

REFERENCE: R-3421A

PROJECT: 34542

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3421A	1	661

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY RICHMOND
PROJECT DESCRIPTION US 220 BYPASS FROM US 74 BYPASS
WEST OF ROCKINGHAM AT SR 1109 INTERCHANGE TO
0.3 MILES SOUTH OF SR 1140

INVENTORY ADDENDUM

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

CONTENTS

LINE	STATION	INVENTORY SECTION 1 PLAN
-US74-	58+50.00 to 74+50.00	4-8,14-17
-I73-	75+00.00 to 133+00.00	7-10
-FLY-	5+74.98 to 40+00.00	6-8,13
-L2REV-	24+00.00 to 36+30.00	9,11
-L2-	38+00.00 to 54+00.00	12
-L2CONN-	14+81.23 to 33+00.00	9,14
-L2RT-	10+00.00 to 23+50.00	9,13
-RPA-	5+04.00 to 18+35.00	9,10,14
-RPC-	9+64.39 to 37+00.00	7-9,11,12
-RPD-	3+33.00 to 21+27.00	10,11
-LPB-	2+00.00 to 11+53.45	9
-LPC-	2+67.50 to 15+15.00	9

CROSS SECTIONS

LINE	STATION	INVENTORY SECTION 2 SHEETS	INVENTORY SECTION 3 SHEETS	INVENTORY SECTION 4 SHEETS	INVENTORY SECTION 5 SHEETS
-US74-	58+50.00 to 74+50.00	18-84			
-I73-	75+00.00 to 106+00.00	85-190			
-I73-	106+00.00 to 133+00.00		191-298		
-FLY-	5+74.98 to 40+00.00		299-325		
-L2REV-	24+00.00 to 36+30.00		326-340		
-L2-	38+00.00 to 54+00.00			341-386	
-L2CONN-	14+81.23 to 33+00.00			387-408	
-L2RT-	10+00.00 to 23+50.00			409-434	
-RPA-	5+04.00 to 18+35.00			435-455	
-RPC-	9+64.39 to 37+00.00				456-529
-RPD-	3+33.00 to 21+27.00				530-557
-LPB-	2+00.00 to 11+53.45				558-580
-LPC-	2+67.50 to 15+15.00				581-603

APPENDICES

APPENDIX	TITLE	INVENTORY SECTION 6 SHEETS
1	BORING LOG, CORING LOG, CORE PHOTOS	604-638
2	SOIL TEST RESULTS, SUMMARY SHEETS, CONSOLIDATION TEST DATA SHEETS	639-644
3	ROCK BREAK LABORATORY RESULTS	645-653
4	DILATOMETER RESULTS	654-661

PERSONNEL

C. JONES

M. JOHNSON

D. TIGNOR

S. DAVIS

C. WANG

D. RACEY

INVESTIGATED BY F&R, INC
HDR ENGINEERING, INC

DRAWN BY C. MYERS

CHECKED BY B. HOWEY

SUBMITTED BY HDR ENGINEERING, INC

DATE 04 /2015



DocuSigned by
Elizabeth C. Howey

F80E690821524F3...

1/8/2016

SIGNATURE

DATE

SIGNATURE

DATE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3421A	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34542.1.1	NHF-220(4)	P.E.	
34542.2.4	HPP-0220(30)	RW, UTIL.	

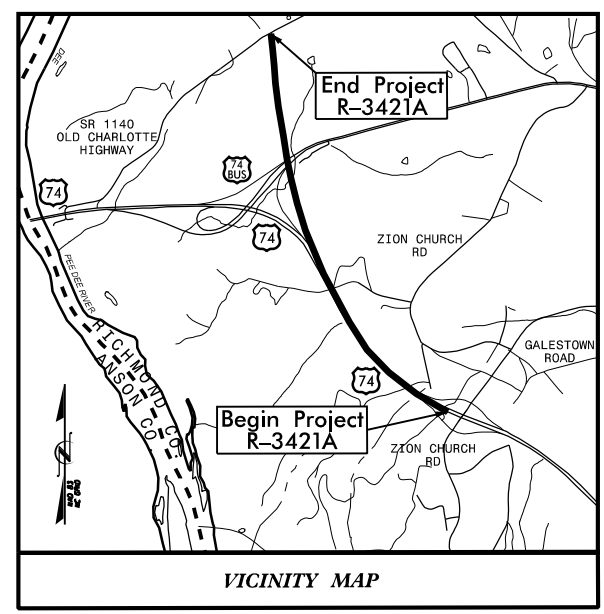
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RICHMOND COUNTY

LOCATION: US 220 BYPASS FROM US 74 BYPASS WEST OF ROCKINGHAM AT SR 1109 (ZION CHURCH RD.) INTERCHANGE TO 0.3 MILES SOUTH OF SR 1140 (OLD CHARLOTTE HWY.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, & SIGNING

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



RW REVIEW PLANS

-US 74- STA 34+00.00
BEGIN STATE PROJECT R-3421A
BEGIN F.A. PROJECT NHF-220(4)
BEGIN CONSTRUCTION

EX. ZION CHURCH RD INTERSECTION

I-73 POT 74+80.44 LB =
-US 74- TS 74+80.44 LA =
-US 74 EBL- POT 74+80.44 65.334 LT.
-RP C- POT 0+00.00 52.60 RT.

-I-73- POC 89+45.82 (35' LT)
END SB BRIDGE
-US 74 EBL- POC 88+57.24
END CONSTRUCTION
-I-73- POC 87+66.59 (35' LT)
BEGIN SB BRIDGE
-I-73- POC 86+74.58 (35' RT)
BEGIN NB BRIDGE

-RPC- POC 10+61.56
BEGIN BRIDGE
-RPC- POC 12+06.92
END BRIDGE
-I-73- POC 88+64.92 (35' RT)
END NB BRIDGE

BEGIN CULVERT -I-73- STA.98+50.94
END CULVERT -I-73- STA.98+75.27

-L2 RT- POC 24+00.00 =
-L2 REV- POC 24+00.00 4.0 RT =
-L2 CONN- CS 6+31.23 12.00 RT

-L2- POT 53+29.48
END CONSTRUCTION

EX. US 74 BUS EAST

EX. US 74 BUS WEST

-RP A- POC 24+71.89 =
-L2 CONN- SC 24+21.6

-L2 RT- POT 9+28.08
BEGIN CONSTRUCTION

-L2 CONN-
-I-73- POC 100+21.09 (35' LT)
BEGIN SB BRIDGE
-I-73- POC 100+64.78 (35' RT)
BEGIN NB BRIDGE
-I-73- POC 102+99.86 (35' LT)
END SB BRIDGE
-I-73- POC 103+36.33 (35' RT)
END NB BRIDGE

I-73 POC 128+00.00
END STATE PROJECT R-3421A

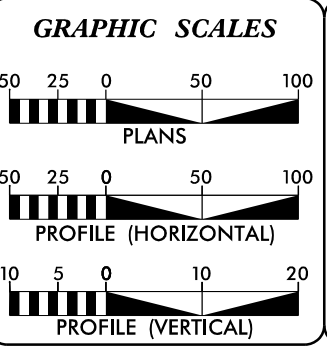
I-73 POC 133+89.42
END CONSTRUCTION

-L2 REV- PT 53+53.24
END CONSTRUCTION

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

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



DESIGN DATA
ADT (2005) = 10,750-17,450
ADT (2030) = 22,815-35,640
DHV = 10%
D = 60%
T = 28% *
V = 70 mph
* (TTST 10% + DUAL 18%)

PROJECT LENGTH
LENGTH ROADWAY TIP PROJECT R-3421A = 1.788 miles
LENGTH STRUCTURES TIP PROJECT R-3421A = 0.091 miles
TOTAL LENGTH OF TIP PROJECT R-3421A = 1.879 miles
(SB LANES WERE USED FOR LENGTH OF PROJECT)

Prepared In the Office of:
GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1989
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 6/2008

LETTING DATE: POST YEAR

NCDOT CONTACT: PROJECT ENGINEER - ENGR. COORD.

MICHAEL T. MERRITT, PE
PROJECT ENGINEER
RK&K, LLP

LIBBY MORRISON
PROJECT DESIGN ENGINEER
RK&K, LLP

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

TIP PROJECT: R-3421A

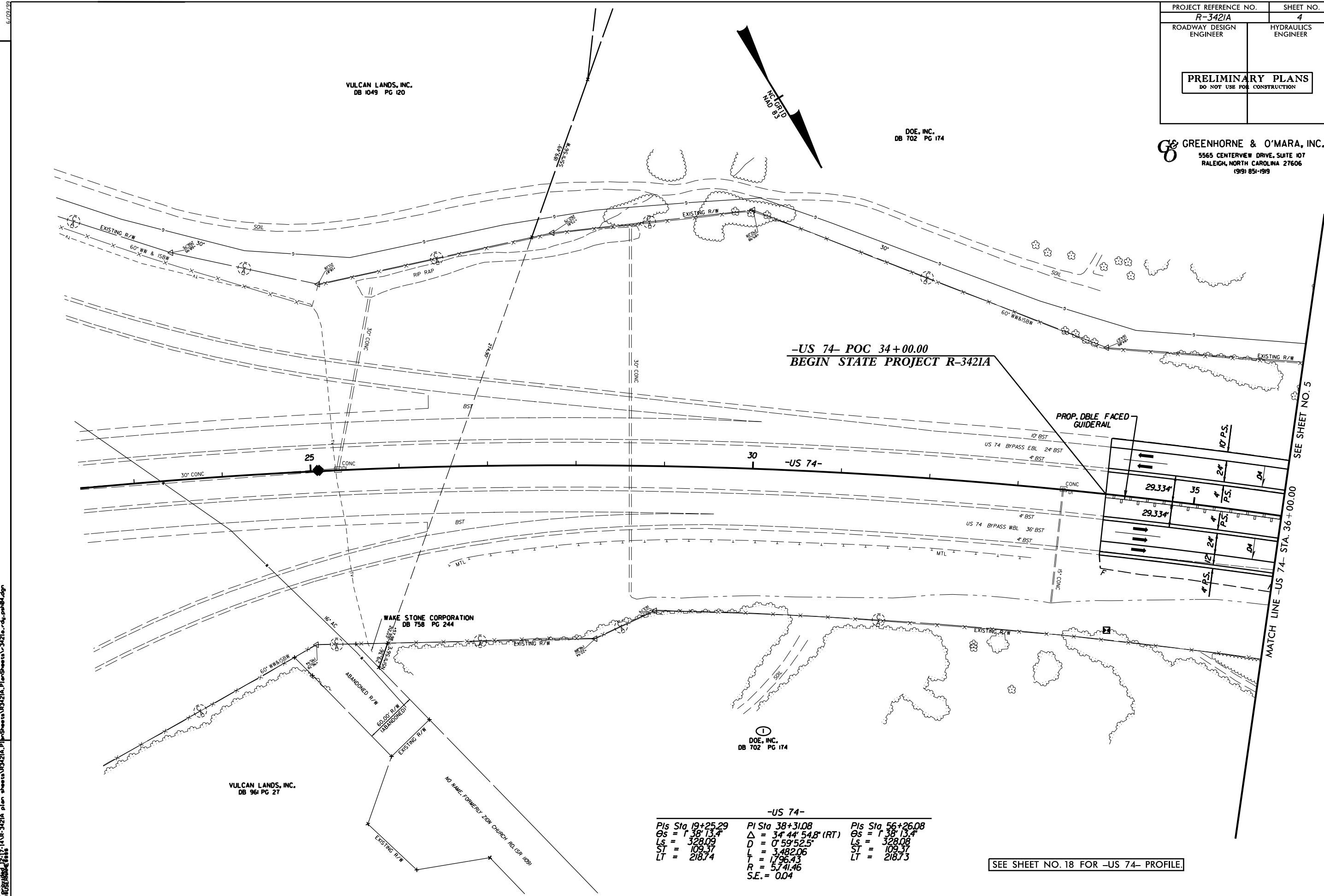
CONTRACT:

08-JUN-2015 09:55 R:\Geotechnical\PROJECTS\R-3421A_US 220 Bypass Roadway\Files Provided RKK 040915\R3421a_rdy.tsh.dgn

09/08/09

PROJECT REFERENCE NO. R-3421A	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919



**-US 74- POC 34+00.00
BEGIN STATE PROJECT R-3421A**

MATCH LINE -US 74- STA. 36+00.00
SEE SHEET NO. 5

-US 74-

PI Sta 19+25.29	PI Sta 38+31.08	PI Sta 56+26.08
Gs = 1' 38" 13.4"	Δ = 34' 44" 54.8" (RT)	Gs = 1' 38" 13.4"
Ls = 328.09	D = 0' 59" 52.5"	Ls = 328.08
ST = 109.37	T = 3,482.06	ST = 109.37
LT = 218.74	T = 1796.43	LT = 218.73
	R = 5,741.46	
	S.E. = 0.04	

SEE SHEET NO. 18 FOR -US 74- PROFILE.

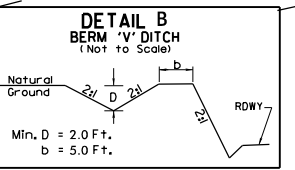
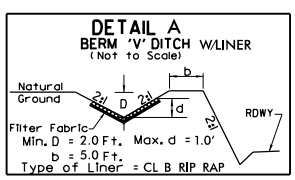
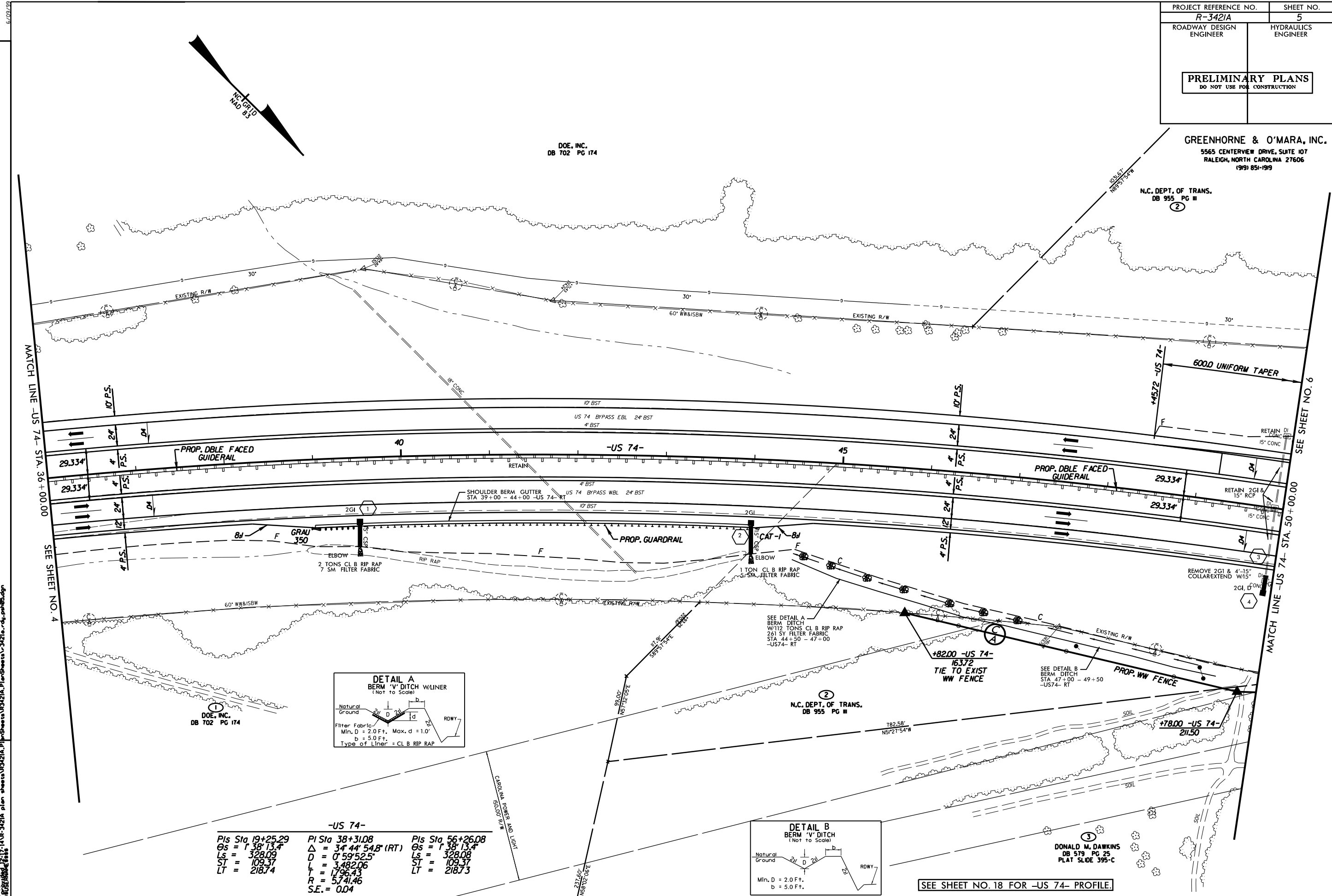
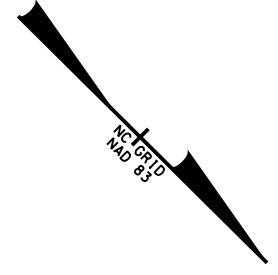
REVISIONS

6/09/99
08-JUN-2005 09:56 JLV-11A-R-3421A plan sheets\R3421A_PlanSheets\R3421A_PlanSheet4.dwg
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GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

N.C. DEPT. OF TRANS.
DB 955 PG III
②

DOE, INC.
DB 702 PG 174



-US 74-

PIs Sta 19+25.29	PI Sta 38+31.08	PIs Sta 56+26.08
Os = 1' 38" 13.4"	Δ = 3' 44" 54.8" (RT)	Os = 1' 38" 13.4"
Ls = 328.09	D = 0' 59" 52.5"	Ls = 328.08
ST = 109.37	L = 3' 48.20'	ST = 109.37
LT = 218.74	L = 1' 76.43"	LT = 218.73
	R = 5' 74.46"	
	S.E. = 0.04	

SEE SHEET NO. 18 FOR -US 74- PROFILE.

REVISIONS

MATCH LINE -US 74- STA. 36+00.00

SEE SHEET NO. 4

MATCH LINE -US 74- STA. 50+00.00

SEE SHEET NO. 6

DB 702 PG 174
 R-3421A plan sheets R3421A Plan Sheets v3421a.dwg, pnh05.dwg
 6/09/99

CAROLINA POWER AND LIGHT
 50.00' R/W

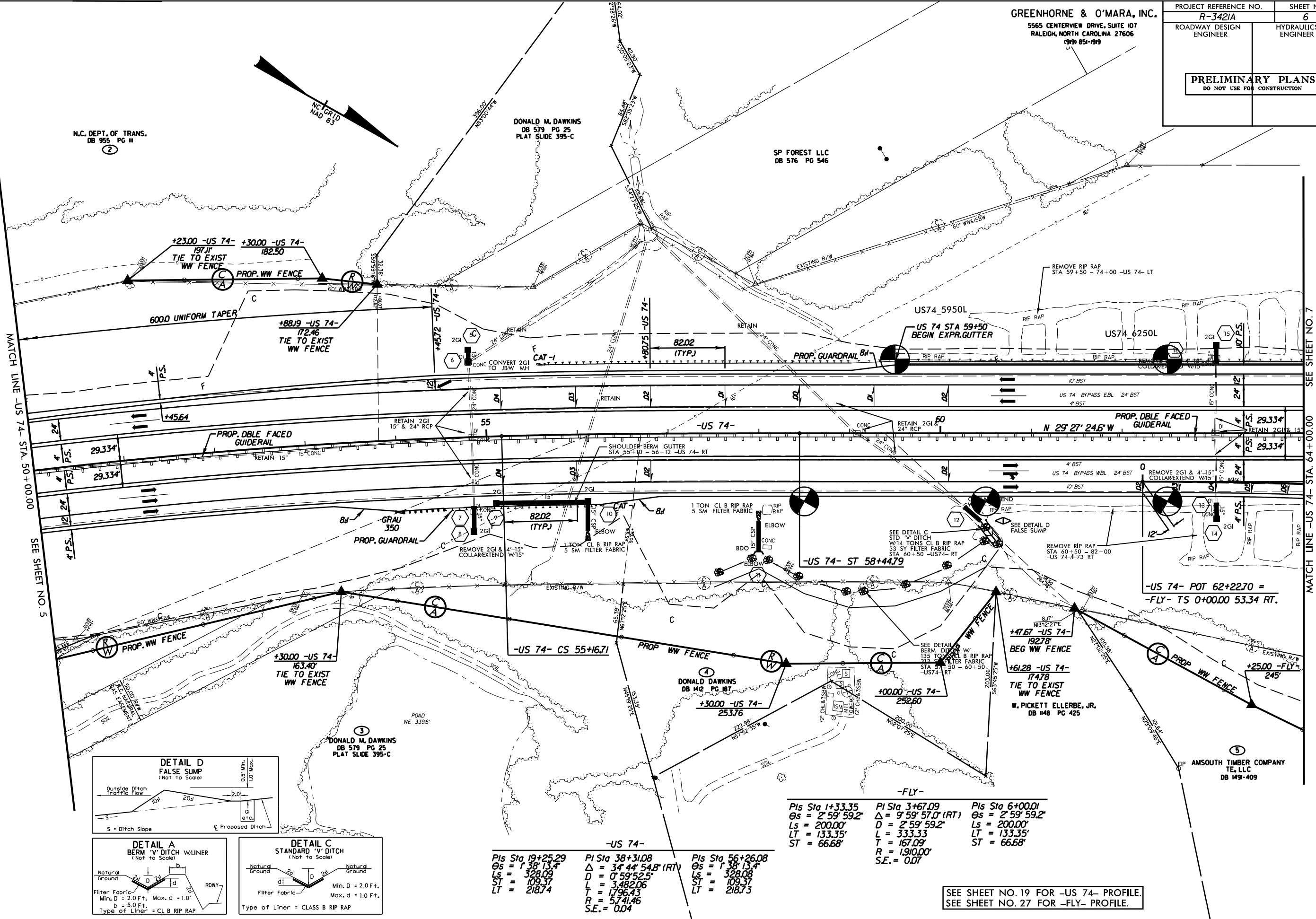
③
DONALD M. DAWKINS
DB 579 PG 25
PLAT SLIDE 395-C

