 PG 788

61 GARY L. COSTNER AND WIFE,
TINY B. COSTNER
DB 655 PG 317

60 CYNTHIA R. SEAGLE
DB 633 PG 121

55 JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 585 PG 183

59 JERRY F. CARPENTER AND WIFE,
JANE P. CARPENTER
DB 549 PG 802
DB 541 PG 359
DB 493 PG 788

+86.426 (L)
42.000m (137.79')

+24.04 (L)
46.50m (152.57')

+23.64 (L)
39.57m (129.82')

+41.92 (L)
41.92m (149.09')

+41.54 (L)
38.50m (126.32')

+78.472 (L)
36.685m (120.35')

+99.782 (L)
50.366m (165.24')

+74.30 (L)
58.30m (191.26')

+70.000 (L)
37.000m (121.39')

+45.598 (L)
34.673m (113.75')

+92.00 (L)
30.80m (101.04')

+94 END SBG

+00 BEGIN SBG

+14.481 (L)
47.988m (157.44')

+47.358 (L)
69.629m (228.44')

+60.786 (L)
66.738m (218.96')

+17.693 (L)
72.157m (236.73')

+76.875 -DR2-
-4.480m (14.70')

+60.500 -DR2-
16.000m (52.49')

+40.000 -DR2-
-12.000m (39.37')

+06.806 -DR2-
-12.000m (39.37')

+07.674 -DR2-
12.000m (39.37')

+38.694 (L)
67.722m (222.18')

+60.687 (L)
80.715m (264.81')

+76.426 (L)
36.500m (119.75')

+60.000 (L)
47.000m (154.20')

+51.453 (L)
35.818m (117.51')

0.9m BASE CHANNEL
W/ CL. 'B' RIP RAP
18m @ 10.0%
EST. DDE = 60 C.M.
EST. 31.6 M TONS
W/ 79 S.M. FF
SEE DITCH DETAIL U

0.6M BASE LATERAL BASE DITCH
W/ CL. 'B' RIP RAP
EST. 45.1 M TONS
W/ 114.7 S.M. FF
SEE DITCH DETAIL M

CLASS 'I' RIP RAP
EST. 13.6 M TONS
W/ 25.1 S.M. FF

0.9m BASE TAIL DITCH
W/ CL. 'B' RIP RAP
13m @ 2.00%
EST. DDE = 75 C.M.
EST. 26.3 M TONS
W/ 65.9 S.M. FF
SEE DITCH DETAIL U

1.5m BASE CHANNEL
W/ CL. 'I' RIP RAP(0.45 THK.)
27m @ 2.66% FROM 260.7
DDE = 115 C.M.
EST. 100 M TONS
W/ 60 S.M. FF
SEE DITCH DETAIL H

LATERAL 'V' DITCH
W/ CL. 'B' RIP RAP
EST. 39.7 M TONS
W/ 104.9 S.M. FF
SEE DITCH DETAIL Q

CL. 'B' RIP RAP
EST. 2.7 M TONS
W/ 8.4 FF

CL. 'B' RIP RAP
EST. 2.7 M TONS
W/ 8.4 FF

FILL & ABANDON
CHANNEL - 60 C.M.

END FENCE TIE TO HEADWALL

BEGIN FENCE TIE TO HEADWALL

GRADE TO DRAIN

SPECIAL DITCH GRADE

HEADWALL

TDE

1650 CLASS IV

800 CSP

400 CSP

450 CSP

600

450

375

2GI(B) 44

2GI(A) 42

3GI(A) 49

2GI(B) 50

2GR(B) FL GR

FS-1

FS-2

FS-3

REM PIPE

GRAU-350

WARNING
ABANDONED TIN MINE AREA
-L- STA. 29+50.000 TO 30+60.000 +/-
SEE SPECIAL PROVISIONS BEFORE
WORKING IN THIS LOCATION

-L-

PIs Sta 31+46.428	PI Sta 32+92.286	PIs Sta 34+37.811
θs = 1° 28' 24.0"	Δ = 7° 34' 32.1" (RT)	θs = 1° 28' 24.0"
Ls = 90.000	L = 231.383	Ls = 90.000
LT = 60.002	T = 115.860	LT = 60.002
ST = 30.002	R = 1,750.000	ST = 30.002
RO = 60.000	SE = .03	RO = 60.000

OBLITERATE PAVEMENT

FOR -L- PROFILE SEE SHEET 21 & 22

1-OCT-2004 6:55
R:\0617c\roadway\sht\617c_sht09.dgn
fbeaton

REVISIONS
REVISION DATE: 6/03/02, ADJUSTED OFFSET DISTANCES OF R/W MONUMENTS LEFT OF -L- STATION 34+97.809 AND 35+85.000

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DA SPIVEY

-L-

PIs Sta 31+46.428	PI Sta 32+92.286	PIs Sta 34+37.811
Θs = 1° 28' 24.0"	Δ = 7° 34' 32.1" (RT)	Θs = 1° 28' 24.0"
Ls = 90.000	L = 231.383	Ls = 90.000
LT = 60.002	T = 115.860	LT = 60.002
ST = 30.002	R = 1,750.000	ST = 30.002
RO = 60.000	SE = .03	RO = 60.000

-L- STSta.34+97.809

-L- CSSta.34+07.809

0.9m BASE LATERAL DITCH
SEE DITCH DETAIL R

SWALE

(64) WADE S. WILLIAMS AND WIFE, GLADYS MAE WILLIAMS
DB 555 PG 390
DB 526 PG 917
DB 408 PG 067

(62) MOZELLE S. SCRONCE AND HUSBAND, DAN SCRONCE
DB 625 PG 205

(63) PHILIP CLYDE COLLINS, WIDOWER
DB 625 PG 247

+96.42 (L)
42.417m (139.16')
END FENCE

+95.433 (L)
32.281m (105.91')
BEGIN FENCE

+97.808 (L)
40.193m (131.86')

+97.808 (L)
55.000m (180.45')

+85.000 (L)
55.000m (180.45')

+85.000 (L)
35.000m (114.83')

+60.000 (L)
35.000m (114.83')

END FENCE TIE TO HEADWALL

BEGIN FENCE TIE TO HEADWALL

HEADWALL

TOE PROTECTION
SEE DITCH DETAIL S
CL.'B' RIP RAP
EST. 32.5 MTN
W/ 68 S.M. F F

BL-21
PINC 27+64.643
-L- 33+81.859
(1.347m LT)

BL-22
PINC 28+61.618
-L- 34+78.879
(0.583m LT)

BL-24
PINC 30+39.107
-L- 36+56.364
(1.867m LT)

CAT-1

GRAU-350

2GI(B) FL GR

2GI(D)

FS-3

+10 BEGIN SBG

+00 END SBG

+20 BEGIN SBG

+20 END SBG

30 INC

30m TAPER

60m FULL

90m TAPER

METHOD 'B'

CSP W/ 2 ELBS

1500 RCP CL. IV

TOE PROTECTION
SEE DITCH DETAIL S
CL.'B' RIP RAP
EST. 39 MTN
W/ 81 S.M. FF

TOE PROTECTION
SEE DITCH DETAIL S
CL.'B' RIP RAP
EST. 32.5 MTN
W/ 67.5 S.M. FF

BL-23
PINC 29+57.439
-L- 35+74.696
(1.437m LT)

CL.'B' RIP RAP
EST. 0.9 TONS
W/ 4.2 S.M. FF

CL.'I' RIP RAP
EST. 23.6 TONS
W/ 46.8 S.M. FF

+89.123 (L)
36.235m (118.88')

+07.809
35.000m (114.82')

+87.399 (L)
53.806m (176.53')

+97.809 (L)
52.022m (170.67')

+21.53 (L)
57.40m (188.30')

+03.58 (L)
59.64m (195.68')

+21.656 (L)
49.059m (160.95')

+60.000 (L)
32.000m (104.98')

N 86° 25' 59.9" E

N89°54'26"E 25.290

N89°47'03"E 9.167

N89°32'01"W 124.416

N89°32'01"W 9.163

S89°32'01"E 129.970

TDE

ROCK

CONC

H/R

DECK

POOL

BLK WALL

GR

SOIL

EIP

CMP

GUY

MATCHLINE SEE SHEET 9 -L- STA. 33+80

MATCHLINE SHEET 11 -L- STA. 36+60

FOR -L- PROFILE SEE SHEET 22

8-OCT-2002 M.556
WS-axicon R-0617-18.pgh

REVISIONS
REVISION DATE: 6/03/02. CREATED PARCEL 66A. DONALD HUSS, JR. ADJUSTED OFFSET DISTANCE OF R/W MONUMENT LEFT OF -L- STATION 39+20.000

PROJECT REFERENCE NO.	SHEET NO.
R-617C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- STA 37+00
-Y39- POTSTA 10+00

PERMANENT SOIL R/F MATTING 30 m²

SPECIAL CUT DITCH SEE DITCH DETAIL N

SPECIAL CUT DITCH SEE DITCH DETAIL N

BL-25 PINC 31+39.676 -L- 37+56.931 (1.502m LT)

(64) WADE S. WILLIAMS AND WIFE, GLADYS MAE WILLIAMS DB 555 PG 390 DB 526 PG 917 DB 408 PG 067

BL-26 PINC 32+39.312 -L- 38+46.761 (0.228m RT)

CL.'B' RIP RAP EST. 0.9 M TONS W/ 4.2 S.M. FF

PROTECTION DITCH DETAIL S M TONS 'B' RIP RAP S.M. FF

+20.000 (L) 35.000m (114.82')

+20.000 (L) 50.00m (164.04')

LATERAL 'V' DITCH SEE DITCH DETAIL B

BL-27 PINC 33+29.324 -L- 39+46.563 (1.556m LT)

MATCHLINE SEE SHEET 10 -L- STA. 36+60

MATCHLINE SEE SHEET 12 -L- STA. 39+80

MATCHLINE SEE SHEET 18 -L- STA. 40+91

2G(B) 57

1.2m PS

7.2m

450

R=30m-1.5m

3.6m

6m

10.8m

37

2G(B)

70m

38

60m FULL

3.6m

R=30m-1.5m 58

0.6m PS

GRADE TO DRAIN

450

7.2m

10.8m

30m TAPER

0.6m

39

-L-

N 86° 25' 59.9" E

0.6m PS

+55 BEGIN SBG 60

GRAU-350

375

2G(B) FL GR

400 CSP W/ 2 ELBS

59

2G(B) FL GR

30m TAPER

1.2m PS

750 RCP, CLASS IV W/ METHOD 'B' INSTALLATION

CL.'B' RIP RAP EST. 7.3 M TONS W/ 17.6 S.M. FF

0.6m BASE TAIL DITCH W/ CL.'B' RIP RAP 22m @ 5.0% SEE DITCH DETAIL G EST. DDE = 60 C.M. EST. 35.4 M TONS W/ 90.1 S.M. FF

2G(B) CAT-I FL GR

400 CSP W/ 2 ELBS

61 +22 BEGIN SBG

1.2m PS

0.6m PS

PCSta. 10+29.200

CL.'B' RIP RAP EST. 2.7 M TONS W/ 8.4 S.M. FF

0.6m BASE TAIL DITCH 42m @ 6.7% SEE DITCH DETAIL P EST. DDE 100 C.M.

