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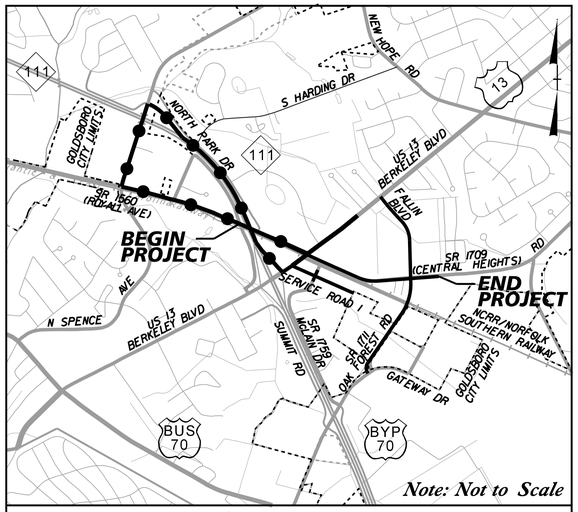
09/08/99

REVISIONS

TIP PROJECT: U-5724

CONTRACT: C204540

SEE SHEET 1A FOR INDEX OF SHEETS
SEE SHEET 1B FOR CONVENTIONAL PLAN SHEET SYMBOLS



VICINITY MAP

DETOUR ROUTE

(SEE TRANSPORTATION MANAGEMENT PLANS FOR ADDITIONAL DETOUR ROUTES)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAYNE COUNTY

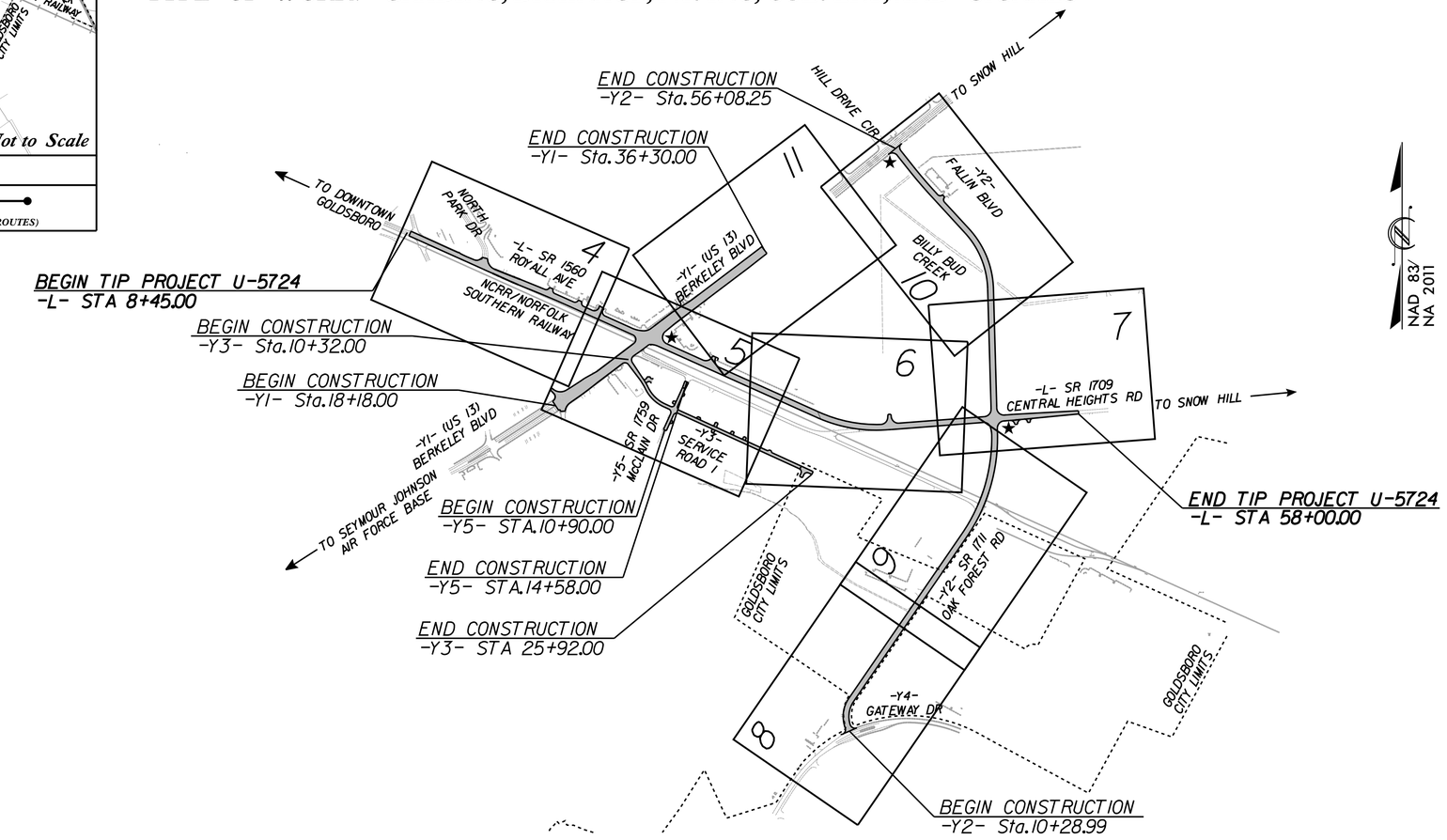
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5724	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
54016.1.2		PE
54016.2.1		R/W
54016.2.1		UTL
54016.3.1		CONST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: ***US 13 (BERKELEY BOULEVARD) – REALIGNMENT OF SR 1709 (CENTRAL HEIGHTS ROAD) AT BERKELEY BOULEVARD***

TYPE OF WORK: ***GRADING, DRAINAGE, PAVING, CULVERT, AND SIGNALS***



★ TRAFFIC SIGNAL

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

AADT 2020	=	10,000
AADT 2040	=	12,300
K	=	9%
D	=	55%
T	=	3%*
V	=	50 MPH

CLASSIFICATION: URBAN COLLECTOR

* 1% TTST 2% DUAL

SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5724 = 0.938 MILES

TOTAL LENGTH TIP PROJECT U-5724 = 0.938 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn ©2018

NC LICENSE #C-0102
P.O. BOX 33068
RALEIGH, NORTH CAROLINA 27636
PHONE: (919) 677-2000

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 15, 2018

LETTING DATE:
NOVEMBER 15, 2022

JASON D. LAWING, P.E.
PROJECT ENGINEER

ELIZABETH W. LYNCH, P.E.
PROJECT DESIGN ENGINEER

ADDISON GAINEY, PE
PROJECT ENGINEER
NCDOT HIGHWAY DIVISION 4

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036144 JASON D. LAWING

10/10/2022

P.E.

SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036144 JASON D. LAWING

10/10/2022

P.E.

SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

10/10/2022 K:\RAL_Roadway\0110336333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_tshdgn

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-5724	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042615 ENGINEER JASON D. LAMB

10/10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

U-5724
WAYNE COUNTY

INDEX OF SHEETS

GENERAL NOTES

2018 SPECIFICATIONS

EFFECTIVE: 01-16-18

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY,

AT&T, CHARTER, PIEDMONT NATURAL GAS, & CITY OF GOLDSBORO

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 AND/OR 848.06. AND/OR DETAILS SHOWN IN THE PLANS.

EFF. 01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY, 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	METHOD OF CLEARING - METHOD III
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
275.01	ROCK PLATING
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
DIVISION 8 - INCIDENTALS	
815.02	SUBSURFACE DRAIN
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90 SKEW
838.11	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS - 15" THRU 48" PIPE 90 SKEW
838.33	REINFORCED CONCRETE ENDWALL FOR SINGLE 66" PIPE 90 SKEW
838.45	NOTES FOR REINFORCED CONCRETE ENDWALL - STD. DWG 838.21 THRU 838.40
838.63	REINFORCED BRICK ENDWALL FOR SINGLE 66" PIPE 90 SKEW
838.75	NOTES FOR REINFORCED BRICK ENDWALL - STA. DWG 838.51 THRU 838.70
840.01	BRICK CATCH BASIN - 12" THRU 54" PIPE
840.02	CONCRETE CATCH BASIN - 12" THRU 54" PIPE
840.03	FRAME, GRATES AND HOOD - FOR USE ON STANDARD CATCH BASIN
840.14	CONCRETE DROP INLET - 12" THRU 30" PIPE
840.15	BRICK DROP INLET - 12" THRU 30" PIPE
840.16	DROP INLET FRAME AND GRATES - FOR USE WITH STD. DWG 840.14 AND 840.15
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.34	TRAFFIC BEARING JUNCTION BOX - FOR USE WITH PIPES 42" AND UNDER
840.45	PRECAST DRAINAGE STRUCTURE
840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
840.71	CONCRETE AND BRICK PIPE PLUG
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.01	CONCRETE SIDEWALK
848.02	DRIVEWAY TURNOUT - RADIUS TYPE
848.03	DRIVEWAY TURNOUT - DROP CURB TYPE
848.04	STREET TURNOUT
848.05	CURB RAMP - PROPOSED CURB & GUTTER
852.01	CONCRETE ISLANDS
852.06	METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

K:\RAL_Roadway\0\0036333 - U-5724 (Central Heights\Roadway\Proj\U-5724_rdy_1stsdgn

8/31/2020

PROJECT REFERENCE NO.	SHEET NO.
U-5724	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) — W
- U/G Water Line LOS C (S.U.E.*) — W
- U/G Water Line LOS D (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

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

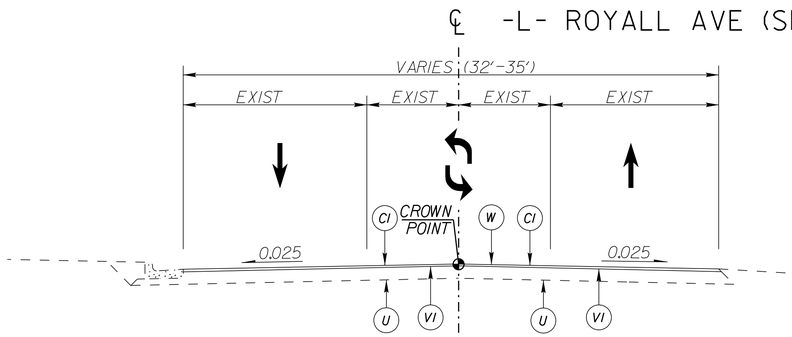
SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

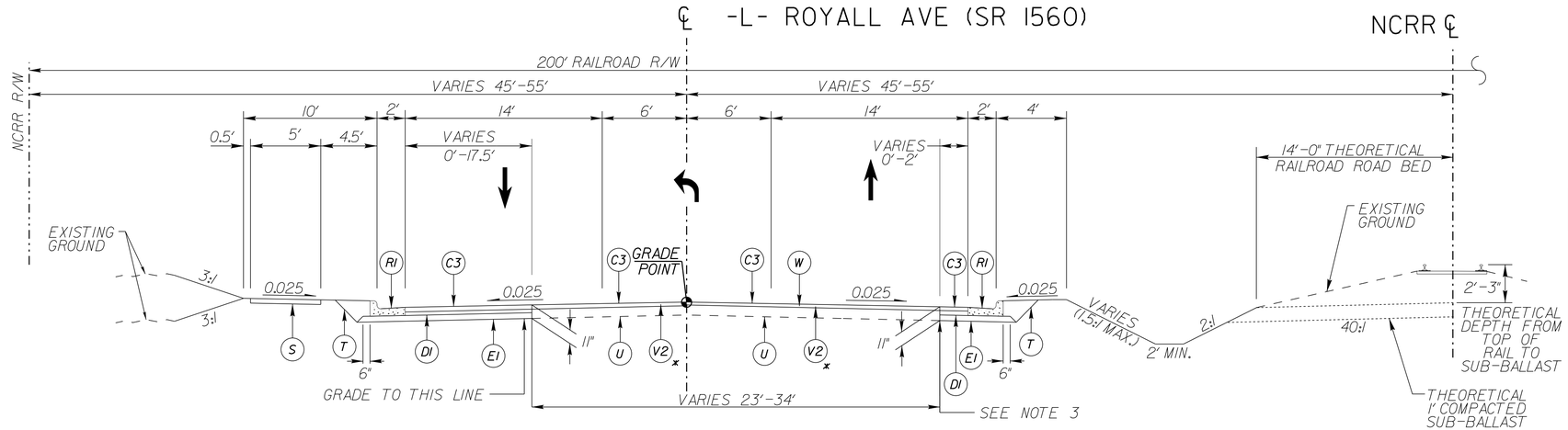
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)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

REVISIONS 5/14/99



TYPICAL SECTION NO. 1

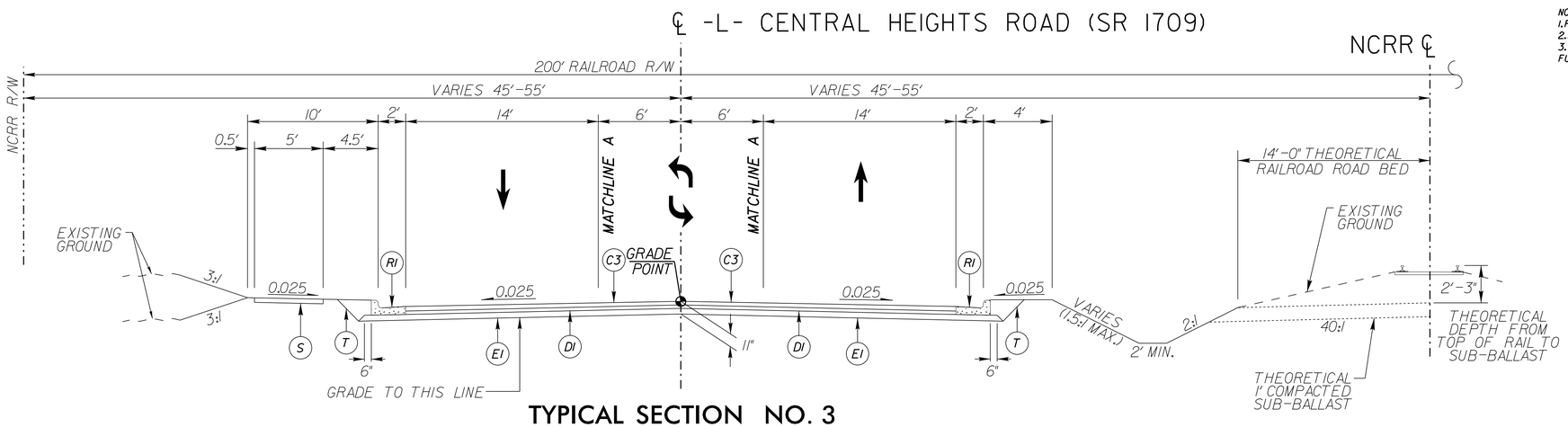
-L- STA 8+65.00 TO STA 13+50.00



TYPICAL SECTION NO. 2

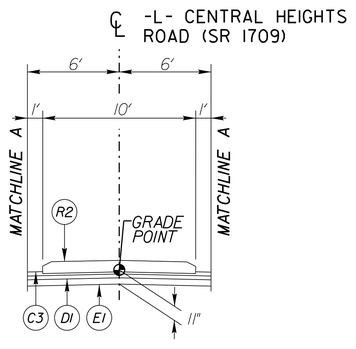
-L- STA 13+50.00 TO STA 26+31.81

* MILL FROM STA 13+50.00 TO STA 16+00.00



TYPICAL SECTION NO. 3

-L- STA 27+17.29 TO STA 39+69.40



TYPICAL SECTION NO. 3A

-L- STA 30+60.00 TO STA 32+35.00

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032613 ENGINEER JASON D. LAWING

Signed by: Jason Lawing

9/6/2022

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022696 ENGINEER CLARK S. MORRISON

Signed by: Clark Morrison

9/6/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

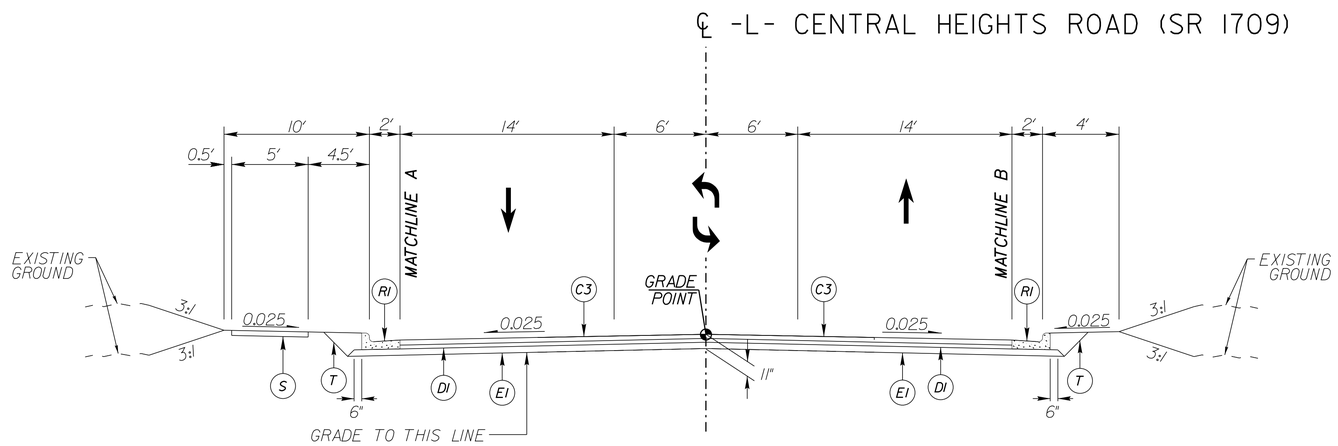
CI	PROPOSED APPROX 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.
C2	PROPOSED APPROX.2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ.YD. IN EACH OF TWO LAYERS
C3	PROPOSED APPROX.3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD. IN EACH OF TWO LAYERS
C4	PROPOSED VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ.YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH.
DI	PROPOSED APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
D2	PROPOSED VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
EI	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROPOSED VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ.YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
J	PROPOSED 6" AGGREGATE BASE COURSE
RI	PROPOSED 2'-6" CONCRETE CURB & GUTTER
R2	PROPOSED 5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	PROPOSED 4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
VI	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, VARIABLE DEPTH (0"-3")
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MIN FULL DEPTH ASPHALT PAVEMENT

9/6/2022 K:\RAL_Roadway\DII036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_typdgn

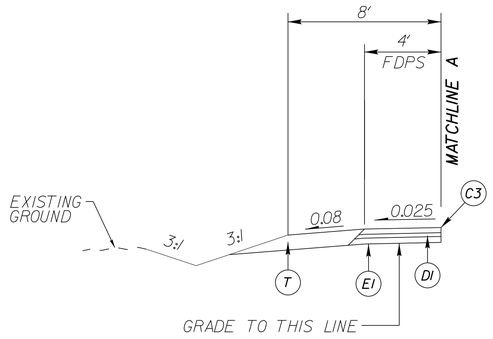
REVISIONS

5/14/99



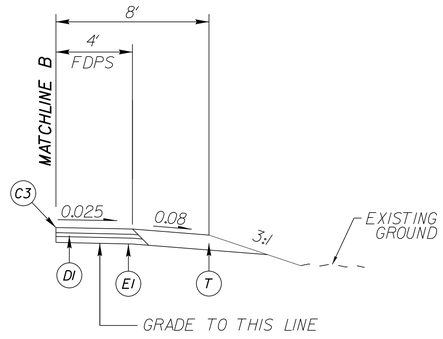
TYPICAL SECTION NO. 4

-L- STA 39+69.40 TO STA 54+00.00



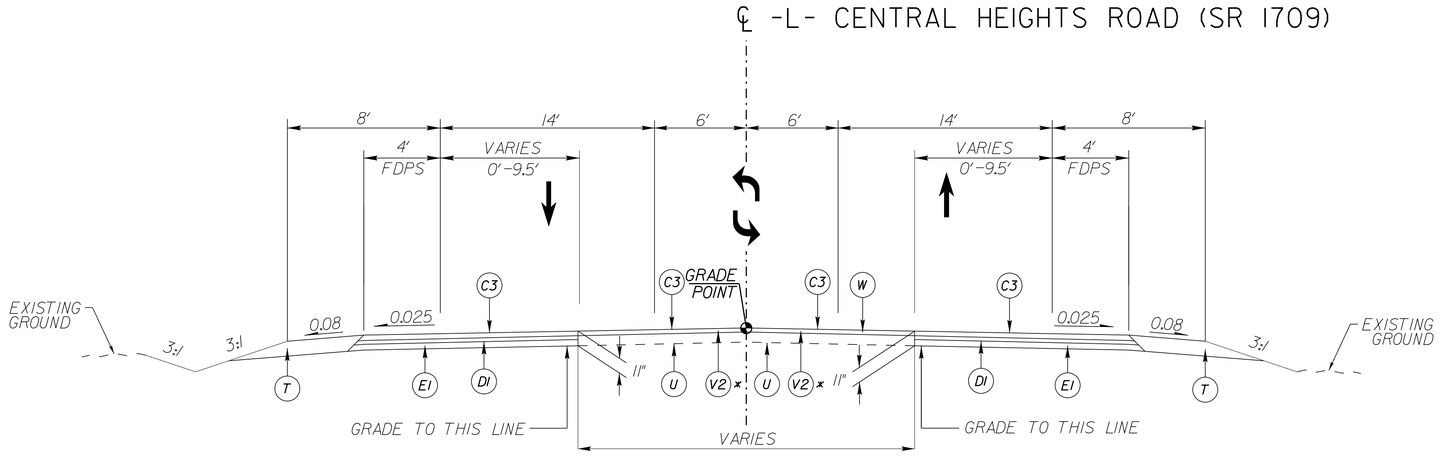
TYPICAL SECTION NO. 4A

-L- STA 52+95.67 TO STA 54+00.00



TYPICAL SECTION NO. 4B

-L- STA 52+95.67 TO STA 54+00.00



TYPICAL SECTION NO. 5

-L- STA 54+00.00 TO STA 58+00.00

*MILL FROM STA 57+00.00 TO STA 58+00.00

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2A-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 052619 ENGINEER JASON D. LANNING
Signed by: Jason Lanning
9/6/2022

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022696 ENGINEER CLARK S. MORRISON
Signed by: Clark Morrison
9/6/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR. DEPTH S9.5B
DI	4" 119.0C
D2	VAR. DEPTH 119.0C
EI	4" B25.0C
E2	VAR. DEPTH B25.0C
J	PROPOSED 6" AGGREGATE BASE COURSE
RI	2'-6" CONCRETE CURB & GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, VARIABLE DEPTH (0"-3")
W	VARIABLE DEPTH ASPHALT PAVEMENT

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1" MIN FULL DEPTH ASPHALT PAVEMENT

9/6/2022 K:\RAL_Roadway\01\036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_typdgn

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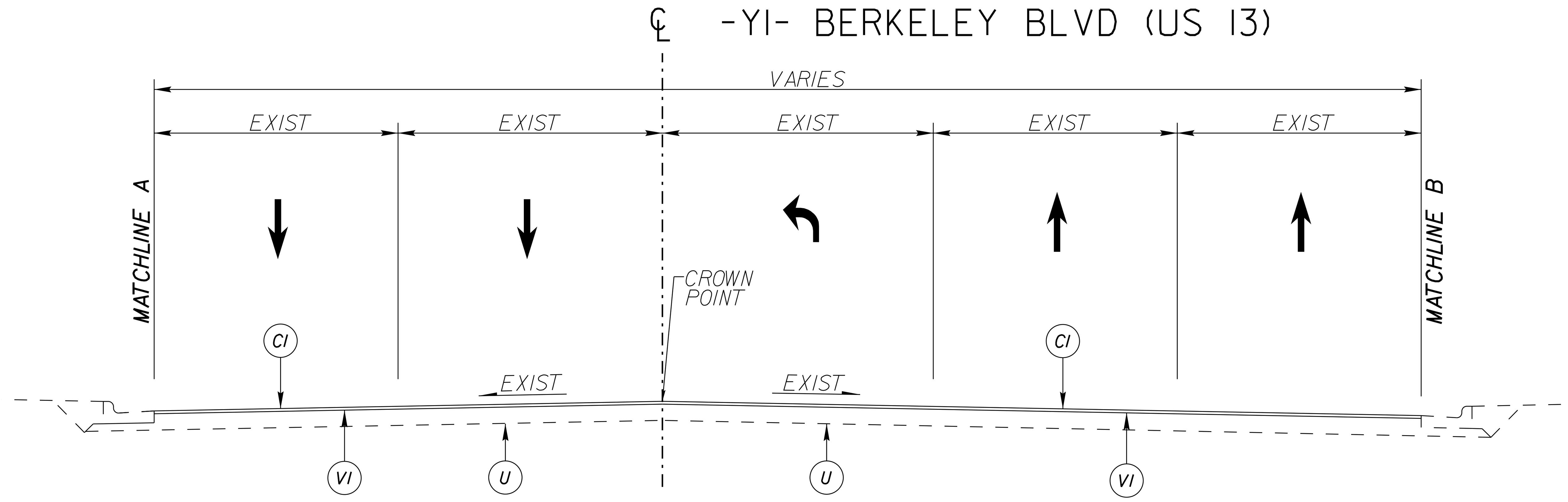
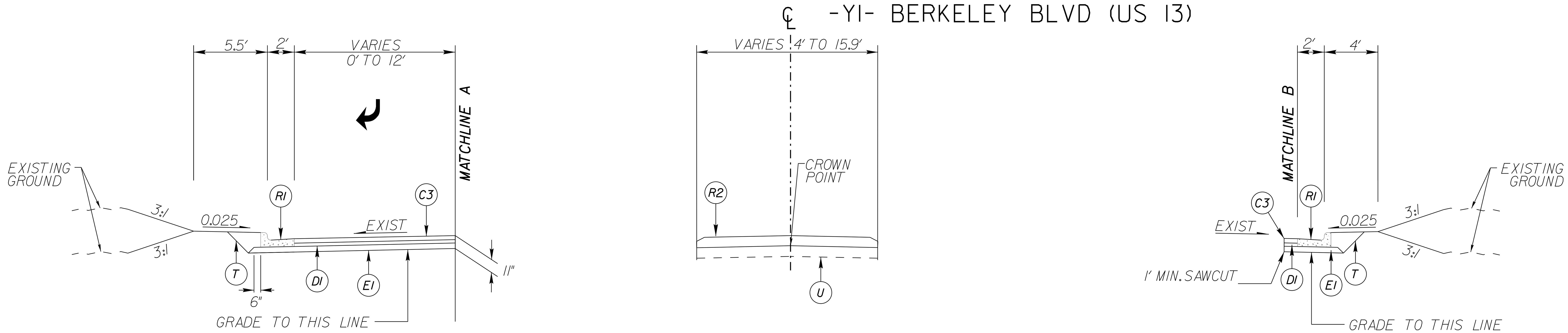
PROJECT REFERENCE NO. U-5724 | SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 6

