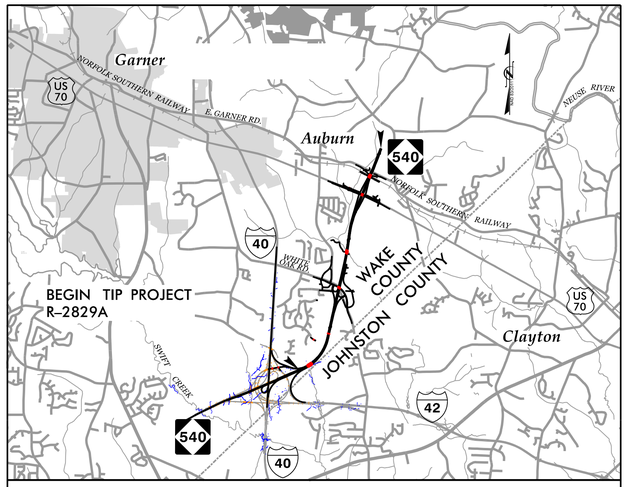
09/08/99

TIP PROJECT: R–2829A

CONTRACT: C204824

See Sheet 1B for Symbology Sheet



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–2829A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35517.3.TA1	N/A, 0540047	
35517.3. TAGV1	N/A, 0540047	



NAD 83/NA 2011

LOCATION: ***TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION FROM I–40 TO SOUTH OF SR 2542 (ROCK QUARRY RD.)***

TYPE OF WORK: ***GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES***

SAFETEA–LU SECTION 6002
HYDRAULIC DESIGN MEETING PLANS

BEGIN CONSTRUCTION
TIP R–2829A
–L– POC STA. 893 + 00.00

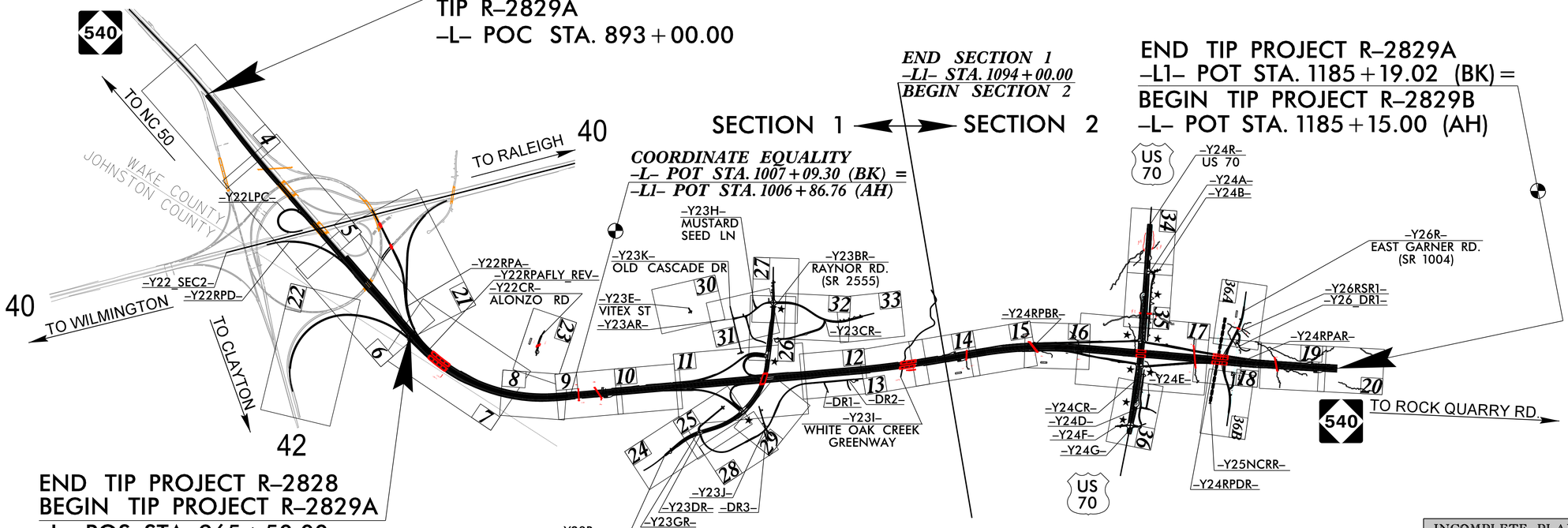
END TIP PROJECT R–2828
BEGIN TIP PROJECT R–2829A
–L– POS STA. 965 + 50.00

END SECTION 1
–L1– STA. 1094 + 00.00
BEGIN SECTION 2

SECTION 1 ↔ SECTION 2

END TIP PROJECT R–2829A
–L1– POT STA. 1185 + 19.02 (BK) =
BEGIN TIP PROJECT R–2829B
–L– POT STA. 1185 + 15.00 (AH)

COORDINATE EQUALITY
–L– POT STA. 1007 + 09.30 (BK) =
–L1– POT STA. 1006 + 86.76 (AH)



NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III MODIFIED.
2. THIS IS A CONTROLLED–ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
3. THIS PROJECT IS NOT WITHIN MUNICIPAL LIMITS.

check to make sure we dont have duplicate named details between section 1 and 2

★ PROPOSED TRAFFIC SIGNAL

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

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

DESIGN DATA

ADT 2023 = 15,440
ADT 2043 = 22,040
K = 12%
D = 65%
T = 10% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 4% + DUALS 6%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–2829A.....3.924 MILES
LENGTH STRUCTURE TIP PROJECT R–2829A.....0.240 MILES
TOTAL LENGTH TIP PROJECT R–2829A.....4.164 MILES

NCTA CONTACT

Ron McCollum, PE
DEPUTY CHIEF ENGINEER for PRECONSTRUCTION
TURNPIKE AUTHORITY

PLANS PREPARED BY:

RK&K — RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615–3960
NC LICENSE NO. F–0112

FOR NORTH CAROLINA TURNPIKE AUTHORITY

BRANCH CIVIL* — S.T. WOOTEN

2018 STANDARD SPECIFICATIONS

LETTING DATE:
October 17, 2023

C. Byron Holden, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

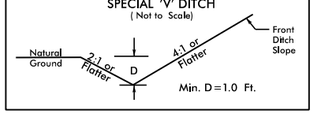
ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

4/3/2024
R:\Hydraulics\Permits_Environmental\Drawings\4B\R-2829A_hyd_4B_tsh.dgn
choffman

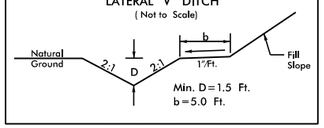
SECTION 1 DITCH DETAILS

DETAIL A
SPECIAL 'V' DITCH
(Not to Scale)



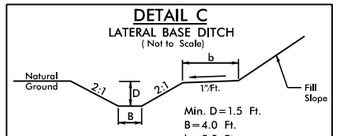
–Y22RPE_REV– STA. 42+00 TO STA. 45+50 LT
–Y22RPE_REV– STA. 48+88 TO STA. 51+93.23 RT
–L– STA. 996+00 TO STA. 1000+00 LT
–L– STA. 1000+00 TO STA. 1001+00 LT
–L– STA. 1000+50 TO STA. 1002+10 RT
–L1– STA. 1005+50 TO STA. 1007+00 RT
–L1– STA. 1025+50 TO STA. 1026+50 LT
–L1– STA. 1027+50 TO STA. 1030+35 LT
–L1– STA. 1040+35 TO STA. 1044+50 RT
–L1– STA. 1045+50 TO STA. 1048+50 RT
–L1– STA. 1057+50 TO STA. 1058+00 LT
–L1– STA. 1071+50 TO STA. 1073+00 LT
–L1– STA. 1093+50 TO STA. 1094+00 RT
–Y22CR– STA. 15+00 TO STA. 15+50 LT
–Y23R– STA. 15+50 TO STA. 16+50 LT
–Y23R– STA. 15+50 TO STA. 16+00 RT
–Y23R– STA. 23+80 TO STA. 25+30 LT
–Y23R– STA. 23+80 TO STA. 25+25 RT
–Y23R– STA. 26+00 TO STA. 27+15 RT
–Y23R– STA. 62+00 TO STA. 62+75 RT
–Y23R– STA. 63+00 TO STA. 63+32 LT
–Y23R– STA. 63+00 TO STA. 63+35 RT
–Y23R– STA. 68+75 TO STA. 69+00 RT
–Y23AR– STA. 10+30 TO STA. 12+50 RT
–Y23AR– STA. 16+50 TO STA. 17+50 RT
–Y23BR– STA. 10+77 TO STA. 16+00 LT
–Y23BR– STA. 18+50 TO STA. 22+00 LT
–Y23CR– STA. 19+00 TO STA. 20+50 LT
–Y23DR– STA. 10+50 TO STA. 11+50 LT
–Y23DR– STA. 15+00 TO STA. 15+50 LT
–Y23DR– STA. 10+50 TO STA. 16+50 RT
–Y23DR– STA. 20+50 TO STA. 23+50 RT
–Y23DR– STA. 37+00 TO STA. 40+00 LT
–Y23DR– STA. 38+38 TO STA. 41+00 RT
–Y23DR– STA. 54+94 TO STA. 55+65 RT
–Y23E– STA. 10+00 TO STA. 10+56 RT
–Y23E– STA. 10+20 TO STA. 10+50 LT
–Y23G– STA. 10+50 TO STA. 11+50 LT
–Y23J– STA. 14+00 TO STA. 15+30 RT
–DR2– STA. 10+27 TO STA. 11+50 LT
–DR2– STA. 10+70 TO STA. 11+50 RT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



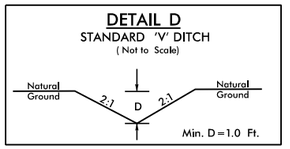
*–Y22RPAFLY_REV– STA. 32+50 TO STA. 34+50 RT
–Y22RPAFLY_REV– STA. 18+54 TO STA. 20+00 LT
–Y22RPA_REV– STA. 21+36 TO STA. 23+00 LT
–Y22RPE_REV– STA. 35+50 TO STA. 39+00 LT
–Y23R– STA. 48+00 TO STA. 49+50 RT
–Y23BR– STA. 22+00 TO STA. 22+75 LT
–L1– STA. 1026+50 TO STA. 1027+50 LT
–L1– STA. 1033+00 TO STA. 1034+00 LT
–L1– STA. 1069+50 TO STA. 1071+50 LT

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



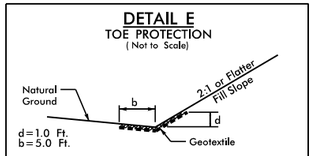
–L– STA. 1003+00 TO STA. 1004+34 RT
–Y23R– STA. 53+00 TO STA. 55+00 RT
–Y23R– STA. 55+00 TO STA. 56+16 LT
–Y22RPA_REV– STA. 14+55 TO STA. 19+50 RT
–Y22RPE_REV– STA. 41+00 TO STA. 42+00 LT

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



–Y22RPE_REV– STA. 51+93.23 TO STA. 53+40 RT
BEGIN ELEV=245.6, END ELEV=242.30
S=2.25%, L=151'
–Y23DR– STA. 55+65 TO STA. 56+18 RT
BEGIN ELEV=279.9, END ELEV=277.5
S=4.5%, L=53'

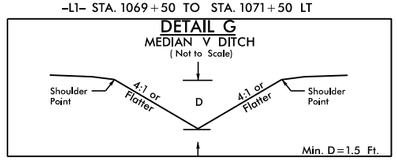
DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIPRAP

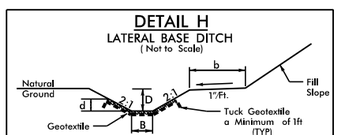
*–Y22RPAFLY1– STA. 62+90 TO 63+70 LT
*–Y22RPAFLY_REV– STA. 39+50 TO 39+69 LT
*–Y22LPC– STA. 24+13 TO STA. 26+25 RT
*–L– STA. 930+24 TO STA. 930+72 RT
–Y22RPE– STA. 27+50 TO STA. 33+50 RT
–Y22RPE_REV– STA. 39+00 TO STA. 43+00 RT
–L1– STA. 1007+00 TO STA. 1010+00 RT
–L1– STA. 1007+50 TO STA. 1010+50 LT
–L1– STA. 1013+00 TO STA. 1014+00 RT
–L1– STA. 1091+69 TO STA. 1093+51 LT
–Y22CR– STA. 15+50 TO STA 16+00 LT
–Y22CR– STA. 15+50 TO STA 16+00 RT
–Y23RPB– STA. 12+50 TO STA. 15+15 LT
–Y23R– STA. 39+00 TO STA. 40+60 RT
–Y23DR– STA. 34+70 TO STA. 35+50 RT
–Y23DR– STA. 51+88 TO STA. 52+47 RT
–Y23E– STA. 10+66 TO STA. 10+81 RT
–DR1– STA. 10+33 TO STA. 11+12 RT
–Y23DR– STA. 47+54 TO STA. 47+92 RT

DETAIL G
MEDIAN 'V' DITCH
(Not to Scale)



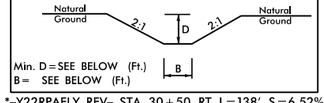
*–L– STA. 962+50 TO STA. 964+00 RT
–L1– STA. 1038+50 TO STA. 1043+50 CL
–L1– STA. 1038+00 TO STA. 1040+35 RT
–L1– STA. 1038+00 TO STA. 1040+50 LT
–L1– STA. 1044+50 TO STA. 1045+00 RT
–L1– STA. 1060+00 TO STA. 1069+50 RT
–Y23RPB– STA. 24+50 TO STA. 25+50 RT
–Y23RPC– STA. 19+00 TO STA. 20+00 LT

DETAIL H
LATERAL BASE DITCH
(Not to Scale)



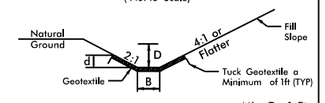
–Y22RPA_REV– 19+50 TO STA. 20+73 RT, D/d=1.0'
–Y22RPE_REV– STA. 39+00 TO STA. 41+00 LT, D/d=1.0'
–L– STA. 966+00 TO STA. 971+50 LT, D/d=3.0'
–L– STA. 1002+40 TO STA. 1003+00 RT, D/d=1.5'
–L1– STA. 1015+50 TO STA. 1018+00 LT, D/d=1.0'
–L1– STA. 1018+15 TO STA. 1019+00 RT, D/d=1.0'
–L1– STA. 1087+00 TO STA. 1089+50 RT, D/d=1.0'
–L1– STA. 1092+00 TO STA. 1094+00 LT, D/d=1.0'
–Y23DR– STA. 24+00 TO STA. 24+99 RT, D/d=1.0'

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



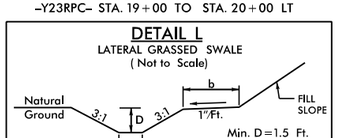
*–Y22RPAFLY_REV– STA. 30+50 RT, L=138', S=6.52%
BEGIN ELEV=284.0, END ELEV=275.0',
MIN D=1.0', B=4' (TEMPORARY DITCH)
–L– STA. 971+50 TO STA. 972+93 LT, L=143'
BEGIN ELEV=217.45', END ELEV=217.00', S=0.31%
MIN D=2.75', B=10'
–Y23R– STA. 23+80 RT, L=82', S=0.3%
BEGIN ELEV=335.25, END ELEV=335.0',
MIN D=1.5', B=4'
–Y23BR– STA. 22+75 LT, L=80', S=0.7%
BEGIN ELEV=340.20, END ELEV=339.65',
MIN D=1.5', B=3'
–Y23DR– STA. 15+50 RT, L=100', S=0.45%
BEGIN ELEV=316.6, END ELEV=316.15',
MIN D=1.5', B=4'
–L1– STA. 1027+00 LT, L=205', S=0.3%
BEGIN ELEV=296.7, END ELEV=296.0,
MIN D=1.5', B=4'
–L1– STA. 1030+35 LT, L=172', S=0.5%
BEGIN ELEV=301.8, END ELEV=301.0,
MIN D=1.5', B=4'
–Y23DR– STA. 51+00 LT, L=97', S=1.24%
BEGIN ELEV=265.0 END ELEV=263.8,
MIN D=2.0', B=4'

DETAIL J
SPECIAL LATERAL BASE DITCH
(Not to Scale)



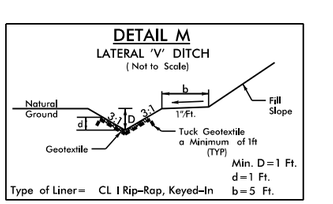
*–Y22RPAFLY_REV– STA. 32+00 TO STA. 32+50 RT,
CL I RIPRAP (TEMPORARY DITCH)

DETAIL L
LATERAL GRASSED SWALE
(Not to Scale)



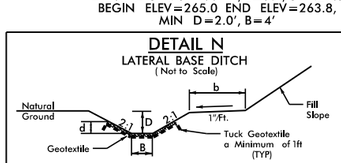
–L– STA. 1003+00 TO STA. 1003+80 LT
–L1– STA. 1010+67 TO STA. 1011+67 LT
–L1– STA. 1013+77 TO STA. 1015+50 LT
–L1– STA. 1023+00 TO STA. 1023+84 LT
–L1– STA. 1024+18 TO STA. 1025+00 RT
–L1– STA. 1034+00 TO STA. 1036+33 LT
–L1– STA. 1089+50 TO STA. 1093+50 RT
–L1– STA. 1090+00 TO STA. 1092+00 LT
–Y23R– STA. 19+00 TO STA. 23+00 LT
–Y23R– STA. 39+00 TO STA. 41+00 LT
–Y23R– STA. 49+50 TO STA. 53+00 RT
–Y23R– STA. 60+00 TO STA. 62+00 RT
–Y23RPB– STA. 27+50 TO STA. 28+75 RT
–Y23RPC– STA. 17+00 TO STA. 18+00 RT
–Y23BR– STA. 21+50 TO STA. 22+50 RT
–Y23BR– STA. 23+40 TO STA. 25+50 RT
–Y23CR– STA. 22+50 TO STA. 23+15 LT
–Y23FR– STA. 10+25 TO STA. 11+15 LT
–Y23FR– STA. 11+94 TO STA. 13+50 LT

DETAIL M
LATERAL 'V' DITCH
(Not to Scale)



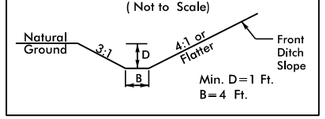
–Y23RPB– STA. 28+20 TO STA. 29+80 LT
–Y22RPA_REV– STA. 10+00 TO STA. 12+00 RT
–Y22RPAFLY_REV– STA. 19+75 TO 21+46 RT
–Y23AR– STA. 19+60 TO STA. 19+80 LT
–Y23DR– STA. 51+93 TO STA. 52+50 RT

DETAIL N
LATERAL BASE DITCH
(Not to Scale)



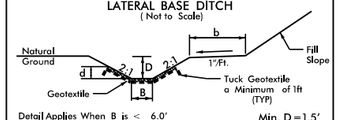
–Y22RPAFLY_REV– STA. 15+37 TO 19+75 RT, D/d=2.75'
–Y22RPAFLY_REV– STA. 21+24 TO STA. 28+00 LT, D/d=2.5'
–Y22RPE_REV– STA. 21+00 TO STA. 28+00 LT, D/d=2.5'
–L– STA. 979+00 TO STA. 982+00 RT, D/d=1.5'
–L– STA. 980+24 TO STA. 986+00 LT, D/d=1.5'
–L1– STA. 1064+00 TO STA. 1066+50 LT, D/d=1'
–Y23R– STA. 31+50 TO STA. 34+75 RT, D/d=1.5'
–Y23DR– STA. 24+40 TO STA. 27+50 LT, D/d=1'
–Y23DR– STA. 32+50 TO STA. 34+15 LT, D/d=1'

DETAIL O
SPECIAL CUT GRASSED SWALE
(Not to Scale)



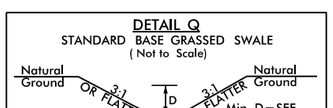
–L– STA. 992+00 TO STA. 996+00 LT
–L– STA. 1001+00 TO STA. 1003+00 LT
–L1– STA. 1018+00 TO STA. 1021+50 LT
–L1– STA. 1019+00 TO STA. 1020+00 RT
–L1– STA. 1022+50 TO STA. 1024+18 RT
–L1– STA. 1026+00 TO STA. 1029+50 RT
–L1– STA. 1060+00 TO STA. 1062+62 LT
–Y23R– STA. 18+50 TO STA. 19+00 LT
–Y23R– STA. 38+20 TO STA. 39+00 LT
–Y23R– STA. 59+00 TO STA. 60+00 RT
–Y23RPC– STA. 14+29 TO STA. 17+00 RT
–Y23RPC– STA. 18+00 TO STA. 19+00 RT
–Y23RPC– STA. 20+00 TO STA. 23+50 LT
–Y23RPC– STA. 19+00 TO STA. 24+00 RT
–Y23LPC– STA. 14+00 TO STA. 15+45 RT
–Y23RPB– STA. 16+08 TO STA. 17+12 LT
–Y23RPB– STA. 18+05 TO STA. 22+50 RT
–Y23AR– STA. 13+30 TO STA. 14+50 RT
–Y23BR– STA. 18+50 TO STA. 21+50 RT
–Y23CR– STA. 20+50 TO STA. 22+50 LT
–Y23DR– STA. 21+00 TO STA. 23+50 LT
–Y23DR– STA. 29+85 TO STA. 32+50 LT
–Y23DR– STA. 36+00 TO STA. 37+00 LT
–Y23DR– STA. 44+43 TO STA. 45+43 RT
–Y23J– STA. 14+00 TO STA. 14+85 LT
–L1– STA. 1054+50 TO STA. 1056+00 RT
–L1– STA 1058+00 TO STA 1060+50 LT

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



–L1– STA. 1011+67 TO STA. 1012+50 LT

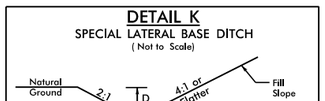
DETAIL Q
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

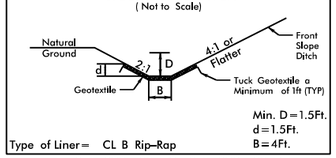
–L1– STA. 1084+71 TO STA. 1087+00 RT, D=2 FT, B=4 FT
BEGIN ELEV=230.0, END ELEV=231.0 S=0.36%, L=279'
–L1– STA. 1056+00 RT, D=1 FT, B=4 FT
BEGIN ELEV=311.9, END ELEV=311.0, S=0.9%, L=100'
–L1– STA. 1085+06 LT, D=2 FT, B=4 FT
BEGIN ELEV=230.4, END ELEV=230.0, S=0.3%, L=117'

DETAIL K
SPECIAL LATERAL BASE DITCH
(Not to Scale)



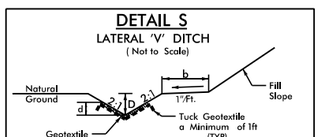
*–Y22RPAFLY_REV– 30+50 TO STA. 32+00 RT
(TEMPORARY DITCH)

DETAIL R
SPECIAL BASE DITCH
(Not to Scale)



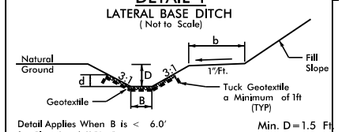
–L– STA. 982+00 TO STA. 988+00 RT
–L1– STA. 1025+00 TO STA. 1026+00 RT
–L1– STA. 1029+50 TO STA. 1030+35 RT
–L1– STA. 1077+25 TO STA. 1078+90
–Y23R– STA. 30+00 TO STA. 31+50 RT
–Y23K– STA. 11+98 TO STA. 12+60 LT
–Y23AR– STA. 11+50 TO STA. 15+50 LT (Min. D=2.0')

DETAIL S
LATERAL 'V' DITCH
(Not to Scale)



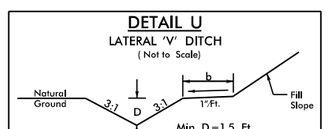
–Y22RPAFLY_REV– STA. 20+00 TO STA. 21+24 LT
–Y23R– STA. 41+00 TO STA. 43+00 LT
–Y23RPB– STA. 22+50 TO STA. 24+50 RT
–Y23DR– STA. 34+15 TO STA. 36+00 LT
–Y23FR– STA. 11+69 TO STA. 13+50 RT
–Y23FR– STA. 13+50 TO STA. 14+00 LT

DETAIL T
LATERAL BASE DITCH
(Not to Scale)



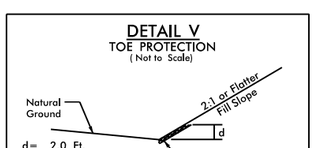
–Y23RPB– STA. 28+75 TO STA. 30+45 RT
–Y22RPE_REV–STA. 28+00 TO STA. 30+00 LT
–Y22RPAFLY_REV– STA. 28+00 TO STA. 30+00 LT

DETAIL U
LATERAL 'V' DITCH
(Not to Scale)



–Y23AR– STA. 14+50 TO STA. 16+50 RT
–Y23AR– STA. 17+50 TO STA. 19+80 RT

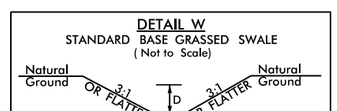
DETAIL V
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B RIPRAP

–L– STA. 1003+50 TO STA. 1004+50 LT
–L– STA. 1004+25 TO STA. 1004+75 RT
–Y23RPB– STA. 27+50 TO STA. 28+00 LT
–Y23DR– STA. 49+24 TO STA. 49+83 RT
–Y23FR– STA. 11+15 TO STA. 11+67 LT

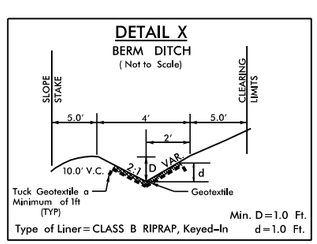
DETAIL W
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

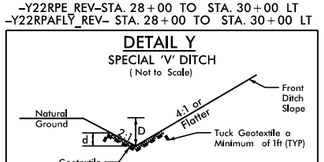
–Y23RPB– STA. 23+50 RT, L=143'
BEGIN ELEV=317.1', END ELEV=315.70', S=1.0%
MIN D=1.0', B=4'

DETAIL X
BERM DITCH
(Not to Scale)



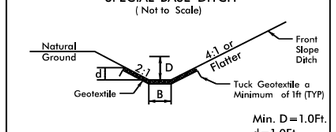
–Y23RPC– STA. 14+29 TO STA. 16+50 RT
–L1– STA. 1053+30 TO STA. 1058+00 LT

DETAIL Y
SPECIAL 'V' DITCH
(Not to Scale)



–L1– STA. 1021+50 TO STA. 1022+00 LT
–L1– STA. 1020+00 TO STA. 1021+00 RT
–L1– STA. 1096+50 TO STA. 1097+00 RT
–L1– STA. 1073+00 TO STA. 1075+50 LT
–Y22CR– STA. 14+50 TO STA 15+00 LT
–Y23R– STA. 56+50 TO STA. 59+00 RT
–Y23R– STA. 64+65 TO STA. 69+00 LT
–Y23R– STA. 66+50 TO STA. 68+30 RT
–Y23LPB– STA. 14+50 TO STA. 15+00 LT
–Y23DR– STA. 27+50 TO STA. 28+80 LT
–Y23DR– STA. 36+00 TO STA. 38+38 RT
–Y23FR– STA. 13+50 TO STA. 14+00 RT

DETAIL Z
SPECIAL BASE DITCH
(Not to Scale)



–L1– STA. 1077+50 TO STA. 1079+00 LT
–Y23DR– STA. 23+50 TO STA. 24+50 RT
–L1– STA. 1060+50 TO STA. 1062+00 LT

NOTE: * INDICATE DITCHES INSIDE THE EARLY START PACKAGE

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-1
	HYDRAULICS DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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8601 Six Forks Road, Forum 1,Suite 700
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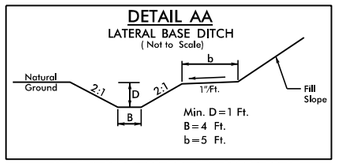
4/3/2024
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SECTION 1 DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-2
	HYDRAULICS DESIGN ENGINEER

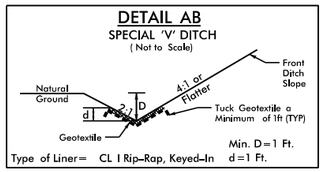
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL AA
LATERAL BASE DITCH
(Not to Scale)



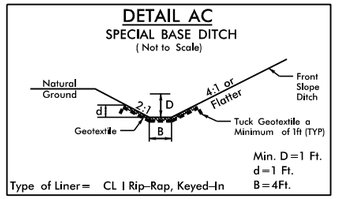
–L1– STA. 1075+50 TO STA. 1077+50 LT
–L1– STA. 1066+00 TO STA. 1069+50 LT

DETAIL AB
SPECIAL 'V' DITCH
(Not to Scale)



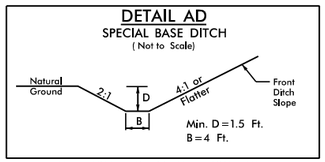
–L1– STA. 1100+00 TO STA. 1100+50 RT
–Y23I– STA. 14+00 TO STA. 14+92 RT
–Y23I– STA. 14+00 TO STA. 14+92 LT
–Y23R– STA. 22+50 TO STA 23+80 RT
–Y23DR– STA. 52+50 TO STA 53+23 RT

DETAIL AC
SPECIAL BASE DITCH
(Not to Scale)



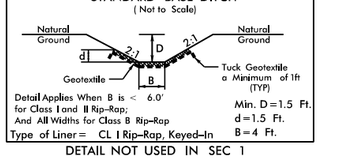
–L– STA. 990+00 TO STA. 991+00 LT
–Y23DR– STA. 23+50 TO STA. 24+40 LT
–Y23H– STA. 10+50 TO STA. 11+85 RT
–Y23R– STA. 32+50 TO STA. 33+50 LT
–Y23R– STA. 64+50 TO STA. 66+50 RT

DETAIL AD
SPECIAL BASE DITCH
(Not to Scale)



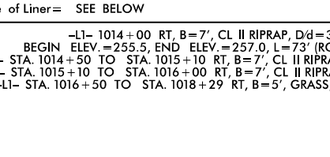
–L1– STA. 1094+50 TO STA. 1096+26 LT
–Y23AR– STA. 10+30 TO STA. 11+50 LT
–Y23R– STA. 33+50 TO STA. 36+00 LT
–Y23RPC– STA. 24+00 TO STA. 27+00 RT

DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



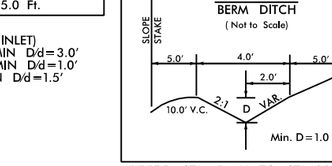
–L– STA. 977+00 TO STA. 980+24 LT, D/d=3.0'

DETAIL AF
SPECIAL 'V' DITCH
(Not to Scale)



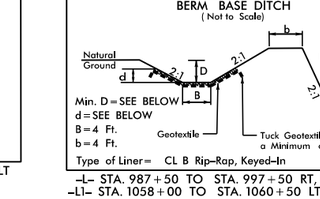
–Y23BR– STA. 31+45 TO STA. 32+00 LT

DETAIL AG
CHANNEL CHANGE
(Not to Scale)



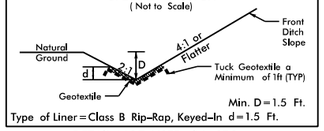
DETAIL NOT USED IN SEC 1

DETAIL AH
BERM V DITCH
(Not to Scale)



–L1– STA. 1030+50 TO STA. 1034+50 RT
–L1– STA. 1058+00 TO STA. 1059+50 LT

DETAIL AJ
SPECIAL 'V' DITCH
(Not to Scale)



DETAIL NOT USED IN SEC 1

DETAIL AK
STANDARD BASE DITCH
(Not to Scale)

–Y23R– STA. 60+95 RT, L=80', S=7.5%
BEGIN ELEV=332.0, END ELEV=326.0', D/d=1.0'
–Y23AR– STA. 11+50 RT, L=24', S=1.4%
BEGIN ELEV=299.0', END ELEV=298.67', D/d=2.5'
–L– STA. 975+75 TO STA. 977+00 LT, L=125', S=0.3%
BEGIN ELEV=214.5, END ELEV=214.88, D/d=3.5'

DETAIL AL
JURISDICTIONAL INLET & OUTLET CHANNEL STABILIZATION
(Not to Scale)

–L– STA. 1004+00 LT
–L1– STA. 1023+00 LT
–L1– STA. 1036+50 LT
–L1– STA. 1062+62 LT
–L1– STA. 1063+80 RT
–Y23R– STA. 61+14 LT
–Y23DR– STA. 24+40 LT
–Y23DR– STA. 25+00 RT
–Y23DR– STA. 34+15 LT
–Y23DR– STA. 34+31 RT
–Y23FR– STA. 11+71 LT
–Y23FR– STA. 11+64 RT

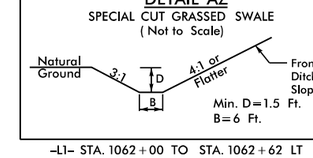
DETAIL AM
SPECIAL BASE DITCH
(Not to Scale)

–L– STA. 991+00 TO STA. 992+00 LT
–L1– STA. 1046+00 TO STA. 1047+50 LT
–Y23R– STA. 23+00 TO STA. 23+80 LT
–Y23R– STA. 31+50 TO STA. 32+50 LT
–Y23LPB– STA. 13+22 TO STA. 14+50 LT

DETAIL AN
MEDIAN V DITCH W/CL B RIP RAP
(Not to Scale)

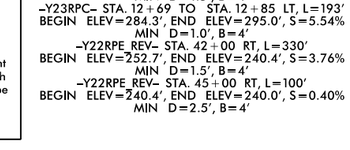
–L1– STA. 1059+50 TO STA. 1060+00 RT

DETAIL AO
LATERAL 'V' DITCH
(Not to Scale)



–Y22CR– STA. 13+61 TO STA 14+50 LT
–Y22CR– STA. 14+26 TO STA 15+50 RT
–L1– STA. 1070+50 TO STA. 1071+50 RT

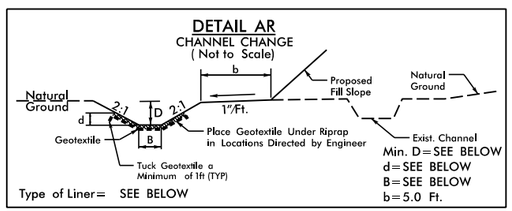
DETAIL AP
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

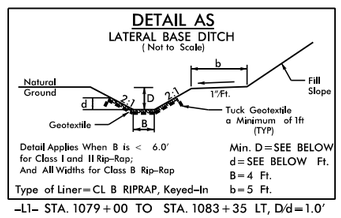
–L1– STA. 1086+70 TO STA. 1090+00 LT, D=2 FT
–BEGIN ELEV=231.0, END ELEV=230.0, S=0.3%, L=330'

DETAIL AR
CHANNEL CHANGE
(Not to Scale)



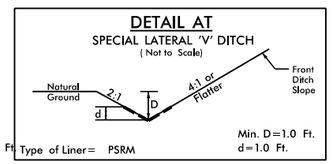
–L1– 1014+00 RT, B=7', CL II RIPRAP, D/d=3.0'
BEGIN ELEV.=255.5, END ELEV.=257.0, L=73' (RCBC INLET)
–L1– STA. 1014+50 TO STA. 1015+10 RT, B=7', CL II RIPRAP, MIN D/d=3.0'
–L1– STA. 1015+10 TO STA. 1016+00 RT, B=7', CL II RIPRAP, MIN D/d=1.0'
–L1– STA. 1016+50 TO STA. 1018+29 RT, B=5', GRASS, MIN D/d=1.5'

DETAIL AS
LATERAL BASE DITCH
(Not to Scale)



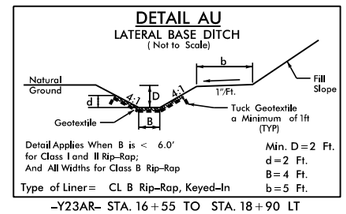
–L1– STA. 1079+00 TO STA. 1083+35 LT, D/d=1.0'

DETAIL AT
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



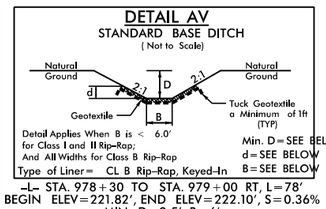
DETAIL NOT USED IN SEC 1

DETAIL AU
LATERAL BASE DITCH
(Not to Scale)



–Y23AR– STA. 16+55 TO STA. 18+90 LT

DETAIL AV
STANDARD BASE DITCH
(Not to Scale)



–L– STA. 978+30 TO STA. 979+00 RT, L=78'
BEGIN ELEV=221.82', END ELEV=222.10', S=0.36%
MIN D=2.5', B=6'
–Y23RPC– STA. 12+06 TO STA. 12+69 LT, L=50'
BEGIN ELEV=284.0', END ELEV=284.3', S=0.60%
MIN D=1.5', B=4'
–Y23RPC– STA. 12+69 TO STA. 12+85 LT, L=193'
BEGIN ELEV=284.3', END ELEV=295.0', S=5.54%
MIN D=1.0', B=4'
–Y22RPE_REV– STA. 42+00 RT, L=330'
BEGIN ELEV=252.7', END ELEV=240.4', S=3.76%
MIN D=1.5', B=4'
–Y22RPE_REV– STA. 45+00 RT, L=100'
BEGIN ELEV=240.4', END ELEV=240.0', S=0.40%
MIN D=2.5', B=4'

DETAIL AW
STANDARD BASE DITCH
(Not to Scale)

DETAIL NOT USED IN SEC 1

DETAIL AX
BERM DITCH
(Not to Scale)

–Y23DR– STA. 13+00 TO STA. 23+00 LT

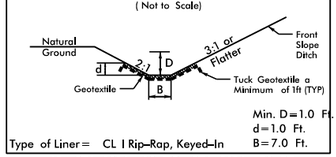
DETAIL AY
BERM BASE DITCH
(Not to Scale)

–L– STA. 987+50 TO STA. 997+50 RT, D/d=1.0'
–L1– STA. 1058+00 TO STA. 1060+50 LT, D/d=1.0'

DETAIL AZ
SPECIAL CUT GRASSED SWALE
(Not to Scale)

–L1– STA. 1062+00 TO STA. 1062+62 LT

DETAIL BB
CHANNEL CHANGE
(Not to Scale)



–L1– STA. 1016+00 TO STA. 1016+50 RT

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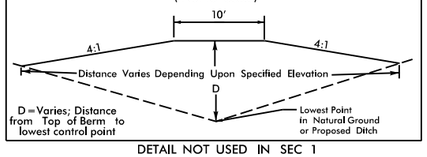
4/3/2024
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mbailey

SECTION 1 DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-3
	HYDRAULICS DESIGN ENGINEER

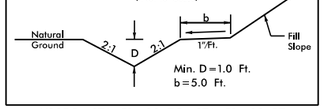
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DETAIL BC
10' WIDE BERM
(Not to Scale)



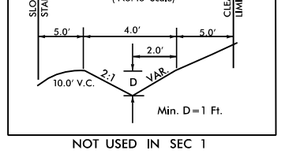
DETAIL NOT USED IN SEC 1

DETAIL BD
LATERAL 'V' DITCH
(Not to Scale)



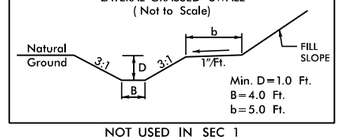
–Y23DR– STA. 51+00 TO STA. 51+93 RT

DETAIL BE
BERM DITCH
(Not to Scale)



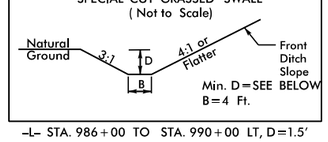
NOT USED IN SEC 1

DETAIL BF
LATERAL GRASSED SWALE
(Not to Scale)



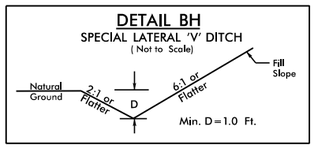
NOT USED IN SEC 1

DETAIL BG
SPECIAL CUT GRASSED SWALE
(Not to Scale)



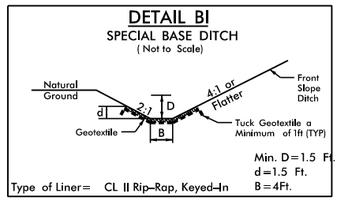
–L– STA. 986+00 TO STA. 990+00 LT, D=1.5'

DETAIL BH
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



DETAIL NOT USED IN SEC 1

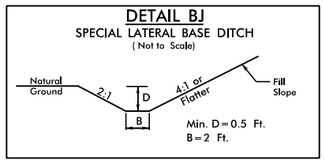
DETAIL BI
SPECIAL BASE DITCH
(Not to Scale)



Type of Liner= CL II Rip–Rap, Keyed–In

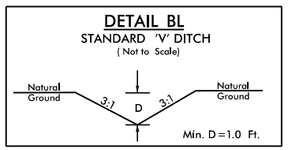
DETAIL NOT USED IN SEC 1

DETAIL BJ
SPECIAL LATERAL BASE DITCH
(Not to Scale)



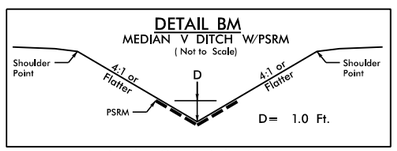
NOT USED IN SEC 1

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



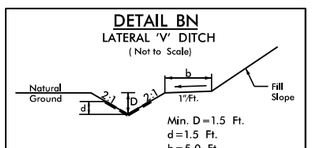
–Y23J– STA. 13+00 TO STA. 14+00 RT
BEGIN ELEV=321.65, END ELEV=317.95
S=3.7%, L=100'
–Y23J– STA. 13+00 TO STA. 14+00 LT
BEGIN ELEV=323.05, END ELEV=317.00
S=6.1%, L=100'

DETAIL BM
MEDIAN V DITCH W/PSRM
(Not to Scale)



DETAIL NOT USED IN SEC 1

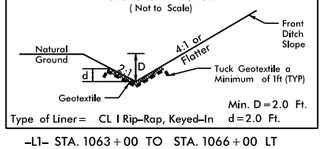
DETAIL BN
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= PSRM

–Y22RPE– STA. 30+00 TO STA. 31+50 LT
–Y22RPAFLY_REV– STA. 30+00 TO STA. 31+50 LT

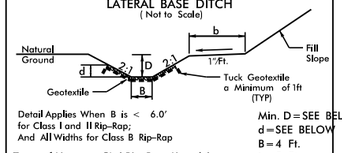
DETAIL BO
SPECIAL 'V' DITCH
(Not to Scale)



Type of Liner= CL I Rip–Rap, Keyed–In

–L1– STA. 1063+00 TO STA. 1066+00 LT

DETAIL BP
LATERAL BASE DITCH
(Not to Scale)

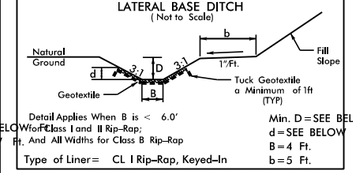


Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=SEE BELOW Ft.
d=SEE BELOW Ft.
B=4 Ft.
b=5 Ft.

Type of Liner= CL I Rip–Rap, Keyed–In

DETAIL NOT USED IN SEC 1

DETAIL BQ
LATERAL BASE DITCH
(Not to Scale)

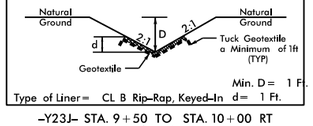


Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=SEE BELOW Ft.
d=SEE BELOW Ft.
B=4 Ft.
b=5 Ft.

Type of Liner= CL I Rip–Rap, Keyed–In

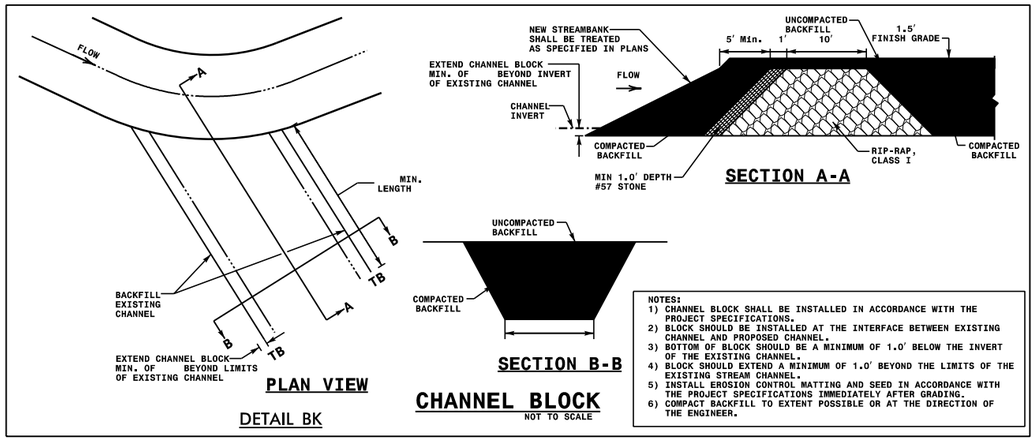
–Y23RPB– STA. 28+75 TO STA. 30+45 RT
–Y22RPE_REV–STA. 28+00 TO STA. 30+00 LT

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



Type of Liner= CL B Rip–Rap, Keyed–In d= 1 Ft.

–Y23J– STA. 9+50 TO STA. 10+00 RT
BEGIN ELEV=316.8, END ELEV=313.8
S=6.0%, L=50'



CHANNEL BLOCK
NOT TO SCALE

NOTES:
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 1.0' BELOW THE INVERT OF THE EXISTING CHANNEL.
4) BLOCK SHOULD EXTEND A MINIMUM OF 1.0' BEYOND THE LIMITS OF THE EXISTING STREAM CHANNEL.
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

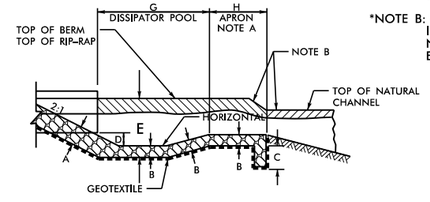
DETAIL BK

DETAIL BS
RIP–RAPPED ENERGY DISSIPATOR BASIN

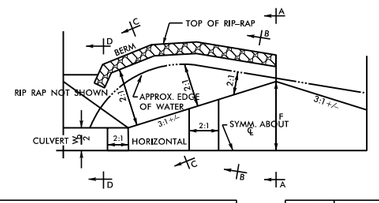
*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP–RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

℄ SECTION



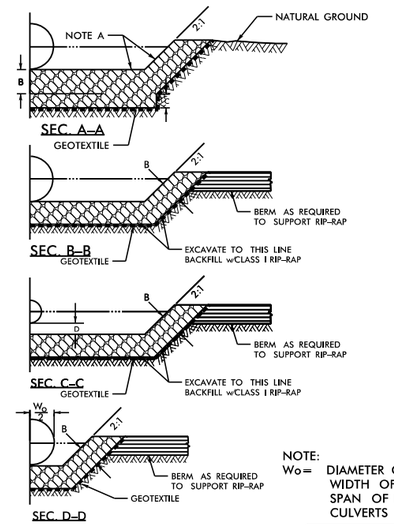
HALF PLAN



DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A	0.4'							
B	0.3'							
C	3.0'							
D	2.1'							
E	3.3'							
F	15.0'							
G	21.1'							
H	10.5'							

*ALL DIMENSIONS APPROXIMATE IN FT

BASIN #	LOCATION (AT OUTLET)
1	–Y23RPB– 23+55
2	
3	
4	
5	
6	
7	
8	



NOTE:
Wo= DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE–ARCH CULVERTS

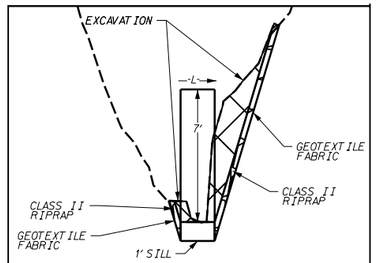
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4/3/2024
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mbailey

SECTION 1 DITCH DETAILS

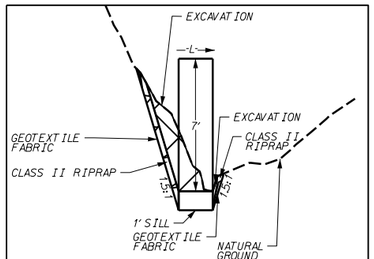
PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-4
	HYDRAULICS DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TOTAL CHANNEL EXCAVATION = 84 CY
TOTAL CL II RIP RAP = 49 TONS
TOTAL GEOTEXTILE FAB. = 130 SY

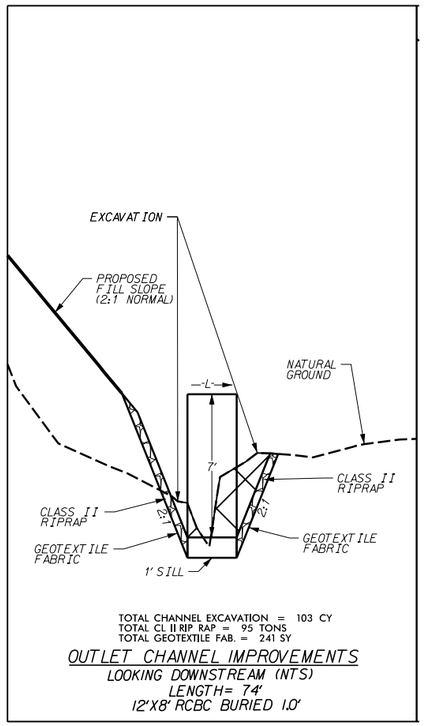
INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH= 48'
9'X8' RCBC BURIED 1.0'



TOTAL CHANNEL EXCAVATION = 37 CY
TOTAL CL II RIP RAP = 26 TONS
TOTAL GEOTEXTILE FAB. = 74 SY

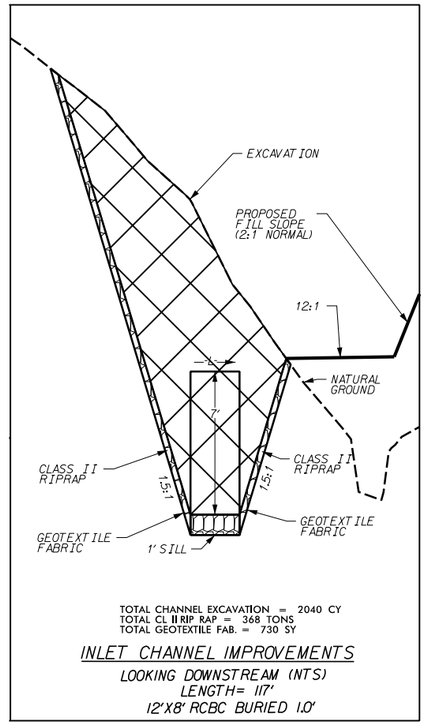
OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH= 39'
9'X8' RCBC BURIED 1.0'

CULVERT INLET/OUTLET DETAILS
C100
-L- STA. 1008+75



TOTAL CHANNEL EXCAVATION = 103 CY
TOTAL CL II RIP RAP = 95 TONS
TOTAL GEOTEXTILE FAB. = 241 SY

OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH= 74'
12'X8' RCBC BURIED 1.0'



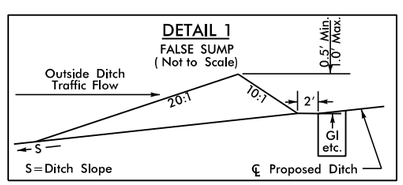
TOTAL CHANNEL EXCAVATION = 2040 CY
TOTAL CL II RIP RAP = 368 TONS
TOTAL GEOTEXTILE FAB. = 730 SY

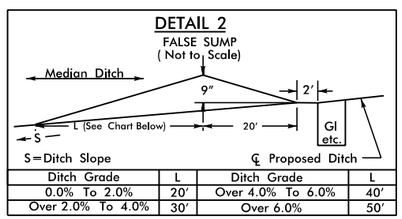
INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH= 117'
12'X8' RCBC BURIED 1.0'

CULVERT INLET/OUTLET DETAILS
C200
-L- STA. 1013+50

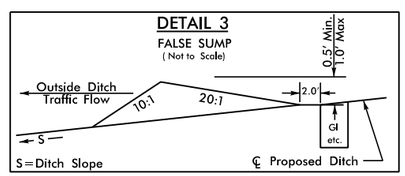
*CSR HAS NOT BEEN SUBMITTED AT THIS TIME

CULVERT INLET/OUTLET DETAILS
C700
-Y22CR- STA. 14+00





Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



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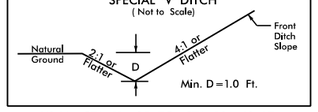
4/3/2024
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mbailey

SECTION 2 DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-1
	HYDRAULICS DESIGN ENGINEER

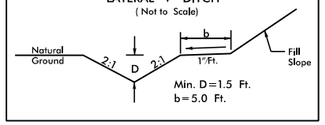
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL A
SPECIAL 'V' DITCH
(Not to Scale)



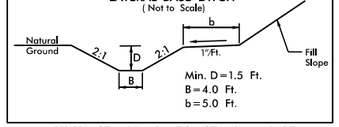
–Y24A– STA. 11+85 TO STA. 13+49 LT
–Y24E– STA. 10+50 TO STA. 11+00 LT
–Y24F– STA. 10+50 TO STA. 12+50 LT
–Y24R– STA. 13+00 TO STA. 16+00 RT
–Y24R– STA. 14+00 TO STA. 15+50 LT
–Y24R– STA. 23+50 TO STA. 24+48 LT
–Y24R– STA. 25+75 TO STA. 26+50 LT
–Y24RPC– STA. 26+30 TO STA. 28+50 LT
–Y26R– STA. 13+00 TO STA. 14+50 LT
–Y26_DRW1– STA. 10+10 TO STA. 12+50 LT
–Y26_DRW1– STA. 10+50 TO STA. 12+50 RT
–Y26RSR1– STA. 12+25 TO STA. 13+82 RT
–Y26RSR2– STA. 10+10 TO STA. 10+50 RT
–L1– STA. 1094+00 TO STA. 1097+00 RT
–L1– STA. 1111+50 TO STA. 1113+00 RT
–Y26R– STA. 13+00 TO STA. 13+50 RT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



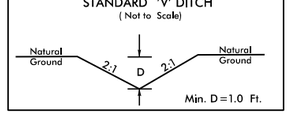
–L1– STA. 1135+50 TO STA. 1136+00 RT
–L1– STA. 1164+50 TO STA. 1168+50 LT

DETAIL C
LATERAL BASE DITCH
(Not to Scale)



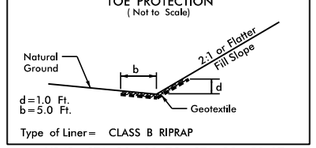
–Y26R– STA. 29+25 TO STA. 34+50 RT

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



–L1– STA. 1161+20 RT
BEGIN ELEV=308.10, END ELEV=307.60
S=1.92%, L=26'
–Y24RPC– STA. 28+50 TO 28+76 LT
BEGIN ELEV=300.00, END ELEV=299.80
S=0.34%, L=58'

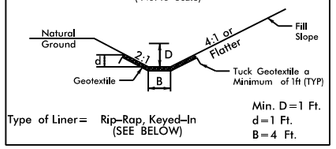
DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIPRAP

–Y24R– STA. 20+00 TO STA. 20+50 LT
–Y24R– STA. 61+15 TO STA. 62+50 LT
–Y24RPAR– STA. 22+86 TO STA. 24+04 RT
–Y24RPDR– STA. 24+10 TO STA. 25+50 LT
–Y26R– STA. 21+70 TO STA. 22+75 RT
–L1– STA. 1104+59 TO STA. 1105+35 LT
–L1– STA. 1170+60 TO STA. 1172+00 LT
–L1– STA. 1123+00 TO STA. 1124+19 LT
–L1– STA. 1125+00 TO STA. 1126+07 LT
–L1– STA. 1128+50 TO STA. 1129+00 LT
–L1– STA. 1113+75 TO STA. 1114+41 RT

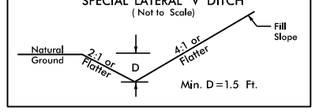
DETAIL J
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Rip–Rap, Keyed–In (SEE BELOW)

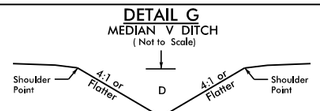
DETAIL NOT USED IN SEC 2

DETAIL F
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



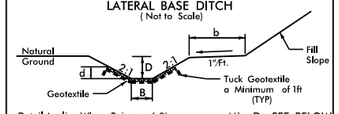
DETAIL NOT USED IN SEC 2

DETAIL G
MEDIAN V DITCH
(Not to Scale)



–L1– STA. 1128+50 TO STA. 1131+00 RT

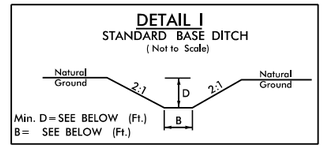
DETAIL H
LATERAL BASE DITCH
(Not to Scale)



Type of Liner=CL B RIPRAP, Keyed–In

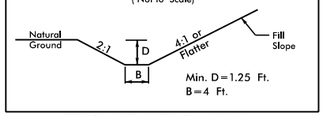
–Y24RPDR– STA. 14+75 TO STA. 17+48 LT, D/d=2.0'
–Y24RPC– STA. 17+32 TO STA. 21+50 RT, D/d=1.0'
–L1– STA. 1114+44 TO STA 1115+66 RT D/d=1.0'

DETAIL I
STANDARD BASE DITCH
(Not to Scale)



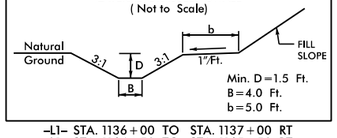
–Y24E– STA. 10+60 LT
BEGIN ELEV=336.2', END ELEV=336.0', L=58', S=0.3%
MIN D=1', B=2'
–Y24R– STA. 37+00 RT
BEGIN ELEV=264.2', END ELEV=264.1', L=37', S=0.3%
MIN D=2', B=4'

DETAIL K
SPECIAL LATERAL BASE DITCH
(Not to Scale)



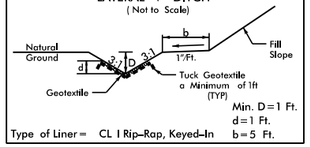
DETAIL NOT USED IN SEC 2

DETAIL L
LATERAL GRASSED SWALE
(Not to Scale)



–L1– STA. 1136+00 TO STA. 1137+00 RT
–L1– STA. 1164+50 TO STA. 1165+50 RT
–L1– STA. 1167+50 TO STA. 1170+00 RT
–L1– STA. 1168+50 TO STA. 1169+50 LT
–Y24RPDR– STA. 11+60 TO STA. 12+80 LT
–Y24R– STA. 18+00 TO STA. 19+17 LT
–Y24R– STA. 19+00 TO STA. 20+11 RT
–Y24R– STA. 33+99 TO STA. 34+68 RT
–L1– STA. 1113+00 TO STA. 1113+26 RT

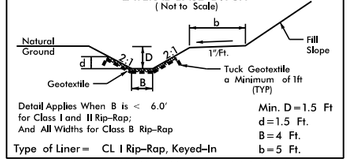
DETAIL M
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL I Rip–Rap, Keyed–In

–Y26R– STA. 22+02 TO STA. 22+40 LT

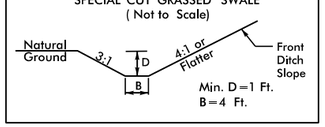
DETAIL N
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL I Rip–Rap, Keyed–In

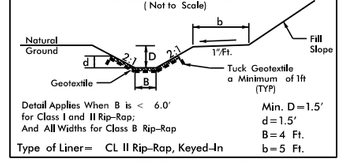
–L1– STA. 1163+00 TO STA. 1164+50 RT
–L1– STA. 1163+00 TO STA. 1164+50 LT
–L1– STA. 1165+50 TO STA. 1167+50 RT
–L1– STA. 1170+00 TO STA. 1171+38 RT
–L1– STA. 1179+40 TO STA. 1181+00 LT
–Y24RPAR– STA. 21+00 TO STA. 21+78 RT
–Y24RPDR– STA. 12+80 TO STA. 14+24 LT
–Y24R– STA. 15+50 TO STA. 18+00 LT
–Y24R– STA. 16+00 TO STA. 19+00 RT

DETAIL O
SPECIAL CUT GRASSED SWALE
(Not to Scale)



–L1– STA. 1097+00 TO STA. 1098+50 RT
–L1– STA. 1101+00 TO STA. 1101+50 RT
–L1– STA. 1119+00 TO STA. 1124+50 RT
–Y24R– STA. 32+50 TO STA. 33+99 RT
–Y24A– STA. 19+51 TO STA. 20+01 LT
–Y24RPC– STA. 21+50 TO STA. 24+50 RT
–L1– STA. 1094+00 TO STA. 1098+00 LT

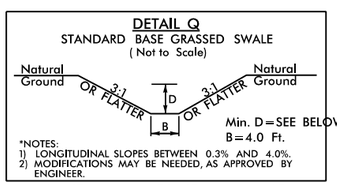
DETAIL P
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL II Rip–Rap, Keyed–In

–Y24RPBR– STA. 31+50 TO STA. 34+00 LT

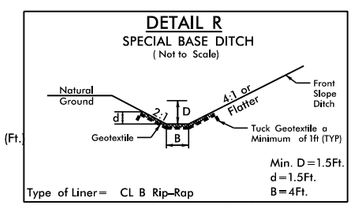
DETAIL Q
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

–L1– STA. 1118+85 TO STA. 1119+00 RT

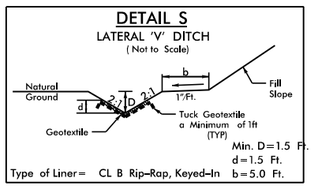
DETAIL R
SPECIAL BASE DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap

–Y24R– STA. 47+00 TO STA. 51+50 RT

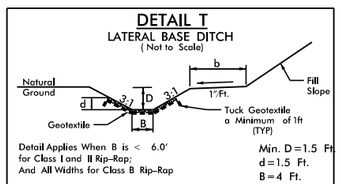
DETAIL S
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap, Keyed–In

–Y26R– STA. 20+30 TO STA. 22+02 LT
–Y26R– STA. 28+50 TO STA. 29+25 RT

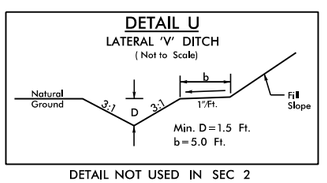
DETAIL T
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CL I Rip–Rap, Keyed–In

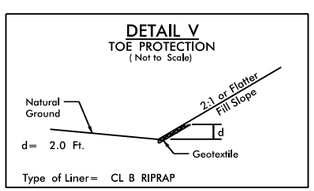
DETAIL NOT USED IN SEC 2

DETAIL U
LATERAL 'V' DITCH
(Not to Scale)



DETAIL NOT USED IN SEC 2

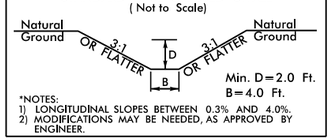
DETAIL V
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B RIPRAP

–Y23RPB– STA. 27+50 TO STA. 28+00 LT
–Y24R– STA. 19+75 TO STA. 20+00 LT
–Y24R– STA. 20+00 TO STA. 21+50 RT
–Y24RPAR– STA. 21+70 TO STA. 22+86 RT
–Y24RPDR– STA. 14+30 TO STA. 14+80 LT
–Y24RPDR– STA. 17+40 TO STA. 18+00 LT
–Y26R– STA. 17+60 TO STA. 18+40 RT
–L1– STA. 1098+63 TO STA. 1104+59 LT
–L1– STA. 1098+93 TO STA. 1099+52 RT
–L1– STA. 1169+54 TO STA. 1170+37 LT
–L1– STA. 1174+55 TO STA. 1175+55 LT
–L1– STA. 1113+24 TO STA. 1113+ 75 RT
–L1– STA. 1114+25 TO STA. 1114+41 RT
–L1– STA. 1110+09 TO STA. 1117+00 LT
–L1– STA. 1124+19 TO STA. 1125+00 LT

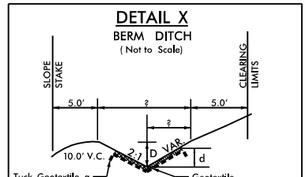
DETAIL W
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

DETAIL NOT USED IN SEC 2

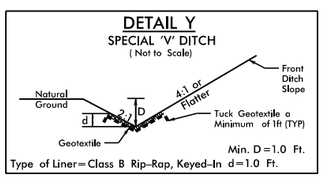
DETAIL X
BERM DITCH
(Not to Scale)



Type of Liner=CLASS B RIPRAP, Keyed–In

–L1– STA. 1108+85 TO STA. 1112+50 RT

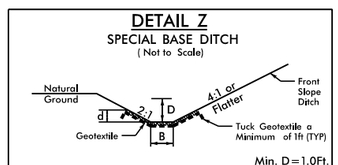
DETAIL Y
SPECIAL 'V' DITCH
(Not to Scale)



Type of Liner=Class B Rip–Rap, Keyed–In

–Y24R– STA. 31+00 TO STA. 32+50 RT
–Y24A– STA. 10+90 TO STA. 11+45 LT
–Y24A– STA. 10+75 TO STA. 13+49 RT
–Y24A– STA. 19+01 TO STA. 19+51 LT

DETAIL Z
SPECIAL BASE DITCH
(Not to Scale)



Type of Liner= CL B Rip–Rap

DETAIL NOT USED IN SEC 2

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
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Responsive People | Creative Solutions

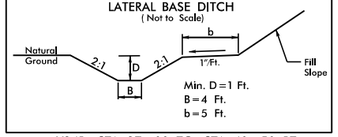
4/3/2024
R:\Hydraulics\Permits_Enviromental\Drawings\4B\R-2829A_hyd_4B_DitchDetails.dgn
mbailey

SECTION 2 DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-2
	HYDRAULICS DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

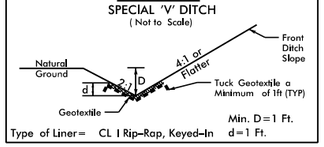
DETAIL AA
LATERAL BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
B = 4 Ft.
b = 5 Ft.

–Y24R– STA. 37+00 TO STA. 40+50 RT
–Y24RPDR– STA. 18+00 TO STA. 21+50 LT
–L1– STA. 1128+74 TO STA. 1130+00 RT
–L1– STA. 1098+00 TO STA. 1098+80 LT

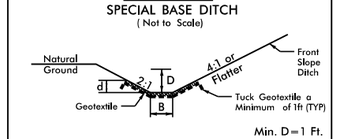
DETAIL AB
SPECIAL 'V' DITCH
(Not to Scale)



Type of Liner = CL I Rip–Rap, Keyed–In
Min. D = 1 Ft.
d = 1 Ft.

–Y24B– STA. 10+26 TO STA. 11+00 RT

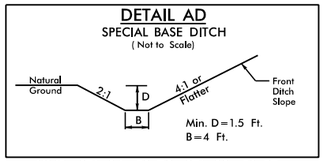
DETAIL AC
SPECIAL BASE DITCH
(Not to Scale)



Type of Liner = CL I Rip–Rap, Keyed–In
Min. D = 1 Ft.
d = 1 Ft.
B = 5 Ft.

–L1– STA. 1100+00 TO STA. 1101+00 RT

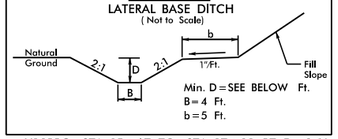
DETAIL AD
SPECIAL BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 4 Ft.

–Y26R– STA. 34+50 TO STA. 39+50 RT

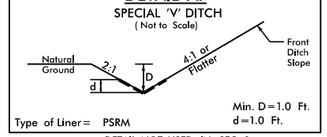
DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



Min. D = SEE BELOW Ft.
B = 4 Ft.
b = 5 Ft.

–Y23RPC– STA. 15+67 TO STA. 17+32 RT, D = 3.0'

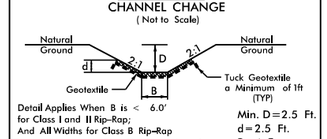
DETAIL AF
SPECIAL 'V' DITCH
(Not to Scale)



Type of Liner = PSRM
Min. D = 1.0 Ft.
d = 1.0 Ft.

DETAIL NOT USED IN SEC 2

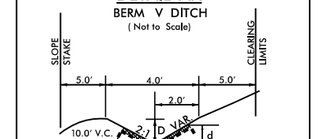
DETAIL AG
CHANNEL CHANGE
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL I Rip–Rap, Keyed–In
Min. D = 2.5 Ft.
d = 2.5 Ft.
B = 4 Ft.

–L1– STA. 1161+40 TO 1162+07 LT
BEGIN ELEV = 291.0', END ELEV = 288.5', L = 110', S = 2.3%
–L1– STA. 1162+07 TO 1163+00 LT
BEGIN ELEV = 294.5', END ELEV = 291.0', L = 108', S = 3.2%

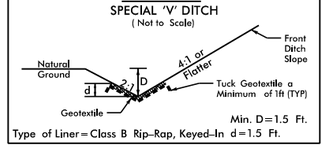
DETAIL AH
BERM V DITCH
(Not to Scale)



Type of Liner = CL B Rip–Rap, Keyed–In
Min. D = 1 Ft.
d = 1 Ft.

DETAIL NOT USED IN SEC 2

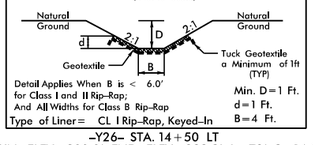
DETAIL AJ
SPECIAL 'V' DITCH
(Not to Scale)



Type of Liner = Class B Rip–Rap, Keyed–In
Min. D = 1.5 Ft.
d = 1.5 Ft.

DETAIL NOT USED IN SEC 2

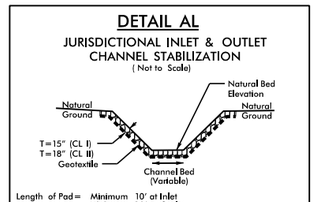
DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL I Rip–Rap, Keyed–In
Min. D = 1 Ft.
d = 1 Ft.
B = 4 Ft.

–Y26– STA. 14+50 LT
BEGIN ELEV = 300.0', END ELEV = 289.8', L = 73', S = 14.0%
–Y26 DRW1– STA. 10+50 RT
BEGIN ELEV = 297.3', END ELEV = 290.6', L = 40', S = 16.6%

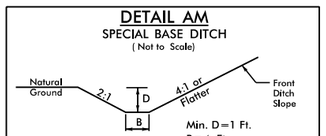
DETAIL AL
JURISDICTIONAL INLET & OUTLET CHANNEL STABILIZATION
(Not to Scale)



Length of Pad = Minimum 10' at Inlet
Minimum 20' at Outlet
Type of Liner = CL I or CL II Rip–Rap – Keyed–In/Countersunk

–L1– STA. 1163+00 LT/RT
–Y24RPBR– STA. 34+00 RT
–Y24RPDR– STA. 24+73 LT
–Y26R– STA. 21+69 RT
–Y26R– STA. 22+02 LT

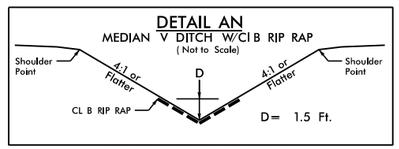
DETAIL AM
SPECIAL BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
B = 4 Ft.

DETAIL NOT USED IN SEC 2

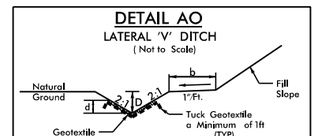
DETAIL AN
MEDIAN V DITCH W/CL B RIP RAP
(Not to Scale)



D = 1.5 Ft.

DETAIL NOT USED IN SEC 2

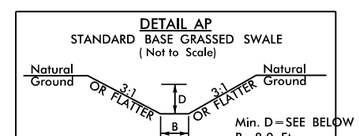
DETAIL AO
LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.0 Ft.
d = 1.0 Ft.
Type of Liner = CL B Rip–Rap, Keyed–In
b = 5.0 Ft.

–L1– STA. 1161+20 TO STA. 1161+60 RT

DETAIL AP
STANDARD BASE GRASSED SWALE
(Not to Scale)

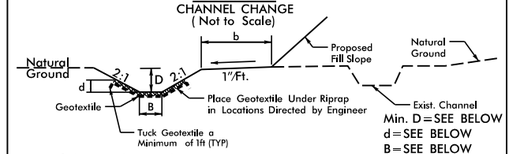


Min. D = SEE BELOW (Ft.)
B = 8.0 Ft.

*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

DETAIL NOT USED IN SEC 2

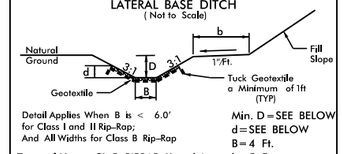
DETAIL AR
CHANNEL CHANGE
(Not to Scale)



Min. D = SEE BELOW
d = SEE BELOW
B = SEE BELOW
b = 5.0 Ft.
Type of Liner = SEE BELOW

–L1– STA. 1171+38 TO STA. 1176+30 RT, CL I RIPRAP, MIN D/d = 4.0'
–L1– STA. 1175+56 TO STA. 1178+09 LT, CL I RIPRAP, MIN D/d = 4.0'
–L1– STA. 1115+82 TO STA. 1118+85 RT, CL II RIP RAP, MIN D/d = 2.5, B = 8
–L1– STA. 1118+85 TO STA. 1119+12 RT, CL II RIP RAP, MIN D/d = 3.0, B = 4
–L1– STA. 1179+00 TO STA. 1179+40 LT, CL I RIP RAP, MIN D/d = 5.0, B = 4

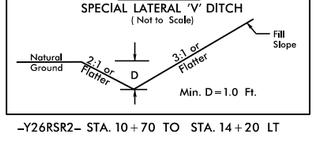
DETAIL AS
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL B RIPRAP, Keyed–In
Min. D = SEE BELOW
d = SEE BELOW
B = 4 Ft.
b = 5 Ft.

–L1– STA. 1159+62 TO STA. 1161+20 RT, D/d = 1.0'
–L1– STA. 1161+60 TO STA. 1163+00 RT, D/d = 1.0'

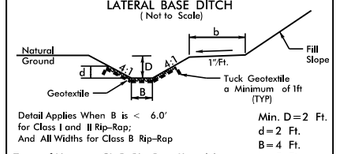
DETAIL AT
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.0 Ft.

–Y26RSR2– STA. 10+70 TO STA. 14+20 LT

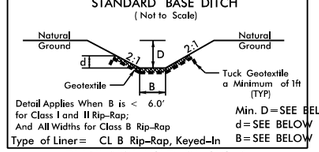
DETAIL AU
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL B Rip–Rap, Keyed–In
Min. D = 2 Ft.
d = 2 Ft.
B = 4 Ft.
b = 5 Ft.

DETAIL NOT USED IN SEC 2

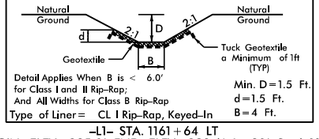
DETAIL AV
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL B Rip–Rap, Keyed–In
Min. D = SEE BELOW
d = SEE BELOW
B = SEE BELOW

DETAIL NOT USED IN SEC 2

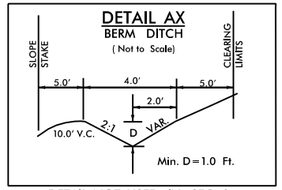
DETAIL AW
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0'
for Class I and II Rip–Rap;
And All Widths for Class B Rip–Rap
Type of Liner = CL I Rip–Rap, Keyed–In
Min. D = 1.5 Ft.
d = 1.5 Ft.
B = 4 Ft.

–L1– STA. 1161+64 LT
BEGIN ELEV = 295.0', END ELEV = 289.6', L = 90', S = 6.0%

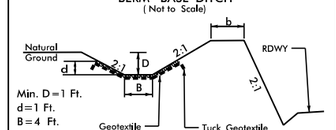
DETAIL AX
BERM DITCH
(Not to Scale)



Min. D = 1.0 Ft.

DETAIL NOT USED IN SEC 2

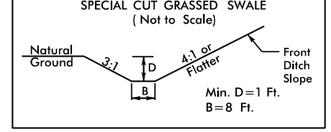
DETAIL AY
BERM BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
d = 1 Ft.
B = 4 Ft.
b = 4 Ft.
Type of Liner = CL B Rip–Rap, Keyed–In

–L1– STA. 1103+79 TO STA. 1108+85 RT

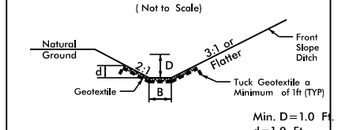
DETAIL AZ
SPECIAL CUT GRASSED SWALE
(Not to Scale)



Min. D = 1 Ft.
B = 8 Ft.

DETAIL NOT USED IN SEC 2

DETAIL BB
CHANNEL CHANGE
(Not to Scale)



Min. D = 1.0 Ft.
d = 1.0 Ft.
Type of Liner = CL I Rip–Rap, Keyed–In
B = 7.0 Ft.

DETAIL NOT USED IN SEC 2

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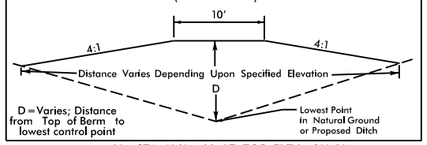
4/3/2024
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mbailey

SECTION 2 DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-3
HYDRAULICS DESIGN ENGINEER	

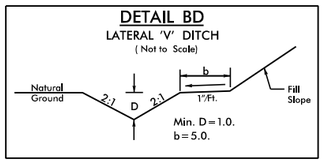
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL BC
10' WIDE BERM
(Not to Scale)



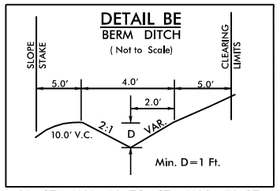
–L1– STA. 1161+60 LT, TOP ELEV=311.0'

DETAIL BD
LATERAL 'V' DITCH
(Not to Scale)



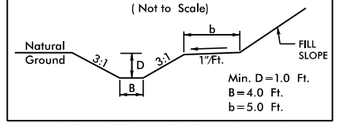
DETAIL NOT USED IN SEC 2

DETAIL BE
BERM DITCH
(Not to Scale)



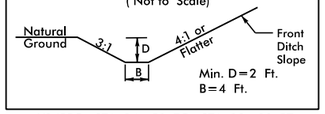
–L1– STA. 1101+50 TO STA. 1103+79 RT

DETAIL BF
LATERAL GRASSED SWALE
(Not to Scale)



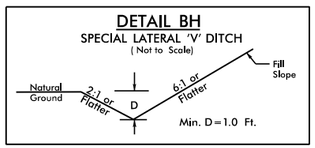
–L1– STA. 1099+17 TO STA. 1100+00 RT
–L1– STA. 1098+50 TO STA. 1098+80 RT
–Y24A– STA. 20+01 TO STA. 20+50 LT

DETAIL BG
SPECIAL CUT GRASSED SWALE
(Not to Scale)



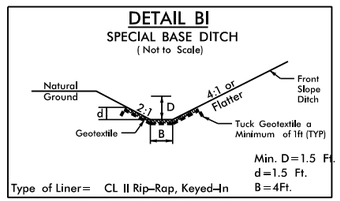
–Y24RPC– STA. 24+50 TO STA. 29+00 RT

DETAIL BH
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



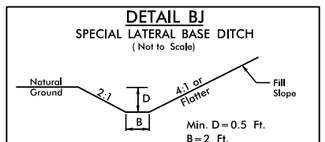
–Y24R– STA. 41+75 TO STA. 43+00 LT

DETAIL BI
SPECIAL BASE DITCH
(Not to Scale)



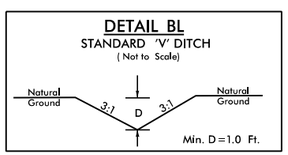
DETAIL NOT USED IN SEC 2

DETAIL BJ
SPECIAL LATERAL BASE DITCH
(Not to Scale)



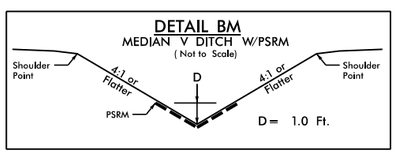
–Y24E– STA. 10+80 TO STA. 12+00 RT

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



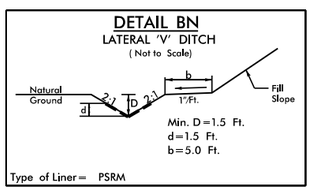
DETAIL NOT USED IN SEC 2

DETAIL BM
MEDIAN V DITCH W/PSRM
(Not to Scale)



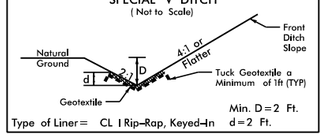
–L1– STA. 1131+00 TO STA. 1134+50 RT

DETAIL BN
LATERAL 'V' DITCH
(Not to Scale)



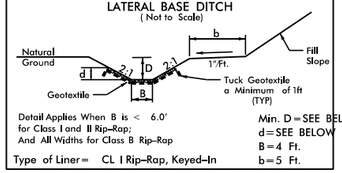
DETAIL NOT USED IN SEC 2

DETAIL BO
SPECIAL 'V' DITCH
(Not to Scale)



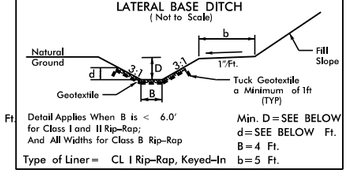
DETAIL NOT USED IN SEC 2

DETAIL BP
LATERAL BASE DITCH
(Not to Scale)



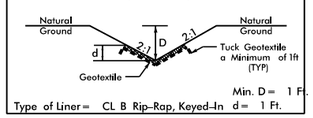
–Y24RPC– STA. 17+32 TO STA. 19+00 RT, D/d=2.5'
–L1– STA. 1124+50 TO STA. 1125+30 RT, D/d=1.0'

DETAIL BQ
LATERAL BASE DITCH
(Not to Scale)

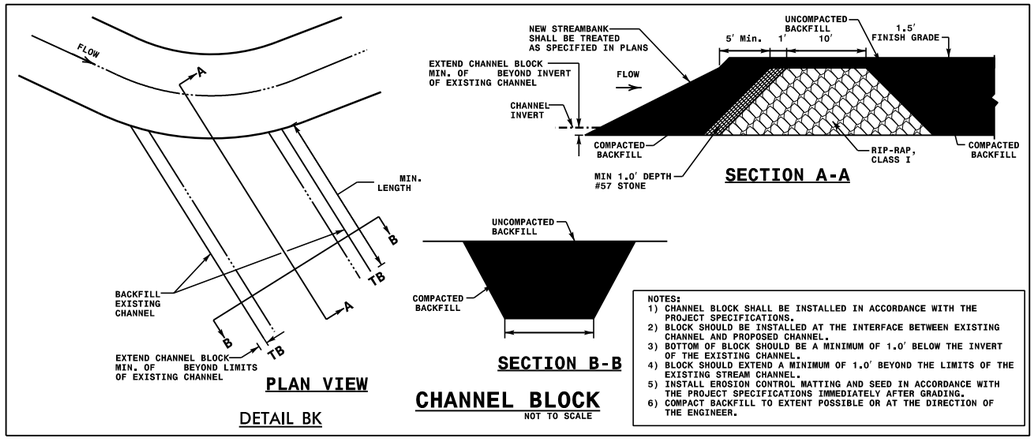


DETAIL NOT USED IN SEC 2

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



DETAIL NOT USED IN SEC 2



NOTES:
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 1.0' BELOW THE INVERT OF THE EXISTING CHANNEL.
4) BLOCK SHOULD EXTEND A MINIMUM OF 1.0' BEYOND THE LIMITS OF THE EXISTING STREAM CHANNEL.
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

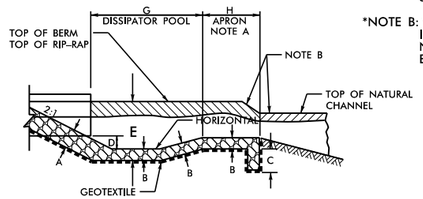
DETAIL BK

DETAIL BS
RIP–RAPPED ENERGY DISSIPATOR BASIN

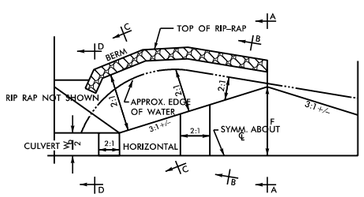
*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP–RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

℄ SECTION



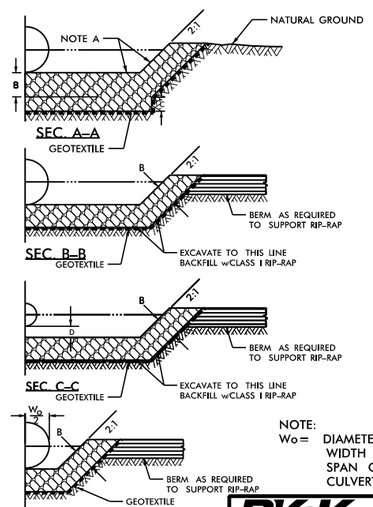
HALF PLAN



DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A		0.4'						
B		0.3'						
C		3.0'						
D		4.7'						
E		5.2'						
F		17.6'						
G		47.0'						
H		23.5'						

*ALL DIMENSIONS APPROXIMATE IN FT

BASIN #	LOCATION (AT OUTLET)
1	
2	–L1– STA. 1105+37 LT
3	
4	
5	
6	
7	
8	



NOTE:
Wo= DIAMETER OF PIPE, WIDTH OF BOX OR SPAN OF PIPE–ARCH CULVERTS

5/05

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mbailey

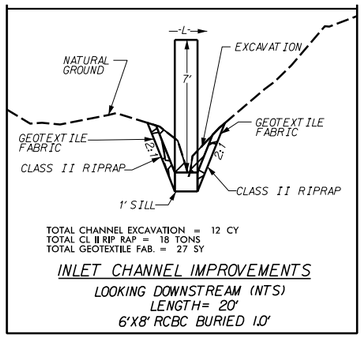
SECTION 2 DITCH DETAILS

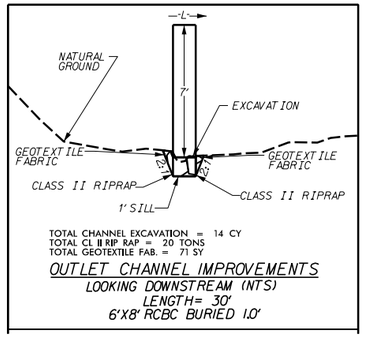
PROJECT REFERENCE NO.	SHEET NO.
R-2829A	2D-4
	HYDRAULICS DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

*CSR HAS NOT BEEN SUBMITTED AT THIS TIME

CULVERT INLET/OUTLET DETAILS
C300
–L1– STA. 1099+00

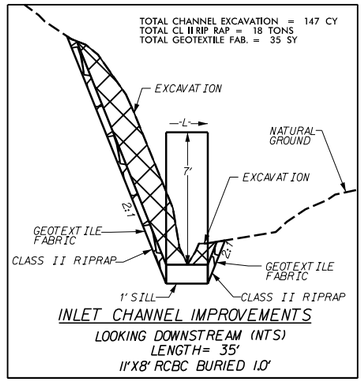


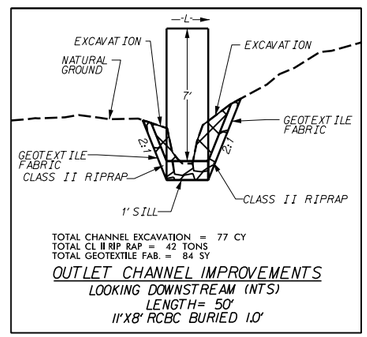


CULVERT INLET/OUTLET DETAILS
C500
–L1– STA. 1152+00

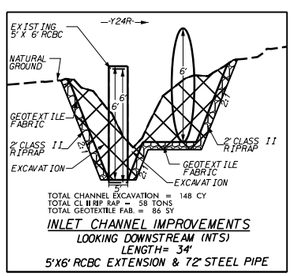
*CSR HAS NOT BEEN SUBMITTED AT THIS TIME

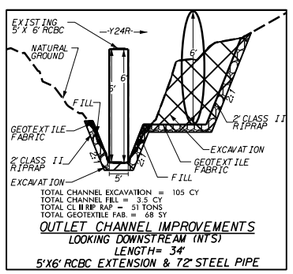
CULVERT INLET/OUTLET DETAILS
C400
–L1– STA. 1114+75



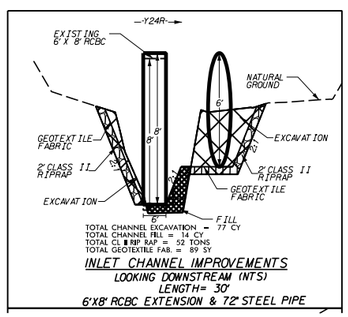


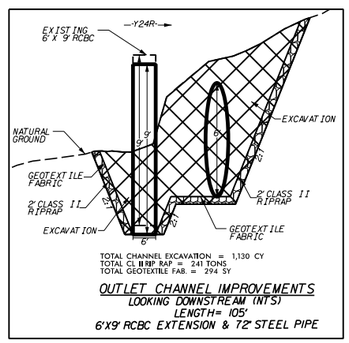
CULVERT INLET/OUTLET DETAILS
C600
–L1– STA. 1171+00





CULVERT INLET/OUTLET DETAILS
C800
–Y24R– 19+50

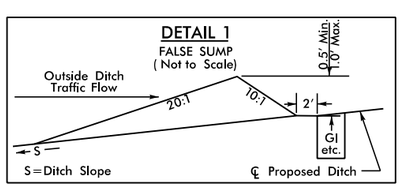


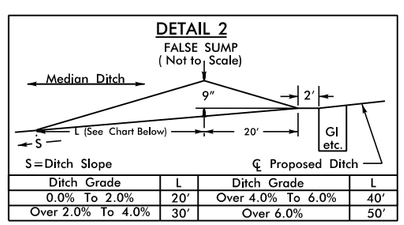


CULVERT INLET/OUTLET DETAILS
C900
–Y24R– 34+50

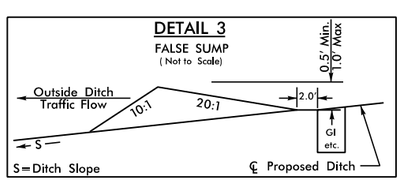
*CSR HAS NOT BEEN SUBMITTED AT THIS TIME

CULVERT INLET/OUTLET DETAILS
C1000
–Y26R– 18+75





Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



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4/3/2024
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mbailey

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	4
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

JEAN BRYAN
DB 7551 PG 671

CH YOUNG PROPERTIES, LLC.
DB 14220 PG 1383
BM 1972 PG 283

NAD 83/NSRS 2011

BEGIN CONSTRUCTION TIP R-2829A
-L- POC STA. 893+00.00

NC 540

R-2828 SITE 51A
*WORK BY OTHERS

WEA

SDM

-L- PRC Sta. 900+63.40

WEC

R-2828 SITE 54
*WORK BY OTHERS

885+00 890+00 895+00 900+00 905+00 910+00

-L-

-Y22SUPRPB-

-LFLYCC-

FINAL R-2828 PAVEMENT MARKINGS TO BE REVISED TO ACCOMMODATE R-2829A

R-2828 SITE 52
*WORK BY OTHERS

SDL

R-2828 SITE 53
*WORK BY OTHERS

SDK

R-2828 SITE 51
*WORK BY OTHERS

BEGIN PAVING ONLY
-L- POC STA. 893+00.00 RT

WEB

R-2828 SITE 47A
*WORK BY OTHERS

MATCHLINE -L- STA. 911+50 SEE SHEET 5

-L-

PI Sta 891+52.65	PI Sta 908+44.49
Δ = 6° 57' 58.2" (RT)	Δ = 4° 04' 00.4" (LT)
D = 0° 22' 55.2"	D = 0° 15' 37.6"
L = 1,823.74'	L = 1,561.54'
T = 912.09'	T = 781.12'
R = 15,000.00'	R = 22,000.00'
SE = NC	SE = NC
DS = 75 MPH	DS = 75 MPH

FOR -L- PROFILE SEE SHT. 37

GRAPHIC SCALE
50 25 0 50 100
PLANS

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R:\Projects\Division 14\Projects\Environmental\R-2829A\Sheets\R-2829A_Sheet 4B.dgn 4B.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	5
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

MATCHLINE -L- STA.911+50 SEE SHEET 4

MATCHLINE -L- STA. 939+00 SEE SHEET 6

MATCHLINE -Y22RPD- STA. 25+00 SEE SHEET 6

R–2828 SITE 55 *WORK BY OTHERS

R–2828 SITE 56 *WORK BY OTHERS

R–2828 SITE 54 *WORK BY OTHERS

R–2828 SITE 76 *WORK BY OTHERS

CH YOUNG PROPERTIES, LLC.
DB 14220 PG 1383
BM 1972 PG 283

WED SDV SDW WEC SDO

A B C D

NC 540

I-40

-L- PI Sta. 916+24.93

-Y22LPC- ST Sta. 26+25.13
-L- POT Sta. 930+24.49 (45° RT)

-Y22LPC- ST Sta. 10+00.00

-Y22LPC- CS Sta. 22+75.13

-Y22LPC- PCC Sta. 18+86.70

-Y22LPC- SC Sta. 13+50.00

-Y22LPC- CT Sta. 9+25.35

-Y22LPC- CS Sta. 7+75.35

-Y22LPC- ST Sta. 6+25.35

-Y22LPC- TS Sta. 144+23.78

-Y22LPC- SC Sta. 145+25.35

-Y22LPC- CT Sta. 146+75.35

-Y22LPC- TS Sta. 147+75.35

BEGIN PAVING ONLY
-Y22LPC- STA. 13+31.46

BEGIN PAVING ONLY
-Y22RPD- STA. 15+34.20

TIE TO EXIST. APPROACH SLAB

PROP. GUIDERAIL

CONCRETE PAVEMENT

RETAIN PIPES AND SYSTEMS INSTALLED BY OTHERS

STORM DRAINAGE INSTALLED BY OTHERS (DASHED)

PROP. SHOULDER BERM GUTTER BY OTHERS

GRADING BY OTHERS

TOE PROTECTION W/GS & SPRAY ON DETAILS INSTALLED BY OTHERS

N 66°45'00.0"E

-L-

-L-	-Y22LPC-			-Y22RPD-	
PI Sta 908+44.49	Pts Sta 12+36.56	PI Sta 14+29.01	PI Sta 17+56.35	PI Sta 21+04.41	Pts Sta 23+94.73	Pts Sta 111+33.35	PI Sta 21+78.68
Δ = 4°04'40.4" (LT)	Ls = 290.13' 47.7	Δ = 25° 47' 56.9" (RT)	Δ = 95°00'00" (RT)	Δ = 64°30'28" (RT)	Ls = 290.13' 47.7	Ls = 2' 9" 59.2	Δ = 13°04'00.2" (RT)
D = 0°15' 37.6"	Ls = 350.00'	D = 16° 16' 25.9"	D = 64°54' 40.4"	D = 16° 16' 26.0"	Ls = 350.00'	Ls = 200.00'	D = 3° 11' 59.2"
L = 1,561.54'	LT = 236.56'	L = 155.15'	L = 381.15'	L = 388.43'	LT = 236.56'	LT = 133.35'	L = 1,792.81'
T = 781.12'	ST = 119.60'	T = 79.01'	T = 254.00'	T = 217.71'	ST = 119.60'	ST = 66.65'	T = 978.68'
R = 22,000.00'		R = 345.00'	R = 230.00'	R = 345.00'			R = 1,800.00'
SE = 1E		SE = 0.08	SE = 0.08	SE = 0.08			SE = 0.08
DS = 75 MPH		DS = 30 MPH	DS = 30 MPH	DS = 30 MPH			DS = 65 MPH

FOR -L- PROFILE SEE SHTS. 37 THRU 38
FOR -Y22LPC- PROFILE SEE SHTS. 51
FOR -Y22RPD- PROFILE SEE SHT. 52

GRAPHIC SCALE
50 25 0 50 100
PLANS

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	6
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

A

D

E

BEGIN PAVING ONLY
–L– POT STA. 942+40.88 LT

MATCHLINE -Y22FLYCC-
STA. 100+00 SEE SHT 21

MATCHLINE -Y22RPAFLY_REV-
STA. 23+00 SEE SHEET 21

MATCHLINE -L- STA. 939+00
SEE SHEET 5

MATCHLINE -L- STA. 965+50 SEE SHEET 7

MATCHLINE -Y22RPD-
STA. 25+00
SEE SHEET 5

MATCHLINE
-Y22RPE REV- STA. 35+00
SEE SHEET 22

END PAVING ONLY
BEGIN GRADING & PAVING
–L– STA. 957+30.00

END TIP PROJECT R–2828
BEGIN TIP PROJECT R–2829A
–L– POS STA. 965+50.00

NC 540

-Y22RPD- CS Sta. 29+92.81

-Y22RPD- ST Sta. 31+92.81=
-L- POT Sta.945+86.66 (+83. RT)

-Y22RPA_REV- PC Sta.10+00.00 =
-Y22RPAFLY_REV- CS Sta. 21+45.87 (122. LT)

-Y22RPE REV- SC Sta. 36+83.89

-L- TS Sta. 964+93.78

PROP. GUIDERAIL

300' TAPER LANE

WFK

WFL

NCDOT
(ROBERT BRYAN, SR)

ROBERT BRYAN, SR
D PG 208 (JOHNSTON COUNTY)

NC DEPT. OF TRANSPORTATION
DB 18373 PG 815
AREA TWO & THREE

MARY KATHRYN ISABELL WILLIAMS & ADRIA WALKER
BK 63 PG 1326
BK 63 PG 369

-Y22FLYCC- (R-2828)

PI Sta 71+34.33	PI Sta 141+36.58	PI Sta 145+35.75
Δ = 29° 52' 23.9" (LT)	Gs = 6°03' 36.5"	Gs = 1°47' 31"
D = 3°40' 22.1"	Ls = 330.00'	Ls = 160.00'
L = 7,046.80'	LT = 2,201.5'	LT = 159.6'
T = 1,054.74'	ST = 80.12'	ST = 53.34'
R = 1,560.00'		

-L-	-Y22RPAFLY_REV-	-Y22RPA_REV-	-Y22RPD-	-Y22RPE_REV-
PI Sta 968+13.85	PI Sta 16+86.16	PI Sta 10+90.09	PI Sta 21+78.68	PI Sta 35+75.93
Bs = 3° 31' 00.8"	Δ = 12° 39' 49.3" (RT)	Δ = 6° 55' 53.0" (RT)	Δ = 5° 04' 00.0" (RT)	Δ = 37° 09' 44.7" (RT)
Ls = 480.00'	D = 3° 27' 05.6"	D = 3° 28' 16.7"	D = 3° 10' 59.2"	D = 2° 37' 41.2"
LT = 320.06'	L = 945.87'	L = 197.34'	L = 179.25'	L = 1,413.96'
ST = 160.06'	T = 486.46'	T = 99.01'	T = 97.86'	T = 732.85'
	R = 1,660.00'	R = 1,648.00'	R = 1,800.00'	R = 2,180.00'
	SE = 0.06	SE = 0.06	SE = 0.08	SE = 0.07
	DS = 65 MPH	DS = 60 MPH	DS = 65 MPH	DS = 65 MPH
	Pts Sta 22+10.56	Pts Sta 30+59.49	Pts Sta 30+59.49	Pts Sta 44+16.74
	Gs = 3° 27' 05.6"	Gs = 3° 10' 59.2"	Gs = 3° 10' 59.2"	Gs = 3° 37' 41.7"
	Ls = 200.00'	Ls = 200.00'	Ls = 200.00'	Ls = 1,413.96'
	LT = 133.36'	LT = 133.35'	LT = 108.19'	T = 732.85'
	ST = 66.69'	ST = 66.69'	ST = 92.05'	R = 2,180.00'
				SE = 0.07'
				DS = 65 MPH

FOR –L– PROFILE SEE SHTS. 38 THRU 39
FOR –Y22RPA_REV– PROFILE SEE SHT. 48
FOR –Y22RPAFLY_REV PROFILE SEE SHTS. 49 THRU 50
FOR –Y22RPD– PROFILE SEE SHT. 52
FOR –Y22RPE REV– PROFILE SEE SHT. 54

GRAPHIC SCALE
50 25 0 50 100
PLANS

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4/23/2024
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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	7
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

NAD 83/NSRS 2011

MARY WHITE, ISABELL WARD, & ADRIA WALKER
BM 2012 PG 1326
DB 4163 PG 369

JOHN AMAN
DB 6385 PG 925 (WAKE COUNTY)
DB 4055 PG 194 (WAKE COUNTY)
DB 1058 PG 695 (JOHNSTON COUNTY)
BM 1988 PG 1683

POSSIBLE DEED OVERLAP
MARY WHITE, ISABELL WARD, & ADRIA WALKER, ROBERT BRYAN SR

MATCHLINE -L- STA. 965+50 SEE SHEET 6

MATCHLINE -L- STA 992+00 SEE SHEET 8

NC 540

WFN(1)
WFJ
SEW
SEY
WFN(2)
WFW
WFX

-Y22RPAFLY_REV- TS Sta. 10+00.00
-L- POC Sta. 971+27.28 (rt Lt)
-Y22RPAFLY_REV- SC Sta. 12+00.00
-L- SC Sta. 969+73.78
-Y22RPE_REV- CS Sta. 50+97.84
-Y22RPE_REV- ST Sta. 52+97.84
-Y22RPE_REV- SC Sta. 56+47.97
-L- POC Sta. 971+65.58 (83 rt)
-Y22RPE_REV- TS Sta. 54+47.97
-L- Sta. 972+46.00 +/-
-L- Sta. 972+61.84 +/-
-L- Sta. 977+35.00 +/-
-L- Sta. 977+11.00 +/-

BEGIN CONCRETE PAVEMENT
END ASPHALT PAVEMENT AT BACK OF GORE

END CONCRETE PAVEMENT
BEGIN ASPHALT PAVEMENT W/ BACK OF GORE

BEGIN BRIDGE
BEGIN APPROACH SLAB
END APPROACH SLAB
END BRIDGE

970+00
975+00
980+00
985+00
990+00

100' TAPER
100' DECELERATION LANE
+ 900' ACCELERATION LANE
300' TAPER LANE

PROP. GUIDERAIL
PROP. SIGN

BUSHY BRANCH, BRIDGE
ABUTMENT 1: 1185 TONS CL B RIPRAP
ABUTMENT 2: 1229 TONS CL B RIPRAP

FLOW DISPLACES FROM -TS- AND -CS/ST- DIRECTIONS INTO THE WETLAND AROUND EL BUSHY BRIDGE APPROACH

BM=37
EL=183.83
-L- STA 971+65.58
Q=5 486.04' RT
EL=+/- 191.46'
BENCH TIE IN BASE OF 18" POPLAR

BM=38
EL=183.01
-L- STA 980+37.99
Q=5 486.04' RT
EL=+/- 191.46'
BENCH TIE IN BASE OF 9" PINE

WAKE COUNTY
JOHNSTON COUNTY

-L-
Pis Sta 968+13.85
θs = 3° 31' 00.0"
Ls = 490.00'
Lt = 320.06'
St = 160.06'
Pi Sta. 986+75.46
Δ = 41° 02' 18.9" (LT)
D = 1° 27' 30.3"
L = 3,260.02'
T = 1,710.68'
R = 3,960.00'
SE = 0.06
DS = 75 MPH

-Y22RPAFLY_REV-
Pis Sta 11+13.27
θs = 1° 29' 32.5"
Ls = 200.00'
Lt = 113.27'
St = 86.25'
Pi Sta 16+85.46
Δ = 32° 38' 49.3" (RT)
D = 3° 27' 05.6"
L = 945.81'
T = 486.16'
R = 1,660.00'
SE = 0.06
DS = 65 MPH

-Y22RPE_REV-
Pi Sta 44+16.74
Δ = 37° 09' 44.1" (RT)
D = 4° 37' 41.7"
L = 1,413.96'
T = 732.85'
R = 1,280.00'
SE = 0.07
DS = 65 MPH
Pis Sta 51+64.52
θs = 2° 37' 41.7"
Ls = 200.00'
Lt = 133.35'
St = 66.68'
Pis Sta 56+05.30
θs = 1° 26' 05.7"
Ls = 200.00'
Lt = 133.34'
St = 66.67'

* ADVANCED ACQUISITION PARCEL

FOR -L- PROFILE SEE SHTS. 39 THRU 40
FOR -Y22RPAFLY_REV- PROFILE SEE SHTS. 49
FOR -Y22RPE_REV- PROFILE SEE SHT. 54

GRAPHIC SCALE
50 25 0 50 100
PLANS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	8
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

NAD 83/NA 2011

JOHN AMAN
DB 4055 PG 194 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
DB 6385 PG 925 (WAKE COUNTY)
BM 1994 PG 1824 (WAKE COUNTY)
DB 1058 PG 695 (JOHNSTON COUNTY)
(NCDOT– PSD MAP) 10403rwf2.psd

MATCHLINE -L- STA. 992+00 SEE SHEET 7

MATCHLINE -L- STA. 1005+00 SEE SHEET 9

-L- CS Sta. 1001+83.81

NC 540

WFY

TOE PROTECTION W/CL B RIPRAP SEE DETAIL V

OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL

26 TONS CL II RIPRAP W/50 SY GEOFAB

CHORD

RW CA

SPECIAL CUT 4' BASE SWALE SEE DETAIL O ADDITIONAL FILTRATION TO DISCUSS AT 4B

2 TONS CL B RIPRAP W/7 SY GEOFAB

SPECIAL V DITCH SEE DETAIL A

LATERAL 4' BASE SWALE SEE DETAIL L ADDITIONAL FILTRATION TO DISCUSS AT 4B

15" RCP-III

48" RCP-III

210'

220'

175'

36'

70'

48'

995+00

1000+00

1005+00

FS

2GIB-WSS

CGAU

-L-

VAR.

GREU TL-3

80' TYP.

8:1

FS MIN. ELEV=278.9

HW

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL H

LATERAL 4' BASE DITCH SEE DETAIL C

TOE PROTECTION W/CL B RIPRAP SEE DETAIL V

26 TONS CL II RIPRAP W/50 SY GEOFAB

INLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL O

900' LANE DROP

+70.00

BERM 4' BASE DITCH W/CL B RIPRAP SEE DETAIL AY

JOHN AMAN
DB 6385 PG 925 (WAKE COUNTY)
DB 4055 PG 194 (WAKE COUNTY)
DB 1058 PG 695 (JOHNSTON COUNTY)
BM 1988 PG 1683

JOHN AMAN
DB 5427 PG 132 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
(NCDOT– PSD MAP) 10403rwf2.psd

JOHN AMAN
DB 3743 PG 788 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
(NCDOT– PSD MAP) 10403rwf2.psd

-L-

PI Sta 986+75.46
Δ = 47° 02' 18.9" (LT)
D = 1° 27' 55.3"
L = 3,210.02'
T = 1,701.68'
R = 3,910.00'
SE = 0.06
DS = 75 MPH

PIs Sta 1003+43.86
Θs = 3° 31' 00.8"
Ls = 480.00'
LT = 320.06'
ST = 160.06'

* ADVANCED ACQUISITION PARCEL

FOR –L– PROFILE SEE SHTS. 40 THRU 41

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mbulla

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	9
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

NAD 83/NA 2011

THE PORTION OF THE PROJECT THROUGHOUT THE -L- ALIGNMENT USES THE R-2828 COORDINATE SYSTEM.

THE PORTION OF THE PROJECT WHERE THE -LI- ALIGNMENT BEGINS USES THE R-2829 COORDINATE SYSTEM

JOHN AMAN
DB 4055 PG 194 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
DB 6385 PG 925 (WAKE COUNTY)
BM 1994 PG 1824 (WAKE COUNTY)
DB 1058 PG 695 (JOHNSTON COUNTY)
(NCDOT- PSD MAP) 10403rwf2.psd

COORDINATE EQUALITY
-L- POT Sta. 1007+09.30 BK=
-LI- ST Sta. 1006+86.76 AH
(691059.355576, 2134406.728485)

COORDINATE EQUALITY
-L- POT Sta. 1007+09.30 BK=
-LI- ST Sta. 1006+86.76 AH
(691062.705847, 2134410.760568)

R. GARLAND BURNETTE
DB 902 PG 89
DB 761 PG 365

-L- ST Sta. 1006+63.81

CHORD

NC 540

JOHN AMAN
DB 5427 PG 132 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
(NCDOT- PSD MAP) 10403rwf2.psd

CULVERT OUTLET STABILIZATION
26 TONS CL II RIPRAP
W/74 SY GEOFAB

CULVERT OUTLET STABILIZATION
95 TONS CL II RIPRAP
W/241 SY GEOFAB

2 TONS CL B RIPRAP
W/7 SY GEOFAB

PROP. WW FENCE

LATERAL 4' BASE DITCH W/CL II RIPRAP SEE DETAIL P

LATERAL 4' BASE SWALE SEE DETAIL L

TOE PROTECTION W/CL B RIPRAP SEE DETAIL E

5 TONS CL B RIPRAP W/14 SY GEOFAB

CHANNEL BLOCK SEE DETAIL BK

FILL REMAINDER OF CHANNEL

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL H

END PROP. SBG +20.00

BEGIN PROP. SBG +34.95

END PROP. DOUBLE POST GR +41.97

BEGIN PROP. DOUBLE POST GR +34.97

15" CSP W/ELBOWS

PROPOSED 12'X 8' RCBC

PROPOSED 9'X 8' RCBC

BEGIN PROP. SBG +39.00

END PROP. SBG +50.00

GRADE TO DRAIN

2GIB-WSF DOUBLE POST GR

2GIA-WSS DOUBLE POST GR

15" RCP-III

24" RCP-III

12'x8' RCBC BURIED

PROP. GUIDERAIL

1010+00

1005+00

1015+00

N 12° 40' 39.6" E

PROP. SIGN

80' TYP.

