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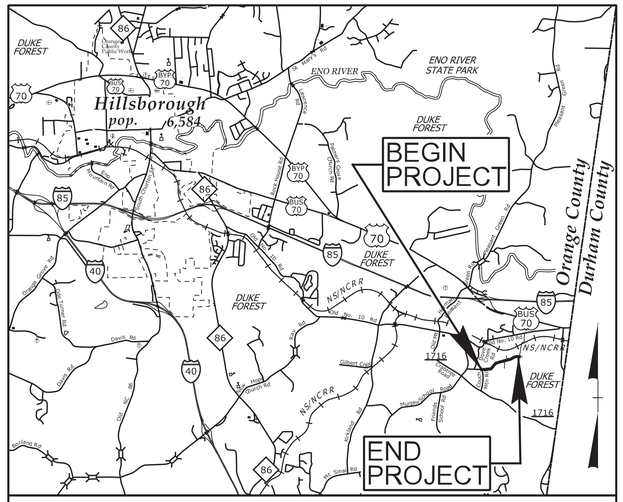
DCN 0686DEL_P21p2

CONTRACT: **TIP PROJECT: P–4405 I**

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



VICINITY MAP

STATE OF NORTH CAROLINA
RAIL DIVISION

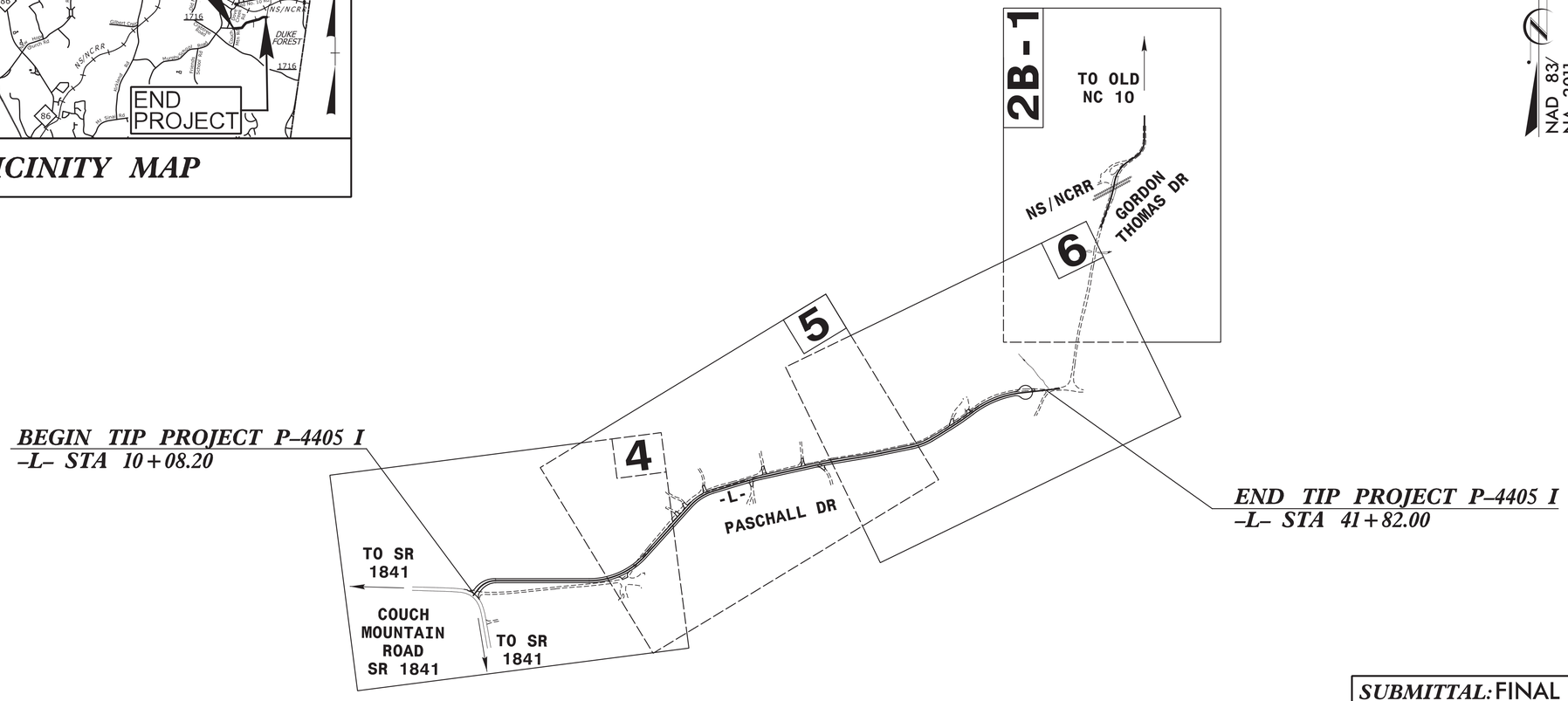
ORANGE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P–4405 I	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
62000.7.STR18T1B		PE
43219.2.STR01P4405I		ROW
62000.7.STR20T4		CONST

LOCATION: *PASCHALL DRIVE FROM GORDON THOMAS DRIVE TO SR 1841 (COUCH MOUNTAIN ROAD) AND GORDON THOMAS DRIVE CROSSING CLOSURE*

TYPE OF WORK: *GRADING, PAVING AND DRAINAGE*



NAD 83/NA 2011

SUBMITTAL: FINAL PLANS
DATE: FEBRUARY 8, 2016

NCDOT CONTACT: DAN HAVENER, PE
PROJECT MANAGER

DESIGN EXCEPTION REQUIRED

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT (2015) = 100
ADT =
DHV = %
D = %
T = % *
V = 30 MPH
* TTST =
* DUAL =
FUNC CLASS = SUBDIVISION
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT P–4405 I = 0.601 MILE
TOTAL LENGTH TIP PROJECT P–4405 I = 0.601 MILE

Prepared In the Office of:
ICA Engineering
5121 Kingdom Way
Suite 100
Raleigh, NC 27607
NC License No: P-0238

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 11, 2015

LETTING DATE: MARCH 17, 2016

DAVID C. WALLER, PE
PROJECT ENGINEER

ALEXANDER D. SNIDER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/16/2016
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 2/16/2016
SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
ENGINEERING COORDINATION AND SAFETY

2/15/2016
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ICA ENGINEERING, INC.

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PROJECT REFERENCE NO.	SHEET NO.
P-4405 1	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER

DocuSigned by: Alexander D. Snider 2/4/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-2	SURVEY CONTROL SHEETS
1D-1	CENTERLINE COORDINATE LIST
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	CROSSING CLOSURE DETAIL
3B-1	EARTHWORK AND PAVEMENT REMOVAL SUMMARIES
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 9	PLAN AND PROFILE SHEETS
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-11	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-5	SIGNING PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-17	CROSS-SECTIONS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE Frontier Communications.

Duke Energy Progress, Time Warner Cable

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.80	Precast Endwalls - 12" thru 72" Pipe 90 Skew
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

2/3/2016
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[DATA ENGINEERING INC.]

DGN 0686DEL_P21p2

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	IB

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

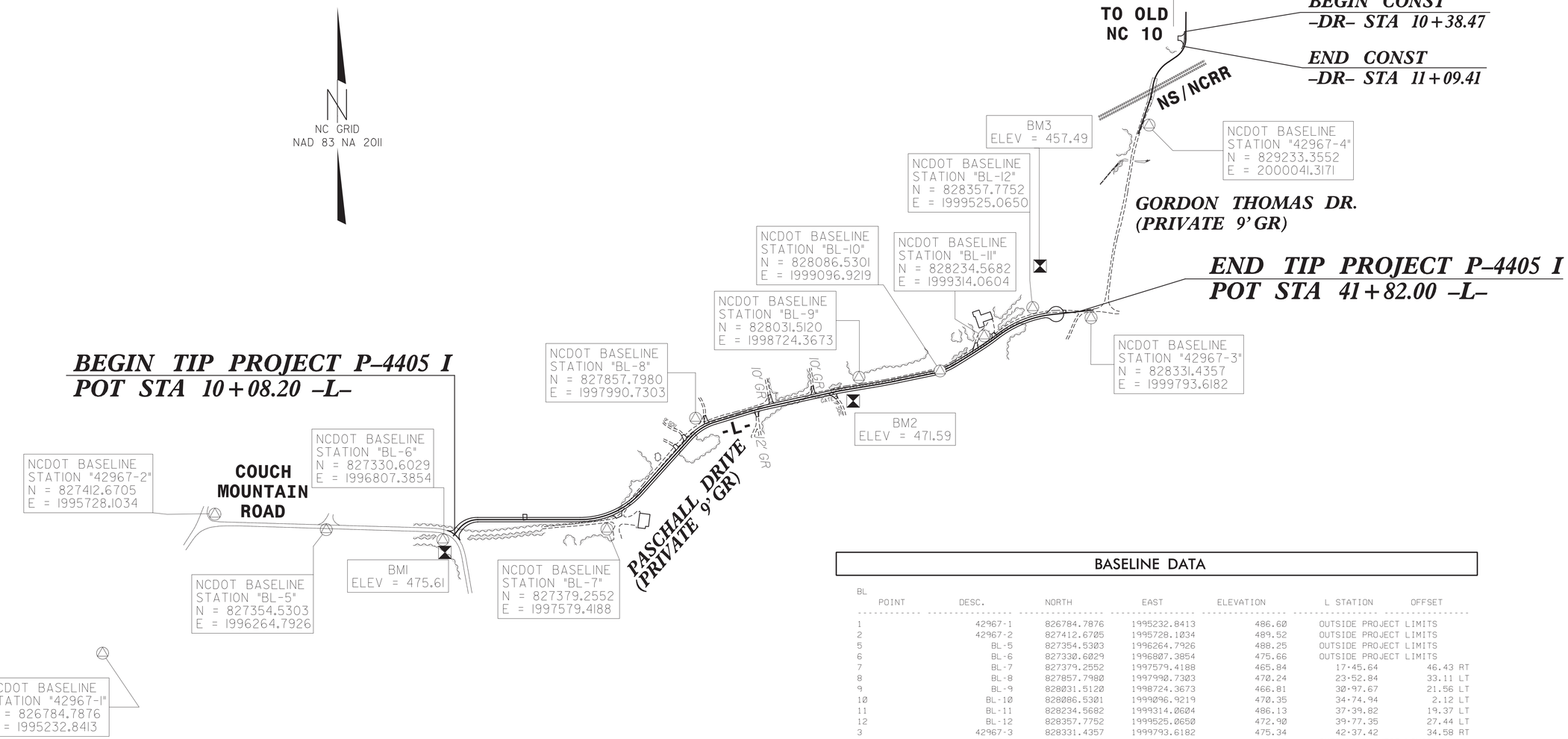
MISCELLANEOUS:

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

0686DEL_P21p2
12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
62000.7.STR18T1B	1C-1
Location and Surveys	

P-4405I SURVEY CONTROL SHEET



BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	42967-1	826784.7876	1995232.8413	486.60	OUTSIDE PROJECT LIMITS	
2	42967-2	827412.6705	1995728.1034	489.52	OUTSIDE PROJECT LIMITS	
5	BL-5	827354.5303	1996264.7926	488.25	OUTSIDE PROJECT LIMITS	
6	BL-6	827330.6029	1996807.3854	475.66	OUTSIDE PROJECT LIMITS	
7	BL-7	827379.2552	1997579.4188	465.84	17+45.64	46.43 RT
8	BL-8	827857.7980	1997990.7303	470.24	23+52.84	33.11 LT
9	BL-9	828031.5120	1998724.3673	466.81	30+97.67	21.56 LT
10	BL-10	828086.5301	1999096.9219	470.35	34+74.94	2.12 LT
11	BL-11	828234.5682	1999314.0604	486.13	37+39.82	19.37 LT
12	BL-12	828357.7752	1999525.0650	472.90	39+77.35	27.44 LT
3	42967-3	828331.4357	1999793.6182	475.34	42+37.42	34.58 RT
4	42967-4	829233.3552	2000041.3171	462.07	OUTSIDE PROJECT LIMITS	

