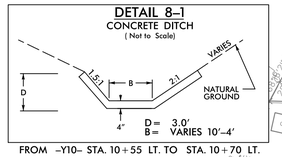
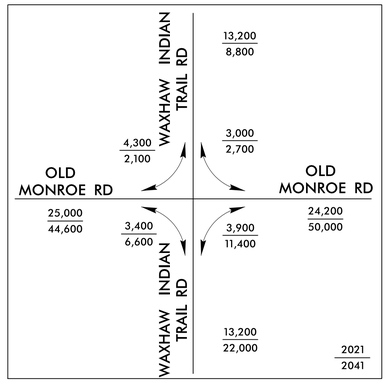
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DETAIL 8–1
CONCRETE DITCH
(Not to Scale)



D= 3.0'
B= VARIES 10'–4'

FROM –Y10– STA. 10+55 LT. TO STA. 10+70 LT.



STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
Docusigned by: STEPHEN C. STEPHENS
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043891 ENGINEER STEPHEN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER
Signed by: TIFFANY A. PREDDY
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051699 ENGINEER TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

☆ MODIFIED TRAFFIC SIGNAL

5" MONOLITHIC ISLAND
CONCRETE CURB & GUTTER /SIDEWALK
PAVED SHOULDER /MULTIUSE PATH

NAD 83/NA 2011

JAMES HENRY NANCE & JUNE DB 1473 PG 786 PB 6 PG 36
LOT 26
LOT 27 JAMES HARBISON DB 5529 PG 333 PB C PG 628
GAY D PRIVETTE JANICE W PRIVETTE DB 1665 PG 001 PB 6 PG 36
POT Sta. 8+00.00
RIZAK RETAIL, LLC DB 5544 PG 865 PB F PG 687
GEORGE ATHANS DB 684 PG 636 PB 6 PG 36
BEGIN CONSTRUCTION –Y10– POT STA. 10+00.00 MATCH EXISTING
BEGIN C&G +15.71,18.86' RT
TIE TO EXIST SIDEWALK +34.80,35.53' RT
TIE TO EXIST SIDEWALK +34.08,30.68' LT
61 GEORGE ATHANS AND WIFE DENISE P. ATHANS DB 439 PG 87 PB 6 PG 36
INDIAN TRAIL RD SOUTH SR 1008
63 SUBHASYS ESTATES LLC DB 6757 PG 593 PB F PG 687
66 INDIAN TRAIL PROPERTIES DB 1309 PG 054 PB F PG 687
67 WILLIAMS HARRIS PROPERTIES LLC DB 5813 PG 892
64 HENDLEY-BREWER PROPERTIES DB 773 PG 520
65 GREGORY PLAZA LLC DB 1717 PG 511
TIE TO EXIST C&G +05.39,39.61' RT
TIE TO EXIST C&G +25.25,42.50' RT
TIE TO EXIST C&G +24.94,37.59' LT
61 GEORGE ANTHANS AND WIFE DENISE P. ANTHANS DB 430 PG 831 –Y10–
–L– POT Sta. 60+77.30 = –Y10– POT Sta. 14+02.85
POT Sta. 6+82.58
POT Sta. 65+99.58
MATCHLINE -L- STA 57+00 (SHEET 7)
MATCHLINE -L- STA 70+00 (SHEET 9)
OLD MONROE RD SR 1009
53 60 ALPHA OMEGA LAND DEVELOPMENT INC DB 4373 PG 786
69 RUSHING CONSTRUCTION DB 245 PG 434
70 INDIAN TRAIL PLAZA LLC DB 5260 PG 305
71 J.J. CLARK, JR. STEPHEN G. SIMMS ANTHONY A. WENDELL DB 1188 PG 128
72 TWO COUSINS PROPERTIES, LLC DB 4362 PG 003
73 CAH HOLDINGS LLC DB 6614 PG 261
74 CAH HOLDINGS LLC DB 4356 PG 001
75 BOULEVARD EAST LLC DB 4452 PG 042
76 TMLE LLC DB 4871 PG 0001
194 UNION COUNTY PUBLIC WORKS DB N/F PG N/F
TIE TO EXIST C&G +58.08,79.76' RT
TIE TO EXIST C&G +84.21,42.07' RT
TIE TO EXIST C&G +47.10,75.09' RT
PC Sta. 14+61.76
PT Sta. 15+83.58
C&G SHALL NOT BE INSTALLED BEYOND PARKING STRIPING INTO DRIVE AISLE. GAP IN CURB NEEDED TO AVOID CONFLICT WITH POWER POLE GUY ANCHOR.
DO NOT DISTURB SIGN
CL-B RIP RAP EST. 5 TONS
14 S.Y. GEOTEXTILE
MATCHLINE -Y10- STA 17+00 (SHEET 11)

SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 18 FOR -Y10- PROFILE

10/8/2026
U-4714BA_Roadway
stvdesign

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★ PROPOSED TRAFFIC SIGNAL
☆ MODIFIED TRAFFIC SIGNAL

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	9
RW SHEET NO.	