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

N.C. DEPT. OF TRANS.
DB 955 PG II
2

DONALD M. DAWKINS
DB 579 PG 25
PLAT SLIDE 395-C

SP FOREST LLC
DB 576 PG 546

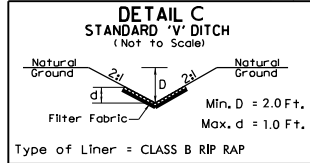
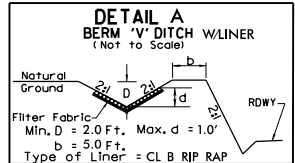
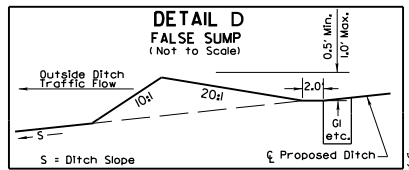


MATCH LINE -US 74- STA. 50+00.00

MATCH LINE -US 74- STA. 64+00.00

REVISIONS

12/02/08 - PARCEL #4 MOVED R/W MONUMENT FROM 290' TO 278' OFFSET FROM US74
4/15/09 - PARCEL #4 REVISED R/W TO MISS TOWER; REVISED PROPERTY OWNER NAME, DB, PG
REVISED PROPOSED WW FENCE
08-28-2015 09:47:11 AM R-3421A PLAN SHEETS AR3421A.P1, AR3421A.P2, AR3421A.P3, AR3421A.P4, AR3421A.P5, AR3421A.P6, AR3421A.P7, AR3421A.P8, AR3421A.P9, AR3421A.P10, AR3421A.P11, AR3421A.P12, AR3421A.P13, AR3421A.P14, AR3421A.P15, AR3421A.P16, AR3421A.P17, AR3421A.P18, AR3421A.P19, AR3421A.P20, AR3421A.P21, AR3421A.P22, AR3421A.P23, AR3421A.P24, AR3421A.P25, AR3421A.P26, AR3421A.P27, AR3421A.P28, AR3421A.P29, AR3421A.P30, AR3421A.P31, AR3421A.P32, AR3421A.P33, AR3421A.P34, AR3421A.P35, AR3421A.P36, AR3421A.P37, AR3421A.P38, AR3421A.P39, AR3421A.P40, AR3421A.P41, AR3421A.P42, AR3421A.P43, AR3421A.P44, AR3421A.P45, AR3421A.P46, AR3421A.P47, AR3421A.P48, AR3421A.P49, AR3421A.P50, AR3421A.P51, AR3421A.P52, AR3421A.P53, AR3421A.P54, AR3421A.P55, AR3421A.P56, AR3421A.P57, AR3421A.P58, AR3421A.P59, AR3421A.P60, AR3421A.P61, AR3421A.P62, AR3421A.P63, AR3421A.P64, AR3421A.P65, AR3421A.P66, AR3421A.P67, AR3421A.P68, AR3421A.P69, AR3421A.P70, AR3421A.P71, AR3421A.P72, AR3421A.P73, AR3421A.P74, AR3421A.P75, AR3421A.P76, AR3421A.P77, AR3421A.P78, AR3421A.P79, AR3421A.P80, AR3421A.P81, AR3421A.P82, AR3421A.P83, AR3421A.P84, AR3421A.P85, AR3421A.P86, AR3421A.P87, AR3421A.P88, AR3421A.P89, AR3421A.P90, AR3421A.P91, AR3421A.P92, AR3421A.P93, AR3421A.P94, AR3421A.P95, AR3421A.P96, AR3421A.P97, AR3421A.P98, AR3421A.P99, AR3421A.P100



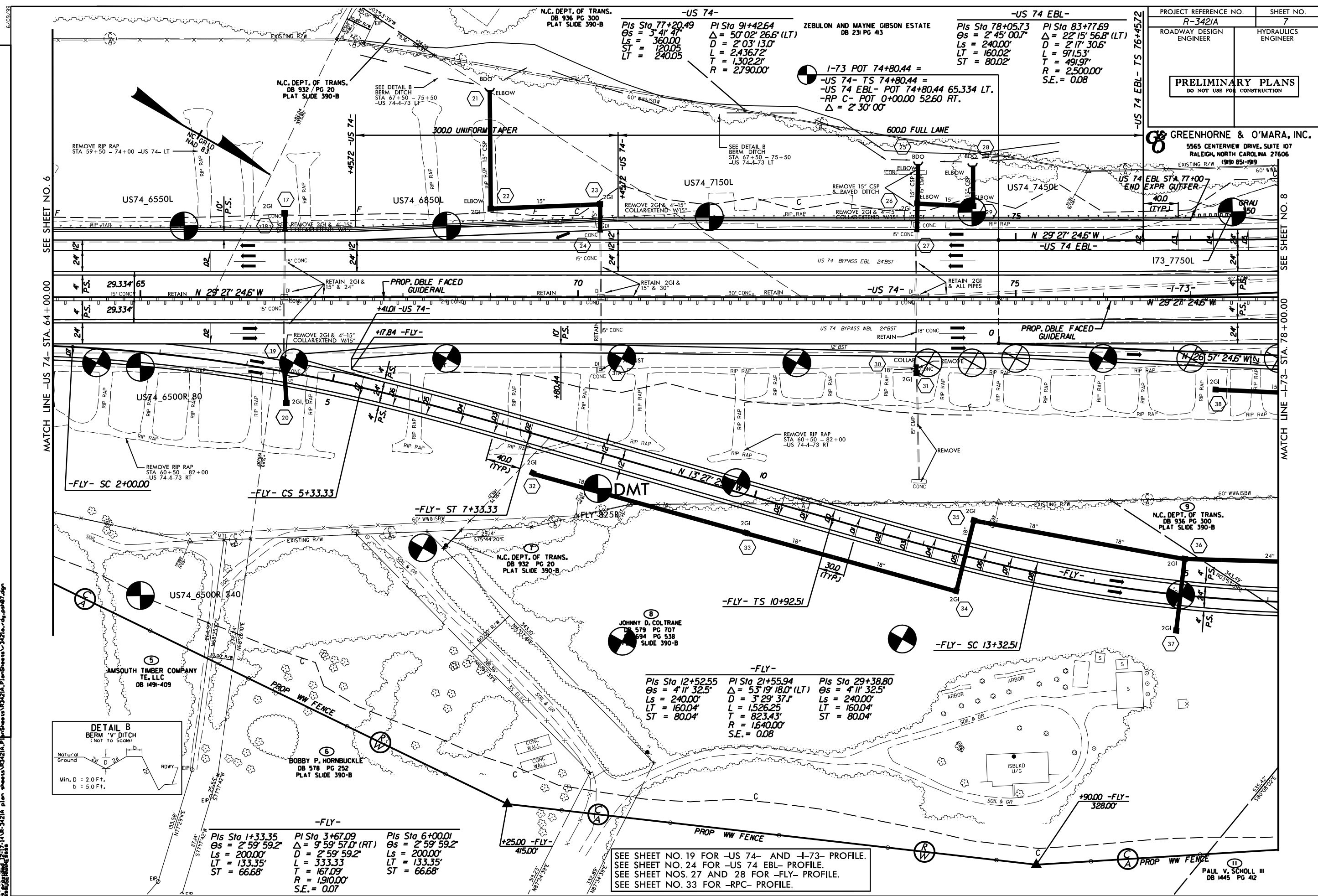
-US 74-

$PI\ Sta\ 19+25.29$	$PI\ Sta\ 38+31.08$	$PI\ Sta\ 56+26.08$
$\Delta = 1^\circ 38' 13.4''$	$\Delta = 34^\circ 44' 54.8'' (RT)$	$\Delta = 1^\circ 38' 13.4''$
$Ls = 328.09'$	$Ls = 328.09'$	$Ls = 328.08'$
$ST = 109.37'$	$L = 3,482.06'$	$ST = 109.37'$
$LT = 218.74'$	$T = 1,796.43'$	$LT = 218.73'$
	$R = 5,741.46'$	
	$S.E. = 0.04$	

-FLY-

$PI\ Sta\ 1+33.35$	$PI\ Sta\ 3+67.09$	$PI\ Sta\ 6+00.01$
$\Delta = 2^\circ 59' 59.2''$	$\Delta = 9^\circ 59' 57.0'' (RT)$	$\Delta = 2^\circ 59' 59.2''$
$Ls = 200.00'$	$D = 2^\circ 59' 59.2''$	$Ls = 200.00'$
$LT = 133.35'$	$L = 333.33'$	$LT = 133.35'$
$ST = 66.68'$	$T = 167.09'$	$ST = 66.68'$
	$R = 1,910.00'$	
	$S.E. = 0.07$	

SEE SHEET NO. 19 FOR -US 74- PROFILE.
SEE SHEET NO. 27 FOR -FLY- PROFILE.



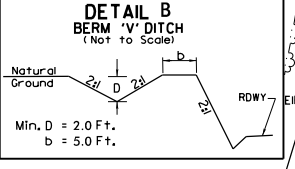
PROJECT REFERENCE NO.	SHEET NO.
R-3421A	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

GREENHORNE & O'MARA, INC.
 5565 CENTERVIEW DRIVE, SUITE 107
 RALEIGH, NORTH CAROLINA 27606
 (919) 851-1919

REVISIONS
 41509 - PARCEL #11 REVISED PROPERTY OWNER NAME, DB, PG.
 020911 - PARCEL #5 REVISED PROPERTY NAME, DB
 09-28-2015 09:55 - I-73, I-73+14V-3421A plan sheets R3421A, Plan Sheets v3421a-d, pah87.dgn
 09-28-2015 10:05 - I-73, I-73+14V-3421A plan sheets R3421A, Plan Sheets v3421a-d, pah87.dgn

MATCH LINE -US 74- STA. 64+00.00

MATCH LINE -I-73- STA. 78+00.00



-FLY-

PIs Sta 12+52.55	PI Sta 21+55.94	PIs Sta 29+38.80
$\Delta s = 4' 11'' 32.5''$	$\Delta = 53' 19'' 18.0'' (LT)$	$\Delta s = 4' 11'' 32.5''$
Ls = 240.00'	D = 3' 29' 37.1"	Ls = 240.00'
LT = 160.04'	L = 1526.25'	LT = 160.04'
ST = 80.04'	T = 823.43'	ST = 80.04'
	R = 1,640.00'	
	S.E. = 0.08	

-FLY-

PIs Sta 1+33.35	PI Sta 3+67.09	PIs Sta 6+00.01
$\Delta s = 2' 59'' 59.2''$	$\Delta = 9' 59'' 57.0'' (RT)$	$\Delta s = 2' 59'' 59.2''$
Ls = 200.00'	D = 2' 59' 59.2"	Ls = 200.00'
LT = 133.35'	L = 333.33'	LT = 133.35'
ST = 66.68'	T = 167.09'	ST = 66.68'
	R = 1,910.00'	
	S.E. = 0.07	