NOTES

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   p4405i_ls_control.txt

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

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

BENCHMARK DATA

```
****************************************
BM1       ELEVATION = 475.61
N 827258       E 1996809
BL STATION 23+83.00 73 RIGHT
RR SPIKE IN BASE OF 15" SWEET GUM
****************************************
****************************************
BM2       ELEVATION = 471.59
N 827971       E 1998683
BL STATION 44+87.00 50 RIGHT
RR SPIKE IN BASE OF 22" POPLAR
****************************************
****************************************
BM3       ELEVATION = 457.49
N 828570       E 1999558
BL STATION 54+37.00 215 LEFT
RR SPIKE IN BASE OF 15" TWIN SYCAMORE
****************************************
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "42967-3" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 828331.4357(ft) EASTING: 1999793.6182(ft) ELEVATION: 475.34'(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999455068

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "42967-3" TO -L- STATION 10+08.20 IS S 71°13'00" W 3104.65'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

k:20/2016
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ITA ENGINEERING INC

PROJECT REFERENCE NO.	SHEET NO.
62000.7.STR18T1B	1C–2
Location and Surveys	

P–4405I SURVEY CONTROL SHEET

L

TYPE	STATION	NORTH	EAST
POT	10+00.17	827325.4614	1996849.3429
PC	10+41.09	827357.6201	1996874.6497
PT	11+40.49	827399.5946	1996961.0479
PC	16+12.70	827399.7903	1997433.2548
PT	19+30.36	827525.1246	1997715.1352
PC	22+71.90	827778.6154	1997944.0244
PT	24+07.56	827850.3662	1998057.1991
PC	25+82.32	827900.9620	1998224.4809
PT	26+57.48	827919.9967	1998297.1639
PC	29+72.09	827988.2128	1998604.2955
PT	30+25.68	827998.4246	1998656.8927
PC	31+59.70	828020.4351	1998789.0989
PT	32+76.02	828041.7569	1998903.4388
PC	34+33.81	828073.6831	1999057.9607
PCC	35+42.10	828112.6991	1999158.4472
PCC	36+91.51	828191.6290	1999285.2927
PRC	37+86.24	828246.3276	1999362.6037
PT	40+60.64	828347.0424	1999614.1623
POT	42+50.00	828367.1560	1999802.4531

Y

TYPE	STATION	NORTH	EAST
POT	9+50.00	829741.0943	2000231.6421
PC	10+71.25	829619.8497	2000231.0068
PT	11+67.72	829537.8879	2000187.5424
POT	12+09.57	829514.2287	2000153.0225

-L- NEW R/W MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	22+71.90	-25.00	827795.3697	1997925.4693
L	22+71.90	25.00	827761.8611	1997962.5795
L	24+07.56	25.00	827826.4368	1998064.4368
L	24+07.56	-25.00	827874.2956	1998049.9615
L	25+82.32	-25.00	827924.8914	1998217.2432
L	25+82.32	25.00	827877.0326	1998231.7186
L	26+57.48	-25.00	827944.4020	1998291.7433
L	26+57.48	25.00	827895.5915	1998302.5845
L	29+72.09	25.00	827963.8075	1998609.7160
L	30+25.68	25.00	827973.7640	1998660.9984
L	30+25.68	-25.00	828023.0852	1998652.7871
L	29+72.09	-25.00	828012.6180	1998598.8749
L	31+59.70	-25.00	828045.0957	1998784.9932
L	32+76.02	-25.00	828066.2398	1998898.3803
L	32+76.02	25.00	828017.2740	1998908.4972
L	31+59.70	25.00	827995.7746	1998793.2045
L	33+40.08	-25.00	828079.2019	1998961.1163
L	34+33.81	25.00	828049.2002	1999063.0192
L	35+42.33	24.80	828091.5099	1999171.3332
L	38+39.28	-29.93	828301.8840	1999390.6730
L	36+91.76	25.08	828170.7390	1999299.1750
L	37+86.24	25.00	828226.5048	1999377.8370
L	39+42.59	55.71	828268.3479	1999518.0490
L	40+00.00	-25.00	828361.3200	1999548.7599
L	41+19.17	-54.30	828407.2557	1999666.5897
L	41+08.79	51.38	828301.0641	1999667.4944
L	19+30.36	-25.00	827541.8789	1997696.5801
L	19+30.36	25.00	827508.3702	1997733.6903
L	16+12.70	-25.00	827424.7903	1997433.2445
L	11+40.49	-25.00	827424.5946	1996961.0375
L	10+15.79	-48.87	827367.9563	1996820.5929
L	10+18.49	42.40	827313.6335	1996893.9956
L	10+41.14	-24.70	827372.9373	1996855.2764
L	10+41.17	25.30	827342.0166	1996894.5690
L	10+92.25	25.00	827366.5342	1996924.9646
L	17+66.99	71.65	827364.9312	1997611.6584
L	17+87.60	25.00	827417.0096	1997613.1393
L	34+06.95	-43.83	828111.1740	1999022.7910
L	38+53.39	-25.00	828305.2379	1999405.9934
L	38+14.93	25.00	828242.4869	1999399.9178
L	40+75.00	-60.00	828408.2283	1999622.0681

-L- NEW PERMANENT DRAINAGE EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	17+50.00	-90.00	827508.5578	1997535.7274
L	18+00.00	-130.00	827559.5981	1997551.4840
L	18+30.00	-115.00	827557.0104	1997576.6038
L	17+70.00	-25.00	827454.8333	1997576.0238
L	17+25.00	-25.00	827440.2232	1997536.6309
L	19+56.00	25.00	827527.4036	1997750.8765
L	19+70.00	55.00	827517.6893	1997782.5251
L	19+94.00	45.00	827542.2040	1997791.1872
L	19+84.00	25.00	827548.1854	1997769.6413
L	32+85.00	-45.00	828087.6436	1998903.1300
L	32+90.00	-25.00	828069.0690	1998912.0734
L	27+60.00	-70.00	828010.5620	1998382.0754
L	27+85.00	-70.00	828015.9826	1998406.4807
L	27+55.00	-25.00	827965.5484	1998386.9514
L	27+85.00	-25.00	827972.0531	1998416.2377
L	33+10.00	-50.00	828097.5986	1998926.6012
L	33+15.00	-25.00	828074.1274	1998936.5563
L	27+83.00	50.00	827898.4029	1998430.5439
L	27+63.00	50.00	827894.0665	1998411.0197
L	27+63.00	25.00	827918.4717	1998405.5991
L	27+83.00	25.00	827922.8082	1998425.1234
L	33+25.00	45.00	828007.5981	1998960.5101
L	33+25.00	25.00	828027.1844	1998956.4633
L	32+95.00	45.00	828001.5279	1998931.1306
L	32+95.00	25.00	828021.1142	1998927.0838

-L- NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	26+96.57	25.00	827904.0675	1998340.7466
L	26+11.58	47.71	827862.9706	1998265.0714
L	26+16.74	25.00	827886.1932	1998264.0003
L	26+08.83	-25.00	827932.4104	1998243.3462
L	25+97.10	-61.16	827963.9257	1998221.8132
L	25+69.39	-52.01	827947.0013	1998197.0429
L	25+77.92	-24.99	827923.6064	1998213.0276

NOTES

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   p4405i_ls_control.txt

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

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "42967-3"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 828331.4357(ft) EASTING: 1999793.6182(ft)
ELEVATION: 475.34'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999455068
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"42967-3" TO -L- STATION 10+08.20 IS
S 71°13'00" W 3104.65'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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12:41:08 PM
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DGN ENGINEERING.NAP

PROJ. REFERENCE NO.	SHEET NO.
P-4405 I	1D-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)
1	L	10+00.17	827325.4614	1996849.3429
2	L	11+00.00	827392.2083	1996921.4648
3	L	12+00.00	827399.6193	1997020.5532
4	L	13+00.00	827399.6607	1997120.5532
5	L	14+00.00	827399.7022	1997220.5532
6	L	15+00.00	827399.7436	1997320.5532
7	L	16+00.00	827399.7851	1997420.5532
8	L	17+00.00	827409.8098	1997519.7832
9	L	18+00.00	827445.0967	1997613.0423
10	L	19+00.00	827503.4284	1997693.9116
11	L	20+00.00	827576.8126	1997761.8068
12	L	21+00.00	827651.0331	1997828.8241
13	L	22+00.00	827725.2536	1997895.8414
14	L	23+00.00	827798.3727	1997963.9903
15	L	24+00.00	827848.0693	1998049.9997
16	L	25+00.00	827877.1289	1998145.6831
17	L	26+00.00	827905.9297	1998241.4451
18	L	27+00.00	827929.2171	1998338.6773
19	L	28+00.00	827950.8995	1998436.2984
20	L	29+00.00	827972.5818	1998533.9195
21	L	30+00.00	827993.8831	1998631.6214
22	L	31+00.00	828010.6304	1998730.2068
23	L	32+00.00	828027.3198	1998828.8034
24	L	33+00.00	828046.6088	1998926.9219
25	L	34+00.00	828066.8427	1999024.8535
26	L	35+00.00	828093.5629	1999120.9785
27	L	36+00.00	828142.6934	1999207.9695
28	L	37+00.00	828196.2808	1999292.3956
29	L	38+00.00	828254.5618	1999373.6295
30	L	39+00.00	828304.8325	1999459.8824
31	L	40+00.00	828336.9653	1999554.4033
32	L	41+00.00	828351.2232	1999653.2997
33	L	42+00.00	828361.8449	1999752.7340
34	L	42+50.00	828367.1560	1999802.4531