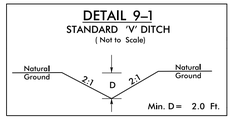
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043891 ENGINEER KEVIN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5" MONOLITHIC ISLAND
CONCRETE CURB & GUTTER /SIDEWALK
PAVED SHOULDER /MULTIUSE PATH

DETAIL 9-1
STANDARD 'V' DITCH
(Not to Scale)



FROM -L- STA. 77+99 RT. TO STA. 79+48 RT.

NAD 83/NA 2017

END TIP PROJECT U-4714BA
BEGIN FUTURE TIP PROJECT U-4714BB
-L- POT STA. 78+12.35 LB =
-LBA- POT STA. 10+00.00 LA

-LBA- PC Sta. 14+62.17

TIE TO EXIST. -LBA- POT STA. 13+00.00

MATCHLINE -L- STA 70+00 (SHEET 8)

MATCHLINE -L- STA 84+00 (SHEET 10)

67 WILLIAMS HARRIS PROPERTIES LLC DB 5813 PG 892

77 UNION MEMORIAL HOSPITAL INC DB 465 PG 758

78 SANDRA E PETERSON WENDY D EDWARDS DB 5469 PG 578 PB 4 PG 149

79 SHARON PRICE JOYCE PRICE DB 5957 PG 004

80 LOT 2 WALLACE CROWELL DB N/F PG N/F PB 4 PG 149

81 LOT 1 BILLIE P CROWELL DB N/F PG N/F PB 4 PG 149

83 BO-TY LLC DB 6508 PG 659

84 JORDAN'S PLACE LLC DB 5260 PG 303 PB D PG 160

86 TAE KYU PARK OH SEON PARK DB 1330 PG 628 PB D PG 160

87 STALLINGS VOLUNTEER FIRE DEPARTMENT INC. DB 1094 PG 701 PB E PG 413

88 ROGER MAC HELMS DB 256 PG 88

89 BARBARA HELMS DB 561PG 448

90 CREEKSIDE BIBLE CHURCH DB 5572 PG 280

76 FAMILY TYME LLC DB 5910 PG 117 PB L PG 810

82 CARLTON'S RENTALS, LLC AND GLEN OAKS INVESTMENTS, LLC DB 7270 PG 654

OLD MONROE RD SR 1009

575' LANE TAPER (LT & RT)

540' MERGE TAPER (RT)

BEGIN MUP +11.24, 52.50' RT

BEGIN C/A +60.60, 49.50

END C/A +34.60, 49.50

BEGIN C/A +12.35, 54.50

END C/A +80.00 54.50 70.00 75.00

END C&G & SIDEWALK +12.35

OTCB 4-SIDED

GRADE TO DRAIN

PROP 5' MONO ISLAND

PROP 2' C&G

PROP. 4' PAVED SHOULDER

REBUILD CONC ISLAND

RETAIN EXIST. SIDEWALK AND C&G

REBUILD CB

REMOVE

RETAIN

PUE

DUE

SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 15 FOR -LBA- PROFILE

10/20/2026
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STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	10
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043891 ENGINEER KEVIN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

★ PROPOSED TRAFFIC SIGNAL

5" MONOLITHIC ISLAND
CONCRETE CURB & GUTTER /SIDEWALK
PAVED SHOULDER /MULTIUSE PATH

NAD 83/NA 2011

SOUTHFORK RD
OLD MONROE RD
GARMON RD

	3,400 / 3,800	
200 / 600		3,200 / 3,100
24,200 / 50,000		27,200 / 52,400
100 / 200		100 / 100
	200 / 400	2021 / 2041

DETAIL 10-2
DITCH CLEANOUT
(Not to Scale)
Natural Ground, 3:1, D, 3:1, Natural Ground, Prop. Ground
Min. D = 0.25 Ft.
FROM Y11 STA. 11+50