CL.'B' RIP RAP EST. 1.8 M TONS W/ 5.9 S.M. FF

LATERAL 'V' DITCH W/ CL.'B' RIP RAP EST. 52.9 M TONS W/ 139.8 S.M. FF SEE DITCH DETAIL O EST. CM DDE

R=30m-15m 15m OFFSET

SPEC. LATERAL 'V' DITCH SEE DITCH DETAIL T

+40.000 (Y39) 18.000m (59.05')

R=40m-20m 29m OFFSET

+61.97 (L) 52.04m (170.72')

+62.26 (L) 68.95m (226.22') BEGIN FENCE

N 86° 25' 59.9" E -Y39-

109 600

+75.000 (Y39) 28.000m (91.86')

+20.00 (Y39) 24.44m (80.18') END FENCE

+50.000 (Y39) 20.000m (65.61')

PTSta. 11+07.740

+00.000 (Y39) 29.000m (95.14')

CL.'B' RIP RAP EST. 2.7 M TONS W/ 9.2 S.M. FF

SPEC. LATERAL

L
NC 150
1/2 1/2
Y39
SR 1300

1999 ADT IN HUNDREDS
2025 ADT IN HUNDREDS

-Y39-

PI Sta 10+79.200	PI Sta 14+76.546
Δ = 90° 00' 00.0" (LT)	Δ = 85° 27' 02.5" (RT)
L = 78.540	L = 193.881
T = 50.000	T = 120.067
R = 50.000	R = 130.000
SE = 0.08	SE = 0.08

(64) WADE S. WILLIAMS AND WIFE, GLADYS MAE WILLIAMS DB 555 PG 390 DB 526 PG 917 DB 408 PG 067

FOR -L- PROFILE SEE SHEET 22
FOR -Y39- PROFILE SEE SHEET 33
FOR INT OF -L- & -Y39- SEE SHEET 2H

6/03/02
8-OCT-2002 8:57
Preston

MATCHLINE SEE SHEET 17 -Y40- STA. 20+20

MATCHLINE SEE SHEET 11 -L- STA. 39+80

MATCHLINE SEE SHEET 16 -Y40- STA. 15+90

REVISIONS

REVISION DATE 8/19/04 JB
ROOT RUN, R/W & REVISED TITLE, PARCEL 7 ALT, KENNETH BUTNER JR. AND WIFE, JANE B. FISHER

ROOT RUN, R/W, PARCEL 7 ALT, LESTER S. MAHNEY ESTATE

KEY R/W, PARCEL 6D, PAUL LAMPE, JR. AND WIFE STACIE H. PAYNE

A

B

C

D

FOR -L- PROFILE SEE SHEET 22 & 23
FOR -Y40RPA- PROFILE SEE SHEET 29
FOR -Y40RPB- PROFILE SEE SHEET 28 & 30
FOR -Y40RPC- PROFILE SEE SHEET 31
FOR -Y40RPD- PROFILE SEE SHEET 32 & 33
FOR -Y4- PROFILE SEE SHEET 34
OBLITERATE PAVEMENT

BRIDGE SKETCH
SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT

END STATE PROJ. B-3940(2) -L- STA. 45+83.559
END FA PROJ STP-150(3) -L- STA. 45+83.559

METRIC

PROJECT REFERENCE NO. B-3940
R/W SHEET NO. 12
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CONSTRUCTION
R/W REV. 8/19/04

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY: DATE:

CHECKED BY: DATE:

REVISIONS

Revised R/W and Easement on Parcel 86.(12-19-01)MAB
REVISION DATE: 6/03/02, REDUCED SLOPE STAKES AND CHANGED R/W BACK TO THE ORIGINAL LOCATION ON PARCEL 86, ADDED TWO 9.0 M DRIVES TO PARCEL 89

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

CONST. REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE SEE SHEET 14

MATCHLINE SEE SHEET 14

MATCHLINE SEE SHEET 6 -Y31- STA. 16+00

MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 15 -Y31- STA. 19+40

BEGIN CONSTRUCTION
-Y38- POT Sta. 9+45.000

+45.000 (Y38)
9.047m (29.68')

+45.000 (Y38)
9.024m (29.60')

+59.810 (Y38)
15.730m (51.61')

+95.000 (Y31)
31.378m (102.94')

PINC Sta. 10+00.000

PC Sta. 10+18.518

+19.80 (Y38)
21.56m (70.73')

PT Sta. 10+31.959

+60.19 (Y38)
12.51m (41.04')

+00.54 (Y38)
14.22m (46.65')

+35.000 (Y31)
25.000m (82.02')

+53.392 (Y31)
28.000m (91.86')

-Y31- STA 16+50
-Y35- STA 10+00

-Y38- POT Sta. 10+42.27m=
-Y31- POS Sta. 17+65.412

REMOVE STRUCTURE

EST. 5.4 M TONS
CLASS 'B' RIP RAP
W/ 18.4 S.M. FF

Y38
SR 1250

Y31
US 321 BUS.
1999 ADT IN HUNDREDS
2025 ADT IN HUNDREDS

FIBER OPTIC TELE DUCT IS SUSPENDED FROM BRIDGE AT THIS LOCATION.

SPEC. LATERAL 'V' DITCH
SEE DITCH DETAIL 'T'

-Y31-

PIs Sta. 17+47.970	PI Sta. 18+44.927	PIs Sta. 19+37.373
Θs = 8° 58' 04.9"	Δ = 35° 13' 35.7" (RT)	Θs = 8° 58' 04.9"
Ls = 72.000	L = 141.409	Ls = 72.000
LT = 48.062	T = 73.019	LT = 48.062
ST = 24.056	R = 230.000	ST = 24.056

FOR -Y38- PROFILE SEE SHEET 36
FOR -Y31- PROFILE SEE SHEET 24 & 25
FOR -Y35- PROFILE SEE SHEET 35
FOR INT OF -Y31- & -Y38- SEE SHEET 26
FOR INT OF -Y31- & -Y35- SEE SHEET 26

OBLITERATE PAVEMENT

JOAN MARIE SIGMON, SINGLE
DB 635 PG 466

ROBERT R. SULLIVAN AND WIFE, EVA SULLIVAN
DB 263 PG 165

RUTHERFORD ELECTRIC MEMBERSHIP CORPORATION
DB 643 PG 92

JAMES M. CHANEY, JR.
DB 970 PG 844

LINCOLNTON CITY LIMITS

CHARLIE W. CALLAWAY
DB 768 PG 664

0.6 m LATERAL BASE DITCH
W/ CLASS 'B' RIP RAP
EST. 48.3 M TONS
W/ 122.9 S.M. FF
SEE DITCH DETAIL M

HEADWALL

LATERAL 'V' DITCH
SEE DITCH DETAIL B

JERRY F. CARPENTER AND WIFE, JANE P. CARPENTER
DB 871PG 046

ADAM L. LEDFORD AND WIFE, BARBARA H. LEDFORD
DB 973 PG 829

SPEC. LATERAL 'V' DITCH
SEE DITCH DETAIL T

SPEC. LATERAL 'V' DITCH
W/ PERM. SOIL R/F MATTING
SEE DITCH DETAIL I

MIKE MCCARTHY
DB 905 PG 862

LINCOLN COUNTY FARM BUREAU INC.
DB 565 PG 879

-DET1- PT Sta. 16+36.657
-Y31- TS Sta. 16+99.908
-DET1- POT Sta. 16+76.824
-Y31- POT Sta. 16+60
-Y31- SC Sta. 17+71.908
-Y31- CS Sta. 19+13.317
-Y31- PT Sta. 16+43.685
-DET1- PRC Sta. 15+54.954
-Y35- PT Sta. 10+29.499
END CONST. -Y35- STA 10+76.267
-Y35- PC Sta. 10+02.203

CL.'B' RIP RAP
EST. 0.9 M TONS
W/ 4.2 S.M. FF

CL.'B' RIP RAP
EST. 4.5 M TONS
W/ 13.4 S.M. FF

400 CSP
W/ 2 ELBS

CL.'B' RIP RAP
EST. 2.7 M TONS
W/ 8.4 S.M. FF

REMOVE

Y31
US 321 BUS.
1999 ADT IN HUNDREDS
2025 ADT IN HUNDREDS

MARVIN JARRETT, BOY(

8-OCT-2004 15:52
K:\Projects\R-0617C\Roadway\Sheets\R-0617C_sht13.dgn

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

MATCHLINE SEE SHEET 5 -SERV- STA 12+60

-SERV- PCSta.13+50.453

CL.'B' RIP RAP
EST. 1.8 M TONS
W/ 5.9 S.M. FF

N 12° 12' 33.2" E

-SERV- PTSta.14+43.366

PERMANENT
SOIL R/F MATTING
44 S.M.

GRADE TO DRAIN

TIE TO EXISTING

US 321 BUS. 7D BST

R=11m

N 36° 43' 08.2" E

SPECIAL LAT. 'V' DITCH
SEE DITCH DETAIL 'T'

MATCHLINE SEE SHEET 13

MATCHLINE SEE SHEET 15 -SERV- STA 16+40

LINCOLNTON CITY LIMITS

KENNETH B. BEAM ESTATE
DB 697 PG 448

NCDOT

'V' DITCH W. 7m e

PLUG

-SERV-

GRAU-350

RET

450 mm CONC

300 mm

GRADE TO DRAIN

OUTL NOT FOUND

MATCHLINE SEE SHEET 13

HOWARD LEE SUMMIT ANDREW JEWELL SUMMIT
DB 3516 PG 2370

BRD

CAR PORT

ISBKD

MTL CANOPY

-SERV-
PI Sta 3+98.454
Δ = 35° 29' 25.0" (LT)
L = 92.913
T = 48.001
R = 150.000
SE = .04

OBLITERATE PAVEMENT

FOR -SERV- PROFILE SEE SHEET 39

8-OCT-2004 14:33
Stockton
M:\0617\c\0617c14.dgn

6/10/99

REVISIONS

Revised R/W and TCE on Parcel 99. (12-19-01) MAB

REVISION DATE: 6/03/02, COMBINED PARCELS 98 AND 99 AS 99, DEBRA ANITA JOHNSON. CHANGED PRICE D. HERNDON TO MONROE HERNDON ON PARCEL 92. CHANGED JOHN E. HERNDON TO CHARLES HERNDON ON PARCEL 93. DELETED HAYWOOD KILLIAN AND LEFT AS KARAH KILLIAN ON PARCEL 96. ELIMINATED CLAIM ON PARCEL 100

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.

