DGN 0006T_P21p2

TIP PROJECT: P-4405 I

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

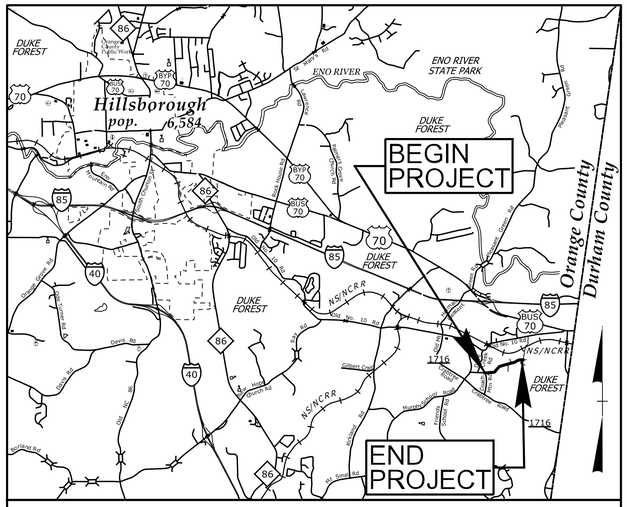
STATE OF NORTH CAROLINA
RAIL DIVISION

ORANGE COUNTY

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

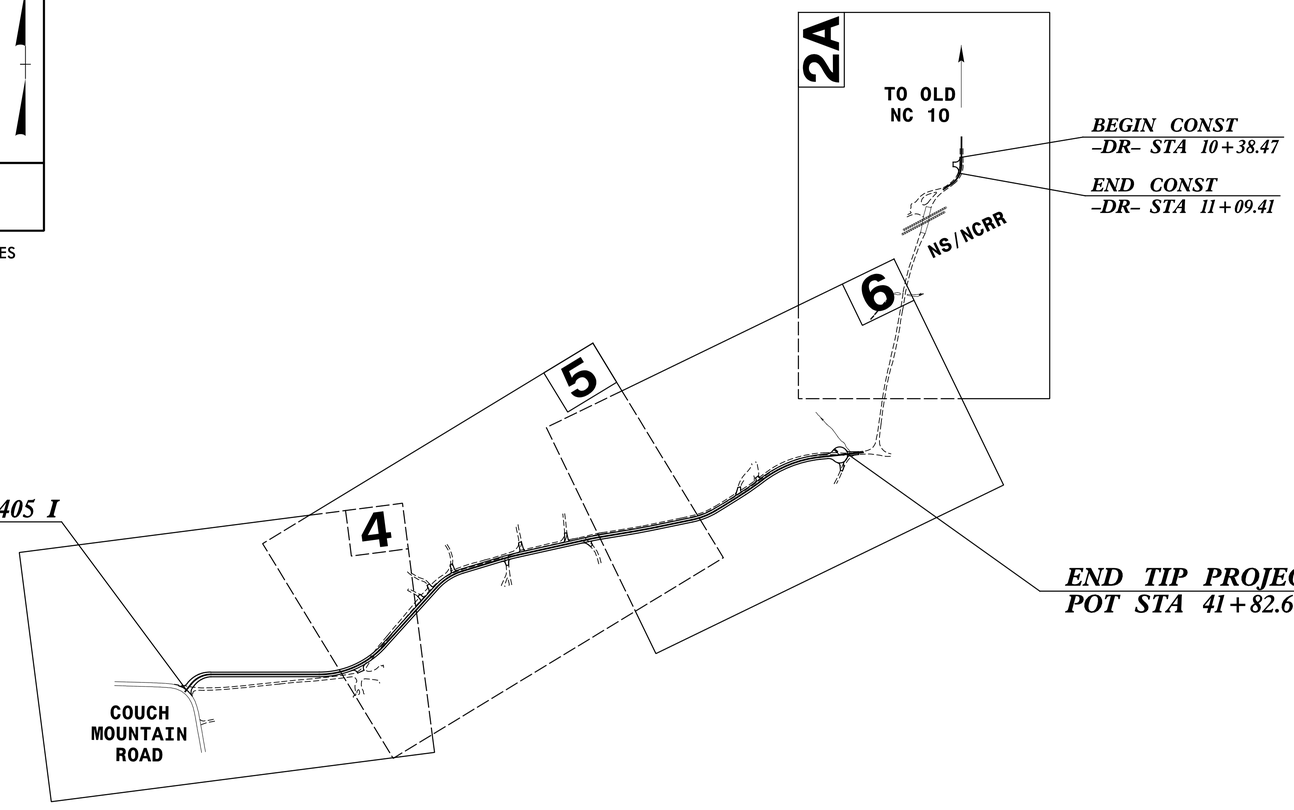
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
62000.7.STR18T1B		PE

LOCATION: PASCHALL DRIVE FROM GORDON THOMAS DRIVE TO SR 1716
COUCH MOUNTAIN ROAD AND GORDON THOMAS DRIVE
CROSSING CLOSURE
TYPE OF WORK: GRADING, PAVING AND DRAINAGE



VICINITY MAP

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES



BEGIN CONST
-DR- STA 10+38.47

END CONST
-DR- STA 11+09.41

NAD 83/
NSRS 2007

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

END TIP PROJECT P-4405 I
POT STA 41+82.68 -L-

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SUBMITTAL: ROW PLANS
DATE: MARCH 11, 2015

NCDOT CONTACT: DAN HAVENER, PE
PROJECT MANAGER

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

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT =
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: F-0258

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 11, 2015

LETTING DATE:
OCTOBER 20, 2015

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

3/11/2015
R:\Roadway\Proj\p4405i_rdy_tsh.dgn
ICA ENGINEERING, INC.