DITCH CLEANOUT (SEE DETAIL 10-2) APPROX. 270 LF

81 LOT 1 BILLIE P CROWELL DB N/F PG N/F PB 4 PG 149

RAY B KILLOUGH DB 5106 PG 656

92 RAY B KILLOUGH DB 5106 PG 656

93 DENISE KILLOUGH WINDHAM BRIAN NEAL WINDHAM DB 4031 PG 737

94 RALPH KILLOUGH DB N/F PG N/F

95 RAY BERNARD KILLOUGH DB 3646 PG 330 REFERENCE MADE TO THIS DEED BUT NO DESCRIPTION FOUND

90 CREEKSIDE BIBLE CHURCH DB 5572 PG 280

91 KILLOUGH-ROHLEDER HOLDING CO, LLC DB 5106 PG 659

96 WAXHAW VENTURES LLC DB 6874 PG 706

97 KENNETH GANTZ NO INFO FOUND

98 LOT 4 ROBERT E JOHNSON SALLY H JOHNSON DB 1105 PG 848 PB B PG 158-B

99 LOT 3 JERRY B HUNEYCUTT PB B PG 158-B

100 LOT 2 AKN HOLDINGS LLC PB B PG 158-B

POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y11- POT STA. 10+50.00
PC Sta. 10+72.61
-L- POT Sta. 86+03.47 = -Y11- POC Sta. 13+00.00
PT Sta. 87+58.69
-L- POC Sta. 86+27.12 = -Y12- POC Sta. 10+00.00
-L- PT Sta. 86+60.44, OFF 22.29' RT = -LBA- PT Sta. 18+49.76
PC Sta. 92+27.62
-L- POC Sta. 93+89.96 = -Y13- POT Sta. 10+00.00
BEGIN C/A +31.36, 49.50
POT Sta. 11+84.70
POT Sta. 13+90.00
POT Sta. 13+40.00

END CONSTRUCTION
-L- POT STA. 85+85.86 =
-LBA- POT STA. 17+74.95

MATCHLINE -L- STA 84+00 (SHEET 9)
MATCHLINE -L- STA 97+00 (SHEET 11)

SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 15 FOR -LBA- PROFILE
SEE SHEET 18 FOR -Y11- PROFILE

10/16/2026
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STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	11
RW SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043891 ENGINEER SEAN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER

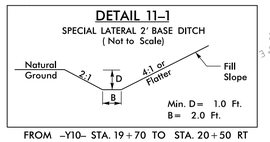
NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

5" MONOLITHIC ISLAND & CONCRETE PAVEMENT
CONCRETE CURB & GUTTER /SIDEWALK
PAVED SHOULDER /MULTIUSE PATH

DETAIL 11-1
SPECIAL LATERAL 2' BASE DITCH
(Not to Scale)



FROM -Y10- STA. 19+70 TO STA. 20+50 RT

195
TRACT 1
CUBE HHF LIMITED PARTNERSHIP
DB 6148 PG 251

196
TAE KYU PARK AND SPOUSE
OH SEON PARK AND MEE AE PARK
DB 6216 PG 151

JDH MANAGEMENT, LLC
DB 6662 PG 672
PB D PG 893

JWH ACQUISITIONS, LLC
DB 6476 PG 164

SOUTHERN EQUIPMENT COMPANY INC
DB 4467 PG 487

DAVID WINDELL CUNNINGHAM
DB 6554 PG 347

201
MICHAEL O RADESKY AND WIFE
PAMELA G RADESKY
DB 5161 PG 339

200
ROBERT CHARLES MULLIS
ROBIN S MULLIS
DB 1198 PG 740

MICHAEL O RADESKY AND WIFE
PAMELA G RADESKY
DB 5161 PG 339

199
ALPHA OMEGA LAND DEVELOPMENT INC
DB 4373 PG 786

198
ALPHA OMEGA LAND DEVELOPMENT INC
DB 4373 PG 786

194
UNION COUNTY PUBLIC WORKS
DB N/F PG N/F

70
INDIAN TRAIL PLAZA LLC
DB 5260 PG 305

MATCHLINE -Y10- STA 17+00 (SHEET 8)