-YI- STA 18+18.00 TO STA 36+30.00



TYPICAL SECTION NO. 6A

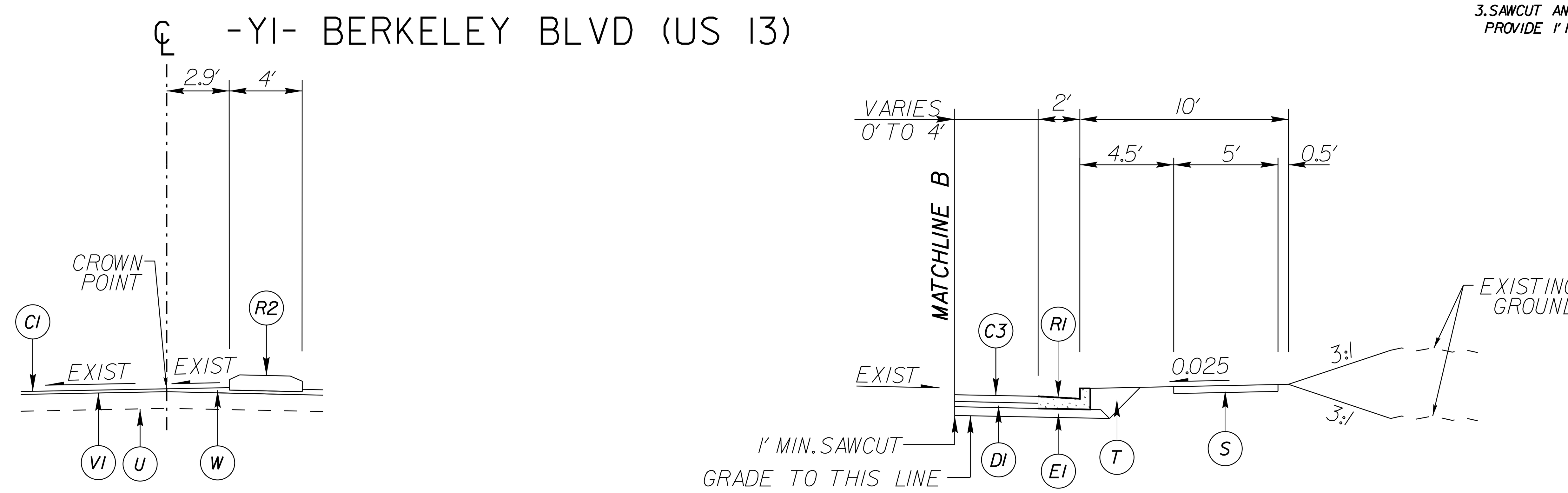
-YI- STA 19+40.21 TO STA. 22+45.00

TYPICAL SECTION NO. 6B

-YI- STA 18+83.00 TO STA 25+32.00
-YI- STA 25+53.00 TO STA 25+66.00

TYPICAL SECTION NO. 6C

-YI- STA 24+61.83 TO STA 25+28.01



TYPICAL SECTION NO. 6D

-YI- STA 26+78.59 TO STA 28+58.91

TYPICAL SECTION NO. 6E

-YI- STA 27+36.52 TO STA 28+21.00

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR. DEPTH S9.5B
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	PROPOSED 6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB & GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
V2	MILLING ASPHALT PAVEMENT, VARIABLE DEPTH (0"-3")
W	VARIABLE DEPTH ASPHALT PAVEMENT

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MIN FULL DEPTH ASPHALT PAVEMENT

REVISIONS

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2A-4

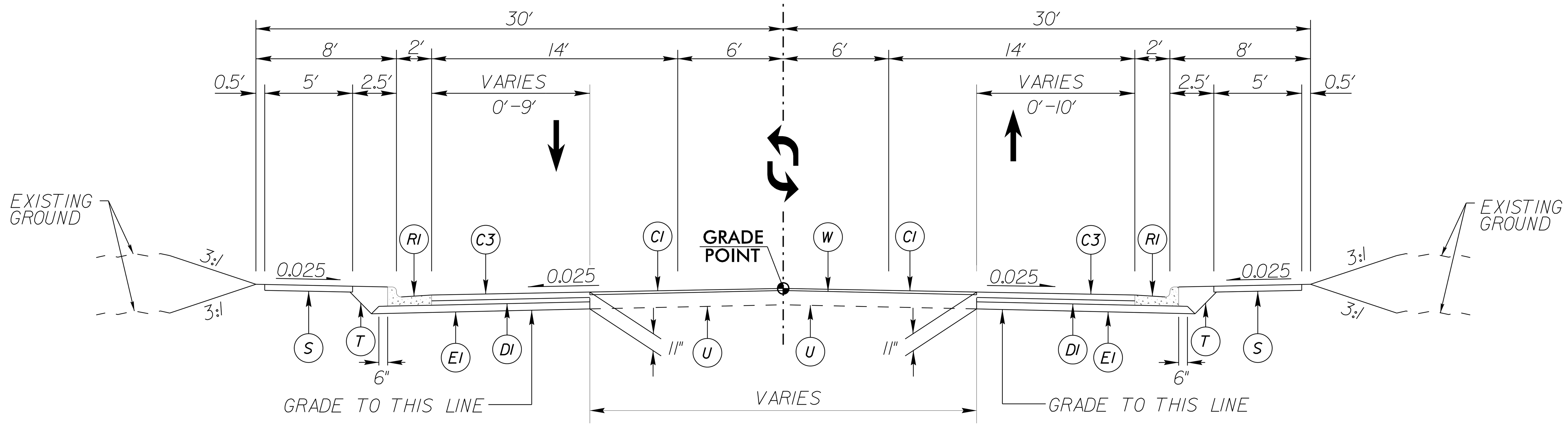
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032615 JASON D. LAWING 9/6/2022

PAVEMENT DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022096 CLARK S. MORRISON 9/6/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

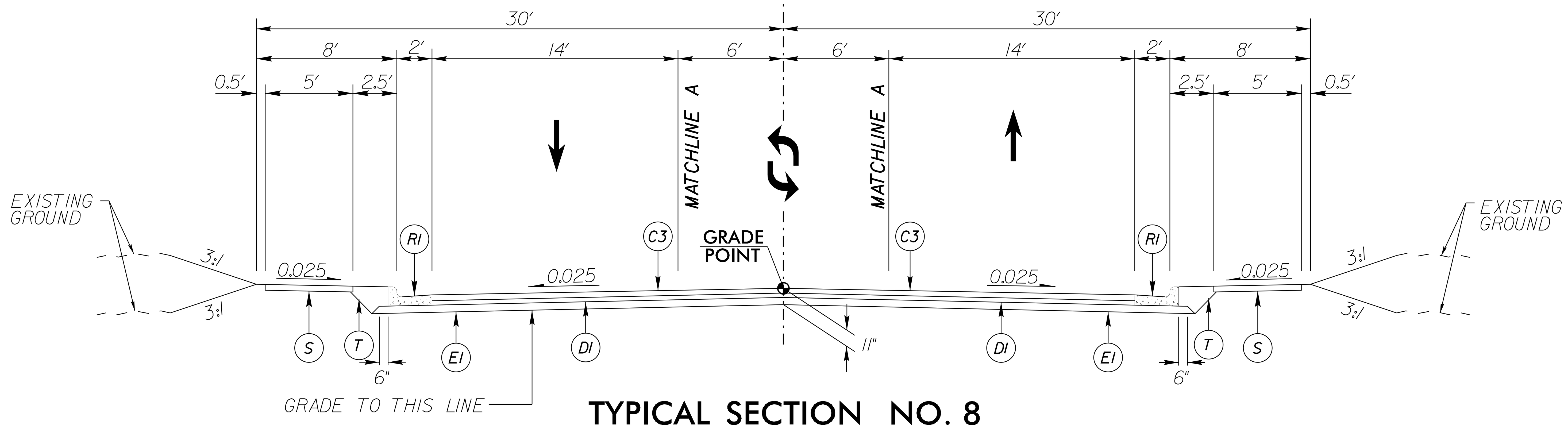
℄ -Y2- OAK FOREST ROAD (SR 1711)



TYPICAL SECTION NO. 7

-Y2- STA 10+28.99 TO STA 26+00.00

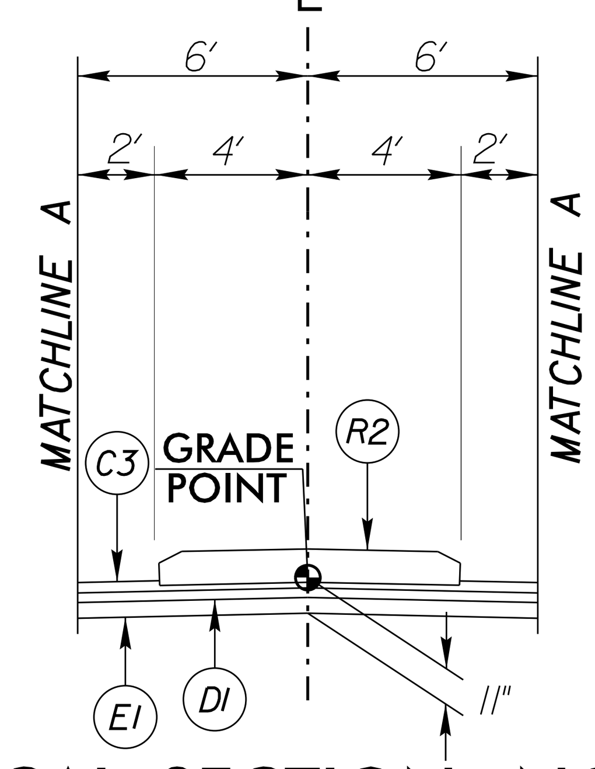
℄ -Y2- OAK FOREST ROAD (SR 1711)
-Y2- FALLIN BOULEVARD



TYPICAL SECTION NO. 8

-Y2- STA 26+00.00 TO STA 29+25.60
-Y2- STA 29+35.62 TO STA 34+79.88
-Y2- STA 35+19.93 TO STA 56+08.25

℄ -Y2- OAK FOREST ROAD (SR 1711)



TYPICAL SECTION NO. 8A

-Y2- STA 28+57.00 TO STA 29+17.00
-Y2- STA 29+44.00 TO STA 30+44.00

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR. DEPTH S9.5B
D1	4" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0C
E2	VAR. DEPTH B25.0C
J	PROPOSED 6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB & GUTTER
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S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
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W	VARIABLE DEPTH ASPHALT PAVEMENT

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MIN FULL DEPTH ASPHALT PAVEMENT

5/14/99

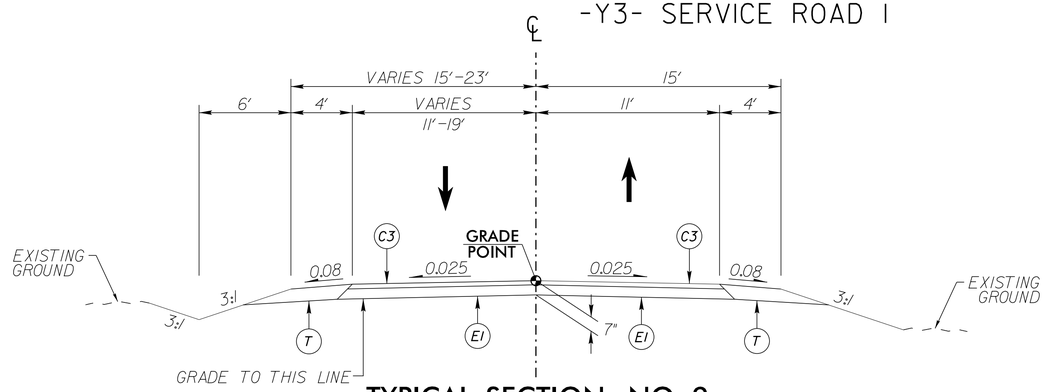
K:\RAL_Roadway\011036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_typ.dgn

9/6/2022

5/14/99

REVISIONS

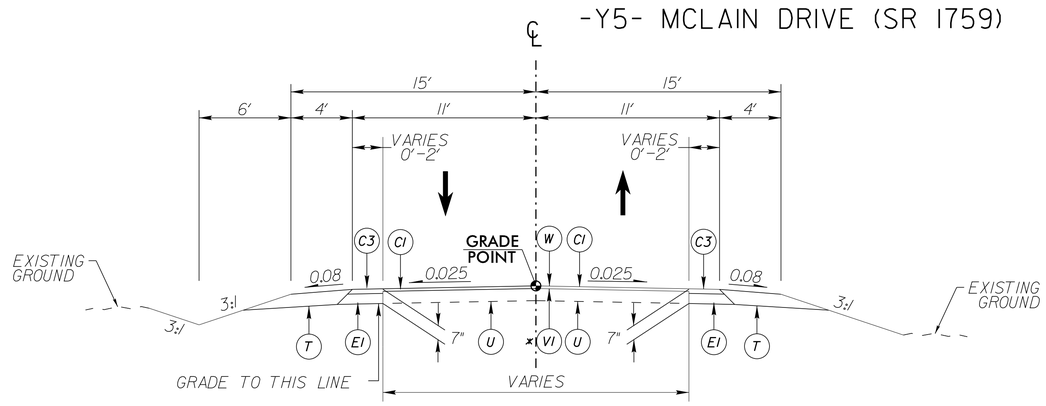
-Y3- SERVICE ROAD 1



TYPICAL SECTION NO. 9

-Y3- STA 10+32.00 TO STA 25+77.00

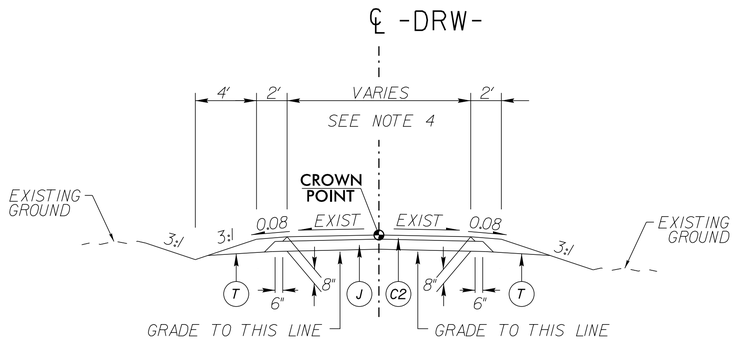
-Y5- MCLAIN DRIVE (SR 1759)



TYPICAL SECTION NO. 10

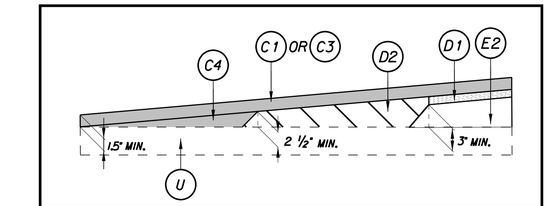
-Y5- STA 10+90.00 TO STA 14+58.00
× MILL FROM STA.14+10.00 TO STA.14+58.00

℄ -DRW-

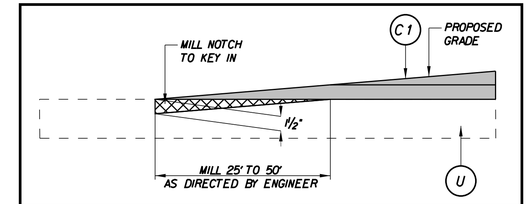


TYPICAL SECTION NO. 11

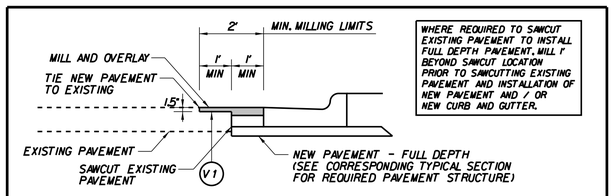
-L- STA 16+62 LT (DRW-1)	-L- STA 46+46 RT (DRW-12)	-Y1- STA 22+24 LT (DRW-20)	-Y2- STA 21+54 RT (DRW-26)	-Y2- STA 41+90 RT (DRW-32)
-L- STA 17+43 LT (DRW-2)	-L- STA 46+88 RT (DRW-13)	-Y2- STA 11+40 LT (DRW-21)	-Y2- STA 23+53 LT (DRW-27)	-Y2- STA 41+90 LT (DRW-33)
-L- STA 39+42 LT (DRW-7)	-L- STA 47+70 RT (DRW-14)	-Y2- STA 12+25 LT (DRW-22)	-Y2- STA 27+97 LT (DRW-28)	-Y2- STA 49+21 RT (DRW-34)
-L- STA 41+95 LT (DRW-8)	-L- STA 48+43 RT (DRW-15)	-Y2- STA 13+66 RT (DRW-23)	-Y2- STA 28+47 RT (DRW-29)	-Y2- STA 49+21 LT (DRW-35)
-L- STA 43+84 LT (DRW-9)	-L- STA 50+39 RT (DRW-16)	-Y2- STA 16+30 LT (DRW-24)	-Y2- STA 38+70 RT (DRW-30)	-Y2- STA 53+68 LT (DRW-37)
-L- STA 45+84 RT (DRW-11)	-Y1- STA 20+91 LT (DRW-19)	-Y2- STA 21+42 LT (DRW-25)	-Y2- STA 38+70 LT (DRW-31)	



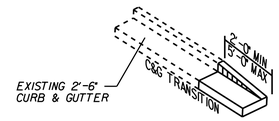
DETAIL 1 – METHOD OF WEDGING



DETAIL 2 – INCIDENTAL MILLING DETAIL



DETAIL 3 – MILLING AND SAWCUT DIMENSIONS



NOT TO SCALE

DETAIL 4 – CURB AND GUTTER END TREATMENT

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RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2A-5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 052613 ENGINEER JASON D. LANNING
Signed by: Jason Lanning
9/6/2022

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022696 ENGINEER CLARK S. MORRISON
Signed by: Clark Morrison
9/6/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR. DEPTH S9.5B
D1	4" ∏19.0C
D2	VAR. DEPTH ∏19.0C
E1	4" B25.0C
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J	PROPOSED 6" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB & GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1.5" DEPTH
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W	VARIABLE DEPTH ASPHALT PAVEMENT

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED
2. REFER TO PLAN SHEETS FOR VARIABLE WIDTHS
3. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MIN FULL DEPTH ASPHALT PAVEMENT
4. CONSTRUCT ALL DRIVEWAYS TO LIMITS SHOWN ON PLANS AND WITH ASPHALT PAVEMENT UNLESS OTHERWISE NOTED

REVISIONS 5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	2B-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING — Digitally signed by JASON D. LAWING — 10/10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

2020 ADT / 2040 ADT

-Y1- US 13 (BERKELEY BLVD): DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%; 23300/27800

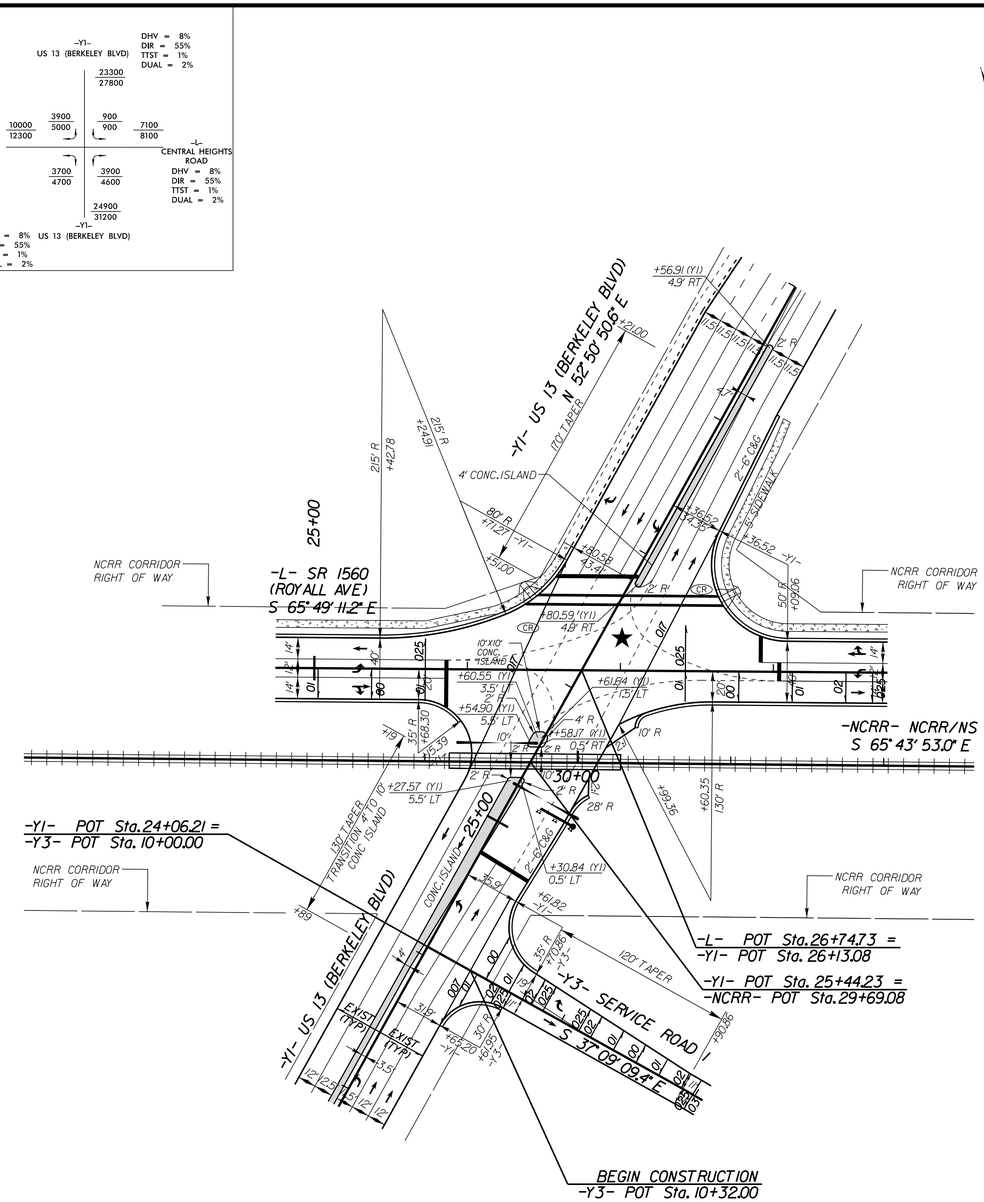
-L- ROYALL AVENUE: DHV = 9%, DIR = 55%, TTST = 1%, DUAL = 2%; 10000/12300; 3900/5000; 3700/4700

900/900

-L- CENTRAL HEIGHTS ROAD: DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%; 7100/8100; 3900/4600

24900/31200

-Y1- DHV = 8% US 13 (BERKELEY BLVD), DIR = 55%, TTST = 1%, DUAL = 2%



-L-/-Y1- & -L-/-Y3-

SEE SHEET NO.5 FOR PLAN

2020 ADT / 2040 ADT

-Y1- US 13 (BERKELEY BLVD): DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%; 26200/31200

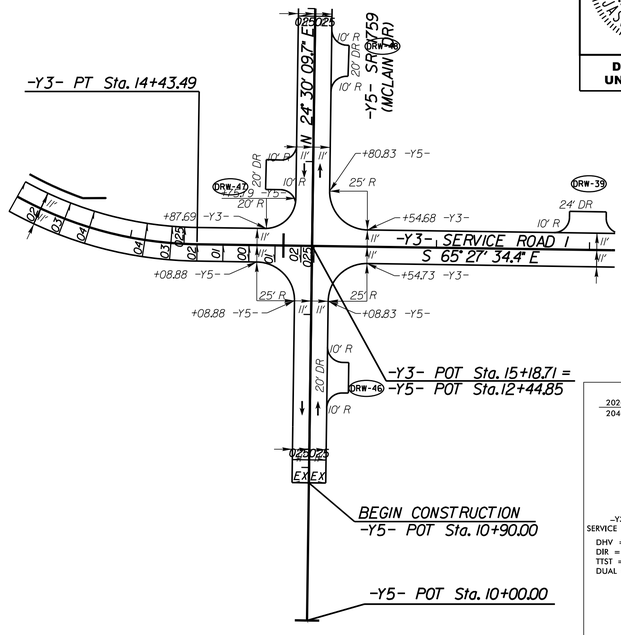
-Y3- SERVICE ROAD 1: DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%; 100/100; 300/300; 200/200

26300/31300

-Y1- US 13 (BERKELEY BLVD) DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%

-Y3-/-Y5-

SEE SHEET NO.5 FOR PLAN

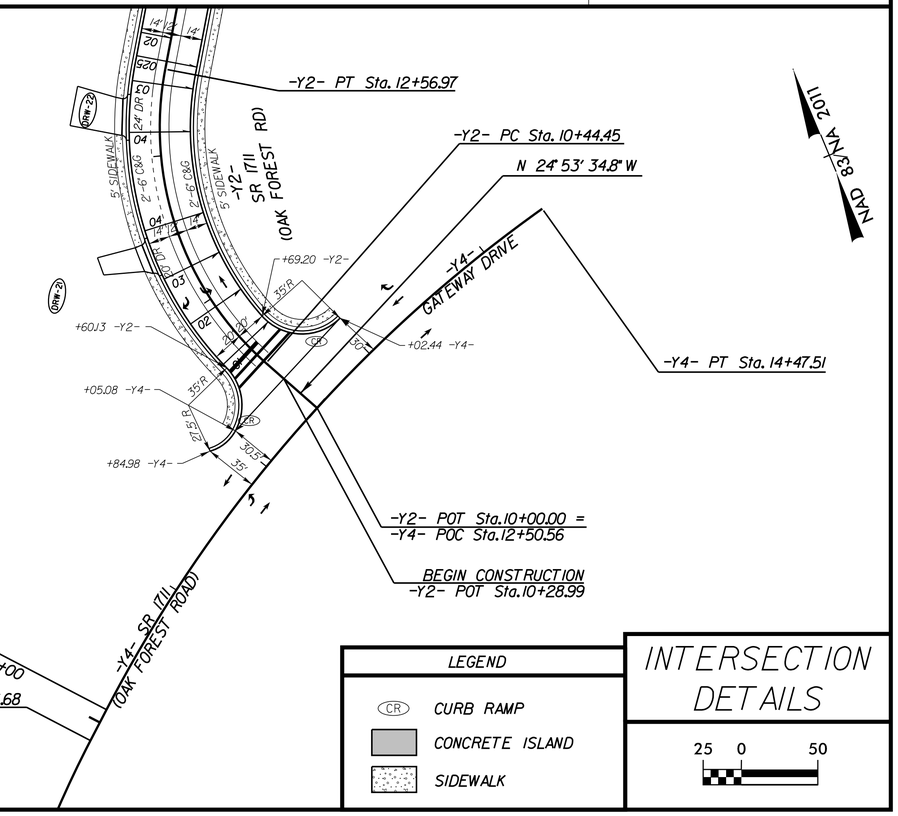


2020 ADT / 2040 ADT

-Y5- SR 1759 (MCLAIN DR): DHV = 9%, DIR = 55%, TTST = 1%, DUAL = 2%; 100/100

-Y3- SERVICE ROAD 1: DHV = 8%, DIR = 55%, TTST = 1%, DUAL = 2%; 300/300; 100/100

-Y5- SR 1759 (MCLAIN DR) DHV = 9%, DIR = 55%, TTST = 1%, DUAL = 2%



-Y2-/-Y4-

SEE SHEET NO.8 FOR PLAN

LEGEND

CR CURB RAMP

CONCRETE ISLAND

SIDEWALK

INTERSECTION DETAILS

25 0 50

10/10/2022 K:\RAL_Roadway\011036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_psh_2B-1.dgn

