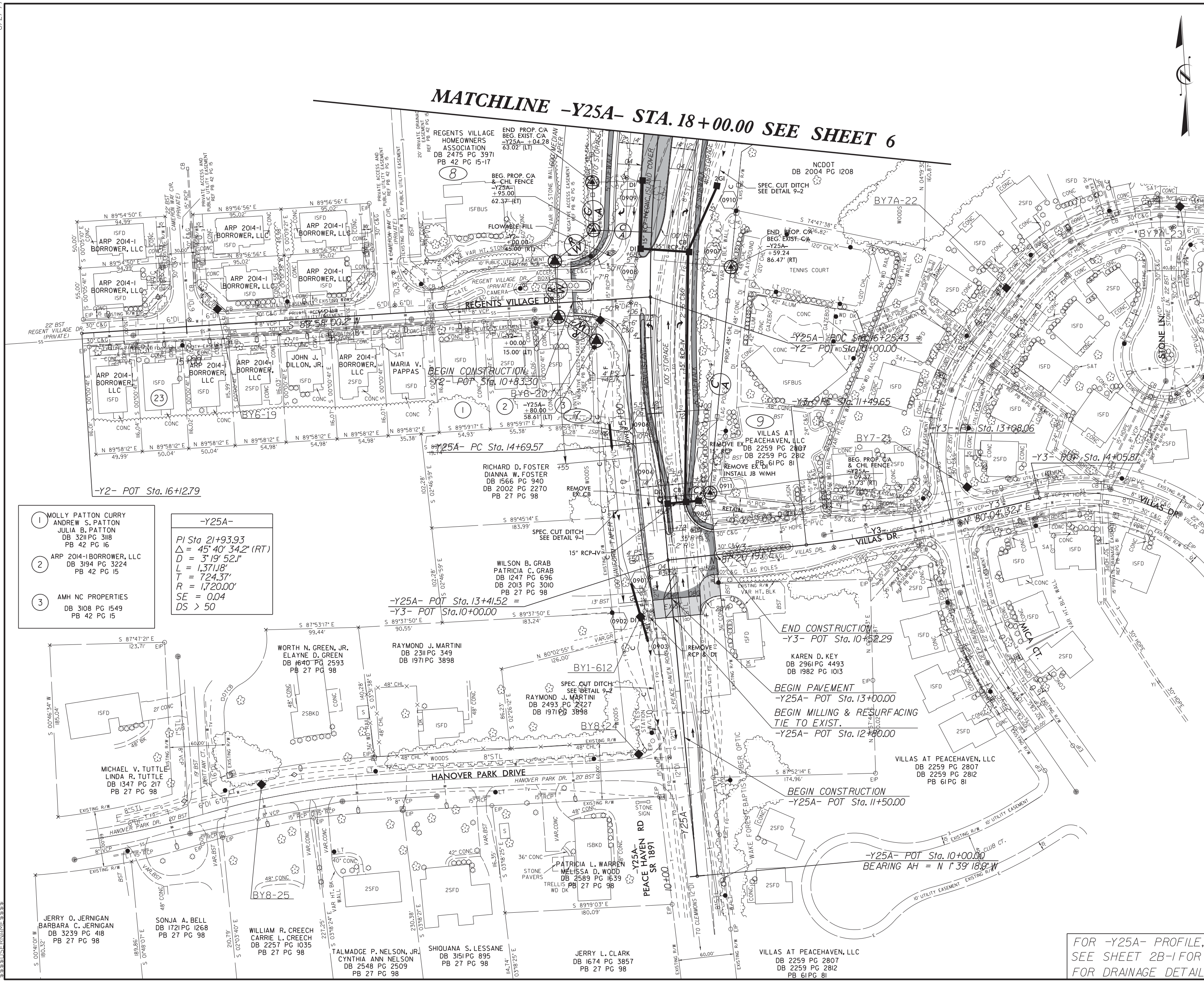
PROJECT REFERENCE NO.	SHEET NO.
R-2247CD	9

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

KCI — Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890



(1) MOLLY PATTON CURRY, ANDREW S. PATTON, JULIA B. PATTON, DB 3211 PG 3118, PB 42 PG 16
(2) ARP 2014-1 BORROWER, LLC, DB 3194 PG 3224, PB 42 PG 15
(3) AMH NC PROPERTIES, DB 3108 PG 1549, PB 42 PG 15

-Y25A-
PI Sta 21+93.93
Δ = 45° 40' 34.2" (RT)
D = 3° 19' 52.1"
L = 1,371.18'
T = 724.37'
R = 1,720.00'
SE = 0.04
DS > 50

-Y3-
PI Sta 12+28.98
Δ = 7° 15' 46.9" (LT)
D = 4° 35' 05.6"
L = 158.41'
T = 79.33'
R = 1,250.00'
SE = EXIST
DS = EXIST

FOR -Y25A- PROFILE, SEE SHEET 15
SEE SHEET 2B-1 FOR -Y25A- MEDIAN ISLAND DETAIL
FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 TO 2D-3

PROJECT REFERENCE NO.	SHEET NO.
R-2247CD	10

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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KCI
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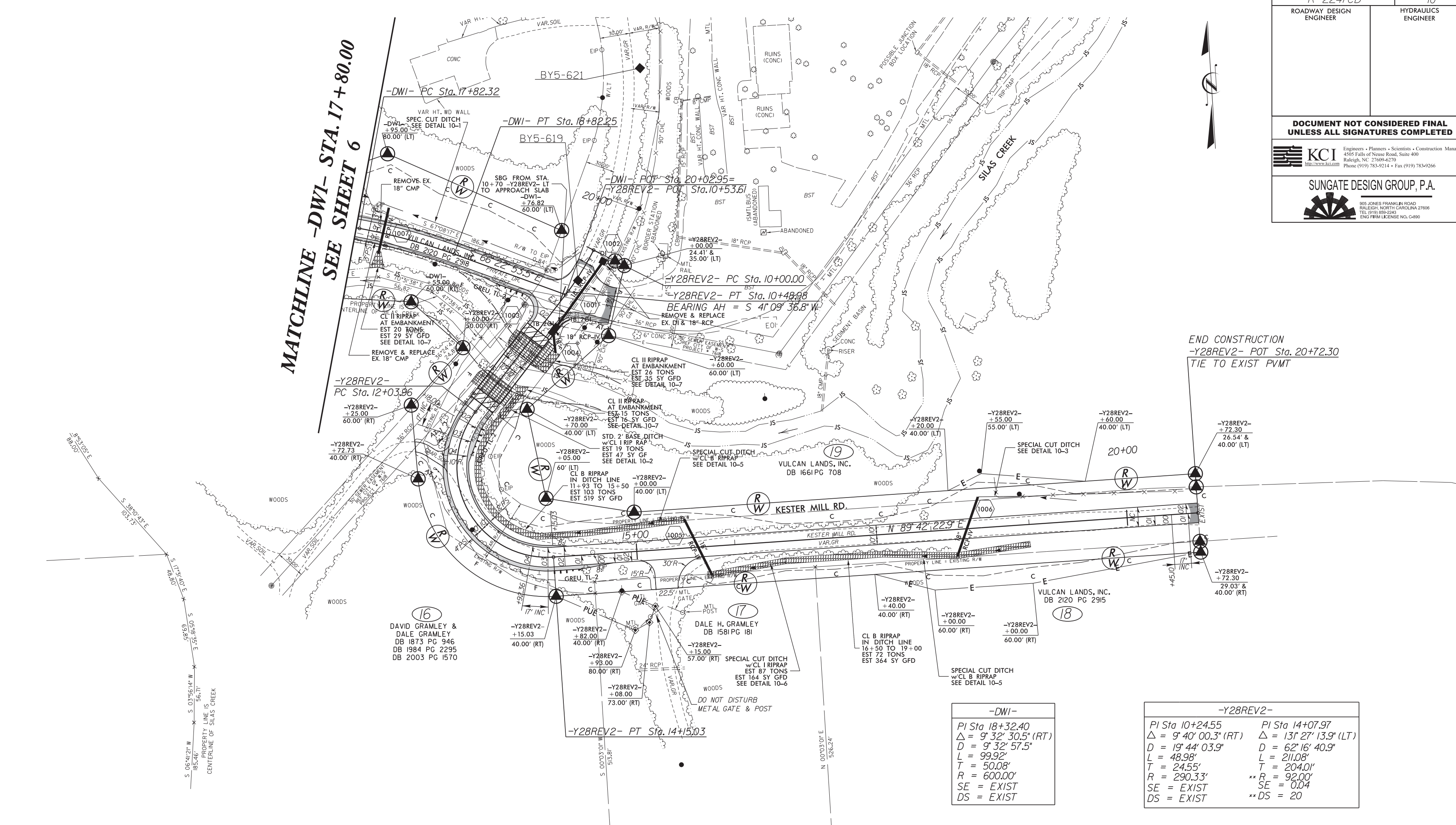
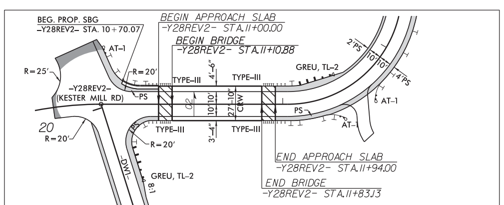


-DW1-
PI Sta 18+32.40
Δ = 9° 32' 30.5" (RT)
D = 9° 32' 57.5"
L = 99.92'
T = 50.08'
R = 600.00'
SE = EXIST
DS = EXIST

-Y28REV2-	
PI Sta 10+24.55	PI Sta 14+07.97
Δ = 9° 40' 00.3" (RT)	Δ = 131° 27' 13.9" (LT)
D = 19° 44' 03.9"	D = 62° 16' 40.9"
L = 48.98'	L = 211.08'
T = 24.55'	T = 204.01'
R = 290.33'	** R = 92.00'
SE = EXIST	SE = 0.04
DS = EXIST	** DS = 20



RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT (1" = 50')

NOTE:
** DESIGN EXCEPTION FOR MIN. HORIZONTAL RADIUS AND ASSOCIATED HORIZONTAL STOPPING SIGHT DISTANCE.

FOR -DW1- PROFILE, SEE SHEET 19
FOR -Y28REV2- PROFILE, SEE SHEET 19
FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 TO 2D-3
SEE STRUCTURE PLANS

(Version 2.07; Released October 2016)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

WBS Element:	34409.3.23	TIP No.:	R-2247EC	County(ies):	Forsyth	Page 1	of 1

General Project Information

WBS Element:	34409.3.23	TIP Number:	R-2247EC	Project Type:	Roadway Widening	Date:	8/28/2017
NCDOT Contact:	Craig Lee, PE			Contractor / Designer:	Brad T. Smith, EI		
Address:	NCDOT Design Build Unit 1595 Mail Service Center Raleigh, NC 27699-1595			Address:	Sungate Design Group, PA 905 Jones Franklin Road Raleigh, NC 27606		
Phone:	(919) 707-6708			Phone:	(919) 859-2243		
Email:	cjlee@ncdot.gov			Email:	bsmith@sungatedesign.com		
City/Town:	Winston-Salem			County(ies):	Forsyth		
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	1.042 miles	Surrounding Land Use:	Medium density residential, business, and industrial				
	Proposed Project			Existing Site			
Project Built-Upon Area (ac.)	21.8	ac.		14.1	ac.		
Typical Cross Section Description:	Y62 (NC 65): One 14' travel lane and one 12' travel lane in each direction with 2'-6" curb and gutter drainage, sidewalk, and a concrete island.			Y62 (NC 65): Two 12' travel lanes with grass shoulders and grass roadway ditches, both sides.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	79,300	Year: 2035	Existing:	61,700	Year:	2015
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The R-2247EC project involves US 52 and Bethania-Rural Hall Road Interchange improvements for the future Winston-Salem Northern Beltway along with other improvements to adjacent roadways, including realignments. Due to the steep geophraphy of the site, achieving treatment through the use of grass swales is not practicable. Riprap dissipation has been incorporated at drainage pipe outlets and outfalls, where applicable. Proposed cross pipes in jurisdictional streams will not be buried in order to prevent channel degradation as agreed upon during the merger process due to the steep grade of existing streams. Stormwater basins are not used due to the regrading and ramp reconfiguration that will occur on site with the future section EB that will follow this project.						

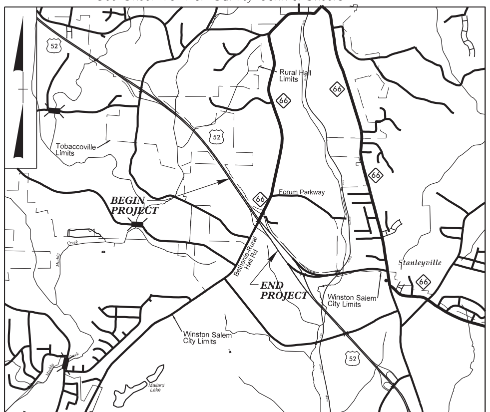
Waterbody Information

Surface Water Body (1):	Grassy Creek and unnamed tributaries		NCDWR Stream Index No.:	12-94-7-3		
NCDWR Surface Water Classification for Water Body		Primary Classification:	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	N/A			Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

TIP PROJECT: R-2247EC

CONTRACT: C203840

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C For Survey Control Sheets



VICINITY MAP

RIGHT OF WAY PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2247EC	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34409.3.23	NHP-0421(088)	P.E.
34409.3.23	NHP-0421(088)	R/W & UTIL.
34409.3.23	NHP-0421(088)	CONST.

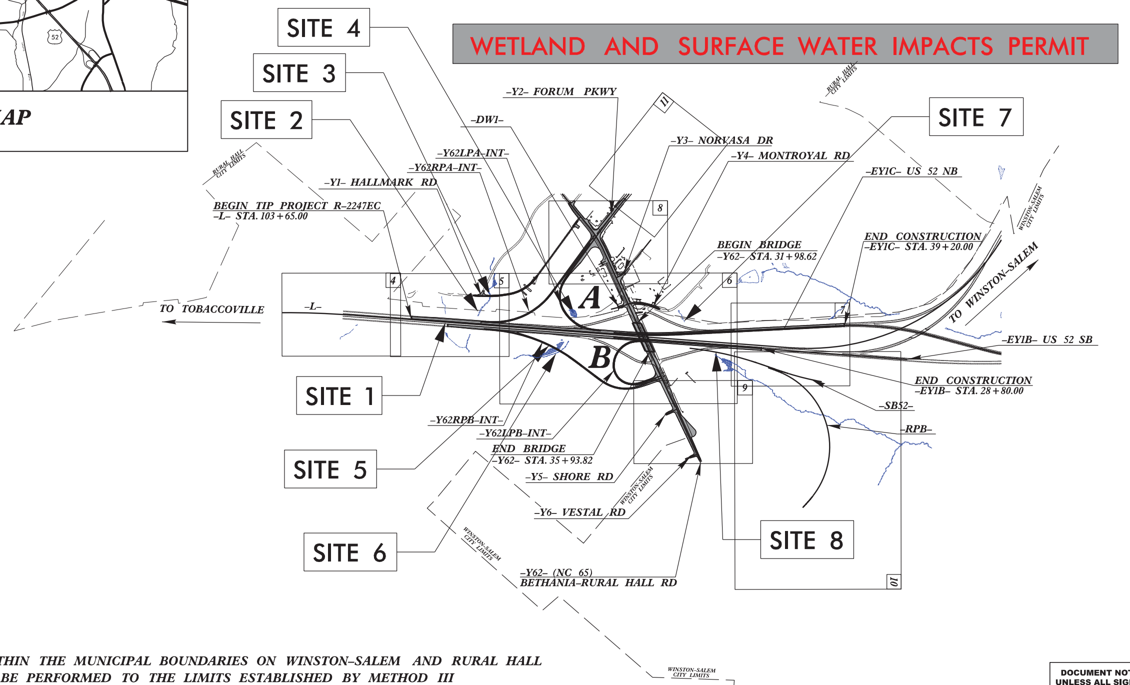
RIGHT OF WAY PLANS
SUBMITTAL NO.: S-033 DATE: 09/14/17

PERMIT DRAWING
SHEET 1 OF 21

LOCATION: WINSTON-SALEM NORTHERN BELTWAY - MODIFICATION OF THE US 52 (FUTURE I-74) /NC 65 (BETHANIA HALL ROAD) INTERCHANGE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL, CABLE GUIDERAIL, STRUCTURES, SIGNING, SIGNALS AND NOISE WALLS

WETLAND AND SURFACE WATER IMPACTS PERMIT



- A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES ON WINSTON-SALEM AND RURAL HALL
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
- THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

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 2015 = 61,700
ADT 2035 = 79,300
DHV = 10 %
D = 60 %
T = 21 % *
V = 70 MPH
* TTST = 14 DUAL 7
FUNC CLASS = FREEWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2247EC = 1.042 MI.

TOTAL LENGTH TIP PROJECT R-2247EC = 1.042 MI.

Prepared In the Office of:
KCI Associates of N.C., P.A.
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
Fax (919) 783-9266
http://www.kci.com

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 15, 2016

LETTING DATE:
NOVEMBER 15, 2016

Plans Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

CHARLES L. FLOWE, P.E.
PROJECT ENGINEER

BRYAN E. HOUGH, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: K. ZAK HAMIDI, P.E.
PROJECT ENGINEER - DESIGN BUILD UNIT

HYDRAULICS ENGINEER

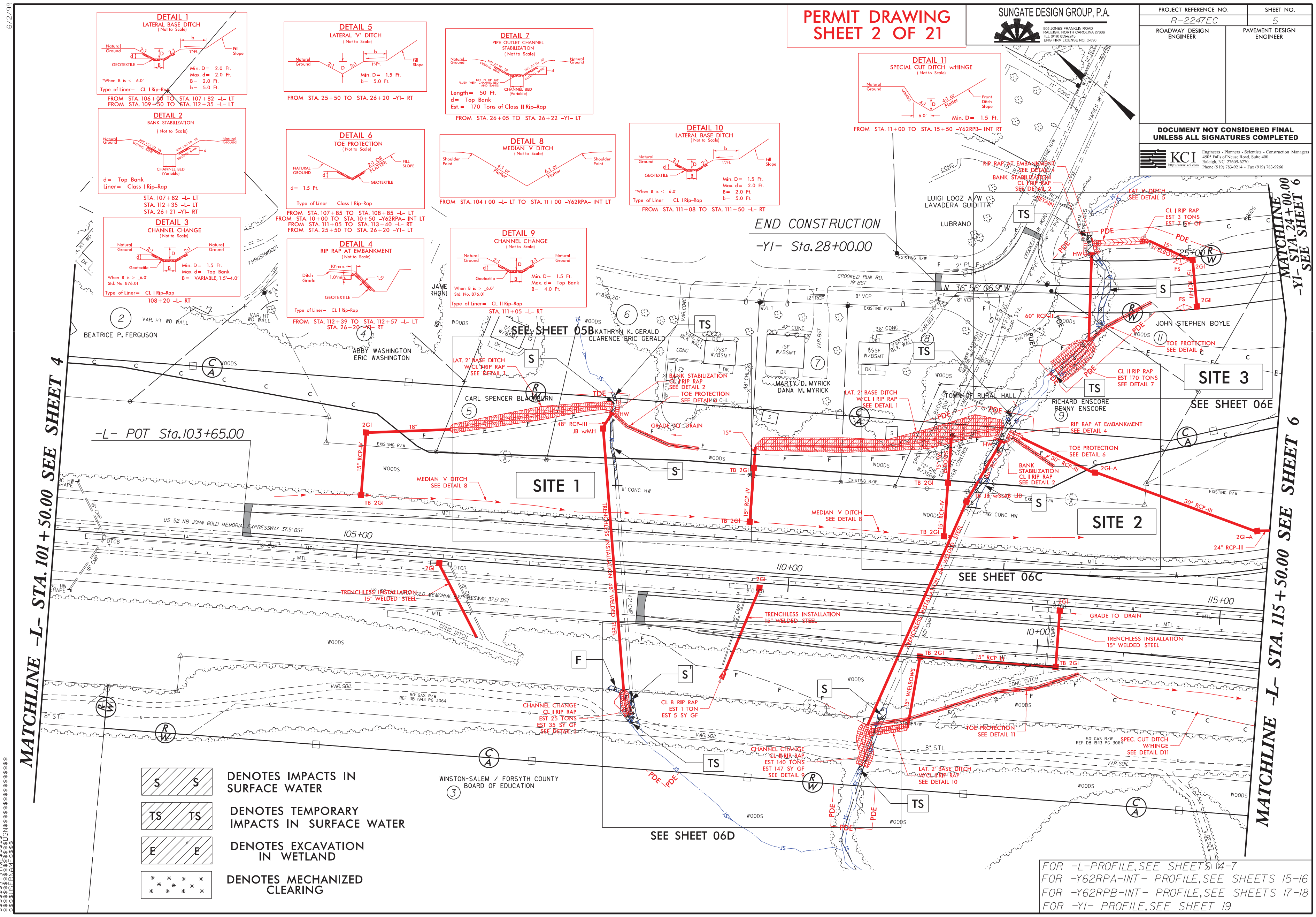
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

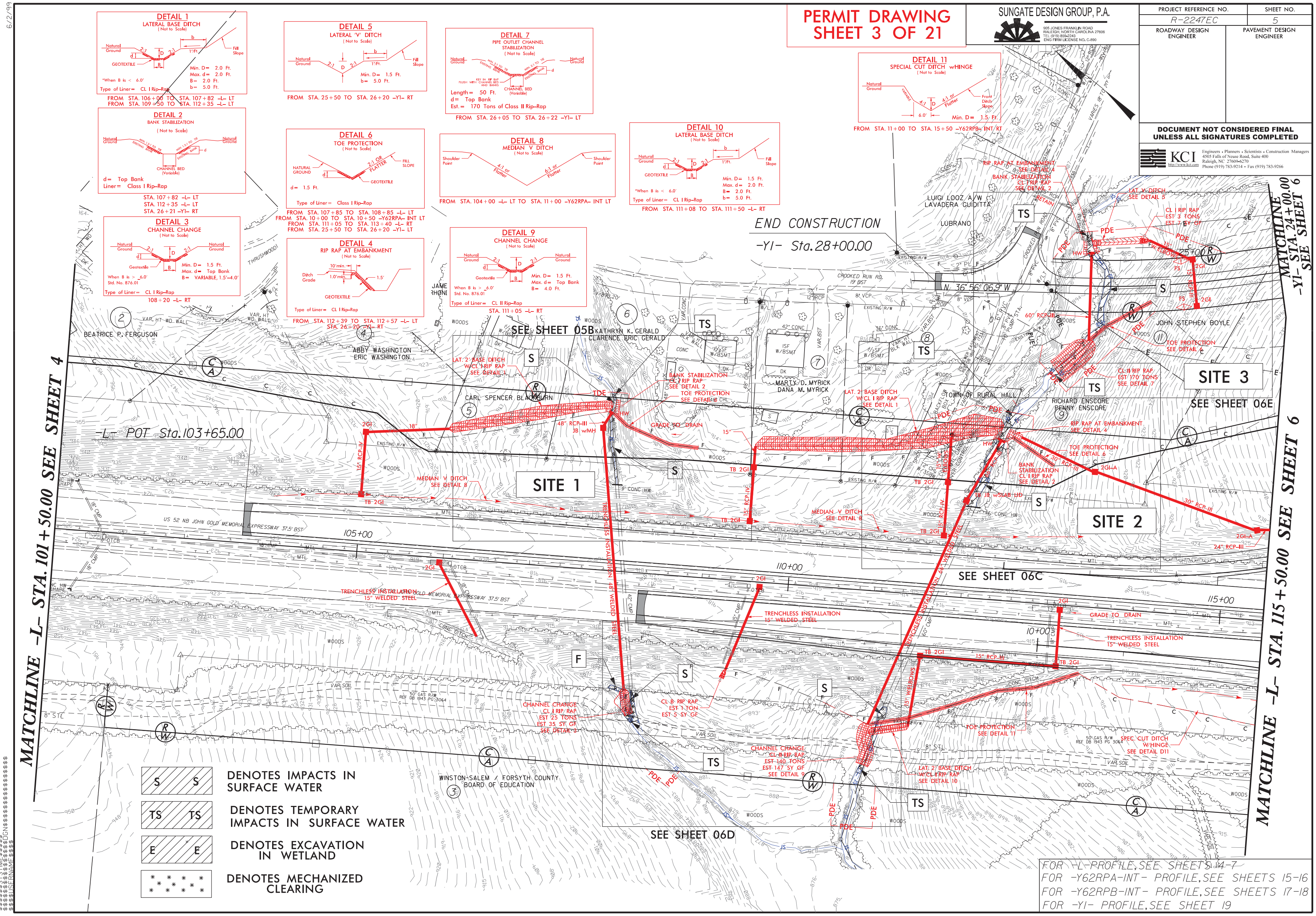
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99
$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$



PERMIT DRAWING
SHEET 2 OF 21
SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
DETAIL 1
LATERAL BASE DITCH
FROM STA. 106+00 TO STA. 107+82 -L- LT
FROM STA. 109+50 TO STA. 112+35 -L- LT
DETAIL 2
BANK STABILIZATION
STA. 107+82 -L- LT
STA. 112+35 -L- LT
STA. 26+21 -Y1- RT
DETAIL 3
CHANNEL CHANGE
108+20 -L- RT
DETAIL 4
RIP RAP AT EMBANKMENT
FROM STA. 112+39 TO STA. 112+57 -L- LT
STA. 26+20 -Y1- RT
DETAIL 5
LATERAL 'V' DITCH
FROM STA. 25+50 TO STA. 26+20 -Y1- RT
DETAIL 6
TOE PROTECTION
FROM STA. 107+85 TO STA. 108+85 -L- LT
FROM STA. 10+00 TO STA. 10+50 -Y62RPA- INT LT
FROM STA. 111+05 TO STA. 113+40 -L- RT
FROM STA. 25+50 TO STA. 26+20 -Y1- LT
DETAIL 7
PIPE OUTLET CHANNEL STABILIZATION
Length = 50 Ft.
d = Top Bank
Est. = 170 Tons of Class II Rip-Rap
FROM STA. 26+05 TO STA. 26+22 -Y1- LT
DETAIL 8
MEDIAN V DITCH
FROM STA. 104+00 -L- LT TO STA. 11+00 -Y62RPA- INT LT
DETAIL 9
CHANNEL CHANGE
STA. 111+05 -L- RT
DETAIL 10
LATERAL BASE DITCH
FROM STA. 111+08 TO STA. 111+50 -L- RT
DETAIL 11
SPECIAL CUT DITCH w/HINGE
FROM STA. 11+00 TO STA. 15+50 -Y62RPB- INT RT
END CONSTRUCTION
-Y1- Sta.28+00.00
-L- POT Sta.103+65.00
SITE 1
SITE 2
SITE 3
SEE SHEET 05B
SEE SHEET 06C
SEE SHEET 06D
SEE SHEET 06E
MATCHLINE -L- STA.101+50.00 SEE SHEET 4
MATCHLINE -L- STA.115+50.00 SEE SHEET 6
MATCHLINE -Y1- STA.24+00.00 SEE SHEET 6
US 52 NB JOHN GOLD MEMORIAL EXPRESSWAY
105+00
110+00
115+00
BEATRICE P. FERGUSON
ABBY WASHINGTON
ERIC WASHINGTON
CARL SPENCER BLACKBURN
KATHRYN K. GERALD
CLARENCE ERIC GERALD
MARTY D. MYRICK
DANA M. MYRICK
LUIGI LOOZ A/W
LAVADERA GUIDITTA
LUBRANO
JOHN STEPHEN BOYLE
RICHARD ENSCORE
PENNY ENSCORE
TOWN OF RURAL HALL
WINSTON-SALEM / FORSYTH COUNTY BOARD OF EDUCATION
TRENCHLESS INSTALLATION 15" WELDED STEEL
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
FOR -L- PROFILE, SEE SHEETS 14-7
FOR -Y62RPA-INT- PROFILE, SEE SHEETS 15-16
FOR -Y62RPB-INT- PROFILE, SEE SHEETS 17-18
FOR -Y1- PROFILE, SEE SHEET 19