DGN 0006T_P21p2

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	1B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

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 Marker — RW
- 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
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

DCN 0006T_P21p2

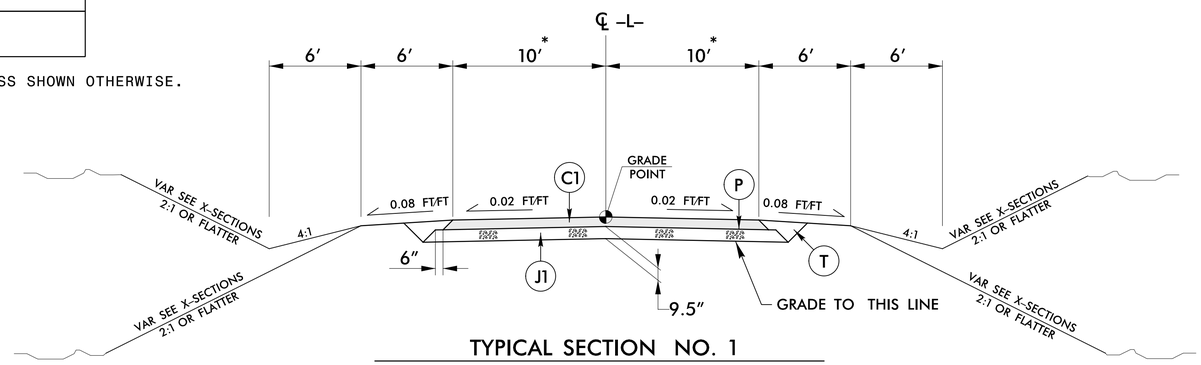
PRELIMINARY PAVEMENT SCHEDULE	
C1	PROP. APPROX 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
J1	8" AGGREGATE BASE COURSE.
P	PRIME COAT
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

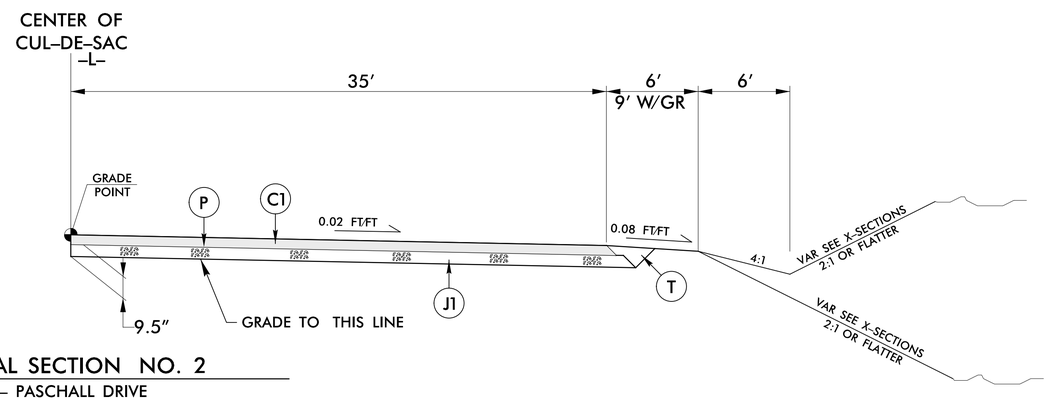
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 1
-L- PASCHALL DRIVE

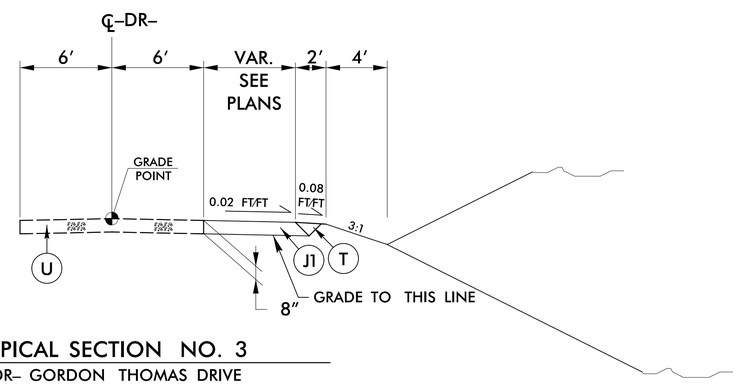
* VARIES 15' TO 10' FROM 10+40.00 TO 11+40.00

USE TYPICAL SECTION NO. 1 FROM:
-L- POT 10+08.20 TO -L- POT 40+92.78



TYPICAL SECTION NO. 2
-L- PASCHALL DRIVE

USE TYPICAL SECTION NO. 2 AT:
-L- 41+47.68



TYPICAL SECTION NO. 3
-DR- GORDON THOMAS DRIVE

USE TYPICAL SECTION NO. 3 FROM:
-DR- PT 10+38.47 TO -DR- PC 11+09.41

3/11/2015
R:\Roadway\Proj\p44051_rdy_typ.dgn
ICA ENGINEERING, INC.