-Y10- POT STA. 22+24.32

-Y10- POT STA. 22+95.00
END CONSTRUCTION

-Y10- POT STA. 22+40.00
END GRADE
MATCH EXISTING

-Y10- STA. 22+82.22

WAXHAW - INDIAN TRAIL RD
-Y10- SR 1008

150' SHIFT TAPER (LT & RT)
100' BAT TAPER (LT)
PROF 2'-6" C&G
PROF 2'-6" C&G
TIE TO EXIST SIDEWALK
2' SPECIAL LATERAL BASE DITCH (SEE DETAIL 11-1)
DO NOT DISTURB SIGN
RETAIN
REMOVE
END C & G +13.85, 27.81' RT
18" RCP-IV
15" RCP-IV
48" RCP
24" CMP
2 CMP
2 PLASTIC
48" CMP
48" CMP
84" CMP
84" CMP
84

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5/28/99

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

END TIP PROJECT U-4714AC
-L- POT STA. 193+50.61 LB=
BEGIN TIP PROJECT U-4714BA
-L- POT STA. 10+00.00 LA

BEGIN GRADE
-L- STA. 10+00.00
ELEV. = 743.00'

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROFILE (HORIZONTAL)
50 25 0 50 100

PROFILE (VERTICAL)
10 5 0 10 20

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	12

ROADWAY DESIGN ENGINEER
Sean C. Stephens
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 043891
ENGINEER SEAN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER
Tiffany A. Preddy
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 051699
ENGINEER TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROPOSED GRADE
EXISTING GROUND

PI = 14+90.00
EL = 724.33'
VC = 480'
K = 97
DS = 50 MPH

LOW POINT
-L- STA. 16+18.00
EL = 726.46'

(-)3.8103%
(+)1.1603%
(+) 0.5000%
(+) 3.5500%
(-) 1.6200%

-L- STA. 15+60.00
72" RCP
SKEW = 45 DEGREES

LEFT DITCH
RIGHT DITCH

HYDRAULIC DATA

DESIGN DISCHARGE	=140 C.F.S.
FREQUENCY OF DESIGN FLOOD	=25 YRS.
DESIGN HIGH WATER ELEVATION	=723.8
DRAINAGE AREA	=0.07 SQ. MI.
BASE DISCHARGE (Q100)	= 160 C.F.S.
BASE HIGH WATER ELEVATION	= 724.2

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=215 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=100+ YRS.
OVERTOPPING FLOOD ELEVATION	=726.9

PI = 15+20.00 LT
EI = 719.20

PI = 15+28.00 RT
EI = 719.60

PI = 16+00.00 LT
EI = 719.60

PI = 16+27.00 RT
EI = 718.00

SEE SHEET 4 FOR -L- PLAN

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

-L- STA. 20+68.26
-Y- STA. 12+00.00

PROPOSED GRADE

PI = 22+20.00
EL = 732.80'
VC = 240'
K = 129
DS = 55 MPH

-L- STA. 23+81.89
-Y1- STA. 10+00.00

-L- STA. 27+49.21
-Y2- STA. 12+00.00
-Y3- STA. 10+00.00

PI = 28+00.00
EL = 728.70'
VC = 400'
K = 1192
DS = 80 MPH

(+)1.1603%
(-)0.7069%
(-)0.7069%
(-)0.3714%
(+) 3.5500%
(+) 5.2000%

PI = 18+00.00 LT
EI = 726.70

PI = 18+40.00 LT
EI = 728.78

EXISTING GROUND

LEFT DITCH
RIGHT DITCH

SEE SHEET 5 FOR -L- PLAN

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5/28/99

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	13

ROADWAY DESIGN ENGINEER

Signature not verified
Digitally signed by SEAN C. STEPHENS
Date: 2026.10.20 08:...
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 043891
SEAN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER

Signature not verified
Digitally signed by TIFFANY A. PREDDY
Date: 2026.10.20 08:...
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 051699
TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- STA. 31+68.82
-Y4- STA. 10+00.00

-L- STA. 32+84.03
-Y5- STA. 13+50.00

PI = 35+00.00
EL = 726.10'
VC = 400'
K = 1318
DS = 80 MPH

-L- STA. 39+14.17
-Y6- STA. 14+00.00

PI = 39+00.00
EL = 723.40'
VC = 400'
K = 189
DS = 60 MPH

(−)0.3714%
(−)0.6750%
(−)0.6750%
(−)12.7930%

PROPOSED GRADE
EXISTING GROUND

SEE SHEET 6 FOR -L- PLAN

760 750 740 730 720 710 700 690 680 670

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

-L- STA. 44+37.55
-Y7- STA. 12+20.00

-L- STA. 45+17.75
-Y8- STA. 10+00.00

LOW POINT
-L- STA. 45+72.00
EL = 708.86'