BEG CONST -Y32- STA 12+00

+00.000 (Y32)
9.22m (29.93') & 15.09m (49.57')

+00.000 (Y32)
9.16m (30.08') & 15.54m (49.72')

-Y32- PCSta. 12+05.815

GRADE TO DRAIN

+20.000 (Y32)
15.000m (49.21')

HERNDON'S CHAPEL A.M.E. ZION METHODIST CHURCH OF LINCOLN COUNTY DB 367 PG 486

-Y32-
PI Sta 12+37.047
Δ = 14° 14' 31.3" (RT)
L = 62.143
T = 31.232
R = 250.000

-Y31-
PI Sta 21+66.225
Δ = 3° 43' 04.8" (LT)
L = 162.229
T = 81.143
R = 2,500.000

-Y32- PTSta. 12+67.957

+52.831 (Y32)
18.976m (62.33')

+60.521 (Y32)
21.862m (71.73')

+67.957 (Y32)
18.18m (59.65')

+67.957 (Y32)
14.314m (46.96')

GEORGE W. HERNDON AND WIFE, MARY JANE HERNDON
DB 262 PG 035

DIANNE H. BRACKETT
DB 705 PG 422

CARPENTER
IFE
CARPENTER
DB 499 PG 051

MONROE HERNDON
DB 359 PG 622

CHARLES HERNDON
DB 1276 PG 653

KARAH KILLIAN
DB 487 PG 306

E.J. HERNDON AND WIFE, MAGGIE HERNDON HEIRS
DB 121 PG 278

DEBRA ANITA JOHNSON
DB 905 PG 198

HAYWOOD KILLIAN AND WIFE, KAREN KILLIAN
DB 459 PG 218

MARTHA HERNDON HEIRS
DB 099 PG 515

SUSAN JARRETT HUDDLESTON AND HUSBAND, WILLIAM McKENZIE HUDDLESTON, JR.
DB 703 PG 671

FGTC LEASING CORP., A NEW YORK CORPORATION
DB 999 PG 346

ISBLK CHURCH

CONC RAMP

REDLEAF TRAIL SR 2157

US 321 BUS.

	Y31	
Y32 SR 1256	7/10	4/7
	46/75	2/4
		Y33 SR 1256

1999 ADT IN HUNDREDS
2025 ADT IN HUNDREDS

SPECIAL CUT DITCH
SEE DITCH DETAIL N

-SERV- PCSta. 16+56.006

-SERV- PTSta. 17+04.302

CLASS 'B' RIP RAP
EST. 10.0 M TONS
W/ 23.4 S.M. FF

-Y31- PCSta. 20+85.082

R=40m-20m
1.8m OFFSET

+20.000 (Y31)
27.44m (91.02')

SPEC. LATERAL 'V' DITCH
W/ CL. 'B' RIP RAP
SEE DITCH DETAIL C
EST. 79.3 M TONS
W/ 209.7 S.M. FF

SPEC. LATERAL 'V' DITCH
SEE DITCH DETAIL 'T'
R=10m

SEE SHEET 14 -SERV- STA 16+40

MATCHLINE SEE SHEET 13 -Y31- STA 19+40

S 74° 00' 07" E

N 15° 53' 56.5" E
-Y31-

S 67° 38' 53.2" E
-Y32-

-SERV- STSta. 17+09.802
-Y31- STA 19+85.317

-SERV-
PI Sta 6+83.589
Δ = 69° 10' 44.6" (RT)
L = 48.296
T = 27.583
R = 40.000
SE = .04

-Y31- STA 21+39.248
-Y32- STA 13+89.991

END CONST -Y31- STA 23+00

-Y31- PTSta. 22+47.311

90m UNIFORM TAPER

PLUG EACH END

RETAIN 450 mm CONC

HEADWALL

COLLAR

REMOVE 375 mm RCP

REMOVE 900 mm RCP

30m TAPER

10m FILL

NC 150 / US 321 BUS. 7.3 BST

NC 150 / US 321 BUS.

EXIST. R/W

FOR -Y31- PROFILE SEE SHEET 25
FOR -Y32- PROFILE SEE SHEET 35
FOR -SERV- PROFILE SEE SHEET 39
FOR INT OF -Y31- & -Y32- SEE SHEET 26
FOR INT OF -Y31- & -SERV- SEE SHEET 26

8-OCT-2004 16:33
R:\Projects\R-0617C\Design\Roadway\Sheets\R-0617C_Sht15.dgn
Easton

REVISIONS
REVISION DATE:8/6/04 JB ADDITIONAL R/W & REDUCED TOE,PARCEL 142. KENNETH E.FINGER JR.AND WIFE,JANE W.FINGER ADDITIONAL R/W & REDUCED TOE,PARCEL 1032. JOHN H.HYDER JR.AND WIFE,MARGARET W.HYDER

-Y40RPC OLD-
PI Sta.0+74.68
Δ = 90°00'00"
D = 63°39'26.94" (RT)
L = 56.00
T = 50.00
R = 90.0000
PI Sta.0+74.68
Δ = 90°00'00"
D = 63°39'26.94" (LT)
L = 56.00
T = 50.00
R = 90.0000

-Y40RPC-
PI Sta.0+74.68
Δ = 90°00'00"
D = 63°39'26.94" (RT)
L = 56.00
T = 50.00
R = 90.0000
PI Sta.0+74.68
Δ = 90°00'00"
D = 63°39'26.94" (LT)
L = 56.00
T = 50.00
R = 90.0000

-Y40RPB-
PI Sta.0+37.341
Δ = 90°00'00"
D = 63°39'26.94" (RT)
L = 56.00
T = 50.00
R = 90.0000
PI Sta.0+37.341
Δ = 90°00'00"
D = 63°39'26.94" (LT)
L = 56.00
T = 50.00
R = 90.0000

ROBERT WAITHE CHAPMAN AND WIFE, DOROTHY P. CHAPMAN
DB 740 PG 606
DB 590 PG 532
DB 487 PG 566
DB 487 PG 563

BOBBY KENNETH CHAPMAN AND WIFE, NANCY P. CHAPMAN
DB 680 PG 387
DB 487 PG 402
DB 482 PG 546

EDWIN YATES CHAPMAN AND WIFE, VASSIE E. CHAPMAN
DB 309 PG 463
DB 278 PG 347

JOHN H. HYDER, JR. AND WIFE, MARGARET W. HYDER
DB 486 PG 986

B.C. LINDERMEIER M.D.ETAL
DB 997 PG 660
DB 786 PG 209

THOMAS EDWIN ROACH AND WIFE, EMMATRUDE S. ROACH
DB 778 PG 544

-Y40- POT Sta.0+00.000

-Y40RPB- SCSta.0+00.000
-Y40- POT Sta.12+86.00 (LT)
(44.5066 (LT))

-Y40RPB- SCSta.0+56.000

-Y40RPB- SCSta.2+63.874

-Y40RPB- SCSta.3+47.914

-Y40RPB- CSSta.2+47.914

-Y40RPC- POT Sta.0+00.000
-Y40- POT Sta.9+70.000 (143.256 RT)

-Y40RPC- TSSta.0+50.000

-Y40RPC- SCSta.1+06.000

-Y40RPC OLD- POT Sta.0+00.000

-Y40RPC OLD- TSSta.0+37.127

-Y40RPC OLD- SCSta.0+93.127

-Y40RPC OLD- CSSta.1+43.062

-Y40RPC OLD- STSta.2+25.062

-Y40RPC- STSta.3+56.780

-Y40RPC- CSSta.3+00.780

BEGIN APPROACH SLAB
-Y40RPC- Sta.2+36.885

BEGIN BRIDGE
-Y40RPC- Sta.2+44.000

END BRIDGE
-Y40RPC- Sta.3+76.000

END APPROACH SLAB
-Y40RPC- Sta.3+83.395

FOR -Y40RPB- PROFILE SEE SHEET 69
FOR -Y40RPC- PROFILE SEE SHEET 57

BRIDGE SKETCH
SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT

MATCHLINE SEE SHEET 72 -Y40- STA 15+90

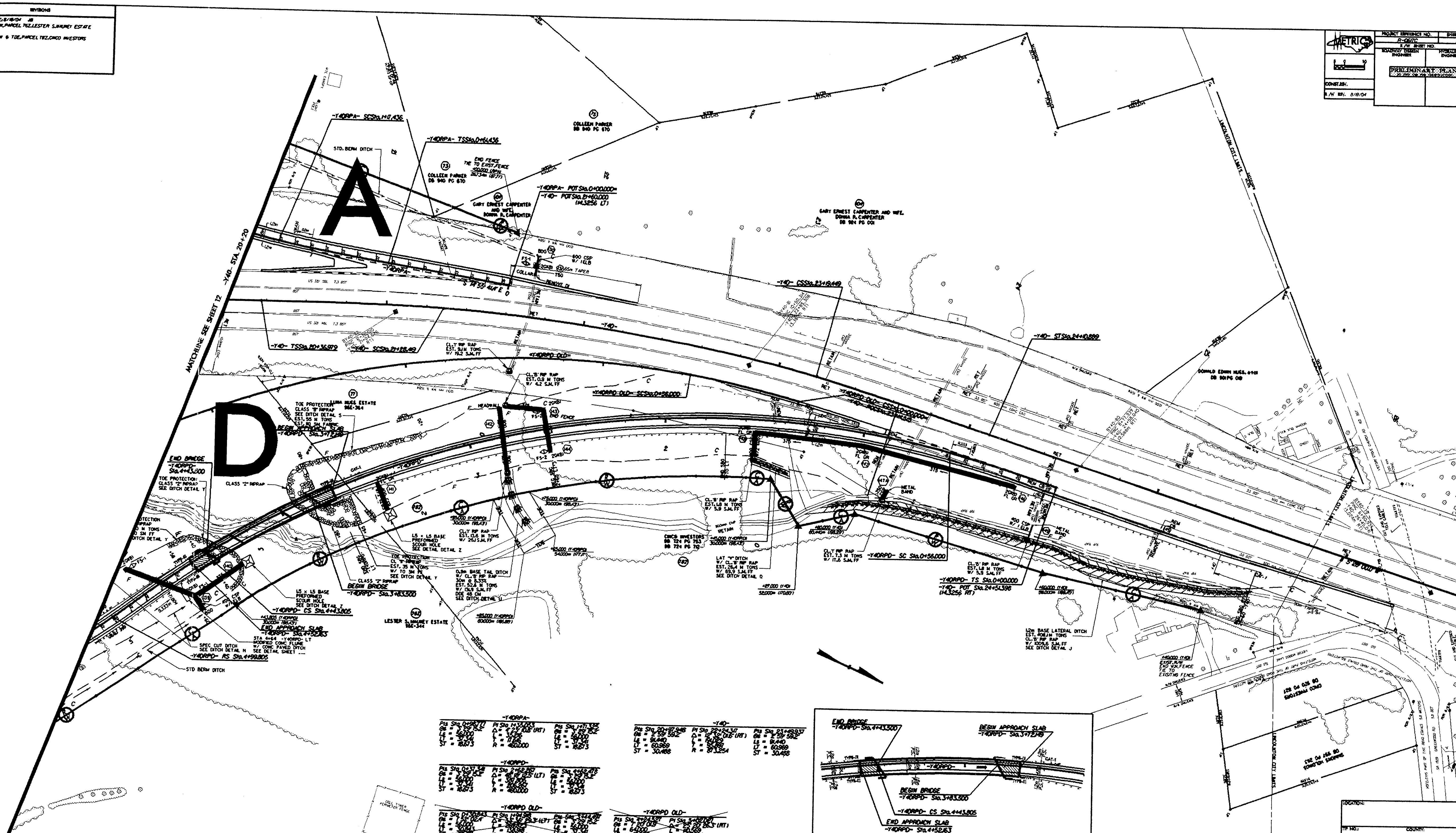
PROJECT REFERENCE NO.	SHEET NO.
R-0601C	56
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CONSTR.
R/W REV. 8/6/04

LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	DATE:
CHECKED BY:	DATE:

REVISIONS
REVISION DATE: 8/18/04 JB
ADDITIONAL R/W, PARCEL 782, LESTER S. MAUNEY ESTATE
ADDITIONAL R/W & TDE, PARCEL 787, CINCO INVESTORS



-Y40RPA-

PIs Sta. 0+96.777	PI Sta. 1+35.063	PIs Sta. 1+71.338
θs = 5°29'15.2"	Δ = 4°23'10.5" (RT)	θs = 5°29'15.2"
Ls = 56.000	L = 35.256	Ls = 56.000
LT = 37.341	T = 17.636	LT = 37.341
ST = 18.673	R = 460.000	ST = 18.673

-Y40-

PIs Sta. 20+97.946	PI Sta. 22+24.317	PIs Sta. 23+49.937
θs = 2°59'59.2"	Δ = 12°[illegible] (RT)	θs = 2°59'59.2"
Ls = 91.440	L = [illegible]	Ls = 91.440
LT = 60.969	T = [illegible]	LT = 60.969
ST = 30.488	R = 873.254	ST = 30.488

-Y40RPD-

PIs Sta. 0+37.348	PI Sta. 2+62.[illegible]	PIs Sta. 4+62.478
θs = 5°29'15.2"	Δ = [illegible] (LT)	θs = 5°29'15.2"
Ls = 56.000	L = [illegible]	Ls = 56.000
LT = 37.341	T = [illegible]	LT = 37.341
ST = 18.673	R = 460.000	ST = 18.673

-Y40RPD OLD- (crossed out)

-Y40RPD OLD- (crossed out)

BRIDGE SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT

FOR -Y40RPA- PROFILE SEE SHEET 29
FOR -Y40RPD- PROFILE SEE SHEET 32 & 33

PROJECT REFERENCE NO.	SHEET NO.
R-2617C	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
CONST. REV.	
R/W REV. 8/19/04	

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY: DATE:
CHECKED BY: DATE:

8/17/99

REVISIONS

MATCHLINE SEE SHEET 11 -Y39- STA. 11+80

MATCHLINE SEE SHEET 11

MATCHLINE SEE SHEET 12

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-0617C	18
	R/W SHEET NO.	
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

'V' DITCH SEE DITCH DETAIL T

HEADWALL

SPECIAL LATERAL 'V' DITCH W/ PERM SOIL R/F MATTING SEE DITCH DETAIL I EST. 25 SM (EA.)

N 86° 25' 59.9" E
-Y39-

GRAU-350

DONALD EDWIN HUSS, JR
MICHAEL CHANWYKE HUSS
BRIAN CLETUS HUSS
AS TENANTS IN COMMON
DB 901 PG 21

PCS Sta. 13+56.478

+73.180 (L)
101.555m (333.18')

LATERAL 'V' DITCH SEE DITCH DETAIL B

CL. 'B' RIP RAP EST. 10.0 M TONS W/ 23.4 S.M. FF

0.6m BASE TAIL DITCH 22m @ 0.50% SEE DITCH DETAIL P EST. DDE = 25 C.M.

+77.698 (L)
104.597m (343.18')

LATERAL 'V' DITCH W/ CLASS B RIP RAP EST. 72.7 M TONS W/ 192.3 S.M. FF SEE DITCH DETAIL Q

CL. 'B' RIP RAP EST. 2.7 M TONS W/ 8.4 S.M. FF

+00.000 (Y39)
21.000m (68.89')

+80.000 (Y39)
20.000m (65.61')

+06.615 (Y39)
17.186m (56.38')

+28.098 (Y39)
19.989m (65.58')

WADE S. WILLIAMS AND WIFE, GLADYS MAE WILLIAMS
DB 555 PG 390
DB 526 PG 917
DB 408 PG 067

DONALD EDWIN HUSS, JR., MICHAEL CHANWYKE HUSS, AND BRIAN CLETUS HUSS AS TENANTS IN COMMON
DB 901 PG 021
DB 671 PG 655

SPECIAL RISER BASIN W/ 900mm CSP RISER/BARREL SEE SPECIAL DETAIL

LARRY COFFEY AND WIFE, PEGGY R. COFFEY
DB 387 PG 674

+70.825 (L)
182.473m (598.66')

CL. 'B' RIP RAP EST. 6.4 M TONS EST. 18.4 S.M. FF

+75.343 (L)
185.515m (608.64')

CHARLES HARMON HUSS
DB 649 PG 362

PT Sta. 15+50.360

+50.360 (Y39)
18.000m (59.05')

LARRY COFFEY AND WIFE, PEGGY R. COFFEY
DB 387 PG 674

SPEC. CUT DITCH SEE DITCH DETAIL N

+06.801 (Y39)
16.321m (53.54')

POT Sta. 16+10.783

+10.232 (Y39)
9.058m (29.71')

+03.280 (Y39)
16.288m (53.43')

+03.249 (Y39)
9.265m (30.39')

END CONST -Y39- STA 16+00.36

-Y39-
PI Sta 14+76.546
Δ = 85° 27' 02.5" (RT)
L = 193.881
T = 120.067
R = 130.000
SE = 0.08

FOR -Y39- PROFILE SEE SHEET 33 & 34

-L-

BEGIN GRADE -L- STA 10+00.000
ELEV 261.220

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 12.6	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2.6	CMS
DESIGN HW ELEVATION	= 258.24M	
100 YEAR DISCHARGE	= 3.00	CMS
100 YEAR HW ELEVATION	= 258.40M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 6.69	CMS
OVERTOPPING ELEVATION	= 260.90M	

BM #100
200mm SPIKE IN ROOT OF 200mm DOGWOOD, 27.6m SOUTH OF BL-2
EL = 262.796

+0.68000%

1200

263.732

(SEE SHEET 36 FOR -LNBL- & -LSBL- PROFILE)

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 33.6	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.10	CMS
DESIGN HW ELEVATION	= 262.34M	
100 YEAR DISCHARGE	= 8.30	CMS
100 YEAR HW ELEVATION	= 262.60M	
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 14.36	CMS
OVERTOPPING ELEVATION	= 264.50M	

PI = 15+00.000
EL = 264.525 m
VC = 150 m

BM #101
200mm SPIKE IN ROOT OF 350mm OAK, 11.4m SOUTHWEST OF BL-5 AND 19.2 m WEST OF RED BUD ROAD
EL = 264.790

271.215

263.732

-1.66699%

+2.51534

1800

END DITCH GR.LT.
PI = 16+80.000
EL = 263.000

(+) 2.56000%

BEGIN DITCH GR.LT
PI = 15+00.000
EL = 257.000

(+) 2.50000%

(+) 5.00000%

PI = 16+00.000
EL = 261.000

PI = 15+40.000
EL = 258.000

BM #112
200mm SPIKE IN BASE OF 400mm SWEET GUM, 8.8m SOUTH OF BY30-52 AND 3.3m FROM THE WEST EDGE OF PAVEMENT ON RED BUD ROAD
EL = 265.979

11-OCT-2006 14:49
V8-exton

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-L-

BEGIN DITCH GR.LT.
PI 17+60.000
EL 270.380

PI =18+40.000
EL= 270.620

PI =18+80.000
EL= 270.500

PI =19+00.000
EL = 271.000

PI =19+40.000
EL= 273.000

END DITCH GR.LT.
PI = 19+60.000
EL = 275.500

BEGIN DITCH GR.LT.
PI = 20+40.000
EL = 276.500

END DITCH GR.LT.
PI = 20+60.000
EL = 277.800

271.215

280.992

+2.573%

(+)0.3000%

(-)0.3000%

(+)2.5000%

(+)12.5000%

(+)5.0000%

(+)6.5000%

BM #102
CHISELED SQUARE ON NORTHEAST CORNER OF CONCRETE PAD ON EAST SIDE OF CATAWBA TRUCK RENTAL BUILDING
EL = 280.552

280.992

PI = 25+00.000
EL = 290.255 m
VC = 500 m

+2.573%

-2.987%

286.760

BM #103
200mm SPIKE IN BASE OF 1.2m DOUBLE SWEET GUM 38.9m SOUTHWEST OF BL-11
EL = 290.462

FOR -L- ALIGNMENT SEE SHEETS 6 & 7

10-26-95
11-OCT-2004 14:50
NBexton
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PROJECT REFERENCE NO.	SHEET NO.
R-0617C	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 4.9	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 0.92	CMS
DESIGN HW ELEVATION	= 279.52 M	
100 YEAR DISCHARGE	= 1.10	CMS
100 YEAR HW ELEVATION	= 279.70 M	
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 1.36	CMS
OVERTOPPING ELEVATION	= 280.00 M	

BM #104
200mm SPIKE IN BASE OF 1.2m DOUBLE SWEET GUM 9Jm WEST OF BL-15
EL = 280.914

BEGIN DITCH GR.LT.
PI = 26+80.000
EL = 279.500

PI = 27+00.000
EL = 278.600

750

PI = 27+40.000
EL = 280.000

END DITCH GR.LT.
PI = 27+60.000
EL = 279.270

278.546

278.546

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 5.6	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.30	CMS
DESIGN HW ELEVATION	= 266.54 M	
100 YEAR DISCHARGE	= 1.50	CMS
100 YEAR HW ELEVATION	= 266.66 M	
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING DISCHARGE	= 1.96	CMS
OVERTOPPING ELEVATION	= 267.00 M	

BM #105
200mm SPIKE IN BASE OF 440mm OAK ON THE WEST SIDE OF JESSICA ANN ROAD AND 8Jm NORTHWEST OF BL-19
EL = 265.416

PI = 32+40.000
EL = 268.593 m
VC = 220 m

END DITCH GR.LT.
PI = 32+20.000
EL = 268.150

BEGIN DITCH GR.LT.
PI = 32+03.000
EL = 268.000

269.96

END DITCH GR.LT.
PI = 32+40.000
EL = 267.700

BEGIN DITCH GR.LT.
PI = 31+94.850
EL = 265.750

1850

300

FOR -L- ALIGNMENT SEE SHEETS 7B & 9

11-OCT-2004 15:51
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WB-axton

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-0617C	22
CONST.REV.	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R /W REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 21.8	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.20	CMS
DESIGN HW ELEVATION	= 264.26	M
100 YEAR DISCHARGE	= 4.80	CMS
100 YEAR HW ELEVATION	= 264.33	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 16.25	CMS
OVERTOPPING ELEVATION	= 271.40	M