PERMIT DRAWING
SHEET 3 OF 21
SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
DETAIL 1
LATERAL BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 106+00 TO STA. 107+82 -L- LT
FROM STA. 109+50 TO STA. 112+35 -L- LT
DETAIL 2
BANK STABILIZATION
(Not to Scale)
d= Top Bank
Liner= Class I Rip-Rap
STA. 107+82 -L- LT
STA. 112+35 -L- LT
STA. 26+21 -Y1- RT
DETAIL 3
CHANNEL CHANGE
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= Top Bank
B= VARIABLE, 1.5'-4.0'
Type of Liner= CL I Rip-Rap
108+20 -L- RT
DETAIL 4
RIP RAP AT EMBANKMENT
(Not to Scale)
FROM STA. 112+39 TO STA. 112+57 -L- LT
STA. 26+20 -Y1- RT
DETAIL 5
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
b= 5.0 Ft.
FROM STA. 25+50 TO STA. 26+20 -Y1- RT
DETAIL 6
TOE PROTECTION
(Not to Scale)
d= 1.5 Ft.
Type of Liner= Class I Rip-Rap
FROM STA. 107+85 TO STA. 108+85 -L- LT
FROM STA. 10+00 TO STA. 10+50 -Y62RPA- INT LT
FROM STA. 111+05 TO STA. 113+40 -L- RT
FROM STA. 25+50 TO STA. 26+20 -Y1- RT
DETAIL 7
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)
Length= 50 Ft.
d= Top Bank
Est.= 170 Tons of Class II Rip-Rap
FROM STA. 26+05 TO STA. 26+22 -Y1- LT
DETAIL 8
MEDIAN V DITCH
(Not to Scale)
FROM STA. 104+00 -L- LT TO STA. 11+00 -Y62RPA- INT LT
DETAIL 9
CHANNEL CHANGE
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= Top Bank
B= 4.0 Ft.
Type of Liner= CL I Rip-Rap
STA. 111+05 -L- LT
DETAIL 10
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 2.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CL I Rip-Rap
FROM STA. 111+08 TO STA. 111+50 -L- RT
DETAIL 11
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 11+00 TO STA. 15+50 -Y62RPB- INT RT
END CONSTRUCTION
-Y1- Sta.28+00.00
-L- POT Sta.103+65.00
SITE 1
SITE 2
SITE 3
SEE SHEET 05B
SEE SHEET 06C
SEE SHEET 06D
SEE SHEET 06E
MATCHLINE -L- STA.101+50.00 SEE SHEET 4
MATCHLINE -L- STA. 115+50.00 SEE SHEET 6
MATCHLINE -Y1- STA.24+00.00 SEE SHEET 6
US 52 NB JOHN GOLD MEMORIAL EXPRESSWAY
BEATRICE P. FERGUSON
ABBY WASHINGTON
ERIC WASHINGTON
CARL SPENCER BLACKBURN
KATHRYN K. GERALD
CLARENCE ERIC GERALD
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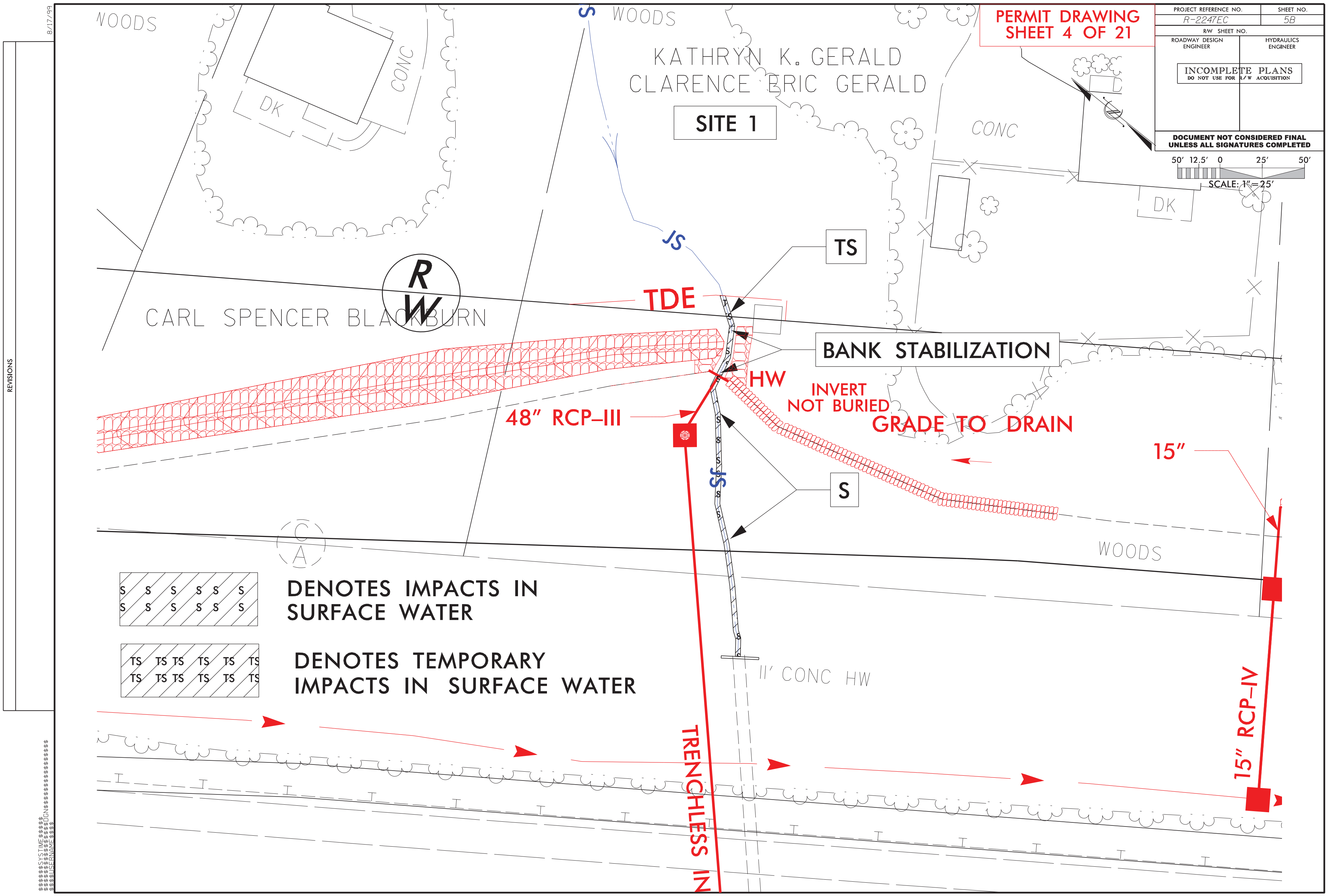
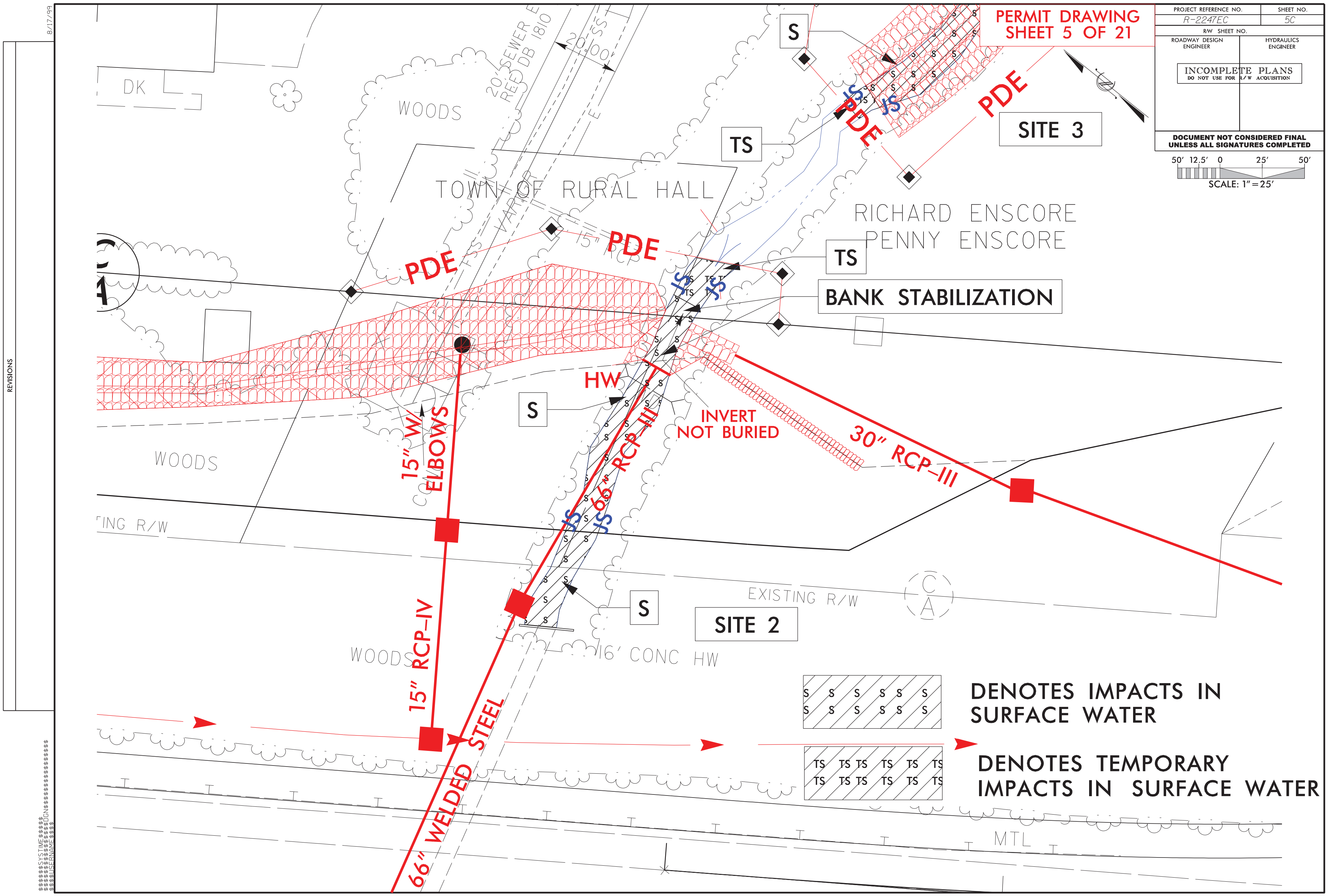
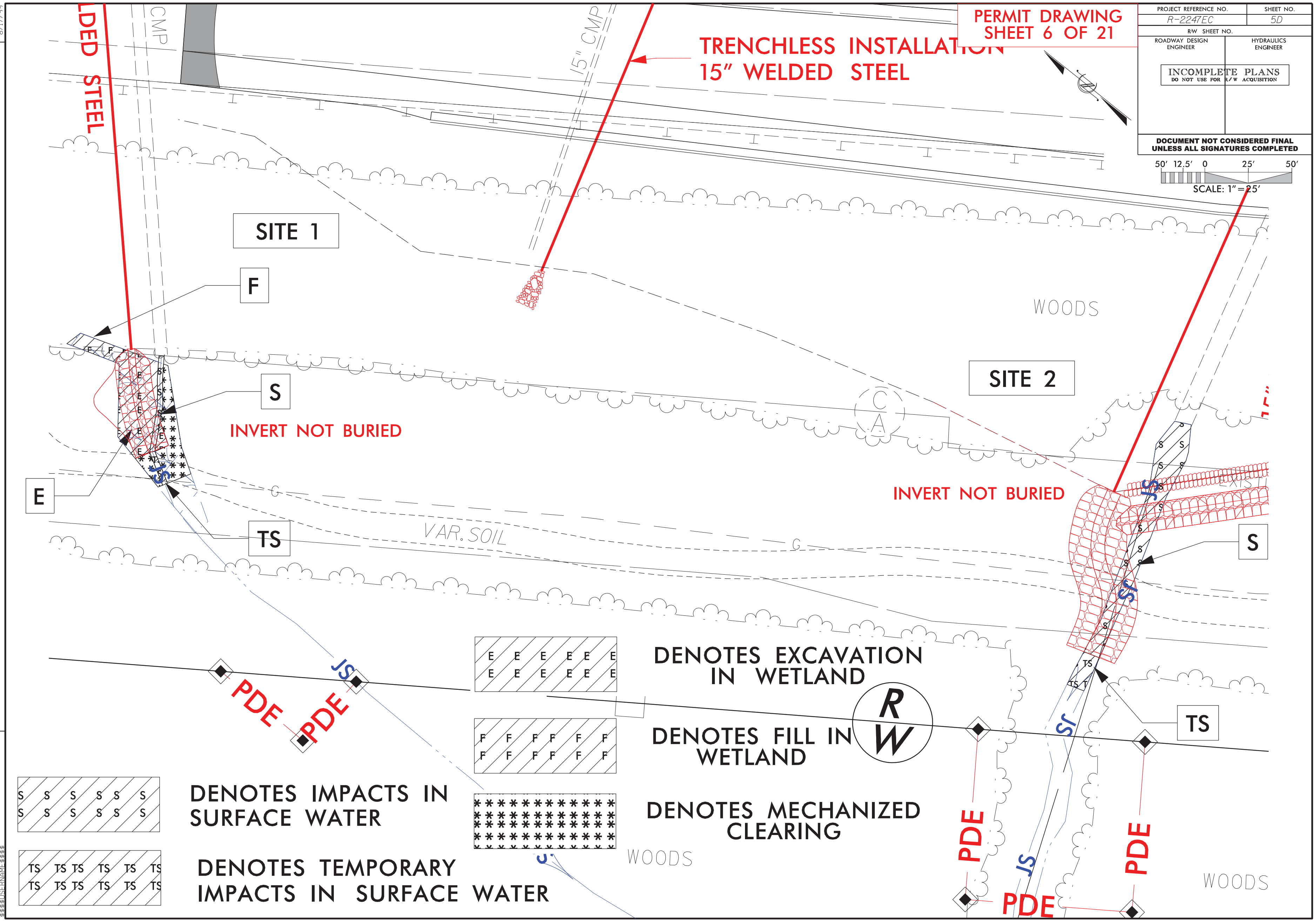
RICHARD ENSCORE
PENNY ENSCORE
JOHN STEPHEN BOYLE
WINSTON-SALEM / FORSYTH COUNTY BOARD OF EDUCATION
TRENCHLESS INSTALLATION 15" WELDED STEEL
CHANNEL CHANGE CL I RIP RAP EST 25 TONS EST 35 SY GF SEE DETAIL 3
CHANNEL CHANGE CL I RIP RAP EST 140 TONS EST 147 SY GF SEE DETAIL 9
CL II RIP RAP EST 170 TONS SEE DETAIL 7
MEDIAN V DITCH SEE DETAIL 8
GRADE TO DRAIN
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
FOR -L- PROFILE,SEE SHEETS 14-7
FOR -Y62RPA-INT- PROFILE,SEE SHEETS 15-16
FOR -Y62RPB-INT- PROFILE,SEE SHEETS 17-18
FOR -Y1- PROFILE,SEE SHEET 19

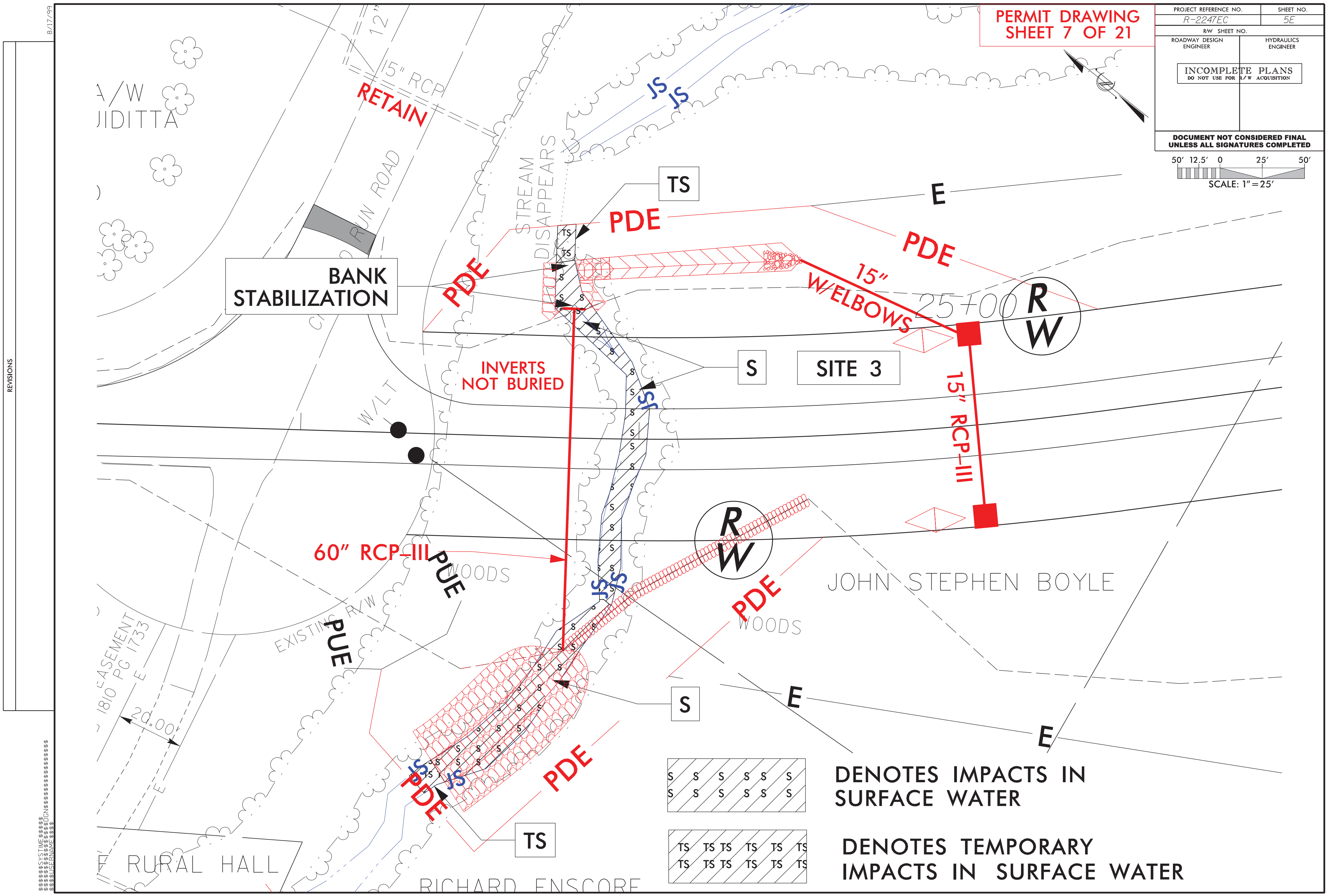

PERMIT DRAWING
SHEET 4 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5B
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
SCALE: 1"=25'
WOODS
KATHRYN K. GERALD
CLARENCE ERIC GERALD
SITE 1
CONC
DK
CARL SPENCER BLACKBURN
TDE
TS
BANK STABILIZATION
HW
INVERT NOT BURIED
GRADE TO DRAIN
48" RCP-III
15"
S
JS
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
11' CONC HW
TRENCHLESS IN
15" RCP-IV
REVISIONS
8/17/99

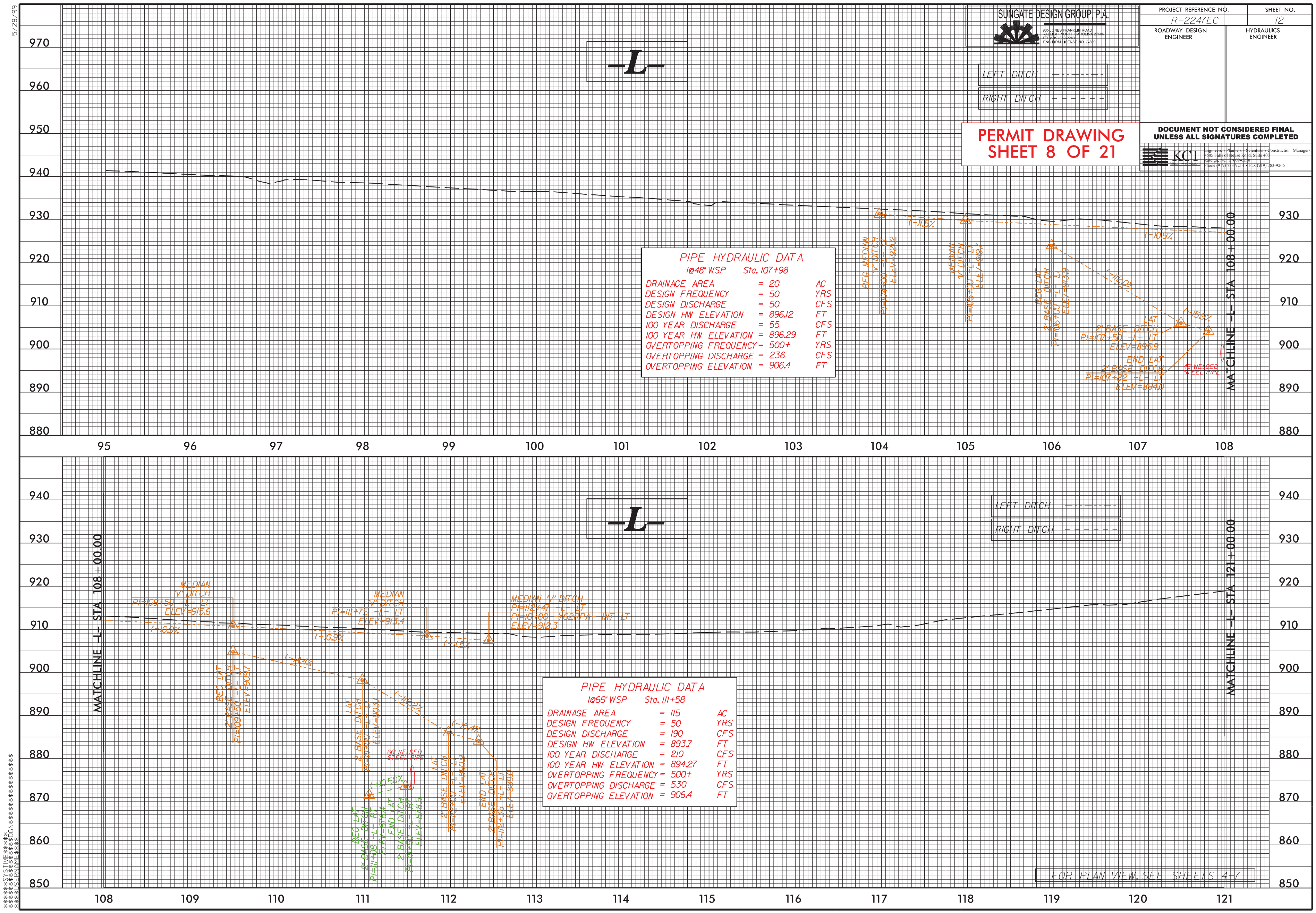

PERMIT DRAWING
SHEET 5 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5C
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
50' 12.5' 0 25' 50'
SCALE: 1"=25'
SITE 3
SITE 2
PDE
TS
S
BANK STABILIZATION
RICHARD ENSCORE
PENNY ENSCORE
TOWN OF RURAL HALL
WOODS
DK
20' SEWER E
REF DB 1810
20.00'
15" RCP
HW
INVERT
NOT BURIED
30" RCP-III
66" RCP-III
15" W/ ELBOWS
15" RCP-IV
66" WELDED STEEL
16' CONC HW
EXISTING R/W
EXISTING R/W
MTL
REVISIONS
8/17/99
DENOTES IMPACTS IN
SURFACE WATER
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



PERMIT DRAWING
SHEET 6 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5D
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
50′ 12.5′ 0 25′ 50′
SCALE: 1″=25′
TRENCHLESS INSTALLATION
15″ WELDED STEEL
LDED STEEL
CMP
15″ CMP
SITE 1
SITE 2
F
S
E
TS
INVERT NOT BURIED
INVERT NOT BURIED
WOODS
VAR. SOIL
PDE
PDE
PDE
PDE
PDE
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
WOODS
WOODS

REVISIONS


PERMIT DRAWING
SHEET 7 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
5E
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
50' 12.5' 0 25' 50'
SCALE: 1"=25'
REVISIONS
8/17/99
RETAIN
15" RCP
12"
STREAM DISAPPEARS
TS
PDE
E
BANK STABILIZATION
15" W/ELBOWS
25+00
R/W
S
SITE 3
INVERTS NOT BURIED
15" RCP-III
W/LT
60" RCP-III
PUE
WOODS
JOHN STEPHEN BOYLE
EXISTING R/W
EASEMENT
1810 PG 1733
20.00'
JS
RURAL HALL
RICHARD ENSCORE
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
12
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING
SHEET 8 OF 21
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266
-L-
LEFT DITCH
RIGHT DITCH
PIPE HYDRAULIC DATA
1@48" WSP Sta. 107+98
DRAINAGE AREA = 20 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 50 CFS
DESIGN HW ELEVATION = 896.12 FT
100 YEAR DISCHARGE = 55 CFS
100 YEAR HW ELEVATION = 896.29 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 236 CFS
OVERTOPPING ELEVATION = 906.4 FT
MATCHLINE -L- STA 108+00.00
-L-
LEFT DITCH
RIGHT DITCH
PIPE HYDRAULIC DATA
1@66" WSP Sta. 111+58
DRAINAGE AREA = 115 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 190 CFS
DESIGN HW ELEVATION = 893.7 FT
100 YEAR DISCHARGE = 210 CFS
100 YEAR HW ELEVATION = 894.27 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 530 CFS
OVERTOPPING ELEVATION = 906.4 FT
MATCHLINE -L- STA 108+00.00
MATCHLINE -L- STA 121+00.00
FOR PLAN VIEW, SEE SHEETS 4-7
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	19

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PERMIT DRAWING SHEET 9 OF 21

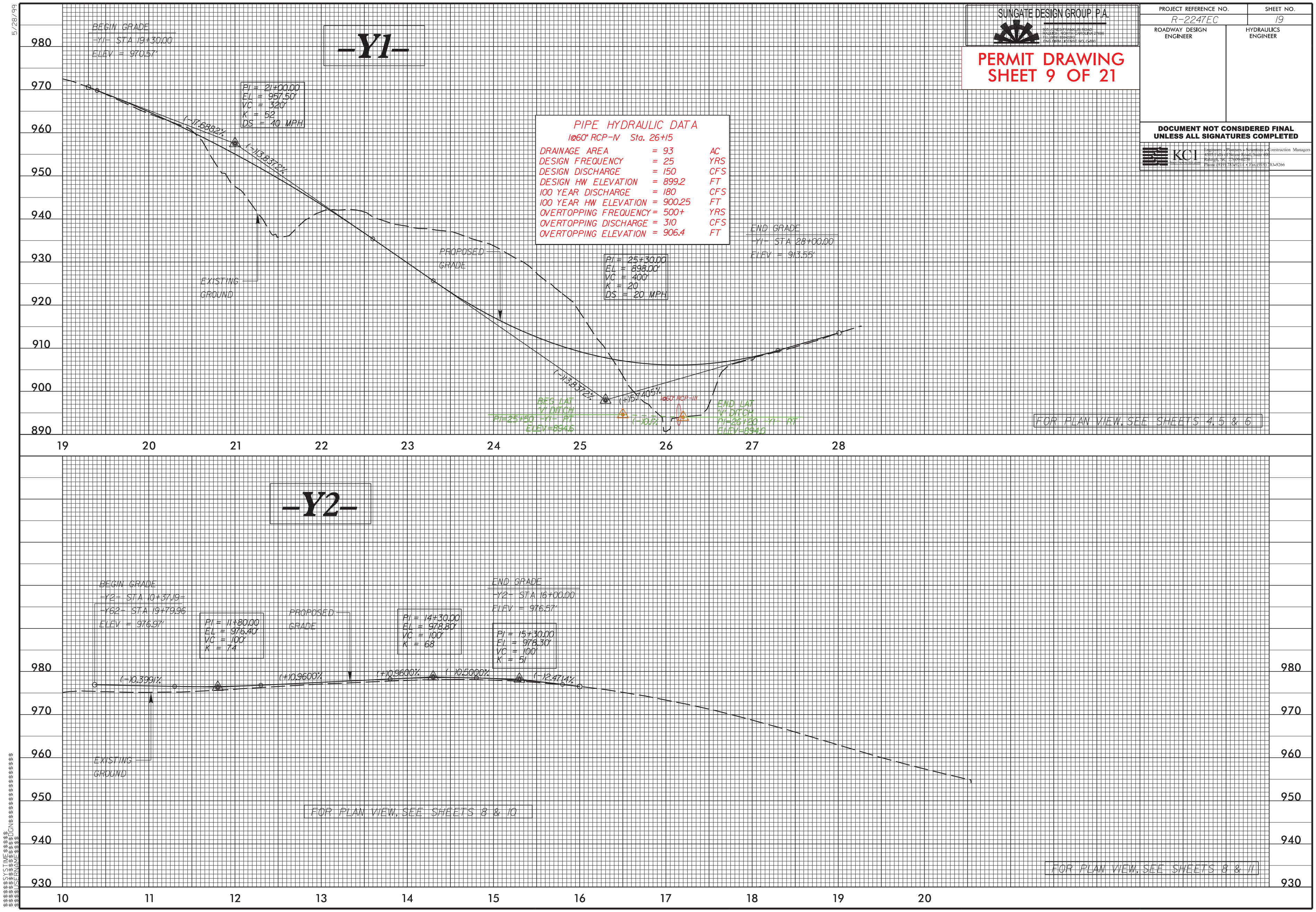
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

KCI http://www.kci.com
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266

PIPE HYDRAULIC DATA

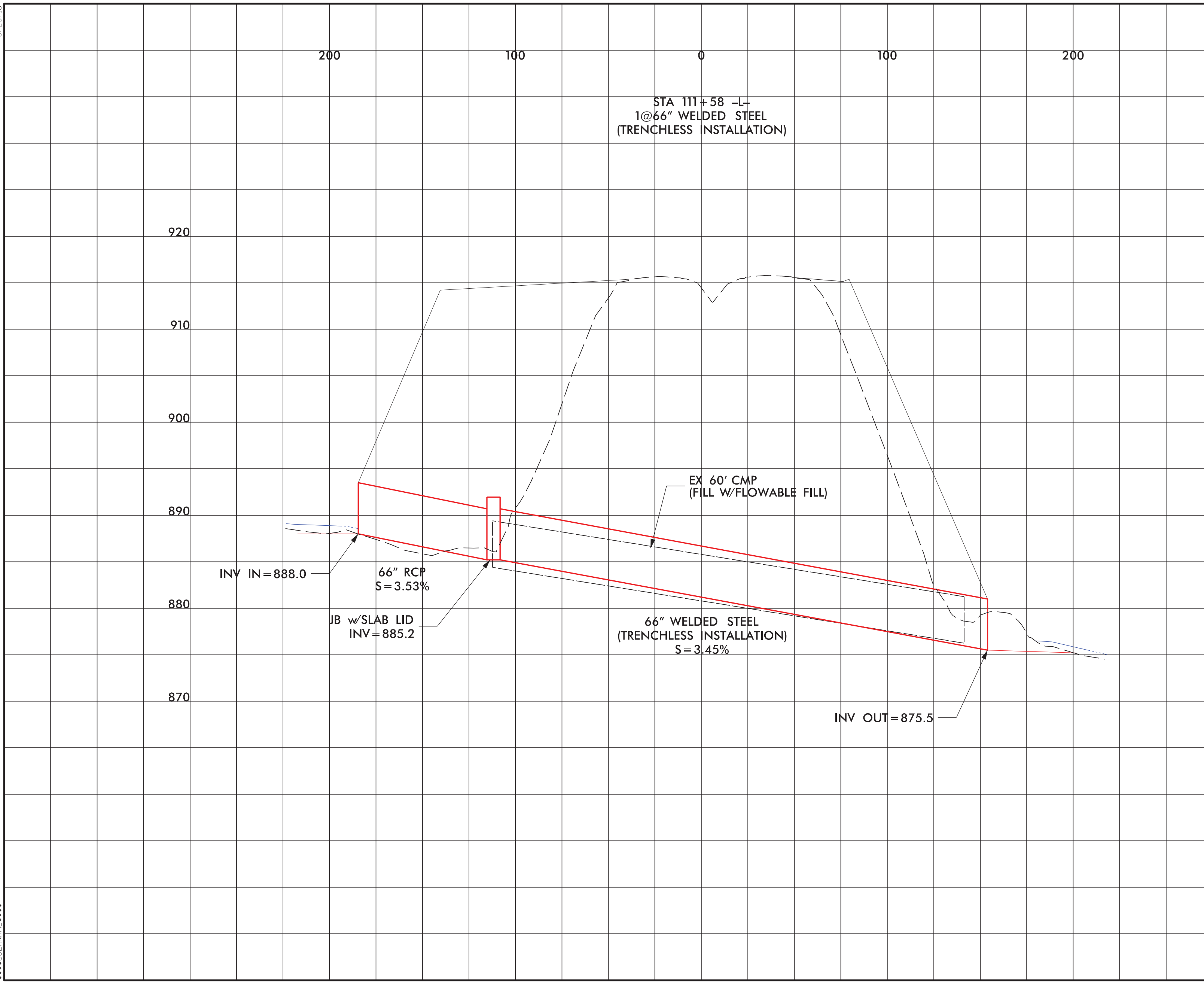
1@60" RCP-IV Sta. 26+15

DRAINAGE AREA	= 93	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 150	CFS
DESIGN HW ELEVATION	= 899.2	FT
100 YEAR DISCHARGE	= 180	CFS
100 YEAR HW ELEVATION	= 900.25	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 310	CFS
OVERTOPPING ELEVATION	= 906.4	FT



0 25 50	PROJ. REFERENCE NO.	SHEET NO.
	R-2247EC	5H

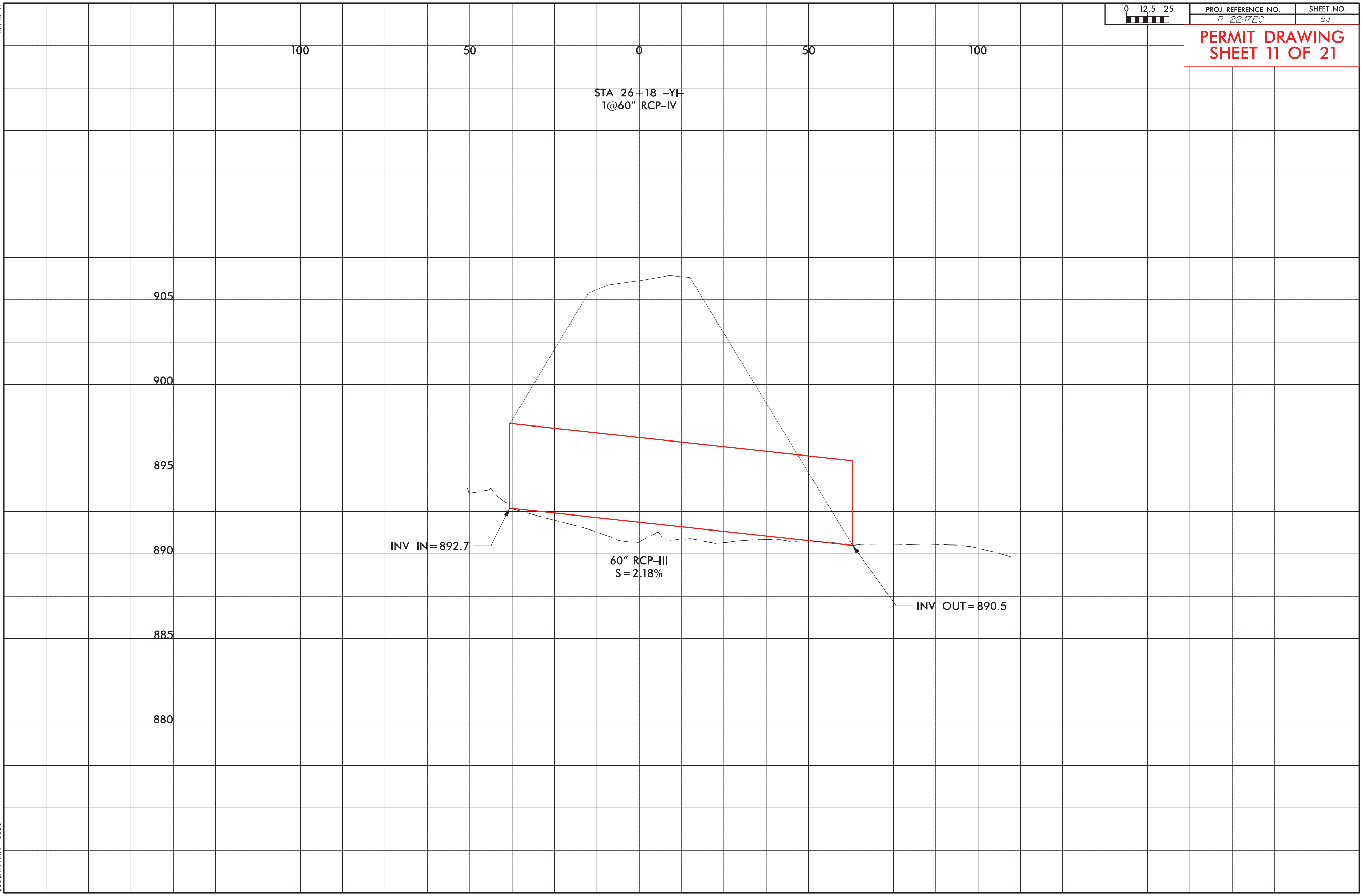
PERMIT DRAWING
SHEET 10 OF 21



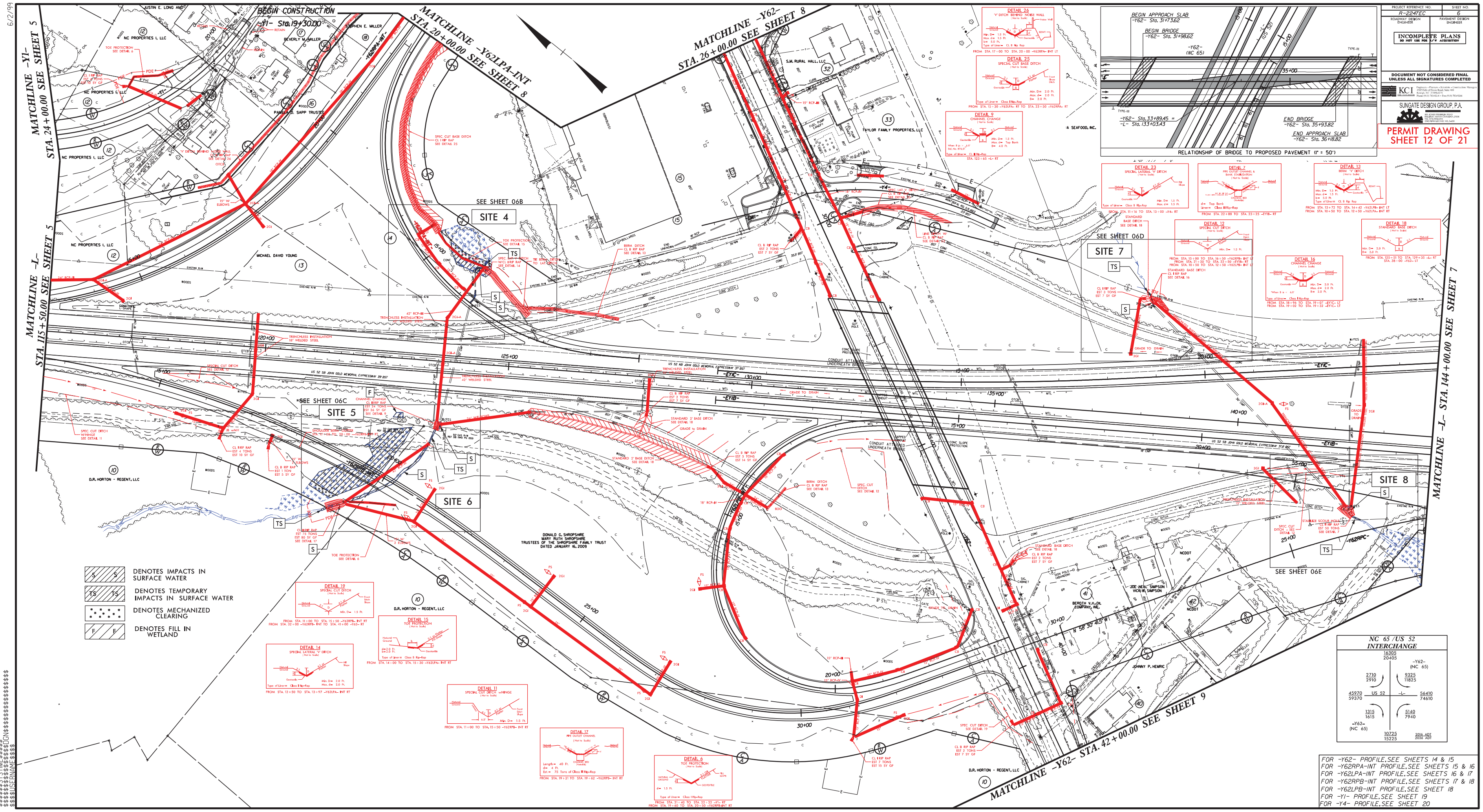
6/23/16

PROJ. REFERENCE NO.	SHEET NO.
R-2247EC	5J

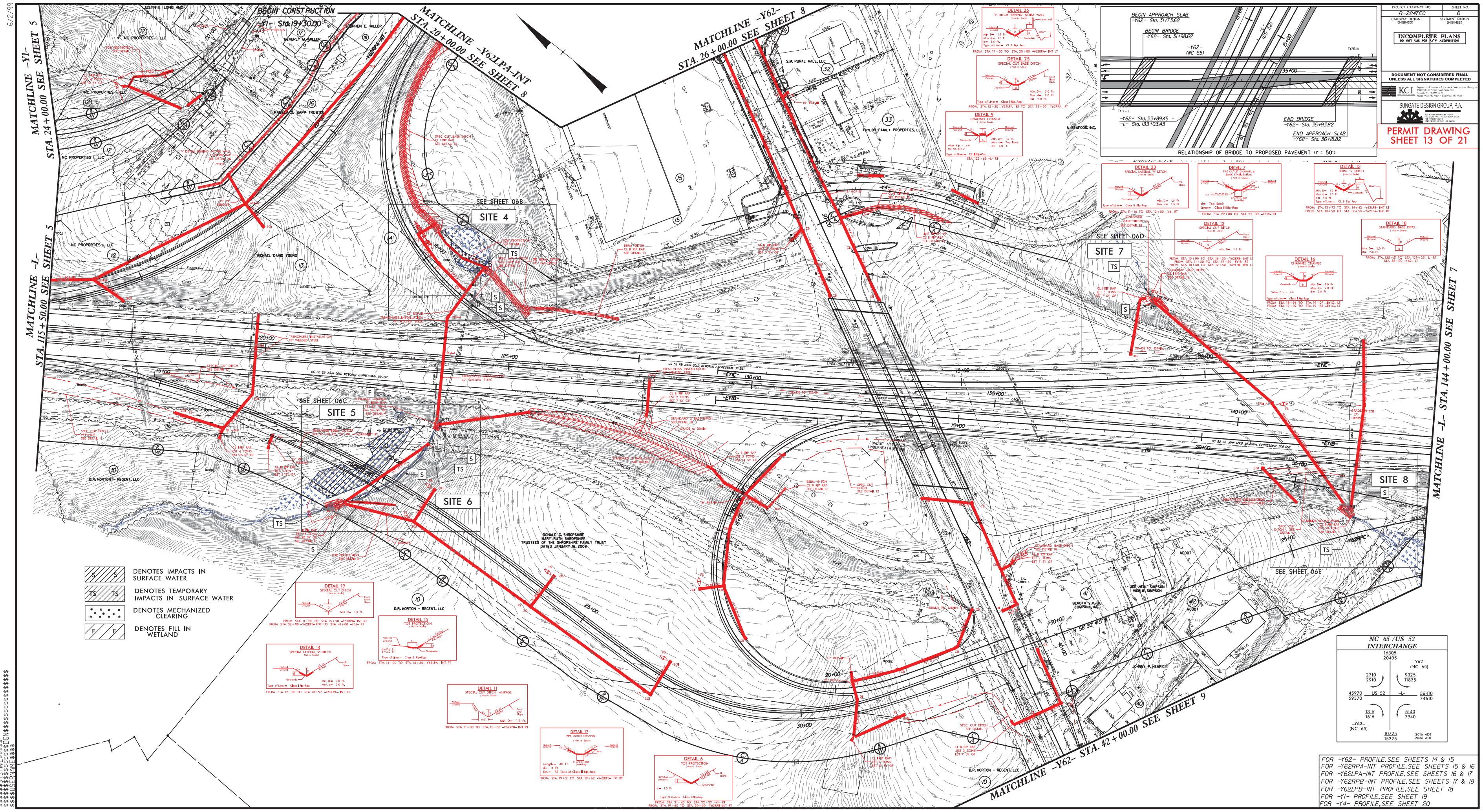
PERMIT DRAWING
SHEET 11 OF 21



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



R-2247EC
6
INCOMPLETE PLANS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
SUNGATE DESIGN GROUP, P.A.
PERMIT DRAWING
SHEET 12 OF 21
RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT (1" = 50')
BEGIN APPROACH SLAB -Y62- Sta. 31+73.62
BEGIN BRIDGE -Y62- Sta. 31+98.62
END BRIDGE -Y62- Sta. 35+93.82
END APPROACH SLAB -Y62- Sta. 36+18.82
-Y62- Sta. 33+89.45 = -L- Sta. 133+03.43
MATCHLINE -Y1- STA. 24+00.00 SEE SHEET 5
MATCHLINE -L- STA. 115+50.00 SEE SHEET 5
MATCHLINE -Y62LPA-INT STA. 20+00.00 SEE SHEET 8
MATCHLINE -Y62- STA. 26+00.00 SEE SHEET 8
MATCHLINE -L- STA. 144+00.00 SEE SHEET 7
MATCHLINE -Y62- STA. 42+00.00 SEE SHEET 9
BEGIN CONSTRUCTION -Y1- Sta. 19+30.00
SITE 4
SITE 5
SITE 6
SITE 7
SITE 8
SEE SHEET 06B
SEE SHEET 06C
SEE SHEET 06D
SEE SHEET 06E
DONALD G. SHROPSHIRE
MARY RUTH SHROPSHIRE
TRUSTEES OF THE SHROPSHIRE FAMILY TRUST
DATED JANUARY 16, 2009
D.R. HORTON - REGENT, LLC
NC PROPERTIES I, LLC
MICHAEL DAVID YOUNG
TAYLOR FAMILY PROPERTIES, LLC
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
NC 65 / US 52 INTERCHANGE
FOR -Y62- PROFILE, SEE SHEETS 14 & 15
FOR -Y62RPA-INT PROFILE, SEE SHEETS 15 & 16
FOR -Y62LPA-INT PROFILE, SEE SHEETS 16 & 17
FOR -Y62RPB-INT PROFILE, SEE SHEETS 17 & 18
FOR -Y62LPB-INT PROFILE, SEE SHEET 18
FOR -Y1- PROFILE, SEE SHEET 19
FOR -Y4- PROFILE, SEE SHEET 20



PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
6
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
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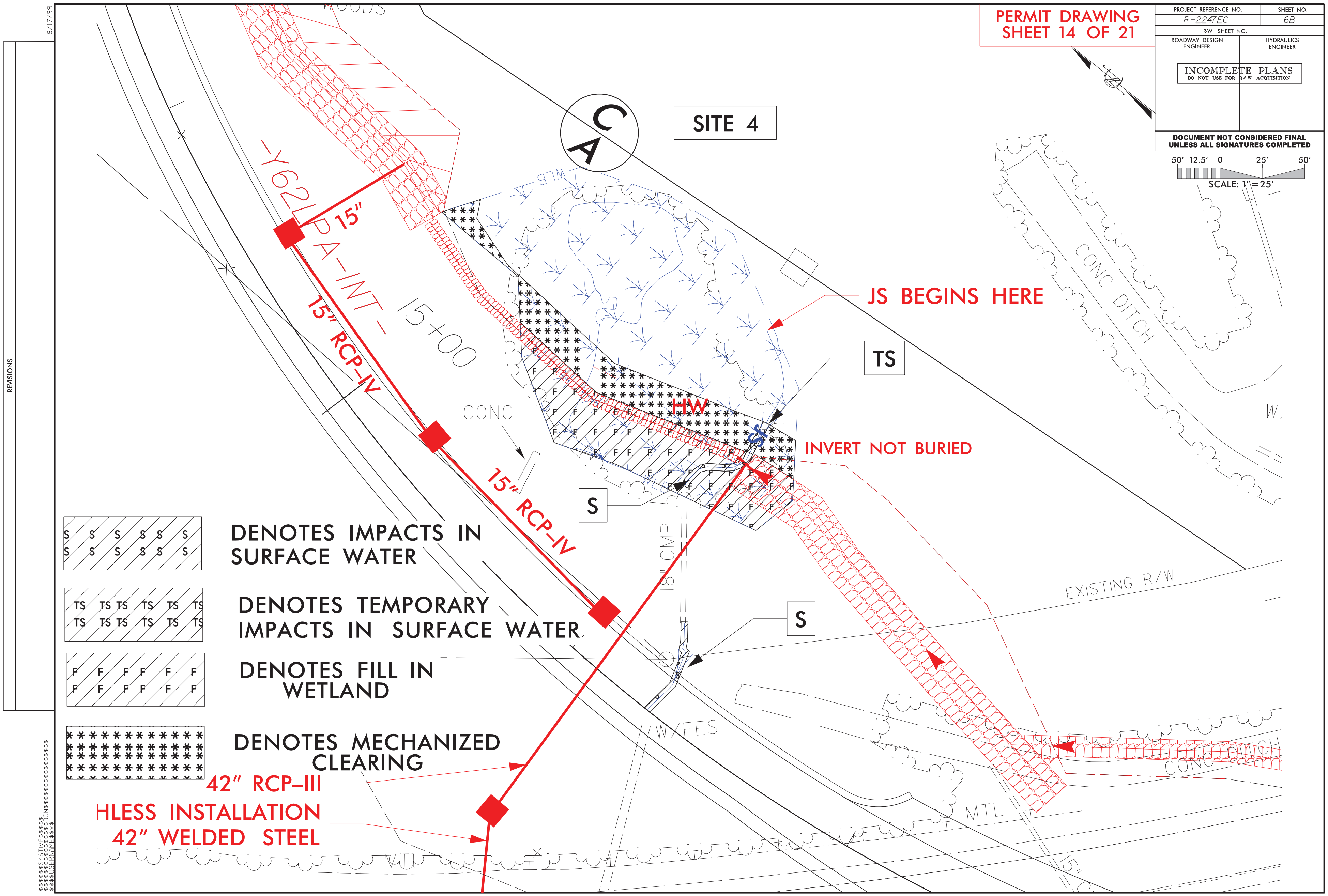
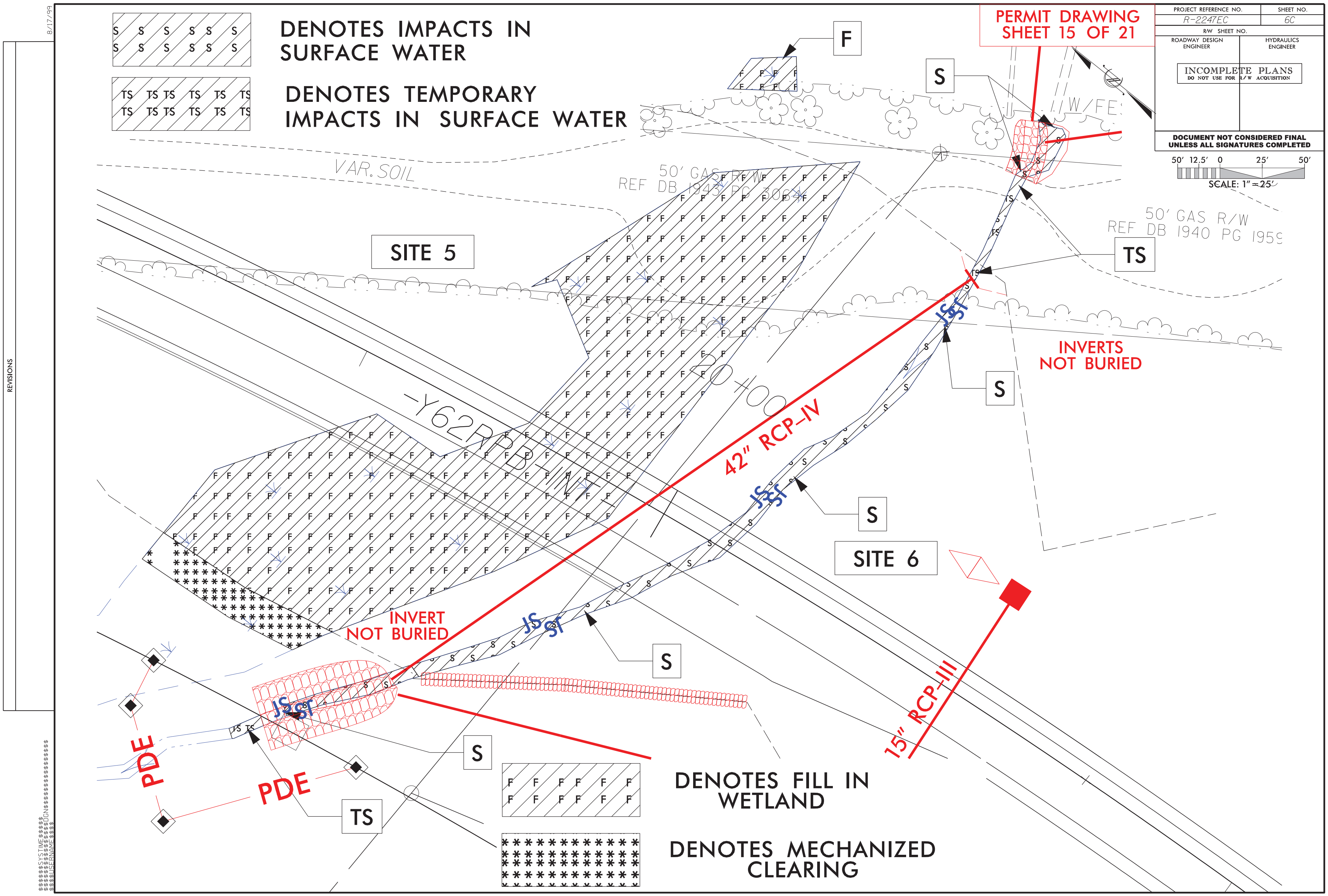
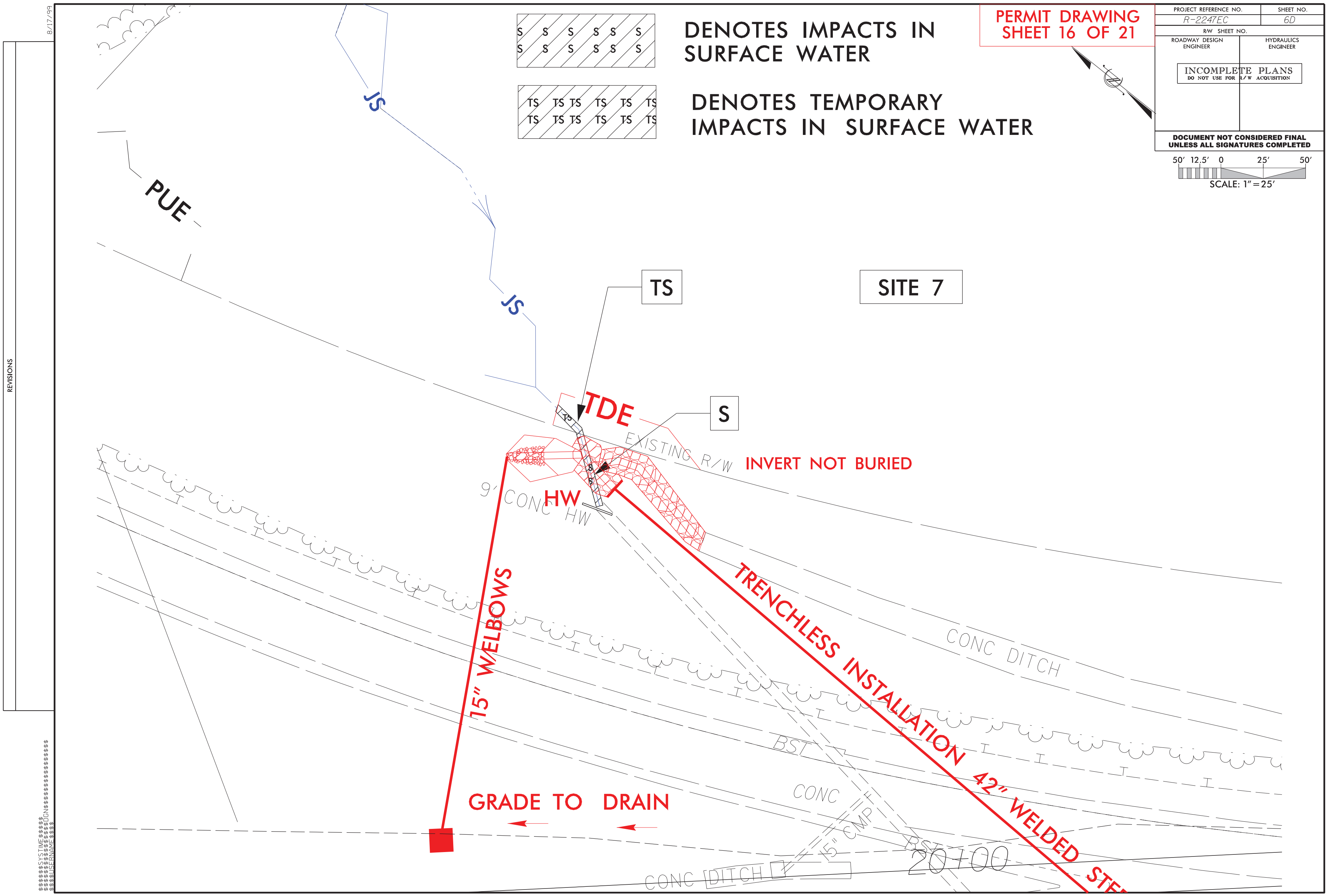
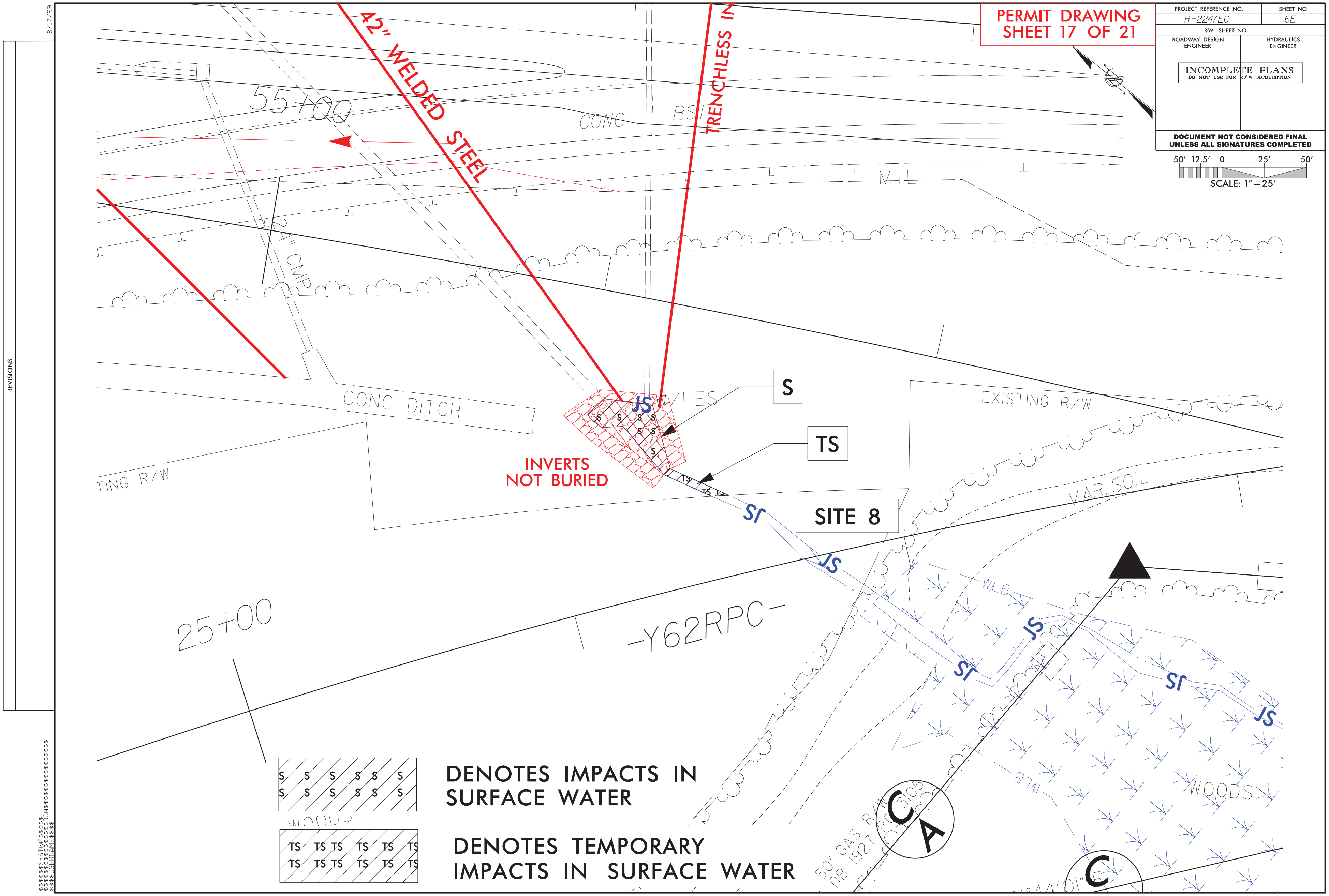
SUNGATE DESIGN GROUP, P.A.
PERMIT DRAWING
SHEET 13 OF 21
RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT (1" = 50')
BEGIN APPROACH SLAB
BEGIN BRIDGE
END BRIDGE
END APPROACH SLAB
MATCHLINE -Y1- STA. 24+00.00 SEE SHEET 5
MATCHLINE -L- STA. 115+50.00 SEE SHEET 5
MATCHLINE -Y62LPA-INT STA. 20+00.00 SEE SHEET 8
MATCHLINE -Y62- STA. 26+00.00 SEE SHEET 8
MATCHLINE -L- STA. 144+00.00 SEE SHEET 7
MATCHLINE -Y62- STA. 42+00.00 SEE SHEET 9
BEGIN CONSTRUCTION
SITE 4
SITE 5
SITE 6
SITE 7
SITE 8
SEE SHEET 06B
SEE SHEET 06C
SEE SHEET 06D
SEE SHEET 06E
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
NC 65 / US 52
INTERCHANGE
16305
20405
-Y62-
(NC 65)
2710
2910
9325
11825
45970
59370
US 52
-L-
56410
74610
1315
1615
5140
7940
-Y62-
(NC 65)
10725
15225
2016 ADT
2036 ADT
FOR -Y62- PROFILE, SEE SHEETS 14 & 15
FOR -Y62RPA-INT PROFILE, SEE SHEETS 15 & 16
FOR -Y62LPA-INT PROFILE, SEE SHEETS 16 & 17
FOR -Y62RPB-INT PROFILE, SEE SHEETS 17 & 18
FOR -Y62LPB-INT PROFILE, SEE SHEET 18
FOR -Y1- PROFILE, SEE SHEET 19
FOR -Y4- PROFILE, SEE SHEET 20



PERMIT DRAWING
SHEET 14 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
6B
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
50' 12.5' 0 25' 50'
SCALE: 1"=25'
SITE 4
WOODS
-Y62LPA-INT-
15+00
15"
15" RCP-IV
15" RCP-IV
CONC
JS BEGINS HERE
TS
HW
JS
INVERT NOT BURIED
S
S
18" CMP
EXISTING R/W
CONC DITCH
CONC DITCH
W/FES
MTL
MTL
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
42" RCP-III
HLESS INSTALLATION
42" WELDED STEEL
REVISIONS
8/17/99


DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PERMIT DRAWING SHEET 15 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
6C
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
SCALE: 1"=25'
VAR. SOIL
50' GAS R/W
REF DB 1943 PG 306
50' GAS R/W
REF DB 1940 PG 1959
W/FE
SITE 5
SITE 6
-Y62RPB-INT-
20+00
42" RCP-IV
15" RCP-III
INVERTS NOT BURIED
INVERT NOT BURIED
PDE
PDE
F
S
TS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
REVISIONS
8/17/99


DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PERMIT DRAWING SHEET 16 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
6D
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
SCALE: 1"=25'
PUE
JS
TS
SITE 7
TDE
S
EXISTING R/W
INVERT NOT BURIED
9' CONC HW
HW
15" W/ELBOWS
TRENCHLESS INSTALLATION 42" WELDED STE
CONC DITCH
BST
CONC
15" CMP
20+00
GRADE TO DRAIN
REVISIONS
8/17/99


PERMIT DRAWING
SHEET 17 OF 21
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
6E
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
50' 12.5' 0 25' 50'
SCALE: 1"=25'
42" WELDED STEEL
TRENCHLESS IN
55+00
CONC
BST
MTL
21" CMP
CONC DITCH
TING R/W
EXISTING R/W
INVERTS NOT BURIED
JS
S
TS
SITE 8
VAR.SOIL
WLB
25+00
-Y62RPC-
WOODS
50' GAS R/W DB 1927 PG 305
CA
C
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REVISIONS
8/17/99

5/28/99

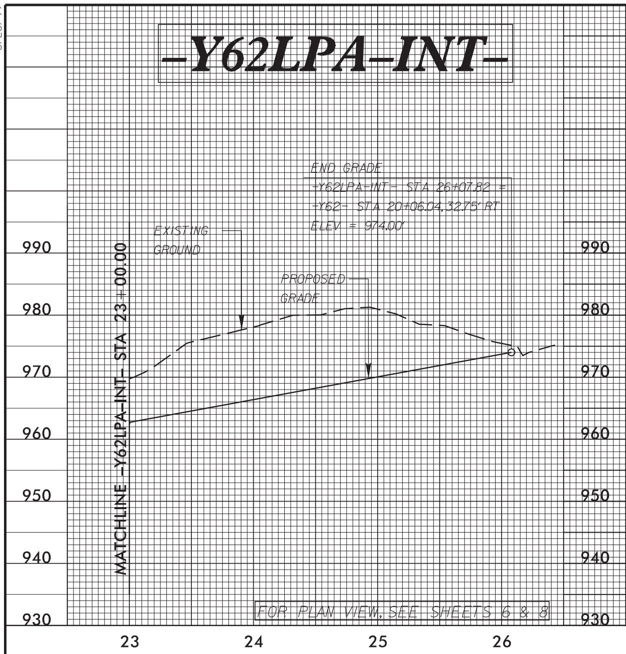
PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

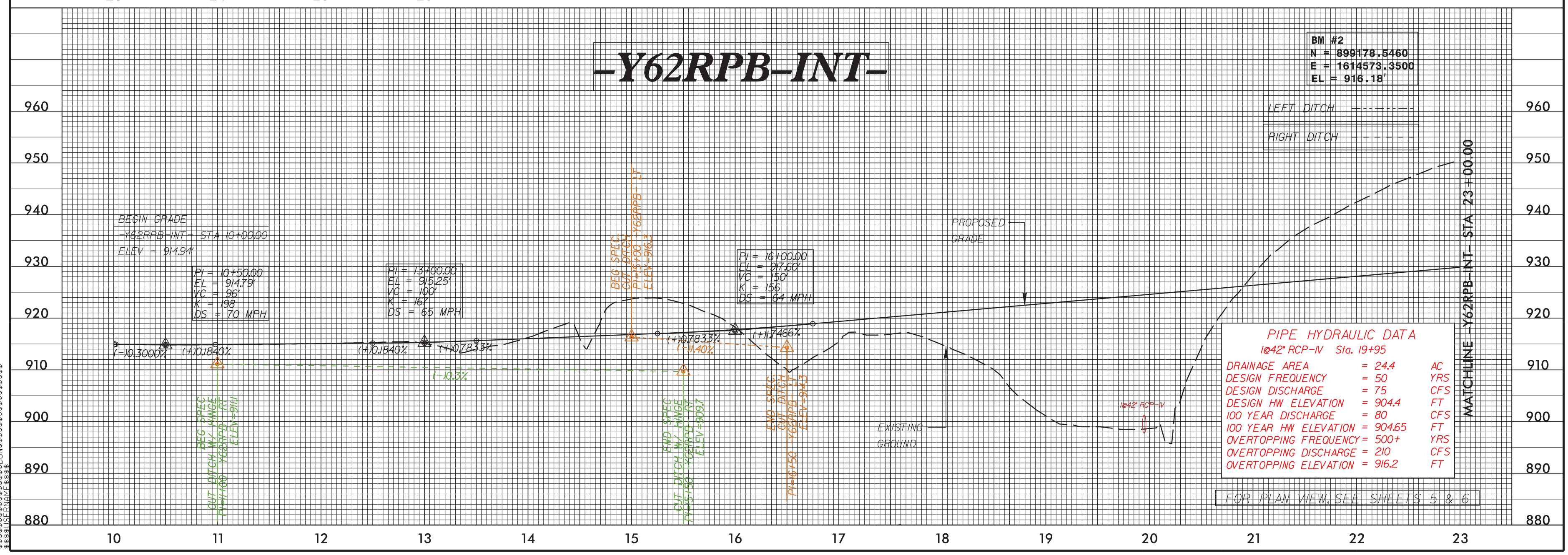
SUNGATE DESIGN GROUP, P.A.

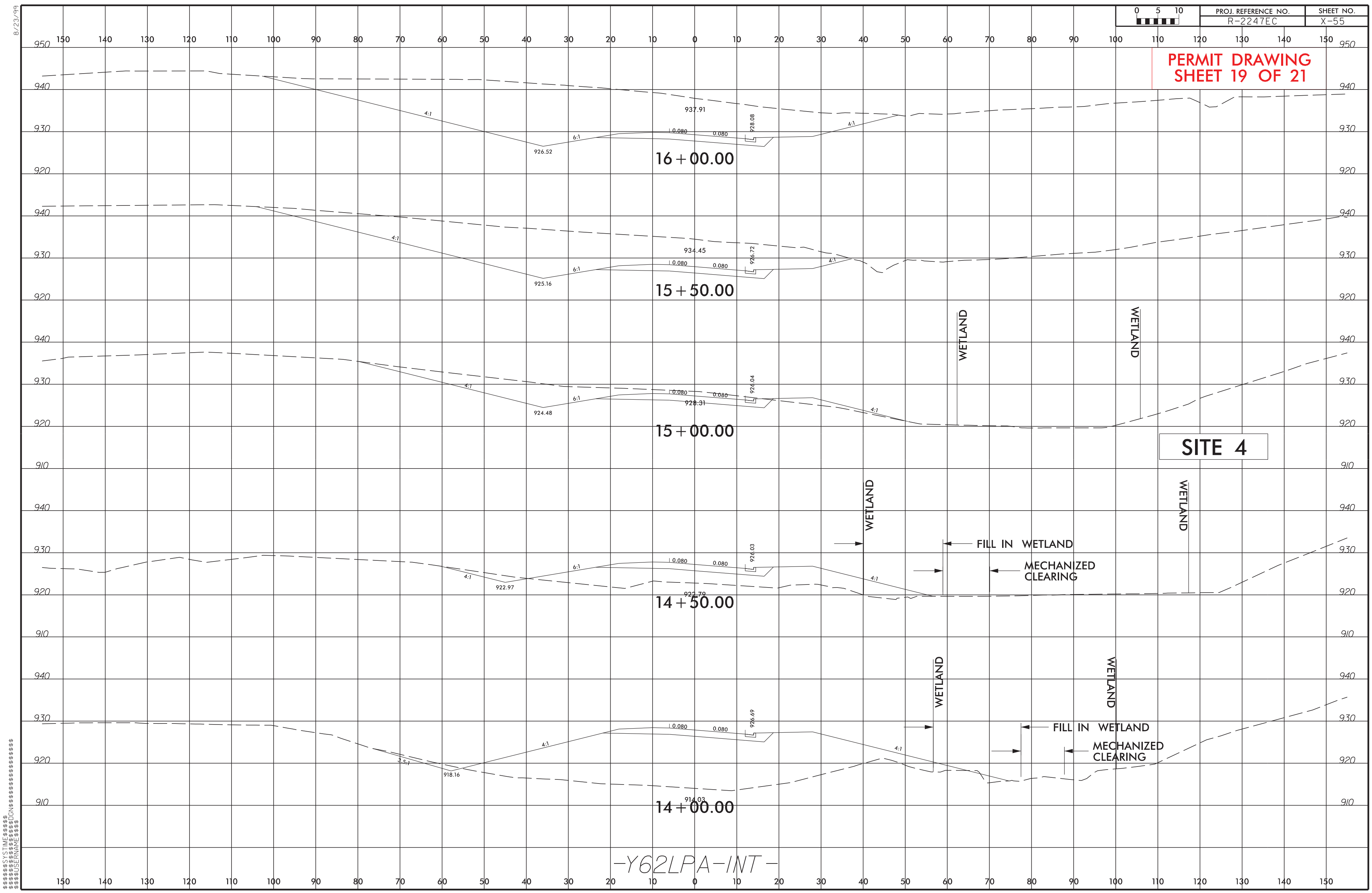
PERMIT DRAWING
SHEET 18 OF 21

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

KCI

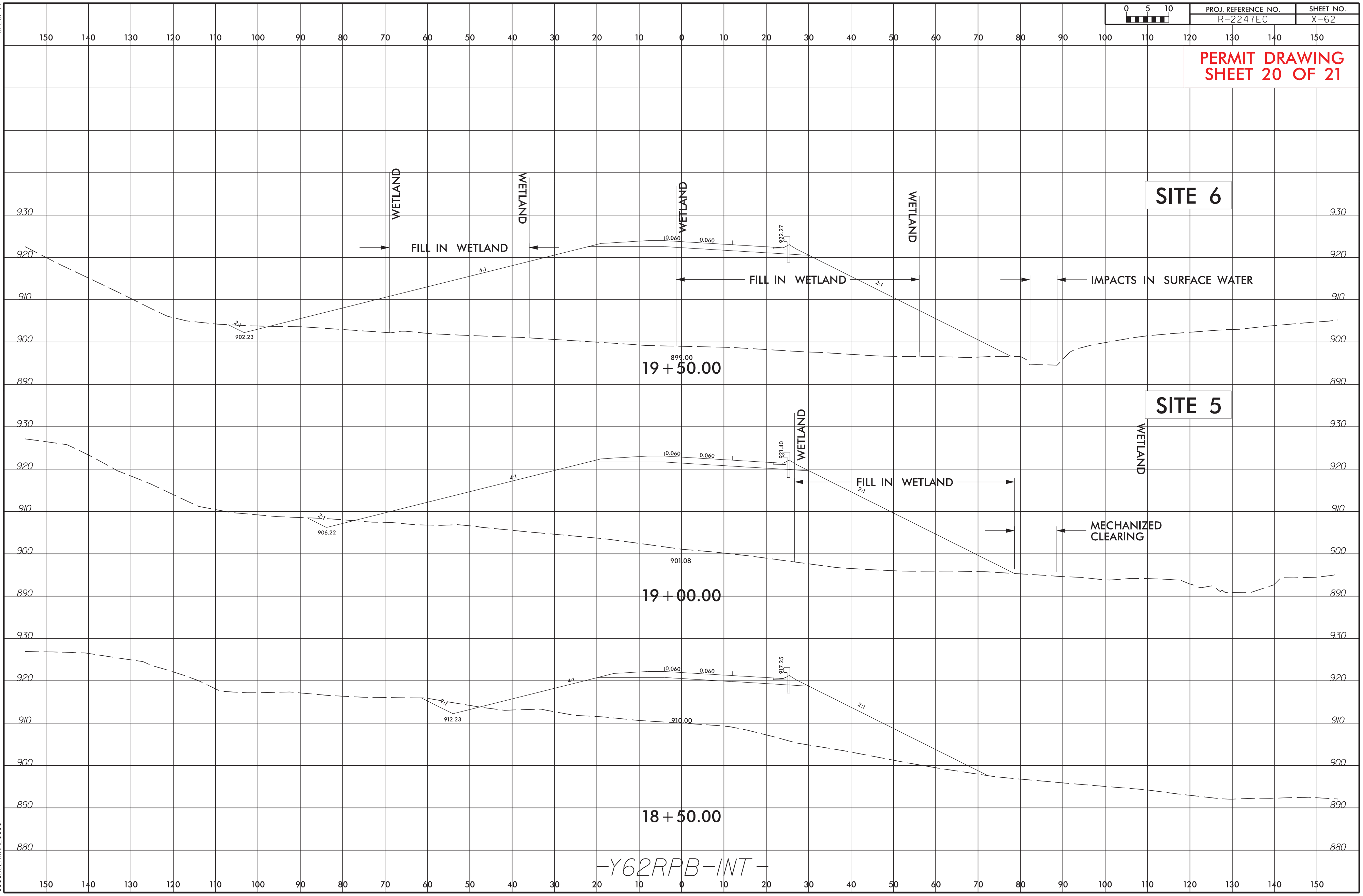






8/23/99
PROJ. REFERENCE NO.
R-2247EC
SHEET NO.
X-55
0 5 10
PERMIT DRAWING
SHEET 19 OF 21
16+00.00
937.91
926.52
928.08
15+50.00
934.45
925.16
926.72
15+00.00
928.31
924.48
926.04
SITE 4
14+50.00
922.97
922.79
926.03
FILL IN WETLAND
MECHANIZED CLEARING
WETLAND
14+00.00
918.16
914.03
926.69
-Y62LPA-INT-
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PERMIT DRAWING
SHEET 20 OF 21



WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	107+74 to 108+45 -L- LTRT	48" WSP	< 0.01		< 0.01	< 0.01		< 0.01	< 0.01	112	20	
	107+74 to 107+91 -L- LT	BANK STABILIZATION						< 0.01		15		
2	110+94 to 112+55 -L- LTRT	66" WSP						0.03	< 0.01	156	25	
	112+23 to 112+45 -L- LT	BANK STABILIZATION						< 0.01		21		
3	25+98 to 26+62 -Y1- LTRT	60" RCP						0.03	< 0.01	165	19	
	26+13 to 26+26 -Y1- RT	BANK STABILIZATION						< 0.01		15		
4	13+69 to 14+96-Y62LPA-INT- RT	42" RCP	0.04			0.02		< 0.01	< 0.01	54	10	
5	18+67 to 19+98 -Y62LPB-INT- LTRT	ROADWAY FILL	0.22			0.01						
6	19+23 to 20+44 -Y62LPB-INT- LTRT	42" WSP, 42" RCP						0.03	< 0.01	275	44	
7	18+90 to 19+03 -EYIC- LT	15"/ 42" WSP						< 0.01	< 0.01	22	11	
8	22+95 to 23+39 -EY1B- RT	24" / 42" WSP						< 0.01	< 0.01	30	17	
TOTALS*:			0.26		< 0.01	0.04		0.10	0.01	865	146	0

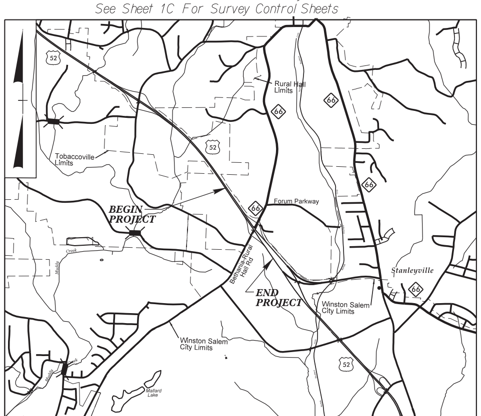
*Rounded totals are sum of actual impacts

NOTES:
Site 1: Perm Fill = 0.0014 ac / Excav. = 0.0068 ac / Mech. Clearing = 0.0041 ac

Revised 2016 09 09

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
9-6-2017
FORSYTH COUNTY
R-2247EC
34409.3.23

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C For Survey Control Sheets



VICINITY MAP

RIGHT OF WAY PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

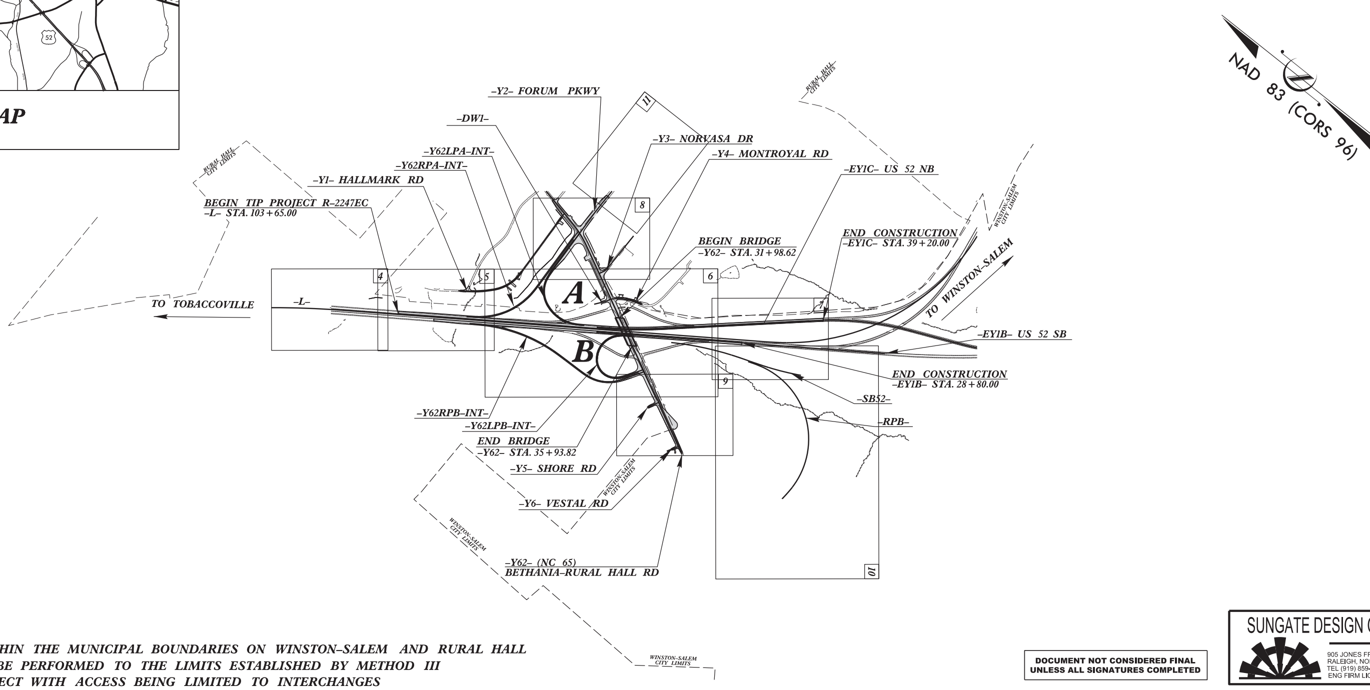
LOCATION: WINSTON–SALEM NORTHERN BELTWAY – MODIFICATION OF THE US 52 (FUTURE I–74) /NC 65 (BETHANIA HALL ROAD) INTERCHANGE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL, CABLE GUIDERAIL, STRUCTURES, SIGNING, SIGNALS AND NOISE WALLS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–2247EC	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34409.3.23	NHP–0421(088)	P.E.
34409.3.23	NHP–0421(088)	R/W & UTIL.
34409.3.23	NHP–0421(088)	CONST.

RIGHT OF WAY PLANS
SUBMITTAL NO.: S–033 DATE: 09/14/17



– A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES ON WINSTON–SALEM AND RURAL HALL
– CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
– THIS IS A CONTROLLED–ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

TIP PROJECT: R–2247EC

CONTRACT: C203840

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 2015 = 61,700
ADT 2035 = 79,300
DHV = 10 %
D = 60 %
T = 21 % *
V = 70 MPH
* TTST =14 DUAL 7
FUNC CLASS = FREEWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–2247EC	= 1.042 MI.
TOTAL LENGTH TIP PROJECT R–2247EC	= 1.042 MI.

Prepared In the Office of:
KCI Associates of N.C., P.A.
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
Fax (919) 783-9266

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 15, 2016

LETTING DATE:
NOVEMBER 15, 2016

Plans Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

CHARLES L. FLOWE, P.E.
PROJECT ENGINEER

BRYAN E. HOUGH, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: K. ZAK HAMIDI, P.E.
PROJECT ENGINEER – DESIGN BUILD UNIT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99
29-SEP-2017 10:48
M:\2016\25160292 R2247 WS\R-2247EC\Roadway\Proj\R2247EC_Rdy_tsh.dgn
$$$$USERNAME$$$$

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	1B

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
Computed 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	S
Potential Contamination Area: Soil	S
Known Contamination Area: Water	W
Potential Contamination Area: Water	W
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 & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	
Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Exist Permanent Easment Pin and Cap	
New Permanent Easement Pin and Cap	
Vertical Benchmark	
Existing Right of Way Marker	
Existing Right of Way Line	
New Right of Way Line	R/W
New Right of Way Line with Pin and Cap	R/W
New Right of Way Line with Concrete or Granite R/W Marker	R/W
New Control of Access Line with Concrete C/A Marker	C/A
Existing Control of Access	C/A
New Control of Access	C/A
Existing Easement Line	E
New Temporary Construction Easement	E
New Temporary Drainage Easement	TDE
New Permanent Drainage Easement	PDE
New Permanent Drainage / Utility Easement	DUE
New Permanent Utility Easement	PUE
New Temporary Utility Easement	TUE
New Aerial Utility Easement	AUE

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	
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	
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:

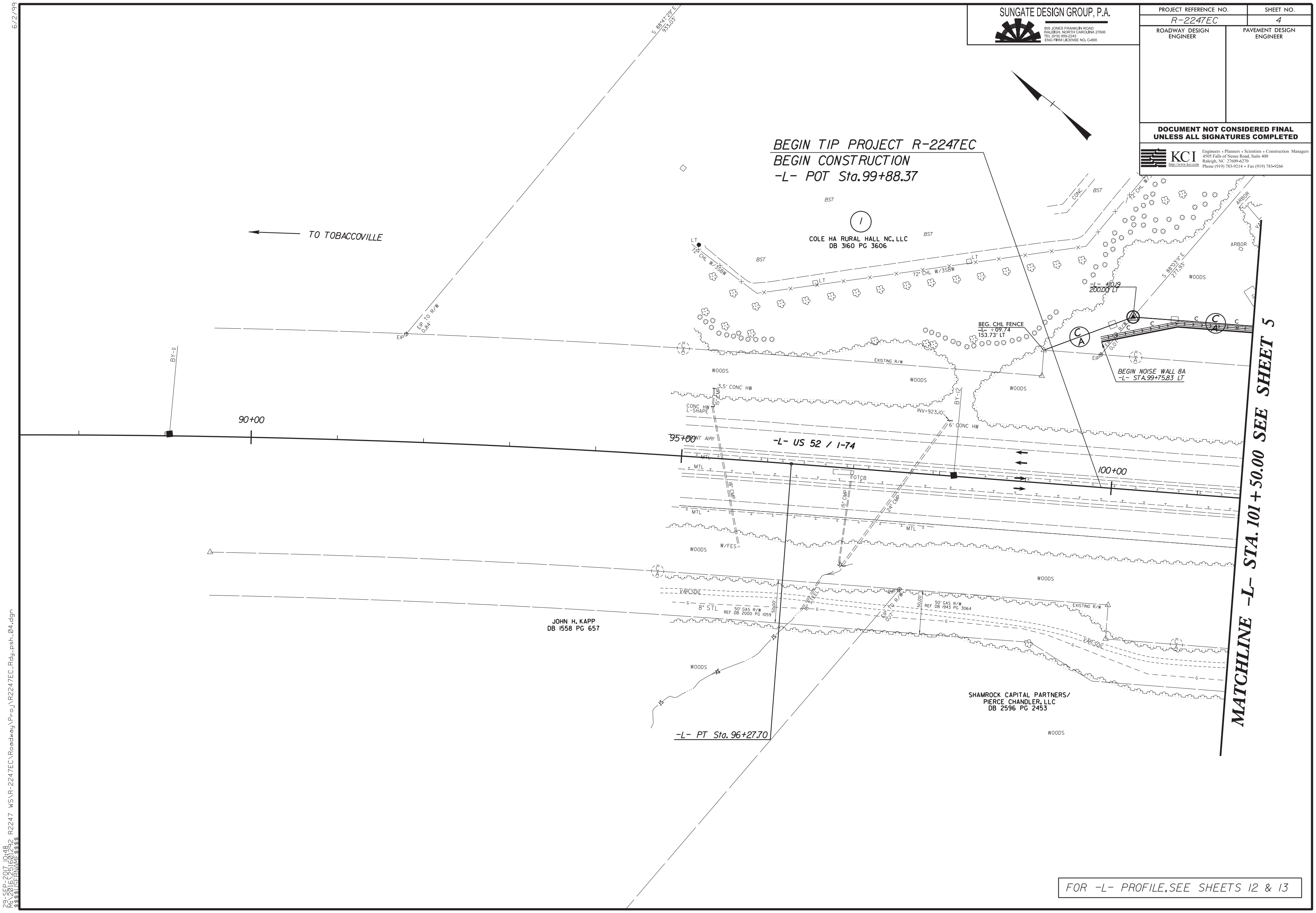
Gas Valve	
Gas Meter	
U/G Gas Line LOS B (S.U.E.*)	G
U/G Gas Line LOS C (S.U.E.*)	G
U/G Gas Line LOS D (S.U.E.*)	G
Above Ground Gas Line	A/G Gas

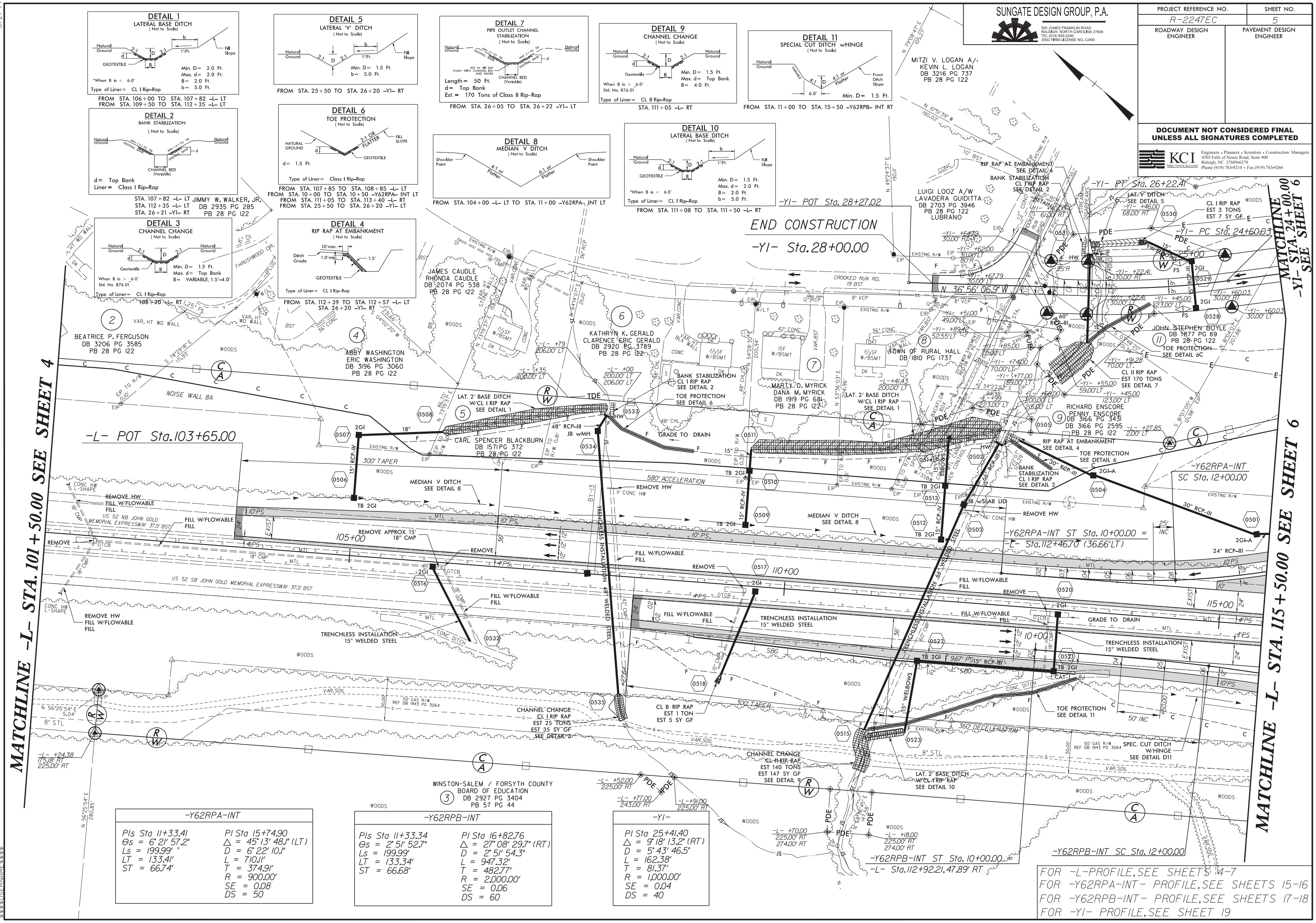
SANITARY SEWER:

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.	UST
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.


SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
4
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
BEGIN TIP PROJECT R-2247EC
BEGIN CONSTRUCTION
-L- POT Sta.99+88.37
TO TOBACCOVILLE
COLE HA RURAL HALL NC, LLC
DB 3160 PG 3606
BEG. CHL FENCE
BEGIN NOISE WALL 8A
-L- STA.99+75.83 LT
WOODS
EXISTING R/W
90+00
95+00
100+00
-L- US 52 / I-74
BY-11
BY-12
6' CONC HW
3.5' CONC HW
CONC HW L-SHAPE
50' GAS R/W REF DB 2000 PG 1059
50' GAS R/W REF DB 1943 PG 3064
8" STL
JOHN H. KAPP
DB 1558 PG 657
SHAMROCK CAPITAL PARTNERS/
PIERCE CHANDLER, LLC
DB 2596 PG 2453
-L- PT Sta. 96+27.70
MATCHLINE -L- STA. 101+50.00 SEE SHEET 5
FOR -L- PROFILE, SEE SHEETS 12 & 13
6/2/99
29-SEP-2017 10:48



-Y62RPA-INT-

PIs Sta 11+33.41
Θs = 6° 21' 57.2"
Ls = 199.99'
LT = 133.41'
ST = 66.74'

PI Sta 15+74.90
Δ = 45° 13' 48.1" (LT)
D = 6° 22' 10.1"
L = 710.11'
T = 374.91'
R = 900.00'
SE = 0.08
DS = 50

-Y62RPB-INT-

PIs Sta 11+33.34
Θs = 2° 51' 52.7"
Ls = 199.99'
LT = 133.34'
ST = 66.68'

PI Sta 16+82.76
Δ = 27° 08' 29.7" (RT)
D = 2° 51' 54.3"
L = 947.32'
T = 482.77'
R = 2,000.00'
SE = 0.06
DS = 60

-Y1-

PI Sta 25+41.40
Δ = 9° 18' 13.2" (RT)
D = 5° 43' 46.5"
L = 162.38'
T = 81.37'
R = 1,000.00'
SE = 0.04
DS = 40

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	6

ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER

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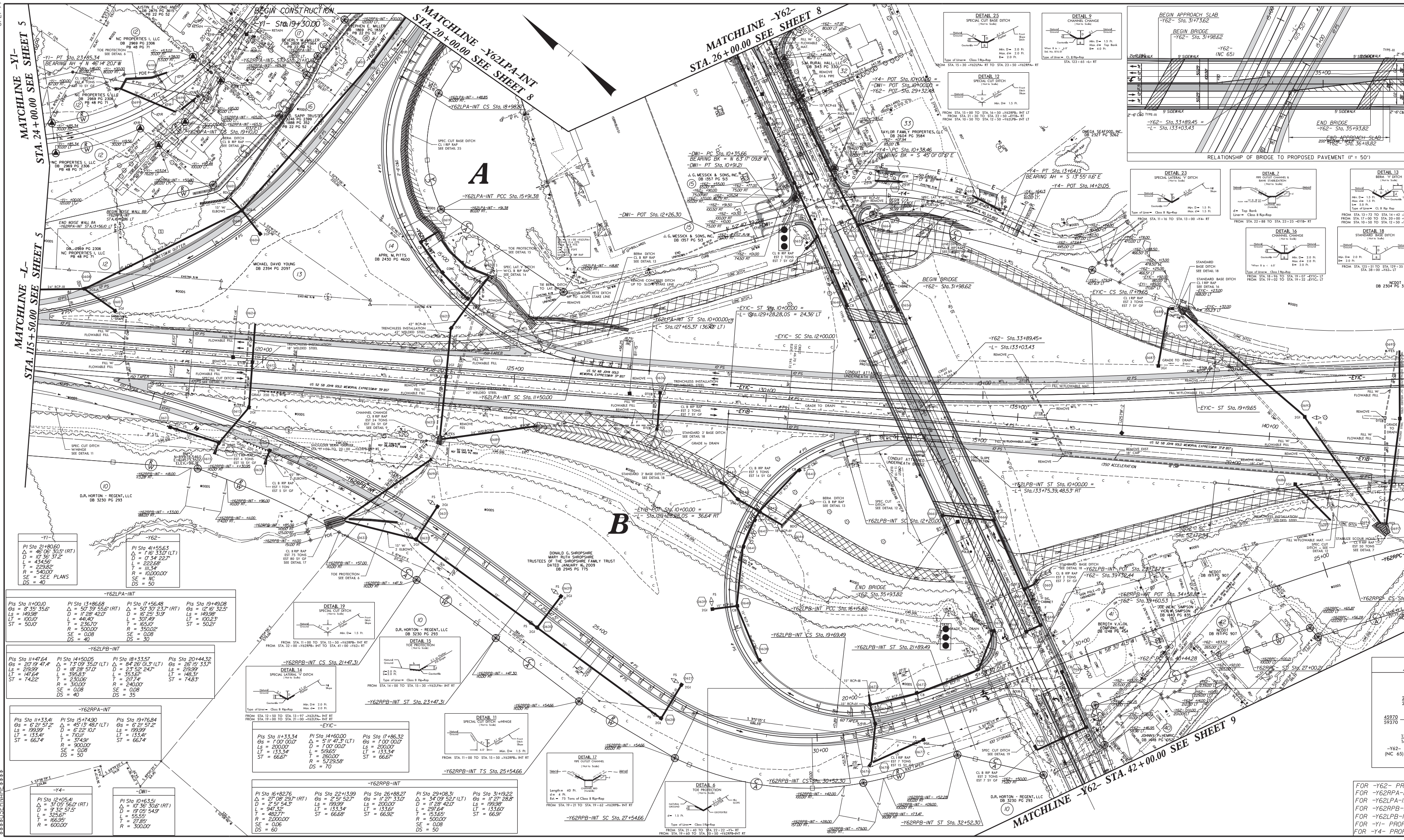
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890



-Y1-
PI Sta 21+80.60
Δ = 46° 06' 30.5" (RT)
D = 10° 36' 37.2"
L = 434.56'
T = 229.82'
R = 540.00'
SE = SEE PLANS
DS = 40

-Y62-
PI Sta 41+55.63
Δ = 1° 16' 33.0" (LT)
D = 0° 34' 22.7"
L = 222.68'
T = 111.34'
R = 10,000.00'
SE = NC
DS = 50

-Y62LPA-INT

PIs Sta 11+00.10	PI Sta 13+86.68	PI Sta 17+56.48	PIs Sta 19+49.08
Θs = 8° 35' 35.6"	Δ = 50° 39' 55.6" (RT)	Δ = 50° 30' 23.7" (RT)	Θs = 12° 16' 32.5"
Ls = 149.98'	D = 11° 28' 42.0"	D = 16° 25' 31.9"	Ls = 149.98'
LT = 100.10'	L = 441.40'	L = 307.49'	LT = 100.23'
ST = 50.10'	T = 236.70'	T = 165.10'	ST = 50.21'
	R = 500.00'	R = 350.02'	
	SE = 0.08	SE = 0.08	
	DS = 40	DS = 30	

-Y62LPB-INT

PIs Sta 11+47.64	PI Sta 14+50.05	PI Sta 18+33.57	PIs Sta 20+44.32
Θs = 20° 19' 47.4"	Δ = 73° 09' 35.0" (LT)	Δ = 84° 26' 01.3" (LT)	Θs = 26° 15' 33.7"
Ls = 219.99'	D = 18° 28' 57.0"	D = 23° 52' 24.7"	Ls = 219.99'
LT = 147.64'	L = 395.83'	L = 353.67'	LT = 148.31'
ST = 74.22'	T = 230.06'	T = 217.74'	ST = 74.83'
	R = 310.00'	R = 240.00'	
	SE = 0.08	SE = 0.08	
	DS = 40	DS = 35	

-Y62RPA-INT

PIs Sta 11+33.41	PI Sta 15+74.90	PIs Sta 19+76.84
Θs = 6° 21' 57.2"	Δ = 45° 13' 48.1" (LT)	Θs = 6° 21' 57.2"
Ls = 199.99'	D = 6° 22' 10.1"	Ls = 199.99'
LT = 133.41'	L = 710.11'	LT = 133.41'
ST = 66.74'	T = 374.91'	ST = 66.74'
	R = 900.00'	
	SE = 0.08	
	DS = 50	

-Y4-
PI Sta 12+05.41
Δ = 31° 05' 56.0" (RT)
D = 9° 32' 57.5"
L = 325.67'
T = 166.95'
R = 600.00'

-DW1-
PI Sta 10+63.51
Δ = 10° 36' 30.6" (RT)
D = 19° 05' 54.9"
L = 55.55'
T = 27.85'
R = 300.00'

-EYIC-

PIs Sta 11+33.34	PI Sta 14+60.00	PIs Sta 17+86.32
Θs = 1° 00' 00.0"	Δ = 5° 11' 47.3" (LT)	Θs = 1° 00' 00.0"
Ls = 200.00'	D = 1° 00' 00.0"	Ls = 200.00'
LT = 133.34'	L = 519.65'	LT = 133.34'
ST = 66.67'	T = 260.00'	ST = 66.67'
	R = 5,729.58'	
	DS = 70	

-Y62RPB-INT

PI Sta 16+82.76	PIs Sta 22+13.99	PIs Sta 26+88.27	PI Sta 29+08.31	PIs Sta 31+19.22
Δ = 27° 08' 29.7" (RT)	Θs = 2° 51' 52.7"	Θs = 11° 27' 33.0"	Δ = 34° 09' 52.1" (LT)	Θs = 11° 27' 28.8"
D = 2° 51' 54.3"	Ls = 199.99'	Ls = 200.00'	D = 11° 28' 42.0"	Ls = 199.98'
L = 947.32'	LT = 133.34'	LT = 133.61'	L = 297.64'	LT = 133.60'
T = 482.77'	ST = 66.68'	ST = 66.92'	T = 153.65'	ST = 66.91'
R = 2,000.00'			R = 500.00'	
SE = 0.06			SE = 0.08	
DS = 60			DS = 50	

NC 65 /US 52 INTERCHANGE

FOR -Y62- PROFILE, SEE SHEETS 14 & 15
FOR -Y62RPA-INT PROFILE, SEE SHEETS 15 & 16
FOR -Y62LPA-INT PROFILE, SEE SHEETS 16 & 17
FOR -Y62RPB-INT PROFILE, SEE SHEETS 17 & 18
FOR -Y62LPB-INT PROFILE, SEE SHEET 18
FOR -Y1- PROFILE, SEE SHEET 19
FOR -Y4- PROFILE, SEE SHEET 20

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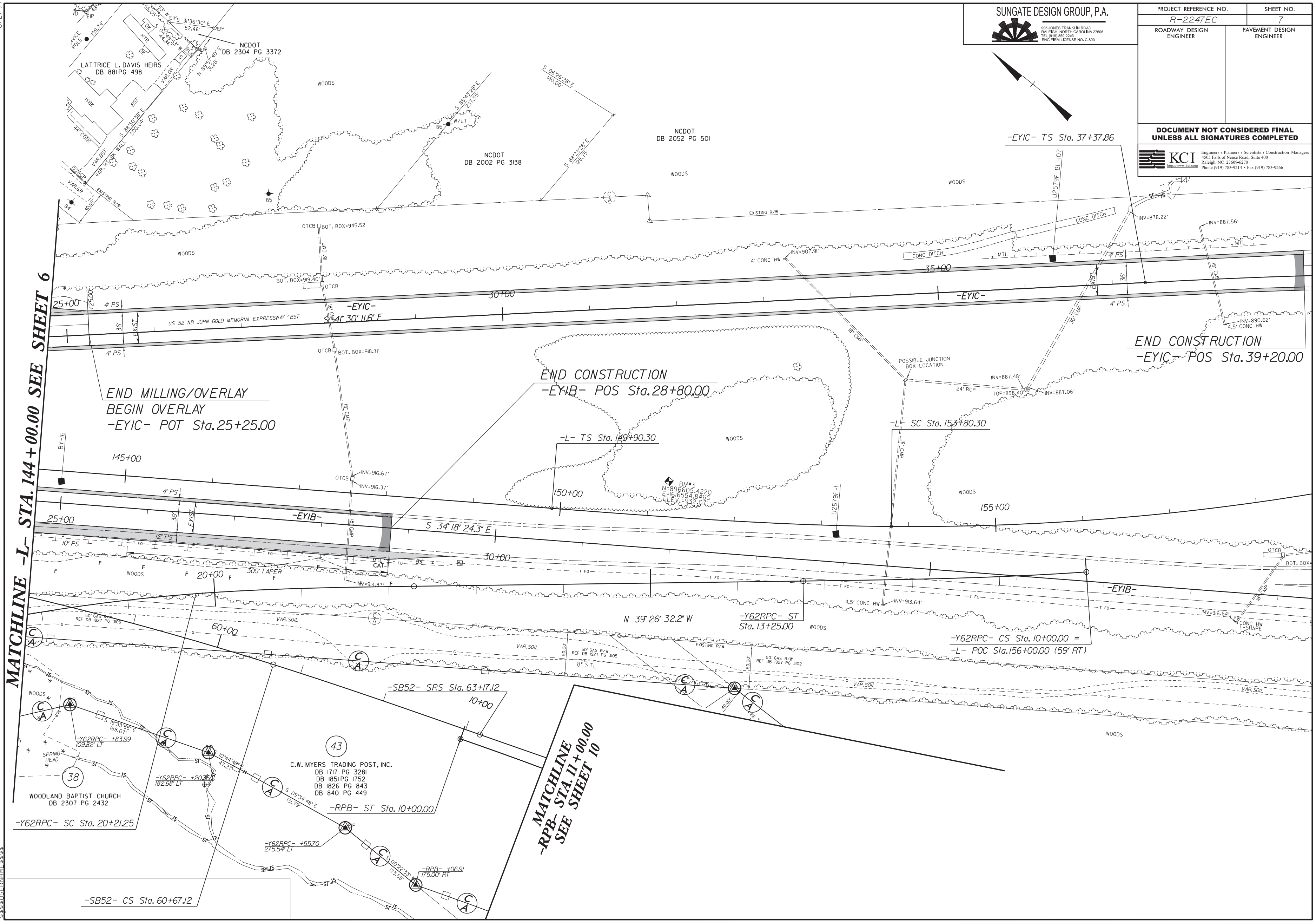
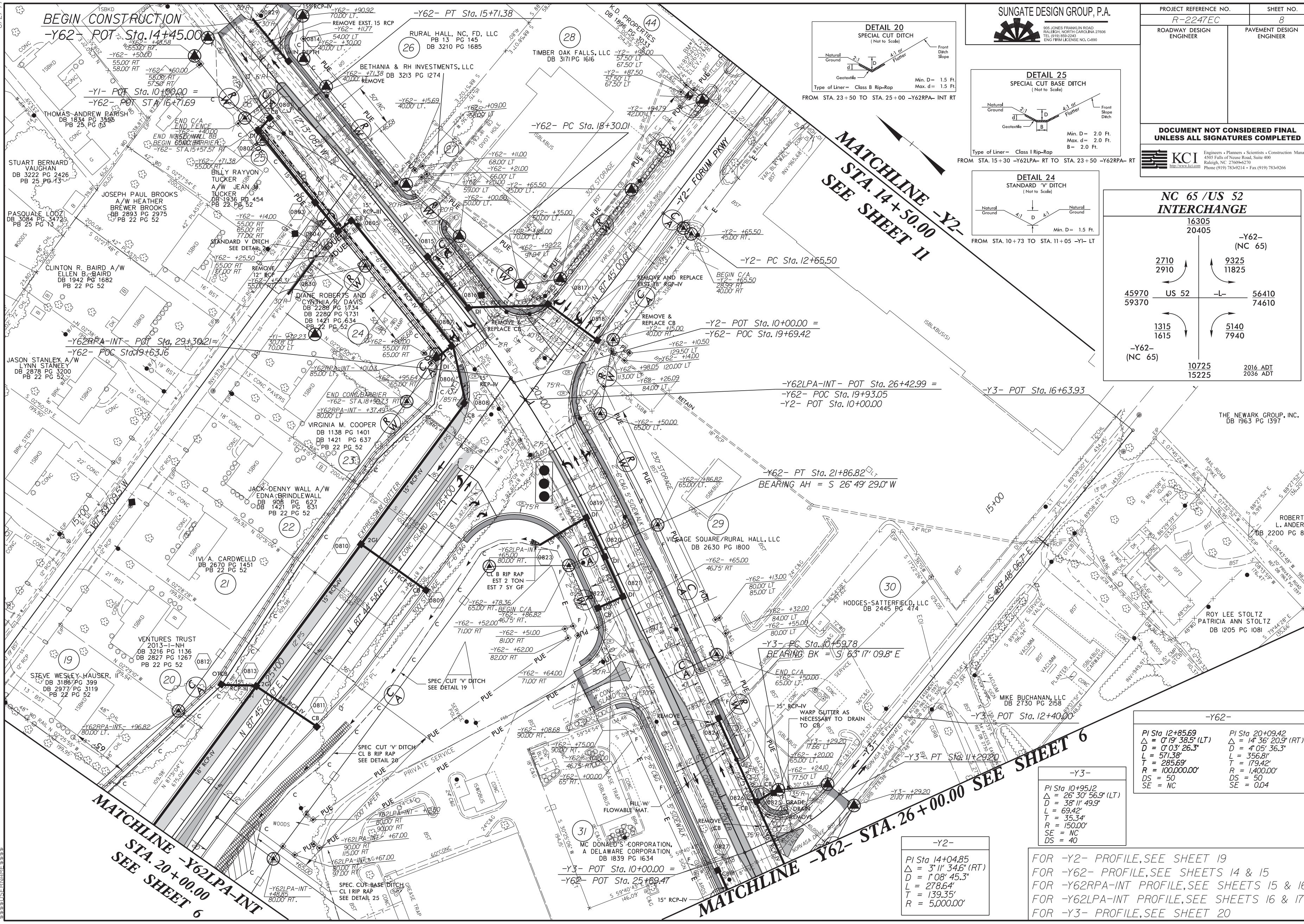
6/2/99



SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
7
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266
MATCHLINE -L- STA. 144+00.00 SEE SHEET 6
MATCHLINE -RPB- STA. 11+00.00 SEE SHEET 10
LATTRICE L. DAVIS HEIRS
DB 881 PG 498
NCDOT
DB 2304 PG 3372
NCDOT
DB 2002 PG 3138
NCDOT
DB 2052 PG 501
WOODS
EXISTING R/W
US 52 NB JOHN GOLD MEMORIAL EXPRESSWAY BST
-EYIC-
S 41° 30' 11.6" E
END MILLING/OVERLAY
BEGIN OVERLAY
-EYIC- POT Sta.25+25.00
END CONSTRUCTION
-EYIB- POS Sta.28+80.00
-EYIC- TS Sta. 37+37.86
END CONSTRUCTION
-EYIC- POS Sta.39+20.00
-L- TS Sta. 149+90.30
-L- SC Sta. 153+80.30
POSSIBLE JUNCTION BOX LOCATION
BM#3
-EYIB-
S 34° 18' 24.3" E
N 39° 26' 32.2" W
300' TAPER
-Y62RPC- ST
Sta. 13+25.00
-Y62RPC- CS Sta. 10+00.00 =
-L- POC Sta.156+00.00 (59' RT)
-SB52- SRS Sta. 63+17.12
-RPB- ST Sta. 10+00.00
-SB52- CS Sta. 60+67.12
-Y62RPC- SC Sta. 20+21.25
C.W. MYERS TRADING POST, INC.
DB 1717 PG 3281
DB 1851 PG 1752
DB 1826 PG 843
DB 840 PG 449
WOODLAND BAPTIST CHURCH
DB 2307 PG 2432
SPRING HEAD
145+00
150+00
155+00
25+00
30+00
35+00
20+00
60+00
10+00