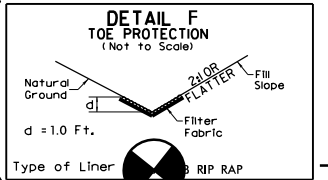
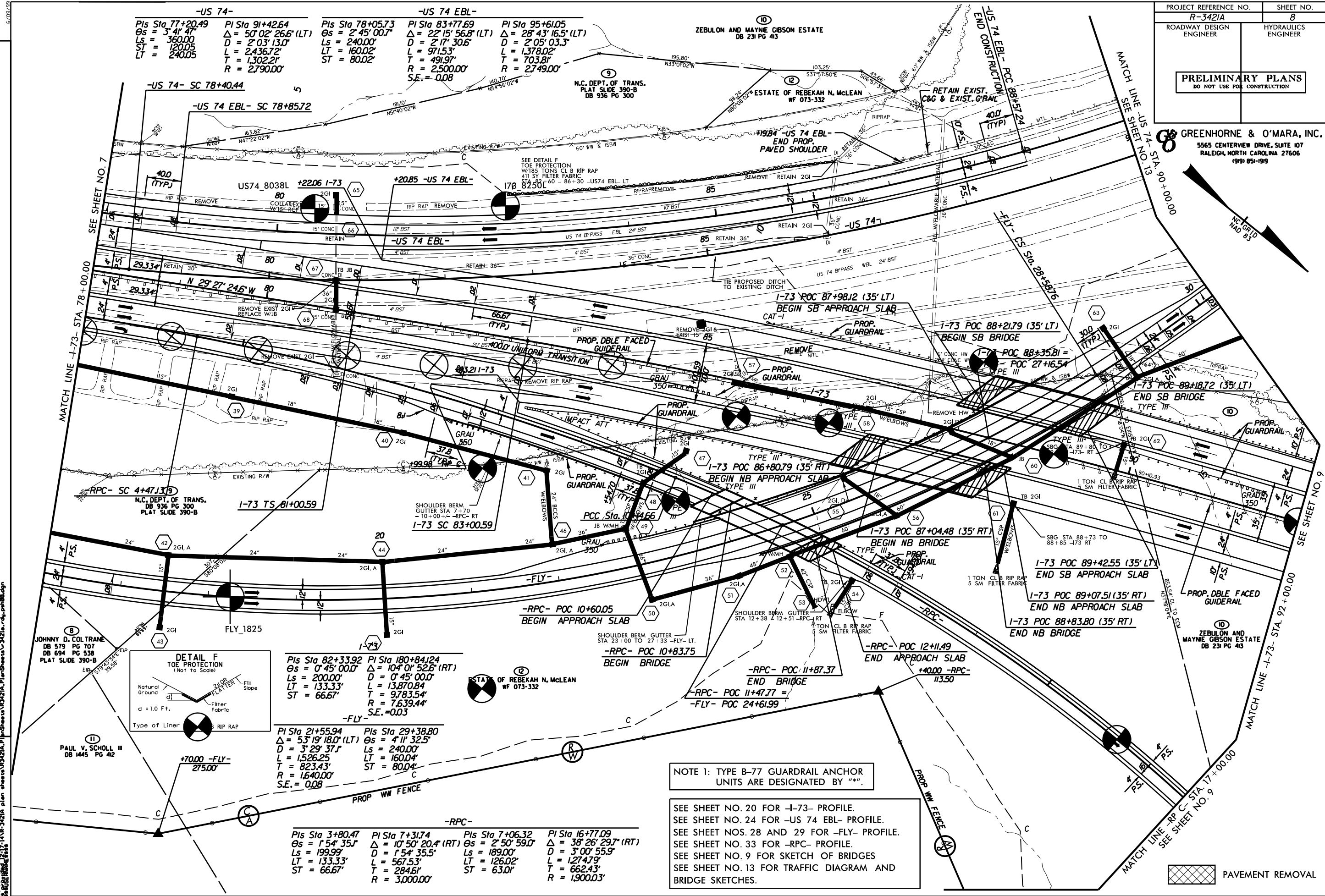
SEE SHEET NO. 19 FOR -US 74- AND -I-73- PROFILE.
 SEE SHEET NO. 24 FOR -US 74 EBL- PROFILE.
 SEE SHEET NOS. 27 AND 28 FOR -FLY- PROFILE.
 SEE SHEET NO. 33 FOR -RPC- PROFILE.

SEE SHEET NO. 6

SEE SHEET NO. 8

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

-US 74-		-US 74 EBL-	
PIs Sta 77+20.49 Os = 3' 41' 47" Ls = 360.00 ST = 120.05 LT = 240.05	PI Sta 91+42.64 Δ = 50' 02' 26.6" (LT) D = 2' 03' 13.0" L = 2436.72' T = 1302.21' R = 2790.00'	PIs Sta 78+05.73 Os = 2' 45' 00.7" Ls = 240.00' L = 160.02' T = 80.02'	PIs Sta 83+77.69 Δ = 22' 15' 56.8" (LT) D = 2' 17' 30.6" L = 971.53' T = 491.97' R = 2500.00' S.E. = 0.08
			PI Sta 95+61.05 Δ = 28' 43' 16.5" (LT) D = 2' 05' 03.3" L = 1378.02' T = 703.81' R = 2749.00'



PIs Sta 82+33.92 Os = 0' 45' 00.0" Ls = 200.00' LT = 133.33' ST = 66.67'	PIs Sta 180+84.24 Δ = 104' 01' 52.6" (RT) D = 0' 45' 00.0" L = 13,870.84' T = 9,783.54' R = 7,639.44' S.E. = 0.03
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PIs Sta 21+55.94 Os = 53' 19' 18.0" (LT) D = 3' 29' 37.1" L = 1526.25' T = 823.43' R = 1640.00' S.E. = 0.08	PIs Sta 29+38.80 Os = 4' 11' 32.5" Ls = 240.00' L = 160.04' T = 80.04'
---	--

-RPC-			
PIs Sta 3+80.47 Os = 1' 54' 35.1" Ls = 199.99' LT = 133.33' ST = 66.67'	PIs Sta 7+31.74 Δ = 10' 50' 20.4" (RT) D = 1' 54' 35.5" L = 567.53' T = 284.61' R = 3,000.00'	PIs Sta 7+06.32 Os = 2' 50' 59.0" Ls = 189.00' LT = 126.02' ST = 63.01'	PIs Sta 16+77.09 Δ = 38' 26' 29.7" (RT) D = 3' 00' 55.9" L = 1274.79' T = 662.43' R = 1,900.03'

NOTE 1: TYPE B-77 GUARDRAIL ANCHOR UNITS ARE DESIGNATED BY "A".

SEE SHEET NO. 20 FOR -I-73- PROFILE.
SEE SHEET NO. 24 FOR -US 74 EBL- PROFILE.
SEE SHEET NOS. 28 AND 29 FOR -FLY- PROFILE.
SEE SHEET NO. 33 FOR -RPC- PROFILE.
SEE SHEET NO. 9 FOR SKETCH OF BRIDGES
SEE SHEET NO. 13 FOR TRAFFIC DIAGRAM AND BRIDGE SKETCHES.

PAVEMENT REMOVAL

REVISIONS

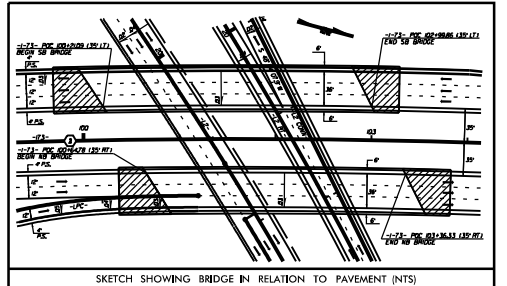
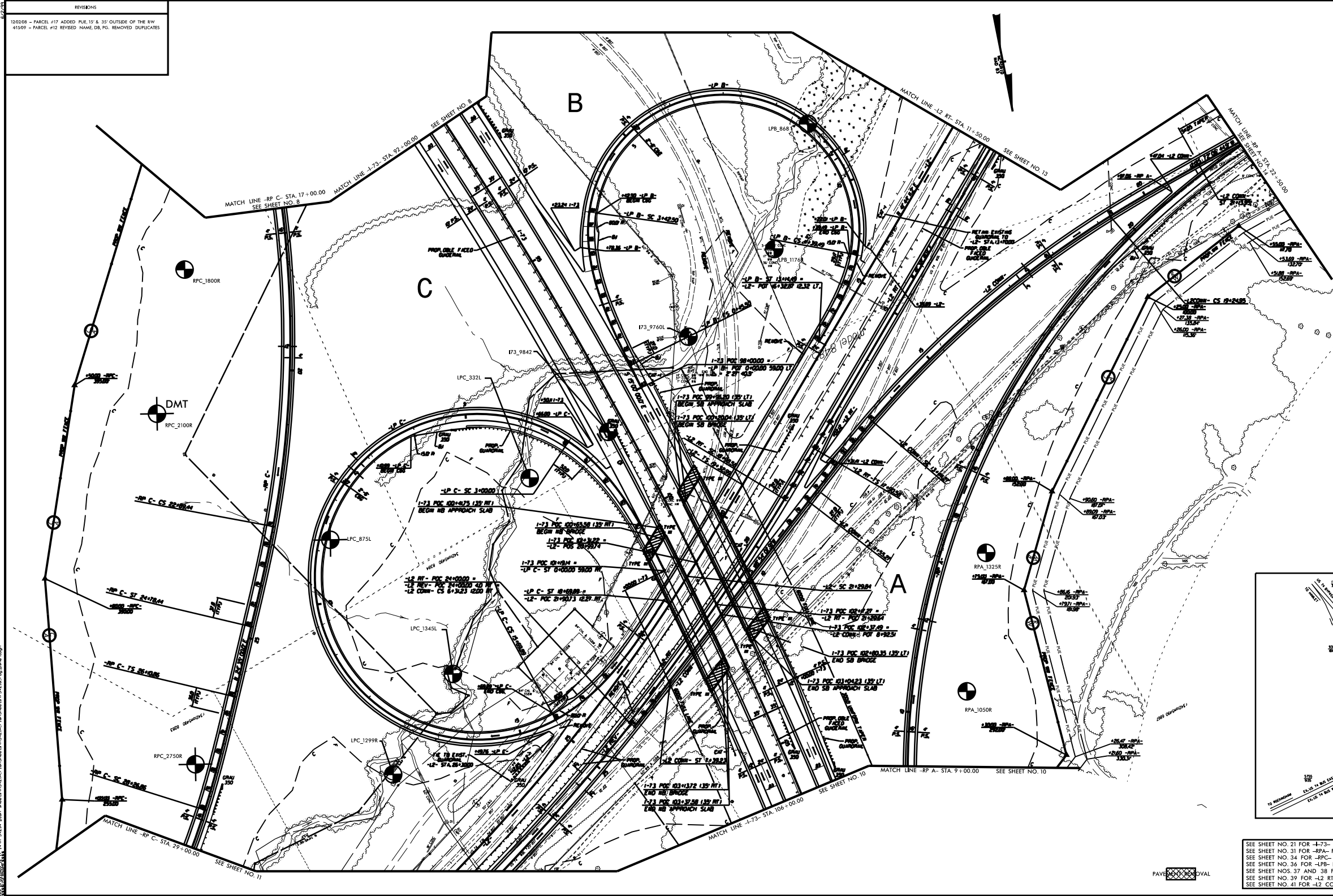
41509 - PARCEL #12 REVISED PROPERTY OWNER NAME, DB, PG. REMOVED DUPLICATES