REVISIONS 5/14/99

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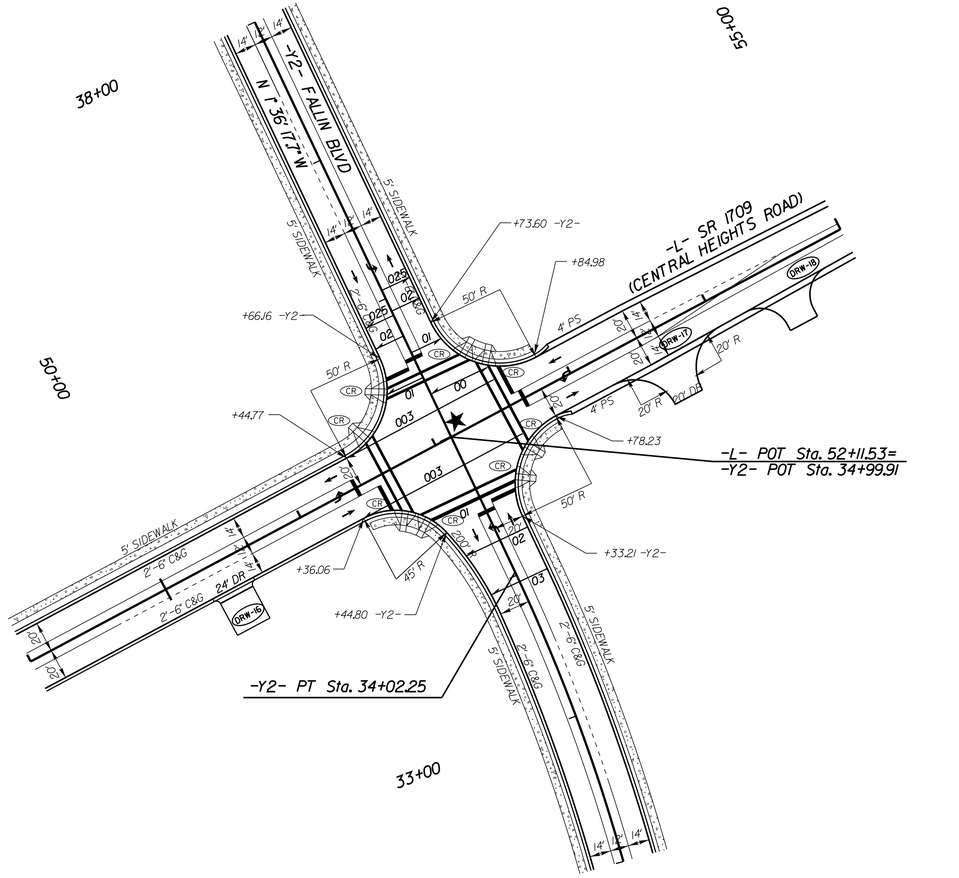
PROJECT REFERENCE NO.	SHEET NO.
U-5724	2B-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 030263 ENGINEER JASON D. LAWING — Digitally signed by: JASON D. LAWING — 10/10/2022

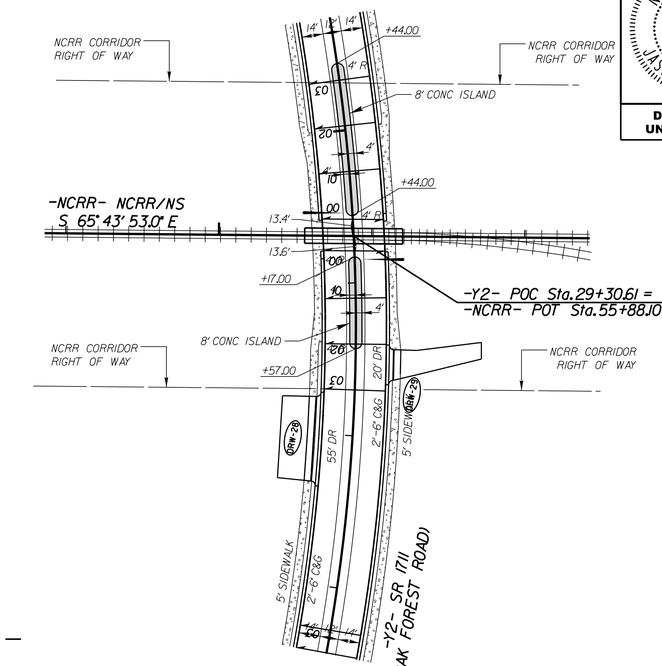
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011



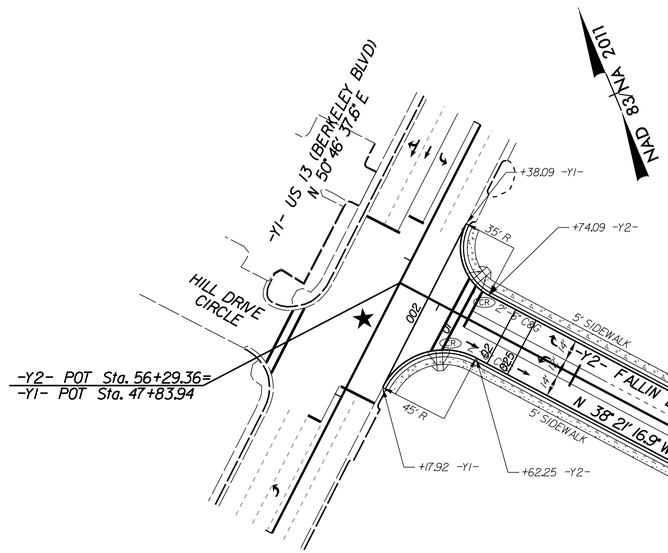
-L-/-Y2-

SEE SHEET NO.7 FOR PLAN



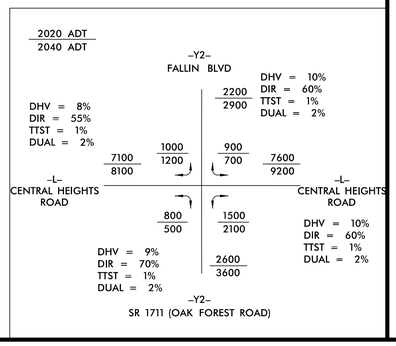
-Y2-/-NCRR-

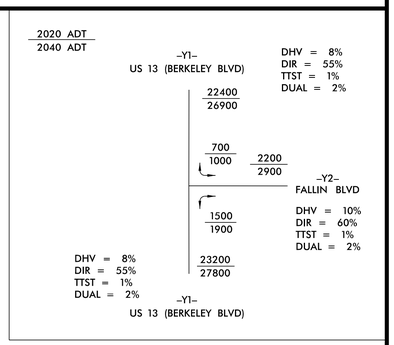
SEE SHEET NO.9 FOR PLAN



-Y2-/-Y1-

SEE SHEET NO.10 FOR PLAN





LEGEND

- (CR) CURB RAMP
- CONCRETE ISLAND
- SIDEWALK

INTERSECTION DETAILS

25 0 50

Kimley »Horn
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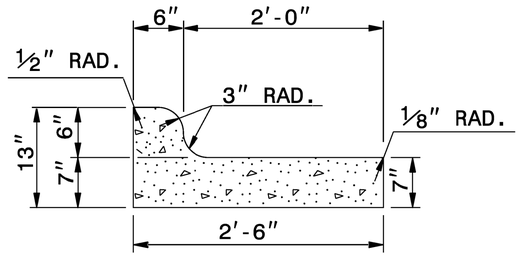
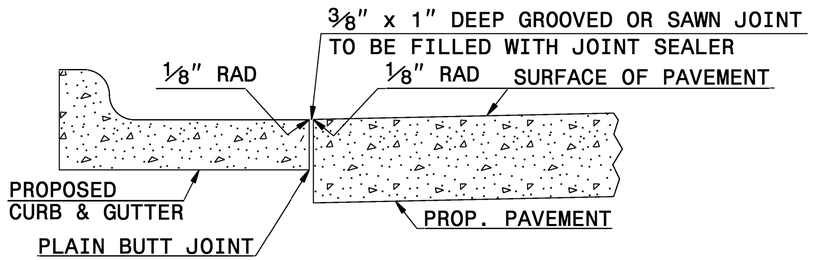
PROJECT REFERENCE NO.	SHEET NO.
U-5724	2C-1

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

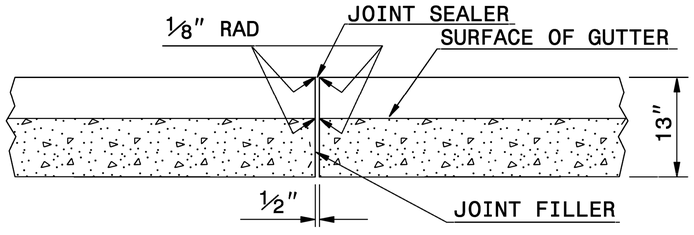
ENGLISH DETAIL DRAWING FOR
SPECIAL CURB & GUTTER
2'-6"



SECTION A-A
2'-6" CURB AND GUTTER



LONGITUDINAL PLAIN BUTT JOINT



TRANSVERSE EXPANSION JOINT
IN CURB AND GUTTER

GENERAL NOTES:
-PLACE CONTRACTION JOINTS AT 10′ INTERVALS, EXCEPT THAT A 15′ SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10′ INTERVALS.
-JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
-CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
-FILL ALL CONSTRUCTION JOINTS, WITH JOINT FILLER AND SEALER.
-SPACE EXPANSION JOINTS AT 90′ INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

SHEET 1 OF 1
846d01

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
SPECIAL CURB & GUTTER
2'-6"

SHEET 1 OF 1
846d01

10/11/2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD DATE: MAY 1997
MODIFIED BY: K.A. KEMPF DATE: MAR 2015
CHECKED BY: DATE:
FILE SPEC.: kkempf\english\B5121_846d01.dgn

18-JUN-2018 10:35
S:\Contracts\Special Details\kkempf\english\B5121_846d01.dgn
jhowerton
AT CSD-292595

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2C-2

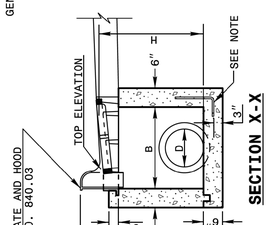
Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

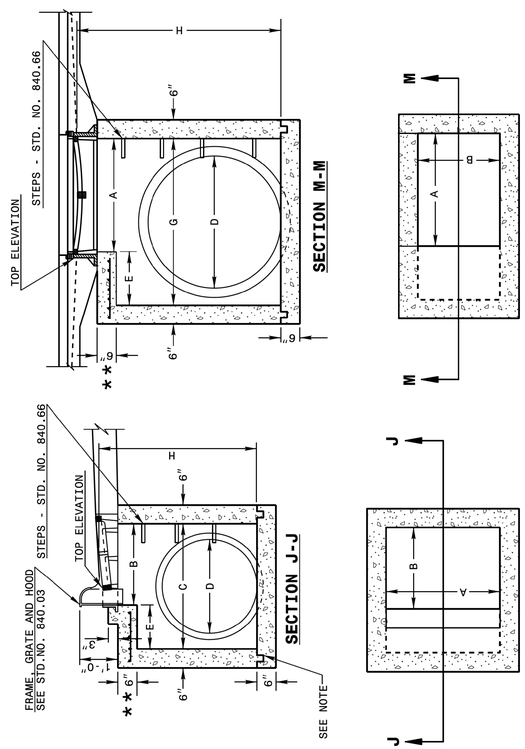
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 1 OF 2 **840D02**

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.

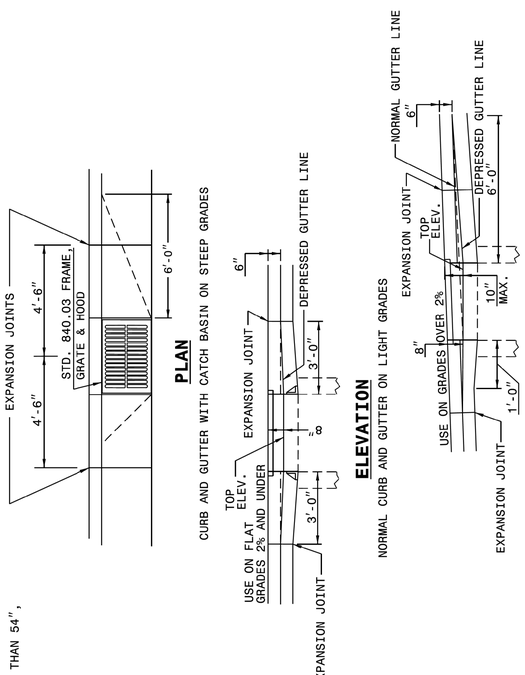


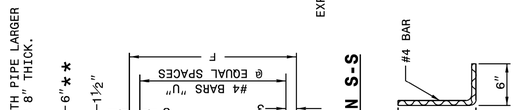


STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 1 OF 2 **840D02**





* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V			CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT H	C.M.	R.C.
D																	
12"	3'-0"	2'-2"	--	--	2'-0"	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"	--	--	2'-3"								--	0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"	--	--	2'-6"									0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-1"									0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-10"	1'-2"	4'-4"	4	1'-5"	2	4'-1"	39	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	4'-6"	1'-8"	4'-10"	4	1'-11"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	4'-5"	4'-11"	2'-2"	5'-5"	5	2'-5"	4	5'-2"	47	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-6"	2'-10"	6'-0"	5	3'-1"	4	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	5'-7"	6'-0"	3'-5"	6'-7"	6	3'-8"	5	6'-4"	56	0.289	0.802	2.387	0.297	0.401
60"	3'-0"	2'-2"	6'-3"	6'-3"	6'-6"	4'-1"	7'-3"	6	4'-4"	5	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	6'-11"	7'-0"	4'-9"	7'-11"	7	5'-0"	6	7'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	7'-6"	7'-6"	5'-3"	8'-6"	7	5'-6"	6	8'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	8'-0"	5'-11"	9'-1"	8	6'-2"	7	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	8'-9"	8'-6"	6'-7"	9'-9"	8	6'-10"	7	9'-6"	84	0.544	1.760	4.062	0.713	1.010

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 2 OF 2 **840D02**

10/10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: s:Special Details/jhowerton/840d02.dgn

10-AUG-2017 10W
S:\Contracts\Special Details\jhowerton\840d02 Min Depth CB.dgn
jhowerton AT CSD-292595

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2C-3

Kimley»Horn

P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

MINIMUM DEPTH BRICK DROP INLET

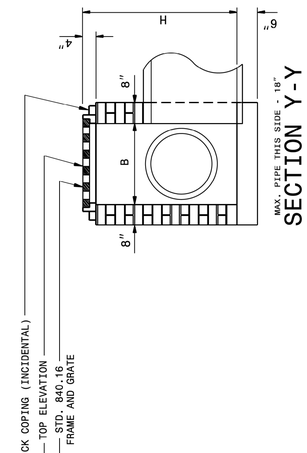
12" THRU 30" PIPE

ENGLISH DETAIL DRAWING FOR

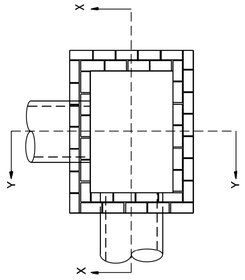
SHEET 1 OF 1 — 840D15

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

GENERAL NOTES:
MORTAR JOINTS ½" TO ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CROWNS MATCHING.
DO NOT USE BRICK MASONRY DROP INLET IN LOCATIONS SUBJECT TO TRAFFIC.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

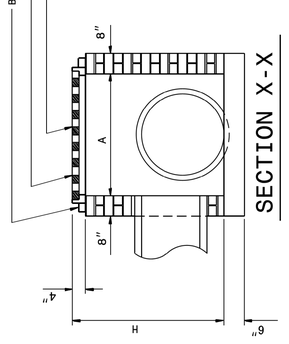


SECTION Y-Y



PLAN

WITH COPING REMOVED



SECTION X-X

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONCRETE	CUBIC YARDS BRICK MASONRY		DEDUCTIONS FOR ONE PIPE
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FOOT HT.	TOTAL BRICK MASONRY FOR MIN. HEIGHT, H	C.S.
D	A	B	H				
12"	3'-0"	2'-0"	1'-8"	0.268	0.313	0.470	0.020
15"			1'-11"	0.268	0.313	0.548	0.031
18"			2'-1"	0.268	0.313	0.626	0.044
24"			2'-9"	0.268	0.313	0.835	0.078
30"	3'-0"	2'-0"	3'-2"	0.268	0.313	0.991	0.122

10/10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STD. 840.14 DATE:
MODIFIED BY: E.E. WARD DATE: 3-4-02
CHECKED BY: DATE:
FILE SPEC.:

MINIMUM DEPTH CONCRETE DROP INLET

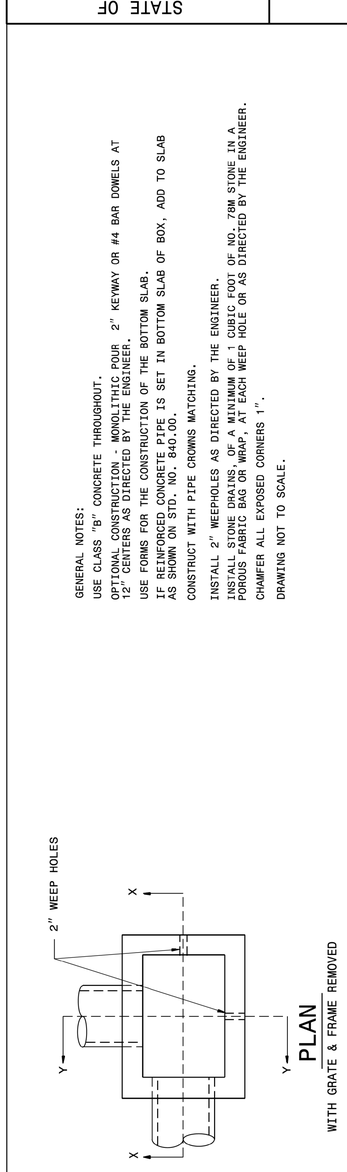
12" THRU 30" PIPE

ENGLISH DETAIL DRAWING FOR

SHEET 1 OF 1 — 840D14

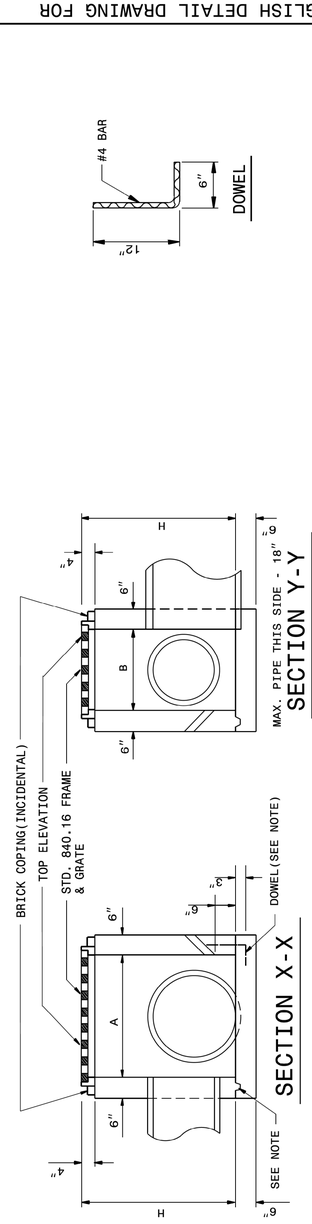
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CROWNS MATCHING.
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



PLAN

WITH GRATE & FRAME REMOVED



SECTION X-X

DOWEL

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	1'-8"	0.222	0.222	0.555	0.015	0.026
15"			1'-11"			0.611	0.023	0.036
18"			2'-1"			0.667	0.033	0.049
24"			2'-9"			0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-2"	0.222	0.222	0.925	0.092	0.127

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

MINIMUM DEPTH CONCRETE DROP INLET

12" THRU 30" PIPE

SHEET 1 OF 1 — 840D14

Kimley »Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2C-4

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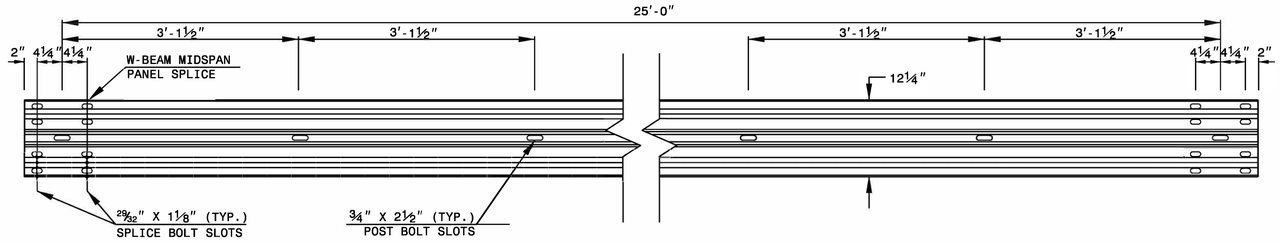
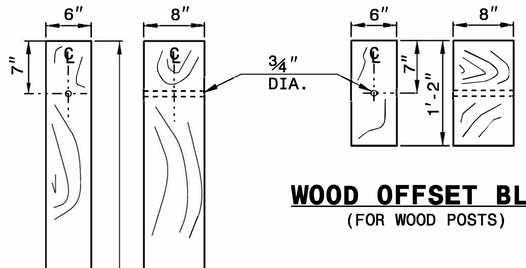
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

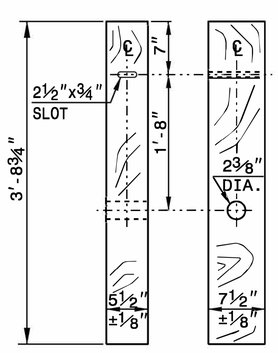
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL

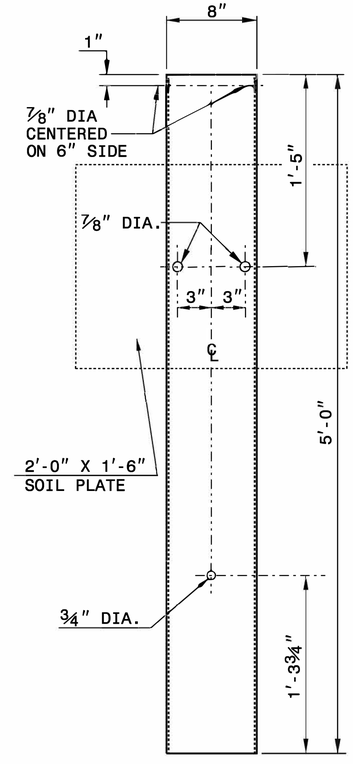


STANDARD LINE POST

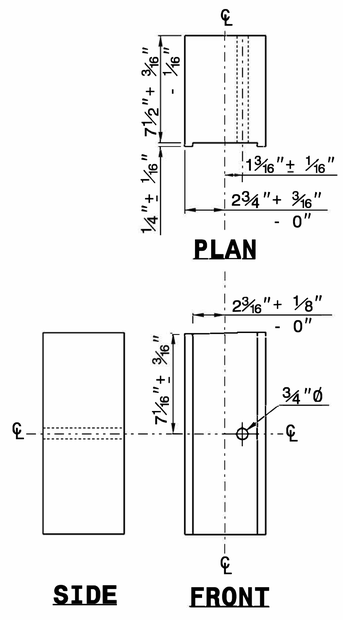


SHORT WOOD BREAKAWAY POST

WOOD OFFSET BLOCK
(FOR WOOD POSTS)



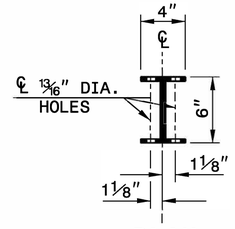
STEEL TUBE
TS 6"x8"x0.1875"



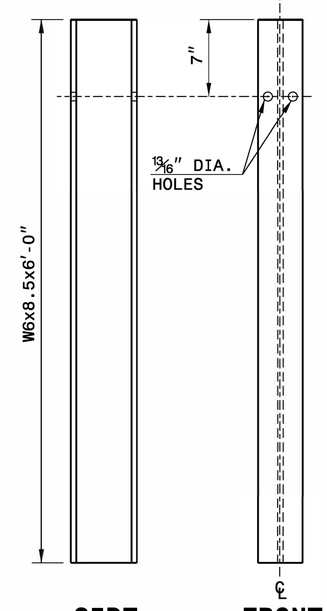
PLAN

SIDE **FRONT**

ROUTED OFFSET BLOCK



PLAN



SIDE **FRONT**

"W6" STEEL POST

SYSTEM PARTS

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

10/11/2022

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

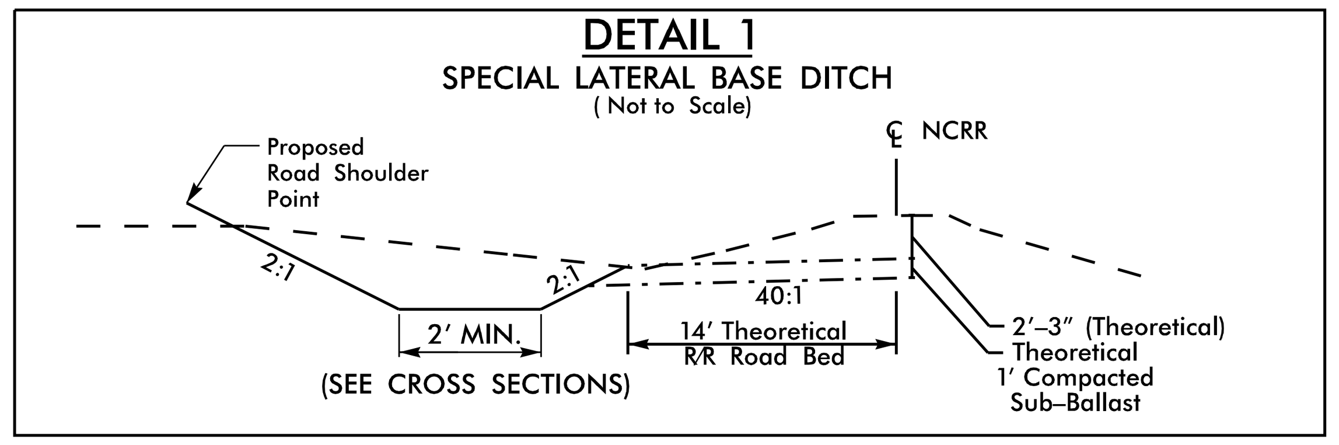
ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