SPECIAL V DITCH SEE DETAIL A

TOE PROTECTION W/CL B RIPRAP SEE DETAIL E

JB w/HI

2 TONS CL B RIPRAP W/7 SY GEOFAB

CULVERT INLET STABILIZATION 49 TONS CL II RIPRAP W/130 SY GEOFAB

900' LANE DROP

+51.60

175'

CHANNEL BLOCK SEE DETAIL BK FILL REMAINDER OF CHANNEL

CHANNEL CHANGE W/CL II RIPRAP SEE DETAIL AR

CHANNEL CHANGE W/CL I RIPRAP SEE DETAIL BB

CHANNEL CHANGE SEE DETAIL AR

CULVERT INLET STABILIZATION 368 TONS CL II RIPRAP W/730 SY GEOFAB

EXISTING R/W PER 10403RWF2_PSD

S 17°29'13" E 169.98'

S 17°29'13" E 146.77'

JOHN AMAN
DB 3743 PG 788 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
(NCDOT- PSD MAP) 10403rwf2.psd

R. GARLAND BURNETTE
DB 902 PG 89
DB 761 PG 365

SFE

SFH

SFE

SFH

SFF

WFZ

SFG

MATCHLINE -L- STA. 1005+00 SEE SHEET 8

MATCHLINE -L1- STA. 1018+00 SEE SHEET 10

-L-
PIs Sta 1003+43.86
Θs = 3° 31' 00.8"
Ls = 480.00'
LT = 320.06'
ST = 160.06'

* ADVANCED ACQUISITION PARCEL

FOR -L- PROFILE SEE SHT. 41
FOR -L1- PROFILE SEE SHT. 41

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	10
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

NAD 83/NA 2011

MATCHLINE -L1- STA. 1018+00 SEE SHEET 9

MATCHLINE -L1- STA. 1032+00 SEE SHEET 11

R. GARLAND BURNETTE
DB 902 PG 89
DB 761 PG 365

R. GARLAND BURNETTE
DB 663 PG 79

PDQ WGE WGD SFB WGC WGB WFZ SFE WGA

PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE PDE

300' TAPER LANE

900' ACCELERATION LANE

+96.32

PROP. WW FENCE

PROP. SIGN

PROP. GUIDERAIL

NC 540

48 TONS CL II RIPRAP W/90 SY GEOFAB OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL

LATERAL 4' BASE SWALE SEE DETAIL L

2 TONS CL B RIPRAP W/7 SY GEOFAB

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

SPECIAL CUT 4' BASE SWALE SEE DETAIL O

BEGIN PROP. SBG +00.00

END PROP. SBG +50.00

80' TYP PROP. SBG

PIPES DO NOT INTERSECT

15" RCP-IV

2GIB-WSF

42" RCP-III (UPSIZED FOR MAINT.)

18" RCP-IV

15" RCP-III

2GIB-WSS

1020+00

1025+00

1030+00

N 12° 40' 39.6" E

N 16° 47' 39.6" E

BL-104

BL-105

BL-106

CGAU

GREU TL-3

8:1

STANDARD 4' BASE DITCH SEE DETAIL I

SPECIAL V DITCH SEE DETAIL A

LATERAL V DITCH SEE DETAIL B

15 TONS CL I RIPRAP W/30 SY GEOFAB

DRAIN POND (SEE POND DRAINAGE PLANS)

POND WSE = 311.5'

36" RCP-III (NOT BURIED, UPSIZED FOR MAINT.)

CAT-I

PROP. SBG

SPECIAL CUT 4' BASE SWALE SEE DETAIL O

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

FS MIN ELEV = 296.0'

SPECIAL CUT 4' BASE SWALE SEE DETAIL O

LATERAL 4' BASE SWALE SEE DETAIL L

SPECIAL CUT 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R

SPECIAL CUT 4' BASE SWALE SEE DETAIL O

SPECIAL CUT 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL H

CHANNEL CHANGE SEE DETAIL AR

HW

BDO

BERM V DITCH W/CL B RIPRAP SEE DETAIL AH

-Y23RPC- POT Sta. 10+00.00=
-L1- POT Sta. 1030+22.59 (71' RT)

BM1 ELEVATION = 307.61'
N 692,519 E 2,135,147
BL STATION 28+20.00
OFFSET 360.2' RIGHT
BENCHTIE IN 28" OAK

INCREASED SUPER TO 0.03 ALONG RAMP B ACCELERATION LANE AND RAMP C STATION 10+00 TO 14+44.52 FOR HYDROPLANING MITIGATION

*** ADVANCED ACQUISITION**

FOR –L1– PROFILE SEE SHTS. 41 THRU 42
FOR –Y23RPC– PROFILE SEE SHT. 59

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	11
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

NAD 83/NA 2011

MATCHLINE -Y23R- STA. 53+00 SEE SHEET 26

MATCHLINE -L1- STA. 1032+00 SEE SHEET 10

MATCHLINE -L1- STA. 1061+00 SEE SHEET 12

MATCHLINE -Y23G- STA. 16+00 SEE SHEET 25

MATCHLINE -Y23R- STA. 36+00 SEE SHEET 25

MATCHLINE -Y23J- STA. 12+00 SEE SHEET 29

MATCHLINE -Y23DR- STA. 37+00 SEE SHEET 29

TRAFFIC DIAGRAM
ADT 2023
ADT 2043
WHITE OAK RD.
NC 540

WAAF WAAE WGI WGJ SFK PAD SFA WGF WGG WGM

BEGIN CONSTRUCTION -Y23K- POT Sta. 20+65.00

END CONSTRUCTION -Y23K- POT Sta. 21+35.00 -Y23RPB- SRS Sta. 22+33.57

-Y23RPB- CS Sta. 22+33.57

-Y23RPB- SC Sta. 12+00.00

-Y23RPB- ST Sta. 10+00.00 -LI- POT Sta. 1032+96.33 (77 LT)

-Y23RPB- Sta. 11+00.00

-Y23RPC- TS Sta. 13+60.14

-Y23RPC- SC Sta. 15+85.14

-Y23RPC- CS Sta. 17+41.76

-Y23RPC- ST Sta. 17+99.93

-Y23RPC- PT Sta. 25+11.29

-Y23RPC- DS Sta. 15+41.93

-Y23RPB- ST Sta. 20+21.76

-Y23RPB- CS Sta. 17+41.76

-Y23RPB- SC Sta. 12+50.00

-Y23RPB- PT Sta. 29+23.43

-Y23R- POT Sta. 51+46.28 -Y23RPB- POT Sta. 31+47.34

-Y23R- POT Sta. 51+13.68 -Y23LPB- POT Sta. 21+87.92

-Y23R- PT Sta. 49+26.39

-Y23R- Sta. 47+42.07

END APPROACH SLAB -Y23R- Sta. 47+83.54

END BRIDGE -Y23R- Sta. 48+37.41 -Y23LPB- ST Sta. 10+00.00 -LI- POT Sta. 1051+07.55 (47 LT)

-LI- POT Sta. 1051+84.56 -Y23R- POT Sta. 46+08.25 SKEW ANGLE = 67° 26' 29"

BEGIN BRIDGE -Y23R- Sta. 44+18.75 +/-

BEGIN APPROACH SLAB -Y23R- Sta. 44+62.81 +/-

-Y23LPC- ST Sta. 10+00.00 -LI- POT Sta. 1047+33.38 (+/- RT)

-Y23- POT Sta. 51+46.28

-Y23- PT Sta. 49+26.39

BEGIN CONSTRUCTION -Y23J- POT Sta. 10+00.00

BEGIN OVERLAY 3" -Y23J- POT Sta. 10+75.00

-Y23G- POT Sta. 18+93.14

END OVERLAY 3" -Y23G- PT Sta. 18+44.74

-Y23- POC Sta. 37+01.87 +/- -Y23LPC- POT Sta. 19+17.45

-Y23- POC Sta. 16+82.55 +/- -Y23RPC- POT Sta. 27+56.36

WHITE OAK RD

NC 540

600' ACCEL. LANE

300' TAPER LANE

600' DECELERATION LANE

1527 ACCELERATION LANE

PROP. WW FENCE

PROP. SIGN

PROP. GUIDERAIL

PROP. 5' MOWED ISLAND

PROP. TYPE I FENCE

DRAIN. POND (SEE POND DRAINAGE PLANS)

OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AH 10" TONS CL II RIPRAP W/15" SY GEOFAB

STANDARD 4' BASE DITCH W/CL B RIPRAP SEE DETAIL AM

LATERAL V DITCH SEE DETAIL B

LATERAL 4' BASE SWALE SEE DETAIL L

LATERAL V DITCH W/CL II RIPRAP SEE DETAIL AM

MEDIAN V DITCH SEE DETAIL G

SPECIAL CUT 4' BASE SWALE SEE DETAIL Q ADDITIONAL FILTRATION TO DISCUSS AT 4B

SPECIAL CUT 4' BASE SWALE SEE DETAIL Q ADDITIONAL FILTRATION TO DISCUSS AT 4A

SPECIAL CUT 4' BASE SWALE SEE DETAIL Q ADDITIONAL FILTRATION TO DISCUSS AT 4B

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	12
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

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MATCHLINE -L1- STA 1061+00 SEE SHEET 11

MATCHLINE -L1- STA. 1075+00 SEE SHEET 13

NAD 83/NA 2011

MUP BY OTHERS

60' PRIVATE INGRESS & EGRESS EASEMENT BM 1996 PG 628

CHRISTO CHRISTODOLOU
DB 6878 PG 103

SARA EARLY
DB 6980 PG 591
BM 1996 PG 628

CLAYTON PROPERTIES GROUP INC
DB 18256 PG 2088
BM 1996 PG 300

ELIZABETH BURNETTE
DB 2280 PG 301

JOSEPH & VELANCIA BAILEY
DB 12144 PG 1641
BM 2006 PG 1234

WGN SFC WGM SFD SFC WGO

INLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL 33 TONS CL II RIPRAP W/62 SY GEOFAB

SPECIAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL Z

SPECIAL CUT 4' SWALE SEE DETAIL AZ

PROP. WW FENCE

SPECIAL CUT DITCH W/CL I RIP RAP SEE DETAIL BO

LATERAL 4' BASE DITCH SEE DETAIL AA

LATERAL V DICTH SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL A

SPECIAL CUT DITCH W/CL B RIP RAP SEE DETAIL Y

-L1- PC Sta. 1071+79.31

NC 540

DRAIN POND (SEE POND DRAINAGE PLANS)

FS MIN ELEV. 309.0

FS MIN ELEV. 290.1

N 12° 40' 39.6" E

1065+00

1070+00

1075+00

PROP. GUIDERAIL

1520' ACCEL. LANE

300' TAPER LANE

S 88° 06' 49.0" E

45+00

50+00

55+00

MEDIAN V DITCH SEE DETAIL G

TOE PROTECTION W/CL B RIPRAP SEE DETAIL E

TOE PROTECTION W/CL B RIPRAP SEE DETAIL V

20 TON CL I RIPRAP W/39 SY GEOFAB

1 TON CL B RIPRAP W/5 SY GEOFAB

SPECIAL CUT 4' SWALE SEE DETAIL O

-Y23DR- POT Sta. 48+07.88 =
-DRI- POT Sta. 10+00.00

-DRI- PC Sta. 10+13.78

-DRI- PT Sta. 11+10.60

-Y23DR- PT Sta. 43+98.58

-DRI- PC Sta. 11+36.63

END CONSTRUCTION
-DRI- Sta. 11+91.00

-DRI- PT Sta. 12+25.51

-DRI- POT Sta. 12+67.48

OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL 48 TONS CL II RIPRAP W/90 SY GEOFAB

N 80° 47' 30.9" E

3 TON CL B RIPRAP W/11 SY GEOFAB

5' TAPER 16' TO 8'

LATERAL V DITCH W/CL I RIP RAP SEE DETAIL M

STD. 4' BASE DITCH SEE DETAIL I

LINE END OF STD DITCH W/ 13 TON CL I RIPRAP W/26 SY GEOFAB

-DR2- PC Sta. 10+71.73

-DR2- POT Sta. 10+00.00 =
-Y23DR POT Sta. 53+50.00

END CONSTRUCTION
-Y23DR- POT STA. 55+35.00

LINE END OF STD DITCH W/ 1 TON CL B RIPRAP W/4 SY GEOFAB

STD. V DITCH SEE DETAIL D

-DR2- PT Sta. 12+47.50

-DR2- POT Sta. 12+60.00

END CONSTRUCTION
-DR2- POT STA. 12+05.00

N 69° 06' 27.0" E

2701 HIDDEN ACRE LAND TRUST
DB 13338 PG 2270
BM 1996 PG 628

VELMO T WILLIAMS TRUST ALICE H WILLIAMS
DB 10404 PG 1591
BM 1996 PG 300

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE
GRAVEL DRIVE
ALL OTHER DRIVES TO BE ASPHALT

* ADVANCED ACQUISITION PARCEL

INCREASED SUPER TO 0.03 ALONG LOOP B ACCELERATION LANE FOR HYDROPLANING MITIGATION

-DRI-		-DR2-	-LI-	-Y23DR-
PI Sta 10+62.34	PI Sta 11+81.14	PI Sta 11+62.22	PI Sta 1081+95.09	PI Sta 40+37.34
Δ = 11° 05' 40.1" (LT)	Δ = 7° 50' 04.8" (RT)	Δ = 33° 34' 12.6" (LT)	Δ = 4° 39' 12.5" (LT)	Δ = 60° 56' 53.0" (RT)
D = 11° 27' 33.0"	D = 8° 48' 53.0"	D = 19° 05' 54.9"	D = 0° 13' 45.1"	D = 7° 32' 20.1"
L = 96.82'	L = 88.88'	L = 175.77'	L = 2,030.45'	L = 808.45'
T = 48.56'	T = 44.51'	T = 90.49'	T = 1,015.79'	T = 447.21'
R = 500.00'	R = 650.00'	R = 300.00'	R = 25,000.00'	R = 760.00'
			SE = NC	SE = 0.06
			DS = 75 MPH	DS = 40 MPH

FOR -L1- PROFILE SEE SHT. 43
FOR -Y23DR- PROFILE SEE SHT. 63
FOR -DR1- PROFILE SEE SHT. 61
FOR -DR2- PROFILE SEE SHT. 63

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	13
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

NAD 83/NA 2011

MATCHLINE -L1- STA. 1075+00 SEE SHEET 12

MATCHLINE -L1- STA. 1089+00 SEE SHEET 14

-Y231- PT Sta. 18+34.44

N 47° 36' 33.5" W

-Y231- PC Sta. 17+62.44

-Y231- PT Sta. 17+11.53

GREENWAY BY OTHERS
OUTSIDE PROPOSED R/W

CLAYTON PROPERTIES GROUP INC
DB 18256 PG 2088
BM 1996 PG 300

-Y231- PC Sta. 15+46.06

END CONSTRUCTION
-Y23I- POC Sta. 14+76.70

SPECIAL V DITCH W/CL B RIP RAP SEE DETAIL Y

LATERAL 4' BASE DITCH SEE DETAIL AA

SPECIAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL Z

LATERAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL AS

BEGIN BRIDGE
-LI- Sta. 1083+72.50 +/-

BEGIN APPROACH SLAB
-LI- Sta. 1083+48.45 +/-

-Y231- PT Sta. 14+80.09

-Y231- PC Sta. 14+22.89

-Y231- PT Sta. 13+94.79

SPECIAL CUT DITCH W/CL I RIP RAP SEE DETAIL AB

SPECIAL CUT DITCH W/CL I RIP RAP SEE DETAIL AB

SFV

STD. 4' BASE SWALE SEE DETAIL Q

STD. 8' BASE SWALE SEE DETAIL AP

PROP. WW FENCE

NC 540

WHITE OAK CREEK GREENWAY

END PROP. SBG +78.08

BEGIN PROP. SBG +78.08

-Y231- PC Sta. 13+67.31

15" CSP W/ELBOWS

2GIB-WSF

8:1 CAT-1 PROP. SBG

60' TAPER

FS MIN ELEV 735.4

36" RCP IV (W/O ANTI-SEEP COLLAR)

15 TON CL I RIPRAP W/30 SY GEOFAB

100' TAPER

BEGIN PROP. SBG +46.12

PROP. SBG

1080+00

1085+00

1075+00

PROP. GUIDERAIL

2GIB-WSS

FS

15" RCP IV

GREU TL-3

8:1

14' FDPS

50:1

B-77

2GIB-WSF

15" RCP III

2GIB-WSS 15" RCP III

CGAU

CAT-1

2GIB-WSF

BEGIN PROP. SBG +50.00

1 TON CL B RIPRAP W/5 SY GEOFAB

2GIB-WSF

15" CSP W/ELBOWS

PROP. SIGN

100' TAPER

END PROP. SBG +19.02

END PROP. SBG +82.60

2GIB-WSF 2GIB-WSF 15" CSP W/ ELBOWS

STD. 4' SWALE SEE DETAIL Q

BEGIN PROP. SBG +85.72

PROP. WW FENCE

2 TON CL B RIPRAP W/7 SY GEOFAB

LATERAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL H

END APPROACH SLAB
-LI- Sta. 1087+13.67 +/-

END BRIDGE
-LI- Sta. 1086+89.50+/-

-LI- POT Sta.1084+22.30=
-Y231- POT Sta.12+81.78

ELMO T WILLIAMS TRUST ALICE H WILLIAMS
DB 10404 PG 1591
BM 1996 PG 300

GREENWAY BY OTHERS
OUTSIDE PROPOSED R/W

-Y231- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y23I- POT Sta. 10+95.15

WHITE OAK CREEK BRIDGE
ABUTMENT 1: 1190 TONS CL II RIPRAP
ABUTMENT 2: 776 TONS CL II RIPRAP

CAPITAL CITIES COMMUNICATIONS, INC.
DB 2564 PG 333

PI Sta 1081+95.09
△ = 4° 39' 12.5" (LT)
D = 0° 13' 45.1"
L = 2,030.45'
T = 1,015.79'
R = 25,000.00'

SFV

SFV

WHITE OAK CREEK

BM6 ELEVATION = 233.77'
N 698,091 E 2,136,341
BL STATION 87+23.00
OFFSET 369.1' RIGHT
BENCHTIE IN 20" OAK

-LI-

PI Sta 1081+95.09
△ = 4° 39' 12.5" (LT)
D = 0° 13' 45.1"
L = 2,030.45'
T = 1,015.79'
R = 25,000.00'
SE = NC
DS = 75 MPH

-Y231-

PI Sta 13+81.17
△ = 18° 18' 27.4" (RT)
D = 66° 37' 22.8"
L = 27.48'
T = 13.86'
R = 86.00'
SE = RC

PI Sta 14+52.60
△ = 38° 06' 22.7" (LT)
D = 66° 37' 22.8"
L = 57.20'
T = 29.70'
R = 86.00'
SE = RC

PI Sta 16+38.33
△ = 63° 08' 47.1" (RT)
D = 38° 09' 45.7"
L = 165.47'
T = 92.27'
R = 150.14'
SE = RC

PI Sta 17+98.83
△ = 20° 36' 24.8" (LT)
D = 28° 37' 19.3"
L = 72.00'
T = 36.39'
R = 200.18'
SE = RC

WGP

FOR -L1- PROFILE SEE SHTS. 43 THRU 44
FOR -Y23I- PROFILE SEE SHT. 64

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	14
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

NC DEPARTMENT OF TRANSPORTATION
DB 7404 PG 28
DB 7404 PG 26
BM 1990 PG 425
PSD 393-96-RW
NCDOT PROJECT # 6.401080

NAD 83/NA 2011

CAPITAL CITIES COMMUNICATIONS, INC.
DB 2564 PG 333

END SECTION 1
-LI- POT Sta. 1094+00.00
BEGIN SECTION 2

WGR

STD. 8' BASE SWALE SEE DETAIL AP
LATERAL 4' BASE SWALE SEE DETAIL L
LATERAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL H
-LI- PT Sta. 1092+09.76
PROP. WW FENCE
3 TON CL B RIPRAP W/10 SY GEOFAB
2 TON CL B RIPRAP W/7 SY GEOFAB
SPECIAL 4' BASE DITCH SEE DETAIL AA
SPECIAL 4' BASE SWALE SEE DETAIL O ADDITIONAL FILTRATION TO DISCUSS AT 4B
SPECIAL 4' BASE SWALE SEE DETAIL O
RCBC INV=242.9
INV IN=243.9
CULVERT OUTLET STABILIZATION 76 TONS CL II RIPRAP W/118 SY GEOFAB
TOE PROTECTION W/CL B RIP RAP SEE DETAIL V
PROP. SIGN
PROP. SBG
24" CSP W/ELBOWS
15" RCP-III
2GIB-WSF
END PROP. DOUBLE POST GR +50.86
DOUBLE POST GR
BEGIN PROP. DOUBLE POST GR +41.02
SAG -LI- Sta.1096+15.60
PROP. GUIDERAIL
-LI-
1090+00
1095+00
1100+00
N 8°01'27.1" E
2GIB-WSS
GREU TL-3
CGAU
CAT-1
BEGIN PROP. DOUBLE POST GR +46.35
END PROP. DOUBLE POST GR +35.86
BL-120
42" SW
SPECIAL V DITCH SEE DETAIL A
SPECIAL CUT 4' SWALE SEE DETAIL O
+63.85 120.00,RT
+43.85 110.00,RT
+97.85
TOE PROTECTION W/CL B RIP RAP SEE DETAIL V
2 TON CL B RIPRAP W/7 SY GEOFAB
LATERAL 4' BASE SWALE SEE DETAIL BF
SPECIAL 4' BASE W/CL I RIP RAP SEE DETAIL AC
SFR
CULVERT INLET STABILIZATION 39 TONS CL II RIPRAP W/73 SY GEOFAB
RCBC INV=245.5
INV IN=246.5
DRAINAGE AREA = 2.0 AC
BUFFER TREATMENT PROVIDED = 313 FT
CAPITAL CITIES COMMUNICATIONS, INC.
DB 2564 PG 333
CAPITOL BROADCASTING COMPANY, INC.
DB 2532 PG 44
BM 1958 PG 98
BM 1990 PG 425
EASEMENT DB 1236 PG 592
EASEMENT DB 1244 PG 559
EASEMENT DB 1317 PG 202

RCBC SHOWN (C300) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

BM7 ELEVATION = 259.88'
N 700.050 E 2,136.602
BL STATION 106+96.00
OFFSET 271.2' RIGHT
BENCHTIE IN 12"POPLAR

MATCHLINE -L1- STA. 1089+00
SEE SHEET 13

MATCHLINE -L1- STA. 1100+50
SEE SHEET 15

-LI-
PI Sta 1081+95.09
△ = 4° 39' 12.5" (LT)
D = 0° 13' 45.1"
L = 2,030.45'
T = 1,015.79'
R = 25,000.00'
SE = NC
DS = 75 MPH

FOR -L1- PROFILE SEE SHT. 44
FOR DITCH DETAILS SEE SHEET 2D-1

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8/17/99

14

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	15
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

CLAYTON PROPERTIES GROUP INC
DB 18256 PG 2088
BM 1996 PG 300

NC DEPARTMENT OF TRANSPORTATION
DB 7404 PG 28
DB 7404 PG 26
BM 1990 PG 425
PSD 393-96-RW
NCDOT PROJECT # 6.401080

BOBBY & MARGARET RAYNOR
DB 4225 PG 496
BM 1972 PG 357

WGR

WGR

SFN

WGS

NC 540

-L1- TS Sta. 1101+32.66

-L1- SC Sta. 1103+72.66

CHORD

60.00' TYP.

RW CA

TOE PROTECTION W/CL B RIP RAP SEE DETAIL V

TOE PROTECTION W/CL B RIP RAP SEE DETAIL E

ENERGY DISSIPATOR BASIN SEE DETAIL BS

300' LANE TAPER LT

PROP. WW FENCE

+54.02

36" CSP W/ELBOWS (NOT BURIED, UPSIZED FOR MAINT.)

SP. DET. 2GIB-WSF

BL-122

BL-123

PROP. SBG

36'

48'

70'

12' PS

BL-121

CGAU

FS

2GIA-WSS

36" RCP-III (UPSIZED FOR MAINT.)

1105+00

-L1-

PROP. GUIDERAIL

1110+00

30" CSP W/ ELBOWS

SPECIAL CUT 4' SWALE SEE DETAIL O

BDO

BERM DITCH SEE DETAIL BE

CREST -L1- Sta.1109+62.51

+94.02

SPECIAL V DITCH SEE DETAIL A

BERM 4' BASE DITCH W/CL B RIP RAP SEE DETAIL AY

BERM DITCH W/CL B RIPRAP SEE DETAIL X

5 TON CL B RIPRAP W/14 SY GEOFAB

FS MIN ELEV = 272.0

3 TON CL B RIPRAP W/10 SY GEOFAB

LATERAL 4' BASE SWALE SEE DETAIL L

TOE PROTECTION W/CL B RIP RAP SEE DETAIL E

TOE PROTECTION W/CL B RIP RAP SEE DETAIL V

APPROX. LOCATION OF RELOCATED WRAL TV TOWER ANCHOR

RCBC SHOWN (C400) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

INV OUT = 248.9
RCBC INV = 247.9

CULVERT OUTLET STABILIZATION 76 TONS CL II RIPRAP W/118 SY GEOFAB

SAG -L1- Sta.1112+22.55

2GIB-WSF

(2)11'x9' RCBC, BURIED 1.0' ±

15" RCP-IV

24" RCP-IV

2GIB-WSS

15" RCP-III

18" CSP W/ ELBOWS

GREU 1-3

300' LANE TAPER RT

BDO

FS MIN ELEV = 272.0

CAPITOL BROADCASTING COMPANY, INC.
DB 2532 PG 44
BM 1958 PG 98
BM 1990 PG 425
EASEMENT DB 1236 PG 592
EASEMENT DB 1244 PG 559
EASEMENT DB 1317 PG 202

* SUPER INCREASED TO 0.04 FOR HYDROPLANING

-L1-

PIs Sta 1102+92.66
Θs = 0° 45' 50.2"
Ls = 240.00'
LT = 160.00'
ST = 80.00'

PI Sta 1114+01.54
Δ = 13° 02' 36.6" (RT)
D = 0° 38' 11.8"
L = 2,048.87'
T = 1,028.88'
R = 9,000.00'
SE = 0.04
DS = 75 MPH

MATCHLINE -L1- STA. 1100+50
SEE SHEET 14

MATCHLINE -L1- STA. 1114+00
SEE SHEET 16

FOR -L1- PROFILE SEE SHT. 44 & 45
FOR DITCH DETAILS SEE SHEET 2D-1

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	16
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

BOBBY & MARGARET RAYNOR
DB 4225 PG 496
BM 1972 PG 357

S 04°26'48" W 282.00'
S 34°26'48" W 160.00'
S 04°18'13" E 335.00'
S 22°16'48" W 350.00'

NC DEPARTMENT OF TRANSPORTATION
DB 7404 PG 28
DB 7404 PG 26
BM 1990 PG 425
PSD 393-96-RW
NCDOT PROJECT # 6.401080

RICHARD ROGERS REVOCABLE TRUST
DB 5720
LEASE DB 5748 PG 2500

NAD 83/NA 2011

WGR
SFS
B
CS Sta. 1124+21.53
PDE
OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL
48 TONS CL II RIPRAP W/90 SY GEOFAB
TOE PROTECTION W/CL B RIP RAP SEE DETAIL V
1 TON CL B RIPRAP W/5 SY GEOFAB
RW CA
-Y24RPBR- ST Sta. 10+00.00 =
-LI- POC Sta. 1115+22.43
-Y24RPBR- ST Sta. 12+00.00
SFQ
CHORD
TOE PROTECTION W/CL B RIP RAP SEE DETAIL V
PROP. WW FENCE
NC 540
LINE CUT/FILL TRANSITION TOE PROTECTION W/CL B RIP RAP SEE DETAIL E
15" CSP W/ELBOWS
CAT-1
15" RCP-III
2GIB-WSF
2GIB-WSS
RCP-IV
PROP. SBG
20+00
15+00
-Y24RPBR-
-LI- ST Sta. 1126+61.53
PROP. GUIDERAIL
-LI- 1120+00
GREU TL-3
CGAU
BL-125
BL-126
BL-127
S 19°31'59" W 922.45'
S 19°12'39" W 1122.39'
-Y24RPC-
1125+00
15+00
PROP. SIGN
PROP. SBG 15' R/W
STANDARD 4' BASE SWALE SEE DETAIL Q
CHANNEL BLOCK SEE DETAIL BK
SPECIAL CUT 4' SWALE SEE DETAIL O
66.67' TYP. FS MIN ELEV = 279.5
2 TON CL B RIPRAP W/7 SY GEOFAB
SFN
NO BUFFER TREATMENT PROVIDED
LATERAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL H
CULVERT INLET STABILIZATION 39 TONS CL II RIPRAP W/73 SY GEOFAB
TOE PROTECTION W/CL B RIP RAP SEE DETAIL V
TOE PROTECTION W/CL B RIP RAP SEE DETAIL E
PROP. WW FENCE
CHANNEL CHANGE W/CL II RIPRAP SEE DETAIL AR
INV. IN = 250.4
RCBC, INV = 251.4
INV = 265.31
WGT
WGS
PAF
SFQ
-Y24RPC- ST Sta. 10+00.00 =
-LI- POT Sta. 1120+12.25
-Y24RPC- SC Sta. 12+00.00
-Y24RPC- CS Sta. 14+60.18
-Y24RPC- SRS Sta. 16+60.18
SFS
LATERAL 4' BASE DITCH W/CL I RIP RAP SEE DETAIL BP
LATERAL 4' BASE DITCH SEE DETAIL AE
DRAINAGE AREA = 30.0 AC
BUFFER TREATMENT PROVIDED = 300 FT.
2GIB-WSS
HW
C

MATCHLINE -L1- STA. 1114+00
SEE SHEET 15

MATCHLINE -L1- STA. 1127+00
-Y24RPBR- STA. 22+00
SEE SHEET 17

MATCHLINE -L1- STA. 1127+00
-Y24RPC- STA. 16+50
SEE SHEET 17

RCBC SHOWN (C400) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

*(INCREASED FROM 03 TO 04 FOR HYDROPLANING)

CAPITOL BROADCASTING COMPANY, INC.
DB 2532 PG 44
BM 1958 PG 98
BM 1990 PG 425
EASEMENT DB 1236 PG 592
EASEMENT DB 1244 PG 559
EASEMENT DB 1317 PG 202

BM8 ELEVATION = 297.55'
N 702,185 E 2,137,167
BL STATION 131+14.00
OFFSET 345.2' RIGHT
BENCHTIE IN 15" PINE

-LI-
PI Sta 1114+01.54
Δ = 13° 02' 36.6" (RT)
D = 0° 38' 11.8"
L = 2,048.87'
T = 1,028.88'
R = 9,000.00'
SE = 0.04*
DS = 75 MPH

Pls Sta 1125+01.53
Θs = 0° 45' 50.2"
Ls = 240.00'
LT = 160.00'
ST = 80.00'

-Y24RPC-
Pls Sta 11+20.28
Θs = 0° 38' 29.6"
Θs = 2° 37' 42.2"
Ls = 200.00'
LT = 120.28'
ST = 79.77'

PI Sta 13+30.25
Δ = 6° 50' 17.9" (RT)
D = 2° 37' 41.7"
L = 260.18'
T = 130.25'
R = 2,180.00'
SE = 0.07
DS = 65 MPH

Pls Sta 15+26.86
Θs = 2° 37' 41.7"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

Pls Sta 17+80.19
Θs = 1° 09' 31.6"
Ls = 180.00'
LT = 120.00'
ST = 60.00'

-Y24BR-
Pls Sta 10+66.67
Θs = 0° 37' 53.9"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

FOR -L1- PROFILE SEE SHT. 45
FOR -Y24RPBR- PROFILE SEE SHT. 69
FOR -Y24RPC- PROFILE SEE SHT. 70

FOR DITCH DETAILS SEE SHEET 2D-1

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/NA 2011

MATCHLINE -Y24R- STA. 36+50 SEE SHEET 35

MATCHLINE -Y24RPBR- STA. 22+00 SEE SHEET 16

MATCHLINE -L- STA. 112+00 SEE SHEET 16

MATCHLINE -Y24RPC- STA. 16+50 SEE SHEET 16

MATCHLINE -Y24RPAR- STA. 20+00 SEE SHEET 18

MATCHLINE -L- STA. 154+00 SEE SHEET 18

MATCHLINE -Y24RPDR- STA. 12+50 SEE SHEET 18

MATCHLINE -Y24R- STA. 51+50 SEE SHEET 36

MATCHLINE -Y24CR- STA. 14+00 SEE SHEET 36

A

B

C

D

NC 540

US 70

SGA

WGU (2)

WGU (1)

SFT

WGX(2)

WGX(1)

SGC

WHB

WGY

WGZ

WHA

CONTRACTOR TO REMOVE EXISTING CABLE GUARDRAIL

-Y24RPBR- POT Sta. 35+59.69 = -Y24R- POC Sta. 41+08.27

-Y24R- PC Sta. 37+34.72

-Y24RPAR- PT Sta. 29+95.09

END CONSTRUCTION -Y24A- POT Sta. 26+55.00

-Y24A- POT Sta. 27+50.00

-Y24RPAR- POT Sta. 34+52.21 = -Y24R- POC Sta. 41+26.45

-Y24RPAR- PRC Sta. 24+92.85

BEGIN BRIDGE -L- 138+47.48 +/- BEGIN APPROACH SLAB -L- 138+49.31 +/-

-L- POT Sta. 139+58.50 = -Y24R- POC Sta. 48+98.83

-Y24RPC- CS Sta. 20+07.57

-Y24RPC- ST Sta. 21+87.57

-Y24RPC- SC Sta. 18+40.18

-Y24RPC- POT Sta. 29+87.57 = -Y24R- POC Sta. 46+50.00

-Y24RPDR- POT Sta. 27+26.70 = -Y24R- POC Sta. 47+00.00

-Y24RPDR- CS Sta. 14+42.03

-Y24RPDR- ST Sta. 15+22.03

-Y24R- PC Sta. 10+00.00

BEGIN CONSTRUCTION -Y23CR- POC Sta. 10+91.84

END BRIDGE -L- 140+48.56 +/-

END APPROACH SLAB -L- 140+17.72 +/-

-Y24R-
PI Sta 50+53.11
Δ = 7°18' 52.9" (RT)
D = 1°17' 11.3"
L = 555.12'
T = 278.39'
R = 4,450.00'
SE = NC
DS = 60 MPH

-Y24RPC-

PIs Sta 17+80.19	PI Sta 19+23.89	PIs Sta 20+67.57
θs = 1°09' 31.6"	Δ = 2°09' 18.6" (LT)	θs = 1°09' 31.6"
Ls = 180.00'	D = 1°11' 15.2"	Ls = 180.00'
LT = 120.00'	L = 167.39'	LT = 120.00'
ST = 60.00'	T = 83.70'	ST = 60.00'
	R = 4,450.00'	
	SE = 0.04	
	DS = 65 MPH	

-Y24RPAR-

PI Sta 21+46.51	PI Sta 27+44.00
Δ = 3°03' 13.2" (RT)	Δ = 2°12' 48.8" (LT)
D = 0°26' 26.3"	D = 1°09' 56.7"
L = 692.85'	L = 502.24'
T = 346.52'	T = 251.15'
R = 13,000.00'	R = 13,000.00'
SE = NC	SE = NC
DS = 65 MPH	DS = 65 MPH

-Y24RPADR-

PIs Sta 13+41.12	PIs Sta 15+02.04
Δ = 5°32' 23.5" (LT)	θs = 1°54' 10.1"
D = 2°06' 51.2"	Ls = 180.00'
L = 266.03'	LT = 120.00'
T = 133.12'	ST = 60.00'
R = 2,710.00'	
SE = 0.04	
DS = 65 MPH	

-Y24CR-
PI Sta 13+01.21
Δ = 1°46' 00.4" (RT)
D = 0°17' 05.2"
L = 620.36'
T = 310.20'
R = 20,085.50'
SE = NC
DS = 30 MPH

-Y24R- US 70			
488	-Y24R-		
585			
33		18	
56		44	
130		115	
224		227	
-L- NC 540		-L- NC 540	
36		34	
45		60	
-Y24R- US 70		507	
		590	

EST. 2025 /2045 TRAFFIC VOLUMES

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

★ PROPOSED TRAFFIC SIGNAL

FOR -L- PROFILE SEE SHT. 45 & 46
FOR -Y24R- PROFILE SEE SHTS. 66 & 67
FOR -Y24RPAR- PROFILE SEE SHT. 68
FOR -Y24RPBR- PROFILE SEE SHT. 69
FOR -Y24RPC- PROFILE SEE SHT. 70
FOR -Y24RPDR- PROFILE SEE SHT. 71
FOR -Y24A- PROFILE SEE SHT. 72
FOR -Y24CR- PROFILE SEE SHT. 73
FOR DITCH DETAILS SEE SHTS. 2D-1

GRAPHIC SCALE
50 25 0 50 100
PLANS

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6/13/2024

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	18
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

MATCHLINE -Y25- STA. 15+00 SEE SHEET 36A

MATCHLINE -Y26R- STA. 22+00 SEE SHEET 36A

MATCHLINE -Y26R-SR1- STA. 12+50 SEE SHEET 36A

MATCHLINE -Y24RPAR- STA. 20+00 SEE SHEET 17

MATCHLINE -L1- STA. 1154+00 SEE SHEET 17

MATCHLINE -Y24RPDR- STA. 12+50 SEE SHEET 17

MATCHLINE -L1- STA. 1167+50 SEE SHEET 19

MATCHLINE -Y25- STA. 24+30 SEE SHEET 36B

MATCHLINE -Y26R- STA. 31+00 SEE SHEET 36B

MATCHLINE -Y26R-SR2- STA. 11+50 SEE SHEET 36B

A

D

NC 540

SGD

WHB

SGD WHC

END CONSTRUCTION -Y26 DRW1- POT Sta. 12+58.05

BEGIN CONSTRUCTION -Y26RSR1- POT Sta. 11+86.89

BEGIN CONSTRUCTION -Y26RSR2- POT Sta. 10+13.43

END BRIDGE -Y24RPAR- 17+55.55

END APPROACH SLAB -Y24RPAR- 17+79.71

BEGIN BRIDGE -Y24RPAR- 14+42.16

BEGIN APPROACH SLAB -Y24RPAR- 14+18.209

BEGIN APPROACH SLAB -LI- 1156+14.67

BEGIN BRIDGE -LI- 1156+38.84

END BRIDGE -LI- 1159+53.42

END APPROACH SLAB -LI- 1159+77.58

-LI- PC Sta. 1161+84.70

-LI- POC Sta. 1164+04.02

-Y24RPAR- POT Sta. 0+00.00 = -LI- POC Sta. 1164+04.02

-Y24RPDR- SC Sta. 11+80.00

-Y24RPDR- TS Sta. 10+00.00 = -LI- POT Sta. 1156+60.22

-LI- POT Sta. 1158+98.15 = -Y26R- POT Sta. 26+89.72

-Y26RSR2- POT Sta. 9+84.61

-LI- POT Sta. 1157+51.67 = -Y25- POT Sta. 19+97.73

-Y26R- PC Sta. 23+97.84

-Y26RSR2- PC Sta. 10+49.62

-Y26 DRW1- PT Sta. 11+19.57

-Y26 DRW1- POT Sta. 13+08.05

-Y26 DRW1- PT Sta. 12+48.23

-Y26 DRW1- PC Sta. 11+70.38

-Y26 DRW1- Sta. 12+18.36

-Y26 DRW1- Sta. 10+33.30

-Y26 DRW1- BVS 10+24.51

-Y26 DRW1- PC Sta. 12+26.89

-Y26 DRW1- SAG

-Y26 DRW1- CREST

-Y26 DRW1-

-Y24RPAR- POT Sta. 16+43.15

-Y25- POT Sta. 18+84.14

-Y24RPAR- POT Sta. 14+93.38 = -Y26R- POC Sta. 25+85.42

-Y24RPAR- Sta. 15+77.92 CREST

-Y24RPDR-

-Y26R-

-Y26-

-LI- Sta. 1157+72.55 CREST

-Y26R- Sta. 28+68.9 CREST

-LI- Sta. 1167+50

-LI- Sta. 1167+19

-Y26RSR2- Sta. 10+49.62

-Y26_DRW1-

-Y24RPAR- Sta. 17+77.92

-Y24RPDR-

-Y26R-

-LI-

-Y26-

-Y26RSR1-

-Y26RSR2-

-Y26_DRW1-

-Y24RPAR-

-Y24RPDR-

-LI-

-Y26R-

-Y26_DRW1-

-Y24RPAR-

-Y24RPDR-

-LI-

-Y26R-

-Y26RSR1-

*-Y26RSR2

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/NA 2011

MATCHLINE -L1- STA. 1167+50 SEE SHEET 18

MATCHLINE -L1- STA. 1181+50 SEE SHEET 20

WHD(2) — EDGE OF AUBURN LLC, DB 10839 PG 2259

JANET P STORMS & LINDA S POWELL, DB 16469 PG 635

SGA — LARRY R STALLINGS, DB 7725 PG 67, BM 1984 PG 1837

SGE — BRENDA L HOWELL, DB 7795 PG 67

SGF — WHD(2)

NC 540

PROP. SBG

PROP. GUIDE RAIL

PROP. WW FENCE

-L1- Sta. 1175+87.94 SAG

-L1- Sta. 1172+20.98
△ = 1° 58' 44.2" (LT)
D = 0° 05' 43.8"
L = 2,072.36'
T = 1,036.28'
R = 60,000.00'
SE = NC
DS = 75 MPH

BM11 ELEVATION = 334.86'
N 707,145 E 2,139,175
BL STATION 184+93.00
OFFSET 315.4' RIGHT
BENCHTIE IN 16" OAK

LATERAL V DITCH SEE DETAIL B

TOE PROTECTION W/CL B RIP RAP SEE DETAIL V

CULVERT OUTLET STABILIZATION 42 TONS CL II RIPRAP W/84 SY GEOFAB

RCBC INV= 292.2 INV OUT= 293.2

TOE PROTECTION W/CL B RIP RAP SEE DETAIL E

SURVEY TO BE UPDATED IN THIS AREA

LATERAL 4' SWALE SEE DETAIL L

15" CSP W/ 2 ELBOWS

11.8" RCCP, BARREL 1.5" INV=291.84

CHANNEL CHANGE W/CL I RIP RAP SEE DETAIL AR

24" CSP W/ ELBOWS

15" RCP-III BZ 1

24" RCP-IV

15" RCP-III

18" RCP-IV

18" CSP W/ ELBOWS

15" CSP W/ ELBOWS

LATERAL 4' BASE DITCH W/CL I RIP RAP SEE DETAIL N

END PROP. DOUBLE POST GR +52.62

BEGIN PROP. DOUBLE POST GR +37.65

DOUBLE POST GR

END PROP. DOUBLE POST GR +47.31

BEGIN PROP. DOUBLE POST GR +37.72

GRADE TO DRAIN

42" SW

1 TONS CL B RIPRAP W/4 SY GEOFAB

CHANNEL BLOCK SEE DETAIL BK

2GIB-WSF

2GIB-WSS

PUE

1170+00

1175+00

1180+00

+04.02

+95.30 118.30,LT R 15

+59.98 119.23,RT

+39.85 109.47,RT

300' LANE TAPER

2 TONS CL B RIPRAP W/7 SY GEOFAB

LATERAL 4' SWALE SEE DETAIL L

LATERAL 4' BASE DITCH W/CL I RIP RAP SEE DETAIL N

CULVERT INLET STABILIZATION 18 TONS CL II RIPRAP W/35 SY GEOFAB

CHANNEL CHANGE W/CL I RIP RAP SEE DETAIL AR

SGG

WHD — AUBURN ASSOCIATES, DB 4424 PG 265, BM 1989 PG 7

SGE

WHF — AUBURN ASSOCIATES, DB 4424 PG 265, BM 1989 PG 7

DENNIS R YARBROUGH, DB 13859 PG 1824, BM 1984 PG 1837

RONALD R & SANDRA C LOCKAMON JR, DB 3420 PG 185, BM 1984 PG 1837

JOHN B MCINTYRE, DB 9167 PG 2491, BM 1984 PG 1837

PAVEMENT REMOVAL

FOR -L1- PROFILE SEE SHT. 47

FOR DITCH DETAILS SEE SHEET 2D-1

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/NA 2011

MATCHLINE -L1- STA. 1181+50
SEE SHEET 19

WHE

SGF

SGF

COORDINATE WITH R-2829B TO INCOPORATE ADJACENT PROJECT DRAINAGE INTO STORMWATER DETENTION POND

END TIP PROJECT R-2829A
-L1- POT STA. 1185+19.02 =
-L- POT STA. 1185+15.00
(R-2829B BY OTHERS)

EDGE OF AUBURN LLC
DB 10839 PG 2259

PROP. WW FENCE -L1- PT Sta. 1182+57.06

RW CA

TOE PROTECTION W/CL B RIP RAP SEE DETAIL E

ROW BY OTHERS (R-2829B)

BY OTHERS (R-2829B)

5 TON CL B RIP RAP
14 SY GEOFAB

24" RCP-III

CL B RIP RAP

PIPE OUTLET FROM R-2829B SYSTEM TO BE REVISED TO ENTER R-2829A STORMWATER DETENTION POND

STORMWATER DETENTION POND

RISER W/TRASH RACK SEE DETAIL AF

300' TAPER

GREU TL-3

2GIB-WSS

15" RCP-III

PROP. GUIDE RAIL

1185+00

BL-137

BL-138

BL-139

BL-140

LINE TYPICAL V DITCH W/PSRM SEE DETAIL AB

.15" RCP-III

2GI

FS

+93.24

N 20° 36' 59.9" E

NC 540

NC 540

2GI AND PIPE BY OTHERS

LINE TYPICAL V DITCH W/PSRM SEE DETAIL AE

END CONSTRUCTION
-L- POT Sta. 1194+06.20

PROP. WW FENCE

PUE

EDGE OF AUBURN LLC
DB 10839 PG 2259

WHF

SGG

FOR -L1- PROFILE SEE SHT. 47

FOR DITCH DETAILS SEE SHEET 2D-1

STV Engineers, Inc.
P: (704) 372-1885
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	27
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	

FINAL R-2828 AND I-40 WEST PAVEMENT MARKINGS TO BE REVISED TO ACCOMMODATE R-2829A

END PAVING ONLY
-Y22RPA_REV- STA. 32+29.64 = R-2828 STA. 36+88.31

END GRADING
BEGIN PAVING ONLY
-Y22RPA_REV- STA. 30+12.50

BEGIN GRADING & PAVING
-Y22RPA_REV- STA. 14+96.21

END GRADING & PAVING
-Y22RPAFLY1- Sta. 65+22.69+/-

-Y22RPA_REV-

PI Sta 10+99.09	PI Sta 12+77.98	PI Sta 22+41.41	PI Sta 29+98.30	PI Sta 37+11.41
Δ = 6°52' 53.2" (RT)	Gs = 4°10' 19.3"	Gs = 4°52' 54.5"	Δ = 53°16' 32.7" (RT)	Gs = 3°05' 58.5"
D = 3°28' 36.7"	Ls = 240.00'	Ls = 240.00'	D = 4°11' 48.7"	Gs = 2°52' 35.4"
L = 197.94'	LT = 150.04'	LT = 150.05'	L = 1,141.29'	Ls = 240.00'
T = 99.09'	ST = 80.04'	ST = 80.06'	T = 707.24'	LT = 129.10'
R = 1,648.00'			R = 1,401.00'	ST = 111.28'
SE = 0.06			SE = 0.08	
DS = 60 MPH			DS = 60 MPH	

-Y22RPAFLY_REV-

PI Sta 22+12.56	PI Sta 27+97.10	PI Sta 30+40.45	PI Sta 32+22.68	PI Sta 68+00.09
Gs = 3°27' 05.6"	Gs = 4°18' 28.6"	Δ = 12°35' 23.9" (LT)	Gs = 4°18' 28.6"	Gs = 3°35' 25.4"
Ls = 200.00'	Ls = 200.00'	D = 4°18' 28.6"	Ls = 200.00'	Ls = 240.00'
LT = 133.36'	LT = 133.37'	L = 292.25'	LT = 133.37'	LT = 160.05'
ST = 66.69'	ST = 66.70'	T = 146.72'	ST = 66.70'	ST = 80.04'
		R = 1,330.00'		
		SE = 0.06		
		DS = 60 MPH		

-Y22RPAFLY1-

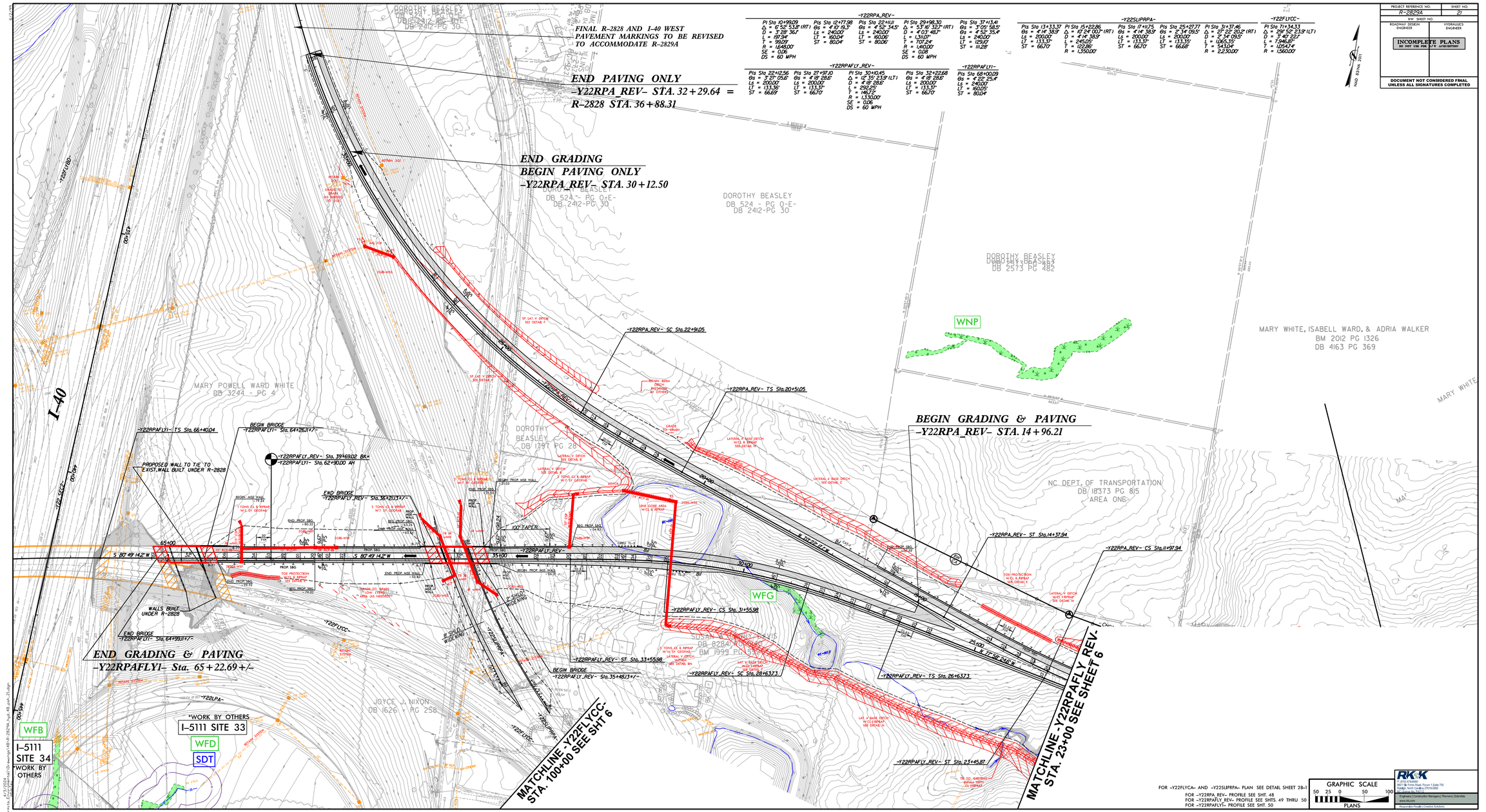
PI Sta 32+22.68
Gs = 4°18' 28.6"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

-Y22SLIPRPA-

PI Sta 13+33.37	PI Sta 15+22.86	PI Sta 17+11.75	PI Sta 25+27.77	PI Sta 31+37.46
Gs = 4°14' 38.9"	Δ = 10°24' 00.1" (RT)	Gs = 4°14' 38.9"	Gs = 2°34' 09.5"	Δ = 37°22' 30.2" (RT)
Ls = 200.00'	D = 4°14' 38.9"	Ls = 200.00'	Ls = 200.00'	D = 2°34' 09.5"
LT = 133.37'	L = 245.05'	LT = 133.37'	LT = 133.35'	L = 1,065.35'
ST = 66.70'	T = 122.86'	ST = 66.70'	ST = 66.68'	T = 543.04'
	R = 1,350.00'			R = 2,230.00'

-Y22FLYCC-

PI Sta 71+34.33
Δ = 29°52' 23.9" (LT)
D = 3°40' 22.7"
L = 734.68'
T = 375.47'
R = 1,560.00'



FOR -Y22FLYCA- AND -Y22SLIPRPA- PLAN SEE DETAIL SHEET 28-1
FOR -Y22RPA_REV- PROFILE SEE SHT. 48
FOR -Y22RPAFLY_REV- PROFILE SEE SHTS 49 THRU 50
FOR -Y22RPAFLY1- PROFILE SEE SHT. 50

GRAPHIC SCALE
50 25 0 50 100
PLANS

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	22
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

NO SCALE

BEGIN PAVING ONLY
–Y22RPE– STA. 15+34.68

END PAVING ONLY
BEGIN GRADING & PAVING
–Y22RPE– STA. 26+50.00

I-42 PAVEMENT MARKINGS TO BE REVISED TO ACCOMMODATE R-2829A USING MILL & OVERLAY TO REMOVE CONFLICTING MARKINGS

–Y22RPE– SC Sta. 12+00.00

–Y22RPE– ST Sta. 10+00.00

–Y22RPE– POC Sta. 31+85.00 =
–Y22RPE_REV– PC Sta. 31+85.00

–Y22RPE_REV– CS Sta. 34+83.89

MATCHLINE
–Y22RPE_REV– STA. 35+00
SEE SHEET 6

SET
I-5111 SITE 60
*WORK BY OTHERS

WFI

WFH

WFN(1)

SEJ

I-42

NCDOT
(ROBERT BRYAN, SR)

J. GUADALUPE GARCIA MEJIA
& LETICIA RODRIGUEZ
DB 4879 PG 934
BM 83 PG 429

NCDOT
DB 1636 PG 793
(JOHNSTON COUNTY)

NCDOT
DB 2090 PG 930
(JOHNSTON COUNTY)

ROBERT BRYAN, SR
DB 3400 PG 908 (JOHNSTON COUNTY)
(ROBERT BRYAN, SR)

–Y22FLYCC– (R-2828)
PI Sta 71+34.33
Δ = 29° 52' 23.9" (LT)
D = 3° 40' 22"
L = 794.87'
T = 405.47'
R = 1560.00'
SE = 0.06
DS = 60 MPH

–Y22RPE–
Pts Sta 11+33.37
θs = 4° 18' 28.6"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

PI Sta 24+29.73
Δ = 85° 30' 46.3" (RT)
D = 4° 18' 28.6"
L = 1385.07'
T = 1229.73'
R = 1330.00'
SE = 0.08
DS = 60 MPH

–Y22RPE_REV–
PI Sta 33+35.08
Δ = 12° 52' 33.4" (RT)
D = 4° 18' 28.6"
L = 298.85'
T = 150.08'
R = 1330.00'
SE = 0.08
DS = 60 MPH

Pts Sta 35+75.93
θs = 2° 37' 41.0"
θs = 4° 18' 29.3"
Ls = 200.00'
LT = 108.79'
ST = 92.05'

PI Sta 44+16.74
Δ = 37° 09' 44.1" (RT)
D = 2° 37' 41"
L = 1,413.96'
T = 732.85'
R = 2,180.00'
SE = 0.07
DS = 65 MPH

FOR –Y22RPE– PROFILE SEE SHT. 53
FOR –Y22RPE_REV PROFILE SEE SHT. 54

GRAPHIC SCALE
50 25 0 50 100
PLANS

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	23
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

NAD 83/NA 2011

-Y22CR-
PI Sta 11+98.09
Δ = 26° 14' 13.4" (LT)
D = 6° 44' 26.4"
L = 389.23'
T = 198.09'
R = 850.00'
SE = 0.03
DS = 30 MPH