BEGIN CONSTRUCTION
-Y62- POT Sta.14+45.00
SUNGATE DESIGN GROUP, P.A.
PROJECT REFERENCE NO.
R-2247EC
SHEET NO.
8
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266
DETAIL 20
SPECIAL CUT DITCH
(Not to Scale)
Type of Liner= Class B Rip-Rap
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
FROM STA. 23+50 TO STA. 25+00 -Y62RPA- INT RT
DETAIL 25
SPECIAL CUT BASE DITCH
(Not to Scale)
Type of Liner= Class I Rip-Rap
Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 2.0 Ft.
FROM STA. 15+30 -Y62LPA- RT TO STA. 23+50 -Y62RPA- RT
DETAIL 24
STANDARD 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 10+73 TO STA. 11+05 -Y1- LT
NC 65 /US 52
INTERCHANGE
2016 ADT
2036 ADT
MATCHLINE -Y2- STA. 14+50.00 SEE SHEET 11
MATCHLINE -Y62LPA-INT STA. 20+00.00 SEE SHEET 6
MATCHLINE -Y62- STA. 26+00.00 SEE SHEET 6
-Y62- PT Sta. 15+71.38
-Y1- POT Sta. 10+00.00 = -Y62- POT STA 16+71.69
-Y62- PC Sta. 18+30.01
-Y2- PC Sta. 12+65.50
-Y2- POT Sta. 10+00.00 = -Y62- POC Sta. 19+69.42
-Y62RPA-INT- POT Sta. 29+30.21= -Y62- POC Sta.19+63.16
-Y62LPA-INT- POT Sta. 26+42.99 = -Y62- POC Sta. 19+93.05 -Y2- POT Sta. 10+00.00
-Y3- POT Sta. 16+63.93
-Y62- PT Sta. 21+86.82
BEARING AH = S 26° 49' 29.0" W
-Y3- PC Sta. 10+59.78
BEARING BK = S 63° 17' 09.8" E
-Y3- POT Sta. 12+40.00
-Y3- PT Sta. 11+29.20
-Y3- POT Sta. 10+00.00 = -Y62- POT Sta. 25+69.47
-Y2- FORUM PKWY
THE NEWARK GROUP, INC. DB 1963 PG 1397
VILLAGE SQUARE/RURAL HALL, LLC DB 2630 PG 1800
HODGES-SATTERFIELD, LLC DB 2445 PG 474
MIKE BUCHANAN, LLC DB 2730 PG 2158
MC DONALD'S CORPORATION, A DELAWARE CORPORATION DB 1839 PG 1634
ROBERT L. ANDERS DB 2200 PG 833
ROY LEE STOLTZ PATRICIA ANN STOLTZ DB 1205 PG 1081
RURAL HALL, NC, FD, LLC PB 13 PG 145 DB 3210 PG 1685
BETHANIA & RH INVESTMENTS, LLC DB 3213 PG 1274
TIMBER OAK FALLS, LLC DB 3171 PG 1616
K.D. PROPERTIES DB 1896 PG 3033
THOMAS ANDREW PARISH DB 1834 PG 3595 PB 25 PG 63
STUART BERNARD VAUGHAN DB 3222 PG 2426 PB 25 PG 13
JOSEPH PAUL BROOKS A/W HEATHER BREWER BROOKS DB 2893 PG 2975 PB 22 PG 52
PASQUALE LOOZ DB 3084 PG 3475 PB 25 PG 13
BILLY RAYVON TUCKER A/W JEAN M. TUCKER DB 1936 PG 454 PB 22 PG 52
CLINTON R. BAIRD A/W ELLEN B. BAIRD DB 1942 PG 1682 PB 22 PG 52
DIANE ROBERTS AND CYNTHIA R. DAVIS DB 2280 PG 1734 DB 2280 PG 1731 DB 1421 PG 634 PB 22 PG 52
JASON STANLEY A/W LYNN STANLEY DB 2878 PG 3200 PB 22 PG 52
VIRGINIA M. COOPER DB 1138 PG 1401 DB 1421 PG 637 PB 22 PG 52
JACK DENNY WALL A/W EDNA BRINDLEWALL DB 908 PG 627 DB 1421 PG 631 PB 22 PG 52
IVI A. CARDWELL DB 2670 PG 1451 PB 22 PG 52
VENTURES TRUST 2013-I-NH DB 3216 PG 1136 DB 2827 PG 1267 PB 22 PG 52
STEVE WESLEY HAUSER, II DB 3186 PG 399 DB 2977 PG 3119 PB 22 PG 52
-Y2-
PI Sta 14+04.85
Δ = 3° 11' 34.6" (RT)
D = 1° 08' 45.3"
L = 278.64'
T = 139.35'
R = 5,000.00'
-Y3-
PI Sta 10+95.12
Δ = 26° 30' 56.9" (LT)
D = 38° 11' 49.9"
L = 69.42'
T = 35.34'
R = 150.00'
SE = NC
DS = 40
-Y62-
PI Sta 12+85.69
Δ = 0° 19' 38.5" (LT)
D = 0° 03' 26.3"
L = 571.38'
T = 285.69'
R = 100,000.00'
DS = 50
SE = NC
PI Sta 20+09.42
Δ = 14° 36' 20.9" (RT)
D = 4° 05' 36.3"
L = 356.81'
T = 179.42'
R = 1,400.00'
DS = 50
SE = 0.04
FOR -Y2- PROFILE, SEE SHEET 19
FOR -Y62- PROFILE, SEE SHEETS 14 & 15
FOR -Y62RPA-INT PROFILE, SEE SHEETS 15 & 16
FOR -Y62LPA-INT PROFILE, SEE SHEETS 16 & 17
FOR -Y3- PROFILE, SEE SHEET 20

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	9

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

SUNGATE DESIGN GROUP, P.A.

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4505 Falls of Neuse Road, Suite 400
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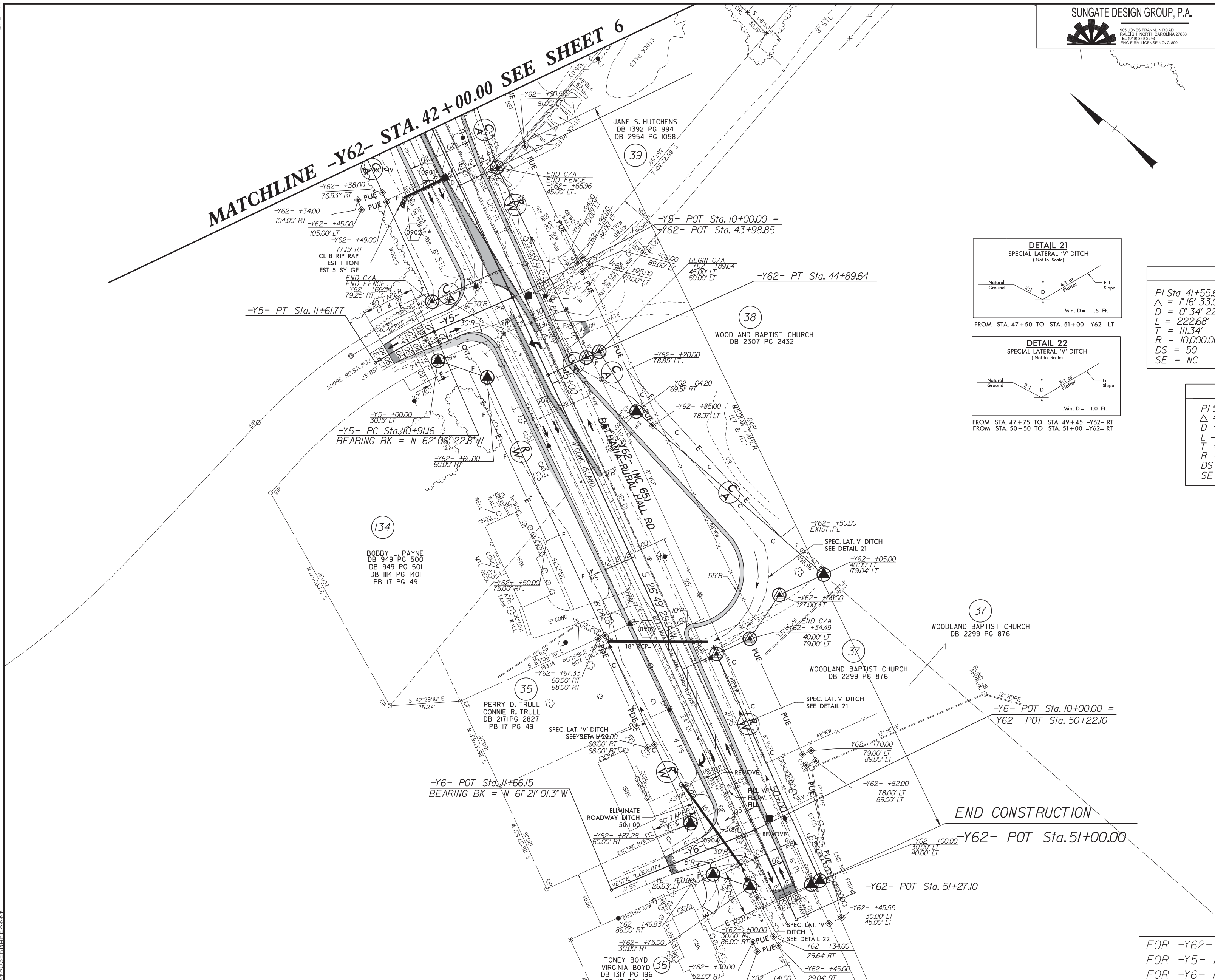

-Y62-

PI Sta 41+55.63	PI Sta 43+78.30
△ = 1° 16' 33.0" (LT)	△ = 1° 16' 33.0" (RT)
D = 0° 34' 22.7"	D = 0° 34' 22.7"
L = 222.68'	L = 222.68'
T = 111.34'	T = 111.34'
R = 10,000.00'	R = 10,000.00'
DS = 50	DS = 50
SE = NC	SE = NC

-Y5-

PI Sta 11+26.54
△ = 9° 13' 31.9" (LT)
D = 13° 03' 58.7"
L = 70.61'
T = 35.38'
R = 438.50'
DS = 40
SE = SEE PLANS

FOR -Y62- PROFILE, SEE SHEETS 14 & 15
FOR -Y5- PROFILE, SEE SHEET 20
FOR -Y6- PROFILE, SEE SHEET 20

6/2/99

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SUNGATE DESIGN GROUP, P.A.

905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-890

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	10
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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Raleigh, NC 27609-6270
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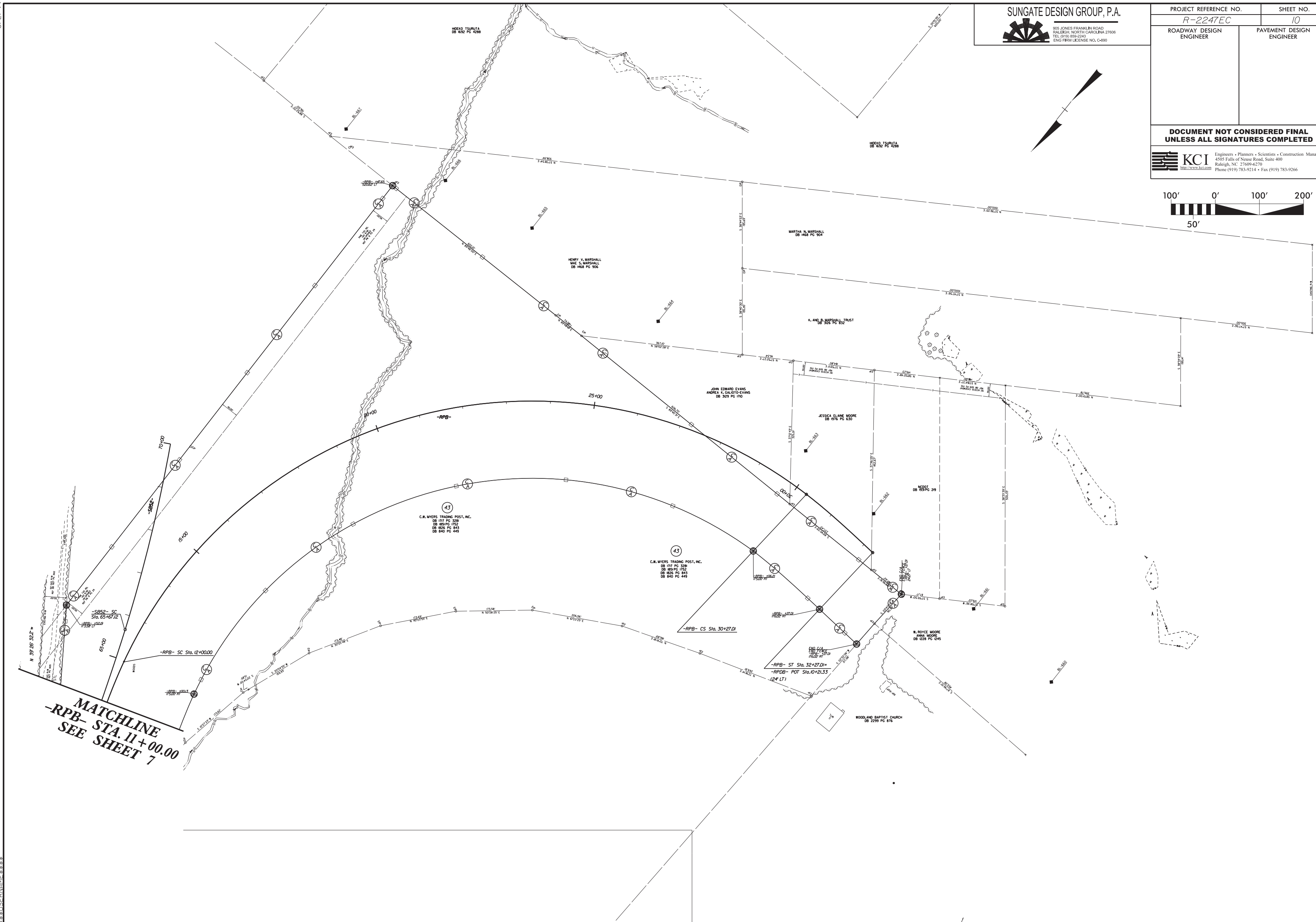

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6/2/99

SUNGATE DESIGN GROUP, P.A.

PROJECT REFERENCE NO.	SHEET NO.
R-2247EC	11

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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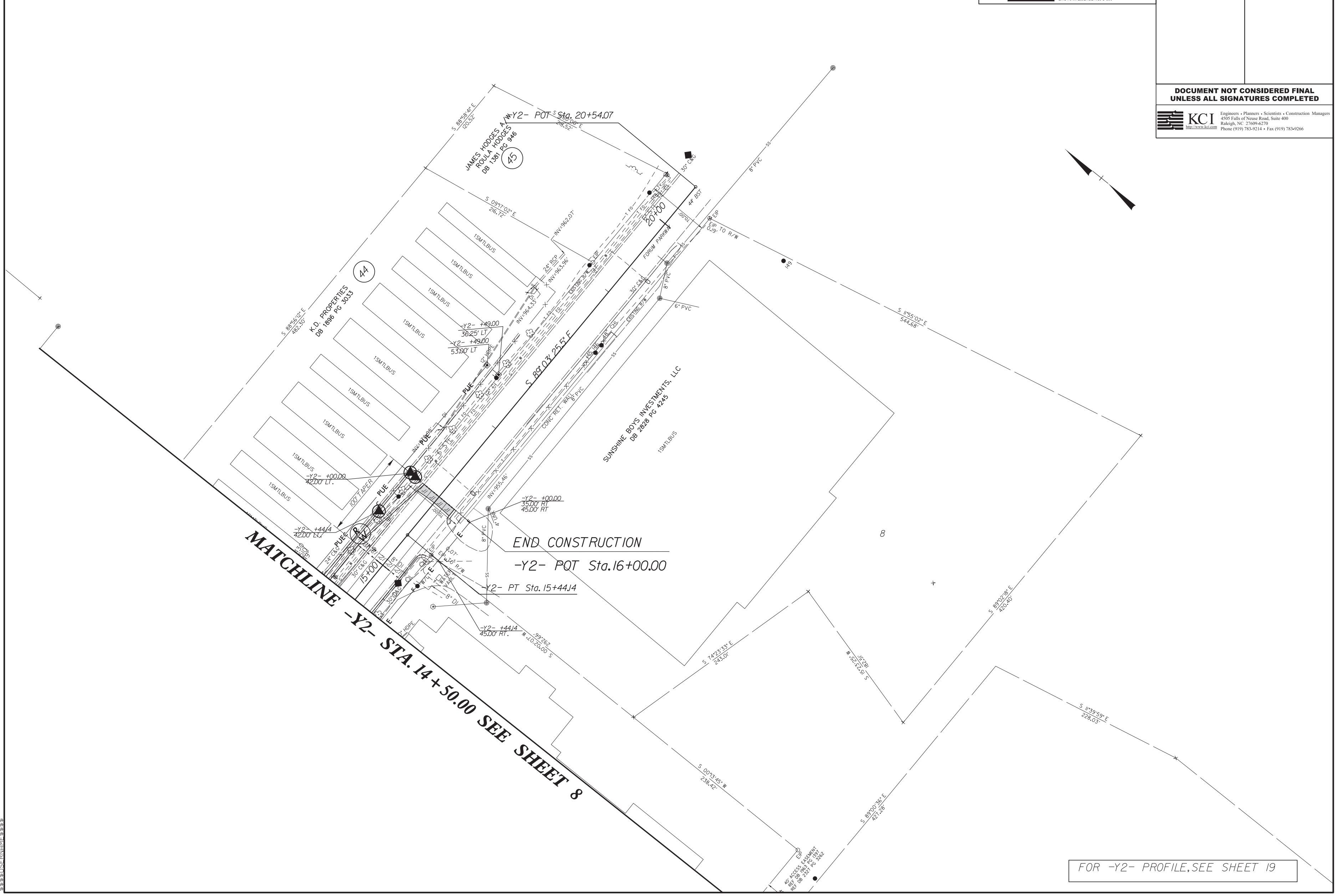
http://www.kci.com



FOR -Y2- PROFILE, SEE SHEET 19

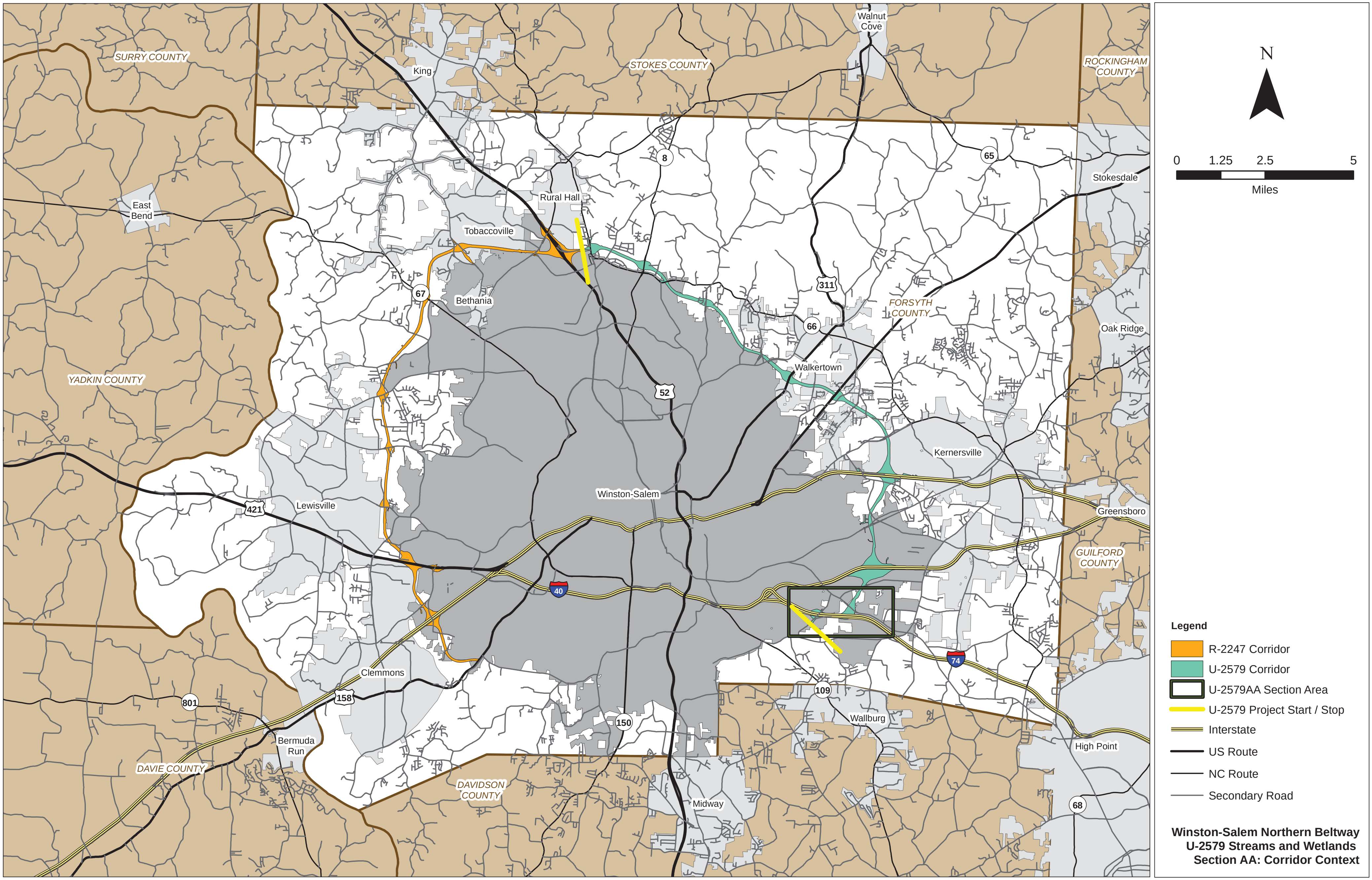
6/2/99

DRAFT Permit Map Set:

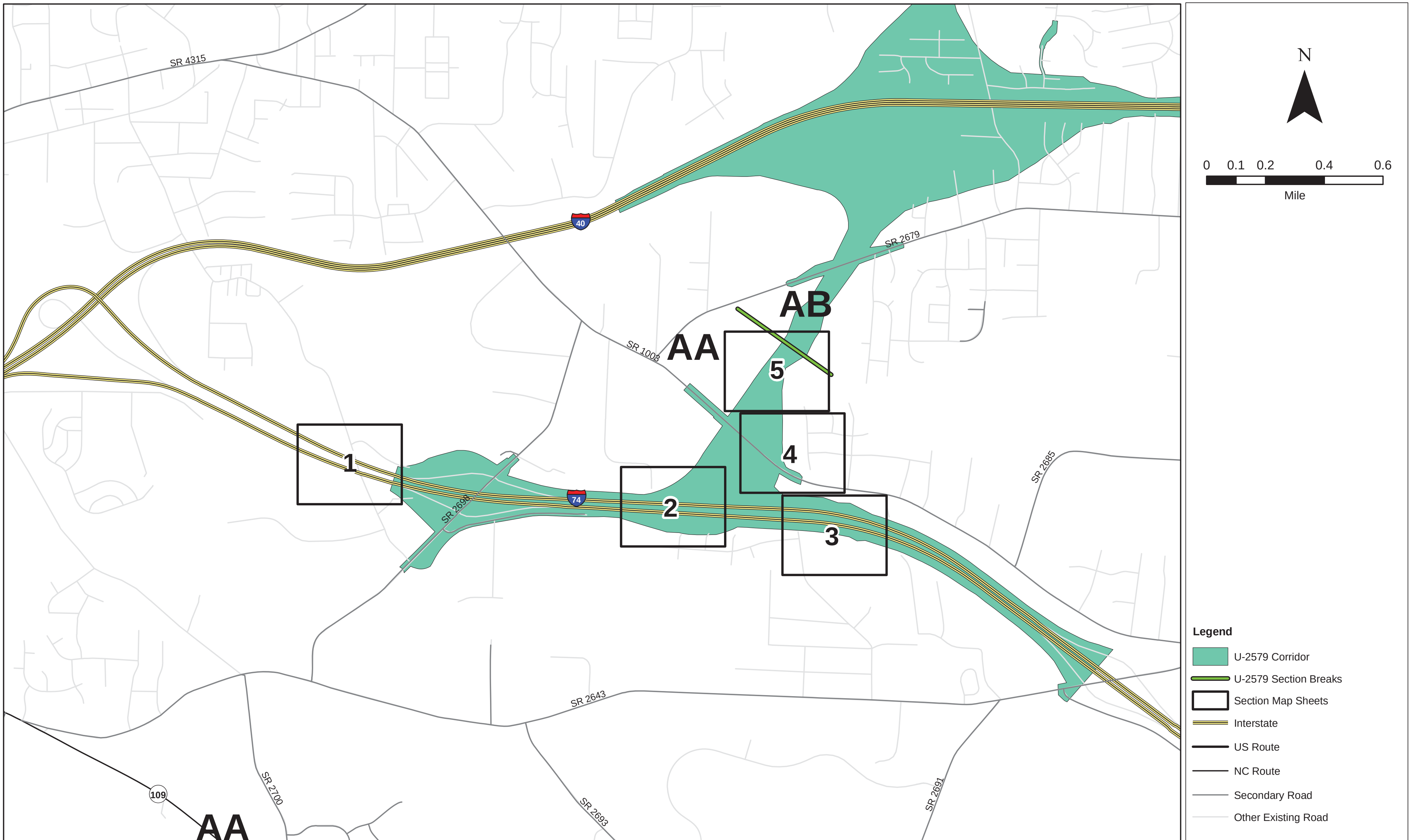
U-2579 USACE PERMIT MAPS: **Sections AA, AB, D, E, F**