35	DR	9+50.00	829741.0943	2000231.6421
36	DR	10+00.00	829691.0950	2000231.3801
37	DR	11+00.00	829591.5124	2000226.7528
38	DR	12+00.00	829519.6371	2000160.9137
39	DR	13+00.00	829448.0736	2000093.2537
40	DR	14+00.00	829351.3666	2000068.9711
41	DR	15+00.00	829256.3843	2000037.7911
42	DR	15+78.13	829182.5785	2000012.1540

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

Point #	Chain	Station	Northing (Y)	Easting (X)

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DGN

FINAL PAVEMENT DESIGN

C1	PROP. APPROX 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J1	8″ AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YARD
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

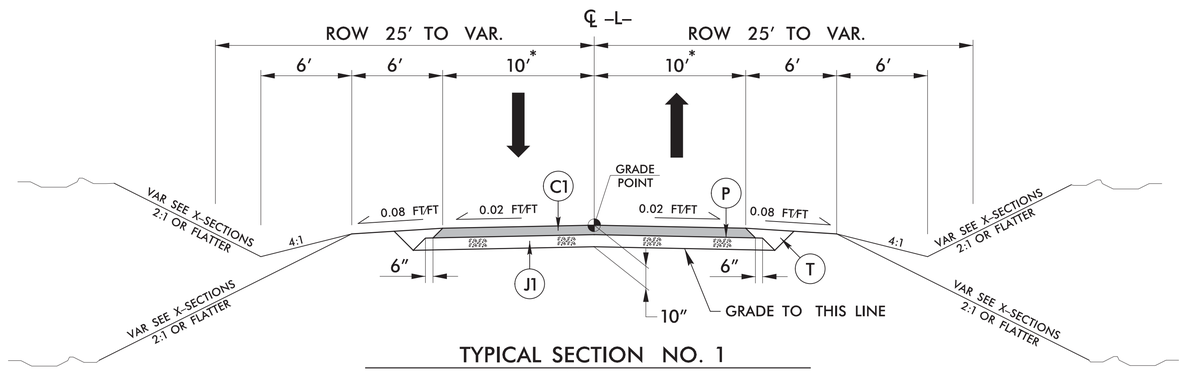
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	2A-I

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 2/4/2016
FD61A6

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022896 ENGINEER CLARK S. MORRISON
DocuSigned by: Clark S Morrison 2/4/2016

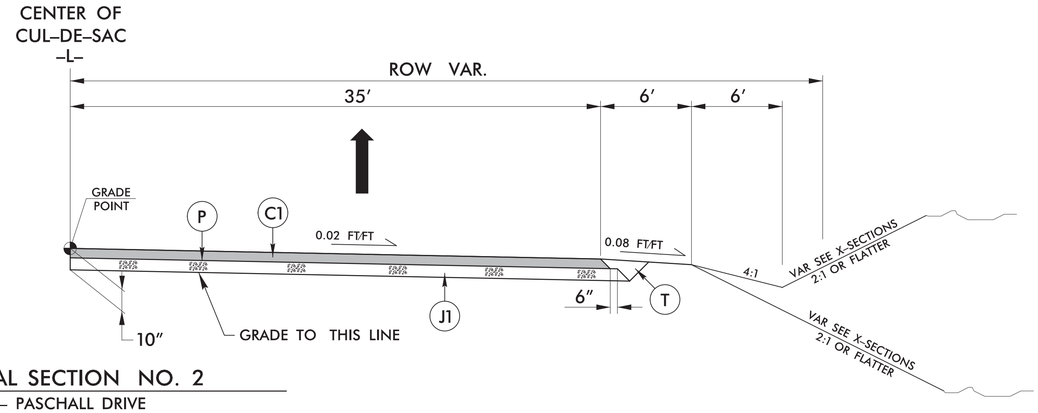
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 1
–L– PASCHALL DRIVE

* VARIES 15′ TO 10′ FROM –L– STA 10+40.00 TO –L– STA 11+40.00

USE TYPICAL SECTION NO. 1 FROM:
–L– STA 10+08.20 TO –L– STA 40+22.66



TYPICAL SECTION NO. 2
–L– PASCHALL DRIVE

USE TYPICAL SECTION NO. 2 AT:
–L– STA 40+78.50

2/3/2016
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ICA ENGINEERING, INC.

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DGN 0686DEL_P21p2 0001ADD_P21p2

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 3/3/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 3/3/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CROSSING CLOSURE DETAIL

GORDON THOMAS DR

NORTH CAROLINA RAILROAD
DB 34 PG 383

NORFOLK SOUTHERN / NORTH CAROLINA RAILROAD

NAD 83/NSRS 2011

-DR-

PI Sta 11+23.61	PI Sta 13+36.36	PI Sta 13+94.14
Δ = 55° 16' 25.5" (RT)	Δ = 6° 22' 49.1" (LT)	Δ = 10° 24' 05.4" (RT)
D = 57° 17' 44.8"	D = 36° 57' 54.1"	D = 10° 36' 37.2"
L = 96.47'	L = 17.26'	L = 98.03'
T = 52.36'	T = 8.64'	T = 49.15'
R = 100.00'	R = 155.00'	R = 540.00'

16
BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

KEVIN L. HINSDALE
SONYA W. HINSDALE
DB 1022 PG 365
PB 6 PG 81

WILLIAM G. CLAYTON
RACHEL L .CLAYTON
DB 211 PG 28
DB 163 PG 85
PB 6 PG 81

17
GLENNA VERNELL BROWN GILL
DB 542 PG 641
PB 6 PG 81

MARGIE JOYNER COUCH
DB 3193 PG 438
PB 35 PG 58

RENE ADAMS COUCH
PATRICIA E. COUCH
DB 2622 PG 255
PB 6 PG 81

ACCESS EASEMENT
DB2612 PG49

60' ACCESS EASEMENT SHOWN ON PB 19 PG 185

-DR- PT 14+43.02

-DR- PC Sta. 10+71.25

-DR- PRC 13+44.99

-DR- POT 15+78.13

-DR- POT Sta. 12+09.57

-DR- PT Sta. 11+67.72

-DR- POT Sta. 9+50.00

-DR- PT Sta. 10+00.00

-GPS- 42967-4

REMOVE AT-GRADE RR CROSSING NUMBER 735199Y AT MILEPOST H-48.50 BY OTHERS

EARTHEN BERM

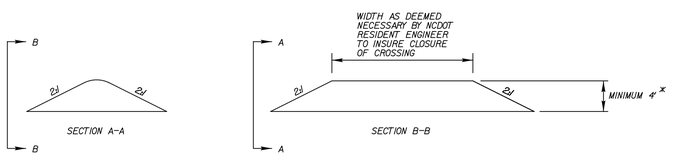
EARTHEN BERM

RETAIN

OBLITERATE

NOTE: ALL WORK WITHIN NCRR RIGHT OF WAY TO BE COORDINATED WITH NCDOT, NCRR, AND NS

EARTHEN BERM DETAIL



* EXCESS MATERIAL FROM CROSSING REMOVAL SHOULD BE USED TO INCREASE HEIGHT OF BERM

NOTES:

1. CONTACT THE NCDOT RESIDENT ENGINEER TO SCHEDULE THE CLOSURE OF GORDON THOMAS DRIVE.
2. THE EXISTING PAVEMENT WITHIN 10' OF THE CENTERLINE OF THE TRACK, WILL BE REMOVED BY OTHERS. THE TIMBER SURFACE AND RAIL SEAL FLANGES WILL ALSO BE REMOVED BY OTHERS. THE EXISTING CROSSBUCKS WILL BE REMOVED BY OTHERS.
3. CONTRACTOR SHALL SEED AND MULCH THE DISTURBED AREA OUTSIDE THE RAILROAD BALLAST LINE.
4. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 TO LOCATE ALL UNDERGROUND UTILITIES IN THE WORK AREA. CONTRACTOR SHALL ALSO CONTACT NORFOLK SOUTHERN RAILWAY TO LOCATE ANY UNDERGROUND RAILROAD UTILITIES IN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK ON THE RIGHT OF WAY CORRIDOR.
5. CONTRACTOR SHALL REMOVE EXISTING HIGHWAY ROADBED AND GRADE AREA TO MATCH ADJACENT TOPOGRAPHY. ANY EXISTING CULVERTS IN THE RAILROAD DITCHES SHALL BE REMOVED AND GRADE EXISTING DITCHES TO DRAIN. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL OF OTHERS. ALL PAVEMENT WITHIN THE RAILROAD CORRIDOR IS TO BE REMOVED AT THE CONCLUSION OF THE PROJECT.
6. PROVIDE PERMANENT SIGNING AS SHOWN.
7. PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
8. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERNATING ANY TRAFFIC PATTERN.

3/2/2016
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tfeltner

DCN 0686DEL_P21p2

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT	UNSUIT. UNCL.	EMBANK. +%	BORROW	WASTE
10+08.20	41+82.00	4936	1220	300	4777	141	1520
PROJECT TOTALS:		4936	1220	300	4777	141	1520
MATERIAL FOR EARTH BERM CONSTRUCTION						1995	
ADDITIONAL UNDERCUT			300	100		480	400
SELECT GRANULAR MATERIAL					1644	1644	
TOTAL:		4936	1520	400	6901	4260	1920
EST. TO REPLACE TOP SOIL ON BORROW PIT						213	
GRAND TOTALS:		4936				4473	
SAY:		5000				4500	

DDE (CY) = 110

GEOTEXTILE FOR SOIL STABILIZATION (SY) = 1820

SHALLOW UNDERCUT (CY) = 150

CLASS IV SUBGRADE STABILIZATION (TONS) = 300

PAVEMENT STRUCUTRE VOLUME (CY) = 940

Note: Approximate quantities only. Clearing and Grubbing, Unclassified Excavation, Borrow Excavation, Fine Grading, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
	10' SOUTH OF RR	TRACKS WITHIN RR	EASMENT	202
TOTAL:				202
SAY:				205

0686DEL_P21p2

RD244542

COMPUTED BY: ADS DATE: 11/11/2015

CHECKED BY: JCB DATE: 11/11/2015

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
P-4405 I	3D-1

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

STATION	LOCATION (LT. RT. OR CL)*	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	DRAINAGE PIPE THICKNESS OR GAUGE	C.S. PIPE SIZE	C.S. PIPE THICKNESS OR GAUGE	R.C. PIPE CLASS III	R.C. PIPE CLASS IV	** R.C. PIPE (CLASS V)	*** RC PIPE CULVERTS, CONTRACTOR DESIGN	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. FT. A 5.0' THRU 10.0'	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32					DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 17+50	CL	401			461.2	459.1							60																														REMOVE 12" RCP
-L- 21+94	LT	501															28																											
-L- 22+55	LT	502															32																											
-L- 27+72	CL	503			465.0	464.7							52																														REMOVE 12" RCP
-L- 33+07	CL	601			460.8	460.5								56					3.4																								REMOVE 10" RCP
PROJECT TOTALS													112	56			60		3.4																								

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

0686DEL_P21p2

COMPUTED BY: GEOTECH DATE: 4/30/2015
CHECKED BY: ADS DATE: 10/21/2015

PROJECT NO.	SHEET NO.
P-4405 I	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU		150	300	2100		
			TOTAL CY/TONS/SY:		150	300	2100**		

***ASU = Aggregate Subgrade**
***AST = Aggregate Stabilization**
****Total square yards of "Geotextile for Soil Stabilization" is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.**

0686DEL_P21p2

PROJ. REFERENCE NO.	SHEET NO.
P-4405 I	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

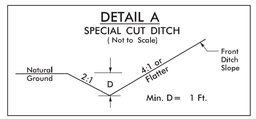
PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	DORIS S. PASCHALL ETAL & STEVEN D PASCHALL
2	4	CHARLES W. ERWIN & ANDREA C. ERWIN
3	4	ROBERT L. PASCHALL AND TO HIS HEIRS AND ASSIGNS
4	4, 5	DONALD PASCHALL
5	5	CATHY O. PASCHALL
6	5	SUSAN G. MIKELS
7	5	MARY ALICE ELLIS & CLAIBORNE O. ELLIS
8	5	JOSEPHINE P. MANGUM & OTIS C. MANGUM
9	5	ROBERT L. PASCHALL
10	5, 6	DUKE UNIVERSITY SCHOOL OF FORESTRY
11	5, 6	FRED T. BROWNING & SANDRA R. BROWNING
12	6	JOHN. A. TAYLOR & CALRICE D. TAYLOR
13	6	MICHAEL M. OSTOYICH & VALENTINE A. OSTOYICH
14	6	LUCILLE C. KING
15	6	MARK L. KING
16	6, 2B-1	BOBBY C. COUCH & SHIRLEY COUCH
17	2B-1	GLENNA VERNELL BROWN GILL

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

DocuSign Envelope ID: 54DB30B8-F691-412D-B9E9-A69E1642FC1E