PROJECT REFERENCE NO.	SHEET NO.
U-5724	2D-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

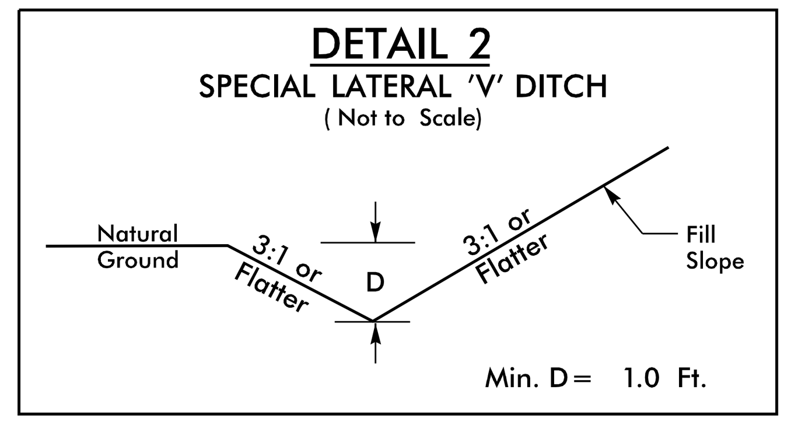
NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING — 10/12/2022

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING — 10/12/2022

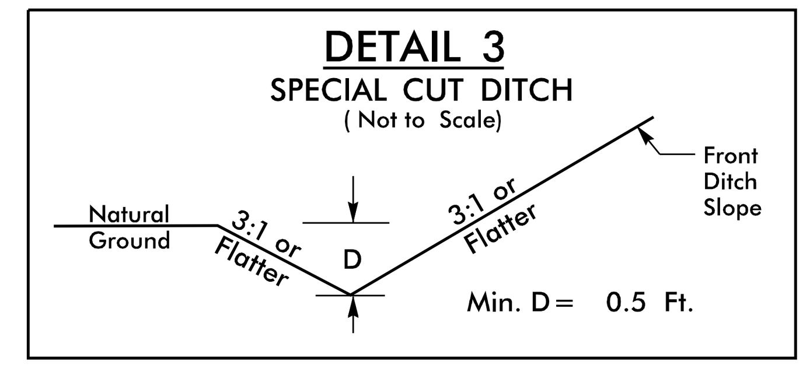
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 1


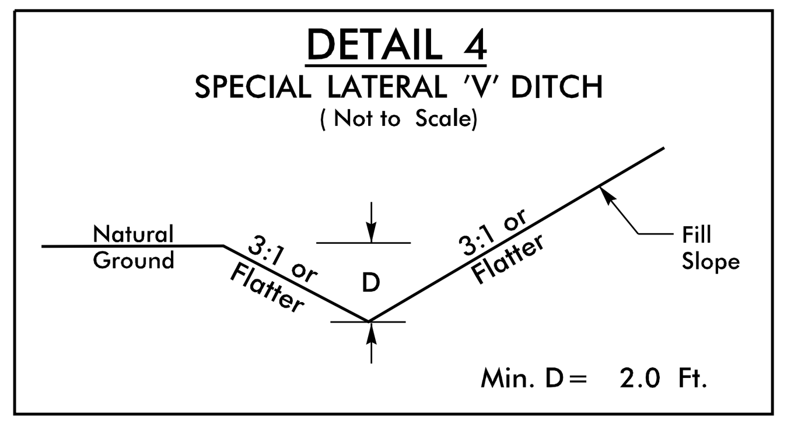
FROM STA. 18+00 TO STA. 25+50 -L- (RT)
FROM STA. 27+35 TO STA. 42+00 -L- (RT)

DETAIL 2


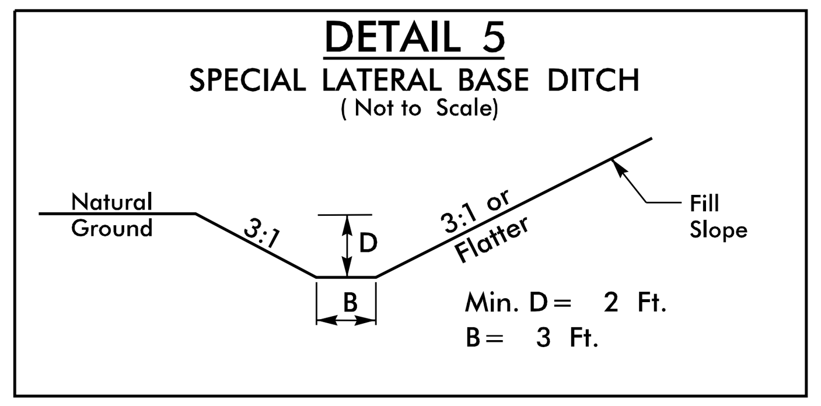
FROM STA. 18+00 TO STA. 18+70 -L- (LT)
FROM STA. 19+50 TO STA. 20+25 -L- (LT)
FROM STA. 20+25 TO STA. 21+00 -L- (LT)
FROM STA. 24+50 TO STA. 25+00 -L- (LT)
FROM STA. 25+00 TO STA. 25+50 -L- (LT)
FROM STA. 43+25 TO STA. 47+50 -L- (RT)
FROM STA. 47+85 TO STA. 48+25 -L- (RT)
FROM STA. 48+60 TO STA. 49+50 -L- (RT)
FROM STA. 49+50 TO STA. 50+25 -L- (RT)
FROM STA. 50+60 TO STA. 51+30 -L- (RT)
FROM STA. 51+30 TO STA. 51+60 -L- (RT)
FROM STA. 53+50 TO STA. 57+50 -L- (LT)
FROM STA. 53+44 TO STA. 58+00 -L- (RT)
FROM STA. 10+66 TO STA. 13+50 -Y2- (RT)
FROM STA. 17+87 TO STA. 20+75 -Y2- (RT)
FROM STA. 19+93 TO STA. 21+00 -Y2- (LT)
FROM STA. 24+00 TO STA. 27+68 -Y2- (LT)
FROM STA. 29+60 TO STA. 29+90 -Y2- (LT)
FROM STA. 29+90 TO STA. 31+00 -Y2- (LT)
FROM STA. 29+90 TO STA. 34+00 -Y2- (RT)
FROM STA. 34+00 TO STA. 34+58 -Y2- (LT)
FROM STA. 54+05 TO STA. 55+75 -Y2- (RT)
FROM STA. 15+45 TO STA. 16+85 -Y3- (LT)
FROM STA. 18+00 TO STA. 21+25 -Y3- (LT)
FROM STA. 21+25 TO STA. 22+30 -Y3- (LT)
FROM STA. 22+60 TO STA. 24+80 -Y3- (LT)
FROM STA. 12+00 TO STA. 12+20 -Y5- (RT)
FROM STA. 12+70 TO STA. 13+00 -Y5- (RT)
FROM STA. 12+00 TO STA. 12+16 -Y5- (LT)
FROM STA. 12+68 TO STA. 14+00 -Y5- (LT)

DETAIL 3


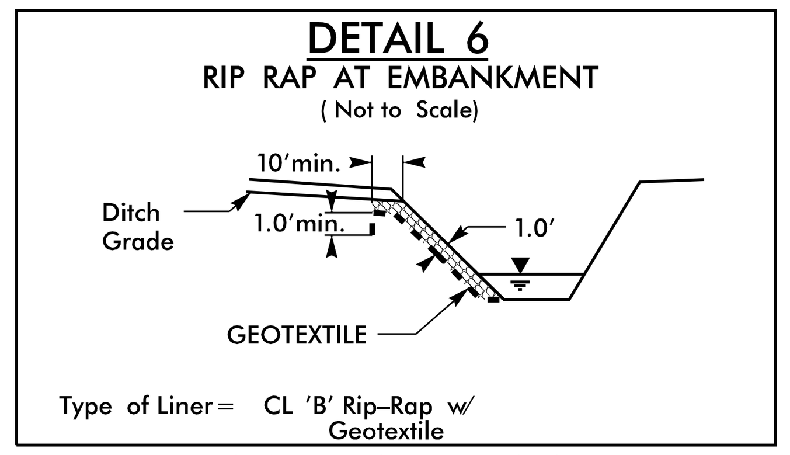
FROM STA. 17+15 TO STA. 18+00 -Y3- (LT)

DETAIL 4


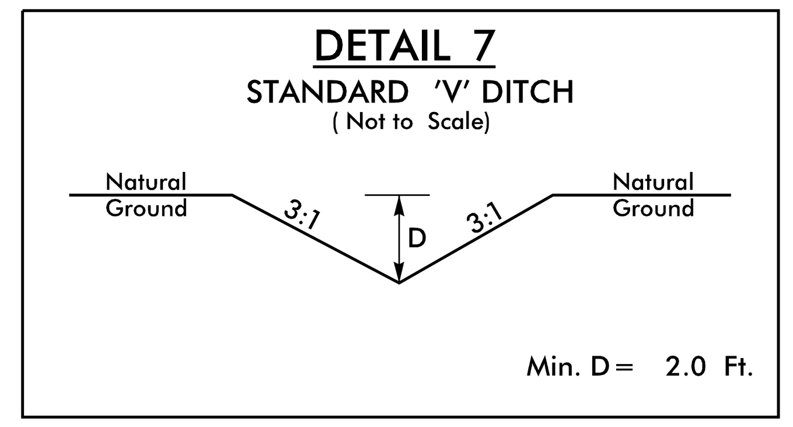
FROM STA. 14+00 TO STA. 17+87 -Y2- (RT)
FROM STA. 21+75 TO STA. 23+25 -Y2- (LT)

DETAIL 5


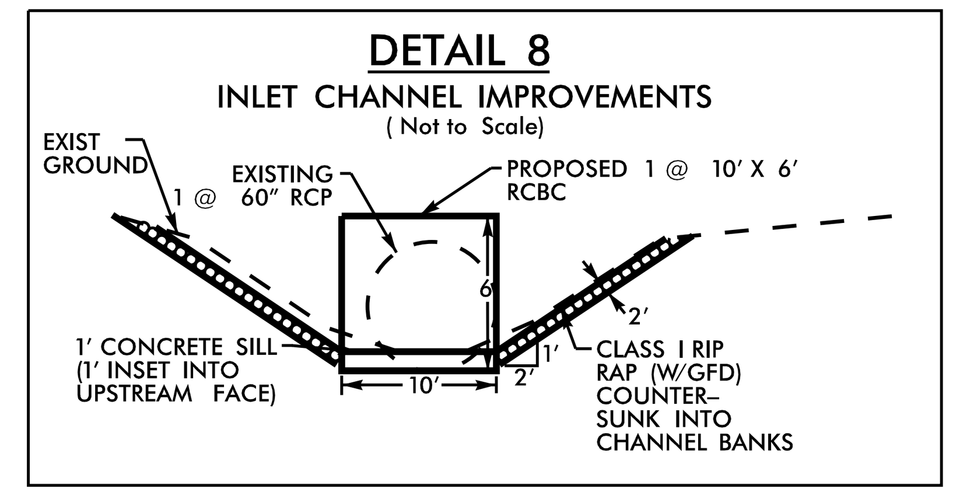
FROM STA. 21+75 TO STA. 29+00 -Y2- (RT)

DETAIL 6


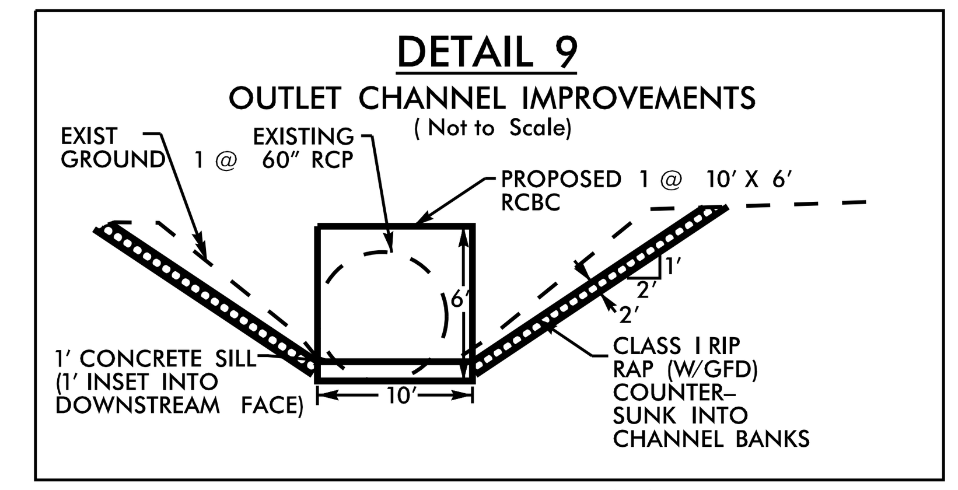
STA. 29+68 -Y2- (RT)

DETAIL 7


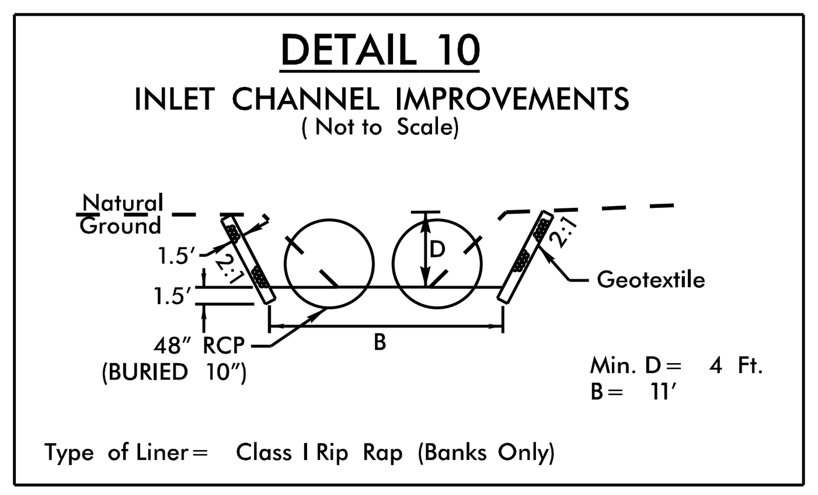
FROM STA. 29+68 TO STA. 29+90 -Y2- (RT)
FROM STA. 10+20 TO STA. 11+96 -Y4- (LT)

DETAIL 8


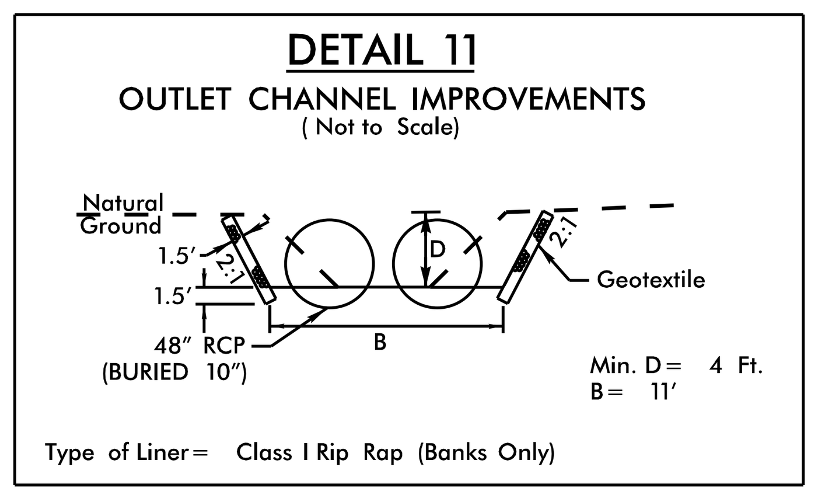
STA. 44+49 -Y2- (RT)

DETAIL 9


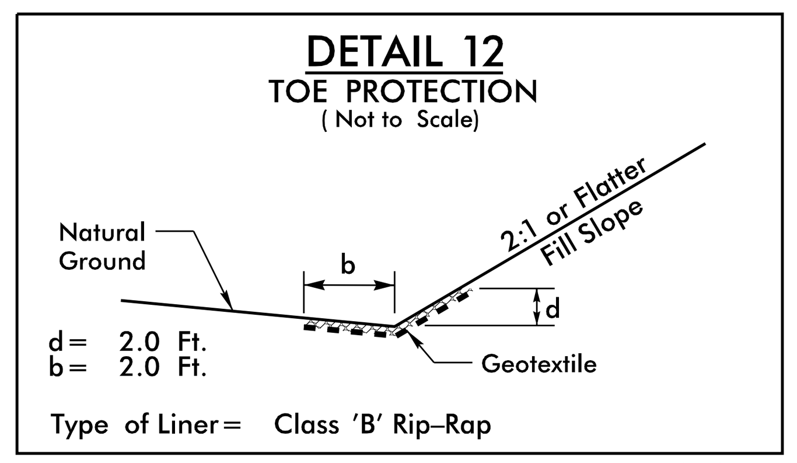
STA. 45+33 -Y2- (LT)

DETAIL 10


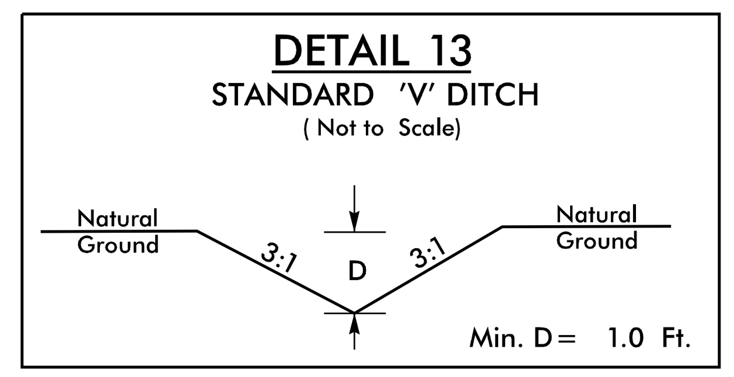
STA. 54+01 -Y2- (RT)

DETAIL 11


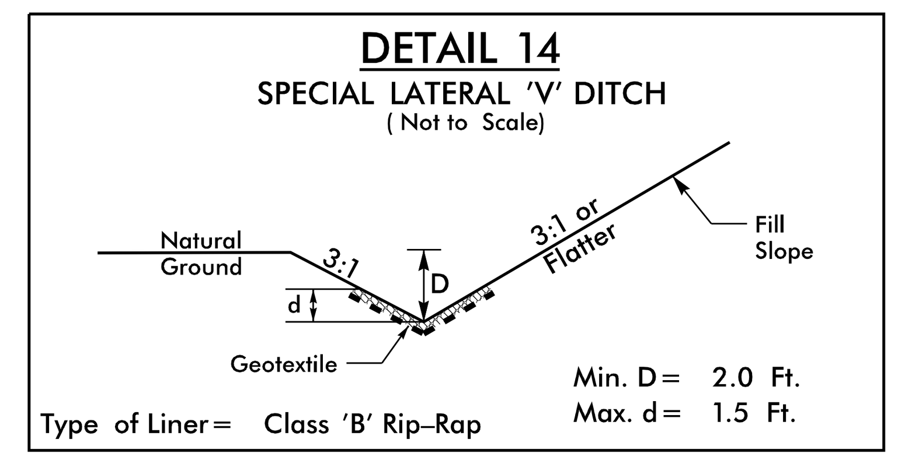
STA. 53+98 -Y2- (LT)

DETAIL 12


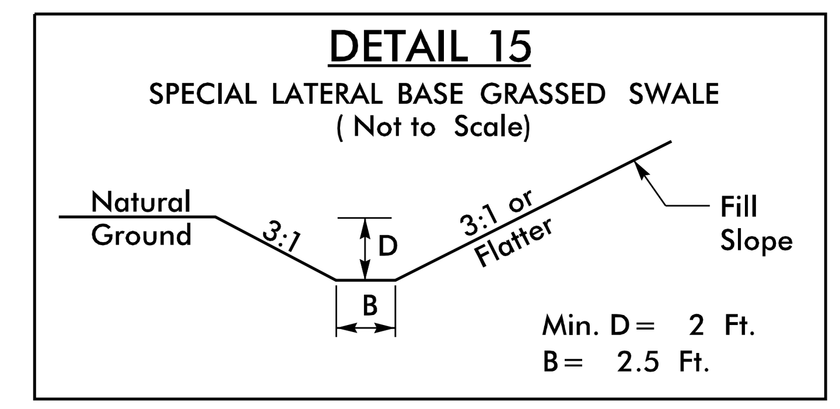
FROM STA. 30+30 TO STA. 31+00 -L- (LT)

DETAIL 13


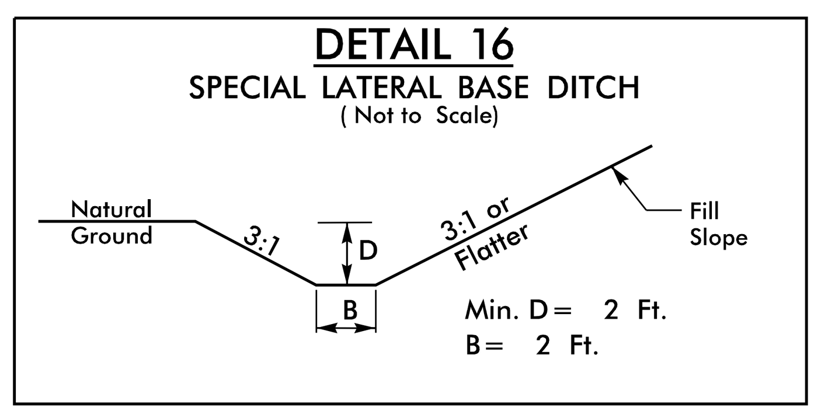
STA. 12+26 -Y3- (LT)

DETAIL 14


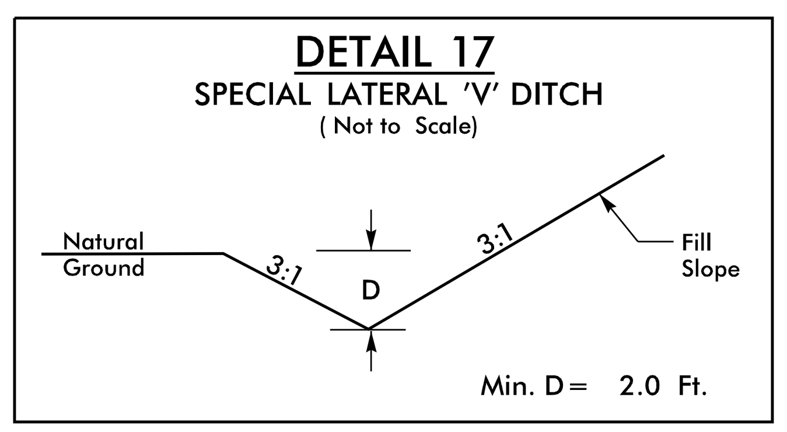
FROM STA. 14+50 TO STA. 15+05 -L- (LT)

DETAIL 15


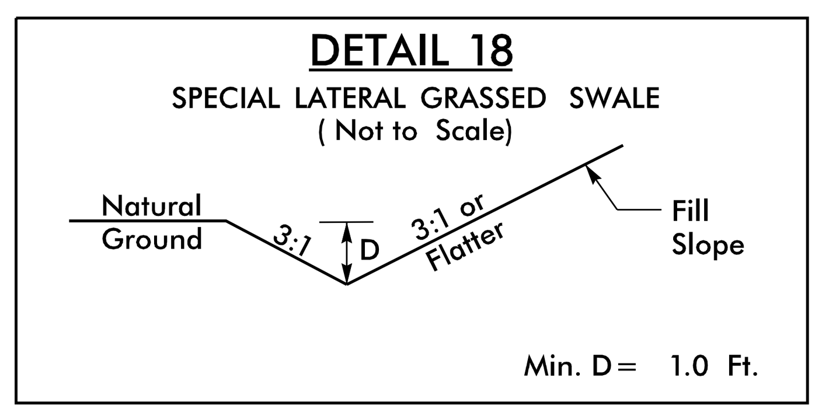
FROM STA. 35+43 TO STA. 45+45 -Y2- (LT)

DETAIL 16


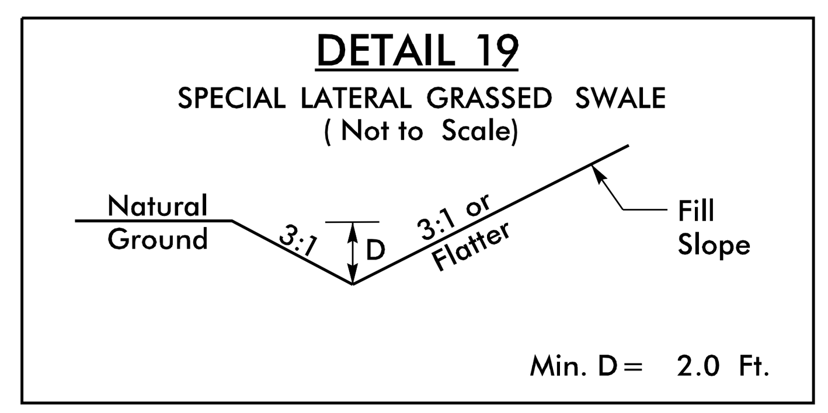
FROM STA. 12+54 TO STA. 19+80 -Y2- (LT)

DETAIL 17


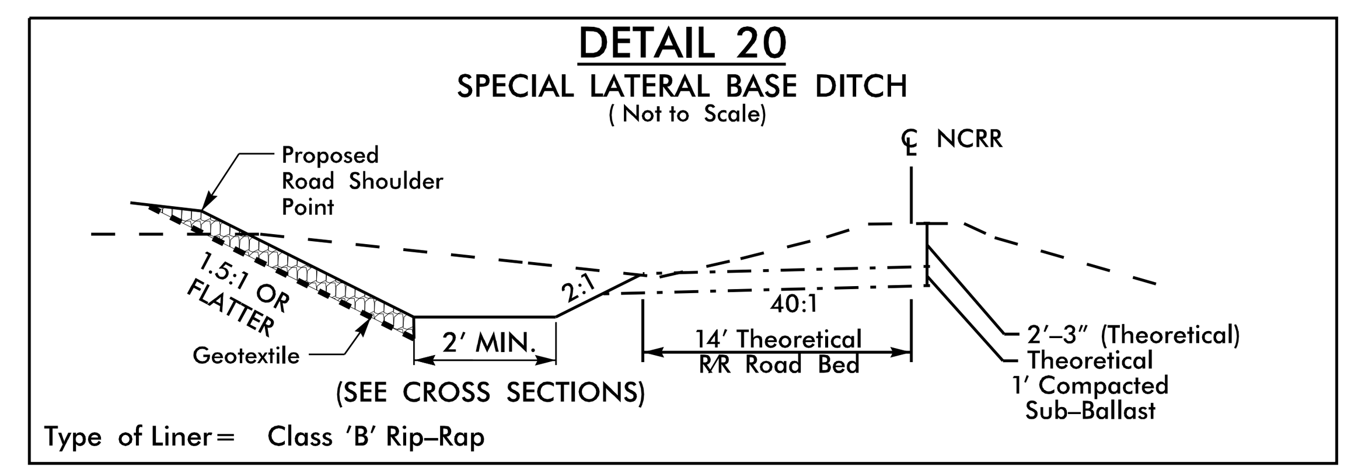
FROM STA. 10+50 TO STA. 14+92 -Y3- (RT)
FROM STA. 14+00 TO STA. 14+94 -Y3- (LT)