DGN 0006T_P21p2

REVISIONS

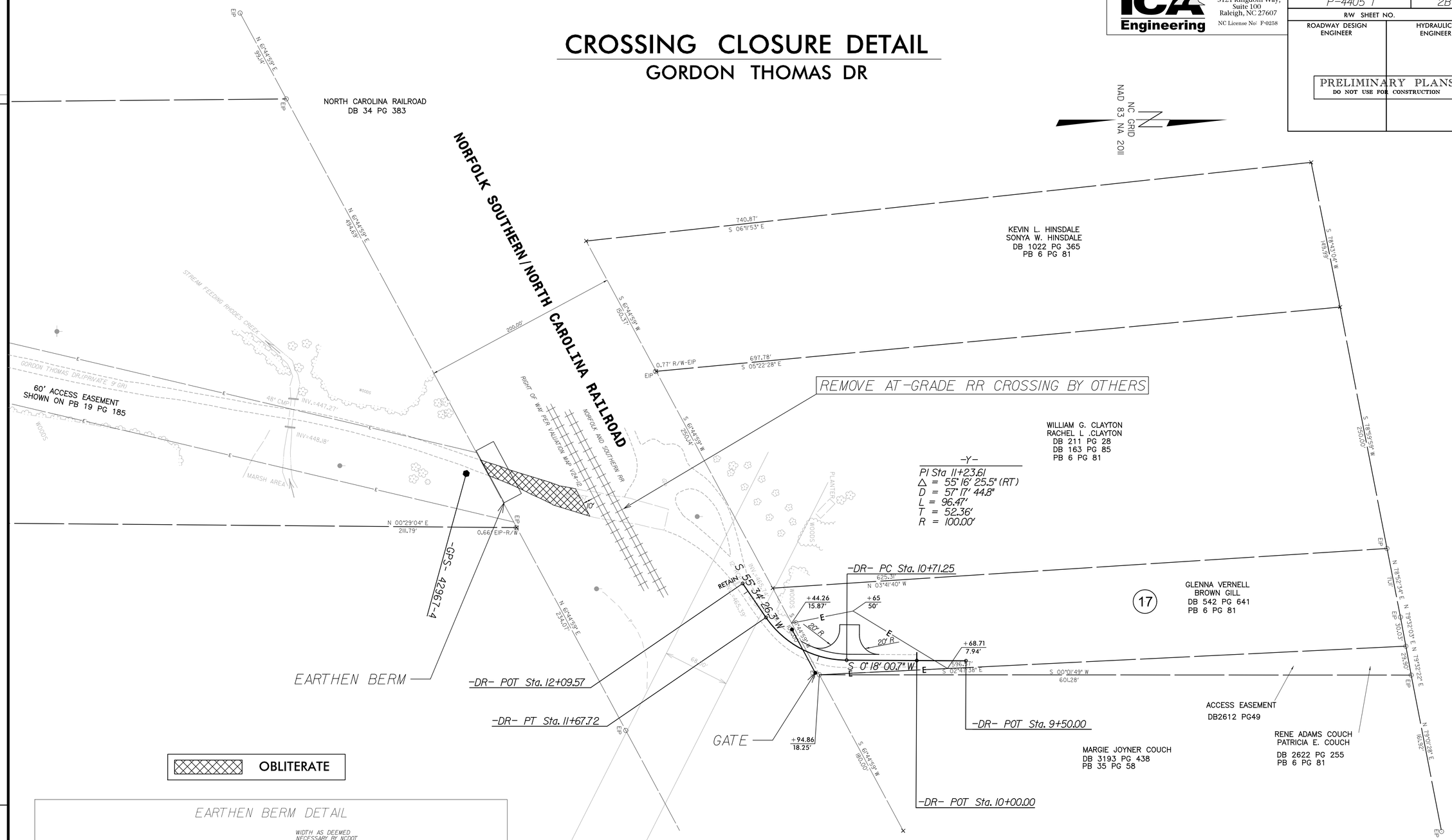
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

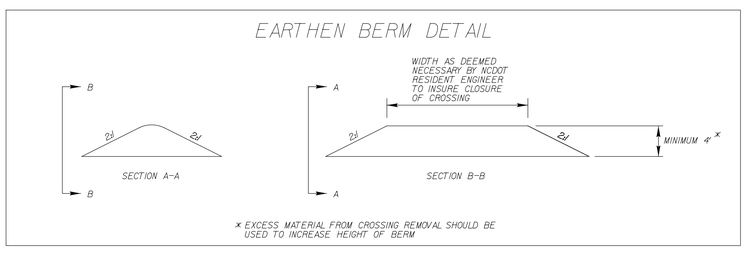
PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CROSSING CLOSURE DETAIL

GORDON THOMAS DR





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 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.
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 DITCHS TO DRAIN. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON HAULING AWAY ANY ASPHALT LEFT BY THE REMOVAL OF OTHERS.
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 TRAFFICE PATTERN.

3/4/2015
R:\Roadway\Proj\P4405_rdy_psh02B.dgn
RAYMOUTERRONE

DCN 0006T_P21p2

COMPUTED BY: ADS DATE: 3/5/2015
CHECKED BY: DCW DATE: 3/5/2015

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	3B

SUMMARY OF EARTHWORK
IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
10+00.17	41+50.00	4216	3292		924
PROJECT TOTALS:					
MATERIAL FOR SHOULDER CONSTRUCTION			156	156	
WASTE IN LIEU OF BORROW				-156	-156
MATERIAL FOR BERM CONSTRUCTION				1728	-768
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				86	
GRAND TOTALS:		4216		1814	
SAY:		4300		1900	

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

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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