PI = 44+70.00
EL = 707.48'
VC = 400'
K = 108
DS = 50 MPH

PI = 50+20.00
EL = 712.50'
VC = 280'
K = 231
DS = 65 MPH

-L- STA. 52+15.41
-Y9- STA. 10+00.00

LOW POINT
-L- STA. 54+71.00
EL = 711.26'

PI = 55+70.00
EL = 710.85'
VC = 350'
K = 252
DS = 80 MPH

(−)2.7930%
(+)0.9127%
(+)0.9127%
(−)0.3000%
(−)0.3000%
(+)1.0906%

PROPOSED GRADE
EXISTING GROUND

-L- STA. 43+84.00
36" RCP
SKEW = 90 DEGREES

HYDRAULIC DATA	
DESIGN DISCHARGE	=33.8 C.F.S.
FREQUENCY OF DESIGN FLOOD	=10 YRS.
DESIGN HIGH WATER ELEVATION	=706.4
DRAINAGE AREA	=0.020 SQ. MI.
BASE DISCHARGE (Q25)	= 38.3 C.F.S.
BASE HIGH WATER ELEVATION	= 707.22
OVERTOPPING FLOOD ELEVATION	=710.48

-L- STA. 52+57.00
18" RCP
SKEW = 51 DEGREES

HYDRAULIC DATA	
DESIGN DISCHARGE	=3.8 C.F.S.
FREQUENCY OF DESIGN FLOOD	=10 YRS.
DESIGN HIGH WATER ELEVATION	=707.2
DRAINAGE AREA	=0.002 SQ. MI.
BASE DISCHARGE (Q25)	= 4.3 C.F.S.
BASE HIGH WATER ELEVATION	= 707.33
OVERTOPPING FLOOD ELEVATION	=711.72

SEE SHEET 7 FOR -L- PLAN

760 750 740 730 720 710 700 690 680 670

43 44 45 46 47 48 49 50 51 52 53 54 55 56 57

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5/28/99

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	14

ROADWAY DESIGN ENGINEER

Signed by: SEAN STEPHENS
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043891 SEAN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER

Signed by: TIFFANY PREDDY
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051699 TIFFANY A. PREDDY
10/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

760 750 740 730 720 710 700 690 680 670

57 58 59 60 61 62 63 64 65 66 67 68 69 70

–L– STA. 60+77.30
–Y10– STA. 14+02.85

PROPOSED GRADE

EXISTING GROUND

PI = 64+20.00
EL = 720.12'
VC = 340'
K = 186
DS = 60 MPH

(+)1.0906%

(–)0.7417%

PI = 69+00.00
EL = 716.56'
VC = 300'
K = 817
DS = 80 MPH

(–)0.7417%

(–)0.3745%

SEE SHEET 8 FOR -L- PLAN

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-

740 730 720 710 700 690 680 670 660 650

70 71 72 73 74 75 76 77 78 79 80 81 82 83 84

PI = 73+70.00
EL = 714.80'
VC = 380'
K = 127
DS = 55 MPH

(–)0.3745%

(–)3.3758%

EXISTING GROUND

PROPOSED GRADE

END TIP PROJECT U-4714BA
BEGIN FUTURE TIP PROJECT U-4714BB
–L– STA. 78+12.35 =
–LBA– STA. 10+00.00 LA
EL 700.01' (SEE –LBA– PROFILE)