JOHN AMAN
DB 4055 PG 194 (WAKE COUNTY)
BM 1988 PG 1683 (WAKE COUNTY)
DB 6385 PG 925 (WAKE COUNTY)
BM 1994 PG 1824 (WAKE COUNTY)
DB 1058 PG 695 (JOHNSTON COUNTY)
(NCDOT- PSD MAP) 10403rwf2.psd

APPROX. LOCATION OF 15' DRAINAGE EASEMENT SCALED FROM BM 2004 PG 423-424

BEGIN CONSTRUCTION
-Y22CR- POC Sta. 11+35.00

-Y22CR- PC Sta. 10+00.00

LARRY WHEELER, JR.
DB 11737 PG 46
BM 2004 PG 423-424

SKR

-Y22CR- PT Sta. 13+89.23

LATERAL V DITCH W/CL B RIPRAP SEE DETAIL AO

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

SPECIAL V DITCH SEE DETAIL A

END CONSTRUCTION
-Y22CR- POT Sta. 15+72.01

-Y22CR- POT Sta. 16+23.48

CULVERT INLET STABILIZATION 39 TONS CL II RIPRAP W/73 SY GEOFAB

2 TONS CL B RIPRAP W/7 SY GEOFAB

END PROP SBG +00.00

BEGIN PROP SBG +00.00

PROP SBG

-Y22CR-

15" CSP W/ELBOW

GREU TL-2

CAT-1

RETAIN

PDE

E

F

TOE PROTECTION W/CL B RIPRAP SEE DETAIL E

PROPOSED (2) 12' X 9' RCBC

CULVERT OUTLET STABILIZATION 76 TONS CL II RIPRAP W/118 SY GEOFAB

LATERAL V DITCH W/CL B RIPRAP SEE DETAIL AO

RCBC SHOWN (C700) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

SYLVIA ALLEN
DB 13998 PG 1164
BM 2004 PG 423-424

HERBERT, JR. & ELIZABETH THOMASON
DB 11990 PG 2769
BM 2004 PG 423-424

20' DRAINAGE EASEMENT
BM 2004 PG 423

PATRICIA & RAYFORD PAGE
DB 15059 PG 2496
BM 2004 PG 423-424

BYI-370

BYI-1373

FOR -Y22CR- PROFILE SEE SHT. 59

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	24
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

NAD 83/NA 2011

BEGIN CONSTRUCTION
-Y23R- POT Sta. 14+34.13

-Y23R- PC Sta. 10+00.00

-Y23R- PCC Sta. 13+45.80

-Y23R- PT Sta. 15+45.09

-Y23R- PC Sta. 20+03.51

150' TAPER

600' LANE TAPER

100' TAPER

CHORD

ADDITIONAL FILTRATION TO DISCUSS AT 4B
SPECIAL CUT 4' SWALE SEE DETAIL O

ADDITIONAL FILTRATION TO DISCUSS AT 4B
LATERAL 4' SWALE SEE DETAIL L

SPECIAL V DITCH SEE DETAIL A

SP. V DITCH W/CL I RIPRAP SEE DETAIL AB

MATCHLINE -Y23R- STA. 23+00 SEE SHEET 25

WHITE OAK RD

SR 2700 WHITE OAK RD

R. GARLAND BURNETTE
DB 761PG 365
DB 902 PG 89

R. GARLAND BURNETTE
DB 663 PG 79

COTTON SPINDLE

SCOTT JONES & CYNTHIA MARTIN
DB 13053 PG 2273
BM 2007 PG 2275

ALLEN & DEBORAH WEATHERSPOON
DB 13166 PG 182
BM 2007 PG 2275

DOREEN DICARLO
DB 13185 PG 2020
BM 2007 PG 2275

CLARA JONES
DB 1018 PG 2727
DB 10622 PG 1566
WILL -E-0

GOOD SAMARITAN BAPTIST CHURCH
DB 15115 PG 216
BM 2012 PG 1359

STEPHEN & LARA BRINK
DB 13166 PG 127
BM 2007 PG 2275

KIMBERLY PARRISH
DB 16605 PG 426
BM 2007 PG 2275

CAPITAL PROPERTIES OF RALEIGH III, LLC.
DB 15417 PG 799
BM 2007 PG 2276

CARDINAL PIPELINE 50' EASEMENT

-Y23R-

PI Sta 11+73.32	PI Sta 14+45.46	PI Sta 23+02.45
Δ = 9° 41' 40.9" (LT)	Δ = 2° 12' 24.4" (LT)	Δ = 22° 23' 48.0" (RT)
D = 2° 48' 12.7"	D = 1° 06' 26.4"	D = 3° 47' 39.9"
L = 345.80'	L = 199.29'	L = 590.25'
T = 173.32'	T = 99.66'	T = 298.94'
R = 2,043.71'	R = 5,174.21'	R = 1,510.00'
SE = EXIST.	SE = EXIST.	SE = 0.04
DS = 50 MPH	DS = 50 MPH	DS = 50 MPH

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR -Y23R- PROFILE SEE SHT. 55

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	25
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

NAD 83/NA 2011

MATCHLINE -Y23R- STA. 23+00 SEE SHEET 24

MATCHLINE -Y23G- STA. 16+00 SEE SHEET 11

MATCHLINE -Y23R- STA. 36+00 SEE SHEET 11

MATCHLINE -Y23R- STA. 14+00 SEE SHEET 28

WHITE OAK RD

-Y23G- PT Sta. 11+64.92

600' LANE TAPER

175' MEDIAN TAPER

R. GARLAND BURNETTE
DB 663 PG 79

-Y23G- PC Sta. 10+45.74

S 89° 40' 38.9" W

END GRADE
BEGIN OVERLAY, 3"
-Y23G- PT Sta. 12+00.00

-Y23G- 15+00
N 22° 02' 16.7" W

-Y23R- PT Sta. 25+93.76

-Y23R- PC Sta. 29+23.10

-Y23R- POC Sta. 25+72.72=
-Y23DR- POT Sta. 10+00.00=
-Y23G- POT Sta. 10+00.00

-Y23DR- PC Sta. 11+26.30

-Y23R-

PI Sta 23+02.45
Δ = 22° 23' 48.0" (RT)
D = 3° 47' 39.9"
L = 590.25'
T = 298.94'
R = 1,510.00'
SE = 0.04
DS = 50 MPH

PI Sta 40+50.65
Δ = 65° 35' 19.0" (LT)
D = 3° 16' 26.6"
L = 2,003.29'
T = 1,127.55'
R = 1,750.00'
SE = 0.04
DS = 50 MPH

-Y23DR-

PI Sta 16+99.11
Δ = 99° 29' 26.7" (LT)
D = 11° 48' 48.8"
L = 842.17'
T = 572.81'
R = 485.00'
SE = 0.06
DS = 40 MPH

-Y23G-

PI Sta 11+13.56
Δ = 68° 17' 04.4"
D = 57° 17' 44.8"
L = 119.48'
T = 67.81'
R = 100.00'
SE = 0.03
DS = STOP CONDITION

FOR -Y23R- PROFILE SEE SHT. 55
FOR -Y23DR- PROFILE SEE SHT. 62
FOR -Y23G- PROFILE SEE SHT. 64

WGH

WGH

PAO
DRAIN POND
(SEE POND DRAINAGE PLANS)

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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MATCHLINE -Y23FR- STA. 15+00 SEE SHEET 31

MATCHLINE -Y23R- STA. 53+00 SEE SHEET 11

MATCHLINE -Y23R- STA. 62+00 SEE SHEET 27

MATCHLINE -Y23CR- STA. 14+50 SEE SHEET 32

-Y23FR- PT Sta. 18+32.88

-Y23FR- PT Sta. 16+47.13

-Y23FR- PC Sta. 17+40.83

END REMOVE/REPLACE, 8"
-Y23FR- Sta. 18+23.66

-Y23FR- Sta.18+72.10

-Y23FR- PC Sta. 59+19.50

WHITE OAK RD

RAYNOR RD

-Y23CR- PC Sta. 10+00.00

BEGIN MILL & FILL
-Y23CR- PT Sta. 10+31.84

-Y23CR- PCC Sta. 12+57.70

-Y23CR- PCC Sta. 13+56.23

SDO INVESTMENTS, LLC
DB 13592 PG 1766
BM 2004 PG 1133
BM 2005 PG 470

TIM FOWLER
DB 15850 PG 2534
BM 2004 PG 1133
BM 2005 PG 470

SCOTT PEACOCK
SYLVIA MATTHEWS,
& STEPHEN PEACOCK
WILL 14-E-266
DB 1996 PG 594
BM 2004 PG 1133
BM 2005 PG 470

MOUNT HERMAN CHRISTIAN CHURCH
DB 2114 PG 401
DB 1709 PG 389
BM 1985 PG 1106

ELLA & PHILLIP PARRISH
WILL 14-E-207
DB 5160 PG 352

CLAYTON PROPERTIES GROUP INC
DB 18256 PG 2088
BM 1996 PG 300

CITY OF RALEIGH WATER EASEMENT

SFJ

40 TONS CL I RIPRAP W/75 SY GEOFAB
OUTLET CHANNEL STABILIZATION W/CL I RIPRAP SEE DETAIL AL

CUT/FILL TRANSITION
1 TON CL B RIPRAP W/5 SY GEOFAB

8 TONS CL B RIPRAP W/21 SY GEOFAB

LATERAL 4' BASE DITCH SEE DETAIL C

2 TONS CL B RIPRAP W/7 SY GEOFAB

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

SPECIAL CUT 4' SWALE SEE DETAIL O

STANDARD 4' BASE DITCH W/CL I RIPRAP SEE DETAIL AK

LATERAL 4' BASE SWALE SEE DETAIL L

175' MEDIAN TAPER

100' TAPER

PROP. WW FENCE

PROP. MONO. ISLAND

PROP. 10' MUP

MUP BY OTHERS

REMOVE SYSTEM

REMOVE PIPE

ADJUST DI

REMOVE EX. DI TB JB wMH

-Y23CR-

PI Sta 11+29.17	PI Sta 13+07.03	PI Sta 14+49.90
Δ = 9° 55' 30.8" (LT)	Δ = 7° 03' 26.4" (LT)	Δ = 6° 27' 34.7" (LT)
D = 3° 51' 05.5"	D = 7° 09' 43.1"	D = 3° 27' 06.1"
L = 257.70'	L = 98.54'	L = 187.14'
T = 129.17'	T = 49.33'	T = 93.67'
R = 1,487.61'	R = 800.00'	R = 1,659.93'
SE = EXIST.	SE = EXIST.	SE = EXIST.
DS = 30 MPH	DS = 30 MPH	DS = 30 MPH

-Y23R-

PI Sta 61+89.66
Δ = 7° 43' 39.4" (LT)
D = 1° 25' 56.6"
L = 539.49'
T = 270.15'
R = 4,000.00'
SE = 0.03
DS = 50 MPH

-Y23FR-

PI Sta 15+47.10	PI Sta 17+87.02
Δ = 59° 12' 59.9" (LT)	Δ = 11° 51' 08.4" (RT)
D = 26° 38' 57.1"	D = 12° 52' 31.6"
L = 222.21'	L = 92.05'
T = 122.18'	T = 46.19'
R = 215.00'	R = 445.00'
SE = EXIST.	SE = EXIST.
DS = 25 MPH	DS = 25 MPH

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR -Y23R- PROFILE SEE SHT. 56
FOR -Y23CR- PROFILE SEE SHT. 61

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	27
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

TRAFFIC DIAGRAM

ADT 2023
ADT 2043

WHITE OAK RD.

10,590
23,690

100 / 100 — TIFFANY CREEK DR

1,770
2,070

RAYNOR ROAD 6,660 / 7,060

100 / 100

4,890
4,990

13,710
26,610

WHITE OAK RD.

MATCHLINE -Y23AR- STA. 17+00 SEE SHEET 31

MATCHLINE -Y23R- STA. 62+00 SEE SHEET 26

MATCHLINE -Y23BR- STA. 14+00 SEE SHEET 32

CLEAR TO R/W LINE IN THIS AREA FOR SIGHT DISTANCE

-Y23AR- PC Sta. 17+03.83

-Y23AR- PT Sta. 19+41.40

N 11° 49' 07.5" E

-Y23R- PC Sta. 69+10.92

-Y23R- PT Sta. 64+58.99

-Y23R- POC Sta. 63+83.23

-Y23BR- POT Sta. 10+00.00

-Y23AR- POT Sta. 20+33.10

-Y23BR- PC Sta. 12+65.20

END CONSTRUCTION
-Y23R- POC Sta. 71+70.00

END OVERLAY, 3"
-Y23R- PT Sta. 69+00.00

END GRADE
BEGIN OVERLAY, 3"
-Y23R- PT Sta. 68+50.00

-Y23R- PT Sta. 71+89.40

-Y23R- POT Sta. 72+11.63

WHITE OAK RD

150' TAPER

200' MEDIAN TAPER

90' TAPER

300' TAPER

65+00

70+00

N 72° 54' 30.3" W

N 70° 55' 36.8" W

SPECIAL V DITCH SEE DETAIL A

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

SPECIAL 4' BASE DITCH W/CL I RIPRAP SEE DETAIL AC

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL AU

LATERAL V DITCH SEE DETAIL U

2GIB-NSS GRADE TO DRAIN

REMOVE

RETAIN

REMOVE SYSTEM

PROP. MONO. ISLAND

24" RCP III (NOT BURIED)

ERNEST DeVANE & CLARLYNDA WILLIAMS-DeVANE
DB 13236 PG 2392
BM 2005 PG 470

DARRELL & STEPHANIE WIGGINS
DB 10941 PG 331
BM 2003 PG 1228
BM 2004 PG 1133

STEVE CLAIR
DB 13284 PG 752
BM 2004 PG 1133

JENNIFER & MICHAEL PARAMORE
DB 15800 PG 121
BM 2004 PG 1133
BM 2005 PG 470

FARR HOLDINGS, LLC
DB 17366 PG 2583
BM 2004 PG 1133

KENNY T YUEN
DB 17136 PG 1437
BM 2005 PG 2508
BM 2005 PG 470
BM 2008 PG 1265

JAMES & ROSITA LEACH
DB 11744 PG 2651
BM 2005 PG 470
BM 2005 PG 2508
BM 2008 PG 1265

RAMON RODRIGUEZ
DB 10941 PG 329
BM 2003 PG 1228

NCDOT
(GARRY & JOYCE SMITH)

GARRY & JOYCE SMITH
DB 16489 PG 785

DAVID & TRUDY SMITH JR.
DB 2683 PG 143
BM 1972 PG 500

ELLA & PHILLIP PARRISH
WILL 14-E-207
DB 5160 PG 352

ELLA & PHILLIP PARRISH
DB 4404 PG 768
WILL 14-E-207

CLEMENTS FAMILY FARMS, LLC
DB 17341 PG 2345
BM 1972 PG 500

JAMES & FELICIA MANGUM
DB 16280 PG 282
BM 1955 PG 1955

JAMES & FELICIA MANGUM
DB 12744 PG 222
BM 1994 PG 1955

ROYELLE & JEWEL MANGUM
DB 2114 PG 401

THOMAS & JEAN MANGUM
DB 16973 PG 113
BM 1988 PG 11

OSCAR & ROSALBA COBOS
DB 8419 PG 1186
BM 1982 PG 597

NAD 83/NA 2011

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

PROPOSED TRAFFIC SIGNAL

-Y23AR-	-Y23R-	-Y23R-	-Y23BR-
PI Sta 18+27.39	PI Sta 61+89.66	PI Sta 70+50.17	PI Sta 15+52.59
Δ = 38° 53' 26.3" (RT)	Δ = 1° 43' 39.4" (LT)	Δ = 1° 58' 53.5" (RT)	Δ = 34° 20' 41.4" (RT)
D = 16° 22' 12.8"	D = 1° 25' 56.6"	D = 0° 42' 41.6"	D = 6° 09' 39.0"
L = 237.57'	L = 539.49'	L = 278.48'	L = 557.47'
T = 123.57'	T = 270.15'	T = 139.25'	T = 287.39'
R = 350.00'	R = 4,000.00'	R = 8,052.22'	R = 930.00'
SE = 0.04	SE = 0.03	SE = EXIST.	SE = 0.04
DS = 30 MPH	DS = 50 MPH	DS = EXIST.	DS = 50 MPH

FOR -Y23R- PROFILE SEE SHT. 56
FOR -Y23AR- PROFILE SEE SHT. 60
FOR -Y23BR- PROFILE SEE SHT. 60

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	28
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

NAD 83/NA 2011

MATCHLINE -Y23DR- STA. 14+00 SEE SHEET 25

MATCHLINE -Y23DR- STA. 27+00 SEE SHEET 29

WGH

SHT

PAO

SHT

-Y23DR- PT Sta. 19+68.47

-Y23DR- PC Sta. 26+39.16

-Y23DR-
N 10°11'58.8" W

BERM V DITCH SEE DETAIL AX

SPECIAL V DITCH SEE DETAIL A

BDO

SPECIAL CUT DITCH SEE DETAIL A

STD. 4' BASE DITCH SEE DETAIL I

18" RCP III

18" CSP W/ELBOWS

FES

2GIB-WSS

5 TONS CL B RIPRAP W/14 SY GEOFAB

SPECIAL CUT DITCH SEE DETAIL A

SP. CUT 4' SWALE SEE DETAIL O ADDITIONAL FILTRATION TO DISCUSS AT 4B

NCDOT
(R) G. (GARLAND) & ETHEL BURNETTE

DRAIN POND (SEE POND DRAINAGE PLANS)

POND WSE=309.7

INLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL
26 TONS CL II RIPRAP W/50 SY GEOFAB

SP. BASE 4' DITCH W/CL I RIPRAP ST
2 TONS CL B RIPRAP W/ 7 SY GEOFAB SEE DETAIL AC

HW

REMOVE

18" CSP W/ELBOWS

BEGIN PROP. SBG 50.00

END PROP. SBG 50.00

PROP. SBG

2GIB-NSF

GREU TL-2

LATERAL 4' BASE DITCH W/CL I RIPRAP SEE DETAIL N

CLARENCE, JR. & SAMANTHA BOYD
DB 3127 PG 6
BM 1983 PG 398

JOHN CAVINESS
DB 10713 PG 175
BM 1986 PG 1207

SPECIAL 4' BASE DITCH W/CL B RIP RAP SEE DETAIL Z

SPECIAL V DITCH SEE DETAIL A

BEGIN PROP. SBG 0+00.00

END PROP. SBG +89.15

45° CSP W/ELBOWS

24" HDPE

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL H

48 TONS CL II RIPRAP W/90 SY GEOFAB

OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL

BEGIN

JOHN & DIANE CAVINESS
DB 11876 PG 255
BM 1986 PG 1207

R. G. (GARLAND) & ETHEL BURNETTE
DB 761 PG 365
BM 2009 PG 198-199 FOR CREEK LOCATION

-Y23DR-

PI Sta 16+99.11	PI Sta 29+01.37
△ = 99° 29' 26.7" (LT)	△ = 38° 04' 14.6" (LT)
D = 11° 48' 48.8"	D = 7° 32' 20.1"
L = 842.17'	L = 504.99'
T = 572.81'	T = 262.21'
R = 485.00'	R = 760.00'
SE = 0.06	SE = 0.06
DS = 40 MPH	DS = 40 MPH

FOR -Y23DR- PROFILE SEE SHT. 62

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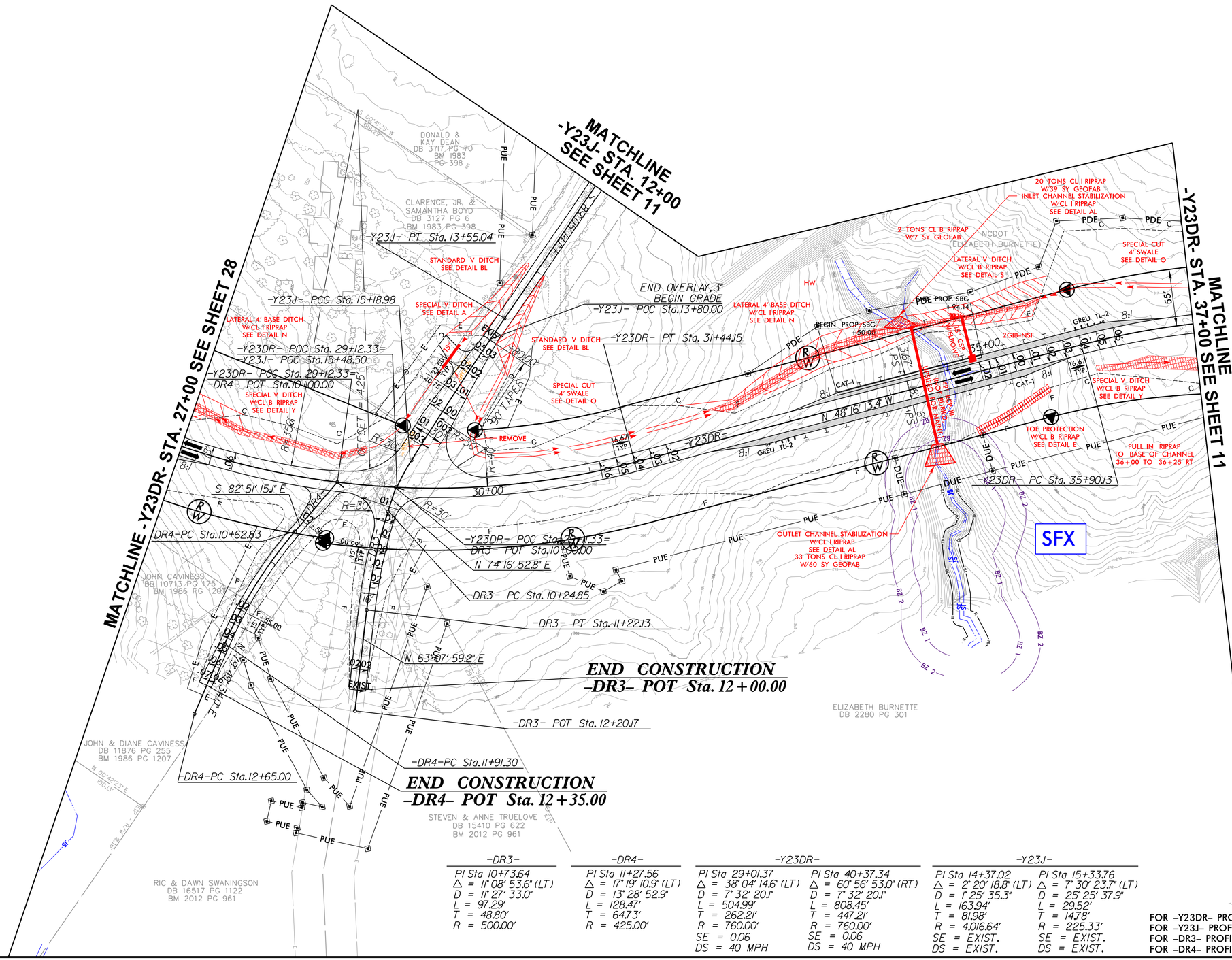
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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011



ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR –Y23DR– PROFILE SEE SHT. 62
FOR –Y23J– PROFILE SEE SHT. 64
FOR –DR3– PROFILE SEE SHT. 64
FOR –DR4– PROFILE SEE SHT. 59

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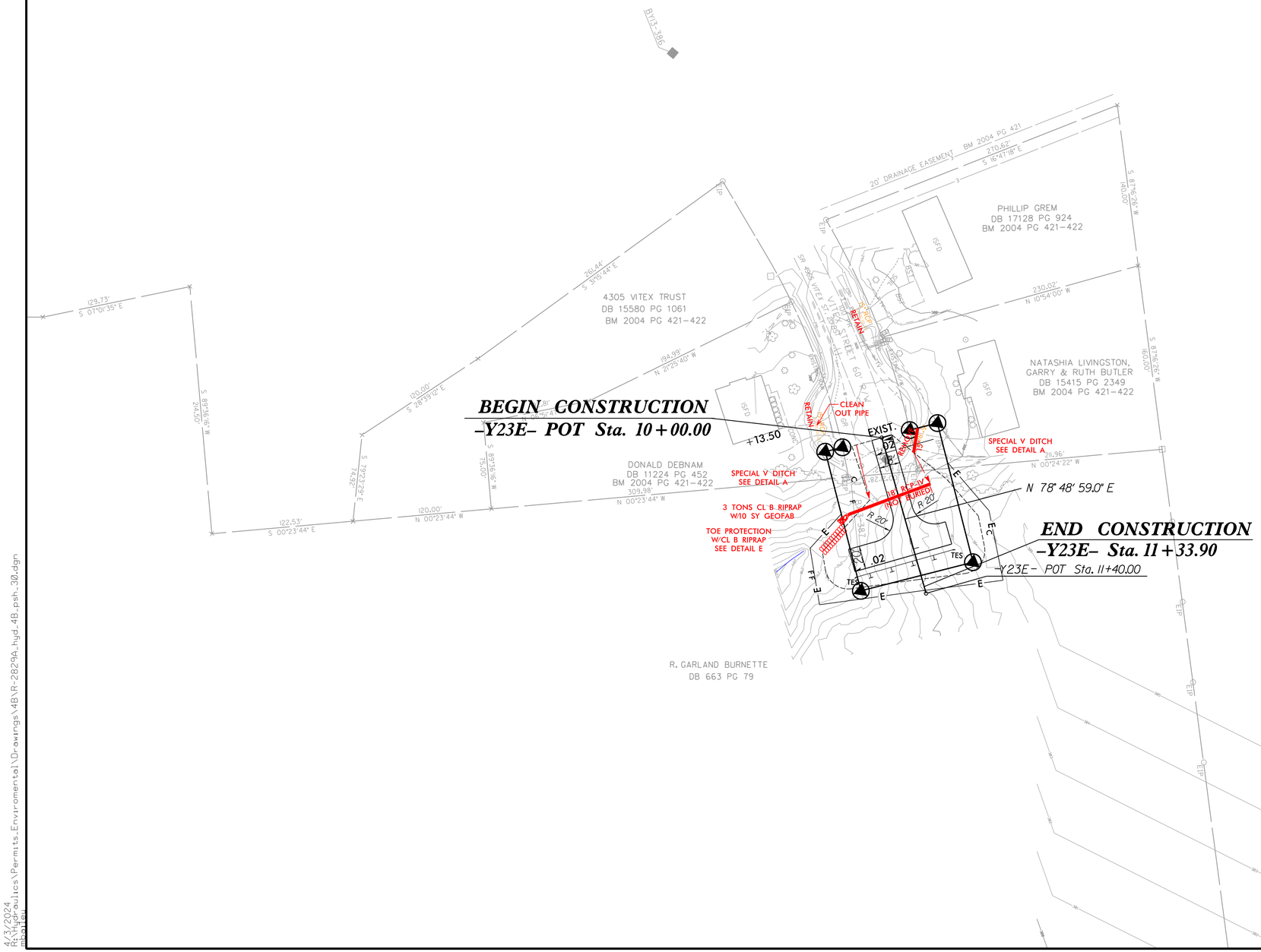
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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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FOR -Y23E- PROFILE SEE SHT. 64

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	31
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

NAD 83/NA 2011

ERNEST DeVANE & CLARLYNDA WILLIAMS-DeVANE
DB 13236 PG 2392
BM 2005 PG 470

LESLIE & JOSEPH WARD
DB 14699 PG 110
BM 2004 PG 1133

JENNY BIGGS
DB 17143 PG 1819
BM 1968 PG 187

GEORGE GANUS
WILL O-E-373
DB 5671 PG 892
BM 1993 PG 587

JOHN BOYKIN
DB 9205 PG 1540
BM 1968 PG 187

LAURENCIO & LEONARDA BENITEZ
DB 15673 PG 1971
BM 2005 PG 470

SDO INVESTMENTS, LLC.
DB 13592 PG 1766
BM 2004 PG 1133
BM 2005 PG 470

STEVEN C & GINA BORASKI
DB 17491 PG 2094
BM 1968 PG 187

BORASKI, STEVEN
BORASKI, GINA
DB 17491 PG 2094
BM 1968 PG 187

JERRY LENGER
DB 15481 PG 2560
BM 1968 PG 187

HEATHER YARBROUGH
DB 15029 PG 1449
BM 2012 PG 1388

KATIE S EDGERTON
WILL BK 18-E
DB 7722 PG 466
BM 1998 PG 173

STEVEN C & GINA BORASKI
DB 18233 PG 2434
BM 1968 PG 187

KENNETH E SMITH
WILL BK 12-E
PG 2455
DB 7150
PG 808
BM 1968
PG 187

HOMECRE-DO, INC
DB 17473 PG 775
BM 1968 PG 187

LILA SMITH
DB 6565 PG 860
BM 1968 PG 187

PAMELA BATEY BRIGHT
REVOCABLE LIVING TRUST
PAMELA BATEY BRIGHT TRUSTEE
DB 18034 PG 355
BM 1968 PG 187

-Y23K- POT Sta. 10+00.00

-Y23H- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y23H- POT STA. 10+50.00

-Y23H- PC Sta. 11+02.79

-Y23H- PT Sta. 12+05.14

-Y23AR- PT Sta. 14+38.83

-Y23AR- POC Sta. 12+97.86

-Y23FR- POT Sta. 10+00.00

-Y23AR- PC Sta. 12+81.50

BEGIN CONSTRUCTION
-Y23AR- POT Sta. 10+08.24

-Y23AR- POT Sta. 10+00.00 =
-Y23K- POT Sta. 13+03.08

-Y23AR- POT Sta. 16+12.55=
-Y23H- POT Sta. 12+30.19

-Y23FR- PC Sta. 14+24.92

END GRADE
BEGIN REMOVE/REPLACE 8" ABC
-Y23FR- PT STA. 14+20.00

MATCHLINE -Y23AR- STA. 17+00 SEE SHEET 27

MATCHLINE -Y23FR- STA. 15+00 SEE SHEET 26

SPECIAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R

SPECIAL 4' BASE DITCH SEE DETAIL AD

SP. 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R

SPECIAL 4' BASE DITCH W/CL I RIPRAP SEE DETAIL AC

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL AU

SPECIAL V DITCH SEE DETAIL A

LATERAL V DITCH SEE DETAIL U

SP. CUT DITCH SEE DETAIL A

SP. CUT DITCH SEE DETAIL A

SPECIAL CUT 4' SWALE SEE DETAIL O

LATERAL 4' BASE SWALE SEE DETAIL L

STANDARD 4' BASE DITCH W/CL I RIPRAP SEE DETAIL AK

DO NOT INSTALL TOE PROTECTION WITHIN 16' OF BZ 1 TRAVEL LANE

INLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL 33 TONS CL II RIPRAP W/62 SY GEOFAB

OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL 48 TONS CL II RIPRAP W/90 SY GEOFAB

LATERAL V DITCH W/CL B RIPRAP SEE DETAIL S

LATERAL 4' SWALE SEE DETAIL L

LATERAL V DITCH W/CL B RIPRAP SEE DETAIL S

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

WNM

SFJ

-Y23AR-	-Y23H-	-Y23FR-
PI Sta 13+61.52	PI Sta 11+54.69	PI Sta 15+47.10
Δ = 25° 45' 22.5" (LT)	Δ = 23° 27' 28.1" (LT)	Δ = 59° 12' 59.9" (LT)
D = 16° 22' 12.8"	D = 22° 55' 05.9"	D = 26° 38' 57.1"
L = 157.34'	L = 102.35'	L = 222.21'
T = 80.02'	T = 51.90'	T = 122.18'
R = 350.00'	R = 250.00'	R = 215.00'
SE = 0.04	SE = RC	SE = EXIST.
DS = 30 MPH	DS = STOP CONDITION	DS = 25 MPH

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR –Y23AR– PROFILE SEE SHT. 60
FOR –Y23FR– PROFILE SEE SHT. 63
FOR –Y23H– PROFILE SEE SHT. 64

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	32
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

NAD 83/NA 2011

-Y23BR-

PI Sta 15+52.59
△ = 34° 20' 41.4" (RT)
D = 6° 09' 39.0"
L = 557.47'
T = 287.39'
R = 930.00'
SE = 0.04
DS = 50 MPH

PI Sta 24+45.15
△ = 49° 40' 40.4" (LT)
D = 6° 09' 39.0"
L = 806.35'
T = 430.49'
R = 930.00'
SE = 0.04
DS = 50 MPH

-Y23CR-

PI Sta 14+49.90
△ = 6° 27' 34.7" (LT)
D = 3° 27' 06.1"
L = 187.14'
T = 93.67'
R = 1,659.93'
SE = EXIST.
DS = 30 MPH

PI Sta 21+66.10
△ = 53° 27' 49.2" (LT)
D = 22° 55' 05.9"
L = 233.28'
T = 125.91'
R = 250.00'
SE = 0.04
DS = 30 MPH

MATCHLINE -Y23BR- STA. 14+00 SEE SHEET 27

MATCHLINE -Y23BR- STA. 27+00 SEE SHEET 33

MATCHLINE -Y23CR- STA. 14+50 SEE SHEET 26

300' TAPER

SPECIAL V DITCH E SEE DETAIL A

-Y23BR- PT Sta. 18+22.67

N 52° 09' 48.9" E

-Y23BR- PC Sta. 20+14.59

SPECIAL V DITCH SEE DETAIL A

LATERAL V DITCH SEE DETAIL B

-Y23BR- POC Sta. 22+93.05=
-Y23CR- POT Sta. 23+50.40

5 TONS CL B RIPRAP W/14 SY GEOFAB

STANDARD 3' BASE DITCH SEE DETAIL I

SPECIAL CUT 4' SWALE SEE DETAIL O

LATERAL 4' BASE SWALE SEE DETAIL L

N 53° 35' 21.1" W

-Y23CR- PT Sta. 22+73.47

ADDITIONAL FILTRATION TO DISCUSS AT 4B

-Y23CR- PC Sta. 20+40.19

SPECIAL CUT 4' SWALE SEE DETAIL O

SPECIAL V DITCH SEE DETAIL A

2 TONS CL B RIPRAP W/7 SY GEOFAB

LATERAL 4' SWALE SEE DETAIL L

CONV. CB TO JBw/MH

2GIB-NSS

RAYNOR RD

N 0° 07' 31.9" W

END MILL & FILL
BEGIN GRADE
-Y23CR- PT Sta. 19+00.00

-Y23CR- PT Sta. 15+43.38

WIDENING,CURB & GUTTER AND SIDEWALK BY OTHERS

RETAIN SYSTEM INSTALLED BY OTHERS

RETAIN SYSTEM BY OTHERS

REMOVE

CLEMENTS FAMILY FARMS, LLC
DB 17341 PG 2345
BM 1972 PG 500

SALLE ALVAREZ & GABRIELA TORRES
DB 17032 PG 2311
BM 1972 PG 500

MOUNT HERMAN CHRISTIAN CHURCH
DB 2114 PG 401
DB 1709 PG 389
BM 1985 PG 1106

LINWOOD RHODES
WILL FB-F-3152
DB 10404 PG 759

TRUST OF ELMO WILLIAMS
DB 10404 PG 759
BM 1972 PG 500
BM 1984 PG 755

CLAYTON PROPERTIES GROUP INC
DB 18256 PG 2088
BM 1996 PG 300

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE
GRAVEL DRIVE
ALL OTHER DRIVES TO BE ASPHALT

FOR -Y23BR- PROFILE SEE SHTS. 60 THRU 61
FOR -Y23CR- PROFILE SEE SHT. 61

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	33
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

NAD 83/NA 2011

MATCHLINE -Y23BR- STA. 27+00 SEE SHEET 32

AQUA NORTH CAROLINA, INC.
DB 8538 PG 1806
DB 13547 PG 76
BM 1976 PG 452

LESLIE SOX
DB 8317 PG 151
BM 1975 PG 337

JEFFREY LITTMATH
DB 9472 PG 350
BM 1975 PG 337

CHRISTOPHER STEWART
DB 17165 PG 41
BM 1975 PG 337

MACK & MARCO PONGO
DB 13403 PG 2093
BM 1976 PG 452

DON & VIOLET MEDLIN
DB 2455 PG 132
BM 1976 PG 452

CECIL & EDNA STANCIL
DB 2405 PG 484
BM 1968 PG 196

NANCY EATMON
WEL-11-E-17
DB 2251 PG 99
BM 1968 PG 196

ELMO T WILLIAMS TRUST ALICE H WILLIAMS
DB 10404 PG 1591
BM 1996 PG 300

END CONSTRUCTION -Y23BR- POC Sta. 32+55.00

-Y23BR- PT Sta. 34+55.43

-Y23BR- PRC Sta. 28+21.02

RAYNOR RD

SR 2555 RAYNOR RD 24' BST

SPECIAL V DITCH W/PSRM SEE DETAIL AF

COLLAR AND EXTEND 24" RCP-III

RETAIN SYSTEM BY OTHERS

REMOVE

ADJ CB-F

CONV. CB TO JBw/MH

PUE

EXIST.

-Y23BR-

PI Sta 24+45.15	*PI Sta 31+38.24*
Δ = 49° 40' 40.4" (LT)	*Δ = 1° 15' 47.9" (RT)*
D = 6° 09' 39.0"	*D = 0° 11' 56.9"*
L = 806.35'	*L = 634.42'*
T = 430.49'	*T = 317.22'*
R = 930.00'	*R = 28,772.96'*
SE = 0.04	*SE = NC*
DS = 50 MPH	*DS = 50 MPH*

ALL DRIVEWAYS HAVE 16' WIDTH AND 10' RADIUS UNLESS OTHERWISE NOTED.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR -Y23BR- PROFILE SEE SHT. 61

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	34
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

MATCHLINE -Y24R- STA. 24+00
SEE SHEET 35

STEC

SEVENTY EAST ASSOCIATES, LLC.
DB 5999 PG 271
BM 1987 PG 1210

CHRISTOPHER DANIELS
DB 10500 PG 520
BM 2001 PG 1059

DAVID HAWLEY
DB 16358 PG 625
BM 2001 PG 1059

R. CARLAND BURNETTE
DB 918 PG 248
BM 2000 PG 372
BM 2021 PG 1204

N 87°08'26" E
1053.06'

S 87°22'44" E
1415.10'

N 87°22'49" E
1280.00'

NAD 83/NA 2011

BEGIN CONSTRUCTION
–Y24R– POT Sta. 14+00.00

WGW

WGV(1)

SFY

SFZ(1)

RCBC INV=271.7
INV IN= 272.7
72" W.S. PIPE INV= 273.7
72" W.S. STREAM INV=274.7
CULVERT INLET STABILIZATION
58 TONS CL II RIPRAP
W/86 SY GEOFAB

TOE PROTECTION
W/CL B RIPRAP
SEE DETAIL V

DRAINAGE AREA=2.9 AC
BUFFER TREATMENT
PROVIDED=140 FT
SURVEY TO
BE UPDATED
IN THIS AREA

2 TONS CL B RIPRAP
W/7 SY GEOFAB

RETAIN SYSTEM

TOE PROTECTION
W/CL B RIPRAP
SEE DETAIL E

SPECIAL V DITCH
SEE DETAIL A

LATERAL 4' BASE DITCH
W/CL I RIPRAP
SEE DETAIL N

LATERAL
4' BASE SWALE
SEE DETAIL L

SP. DET. HW

EXTEND
EXISTING
5'x6'

2GIB-WSF

15" CSP
W/ELBOWS

TRENCHLESS INSTALLATION

REMOVE 60'
EXIST 15"

PLUG & FILL
W/FF

TB JB wMH

PROP. SBG

CAT-1

REMOVE DI

2GIB-WSS

RETAIN

US 70

-Y24R-

200' TAPER

US 70 BUS EB 3F BST

US 70 BUS WB 3F BST

CONTRACTOR TO REMOVE
GUIDERAIL BEYOND CGAU

SILT FENCE

CONC PAVED DITCH

CONC RIPRAP DITCH

GREU TL-3

36.00' TYP.

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

FOR –Y24R– PROFILE SEE SHT. 65

FOR DITCH DETAILS SEE SHEET 2D–1

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mbullard

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	35
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

WGX(2)

SGI

SGA

NAD 83/NA 2011

SEVENTY EAST ASSOCIATES, LLC.
DB 5999 PG 271
BM 1987 PG 1210

BUFFALOE MINI STORAGE, LLC.
DB 13348 PG 2701
BM 2004 PG 1225
BM 2008 PG 1586

BUFFALOE MINI STORAGE, LLC.
DB 13348 PG 2701
BM 2007 PG 1429
BM 2008 PG 1586

BUFFALOE ENTERPRISES, LLC.
DB 13348 PG 2709
BM 2008 PG 1586
BM 1989 PG 1202
BM 1998 PG 1927

BUFFALOE ENTERPRISES, LLC.
DB 13348 PG 2709
BM 1989 PG 1202
BM 2008 PG 1586

-Y24B- POT Sta. 11+99.20

END CONSTRUCTION
-Y24B- POT Sta. 11+50.00

-Y24B- PT Sta. 11+07.55
-Y24B- PC Sta. 10+56.18
-Y24B- POT Sta. 10+00.00 = -Y24A- POC Sta. 11+57.70
-Y24A- PRC Sta. 12+65.83
-Y24A- PT Sta. 15+57.04

END WW FENCE & C/A, +74.82 , EX.R/W

MATCHLINE -Y24R- STA. 24+00 SEE SHEET 34

MATCHLINE -Y24R- STA. 36+50 SEE SHEET 17

US 70

-Y24R-

-Y24A- POT Sta. 10+00.00 = -Y24R- POT Sta. 24+88.03
-Y24A- PC Sta. 10+76.39

END WW FENCE & C/A, +00 , EX.R/W

700' MEDIAN TAPER

1000' MEDIAN TAPER

PROP. EXP. GUTTER

PROP. MONO. ISLAND

PROP. SIGN

PROP. SBG

PROP. SBC

SPECIAL V DITCH W/CL B RIPRAP SEE DETAIL Y

SPECIAL V DITCH W/CL I RIPRAP SEE DETAIL AB

SPECIAL V DITCH SEE DETAIL A

SPECIAL 4' BASE SWALE SEE DETAIL O

LATERAL 4' BASE SWALE SEE DETAIL BF

LATERAL 4' BASE SWALE SEE DETAIL L

2 TONS CL B RIPRAP W/7 SY GEOFAB

6 TONS CL B RIPRAP W/21 SY GEOFAB

5 TONS CL B RIPRAP W/10 SY GEOFAB

CULVERT INLET STABILIZATION 52 TONS CL II RIPRAP W/89 SY GEOFAB

CULVERT OUTLET STABILIZATION 241 TONS CL II RIPRAP W/294 SY GEOFAB

RCBC INV=263.6
INV IN= 264.6
72" W.S. PIPE INV= 265.6
72" W.S. STREAM INV=266.6

RCBC INV=261.2
INV OUT= 262.2
72" W.S. PIPE INV= 263.2
72" W.S. STREAM INV=264.2

DRAINAGE AREA=3.4 AC
BUFFER TREATMENT PROVIDED=220 FT

15" CSH W/ ELBOWS

SP. DET. HW

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

REMOVE DI

REMOVE JB

EXTEND

PROP. MONO. ISLAND

PROP. SIGN

CAT-1

PARTLO GARNER, LLC.
DB 12829 PG 133
BM 1964 PG 241

R. GARLAND BURNETTE
DB 918 PG 248
BM 2000 PG 372
BM 2021 PG 1204

W. H. & THELMA MEDLIN
DB 1626 PG 227
BM 1964 PG 241

NC DEPARTMENT OF TRANSPORTATION
DB 18045 PG 2486
BM 1964 PG 241

* STOP CONDITION

-Y24A-		-Y24B-
PI Sta 12+15.40	PI Sta 14+12.72	PI Sta 10+82.45
Δ = 108° 32' 20.2" (RT)	Δ = 18° 32' 20.2" (LT)	Δ = 29° 25' 50.5" (RT)
D = 57° 17' 44.8"	D = 6° 21' 58.3"	D = 57° 17' 44.8"
L = 189.44'	L = 291.21'	L = 51.37'
T = 139.01'	T = 146.89'	T = 26.26'
R = 100.00'	R = 900.00'	R = 100.00'
SE = 0.04	SE = 0.03	SE = 0.04
DS = 20 MPH*	DS = 30 MPH	DS = 20 MPH

BM9 ELEVATION = 271.69
N 703,944 E 2,136,458
BY3 STATION 20+33.00
OFFSET 429.4' RIGHT
BENCHTIE IN 29" SYCAMORE

CONCRETE DRIVE
GRAVEL DRIVE
ALL OTHER DRIVES TO BE ASPHALT

FOR -Y24A- PROFILE SEE SHT. 72
FOR -Y24B- PROFILE SEE SHT. 72
FOR -Y24R- PROFILE SEE SHT. 65 & 66
FOR DITCH DETAILS SEE SHEET 2D-1

STV Engineers, Inc.
P: (704) 372-1885
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	36
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

NAD 83/NA 2011

MATCHLINE -Y24R- STA. 51+50 SEE SHEET 17

MATCHLINE -Y24CR- STA. 14+00 SEE SHEET 17

SEEDLING TECHNOLOGY CENTER, LLC.
DB 14186 PG 171
DB 4242 PG 1301
BM 1988 PG 1506

SEEDLING TECHNOLOGY CENTER, LLC.
DB 16424 PG 2044
BM 2006 PG 2057

ENTIRE AREA UNDER CONSTRUCTION

GARNER INDUSTRIAL II, LLC
DB 18548 PG 507
BM 2021 PG 966

BROOKIE HENDERSON & SAMMY STRICKLAND
DB 4755 PG 661
WILL 04-E-48

BROOKIE HENDERSON & SAMMY STRICKLAND
DB 1761 PG 426

TERRY MARTIN JONES
DB 17439 PG 1995
BM 1958 PG 4

STORE MASTER FUNDING II, LLC.
DB 15710 PG 1372
BM 1958 PG 4
BM 2016 PG 1800

END CONSTRUCTION
-Y24D- POC Sta. 12+11.00

-Y24E- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y24E- POT Sta. 10+03.00