0006T_P21p2

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

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	BOBBY C. COUCH & SHIRLEY COUCH
17	2A	GLENNA VERNELL BROWN GILL

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

DGN 0006T_P21p2

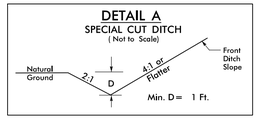
REVISIONS

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

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

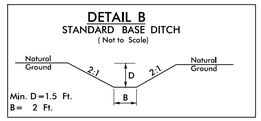
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



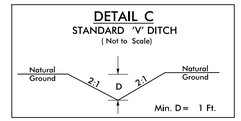
FROM STA. 10+50 TO STA. 11+50 -L- LT
FROM STA. 15+50 TO STA. 19+00 -L- LT
FROM STA. 18+79 TO STA. 20+00 -L- RT

DETAIL B
STANDARD BASE DITCH
(Not to Scale)



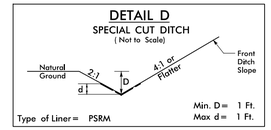
STA. 17+50 -L- LT

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

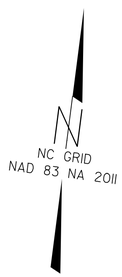


STA. 19+70 -L- RT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



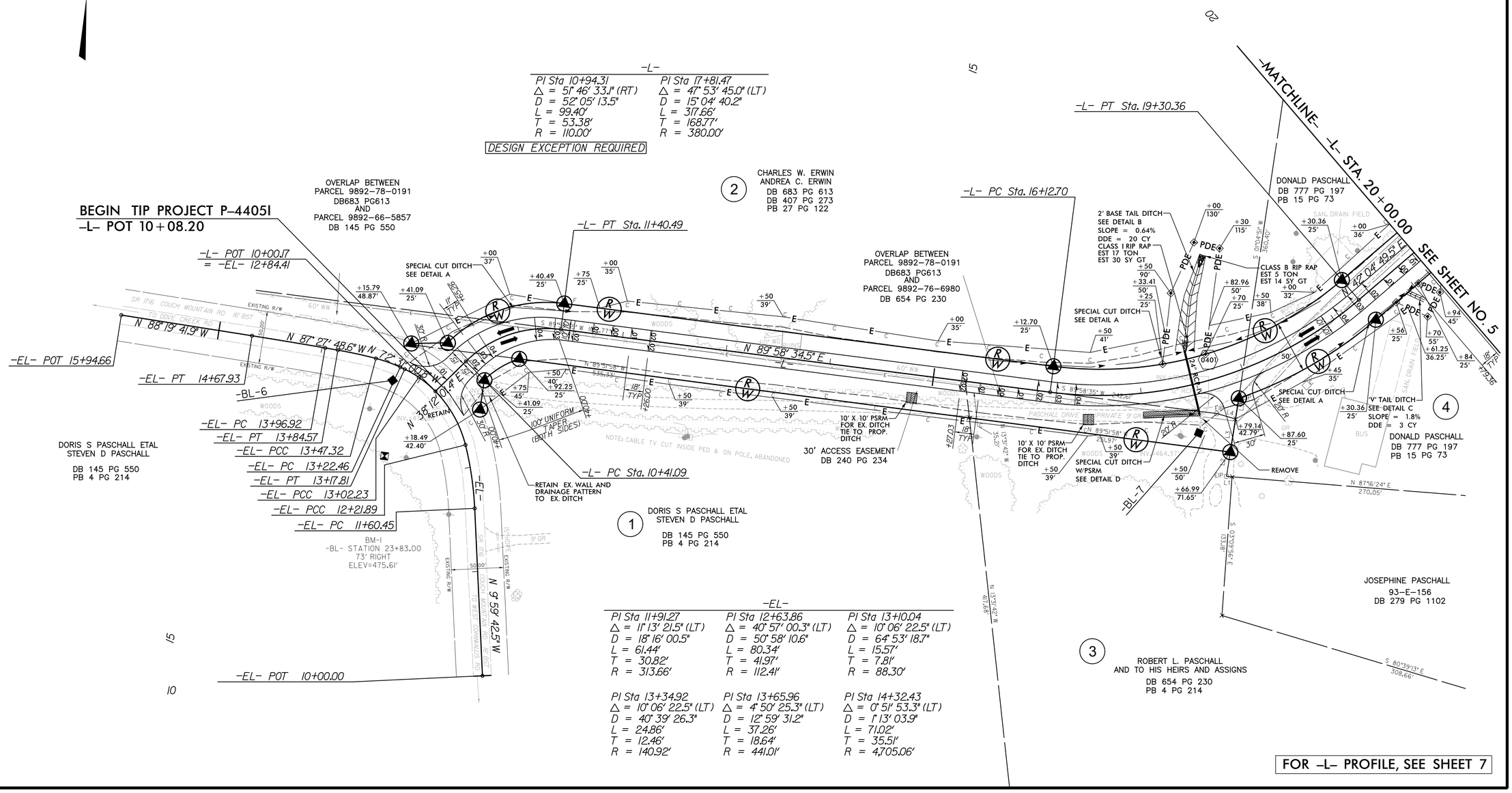
FROM STA. 17+00 TO STA. 17+50 -L- RT



-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'

DESIGN EXCEPTION REQUIRED



-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'

FOR -L- PROFILE, SEE SHEET 7

3/11/2015
FILENAME = C:\Projects\P-4405I_rdy_psh04.dgn

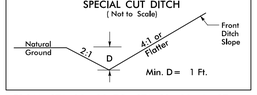
REVISIONS

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

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

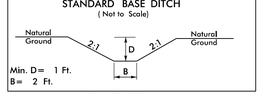
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