DETAIL 18


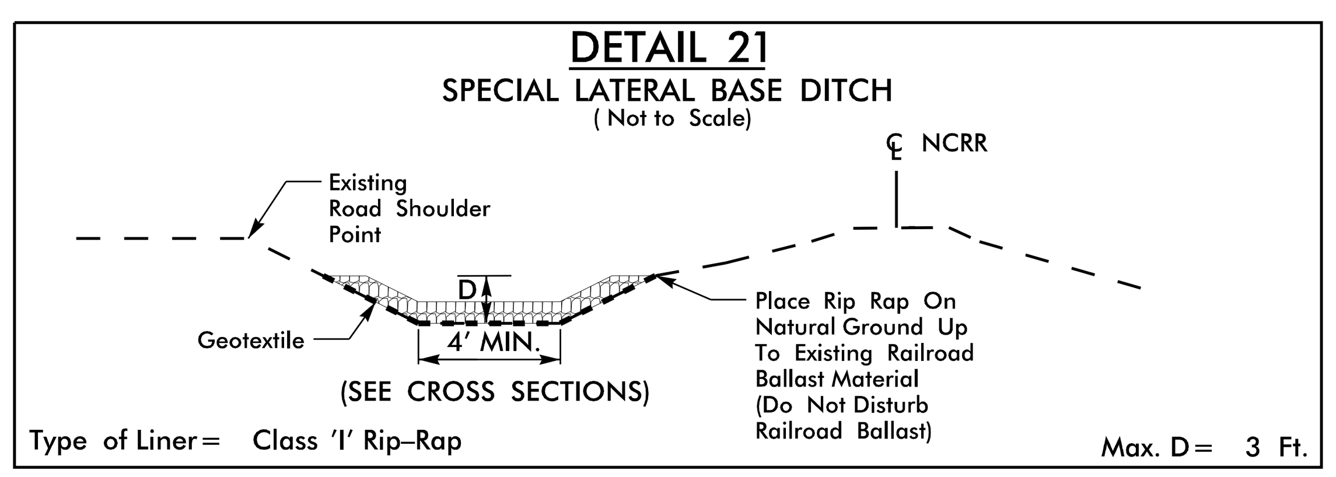
FROM STA. 40+00 TO STA. 44+36 -L- (LT)
FROM STA. 45+60 TO STA. 48+06 -Y2- (LT)
FROM STA. 53+00 TO STA. 53+88 -Y2- (LT)
FROM STA. 54+05 TO STA. 55+39 -Y2- (LT)

DETAIL 19


FROM STA. 44+36 TO STA. 51+40 -L- (LT)
FROM STA. 35+43 TO STA. 44+25 -Y2- (RT)

DETAIL 20


FROM STA. 13+50 TO STA. 17+90 -L- (RT)

DETAIL 21


FROM STA. 8+45 TO STA. 9+15 -L- (RT)

REVISIONS

5/14/99

K:\RAL_Roadway\DI\036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_typ.dgn

10/12/2022

COMPUTED BY: E. LYNCH DATE: 10/29/19
CHECKED BY: J. LAWING DATE: 12/13/19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-5724	3B-1

Kimley»Horn
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P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

REVISIONS

SUMMARY OF EARTHWORK

LOCATION				UNCLASSIFIED EXCAVATION	EMBANKMENT + %	BORROW	WASTE
SUMMARY (PHASE 1)							
-PP_RR-	11+33.00	TO	25+35.13	971	883	0	88
-L- (LT)	13+50.00	TO	26+74.73	206	1173	967	0
-L-	26+74.73	TO	43+58.09	1524	15731	14027	0
-L- (LT)	43+58.09	TO	58+00.00	653	1696	1043	0
-Y2- (LT)	10+29.00	TO	29+30.67	988	3515	2527	0
-Y2- (RT)	28+60.00	TO	34+99.91	0	106	106	0
-Y2-	28+91.00	TO	51+28.00	262	3973	3711	0
-Y2-	34+99.91	TO	51+28.00	4320	4868	548	0
-Y3-	10+32.00	TO	15+18.71	121	205	84	0
-Y3-	15+18.71	TO	25+92.00	211	1696	1485	0
-Y5-	10+90.00	TO	14+58.00	49	56	7	0
SUMMARY (PHASE 1)				9305	33902	24685	88
SUMMARY (PHASE 2)							
-L- (RT)	13+50.00	TO	26+74.73	1190	154	0	1036
-L- (RT)	43+58.09	TO	58+00.00	417	1249	832	0
-Y1- (LT)	18+63.46	TO	22+45.00	239	18	0	221
-Y1- (RT)	24+61.00	TO	25+28.00	8	15	7	0
-Y1- (RT)	27+36.00	TO	28+21.00	23	0	0	23
-Y2- (RT)	10+29.00	TO	28+60.00	2477	3236	759	0
-Y2- (LT)	28+36.00	TO	28+91.00	0	165	165	0
-Y2-	51+28.00	TO	56+08.25	279	1003	724	0
SUMMARY (PHASE 2)				4633	5840	2487	1280
SUMMARY (PHASE 1 AND PHASE 2)				13938	39742	27172	1368
MATERIAL FOR SHOULDER CONSTRUCTION				0	638	638	0
LOSS DUE TO CLEARING AND GRUBBING				-6000	0	6000	0
UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE				0	0	700	700
WASTE IN LIEU OF BORROW				0	0	-1368	-1368
PROJECT TOTALS:				7938	40380	33142	700
EST 5% FOR REPLACING TOPSOIL ON BORROW PITS				0	0	1658	0
GRAND TOTALS:				7938		34800	
SAY:				8000		35000	
EST. UNDERCUT					14600 CY		
EST. SELECT GRANULAR MATERIAL					15200 CY		
EST. GEOTEXTILE FOR SOIL STABILIZATION					20450 SY		
EST. ROCK PLATTING					200 SY		
EST. SHALLOW UNDERCUT					1350 CY		
EST. CLASS IV SUBGRADE STABILIZATION					4200 TON		

Earthwork quantities are calculated by Kimley-Horn.
These earthwork quantities are based in part on subsurface data provided by Falcon Engineering.

NOTE: APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, AND REMOVAL OF ASPHALT PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

K:\RAL_Roadway\011036333 - U-5724 (Central Heights\Roadway\Proj\U-5724_rdy_sum.dgn
10/3/2022

PROJECT REFERENCE NO.	SHEET NO.
U-5724	3B-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			TERMINAL SECTIONS	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
L	42+29	42+64	RT	37.5																									
Y1	24+91	25+28	RT	37.5																									
Y2	28+55	28+94	LT	37.5																									
Y3	25+80	25+80	LT/RT	37.5																									
Y5	14+58	14+58	LT/RT	37.5																									
			TOTAL	187.5																									

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
L	13+50	26+00	RT	1206
L	14+30	15+60	LT	29
Y2	49+81	56+09	LT/RT	2329
Y5	13+47	14+58	LT	16
Y5	13+85	14+58	RT	16
NCRR	29+59	55+50	RT	7627
NCRR	44+31	46+14	LT	492
			TOTAL:	11715
			SAY:	11720

NOTE: APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, AND REMOVAL OF ASPHALT PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

REVISIONS

K:\RAL_Roadway\0II0363333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_sum.dgn

10/3/2022

LD60070

COMPUTED BY: SRG DATE: 11-13-2019
CHECKED BY: JDL DATE: 11-13-2019

PROJECT NO.	SHEET NO.
U-5724	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET		STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)														C. S. PIPE							R. C. PIPE CLASS III								R. C. PIPE CLASS IV								R. C. PIPE CLASS V								15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE THICKNESS OR GAUGE			FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48				CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		E	F	G		D.I. STD. 852.06	C.B. STD. 852.05																CY	CY	CY	LIN. FT.	
L 8+80	30	RT	0400		111.2																																																																															
L 15+75	19	RT	0401		112.3																																																			1					1																	1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0401	0402		109.0	108.9																																							40																																							
L 15+33	19	RT	0402		112.2																																																			1			1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0402	0433		108.9	108.8																																							176																																							
L 15+34	19	LT	0403		112.2																																																			1			1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0403	0404		107.6	107.6																																									28																																						
L 15+05	18	LT	0404		112.3																																																			1					1																	1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0404	0421		107.6	107.5																																									200																																						
L 19+75	22	RT	0405		113.0																																																			1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0405	0428		109.4	109.2																																							172																																							
L 20+25	22	LT	0406		113.0																																																			1			1		1																												
				0406	0408		108.5	108.5																																								24																																							
L 20+00	22	RT	0407		113.0																																																			1			1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0407	0405		109.4	109.4																																							24																																							
L 20+00	22	LT	0408		113.0																																																			1			1	1																													
				0408	0419		108.5	108.2																																								128																																							
L 12+96	20	RT	0409		112.7																																																			1																						1			1							
				0409	0410		108.7	108.7																																							12																																							
L 16+80	36	LT	0412	0420		110.5	110.2	0.3																																					16																																									
L 15+95	35	LT	0413		111.5																																																			1											1	1																		
				0413	0425		109.0	108.9																																							16																																									
L 18+70	39	LT	0414		111.6																																																			1											1	1																		
				0414	0419		109.1	109.0																																							16																																									
L 21+71	37	LT	0415	0418		110.8	110.3																																							16																																									
L 20+25	38	LT	0416		111.5																																																			1											1	1																		
				0416	0406		109.0	108.9																																							16																																									
L 21+77	22	LT	0418		113.4																																																			1			1		1																												
				0418	0406		109.0	108.5																																								152																																							
L 18+70	22	LT	0419		113.3																																																			1			1			1																											
				0419	0420		108.2	107.9																																									192																																						
L 16+80	22	LT	0420		112.8																																																			1			1		1																												
				0420	0425		107.9	107.7																																									84																																						
L 13+04	15	LT	0421		112.4																																																			1																						1			1							
				0421	0426		107.5	107.5																																									16																																						
L 13+07	24	LT	0422	0421		108.8	108.6																																						8																																							
L 13+65	28	RT	0424	0433		109.7	109.5																																							16																																									
L 15+95	20	LT	0425		112.3																																																			1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0425	0403		107.7	107.6																																									60																																						
L 13+01	0	CL	0426		112.9																																																			1	0.4																								1			1							
				0426	0427		107.5	107.3																																									412																																						
L 08+85	3	RT	0427		111.8																																																			1																						1			1							
				0427	0400		107.3	107.2	0.3																																								36																																						
L 18+00	22	RT	0428		113.3																																																			1			1			1																											
				0428	0401		109.2	109.0																																							224																																							
L 18+00	33	RT	0429	0428		109.6	109.5																																							12																																									
L 14+65	27	LT	0430		111.9																																																			1			1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
				0430	0431		109.4	109.3																																							20																																									
L 15+05	40	LT	0432	0404		109.1	108.3	0.4																																						24																																							
L 13+54	18	RT	0433		112.2																																																			1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
SHEET TOTALS																																													128	680	304	1028								22	0.4		6	5	6	4					3	3							4			4	9						

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY: SRG DATE: 11-13-2019
CHECKED BY: JDL DATE: 11-13-2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5724	3D-2

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION SIZE THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
		0433	0409		108.8	108.7																																							60																																							
L 23+92	22 RT	0501		113.0																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0501	0407		109.8	109.4																																							392																																							
L 24+25	22 RT	0502		113.0																																																				1						1																		1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0502	0501		109.8	109.8																																							32																																							
L 25+00	22 LT	0503		113.3																																																				1					1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0503	0504		110.5	110.0																																						108																																								
L 23+92	22 LT	0504		113.0																																																				1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0504	0418		110.0	109.0																																							212																																							
L 28+65	22 RT	0505		114.3																																																				1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0505	0550		110.8	110.7																																						16																																								
L 28+48	22 LT	0506		114.3																																																				1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0506	0550		110.8	110.7																																							44																																							
L 30+10	22 LT	0507		115.4																																																				1			1		1																										
		0507	0552		111.4	111.2																																							52																																							
L 30+00	22 RT	0508		115.3																																																				1			1			1																								
		0508	0505		111.3	110.8																																						136																																								
L 27+35	25 RT	0509		115.4																																																				1			1		1																										
		0509	0502		110.5	109.8																																							308																																							
L 34+00	22 RT	0510		116.8																																																				1			1		1																										
		0510	0508		112.8	111.3																																						400																																								
L 36+03	22 RT	0511		116.2																																																				1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0511	0510		113.6	112.8																																						204																																								
L 36+45	22 RT	0512		116.2																																																				1						1																		1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0512	0511		113.7	113.6																																						40																																								
L 36+03	22 LT	0513		116.2																																																				1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0513	0514		113.7	112.9																																						200																																								
L 34+00	22 LT	0514		116.8																																																				1			1			1																								
		0514	0519		112.9	111.7																																						320																																								
L 36+45	22 LT	0515		116.2																																																				1					1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		0515	0513		113.7	113.7																																						40																																								
L 27+35	36 RT	0516	0509		110.7	110.5																																							12																																							
L 30+10	40 LT	0517		113.5																																																				1												1												1					SPECIAL DESIGN, SEE DETAIL 840D14 SHEET 2C-3
		0517	0507		111.4	111.4																																						20																																								
L 25+00	36 LT	0518		113.0																																																				1											1	1																	
		0518	0503		110.5	110.5																																						16																																								
L 30+80	22 LT	0519		116.2																																																				1			1		1																										
		0519	0507		111.7	111.4																																							68																																							
L 30+90	45 LT	0520	0519		112.8	112.5																																						28																																								
Y1 22+27	5 LT	0521		113.0																																																				1								1			1	1																	TIE TO EX 15" RCP
		0521	0522		109.0	106.3																															176																																																					
Y1 20+50	3 LT	0522		111.3																																																				1								1			1	1																	
		0522	0524		106.3	104.3																															124																																																					
Y1 18+95	0 CL	0523		108.7																																																				1								1			1	1																	REMOVE EX DI
		0523	0525		103.9	101.5																															80																																																						
Y1 19+25	0 CL	0524		109.3																																																				1								1			1	1																	
		0524	0523		104.3	103.9																															28																																																							
Y1 18+22	40 LT	0525		106.2	96.9																																																			1	4.3		1		1																								REMOVE EX CB AND TIE TO EX 24" RCP
Y1 24+65	2 LT	0527		115.1																																																			1								1			1	1																	
		0527	0521		110.4	109.0																															236																																																						
SHEET TOTALS																																					644							1528	1180										24	4.3		7	6	7	4		5			6	7											10	1					

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY:	SRG	**DATE:**	11-13-2019
CHECKED BY:	JDL	**DATE:**	11-13-2019

PROJECT NO.	SHEET NO.
U-5724	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109
Y1 24+65	38 RT	0528		114.0																							
		0528	0527		110.7	110.4																					
Y1 21+25	43 LT	0531		110.8																							
		0531	0532		106.2	103.5	0.3																				
Y1 19+45	51 LT	0532		108.2																							
		0532	0533		103.5	101.4	0.4																				
Y1 18+72	95 LT	0533		105.8																							
		0533	0538		98.7	98.5	0.8																				
Y1 21+24	51 LT	0536		110.2																							
		0536	0531		106.3	106.2					8																
Y1 18+50	90 LT	0538		106.0																							
		0538	0525		97.5	97.0	0.8																				
Y3 14+93	0 CL	0539	0540		110.5	110.3																					
Y3 15+45	0 CL	0541	0542		110.5	110.3																					
Y3 19+53	22 LT	0543																									
Y3 20+47	24 LT	0544																									
Y3 21+25	0 CL	0545	0546		110.9	110.7																					
L 28+48	22 RT	0550		114.4																							
		0550	0509		110.7	110.5																					
L 29+56	37 LT	0551		114.5																							
		0551	0552		112.0	111.7																					
L 29+56	22 LT	0552		114.8																							
		0552	0506		111.2	110.8																					
Y5 11+60	23 RT	0555																									
Y3 18+26	19 LT	0556																									
Y3 12+38	51 LT	0598																									
Y5 12+91	21 LT	0599																									
L 42+20	22 LT	0601		116.0																							
		0601	0602		113.0	112.0																					
L 44+15	22 LT	0602		115.0																							
		0602	0603		112.0	111.6																					
L 46+00	22 LT	0603		114.4																							
		0603	0606		111.6	111.3																					
L 47+61	22 LT	0604		113.8																							
		0604	0605		111.3	111.0																					
L 48+50	22 LT	0605		114.0																							
		0605	0718		110.9	110.3																					
L 47+50	22 LT	0606		113.8																							
		0606	0604		111.3	111.3																					
L 43+84	45 LT	0608																									
L 44+86	45 LT	0609																									
L 47+50	36 RT	0610	0611		111.3	111.3				16																	
L 47+50	22 RT	0611		113.8																							
		0611	0612		111.3	111.2																					
L 47+85	22 RT	0612		113.8																							
		0612	0720		111.2	110.8																					
L 47+85	35 RT	0613	0612		111.3	111.2			16																		
L 45+86	38 RT	0615																									
L 46+46	37 RT	0616																									
Y3 24+81	0 CL	0617	0618		111.4	111.2																					
					SHEET TOTALS				16	16	8																

LINE & STATION	FROM	TO	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY
Y1 24+65	0528																														
	0528	0527											40																		
Y1 21+25	0531																														
	0531	0532												176																	
Y1 19+45	0532																														
	0532	0533												84																	
Y1 18+72	0533																														
	0533	0538												20																	
Y1 21+24	0536																														
	0536	0531																													
Y1 18+50	0538																														
	0538	0525												60																	
Y3 14+93	0539	0540																			56										
Y3 15+45	0541	0542																			52										
Y3 19+53	0543																										32				
Y3 20+47	0544																										32				
Y3 21+25	0545	0546																			52										
L 28+48	0550																														
	0550	0509																				112									
L 29+56	0551																														
	0551	0552																			16										
L 29+56	0552																														
	0552	0506																				108									
Y5 11+60	0555																										32				
Y3 18+26	0556																										32				
Y3 12+38	0598																		40												
Y5 12+91	0599																										32				
L 42+20	0601																														
	0601	0602																		188											
L 44+15	0602																														
	0602	0603																		184											
L 46+00	0603																														
	0603	0606																			148										
L 47+61	0604																														
	0604	0605																			88										
L 48+50	0605																														
	0605	0718																				280									
L 47+50	0606																														
	0606	0604																			12										
L 43+84	0608																										40				
L 44+86	0609											96																			
L 47+50	0610	0611																													
L 47+50	0611																														
	0611	0612																			36										
L 47+85	0612																														
	0612	0720																			164										
L 47+85	0613	0612																													
L 45+86	0615																										44				
L 46+46	0616																										36				
Y3 24+81	0617	0618																			56										
SHEET TOTALS												96	40	340					40	372	680	500					280				

LINE & STATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y1 24+65	0528		1			1			1																							
	0528	0527																														
Y1 21+25	0531		1			1		1																								
	0531	0532																														
Y1 19+45	0532		1			1		1																								
	0532	0533																														
Y1 18+72	0533		1	2.1		1		1																								
	0533	0538																														
Y1 21+24	0536		1											1	1																	TIE TO EX 15" HDPE
	0536	0531																														
Y1 18+50	0538		1	3.5		1	1																									
	0538	0525																														
Y3 14+93	0539	0540																														
Y3 15+45	0541	0542																														
Y3 19+53	0543																															
Y3 20+47	0544																															
Y3 21+25	0545	0546																														
L 28+48	0550		1				1																				1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0550	0509																														
L 29+56	0551		1											1	1																	
	0551	0552																														
L 29+56	0552		1					1																			1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0552	0506																														
Y5 11+60	0555																															
Y3 18+26	0556																															
Y3 12+38	0598																															
Y5 12+91	0599																															
L 42+20	0601		1			1			1																							
	0601	0602																														
L 44+15	0602		1			1			1																							
	0602	0603																														
L 46+00	0603		1						1																		1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0603	0606																														
L 47+61	0604		1				1																				1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0604	0605																														
L 48+50	0605		1					1																			1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0605	0718																														
L 47+50	0606		1						1																		1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0606	0604																														
L 43+84	0608																															
L 44+86	0609																															
L 47+50	0610	0611																														
L 47+50	0611		1				1																				1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0611	0612																														
L 47+85	0612		1				1																				1					SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
	0612	0720																														
L 47+85	0613	0612																														
L 45+86	0615																															
L 46+46	0616																															
Y3 24+81	0617	0618																														
SHEET TOTALS			17	5.6		7	5	5	5					2	2												8					

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY:	SRG	DATE:	11-13-2019
CHECKED BY:	JDL	DATE:	11-13-2019

PROJECT NO.	SHEET NO.
U-5724	3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION	OFFSET		STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)													C. S. PIPE							R. C. PIPE CLASS III								R. C. PIPE CLASS IV								R. C. PIPE CLASS V								15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE									12	15	18	24	30	36	42	48						15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48							A	B		GRATE TYPE				D.I. STD. 852.06	C.B. STD. 852.05																				
THICKNESS OR GAUGE			FROM	TO													DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	.064	.064	.064	.079	.079	.109	.109																													MASONRY	0' THRU 5'	5' THRU 10'	10' AND ABOVE		E	F	G																							
					FT.	FT.	FT.	%																																																	CY	CY	EACH	LIN. FT.	LIN. FT.																							CY	CY	CY	LIN. FT.	
L 46+88	36	RT	0620																																																		36																																		
L 41+95	47	LT	0619																																																		44																																		
Y2 33+40	22	LT	0701		113.9																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0701	0915		111.6	111.4																																							136																																										
Y2 33+50	22	LT	0702		113.9																																																					1					1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0702	0701		111.7	111.6																																							8																																									
Y2 36+92	22	LT	0705		113.2																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0705	0706		111.0	111.0																																							8																																									
Y2 37+03	22	LT	0706		113.2																																																					1					1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0706	0704		111.0	110.9			20																																																																														
Y2 41+02	22	LT	0707		113.2																																																					1						1																		1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0707	0708		111.0	110.9																																							8																																									
Y2 41+13	22	LT	0708		113.2																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0708	0710		110.9	110.5																																							136																																									
Y2 42+50	22	LT	0710		114.2																																																					1			1		1																										
			0710	0709		110.5	110.5			24																																																																														
Y2 36+92	22	RT	0712		113.2																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0712	0713		111.0	111.0																																							12																																									
Y2 37+03	22	RT	0713		113.2																																																					1						1																		1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0713	0711		111.0	110.9			20																																																																														
Y2 41+02	22	RT	0714		113.2																																																					1					1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0714	0715		111.0	110.9																																							8																																									
Y2 41+13	22	RT	0715		113.2																																																					1				1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0715	0716		110.9	110.9			20																																																																															
L 53+46	0	CL	0717	0703		111.7	111.4																																								84																																								
L 51+30	22	LT	0718		114.8																																																					1			1		1																										
			0718	0719		110.3	110.3						28																																																																											
L 49+50	22	RT	0720		114.3																																																					1						1																		1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
			0720	0721		110.8	110.4																																									180																																							
L 51+30	22	RT	0721		114.8																																																					1			1			1																									
			0721	0718		110.4	110.3																																	44																																																
L 51+30	38	RT	0722	0721		112.3	111.8			16																																																																														
L 49+50	38	RT	0723	0720		111.2	110.8			16																																																																															
Y2 38+67	45	LT	0724										40																																																																										
Y2 38+72	41	RT	0725																																																				44																																
Y2 41+90	46	LT	0726										44																																																																									
Y2 41+90	42	RT	0727																																																				48																																
L 53+64	42	RT	0728																																			48																																																		
L 54+50	33	RT	0729																																																			44																																		
Y2 10+66	39	RT	0802	0803		109.0	108.4			20																																																																														
Y2 10+75	22	RT	0803		111.4																																																					1			1			1																									
			0803	0801		107.3	107.1																																								84																																								
Y2 12+16	22	RT	0804		110.9																																																					1			1	1																											
			0804	0803		107.7	107.3																																								124																																								
Y2 12+62	22	RT	0805		111.2																																																					1			1			1																									
			0805	0804		108.0	107.7																																								40																																								
Y2 13+90	22	RT	0806		111.6																																																					1			1			1																									
			0806	0805		108.3	108.0																																								128																																								
Y2 13+90	22	LT	0807		111.8																																																					1			1		1																										
			0807	0806		108.5	108.3																																								44																																								
							SHEET TOTALS			136			112																									48		44						316	504	180						124		92			19			8	6	6	7																	11						

ABBREVIATIONS	
C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY: SRG DATE: 11-13-2019

CHECKED BY: JDL DATE: 11-13-2019

PROJECT NO.	SHEET NO.
U-5724	3D-5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y2 17+87	22 LT	0809		112.0																																																					1			1	1																							
		0809	0808		108.1	107.8	0.8			24																																																																																
Y2 18+02	22 LT	0810		112.0																																																					1			1		1																								
		0810	0809		109.0	108.4																																									16																																									
Y2 17+87	22 RT	0811		112.0																																																					1			1	1																							
		0811	0809		108.5	108.1	0.6																																							44																																								
Y2 17+87	42 RT	0812	0811		108.7	108.5	0.5			20																																																																																
Y2 18+02	22 RT	0813		112.0																																																					1			1			1																							
		0813	0811		109.0	108.8																																									16																																									
Y2 16+29	46 LT	0814																																																			32																																	
Y2 21+75	51 RT	0905	0913		107.1	107.1								32																																																																									
Y2 21+75	22 LT	0907		113.1																																																					1	1.1		1		1																								
		0907	0816		106.9	106.4																																													184																																				
Y2 24+00	22 LT	0908		113.7																																																					1			1		1																								
		0908	0907		110.4	109.4	0.3																																							224																																								
Y2 26+00	22 LT	0909		114.3																																																					1			1		1																								
		0909	0908		111.3	110.4																																									200																																									
Y2 27+50	22 LT	0910		115.0																																																					1			1		1																								
		0910	0909		111.9	111.3																																									148																																									
Y2 24+00	42 LT	0911	0908		110.5	110.4				20																																																																																
Y2 21+75	46 LT	0912	0907		108.6	108.4					24																																																																															
Y2 21+75	22 RT	0913		113.1																																																					1	1.0		1			1																							
		0913	0907		107.1	106.9																																													44																																						
Y2 28+25	56 RT	0914		114.0	109.1	109.0																																													60																																						
Y2 32+00	22 LT	0915		114.7																																																					1			1			1																							
		0915	0916		111.4	111.0																																								204																																								
Y2 29+90	22 LT	0916		117.0																																																					1	0.9		1			1																							
		0916	0918		111.0	110.7																																											80																																							
Y2 29+90	47 LT	0917	0916		111.6	111.0																																											28																																							
Y2 48+06	22 LT	1003		113.2																																																					1				1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1003	1002		110.7	110.6				20																																																																																
Y2 48+18	22 LT	1004		113.2																																																					1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1004	1003		110.7	110.7																																								8																																								
Y2 49+77	22 LT	1005		114.2																																																					1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1005	1004		111.7	110.7																																								156																																								
Y2 49+77	22 RT	1006		114.4																																																					1						1																			1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1006	1005		111.9	111.7																																								44																																								
Y2 53+00	22 RT	1008		114.2																																																					1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1008	1009		111.7	111.3																																								68																																								
Y2 55+29	22 RT	1010		113.5																																																					1					1																				1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1010	1011		111.3	111.0																																							8																																									
Y2 55+39	22 RT	1011		113.5																																																					1				1																					1						SPECIAL DESIGN, SEE DETAIL 840D02 SHEET 2C-2
		1011	1012		111.0	110.7																																								68																																								
Y1 48+35	23 RT	1013		114.6																																																					1			1			1																							TIE TO EX 30" RCP
		1013	1014		110.1	110.1																																										16																																						
Y2 56+08	36 RT	1014		114.8																																																					1																			1			1						
Y2 54+00	0 CL	1016	1015		107.7	107.4																																															152				16.000																															
Y2 53+69	48 LT	1070																																																				40																																				
L 12+99	10 RT																																																																																1				PLUG, FILL, AND ABANDON EX 18" RCP
L 13+26	34 RT																																																																																8				PLUG, FILL, AND ABANDON EX 24" RCP
SHEET TOTALS										84	24			32																																388	816	108	16		104	336		40	32	16.000		20	3.0		12	4	9	6													1			1	7		9					