DB: 10-20-05 09:59
41509 - PARCEL #12 REVISED PROPERTY OWNER NAME, DB, PG. REMOVED DUPLICATES
41509 - PARCEL #12 REVISED PROPERTY OWNER NAME, DB, PG. REMOVED DUPLICATES

REVISIONS	
12/20/08	PARCEL #12 ADDED PLS 15 & 31 OUTSIDE OF THE R/W
4/15/09	PARCEL #12 REVISED NAME, DR, PG, REMOVED DUPLICATES

PROJECT REFERENCE NO.	SHEET NO.
7-122A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PROJECT ENGINEER
PRELIMINARY PLANS	
NO SHOP LINES	

GREENHORN & O'MARA, INC.
300 GARDNER ROAD, SUITE 200
MILLSBORO, DELAWARE 19966
409-321-0000

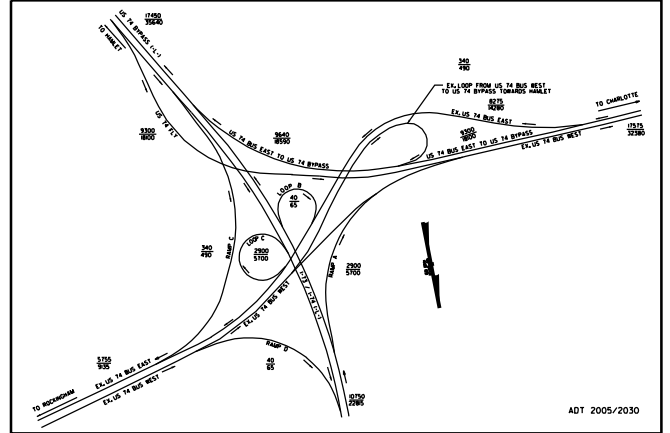


-12 A-		
PI STA 414.00	PI STA 417.00	PI STA 420.00
Δ = 3.00'	Δ = 3.00'	Δ = 3.00'
L = 240.00'	L = 240.00'	L = 240.00'
E = 157.14'	E = 157.14'	E = 157.14'
ST = 80.00'	ST = 80.00'	ST = 80.00'
R = 1200.00'	R = 1200.00'	R = 1200.00'
SE = 0.00'	SE = 0.00'	SE = 0.00'

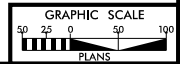
-12 B-		
PI STA 417.00	PI STA 420.00	PI STA 423.00
Δ = 3.00'	Δ = 3.00'	Δ = 3.00'
L = 240.00'	L = 240.00'	L = 240.00'
E = 157.14'	E = 157.14'	E = 157.14'
ST = 80.00'	ST = 80.00'	ST = 80.00'
R = 1200.00'	R = 1200.00'	R = 1200.00'
SE = 0.00'	SE = 0.00'	SE = 0.00'

-12 C-		
PI STA 420.00	PI STA 423.00	PI STA 426.00
Δ = 3.00'	Δ = 3.00'	Δ = 3.00'
L = 240.00'	L = 240.00'	L = 240.00'
E = 157.14'	E = 157.14'	E = 157.14'
ST = 80.00'	ST = 80.00'	ST = 80.00'
R = 1200.00'	R = 1200.00'	R = 1200.00'
SE = 0.00'	SE = 0.00'	SE = 0.00'

-12 D-		
PI STA 423.00	PI STA 426.00	PI STA 429.00
Δ = 3.00'	Δ = 3.00'	Δ = 3.00'
L = 240.00'	L = 240.00'	L = 240.00'
E = 157.14'	E = 157.14'	E = 157.14'
ST = 80.00'	ST = 80.00'	ST = 80.00'
R = 1200.00'	R = 1200.00'	R = 1200.00'
SE = 0.00'	SE = 0.00'	SE = 0.00'



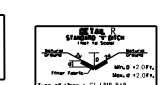
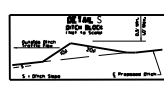
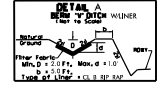
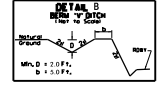
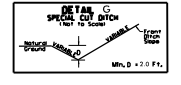
SEE SHEET NO. 21 FOR -12-3- PROFILE.
SEE SHEET NO. 31 FOR -RPA- PROFILE.
SEE SHEET NO. 34 FOR -RPC- PROFILE.
SEE SHEET NO. 36 FOR -EP- PROFILE.
SEE SHEET NOS. 37 AND 38 FOR -LPC- PROFILE.
SEE SHEET NO. 39 FOR -L2 RT--L2 REV- PROFILE.
SEE SHEET NO. 41 FOR -L2 CONN- PROFILE.



DATE:	COUNTY:
DESIGNED BY:	CHECKED BY:
DRAWN BY:	DATE:

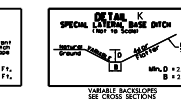
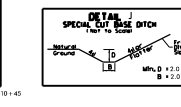
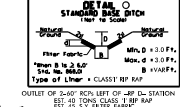
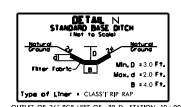
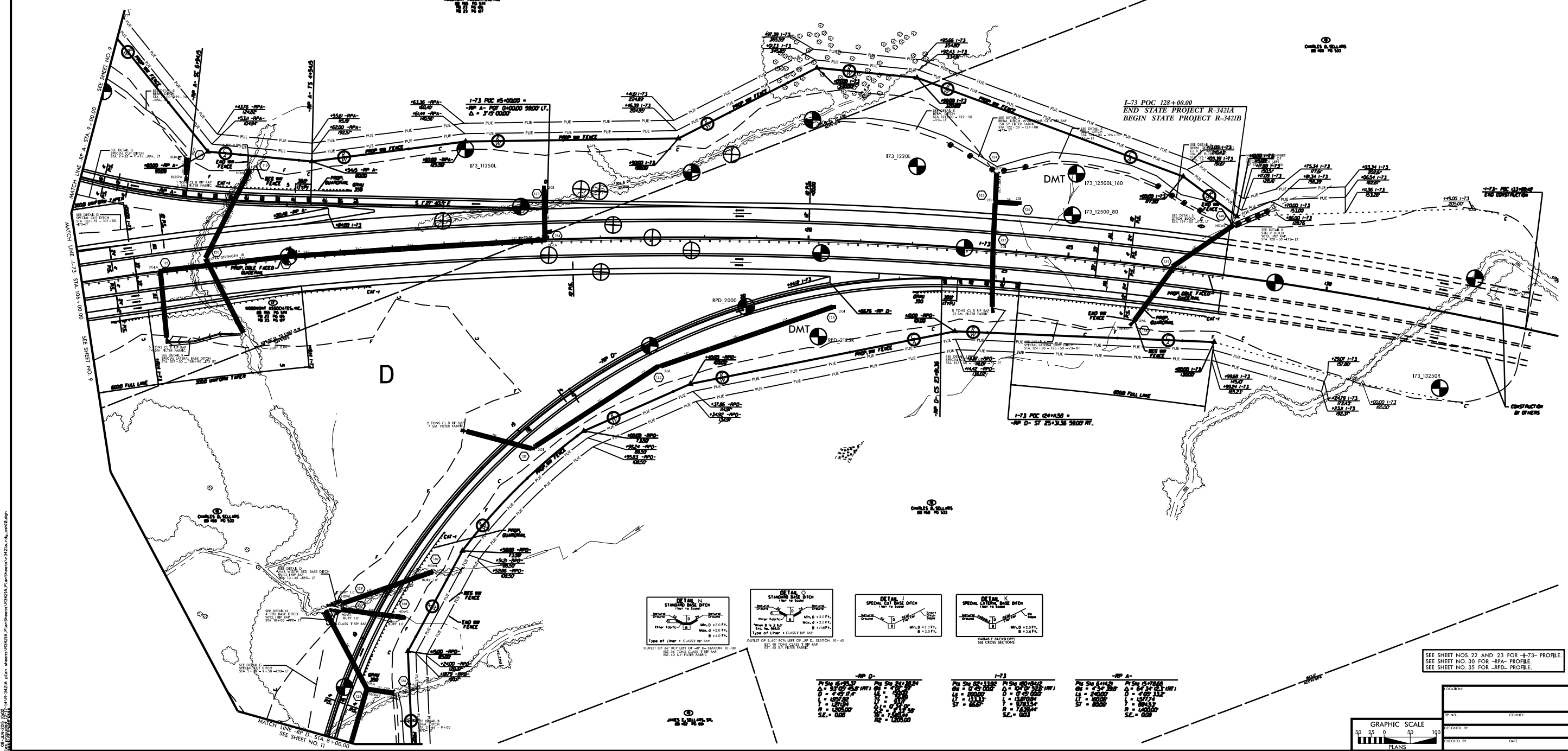
C:\Users\mch\Documents\PROJECTS\7-122A\122A_122B.dwg 12/20/08 10:28:28 AM

REVISIONS	
1	202008 - PARCELS #17 & 18 ADDED PUE, 15' & 35' OUTSIDE OF THE R/W



PROJECT REFERENCE NO.	R-3421A	SHEET NO.	11
ROADWAY DESIGN ENGINEER		PROJECT ENGINEER	
PRELIMINARY PLANS			
NO NOT USE FOR CONSTRUCTION			

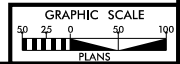
GREENHORN & O'MARA, INC.
200 COUNTY ROAD 101, SUITE 100
MILLSBORO, DE 19966-2000



-RP D-	
PI STA 1185.37	PI STA 1211.24
Δ = 27° 05' 48" HW	Δ = 4° 05' 00" HW
LI = 113.37	LI = 137.04
RI = 125.00	RI = 137.04
ST = 60.00	ST = 60.00
SE = 0.00	SE = 0.00

I-73	
PI STA 1211.24	PI STA 1211.24
Δ = 0° 00' 00" HW	Δ = 0° 00' 00" HW
LI = 113.37	LI = 137.04
RI = 125.00	RI = 137.04
ST = 60.00	ST = 60.00
SE = 0.00	SE = 0.00

-RP A-	
PI STA 1211.24	PI STA 1211.24
Δ = 2° 54' 30" HW	Δ = 54° 30' 00" HW
LI = 113.37	LI = 137.04
RI = 125.00	RI = 137.04
ST = 60.00	ST = 60.00
SE = 0.00	SE = 0.00