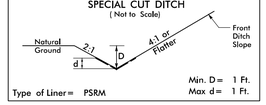
FROM STA. 20+00 TO STA. 21+00 -L- RT
FROM STA. 27+00 TO STA. 27+73 -L- RT
FROM STA. 29+00 TO STA. 30+50 -L- LT
FROM STA. 30+50 TO STA. 31+50 -L- RT

DETAIL B
STANDARD BASE DITCH
(Not to Scale)

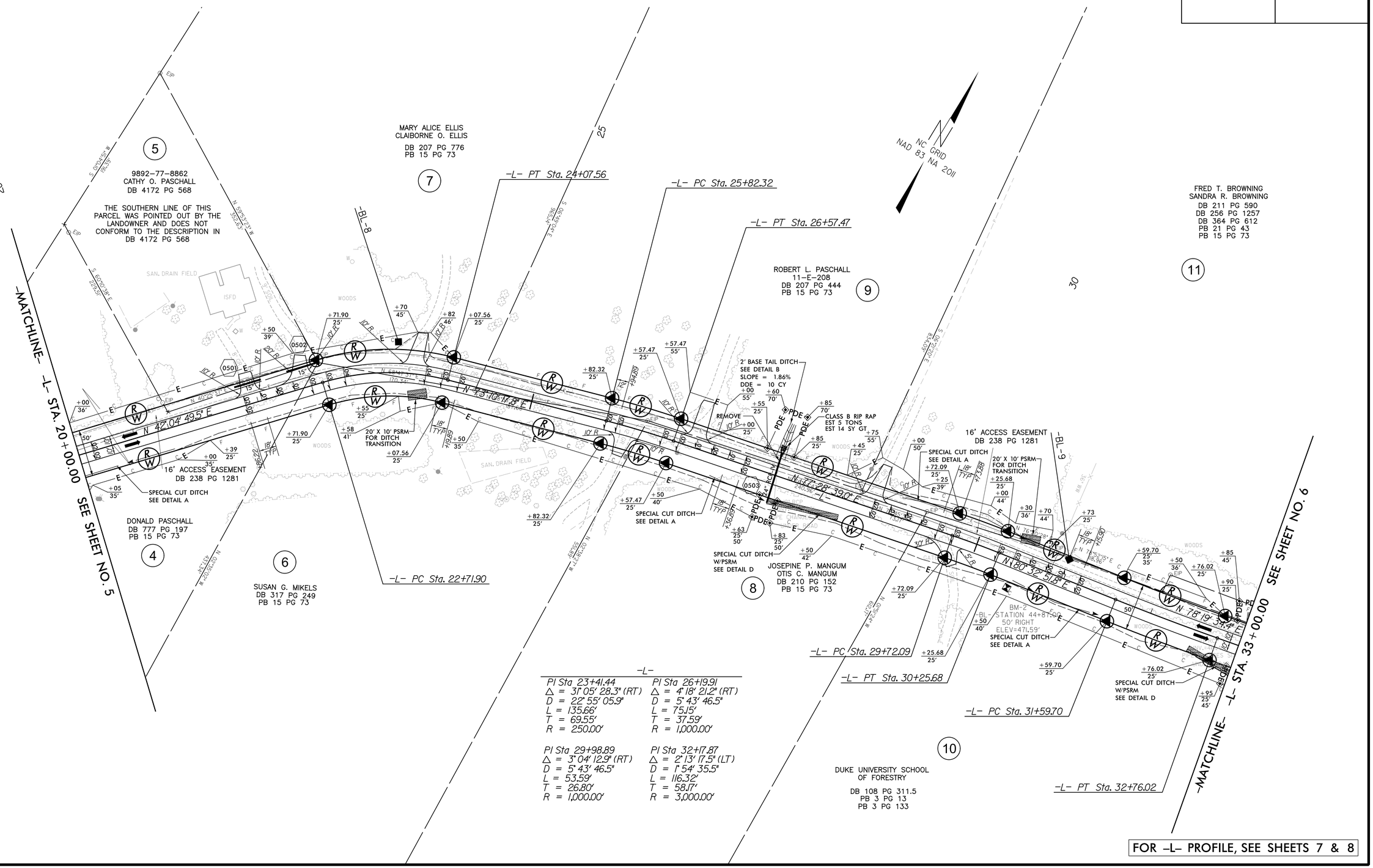


STA. 27+71 -L- LT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



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



-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'

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'

FOR -L- PROFILE, SEE SHEETS 7 & 8

3/11/2015
R:\Roadway\Proj\p4405i_rdy_psh05.dgn
ICA ENGINEERING, INC.

DGN 0006T_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	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D= 1 Ft.
FROM STA. 33+00 TO STA. 33+10 -L- RT