PI = 79+90.00
EL = 693.87'
VC = 500'
K = 187
DS = 70 MPH

(–)3.3758%

(–)0.7012%

U-4714BB FUTURE GRADE

PI = 84+15.00
EL = 690.89'
VC = 350'
K = 520
DS = 80 MPH

(–)0.7012%

SEE SHEET 9 FOR -L- PLAN

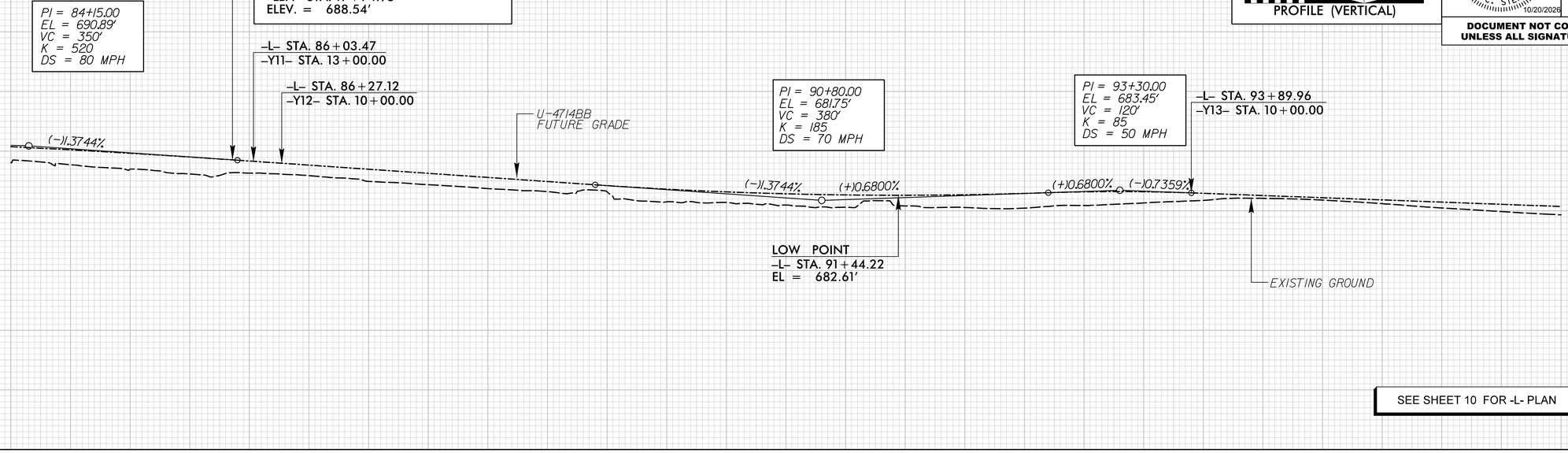
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5/28/99

NOTE: SEE CROSS-SECTIONS FOR UNDERCUT EXCAVATION LOCATIONS THROUGH OUT PROJECT LIMITS.

-L-



SEE SHEET 10 FOR -L- PLAN

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROFILE (HORIZONTAL)
50 25 0 50 100

PROFILE (VERTICAL)
10 5 0 10 20

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	15

ROADWAY DESIGN ENGINEER

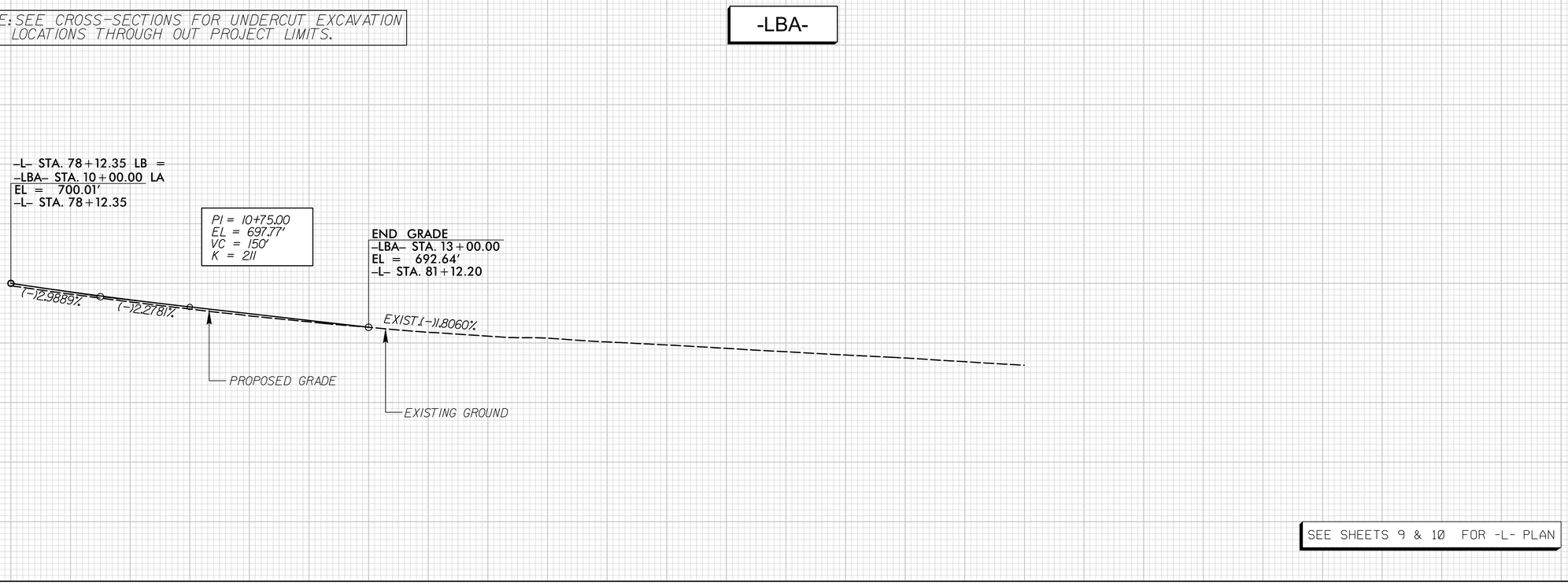
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043891 SEAN C. STEPHENS
10/20/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051699 TIFFANY A. PREDDY
10/20/2026