ABBREVIATIONS	
C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY:	SRG	DATE:	11-13-2019
CHECKED BY:	JDL	DATE:	11-13-2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5724	3D-6

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 13+77	34 LT																																																																																		12	REMOVE EX 18" RCP
L 14+25	36 LT																																																																															6				PLUG, FILL, AND ABANDON EX 18" RCP
L 15+76	26 LT																																																																																	30	REMOVE EX 18" RCP
L 17+44	17 LT																																																																																	33	REMOVE EX 18" RCP
L 19+19	16 LT																																																																																	62	REMOVE EX 18" RCP
L 21+36	15 LT																																																																																	62	REMOVE EX 18" RCP
L 22+80	12 LT																																																																																	97	REMOVE EX 18" RCP
L 26+33	43 RT																																																																															10				PLUG, FILL, AND ABANDON EX 18" RCP
L 27+50	151 RT																																																																																	29	REMOVE EX 15" RCP
L 28+11	119 RT																																																																																	68	REMOVE EX 15" RCP
L 28+21	150 RT																																																																																	8	REMOVE EX 12" RCP
L 28+37	150 RT																																																																																	21	REMOVE EX DI AND 15" RCP
L 29+29	146 RT																																																																																	24	REMOVE EX 15" RCP
L 31+10	143 RT																																																																																	17	REMOVE EX 15" RCP
L 32+23	144 RT																																																																																	53	REMOVE EX 15" RCP
L 33+27	141 RT																																																																																	30	REMOVE EX 15" RCP
L 34+76	144 RT																																																																																	28	REMOVE EX 15" RCP
L 37+53	145 RT																																																																																	24	REMOVE EX 15" RCP
L 38+39	146 RT																																																																																	24	REMOVE EX 15" RCP
L 39+93	140 RT																																																																																	22	REMOVE EX 15" RCP
L 40+33	139 RT																																																																																	27	REMOVE EX 15" RCP
L 41+03	144 RT																																																																																	30	REMOVE EX 18" RCP
L 42+01	14 RT																																																																																	42	REMOVE EX 15" RCP
L 42+91	1 LT																																																																																	42	REMOVE EX 15" RCP
L 44+36	4 RT																																																																																	36	REMOVE EX 15" RCP
L 44+72	22 RT																																																																															2				PLUG, FILL, AND ABANDON EX 15" RCP
L 45+83	21 RT																																																																																	26	REMOVE EX 15" RCP
L 46+46	19 RT																																																																																	20	REMOVE EX 15" RCP
L 51+92	18 RT																																																																																	32	REMOVE EX 15" RCP
L 52+33	19 RT																																																																																	34	REMOVE EX 15" RCP
L 53+60	25 RT																																																																																	25	REMOVE EX 15" RCP
L 53+78	43 RT																																																																																	23	REMOVE EX 15" RCP
L 53+97	24 RT																																																																																	17	REMOVE EX 15" HDPE
L 54+36	23 RT																																																																																	23	REMOVE EX 15" RCP
NCRR 52+40	47 RT																																																																																	40	REMOVE EX 18" RCP
NCRR 52+67	72 RT																																																																																	52	REMOVE EX 15" RCP
Y1 18+26	42 LT																																																																																	8	REMOVE EX 18" RCP
Y1 18+47	66 LT																																																																															4				PLUG, FILL, AND ABANDON EX 18" RCP
Y1 18+68	91 LT																																																																																	8	REMOVE EX 18" RCP
Y1 18+88	38 LT																																																																															6				PLUG, FILL, AND ABANDON EX 15" RCP
Y1 20+39	38 LT																																																																														8				PLUG, FILL, AND ABANDON EX 15" RCP
Y1 21+73	35 LT																																																																																	90	REMOVE EX JB, DI, AND 15" RCP
Y1 22+23	19 LT																																																																																	28	REMOVE EX 15" RCP
Y2 10+57	2 LT																																																																																	49	REMOVE EX 18" RCP
Y2 19+87	26 RT																																																																																	20	REMOVE EX 36" CMP
Y2 20+36	31 RT																																																																																		63	REMOVE EX JB AND 36" CMP
Y2 20+68	42 RT																																																																																	19	REMOVE DI AND 24" CMP
Y2 21+03	32 RT																																																																																	0.262	71	REMOVE EX 36" CMP AND PLUG JB
Y2 21+52	29 RT																																																																																	0.182	27	REMOVE EX 30" CMP AND PLUG JB
Y2 23+27	29 LT																																																																																	13	REMOVE EX 15" RCP
SHEET TOTALS																																																																																	36		0.444	1509	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LD60070

COMPUTED BY:	SRG	**DATE:**	11-13-2019
CHECKED BY:	JDL	**DATE:**	11-13-2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5724	3D-7

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC
Y2 28+44	47 RT																			
Y2 34+30	4 LT																			
Y2 56+03	35 RT																			
Y5 14+81	2 RT																			
-RR_PR- 12+10	20 RT																			
SHEET TOTALS																				
PROJECT TOTALS									152	100	32	112		32						

LINE & STATION	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48
Y2 28+44															
Y2 34+30															
Y2 56+03															
Y5 14+81															
-RR_PR- 12+10															
SHEET TOTALS															
PROJECT TOTALS															

LINE & STATION	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48
Y2 28+44																
Y2 34+30																
Y2 56+03																
Y5 14+81																
-RR_PR- 12+10																
SHEET TOTALS																
PROJECT TOTALS		144	684	384					40	1076	3656	2648	320	1028	104	336

LINE & STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.06	C.B. STD. 852.05
Y2 28+44															
Y2 34+30															
Y2 56+03															
Y5 14+81															
-RR_PR- 12+10															
SHEET TOTALS															
PROJECT TOTALS	404	40	124	16.000		102	13.3		40	26	33	26		5	

LINE & STATION	OPEN THROAT C.B. STD. 840.04	D.I. STD. 840.14	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17	G.D.I. TYPE "B" STD. 840.18	G.D.I. TYPE "D" STD. 840.19	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	J.B. STD. 840.31	T.B.J.B. STD. 840.34	STEEL FRAME WITH TWO GRATES STD. 840.37	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	DI STD. 840D14 (SPECIAL DETAIL)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
Y2 28+44																			23	REMOVE EX 24" RCP
Y2 34+30																			14	REMOVE EX 12" HDPE
Y2 56+03																			10	REMOVE EX DI AND 15" RCP
Y5 14+81																			76	REMOVE EX 15" RCP
-RR_PR- 12+10																			194	REMOVE EX 24" RCP
SHEET TOTALS																			317	
PROJECT TOTALS		11	12							5			5	45	1	44		0.444	1826	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
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H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

DD85709

COMPUTED BY:	SRG	DATE:	11-13-2019
CHECKED BY:	JDL	DATE:	11-13-2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
U-5724	3D-8

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".**

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC)								C. S. PIPE										R. C. PIPE CLASS III											R. C. PIPE CLASS IV											R. C. PIPE CLASS V											REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	CB STD. 840D02 (SPECIAL DETAIL)	ADJUST MH	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE		FROM	TO					54	60	66	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	15	18	24	30	36	42	48	54	60	66	12	15	18	24	30	36	42	48	54	60	66	12	15	18	24	30	36	42	48	54	60	66	12	15	18	24	30	36	42	48	54	60	66		MASONRY	0' THRU 5'	A 5' THRU 10'	B 10' AND ABOVE		GRATE TYPE				D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05													
THICKNESS OR GAUGE				FT.	FT.	FT.	%									.064	.064	.064	.079	.079	.109	.109																																					CY	CY	EACH	LIN. FT.	LIN. FT.		E	F	G												CY	CY	CY	LIN. FT.	
Y2 19+90	39 LT	0815																																																									6.300																								
Y2 19+92	22 LT	0816		112.5																																																								1.754						1											1						SPECIAL DESIGN, SEE DETAIL 840D02
		0816	0815		105.6	105.5				20																																																																							
Y2 19+98	22 RT	0817		112.5																																																						1.721							1										1						SPECIAL DESIGN, SEE DETAIL 840D02
		0817	0816		105.7	105.6																																																			44																										
Y2 21+30	22 RT	0903		112.9																																																							1.904							1										1						SPECIAL DESIGN, SEE DETAIL 840D02
		0903	0817		106.0	105.7																																																			132																										
Y2 21+39	32 RT	0904		113.8																																																																											1					
		0904	0903		106.0	106.0			12																																																																										
SHEET TOTALS									12	20																																															176		6.300	5.379						1	2										3	1					
PROJECT TOTALS									12	20																																															176		6.300	5.379						1	2										3	1					

COMPUTED BY: Hunsberger, W.S. DATE: 05/29/19
CHECKED BY: Hamm, J.R. DATE: 05/29/19

PROJECT REFERENCE NO.	SHEET NO.
U-5724	3G-1

(5-15-18)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GEOTECHNICAL SUMMARY

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT	Drain Type* UD/BD/SD	LF
–L–	35+00	37+00	LT	SD	200
–L–	47+00	51+00	LT	SD	400
–L–	53+00	57+00	LT	SD	400
–Y2–	12+00	25+00	LT or RT	SD	1300
–Y2–	35+00	43+00	LT or RT	SD	800
–Y2–	46+00	50+00	LT or RT	SD	400
–Y2–	52+00	56+00	LT or RT	SD	400
VARIES				SD	500
CONTINGENCY					1000
				TOTAL LF:	5400

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE / STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY					1000	3000	3000	0	0
CONTINGENCY					0	200	0	0	0
–RP_RR–	13+25	24+25			350	1000	1450	0	0
CONTINGENCY					0	0	200	0	0
			TOTAL CY/TONS/SY		1350	4200	4650	0	0
				SAY	1350	4200	4650	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
*AST = Aggregate Stabilization
**Total tons of "Geotextile for Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

REVISIONS

9/9/2020 K:\RAL_Roadway\DII\036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_sum-geo 3G-1.dgn

PROJ. REFERENCE NO.	SHEET NO.
U-5724	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	DEED BOOK
2	4	MERRITT FAMILY PROPERTIES LLC	DB 3112 PG 631
3	4	TAYLOR LEASING ENTERPRISES INC	DB 2073 PG 187
4	4/5	NORTH BERKELEY DEVELOPMENT ASSOCIATES LLC	DB 1665 PG 554
5	5/11	RICHARD S SMITH REVOCABLE 1990 TRUST	DB 2699 PG 473
7	5/6	FALLIN PROPERTIES/LOWES LLC	DB 2537 PG 94
8	6	SHELBY D KEARNEY	DB 1568 PG 786
9	6	SHELBY D KEARNEY	DB 565 PG 557
10	6	SHELBY D KEARNEY	DB 1301 PG 382
12	6/7	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
13	6	BOBBY DENNING PROPERTIES LLC	DB 3025 PG 521
14	6	ROBER L WEBBER	DB 2948 PG 535
15	6/7	ROBER L WEBBER	DB 1763 PG 433
17	7/9	ALEX ECONOMY	DB 1239 PG 505
18	7/9	ALEX ECONOMY SR	DB 1264 PG 482
19	7	KENNETH N FALLIN & MARY SUE FALLIN	DB 2587 PG 760
20	7/9	DUKE ENERGY PROGRESS LLC	DB 3354 PG 763
21	7	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
22	5	MALISSA B SAULS HEIRS	DB 736 PG 144
24	5	DELMUS BRIDGERS FAMILY LIMITED PARTNERSHIP	DB 1657 PG 804
26	8	HUNTER & BUNDY LLC	DB 3286 PG 548
27	8/9	GRUMA CORPORATION	DB 1736 PG 181
28	8	CHURCH OF CHRIST	DB 1684 PG 592
30	8	L E SUMMERLIN	DB 1115 PG 472
31	8/9	BUTTERBALL LLC	DB 2833 PG 292
33	9	AGNL FREEZER LP	DB 3063 PG 402
34	9	SOUTHEASTERN LAB INC	DB 1236 PG 81
35	7	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
36	7/10	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
37	10	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
40	10	KENNETH N FALLIN & MARY SUE FALLIN	DB 1705 PG 671
41	10	BERKELEY PLACE APARTMENTS LLC	DB 2644 PG 744
42	10	TRUSTEES OF ADAMSVILLE BAPTIST CHURCH	DB 1103 PG 845
43	10	WILLIAM A HARRIS JR	DB 748 PG 201
44	5	ANK FARMS LLC	DB 2385 PG 642
45	5	DIEHL PRICE INC	DB 3175 PG 451
46	5	EVERNEW TRADERS LLC	DB 2186 PG 763
47	5	TRUSTEES OF THE CAUDILL FAMILY TRUST	DB 2308 PG 451
48	5	TRUSTEES OF THE CAUDILL FAMILY TRUST	DB 2308 PG 451
49	5	THOMAS L FURCRON	DB 1772 PG 480
50	5	JANET MURCHISON	DB 2306 PG 714
51	5	CENTRAL HEIGHTS PROPERTIES LLC	DB 2649 PG 420
52	5	GERALD M UNDERHILL	DB 2023 PG 119
53	5	SHOWERS OF BLESSING CHRISTIAN CENTER	DB 1673 PG 192
54	5/6	TRUSTESS OF PARKER'S CHAPEL CHURCH	DB 1841 PG 793
55	6	JOSE CRUZ ORTEGA	DB 2415 PG 767
56	6	ASH STREET ENTERPRISES INC	DB 987 PG 432
57	6	L E SUMMERLIN	DB 1063 PG 113
60	9	THOMAS F BELL & WIFE MARY M BELL	DB 1634 PG 234

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING
10/10/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING
10/10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 5/14/99

10/10/2022 K:\RAL_Roadway\011036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_dsh_04.dgn

NAD 83/NA 2011

NCDOT GPS MONUMENT U-5724-1
-L- STA 10+17.05
OFF 300.84' LT

10+00

SAM'S REAL ESTATE BUSINESS TRUST
DB 1967 PG 758
PB J PG 377

END MILLING AND RESURFACING
BEGIN GRADE
-L- POT Sta.13+50.00

15+00

REMOVE 12 LF AND PLUG, FILL, AND ABANDON 84 LF OF EXIST 18" RCP UNDER ROADWAY

-L- PC Sta. 14+27.08

BEGIN C&G & SIDEWALK
-L- POT Sta.14+30.00 (62.65' LT)

TIE TO EXIST DITCH

SPECIAL LATERAL 'V' DITCH W/CLASS 'B' RIP RAP
EST 20 TONS
EST 40 SY GFD
SEE DETAIL 14/SHEET 2D-1

NORTH PARK DRIVE

EDMOND J BROWN II
DB 2757 PG 637
PB H PG 267

2 MERRITT FAMILY PROPERTIES LLC
DB 3112 PG 631
PB H PG 267

-L- PRC Sta. 17+43.49

3 TAYLOR LEASING ENTERPRISES INC
DB 2073 PG 187
PB 1PG 252

4 NORTH BERKELEY DEVELOPMENT ASSOCIATES LLC
DB 1665 PG 554
PB 1PG 231

BMI
-L- STA 8+26.33
OFF 36.82' LT
ELEV = 114.32
BONNET BOLT

-BL9-
-L- STA 8+31.29
OFF 30.71' LT

BEGIN TIP PROJECT U-5724
-L- POT Sta.8+45.00

BEGIN MILLING AND RESURFACING
-L- POT Sta.8+65.00

RETAIN EXIST SYSTEM

US 70 EASTBOUND

US 70 WESTBOUND

24" RCP-V
36" RCP-V
REMOVE 29' OF EX. 18" PIPE

TBJB W/MH

36" RCP-V
S 65°47'55.5" E

RETAIN 24"

RAILROAD CONST. LIMIT

36" RCP-V
TIE OUTLET TO EXIST RAILROAD DITCH

SPECIAL VARIABLE WIDTH LATERAL BASE DITCH W/CLASS I RIP RAP
EST 45 TONS
EST 75 SY GFD
SEE DETAIL 21/SHEET 2D-1
PLACE RIP RAP AND GEOTEXTILE ON NATURAL GROUND UP TO RAILROAD BALLAST. DO NOT DISTURB RAILROAD BALLAST.

CAROLINA-DIXIE GRAIN COMPANY
DB 1154 PG 647
PC O SL 48D

RETAIN DI

15+00 (-NCRR-)

-NCRR- PT Sta. 13+10.22

PLUG, FILL AND ABANDON 11' OF EX. 18" PIPE
24" RCP-V
REMOVE 20' OF EX. 18" PIPE
RETAIN EX JB

PLUG, FILL AND ABANDON 67' OF EX. 24" PIPE

18" RCP-V
MIN. DEPTH CB

NCDOT GPS MONUMENT U-5724-2
-L- STA 14+20.30
OFF 25.50' RT

NCRR CORRIDOR RIGHT OF WAY

MIN. DEPTH CB
24" RCP-V
MIN. DEPTH CB

20+00 (-NCRR-)

200' TAPER

SPECIAL VARIABLE WIDTH LATERAL BASE DITCH W/CLASS 'B' RIP RAP ON LEFT SIDE SLOPE
EST 120 TONS
EST 245 SY GFD
SEE DETAIL 20/SHEET 2D-1

RAILROAD CONSTRUCTION LIMIT

-NCRR- NCRR/NS
S 65°43'53.0" E

18" RCP-V
MIN. DEPTH CB
24" RCP-V
MIN. DEPTH CB

-L- PT Sta. 20+57.26

SPECIAL VARIABLE WIDTH LATERAL BASE DITCH
SEE DETAIL 1/SHEET 2D-1

25+00 (-NCRR-)

ANY WASTE FROM DITCH GRADING IN NCRR RIGHT OF WAY TO BE DISPOSED OF ON SITE WITHIN THE OLD CENTRAL HEIGHTS ROADBED (TYP.)

NCRR CORRIDOR RIGHT OF WAY

-L- SR 1560 (ROYALL AVE)

S 65°49'11.2" E

-L- STA 23+00 (SEE SHEET 5)

MATCHLINE -L- STA 23+00 (SEE SHEET 5)

DELMUS BRIDGERS FAMILY LIMITED PARTNERSHIP
LINES TAKEN FROM GIS
DB 1657 PG 804
PB B PG 304

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR "U-5724-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 595362.848(ft) EASTING: 2316632.989(ft)
ELEVATION: 111.932(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999875296
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U-5724-2" TO -L- STATION 15+00.00 IS S 83°46'46.8"E 83.79'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. CURB AND GUTTER END TREATMENT

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 19 FOR -NCRR- PROFILE

-NCRR-	-L-	
PI Sta 11+55.11	PI Sta 15+85.31	PI Sta 19+00.40
Δ = 1°04'23.2" (RT)	Δ = 2°30'39.5" (LT)	Δ = 2°29'23.8" (RT)
D = 0°20'45.3"	D = 0°47'36.9"	D = 0°47'36.9"
L = 310.22'	L = 316.41'	L = 313.77'
T = 155.11'	T = 158.23'	T = 156.91'
R = 16,563.17'	R = 7,220.00'	R = 7,220.00'
	SE = NC	SE = NC
	DS = 50	DS = 50

PROJECT REFERENCE NO.	SHEET NO.
U-5724	5
RW SHEET NO.	

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ROADWAY DESIGN ENGINEER — SEAL 036261 — Signed by: JASON D. LAWING — 10/11/2022
HYDRAULICS ENGINEER — SEAL 036261 — Signed by: JASON D. LAWING — 10/11/2022

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NAD 83/NA 2011

REVISIONS 5/14/99

NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. CURB AND GUTTER END TREATMENT
5. PROP SIGNAL POLE (SEE SIGNAL PLANS)
6. REMOVE 8' OF EX 18" PLUG, FILL, AND ABANDON REMAINDER OF PIPE

-BL11- -L- STA 27+05.25 OFF 19.85' RT +52.93(L) EX. R/W
-L- POT Sta.26+74.73 = -Y1- POT Sta.26+13.08
10'x10' CONC ISLAND,BEGIN -Y1-STA 25+53 END -Y1-STA 25+64
-Y1- POT Sta. 25+44.23 = -NCRR- POT Sta.29+69.08
AAR/DOT R/R CROSSING NO.722816W R/R MILE POST EC-40.2
R/R SIGNAL WITH GATES TO BE INSTALLED BY OTHERS SUBJECT TO AGREEMENT (TYP.)
PROPOSED 112' RR CROSSING TO BE INSTALLED BY OTHERS, SUBJECT TO AGREEMENT.CROSSING TO BE RUBBER RAIL SEAL.CONTRACTOR TO PAVE APPRAOACHES.(TYP)

MATCHLINE -Y1- STA 29+00 (SEE SHEET 11)
MATCHLINE -L- STA 23+00 (SEE SHEET 4)
MATCHLINE -L- STA 36+50 (SEE SHEET 6)
MATCHLINE -Y3- STA 21+50 (SEE SHEET 6)

NORTH BERKELEY DEVELOPMENT ASSOCIATES LLC — DB 1665 PG 554 — PB 1PG 231 — (4)
ROWAN ASSET COMPANY LLC — DB 2707 PG 839
FALLIN PROPERTIES/LOWES LLC — DB 2537 PG 94 — (7)
RICHARD S SMITH REVOCABLE 1990 TRUST — DB 2699 PG 473 — PB M PG 57E — (5)
RICHARD S SMITH REVOCABLE 1990 TRUST — DB 2699 PG 469
DIEHL PRICE INC — DB 3175 PG 451 — PB E PG 31 — (45)
JUDITH D MCMILLEN — DB 2160 PG 177 — PB E PG 31 — (47)
TRUSTEES OF THE CAUDILL FAMILY TRUST — DB 2308 PG 451 — PB E PG 31 — (48)
ANK FARMS LLC — DB 2385 PG 642 — PB E PG 31 — (44)
TRUSTEES OF THE CAUDILL FAMILY TRUST — DB 2308 PG 451 — PB E PG 31
JACKIE C BAKER — DB 1694 PG 439 — PB E PG 31 — (46)
CENTRAL HEIGHTS PROPERTIES LLC — DB 2649 PG 420 — PB E PG 31 — (49)
JANET MURCHISON — DB 2306 PG 714 — PB E PG 31 — (50)
SHERRY A CHADWICK — DB 1246 PG 551 — PB E PG 31
GERALD M UNDERHILL — DB 2023 PG 119 — (52)
SHOWERS OF BLESSING CHRISTIAN CENTER — DB 1673 PG 192 — (53)
TRUSTEES OF PARKER'S CHAPEL CHURCH — DB 1841PG 793 — PB L PG 63B — (54)
GOLDSBORO LODGE #634 AF & FM — DB 736 PG 144 — PB E PG 31
GOLDSBORO LODGE #634 AF & FM — DB 660 PG 5 — PB E PG 31
ED RADFORD AUTO AUCTION INC — DB 1557 PG 316 — PB E PG 31
GOLDSBORO PENTECOSTAL FREE WILL BAPTIST CHURCH — DB 705 PG 164 — PB E PG 31
TRUSTEES OF THE CAUDILL FAMILY TRUST — DB 2308,PG 451 — PB E PG 31
SHERRY A CHADWICK — DB 1213 PG 362 — PB E PG 31
THOMAS L FURCRON — DB 1772 PG 480 — PB E PG 31
EVERNEW TRADERS LLC — DB 2186 PG 763 — PB E PG 31 — (46)
MALISSA B SAULS HEIRS LINES TAKEN FROM GIS — DB 736 PG 144 — (22)
DELMUS BRIDGERS FAMILY LIMITED PARTNERSHIP LINES TAKEN FROM GIS — DB 1657 PG 804 — PB B PG 304 — (24)

-Y1- POT Sta.24+06.21= -Y3- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y3- POT Sta. 10+32.00
END 2'-6" C&G -Y1- STA.22+45.00
BEGIN 2'-6" C&G SEE DETAIL 3, SHEET 2A-4
SAWCUT AND REMOVE 24 LF OF EXIST CURB CONSTRUCT 32 LF 2'-6" C&G
-Y1- PC Sta. 19+50.77
-Y1- PT Sta. 18+18.00
BEGIN MILLING AND RESURFACING
-BY2-18- -Y1- STA 18+85.03 OFF 52.8' RT
BEGIN CONC ISLAND -Y1- STA.18+83.00 REMOVE EXIST ISLAND
-Y1- PT Sta. 21+32.65
-Y3- PC Sta. 11+89.86
-Y3- PRC Sta. 12+70.58
-Y3- PT Sta. 14+43.49
-Y1- US 13 (BERKELEY BLVD) N 52°50'50.6" E
-L- SR 1560 (ROYALL AVE)
-L- SR 1709 (CENTRAL HEIGHTS ROAD)
-Y1- SR 1759 (MCLAIN DR)
-Y3- SERVICE ROAD 1
S 65°49'11.2" E
S 65°43'53.0" E
S 37°09'09.4" E
N 24°30'09.7" E
N 57°00'56.7" E
-NCRR- NCRR/NS
-BL12- -Y5- STA 14+75.49 OFF 31.70' LT
-Y5- POT Sta. 15+00.00
35+00 (-NCRR-)
-Y5- POT Sta.14+58.00
BEGIN MILLING -Y5- POT Sta. 14+10.00
-Y5- POT Sta. 15+18.71 = -Y5- POT Sta.12+44.85
BEGIN CONSTRUCTION -Y5- POT Sta. 10+90.00
-Y5- POT Sta. 10+00.00
-BY4-12- OUTSIDE PROJECT LIMITS
-BL13- -L- STA 35+20.67 OFF 142.22' RT
REMOVE EXISTING ROADWAY SURFACE AND RETAIN EXISTING SUBGRADE (TYP)
END CONSTRUCTION -Y5- POT Sta.14+58.00

-Y1-
PI Sta 20+41.75
Δ = 4°10'06.1" (LT)
D = 2°17'30.6"
L = 181.88'
T = 90.98'
R = 2,500.00'

-Y3-
PI Sta 12+30.46
Δ = 11°35'29.4" (RT)
D = 14°21'41.4"
L = 80.71'
T = 40.60'
R = 400.00'
SE = 0.04
RO = 68
DS = 35

PI Sta 13+61.32
Δ = 39°53'54.4" (LT)
D = 23°04'26.1"
L = 172.92'
T = 90.74'
R = 250.00'
SE = 0.04
RO = 68
DS = 30

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS
REMOVAL OF EXISTING ASPHALT PAVEMENT
TRAFFIC SIGNAL
RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED
SEE SHEETS 12 & 13 FOR -L- PROFILE
SEE SHEET 16 FOR -Y3- PROFILE
SEE SHEET 17 FOR -Y5- PROFILE
SEE SHEET 18 FOR -Y1- PROFILE
SEE SHEETS 19 & 20 FOR -NCRR- PROFILE

DocuSign Envelope ID: F906492D-705A-4841-AA06-2FD102E05812

PROJECT REFERENCE NO.	SHEET NO.
U-5724	6
RW SHEET NO.	