-Y24E- POT Sta. 13+41.57 =
-Y24D- POT Sta. 11+35.36

-Y24D- POT Sta. 13+95.18

-Y24D- PT Sta. 13+51.87

END CONSTRUCTION
-Y24CR- POT Sta. 22+65.64

-Y24CR- POT Sta. 23+08.91
-Y24G- POT Sta. 11+04.80

-Y24CR- PT Sta. 22+14.82

-Y24D- POT Sta. 10+00.00 =
-Y24CR- POT Sta. 18+85.17

-Y24G- POT Sta. 10+00.00

-Y24G- PC Sta. 11+62.95

BEGIN CONSTRUCTION
-Y24G- POC Sta. 12+00.00

-Y24G- PT Sta. 12+25.42

-Y24G- POT Sta. 13+74.80 =
-Y24R- POT Sta. 60+72.54

-Y24F- POT Sta. 13+53.03 =
-Y24R- POT Sta. 60+73.87

-Y24R- PT Sta. 62+88.02

-Y24CR- PC Sta. 17+60.88

-Y24CR- PT Sta. 17+19.52

-Y24CR- PRC Sta. 16+20.38

-Y24CR- PT Sta. 18+73.14

-Y24CR- PC Sta. 20+17.05

-Y24CR- Sta. 21+87.46

PC Sta. 11+74.40

-Y24R- PC Sta. 17+60.50

-Y24R- PT Sta. 17+39.64

-Y24R- PRC Sta. 16+70.28

-Y24R- PT Sta. 16+50.00

-Y24R- PC Sta. 16+29.72

-Y24R- POT Sta. 16+00.00

-Y24R- POC Sta. 15+80.00

-Y24R- PI Sta. 15+00.00

-Y24R- PI Sta. 13+10.21

-Y24R- PI Sta. 11+95.05

-Y24R- PI Sta. 11+00.00

-Y24R- PI Sta. 10+00.00

-Y24R- PI Sta. 8+00.00

-Y24R- PI Sta. 6+00.00

-Y24R- PI Sta. 4+00.00

-Y24R- PI Sta. 2+00.00

-Y24R- PI Sta. 0+00.00

-Y24R- PI Sta. 50+13.11

-Y24R- PI Sta. 62+88.02

-Y24R- PI Sta. 60+72.54

-Y24R- PI Sta. 60+73.87

-Y24R- PI Sta. 62+75.00

-Y24R- PI Sta. 64+61.43

-Y24R- PI Sta. 66+47.86

-Y24R- PI Sta. 68+34.29

-Y24R- PI Sta. 70+20.72

-Y24R- PI Sta. 72+07.15

-Y24R- PI Sta. 73+93.58

-Y24R- PI Sta. 75+80.01

-Y24R- PI Sta. 77+66.44

-Y24R- PI Sta. 79+52.87

-Y24R- PI Sta. 81+39.30

-Y24R- PI Sta. 83+25.73

-Y24R- PI Sta. 85+12.16

-Y24R- PI Sta. 86+98.59

-Y24R- PI Sta. 88+85.02

-Y24R- PI Sta. 90+71.45

-Y24R- PI Sta. 92+57.88

-Y24R- PI Sta. 94+44.31

-Y24R- PI Sta. 96+30.74

-Y24R- PI Sta. 98+17.17

-Y24R- PI Sta. 100+03.60

-Y24R- PI Sta. 101+90.03

-Y24R- PI Sta. 103+76.46

-Y24R- PI Sta. 105+62.89

-Y24R- PI Sta. 107+49.32

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-Y24R- PI Sta. 114+95.04

-Y24R- PI Sta. 116+81.47

-Y24R- PI Sta. 118+67.90

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-Y24R- PI Sta. 122+40.76

-Y24R- PI Sta. 124+27.19

-Y24R- PI Sta. 126+13.62

-Y24R- PI Sta. 128+00.05

-Y24R- PI Sta. 129+86.48

-Y24R- PI Sta. 131+72.91

-Y24R- PI Sta. 133+59.34

-Y24R- PI Sta. 135+45.77

-Y24R- PI Sta. 137+32.20

-Y24R- PI Sta. 139+18.63

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-Y24R- PI Sta. 142+91.49

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-Y24R- PI Sta. 146+64.35

-Y24R- PI Sta. 148+50.78

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-Y24R- PI Sta. 152+23.64

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-Y24R- PI Sta. 157+82.93

-Y24R- PI Sta. 159+69.36

-Y24R- PI Sta. 161+55.79

-Y24R- PI Sta. 163+42.22

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-Y24R- PI Sta. 169+01.51

-Y24R- PI Sta. 170+87.94

-Y24R- PI Sta. 172+74.37

-Y24R- PI Sta. 174+60.80

-Y24R- PI Sta. 176+47.23

-Y24R- PI Sta. 178+33.66

-Y24R- PI Sta. 180+20.09

-Y24R- PI Sta. 182+06.52

-Y24R- PI Sta. 183+92.95

-Y24R- PI Sta. 185+79.38

-Y24R- PI Sta. 187+65.81

-Y24R- PI Sta. 189+52.24

-Y24R- PI Sta. 191+38.67

-Y24R- PI Sta. 193+25.10

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-Y24R- PI Sta. 196+97.96

-Y24R- PI Sta. 198+84.39

-Y24R- PI Sta. 200+70.82

-Y24R- PI Sta. 202+57.25

-Y24R- PI Sta. 204+43.68

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-Y24R- PI Sta. 416+96.70

-Y24R- PI Sta. 418+83.13

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-Y24R- PI Sta. 433+74.57

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-Y24R- PI Sta. 553+06.09

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-Y24R- PI Sta. 556+78.95

-Y24R- PI Sta. 558+65.38

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-Y24R- PI Sta. 562+38.24

-Y24R- PI Sta. 564+24.67

-Y24R- PI Sta. 566+11.10

-Y24R- PI Sta. 567+97.53

-Y24R- PI Sta. 569+83.96

-Y24R- PI Sta. 571+70.39

-Y24R- PI Sta. 573+56.82

-Y24R- PI Sta. 575+43.25

-Y24R- PI Sta. 577+29.68

-Y24R- PI Sta. 579+16.11

-Y24R- PI Sta. 581+02.54

-Y24R- PI Sta. 582+88.97

-Y24R- PI Sta. 584+75.40

-Y24R- PI Sta. 586+61.83

-Y24R- PI Sta. 588+48.26

-Y24R- PI Sta. 590+34.69

-Y24R- PI Sta. 592+21.12

-Y24R- PI Sta. 594+07.55

-Y24R- PI Sta. 595+93.98

-Y24R- PI Sta. 597+80.41

-Y24R- PI Sta. 599+66.84

-Y24R- PI Sta. 601+53.27

-Y24R- PI Sta. 603+39.70

-Y24R- PI Sta. 605+26.13

-Y24R- PI Sta. 607+12.56

-Y24R- PI Sta. 608+98.99

-Y24R- PI Sta. 610+85.42

-Y24R- PI Sta. 612+71.85

-Y24R- PI Sta. 614+58.28

-Y24R- PI Sta. 616+44.71

-Y24R- PI Sta. 618+31.14

-Y24R- PI Sta. 620+17.57

-Y24R- PI Sta. 622+04.00

-Y24R- PI Sta. 623+90.43

-Y24R- PI Sta. 625+76.86

-Y24R- PI Sta. 627+63.29

-Y24R- PI Sta. 629+49.72

-Y24R- PI Sta. 631+36.15

-Y24R- PI Sta. 633+22.58

-Y24R- PI Sta. 635+09.01

-Y24R- PI Sta. 636+95.44

-Y24R- PI Sta. 638+81.87

-Y24R- PI Sta. 640+68.30

-Y24R- PI Sta. 642+54.73

-Y24R- PI Sta. 644+41.16

-Y24R- PI Sta. 646+27.59

-Y24R- PI Sta. 648+14.02

-Y24R- PI Sta. 650+00.45

-Y24R- PI Sta. 651+86.88

-Y24R- PI Sta. 653+73.31

-Y24R- PI Sta. 655+59.74

-Y24R- PI Sta. 657+46.17

-Y24R- PI Sta. 659+32.60

-Y24R- PI Sta. 661+19.03

-Y24R- PI Sta. 663+05.46

-Y24R- PI Sta. 664+91.89

-Y24R- PI Sta. 666+78.32

-Y24R- PI Sta. 668+64.75

-Y24R- PI Sta. 670+51.18

-Y24R- PI Sta. 672+37.61

-Y24R- PI Sta. 674+24.04

-Y24R- PI Sta. 676+10.47

-Y24R- PI Sta. 677+96.90

-Y24R- PI Sta. 679+83.33

-Y24R- PI Sta. 681+69.76

-Y24R- PI Sta. 683+56.19

-Y24R- PI Sta. 685+42.62

-Y24R- PI Sta. 687+29.05

-Y24R- PI Sta. 689+15.48

-Y24R- PI Sta. 691+01.91

-Y24R- PI Sta. 692+88.34

-Y24R- PI Sta. 694+74.77

-Y24R- PI Sta. 696+61.20

-Y24R- PI Sta. 698+47.63

-Y24R- PI Sta. 700+34.06

-Y24R- PI Sta. 702+20.49

-Y24R- PI Sta. 704+06.92

-Y24R- PI Sta. 705+93.35

-Y24R- PI Sta. 707+79.78

-Y24R- PI Sta. 709+66.21

-Y24R- PI Sta. 711+52.64

-Y24R- PI Sta. 713+39.07

-Y24R- PI Sta. 715+25.50

-Y24R- PI Sta. 717+11.93

-Y24R- PI Sta. 718+98.36

-Y24R- PI Sta. 720+84.79

-Y24R- PI Sta. 722+71.22

-Y24R- PI Sta. 724+57.65

-Y24R- PI Sta. 726+44.08

-Y24R- PI Sta. 728+30.51

-Y24R- PI Sta. 730+16.94

-Y24R- PI Sta. 732+03.37

-Y24R- PI Sta. 733+89.80

-Y24R- PI Sta. 735+76.23

-Y24R- PI Sta. 737+62.66

-Y24R- PI Sta. 739+49.09

-Y24R- PI Sta. 741+35.52

-Y24R- PI Sta. 743+21.95

-Y24R- PI Sta. 745+08.38

-Y24R- PI Sta. 746+94.81

-Y24R- PI Sta. 748+81.24

-Y24R- PI Sta. 750+67.67

-Y24R- PI Sta. 752+54.10

-Y24R- PI Sta. 754+40.53

-Y24R- PI Sta. 756+26.96

-Y24R- PI Sta. 758+13.39

-Y24R- PI Sta. 759+99.82

-Y24R- PI Sta. 761+86.25

-Y24R- PI Sta. 763+72.68

-Y24R- PI Sta. 765+59.11

-Y24R- PI Sta. 767+45.54

-Y24R- PI Sta. 769+31.97

-Y24R- PI Sta. 771+18.40

-Y24R- PI Sta. 773+04.83

-Y24R- PI Sta. 774+91.26

-Y24R- PI Sta. 776+77.69

-Y24R- PI Sta. 778+64.12

-Y24R- PI Sta. 780+50.55

-Y24R- PI Sta. 782+36.98

-Y24R- PI Sta. 784+23.41

-Y24R- PI Sta. 786+09.84

-Y24R- PI Sta. 787+96.27

-Y24R- PI Sta. 789+82.70

-Y24R- PI Sta. 791+69.13

-Y24R- PI Sta. 793+55.56

-Y24R- PI Sta. 795+41.99

-Y24R- PI Sta. 797+28.42

-Y24R- PI Sta. 799+14.85

-Y24R- PI Sta. 801+01.28

-Y24R- PI Sta. 802+87.71

-Y24R- PI Sta. 804+74.14

-Y24R- PI Sta. 806+60.57

-Y24R- PI Sta. 808+47.00

-Y24R- PI Sta. 810+33.43

-Y24R- PI Sta. 812+19.86

-Y24R- PI Sta. 814+06.29

-Y24R- PI Sta. 815+92.72

-Y24R- PI Sta. 817+79.15

-Y24R- PI Sta. 819+65.58

-Y24R- PI Sta. 821+52.01

-Y24R- PI Sta. 823+38.44

-Y24R- PI Sta. 825+24.87

-Y24R- PI Sta. 827+11.30

-Y24R- PI Sta. 828+97.73

-Y24R- PI Sta. 830+84.16

-Y24R- PI Sta. 832+70.59

-Y24R- PI Sta. 834+57.02

-Y24R- PI Sta. 836+43.45

-Y24R- PI Sta. 838+29.88

-Y24R- PI Sta. 840+16.31

-Y24R- PI Sta. 842+02.74

-Y24R- PI Sta. 843+89.17

-Y24R- PI Sta. 845+75.60

-Y24R- PI Sta. 847+62.03

-Y24R- PI Sta. 849+48.46

-Y24R- PI Sta. 851+34.89

-Y24R- PI Sta. 853+21.32

-Y24R- PI Sta. 855+07.75

-Y24R- PI Sta. 856+94.18

-Y24R- PI Sta. 858+80.61

-Y24R- PI Sta. 860+67.04

-Y24R- PI Sta. 862+53.47

-Y24R- PI Sta. 864+39.90

-Y24R- PI Sta. 866+26.33

-Y24R- PI Sta. 868+12.76

-Y24R- PI Sta. 869+99.19

-Y24R- PI Sta. 871+85.62

-Y24R- PI Sta. 873+72.05

-Y24R- PI Sta. 875+58.48

-Y24R- PI Sta. 877+44.91

-Y24R- PI Sta. 879+31.34

-Y24R- PI Sta. 881+17.77

-Y24R- PI Sta. 883+04.20

-Y24R- PI Sta. 884+90.63

-Y24R- PI Sta. 886+77.06

-Y24R- PI Sta. 888+63.49

-Y24R- PI Sta. 890+49.92

-Y24R- PI Sta. 892+36.35

-Y24R- PI Sta. 894+22.78

-Y24R- PI Sta. 896+09.21

-Y24R- PI Sta. 897+95.64

-Y24R- PI Sta. 899+82.07

-Y24R- PI Sta. 901+68.50

-Y24R- PI Sta. 903+54.93

-Y24R- PI Sta. 905+41.36

-Y24R- PI Sta. 907+27.79

-Y24R- PI Sta. 909+14.22

-Y24R- PI Sta. 911+00.65

-Y24R- PI Sta. 912+87.08

-Y24R- PI Sta. 914+73.51

-Y24R- PI Sta. 916+59.94

-Y24R- PI Sta. 918+46.37

-Y24R- PI Sta. 920+32.80

-Y24R- PI Sta. 922+19.23

-Y24R- PI Sta. 924+05.66

-Y24R- PI Sta. 925+92.09

-Y24R- PI Sta. 927+78.52

-Y24R- PI Sta. 929+64.95

-Y24R- PI Sta. 931+51.38

-Y24R- PI Sta. 933+37.81

-Y24R- PI Sta. 935+24.24

-Y24R- PI Sta. 937+10.67

-Y24R- PI Sta. 938+97.10

-Y24R- PI Sta. 940+83.53

-Y24R- PI Sta. 942+69.96

-Y24R- PI Sta. 944+56.39

-Y24R- PI Sta. 946+42.82

-Y24R- PI Sta. 948+29.25

-Y24R- PI Sta. 950+15.68

-Y24R- PI Sta. 952+02.11

-Y24R- PI Sta. 953+88.54

-Y24R- PI Sta. 955+74.97

-Y24R- PI Sta. 957+61.40

-Y24R- PI Sta. 959+47.83

-Y24R- PI Sta. 961+34.26

-Y24R- PI Sta. 963+20.69

-Y24R- PI Sta. 965+07.12

-Y24R- PI Sta. 966+93.55

-Y24R- PI Sta. 968+79.98

-Y24R- PI Sta. 970+66.41

-Y24R- PI Sta. 972+52.84

-Y24R- PI Sta. 974+39.27

-Y24R- PI Sta. 976+25.70

-Y24R- PI Sta. 978+12.13

-Y24R- PI Sta. 979+98.56

-Y24R- PI Sta. 981+84.99

-Y24R- PI Sta. 983+71.42

-Y24R- PI Sta. 985+57.85

-Y24R- PI Sta. 987+44.28

-Y24R- PI Sta. 989+30.71

-Y24R- PI Sta. 991+17.14

-Y24R- PI Sta. 993+03.57

-Y24R- PI Sta. 994+90.00

-Y24R- PI Sta. 996+76.43

-Y24R- PI Sta. 998+62.86

-Y24R- PI Sta. 1000+49.29

-Y24R- PI Sta. 1002+35.72

-Y24R- PI Sta. 1004+22.15

-Y24R- PI Sta. 1006+08.58

-Y24R- PI Sta. 1007+95.01

-Y24R- PI Sta. 1009+81.44

-Y24R- PI Sta. 1011+67.87

-Y24R- PI Sta. 1013+54.30

-Y24R- PI Sta. 1015+40.73

-Y24R- PI Sta. 1017+27.16

-Y24R- PI Sta. 1019+13.59

-Y24R- PI Sta. 1021+00.02

-Y24R- PI Sta. 1022+86.45

-Y24R- PI Sta. 1024+72.88

-Y24R- PI Sta. 1026+59.31

-Y24R- PI Sta. 1028+45.74

-Y24R- PI Sta. 1030+32.17

-Y24R- PI Sta. 1032+18.60

-Y24R- PI Sta. 1034+05.03

-Y24R- PI Sta. 1035+91.46

-Y24R- PI Sta. 1037+77.89

-Y24R- PI Sta. 1039+64.32

-Y24R- PI Sta. 1041+50.75

-Y24R- PI Sta. 1043+37.18

-Y24R- PI Sta. 1045+23.61

-Y24R- PI Sta. 1047+10.04

-Y24R- PI Sta. 1048+96.47

-Y24R- PI Sta. 1050+82.90

-Y24R- PI Sta. 1052+69.33

-Y24R- PI Sta. 1054+55.76

-Y24R- PI Sta. 1056+42.19

-Y24R- PI Sta. 1058+28.62

-Y24R- PI Sta. 1060+15.05

-Y24R- PI Sta. 1062+01.48

-Y24R- PI Sta. 1063+87.91

-Y24R- PI Sta. 1065+74.34

-Y24R- PI Sta. 1067+60.77

-Y24R- PI Sta. 1069+47.20

-Y24R- PI Sta. 1071+33.63

-Y24R- PI Sta. 1073+20.06

-Y24R- PI Sta. 1075+06.49

-Y24R- PI Sta. 1076+92.92

-Y24R- PI Sta. 1078+79.35

-Y24R- PI Sta. 1080+65.78

-Y24R- PI Sta. 1082+52.21

-Y24R- PI Sta. 1084+38.64

-Y24R- PI Sta. 1086+25.07

-Y24R- PI Sta. 1088+11.50

-Y24R- PI Sta. 1089+97.93

-Y24R- PI Sta. 1091+84.36

-Y24R- PI Sta. 1093+70.79

-Y24R- PI Sta. 1095+57.22

-Y24R- PI Sta. 1097+43.65

-Y24R- PI Sta. 1099+30.08

-Y24R- PI Sta. 1101+16.51

-Y24R- PI Sta. 1103+02.94

-Y24R- PI Sta. 1104+89.37

-Y24R- PI Sta. 1106+75.80

-Y24R- PI Sta. 1108+62.23

-Y24R- PI Sta. 1110+48.66

-Y24R- PI Sta. 1112+35.09

-Y24R- PI Sta. 1114+21.52

-Y24R- PI Sta. 1116+07.95

-Y24R- PI Sta. 1117+94.38

-Y24R- PI Sta. 1119+80.81

-Y24R- PI Sta. 1121+67.24

-Y24R- PI Sta. 1123+53.67

-Y24R- PI Sta. 1125+40.10

-Y24R- PI Sta. 1127+26.53

-Y24R- PI Sta. 1129+12.96

-Y24R- PI Sta. 1130+99.39

-Y24R- PI Sta. 1132+85.82

-Y24R- PI Sta. 1134+72.25

-Y24R- PI Sta. 1136+58.68

-Y24R- PI Sta. 1138+45.11

-Y24R- PI Sta. 1140+31.54

-Y24R- PI Sta. 1142+17.97

-Y24R- PI Sta. 1144+04.40

-Y24R- PI Sta. 1145+90.83

-Y24R- PI Sta. 1147+77.26

-Y24R- PI Sta. 1149+63.69

-Y24R- PI Sta. 1151+50.12

-Y24R- PI Sta. 1153+36.55

-Y24R- PI Sta. 1155+22.98

-Y24R- PI Sta. 1157+09.41

-Y24R- PI Sta. 1158+95.84

-Y24R- PI Sta. 1160+82.27

-Y24R- PI Sta. 1162+68.70

-Y24R- PI Sta. 1164+55.13

-Y24R- PI Sta. 1166+41.56

-Y24R- PI Sta. 1168+27.99

-Y24R- PI Sta. 1170+14.42

-Y24R- PI Sta. 1172+00.85

-Y24R- PI Sta. 1173+87.28

-Y24R- PI Sta. 1175+73.71

-Y24R- PI Sta. 1177+60.14

-Y24R- PI Sta. 1179+46.57

-Y24R- PI Sta. 1181+33.00

-Y24R- PI Sta. 1183+19.43

-Y24R- PI Sta. 1185+05.86

-Y24R- PI Sta. 1186+92.29

-Y24R- PI Sta. 1188+78.72

-Y24R- PI Sta. 1190+65.15

-Y24R- PI Sta. 1192+51.58

-Y24R- PI Sta. 1194+38.01

-Y24R- PI Sta. 1196+24.44

-Y24R- PI Sta. 1198+10.87

-Y24R- PI Sta. 1199+97.30

-Y24R- PI Sta. 1201+83.73

-Y24R- PI Sta. 1203+70.16

-Y24R- PI Sta. 1205+56.59

-Y24R- PI Sta. 1207+43.02

-Y24R- PI Sta. 1209+29.45

-Y24R- PI Sta. 1211+15.88

-Y24R- PI Sta. 1213+02.31

-Y24R- PI Sta. 1214+88.74

-Y24R- PI Sta. 1216+75.17

-Y24R- PI Sta. 1218+61.60

-Y24R- PI Sta. 1220+48.03

-Y24R- PI Sta. 1222+34.46

-Y24R- PI Sta. 1224+20.89

-Y24R- PI Sta. 1226+07.32

-Y24R- PI Sta. 1227+93.75

-Y24R- PI Sta. 1229+80.18

-Y24R- PI Sta. 1231+66.61

-Y24R- PI Sta. 1233+53.04

-Y24R- PI Sta. 1235+39.47

-Y24R- PI Sta. 1237+25.90

-Y24R- PI Sta. 1239+12.33

-Y24R- PI Sta. 1240+98.76

-Y24R- PI Sta. 1242+85.19

-Y24R- PI Sta. 1244+71.62

-Y24R- PI Sta. 1246+58.05

-Y24R- PI Sta. 1248+44.48

-Y24R- PI Sta. 1250+30.91

-Y24R- PI Sta. 1252+17.34

-Y24R- PI Sta. 1254+03.77

-Y24R- PI Sta. 1255+90.20

-Y24R- PI Sta. 1257+76.63

-Y24R- PI Sta. 1259+63.06

-Y24R- PI Sta. 1261+49.49

-Y24R- PI Sta. 1263+35.92

-Y24R- PI Sta. 1265+22.35

-Y24R- PI Sta. 1267+08.78

-Y24R- PI Sta. 1268+95.21

-Y24R- PI Sta. 1270+81.64

-Y24R- PI Sta. 1272+68.07

-Y24R- PI Sta. 1274+54.50

-Y24R- PI Sta. 1276+40.93

-Y24R- PI Sta. 1278+27.36

-Y24R- PI Sta. 1280+13.79

-Y24R- PI Sta. 1281+99.22

-Y24R- PI Sta. 1283+85.65

-Y24R- PI Sta. 1285+72.08

-Y24R- PI Sta. 1287+58.51

-Y24R- PI Sta. 1289+44.94

-Y24R- PI Sta. 1291+31.37

-Y24R- PI Sta. 1293+17.80

-Y24R- PI Sta. 1295+04.23

-Y24R- PI Sta. 1296+90.66

-Y24R- PI Sta. 1298+77.09

-Y24R- PI Sta. 1300+63.52

-Y24R- PI Sta. 1302+49.95

-Y24R- PI Sta. 1304+36.38

-Y24R- PI Sta. 1306+22.81

-Y24R- PI Sta. 1308+09.24

-Y24R- PI Sta. 1309+95.67

-Y24R- PI Sta. 1311+82.10

-Y24R- PI Sta. 1313+68.53

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	36A
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

-Y26R-
PI Sta 17+00.21
△ = 18° 53' 37.2" (RT)
D = 3° 49' 11.0"
L = 494.63'
T = 249.58'
R = 1,500.00'
SE = 0.04
DS = 50 MPH

-Y26-SRI-
PI Sta 14+14.14
△ = 71° 16' 19.7" (LT)
D = 57° 17' 44.8"
L = 124.39'
T = 71.69'
R = 100.00'
SE = 0.04
DS = 20 MPH *

PI Sta 12+67.23
△ = 43° 56' 17.5" (LT)
D = 57° 17' 44.8"
L = 76.69'
T = 40.34'
R = 100.00'
SE = 0.02
DS = 20 MPH *

* STOP CONDITION

NAD 83/NA 2011

BOBBY B GRADY
PC 6240 PG 281
BM 1994 PG 1040
BM 1994 PG 1211

JANET P STORMS & LINDA S POWELL
DB 16469 PG 635

JANET P HINTON
DB 6286 PG 659
BM 1994 PG 1211

JANET P STORMS & LINDA S POWELL
DB 16469 PG 635

BEGIN CONSTRUCTION
-Y26R- POT Sta. 13+38.63

-Y26R- PC Sta. 14+50.63

-Y26RSRI- PC Sta. 13+42.45

-Y26RSRI- POT Sta. 14+91.21 =
-Y26R- POT Sta. 19+84.07

-Y26RSRI- PT Sta. 14+66.85

PT Sta. 13+03.58

-Y26R- POT Sta. 10+00.00

-Y25- POT Sta. 10+00.00

-Y26R- PT Sta. 19+45.24

SAAL
SAAK
SGA
WAAJ
WHD
WAAK
SGA
SGD

EAST GARNER ROAD
SR 1004 (EAST GARNER RD * 20' BSW)

S 64° 15' 31.8" E

S 44° 38' 05.4" W

S 45° 21' 54.6" E

N 64° 05' 34.9" W

POND WSE=304?

EDGE OF AUBURN LLC
DB 10839 PG 2259

La SANGRE De JESUCRISTO
DB 17526 PG 88

La SANGRE De JESUCRISTO
DB 17526 PG 88
BM 1988 PG 1678

JANET P BOBBY GERALD STORMS
DB 14856 PG 822
BM 2000 PG 1438

JEFFREY P CATES & NANSE S CATES
DB 1061 PG 476
WILL BK 11-E PG 1444

NC RAILROAD COMPANY
DB 139 PG 529

NC RAILROAD COMPANY
DB 9875 PG 2095
BM 1973 PG 9

NC RAILROAD COMPANY
DB 9875 PG 2554
BM 2000 PG 2274

STANDARD 4' BASE DITCH W/CL I RIP RAP SEE DETAIL AK

SPECIAL CUT DITCH SEE DETAIL A

CULVERT INLET STABILIZATION 39 TONS CL II RIPRAP W/73 SY GEOFAB

RCBC INV = 281.5
INV IN = 282.5

SURVEY TO BE UPDATED IN THIS AREA

GRADE TO DRAIN

REMOVE

TB 2GIB-NSF

2GIB-NSS

PROP SBG

15" CSP W/ELBOWS

1 TONS CL B RIP RAP W/5 SY GEOFAB

SAG W/5 SY GEOFAB

-Y26R- Sta.18+09.66

TOE PROTECTION W/CL B RIPRAP SEE DETAIL V

RCBC INV=279.7
INV IN= 280.7

CULVERT OUTLET STABILIZATION 76 TONS CL II RIPRAP W/118 SY GEOFAB

48 TONS CL II RIPRAP W/98 SY GEOFAB OUTLET CHANNEL STABILIZATION W/CL II RIPRAP SEE DETAIL AL

TOE PROTECTION W/CL B RIPRAP SEE DETAIL E

SPECIAL CUT DITCH SEE DETAIL A
2 TONS CL B RIP RAP W/7 SY GEOFAB

17.00' TYP.

100' TAPER LT & RT

PROP GRAVEL DRIVE (TYP.)

RCBC SHOWN (C1000) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

-FUTTRK2-
-Y25- -TRK1-
-TRK2-
-FUTTRK1-

MATCHLINE -Y26R-STA. 22+00 SEE SHEET 18

MATCHLINE -Y25- STA. 15+00 SEE SHEET 18

CONCRETE DRIVE
GRAVEL DRIVE
ALL OTHER DRIVES TO BE ASPHALT
PAVEMENT REMOVAL

FOR -Y26R- PROFILE SEE SHT. 75
FOR -Y26_DRW1- PROFILE SEE SHT. 76
FOR DITCH DETAILS SEE SHEET 2D-1

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Raleigh, North Carolina 27615-3960
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Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

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mbullard

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	36B
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

MATCHLINE -Y26R-SR2- STA. 12+00 SEE SHEET 18

MATCHLINE -Y26R- STA. 31+50 SEE SHEET 18

MATCHLINE -Y25- STA. 24+30 SEE SHEET 18

-Y26R-

PI Sta 28+10.86
△ = 48° 04' 31.8" (LT)
D = 6° 11' 14.8"
L = 776.98'
T = 413.01'
R = 926.00'
SE = 0.04
DS = 50 MPH

PI Sta 34+89.06
△ = 29° 20' 51.6" (RT)
D = 4° 46' 28.7"
L = 614.66'
T = 314.23'
R = 1,200.00'
SE = 0.04
DS = 50 MPH

-Y26-SR2-

PI Sta 13+87.94
△ = 69° 22' 12.6" (RT)
D = 57° 17' 44.8"
L = 121.07'
T = 69.20'
R = 100.00'
SE = 0.04
DS = 20 MPH *

* STOP CONDITION

NAD 83/NA 2011

WHC

SGD

-Y26RSR2- PC Sta. 13+18.74

-Y26RSR2- PT Sta. 14+39.81

POND WSE=324.8'

LAURA L WATTS & BARBARA W GAUL DB 16337 PG 463

-Y26R- PT Sta. 37+89.48

-Y26R- POT Sta. 42+25.00

END CONSTRUCTION -Y26R- POT Sta. 39+21.00

PAMELA R & CARLOS BONILLA BM 1980 PG 901 DB 3915 PG 76

COATS-MELTON LLC DB 18658 PG 747 BM 1980 PG 901

SP. LATERAL V DITCH SEE DETAIL AT

35+00

40+00

RETAIN

18" RCP REMOVE

24.00' TYP.

17.00' TYP.

S 64° 05' 34.9" E

-Y26RSR2-

-Y26R-

EAST GARNER ROAD

SR 1004 E GARNER RD 21' BST

SP. CUT 4' BASE DITCH SEE DETAIL AD

100' TAPER LT & RT

CREST -Y26RSR2- Sta.14+25.93

LATERAL 4' BASE DITCH SEE DETAIL C

-Y26RSR2- POT Sta.14+52.83 = -Y26R- POC Sta. 33+57.41

S 5° 16' 37.7" W

-Y26R- PRC Sta. 31+74.83

PATRICIA WILLIAMS DB 3500 PG 674 BM 1984 PG 1738 WILL BK 09-E PG 2997

SAG -Y26R- Sta. 32+43.14

JOE L & JOEATTA PRICE JR DB 7105 PG 179 BM 1984 PG 1838

LAURA L WATTS & BARBARA W GAUL DB 16337 PG 463

BM10 ELEVATION = 345.41'
N 705,278 E 2,139,241
BY4 STATION 33+45.00
OFFSET 248.1' RIGHT
BENCHTIE IN 12" PINE

AGUSTIN & ESMERALDA JAIMES DB 18882 PG 2321

MOUNT MORIAH BAPTIST CHURCH DB 17717 PG 727

MOUNT MORIAH BAPTIST CHURCH DB 1542 PG 28

PSC OF NORTH CAROLINA, INC DB 17138 PG 1208

NC RAILROAD COMPANY DB 38 PG 317?

NORFOLK SOUTHERN RR

-FUTTRK2- -TRK1- -TRK2- -FUTTRK1- -Y25-

S 62° 12' 22.9" E

25+00

30+00

-Y25- POT Sta. 30+21.59

CONCRETE DRIVE

GRAVEL DRIVE

ALL OTHER DRIVES TO BE ASPHALT

PAVEMENT REMOVAL

FOR -Y26R- PROFILE SEE SHT. 75
FOR -Y26R-SR2- PROFILE SEE SHT. 76
FOR DITCH DETAILS SEE SHEET 2D-1

STV Engineers, Inc.
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–LSEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#28 (FROM R-2828_ncdot_FS.dgn FILE)
N: 685,901 E: 2,125,809
-BL- STA 407+26.68 O/S 445.53' LT
-L- STA 900+96.84 O/S 448.73' LT
ELEV.= 239.98', BENCH TIE IN 17" PINE

BEGIN PAVING ONLY RIGHT
-LSEC1- STA. 893+00.00
EL = 239.56'

PROPOSED GRADE

(+)0.997%

EXISTING GROUND

891+00 892+00 893+00 894+00 895+00 896+00 897+00 898+00 899+00 900+00 901+00 902+00 903+00 904+00 905+00

290 280 270 260 250 240 230 220 210 200

–LSEC1–

BM#30 (FROM R-2828_ncdot_FS.dgn FILE)
N: 684,659 E: 2,126,707
-BL- STA 411+47.94 O/S 1028.61' RT
-L- STA 905+14.71 O/S 1023.67' RT
ELEV.= 200.64', BENCH TIE IN 16" PINE

PROPOSED GRADE

PI = 910+30.00
EL = 256.81'
VC = 700'
K = 514
DS > 80 MPH

(+)0.997%

(+)2.360%

EXISTING GROUND

FOR –LSEC1– PLAN SEE SHTS. 4 THRU 5

905+00 906+00 907+00 908+00 909+00 910+00 911+00 912+00 913+00 914+00 915+00 916+00 917+00 918+00 919+00

290 280 270 260 250 240 230 220 210 200

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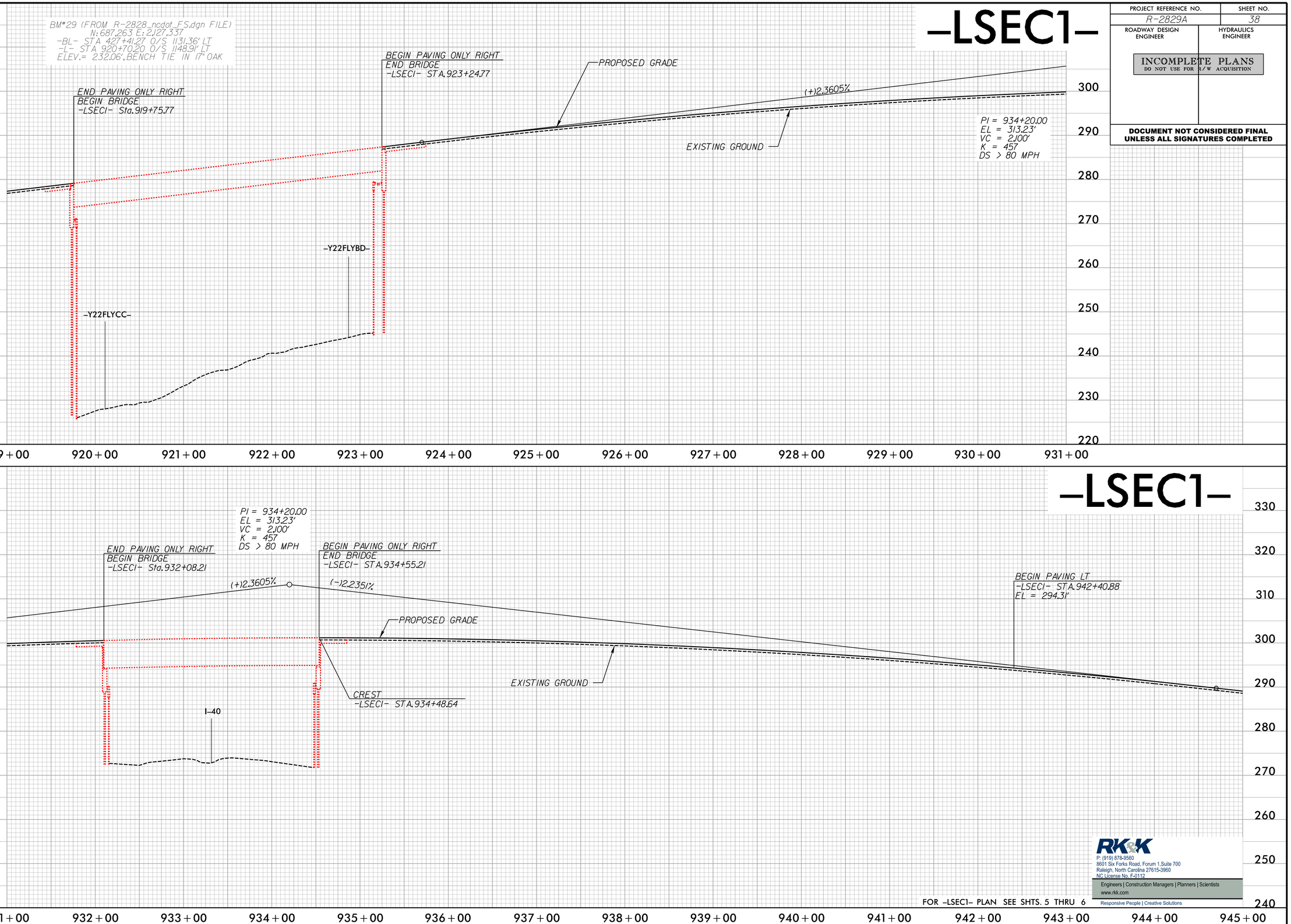
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–LSEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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FOR –LSEC1– PLAN SEE SHTS. 5 THRU 6

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–LSEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#36 (FROM R-2828_ncdot_FS.dgn FILE)
N:686,830 E:2,130,512
-BL- STA 457+36.37 O/S 466.89' RT
-L- STA 948+16.59 O/S 502.55' RT
ELEV.= 278.56', BENCH TIE IN 14" GUM

–Y22FLYCC–

EXISTING GROUND

PROPOSED GRADE

(–)12.2351%

END PAVING ONLY
BEGIN GRADING AND PAVING
-LSEC1- STA.957+30.00
EL = 261.60'

PI = 959+80.00
EL = 256.01'
VC = 500'
K = 303
DS > 80 MPH

BEGIN SP.LAT.V DITCH LT
-L- STA.957+00.00
EL = 258.47'

(–) 3.0200%

(–) 2.6489%

(–) 2.2778%

PI = 958+00.00 LT
EL = 255.45'

BEGIN SP.LAT.V DITCH RT
-L- STA.958+00.00
EL = 255.99'

–LSEC1–

BM#37 (FROM R-2828_ncdot_FS.dgn FILE)
N:688,017 E:2,132,602
-BL- STA 481+51.64 O/S 262.92' RT
-L- STA 971+76.64 O/S 265.42' RT
ELEV.= 221.92', BENCH TIE IN 14" POPLAR

PI = 959+80.00
EL = 256.01'
VC = 500'
K = 303
DS > 80 MPH

(–)12.2351%

(–)10.5827%

(–) 2.6489%

(–) 2.2778%

(–) 0.3000%

(+) 2.2933%

PI = 961+50.00 RT
EL = 246.72'

END SP.LAT.V DITCH RT
BEGIN MEDIAN V DITCH RT
-L- STA.962+50.00 RT
EL = 246.42'

END SP.LAT.V DITCH LT
-L- STA.962+50.00
EL = 245.20'

END MEDIAN V DITCH RT
-L- STA.964+00.00
EL = 249.86'

BEGIN SP.V DITCH RT
-L- STA.965+00.00
EL = 248.00'

BEGIN LAT.BASE DITCH LT
-L- STA.966+00.00
EL = 227.00'

(–) 1.2000%

END SP.V DITCH RT
BEGIN V DITCH RT
-L- STA.966+50.00
EL = 246.20'

(–) 1.2000%

PI = 967+50.00 RT
EL = 245.00'

(–) 2.8723%

END V DITCH RT
-L- STA.968+44.00
EL = 242.30'

(–) 1.7364%

EXISTING GROUND

BEGIN BRIDGE
-LSEC1- STA.972+46.00+/-

PROPOSED GRADE

(–) 0.3147%

END LAT.BASE DITCH LT
BEGIN BASE DITCH LT
-L- STA.971+50.00
EL = 217.45'

END BASE DITCH LT
-L- STA.972+93.00
EL = 217.00'

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FOR –LSEC1– PLAN SEE SHTS. 6 THRU 7

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–LSEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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BRIDGE HYDRAULIC DATA
Sta. 974+79 –L1–

DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 2,100	CFS
DESIGN HW ELEVATION	= 218.2	FT
100 YEAR DISCHARGE	= 2,100	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 218.2	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 107,500	CFS
OVERTOPPING ELEVATION	= 254.8	FT

NORMAL WATER SURFACE ELEV = 216.8 FT
DATE OF SURVEY = 11/2023

280 270 260 250 240 230 220 210 200 190

973+00 974+00 975+00 976+00 977+00 978+00 979+00 980+00 981+00 982+00 983+00 984+00 985+00 986+00 987+00

END BRIDGE
–LSEC1– STA. 977+11.00+/–

PROPOSED GRADE

SAG
–LSEC1– STA. 981+35.27

PI = 982+80.00
EL = 242.61'
VC = 530'
K = 206
DS = 75 MPH

SITE 5

BUSHY BRANCH

BEGIN BASE DITCH RT.
–L– STA. 978+30.00
EL = 221.82'

END BASE DITCH RT.
BEGIN LAT. BASE DITCH RT.
–L– STA. 979+00.00
EL = 222.10'

(+) 0.3590%

(+) 0.3040%

(+) 0.3151%

(–)0.5827%

EXISTING GROUND

(+)1.9852%

(+) 2.5000%

(+) 4.9667%

(+) 4.3901%

PI = 983+00.00 RT.
EL = 239.50'

(+) 2.6460%

(+) 4.3901%

(+) 0.3000%

END LAT. BASE DITCH RT.
BEGIN SP. BASE DITCH RT.
–L– STA. 982+00.00
EL = 237.00'

END LAT. BASE DITCH LT.
BEGIN SP. CUT GRASSED SWALE LT.
–L– STA. 986+00.00
EL = 241.20'

BEGIN BASE DITCH LT
–L– STA. 975+75.00
EL = 214.50'

END BASE DITCH LT.
BEGIN LAT. BASE DITCH LT.
–L– STA. 977+00.00
EL = 214.88'

END LAT. BASE DITCH LT.
BEGIN LAT. BASE DITCH LT.
–L– STA. 980+23.70
EL = 215.90'

–LSEC1–

BM#38 (FROM R-2828_ncdot_FS.dgn FILE)
N: 689,101 E: 2,134,103
–BL– STA 498+37.99 O/S 486.04' RT
–L– STA 988+70.59 O/S 474.03' RT
ELEV.= 271.44', BENCH TIE IN 11" PINE

310 300 290 280 270 260 250 240 230 220

987+00 988+00 989+00 990+00 991+00 992+00 993+00 994+00 995+00 996+00 997+00 998+00 999+00 1000+00 1001+00

EXISTING GROUND

PROPOSED GRADE

(+)1.9852%

END SP. BASE DITCH RT.
–L– STA. 988+00.00
EL = 252.73'

(+) 2.6460%

(+) 0.3000%

(+) 7.6000%

(+) 3.2000%

(+) 0.4000%

(+) 3.9875%

END SP. CUT GRASSED SWALE LT.
BEGIN SP. BASE DITCH LT.
–L– STA. 990+00.00
EL = 242.40'

END SP. BASE DITCH LT.
BEGIN SP. BASE DITCH LT.
–L– STA. 991+00.00
EL = 250.00'

END SP. BASE DITCH LT.
BEGIN SP. CUT GRASSED SWALE LT.
–L– STA. 992+00.00
EL = 253.20'

END SP. CUT GRASSED SWALE LT.
BEGIN SP. V DITCH LT.
–L– STA. 996+00.00
EL = 254.80'

BEGIN SP. V DITCH RT.
–L– STA. 1000+50.00
EL = 277.50'

(–) 0.3125%

(–) 2.3500%

END SP. V DITCH LT.
BEGIN SP. V DITCH LT.
–L– STA. 1000+00.00
EL = 270.75'

END SP. V DITCH LT.
BEGIN SP. CUT GRASSED SWALE LT.
–L– STA. 1001+00.00
EL = 268.40'

FOR –LSEC1– PLAN SEE SHTS. 7 THRU 8

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–LSEC1–

PIPE HYDRAULIC DATA
48" RCP @ -L- STA.1003+50

DRAINAGE AREA	= 14.9	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 54.8	CFS
DESIGN HW ELEVATION	= 276.71	FT
100 YEAR DISCHARGE	= 54.8	CFS
100 YEAR HW ELEVATION	= 276.71	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 124	CFS
OVERTOPPING ELEVATION	= 280.4	FT

BM#39 (FROM R-2828_ncdot_FS.dgn FILE)
N: 690,611 E: 2,134,184
-BL- STA 513+27.34 O/S 502.67' RT
-L- STA 1003+68.52 O/S 472.06' RT
ELEV.= 297.39', BENCH TIE IN 17" GUM

END LAT.BASE DITCH RT.
BEGIN LAT.BASE DITCH RT.
-L- STA.1003+00.00
EL = 273.00'

BEGIN LAT.BASE DITCH RT.
-L- STA.1002+40.00
EL = 275.30'

PI = 1003+70.00
EL = 284.10'
VC = 520'
K = 317
DS = 75 MPH

END GRADE
-LSEC1- STA.1007+09.30 BK =
BEGIN GRADE
-LISEC1- STA.1006+86.76 AH
EL = 285.26'

PROPOSED GRADE

END SP.V DITCH RT.
-L- STA.1002+10.00
EL = 277.00'

(+)1.9852%
(+)0.3435%
(-) 0.3125%
(-) 3.8333%
(+) 2.6119%
48" RCP
(-) 0.4933%

END SP.V DITCH RT.
-L- STA.1007+00.00
EL = 280.79'

(-) 0.6000%
(-) 0.6250%

BEGIN SP.V DITCH RT.
-L- STA.1005+50.00
EL = 281.53'

END SP.CUT GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
-L- STA.1003+00.00
EL = 267.20'

END LAT.GRASSED SWALE LT.
-L- STA.1003+80.00
EL = 266.70'

END LAT.BASE DITCH RT.
-L- STA.1004+34.00
EL = 276.50'

END SP.V DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
-L- STA.1001+00.00
EL = 268.40'

–L1SEC1–

HYDRAULIC DATA
9'x8'RCBC @ -LI- STA.1008+82

DRAINAGE AREA	= 39.4	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 130	CFS
DESIGN HW ELEVATION	= 262.5	FT
100 YEAR DISCHARGE	= 130	CFS
100 YEAR HW ELEVATION	= 262.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1400	CFS
OVERTOPPING ELEVATION	= 281.1	FT

HYDRAULIC DATA
12'x8'RCBC @ -LI- STA.1013+41

DRAINAGE AREA	= 0.14	SQ.MI.
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 190	CFS
DESIGN HW ELEVATION	= 258.7	FT
100 YEAR DISCHARGE	= 190	CFS
100 YEAR HW ELEVATION	= 258.7	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 2000	CFS
OVERTOPPING ELEVATION	= 281.1	FT

END GRADE
-LSEC1- STA.1007+09.30 BK =
BEGIN GRADE
-LISEC1- STA.1006+86.76 AH
EL = 285.26'

PI = 1009+90.00
EL = 286.30'
VC = 430'
K = 320
DS = 75 MPH

CREST
-LISEC1- STA.1008+84.8921

PROPOSED GRADE

(+)0.3435%
(-)1.0006%

BEGIN LAT.GRASS SWALE LT.
-LI- STA.1013+76.54
EL = 257.00'

EXISTING GROUND

(+) 0.5765%

9'x8' RCBC

BEGIN LAT.GRASS SWALE LT.
-LI- STA.1010+67.00
EL = 262.20'

(-) 0.9000%
(-) 5.4819%

END LAT.GRASS SWALE LT.
BEGIN LAT.BASE DITCH LT.
-LI- STA.1011+67.00
EL = 261.30'

END LAT.BASE DITCH LT.
-LI- STA.1012+50.00
EL = 248.45'

12'x8' RCBC

–L1SEC1–

PIPE HYDRAULIC DATA
42" RCP @ -LI- STA.1024+00

DRAINAGE AREA	= 5.8	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 22.5	CFS
DESIGN HW ELEVATION	= 295.19	FT
100 YEAR DISCHARGE	= 22.5	CFS
100 YEAR HW ELEVATION	= 295.19	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 53	CFS
OVERTOPPING ELEVATION	= 296.8	FT

BM#1(FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 692,519 E: 2,135,147
-BL- STA 26+20.00 O/S 368.20' RT
-LI- STA 1022+73.10 O/S 402.01' RT
ELEV.= 307.61', BENCH TIE IN 28" OAK

SAG
-LISEC1- STA.1014+12.7146

PI = 1015+70.00
EL = 280.50'
VC = 730'
K = 208
DS = 75 MPH

(-)1.0006%
(+)2.5159%

EXISTING GROUND

(+) 9.2000%
(+) 0.5765%

END LAT.GRASS SWALE LT.
BEGIN LAT.BASE DITCH LT.
-LI- STA.1015+50.00
EL = 258.00'

END LAT.BASE DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
-LI- STA.1018+00.00
EL = 281.00'

(+) 0.6000%
(+) 7.6471%
(+) 2.1600%
(+) 1.5000%
(+) 9.0300%

END LAT.BASE DITCH RT.
BEGIN SP.CUT GRASSED SWALE RT.
-LI- STA.1019+00.00
EL = 279.50'

PI= 1019+00.00 LT.
EL= 281.60'

BEGIN LAT.BASE DITCH RT.
-LI- STA.1018+15.00
EL = 273.00'

SAG
-LISEC1- STA.1014+12.7146

END SP.CUT GRASSED SWALE LT.
BEGIN SP.V DITCH LT.
-LI- STA.1021+50.00
EL = 287.00'

END LAT.GRASSED SWALE RT.
BEGIN SP.BASE DITCH RT.
-LI- STA.1025+00
EL = 293.45'

PROPOSED GRADE

END SP.BASE DITCH RT.
BEGIN SP.CUT GRASSED SWALE RT.
-LI- STA.1026+00.00
EL = 300.00'

(+) 0.5714%
(-)1.8000%
(-) 0.6000%
(+) 3.8000%
(+) 3.9333%

(+) 9.4600%

END SP.V DITCH LT.
-LI- STA.1022+00.00
EL = 291.73'

END SP.V DITCH RT.
-LI- STA.1021+00.00
EL = 290.03'

END SP.CUT GRASSED SWALE RT.
BEGIN SP.V DITCH RT.
-LI- STA.1020+00.00
EL = 281.00'

(-) 0.4821%
(+) 0.5488%
(+) 6.5500%

42" RCP
(+) 0.9524%

BEGIN LAT.GRASSED SWALE LT.
-LI- STA.1023+00.00
EL = 281.00'

BEGIN SP.CUT GRASSED SWALE RT.
-LI- STA.1022+50.00
EL = 293.81'

END LAT.GRASSED SWALE LT.
-LI- STA.1023+84.00
EL = 281.80'

END SP.CUT GRASSED SWALE RT.
BEGIN LAT.GRASSED SWALE RT.
-LI- STA.1024+18.00
EL = 293.00'

BEGIN SP.V DITCH LT.
-LI- STA.1025+50.00
EL = 298.80'

END SP.V DITCH LT.
BEGIN LAT.V DITCH LT.
-LI- STA.1026+50.00
EL = 297.00'

BEGIN LAT.V DITCH LT.
END SP.V DITCH LT.
-LI- STA.1027+00.00
EL = 296.70'

PI= 1027+50.00 LT.
EL= 298.60'

FOR –LSEC1– PLAN SEE SHTS. 8 THRU 9
FOR –L1SEC1– PLAN SEE SHTS. 9 THRU 10

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–L1SEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

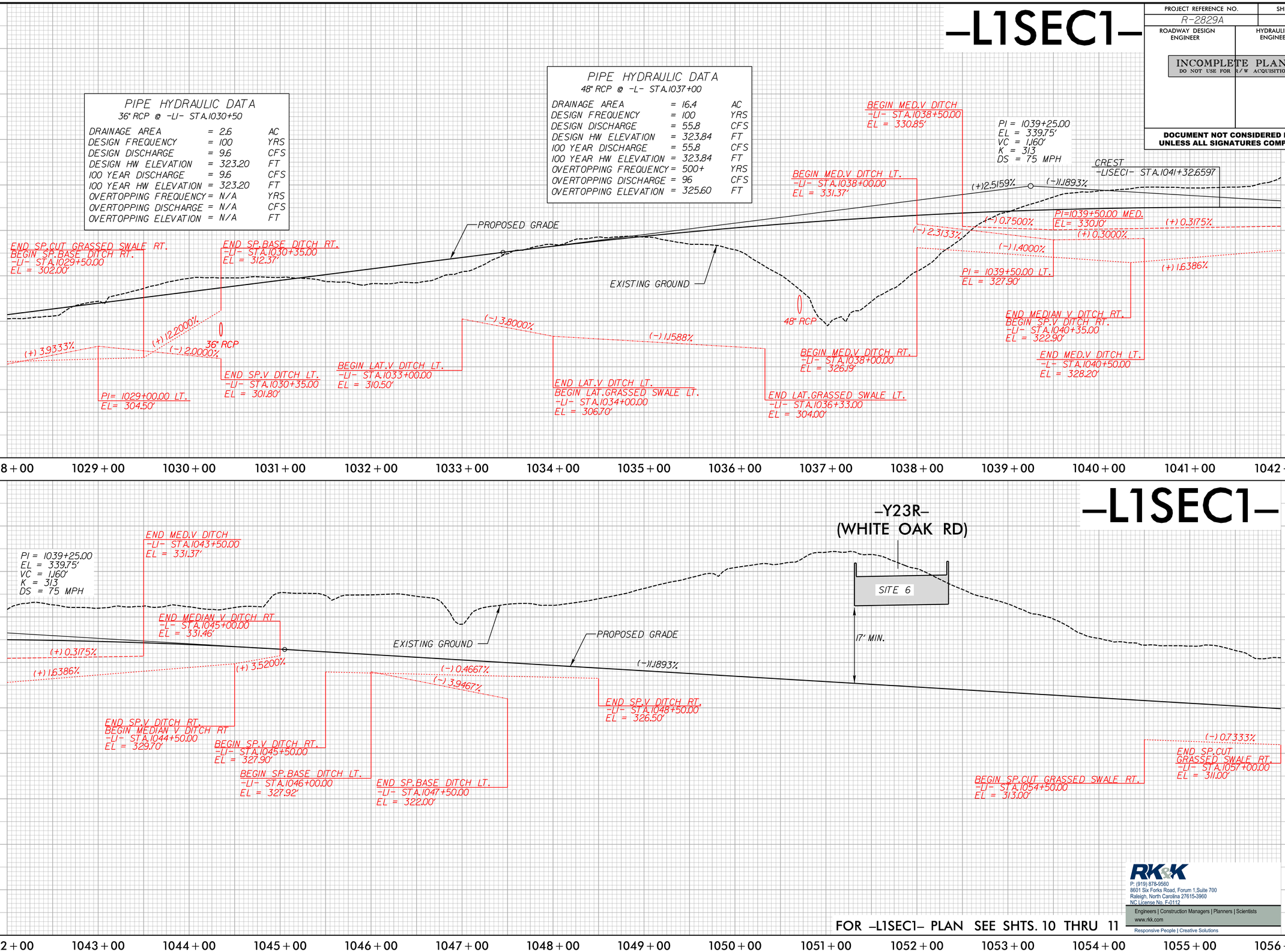
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PIPE HYDRAULIC DATA
36" RCP @ -LI- STA.1030+50

DRAINAGE AREA	= 2.6	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 9.6	CFS
DESIGN HW ELEVATION	= 323.20	FT
100 YEAR DISCHARGE	= 9.6	CFS
100 YEAR HW ELEVATION	= 323.20	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

PIPE HYDRAULIC DATA
48" RCP @ -L- STA.1037+00

DRAINAGE AREA	= 16.4	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 55.8	CFS
DESIGN HW ELEVATION	= 323.84	FT
100 YEAR DISCHARGE	= 55.8	CFS
100 YEAR HW ELEVATION	= 323.84	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 96	CFS
OVERTOPPING ELEVATION	= 325.60	FT



FOR –L1SEC1– PLAN SEE SHTS. 10 THRU 11

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–L1SEC1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#5 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 696,293 E: 2,135,230
-BL- STA 64+65.00 O/S 371.90' LT
-L1- STA 1059+73.27 O/S 345.52' LT
ELEV.= 345.06', BENCH TIE IN 10" GUM

PIPE HYDRAULIC DATA
48" RCP @ -L1- STA.1063+01

DRAINAGE AREA	= 14.3	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 65.7	CFS
DESIGN HW ELEVATION	= 307.26	FT
100 YEAR DISCHARGE	= 65.7	CFS
100 YEAR HW ELEVATION	= 307.26	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 125.0	CFS
OVERTOPPING ELEVATION	= 310.8	FT

PIPE HYDRAULIC DATA
42" RCP @ -L1- STA.1069+16.95

DRAINAGE AREA	= 7.9	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 26.6	CFS
DESIGN HW ELEVATION	= 287.42	FT
100 YEAR DISCHARGE	= 26.6	CFS
100 YEAR HW ELEVATION	= 287.42	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 88.0	CFS
OVERTOPPING ELEVATION	= 291.6	FT

BEGIN BERM BASE DITCH LT.
-L1- STA.1058+00.00
EL = 339.05'

(-) 5.9000%

END BERM BASE DITCH LT.
-L1- STA.1060+50.00
EL = 324.30'

EXISTING GROUND

END LAT.BASE DITCH LT.
BEGIN DITCH LT.
-L- STA.1062+00.00
EL = 303.53'

PROPOSED GRADE

(-) 4.0800%

(-) 0.5200%

(-) 4.7800%

(-) 0.3065%

END SP.CUT GRASSED SWALE LT.
BEGIN LAT.BASE DITCH LT.
-L- STA.1060+50.00
EL = 310.70'

(-) 5.5000%

(-) 0.9880%

BEGIN MED.V DITCH RT.
-L1- STA.1059+50.00
EL = 299.79'

END SP.V DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
-L1- STA.1058+00.00
EL = 312.00'

END MED.V DITCH RT.
BEGIN MED.V DITCH RT.
-L1- STA.1060+00.00
EL = 297.04'

PI = 1062+50.00 RT.
EL = 294.57'

END DITCH LT.
BEGIN SP.V DITCH LT.
-L- STA.1062+62.00
EL = 303.34'

BEGIN SP.V DITCH LT.
-L1- STA.1057+50.00
EL = 314.04'

48" RCP

(-) 3.3000%

PI = 1065+00.00 RT.
EL = 290.73'

(-) 2.7800%

(-) 0.7067%

PI = 1063+50.00 RT.
EL = 291.79'

BEGIN SP.CUT DITCH LT.
-L1- STA.1063+00.00
EL = 307.70'

(-) 3.8000%

END SP.CUT DITCH LT.
BEGIN LAT.BASE DITCH LT.
-L1- STA.1066+00.00
EL = 297.80'

(-) 2.0200%

PI = 1067+00.00 LT
EL = 294.00'

PI = 1070+15.00
EL = 303.00'
VC = 780'
K = 313
DS = 75 MPH

(-) 1.1893%

(-) 3.6400%

(+) 0.3000%

(-) 1.7933%

PI = 1068+00.00 RT.
EL = 284.67'

42" RCP

END MED.V DITCH RT.
-L1- STA.1069+50
EL = 281.98'

END LAT.BASE DITCH LT.
BEGIN LAT.V DITCH LT.
-L1- STA.1069+50.00
EL = 284.90'

1056+00 1057+00 1058+00 1059+00 1060+00 1061+00 1062+00 1063+00 1064+00 1065+00 1066+00 1067+00 1068+00 1069+00 1070+00

–L1SEC1–

PI = 1070+15.00
EL = 303.00'
VC = 780'
K = 313
DS = 75 MPH

BM#6 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 698,091 E: 2,136,341
-BL- STA 87+23.00 O/S 369.10' RT
-L1- STA 1079+60.57 O/S 356.75' RT
ELEV.= 233.77', BENCH TIE IN 20" OAK

(-)3.6842%

(+) 0.3000%

(+) 0.4667%

EXISTING GROUND

PROPOSED GRADE

(-) 5.9800%

END LAT.V DITCH LT.
BEGIN SP.V DITCH LT.
-L1- STA.1071+50.00
EL = 285.50'

END SP.V DITCH LT.
BEGIN SP.V DITCH LT.
-L1- STA.1073+00.00
EL = 286.20'

(-) 2.6250%

(-) 4.3333%

END SP.V DITCH LT.
BEGIN LAT.BASE DITCH LT.
-L1- STA.1075+50.00
EL = 271.25'

END LAT.BASE DITCH LT.
BEGIN SP.BASE DITCH LT.
-L1- STA.1077+50.00
EL = 266.00'

END SP.BASE DITCH LT.
BEGIN LAT.BASE DITCH LT.
-L1- STA.1079+00.00
EL = 259.50'

BEGIN BRIDGE
-L1SEC1- STA.1083+72.50+/-

PI = 1082+50.00
EL = 257.50'
VC = 700'
K = 207
DS = 75 MPH

(-)3.6842%

(-)10.3065%

SITE 7

PI= 1083+50.00 LT.
EL= 237.00'

(-) 5.0000%

(-)4.7059%

FOR –L1SEC1– PLAN SEE SHTS. 11 THRU 13

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1070+00 1071+00 1072+00 1073+00 1074+00 1075+00 1076+00 1077+00 1078+00 1079+00 1080+00 1081+00 1082+00 1083+00 1084+00

4/3/2024
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–L1SEC2–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	44
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

BRIDGE HYDRAULIC DATA
Sta.1085+31 –L–

DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 3,160	CFS
DESIGN HW ELEVATION	= 238.7	FT
100 YEAR DISCHARGE	= 3,160	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 238.7	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 50,000	CFS
OVERTOPPING ELEVATION	= 254.0	FT

NORMAL WATER SURFACE ELEV = 231.0 FT
DATE OF SURVEY = 12/2023

BM#7 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N:700,050 E:2,136,602
–BL– STA 106+96.00 O/S 271.20' RT
–LI– STA 1099+19.29 309.96' RT
ELEV.= 259.88' BENCHTIE IN 12" POPLAR

PI = 1098+00.00
EL = 252.75'
VC = 500'
K = 214
DS = 75 MPH

END BRIDGE
–LISECI– STA.1086+88.70+/–

END GRADE SECTION 1
BEGIN GRADE SECTION 2
–LSEC2– STA.1094+00.00
EL = 253.98'

END SP.V DITCH RT.
BEGIN SP.V GRASSED SWALE RT.
–L– STA.1097+00.00
EL = 247.75'

PROPOSED GRADE

EXISTING GROUND

SITE 7

WHITE OAK CREEK GREENWAY

WHITE OAK CREEK

PI = 1088+82.00 RT.
EL = 238.30'

END BASE GRASSED SWALE RT.
BEGIN LAT.BASE DITCH RT.
–LI– STA.1087+00.00
EL = 230.80'

END LAT.BASE DITCH RT.
BEGIN LAT.GRASSED SWALE RT.
–LI– STA.1089+50.00
EL = 241.00'

END LAT.GRASSED SWALE RT.
BEGIN SP.V DITCH RT.
–LI– STA.1093+50
EL = 243.00'

PI = 1096+00.00
EL = 249.50'

BEGIN SP.V DITCH RT.
–L– STA.1094+00.00
EL = 244.00'

PI= 1096+16
EL = 246.00'

END SP.V GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
–L– STA.1098+00.00
EL = 244.50'

END LAT.BASE DITCH LT.
BEGIN SP.V GRASSED SWALE LT.
–L– STA.1194+00.00
EL = 243.00'

PI= 1093+47.00 LT.
EL= 240.10'

END LAT.GRASSED SWALE LT.
BEGIN LAT.BASE DITCH LT.
–LI– STA.1092+00.00
EL = 231.70'

BEGIN BASE GRASSED SWALE LT.
–LI– STA.1086+70.00
EL = 230.00'

END BASE GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
–LI– STA.1090+00.00
EL = 231.00'

END LAT.
BASE DITCH LT.
–LI– STA.1084+35.00
EL = 233.00'

BEGIN BASE GRASSED SWALE LT.
–LI– STA.1084+88.00
EL = 230.35'

BEGIN BASE GRASSED SWALE RT.
–LI– STA.1084+71.00
EL = 233.00'

END BASE GRASSED SWALE LT.
–LI– STA.1086+05.00
EL = 231.00'

(–) 4.7059%
(+) 0.3493%
(–) 0.2991%
(+) 4.1209%
(+) 3.9706%
(+) 0.3030%
(+) 0.5000%
(+) 0.3500%
(+) 5.7143%
(+) 2.0000%
(+) 5.4717%
(+) 2.7500%
(+)1.3889%
(–) 0.8152%
(–) 0.8152%
(–) 0.6800%
(–)0.3065%