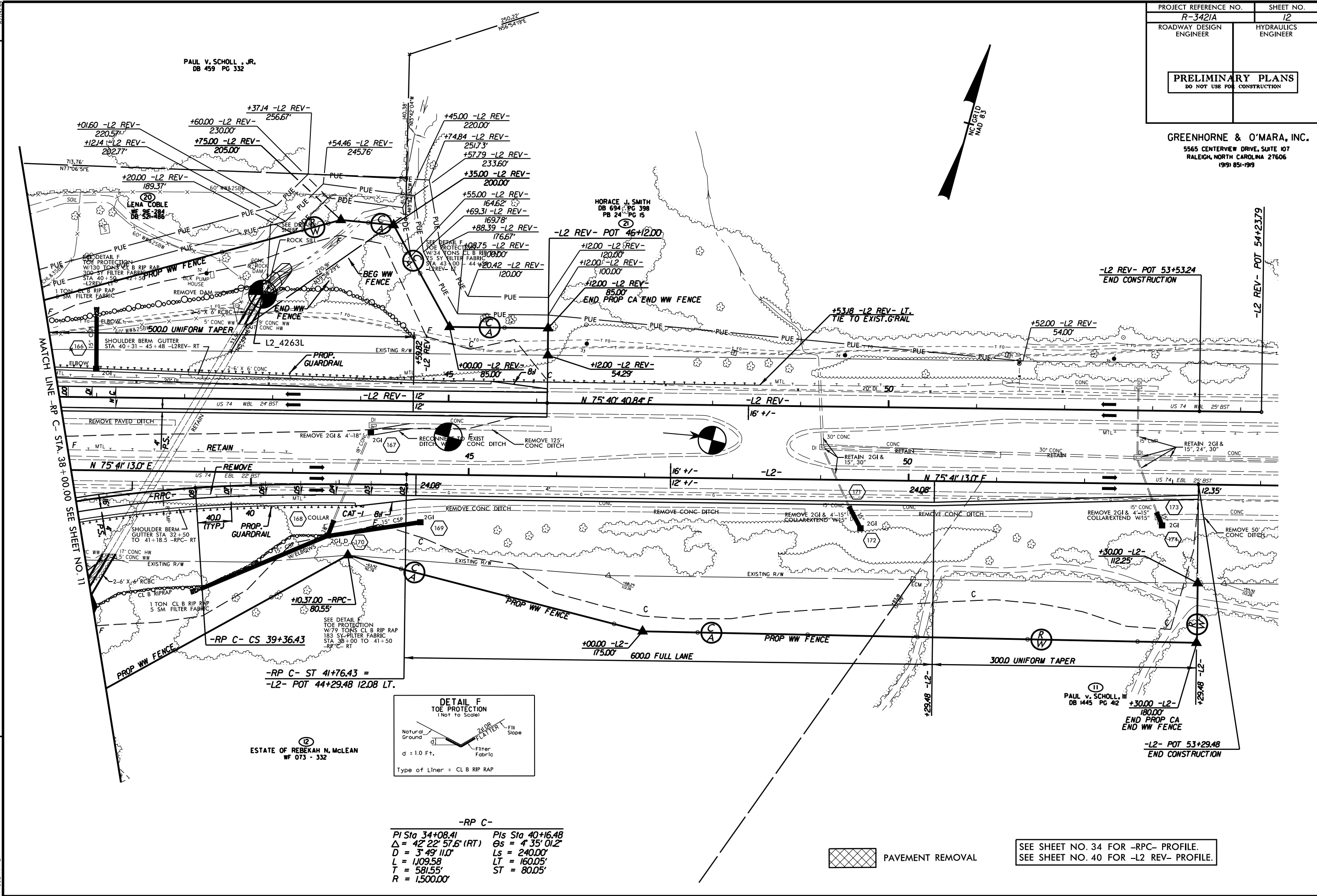


SEE SHEET NOS. 22 AND 23 FOR I-73-PROFILE.
SEE SHEET NO. 30 FOR RPA-PROFILE.
SEE SHEET NO. 35 FOR RPD-PROFILE.

DATE:	
DESIGNED BY:	
CHECKED BY:	
DATE:	

PROJECT NO. R-3421A, SHEET NO. 11, DATE: 08/11/2020, SCALE: AS SHOWN, DRAWN BY: JLM, CHECKED BY: JLM, APPROVED BY: JLM, PROJECT LOCATION: I-73, STA. 1185.37 TO 1211.24.

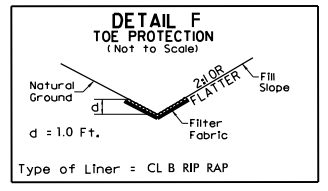
GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919



REVISIONS

02/09/11 - PARCEL #20 REVISED NAME, DB
PARCEL #20A REVISED TO #20

12/02/08 - PARCELS #18, #20 & #21 ADDED PUE, 15' & 35' OUTSIDE OF THE RW
4/15/09 - PARCEL #11 REVISED NAME, DB, PG, REMOVED DUPLICATE
4/15/09 - PARCEL #12 REVISED NAME, DB, PG, REMOVED DUPLICATE
08-11-2005 10:04
08-11-2005 10:04
08-11-2005 10:04



-RP C-

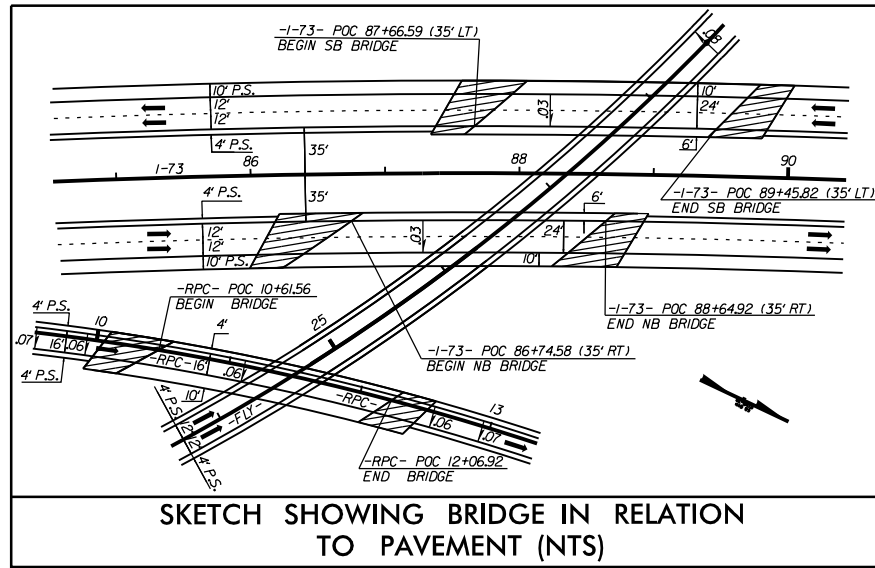
PI Sta 34+08.41	PIs Sta 40+16.48
Δ = 42° 22' 57.6" (RT)	Θs = 4° 35' 01.2"
D = 3' 49' 11.0"	Ls = 240.00'
L = 1,099.58	LT = 160.05'
T = 581.55'	ST = 80.05'
R = 1,500.00'	



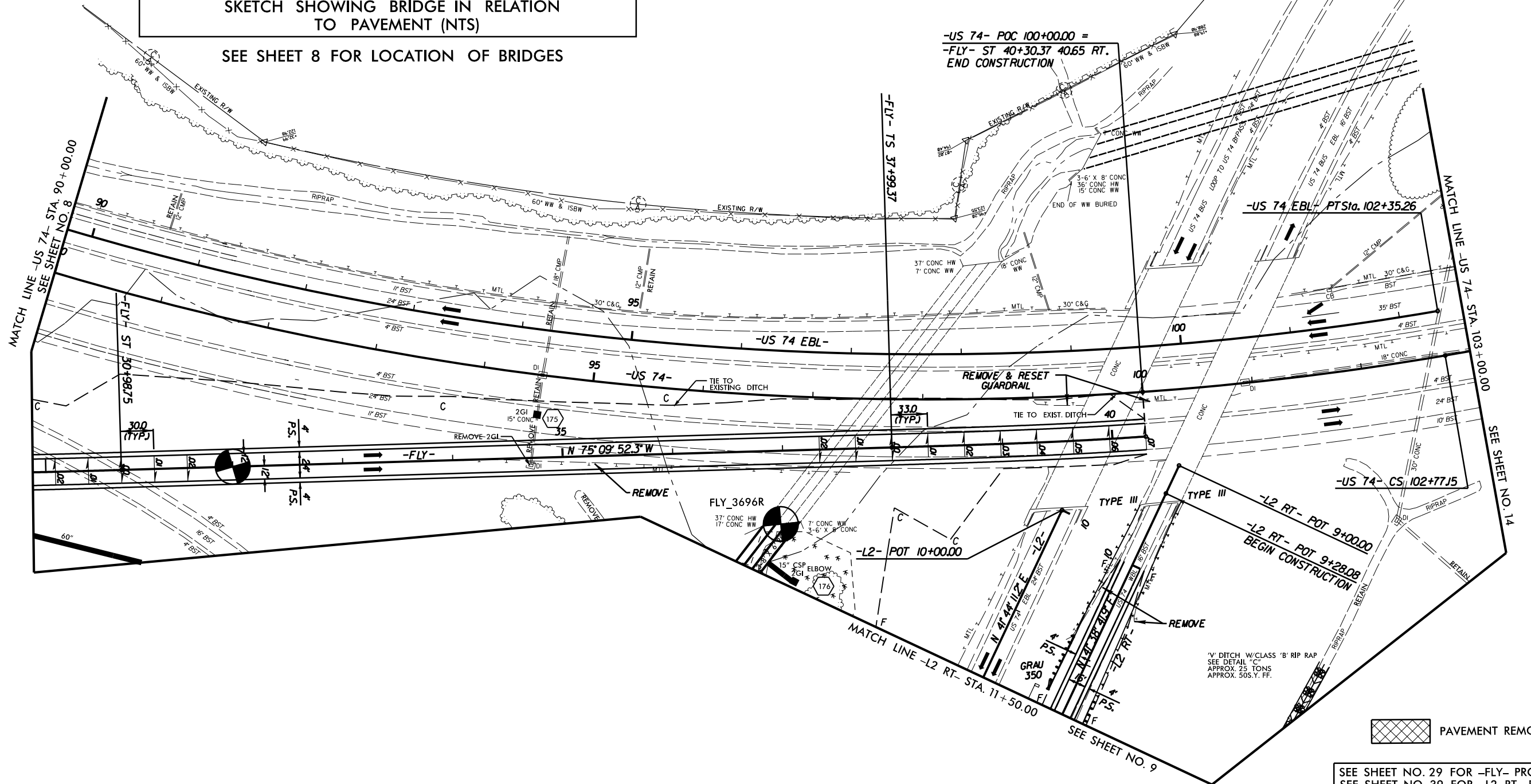
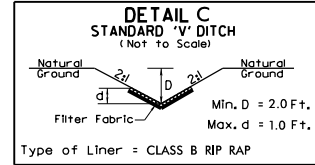
SEE SHEET NO. 34 FOR -RPC- PROFILE.
SEE SHEET NO. 40 FOR -L2 REV- PROFILE.