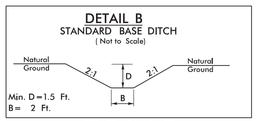
DGN 0686DEL_P21p2

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



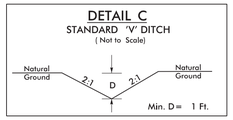
FROM STA. 10+50 TO STA. 11+50 –L– LT
FROM STA. 15+50 TO STA. 19+00 –L– LT
FROM STA. 18+79 TO STA. 20+00 –L– RT

DETAIL B
STANDARD BASE DITCH
(Not to Scale)



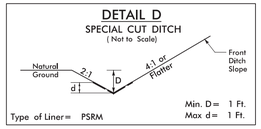
STA. 17+50 –L– LT

DETAIL C
STANDARD 'V' DITCH
(Not to Scale)



STA. 19+70 –L– RT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 17+00 TO STA. 17+50 –L– RT

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D SNIDER
DocuSigned by: Alexander D. Snider 2/16/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/16/2016

FD61A6...
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2011

–L–	
PI Sta 10+94.31	PI Sta 17+81.47
△ = 51° 46' 33.1" (RT)	△ = 47° 53' 45.0" (LT)
D = 52° 05' 13.5"	D = 15° 04' 40.2"
L = 99.40'	L = 317.66'
T = 53.38'	T = 168.77'
R = 110.00'	R = 380.00'
SE = 0.04	SE = 0.04
V = 20 MPH	V = 35 MPH

DESIGN EXCEPTION REQUIRED

BEGIN TIP PROJECT P-4405I
–L– POT 10+08.20

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-66-5857
DB 145 PG 550

100' UNIFORM TAPER (BOTH SIDES)

–L– POT 10+00.17
= –EL– 12+84.41

–L– PT Sta. 11+40.49

SPECIAL CUT DITCH SEE DETAIL A

–L– PC Sta. 10+41.09

RETAIN EX. WALL AND DRAINAGE PATTERN TO EX. DITCH

RETAIN

–EL– POT 15+94.66

–EL– PT 14+67.93
–EL– PC 13+96.92
–EL– PT 13+84.57
–EL– PCC 13+47.32
–EL– PC 13+22.46
–EL– PT 13+17.81
–EL– PCC 13+02.23
–EL– PCC 12+21.89
–EL– PC 11+60.45

–EL– POT 10+00.00

–BL-6

N 88°19'41.9" W
N 87°27'48.6" W
N 72°31'00.2" W
N 36°12'04.4" E
N 9°59'42.5" W

DORIS S PASCHALL ETAL
STEVEN D PASCHALL

DB 145 PG 550
PB 4 PG 214

BM-1, ELEVATION = 475.61'
N 827258 E 1996809
BL STATION 23+83.00, 73' RIGHT
RR SPIKE IN BASE OF 15" SWEET GUM

1 DORIS S PASCHALL ETAL
STEVEN D PASCHALL

DB 145 PG 550
PB 4 PG 214

2 CHARLES W. ERWIN
ANDREA C. ERWIN

DB 683 PG 613
DB 407 PG 273
PB 27 PG 122

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-76-6980
DB 654 PG 230

N 89°58'34.5" E

30' ACCESS EASEMENT
DB 240 PG 234

10' X 10' PSRM FOR EX. DITCH TIE TO PROP. DITCH
EST 11 SY

–L– PC Sta. 16+12.70

15+00

–L– PT Sta. 19+30.36

2' BASE TAIL DITCH
SEE DETAIL B
SLOPE = 0.64%
DDE = 20 CY

CLASS I RIP RAP
EST 17 TON
EST 30 SY GT

CLASS B RIP RAP
EST 5 TON
EST 14 SY GT

SPECIAL CUT DITCH
SEE DETAIL A

10' X 10' PSRM FOR EX. DITCH TIE TO PROP. DITCH
EST 11 SY

SPECIAL CUT DITCH W/PSRM
SEE DETAIL D
EST 35 SY

-BL-7

REMOVE

'V' TAIL DITCH
SEE DETAIL C
SLOPE = 1.8%
DDE = 3 CY

SPECIAL CUT DITCH
SEE DETAIL A

DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73

4 DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73

MATCHLINE
–L– STA 20+00
SEE SHEET 5

3 ROBERT L. PASCHALL
AND TO HIS HEIRS AND ASSIGNS

DB 654 PG 230
PB 4 PG 214

JOSEPHINE PASCHALL
93-E-156
DB 279 PG 1102

–EL–		
PI Sta 11+91.27	PI Sta 12+63.86	PI Sta 13+10.04
△ = 11° 13' 21.5" (LT)	△ = 40° 57' 00.3" (LT)	△ = 10° 06' 22.5" (LT)
D = 18° 16' 00.5"	D = 50° 58' 10.6"	D = 64° 53' 18.7"
L = 61.44'	L = 80.34'	L = 15.57'
T = 30.82'	T = 41.97'	T = 7.81'
R = 313.66'	R = 112.41'	R = 88.30'
PI Sta 13+34.92	PI Sta 13+65.96	PI Sta 14+32.43
△ = 10° 06' 22.5" (LT)	△ = 4° 50' 25.3" (LT)	△ = 0° 51' 53.3" (LT)
D = 40° 39' 26.3"	D = 12° 59' 31.2"	D = 1° 13' 03.9"
L = 24.86'	L = 37.26'	L = 71.02'
T = 12.46'	T = 18.64'	T = 35.51'
R = 140.92'	R = 441.01'	R = 4,705.06'

OBLITERATE

FOR –L– PROFILE, SEE SHEET 7

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PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider FD61A0 2/4/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/4/2016

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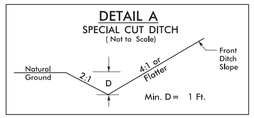
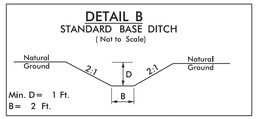
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



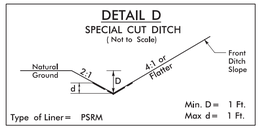
FROM STA. 20+00 TO STA. 21+00 -L- RT
FROM STA. 27+00 TO STA. 27+73 -L- RT
FROM STA. 29+00 TO STA. 30+50 -L- LT
FROM STA. 30+50 TO STA. 31+50 -L- RT

DETAIL B
STANDARD BASE DITCH
(Not to Scale)



STA. 27+71 -L- LT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= PSRM

FROM STA. 27+73 TO STA. 28+50 -L- RT
FROM STA. 32+50 TO STA. 33+00 -L- RT

NAD 83/NSRS 2011

MATCHLINE -L- STA. 20+00 SEE SHEET 4

5
9892-77-8862
CATHY O. PASCHALL
DB 4172 PG 568

THE SOUTHERN LINE OF THIS PARCEL WAS POINTED OUT BY THE LANDOWNER AND DOES NOT CONFORM TO THE DESCRIPTION IN DB 4172 PG 568

S 00°04'59" W 89.39'
N 63°53'37" W 352.85'
S 60°20'38" E 226.01'
EIP
SAN. DRAIN FIELD
ISFD
WOODS

DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73
4

6
SUSAN G. MIKELS
DB 317 PG 249
PB 15 PG 73

MARY ALICE ELLIS
CLAIBORNE O. ELLIS
DB 207 PG 776
PB 15 PG 73
7

ROBERT L. PASCHALL
11-E-208
DB 207 PG 444
PB 15 PG 73
9

FRED T. BROWNING
SANDRA R. BROWNING
DB 211 PG 590
DB 256 PG 1257
DB 364 PG 612
PB 21 PG 43
PB 15 PG 73
11

JOSEPINE P. MANGUM
OTIS C. MANGUM
DB 210 PG 152
PB 15 PG 73
8

DUKE UNIVERSITY SCHOOL OF FORESTRY
DB 108 PG 311.5
PB 3 PG 13
PB 3 PG 133
10

-BL-8
-BL-9
-L- PT Sta. 24+07.56
-L- PC Sta. 25+82.32
-L- PT Sta. 26+57.47
-L- PC Sta. 22+71.90
-L- PC Sta. 29+72.09
-L- PT Sta. 30+25.68
-L- PC Sta. 31+59.70
-L- PT Sta. 32+76.02
25+00
30+00
N 42°04'49.5" E
N 73°10'17.5" E
N 77°28'39.0" E
N 80°32'51.8" E
N 78°19'34.4" E
16' ACCESS EASEMENT DB 238 PG 1281
SPECIAL CUT DITCH SEE DETAIL A
20' X 10' PSRM FOR DITCH TRANSITION EST 22 SY
2' BASE TAIL DITCH SEE DETAIL B SLOPE = 1.86% DDE = 10 CY
REMOVE
CLASS B RIP RAP EST 5 TONS EST 14 SY GT
SPECIAL CUT DITCH W/PSRM SEE DETAIL D EST 54 SY
SPECIAL CUT DITCH W/PSRM SEE DETAIL D EST 35 SY
PUE
PDE
EIP
EIPF
CIP
RCP
BM-2, ELEVATION = 471.59'
N 827971 E 1998683
BL STATION 44+87.00 50' RIGHT
RR SPIKE IN BASE OF 22" POPLAR

-L-

PI Sta 23+41.44	PI Sta 26+19.91
Δ = 31° 05' 28.3" (RT)	Δ = 4° 18' 21.2" (RT)
D = 22° 55' 05.9"	D = 5° 43' 46.5"
L = 135.66'	L = 75.15'
T = 69.55'	T = 37.59'
R = 250.00'	R = 1,000.00'
SE = 0.04	SE = 0.03
DS = 30 MPH	DS = 35 MPH
PI Sta 29+98.89	PI Sta 32+17.87
Δ = 3° 04' 12.9" (RT)	Δ = 2° 13' 17.5" (LT)
D = 5° 43' 46.5"	D = 1° 54' 35.5"
L = 53.59'	L = 116.32'
T = 26.80'	T = 58.17'
R = 1,000.00'	R = 3,000.00'
SE = 0.03	SE = NC
V = 35 MPH	DS = 30 MPH

FOR -L- PROFILE, SEE SHEETS 7 & 8

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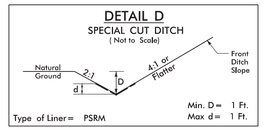
DGN

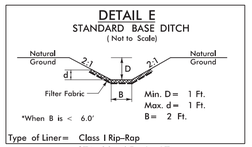
DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner = PSRM

FROM STA. 33+00 TO STA. 33+50 –L– RT

DETAIL E
STANDARD BASE DITCH
(Not to Scale)

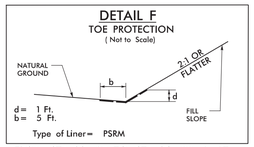


*When B is < 6.0'

Type of Liner = Class I Rip-Rap

STA. 33+05 –L– LT

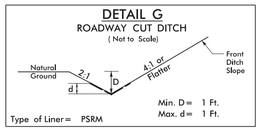
DETAIL F
TOE PROTECTION
(Not to Scale)



Type of Liner = PSRM

FROM STA. 33+05 TO STA. 36+00 –L– LT
FROM STA. 34+25 TO STA. 36+50 –L– RT

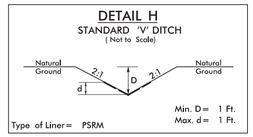
DETAIL G
ROADWAY CUT DITCH
(Not to Scale)



Type of Liner = PSRM

FROM STA. 37+50 TO STA. 41+00 –L– RT

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner = PSRM

FROM STA. 41+00 TO STA. 41+62 –L– RT

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P-4405 I	6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 2/4/2016
FD61A...

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/4/2016

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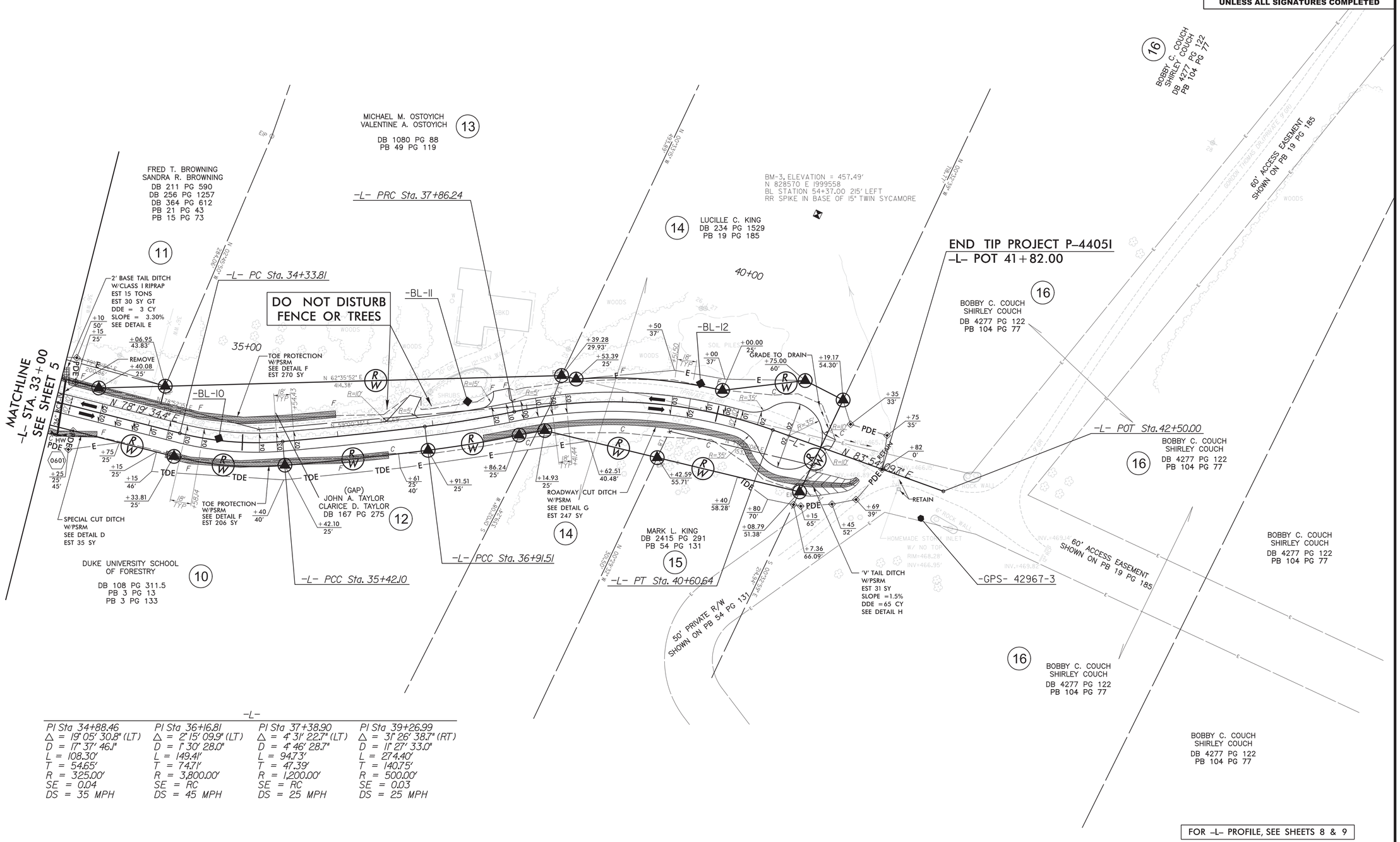

FOR –L– PROFILE, SEE SHEETS 8 & 9

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PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	7

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
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FD61A6

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/4/2016

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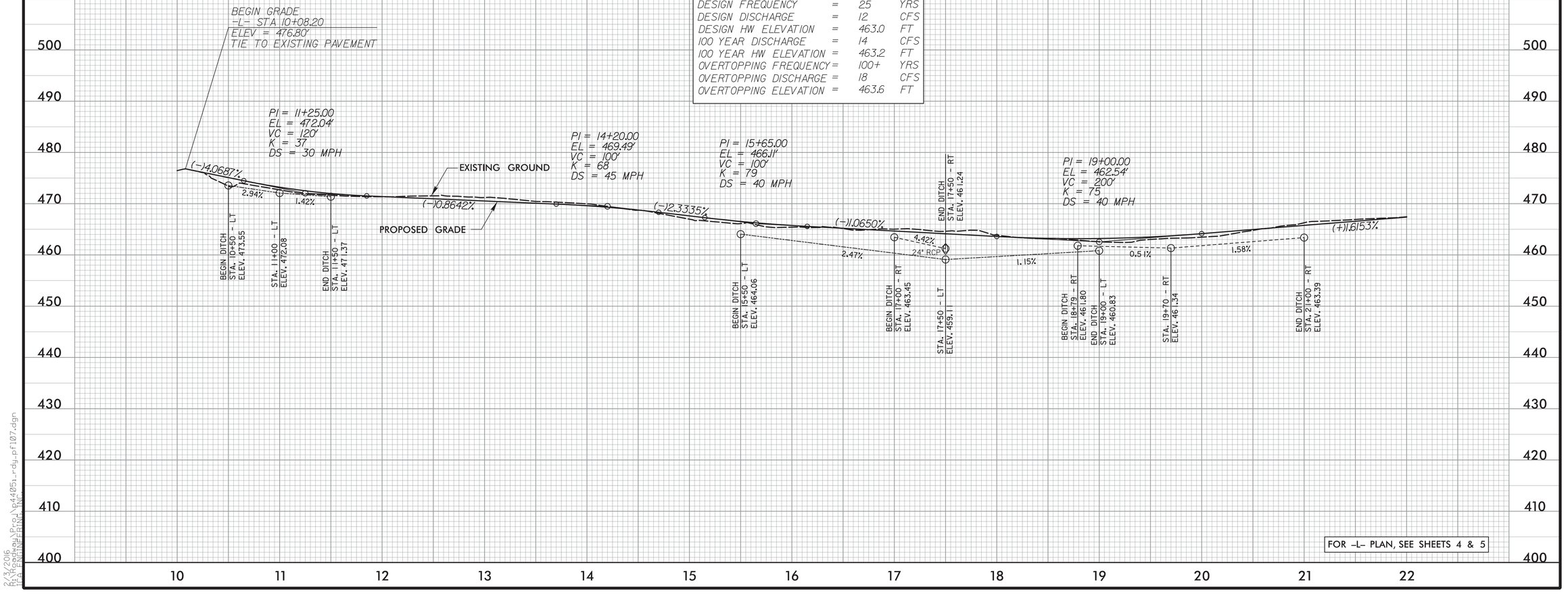