FOR –L1– PLAN SEE SHTS. 13 & 14

1084+00 1085+00 1086+00 1087+00 1088+00 1089+00 1090+00 1091+00 1092+00 1093+00 1094+00 1095+00 1096+00 1097+00 1098+00

310 300 290 280 270 260 250 240 230 220

–L1SEC2–

CULVERT HYDRAULIC DATA
8x8 RCBC BURIED 1.0' @ –LI– STA.1099+10

RCBC SHOWN (C300) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS AND HYDRAULIC DATA WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

PI = 1098+00.00
EL = 252.75'
VC = 500'
K = 214
DS = 75 MPH

PI = 1106+50.00
EL = 270.00'
VC = 850'
K = 363
DS = 79 MPH

END SP.V GRASSED SWALE RT.
BEGIN LAT.GRASSED SWALE RT.
–L– STA.1098+50.00
EL = 246.73'

END LAT.GRASSED SWALE RT.
–L– STA.1098+80.00
EL = 246.52'

END LAT.GRASSED SWALE RT.
BEGIN SP.BASE DITCH RT.
–L– STA.1100+00.00
EL = 249.20'

PROPOSED GRADE

EXISTING GROUND

EXISTING GROUND

8' x 8' RCBC

BEGIN LAT.GRASSED SWALE RT.
–L– STA.1099+17.00
EL = 248.56'

END LAT.GRASSED SWALE LT.
–L– STA.1098+80.00
EL = 243.75'

END SP.V GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
–L– STA.1098+00.00
EL = 244.50'

END SP.V GRASSED SWALE RT.
–L– STA.1101+50.00
EL = 255.78'

END SP.BASE DITCH RT.
BEGIN SP.V GRASSED SWALE RT.
–L– STA.1101+00.00
EL = 255.00'

BEGIN LAT.V DITCH RT.
–L– STA.1111+50.00
EL = 263.36'

(–) 0.7000%
(–) 0.9375%
(+)2.0294%
(+) 0.7711%
(+) 5.8000%
(+) 1.5600%
(+)2.0294%
(–)0.3095%
(–) 2.1800%

FOR –L1– PLAN SEE SHTS. 14 & 15

1098+00 1099+00 1100+00 1101+00 1102+00 1103+00 1104+00 1105+00 1106+00 1107+00 1108+00 1109+00 1110+00 1111+00 1112+00

310 300 290 280 270 260 250 240 230 220

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–L1SEC2–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	45
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

CULVERT HYDRAULIC DATA

2@ 11x9 RCBC BURIED 1.0' @ -L1- STA.1114+75

RCBC SHOWN (C400) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS AND HYDRAULIC DATA WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

PIPE HYDRAULIC DATA

60" RCP @ -L1- STA.1124+80

DRAINAGE AREA	= 32.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 116.2	CFS
DESIGN HW ELEVATION	= 276.31	FT
100 YEAR DISCHARGE	= 116.2	CFS
100 YEAR HW ELEVATION	= 276.31	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 338	CFS
OVERTOPPING ELEVATION	= 282.4	FT

BM#8 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N:702,185 E:2,137,167
-BL- STA 131+14.00 O/S 345.20' RT
-L1- STA 1122+06.81 367.94' RT
ELEV.= 297.55' BENCHTIE IN 15" PINE

PI = 1122+00.00
EL = 287.00'
VC = 600'
K = 409
DS = 75 MPH

PI = 1114+90.00
EL = 267.40'
VC = 670'
K = 218
DS = 76 MPH

BEGIN LAT.GRASSED SWALE RT.
END SP.V DITCH
-L- STA.1113+00.00
EL = 260.09'

END LAT.GRASE SWALE RT.
-L- STA.1113+26.00
EL = 260.00'

BEGIN LAT.BASE DITCH RT.
-L- STA.1114+44.00
EL = 256.07'

(2)11' x 9' RCBC

END LAT.BASE DITCH RT.
-L- STA.1115+66.00
EL = 251.00'

BEGIN CHANNEL CHANGE RT.
-L- STA.1115+82
EL = 251.00'

BEGIN STD.GRASSED SWALE RT.
-L- STA.1118+85.00
EL = 274.20'

PI= 1118+85
EL = 274.20'

END STD.GRASSED SWALE RT.
BEGIN CUT.GRASSED SWALE RT.
-L- STA.1118+85.00
EL = 274.20'

END CHANNEL CHANGE RT.
-L- STA.1119+12.00
EL = 279.00'

PI = 1121+75.00 RT.
EL = 278.50'

END CUT.GRASSED SWALE RT.
BEGIN LAT.BASE DITCH RT.
-L- STA.1124+50.00
EL = 277.00'

60" RCP

BEGIN LAT.BASE DITCH RT.
-L- STA.1125+30.00
EL = 271.00'

PROPOSED GRADE
EXISTING GROUND

(-)0.3095%
(+)2.7606%
(-)2.1800%
(-)0.3462%
(+)17.6568%
(+)15.5%
(+)1.4828%
(+)2.7606%
(+)1.2923%
(-)0.5455%
(-)7.5000%

FOR –L1– PLAN SEE SHTS. 15 & 16

1112+00 1113+00 1114+00 1115+00 1116+00 1117+00 1118+00 1119+00 1120+00 1121+00 1122+00 1123+00 1124+00 1125+00 1126+00

330 320 310 300 290 280 270 260 250 240

BM#9 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N:703,994 E:2,136,458
-BY3- STA 20+33.00 O/S 429.40' RT
-L1- STA 1135+72.47 956.60' RT
ELEV.= 271.69' BENCHTIE IN 12" PINE

–L1SEC2–

PI = 1128+50.00
EL = 295.40'
VC = 320'
K = 210
DS = 75 MPH

BEGIN MED.V DITCH RT.
-L- STA.1128+50.00
EL = 287.56'

PI = 1128+74.00 RT.
EL = 287.30'

PI = 1131+00 RT.
EL = 293.00'

END MED.V DITCH RT.
BEGIN CUT.V DITCH RT.
-L- STA.1131+50.00
EL = 295.22'

PI = 1133+00 RT.
EL = 302.00'

END CUT.V DITCH RT.
-L- STA.1134+50.00
EL = 308.51'

BEGIN LAT.V DITCH RT.
-L- STA.1135+50.00
EL = 304.50'

END LAT.V DITCH RT.
BEGIN LAT.GRASSED SWALE RT.
-L- STA.1136+00.00
EL = 301.50'

END LAT.GRASSED SWALE RT.
-L- STA.1137+00.00
EL = 302.50'

42" RCP

PROPOSED GRADE
EXISTING GROUND

(+)1.2923%
(+)2.8182%
(-)1.0833%
(+)2.5221%
(+)4.4400%
(+)4.5200%
(+)4.3400%
(-)6.0000%
(+)1.0000%

SEE SHEET No. 46

FOR –L1– PLAN SEE SHTS. 16 & 17

1126+00 1127+00 1128+00 1129+00 1130+00 1131+00 1132+00 1133+00 1134+00 1135+00 1136+00 1137+00

330 320 310 300 290 280 270 260 250 240

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–L1SEC2–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	46
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

BM#9 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N:703,994 E:2,136,458
-BY3- STA 20+33.00 O/S 429.40' RT
-L1- STA 1135+72.47 956.60' RT
ELEV.= 271.69' BENCHTIE IN 29" SYCAMORE

BEGIN BRIDGE
-L1SEC2- STA. 1138+73.47 +/-

PI = 1139+50.00
EL = 326.40'
VC = 230'
K = 598
DS = 75 MPH

END BRIDGE
-L1SEC2- STA. 1140+48.56 +/-

PROPOSED GRADE

(+)2.8182%

(+)2.4339%

SITE 8

MSE WALL

MSE WALL

-Y24R-

EXISTING GROUND

54" RCP

SEE THIS SHEET

FOR –L1– PLAN SEE SHTS. 17

360 350 340 330 320 310 300 290 280 270

1137+00 1138+00 1139+00 1140+00 1141+00 1142+00 1143+00 1144+00 1145+00 1146+00 1147+00 1148+00 1149+00

–L1SEC2–

BEGIN BRIDGE
-L1SEC22- STA. 1158+33.37 +/-

(+)2.4339%

(-)2.8645%

END BRIDGE
-L1SEC2- STA. 1159+53.00 +/-

(-)2.8645%

PROPOSED GRADE

SITE 9

PI = 1158+40.00
EL = 372.40'
VC = 1,660'
K = 313
DS = 75 MPH

BM#10 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N:705,278 E:2,139,241
-BY4- STA 33+45.00 O/S 248.10' RT
-L1- STA 1158+73.67 1,100.43' RT
ELEV.= 345.41' BENCHTIE IN 12" PINE

NCRR/NSRR
-Y25-
-TRK2-
NSRR

MSE WALL

-Y26R-

-FUTRK1-

-FUTRK2-

EXISTING GROUND

END LAT.V DITCH RT.
BEGIN LAT.BASE DITCH RT.
-L- STA. 1161+60.00
EL = 307.75'

END LAT.BASE DITCH RT.
BEGIN LAT.V DITCH RT.
-L- STA. 1161+20.00
EL = 307.60'

END LAT.BASE DITCH RT.
BEGIN LAT.BASE DITCH RT.
-L- STA. 1163+00.00
EL = 301.80'

(-) 5.8228%

(+)0.3750%

(-) 4.2500%

42" RCP

BEGIN LAT.BASE DITCH RT.
-L- STA. 1159+62.00
EL = 316.80'

6' x 8' RCBC

CULVERT HYDRAULIC DATA
6'x8' RCBC BURIED 1.0' @ -L1- STA. 1152+13

DRAINAGE AREA	= 51.6	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 170	CFS
DESIGN HW ELEVATION	= 300.0	FT
100 YEAR DISCHARGE	= 170	CFS
100 YEAR HW ELEVATION	= 300.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 700	CFS
OVERTOPPING ELEVATION	= 317.0	FT

PIPE HYDRAULIC DATA
42" RCP @ -L- STA. 1161+40

DRAINAGE AREA	= 11.8	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 36.6	CFS
DESIGN HW ELEVATION	= 310.54	FT
100 YEAR DISCHARGE	= 36.6	CFS
100 YEAR HW ELEVATION	= 310.54	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 49	CFS
OVERTOPPING ELEVATION	= 311.2	FT

FOR –L1– PLAN SEE SHTS. 17 & 18

370 360 350 340 330 320 310 300 290 280

1149+00 1150+00 1151+00 1152+00 1153+00 1154+00 1155+00 1156+00 1157+00 1158+00 1159+00 1160+00 1161+00 1162+00 1163+00

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–L1SEC2–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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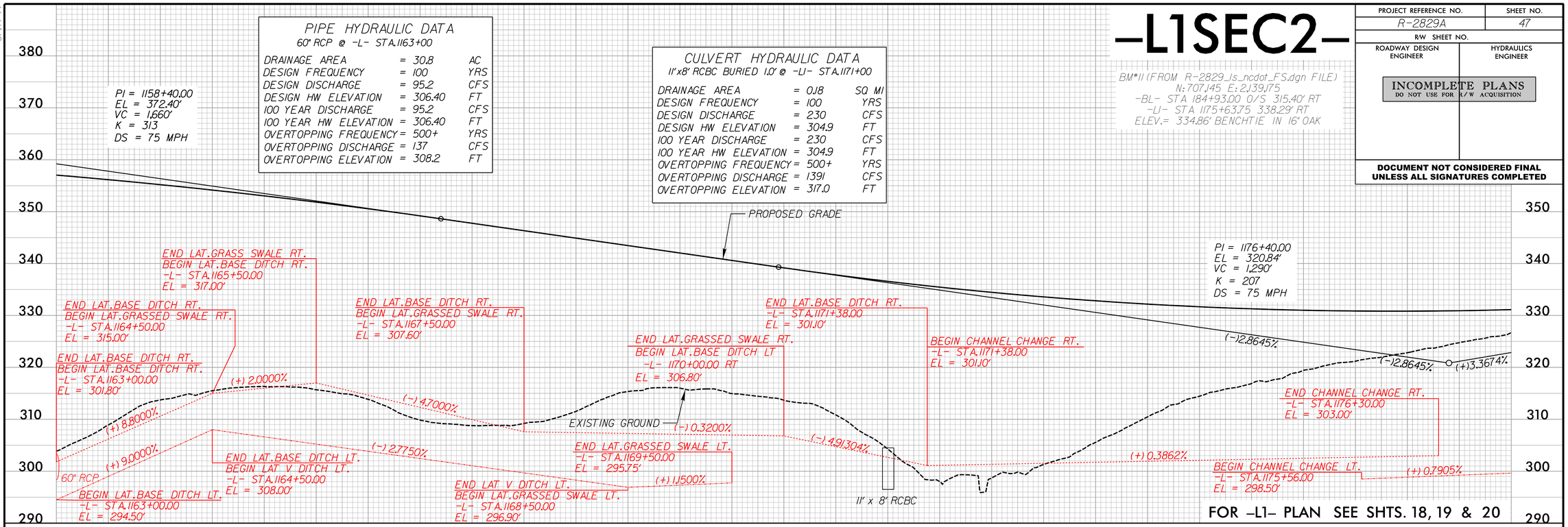
BM#11 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 707,145 E: 2,139,175
-BL- STA 184+93.00 O/S 315.40' RT
-L1- STA 1175+63.75 338.29' RT
ELEV.= 334.86' BENCHTIE IN 16" OAK

PIPE HYDRAULIC DATA
60" RCP @ -L- STA.1163+00

DRAINAGE AREA	= 30.8	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 95.2	CFS
DESIGN HW ELEVATION	= 306.40	FT
100 YEAR DISCHARGE	= 95.2	CFS
100 YEAR HW ELEVATION	= 306.40	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 137	CFS
OVERTOPPING ELEVATION	= 308.2	FT

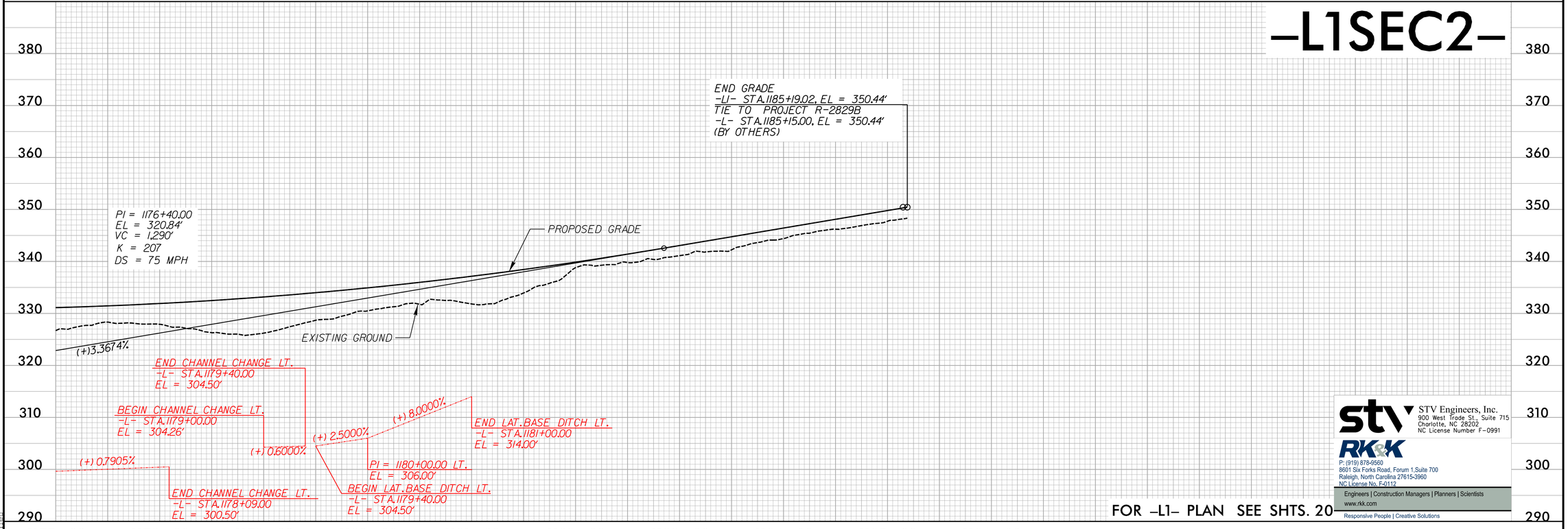
CULVERT HYDRAULIC DATA
11'x8' RCBC BURIED 1.0' @ -L1- STA.1171+00

DRAINAGE AREA	= 0.18	SQ MI
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 230	CFS
DESIGN HW ELEVATION	= 304.9	FT
100 YEAR DISCHARGE	= 230	CFS
100 YEAR HW ELEVATION	= 304.9	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1391	CFS
OVERTOPPING ELEVATION	= 317.0	FT



FOR –L1– PLAN SEE SHTS. 18, 19 & 20

–L1SEC2–



FOR –L1– PLAN SEE SHTS. 20

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–Y22RPA_REV–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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340 330 320 310 300 290 280 270 260 250

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

BEGIN GRADE
-Y22RPA_REV- STA.10+00.00
EL = 272.87'

PI = 11+35.00
EL = 279.58'
VC = 180'
K = 223
DS = 65 MPH

(+)4.9713%

(+)4.1623%

PROPOSED GRADE

EXISTING GROUND

BEGIN LAT.V DITCH RT
-Y22RPA_REV- STA.10+00.00
EL = 249.95'

(+)7.5250%

END LAT.V DITCH RT
-Y22RPA_REV- STA.12+00.00
EL = 265.00'

BEGIN LAT.BASE DITCH RT
-Y22RPA_REV- STA.14+55.07
EL = 278.58'

(+) 2.7048%

PI=16+00.00 RT
EL=282.50'

(+) 2.7143%

PI = 19+05.00
EL = 311.63'
VC = 1,015'
K = 151
DS = 60 MPH

(+)4.1623%

(-)12.5419%

CREST
-Y22RPA_REV- STA.20+27.66

END LAT.BASE DITCH RT
BEGIN LAT.BASE DITCH RT
-Y22RPA_REV- STA.19+50.00
EL = 292.00'

(+) 4.9769%

END LAT.BASE DITCH RT
-Y22RPA_REV- STA.20+73.37
EL = 298.14'

BEGIN LAT.V DITCH LT
-Y22RPA_REV- STA.21+35.78
EL = 290.00'

(+) 3.2152%

(-)1.7588%

(-)1.8748%

BEGIN SP.LAT.V DITCH RT
-Y22RPA_REV- STA.23+00.00
EL = 292.40'

END LAT.V DITCH LT
BEGIN SP.LAT.V DITCH LT
-Y22RPA_REV- STA.23+00.00
EL = 295.28'

–Y22RPA_REV–

330 320 310 300 290 280 270 260 250 240

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

PROPOSED GRADE

END SP.LAT.V DITCH LT
-Y22RPA_REV- STA.27+85.00
EL = 286.75'

(-)1.7588%

(-)1.8748%

EXISTING GROUND

(-) 0.3200%

PI=27+00.00 RT
EL=284.90'

END SP.LAT.V DITCH RT
-Y22RPA_REV- STA.27+50.00
EL = 284.74'

PI = 28+60.00
EL = 287.35'
VC = 305'
K = 138
DS = 60 MPH

(-)12.5419%

(-)0.3284%

(-)0.9941%

END SP.CUT DITCH RT
-Y22RPA_REV- STA.29+56.33
EL = 282.04'

BEGIN SP.CUT DITCH RT
-Y22RPA_REV- STA.29+00.00
EL = 282.60'

END GRADING
BEGIN PAVING ONLY
-Y22RPA_REV- STA.30+12.50
EL = 286.85'

END PAVING ONLY
-Y22RPA_REV- STA.32+29.66 LB =
R-2828 -Y22RPA- STA.36+88.31 LA
EL = 286.14'

(-)0.3284%

(+)0.3673%

PI = 38+10.00
EL = 285.74'
VC = 140'
K = 201
DS = 70 mph

PAVED UNDER TIP R-2828

(+)0.3673%

(-)0.3187%

PI = 40+20.00
EL = 286.51'
VC = 200'
K = 292
DS = 70 mph

FOR –Y22RPREV– PLAN SEE SHTS. 6 AND 21

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–Y22RPAFLY_REV–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA
60" RCP @ –Y22RPAFLY_REV– 20+38

DRAINAGE AREA	= 34.5	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 114.7	CFS
DESIGN HW ELEVATION	= 243.32	FT
100 YEAR DISCHARGE	= 114.7	CFS
100 YEAR HW ELEVATION	= 243.32	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 267	CFS
OVERTOPPING ELEVATION	= 251.4	FT

BEGIN GRADE
–Y22RPAFLY_REV– STA.10+00.00
EL = 247.16'

PI = 11+00.00
EL = 247.65'
VC = 180'
K = 617
DS > 80 MPH

PI = 12+90.00
EL = 249.13'
VC = 180'
K = 5515.9
DS > 80 MPH

PI = 16+75.00
EL = 252.12'
VC = 515'
K = 136
DS = 60 MPH

(+)0.4872%
(+)0.7789%
(+)0.7789%
(+)0.7757%
(+)0.7757%
(+)4.5599%

PROPOSED GRADE

EXISTING GROUND

BEGIN LAT.BASE DITCH RT
–Y22RPAFLY_REV– STA.15+36.82
EL = 227.00'

(+) 2.4510%

BEGIN LAT.V DITCH LT.
–Y22RPAFLY_REV– STA.18+53.94
EL = 245.20'

END LAT.V DITCH LT.
BEGIN LAT.V DITCH LT.
–Y22RPAFLY_REV– STA.20+00.00
EL = 246.00'

(+) 0.5477%

(+) 2.4189%

PI=18+50.98 RT
EL= 234.70'

(+) 7.1692%

(–) 6.0631%

60" RCP

END LAT.BASE DITCH RT
BEGIN LAT.V DITCH RT
–Y22RPAFLY_REV– STA.19+75.00
EL = 237.70'

END LAT.V DITCH RT
–Y22RPAFLY_REV– STA.21+45.87
EL = 249.95'

END LAT.V DITCH LT.
BEGIN LAT.BASE DITCH LT.
–Y22RPAFLY_REV– STA.21+23.70
EL = 238.50'

(+) 3.0630%

PI= 23+00.00 LT.
EL= 243.90'

(+) 2.9489%

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

220 230 240 250 260 270 280 290 300 310

–Y22RPAFLY_REV–

PI = 33+95.00
EL = 330.55'
VC = 1100'
K = 152
DS = 60 MPH

(+)4.5599%

(–)2.6657%

BEGIN BRIDGE
–Y22RPAFLY_REV– STA.35+48.13+/–

END BRIDGE
–Y22RPAFLY_REV–
STA.36+21.13+/–

SITE 2

CREST
–Y22RPAFLY_REV– STA.35+39.18

MSE WALL

–Y22SLIPRPA–

MSE WALL

PROPOSED GRADE

EXISTING GROUND

PI= 24+89.90 LT.
EL= 249.50'

(+) 2.9489%

(+) 5.6433%

END LAT.BASE DITCH LT.
BEGIN LAT.BASE DITCH LT.
–Y22RPAFLY_REV– STA.28+00.00
EL = 267.00'

(+) 6.2500%

END LAT.BASE DITCH LT.
BEGIN LAT.V DITCH LT.
–Y22RPAFLY_REV– STA.30+00.00
EL = 279.50'

(+) 3.6667%

END LAT.V DITCH LT.
–Y22RPAFLY_REV– STA.31+50.00
EL = 285.00'

BEGIN LATERAL V DITCH RT
–Y22RPAFLY_REV– STA.32+50.00
EL = 290.00'

(+) 2.5000%

END LATERAL V DITCH RT
–Y22RPAFLY_REV– STA.34+50.00
EL = 295.00'

FOR –Y22RPAFLY_REV– PLAN SEE SHTS. 6, 7 AND 21

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24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

260 270 280 290 300 310 320 330 340

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–Y22RPAFLY_REV–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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END GRADE
–Y22RPAFLY_REV– Sta. 39+69.02 BK =
BEGIN GRADE
–Y22RPAFLY1– Sta. 62+90.00 AH
EL = 315.25

(–)12.6657%

PROPOSED GRADE

EXISTING GROUND

330 320 310 300 290 280 270 260

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00

–Y22RPAFLY1–

END GRADE –Y22RPAFLY_REV– Sta. 39+69.02 BK =
BEGIN GRADE –Y22RPAFLY1– Sta. 62+90.00 AH
EL = 315.25

BEGIN BRIDGE
–Y22RPAFLY1–
STA. 64+26.11+/–

END BRIDGE
–Y22RPAFLY1–
STA. 64+99.11+/–

PROPOSED GRADE

PI = 64+15.00
EL = 311.91'
VC = 250'
K = 138
DS = 60 MPH

(–)12.6657%

(–)10.8562%

SITE 1

–Y22FLYCA–

MSE WALL

MSE WALL

END PAVING –Y22RPAFLY1
–Y22RPAFLY1– Sta. 65+22.69
EL = 311.00

PI = 66+50.00
EL = 309.90'

(–)10.8562%

GRADE FROM R-2828

(–)11.1169%

–Y22RPAFLY1– Sta. 68+80.04
EL = 307.42

PI = 68+00.00
EL = 308.23'

(–)11.0094%

EXISTING GROUND

360 350 340 330 320 310 300 290 280 270

62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00

FOR –Y22RPAFLY_REV– PLAN SEE SHT. 21
FOR –Y22RPAFLY_REV1– PLAN SEE SHT. 21

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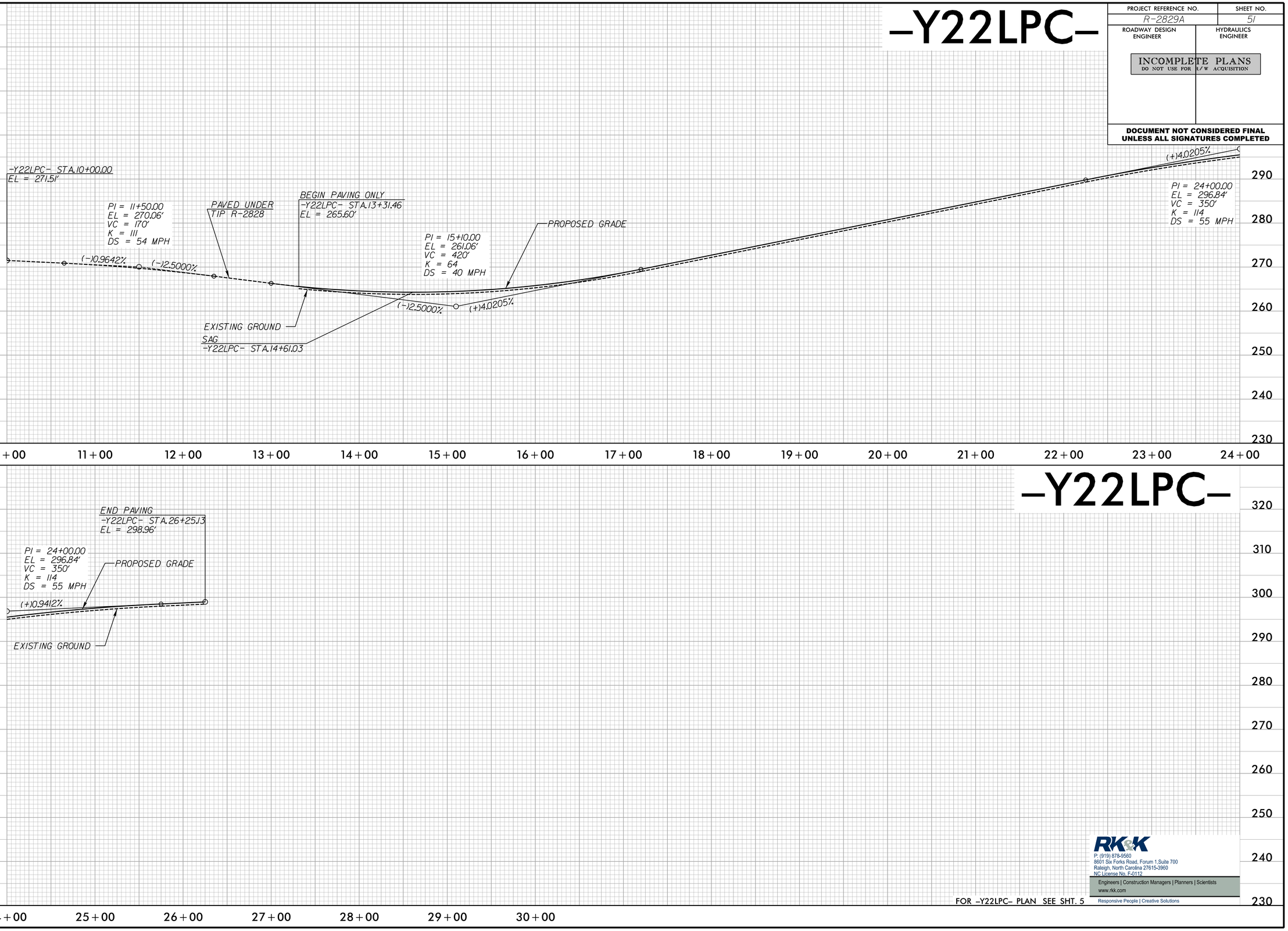
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–Y22LPC–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y22LPC–

FOR –Y22LPC– PLAN SEE SHT. 5

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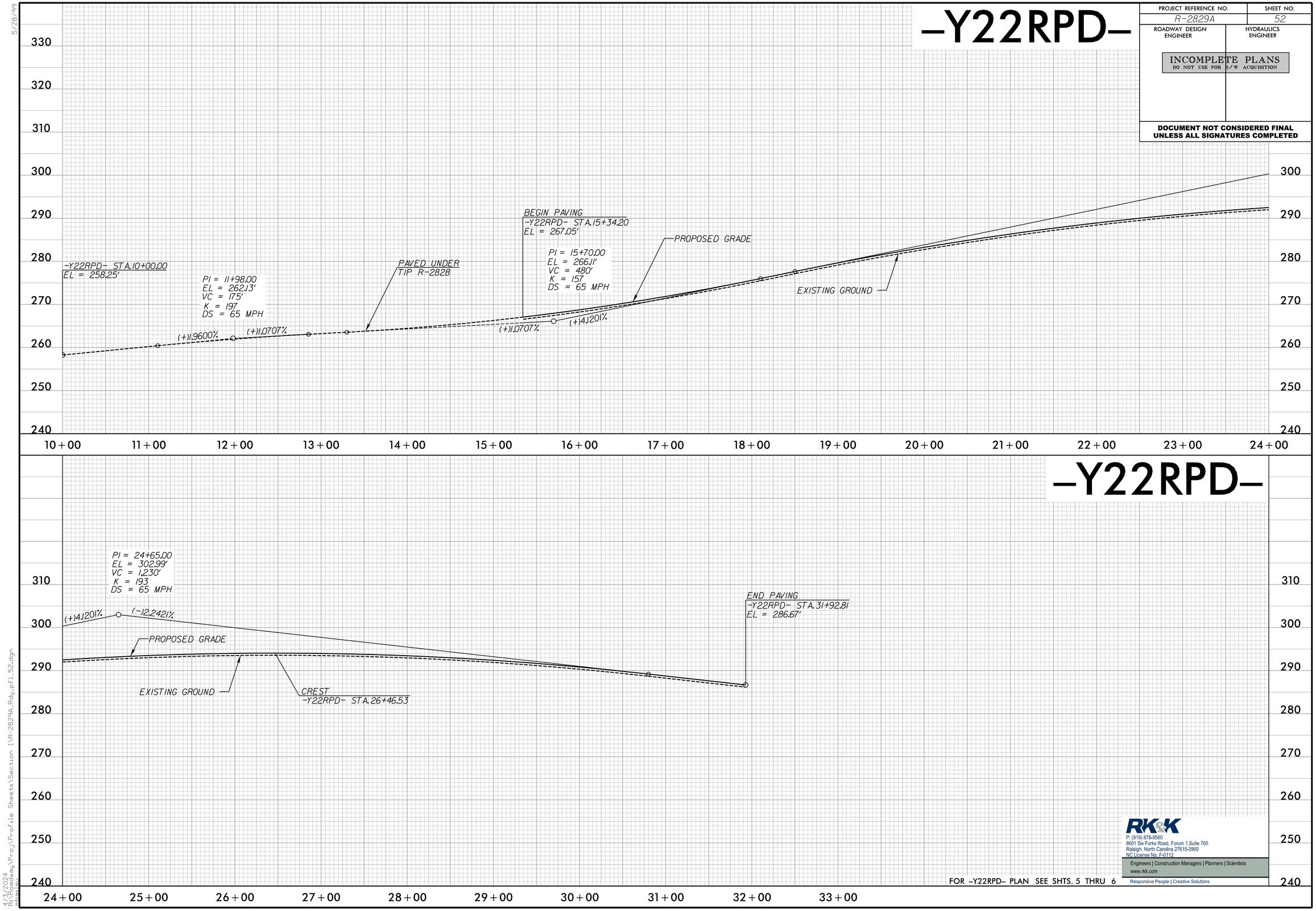
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–Y22RPD–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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–Y22RPD–

FOR –Y22RPD– PLAN SEE SHTS. 5 THRU 6

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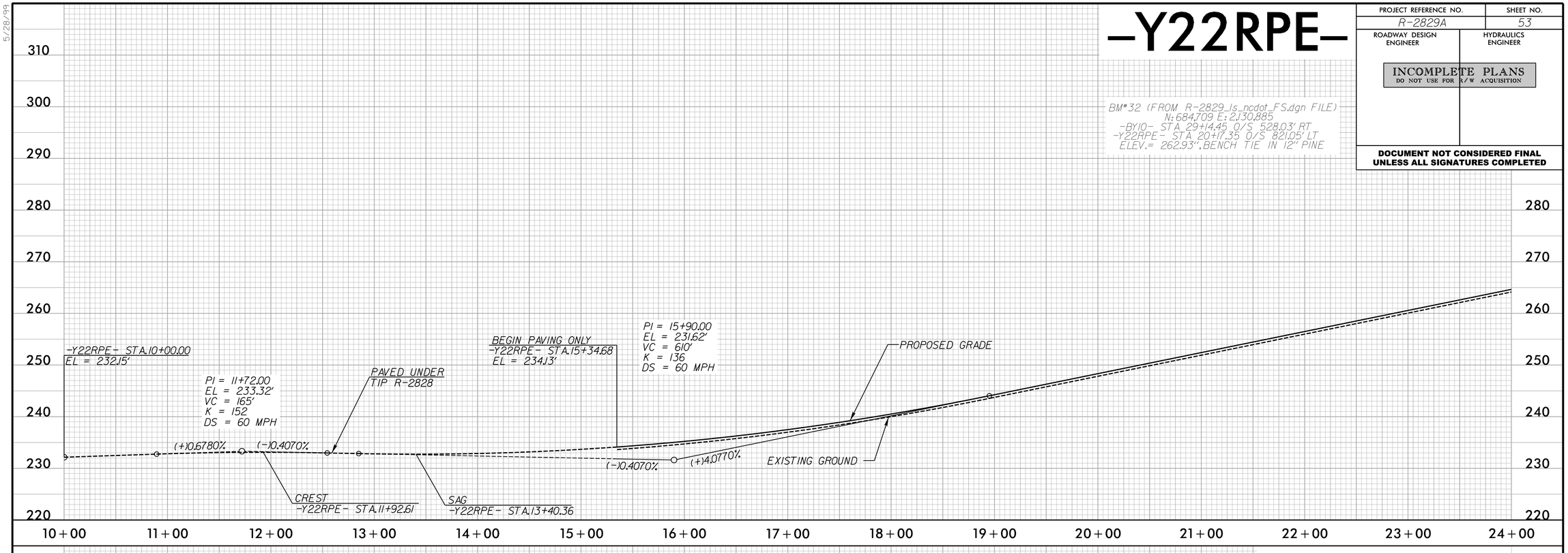
–Y22RPE–

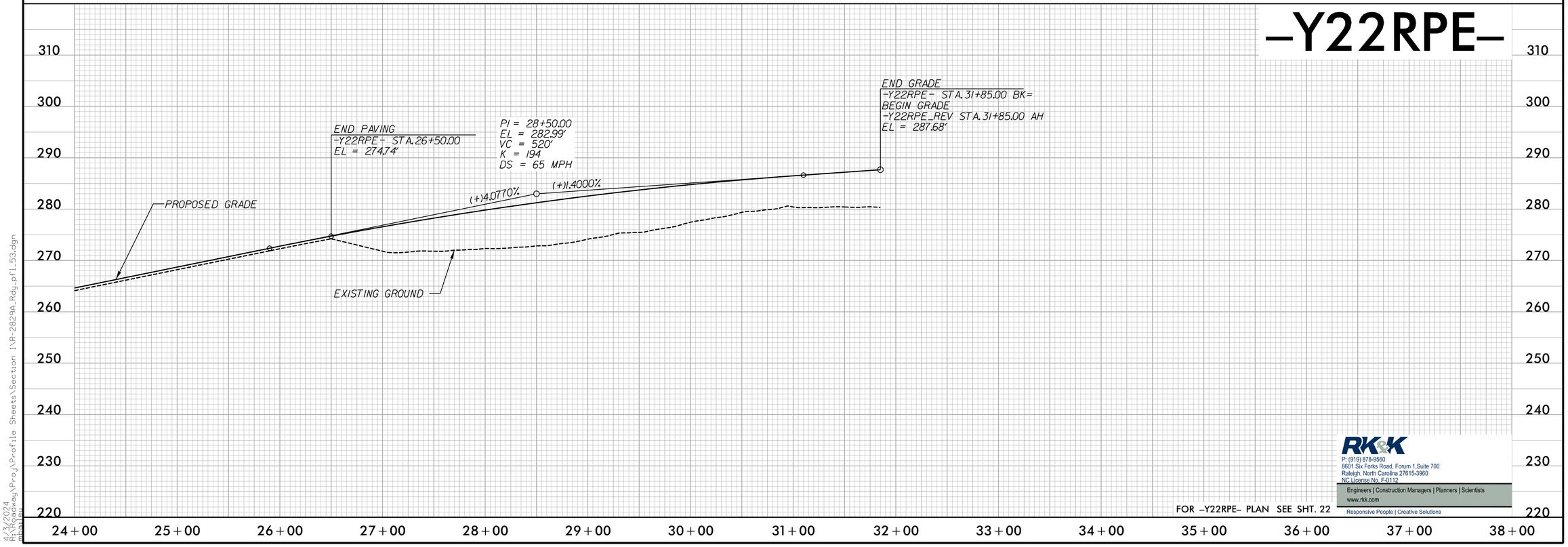
PROJECT REFERENCE NO.	SHEET NO.
R-2829A	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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BM#32 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 684,709 E: 2,130,885
–BY10– STA 29+14.45 O/S 528.03' RT
–Y22RPE– STA 20+17.35 O/S 821.05' LT
ELEV.= 262.93', BENCH TIE IN 12" PINE





FOR –Y22RPE– PLAN SEE SHT. 22

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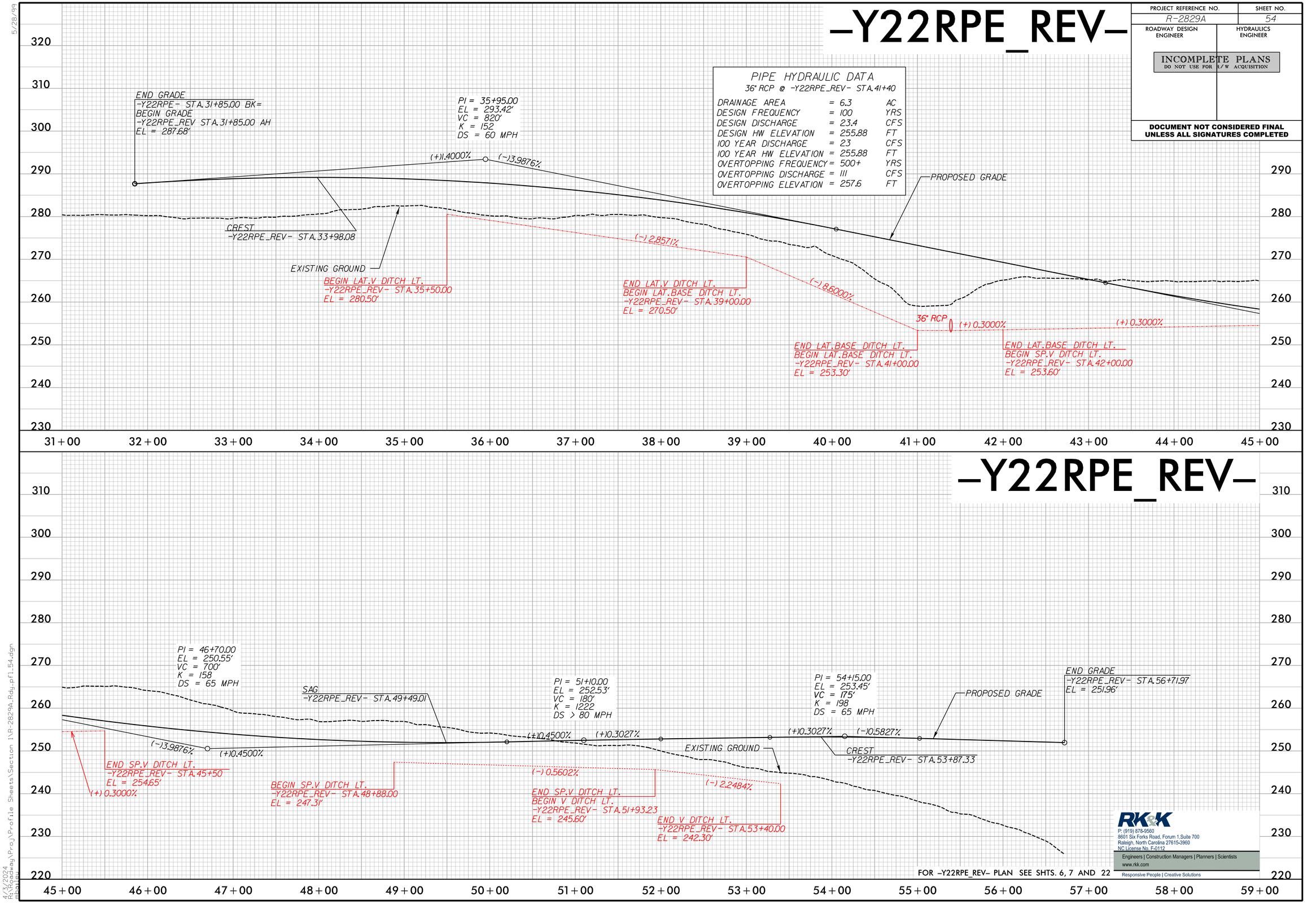
PROJECT REFERENCE NO.	SHEET NO.
R-2829A	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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PIPE HYDRAULIC DATA
36" RCP @ –Y22RPE_REV– STA. 41+40

DRAINAGE AREA	= 6.3	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 23.4	CFS
DESIGN HW ELEVATION	= 255.88	FT
100 YEAR DISCHARGE	= 23	CFS
100 YEAR HW ELEVATION	= 255.88	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 111	CFS
OVERTOPPING ELEVATION	= 257.6	FT



–Y22RPE_REV–

FOR –Y22RPE_REV– PLAN SEE SHTS. 6, 7 AND 22

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–Y23R–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BEGIN GRADE
–Y23R– STA. 16+00.00
EL = 347.58'

PROPOSED GRADE

CREST
–Y23R– STA. 19+10.5886

PI = 19+05.00
EL = 355.67'
VC = 440'
K = 85
DS = 50 MPH

(+)2.6530%
(–)2.5216%
(–)3.9000%
(–)1.5200%
(+)1.8200%
(+) 3.1810%

EXISTING GROUND

END SP.V DITCH LT.
–Y23R– STA. 16+50.00
EL = 346.41'

BEGIN SP.CUT GRASSED SWALE LT.
–Y23R– STA. 18+50.00
EL = 351.05'

END SP.V DITCH RT.
–Y23R– STA. 16+00.00
EL = 345.22'

BEGIN SP.V DITCH LT.
–Y23R– STA. 15+50.00
EL = 343.23'

BEGIN SP.V DITCH RT.
–Y23R– STA. 15+50.00
EL = 344.31'

END SP.CUT GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
–Y23R– STA. 19+00.00
EL = 349.10'

END LAT.GRASSED SWALE LT.
BEGIN SP.BASE DITCH LT.
–Y23R– STA. 23+00.00
EL = 343.02'

BEGIN SP.V DITCH RT.
–Y23R– STA. 22+50.00
EL = 343.27'

PI = 23+80.00 RT.
EL = 335.25'

PI = 23+80.00
EL = 343.69'
VC = 150'
K = 97
DS = 50 MPH

END SP.BASE DITCH LT.
BEGIN SP.V DITCH LT.
–Y23R– STA. 23+80.00
EL = 340.30'

(–)2.5216%
(–)0.9820%
(–) 3.4000%
(–) 6.2462%
24" RCP
(+) 1.8000%
(+) 0.5172%

END SP.V DITCH RT.
–Y23R– STA. 25+25.00
EL = 336.00'

END SP.V DITCH LT.
–Y23R– STA. 25+30.00
EL = 343.00'

–Y23G–
EXISTING WHITE OAK ROAD
–Y23DR–

PI = 28+00.00
EL = 339.57'
VC = 200'
K = 458
DS > 80 MPH

(–)0.9820%
(–)0.5455%
(+) 0.3043%

BEGIN SP.V DITCH RT.
–Y23R– STA. 26+00.00
EL = 335.40'

END SP.V DITCH RT.
–Y23R– STA. 27+15.00
EL = 335.75'

BM#3 (FROM R-2829_ls_ncdot_FS.dgn FILE)
N: 694,024 E: 2,135,621
–BY2– STA 46+08.00 O/S 207.50' RT
–Y23R– STA 29+43.88 O/S 512.71' LT
ELEV.= 344.46', BENCH TIE IN 22" PINE

–Y23R–

PIPE HYDRAULIC DATA
36" RCP @ –Y23R– STA. 34+00

DRAINAGE AREA	= 7.5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 28.2	CFS
DESIGN HW ELEVATION	= 325.65	FT
100 YEAR DISCHARGE	= 32.2	CFS
100 YEAR HW ELEVATION	= 325.96	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 90	CFS
OVERTOPPING ELEVATION	= 334.5	FT

PIPE HYDRAULIC DATA
36" RCP @ –Y23R– STA. 40+50

DRAINAGE AREA	= 4.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 19.1	CFS
DESIGN HW ELEVATION	= 333.65	FT
100 YEAR DISCHARGE	= 21.8	CFS
100 YEAR HW ELEVATION	= 333.85	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 65	CFS
OVERTOPPING ELEVATION	= 338.4	FT

BEGIN LAT.BASE DITCH RT.
–Y23R– STA. 31+50.00
EL = 337.20'

PROPOSED GRADE

PI = 32+50.00 LT.
EL = 331.35'

SAG
–Y23R– STA. 34+46.3377

PI = 35+15.00
EL = 335.67'
VC = 300'
K = 149
DS = 63 MPH

(+)1.4664%
(–)0.5455%

(–) 10.9000%
(–) 2.5700%
EXISTING GROUND

BEGIN SP.CUT BASE DITCH LT.
–Y23R– STA. 31+50.00
EL = 333.92'

PI = 32+00.00 RT.
EL = 331.75'

(–) 8.4500%
(–) 7.5636%

PI = 33+50.00 LT.
EL = 322.90'

(+) 0.4000%
(+) 0.2667%

36" RCP

PI = 34+50.00 LT.
EL = 323.30'

(–) 4.0513%

PI = 34+36.00 RT.
EL = 313.90'

END LAT.BASE DITCH RT.
–Y23R– STA. 34+75.00
EL = 312.32'

END SP.CUT BASE DITCH LT.
–Y23R– STA. 36+00.00
EL = 323.70'

–Y23RPC–
–Y23LPC–

BEGIN SP.CUT GRASSED SWALE LT.
–Y23R– STA. 38+20.00
EL = 332.50'

(–) 0.4125%

END SP.CUT GRASSED SWALE LT.
BEGIN LAT.GRASSED SWALE LT.
–Y23R– STA. 39+00.00
EL = 332.17'

(–) 0.4136%
(+) 0.5263%

36" RCP

PI = 40+62.00 LT.
EL = 331.50'

END LAT.GRASSED SWALE LT.
BEGIN LAT.V DITCH LT.
–Y23R– STA. 41+00.00
EL = 331.70'

(+) 5.6500%

END LAT.V DITCH LT.
–Y23R– STA. 43+00.00
EL = 343.00'

FOR –Y23R– PLAN SEE SHTS. 11, 24 AND 25

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–Y23R–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	56
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CREST
–Y23R– STA. 45+89.8235

BEGIN BRIDGE
–Y23R– STA. 44+86.75+/–

PI = 46+00.00
EL = 351.58'
VC = 270'
K = 85
DS = 50 MPH

END BRIDGE
–Y23R– STA. 47+18.75+/–

PROPOSED GRADE

PI = 51+50.00
EL = 342.20'
VC = 160'
K = 114
DS = 54 MPH

–Y23LPB––Y23RPB–

PI = 56+45.00
EL = 340.71'
VC = 270'
K = 85
DS = 50 MPH

(+)1.4664%
(–)1.7055%
(–)2.0000%
(–)3.6000%
(–)1.7055%
(–)10.3000%
(–)1.0286%
(–)0.8500%
(–)10.3000%
(–)13.4754%
(–)3.5233%
(–)0.8850%

SITE 6
-U-
-U-

EXISTING GROUND

END LAT.V DITCH LT.
–Y23R– STA. 43+00.00
EL = 343.00'

PI = STA. 48+25.00
EL = 346.50'
BEGIN LAT.V DITCH RT.
–Y23R– STA. 48+00.00
EL = 346.00'

END LAT.V DITCH RT.
BEGIN LAT.GRASSED SWALE RT.
–Y23R– STA. 49+50.000
EL = 342.00'

END LAT.GRASSED SWALE RT.
BEGIN LAT.BASE DITCH RT.
–Y23R– STA. 53+00.00
EL = 338.40'

END LAT.BASE DITCH RT.
–Y23R– STA. 55+00.00
EL = 336.70'

30" RCP

BEGIN SP.V DITCH RT.
–Y23R– STA. 56+50.00
EL = 335.66'

END LAT.V DITCH LT.
–Y23R– STA. 56+16.00
EL = 325.00'

BEGIN LAT.V DITCH LT.
–Y23R– STA. 55+00.00
EL = 326.00'

–Y23R–

PIPE HYDRAULIC DATA
36" RCP @ –Y23R– STA. 61+05

DRAINAGE AREA	= 14.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 39.9	CFS
DESIGN HW ELEVATION	= 329.09	FT
100 YEAR DISCHARGE	= 47.0	CFS
100 YEAR HW ELEVATION	= 329.54	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 67	CFS
OVERTOPPING ELEVATION	= 330.7	FT

PI = 56+45.00
EL = 340.71'
VC = 270'
K = 85
DS = 50 MPH

PI = 60+60.00
EL = 326.29'
VC = 530'
K = 97
DS = 50 MPH

PROPOSED GRADE

SAG
–Y23R– STA. 61+32.9743

–Y23AR–
TIFFANY CREEK DRIVE
–Y23BR–
RAYNOR DRIVE

PI = 65+80.00
EL = 336.56'
VC = 370'
K = 97
DS = 50 MPH

(+)1.9746%
(–)13.4754%
(–)3.5233%
(–)0.4000%
(–)0.4737%
(+)0.9524
(+)2.6800
(+)2.6800
(+)2.6886
(–)1.2500%
(+)6.6500%
(+)1.9746%
(+)4.7143%
(+)5.8060%
(+)4.2857%
(+)4.0000%
(+)7.4071%
(+)4.0000%
(+)5.2500%
(+)5.7447%
(+)6.4000%
(+)4.2308%
(+)9.3333%
(+)1.3404%
(+)3.7040%

END SP.V DITCH RT.
BEGIN SP.CUT GRASSED SWALE RT.
–Y23R– STA. 59+00.00
EL = 326.85'

END SP.CUT GRASSED SWALE RT.
BEGIN LAT.GRASSED SWALE RT.
–Y23R– STA. 60+00.00
EL = 326.45'

PI = 60+95.00 RT.
EL = 326.00'

END LAT.GRASSED SWALE RT.
BEGIN SP.V DITCH RT.
–Y23R– STA. 62+00.00
EL = 327.00'

36" RCP

PI = 62+75.00 RT.
EL = 329.01'

PI = 63+00.00 RT.
EL = 329.68'

END SP.V DITCH RT.
–Y23R– STA. 63+35.00
EL = 330.62'

END SP.V DITCH LT.
–Y23R– STA. 63+32.00
EL = 327.40'

BEGIN SP.V DITCH LT.
–Y23R– STA. 63+00.00
EL = 327.80'

EXISTING GROUND

24" RCP

BEGIN SP.BASE DITCH RT.
–Y23R– STA. 64+50.00
EL = 326.40'

PI = 66+05.00 LT.
EL = 335.00'

BEGIN SP.BASE DITCH LT.
–Y23R– STA. 64+65.00
EL = 328.40'

PI = 66+32.00 LT.
EL = 337.00'

PI = 66+62.00 LT.
EL = 338.20'

PI = 66+90.00 LT.
EL = 339.40'

END SP.BASE DITCH RT.
BEGIN SP.V DITCH RT.
–Y23R– STA. 66+50.00
EL = 339.50'

PI = 67+55.00 LT.
EL = 342.00'

PI = 67+80.00 LT.
EL = 343.60'

PI = 68+75.00 RT.
EL = 353.15'

PI = 68+30.00 RT.
EL = 348.95'

END GRADE
BEGIN OVERLAY, 3"
–Y23R– STA. 68+50.00
EL = 352.24'

PI = 68+53.00 LT.
EL = 350.00'

PI = 68+27.00 LT.
EL = 346.60'

END OVERLAY, 3"
–Y23R– STA. 69+00.00
EL = 354.90'

END SP.V DITCH RT.
–Y23R– STA. 69+00.00
EL = 354.08'

END SP.V DITCH LT.
–Y23R– STA. 69+00.00
EL = 353.45'

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FOR –Y23R– PLAN SEE SHTS. 11, 26 AND 27