269.916

BM #106
200mm SPIKE IN BASE OF 400mm
12.7m WEST OF BL-22
EL = 264.916

BEGIN DITCH GR.LT.
PI = 35+10.000
EL = 264.300

(-L- STA 35+63.59X)

END DITCH GR.LT.
PI = 35+70.000
EL = 262.750

1500.CLASS IV

276.782

+80 33 +20 +40 +60 +80 34 +20 +40 +60 +80 35 +20 +40 +60 +80 36 +20 +40 +60

260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277

-L-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 5.0	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 0.95	CMS
DESIGN HW ELEVATION	= 274.44	M
100 YEAR DISCHARGE	= 1.10	CMS
100 YEAR HW ELEVATION	= 274.60	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 6.69	CMS
OVERTOPPING ELEVATION	= 279.06	M

276.782

-L- STA 37+00.000
-Y39- STA 10+00.000
EL = 277.562

(+) 3.860%

(-) 1.000%

PI =37+00.000
EL= 276.790

(+) 5.833%

PI =37+30.000
EL = 276.490

END DITCH GR.LT.
PI = 37+60.000
EL = 277.580

BEGIN DITCH GR.LT.
PI = 36+80.000
EL = 276.020

BM #107
200mm SPIKE IN BASE OF 350mm
CEDAR, 42.42.1m SOUTHEAST OF BL-25
EL = 277.289

BEGIN DITCH GR.LT.
PI = 38+55.000
EL = 276.500

(-) 10.000%

END DITCH GR.LT.
PI = 38+95.000
EL = 272.500

BEGIN DITCH GR.LT.
PI = 39+30.000
EL = 274.50

(-) 15.000%

(-) 1.086%

PI =39+40.000
EL= 274.000

PI =39+92.000
EL = 273.500

(+) 7.286%

1750.CLASS IV

280.496

271.000

BM #122
200mm SPIKE IN ROOT OF 500mm OAK
WEST SIDE OF SMITH FARM ROAD
54.5m NORTHWEST OF BY39-74
EL = 289.215

+60 +80 37 +20 +40 +60 +80 38 +20 +40 +60 +80 39 +20 +40 +60 +80 40 +20 +40

264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288

FOR -L- ALIGNMENT SEE SHEETS 9,10,11 & 12

8-OCT-2008 15:52
/projects/hydro/roadway/r0617c_pf1

10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

PI = 40+60.000
EL = 284.582 m
VC = 600 m

280.486

-3.720%

277.000

(+) 2.500%

PI = 40+40.000
EL = 277.000

PI = 40+80.000
EL = 278.000

(+) 4.000%

END DITCH GR.LT.
PI = 41+00.000
EL = 278.820

-L- STA 41+20.000
-Y40RPA- STA 3+90.170
-Y40RPB- STA 5+23.580
EL = 279.625

BM #108
200mm SPIKE IN BASE OF 300mm POPLAR. 86.8m NORTHWEST OF BL-29 AND 30.1m FROM WEST SIDE OF SMITH FARM ROAD
EL = 280.835

BM #126
200mm SPIKE IN 200mm HICKORY
EAST SIDE OF US 321
40.3m SOUTHWEST OF BY40-86
EL = 262.934

BM #127
200mm SPIKE IN 450mm IRONWOOD
EAST SIDE OF US 321
37m NORTHWEST OF BY40-89
EL = 250.070

BM #124
200mm SPIKE IN ROOT OF 300mm OAK
EAST SIDE US 321
70.946m SOUTHEAST OF BY40-78
EL = 293.03

BM #125
CHISELED SQUARE IN NORTH CENTER OF CONCRETE DROP INLET IN MEDIAN OF US321 40.395m NORTHWEST OF BY40-81
EL = 277.992

-L- STA 43+80.000
-Y40RPC- STA 4+14.844
-Y40RPD- STA 6+31.393
EL = 272.669

271.180

BM #109
CHISELED SQUARE ON SOUTHWEST CORNER OF CONCRETE DRAINAGE MEDIAN ON US 321.87m SOUTH OF BL-30
EL = 268.356

PI = 43+80.000
El = 261.740

263.740

(+) 4.000%

BEG.DITCH GR.LT.
PI = 43+40.000
El = 257.740

257.740

-L- STA 45+79.770
END GRADE
EL 267.152

PI = 45+09.270
EL = 267.857 m
VC = 140 m

271.180

-3.736%

-1.000%

263.540

(+) 4.000%

(+) 0.500%

END DITCH GR.LT.
PI = 44+50
EL = 264.54

BEG.DITCH GR.RT.
PI = 44+90.000
EL = 265.050

END DITCH GR.RT.
PI = 45+20.000
EL = 265.200

BM #110
200mm SPIKE IN BASE OF 300mm SWEET GUM
53.7m NORTHEAST OF BL-33 AND 3.7m FROM THE WEST EDGE OF PAVEMENT ON JANICE ROAD
EL = 267.565

BRIDGE HYDRAULIC DATA

DRAINAGE AREA	= 49.1	HA
DESIGN DISCHARGE	= 11.0	CMS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 257.79	M
BASE DISCHARGE	= 12.5	CMS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 257.83	M
OVERTOPPING DISCHARGE	= 19.5+	CMS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 269.67	M

FOR -L- ALIGNMENT SEE SHEETS 12 & 13

11-OCT-2004 8:52
#B-axis on

10/26/38

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-Y31-

BM #120
CHISELED SQUARE IN NORTHEAST CORNER OF CONCRETE PAD SUPPORTING ELECTRICAL TRANSFORMER WEST SIDE OF JESSICA ANN 29.5m NORTH OF BY38-72
EL = 272.663

-Y31- STA 12+05.967
-Y31- STA 11+83.440
EL = 288.172

-Y31- STA 12+72.000
-Y31RPC- STA 5+27.695
-Y31RPD- STA 2+92.653
EL = 287.180

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 4.4	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.2	CMS
DESIGN HW ELEVATION	= 282.04 M	
100 YEAR DISCHARGE	= 1.30	CMS
100 YEAR HW ELEVATION	= 282.04 M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 2.90	CMS
OVERTOPPING ELEVATION	= 284.00 M	

BEGIN GRADE -Y31- STA 11+00.000
EL 289.805

BEGIN DITCH GR.LT.
PI = 11+40.000
EL = 286.000

(-) 5.000%

END DITCH GR.LT.
PI = 12+00.000
EL = 285.000

BEGIN DITCH GR.LT.
PI = 12+30.000
EL = 283.750

(-) 2.500%

END DITCH GR.LT.
PI = 12+50.000
EL = 283.250

1500

BEGIN DITCH GR.LT.
PI = 13+00.000
EL = 281.500

(-) 5.000%

PI = 13+20.000
EL = 280.500

(-) 10.000%

PI = 13+40.000
EL = 278.500

(-) 16.250%

END DITCH GR.LT.
PI = 13+80.000
EL = 276.000

PI = 13+90.000
EL = 285.379 m
VC = 80 m

-16.250%

-2.167%

BEGIN DITCH GR.RT.
PI = 14+20.000
EL = 274.650

PI = 14+75.000
EL = 271.300

283.428

271.725

BM #121
CHISELED SQUARE IN NORTHEAST CORNER OF CONCRETE PAD SUPPORTING ELECTRICAL TRANSFORMER WEST SIDE OF JESSICA ANN 53.6m SOUTHWEST OF BY38-73
EL = 273.167

BM #119
200mm SPIKE IN ROOT OF 400mm OAK ON SOUTHEAST SIDE OF ANTIQUE ROAD 98.4 NORTHEAST OF BY37-71
EL = 285.821

BM #118
200mm SPIKE IN ROOT OF 400mm PINE STUMP ON SOUTHWEST SIDE OF LITHIA PARK ROAD 70.4 NORTHEAST OF BY36-60
EL = 279.678

+20 +40 +60 +80 12 +20 +40 +60 +80 13 +20 +40 +60 +80 14 +20 +40 +60 +80

-Y31-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 16.1	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.00	CMS
DESIGN HW ELEVATION	= 272.88 M	
100 YEAR DISCHARGE	= 4.60	CMS
100 YEAR HW ELEVATION	= 272.99 M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14.49	CMS
OVERTOPPING ELEVATION	= 277.91 M	

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.8	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 0.60	CMS
DESIGN HW ELEVATION	= 276.08 M	
100 YEAR DISCHARGE	= 0.68	CMS
100 YEAR HW ELEVATION	= 276.14 M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1.82	CMS
OVERTOPPING ELEVATION	= 277.50 M	

BM #111
CHISELED SQUARE ON SOUTH CORNER OF CONCRETE SIGN FOOTING ON NORTH SIDE OF OLD GASTONIA HIGHWAY AND THE INTERSECTION WITH RED BUD ROAD
EL = 276.347

-Y31- STA 16+50.000
-Y35- STA 10+00.000
EL = 279.743

-Y31- STA 17+65.472
-Y38- STA 10+42.217
EL = 277.240

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 4.1	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.10	CMS
DESIGN HW ELEVATION	= 272.52 M	
100 YEAR DISCHARGE	= 1.30	CMS
100 YEAR HW ELEVATION	= 272.67 M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 5.04	CMS
OVERTOPPING ELEVATION	= 273.80 M	

283.428

-Y31- STA 15+41.040
-Y31RPA- STA 5+43.750
-Y31RPB- STA 3+24.772
EL = 282.105

PI = 15+80.000
EL = 276.500

(-) 5.000%

END DITCH GR.RT.
PI = 16+20.000
EL = 276.000

(-) 4.500%

(-) 4.667%

BEGIN DITCH GR.RT.
PI = 15+60.000
EL = 277.500

(-) 3.500%

BEGIN DITCH GR.RT.
PI = 16+60.000
EL = 276.500

PI = 16+05.000
EL = 275.375

750

PI = 16+80.000
EL = 276.750

(+) 12.500%

(+) 3.750%

END DITCH GR.RT.
PI = 17+00.000
EL = 277.500

BEGIN DITCH GR.RT.
PI = 17+60.000
EL = 275.800

-2.167%

-3.500%

275.591

271.725

(+) 8.500%

END DITCH GR.RT.
PI = 14+95.000
EL = 273.000

1500 CLASS M

PI = 17+80.000
EL = 272.500

PI = 18+00.000
EL = 271.800

(-) 0.500%

(+) 2.500%

600 EXIST. 600

PI = 18+10.000
EL = 271.750

END DITCH GR.RT.
PI = 18+20.000
EL = 272.000

+80 15 +20 +40 +60 +80 16 +20 +40 +60 +80 17 +20 +40 +60 +80 18 +20 +40 +60

FOR Y31 ALIGNMENT SEE SHEETS 12 & 14

8-OCT-2004 14:35
[R-0617-opt]
at 60.0000 100.0000

10/26/98

-Y31-

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 4.1	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.10	CMS
DESIGN HW ELEVATION	= 270.41	M
100 YEAR DISCHARGE	= 1.30	CMS
100 YEAR HW ELEVATION	= 270.45	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 3.60	CMS
OVERTOPPING ELEVATION	= 273.17	M