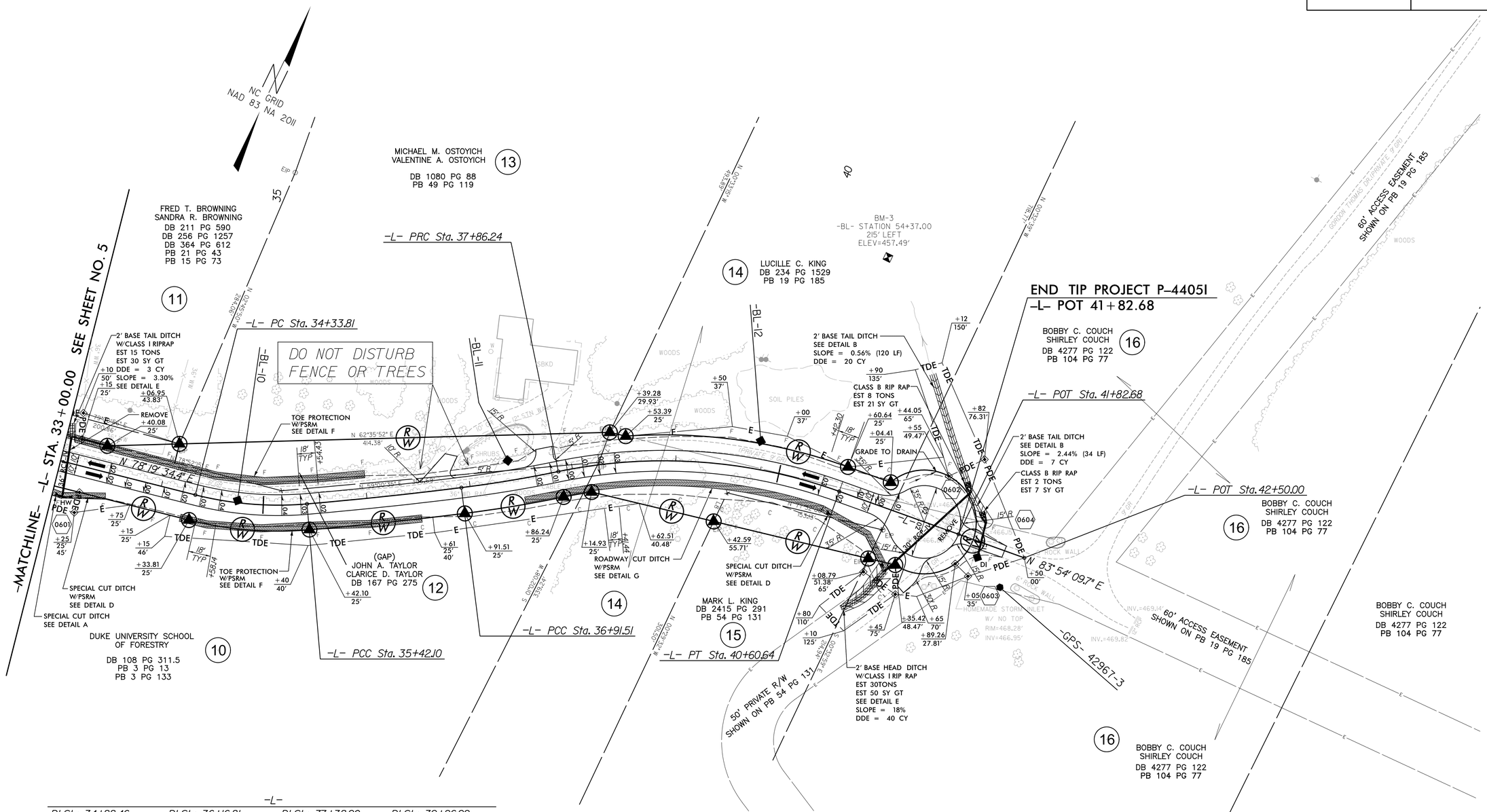
DETAIL B
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, B, 2:1, Natural Ground
Min. D= 1 Ft.
B= 2 Ft.
STA. 41+82 -L- LT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 2:1, D, d, 4:1 or Flatter, Front Ditch Slope
Min. D= 1 Ft.
Max d= 1 Ft.
Type of Liner= PSRM
FROM STA. 33+00 TO STA. 33+50 -L- RT
FROM STA. 40+50 TO STA. 41+28 -L- RT

DETAIL E
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, d, D, 2:1, Natural Ground, Filter Fabric, B
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
*When B is < 6.0'
Type of Liner= Class I Rip-Rap
STA. 33+05 -L- LT
STA. 41+28 -L- RT

DETAIL F
TOE PROTECTION
(Not to Scale)
NATURAL GROUND, b, 2:1 OR FLATTER, d, FILL SLOPE
d= 1 Ft.
b= 5 Ft.
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)
Natural Ground, 2:1, D, d, 4:1 or Flatter, Front Ditch Slope
Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= PSRM
FROM STA. 37+50 TO STA. 40+50 -L- RT



-L-

PI Sta 34+88.46	PI Sta 36+16.81	PI Sta 37+38.90	PI Sta 39+26.99
Δ = 19° 05' 30.8" (LT)	Δ = 2° 15' 09.9" (LT)	Δ = 4° 31' 22.7" (LT)	Δ = 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'