12/02/08 - PARCELS #18, #20 & #21 ADDED PUE, 15' & 35' OUTSIDE OF THE RW
 4/15/09 - PARCEL #11 REVISED NAME, DB, PG, REMOVED DUPLICATE
 4/15/09 - PARCEL #12 REVISED NAME, DB, PG, REMOVED DUPLICATE
 08-11-2005 10:04
 08-11-2005 10:04
 08-11-2005 10:04

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919



-FLY-	-FLY-	-FLY-	-FLY-
Pls Sta 12+52.55 Os = 4' 11' 32.5" Ls = 240.00' LT = 160.04' ST = 80.04'	Pls Sta 21+55.94 Δ = 53° 19' 18.0" (LT) D = 3' 29' 37.1" L = 1526.25' T = 823.43' R = 1640.00' S.E. = 0.08	Pls Sta 29+38.80 Os = 4' 11' 32.5" Ls = 240.00' LT = 160.04' ST = 80.04'	Pls Sta 39+53.39 Os = 2' 20' 16.3" Ls = 231.00' LT = 154.01' ST = 77.01'
-US 74 EBL-	-US 74-	-US 74-	-US 74-
Pls Sta 95+61.05 Δ = 28° 43' 16.5" (LT) D = 2' 05' 03.3" L = 1378.02' T = 703.81' R = 2749.00' S.E. = 0.08	Pls Sta 91+42.64 Δ = 50° 02' 26.6" (LT) D = 2' 03' 13.0" L = 2436.72' T = 1302.21' R = 2790.00'	Pls Sta 104+35.15 Os = 5' 24' 04.2" Ls = 360.00' ST = 158.00' LT = 202.26' D1 = 1' 42' 16.3" D2 = 3' 41' 47.9" R1 = 6050.00' R2 = 2790.00'	



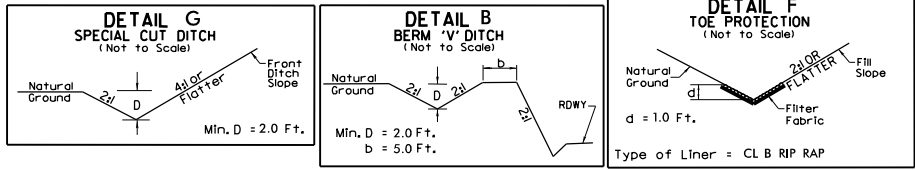
SEE SHEET NO. 29 FOR -FLY- PROFILE.
SEE SHEET NO. 39 FOR -L2 RT- PROFILE.

REVISIONS

09-24-2005 10:05 AM 1-1418-3421A plan sheets\3421A_PlanSheets\3421a.dwg, psh13.dgn

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

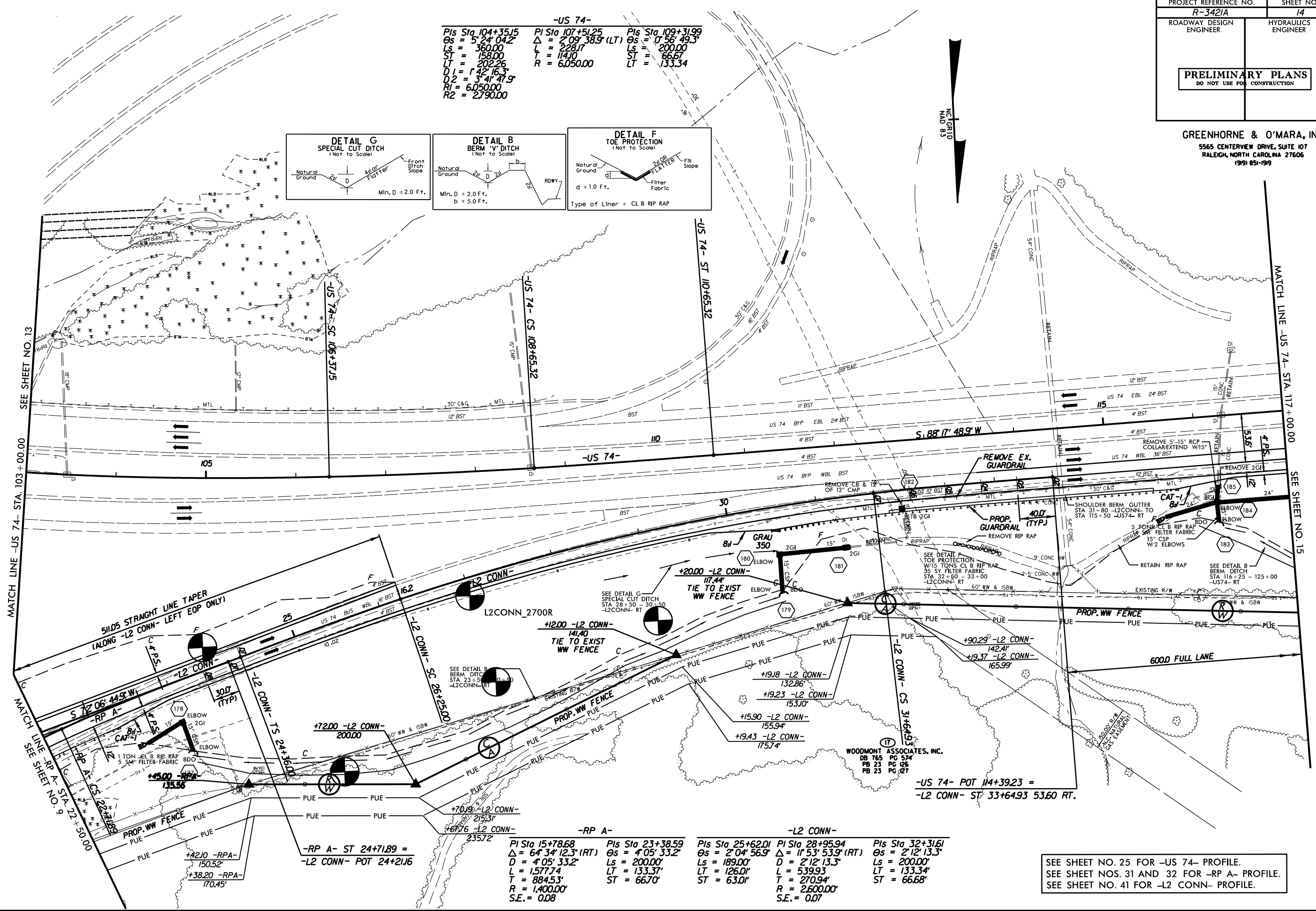
-US 74-
 PIs Sta 104+35.15 PIs Sta 107+51.25 PIs Sta 109+31.99
 $\Theta_s = 5^\circ 24' 04.2"$ $\Delta = 2^\circ 09' 38.9" (LT)$ $\Theta_s = 0^\circ 56' 49.3"$
 Ls = 360.00 L = 228.17 Ls = 200.00
 ST = 158.00 T = 114.0 ST = 66.67
 LT = 202.26 R = 6050.00 LT = 133.34
 D1 = 1' 42' 16.3"
 D2 = 3' 41' 47.9"
 R1 = 6050.00
 R2 = 2790.00



REVISIONS

12/02/08 - PARCEL #17 ADDED PUE, 15' & 35' OUTSIDE OF THE RW

08 - JUN - 2008 10:05 AM
 C:\Users\jforbes\Desktop\14-R-3421A_Plan\Sheets\14-R-3421A_Plan_Sheets_V3421a.dwg - djl_pah14.dgn



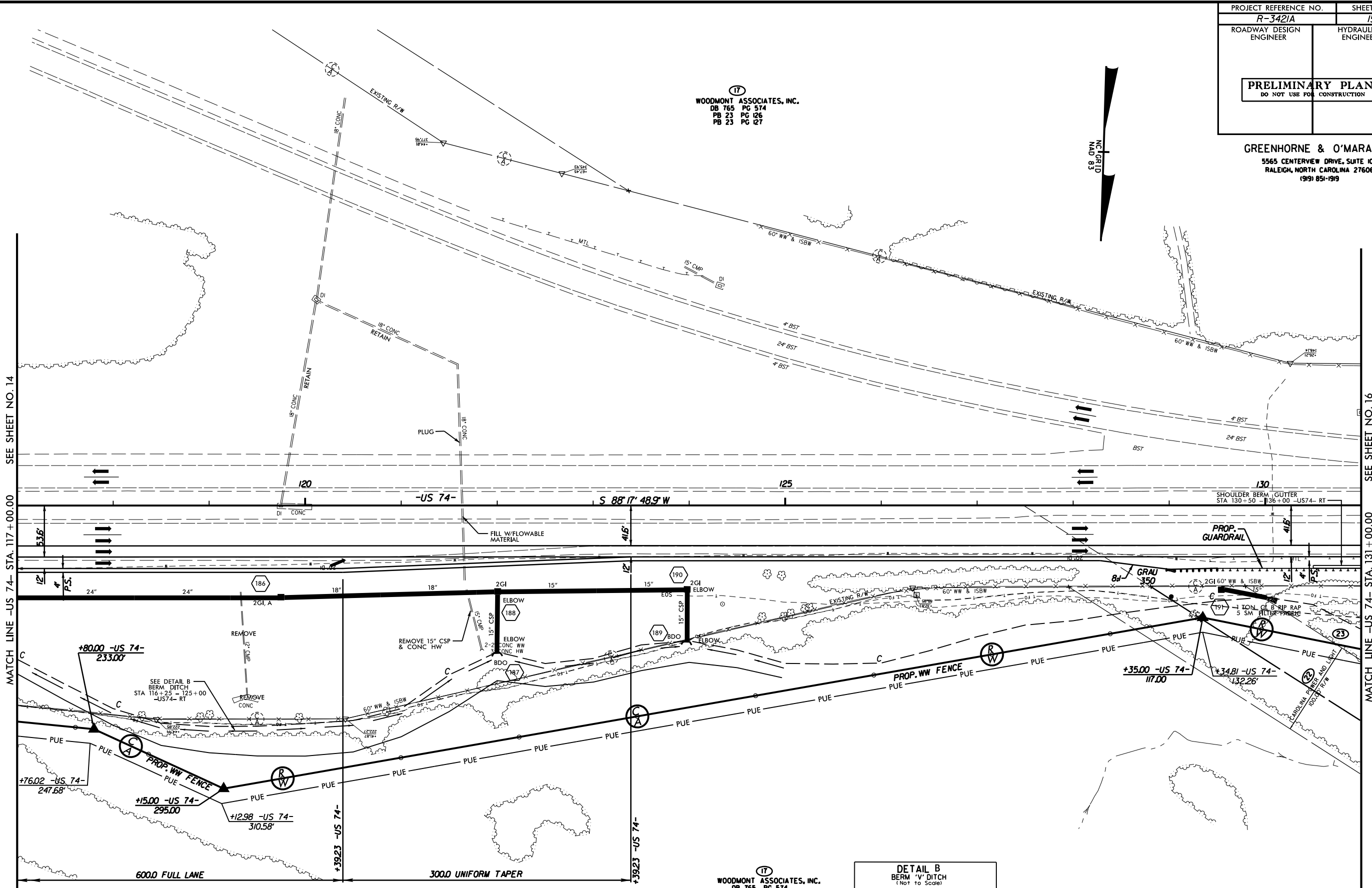
<p>-RP A- PIs Sta 15+78.68 $\Delta = 64^\circ 34' 12.3" (RT)$ D = 4' 05' 33.2" L = 1,577.74 T = 884.53' R = 1,400.00' S.E. = 0.08</p>	<p>-L2 CONN- PIs Sta 23+38.59 $\Theta_s = 4^\circ 05' 33.2"$ Ls = 200.00' LT = 133.37' ST = 66.70'</p>	<p>-L2 CONN- PIs Sta 25+62.01 $\Theta_s = 2^\circ 04' 56.9"$ Ls = 189.00' LT = 126.01' ST = 63.01'</p>	<p>-L2 CONN- PIs Sta 28+95.94 $\Delta = 11^\circ 53' 53.9" (RT)$ D = 2' 12' 13.3" L = 539.93' T = 270.94' R = 2,600.00' S.E. = 0.07</p>	<p>-L2 CONN- PIs Sta 32+31.61 $\Theta_s = 2^\circ 12' 13.3"$ Ls = 200.00' LT = 133.34' ST = 66.68'</p>
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SEE SHEET NO. 25 FOR -US 74- PROFILE.
 SEE SHEET NOS. 31 AND 32 FOR -RP A- PROFILE.
 SEE SHEET NO. 41 FOR -L2 CONN- PROFILE.