275.591

BEGIN DITCH GR.RT.
PI = 19+40.000
EL = 272.200

PI = 19+80.000
EL = 272.590 m
VC = 160 m

END DITCH GR.RT.
PI = 19+80.000
EL = 271.400

-Y31- STA 19+85.317
-SERV- STA 17+09.802
EL = 273.212

PI = 19+60.000
EL = 271.750

PI = 19+20.000
EL = 268.700

BEGIN DITCH GR.LT.
PI = 19+00.000
EL = 267.300

END DITCH GR.LT.
PI = 19+60.000
EL = 269.000

BEGIN DITCH GR.LT.
PI = 20+00.000
EL = 268.670

PI = 20+20.000
EL = 269.500

END DITCH GR.LT.
PL = 20+60.000
EL = 272.300

-Y31- STA 21+39.248
-Y32- STA 13+69.839
EL = 274.212

PI = 22+00.000
EL = 274.954 m
VC = 190 m

273.996

BM #115
CHISELED SQUARE ON NORTHWEST CORNER OF ABANDONED GAS PUMP ISLAND IN FRONT OF THE ITALIAN VILLA ON THE SOUTH SIDE OF OLD GASTONIA HIGHWAY 50.3m SOUTH OF BY31-54
EL = 289.977

BM #114
200mm SPIKE IN BASE OF 400mm HONEY LOCUST ON THE SOUTHWEST SIDE OF THE INTERSECTION OF NC 150 AND GEORGETOWN ROAD, 37.4m SOUTHWEST OF BY31-54.
EL = 275.912

+60 +80 19 +20 +40 +60 +80 20 +20 +40 +60 +80 21 +20 +40 +60 +80 22 +20 +40

-Y31-

273.996

END GRADE -Y31- STA 23+00.000
EL 273.534

BM #113
USGS MONUMENT "ROBIN" 5.9m SOUTHWEST OF BY31-53 8.0 m FROM EAST EDGE OF PAVEMENT OF NC150/US321
EL = 271.865

+40 +60 +80 23

FOR Y31 ALIGNMENT SEE SHEETS 14 & 15

11-OCT-2005 15:53
$DGN: R0617c-pf1
dlbaxton

10/26/98

-Y31RPA-

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

BEGIN GRADE -Y31RPA- STA. 0+000.000
EL 286.484

PI = 0+170.000
EL = 285.857 m
VC = 100 m

-0.895%

-2.662%

PI = 1+26.884
EL = 281.383 m

BEGIN DITCH GR.LT.
PI = 2+60.000
EL = 280.500

-1.500.00%

-2.662%

PI = 3+50.000
EL = 278.402 m
VC = 200 m

279.543

PI = 3+80.000
EL = 277.000

+2.400%

PI = 3+40.000
EL = 277.500

+0.500%

BEGIN DITCH GR.RT.
PI = 3+30.000
EL = 275.880

(200)

274.500

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 8.8	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2.20	CMS
DESIGN HW ELEVATION	= 277.00	M
100 YEAR DISCHARGE	= 2.60	CMS
100 YEAR HW ELEVATION	= 277.07	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 5.86	CMS
OVERTOPPING ELEVATION	= 279.00	M

-Y31RPA-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 1.8	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 0.39	CMS
DESIGN HW ELEVATION	= 278.61	M
100 YEAR DISCHARGE	= 0.44	CMS
100 YEAR HW ELEVATION	= 278.63	M
OVERTOPPING FREQUENCY	= 500-	YRS
OVERTOPPING DISCHARGE	= 0.72	CMS
OVERTOPPING ELEVATION	= 279.00	M

END GRADE -Y31RPA- STA. 5+37.545
EL 282.019

279.543

PI = 3+80.000
EL = 277.000

(-) 5.000%

(+) 3.600%

PI = 4+00.000
EL = 278.000

END DITCH GR.RT.
PI = 4+20.000
EL = 278.750

(600)

274.500

END DITCH GR.LT.
PI = 4+00.000
EL = 273.000

FOR Y31RPA ALIGNMENT SEE SHEETS 6 & 7

8-OCT-2004 15:54
1DKA200:[DGN]R0617C-sht1
(Bruton)

–Y31RPB–

BEGIN GRADE –Y31RPB– STA 0+00.000
EL 266.953

PI = 0+80.000
EL = 268.937 m
VC = 40 m

PI = 1+27.540
EL = 269.947 m
VC = 55 m

PI = 3+14.841
EL = 281.875 m

END GRADE –Y31RPB– STA 3+18.566
EL 281.950

BEGIN DITCH GR.LT.
PI = 1+70.000
EL = 265.400

PI =1+80.000
EL = 265.500

PI =2+20.000
EL= 267.000

PI =2+25.000
EL = 267.500

PI =2+40.000
EL = 269.000

END DITCH GR.LT.
PI = 2+60.000
EL = 270.000

–Y31RPC–

BEGIN GRADE –Y31RPC– STA 0+00.000
EL 266.799

PI = 0+26.036
EL = 267.585 m
VC = 40 m

PI = 2+14.852
EL = 272.226 m
VC = 130 m

281.607

FOR Y31RPB ALIGNMENT SEE SHEETS 5 & 6
FOR Y31RPC ALIGNMENT SEE SHEETS 5 & 6

METRIC
5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

8-OCT-2008 08:54
M:\Roadway\Projects\0617c-pf1
MBaston

10/26/98

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-0617C	28
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST.REV.		
R/W REV.		

-Y31RPC-

PI = 4+50.696
EL = 285.623 m
VC = 80 m

+1.994%

+1.580%

-1.150%

END GRADE -Y31RPD- STA 5+21.483
EL 287.035

END DITCH GR.RT.
PI = 5+00.000
EL = 283.750

BEGIN DITCH GR.RT.
PI = 4+50.000
EL = 284.500

EL 281.607

285 284 283 282 281 280 279 278 277 276 275 274 273 272 271 270

+80 4 +20 +40 +60 +80 5 +20

-Y31RPD-

BEGIN GRADE -Y31RPD- STA 0+00.000
EL 286.042

PI = 0+40.000
EL = 285.529 m
VC = 60 m

+1.882%

-2.326%

PI = 1+62.930
EL = 282.669 m
VC = 170 m

-2.326%

+1.574%

END GRADE -Y31RPD- STA 2+86.441
EL 287.084

292 291 290 289 288 287 286 285 284 283 282 281 280 279 278 277 276

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80

FOR Y31RPC ALIGNMENT SEE SHEET 6
FOR Y31RPD ALIGNMENT SEE SHEET 6

8-OCT-2004 8:55
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MBraxton

-Y40-

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	28A

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-Y40-

9-OCT-2006 16:55
fb-sexton a:\r0617c-pf1

10/26/98

-Y40-

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	28B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

283 282 281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262 261 260

+60 +80 18 +20 +40 +60 +80 19 +20 +40 +60 +80 20 +20 +40 +60 +80 21 +20 +40

-Y40-

283 282 281 280 279 278 277 276 275 274 273 272 271 270

+40 +60 +80 22 +20 +40 +60 +80 23 +20 +40 +60 +80 24 +20 +40 +60 +80 25 +20

11-OCT-2004 16:55
MP-axton

10/26/98

-Y40-

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0617C	28C
5 0 10	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST.REV.	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
R /W REV.		

283
282
281
280
279
278
277
276
275
274
273
272
271
270

+20 +40 +60 +80 26 +20 +40 +60 +80 27 +20 +40 +60 +80 28

11-OCT-2004 14:57
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MS-axton

-Y40RPA-

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

BEGIN GRADE -Y40RPA- STA. 0+00.000
EL 276.643

PI = 0+38.000
EL = 276.130 m
VC = 70 m

-3.500%

-2.000%

PI = 1+70.000
EL = 273.462 m
VC = 194 m

-2.000%

+2.982%

END GRADE -Y40RPA- STA. 3+75.970
EL 279.481

285 284 283 282 281 280 279 278 277 276 275 274 273 272 271 270

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3 +20 +40 +60 +80

-Y40RPB-

BEGIN GRADE -Y40RPB- STA. 0+00.000
EL 261.757

PI = 0+20.000
EL = 262.120 m
VC = 32 m

+1.850%

+1.326%

PI = 1+70.000
EL = 264.110 m
VC = 150 m

+1.326%

+4.593%

273.501

281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262 261 260 259 258

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3 +20 +40 +60 +80

FOR Y40RPA ALIGNMENT SEE SHEET 12
FOR Y40RPB ALIGNMENT SEE SHEETS 12 & 16

8-OCT-2008 AT R0266398 U:\R0617\cad\

10/26/98

-Y40RPB-

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

END GRADE -Y40RPB- STA. 5+06.879
EL. 279.425

273.69ft

281
280
279
278
277
276
275
274
273
272
271
270
269
268

+80 4 +20 +40 +60 +80 5 +20

FOR Y40RPA ALIGNMENT SEE SHEET 12
FOR Y40RPB ALIGNMENT SEE SHEETS 12 & 16

I-0617-2004 (R-0617c-pf1)
dgn 10/26/98 8:50
MBaxton

10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-Y40RPC-

-Y40RPC- STA. 0+00
TIE TO -Y40- STA. 11+70.000
14.326 RT

PI = 0+85.000
EL = 260.786 ft
VC = 60 ft

PI = 1+75.000
EL = 261.750 ft
VC = 60 ft

259.826

264.437

BEGIN DITCH GR.LT.
PI =1+28.000
EL =261.300

261.300

+4.779%

+0.876%

+0.762%

+2.438%

(-) 10.500%

(-) 7.857%

(-) 4.000%

PI =1+68.000
EL = 261.100

END DITCH GR.LT.
PI =2+22.000
EL =260.540

600 RCP

PI =1+96.000
EL = 259.500

BEGIN DITCH GR.RT.
PI =0+70.000
EL =256.000

(-) 15.000%

(-) 7.692%

END DITCH GR.RT.
PI =1+03.000
EL = 252.000

(+) 13.333%

END DITCH GR.RT.
PI =1+75.000
EL =255.800

(+) 2.000%

PI =0+90.000
EL = 253.000

BEGIN DITCH GR.RT.
PI =1+05.000
EL = 252.000

PI =1+30.000
EL = 252.500

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3

BRIDGE HYDRAULIC DATA

DRAINAGE AREA	= 56	HA
DESIGN DISCHARGE	= 11.5	CMS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 253.03	M
BASE DISCHARGE	= 13.5	CMS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 253.12	M
OVERTOPPING DISCHARGE	= 210+	CMS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 261.30	M