–L–

PIPE HYDRAULIC DATA
Sta.17+50 –L– 24" RCP

DRAINAGE AREA	=	4	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	12	CFS
DESIGN HW ELEVATION	=	463.0	FT
100 YEAR DISCHARGE	=	14	CFS
100 YEAR HW ELEVATION	=	463.2	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	18	CFS
OVERTOPPING ELEVATION	=	463.6	FT



FOR –L– PLAN, SEE SHEETS 4 & 5

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PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	8

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 2/4/2016
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HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
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–L–

PIPE HYDRAULIC DATA
Sta. 27+72 –L– 24" RCP

DRAINAGE AREA	=	3	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	10	CFS
DESIGN HW ELEVATION	=	466.6	FT
100 YEAR DISCHARGE	=	12	CFS
100 YEAR HW ELEVATION	=	466.8	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	28	CFS
OVERTOPPING ELEVATION	=	469.1	FT

PIPE HYDRAULIC DATA
Sta. 33+07 –L– 36" RCP

DRAINAGE AREA	=	16	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	34	CFS
DESIGN HW ELEVATION	=	463.8	FT
100 YEAR DISCHARGE	=	40	CFS
100 YEAR HW ELEVATION	=	464.1	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	49	CFS
OVERTOPPING ELEVATION	=	465.6	FT

BM #2.
RR SPIKE IN BASE OF 22" POPLAR
–L– STA. 30+46.84, OFFSET 31.66' RT
ELEV = 471.59'

PI = 26+00.00
EL = 473.85'
VC = 140'
K = 30
DS = 35 MPH

PI = 28+00.00
EL = 467.87'
VC = 170'
K = 30
DS = 35 MPH

PI = 30+00.00
EL = 473.20'
VC = 200'
K = 31
DS = 35 MPH

PI = 33+35.00
EL = 460.42'
VC = 390'
K = 31
DS = 25 MPH

PROPOSED GRADE
(+)1.6153%
EXISTING GROUND
(–)2.9889%
5.11%
24" RCP
2.96%
(+)2.6650%
0.57%
5.44%
(–)3.8157%
1.36%
EXISTING GROUND
PROPOSED GRADE
36" RCP
4.37%
6.98%
(+)8.9320%

BEGIN DITCH STA. 27+00 – RT ELEV. 466.68
STA. 27+73 – RT ELEV. 464.95
END DITCH STA. 28+50 – RT ELEV. 467.23
BEGIN DITCH STA. 29+00 – LT ELEV. 469.01
BEGIN DITCH STA. 30+50 – RT ELEV. 468.71
END DITCH STA. 30+50 – LT ELEV. 468.15
STA. 31+00 – RT ELEV. 465.99
END DITCH STA. 31+50 – RT ELEV. 465.31
BEGIN DITCH STA. 32+50 – RT ELEV. 463.46
STA. 33+10 – RT ELEV. 460.84
END DITCH STA. 33+50 – RT ELEV. 463.47

UNDERCUT EXCAVATION

FOR –L– PLAN, SEE SHEETS 5 & 6

500 490 480 470 460 450 440 430 420 410 400

22 23 24 25 26 27 28 29 30 31 32 33 34

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PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	9

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 041473 ENGINEER ALEXANDER D. SNIDER
DocuSigned by: Alexander D. Snider 2/4/2016
FD61A6

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 24451 ENGINEER STACEY H. BAILEY
DocuSigned by: Stacey H. Bailey 2/4/2016

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–L–

PI = 37+15.00
EL = 494.36'
VC = 305'
K = 19
DS = 30 MPH

BM #3:
RR SPIKE IN BASE OF 15" TWIN SYCAMORE
–L– STA. 40+38.68, OFFSET 228.53' LT
ELEV = 457.49'

END GRADE
–L– STA 41+13.50
ELEV = 469.97'

PI = 40+00.00
EL = 474.09'
VC = 140'
K = 40
DS = 30 MPH

PROPOSED GRADE
EXISTING GROUND
(+)8.93201%
(–)7.13131%
(–)13.62427%

500 490 480 470 460 450 440 430 420 410 400

34 35 36 37 38 39 40 41

FOR –L– PLAN, SEE SHEET 6

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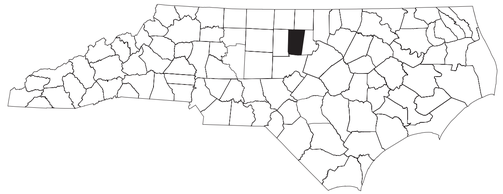
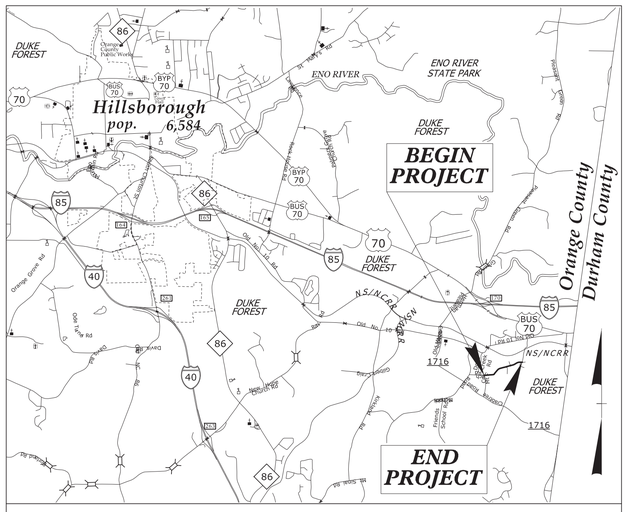
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ORANGE COUNTY





SKETCH MAP SHOWING THE VICINITY OF STATE PROJECT P-4405I

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND & TEMPORARY PAVEMENT MARKING SCHEDULE
TMP-2	PROJECT NOTES
TMP-3	PHASING
TMP-4 THRU TMP-6	PHASE I DETAIL

SHEET NO.
TMP-1

P-4405I

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
D. BISSETTE, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
_____ — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
_____ — TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: P0358

APPROVED: DocuSigned by: Michael T. Rzepka 01BC3480C26049D...
DATE: 2/3/2016

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RZEPKA

1/20/2016
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PROJ. REFERENCE NO.	SHEET NO.
P-4405I	TMP-1A

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Raleigh, NC 27607
NC License No. P1609

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING PROPOSED TEMP TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS, LEGEND & TEMPORARY PAVEMENT MARKING SCHEDULE

1/20/2016
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P-4405I	TMP-2

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

E) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

TRAFFIC PATTERN ALTERATIONS

F) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

G) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

I) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

L) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENTH TO CLOSE ENTIRE ROADWAY.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RZEPKA

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

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PROJ. REFERENCE NO.	SHEET NO.
P-4405I	TMP-3

PHASING

PHASE I

STEP 1

INSTALL ALL ADVANCE WORK ZONE WARNING SIGNS.

STEP 2

AWAY FROM TRAFFIC AND USING RSD 1101.02 (SHEET 1 OF 15), BEGIN INSTALLATION OF PROPOSED DRAINAGE.

AWAY FROM TRAFFIC AND USING RSD 1101.02 (SHEET 1 OF 15), CONSTRUCT THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL LAYER OF ASPHALT (SEE SHEETS TMP-4 THRU TMP-7):

-L- STA 10+08± TO -L- STA 41+13±

STEP 3

PERFORM THE FOLLOWING USING RSD 1101.02 (SHEET 1 OF 15) AS NEEDED:

- -COMPLETE PROPOSED DRAINAGE
- -PLACE ASPHALT SURFACE COURSE LAYER
- -SHIFT TRAFFIC TO FINAL PATTERN AND OPEN ALL LANES
- -UPON OPENING OF -L-, CLOSE EXISTING GORDON THOMAS DRIVE DRIVE AT THE RAILROAD CROSSING USING TYPE III BARRICADE UNTIL PHASE II WORK IS COMPLETED

PHASE II

STEP 1

PERFORM PAVEMENT REMOVAL AND CONSTRUCT EARTHEN BERM (REFER TO ROADWAY PLANS).

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NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RZEPKA

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASING

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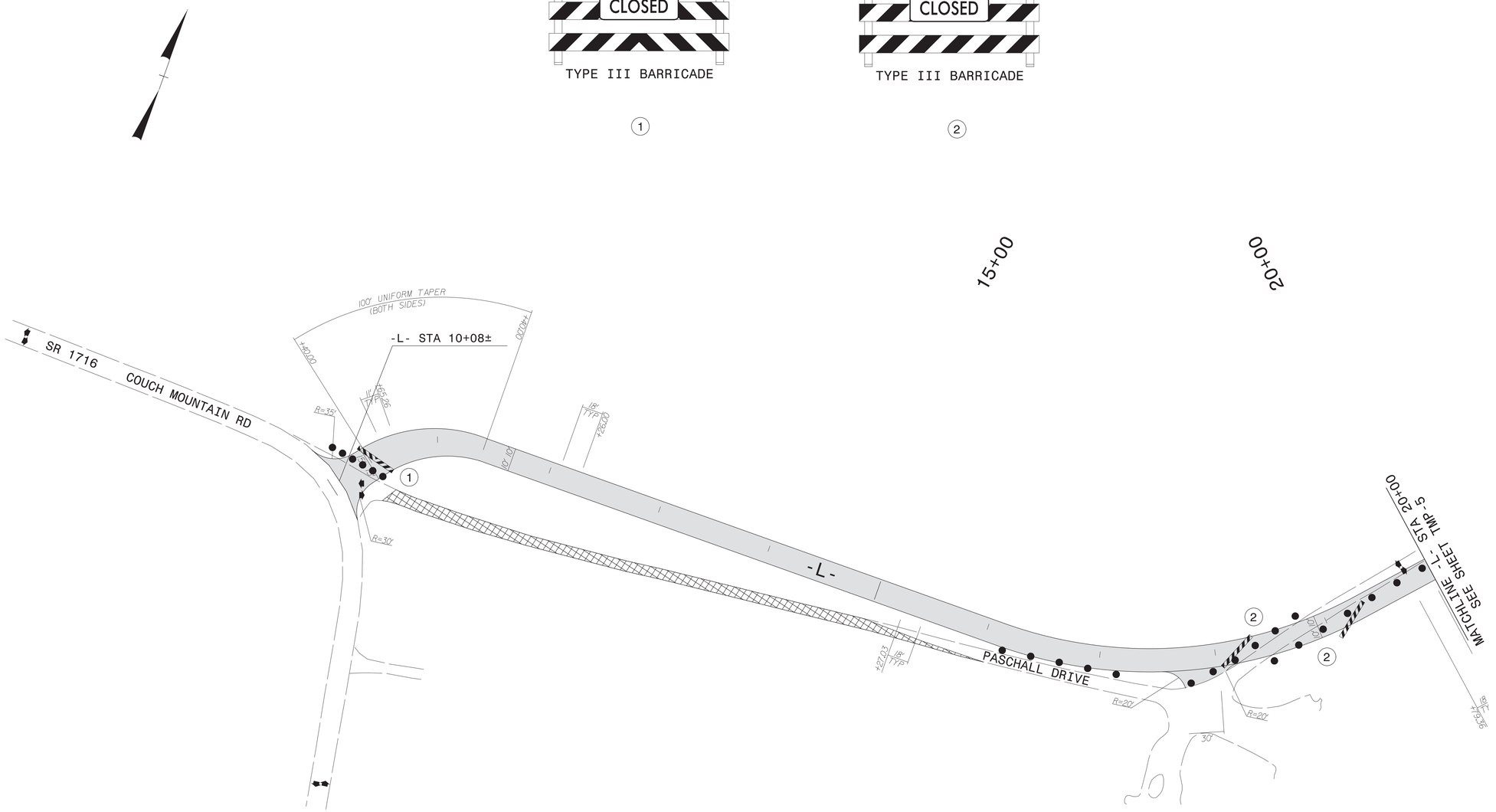
PROJ. REFERENCE NO.	SHEET NO.
P-4405I	TMP-4

R11-2
48'' x 30''
ROAD CLOSED
TYPE III BARRICADE
1

R11-2
48'' x 30''
ROAD CLOSED
TYPE III BARRICADE
2



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NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RZEPKA

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL

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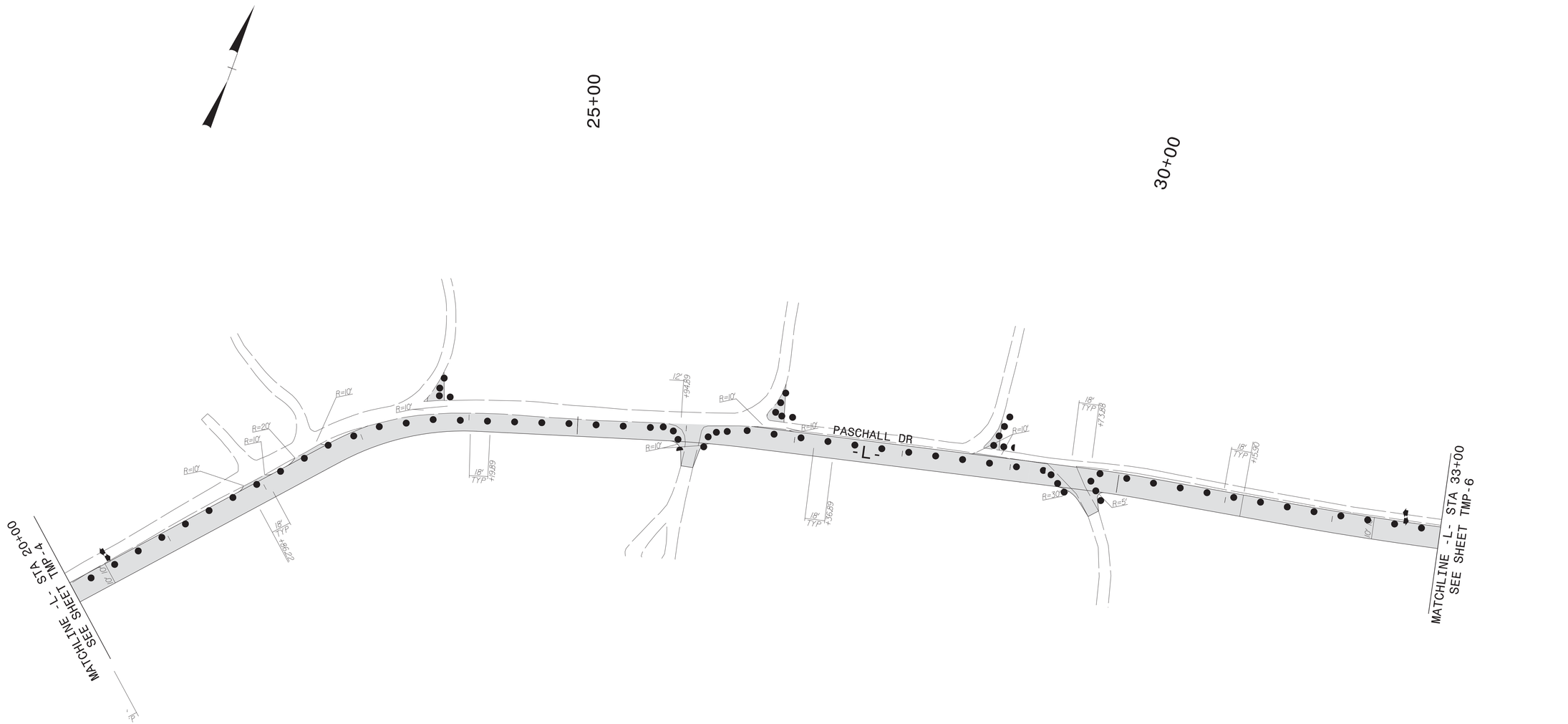
PROJ. REFERENCE NO.	SHEET NO.
P-4405I	TMP-5



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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL

1/20/2016
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PROJ. REFERENCE NO.	SHEET NO.
P-4405I	TMP-6

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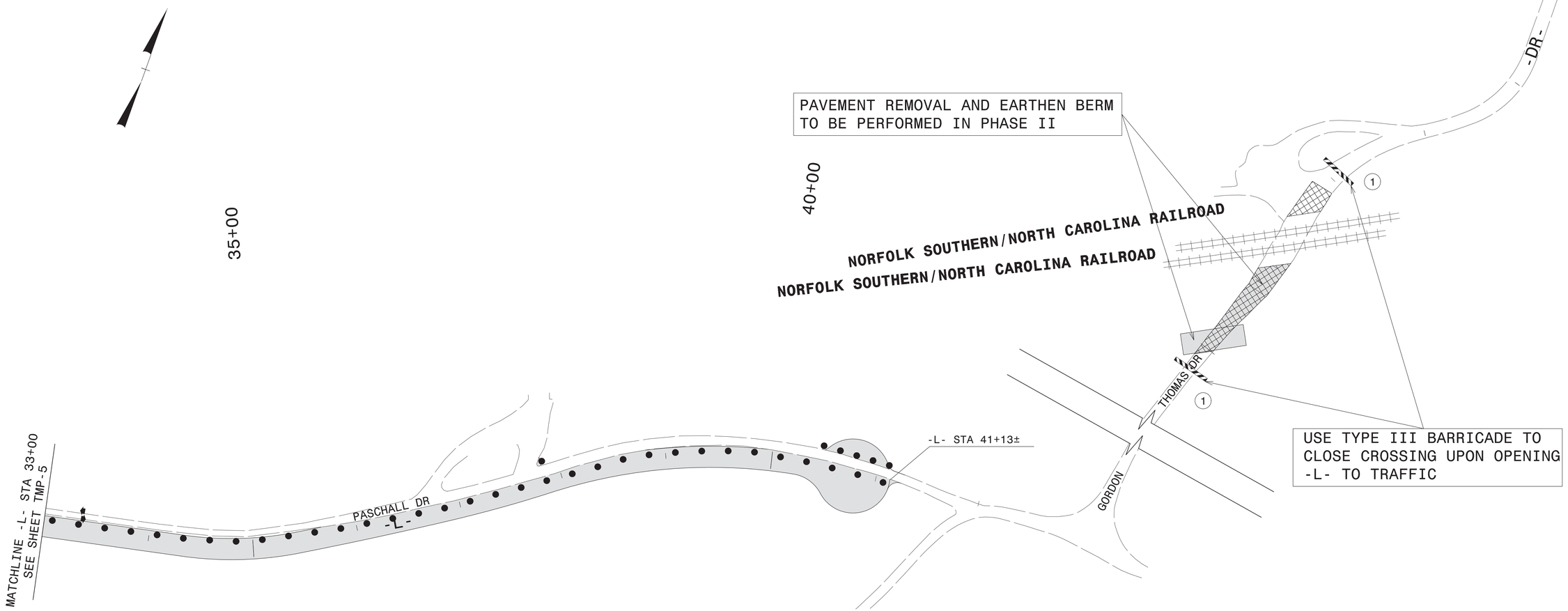

TYPE III BARRICADE

1

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE I DETAIL

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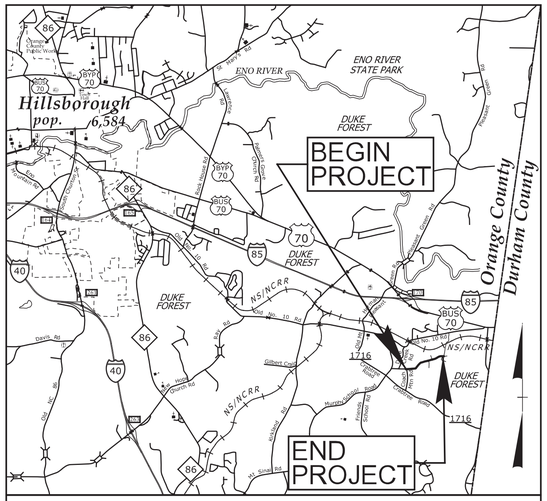
TIP PROJECT: P-4405 I

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4405 I	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



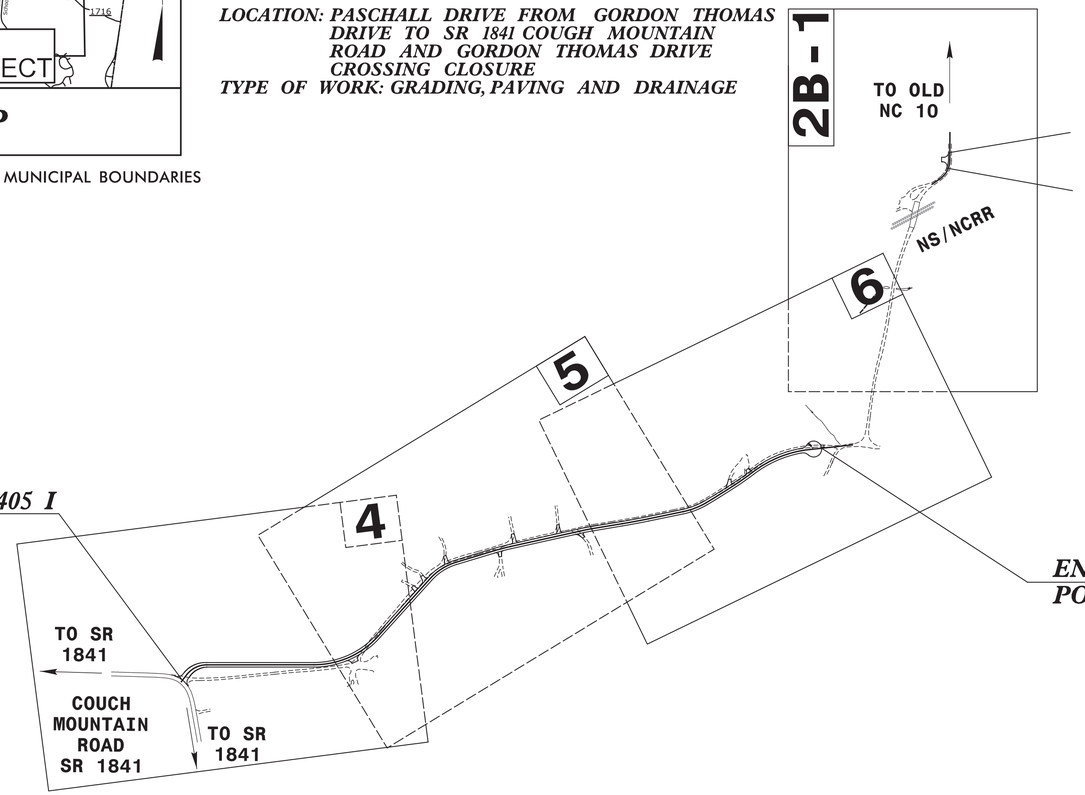
VICINITY MAP

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
ORANGE COUNTY

LOCATION: PASCHALL DRIVE FROM GORDON THOMAS DRIVE TO SR 1841 COUGH MOUNTAIN ROAD AND GORDON THOMAS DRIVE CROSSING CLOSURE

TYPE OF WORK: GRADING, PAVING AND DRAINAGE



BEGIN TIP PROJECT P-4405 I
POT STA 10+08.20 -L-

END TIP PROJECT P-4405 I
POT STA 41+13.50 -L-

NAD 83/ NSRS 2011

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