FOR -L- PROFILE, SEE SHEETS 8 & 9

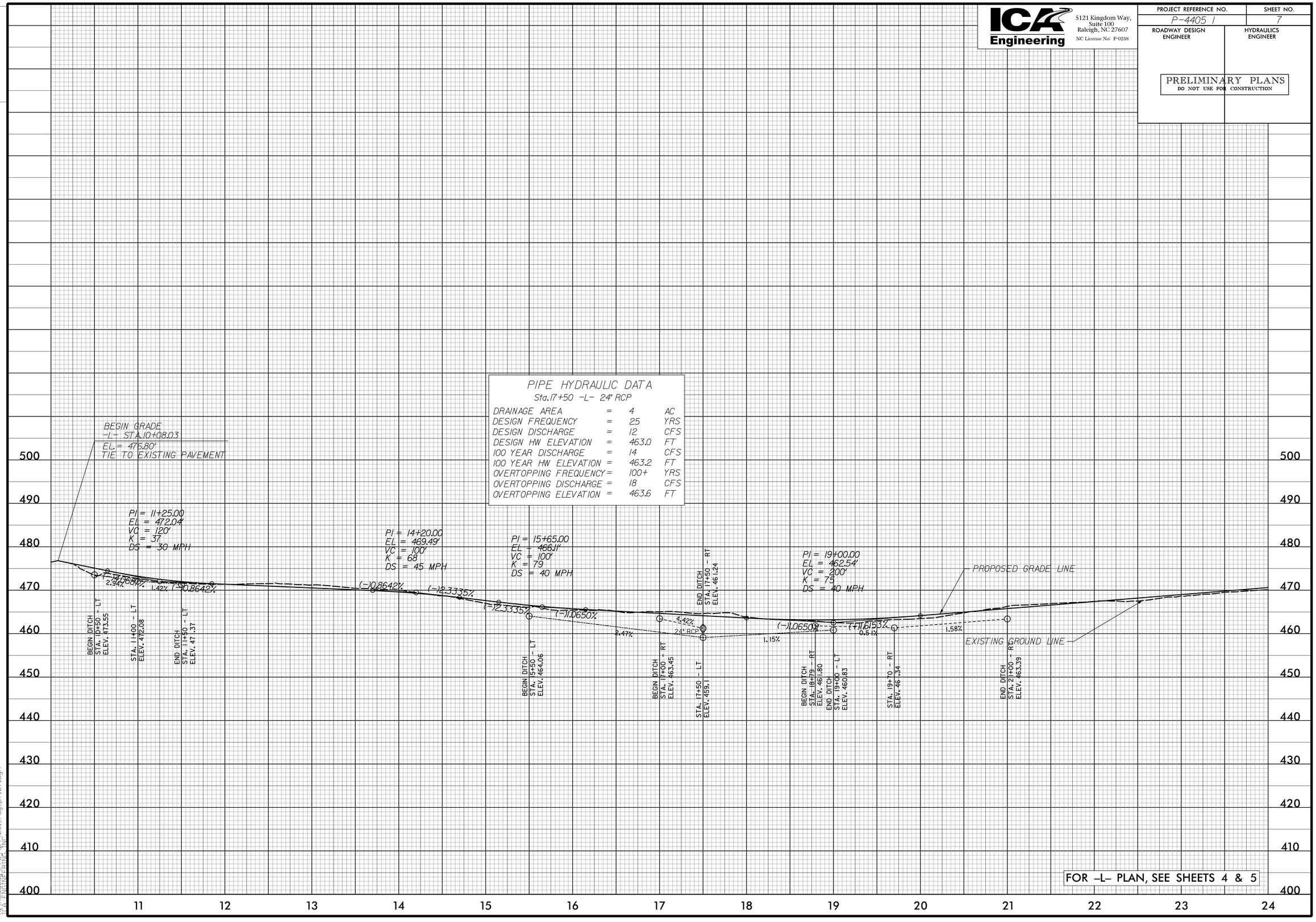
3/11/2015
TIP P4405I_ROW_PROJ\p4405i_rdy_psh06.dgn

DGN 0006T_P21p2

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

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FOR -L- PLAN, SEE SHEETS 4 & 5

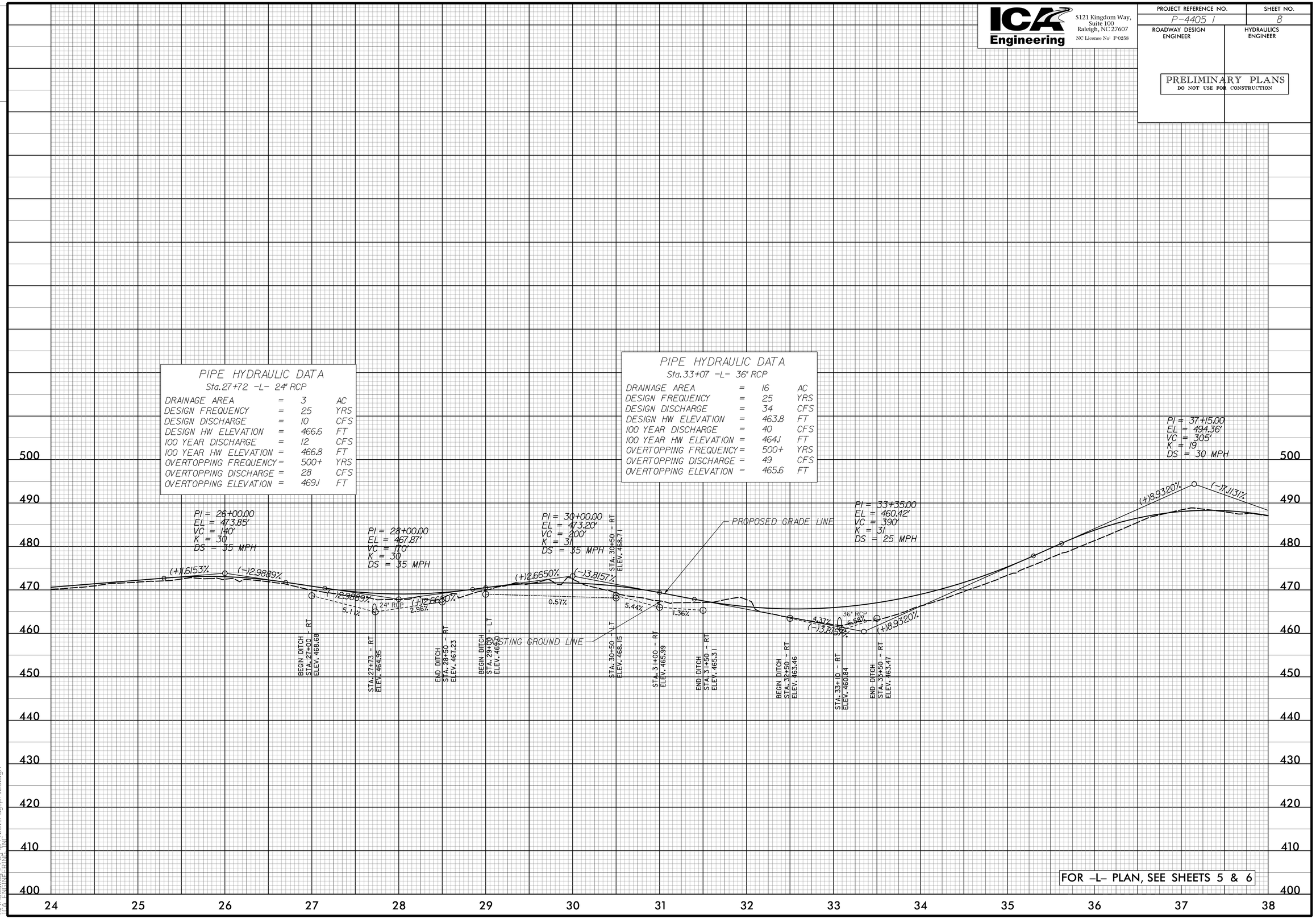
3/4/2015
R:\Roadway\Proj\p4405i_rdy_pf107.dgn