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ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

JASON D. LAWING — SEAL 032615 — 10/10/2022

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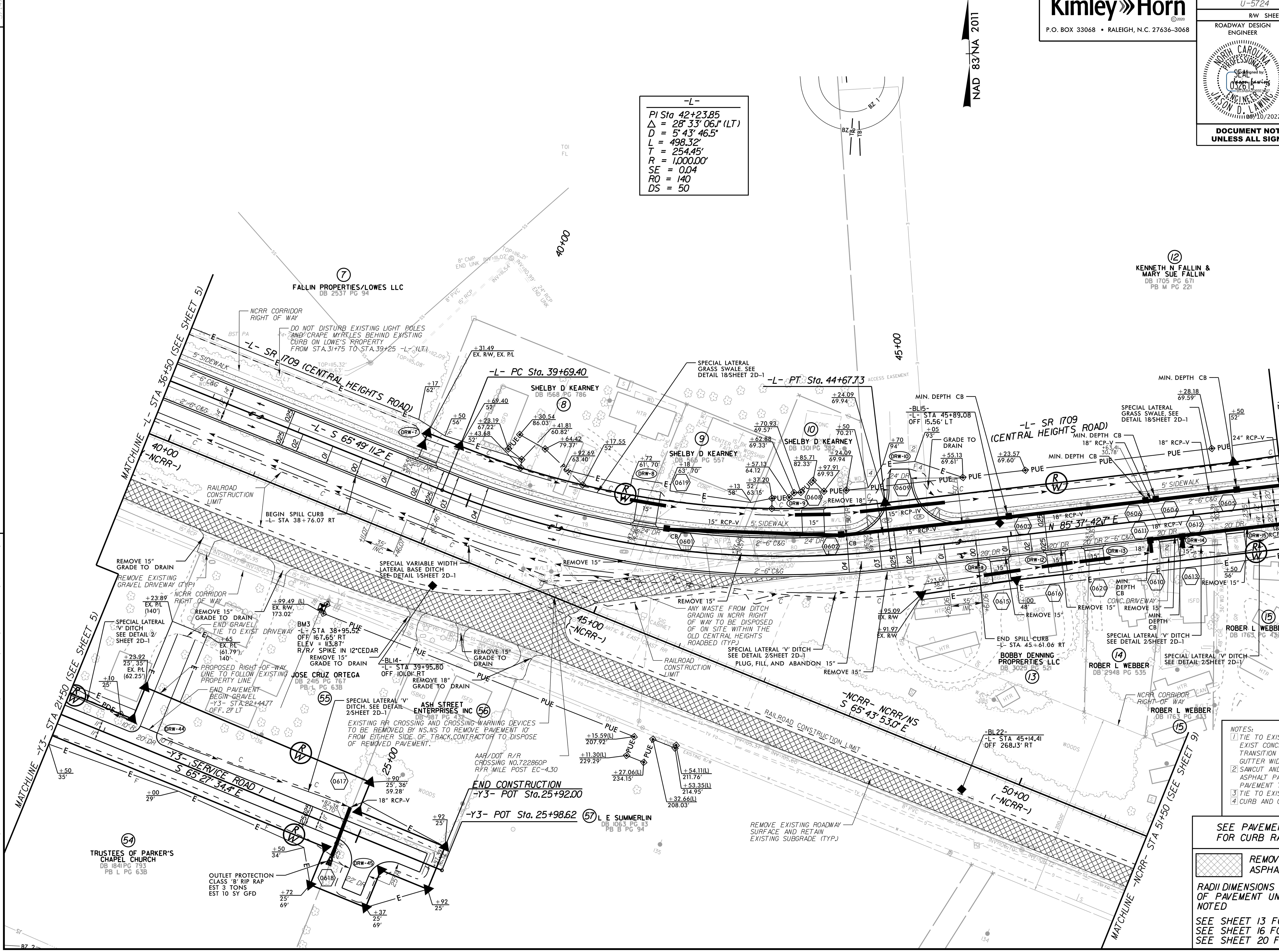
REVISIONS



NAD 83/NA 2011
-L-
PI Sta 42+23.85
Δ = 28° 33' 06.1" (LT)
D = 5° 43' 46.5"
L = 498.32'
T = 254.45'
R = 1,000.00'
SE = 0.04
RO = 140
DS = 50
-L- SR 1709 (CENTRAL HEIGHTS ROAD)
-L- S 65° 49' 11.2" E
-L- PC Sta. 39+69.40
-L- PT Sta. 44+67.73
-L- SR 1709 (CENTRAL HEIGHTS ROAD)
N 85° 37' 42.7" E
MATCHLINE -L- STA 36+50 (SEE SHEET 5)
MATCHLINE -L- STA 49+00 (SEE SHEET 7)
MATCHLINE -Y3- STA 21+50 (SEE SHEET 5)
MATCHLINE -NCRR- STA 51+50 (SEE SHEET 9)
-NCRR- NCRR/NS S 65° 43' 53.0" E
-Y3- SERVICE ROAD 1 S 65° 27' 34.4" E
END CONSTRUCTION -Y3- POT Sta. 25+92.00
-Y3- POT Sta. 25+98.62
FALLIN PROPERTIES/LOWES LLC DB 2537 PG 94
SHELBY D KEARNEY DB 1568 PG 786
SHELBY D KEARNEY DB 565 PG 557
SHELBY D KEARNEY DB 1301 PG 382
KENNETH N FALLIN & MARY SUE FALLIN DB 1705 PG 671 PB M PG 221
BOBBY DENNING PROPERTIES LLC DB 3025 PG 521
ROBER L WEBBER DB 2948 PG 535
ROBER L WEBBER DB 1763 PG 433
JOSE CRUZ ORTEGA DB 2415 PG 767 PB L PG 63B
ASH STREET ENTERPRISES INC DB 987 PG 432
L E SUMMERLIN DB 1063 PG 113 PB B PG 94
TRUSTEES OF PARKER'S CHAPEL CHURCH DB 1841 PG 793 PB L PG 63B
DO NOT DISTURB EXISTING LIGHT POLES AND CRAPE MYRTLES BEHIND EXISTING CURB ON LOWE'S PROPERTY FROM STA.31+75 TO STA.39+25 -L- (LT)
BM3 -L- STA 38+95.52 OFF 167.65' RT ELEV = 113.87' R/R/ SPIKE IN 12" CEDAR
EXISTING RR CROSSING AND CROSSING WARNING DEVICES TO BE REMOVED BY NS. NS TO REMOVE PAVEMENT 10' FROM EITHER SIDE OF TRACK. CONTRACTOR TO DISPOSE OF REMOVED PAVEMENT.
AAR/DOT R/R CROSSING NO.722860P R/R MILE POST EC-4.30
ANY WASTE FROM DITCH GRADING IN NCRR RIGHT OF WAY TO BE DISPOSED OF ON SITE WITHIN THE OLD CENTRAL HEIGHTS ROADBED (TYP.)
REMOVE EXISTING ROADWAY SURFACE AND RETAIN EXISTING SUBGRADE (TYP.)
OUTLET PROTECTION CLASS 'B' RIP RAP EST 3 TONS EST 10 SY GFD

NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. CURB AND GUTTER END TREATMENT

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 16 FOR -Y3- PROFILE
SEE SHEET 20 FOR -NCRR- PROFILE

10/10/2022 K:\RAL_Roadway\011036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_psh_06.dgn

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052615 JASON D. LAWING 10/11/2022

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052615 JASON D. LAWING 10/11/2022

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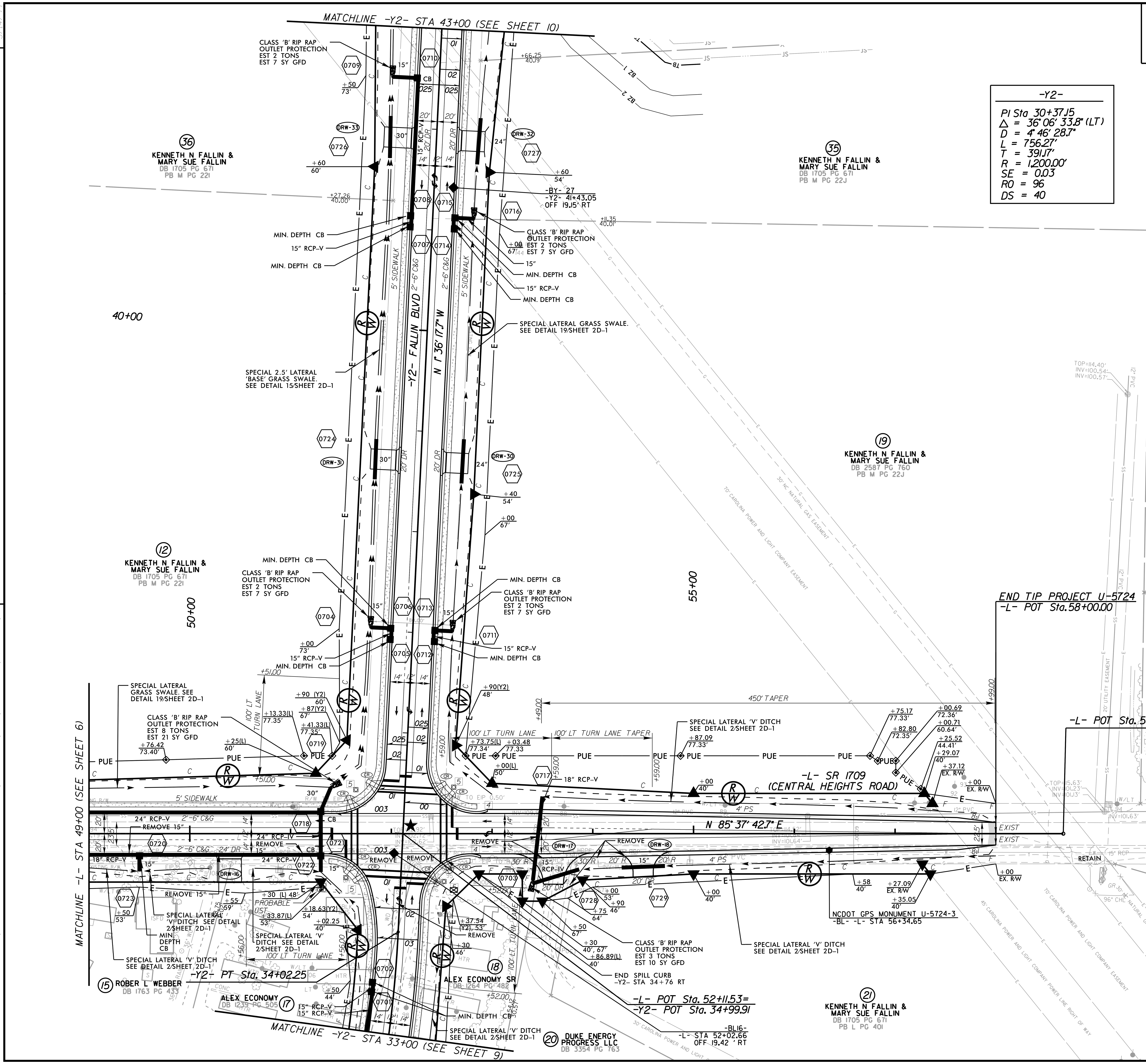
-Y2-
PI Sta 30+37.15
Δ = 36° 06' 33.8" (LT)
D = 4° 46' 28.7"
L = 756.27'
T = 391.17'
R = 1,200.00'
SE = 0.03
RO = 96
DS = 40



NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. CURB AND GUTTER END TREATMENT
5. PROPOSED SIGNAL POLE (SEE SIGNAL PLANS)

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

★ TRAFFIC SIGNAL

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED
SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 15 FOR -Y2- PROFILE

10/11/2022 K:\RAL_Roadway\011036333 - U-5724 (Central Heights)\Roadway\Proj\U-5724_rdy_psh_07.dgn

REVISIONS

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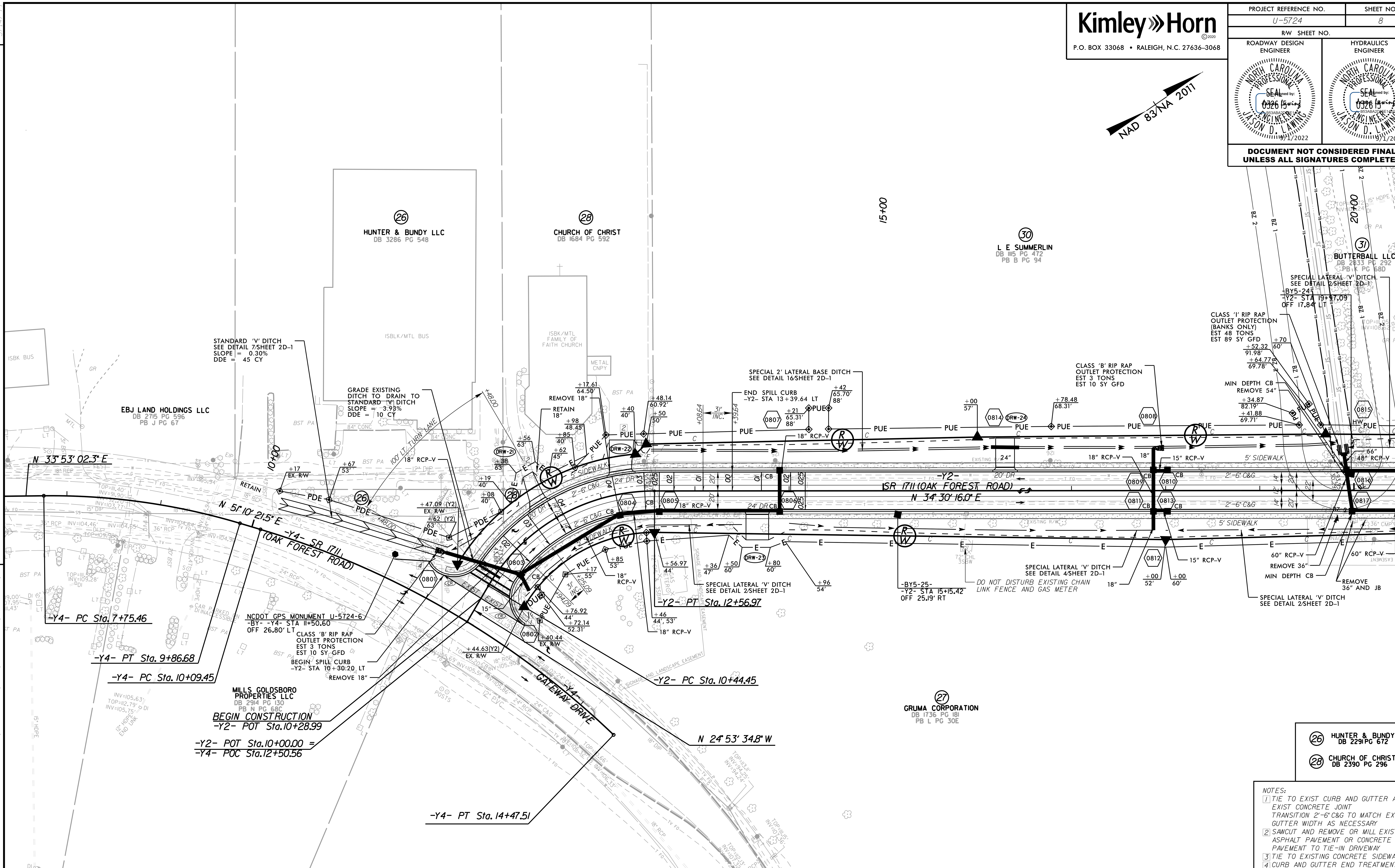
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING 9/1/2022

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING 9/1/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NAD 83/NA 2011
HUNTER & BUNDY LLC
DB 3286 PG 548
CHURCH OF CHRIST
DB 1684 PG 592
L E SUMMERLIN
DB 1115 PG 472
PB B PG 94
BUTTERBALL LLC
EBJ LAND HOLDINGS LLC
DB 2715 PG 596
PB J PG 67
MILLS GOLDSBORO PROPERTIES LLC
DB 2914 PG 130
PB N PG 68C
GRUMA CORPORATION
DB 1736 PG 181
PB L PG 30E
COUNTY OF WAYNE
DB 2567 PG 523
PB M PG 56D
N 33° 53' 02.3" E
N 51° 10' 21.5" E
-Y4- SR 1711 (OAK FOREST ROAD)
-Y2- SR 1711 (OAK FOREST ROAD)
N 34° 30' 16.0" E
-Y4- GATEWAY DRIVE
N 24° 53' 34.8" W
-Y4- PC Sta. 7+75.46
-Y4- PT Sta. 9+86.68
-Y4- PC Sta. 10+09.45
BEGIN CONSTRUCTION
-Y2- POT Sta. 10+28.99
-Y2- POT Sta. 10+00.00 =
-Y4- POC Sta. 12+50.56
-Y4- PT Sta. 14+47.51
-Y2- PC Sta. 10+44.45
-Y2- PT Sta. 12+56.97
STANDARD 'V' DITCH
SEE DETAIL 7/SHEET 2D-1
SLOPE = 0.30%
DDE = 45 CY
GRADE EXISTING DITCH TO DRAIN TO STANDARD 'V' DITCH
SLOPE = 3.93%
DDE = 10 CY
NCDOT GPS MONUMENT U-5724-6
-BY- -Y4- STA 11+50.60
OFF 26.80' LT
CLASS 'B' RIP RAP OUTLET PROTECTION
EST 3 TONS
EST 10 SY GFD
BEGIN SPILL CURB
-Y2- STA 10+30.20 LT
SPECIAL 2' LATERAL BASE DITCH
SEE DETAIL 16/SHEET 2D-1
END SPILL CURB
-Y2- STA 13+39.64 LT
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 2/SHEET 2D-1
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 4/SHEET 2D-1
DO NOT DISTURB EXISTING CHAIN LINK FENCE AND GAS METER
-BY5-25-
-Y2- STA 15+15.42
OFF 25.19' RT
CLASS 'B' RIP RAP OUTLET PROTECTION
EST 3 TONS
EST 10 SY GFD
CLASS 'I' RIP RAP OUTLET PROTECTION (BANKS ONLY)
EST 48 TONS
EST 89 SY GFD
-BY5-24-
-Y2- STA 19+97.09
OFF 17.84' LT
MATCHLINE -Y2- STA 20+50 (SEE SHEET 9)

(26)	HUNTER & BUNDY DB 2291 PG 672
(28)	CHURCH OF CHRIST DB 2390 PG 296

NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. CURB AND GUTTER END TREATMENT

-Y2-	-Y4-	
PI Sta 11+61.38	PI Sta 8+81.88	PI Sta 12+32.67
Δ = 59° 23' 50.8" (RT)	Δ = 17° 17' 19.2" (RT)	Δ = 27° 08' 02.2" (RT)
D = 27° 56' 57.0"	D = 8° 11' 06.4"	D = 6° 11' 38.9"
L = 212.52'	L = 211.22'	L = 438.06'
T = 116.92'	T = 106.42'	T = 223.22'
R = 205.00'	R = 700.00'	R = 925.00'
SE = 0.04		
RO = 124		
DS = 40		

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 14 FOR -Y2- PROFILE

REVISIONS 5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	9
RW SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 037605 ENGINEER JASON D. LAWING
9/29/2022

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 037605 ENGINEER JASON D. LAWING
9/29/2022

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NAD 83/NA 2011

THOMAS F BELL & WIFE MARY W BELL
DB 1634 PG 234
PB J PG 95
(60)

(34) SOUTHEASTERN LAB INC
DB 1236 PG 81
PB 1 PG 350

(31) BUTTERBALL LLC
DB 3014 PG 728
PB J PG 173

(33) AGNL FREEZER LP
DB 3063 PG 402
PB K PG 2F

(17) ALEX ECONOMY
DB 1239 PG 505

(18) ALEX ECONOMY SR
DB 1264 PG 482

(20) DUKE ENERGY PROGRESS LLC
DB 3354 PG 763

MATCHLINE -NCRR- STA 51+50 (SEE SHEET 6)

MATCHLINE -Y2- STA 20+50 (SEE SHEET 8)

MATCHLINE -Y2- STA 33+00 (SEE SHEET 7)

-Y2- PC Sta. 26+45.98

-Y2- SR 1711 (OAK FOREST ROAD)

N 34° 30' 16.0" E

-NCRR- PC Sta. 53+62.64

-NCRR- PT Sta. 53+66.97

-NCRR- S 65° 43' 53.0" E

-Y2- POC Sta. 29+30.67 = -NCRR- POT Sta. 55+88.10

Δ = 93° 20' 33.0"

-NCRR- S 65° 44' 45.4" E

25+00

30+00

55+00 (-NCRR-)

60+00 (-NCRR-)

RETAIN 15"
REMOVE 18" GRADE TO DRAIN
REMOVE 15" GRADE TO DRAIN
RAILROAD CONSTRUCTION LIMIT
REMOVE EXISTING ROADWAY SURFACE AND RETAIN EXISTING SUBGRADE (TYP.)
REMOVE EXISTING GRAVEL DRIVEWAY
BEGIN SIDEWALK TRANSITION -Y2- STA. 28+56.00 LT & RT
BEGIN 8' CONC ISLAND -Y2- STA. 28+57.00
RAILROAD CONSTRUCTION LIMIT
END 8' CONC ISLAND -Y2- STA. 29+17.00
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2/SHEET 2D-1
24" RCP-V
+40.20 EX. R/W
TIE TO EXIST RAILROAD RIGHT OF WAY +38.63, 50'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2/SHEET 2D-1
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2/SHEET 2D-1
TIE TO EXISTING DITCH
SPECIAL LATERAL 'V' DITCH SEE DETAIL 4/SHEET 2D-1
REMOVE 18" AND HW'S
REMOVE 15"
REMOVE 18"
48" RCP-V
18" RCP-V
42" RCP-V
60" RCP-V
15" RCP-V
5' SIDEWALK
2'-6" C&G
24' DR
51' DR
55' DR
20' DR
CB
(0907) (0908) (0909) (0910) (0911) (0912) (0913) (0914) (0915) (0916) (0917) (0918)
DRW-25 DRW-26 DRW-27 DRW-28 DRW-29
+56.81 68.60'
+45.63 65.91'
+22 57'
+82 47'
+18.50 62.05'
+45.98 47'
+46.02 57'
+28.16 72.70'
+12.66 60.12'
+57 47'
+29.08 57'
+29.40 47'
+34.07 30.63'
+36.04 30.16'
+21.96
+51.98
30" INC.
+23 44'
+23 64'
+83 74'
+83 80'
+00 80'
+45.98 74'
+00 82'
+32.65 EX. R/W
+00 45'
+50 40'
+00 57'
+25 54'
+50 63'
+21.55 EX. R/W
REMOVE PIPE AND PLUG JB
MIN DEPTH CB 60"
ADJUST MH
REMOVE PIPE AND PLUG JB
RETAIN 2 @ 46" X 60" CMP'S
REMOVE 24" AND DI
REMOVE BLIND JB
+57 53', 64'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2/SHEET 2D-1
BEGIN SPILL CURB -Y2- STA. 25+81.98 RT
SPECIAL 3' LATERAL BASE DITCH SEE DETAIL 5/SHEET 2D-1
ANY WASTE FROM DITCH GRADING IN NCRR RIGHT OF WAY TO BE DISPOSED OF ON SITE WITHIN THE OLD CENTRAL HEIGHTS ROADBED (TYP.)
CLASS 'I' RIP RAP OUTLET PROTECTION EST 20 TONS EST 39 SY GFD
REMOVE 24" 42" RCP-V
TIE TO EXIST RAILROAD RIGHT OF WAY +32.30, 74'
AAR/DOT R/R CROSSING NO.961288L R/R MILE POST EC-4.50
NCRR CORRIDOR RIGHT OF WAY
BM6 -Y2- STA 28+79.55 OFF 47.37' RT
-BY5-23- -Y2- STA 28+93.26 OFF 21.64' RT
RR SIGNAL WITH GATES TO BE INSTALLED BY OTHERS
ADJUST GRADE OF PROPOSED SIDEWALKS WITHIN NCRR R/W AS NEEDED TO MATCH RR CROSSING
PROPOSED 64' RR CROSSING TO BE INSTALLED BY OTHERS, SUBJECT TO AGREEMENT. CROSSING TO BE RUBBER RAIL SEAL. CONTRACTOR TO PAVE APPRAOACHES.
EXIST RAILROAD SWITCH TO BE RELOCATED BY OTHERS, SUBJECT TO AGREEMENT
RETAIN 42"
CLASS 'B' RIP RAP OUTLET PROTECTION EST 5 TONS EST 14 SY GFD
STANDARD 'V' DITCH SEE DETAIL 7/SHEET 2D-1 SLOPE = 0.3% DDE = 40 CY
BEGIN 8' CONC ISLAND -Y2- STA. 29+44.00
CLASS 'B' RIP RAP EMBANKMENT PROTECTION EST 3 TONS EST 6 SY GFD SEE DETAIL 6/SHEET 2D-1
INSTALL CURB NO CLOSER THAN 10' FROM RR CENTERLINE (TYP.) SEE DETAIL 4, SHEET 2A-4 FOR CURB TRANSITION
NCRR CORRIDOR RIGHT OF WAY
END 8' CONC ISLAND -Y2- STA. 30+44.00
END SIDEWALK TRANSITION -Y2- STA. 30+06.00 LT & RT
TIE TO EXIST RAILROAD RIGHT OF WAY +22.57, 63'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 2/SHEET 2D-1

-Y2-	-NCRR-
PI Sta 30+37.15	PI Sta 53+64.80
Δ = 36° 06' 33.8" (LT)	Δ = 0° 00' 52.4" (LT)
D = 4° 46' 28.7"	D = 0° 20' 13.3"
L = 756.27'	L = 4.32'
T = 391.17'	T = 2.16'
R = 1,200.00'	R = 17,000.00'
SE = 0.03	
RO = 96	
DS = 40	

NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 14 FOR -Y2- PROFILE
SEE SHEET 20 FOR -NCRR- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	10
R/W SHEET NO.	