-Y40RPC-

-Y40RPC- STA. 5+27.872
TIE TO PROPOSED EOP
-L- STA. 44+87.800
14.200 RT

269.336

264.437

BEGIN DITCH GR.RT.
PI =3+60.000
EL =258.935

(+) 6.000%

(+) 2.000%

PI =4+35.000
EL = 263.510

END DITCH GR.RT.
PI =5+12.000
EL =265.050

3 +20 +40 +60 +80 4 +20 +40 +60 +80 5

FOR Y40RPC ALIGNMENT SEE SHEETS 12 & 16

8-OCT-2004 8:58
d:\projects\2004\r-0617c-prf1

10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

-Y40RPD-

PI = 0+21.000
EL = 280.597 M
VC = 40 M

PI = 0+86.000
EL = 279.737 M
VC = 45 M

PI = 1+40.000
EL = 277.748 M
VC = 100 M

280.902

272.487

-14.500%

-1.954%

-1.954%

-2.654%

-2.654%

-3.296%

-Y40RPD- STA. 0+00.000
TIE TO -Y40- STA. 24+51.388
14.326 RT

+1.500000%

END DITCH GR.LT.
PI =1+55.000
EL.=271.000

BEGIN DITCH GR.LT.
PI =1+35.000
EL.=269.000

900 RCP W/ FW

281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266 265 264

0 +20 +40 +60 +80 1 +20 +40 +60 +80 2 +20 +40 +60 +80 3

-Y40RPD-

BRIDGE HYDRAULIC DATA

DRAINAGE AREA	=	36.2 HA
DESIGN DISCHARGE	=	8.8 CMS
DESIGN FREQUENCY	=	50 YRS
DESIGN HW ELEVATION	=	263.08 M
BASE DISCHARGE	=	10.0 CMS
BASE FREQUENCY	=	100 YRS
BASE HW ELEVATION	=	263.17 M
OVERTOPPING DISCHARGE	=	16.0+ CMS
OVERTOPPING FREQUENCY	=	500+ YRS
OVERTOPPING ELEVATION	=	266.49 M

272.487

PI = 5+50.000
EL = 264.271 M
VC = 400 M

PI =5+80.000
EI = 266.490

266.757

(+)0.300%

(+)0.300%

(-)0.300%

(-)0.300%

-3.286%

+0.000%

BEGIN DITCH GR.RT.
PI =4+80.000
EL.=265.590

BEGIN DITCH GR.LT.
PI =4+60.000
EL.=266.130

PI =5+80.000
EI = 265.890

FOR Y40RPC ALIGNMENT SEE SHEETS 12 & 17

281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262 261 260

3 +20 +40 +60 +80 4 +20 +40 +60 +80 5 +20 +40 +60 +80 6

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MS-exton

10/25/96

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-Y40RPD-

-Y40RPD- 8+05.223
TIE TO PROPOSED EOP
-L- STA. 44+67.800
14.200 LT

268.757

269.375

PI =7+60.000
EL = 265.950

END DITCH GR.LT.
PI =7+82.000
EL.=265.550

PI =7+20.000
EL = 265.470

END DITCH GR.RT.
PI =7+82.000
EL.=264.540

600 RCP

-Y39-

BEGIN GRADE -Y39- STA 10+14.200
EL 277.418

BEGIN DITCH GR.LT.
PI = 10+40.000
EL = 275.439

PI =10+60.000
EL= 274.260

PI =10+80.000
EL = 273.827

END DITCH GR.LT.
PI = 11+00.000
EL = 272.400

600

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 1.7	HA
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.32	CMS
DESIGN HW ELEVATION	= 272.92 M	
100 YEAR DISCHARGE	= 0.40	CMS
100 YEAR HW ELEVATION	= 273.03 M	
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 0.47	CMS
OVERTOPPING ELEVATION	= 273.05 M	

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 7.4	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1.40	CMS
DESIGN HW ELEVATION	= 268.39 M	
100 YEAR DISCHARGE	= 1.60	CMS
100 YEAR HW ELEVATION	= 268.52 M	
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 3.22	CMS
OVERTOPPING ELEVATION	= 270.24 M	

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.7	HA
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.10	CMS
DESIGN HW ELEVATION	= 271.80 M	
100 YEAR DISCHARGE	= 0.13	CMS
100 YEAR HW ELEVATION	= 271.86 M	
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 0.12	CMS
OVERTOPPING ELEVATION	= 271.80 M	

BEGIN DITCH GR.RT.
PI = 12+40.000
EL = 269.243

BEGIN DITCH GR.LT.
PI = 12+60.000
EL= 269.172

PI = 12+80.000
EL = 268.098 m
VC = 200 m

PI =12+80.000
EL= 267.750

PI =12+60.000
EL = 267.000

PI =12+80.000
EL= 266.425

PI =13+05.000
EL= 266.300

END DITCH GR.LT.
PI = 13+15.000
EL = 267.313

END DITCH GR.LT.
PI = 13+80.000
EL= 273.000

END DITCH GR.RT.
PI = 13+80.000
EL = 272.200

273.598

450

900

PI =13+60.000
EL = 270.500

BEGIN DITCH GR.LT.
PI = 13+60.000
EL= 271.500

PI =13+20.000
EL= 266.380

FOR Y40RPD ALIGNMENT SEE SHEET 12
FOR Y39 ALIGNMENT SEE SHEETS 10 & 11

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$USER: dsmith

10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-Y39-

PI = 14+70.000
EL = 278.548 m
VC = 180 m

+2.40.00%

BEGIN DITCH GR.LT.
PI = 15+60.000
EL = 275.594

END DITCH GR.RT.
PI = 16+00.000
EL = 274.961

END GRADE -Y39- STA 16+00.360
EL 275.419

(-) 1.09.00%

(-) 0.69.50%

BEGIN DITCH GR.RT.
PI = 15+60.000
EL = 275.239

END DITCH GR.LT.
PI = 16+00.000
EL = 274.806

273.598

278 277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262

+80 14 +20 +40 +60 +80 15 +20 +40 +60 +80 16

BM #123
200mm SPIKE IN ROOT OF 250mm DOUBLE WHITE PINE ON EAST SIDE OF SMITH FARM ROAD
25.3m NORTH OF BY39-77
EL = 275.148

-Y41-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.6	HA
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.10	CMS
DESIGN HW ELEVATION	= 266.40	M
100 YEAR DISCHARGE	= 0.12	CMS
100 YEAR HW ELEVATION	= 266.45	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 0.38	CMS
OVERTOPPING ELEVATION	= 266.92	M

BM #128
200mm SPIKE IN 699mm CEDAR
EAST SIDE OF JANICE ROAD
6m SOUTHEAST OF BY41-91
EL = 263.525

BEGIN GRADE -Y41- STA 10+00.000
EL 265.157

PI = 10+57.000
EL = 267.482 m
VC = 65 m

PI = 11+17.000
EL = 266.741 m
VC = 40 m

END GRADE -Y41- STA 11+80.000
EL 268.579

+4.07.88%

+2.35.00%

+1.23.50%

+2.30.75%

0.15.0

270 269 268 267 266 265 264 263 262 261 260

10 +20 +40 +60 +80 11 +20 +40 +60 +80 12 +20

FOR Y39 ALIGNMENT SEE SHEET 11
FOR Y41 ALIGNMENT SEE SHEET 13

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PROJECT REFERENCE NO.	SHEET NO.
R-0617C	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y32-

277 276 275 274 273 272 271 270 269 268 267 266 265 264 263 262 261 260

+20 +40 +60 +80 11 +20 +40 +60 +80 12 +20 +40 +60 +80 13 +20 +40 +60 +80

BEGIN GRADE -Y32- STA 12+00.000
EL 273.012

BEGIN DITCH GR.RT.
PI = 12+20.000
EL = 273.014

PI = 12+40.000
EL = 273.500

PI = 12+60.000
EL = 275.968 m
VC = 60 m

PI = 12+60.000
EL = 273.750

PI = 12+80.000
EL = 275.000

PI = 13+20.000
EL = 277.000 m
VC = 60 m

END DITCH GR.RT.
PI = 13+00.000
EL= 275.711

END GRADE -Y32- STA 13+81.934
EL 274.096

+4.960% +2.430% +1.250% +1.886% (+) 3.555% (+) 2.600% +1.886% +5.922%

450

BM #117
CHISELED SQUARE ON SOUTHEAST CORNER OF CONCRETE PAD FOR TELEPHONE SWITCH BOX AT INTERSECTION OF SOUTH ASPEN AND GEORGETOWN ROAD 16.0m NORTHEAST FROM BY32-60
EL = 261.324

BM #116
200mm SPIKE IN ROOT OF 250mm OAK ON EAST SIDE OF PRIVATE DRIVE BESIDE HERNDON'S CHAPEL 55.0m NORTHWEST OF BY32-62
EL = 276.115

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.5	HA
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.10	CMS
DESIGN HW ELEVATION	= 273.28	M
100 YEAR DISCHARGE	= 0.12	CMS
100 YEAR HW ELEVATION	= 273.32	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 0.35	CMS
OVERTOPPING ELEVATION	= 274.00	M

-Y35-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 1.8	HA
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 0.26	CMS
DESIGN HW ELEVATION	= 277.07	M
100 YEAR DISCHARGE	= 0.33	CMS
100 YEAR HW ELEVATION	= 277.23	M
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 0.41	CMS
OVERTOPPING ELEVATION	= 277.50	M

BEGIN GRADE -Y35- STA 10+06.240
EL 279.660

END GRADE -Y35- STA 10+76.267
EL 280.236

PI = 10+50.000
EL = 279.048 m
VC = 50 m

BEGIN DITCH GR.LT.
PI = 10+10.000
EL = 276.500

PI =10+40.000
EL = 277.500

END DITCH GR.LT.
PI = 10+60.000
EL= 278.500

-3.980% +4.528% (+) 5.000% (+) 8.333%

450

-Y37-

BEGIN GRADE -Y37- STA 11+14.000
EL 287.161

END GRADE -Y37- STA 11+78.226
EL 288.040

PI = 11+50.000
EL = 287.015 m
VC = 40 m

-0.406% +3.632%

450

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.9	HA
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 0.21	CMS
DESIGN HW ELEVATION	= 285.49	M
100 YEAR DISCHARGE	= 0.24	CMS
100 YEAR HW ELEVATION	= 285.52	M
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 0.72	CMS
OVERTOPPING ELEVATION	= 287.20	M