STACEY H. BAILEY, P.E.
ROADSIDE ENVIRONMENTAL ENGINEER

3074
LEVEL III CERTIFICATION NUMBER

TRENTON J. CORMIER, P.E.
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

3377
LEVEL III CERTIFICATION NUMBER

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared In the Office of:

ICA ENGINEERING, INC.
5121 KINGDOM WAY, SUITE 100
RALEIGH NC 27607
NC LICENSE NO: F-0258

2012 STANDARD SPECIFICATIONS

Designed by:

STACEY H BAILEY, P.E. *3074*
NAME *LEVEL III CERTIFICATION NO.*

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

JENNIFER PARISH

Roadway Standard Drawings

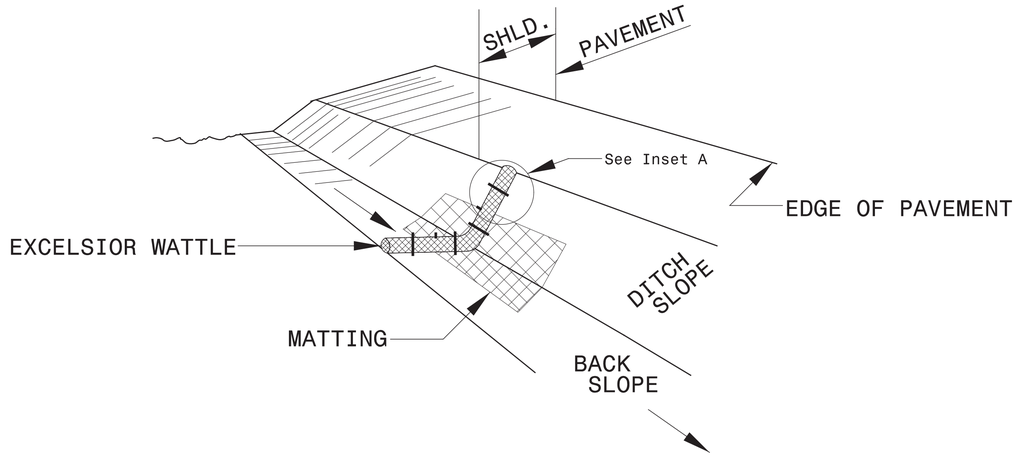
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

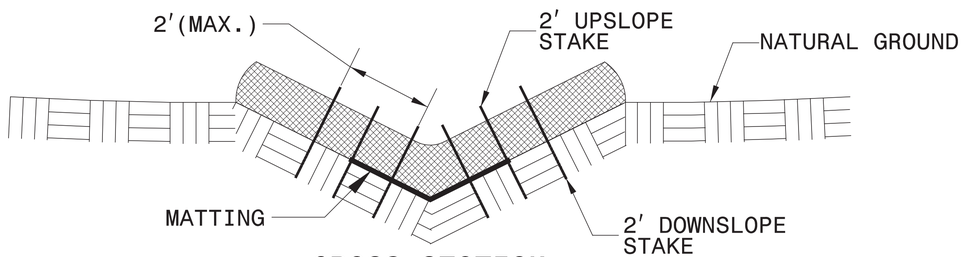
ICA ENGINEERING, INC.

PROJECT REFERENCE NO.	SHEET NO.
P-44051	EC-2

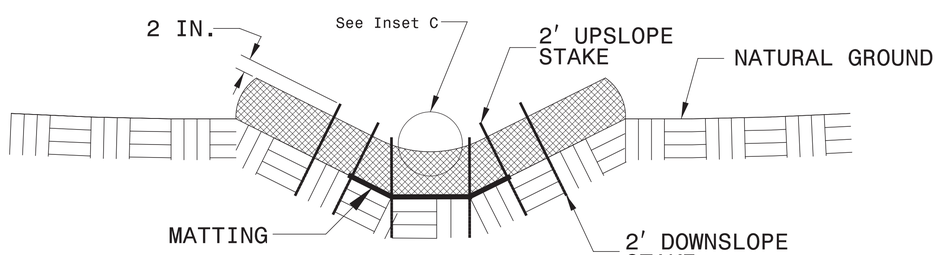
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

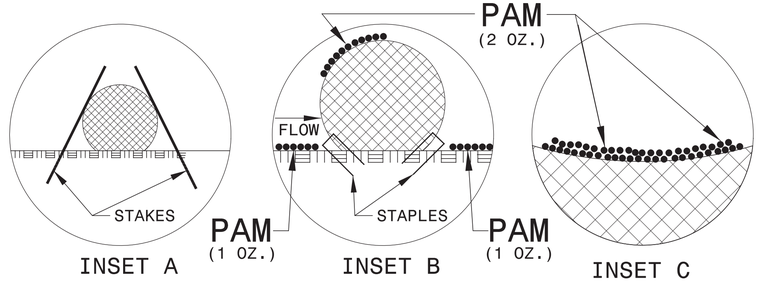
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

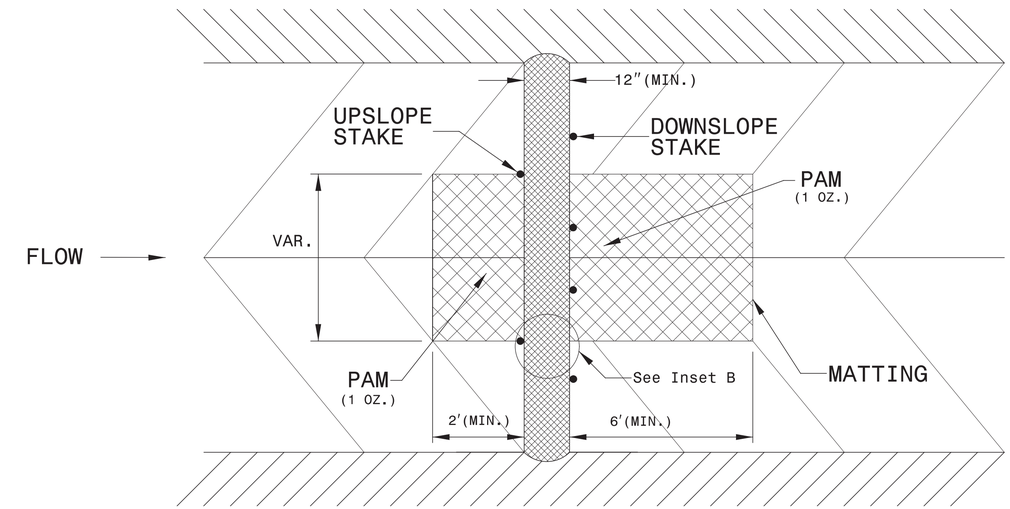
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

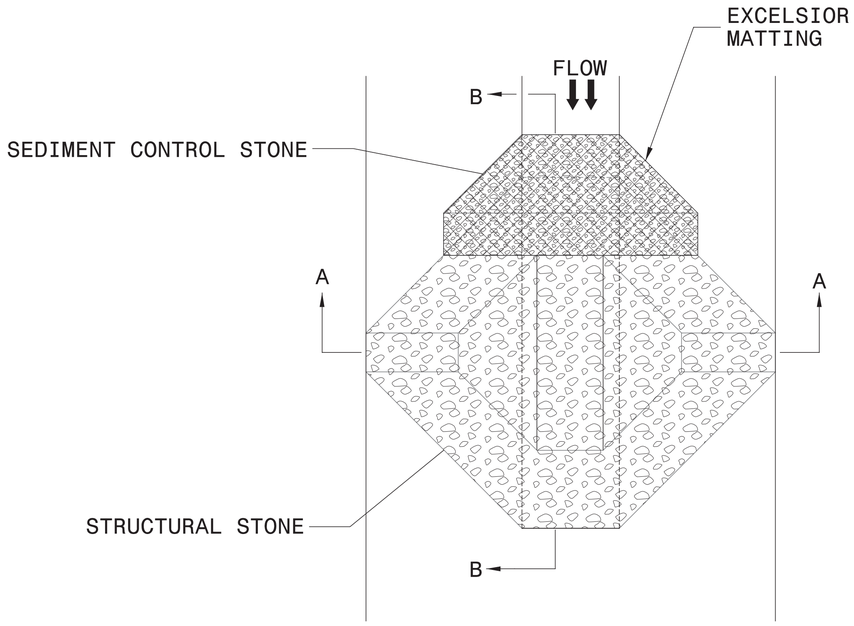




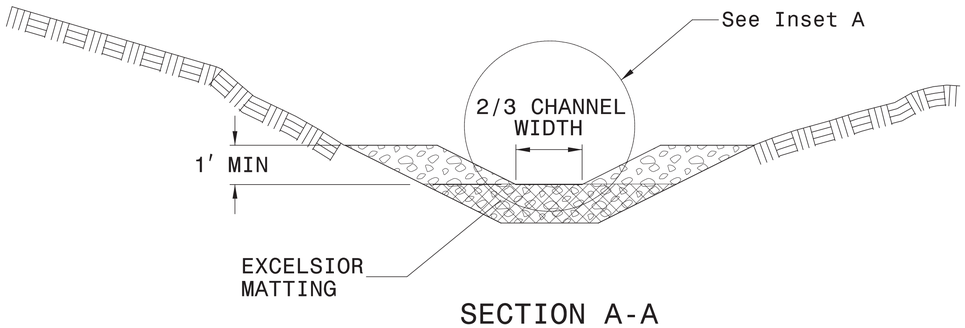
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
P-44051	EC-2A

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

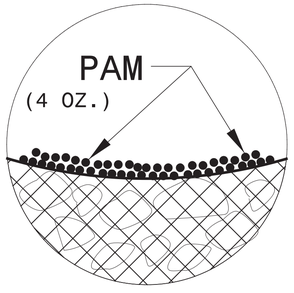
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

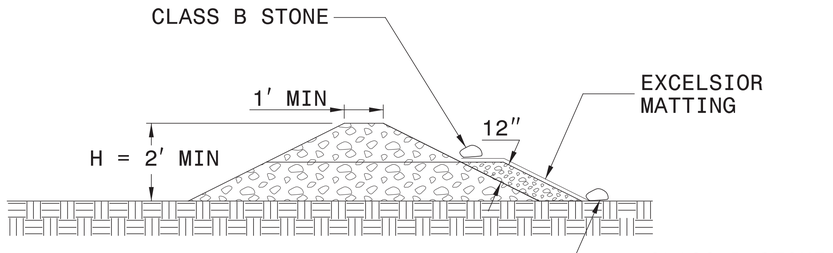
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
P-4405I	EC-3
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+00	11+00	LT	105
4	-L-	12+00	17+50	LT	580
4	-L-	17+50	23+50	LT	630
4	-L-	10+00	17+00	RT	735
4	-L-	17+50	17+75	RT	30
4	-L-	19+70	21+00	RT	140
4	-L-	24+50	25+50	RT	105
4&5	-L-	25+50	27+00	RT	160
5	-L-	27+73	30+00	RT	240
5	-L-	30+00	32+50	RT	265
5	-L-	31+50	32+00	LT	55
6	-L-	36+50	37+50	RT	105
6	-L-	41+00	41+63	LT	80
			SUBTOTAL		3230
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					6390
				TOTAL	9620
				SAY	9620

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-L-	27+00	27+73	RT	80
6	-L-	40+50	41+00	LT	55
			SUBTOTAL		135
		ADDITIONAL PSRM TO BE INSTALLED			970
				TOTAL	1105
				SAY	1105

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PROJECT REFERENCE NO.	SHEET NO.
P-4405I	EC-3A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

0686DEL_P21p2

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-04/CONST.04
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

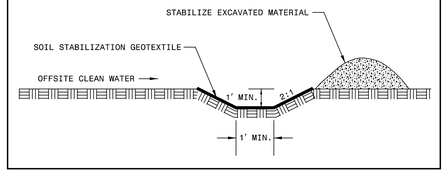
NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



NAD 83/NSRS 2011

BEGIN TIP PROJECT P-4405I
-L- POT 10+08.20

-L- PI Sta 10+94.31
△ = 51° 46' 33.1" (RT)
D = 52° 05' 13.5"
L = 99.40'
T = 53.38'
R = 110.00'
SE = 0.04
V = 20 MPH

-L- PI Sta 17+81.47
△ = 47° 53' 45.0" (LT)
D = 15° 04' 40.2"
L = 317.66'
T = 168.77'
R = 380.00'
SE = 0.04
V = 35 MPH

DESIGN EXCEPTION REQUIRED

-L- POT 10+00.17
-EL- 12+84.41

-L- PT Sta. 11+40.49

-L- PC Sta. 10+41.09

-L- PT Sta. 19+30.36

-L- PC Sta. 16+12.70

-EL- POT 15+94.66

-EL- PT 14+67.93

-EL- PC 13+96.92

-EL- PT 13+84.57

-EL- PCC 13+47.32

-EL- PC 13+22.46

-EL- PT 13+17.81

-EL- PCC 13+02.23

-EL- PCC 12+21.89

-EL- PC 11+60.45

-EL- POT 10+00.00

-BL-6

-BL-7

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-66-5857
DB 145 PG 550

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-76-6980
DB 654 PG 230

CHARLES W. ERWIN
ANDREA C. ERWIN
DB 683 PG 613
DB 407 PG 273
PB 27 PG 122

DORIS S PASCHALL ETAL
STEVEN D PASCHALL
DB 145 PG 550
PB 4 PG 214

DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73

JOSEPHINE PASCHALL
93-E-156
DB 279 PG 1102

ROBERT L. PASCHALL
AND TO HIS HEIRS AND ASSIGNS
DB 654 PG 230
PB 4 PG 214

30' ACCESS EASEMENT
DB 240 PG 234

MATCHLINE
-L- STA 20+00
SEE SHEET 5

TO DOVE CREEK RD

SR 1841 COUGH MOUNTAIN RD
N 88°19'41.9" W

N 87°27'48.6" W
N 72°37'08.5" W
N 89°58'34.5" E
N 87°16'24" E 270.05'
S 80°39'19" E 308.66'
S 03°09'56" E 133.28'
N 03°31'42" W 401.58'
S 01°24'51" W 360.40'

BM-1, ELEVATION = 475.61'
N 827258 E 1996809
BL STATION 23+83.00, 73' RIGHT
RR SPIKE IN BASE OF 15" SWEET GUM

TO WEST CORNWALLIS RD

N 9° 59' 42.5" W

SPECIAL CUT DITCH
SEE DETAIL A

SPECIAL CUT DITCH
SEE DETAIL B

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL D
EST 35 SY

SPECIAL CUT DITCH
SEE DETAIL A

2' BASE TAIL DITCH
SEE DETAIL B
SLOPE = 0.64%
DDE = 20 CY

CLASS I RIP RAP
EST 17 TON
EST 30 SY GT

CLASS B RIP RAP
EST 5 TON
EST 14 SY GT

V TAIL DITCH
SEE DETAIL C
SLOPE = 1.8%
DDE = 3 CY

10' X 10' PSRM
FOR EX. DITCH
TIE TO PROP.
DITCH
EST 11 SY

10' X 10' PSRM
FOR EX. DITCH
TIE TO PROP.
DITCH
EST 11 SY

RETAIN EX. WALL AND
DRAINAGE PATTERN
TO EX. DITCH

NOTE: CABLE TV CUT INSIDE PED & ON POLE, ABANDONED

REMOVE

-EL-

PI Sta 11+91.27
△ = 11° 13' 21.5" (LT)
D = 18° 16' 00.5"
L = 61.44'
T = 30.82'
R = 313.66'

PI Sta 12+63.86
△ = 40° 57' 00.3" (LT)
D = 50° 58' 10.6"
L = 80.34'
T = 41.97'
R = 112.41'

PI Sta 13+10.04
△ = 10° 06' 22.5" (LT)
D = 64° 53' 18.7"
L = 15.57'
T = 7.81'
R = 88.30'

PI Sta 13+34.92
△ = 10° 06' 22.5" (LT)
D = 40° 39' 26.3"
L = 24.86'
T = 12.46'
R = 140.92'

PI Sta 13+65.96
△ = 4° 50' 25.3" (LT)
D = 12° 59' 31.2"
L = 37.26'
T = 18.64'
R = 441.01'

PI Sta 14+32.43
△ = 0° 51' 53.3" (LT)
D = 1° 13' 03.9"
L = 71.02'
T = 35.51'
R = 4,705.06'

OBLITERATE

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0686DEL_P21p2

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

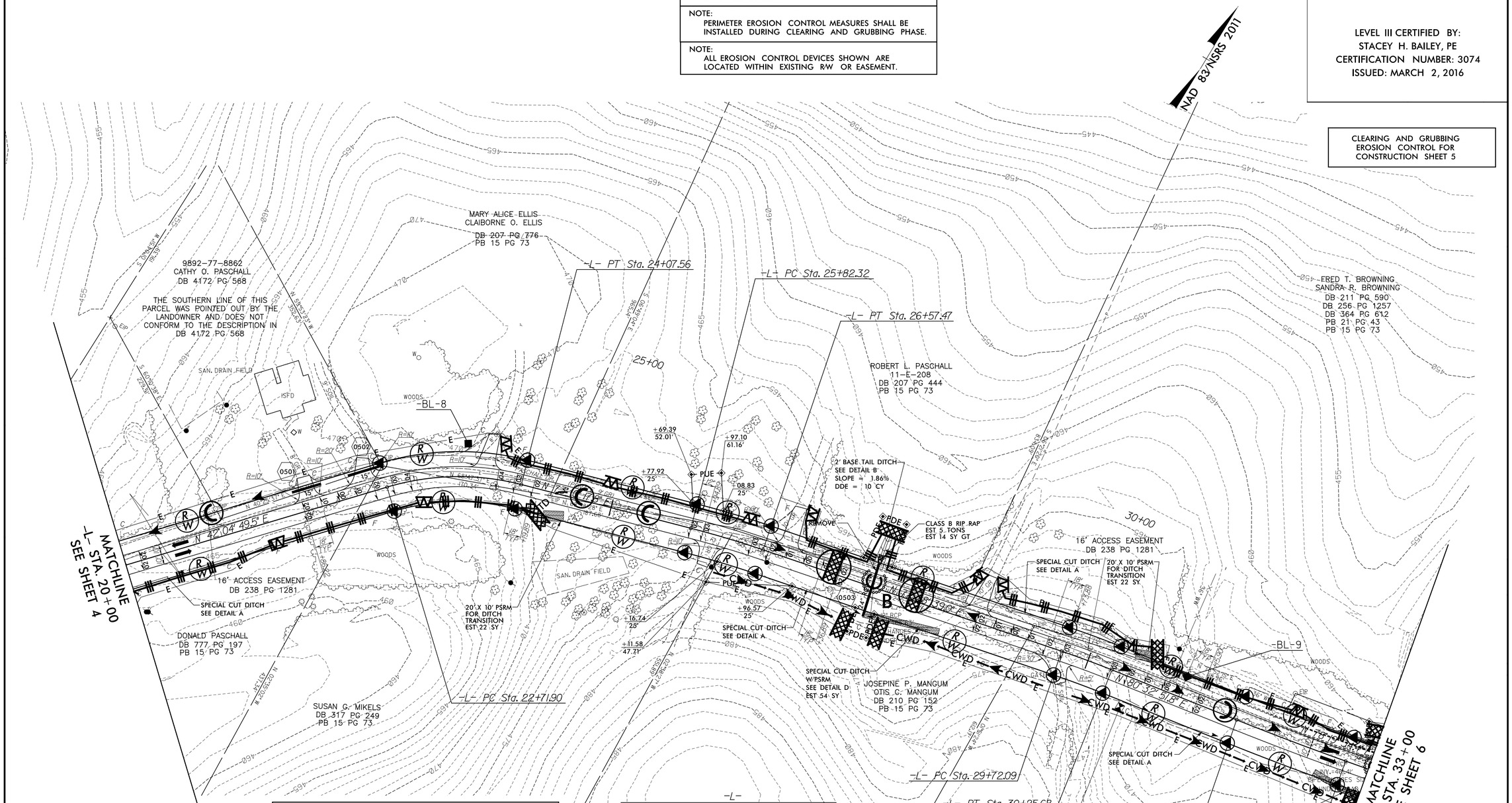
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-05/CONST.05
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5



-L-

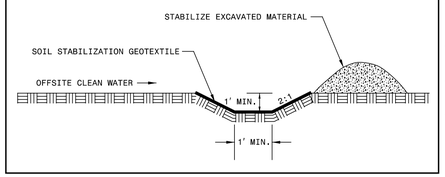
PI Sta 23+41.44	PI Sta 26+19.91
Δ = 31° 05' 28.3" (RT)	Δ = 4° 18' 21.2" (RT)
D = 22° 55' 05.9"	D = 5° 43' 46.5"
L = 135.66'	L = 75.15'
T = 69.55'	T = 37.59'
R = 250.00'	R = 1,000.00'
SE = 0.04	SE = 0.03
DS = 30 MPH	DS = 35 MPH

PI Sta 29+98.89	PI Sta 32+17.87
Δ = 3° 04' 12.9" (RT)	Δ = 2° 13' 17.5" (LT)
D = 5° 43' 46.5"	D = 1° 54' 35.5"
L = 53.59'	L = 116.32'
T = 26.80'	T = 58.17'
R = 1,000.00'	R = 3,000.00'
SE = 0.03	SE = NC
V = 35 MPH	DS = 30 MPH

CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



OBLITERATE

$$$$SYSTIME$$$$
$$$$DGN$$$$
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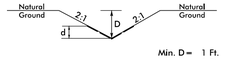
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-06/CONST.06
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = PSRM

FROM STA. 41+00 TO STA. 41+62 -L- RT

NAD 83/NSRS 2011

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

OBLITERATE

DO NOT DISTURB FENCE OR TREES

MATCHLINE -L- STA. 33+00 SEE SHEET 5

MICHAEL M. OSTOYICH
VALENTINE A. OSTOYICH
DB 1080 PG 88
PB 49 PG 119

FRED T. BROWNING
SANDRA R. BROWNING
DB 211 PG 590
DB 256 PG 1257
DB 364 PG 612
PB 21 PG 43
PB 15 PG 73

-L- PRC Sta. 37+86.24

-L- PC Sta. 34+33.81

-L- PCC Sta. 35+42.10

-L- PCC Sta. 36+91.51

-L- PT Sta. 40+60.64

-L- POT Sta. 42+50.00

END TIP PROJECT P-4405I
-L- POT 41+82.00

-GPS- 42967-3

BM-3, ELEVATION = 457.49'
N 828570 E 1999558
BL STATION 54+37.00 215' LEFT
RR SPIKE IN BASE OF 15" TWIN SYCAMORE

LUCILLE C. KING
DB 234 PG 1529
PB 19 PG 185

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 122

GORDON THOMAS DEL/PRIVATE 9' R/W

60' ACCESS EASEMENT SHOWN ON PB 19 PG 185

2' BASE TAIL DITCH
W/CLASS I RIPRAP
EST 15 TONS
EST 30 SY GT
DDE = 3 CY
SLOPE = 3.30%
SEE DETAIL E

REMOVE

TOE PROTECTION W/PSRM
SEE DETAIL F
EST 270 SY

TOE PROTECTION W/PSRM
SEE DETAIL F
EST 206 SY

SPECIAL CUT DITCH W/PSRM
SEE DETAIL D
EST 39 SY

ROADWAY CUT DITCH W/PSRM
SEE DETAIL G
EST 247 SY

'V' TAIL DITCH W/PSRM
EST 31 SY
SLOPE = 1.5%
DDE = 65 CY
SEE DETAIL H

HOMEMADE STORM INLET W/ ND TOP
RIM=468.28'
INV=466.95'
INV=469.82'

INV=469.14'

INV=466.15'

GRADE TO DRAIN

RETAIN