DGN 0006T_P21p2

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

PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FOR -L- PLAN, SEE SHEETS 5 & 6

3/11/2015
ICA(Raleigh)\Proj\p4405_rdy_pl08.dgn
ICA Engineering

DGN 0006T_P21p2

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

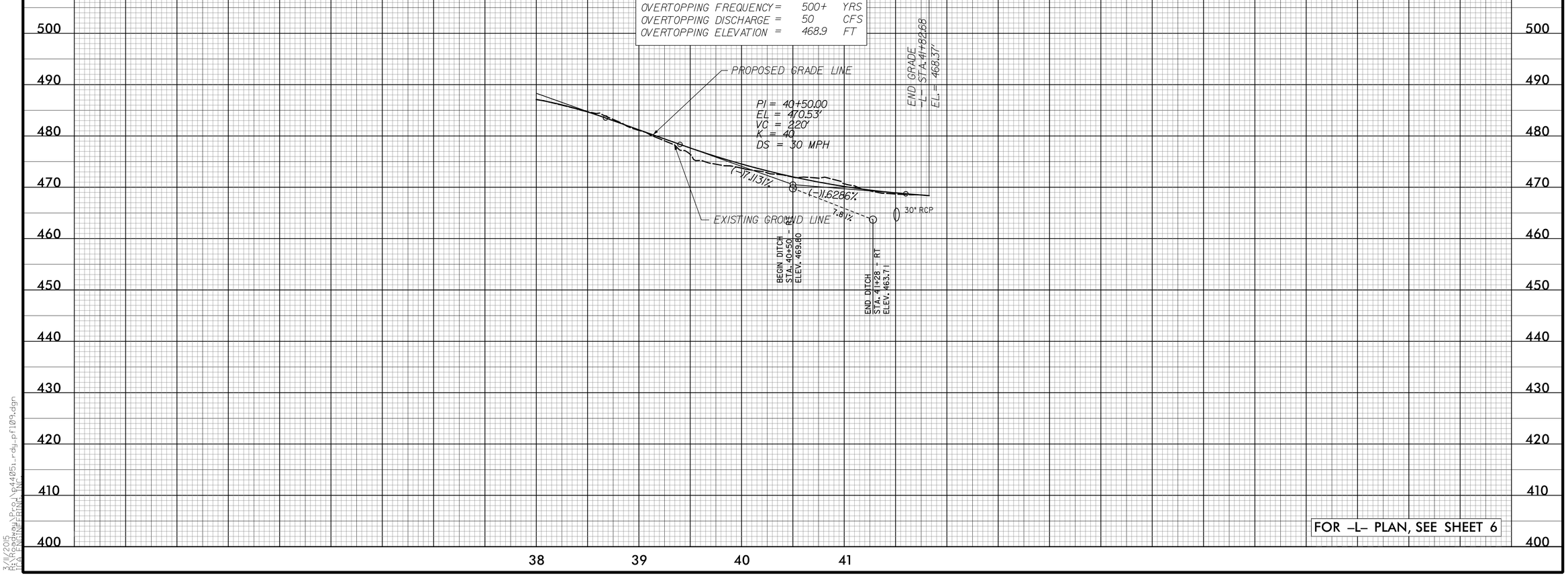
PROJECT REFERENCE NO.	SHEET NO.
P-4405 I	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA

Sta. 41+51 -L- 30" RCP

DRAINAGE AREA	=	8	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	19	CFS
DESIGN HW ELEVATION	=	466.0	FT
100 YEAR DISCHARGE	=	23	CFS
100 YEAR HW ELEVATION	=	466.1	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	50	CFS
OVERTOPPING ELEVATION	=	468.9	FT



FOR -L- PLAN, SEE SHEET 6

3/11/2015
R:\Roadway\Proj\p4405i_rdy_pf109.dgn
ICA ENGINEERING, INC.