FOR Y32 ALIGNMENT SEE SHEET 15
FOR Y35 ALIGNMENT SEE SHEET 6
FRO Y37 ALIGNMENT SEE SHEET 6

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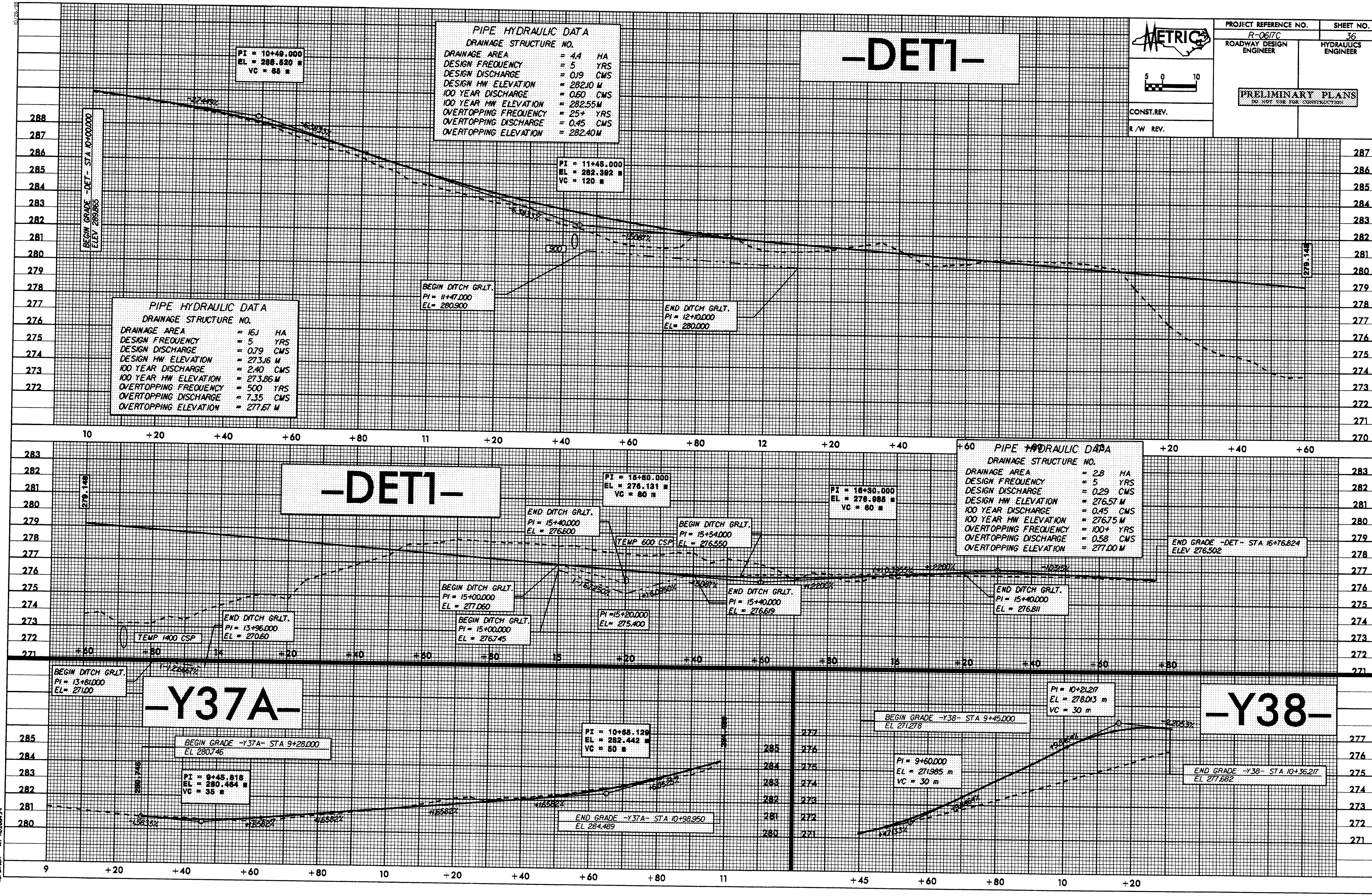
Revision



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 4.4	HA
DESIGN FREQUENCY	= 5	YRS
DESIGN DISCHARGE	= 0.19	CMS
DESIGN HW ELEVATION	= 282.10	M
100 YEAR DISCHARGE	= 0.60	CMS
100 YEAR HW ELEVATION	= 282.55	M
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING DISCHARGE	= 0.45	CMS
OVERTOPPING ELEVATION	= 282.40	M

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 16.1	HA
DESIGN FREQUENCY	= 5	YRS
DESIGN DISCHARGE	= 0.79	CMS
DESIGN HW ELEVATION	= 273.16	M
100 YEAR DISCHARGE	= 2.40	CMS
100 YEAR HW ELEVATION	= 273.86	M
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 7.35	CMS
OVERTOPPING ELEVATION	= 277.67	M

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.8	HA
DESIGN FREQUENCY	= 5	YRS
DESIGN DISCHARGE	= 0.29	CMS
DESIGN HW ELEVATION	= 276.57	M
100 YEAR DISCHARGE	= 0.45	CMS
100 YEAR HW ELEVATION	= 276.75	M
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 0.58	CMS
OVERTOPPING ELEVATION	= 277.00	M

10/26/98

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	37

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

-LNBL-

BEGIN -LNBL- GRADE STA.10+00
EL. 261.90

+0.60%

-0.60%

263.70

END GRADE -LNBL- STA.13+96.206
EL. 263.808

263.70

10 11 12 13

-LSBL-

BEGIN GRADE -LSBL- STA.10+00
EL. 261.337

PI = 12+10.701
EL = 262.687 m
VC = 100 m

+0.60%

-0.60%

END GRADE -LSBL- STA.13+80.339
EL. 263.808

10 11 12 13

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10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-DRIVE1-

BEGIN GRADE -DRIVE1- STA.10+05.986
EL 261.636

END GRADE -DRIVE1- STA.10+40.000
EL 264.895

PI = 10+03.586
EL = 261.828 m

PI = 10+05.986
EL = 261.636 m

PI = 10+15.000
EL = 261.816 m

PI = 10+20.000
EL = 262.316 m

PI = 10+30.000
EL = 264.339 m
K = 1
VC = 15 m

+2.000%
+10.000%
+25.580%

267 266 265 264 263 262 261 260 259 258 257 256 255 254 253 252 251 250

10 +20 +40 +60

-DR2-

BEGIN GRADE -DRIVE2- STA.10+00.000
ELEV 259.769

PI = 10+12.217
EL = 261.556 m
VC = 15 m

END GRADE -DRIVE2- STA.0+00.000
ELEV 265.318

+2.000%
+12.000%

262 261 260 259 258

10 +20

-DR3-

BEGIN GRADE -DRIVE3- STA.10+03.670
ELEV 266.483 (-741- EP)

PI = 10+11.702
EL = 266.881 m

PI = 10+52.250
EL = 268.245 m
VC = 35 m

-2.000%
+5.359%
+2.000%

268 267 266 265 264

10 +20 +40 +60

END GRADE -DRIVE3- STA.10+69.871
ELEV 267.846

-DET2-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.4	HA
DESIGN FREQUENCY	= 5.0	YRS
DESIGN DISCHARGE	= 0.09	CMS
DESIGN HW ELEVATION	= 278.51	M
100 YEAR DISCHARGE	= 0.14	CMS
100 YEAR HW ELEVATION	= 278.63	M
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 0.19	CMS
OVERTOPPING ELEVATION	= 279.00	M

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 0.4	HA
DESIGN FREQUENCY	= 5.0	YRS
DESIGN DISCHARGE	= 0.07	CMS
DESIGN HW ELEVATION	= 281.13	M
100 YEAR DISCHARGE	= 1.2	CMS
100 YEAR HW ELEVATION	= 281.28	M
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 0.3	CMS
OVERTOPPING ELEVATION	= 281.25	M

287 286 285 284 283 282 281 280 279 278 277 276

BEGIN GRADE -DET2- STA.10+00
EL 277.976

PI = 10+50.000
EL = 278.770 m
VC = 90 m

PI = 11+60.000
EL = 279.176 m
VC = 100 m

PI = 13+01.810
EL = 285.548 m
VC = 60 m

+0.588%
+0.369%
-1.050%
+0.369%
+0.434%
TEMP 400 CSP
-1.500%
+4.923%
+2.000%

BEGIN DITCH (RT.)
Sta.10+80
EL= 278.300

TEMP 400 CSP
PI =11+10.000
EL = 278.150

END DITCH (RT.)
Sta.11+40
EL= 278.500

BEGIN DITCH (RT.)
Sta.12+14
EL= 280.800

END DITCH (RT.)
Sta.12+50
EL = 282.600

END GRADE -DET2- STA.13+33.450
EL 286.439

10 +20 +40 +60 +80 11 +20 +40 +50 +80 12 +20 +40 +60 +80 13 +20

FOR -DR2- ALIGNMENT SEE SHEET 9
FOR -DR3- ALIGNMENT SEE SHEET 12
FOR -DET2- ALIGNMENT SEE SHEETS 12,18

10/26/98

PROJECT REFERENCE NO.	SHEET NO.
R-0617C	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

-SERV-

BEGIN GRADE -SERV- STA 10+05.000
EL = 259.440

PI = 10+35.000
EL = 259.568 m
VC = 40 m

+0.497%
-0.537%
+0.638%
+0.368%

BEGIN DITCH GR.RT
PI = 10+20.000
EL = 258.75

END DITCH GR.RT.
PI = 10+40.000
EL = 259.450

BEGIN DITCH GR.LT.
PI = 10+20.000
EL = 257.500

END DITCH GR.LT.
PI = 10+45.000
EL = 251.000

RETAIN EXIST.
1200 CONC.

PI = 11+00.000
EL = 263.232 m
VC = 85 m

PI = 11+60.000
EL = 263.738 m
VC = 30 m

PI = 12+00.000
EL = 263.926 m
VC = 30 m

PI = 12+60.000
EL = 264.455 m
VC = 30 m

PI = 13+20.000
EL = 265.056 m
VC = 30 m

PI = 13+76.000
EL = 265.468 m
VC = 80 m

266.042

+0.842%
+0.470%
-0.861%
+1.100%
+0.735%
+2.383%

RETAIN EXIST.
2.4 x 2.1 RCBC

FOR -SERV- ALIGNMENT SEE SHEETS 4,5,14,15,18

10 +20 +40 +60 +80 11 +20 +40 +60 +80 12 +20 +40 +60 +80 13 +20 +40 +60 +80

271 270 269 268 267 266 265 264 263 262 261 260 259 258 257 256

-SERV-

PI = 15+10.000
EL = 272.487 m
VC = 112 m

+2.963%
-0.934%

PI = 16+37.000
EL = 271.300 m
VC = 65 m

-0.934%
+2.862%
-0.934%
+2.862%
+0.000%

BEGIN DITCH GR.RT.
PI = 16+00.000
EL = 270.940

END GRADE -SERV- STA 17+03.802
EL = 271.322

271.322

266.042

END DITCH GR.RT.
PI = 16+65.000
EL = 268.890

(TIE TO -Y31- STA 19+60.000 LT.)

FOR -SERV- ALIGNMENT SEE SHEETS 4,5,14,15,18

+80 14 +20 +40 +60 +80 15 +20 +40 +60 +80 16 +20 +40 +60 +80 17

274 273 272 271 270 269 268 267 266 265 264 263 262 261 260 259

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