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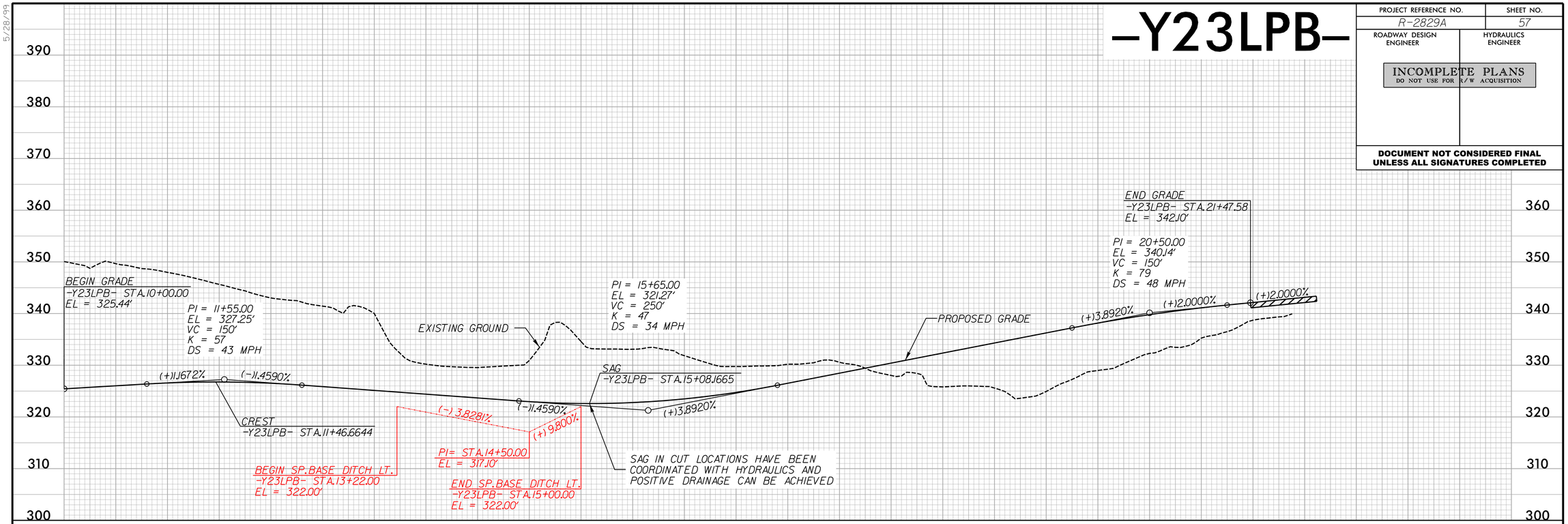
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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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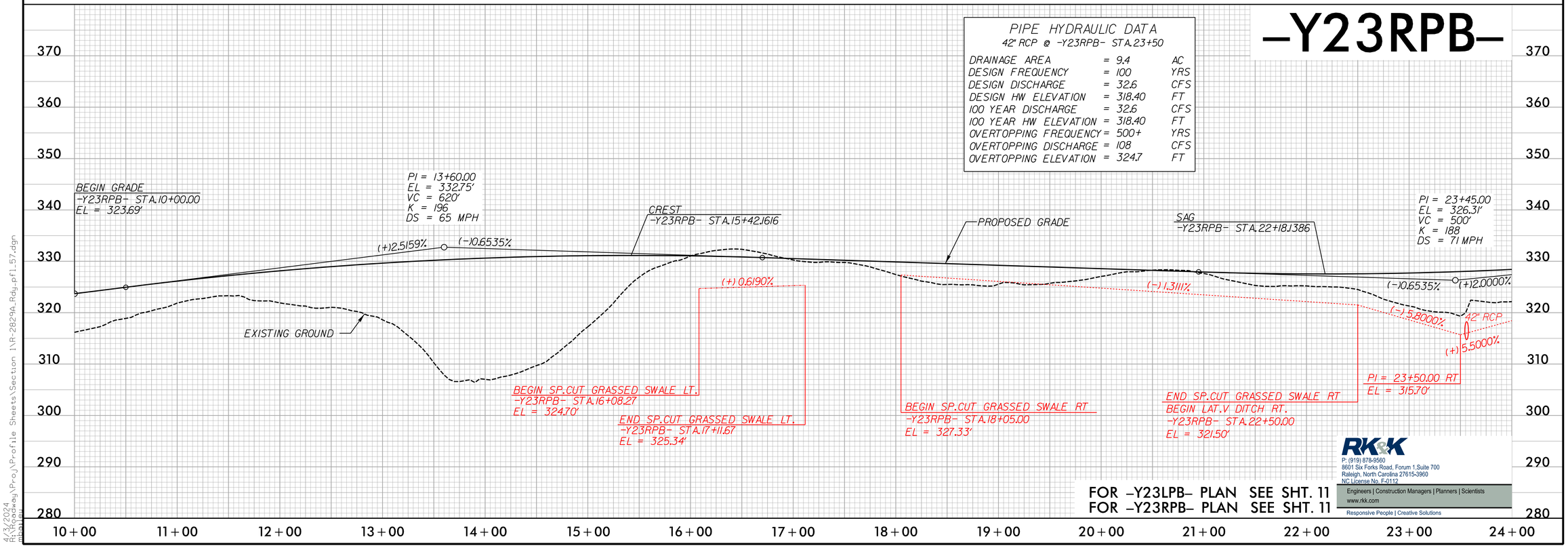
–Y23LPB–



–Y23RPB–

PIPE HYDRAULIC DATA
42" RCP @ –Y23RPB– STA.23+50

DRAINAGE AREA	= 9.4	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 32.6	CFS
DESIGN HW ELEVATION	= 318.40	FT
100 YEAR DISCHARGE	= 32.6	CFS
100 YEAR HW ELEVATION	= 318.40	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 108	CFS
OVERTOPPING ELEVATION	= 324.7	FT



FOR –Y23LPB– PLAN SEE SHT. 11
FOR –Y23RPB– PLAN SEE SHT. 11

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–Y23RPB–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	58

ROADWAY DESIGN ENGINEER

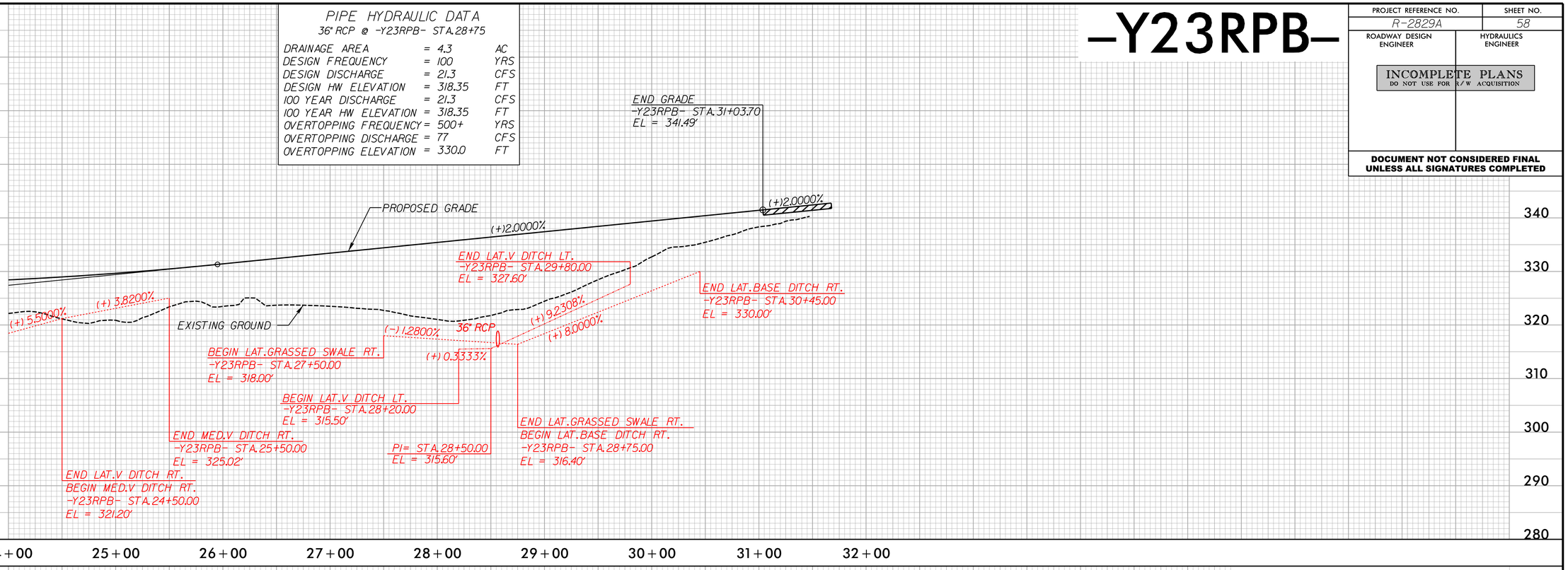
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

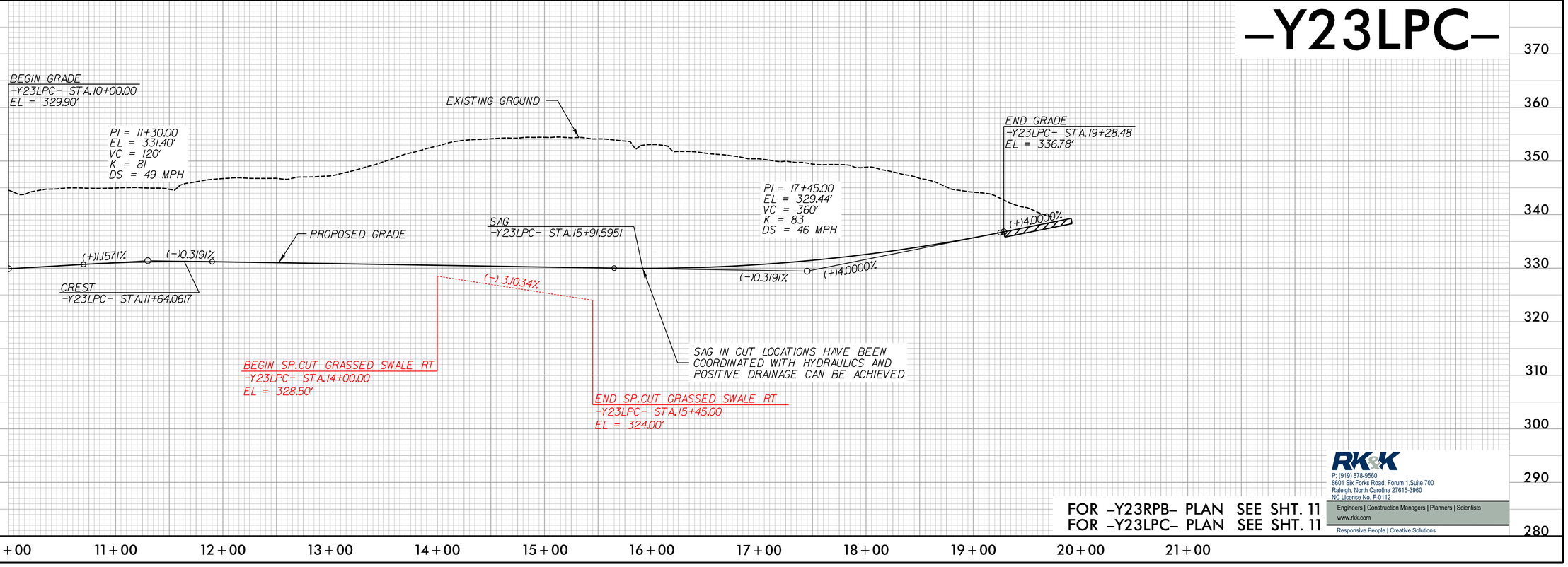
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA
36" RCP @ -Y23RPB- STA. 28+75

DRAINAGE AREA	= 4.3	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 21.3	CFS
DESIGN HW ELEVATION	= 318.35	FT
100 YEAR DISCHARGE	= 21.3	CFS
100 YEAR HW ELEVATION	= 318.35	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 77	CFS
OVERTOPPING ELEVATION	= 330.0	FT



–Y23LPC–



FOR –Y23RPB– PLAN SEE SHT. 11
FOR –Y23LPC– PLAN SEE SHT. 11

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–Y23RPC–

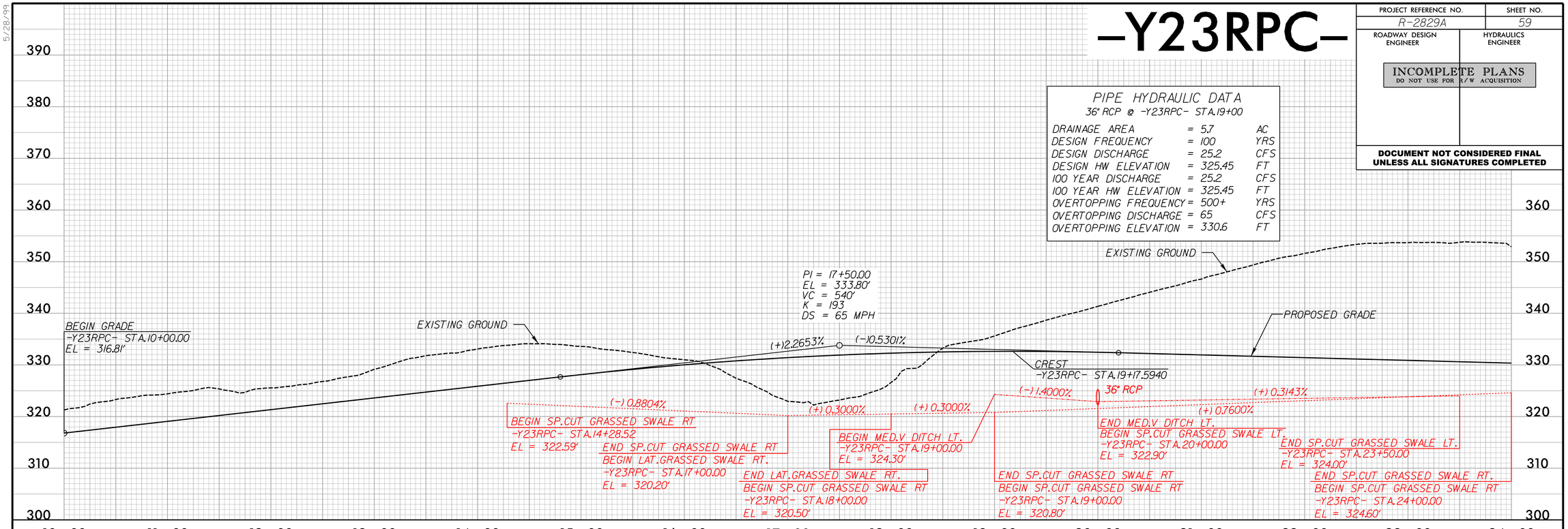
PROJECT REFERENCE NO.	SHEET NO.
R-2829A	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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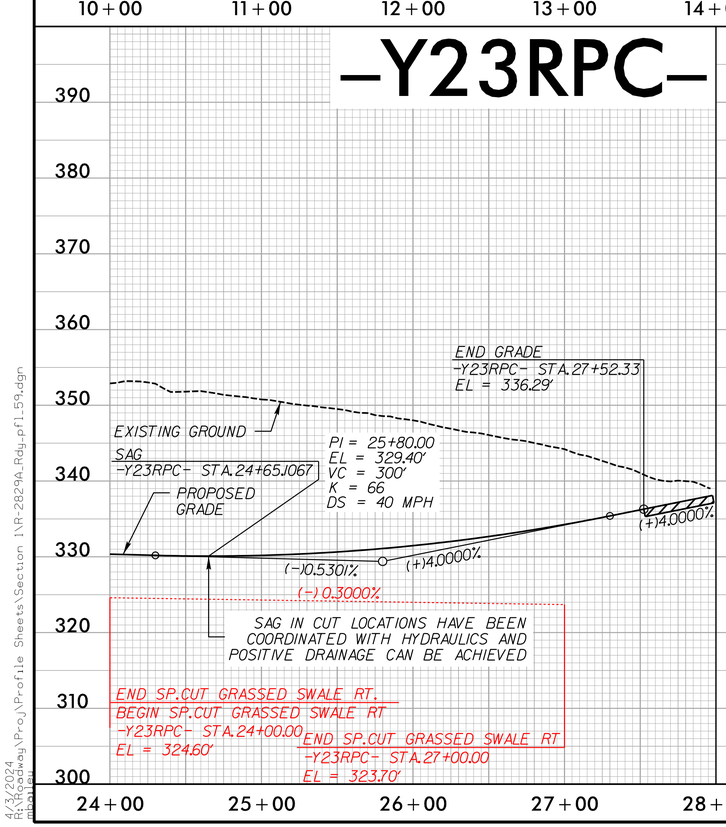
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PIPE HYDRAULIC DATA
36" RCP @ –Y23RPC– STA.19+00

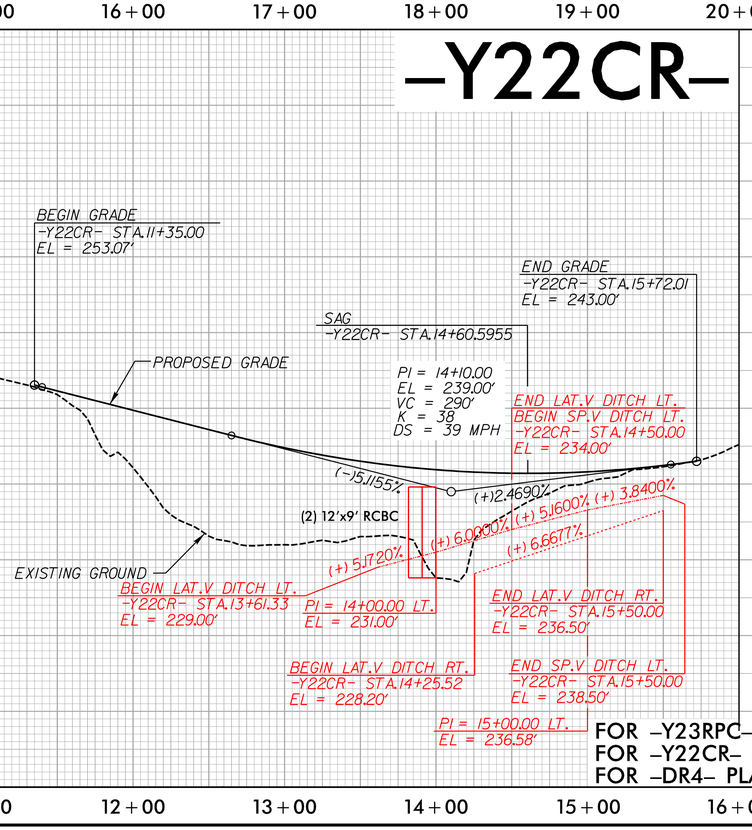
DRAINAGE AREA	= 5.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 25.2	CFS
DESIGN HW ELEVATION	= 325.45	FT
100 YEAR DISCHARGE	= 25.2	CFS
100 YEAR HW ELEVATION	= 325.45	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 65	CFS
OVERTOPPING ELEVATION	= 330.6	FT



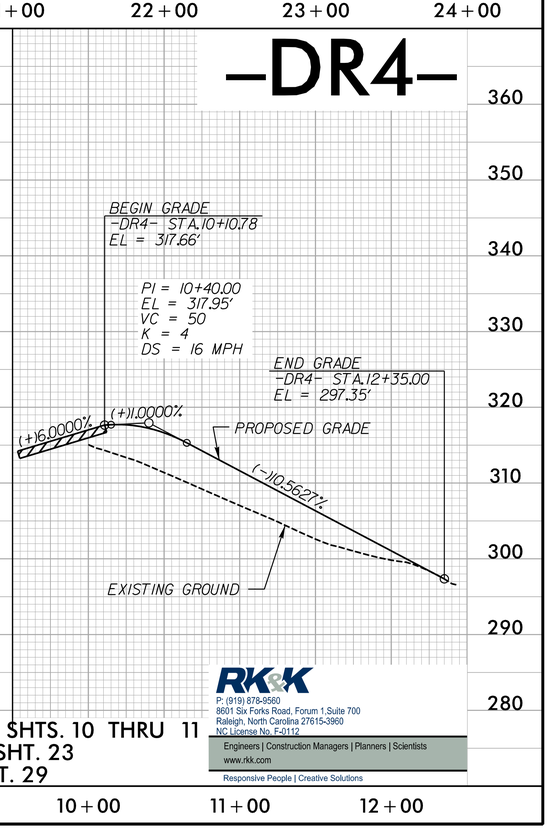
–Y23RPC–



–Y22CR–



–DR4–



FOR –Y23RPC– PLAN SEE SHTS. 10 THRU 11
FOR –Y22CR– PLAN SEE SHT. 23
FOR –DR4– PLAN SEE SHT. 29

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–Y23AR–

PROJECT REFERENCE NO.	SHEET NO.
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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BM#4 (FROM R-2829_js_ncdot_FS.dgn FILE)
N: 695,433 E: 2,134,016
–BY15– STA 18+25.00 O/S 255.00' LT
–Y23AR– STA 12+54.35 O/S 136.24' RT
ELEV.= 306.02', BENCH TIE IN 12" GUM

–Y23H–
MUSTARD SEED LANE

–Y23FR–
SAND CASTLE DRIVE

BEGIN GRADE
–Y23AR– STA.10+08.24
EL = 307.16'

SAG
–Y23AR– STA.11+41.876I

PI = 12+00.00
EL = 305.50'
VC = 200'
K = 48
DS = 34 MPH

EXISTING GROUND

(–)10.8636%
(+)3.2609%
(–) 3.1667%
(–) 4.3917%
(+) 6.5100%

42" RCP

BEGIN SP.V DITCH RT
–Y23AR– STA.10+30.00
EL = 304.27'

PI = 11+50.00 RT.
EL = 299.00'

BEGIN SP.BASE DITCH LT.
–Y23AR– STA.10+30.00
EL = 304.50'

PI = 11+50.00 LT.
EL = 300.70'

END SP.V DITCH RT
–Y23AR– STA.12+50.00
EL = 305.51'

BEGIN SP.CUT GRASSED SWALE RT
–Y23AR– STA.13+30.00
EL = 307.20'

PI = 14+30.00
EL = 313.00'
VC = 200'
K = 142
DS = 58 MPH

(+)3.2609%
(+) 0.5000%
(+) 1.7322%

END SP.BASE DITCH LT.
–Y23AR– STA.14+45.00
EL = 305.81'

END LAT.V DITCH RT
BEGIN SP.V DITCH RT.
–Y23AR– STA.16+50.00
EL = 314.30'

END SP.CUT GRASSED SWALE RT
BEGIN LAT.V DITCH RT
–Y23AR– STA.14+50.00
EL = 307.80'

(+)11.8519%
(+) 3.2500%
(+) 2.3256%

END SP.BASE DITCH LT.
–Y23AR– STA.15+50.00
EL= 307.00'

BEGIN SP.BASE DITCH LT.
–Y23AR– STA.15+07.00
EL= 306.00'

PI = 17+00.00
EL = 318.00'
VC = 300'
K = 99
DS = 50 MPH

(+)11.8519%
(+) 5.7143%

BEGIN LAT.BASE DITCH LT.
–Y23AR– STA.16+55.00
EL= 313.00'

END SP.V DITCH RT.
BEGIN LAT.V DITCH RT.
–Y23AR– STA.17+50.00
EL = 318.25'

PROPOSED GRADE

(+) 3.9500%
(+) 3.9574%

PI = 19+50.00
EL = 330.18'
VC = 100'
K = 53
DS = 42 MPH

(+)4.8710%
(+) 3.9783%

END LAT.V DITCH RT.
–Y23AR– STA.19+80.00
EL = 327.40'

END LAT BASE DITCH LT.
–Y23AR– STA.18+90.00
EL = 322.30'

(+)4.8710%
(+)3.0000%

END GRADE
–Y23AR– STA.20+00.35
EL = 331.69'

PIPE HYDRAULIC DATA
42" RCP @ –Y23AR– STA.11+50

DRAINAGE AREA	= 19.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 58.6	CFS
DESIGN HW ELEVATION	= 304.34	FT
100 YEAR DISCHARGE	= 67.7	CFS
100 YEAR HW ELEVATION	= 304.73	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 84	CFS
OVERTOPPING ELEVATION	= 305.5	FT

340 330 320 310 300 290 280 270 260

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

–Y23BR–

BEGIN GRADE
–Y23BR– STA.10+32.75
EL = 333.66'

(+)3.0000%

PROPOSED OVERLAY

EXISTING GROUND

(+) 3.7058%

END SP.V DITCH LT.
–Y23BR– STA.16+00.00
EL = 345.80'

BEGIN SP.V DITCH LT.
–Y23BR– STA.10+76.50
EL = 326.40'

CREST
–Y23BR– STA.18+45.53

PI = 19+70.00
EL = 361.78'
VC = 1,320'
K = 179
DS = 63 MPH

(+)3.0000%
(–)4.3945%

BEGIN SP.CUT GRASSED SWALE RT
–Y23BR– STA.18+50.00
EL = 346.31'

BEGIN SP.V DITCH LT.
–Y23BR– STA.18+50.00
EL = 347.27'

PI= 20+00.00 LT.
EL= 343.30'

(–) 2.6467%
(–) 1.1033%
(–) 1.1500%

END SP.CUT GRASSED SWALE RT
BEGIN LAT.GRASSED SWALE RT.
–Y23BR– STA.21+50.00
EL = 343.00'

END SP.LAT.V DITCH LT.
BEGIN LAT.V DITCH LT.
–Y23BR– STA.22+00.00
EL = 341.00'

END LAT.GRASSED SWALE RT.
–Y23BR– STA.22+50.00
EL = 342.10'

(–) 1.0900%
(–) 1.0667%

END LAT.V DITCH LT.
–Y23BR– STA.22+75.00
EL = 340.20'

BEGIN LAT.GRASSED SWALE RT.
–Y23BR– STA.23+40.00
EL = 339.50'

(–) 3.3125%

–Y23CR–
EXISTING RAYNOR ROAD

FOR –Y23AR– PLAN SEE SHTS. 27 AND 31
FOR –Y23BR– PLAN SEE SHTS. 27 AND 32

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390 380 370 360 350 340 330 320 310 300

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y23BR–

PROPOSED OVERLAY

EXISTING GROUND

(–) 3.3125%

(–) 0.6000%

PI = 25+00.00 RT.
EL = 334.20'

END LAT. GRASSED SWALE RT.
–Y23BR– STA. 25+50.00
EL = 333.90'

PI = 30+00.00
EL = 316.51'
VC = 350'
K = 103
DS = 51 MPH

(–) 4.3945%

(–) 1.0000%

END GRADE
–Y23BR– STA. 31+75.00
EL = 314.76'

(+) 2.9600%

END SP.V DITCH LT.
–Y23BR– STA. 31+45.00
EL = 311.21'

END SP.V DITCH LT.
–Y23BR– STA. 32+00.00
EL = 312.84'

DEVELOPMENT UNDER CONSTRUCTION
WILL ADJUST GRADE ACCORDINGLY

–DR1–

BEGIN GRADE
–DR1– STA. 10+09.16
EL = 292.81'

PI = 10+40.00
EL = 290.66'
VC = 50'
K = 23
DS = 32 MPH

PI = 11+00.00
EL = 285.17'
VC = 70'
K = 10
DS = 15 MPH

PROPOSED GRADE

(–) 2.0000%

(–) 7.0000%

(–) 9.1385%

(–) 2.3000%

END GRADE
–DR1– STA. 11+91.00
EL = 283.08'

EXISTING GROUND

–Y23CR–

DEVELOPMENT UNDER CONSTRUCTION
WILL ADJUST GRADE ACCORDINGLY

END MILL & FILL
BEGIN GRADE
–Y23CR– STA. 19+00.00
EL = 357.70'

BEGIN MILL & FILL
–Y23CR– STA. 10+31.84
EL = 341.68'

PROPOSED OVERLAY

EXISTING GROUND

PI = 19+92.00
EL = 356.74'
VC = 165'
K = 63
DS = 45MPH

(–) 1.0455%

(–) 3.6853%

(–) 5.4200%

BEGIN SP.V DITCH LT.
–Y23CR– STA. 19+00.00
EL = 354.83'

END SP.V DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
–Y23CR– STA. 20+50.00
EL = 346.70'

PI = 22+00.00
EL = 349.07'
VC = 200'
K = 269
DS > 80MPH

END GRADE
–Y23CR– STA. 23+28.40
EL = 345.30'

(–) 3.6853%

(–) 1.6000%

(–) 2.9411%

(–) 2.1538%

(+) 4.0000%

END SP.CUT GRASSED SWALE LT.
BEGIN LAT. GRASSED SWALE LT.
–Y23CR– STA. 22+50.00
EL = 343.50'

END LAT. GRASSED SWALE LT.
–Y23CR– STA. 23+15.00
EL = 342.10'

FOR –Y23BR– PLAN SEE SHTS. 32 THRU 33
FOR –Y23CR– PLAN SEE SHTS. 26 AND 32
FOR –DR1– PLAN SEE SHT. 12

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–Y23DR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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DO NOT USE FOR R/W ACQUISITION

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BEGIN GRADE
–Y23DR– STA.10+35.50
EL = 340.70'

(+12.9167%

END SP.V DITCH LT.
–Y23DR– STA.11+50.00
EL = 333.97'

PI = 13+00.00
EL = 332.58'
VC = 125'
K = 127
DS = 55 MPH

(–) 1.4300%

BEGIN SP.V DITCH LT.
–Y23DR– STA.10+50.00
EL = 335.40'

BEGIN SP.V DITCH RT.
–Y23DR– STA.10+50.00
EL = 336.00'

(–)13.0690%

(–) 3.9040%

(–)14.0500%

EXISTING GROUND

PROPOSED GRADE

(–) 2.1200%

18" RCP

(+) 0.4700%

BEGIN SP.V DITCH LT.
–Y23DR– STA.15+00.00
EL = 321.46'

PI= 15+50.00 RT.
EL= 316.48'

END SP.V DITCH LT.
–Y23DR– STA.15+50.00
EL = 320.40'

END SP.V DITCH RT.
–Y23DR– STA.16+50.00
EL = 316.95'

SAG
–Y23DR– STA.22+67.9387

SAG IN CUT LOCATIONS HAVE BEEN COORDINATED WITH HYDRAULICS AND POSITIVE DRAINAGE CAN BE ACHIEVED

PI = 22+90.00
EL = 292.49'
VC = 560'
K = 64
DS = 40 MPH

(–)14.0500%

BEGIN SP.V DITCH RT.
–Y23DR– STA.20+50.00
EL = 299.84'

(–) 3.6133%

(–) 0.9240%

(–)10.0000%

BEGIN SP.CUT GRASSED SWALE LT.
–Y23DR– STA.21+00.00
EL = 298.16'

END SP.V DITCH RT.
BEGIN SP.BASE DITCH RT.
–Y23DR– STA.23+50.00
EL = 289.00'

END SP.BASE DITCH RT.
BEGIN LAT.BASE DITCH RT.
–Y23DR– STA.24+00.00
EL = 286.10'

END SP.CUT GRASSED SWALE LT.
BEGIN SP.BASE DITCH LT.
–Y23DR– STA.23+50.00
EL = 295.85'

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

260 270 280 290 300 310 320 330 340 350

PIPE HYDRAULIC DATA
48" RCP @ –Y23DR– STA.24+70

DRAINAGE AREA	= 24.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 70.7	CFS
DESIGN HW ELEVATION	= 290.93	FT
100 YEAR DISCHARGE	= 81.5	CFS
100 YEAR HW ELEVATION	= 290.93	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 171	CFS
OVERTOPPING ELEVATION	= 297.9	FT

–Y23DR–

–Y23J–
–DR3–

PI = 28+55.00
EL = 319.28'
VC = 270'
K = 44
DS = 40 MPH

CREST
–Y23DR– STA.29+30.3478

(+)4.7428%

(–)11.3450%

PROPOSED GRADE

(+)4.7428%

(–) 1.1321%

(+) 5.3846%

BEGIN SP.CUT GRASSED SWALE LT.
–Y23DR– STA.29+85.00
EL = 314.00'

END SP.CUT GRASSED SWALE LT.
BEGIN LAT.BASE DITCH LT.
–Y23DR– STA.32+50.00
EL = 311.00'

(–) 11.9394%

EXISTING GROUND

(–)10.0000%

(+) 7.0548%

END LAT.BASE DITCH LT.
BEGIN SP.V DITCH LT.
–Y23DR– STA.27+50.00
EL = 308.00'

END SP.V DITCH LT.
–Y23DR– STA.28+80.00
EL = 315.00'

48" RCP

END LAT.BASE DITCH RT.
–Y23DR– STA.24+99.00
EL = 280.30'

END SP.BASE DITCH LT.
BEGIN LAT.BASE DITCH LT.
–Y23DR– STA.24+40.00
EL = 286.13'

END SP.BASE DITCH RT.
BEGIN LAT.BASE DITCH RT.
–Y23DR– STA.24+00.00
EL = 286.10'

42" RCP

(+) 4.9730%

BEGIN SP.V DITCH RT.
–Y23DR– STA.36+00.00
EL = 306.37'

(–) 2.6786%

(+) 3.0000%

(–) 5.1975%

END LAT.BASE DITCH LT.
BEGIN LAT.V DITCH LT.
–Y23DR– STA.34+15.00
EL = 291.30'

END LAT.V DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
–Y23DR– STA.36+00.00
EL = 300.50'

END SP.CUT GRASSED SWALE LT.
BEGIN SP.V DITCH LT.
–Y23DR– STA.37+00.00
EL = 303.50'

PIPE HYDRAULIC DATA
42" RCP @ –Y23DR– STA.34+25

DRAINAGE AREA	= 13.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 46.5	CFS
DESIGN HW ELEVATION	= 294.4	FT
100 YEAR DISCHARGE	= 53.2	CFS
100 YEAR HW ELEVATION	= 294.40	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 160	CFS
OVERTOPPING ELEVATION	= 308.5	FT

FOR –Y23DR– PLAN SEE SHTS. 11, 25, 28 AND 29

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–Y23DR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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PIPE HYDRAULIC DATA
54" RCP (48" at entrance) @ –Y23DR– STA. 46+10

DRAINAGE AREA	= 14.3	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 65.7	CFS
DESIGN HW ELEVATION	= 307.26	FT
100 YEAR DISCHARGE	= 65.7	CFS
100 YEAR HW ELEVATION	= 307.26	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 125.0	CFS
OVERTOPPING ELEVATION	= 310.8	FT

PIPE HYDRAULIC DATA
42" RCP @ –Y23DR– STA. 51+14.33

DRAINAGE AREA	= 7.9	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 26.6	CFS
DESIGN HW ELEVATION	= 287.42	FT
100 YEAR DISCHARGE	= 26.6	CFS
100 YEAR HW ELEVATION	= 287.42	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 88.0	CFS
OVERTOPPING ELEVATION	= 291.6	FT

PROPOSED GRADE
EXISTING GROUND
–DR1–
(–) 2.6786%
30" RCP
(+) 2.5909%
(+) 2.1069%
PI = 38+68.00 LT.
EL = 299.00'
END SP.V DITCH RT.
BEGIN SP.V DITCH RT.
–Y23DR– STA. 38+38.00
EL = 294.00'
END SP.V DITCH LT.
–Y23DR– STA. 40+00.00
EL = 302.42'
END SP.V DITCH RT.
–Y23DR– STA. 41+00.00
EL = 299.52'
BEGIN SP.CUT SWALE LT.
–Y23DR– 44+43.15
EL = 295.26'
(–) 1.3400%
END SP.CUT SWALE LT.
–Y23DR– 45+43.15
EL = 293.92'
54" RCP
(–) 1.3450%
PI = 51+93.15
EL = 269.00'
42" RCP
(+) 5.5824%
(+) 6.1566%
BEGIN LAT.V DITCH RT.
–Y23DR– 51+00.00

–Y23DR–

END GRADE
–Y23DR– STA. 55+35.00
EL = 283.24'
–DR2–
EXISTING GROUND
(–) 1.3450%
PROPOSED GRADE
24" RCP
(+) 6.1566%
(+) 8.9041%
END SP.V DITCH RT.
–Y23DR– 53+23.00
EL = 279.00'
END LAT.V DITCH RT.
BEGIN SP.V DITCH RT.
–Y23DR– 52+50.00
EL = 272.50'
BEGIN SP.V DITCH RT.
–Y23DR– 54+93.71
EL = 279.89'
END SP.V DITCH RT.
–Y23DR– 56+18.06
EL = 278.67'
(–) 1.7155%
(–) 2.2051%
END SP.V DITCH RT.
–Y23DR– 56+18.06
EL = 278.67'

–Y23FR–

PIPE HYDRAULIC DATA
54" RCP @ –Y23FR– STA. 11+70

DRAINAGE AREA	= 30.2	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 73.1	CFS
DESIGN HW ELEVATION	= 309.04	FT
100 YEAR DISCHARGE	= 86.1	CFS
100 YEAR HW ELEVATION	= 309.48	FT
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING DISCHARGE	= 75	CFS
OVERTOPPING ELEVATION	= 309.1	FT

BEGIN GRADE
–Y23FR– STA. 10+09.00
EL = 309.03'
BEGIN LAT.GRASSED SWALE LT.
–Y23FR– STA. 11+94.00
EL = 307.72'
PI = 10+70.00
EL = 311.00'
VC = 100'
K = 38
DS = 37 MPH
PI = 12+40.00
EL = 312.00'
VC = 160'
K = 42
DS = 32 MPH
PROPOSED GRADE
END GRADE
–Y23FR– STA. 14+20.00
EL = 319.98'
(+) 3.7540%
(+) 3.2330%
(+) 0.5882%
(+) 0.5882%
(+) 4.4356%
(+) 5.9800%
(+) 6.9400%
(+) 3.9615%
(–) 0.7600%
EXISTING GROUND
54" RCP
(+) 8.4530%
END LAT.V DITCH LT.
–Y23FR– STA. 14+00.00
EL = 316.89'
END LAT.GRASSED SWALE LT.
–Y23FR– STA. 11+15.00
EL = 306.25'
END LAT.GRASSED SWALE LT.
BEGIN LAT.V DITCH LT.
–Y23FR– STA. 13+50.00
EL = 313.90'
BEGIN LAT.GRASSED SWALE LT.
–Y23FR– STA. 10+25.00
EL = 307.20'
END LAT.V DITCH RT.
BEGIN LAT.V DITCH RT.
–Y23FR– STA. 11+69.00
EL = 297.70'
BEGIN SP.V DITCH RT.
–Y23FR– STA. 13+50.00
EL = 313.00'
END SP.V DITCH RT.
–Y23FR– STA. 14+00.00
EL = 316.47'

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E: 2,134,016
–BYI5– STA. 18+25.00 O/S 255.00' LT
–Y23FR– STA. 11+34.70 O/S 49.13' RT
ELEV. = 306.02', BENCH TIE IN 12" GUM

FOR –Y23DR– PLAN SEE SHTS. 11 THRU 12
FOR –Y23FR– PLAN SEE SHTS. 31
FOR –DR2– PLAN SEE SHT. 12

–DR2–

BEGIN GRADE
–DR2– STA. 10+09.00
EL = 285.55'
END GRADE
–DR2– STA. 12+05.00
EL = 282.57'
PI = 10+70.00
EL = 285.36'
VC = 120'
K = 200
DS = 73 MPH
PI = 11+81.00
EL = 285.70'
VC = 35'
K = 3
DS = 15 MPH
PI = 10+70.00 LT.
EL = 282.25'
END SP.CUT DITCH LT.
–DR2– STA. 11+50.00
EL = 284.92'
(–) 0.3000%
(+) 0.3000%
(–) 3.0354%
(+) 3.3375%
(+) 3.9875%
(–) 10.3261%
BEGIN SP. CUT DITCH LT.
–DR2– STA. 10+24.00
EL = 277.50'
END SP.V DITCH RT.
–DR– 11+50.00
EL = 284.54'
BEGIN SP.V DITCH RT.
–DR2– 10+70.00
EL = 281.35'

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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–Y23G–

END GRADE
BEGIN OVERLAY, 3"
-Y23G- STA. 12+00.00
EL = 350.00'

BEGIN GRADE
-Y23G- STA. 10+35.50
EL = 342.90'

PI = 11+20.00
EL = 348.66'
VC = 100'
K = 19
DS = 30 MPH

PROPOSED OVERLAY

END OVERLAY, 3"
-Y23G- STA. 18+44.74
EL = 352.42'

(+)12.5167%
(+)6.8176%
(+)1.6736%
(+) 3.1680%

END SP.V DITCH LT.
-Y23G- STA. 11+50.00
EL = 346.96'

BEGIN SP.V DITCH LT.
-Y23G- STA. 10+50.00
EL = 343.00'

EXISTING GROUND

PROPOSED GRADE

–Y23H–

PIPE HYDRAULIC DATA
36" RCP @ -Y23H- STA. 11+85

DRAINAGE AREA	= 12.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 39.1	CFS
DESIGN HW ELEVATION	= 316.06	FT
100 YEAR DISCHARGE	= 45.1	CFS
100 YEAR HW ELEVATION	= 316.36	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 59	CFS
OVERTOPPING ELEVATION	= 311.2	FT

END GRADE
-Y23H- STA. 12+21.19
EL = 316.76'

BEGIN GRADE
-Y23H- STA. 10+50.00
EL = 321.68'

PI = 11+70.00
EL = 318.30'
VC = 90'
K = 466
DS > 80 MPH

BEGIN SP.BASE DITCH RT.
-Y23H- STA. 10+50.00
EL = 319.11'

END SP.BASE DITCH RT.
-Y23H- STA. 11+85.00
EL = 307.00'

PROPOSED GRADE

(-)12.8204%
(-)3.0135%
(+)12.0000%
(+) 8.9704%

EXISTING GROUND

36" RCP

–Y23E–

BEGIN GRADE
-Y23E- STA. 10+00.00
EL = 297.55'

END GRADE
-Y23E- STA. 11+05.00
EL = 297.87'

PROPOSED GRADE

EXISTING GROUND

BEGIN SP.V DITCH LT.
-Y23E- STA. 10+20.00
EL = 295.20'

(+)0.3000%
(+) 4.0000%
(-) 3.6250%

END SP.V DITCH LT.
-Y23E- STA. 10+50.00
EL = 294.00'

END SP.V DITCH RT.
-Y23E- STA. 10+56.00
EL = 293.00'

BEGIN SP.V DITCH RT.
-Y23E- STA. 10+00.00
EL = 295.03'

–Y23I–

PIPE HYDRAULIC DATA
36" RCP @ -LI- STA. 13+98

DRAINAGE AREA	= 5.9	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 19.0	CFS
DESIGN HW ELEVATION	= 235.04	FT
100 YEAR DISCHARGE	= 22.1	CFS
100 YEAR HW ELEVATION	= 235.25	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

BEGIN GRADE
-Y23I- STA. 10+95.15
EL = 236.50'

PROPOSED GRADE

END GRADE
-Y23I- STA. 14+76.70
EL = 238.50'

(+)0.5242%
2%
2%

EXISTING GROUND

36" RCP
(+) 5.9783%
(+) 3.8000%
(+) 3.8889%

BEGIN SP.V DITCH RT.
-Y23I- STA. 14+00.00
EL = 230.00'

BEGIN SP.V DITCH LT.
-Y23I- STA. 14+00
EL = 233.00'

END SP.V DITCH RT.
BEGIN V DITCH RT.
-Y23I- STA. 14+92.15
EL = 235.50'

END SP.D.V DITCH RT.
-Y23I- STA. 16+00.00
EL = 239.70'

BEGIN SP.V DITCH LT.
-Y23I- STA. 14+00
EL = 233.00'

–Y23J–

BEGIN SP.LAT.V DITCH RT.
-Y23J- STA. 13+00.00
EL = 321.65'

PI = 14+95.00
EL = 316.87'
VC = 85'
K = 17
DS = 20 MPH

BEGIN GRADE
-Y23J- STA. 13+80.00
EL = 321.33'

EXISTING GROUND

PROPOSED GRADE

END GRADE
-Y23J- STA. 15+38.70
EL = 317.31'

(-) 6.050%
(-) 3.7000%
PI = 14+22.00 RT.
EL = 317.10'
(-)3.8793%
(-) 3.8636%
(+)1.0000%
(+)6.0000%
(-) 3.5294%
(-)1.9444%

END SP.V DITCH RT.
-Y23J- STA. 15+30.00
EL = 315.00'

SAG
-Y23J- STA. 15+20.0795

END SP.LAT.V DITCH LT.
BEGIN SP.CUT GRASSED SWALE LT.
-Y23J- STA. 14+00.00
EL = 317.00'

END SP.CUT GRASSED SWALE LT.
-Y23J- STA. 14+85.00
EL = 314.00'

END SP.LAT.V DITCH RT.
BEGIN SP.CUT DITCH RT.
-Y23J- STA. 14+00.00 RT.
EL = 317.95'

BEGIN SP.LAT.V DITCH LT.
-Y23J- STA. 13+00.00
EL = 323.05'

–DR3–

BEGIN GRADE
-DR3- STA. 10+09.31
EL = 318.36'

PI = 10+35.00
EL = 318.61'
VC = 50'
K = 5
DS = 17 MPH

PROPOSED GRADE

PI = 11+70.00
EL = 305.11'
VC = 60'
K = 18
DS = 20 MPH

(+)6.0000%
(+)1.0000%
(-)10.0000%
(-)6.7233%

CREST
-DR3- STA. 10+14.5455

EXISTING GROUND

END GRADE
-DR3- STA. 12+00.00
EL = 303.10'

FOR –Y23E– PLAN SEE SHT 30
FOR –Y23G– PLAN SEE SHTS. 11 AND 25
FOR –Y23H– PLAN SEE SHT. 31
FOR –Y23I– PLAN SEE SHT. 13
FOR –Y23J– PLAN SEE SHT. 29
FOR –DR3– PLAN SEE SHT. 29

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–Y24R–LT–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	65
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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CULVERT HYDRAULIC DATA
EXTEND 5'x6' RCBC BURIED 1.0'
w/ 72"W.S.PIPE @ –Y24R– STA.19+81

DRAINAGE AREA	= 0.41	SQ MI
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 570	CFS
DESIGN HW ELEVATION	= 280.8	FT
100 YEAR DISCHARGE	= 660	CFS
100 YEAR HW ELEVATION	= 281.8	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1350	CFS
OVERTOPPING ELEVATION	= 295.9	FT

BEGIN GRADE
–Y24R–LT– STA.14+00.00
EL = 312.83'

PI = 15+50.00
EL = 310.65'
VC = 300'
K = 284
DS = 72 MPH

PI = 18+70.00
EL = 302.62'
VC = 300'
K = 501
DS > 80 MPH

PI = 22+50.00
EL = 295.36'
VC = 300'
K = 2714
DS > 80 MPH

END GRADE
–Y24R–LT– STA.24+20.00,27' LT =
–Y24R– STA.24+20.00
EL = 292.30'

(–)1.4546%
(–)12.5094%
(–)12.5094%
(–)1.9105%
(–)1.9105%
(–)1.8000%
(–) 3.3667%
(–) 10.8600%
(–) 0.6410%

PROPOSED GRADE
EXISTING GROUND

END SP.V DITCH LT.
BEGIN LAT.BASE DITCH LT.
–Y24R– STA.15+50.00
EL = 305.00'

BEGIN SP.V DITCH LT.
–Y24R– STA.14+00.00
EL = 310.05'

END LAT.SWALE LT.
–Y24R– STA.19+17.00
EL = 277.10'

END LAT.BASE DITCH LT.
BEGIN LAT.SWALE LT.
–Y24R– STA.18+00.00
EL = 277.85'

108" WSP
EXIST 5' x 6' RCBC

FOR –Y24R– PLAN SEE SHTS. 34 & 35

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

360 350 340 330 320 310 300 290 280 270

–Y24R–RT–

CULVERT HYDRAULIC DATA
EXTEND 5'x6' RCBC BURIED 1.0'
w/ 72"W.S.PIPE @ –Y24R– STA.19+81

DRAINAGE AREA	= 0.41	SQ MI
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 570	CFS
DESIGN HW ELEVATION	= 280.8	FT
100 YEAR DISCHARGE	= 660	CFS
100 YEAR HW ELEVATION	= 281.8	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1350	CFS
OVERTOPPING ELEVATION	= 295.9	FT

BEGIN GRADE
–Y24R–RT– STA.14+00.00
EL = 312.38'

PI = 14+90.00
EL = 310.78'
VC = 180'
K = 429
DS > 80 MPH

PI = 21+20.00
EL = 296.90'
VC = 200'
K = 249
DS > 80 MPH

PI = 23+20.00
EL = 294.10'
VC = 200'
K = 500
DS > 80 MPH

END GRADE
–Y24R–RT– STA.24+20.00,27' RT =
–Y24R– STA.24+20.00
EL = 292.30'

(–)1.7833%
(–)12.2027%
(–)12.2027%
(–)1.4000%
(–)1.4000%
(–)1.8000%
(–) 3.9600%
(–) 3.9500%
(–) 8.7333%
(–) 0.3604%

PROPOSED GRADE
EXISTING GROUND

PI= STA.14+00.00 RT
EL = 309.10'

BEGIN SP.V DITCH RT.
–Y24R– STA.13+00.00
EL = 313.06'

END SP.V DITCH RT.
BEGIN LAT.BASE DITCH RT.
–Y24R– STA.16+00.00
EL = 301.20'

END LAT.BASE DITCH RT.
BEGIN LAT.SWALE RT
–Y24R– STA.19+00.00
EL = 275.00'

108" WSP
EXIST 5' x 6' RCBC

END LAT.SWALE RT
–Y24R– STA.20+11.00
EL = 274.60'

FOR –Y24R– PLAN SEE SHTS. 34 & 35

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

360 350 340 330 320 310 300 290 280 270

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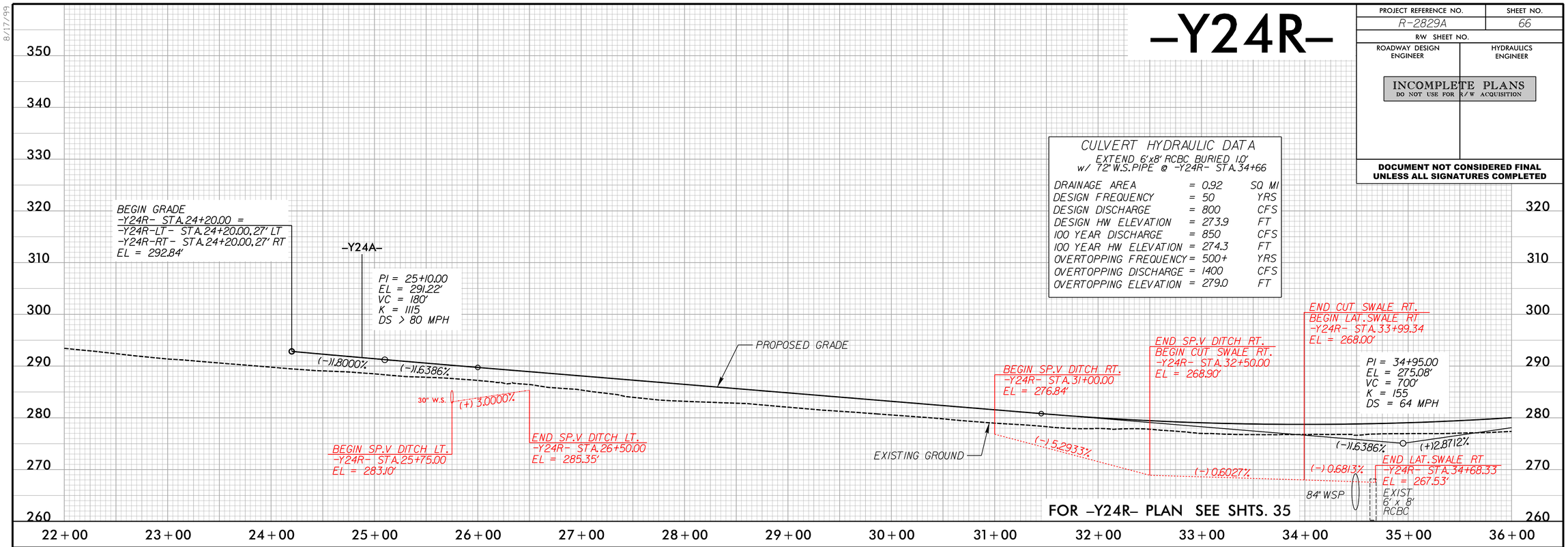
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–Y24R–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	66
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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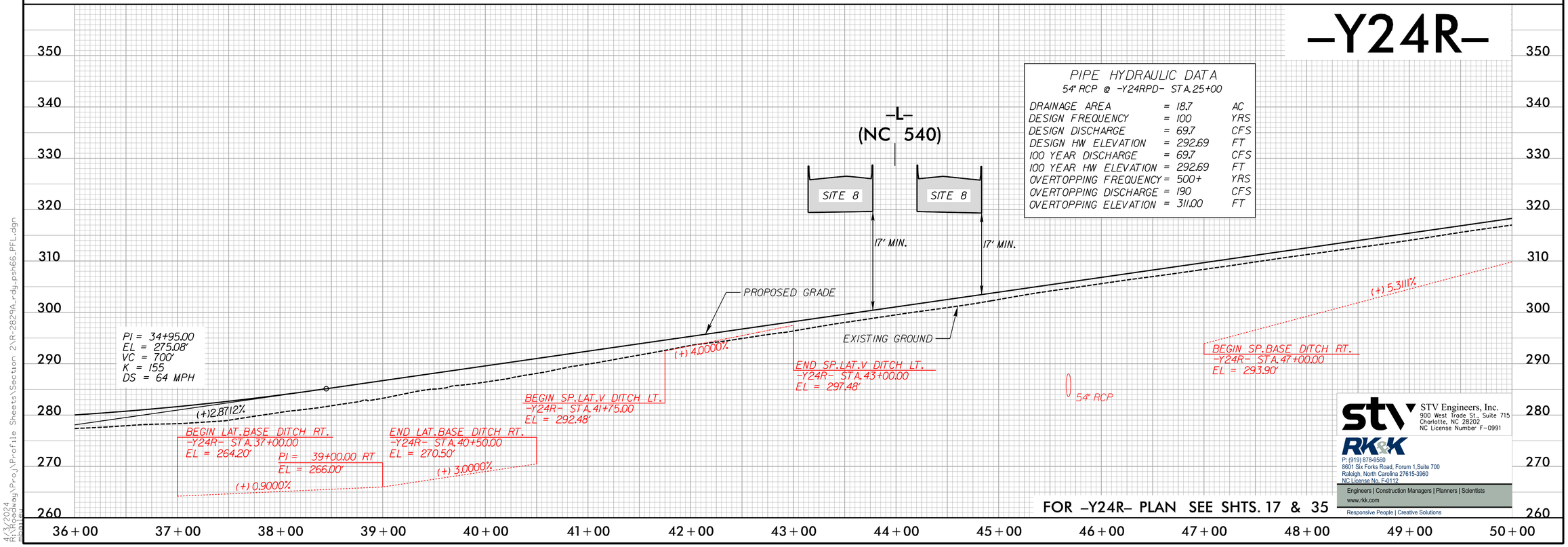


CULVERT HYDRAULIC DATA
EXTEND 6'x8' RCBC BURIED 1.0'
w/ 72" W.S.PIPE @ –Y24R– STA.34+66

DRAINAGE AREA	= 0.92	SQ MI
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 800	CFS
DESIGN HW ELEVATION	= 273.9	FT
100 YEAR DISCHARGE	= 850	CFS
100 YEAR HW ELEVATION	= 274.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1400	CFS
OVERTOPPING ELEVATION	= 279.0	FT

FOR –Y24R– PLAN SEE SHTS. 35

–Y24R–



PIPE HYDRAULIC DATA
54" RCP @ –Y24RPD– STA.25+00

DRAINAGE AREA	= 18.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 69.7	CFS
DESIGN HW ELEVATION	= 292.69	FT
100 YEAR DISCHARGE	= 69.7	CFS
100 YEAR HW ELEVATION	= 292.69	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 190	CFS
OVERTOPPING ELEVATION	= 311.00	FT