6' ROCK WALL

(GAP)
JOHN A. TAYLOR
CLARICE D. TAYLOR
DB 167 PG 275

MARK L. KING
DB 2415 PG 291
PB 54 PG 131

50' PRIVATE R/W SHOWN ON PB 54 PG 131

DUKE UNIVERSITY SCHOOL OF FORESTRY
DB 108 PG 311.5
PB 3 PG 13
PB 3 PG 133

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

PI Sta 34+88.46
Δ = 19° 05' 30.8" (LT)
D = 17° 37' 46.1"
L = 108.30'
T = 54.65'
R = 325.00'
SE = 0.04
DS = 35 MPH

PI Sta 36+16.81
Δ = 2° 15' 09.9" (LT)
D = 1° 30' 28.0"
L = 149.41'
T = 74.71'
R = 3,800.00'
SE = RC
DS = 45 MPH

PI Sta 37+38.90
Δ = 4° 31' 22.7" (LT)
D = 4° 46' 28.7"
L = 94.73'
T = 47.39'
R = 1,200.00'
SE = RC
DS = 25 MPH

PI Sta 39+26.99
Δ = 31° 26' 38.7" (RT)
D = 11° 27' 33.0"
L = 274.40'
T = 140.75'
R = 500.00'
SE = 0.03
DS = 25 MPH

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

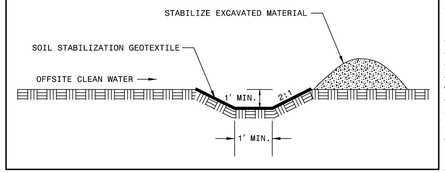
NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

CLEAN WATER DIVERSION

CWD CWD CWD CWD

(Not to Scale)



CA ENGINEERING, INC.

0686DEL_P21p2

CROSSING CLOSURE DETAIL

GORDON THOMAS DR

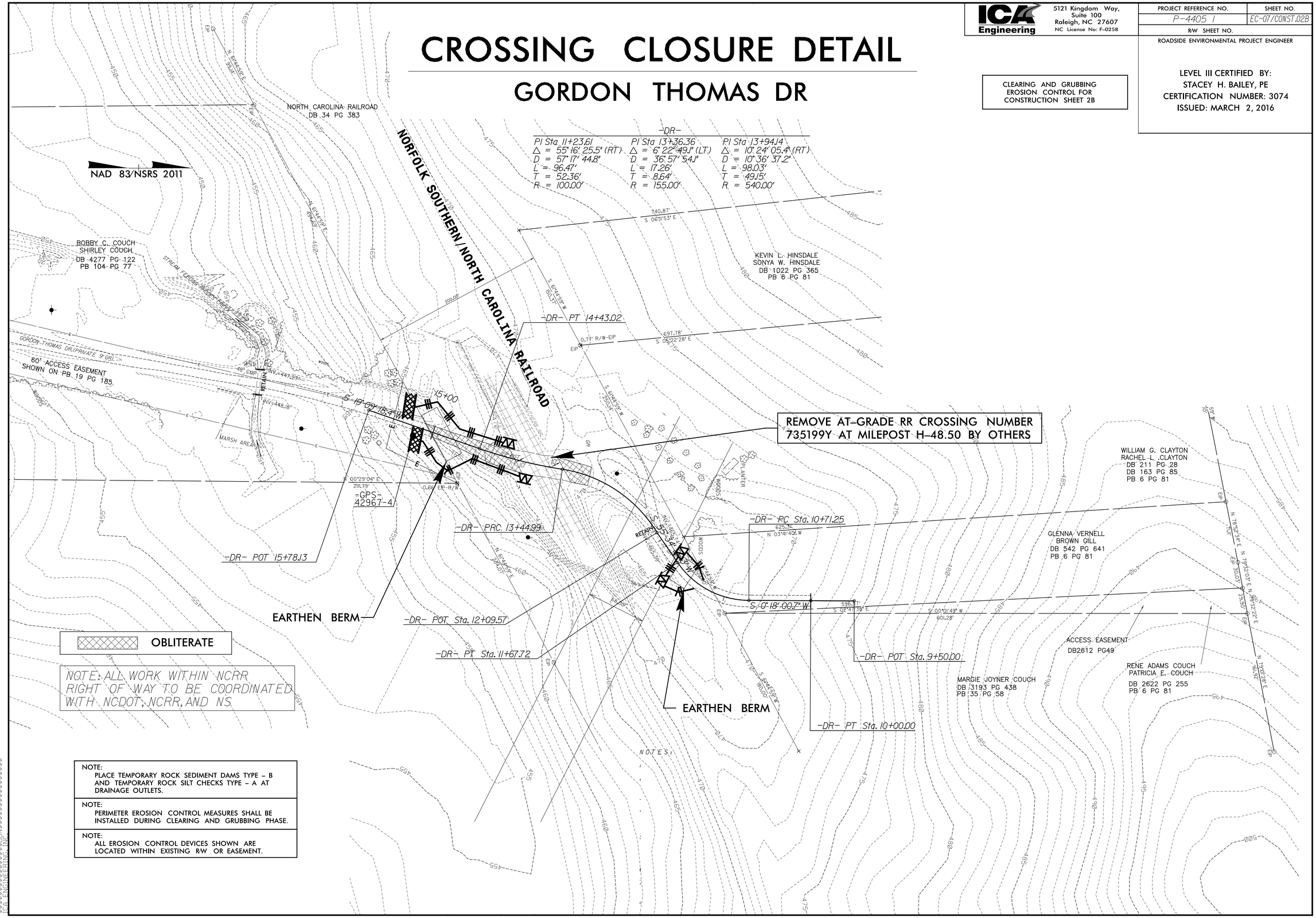
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-07/CONST.02B
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 2B



OBLITERATE

NOTE: ALL WORK WITHIN NCRR RIGHT OF WAY TO BE COORDINATED WITH NCDOT, NCRR, AND NS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

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ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-08/CONST.04
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

NAD 83/NSRS 2011

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

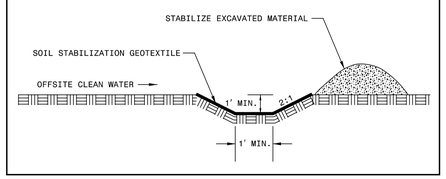
NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

CLEAN WATER DIVERSION

CWD → CWD → CWD → CWD →

(Not to Scale)



BEGIN TIP PROJECT P-4405I
-L- POT 10+08.20

-L-

PI Sta 10+94.31	PI Sta 17+81.47
△ = 51° 46' 33.1" (RT)	△ = 47° 53' 45.0" (LT)
D = 52° 05' 13.5"	D = 15° 04' 40.2"
L = 99.40'	L = 317.66'
T = 53.38'	T = 168.77'
R = 110.00'	R = 380.00'
SE = 0.04	SE = 0.04
V = 20 MPH	V = 35 MPH

DESIGN EXCEPTION REQUIRED

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-66-5857
DB 145 PG 550

100' UNIFORM TAPER (BOTH SIDES)

-L- POT 10+00.17
= -EL- 12+84.41

-L- PT Sta. 11+40.49

SPECIAL CUT DITCH
SEE DETAIL A

TO DOVE CREEK RD

SR 1841 COUCH MOUNTAIN RD 16' BST

N 88°19'41.9" W

-EL- POT 15+94.66

15+00

-EL- PT 14+67.93
-EL- PC 13+96.92
-EL- PT 13+84.57
-EL- PCC 13+47.32
-EL- PC 13+22.46
-EL- PT 13+17.81
-EL- PCC 13+02.23
-EL- PCC 12+21.89
-EL- PC 11+60.45

N 87°27'48.6" W
N 72°31'08.1" W

-BL-6

RETAIN EX. WALL AND DRAINAGE PATTERN TO EX. DITCH

-L- PC Sta. 10+41.09

DORIS S PASCHALL ETAL
STEVEN D PASCHALL

DB 145 PG 550
PB 4 PG 214

BM-1, ELEVATION = 475.61'
N 827258 E 1996809
BL STATION 23+83.00, 73' RIGHT
RR SPIKE IN BASE OF 15" SWEET GUM

-EL- POT 10+00.00

N 9°59'42.5" W

CHARLES W. ERWIN
ANDREA C. ERWIN
DB 683 PG 613
DB 407 PG 273
PB 27 PG 122

-L- PC Sta. 16+12.70

15+00

OVERLAP BETWEEN
PARCEL 9892-78-0191
DB683 PG613
AND
PARCEL 9892-76-6980
DB 654 PG 230

2' BASE TAIL DITCH
SEE DETAIL B
SLOPE = 0.64%
DDE = 20 CY

CLASS I RIP RAP
EST 17 TON
EST 30 SY GT

SPECIAL CUT DITCH
SEE DETAIL A

10' X 10' PSRM FOR EX. DITCH TIE TO PROP. DITCH
EST 11 SY

10' X 10' PSRM FOR EX. DITCH TIE TO PROP. DITCH
EST 11 SY

30' ACCESS EASEMENT
DB 240 PG 234

NOTE: CABLE TV CUT INSIDE PED & ON POLE, ABANDONED

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL D
EST 35 SY

-BL-7

-L- PT Sta. 19+30.36

DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73

SAN. DRAIN FIELD

CLASS B RIP RAP
EST 5 TON
EST 14 SY GT

SPECIAL CUT DITCH
SEE DETAIL A

V TAIL DITCH
SEE DETAIL C
SLOPE = 1.8%
DDE = 3 CY

DONALD PASCHALL
DB 777 PG 197
PB 15 PG 73

REMOVE

MATCHLINE
-L- STA 20+00
SEE SHEET 5

DORIS S PASCHALL ETAL
STEVEN D PASCHALL

DB 145 PG 550
PB 4 PG 214

JOSEPHINE PASCHALL
93-E-156
DB 279 PG 1102

ROBERT L. PASCHALL
AND TO HIS HEIRS AND ASSIGNS
DB 654 PG 230
PB 4 PG 214

-EL-

PI Sta 11+91.27	PI Sta 12+63.86	PI Sta 13+10.04
△ = 11° 13' 21.5" (LT)	△ = 40° 57' 00.3" (LT)	△ = 10° 06' 22.5" (LT)
D = 18° 16' 00.5"	D = 50° 58' 10.6"	D = 64° 53' 18.7"
L = 61.44'	L = 80.34'	L = 15.57'
T = 30.82'	T = 41.97'	T = 7.81'
R = 313.66'	R = 112.41'	R = 88.30'
PI Sta 13+34.92	PI Sta 13+65.96	PI Sta 14+32.43
△ = 10° 06' 22.5" (LT)	△ = 4° 50' 25.3" (LT)	△ = 0° 51' 53.3" (LT)
D = 40° 39' 26.3"	D = 12° 59' 31.2"	D = 1° 13' 03.9"
L = 24.86'	L = 37.26'	L = 71.02'
T = 12.46'	T = 18.64'	T = 35.51'
R = 140.92'	R = 441.01'	R = 4,705.06'

OBLITERATE

$$$$$$CYTLIVE$$$$
$$$$$$SIGN$$$$$$$$$$
$$$$$$ICA ENGINEERING, INC.$$$$

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ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-09/CONST.05
R/W SHEET NO.	

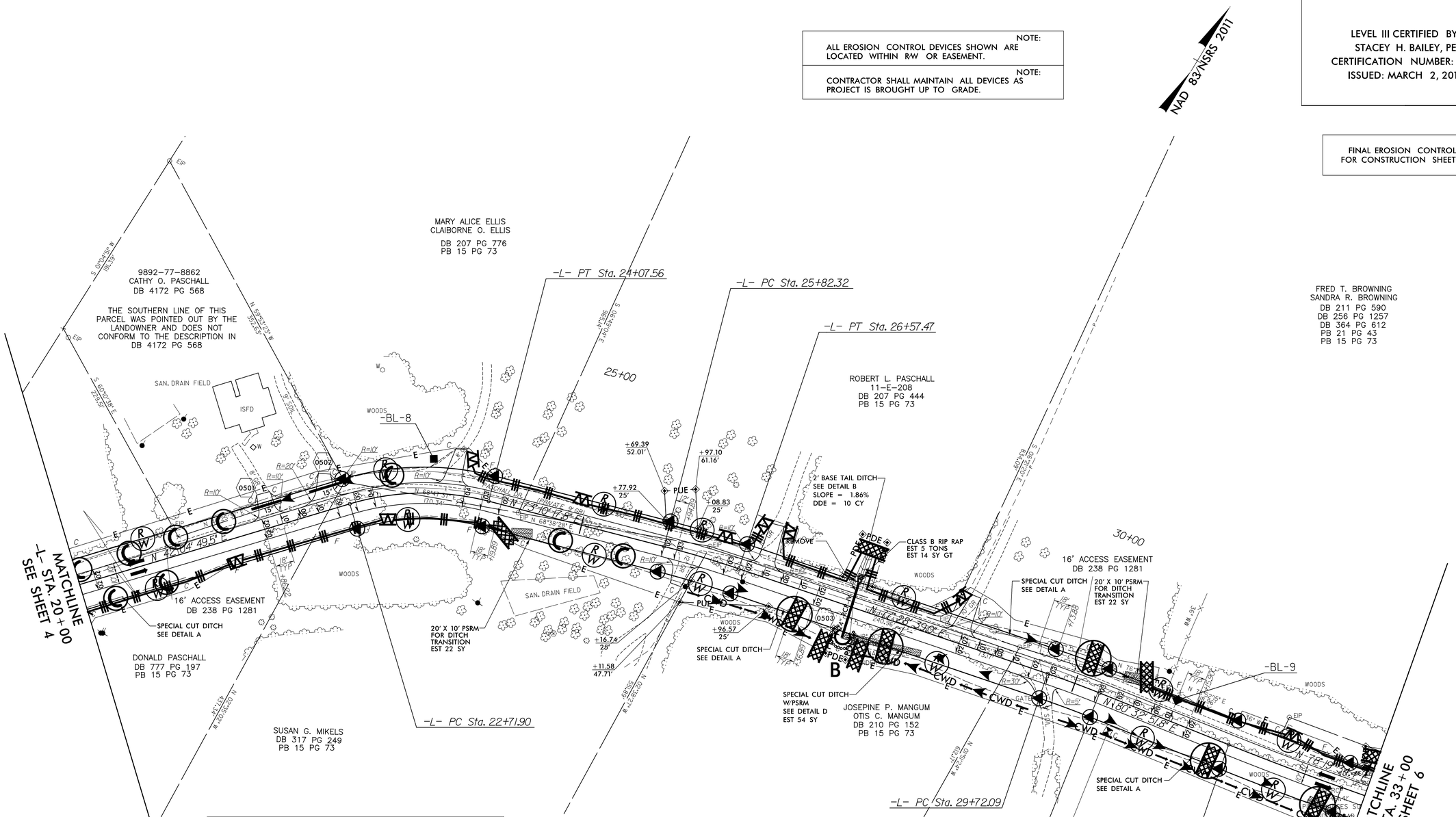
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

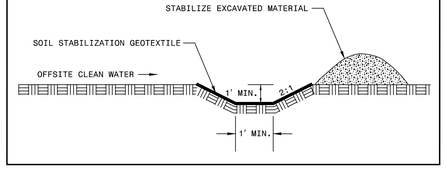
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 5



CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



OBLITERATE

-L-

PI Sta 23+41.44	PI Sta 26+19.91
△ = 31° 05' 28.3" (RT)	△ = 4° 18' 21.2" (RT)
D = 22° 55' 05.9"	D = 5° 43' 46.5"
L = 135.66'	L = 75.15'
T = 69.55'	T = 37.59'
R = 250.00'	R = 1,000.00'
SE = 0.04	SE = 0.03
DS = 30 MPH	DS = 35 MPH
PI Sta 29+98.89	PI Sta 32+17.87
△ = 3° 04' 12.9" (RT)	△ = 2° 13' 17.5" (LT)
D = 5° 43' 46.5"	D = 1° 54' 35.5"
L = 53.59'	L = 116.32'
T = 26.80'	T = 58.17'
R = 1,000.00'	R = 3,000.00'
SE = 0.03	SE = NC
V = 35 MPH	DS = 30 MPH

$$$$$SYSTEMS$$$$$ICA ENGINEERING, INC.

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

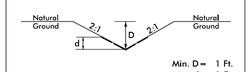
PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-10/CONST.06
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

0686DEL_P21p2

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = PSRM

FROM STA. 41+00 TO STA. 41+62 -L- RT

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NAD 83/NSRS 2011

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 6

MATCHLINE -L- STA. 33+00 SEE SHEET 5

FRED T. BROWNING
SANDRA R. BROWNING
DB 211 PG 590
DB 256 PG 1257
DB 364 PG 612
PB 21 PG 43
PB 15 PG 73

MICHAEL M. OSTOYICH
VALENTINE A. OSTOYICH
DB 1080 PG 88
PB 49 PG 119

LUCILLE C. KING
DB 234 PG 1529
PB 19 PG 185

BM-3, ELEVATION = 457.49'
N 828570 E 1999558
BL STATION 54+37.00 215' LEFT
RR SPIKE IN BASE OF 15" TWIN SYCAMORE

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

-L- PRC Sta. 37+86.24

-L- PC Sta. 34+33.81

-L- PCC Sta. 35+42.10

-L- PCC Sta. 36+91.51

-L- PT Sta. 40+60.64

END TIP PROJECT P-4405I
-L- POT 41+82.00

-L- POT Sta. 42+50.00

-GPS- 42967-3

DO NOT DISTURB FENCE OR TREES

2' BASE TAIL DITCH W/CLASS I RIPRAP
EST 15 TONS
EST 30 SY GT
DDE = 3 CY
SLOPE = 3.30%
SEE DETAIL E

REMOVE

TOE PROTECTION W/PSRM
SEE DETAIL F
EST 270 SY

TOE PROTECTION W/PSRM
SEE DETAIL F
EST 206 SY

SPECIAL CUT DITCH W/PSRM
SEE DETAIL D
EST 35 SY

ROADWAY CUT DITCH W/PSRM
SEE DETAIL G
EST 247 SY

'V' TAIL DITCH W/PSRM
EST 31 SY
SLOPE =1.5%
DDE =65 CY
SEE DETAIL H

HOMEMADE STORM INLET
W/ NO TOP
RIM=468.28'
INV=466.95'

INV.=469.82

INV.=469.14'

INV.=466.15'

RETAIN

6' ROCK WALL

DUKE UNIVERSITY SCHOOL OF FORESTRY
DB 108 PG 311.5
PB 3 PG 13
PB 3 PG 133

(GAP)
JOHN A. TAYLOR
CLARICE D. TAYLOR
DB 167 PG 275

MARK L. KING
DB 2415 PG 291
PB 54 PG 131

50' PRIVATE R/W SHOWN ON PB 54 PG 131

60' ACCESS EASEMENT SHOWN ON PB 19 PG 185

GORDON THOMAS DR.(PRIVATE 9' GRV)

WOODS

SBKD

SHRUBS

SOIL PILES

GRADE TO DRAIN

-BL-10

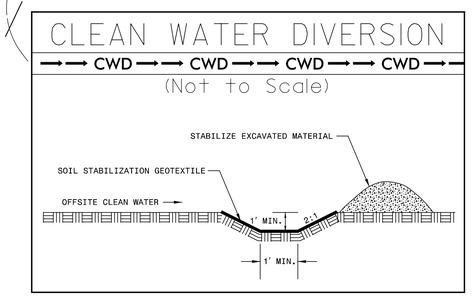
-BL-11

-BL-12

-L-

PI Sta 34+88.46	PI Sta 36+16.81	PI Sta 37+38.90	PI Sta 39+26.99
△ = 19° 05' 30.8" (LT)	△ = 2° 15' 09.9" (LT)	△ = 4° 31' 22.7" (LT)	△ = 31° 26' 38.7" (RT)
D = 17° 37' 46.1"	D = 1° 30' 28.0"	D = 4° 46' 28.7"	D = 11° 27' 33.0"
L = 108.30'	L = 149.41'	L = 94.73'	L = 274.40'