R-2247 USACE PERMIT MAPS: **Sections B Phase II, CA, CB, D, EA, EB**

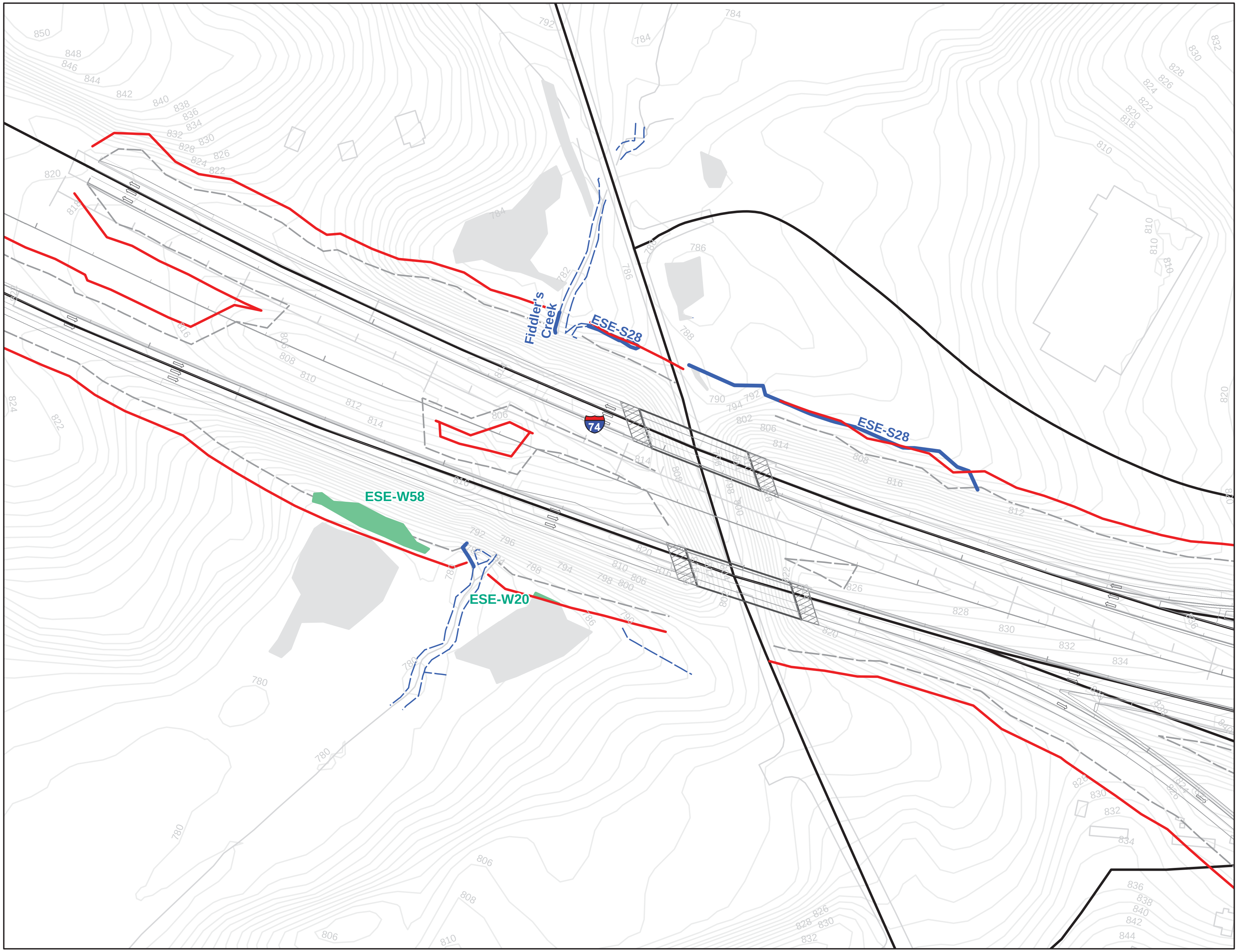
September 27, 2017



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Corridor Context



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Master Sheet



N

0 50 100 200 300

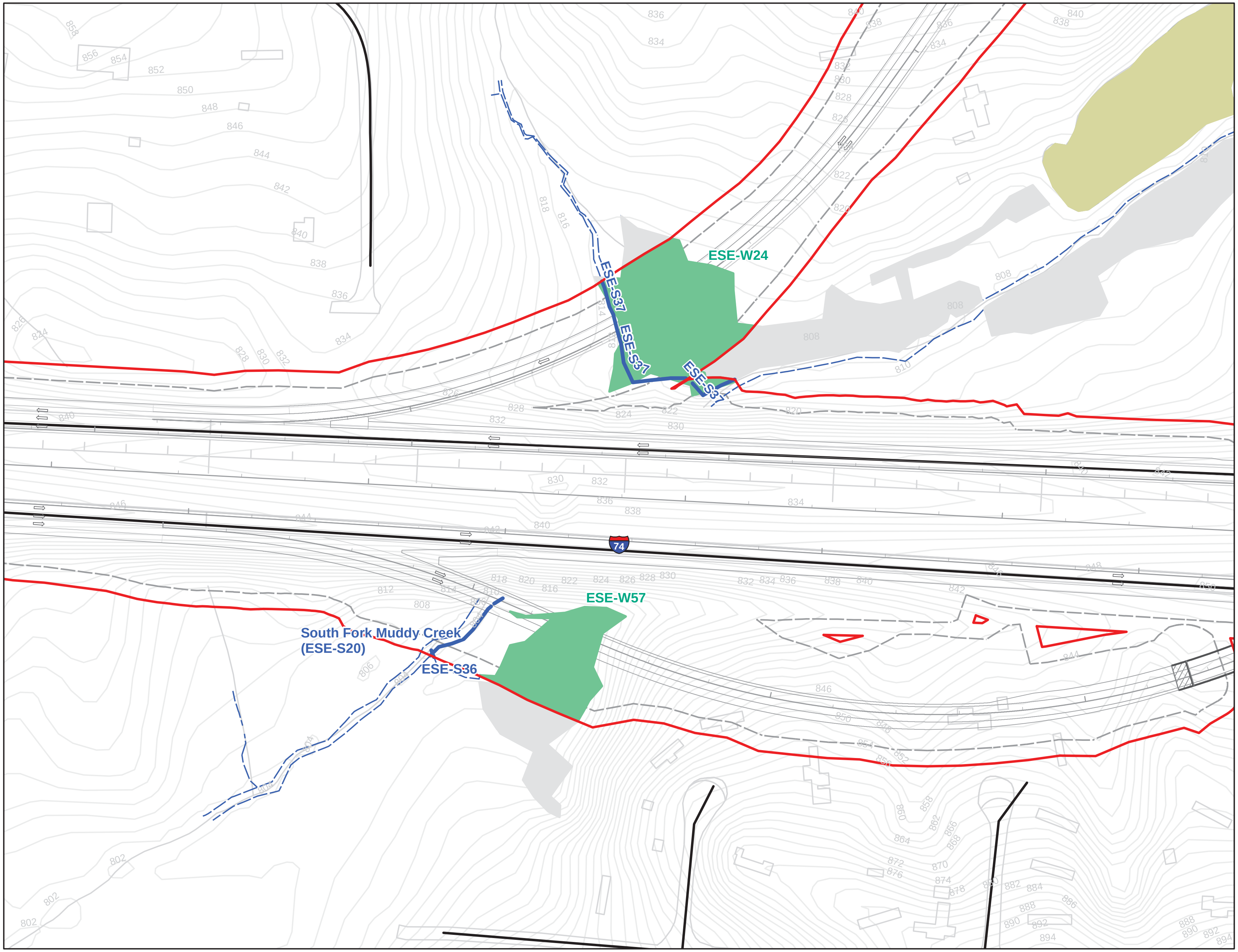
Feet

Legend

- U-2579AA Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Sheet 1 of 5



N

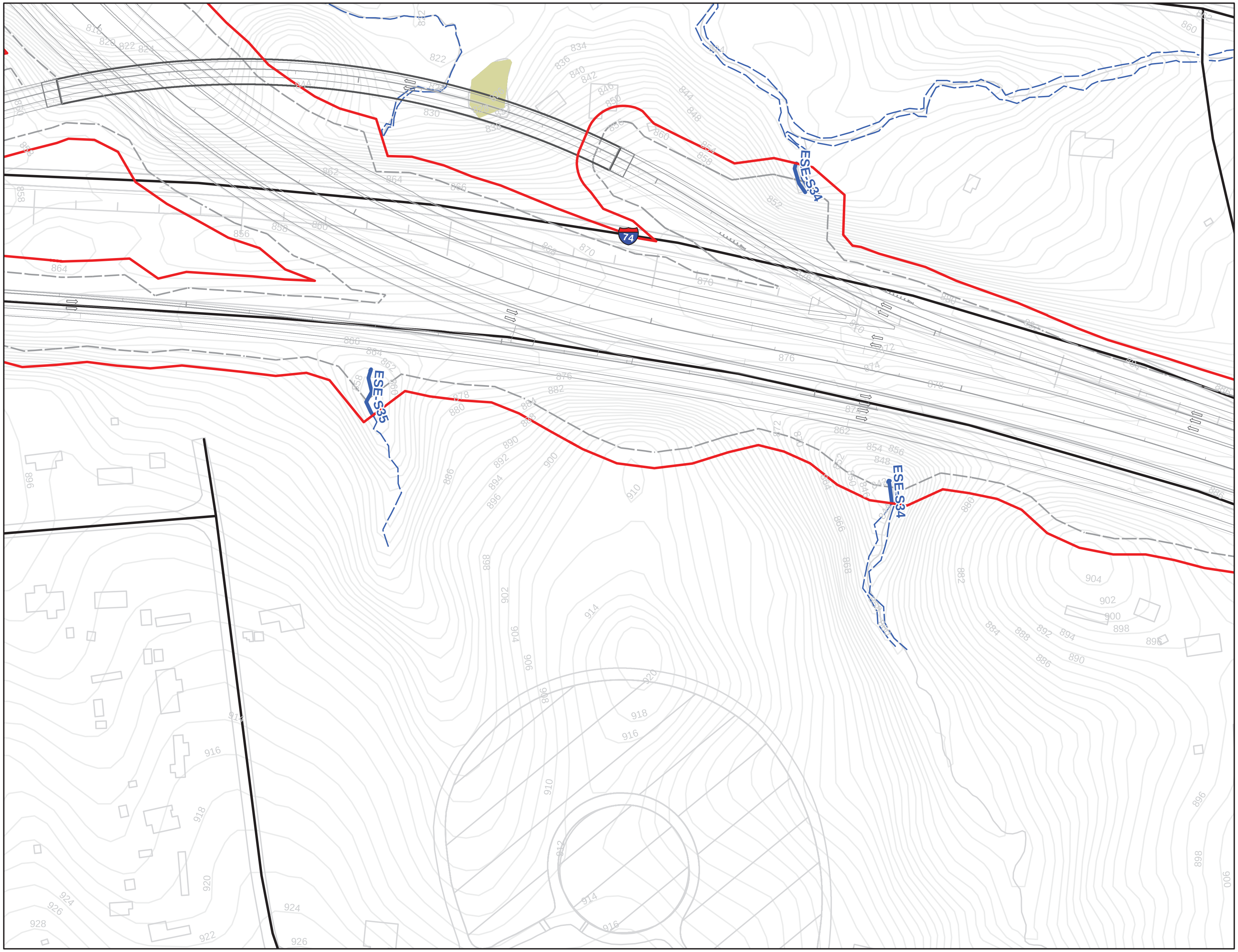
0 50 100 200 300
Feet

Legend

- U-2579AA Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Sheet 2 of 5



N

0 50 100 200 300

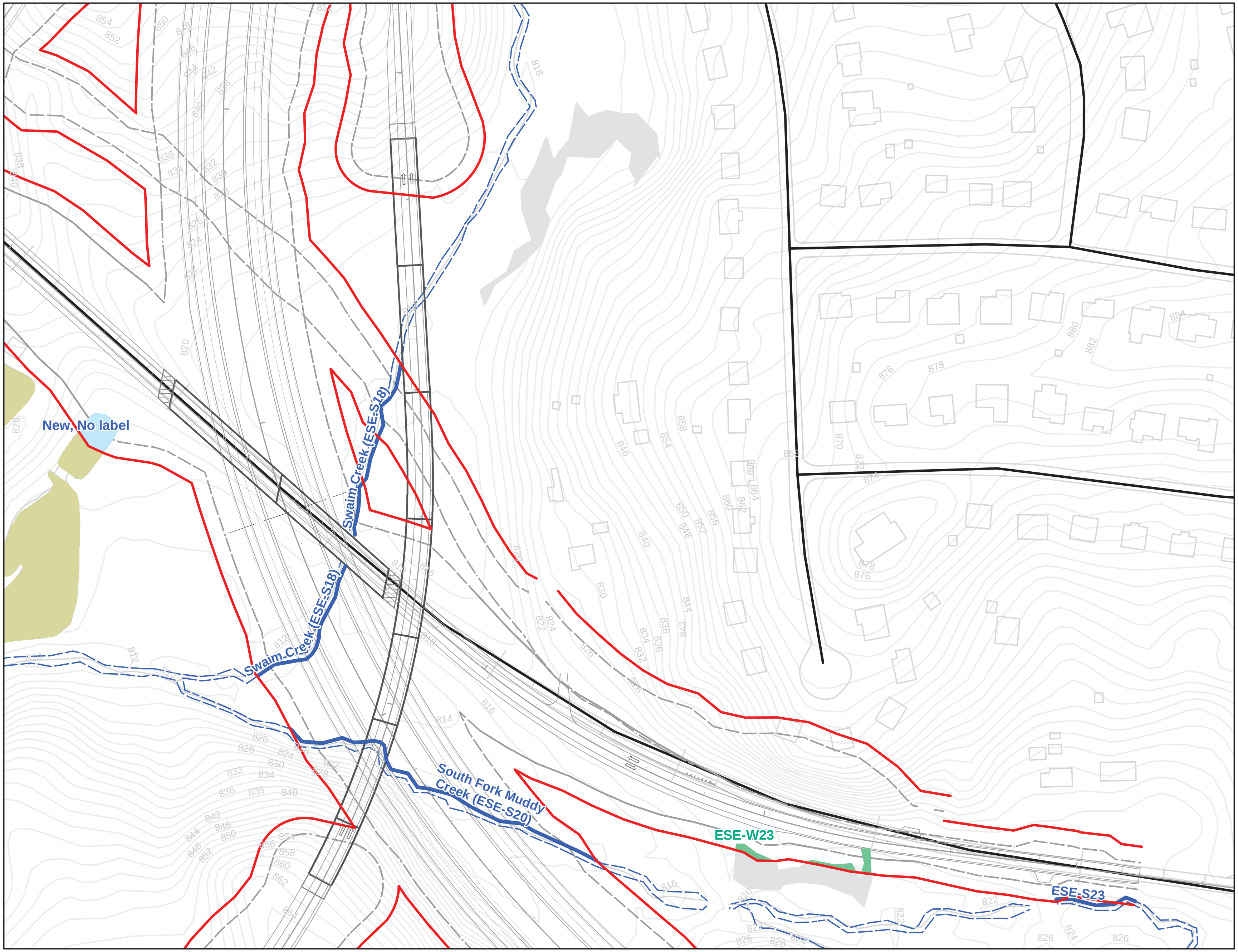
Feet

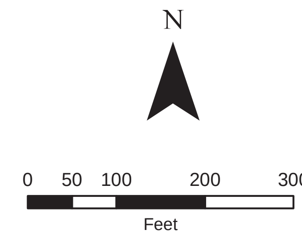
Legend

- U-2579AA Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Sheet 3 of 5



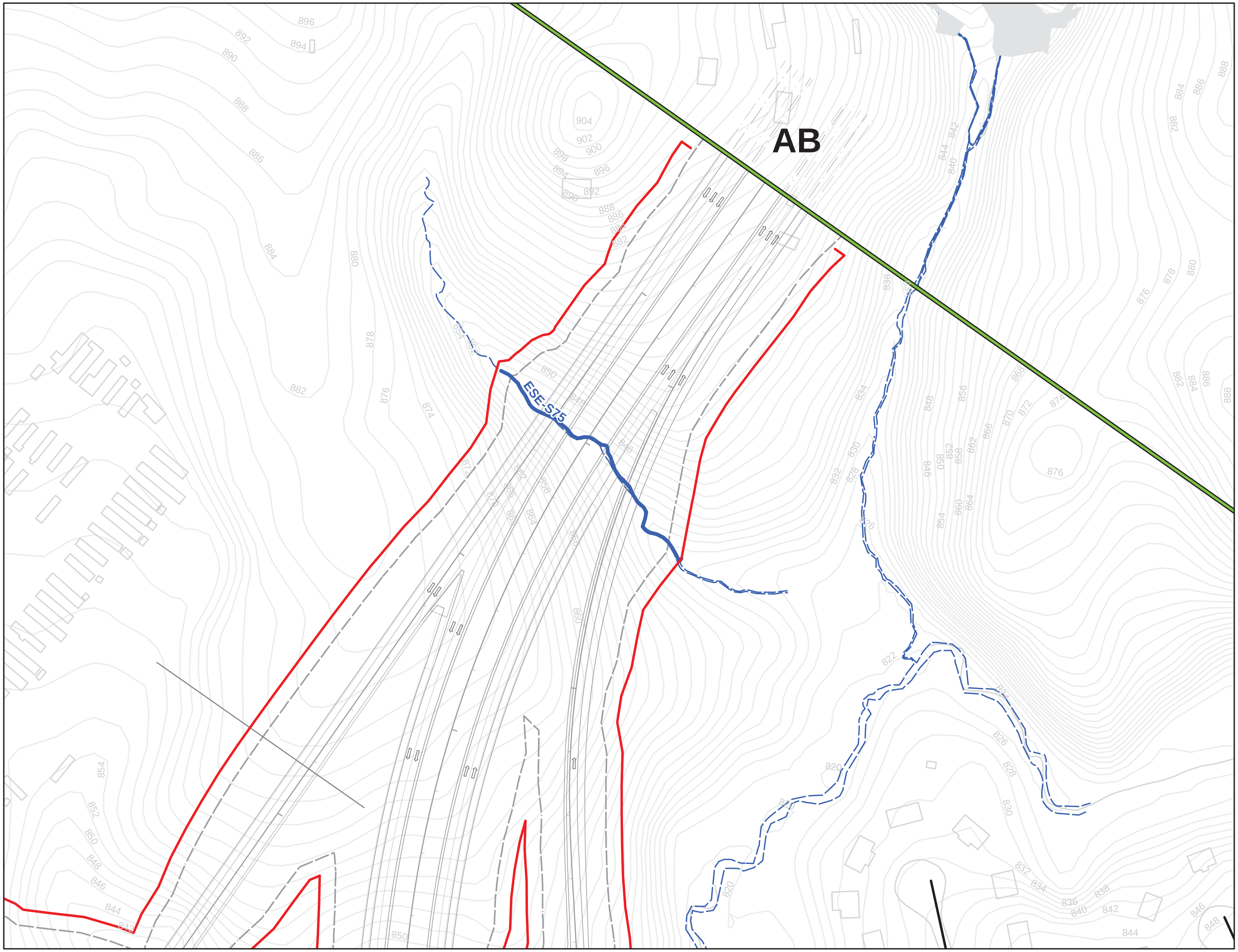


Legend

- U-2579AA Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Sheet 4 of 5



N

0 50 100 200 300

Feet

Legend

- U-2579AA Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AA: Sheet 5 of 5

STIP No. U-2579, Section AA

Summary Sheet: Impacts within slope stakes + 25'

Note: wetland impacts calculated to nearest 0.01 acre; stream impacts calculated to nearest foot

Wetlands

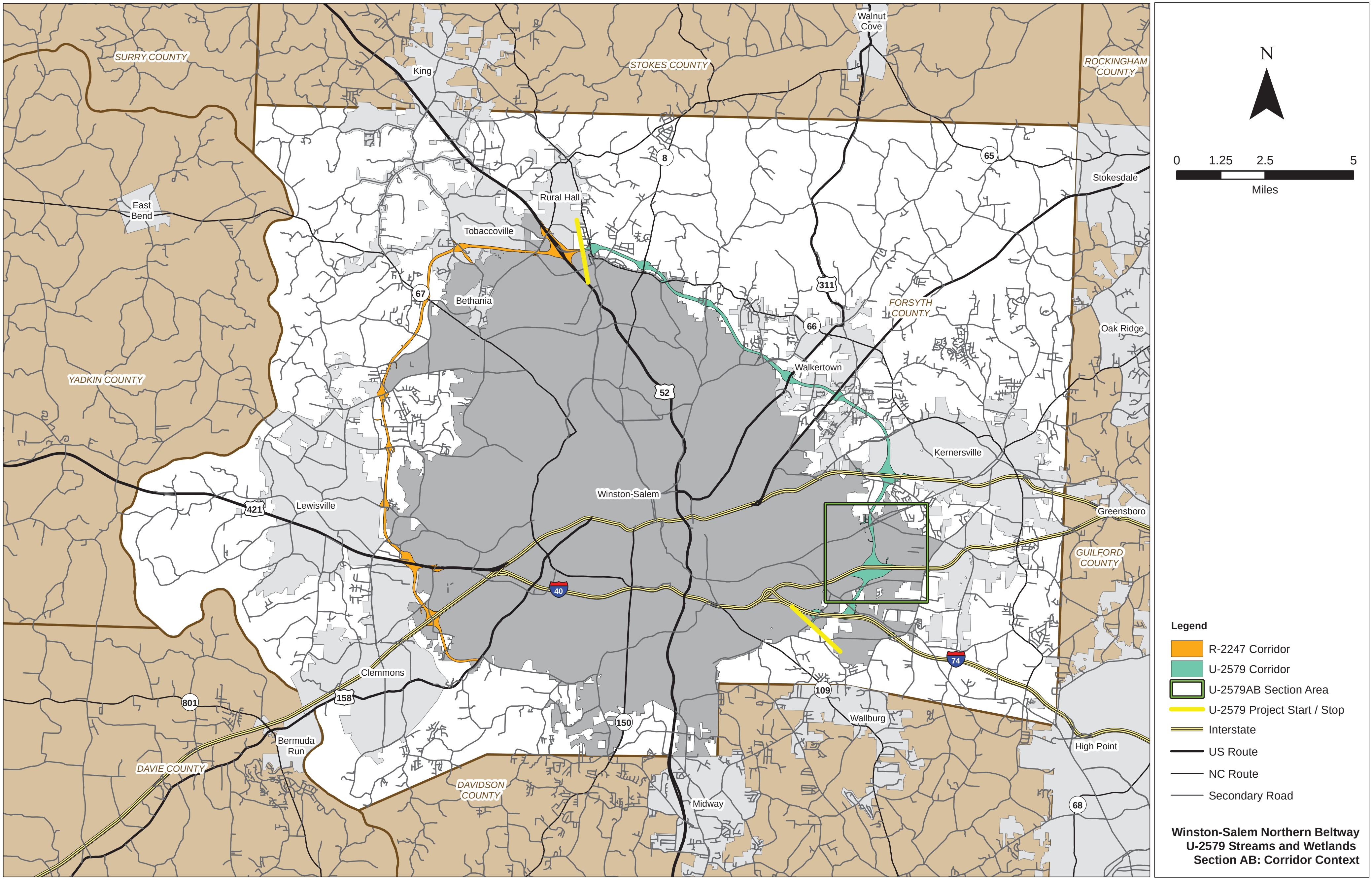
Sheet No.	*Identifier*	*Area (Acres)*
1	ESE-W58	0.09
1	ESE-W20	<0.01
2	ESE-W24	0.84
2	ESE-W57	0.47
4	ESE-W23	0.03
	Total:	**1.43**

Streams

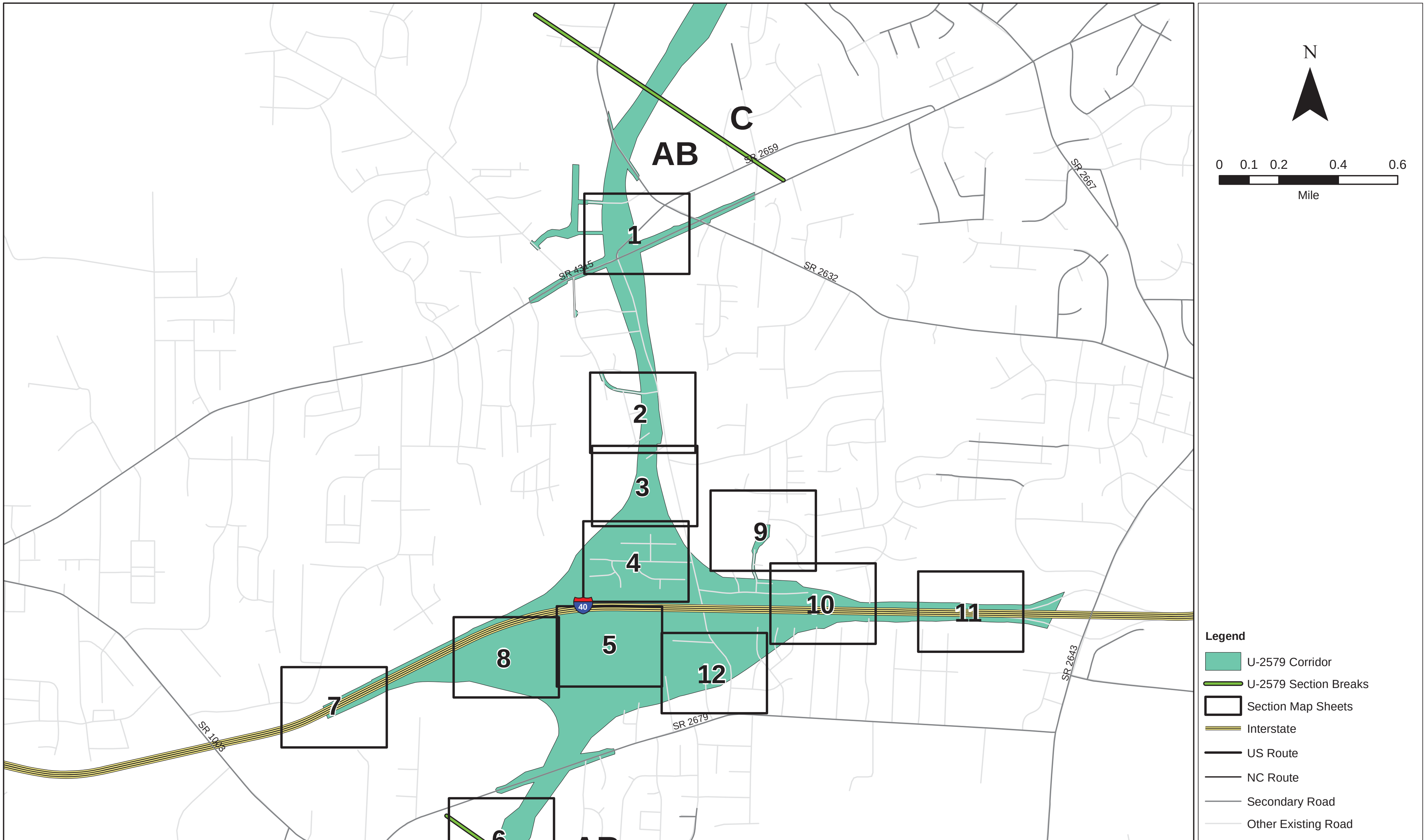
Sheet No.	*Identifier*	*Length (Feet)*
1	Fiddler's Creek	78
1	ESE-S28	606
2	South Fork Muddy Creek (ESE-S20)	200
2	ESE-S36	12
2	ESE-S37	274
3	ESE-S34	90
3	ESE-S35	80
4	Swaim Creek (ESE-S18)	535
4	South Fork Muddy Creek (ESE-S20)	562
4	ESE-S23	130
5	ESE-S75	452
	Total:	**3,019**

Ponds

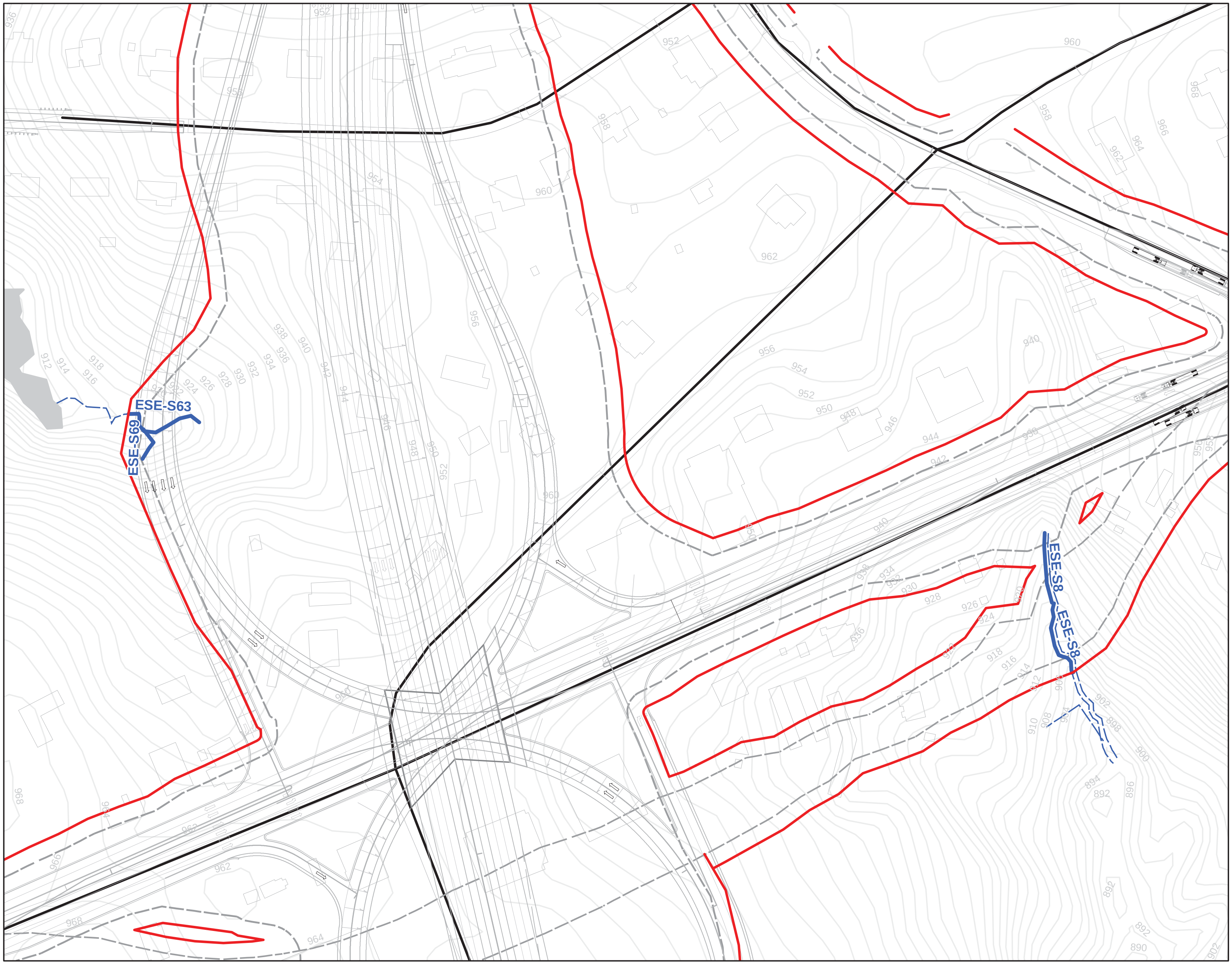
Sheet No.	*Identifier*	*Area (Acres)*
4	New, No label	0.06
	Total:	**0.06**



SURRY COUNTY
STOKES COUNTY
ROCKINGHAM COUNTY
YADKIN COUNTY
FORSYTH COUNTY
GUILFORD COUNTY
DAVIE COUNTY
DAVIDSON COUNTY
Walnut Cove
King
Stokesdale
East Bend
Rural Hall
Tobaccoville
Bethania
Walkertown
Oak Ridge
Kernersville
Winston-Salem
Lewisville
Greensboro
Clemmons
Bermuda Run
Wallburg
High Point
Midway
8
65
311
66
67
52
421
40
74
109
158
801
150
68
N
0
1.25
2.5
5
Miles
Legend
R-2247 Corridor
U-2579 Corridor
U-2579AB Section Area
U-2579 Project Start / Stop
Interstate
US Route
NC Route
Secondary Road
Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Corridor Context



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Master Sheet

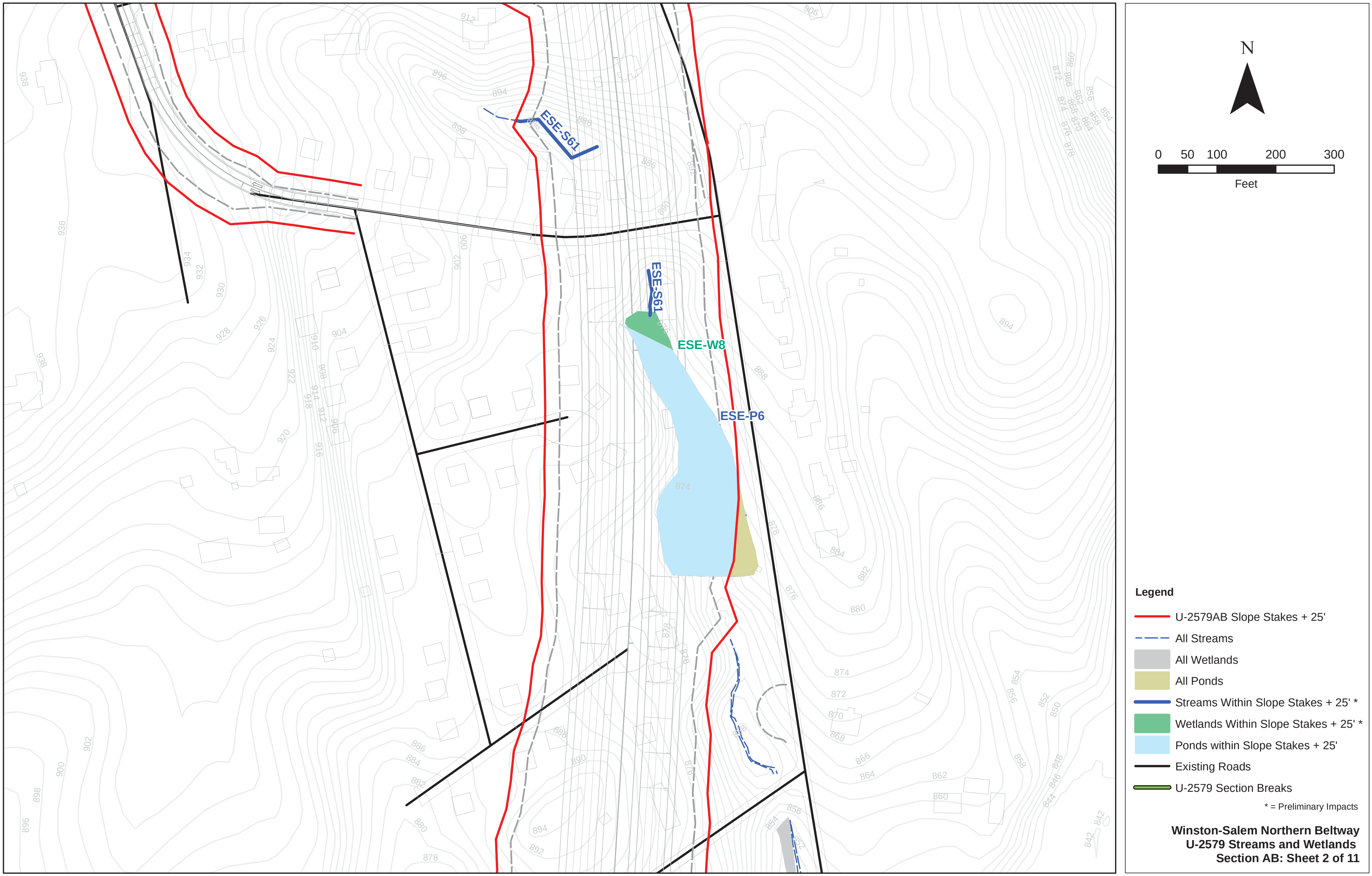


Legend

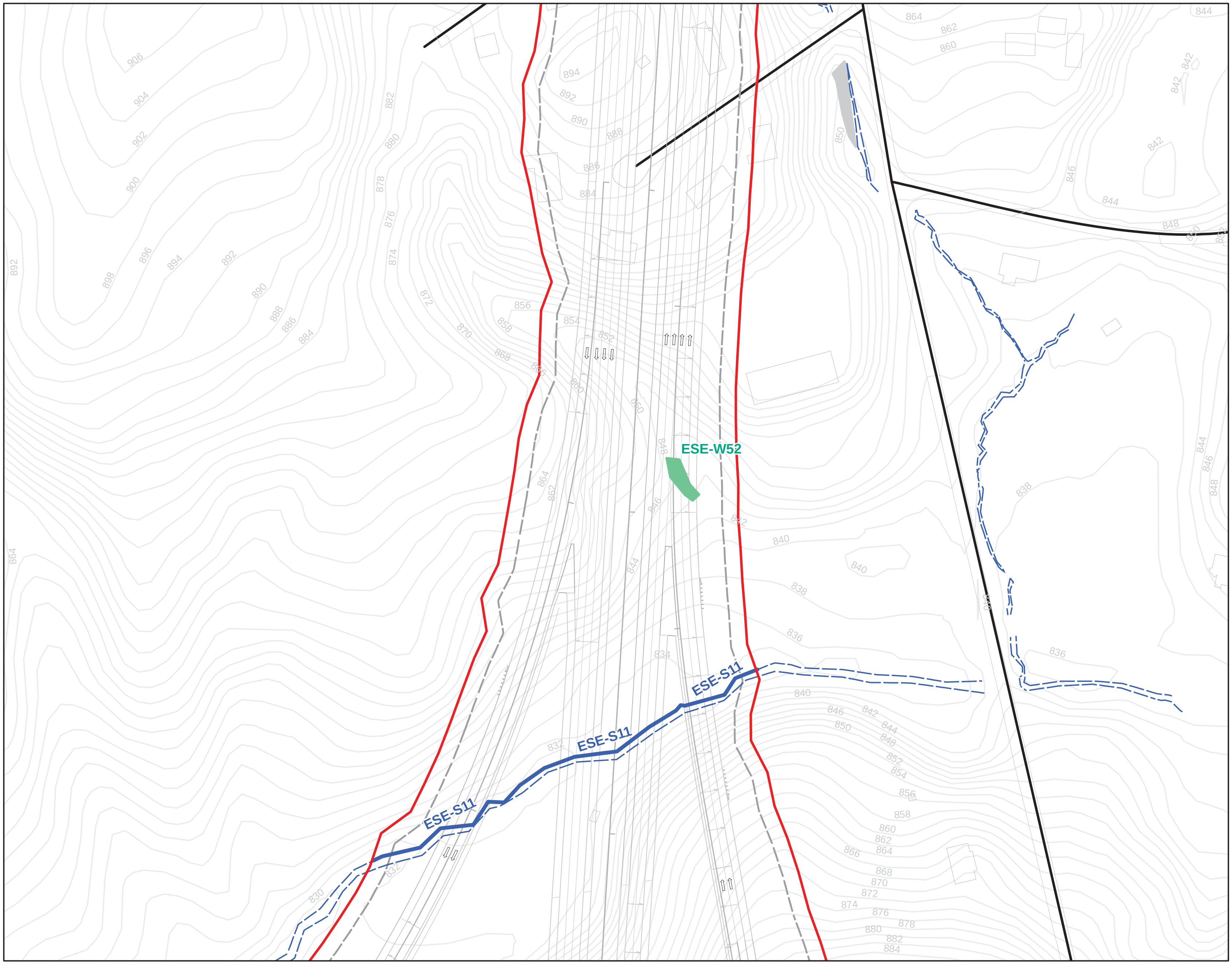
- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 1 of 11



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 2 of 11



N

0 50 100 200 300

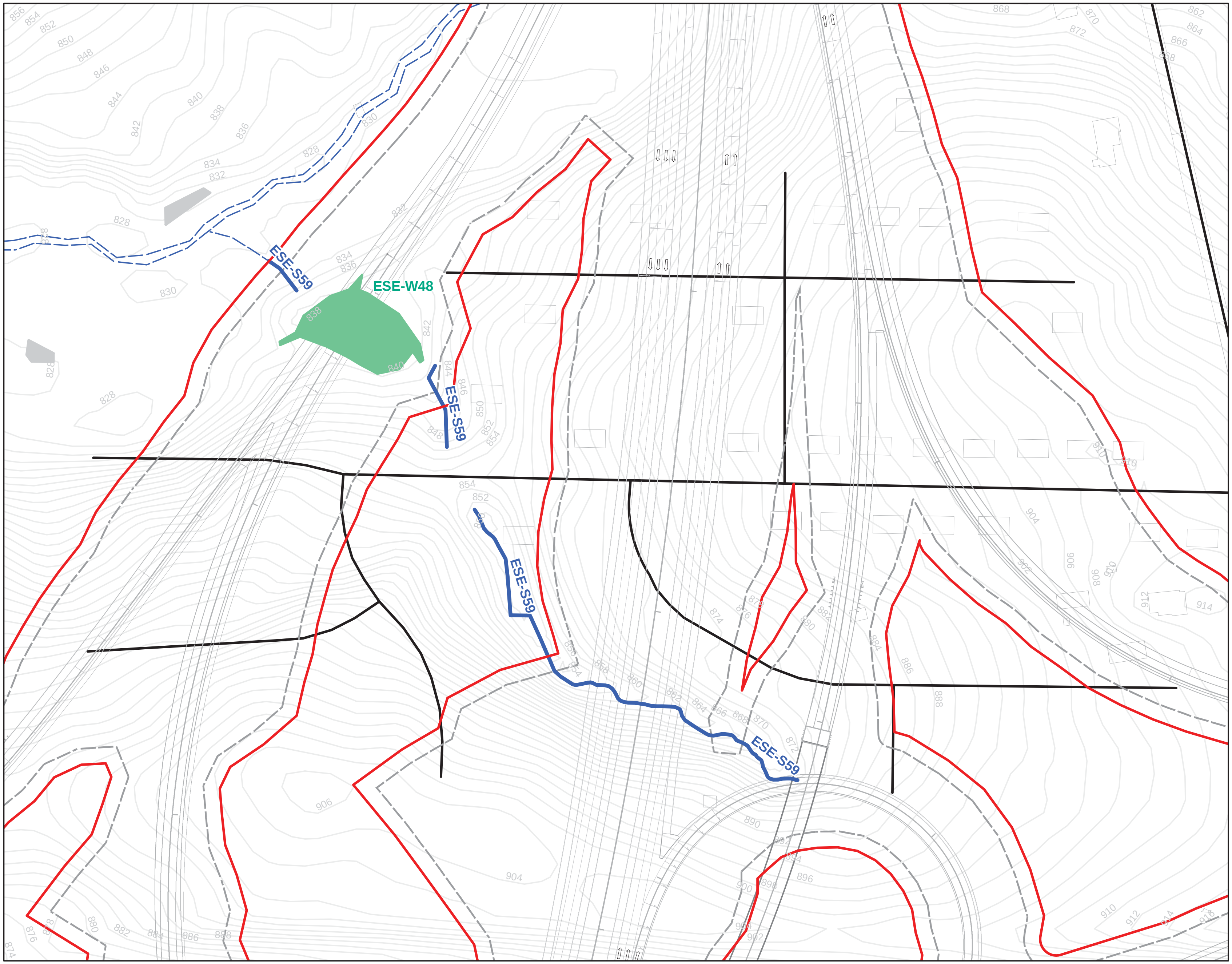
Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 3 of 11