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-LBA-



SEE SHEETS 9 & 10 FOR -L- PLAN

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-Y-

PI = 11+10.00
EL = 728.83'
VC = 80'
K = 74
DS = 40 MPH

BEGIN GRADE
–Y– STA. 10+70.00
ELEV. = 728.15'

END GRADE
–Y– STA. 11+64.27 =
–L– STA 20+64.25,35.50' LT
ELEV. = 730.34'

PROPOSED GRADE
(+)1.7000%
(+)2.7824%
EXISTING GROUND

SEE SHEET 5 FOR -Y- PLAN

-Y1-

PI = 11+25.00
EL = 729.95'
VC = 60'
K = 218
DS = 75 MPH

END GRADE
–Y1– STA. 11+55.00
ELEV. = 729.69'

EXISTING GROUND
PROPOSED GRADE
(–)1.1425%
(–)0.8667%

BEGIN GRADE
–Y1– STA. 10+35.72 =
–L– STA. 23+77.93,35.50' RT
ELEV. = 730.97'

SEE SHEET 5 FOR -Y1- PLAN

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROFILE (HORIZONTAL)
50 25 0 50 100

PROFILE (VERTICAL)
10 5 0 10 20

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	16

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043891 ENGINEER SEAN T. STEPHENS
10/20/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PRESTON
10/20/2026

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-Y2-

PI = 11+30.00
EL = 726.83'
VC = 60'
K = 21
DS = 20 MPH

BEGIN GRADE
–Y2– STA. 11+00.00
ELEV. = 726.31'

END GRADE
–Y2– STA. 11+64.50 =
–L– STA. 27+49.17,35.50 LT
ELEV. = 728.44'

PROPOSED GRADE
(+)1.7500%
(+)4.6522%
EXISTING GROUND

SEE SHEET 5 FOR -Y2- PLAN

-Y3-

BEGIN GRADE
–Y3– STA. 10+35.55 =
–L– STA. 27+47.59,35.50' RT
ELEV. = 728.46'

END GRADE
–Y3– STA. 11+70.00
ELEV. = 729.54'

PROPOSED GRADE
(+)0.8033%
EXISTING GROUND

SEE SHEET 5 FOR -Y3- PLAN

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-Y4-

PI = 11+10.00
EL = 726.14'
VC = 120'
K = 80
DS = 40 MPH

BEGIN GRADE
–Y4– STA. 10+43.19 =
–L– STA. 31+68.82,43.19' RT
ELEV. = 726.47'

END GRADE
–Y4– STA. 11+90.00
ELEV. = 726.93'

PROPOSED GRADE
(–)0.5000%
(+)0.9926%
EXISTING GROUND

LOW POINT
–Y5– STA. 10+90.20
EL = 726.34'

SEE SHEET 6 FOR -Y4- PLAN

-Y5-

BEGIN GRADE
–Y5– STA. 11+60.00
ELEV. = 727.85'

PI = 12+30.00
EL = 728.10'
VC = 140'
K = 44
DS = 40 MPH

END GRADE
–Y5– STA. 13+04.20 =
–L– STA. 32+77.81,45.37' LT
ELEV. = 726.02'

(+)0.3571%
(–)2.8032%
PROPOSED GRADE
EXISTING GROUND

SEE SHEET 6 FOR -Y5- PLAN

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	17

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043891 ENGINEER SEAN C. STEPHENS
Signed by: SEAN STEPHENS
10/20/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 051699 ENGINEER TIFFANY A. PREDDY
Signed by: TIFFANY PREDDY
10/20/2026