T = 54.65'	T = 74.71'	T = 47.39'	T = 140.75'
R = 325.00'	R = 3,800.00'	R = 1,200.00'	R = 500.00'
SE = 0.04	SE = RC	SE = RC	SE = 0.03
DS = 35 MPH	DS = 45 MPH	DS = 25 MPH	DS = 25 MPH

CLEAN WATER DIVERSION
(Not to Scale)



BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

$$$$SYSTIME$$$$
$$$$ENGINEERING_INC$$$$

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ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	EC-II/CONST.02B
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MARCH 2, 2016

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 2B

CROSSING CLOSURE DETAIL

GORDON THOMAS DR

NAD 83/NSRS 2011

NORTH CAROLINA RAILROAD
DB 34 PG 383

NORFOLK SOUTHERN/NORTH CAROLINA RAILROAD

-DR-
PI Sta 11+23.61
△ = 55°16' 25.5" (RT)
D = 57° 17' 44.8"
L = 96.47'
T = 52.36'
R = 100.00'

PI Sta 13+36.36
△ = 6° 22' 49.1" (LT)
D = 36° 57' 54.1"
L = 17.26'
T = 8.64'
R = 155.00'

PI Sta 13+94.14
△ = 10° 24' 05.4" (RT)
D = 10° 36' 37.2"
L = 98.03'
T = 49.15'
R = 540.00'

N 61°44'59" E 994.14'
N 61°44'59" E 1094.50'
740.87'
S 06°11'53" E
S 61°44'59" W 150.31'
200.00'
-DR- PT 14+43.02
0.77' R/W-EIP
697.78'
S 05°22'28" E
S 61°44'59" W 250.14'

BOBBY C. COUCH
SHIRLEY COUCH
DB 4277 PG 122
PB 104 PG 77

KEVIN L. HINSDALE
SONYA W. HINSDALE
DB 1022 PG 365
PB 6 PG 81

STREAM FEEDING RHODES CREEK
GORDON THOMAS DR.(PRIVATE 9' GR)
60' ACCESS EASEMENT SHOWN ON PB 19 PG 185
48" CMP INV.=447.27'
INV=448.18'
WOODS
MARSH AREA
S 19°09'16" W
15+00
RIGHT OF WAY PER VALUATION MAP #124
NORFOLK SOUTHERN RR
GR
PLANTER
WOODS

REMOVE AT-GRADE RR CROSSING NUMBER 735199Y AT MILEPOST H-48.50 BY OTHERS

N 00°29'04" E 2111.79'
0.66' EIP-R/W
-GPS-42967-4
-DR- POT 15+78.13
-DR- PRC 13+44.99
N 61°44'59" E 234.07'
INV=465.39
S 55°53'41" W
INV=465.39
68.00'
EARTHEN BERM
-DR- POT Sta. 12+09.57
-DR- PT Sta. 11+67.72
EARTHEN BERM
-DR- PC Sta. 10+71.25
625.31'
N 03°41'40" W
S 0°18'00.7" W
596.21'
S 02°41'38" E
S 00°01'49" W 601.28'
-DR- POT Sta. 9+50.00
-DR- PT Sta. 10+00.00
S 61°44'59" W 180.00'

WILLIAM G. CLAYTON
RACHEL L .CLAYTON
DB 211 PG 28
DB 163 PG 85
PB 6 PG 81

GLENNA VERNELL BROWN GILL
DB 542 PG 641
PB 6 PG 81

ACCESS EASEMENT
DB2612 PG49

RENE ADAMS COUCH
PATRICIA E. COUCH
DB 2622 PG 255
PB 6 PG 81

MARGIE JOYNER COUCH
DB 3193 PG 438
PB 35 PG 58

N 78°52'34" E 71.91'
N 79°32'03" E 79.32'22" E
N 79°00'28" E 160.02'
EIP 30.03'
EIP 29.30'

OBLITERATE

NOTE: ALL WORK WITHIN NCRR RIGHT OF WAY TO BE COORDINATED WITH NCDOT, NCRR, AND NS

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

CYSTIME ##/##/## ##:## ##
ICA ENGINEERING, INC.

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T.I.P.: P-4405I

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING & PAVEMENT MARKING PLAN
ORANGE COUNTY

LOCATION: PASCHALL DRIVE FROM GORDON THOMAS DRIVE TO SR 1716 COUCH MOUNTAIN ROAD AND GORDON THOMAS DRIVE CROSSING CLOSURE

TIP NO.	SHEET NO.
P-4405I	SIGN-1

APPROVED: DocuSigned by: Michael T. Rzepka 01BC3480C26049D...

DATE: 2/3/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	E SHEET
SIGN-3	SIGN/PM DETAIL SHEET

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	52	L.F.
4102000000	904	SIGN ERECTION, TYPE E	4	EA.
4025000000	901	CONTRACTOR FURNISHED, TYPE E SIGN	26.5	S.F.

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	THERMOPLASTIC (4", 120 MILS)
T8	2 FT./6 FT. SP WHITE MINISKIP

GENERAL NOTES

SIGNING NOTES

. SIGNS FURNISHED BY CONTRACTOR
. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
. ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
. WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

PAVEMENT MARKING NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
COUCH MOUNTAIN RD.	THERMOPLASTIC	NONE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

PLAN REVIEWED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

RENEE ROACH, P.E. SIGNING & DELINEATION REGIONAL ENGINEER

JAMES HAMBRIGHT SIGNING & DELINEATION PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: ICA ENGINEERING

M. T. RZEPKA, P.E. PROJECT ENGINEER

A. C. PILZ, P.E. DESIGN ENGINEER

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No. P-0358

1/20/2016
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ICA Engineering

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401 QUANTITY REQ'D 1

36 X 36
R1-1

ONE "U" POST PER SIGN

402 QUANTITY REQ'D 1

30 X 30
W14-1

ONE "U" POST PER SIGN

403 QUANTITY REQ'D 1

24 X 30
R2-1

ONE "U" POST PER SIGN

404 QUANTITY REQ'D 1

30 X 30
W3-1a

ONE "U" POST PER SIGN

TIP NO.	SHEET NO.
P-4405I	SIGN-2

APPROVED: DocuSigned by: Michael T. Rzepka 01BC3480C260490...

DATE: 2/3/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

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TYPE "E" SIGNS

1/20/2016
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TDA Engineering

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5121 Kingdom Way,
Suite 100
Raleigh, NC 27607
NC License No: P-0258

TIP NO.	SHEET NO.
P-4405I	SIGN-3

APPROVED: DocuSigned by: Michael T. Rzepka 01BC3480C260490...

DATE: 2/3/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T RZEPKA

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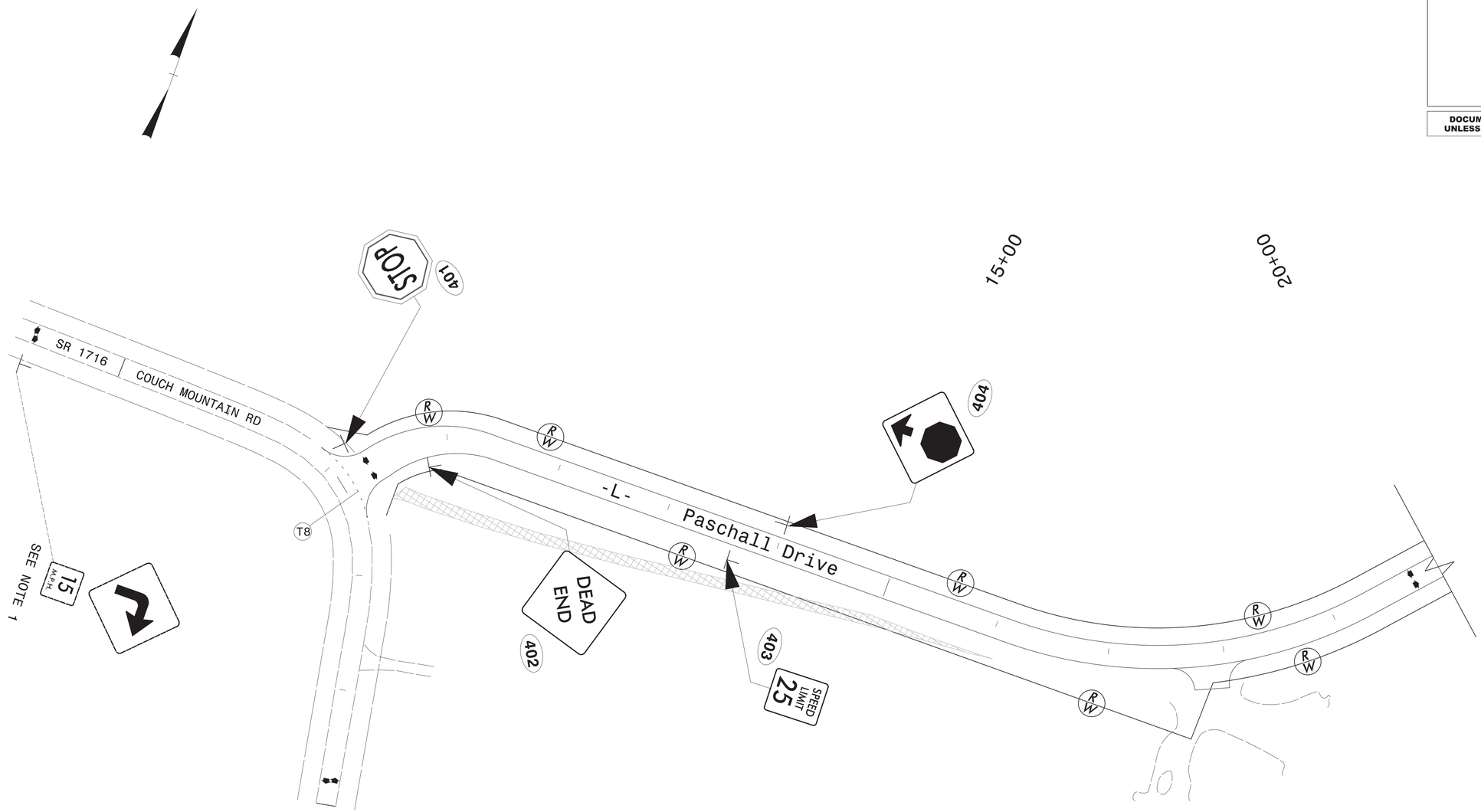

PROJECT NOTES

1 EXISTING SIGN TO REMAIN

PROPOSED & EXISTING SIGNS

1/20/2016
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ICA Engineering

0686DEL_P21p2

REVISIONS

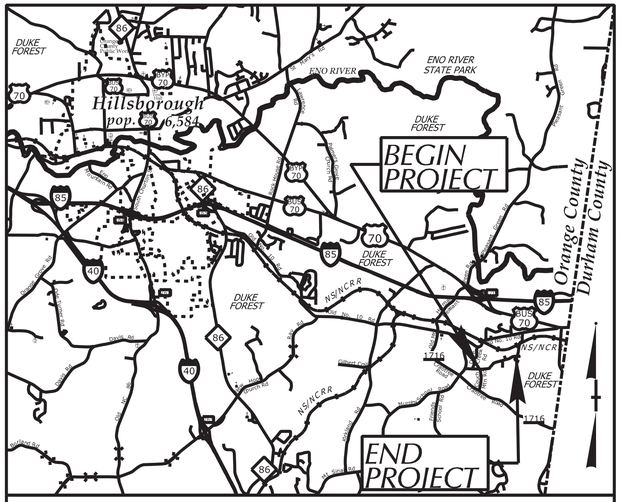
1-30-2015	SHIFTED CUL-DE-SAC OFF PARCEL 16
8-17-2015	ADDED PUE TO PARCELS 8 & 9

$$$$SYSTIME$$$$
$$$$DGNS$$$$
$$$$USERNAME$$$$

TIP PROJECT: P-4405 I

CONTRACT:

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



VICINITY MAP

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

STATE OF NORTH CAROLINA
RAIL DIVISION

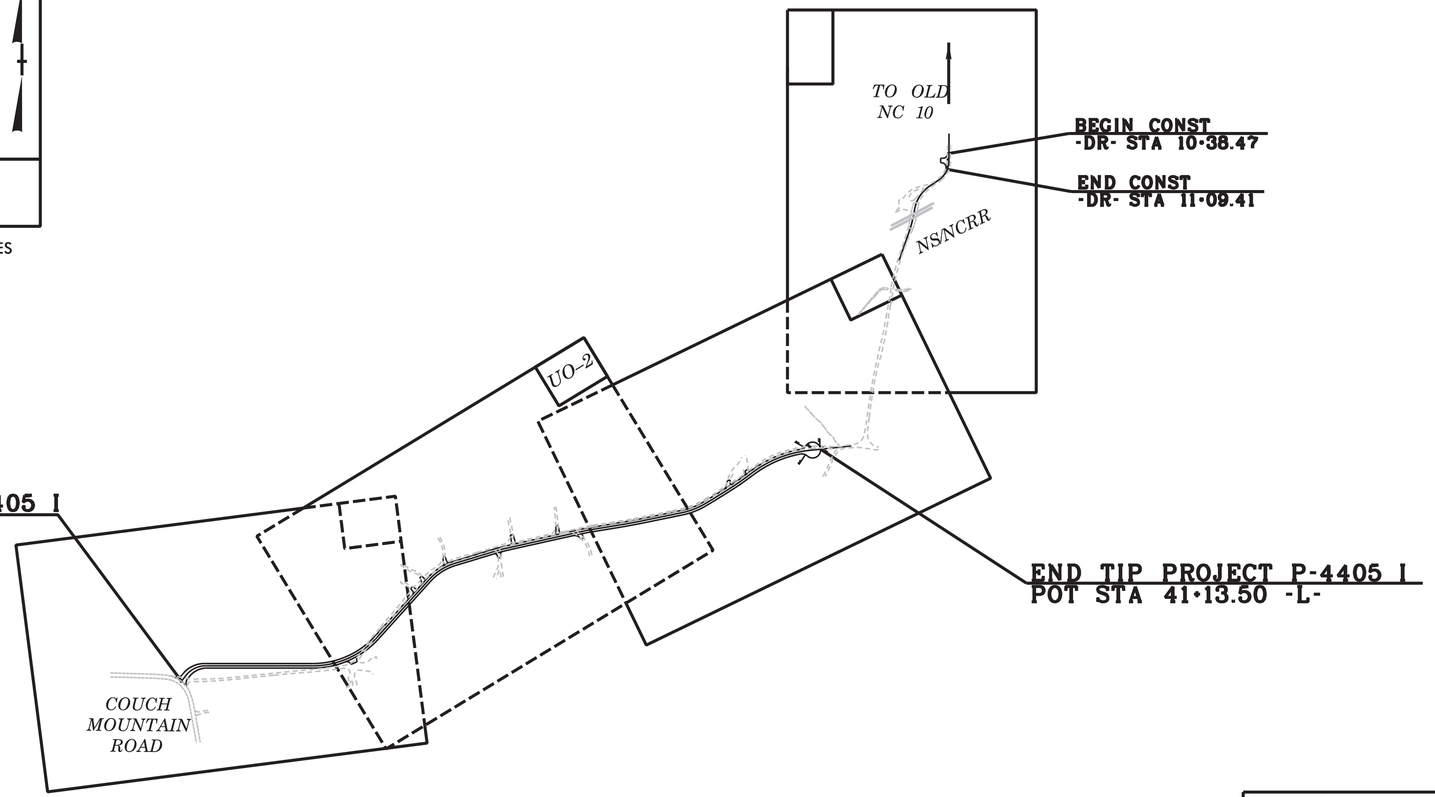
ORANGE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4405 I	UO-1	

STATE FED.AID NO.	F.A.PROJ.NO.	DESCRIPTION
62000.7.STR18T1B		PE
43219.2.STR01P4405I		ROW

LOCATION: PASCHALL DR FROM GORDON THOMAS DR TO SR 1716
COUCH MOUNTAIN RD AND GORDON THOMAS DR CROSSING CLOSURE

UTILITIES BY OTHERS



NAD 83/
NSRS 2007

Utilities by Others – All proposed utility work shown will be performed by others. See UO Special Provisions

Preliminary /Conceptual – Do not use for Construction

NCDOT CONTACT: DAN HAVENER, PE
PROJECT MANAGER

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

SO-DEEP ® U.S.P.C.I. The Subsurface Utility Engineering Company
4839 Paragon Park Road, Raleigh, NC 27616 (919) 878-7455

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS ON PROJECT

(A) DUKE ENERGY PROGRESS – POWER (DISTRIBUTION)
(B) TIME WARNER CABLE – COMMUNICATION
(C) FRONTIER – COMMUNICATION

Prepared in the Office of: ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: P-0258

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 11, 2015

LETTING DATE: JANUARY 19, 2016

DAVID C. WALLER, PE
PROJECT ENGINEER

ALEXANDER D. SNIDER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
ENGINEERING COORDINATION AND SAFETY

DCN 0686DEL_P21p2

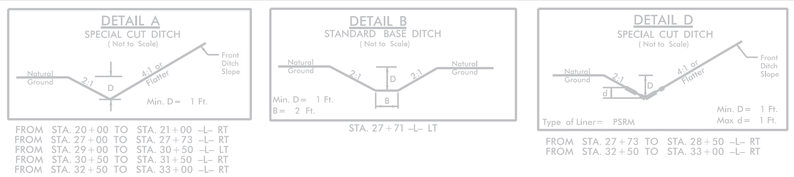
REVISIONS

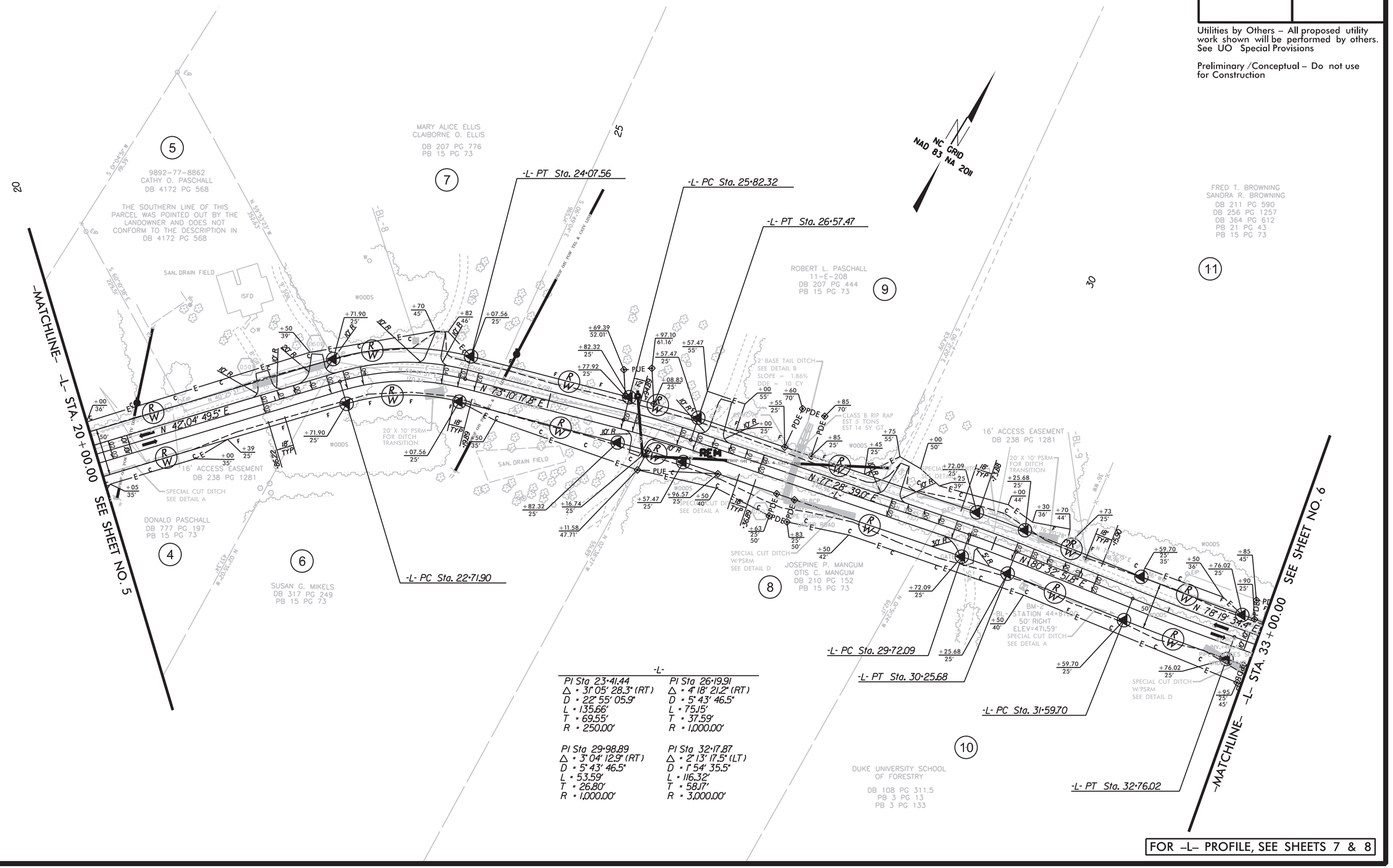
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	U0-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Utilities by Others – All proposed utility work shown will be performed by others. See UO Special Provisions

Preliminary /Conceptual – Do not use for Construction





-L-

PI Sta 23+41.44	PI Sta 26+19.91
Δ = 31° 05' 28.3" (RT)	Δ = 4° 18' 21.2" (RT)
D = 22° 55' 05.9"	D = 5° 43' 46.5"
L = 135.66'	L = 75.15'
T = 69.55'	T = 37.59'
R = 250.00'	R = 1,000.00'
PI Sta 29+98.89	PI Sta 32+17.87
Δ = 3° 04' 12.9" (RT)	Δ = 2° 13' 17.5" (LT)
D = 5° 43' 46.5"	D = 1° 54' 35.5"
L = 53.59'	L = 116.32'
T = 26.80'	T = 58.17'
R = 1,000.00'	R = 3,000.00'

FOR -L- PROFILE, SEE SHEETS 7 & 8