N

0 50 100 200 300

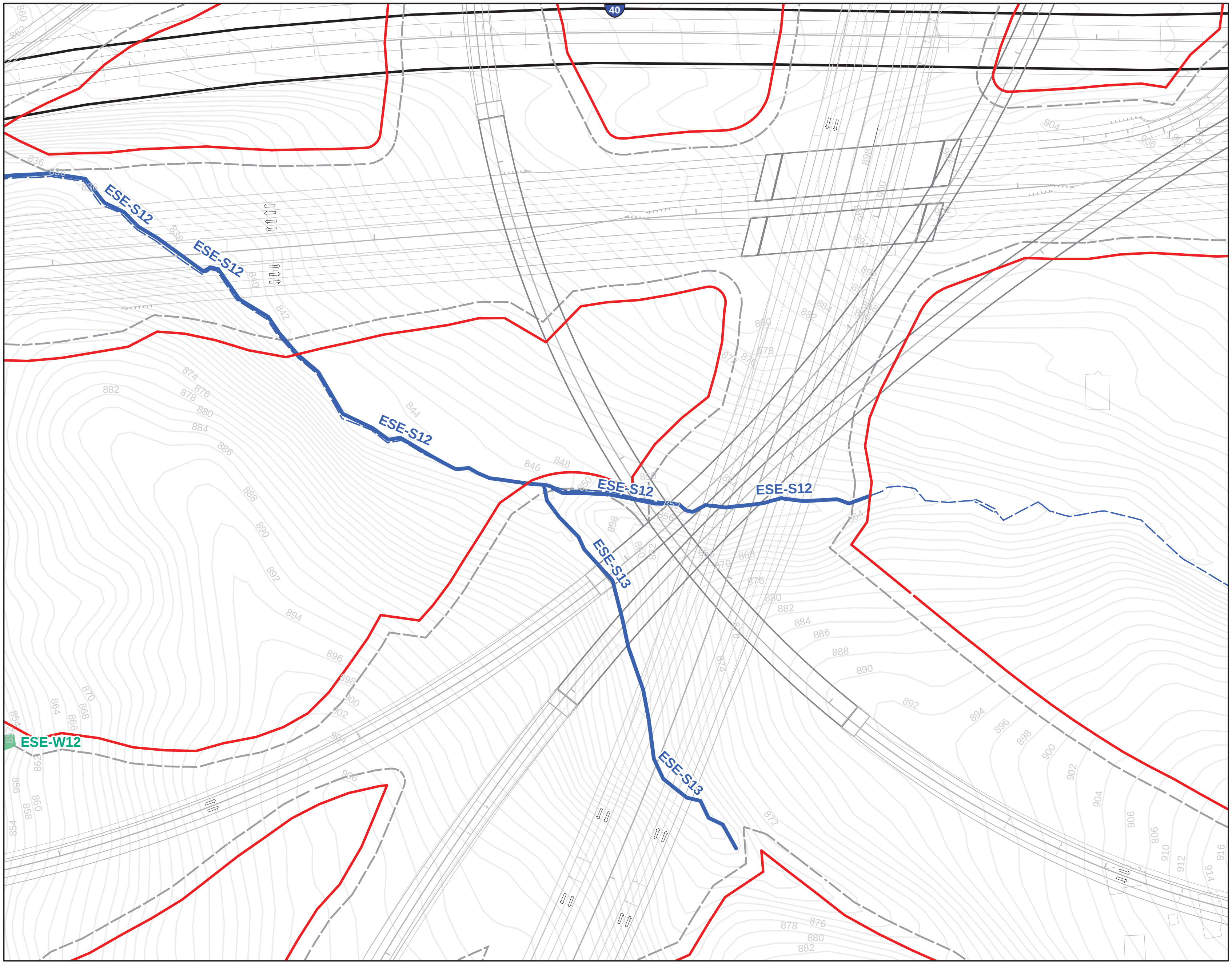
Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 4 of 11



N

0 50 100 200 300

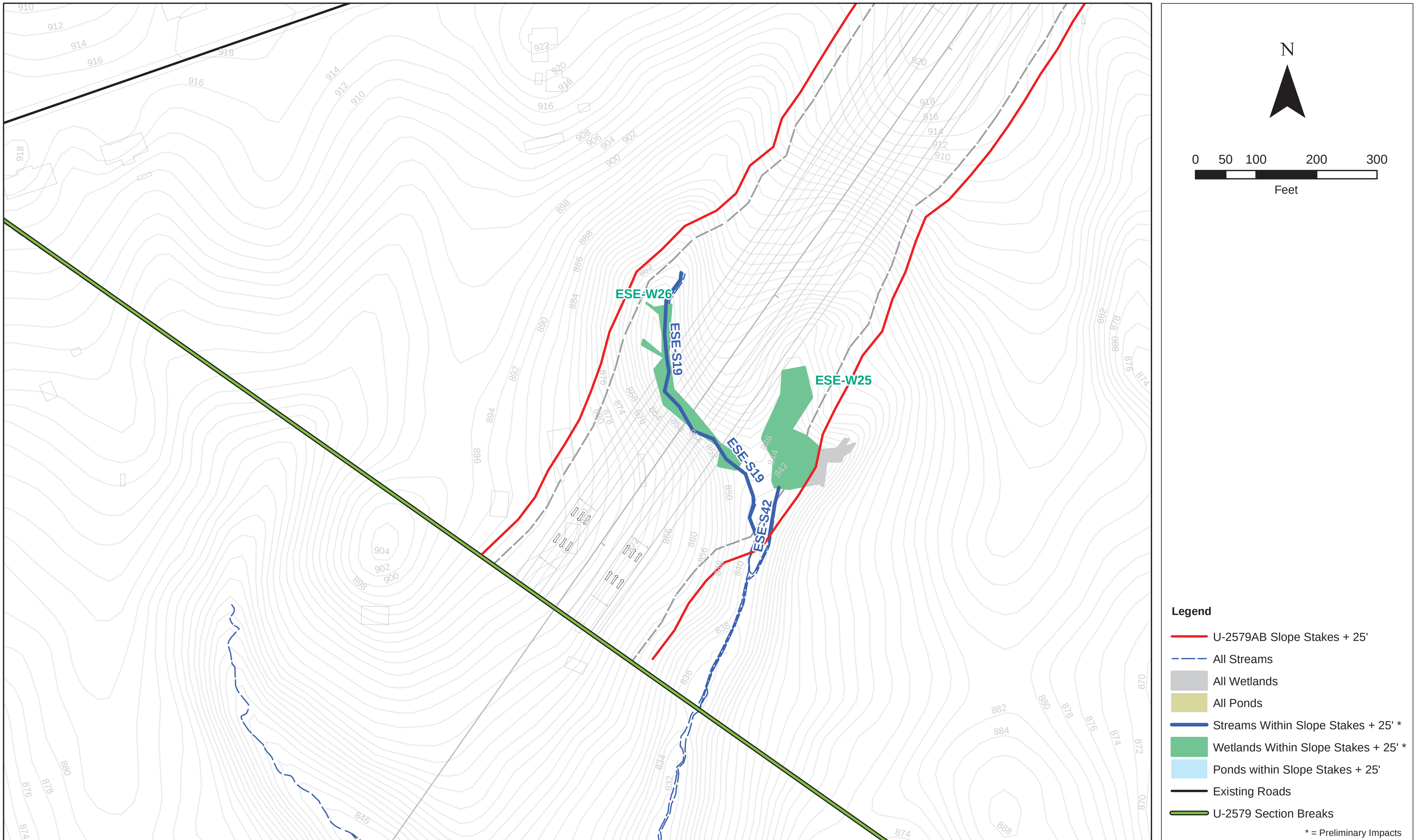
Feet

Legend

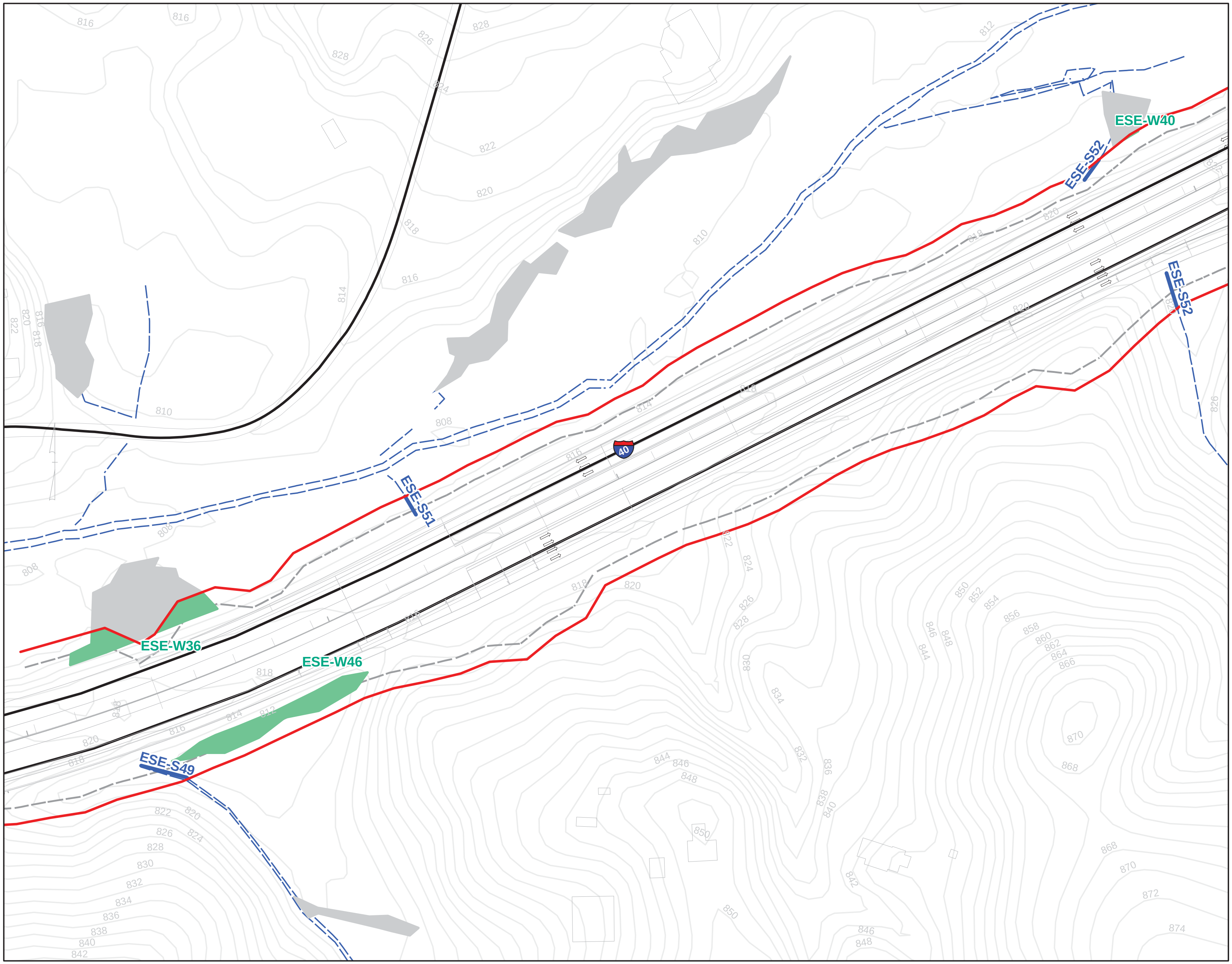
- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

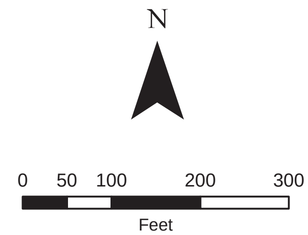
* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 5 of 11



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 6 of 11



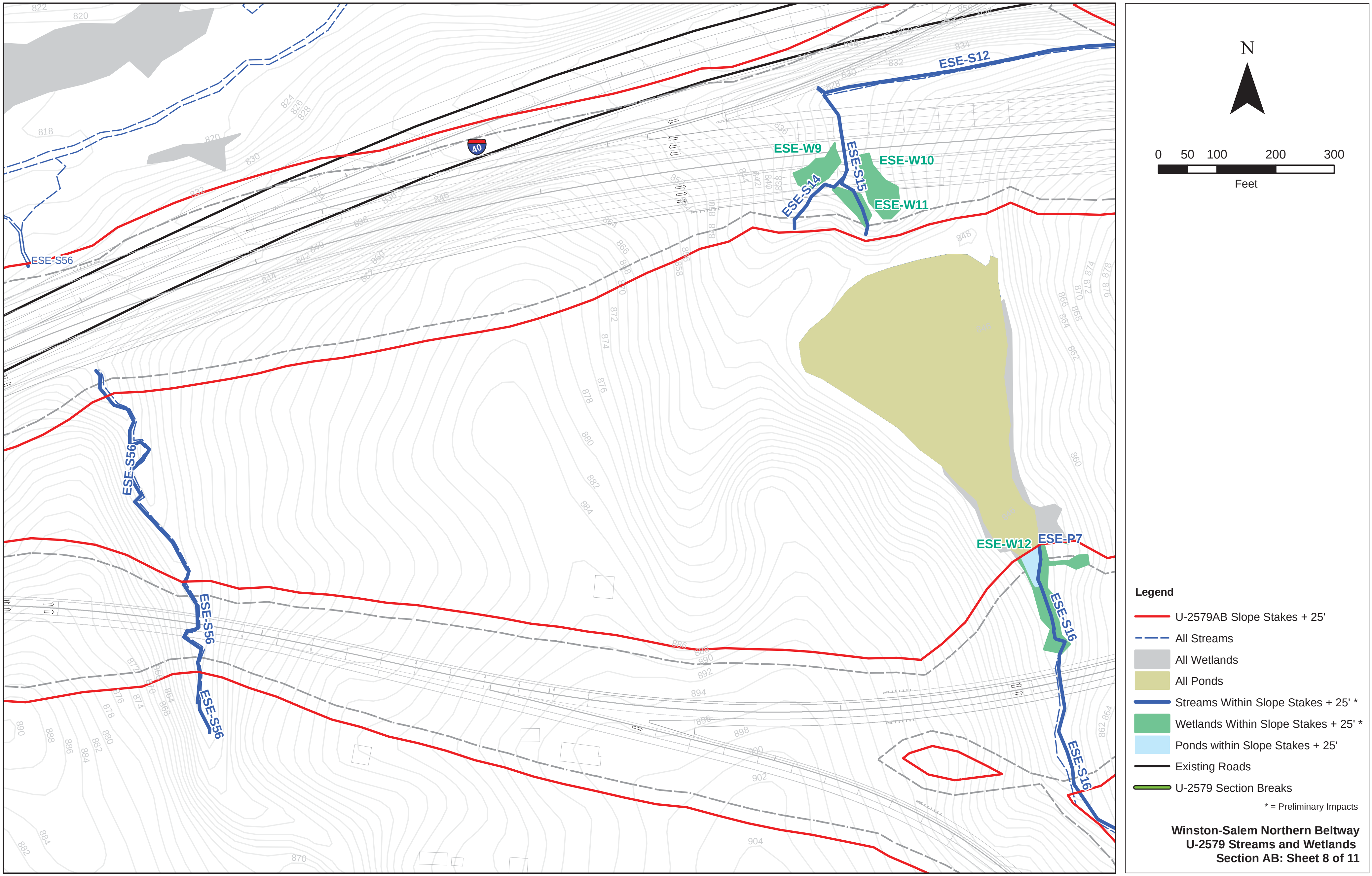


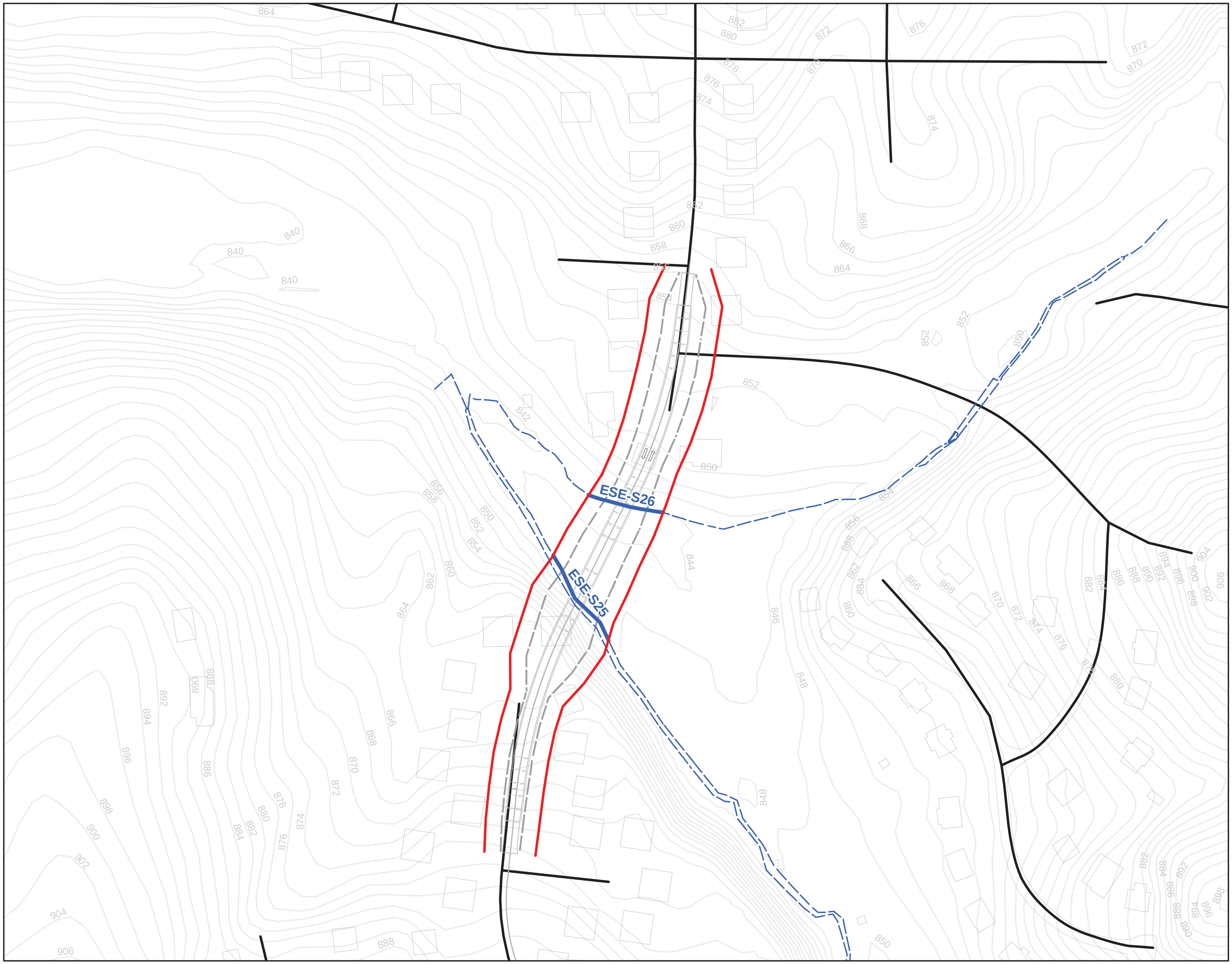
Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 7 of 11


ESE-S12
ESE-W9
ESE-S15
ESE-W10
ESE-S14
ESE-W11
ESE-S56
ESE-S56
ESE-S56
ESE-S56
ESE-W12
ESE-P7
ESE-S16
ESE-S16
40
N
0 50 100 200 300
Feet
Legend
U-2579AB Slope Stakes + 25'
All Streams
All Wetlands
All Ponds
Streams Within Slope Stakes + 25' *
Wetlands Within Slope Stakes + 25' *
Ponds within Slope Stakes + 25'
Existing Roads
U-2579 Section Breaks
* = Preliminary Impacts
Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 8 of 11



N

0 50 100 200 300

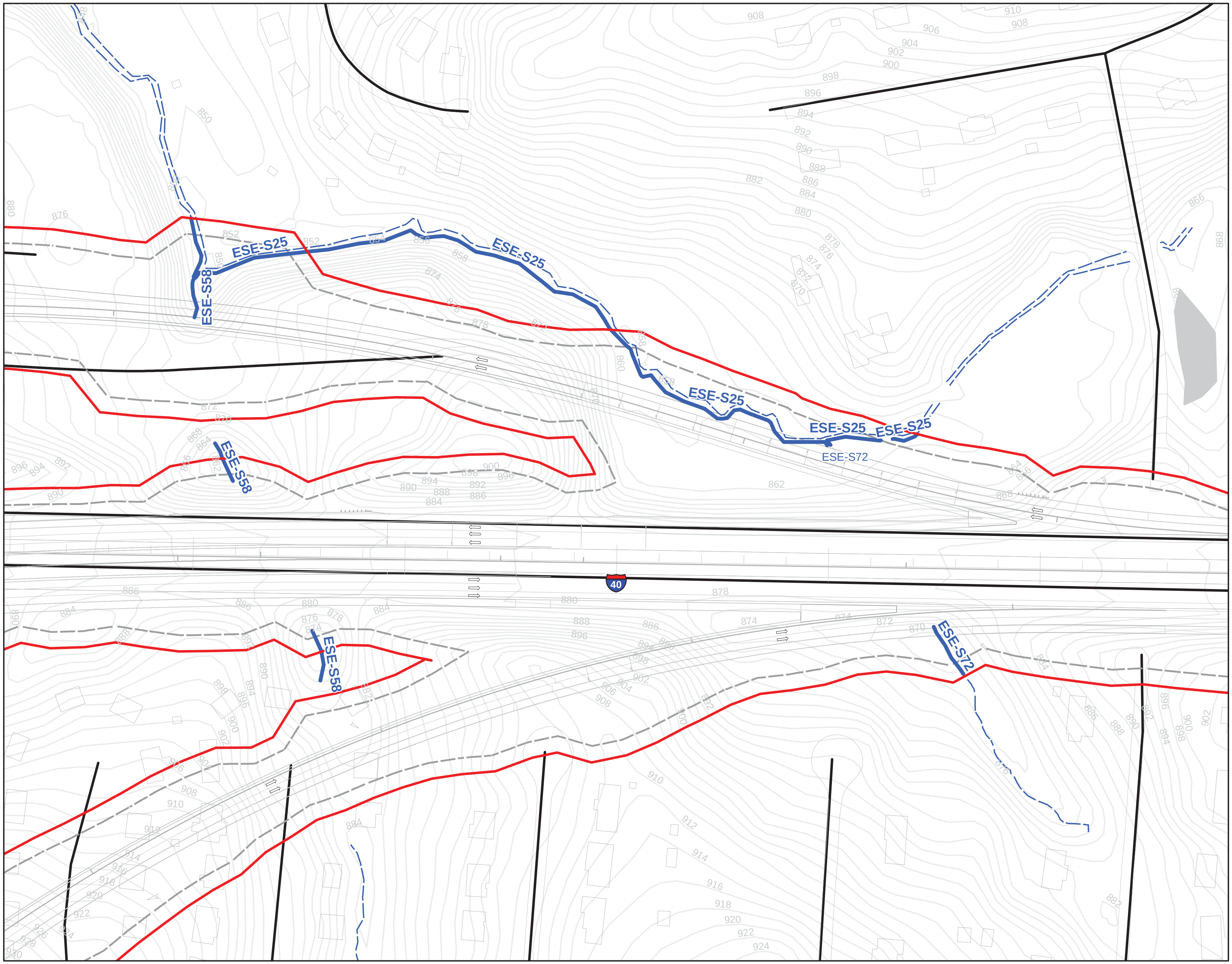
Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 9 of 11



N

0 50 100 200 300

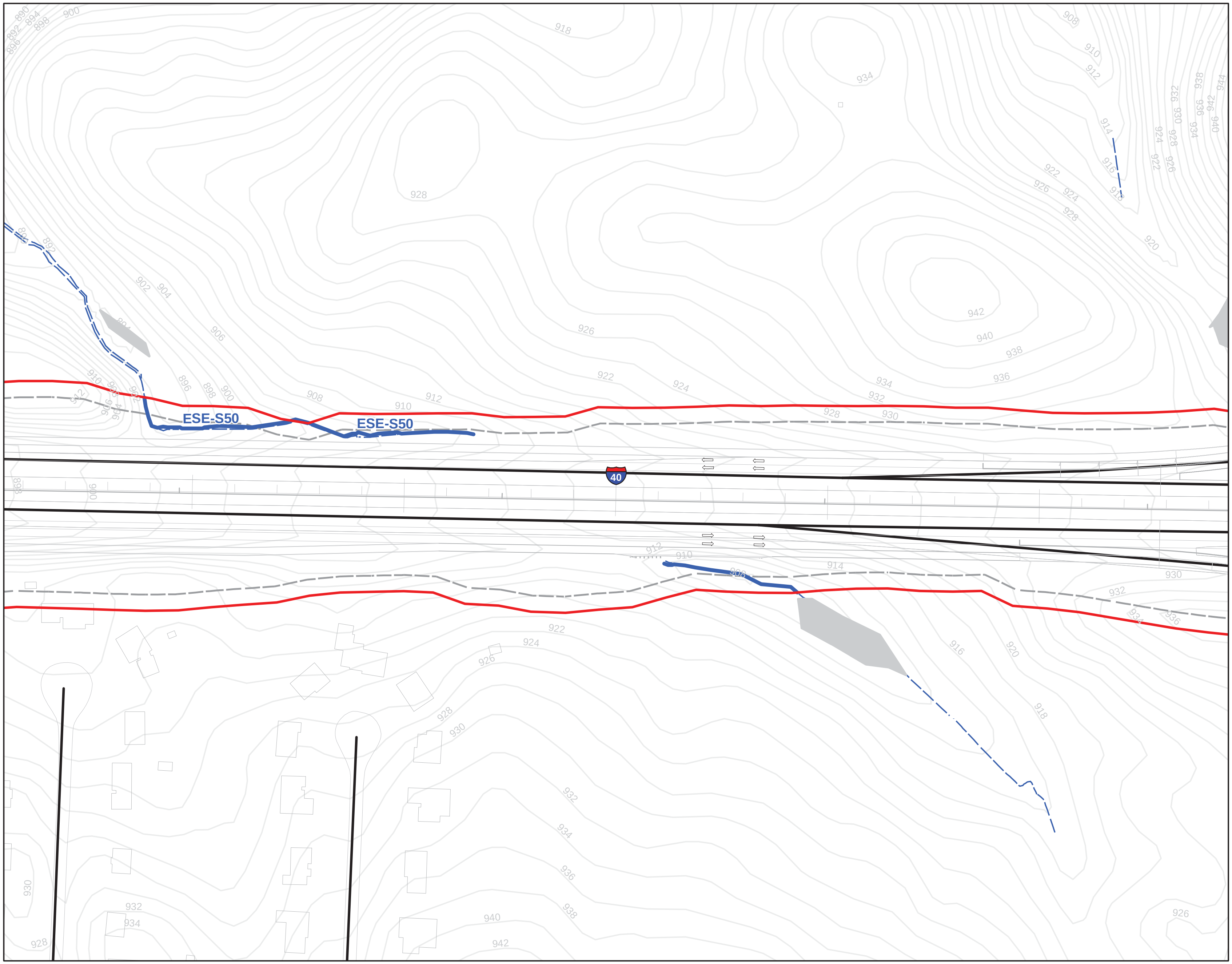
Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 10 of 11



N

0 50 100 200 300

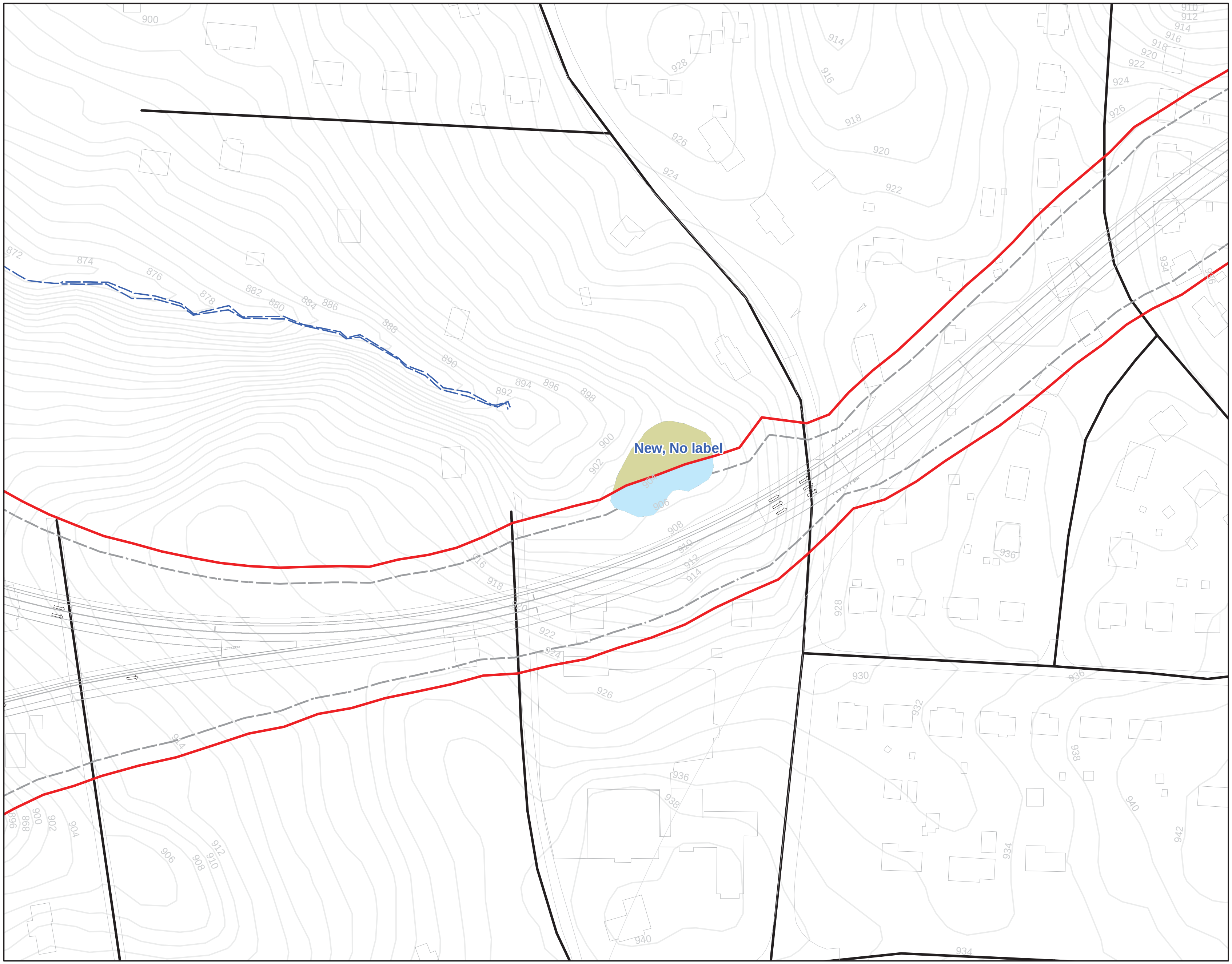
Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 11 of 11



N

0 50 100 200 300

Feet

Legend

- U-2579AB Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section AB: Sheet 12 of 11

STIP No. U-2579, Section AB

Summary Sheet: Impacts within slope stakes + 25'

Note: wetland impacts calculated to nearest 0.01 acre; stream impacts calculated to nearest foot

Wetlands

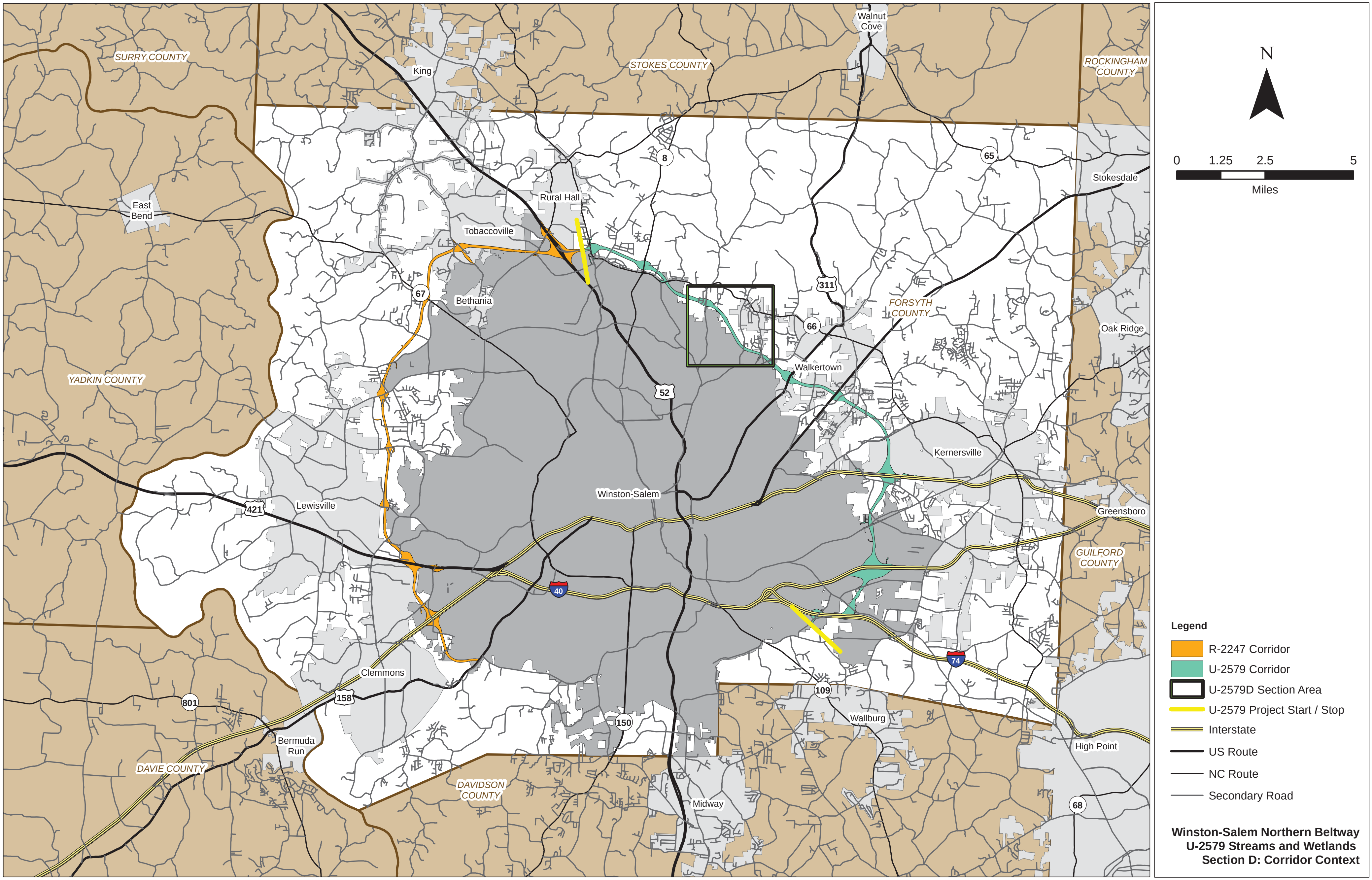
Sheet No.	*Identifier*	*Area (Acres)*
2	ESE-W8	0.13
3	ESE-W52	0.03
4	ESE-W48	0.36
6	ESE-W25	0.26
6	ESE-W26	0.14
7	ESE-W36	0.10
7	ESE-W40	<0.01
7	ESE-W46	0.16
8	ESE-W9	0.06
8	ESE-W10	0.09
8	ESE-W11	0.04
8	ESE-W12	0.13
	Total:	**1.50**