FOR –Y24R– PLAN SEE SHTS. 17 & 35

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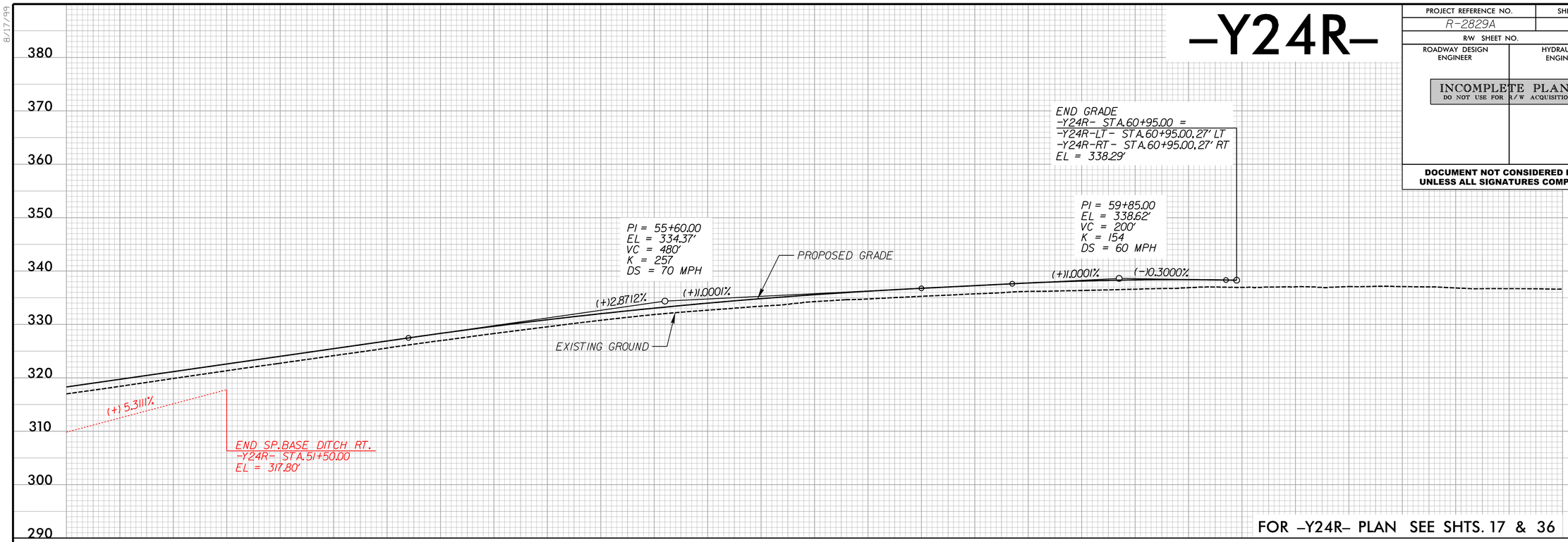
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–Y24R–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	67
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

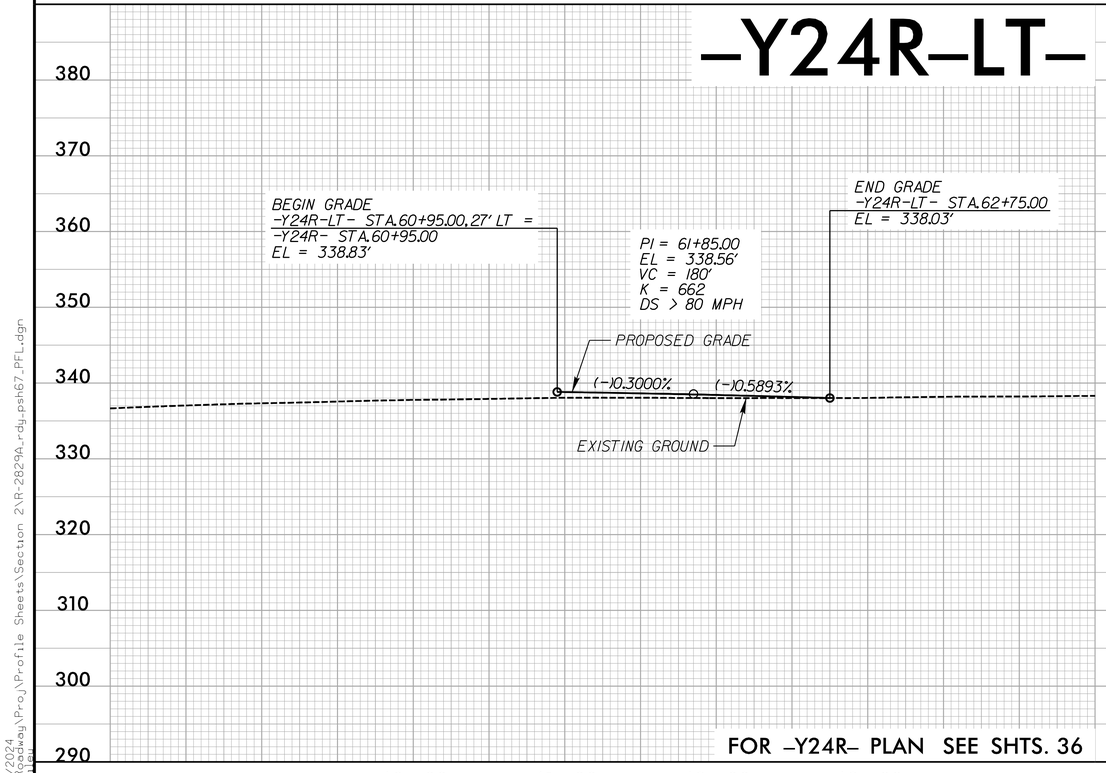
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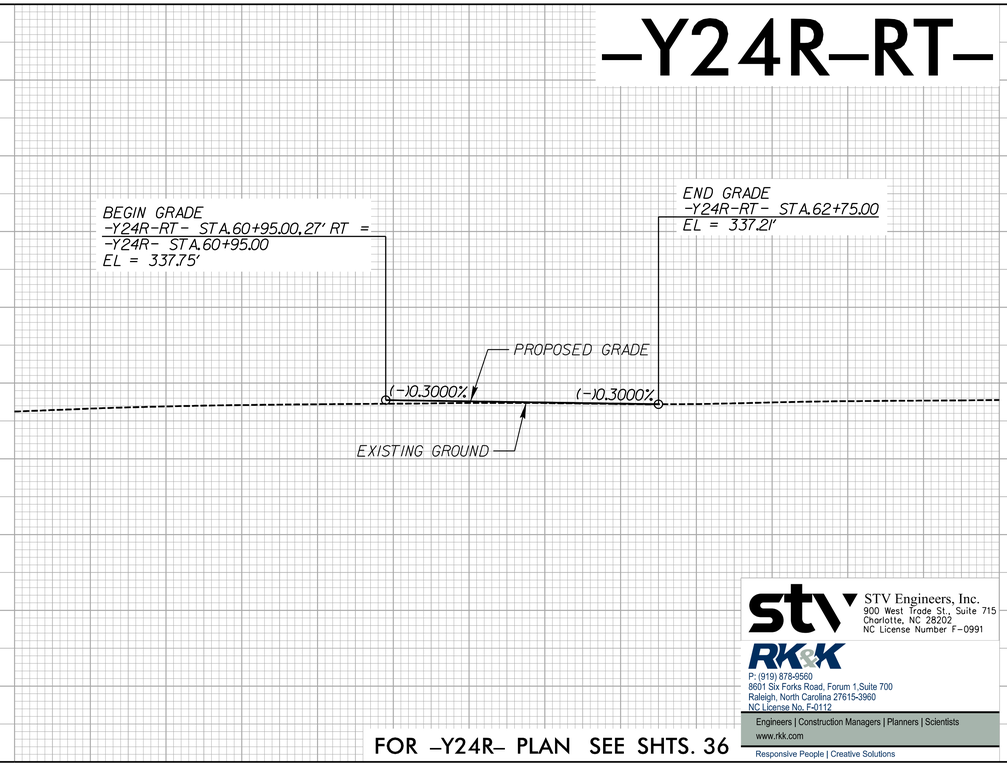
FOR –Y24R– PLAN SEE SHTS. 17 & 36

–Y24R–LT–



FOR –Y24R– PLAN SEE SHTS. 36

–Y24R–RT–



FOR –Y24R– PLAN SEE SHTS. 36

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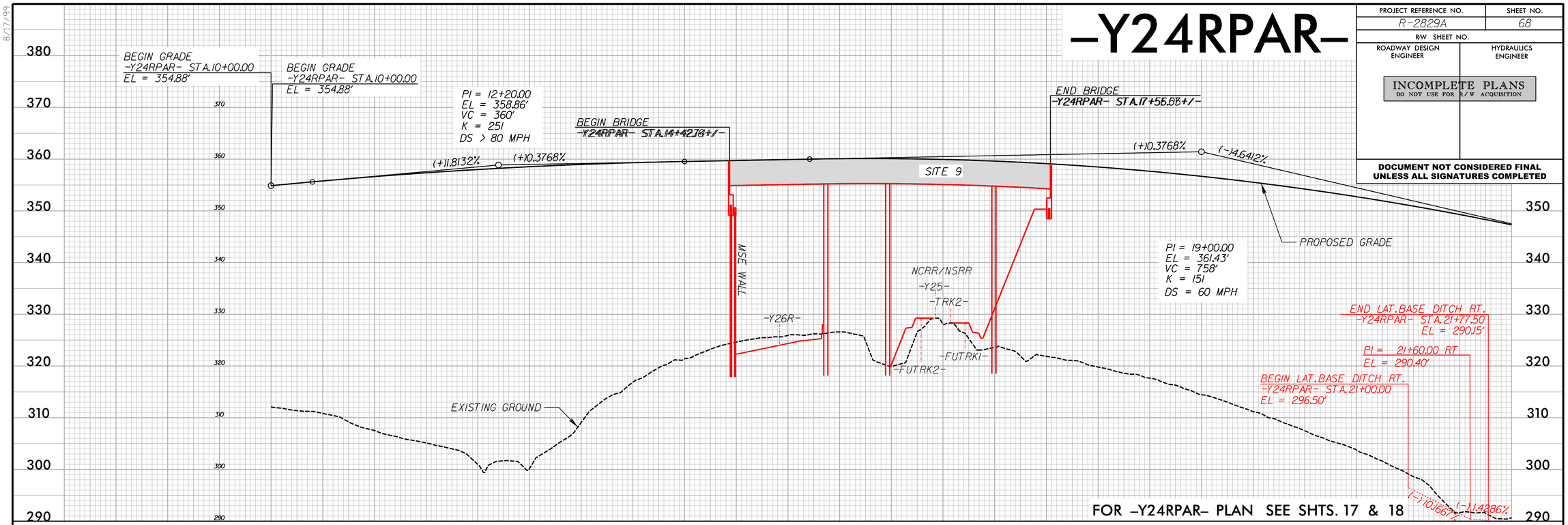
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–Y24RPAR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	68
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

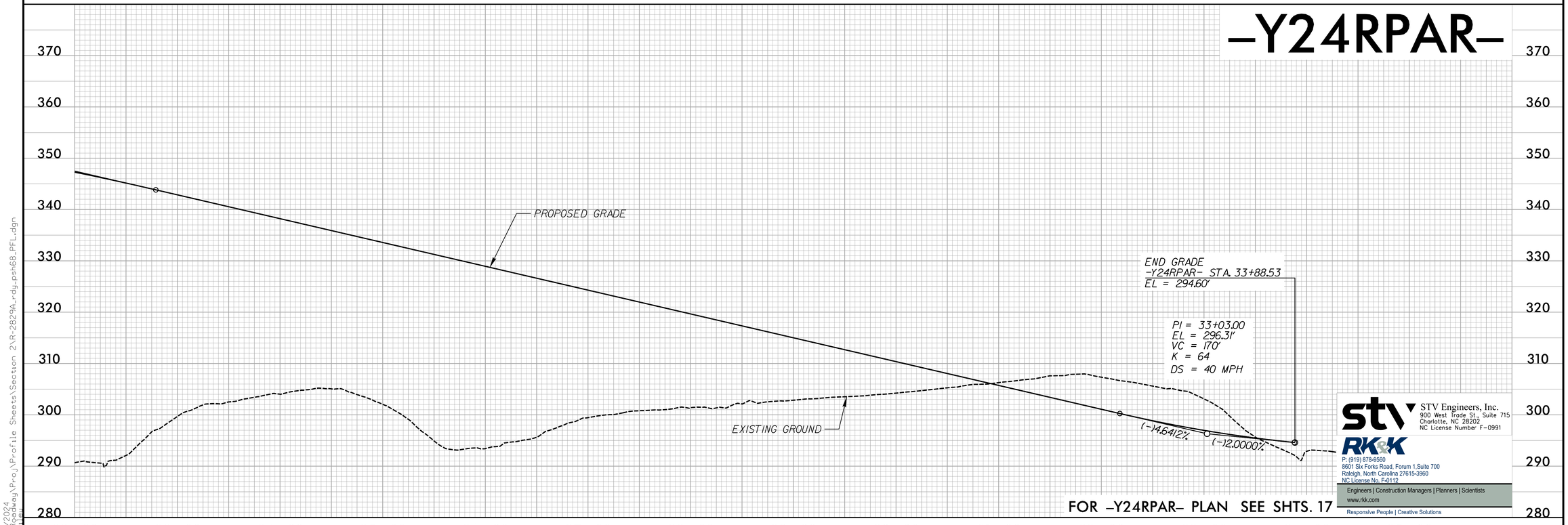
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FOR –Y24RPAR– PLAN SEE SHTS. 17 & 18

–Y24RPAR–



FOR –Y24RPAR– PLAN SEE SHTS. 17

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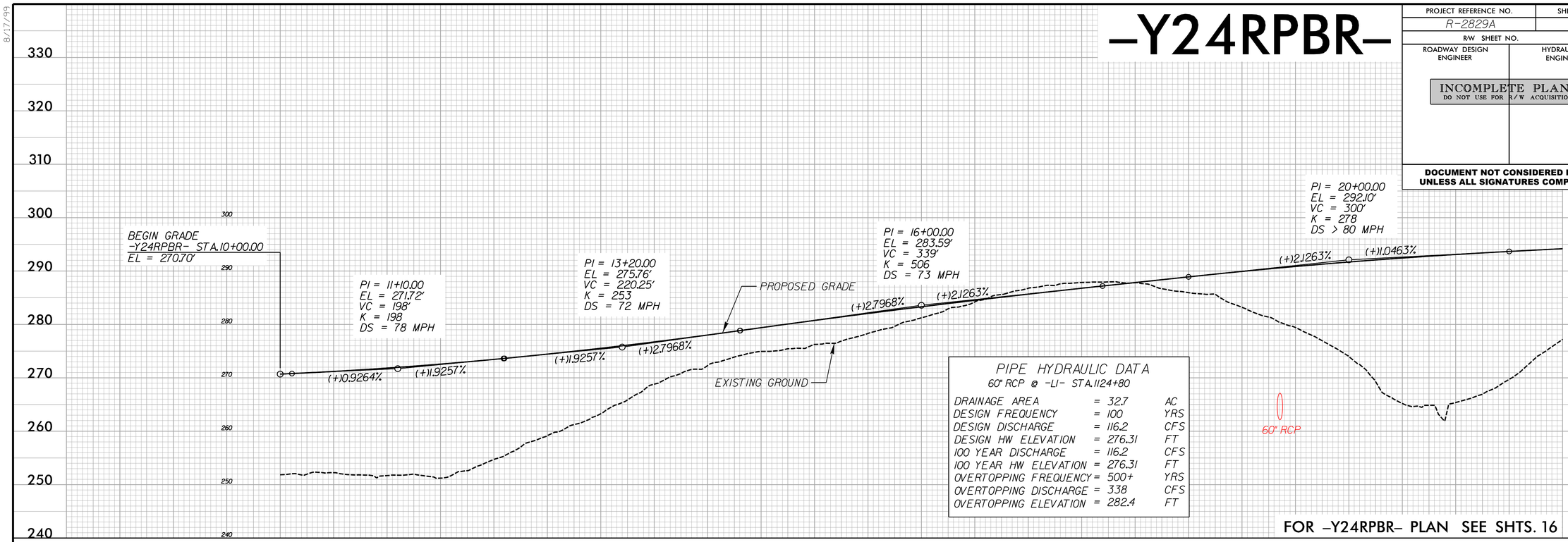
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–Y24RPBR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	69
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PIPE HYDRAULIC DATA
60" RCP @ –LI– STA.1124+80

DRAINAGE AREA	= 32.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 116.2	CFS
DESIGN HW ELEVATION	= 276.31	FT
100 YEAR DISCHARGE	= 116.2	CFS
100 YEAR HW ELEVATION	= 276.31	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 338	CFS
OVERTOPPING ELEVATION	= 282.4	FT

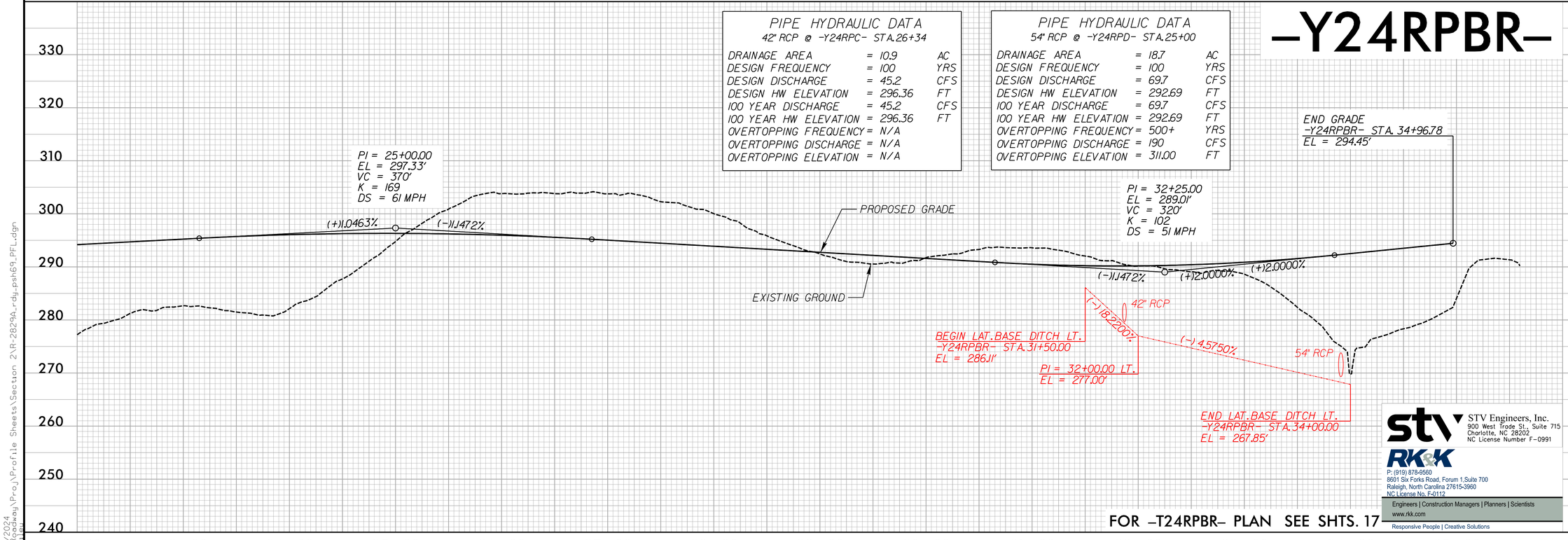
FOR –Y24RPBR– PLAN SEE SHTS. 16

PIPE HYDRAULIC DATA
42" RCP @ –Y24RPC– STA.26+34

DRAINAGE AREA	= 10.9	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 45.2	CFS
DESIGN HW ELEVATION	= 296.36	FT
100 YEAR DISCHARGE	= 45.2	CFS
100 YEAR HW ELEVATION	= 296.36	FT
OVERTOPPING FREQUENCY	= N/A	
OVERTOPPING DISCHARGE	= N/A	
OVERTOPPING ELEVATION	= N/A	

PIPE HYDRAULIC DATA
54" RCP @ –Y24RPD– STA.25+00

DRAINAGE AREA	= 18.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 69.7	CFS
DESIGN HW ELEVATION	= 292.69	FT
100 YEAR DISCHARGE	= 69.7	CFS
100 YEAR HW ELEVATION	= 292.69	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 190	CFS
OVERTOPPING ELEVATION	= 311.00	FT



FOR –T24RPBR– PLAN SEE SHTS. 17

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–Y24RPC–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	70
R/W SHEET NO.	

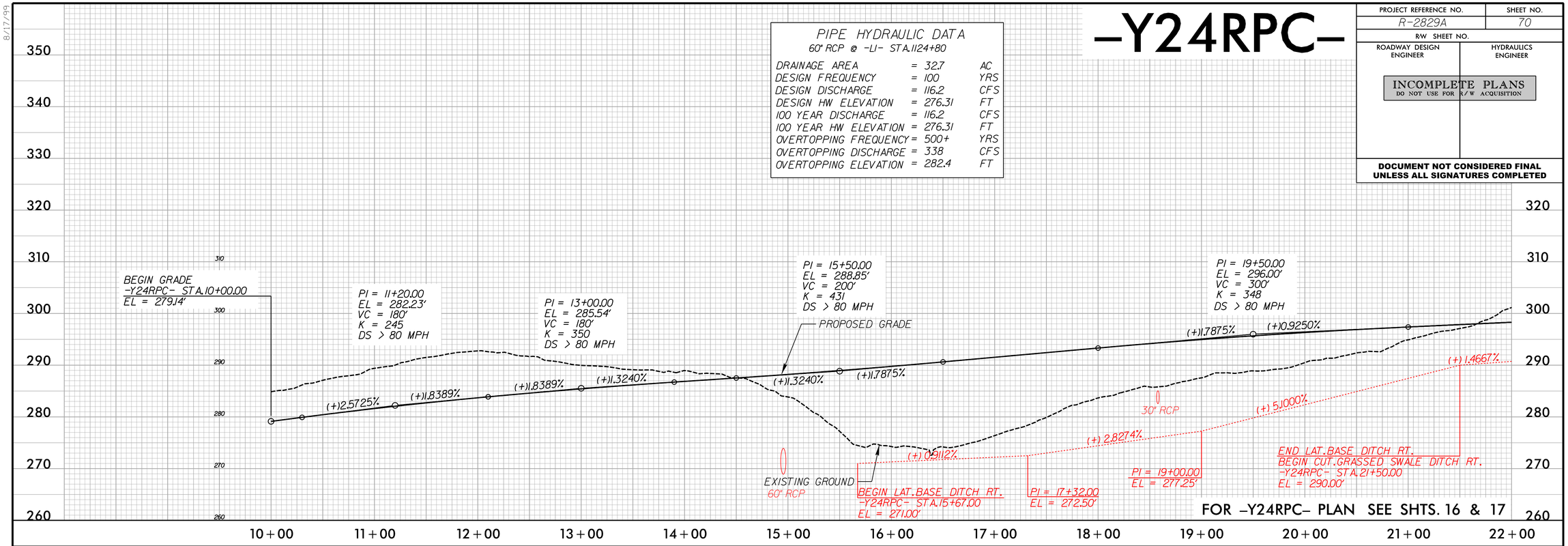
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PIPE HYDRAULIC DATA
60" RCP @ –L1– STA.1124+80

DRAINAGE AREA	= 32.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 116.2	CFS
DESIGN HW ELEVATION	= 276.31	FT
100 YEAR DISCHARGE	= 116.2	CFS
100 YEAR HW ELEVATION	= 276.31	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 338	CFS
OVERTOPPING ELEVATION	= 282.4	FT

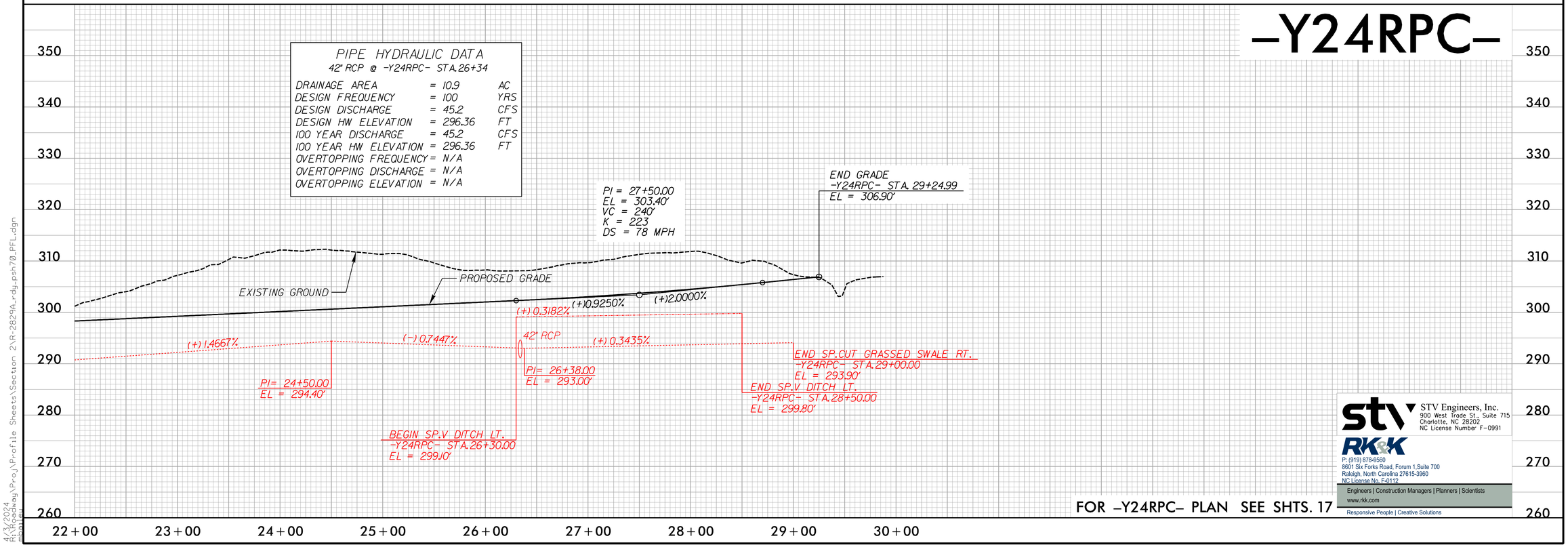


FOR –Y24RPC– PLAN SEE SHTS. 16 & 17

–Y24RPC–

PIPE HYDRAULIC DATA
42" RCP @ –Y24RPC– STA.26+34

DRAINAGE AREA	= 10.9	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 45.2	CFS
DESIGN HW ELEVATION	= 296.36	FT
100 YEAR DISCHARGE	= 45.2	CFS
100 YEAR HW ELEVATION	= 296.36	FT
OVERTOPPING FREQUENCY	= N/A	
OVERTOPPING DISCHARGE	= N/A	
OVERTOPPING ELEVATION	= N/A	



FOR –Y24RPC– PLAN SEE SHTS. 17

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–Y24RPDR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	71
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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BEGIN GRADE
–Y24RPDR– STA. 10+00.00
EL = 361.04'

PI = 14+45.00
EL = 359.40'
VC = 860'
K = 217
DS = 66 MPH

(–)0.3688%

(–)4.3254%

PROPOSED GRADE

SITE 9

END LAT. GRASSED SWALE LT.
BEGIN LAT. BASE DITCH LT.
–Y24RPDR– STA. 12+80.00
EL = 310.50'

BEGIN LAT. GRASSED SWALE LT.
–Y24RPDR– STA. 11+60.23
EL = 311.50'

(–) 0.8349%

EXISTING GROUND

(–) 11.7749%

(–) 8.4807%

PI = 13+60.68 LT.
EL = 301.00'

END LAT. BASE DITCH LT.
–Y24RPDR– STA. 14+24.00
EL = 295.63'

BEGIN LAT. BASE DITCH LT.
–Y24RPDR– STA. 14+75.00
EL = 298.50'

PI = 15+00.00 LT.
EL = 298.60'

(+) 0.4000%

(+) 3.7903%

EXISTING GROUND

BEGIN LAT. BASE DITCH LT.
–Y24RPDR– STA. 18+00.00
EL = 308.00'

END LAT. BASE DITCH LT.
–Y24RPDR– STA. 17+48.00
EL = 308.00'

(+) 0.5000%

(+) 3.9744%

PI = 18+50.00 LT.
EL = 308.25'

PI = 20+45.00 LT.
EL = 316.00'

(+) 0.6667%

END LAT. BASE DITCH LT.
–Y24RPDR– STA. 21+50.00
EL = 316.70'

FOR –Y24RPDR– PLAN SEE SHTS. 17 & 18

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

–Y24RPDR–

PIPE HYDRAULIC DATA
54" RCP @ –Y24RPD– STA. 25+00

DRAINAGE AREA	= 18.7	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 69.7	CFS
DESIGN HW ELEVATION	= 292.69	FT
100 YEAR DISCHARGE	= 69.7	CFS
100 YEAR HW ELEVATION	= 292.69	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 190	CFS
OVERTOPPING ELEVATION	= 311.00	FT

PROPOSED GRADE

PI = 25+00.00
EL = 313.77'
VC = 300'
K = 129
DS = 57 MPH

(–)4.3254%

(–)12.0000%

END GRADE
–Y24RPDR– STA. 26+50.77
EL = 310.75'

EXISTING GROUND

54" RCP

FOR –Y24RPDR– PLAN SEE SHTS. 17

22+00 23+00 24+00 25+00 26+00 27+00 28+00 36+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	72
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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–Y24A–

BEGIN SP.V DITCH LT.
–Y24A– STA.10+90.00
EL = 287.00'

BEGIN GRADE
–Y24A– STA.10+51.00
EL = 290.62'

PI = 10+96.00
EL = 291.15'
VC = 88'
K = 26
DS = 25 MPH*

END SP.V DITCH LT.
–Y24A– STA.11+45.00
EL = 293.85'

–Y24B–

PI = 11+80.00
EL = 295.00'
VC = 80'
K = 19
DS = 30 MPH

PI = 12+90.00
EL = 295.44'
VC = 110'
K = 38
DS = 30 MPH

PI = 14+30.00
EL = 300.10'
VC = 140'
K = 20
DS = 30 MPH

PROPOSED GRADE

EXISTING GROUND

* STOP CONDITION

(+)11.3827%
(+)4.5828%
(+)10.4000%
(+)3.3286%
(+)3.3286%
(+)2.6413%
(+)3.3286%
(+)6.4792%
(–)3.7927%
(+)8.2530%
(+)5.5155%
(+)5.5155%

18" RCP-III
24" RCP-IV

PI= STA.11+00.00
EL = 284.80'

BEGIN SP.V DITCH LT.
–Y24A– STA.11+85.00
EL = 293.60'

PI = STA.12+62.00
EL = 291.96'

BEGIN SP.V DITCH RT.
–Y24A– STA.10+75.00
EL = 283.10'

PI= STA.12+64.95
EL = 290.15'

END SP.V DITCH RT.
–Y24A– STA.13+49.22
EL = 295.61'

END SP.V DITCH LT.
–Y24A– STA.13+49.22
EL = 294.27'

BEGIN SP.V DITCH LT.
–Y24RPDR– STA.19+01.06
EL = 278.50'

END CUT SWALE LT.
BEGIN LAT.SWALE LT
–Y24A– STA.20+01.06
EL = 274.30'

PI = 19+70.00
EL = 279.62'
VC = 160'
K = 38
DS = 30 MPH

PI = 23+30.00
EL = 281.20'
VC = 200'
K = 78
DS = 44 MPH

(–)3.7927%
(+)0.4386%
(–)7.0000%
(–)1.4000%
(–)2.0247%

END SP.V DITCH LT.
BEGIN CUT SWALE LT.
–Y24A– STA.19+51.06
EL = 275.00'

END LAT.SWALE LT.
–Y24A– STA.20+50.45
EL = 273.30'

84" WSP

EXIST 6' x 8' RCBC

FOR –Y24A– PLAN SEE SHTS. 35

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

–Y24A–

PI = 23+30.00
EL = 281.20'
VC = 200'
K = 78
DS = 44 MPH

END GRADE
–Y24A– STA. 26+55.00
EL = 291.00'

PROPOSED GRADE

(+)3.0159%
(+)0.4386%

EXISTING GROUND

FOR –Y24A– PLAN SEE SHTS. 17

23+00 24+00 25+00 26+00 27+00

–Y24B–

PI = 11+31.00
EL = 304.02'
VC = 38'
K = 7
DS = 20 MPH

PI = 10+43.00
EL = 295.62'
VC = 56'
K = 10
DS = 15 MPH *

BEGIN GRADE
–Y24B– STA.10+15.00
EL = 294.50'

END GRADE
–Y24B– STA. 11+50.00
EL = 304.81'

PROPOSED GRADE

(+)9.5455%
(+)9.5455%
(+)4.1658%

* STOP CONDITION

(+)4.0000%
(+) 6.6622%

EXISTING GROUND

END SP.V DITCH RT.
–Y24B– STA.11+00.00
EL = 298.53'

BEGIN SP.V DITCH RT.
–Y24B– STA.10+26.00
EL = 293.60'

FOR –Y24B– PLAN SEE SHTS. 35

10+00 11+00 12+00

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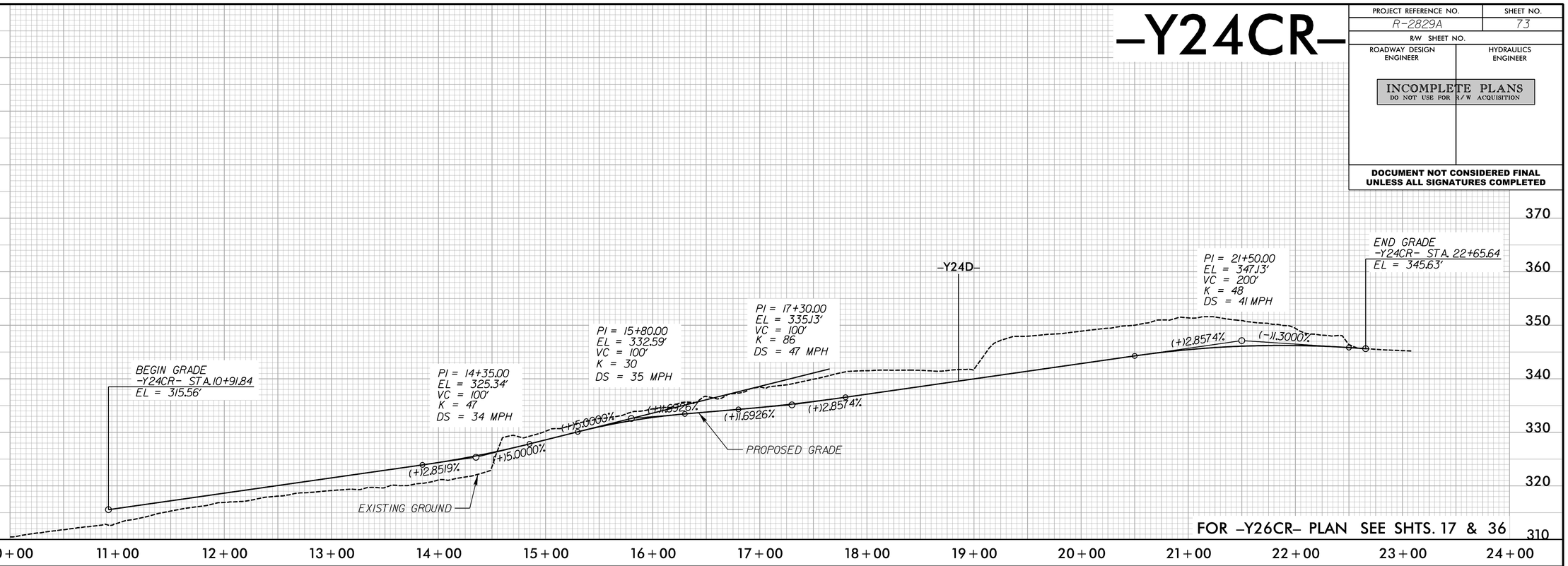
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–Y24CR–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	73
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

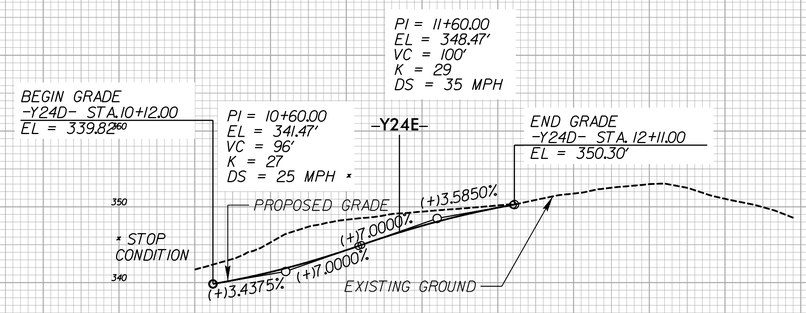
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FOR –Y26CR– PLAN SEE SHTS. 17 & 36

–Y24D–



FOR –Y24D– PLAN SEE SHTS. 36

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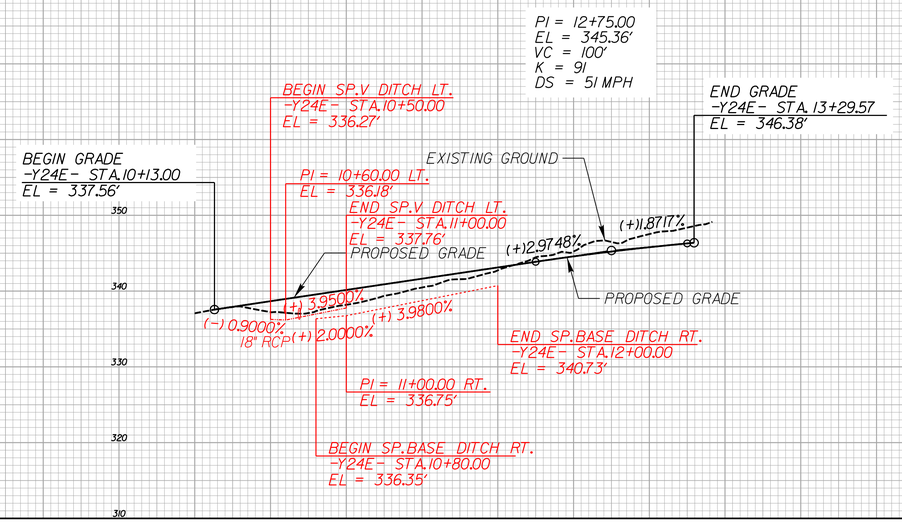
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PROJECT REFERENCE NO.	SHEET NO.
R-2829A	74
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

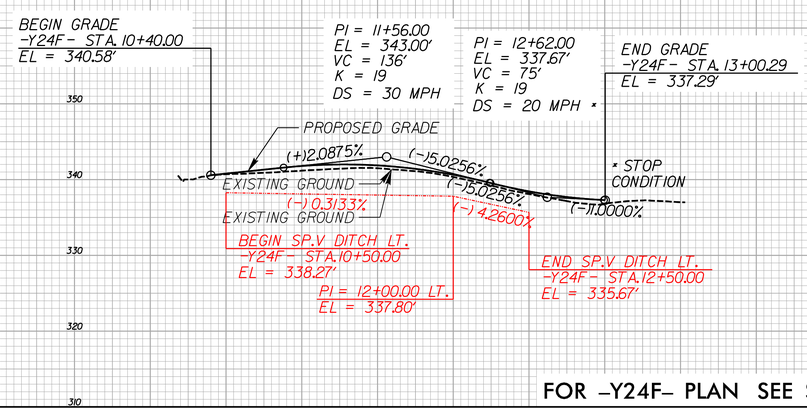
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y24E–



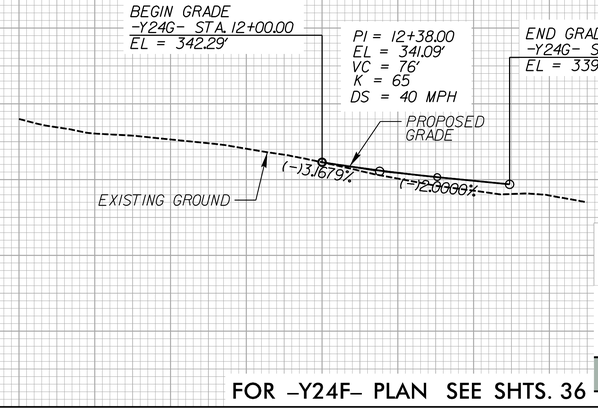
FOR –Y24E– PLAN SEE SHTS. 36

–Y24F–



FOR –Y24F– PLAN SEE SHTS. 36

–Y24G–



FOR –Y24F– PLAN SEE SHTS. 36

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mbolejack

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–Y26R–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	75
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
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CULVERT HYDRAULIC DATA

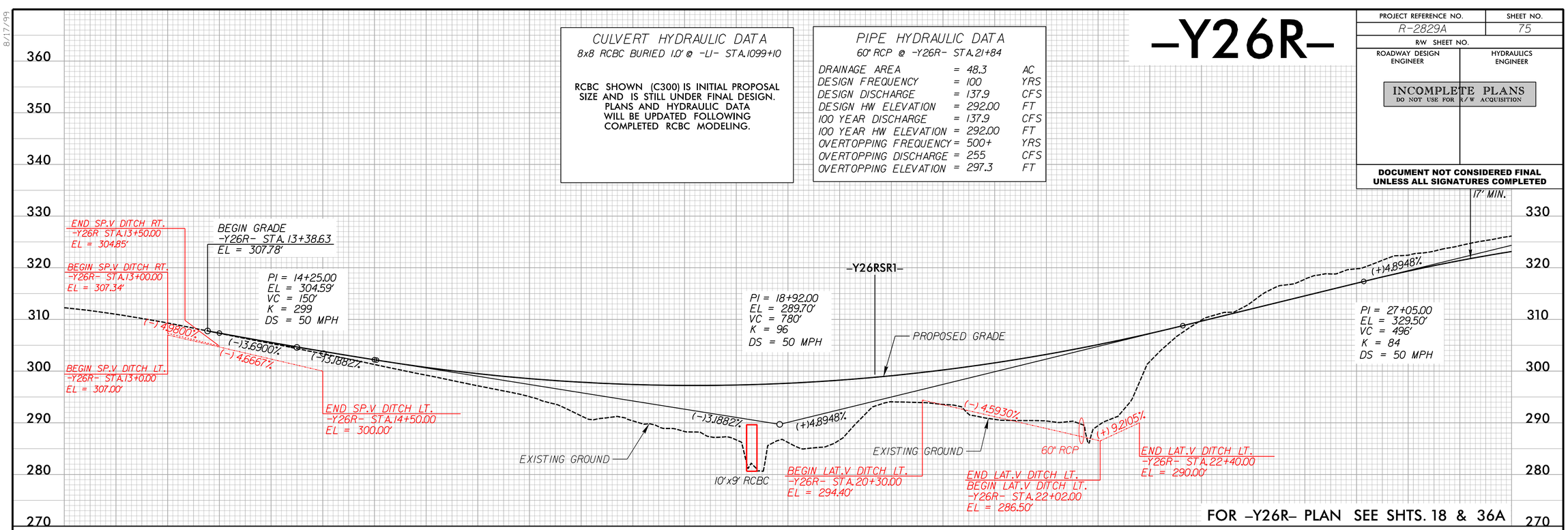
8x8 RCBC BURIED 1.0' @ –L1– STA.1099+10

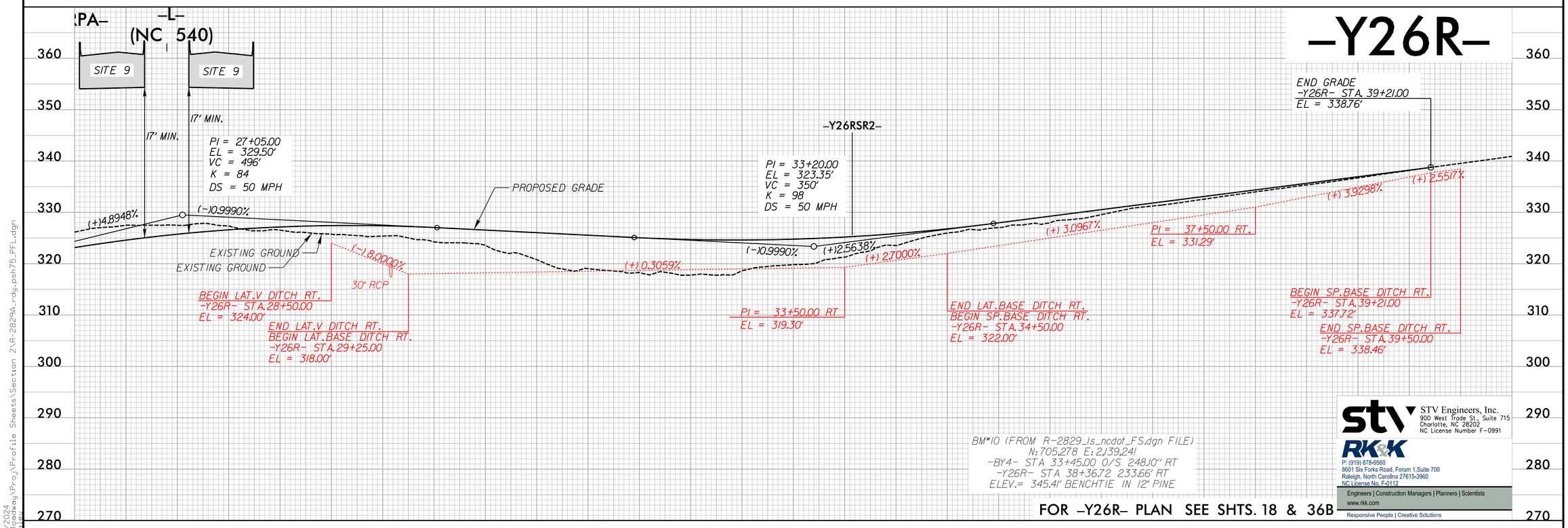
RCBC SHOWN (C300) IS INITIAL PROPOSAL SIZE AND IS STILL UNDER FINAL DESIGN. PLANS AND HYDRAULIC DATA WILL BE UPDATED FOLLOWING COMPLETED RCBC MODELING.

PIPE HYDRAULIC DATA

60" RCP @ –Y26R– STA.21+84

DRAINAGE AREA	= 48.3	AC
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 137.9	CFS
DESIGN HW ELEVATION	= 292.00	FT
100 YEAR DISCHARGE	= 137.9	CFS
100 YEAR HW ELEVATION	= 292.00	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 255	CFS
OVERTOPPING ELEVATION	= 297.3	FT





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mbollinger

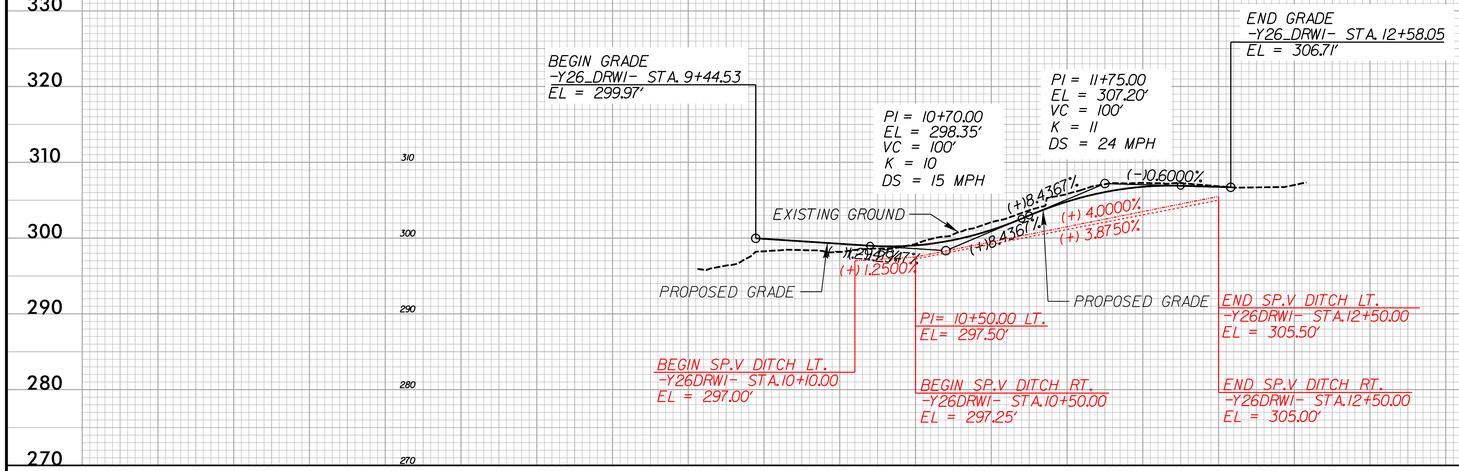
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–Y26_DRW1–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	76
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

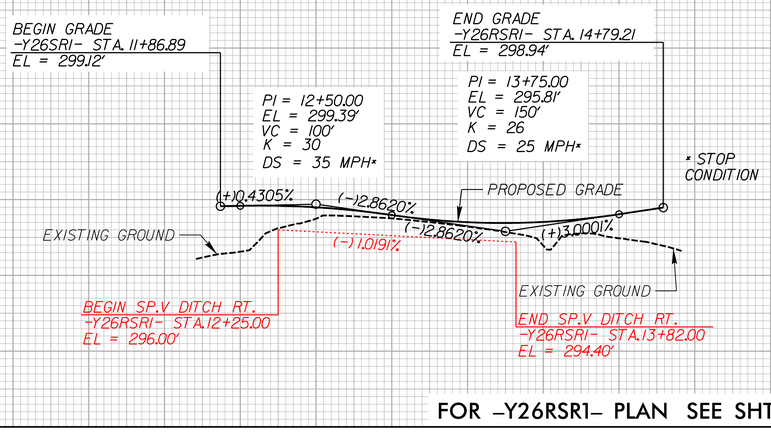
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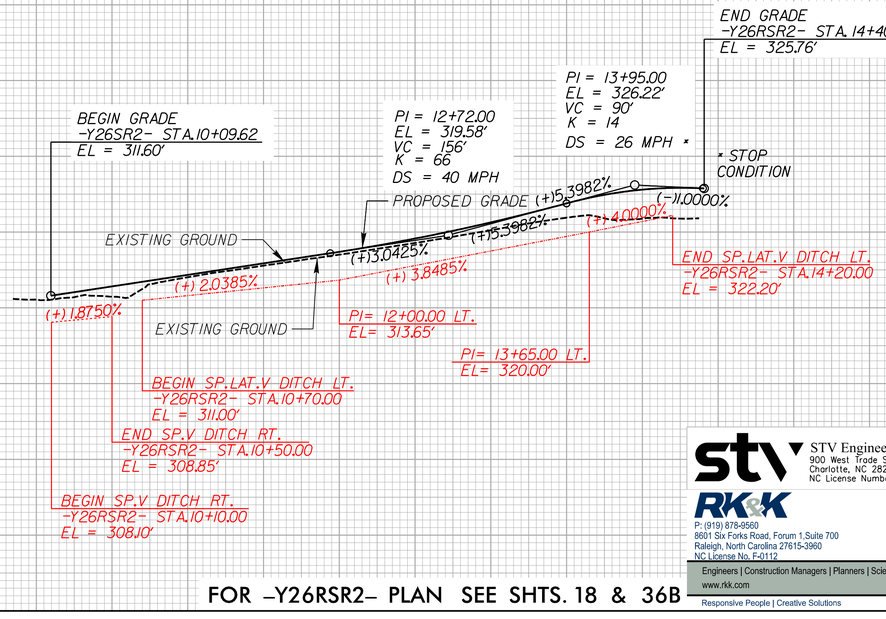
FOR –Y26_DRW1– PLAN SEE SHTS. 18

–Y26RSR1–



FOR –Y26RSR1– PLAN SEE SHTS. 18 & 36A

–Y26RSR2–



FOR –Y26RSR2– PLAN SEE SHTS. 18 & 36B

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–Y22SLIPRPA–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	77
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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BEGIN GRADE
–Y22SLIPRPA– STA.10+00.00
EL = 304.36'

PI = 10+50.00
EL = 304.20'
VC = 100'
K = 4998
DS > 80 MPH

PI = 11+50.00
EL = 303.90'
VC = 100'
K = 4003
DS > 80 MPH

PI = 12+50.00
EL = 303.63'
VC = 100'
K = 1967
DS > 80 MPH

PI = 14+55.00
EL = 302.96'
VC = 260'
K = 153
DS = 60 MPH

–Y22RPAFLY–

–Y22SLIPRPA–
CONSTRUCTED
UNDER PROJECT R-2828

PI = 20+00.00
EL = 291.91'
VC = 300'
K = 181
DS = 70 MPH

(–)0.3200%
(–)0.3000%
(–)0.3000%
(–)0.2750%
(–)0.2750%
(–)0.3259%
(–)0.3259%
(–)2.0275%
(–)2.0275%
(–)0.3667%

340 330 320 310 300 290 280 270 260 250

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

–Y22SLIPRPA–

–Y22SLIPRPA–
CONSTRUCTED
UNDER PROJECT R-2828

PI = 35+60.00
EL = 286.19'
VC = 170'
K = 255
DS > 80 MPH

PI = 37+00.00
EL = 286.61'
VC = 110'
K = 167
DS = 61 MPH

PI = 37+80.00
EL = 286.32'
VC = 50'
K = 166
DS = 61 MPH

(–)0.3667%
(+)0.3000%
(–)0.3575%
(–)0.0567%

SAG
–Y22SLIPRPA– STA.35+68.51

CREST
–Y22SLIPRPA– STA.36+95.19

330 320 310 300 290 280 270 260 250 240

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

FOR –Y22SLIPRPA– PLAN SEE SHT. 2B–1

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–Y22SLIPRPA–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	78
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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340 330 320 310 300 290 280 270 260 250

END GRADE
–Y22SLIPRPA– STA. 38+99.77
EL = 285.96'

PI = 38+45.00
EL = 286.28'
VC = 80'
K = 150
DS = 59 MPH

(–)0.0567% (–)0.5900%

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00

–Y22FLYCA–

330 320 310 300 290 280 270 260 250 240

BEGIN GRADE
–Y22FLYCA– STA. 10+00.00
EL = 281.90'

PI = 12+70.00
EL = 282.84'
VC = 540'
K = 194
DS = 65 MPH

(+)0.3484% (–)2.4350%

CREST
–Y22FLYCA– STA. 10+67.59

–Y22FLYCA–
FUTURE RAMP
CONSTRUCTED BY OTHERS

SAG
–Y22FLYCA– STA. 19+36.25

PI = 20+25.00
EL = 264.45'
VC = 900'
K = 148
DS = 62 MPH

(–)2.4350% (+)3.6315%

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

FOR –Y22SLIPRPA– PLAN SEE SHT. 2B–1
FOR –Y22FLYCA– PLAN SEE SHT. 2B–1

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–Y22FLYCA–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	79
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PI = 35+75.00
EL = 320.74'
VC = 1,100'
K = 156
DS = 60 MPH

(+)3.6315%
(–)3.4132%
CREST
–Y22FLYCA– STA. 35+92.05

–Y22FLYCA–
FUTURE RAMP
CONSTRUCTED BY OTHERS

MSE WALL
–U–
–U–
MSE WALL

340 330 320 310 300 290 280 270 260 250

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

–Y22FLYCA–

–Y22RPAFLY1–

–Y22FLYCA–
FUTURE RAMP
CONSTRUCTED BY OTHERS

PI = 48+00.00
EL = 278.93'
VC = 700'
K = 16.3
DS = 66 MPH

(–)13.4132%
(+)0.8921%
SAG
–Y22FLYCA– STA. 50+04.95

330 320 310 300 290 280 270 260 250 240

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00

FOR –Y22FLYCA– PLAN SEE SHT. 2B–1

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–Y22FLYCA–

PROJECT REFERENCE NO.	SHEET NO.
R-2829A	80
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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END GRADE
–Y22FLYCA– STA. 56+06.30
EL = 285.94'

–Y22FLYCA–
FUTURE RAMP
CONSTRUCTED BY OTHERS

PI = 55+50.00
EL = 285.62'
VC = 70'
K = 218
DS = 67 MPH

(+)0.8921%

(+)0.5714%

340 330 320 310 300 290 280 270 260 250

52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00

330 320 310 300 290 280 270 260 250 240

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00

FOR –Y22FLYCA– PLAN SEE SHT. 2B–1

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