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-Y7-

PI = 10+80.00
EL = 705.10'
VC = 120'
K = 47
DS = 30 MPH

BEGIN GRADE
–Y7– STA. 10+20.00
ELEV. = 704.24'

END GRADE
–Y7– STA. 11+68.37 =
–L– STA. 44+41.47,51.00' LT
ELEV. = 708.62'

PROPOSED GRADE
(+)1.4333%
(+)3.9833%
EXISTING GROUND

SEE SHEET 7 FOR -Y7- PLAN

-Y8-

LEFT DITCH
RIGHT DITCH

PI = 11+35.00
EL = 712.52'
VC = 60'
K = 60
DS = 40 MPH

BEGIN GRADE
–Y8– STA. 10+38.48 =
–L– STA. 45+12.12,38.06' RT
ELEV. = 708.27'

END GRADE
–Y8– STA. 11+65.00
ELEV. = 713.77'

PROPOSED GRADE
(+)2.9833%
(+)5.1587%
(+)4.1661%
(+) 4.5771%
EXISTING GROUND

PI = 12+90.00 RT
El = 716.31

PI = 11+15.00 RT
El = 708.30

PI = 10+72.00
EL = 709.27'
VC = 66'
K = 30
DS = 25 MPH

SEE SHEET 7 FOR -Y8- PLAN

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-Y9-

PI = 11+15.00
EL = 713.22'
VC = 130'
K = 877
DS = 80 MPH

BEGIN GRADE
–Y9– STA. 10+41.50=
–L– STA. 52+15.41,41.50' RT
ELEV. = 711.09'

END GRADE
–Y9– STA. 11+80.00
ELEV. = 715.20'

(+)2.8980%
(+)3.0462%
PROPOSED GRADE
EXISTING GROUND

SEE SHEET 7 FOR -Y9- PLAN

-Y11-

LEFT DITCH
RIGHT DITCH

(+)1.9400%

PI = 11+50.00 RT
EI = 678.86

PI = 10+50.00 RT
EI = 676.92

SEE SHEET 10 FOR -Y11- PLAN

STV Engineers, Inc.
2151 Hawkins St., Suite 1400
Charlotte, NC 28203
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
U-4714BA	18

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043891 SEAN T. STEPHENS
10/20/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 051699 TIFFANY A. PREDDY
10/20/2026

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-Y10-

BEGIN GRADE
–Y10– STA. 10+00.00
ELEV. = 706.91

PI = 11+75.00
EL = 703.01'
VC = 348'
K = 38
DS = 30 MPH

LOW POINT
–L– STA. 10+84.69
EL = 705.96'

PROPOSED GRADE

(–)2.2300%
(+)1.0430%

–Y10– STA. 10+85.00
30" RCP
SKEW = 90 DEGREES

END GRADE
–Y10– STA. 13+49.25 =
–L– STA. 60+74.73,41.50' LT
ELEV. = 715.28'

BEGIN GRADE
–Y10– STA. 14+56.46 =
–L– STA. 60+80.61,53.50' RT
ELEV. = 717.47'

PI = 15+20.00
EL = 718.93'
VC = 120'
K = 84
DS = 45 MPH

–L– 2%

(+)2.2978%
(+)3.7190%
(+)3.7190%
EXISTING GROUND

PI = 17+30.00
EL = 726.74'
VC = 300'
K = 44
DS = 40 MPH

(–)3.0980%
(–)3.0980%

PI = 19+75.00
EL = 719.15'
VC = 190'
K = 320
DS = 75 MPH

(–)3.6914%
(–)3.6914%

PI = 21+50.00
EL = 712.69'
VC = 160'
K = 66
DS = 40 MPH

END GRADE
–Y10– STA. 22+40.00
ELEV. = 711.56'

PROPOSED GRADE

(–)1.2556%

HYDRAULIC DATA

DESIGN DISCHARGE		=26.5 C.F.S.
FREQUENCY OF DESIGN FLOOD		=10 YRS.
DESIGN HIGH WATER ELEVATION		=704.03
DRAINAGE AREA		=0.011 SQ. MI.
BASE DISCHARGE (Q25)	=	30.5 C.F.S.
BASE HIGH WATER ELEVATION	=	704.40
OVERTOPPING FLOOD ELEVATION		=705.95

SEE SHEETS 8 & 20 FOR -Y10- PLAN

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