Streams

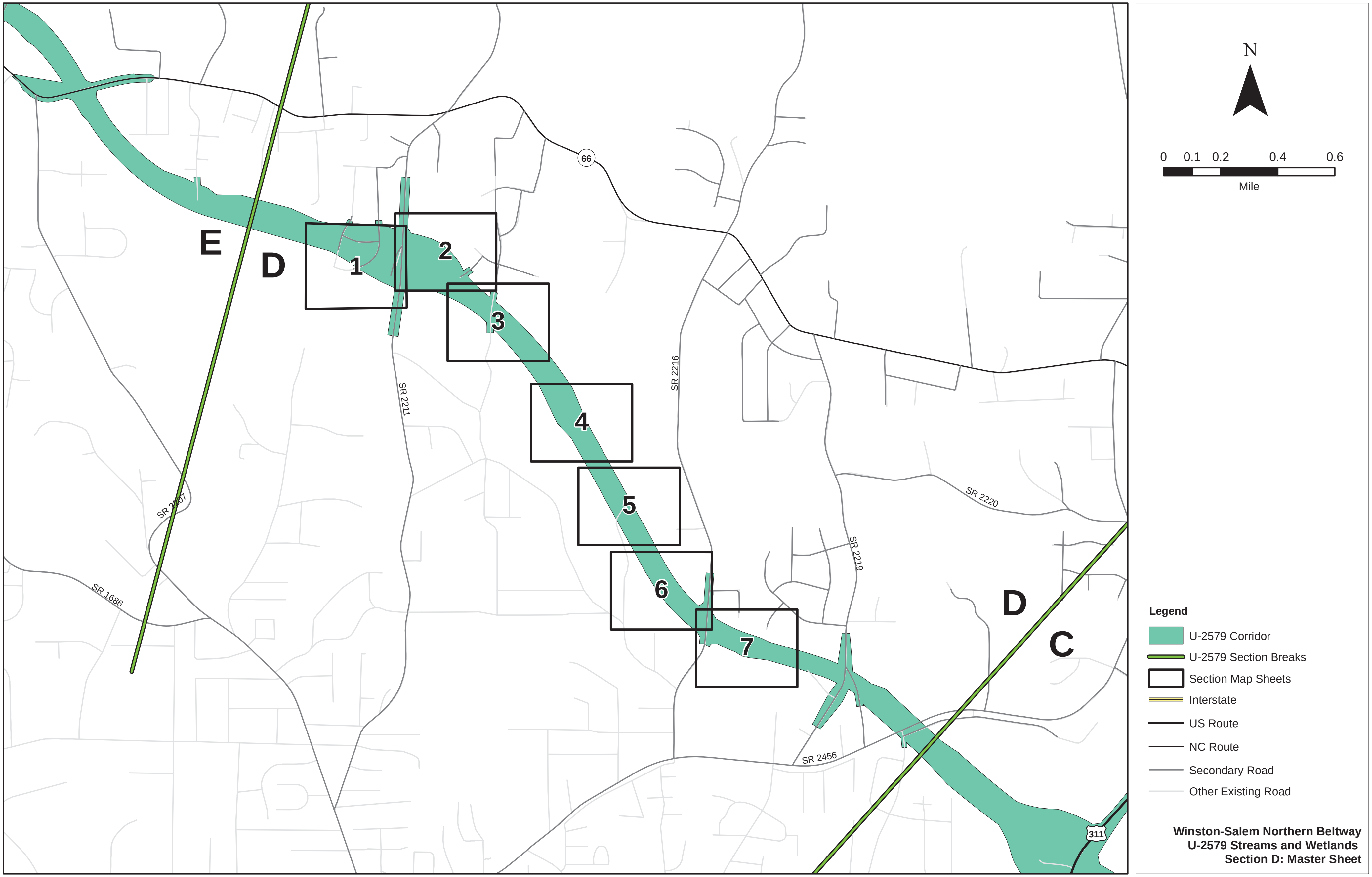
Sheet No.	*Identifier*	*Length (Feet)*
1	ESE-S8	234
1	ESE-S63	141
1	ESE-S69	57
2	ESE-S61	250
3	ESE-S11	696
4	ESE-S59	954
5	ESE-S12	1,501
5	ESE-S13	666
6	ESE-S19	539
6	ESE-S42	82
7	ESE-S49	76
7	ESE-S51	33
7	ESE-S52	95
8	ESE-S14	135
8	ESE-S15	273
8	ESE-S16	607
8	ESE-S56	793
8	ESE-S12	503
9	ESE-S25	158
9	ESE-S26	118
10	ESE-S58	209
10	ESE-S72	87
10	ESE-S25	1,374
11	ESE-S50	770
	Total:	**10,351**

Ponds

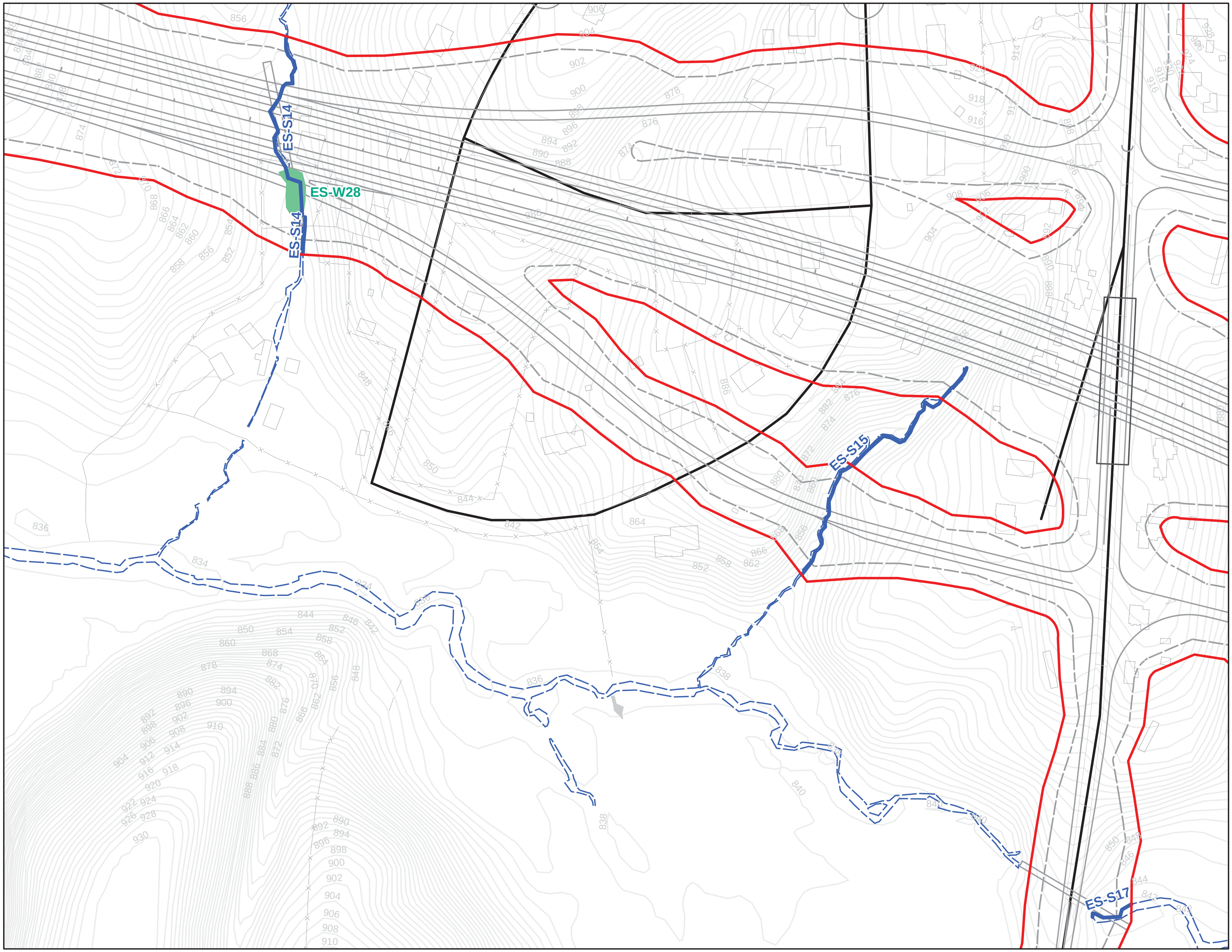
Sheet No.	*Identifier*	*Area (Acres)*
2	ESE-P6	0.89
8	ESE-P7	0.03
12	New, No label	0.15
	Total:	**1.07**



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Corridor Context



N
0 0.1 0.2 0.4 0.6
Mile
E
D
D
C
1
2
3
4
5
6
7
66
311
SR 2211
SR 2216
SR 2219
SR 2220
SR 2456
SR 1686
SR 2407
Legend
U-2579 Corridor
U-2579 Section Breaks
Section Map Sheets
Interstate
US Route
NC Route
Secondary Road
Other Existing Road
Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Master Sheet



N

0 50 100 200 300

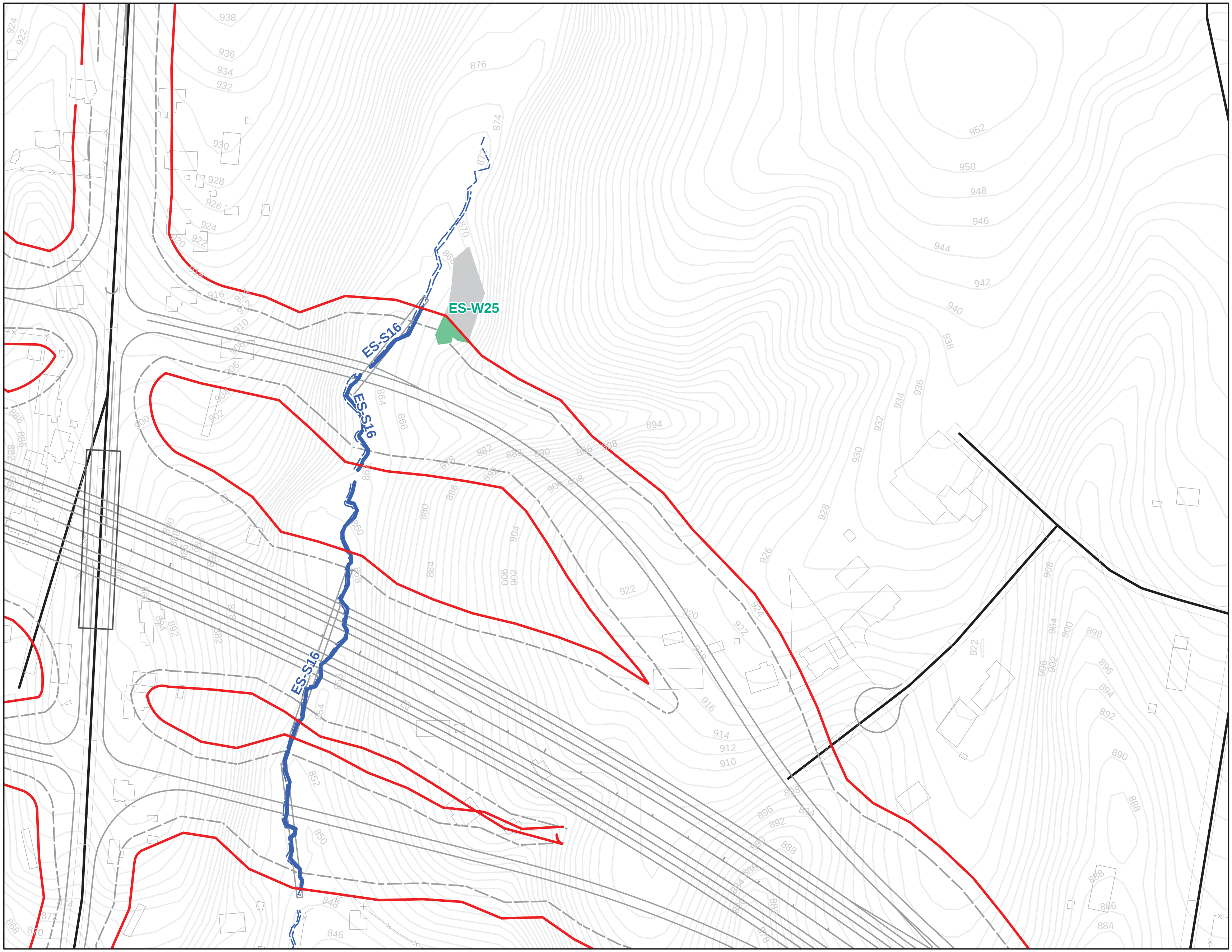
Feet

Legend

- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 1 of 7



N

0 50 100 200 300

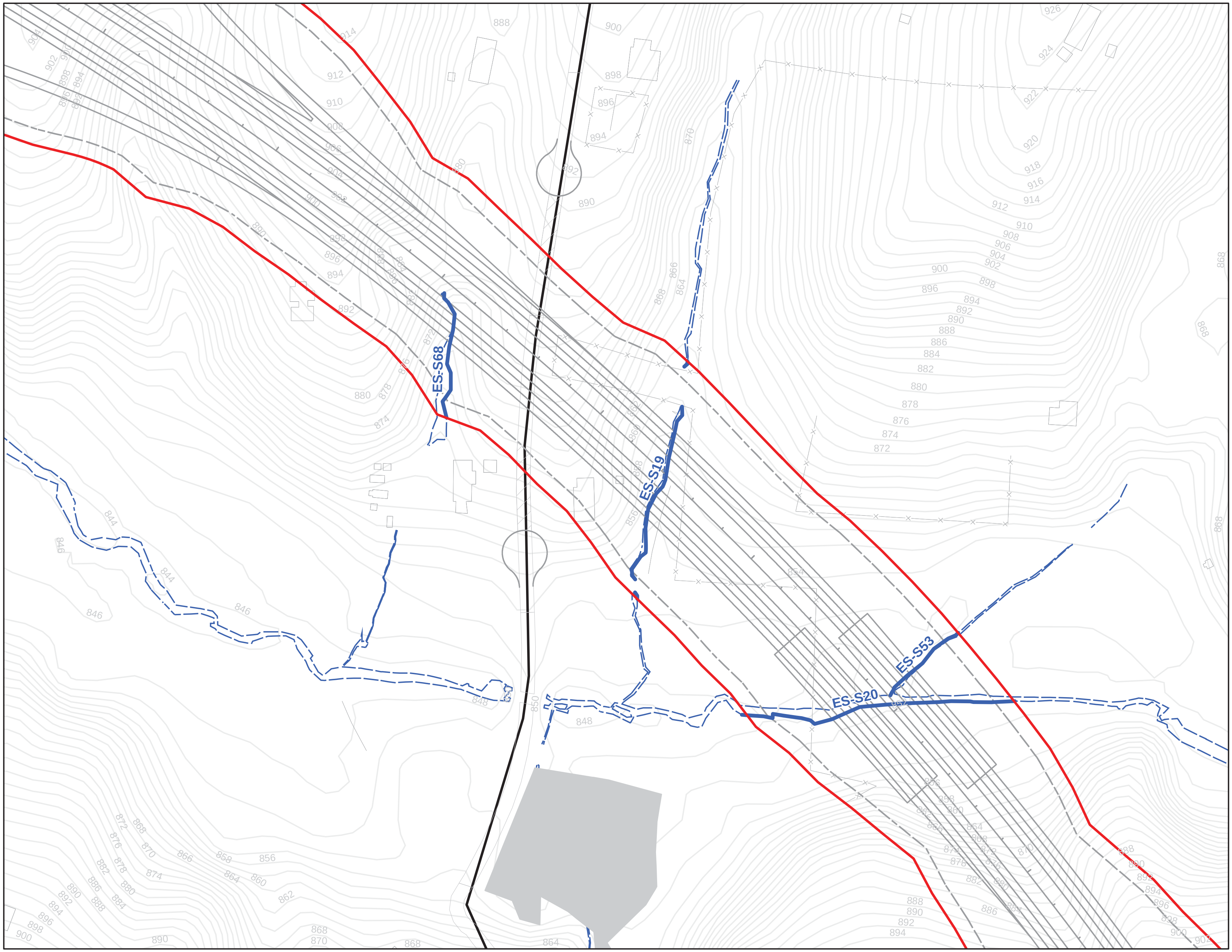
Feet

Legend

- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 2 of 7



N

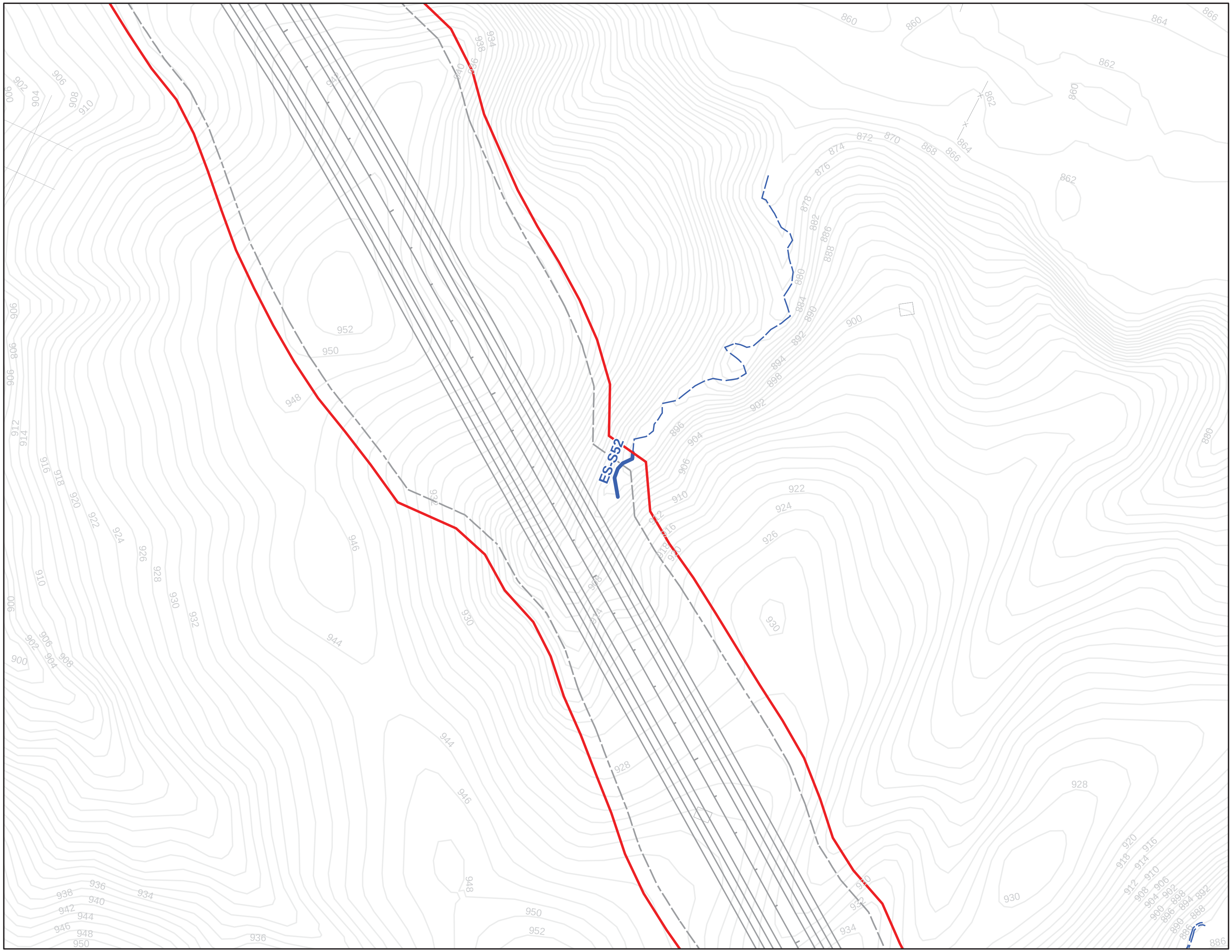
0 50 100 200 300
Feet

Legend

- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 3 of 7



N

0 50 100 200 300

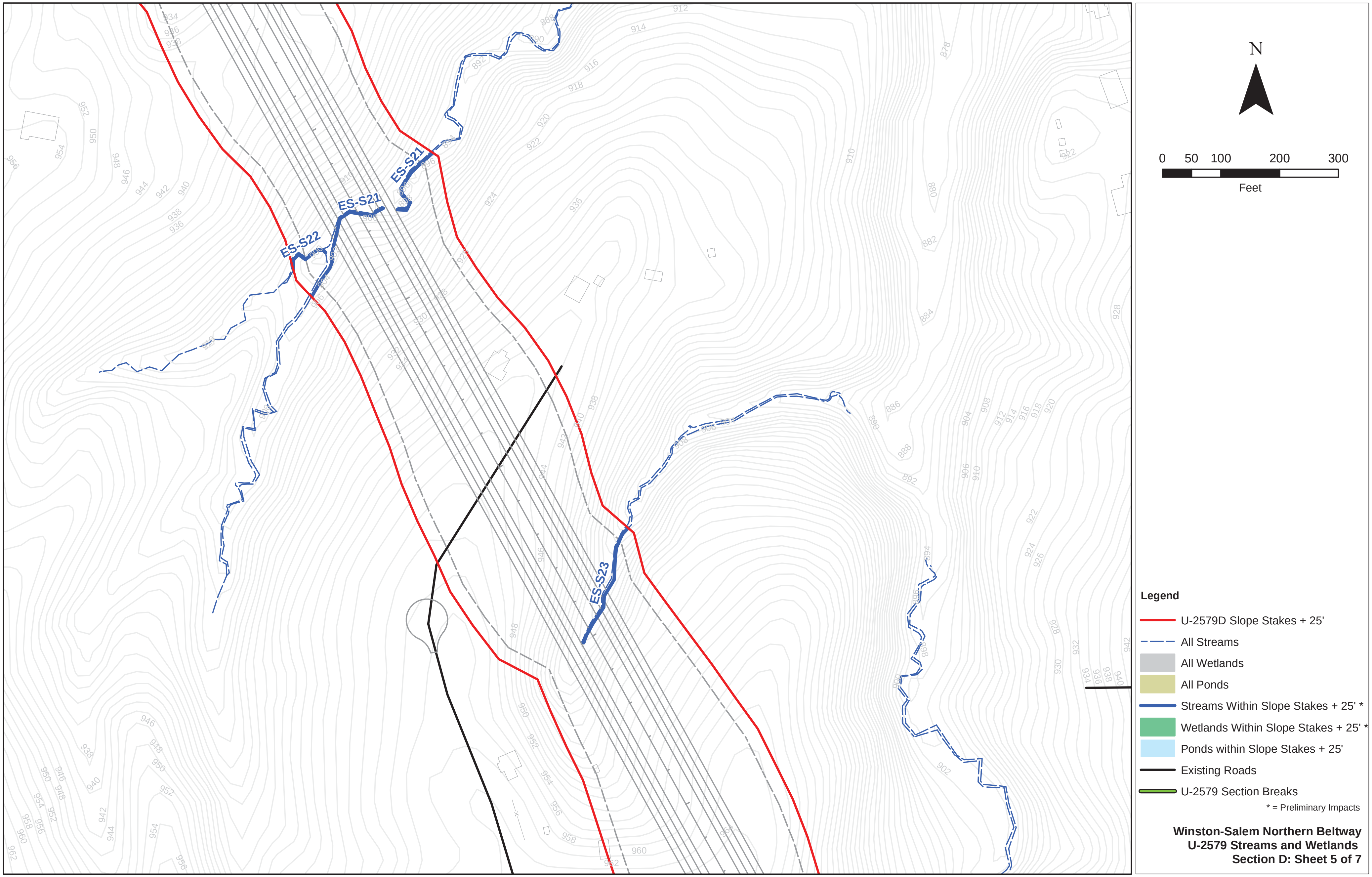
Feet

Legend

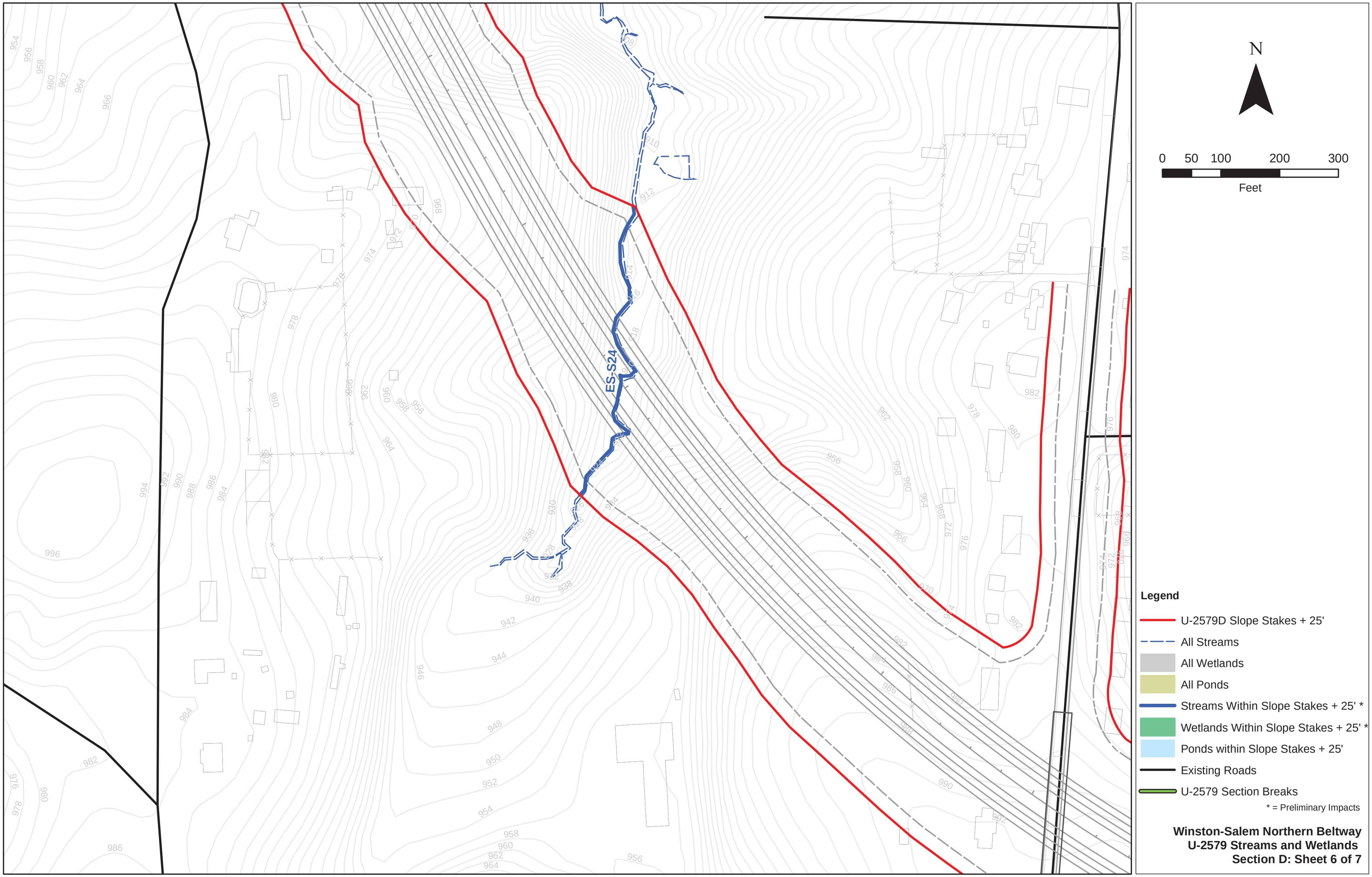
- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 4 of 7



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 5 of 7

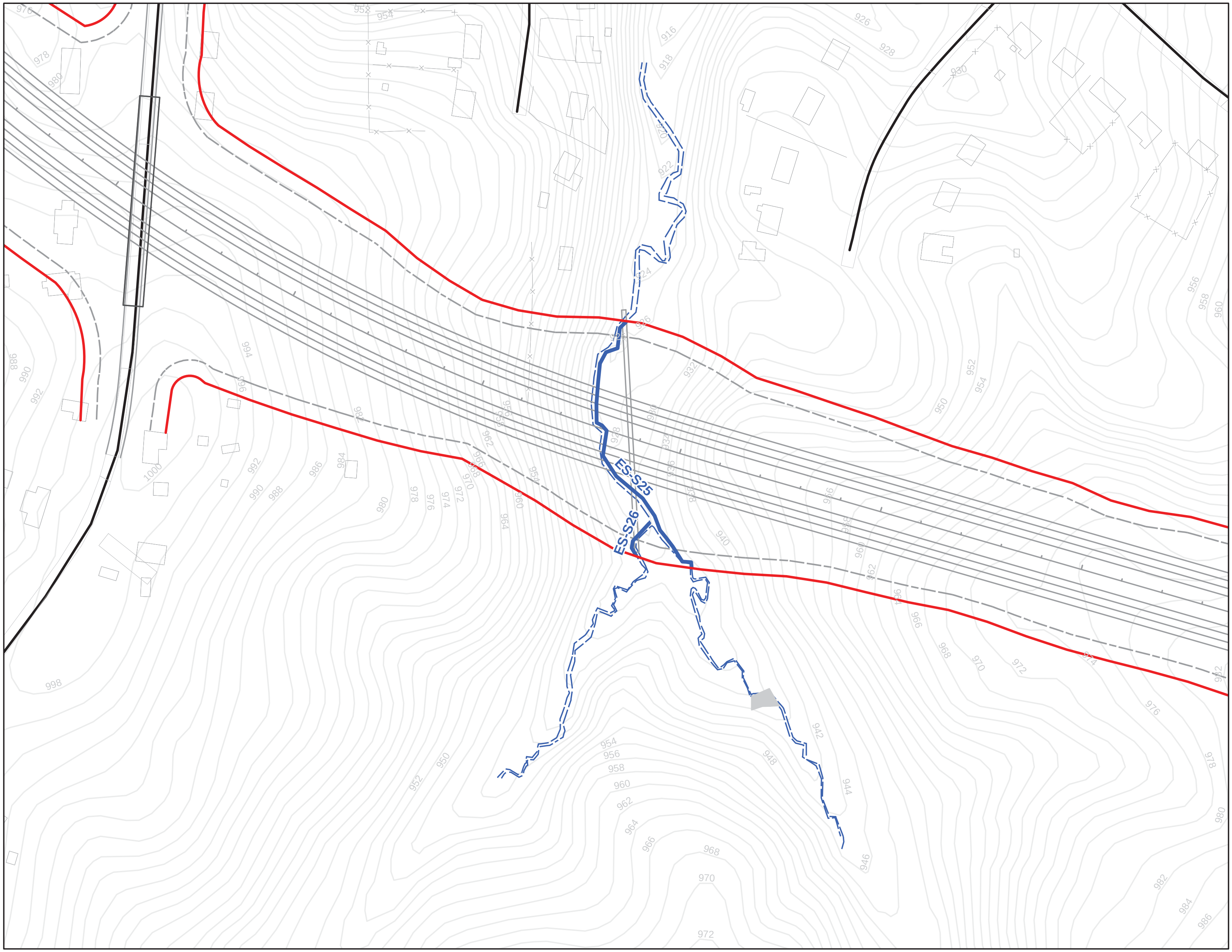


Legend

- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 6 of 7



N

0 50 100 200 300

Feet

Legend

- U-2579D Slope Stakes + 25'
- All Streams
- All Wetlands
- All Ponds
- Streams Within Slope Stakes + 25' *
- Wetlands Within Slope Stakes + 25' *
- Ponds within Slope Stakes + 25'
- Existing Roads
- U-2579 Section Breaks

* = Preliminary Impacts

Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section D: Sheet 7 of 7

STIP No. U-2579, Section D

Summary Sheet: Impacts within slope stakes + 25'

Note: wetland impacts calculated to nearest 0.01 acre; stream impacts calculated to nearest foot

Wetlands

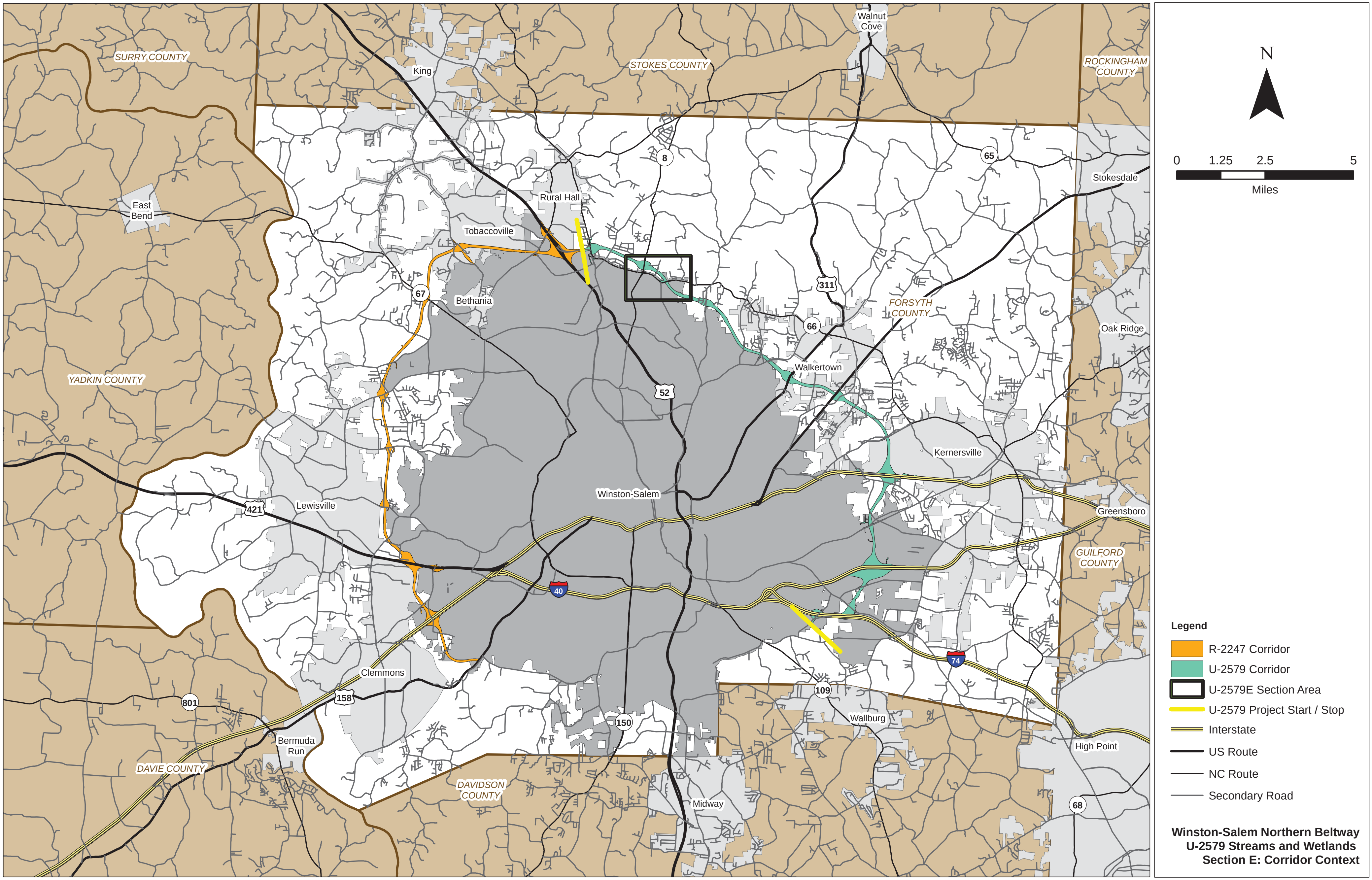
Sheet No.	*Identifier*	*Area (Acres)*
1	ES-W28	0.05
2	ES-W25	0.03
	Total:	**0.08**

Streams

Sheet No.	*Identifier*	*Length (Feet)*
1	ES-S14	413
1	ES-S15	508
1	ES-S17	85
2	ES-S16	1,036
3	ES-S19	316
3	ES-S20	444
3	ES-S53	147
3	ES-S68	208
4	ES-S52	83
5	ES-S21	368
5	ES-S22	86
5	ES-S23	217
6	ES-S24	597
7	ES-S25	472
7	ES-S26	63
	Total:	**5,043**

Ponds

none present



Winston-Salem Northern Beltway
U-2579 Streams and Wetlands
Section E: Corridor Context