PROJECT REFERENCE NO. R-3421A	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127

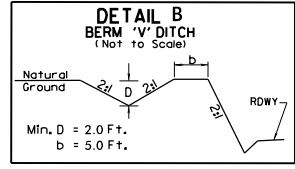


REVISIONS

12/02/08 - PARCEL #17 ADDED PUE, 15' & 35' OUTSIDE OF THE RW

08 JUN 2008 10:07
woodway\F105\PROJECTS\3421A\plan_sheets\3421A_Plan_Sheets_V3421a.dwg_pah15.dgn

WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127



SEE SHEET NO. 25 FOR -US 74- PROFILE.

SEE SHEET NO. 14

MATCH LINE -US 74- STA. 117+00.00

SEE SHEET NO. 14

SEE SHEET NO. 16

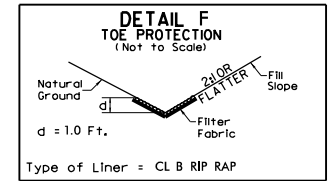
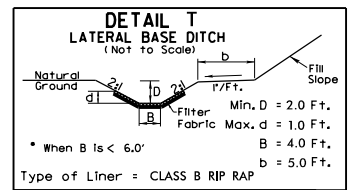
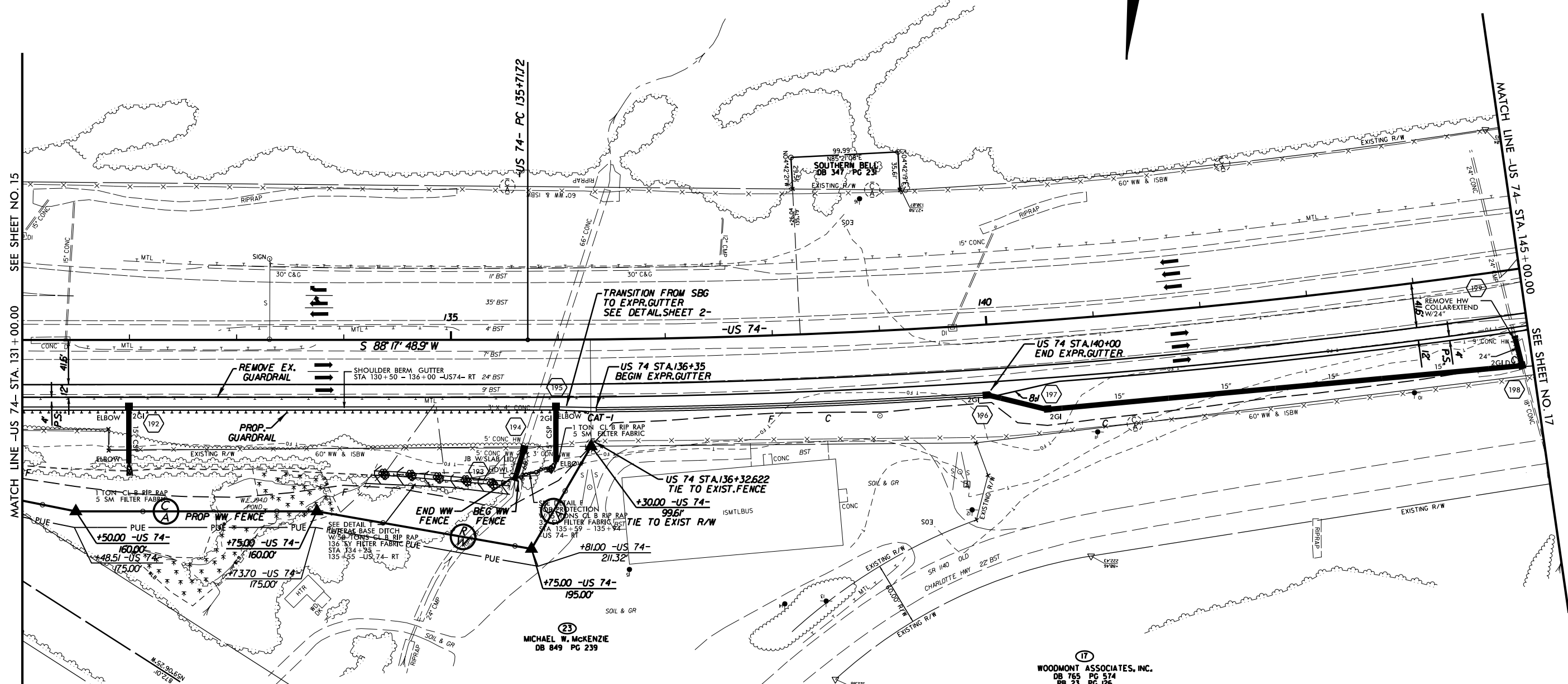
MATCH LINE -US 74- STA. 131+00.00

PROJECT REFERENCE NO. R-3421A	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919

-US 74-
PI Sta 140+67.57
 $\Delta = 8' 43' 29''$ (LT)
 $D = 0' 52' 53.3''$
 $L = 989.786$
 $T = 495.85$
 $R = 6,500.00$

17
WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127



17
WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127

17
WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127

23
MICHAEL W. MCKENZIE
DB 849 PG 239

SEE SHEET NO. 26 FOR -US 74- PROFILE.

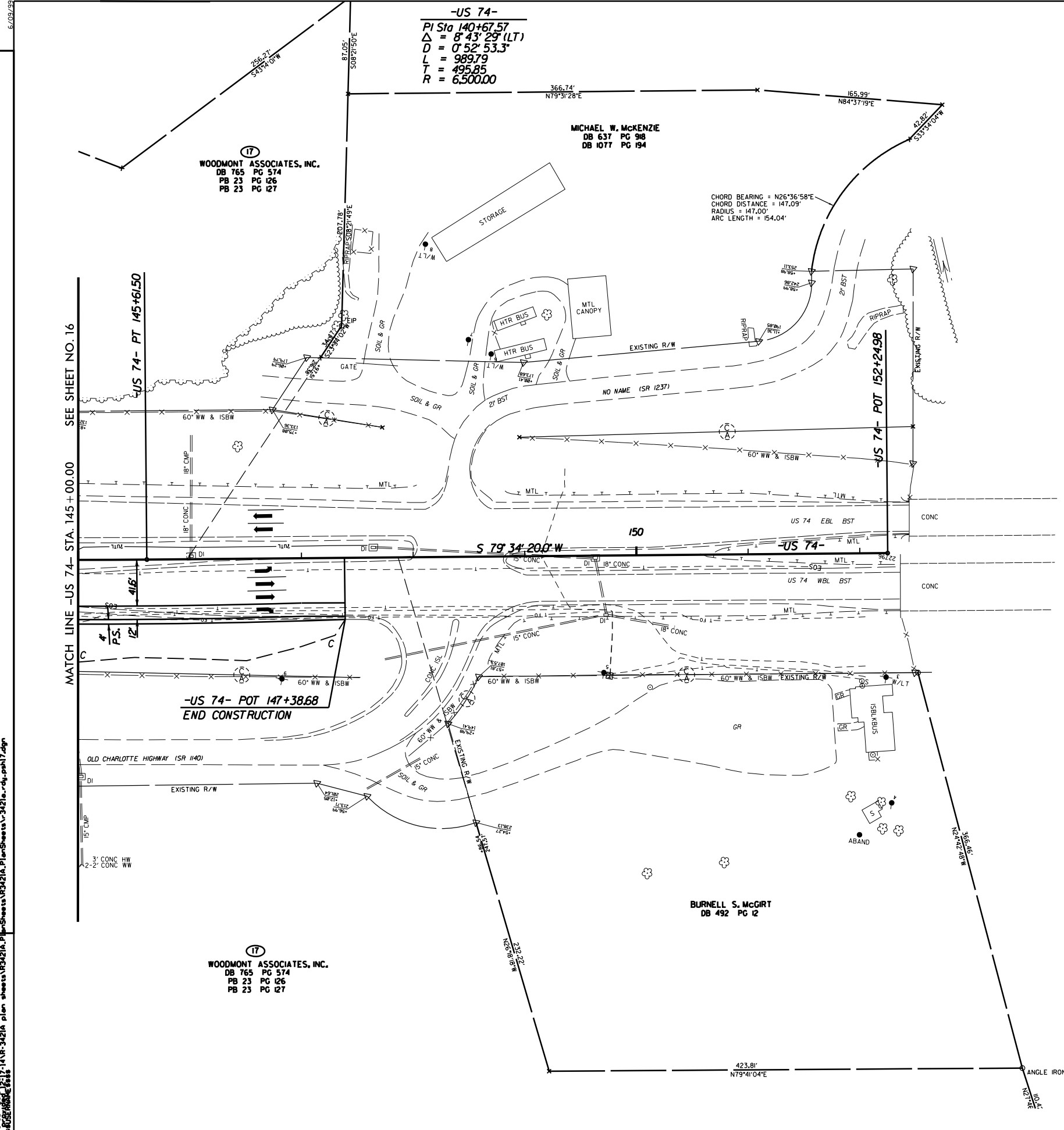
REVISIONS

12/02/08 - PARCEL #23 ADDED PUE, 15' & 35' OUTSIDE OF THE R/W
12/08/10 - PARCEL #23 REVISED PUE
08 JUN 2015 10:17 1-141R-3421A plan sheets\FR3421A.PlanSheet\080615\FR3421A-141R-3421A.dwg

6/09/09

PROJECT REFERENCE NO. R-3421A	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

GREENHORNE & O'MARA, INC.
5565 CENTERVIEW DRIVE, SUITE 107
RALEIGH, NORTH CAROLINA 27606
(919) 851-1919



MATCH LINE -US 74- STA. 145+00.00 SEE SHEET NO. 16

US 74- PT 145+61.50

US 74- POT 152+24.98

-US 74- POT 147+38.68
END CONSTRUCTION

-US 74-
PI Sta 140+67.57
 $\Delta = 8^\circ 43' 29\"$ (LT)
 $D = 0^\circ 52' 53.3\"$
 $L = 989.79$
 $T = 495.85$
 $R = 6,500.00$

WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127

MICHAEL W. MCKENZIE
DB 637 PG 98
DB 1077 PG 194

BURNELL S. MCGIRT
DB 492 PG 12

WOODMONT ASSOCIATES, INC.
DB 765 PG 574
PB 23 PG 126
PB 23 PG 127

SEE SHEET NO. 26 FOR -US 74- PROFILE.

REVISIONS

OR: 04/20/2011 11:41 AM: R3421A plan sheets R3421A Plan Sheets V3421a.dwg, psh17.dgn