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ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 052615 ENGINEER JASON D. LAWING 10/11/2022

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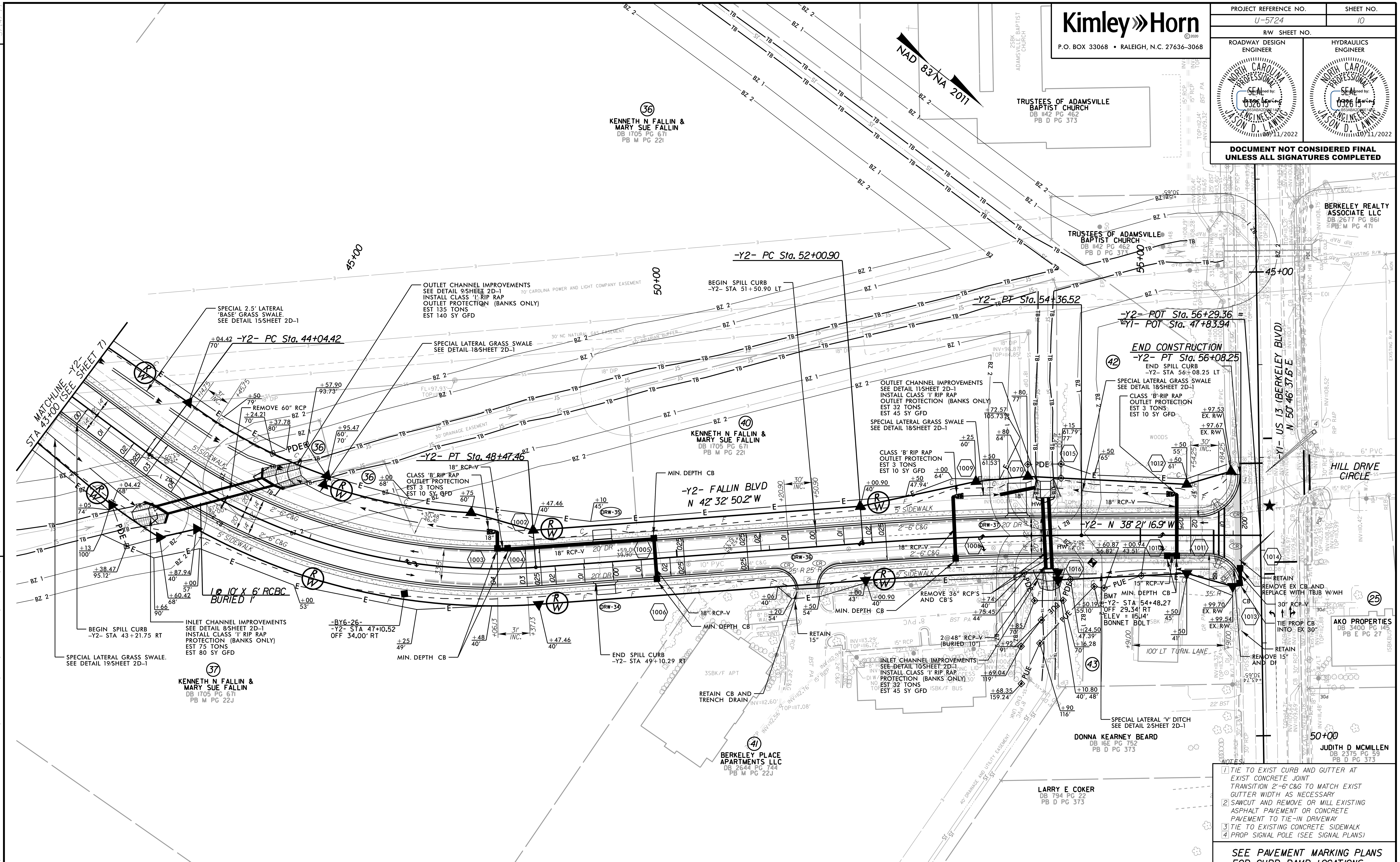
REVISIONS



NOTES:
1. TIE TO EXIST CURB AND GUTTER AT EXIST CONCRETE JOINT TRANSITION 2'-6" C&G TO MATCH EXIST GUTTER WIDTH AS NECESSARY
2. SAWCUT AND REMOVE OR MILL EXISTING ASPHALT PAVEMENT OR CONCRETE PAVEMENT TO TIE-IN DRIVEWAY
3. TIE TO EXISTING CONCRETE SIDEWALK
4. PROP SIGNAL POLE (SEE SIGNAL PLANS)

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 15 FOR -Y2- PROFILE

SEE SHEETS C-1 THRU C-8 FOR CULVERT PLANS

-Y2-

PI Sta 46+35.88	PI Sta 53+18.77
Δ = 40° 56' 32.4" (LT)	Δ = 4° 11' 33.3" (RT)
D = 9° 14' 28.5"	D = 1° 46' 45.7"
L = 443.04'	L = 235.62'
T = 231.45'	T = 117.86'
R = 620.00'	R = 3,220.00'
SE = 0.04	SE = RC
RO = 124	RO = 75
DS = 40	DS = 40

36	KENNETH N FALLIN & MARY SUE FALLIN DB 1705 PG 671 PB M PG 221
42	TRUSTEES OF ADAMSVILLE BAPTIST CHURCH DB 1103 PG 845
43	WILLIAM A HARRIS JR DB 748 PG 201 PB D PG 373

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWINS
Signed by: Jason Lawins
10/10/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWINS
Signed by: Jason Lawins
10/10/2022

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NAD 83/NA 2011

REVISIONS
5/14/99

MATCHLINE -Y1- STA 29+00 (SEE SHEET 5)

CONSTRUCTED AS PART OF U-3609A PROJECT

SURVEY FROM U-3609A SHOWN FOR GRAPHICAL REPRESENTATION FOR MILLING AND RESURFACING

END CONSTRUCTION
-Y1- POT STA 36+30.00
END MILLING AND RESURFACING
TIE TO U-3609A RESURFACING LIMITS

-Y1- PC Sta. 36+39.57

-Y1- PT Sta. 40+00.90

-Y1- US 13 (BERKELEY BLVD)
N 52° 50' 50.6" E

NORFAM LLC
DB 1541 PG 206
PB 1 PG 71

RICHARD S SMITH REVOCABLE 1990 TRUST
DB 2699 PG 473

ROWAN ASSET COMPANY LLC
DB 2707 PG 839

BR ASSOCIATES LLC
DB 2704 PG 669
PB M PG 471

REBAR W/ CAP
N=595,599.71'
E=2,318,783.99'
EL=115.28'

RIM= 115.35
INV. OUT= 109.52

S.S.M.H.
INV.OUT
108.04

S.S.M.H.
INV. IN 106.09
INV. OUT 106.04

S.S.M.H.
INV. IN 104.55
INV. OUT 104.55

SEE PAVEMENT MARKING PLANS FOR CURB RAMP LOCATIONS

REMOVAL OF EXISTING ASPHALT PAVEMENT

★ TRAFFIC SIGNAL

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

SEE SHEET 18 FOR -Y1- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING 10/10/2022

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING 10/10/2022

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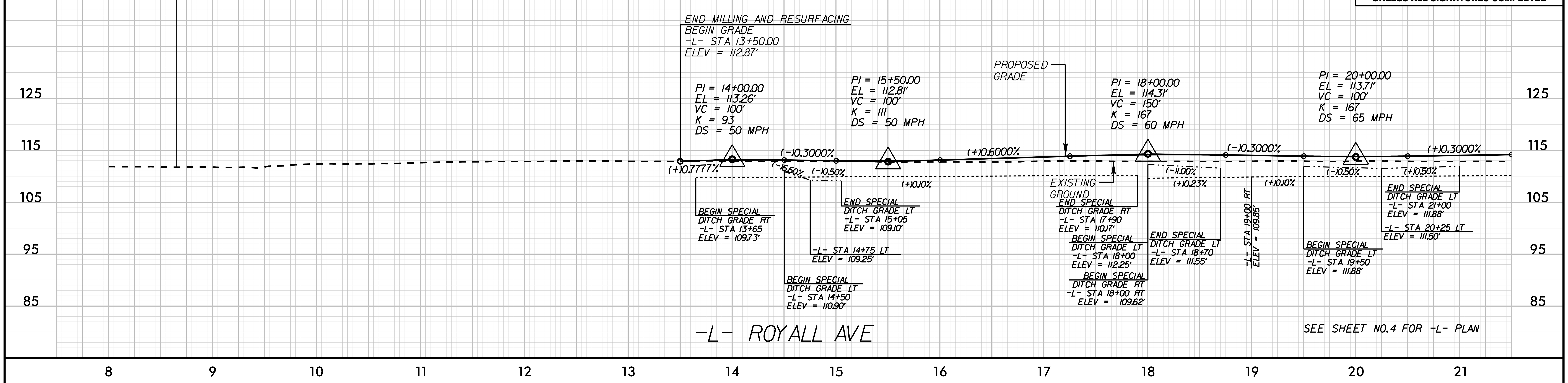

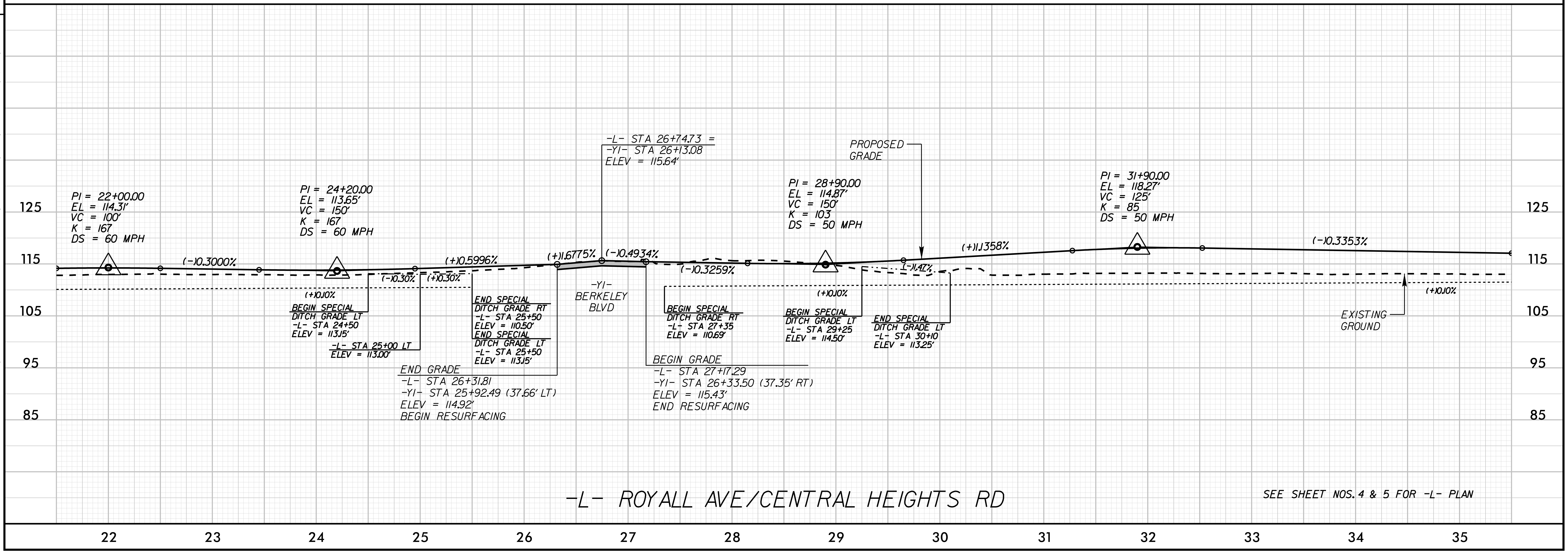

REVISIONS 5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	13

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 052613 ENGINEER JASON D. LAWING — 10/10/2022

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 052613 ENGINEER JASON D. LAWING — 10/10/2022

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BM #3
R/R SPIKE IN 12" CEDAR
-L- STA 38+95.52 (167.65' RT)
ELEV = 113.87'

PI = 36+00.00
EL = 116.90'
VC = 100'
K = 157
DS = 65 MPH

PI = 40+10.00
EL = 118.13'
VC = 80'
K = 100
DS = 50 MPH

PI = 47+45.00
EL = 114.46'
VC = 130'
K = 163
DS = 65 MPH

PROPOSED GRADE

EXISTING GROUND

(+)0.3000%
(-)0.3353%
(+)0.10%
(+)0.14%
(+)0.54%
(+)0.33%
(+)2.46%
(-)0.15%
(-)0.5000%
(-)0.50%
(-)1.78%
(-)0.10%
(-)0.17%
(+)3.13%
(-)2.00%

-L- STA 38+50 RT ELEV = 111.80'
-L- STA 39+00 RT ELEV = 111.87'
-L- STA 39+50 RT ELEV = 112.24'
-L- STA 41+00 RT ELEV = 112.34'
-L- STA 43+25 LT ELEV = 112.04'
-L- STA 44+36 LT ELEV = 111.48'
-L- STA 44+50 RT ELEV = 111.59'

BEGIN SPECIAL DITCH GRADE LT -L- STA 40+00 ELEV = 112.53'
END SPECIAL DITCH GRADE RT -L- STA 42+00 ELEV = 114.80'
BEGIN SPECIAL DITCH GRADE RT -L- STA 43+25 ELEV = 113.81'
BEGIN SPECIAL DITCH GRADE RT -L- STA 47+85 ELEV = 111.25'
END SPECIAL DITCH GRADE RT -L- STA 47+50 ELEV = 111.29'
BEGIN SPECIAL DITCH GRADE RT -L- STA 48+60 ELEV = 113.04'
END SPECIAL DITCH GRADE RT -L- STA 48+25 ELEV = 112.5'

125 / 115 / 105 / 95 / 85

36 37 38 39 40 41 42 43 44 45 46 47 48 49

-L- CENTRAL HEIGHTS RD

SEE SHEET NOS.5 & 6 FOR -L- PLAN

CULVERT HYDRAULIC DATA
1 @ 18" RCP
(NOT BURIED)

DESIGN DISCHARGE	= 2.90 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 112.62 FT
BASE DISCHARGE	= 3.40 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 112.71 FT
OVERTOPPING DISCHARGE	= 13 CFS
OVERTOPPING FREQUENCY	= >500 YR
OVERTOPPING ELEVATION	= 115.21 FT

PROPOSED GRADE

-L- STA 52+11.53 = -Y2- STA 34+99.91
ELEV = 115.85'

PI = 52+60.00
EL = 116.00'
VC = 50'
K = 62
DS = 45 MPH

PI = 54+40.00
EL = 115.10'
VC = 100'
K = 111
DS = 50 MPH

PI = 56+37.00
EL = 115.89'
VC = 70'
K = 100
DS = 50 MPH

PI = 57+10.00
EL = 115.67'
VC = 70'
K = 105
DS = 50 MPH

END GRADE
-L- STA 58+00.00
ELEV = 116.00'
TIE TO EXIST PAVEMENT

(+)0.3000%
(-)0.5003%
(+)0.4007%
(-)0.3000%
(+)0.3667%
(-)2.00%
(+)2.00%
(-)0.17%
(-)0.50%
(+)0.64%
(+)0.53%
(+)1.98%

-L- STA 49+50 RT ELEV = 111.24'
-L- STA 57+00 LT ELEV = 113.30'

END SPECIAL DITCH GRADE RT -L- STA 50+25 ELEV = 112.74'
BEGIN SPECIAL DITCH GRADE RT -L- STA 50+60 ELEV = 112.62'
END SPECIAL DITCH GRADE LT -L- STA 51+40= -Y2- STA 35+43 LT ELEV = 110.27'
END SPECIAL DITCH GRADE RT -L- STA 51+30= -Y2- STA 34+58 ELEV = 112.27'
18" RCP
BEGIN SPECIAL DITCH GRADE LT -L- STA 53+50= ELEV = 111.65'
BEGIN SPECIAL DITCH GRADE RT -L- STA 53+41 ELEV = 111.44'
END SPECIAL DITCH GRADE LT -L- STA 57+50 ELEV = 114.49'
END SPECIAL DITCH GRADE RT -L- STA 58+00 ELEV = 114.39'

125 / 115 / 105 / 95 / 85

49 50 51 52 53 54 55 56 57 58 59 60

-L- CENTRAL HEIGHTS RD

SEE SHEET NO.7 FOR -L- PLAN

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10/10/2022

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	14

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032613 JASON D. LAWING — 10/10/2022

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032613 JASON D. LAWING — 10/10/2022

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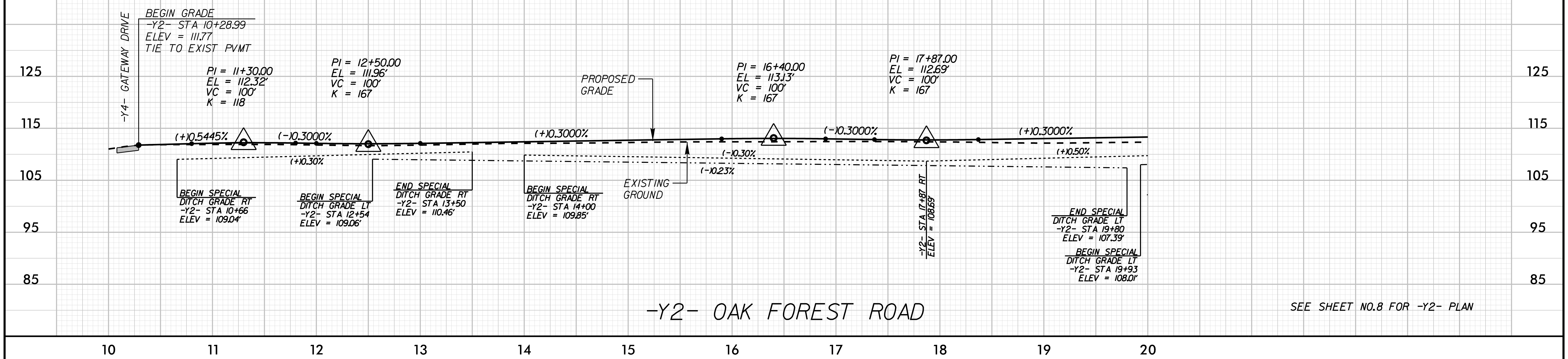
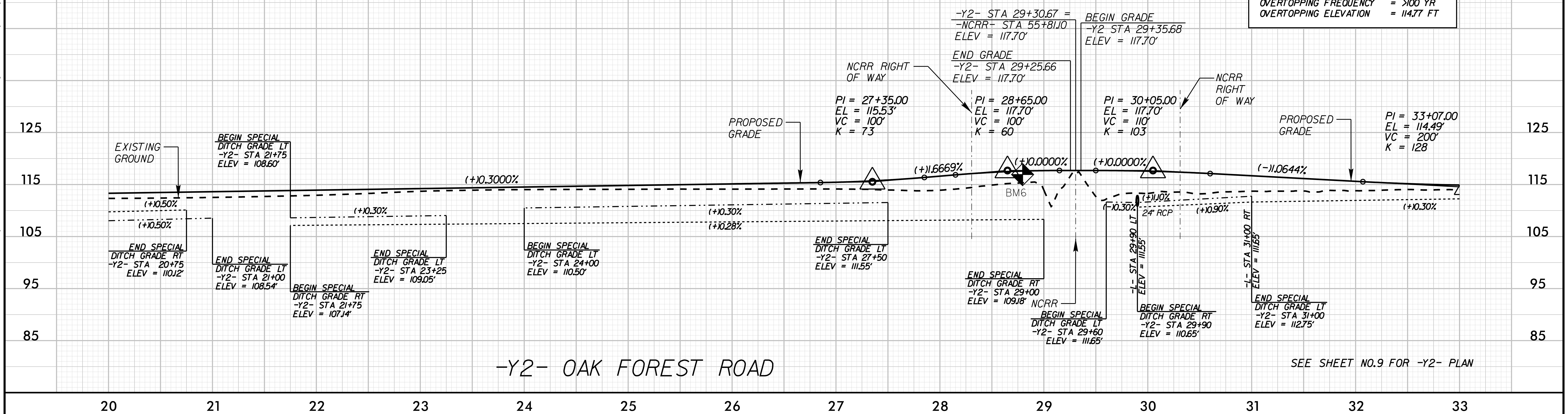
REVISIONS



CULVERT HYDRAULIC DATA

1 @ 24" RCP (NOT BURIED)

DESIGN DISCHARGE	= 13.0 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 113.16 FT
BASE DISCHARGE	= 15.0 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 113.33 FT
OVERTOPPING DISCHARGE	= 23 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 114.77 FT



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REVISIONS 5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	15

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036213 ENGINEER JASON D. LAWING
Sealed by: JASON D. LAWING
10/10/2022

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036213 ENGINEER JASON D. LAWING
Sealed by: JASON D. LAWING
10/10/2022

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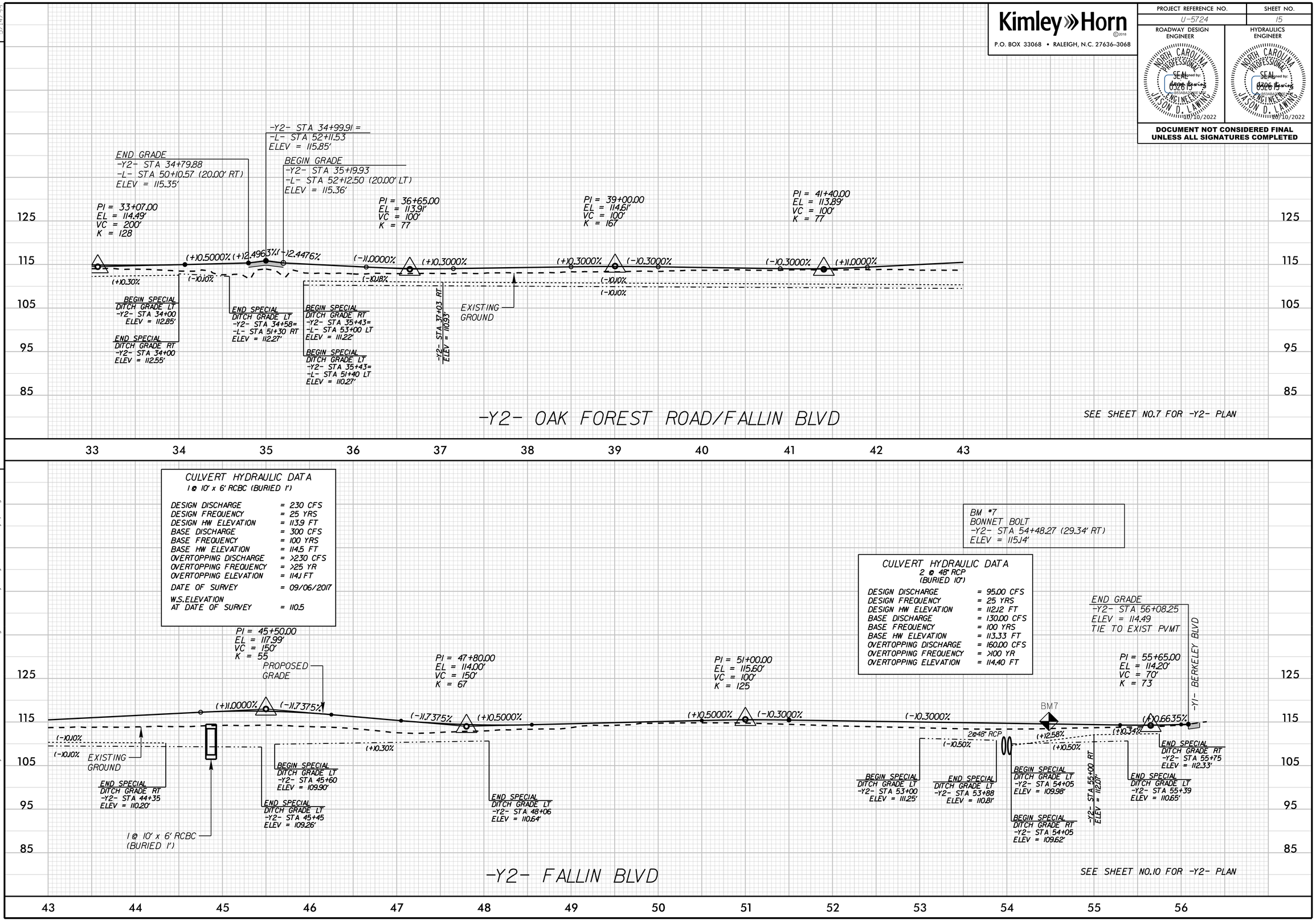

CULVERT HYDRAULIC DATA
1 @ 10' x 6' RCBC (BURIED 1')

DESIGN DISCHARGE	= 230 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 113.9 FT
BASE DISCHARGE	= 300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 114.5 FT
OVERTOPPING DISCHARGE	= >230 CFS
OVERTOPPING FREQUENCY	= >25 YR
OVERTOPPING ELEVATION	= 114.1 FT
DATE OF SURVEY	= 09/06/2017
W.S.ELEVATION AT DATE OF SURVEY	= 110.5

BM #7
BONNET BOLT
-Y2- STA 54+48.27 (29.34' RT)
ELEV = 115.14'

CULVERT HYDRAULIC DATA
2 @ 48" RCP
(BURIED 10")

DESIGN DISCHARGE	= 95.00 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 112.12 FT
BASE DISCHARGE	= 130.00 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 113.33 FT
OVERTOPPING DISCHARGE	= 160.00 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 114.40 FT

BM *2
BONNET BOLT
-Y3- STA 10+46.49 (33.90' LT)
ELEV = 115.56'

BEGIN GRADE
-Y3- STA 10+32.00
ELEV = 114.11'
TIE TO EXIST PVMT

-Y1- BERKELEY BLVD

(-)1.7%

(-)0.5000%

(-)0.39%

PROPOSED GRADE

PI = 13+00.00
EL = 112.77'
VC = 50'
K = 50
DS = 35 MPH

(+)0.5018%

(-)0.96%

-Y3- STA 15+18.71
-Y5- STA 12+44.85
ELEV = 113.81'

PI = 15+20.00
EL = 113.87'
VC = 50'
K = 50
DS = 40 MPH

(-)0.5000%

(+)1.06%

PI = 16+90.00
EL = 113.02'
VC = 50'
K = 50
DS = 35 MPH

(+)0.5000%

(-)0.27%

PI = 20+55.00
EL = 114.84'
VC = 80'
K = 50
DS = 40 MPH

(-)0.5000%

18" RCP

18" RCP

18" RCP

BEGIN SPECIAL
DITCH GRADE RT
-Y3- STA 10+50
ELEV = 112.11'

BEGIN SPECIAL
DITCH GRADE LT
-Y3- STA 14+00
ELEV = 111.45'

END SPECIAL
DITCH GRADE RT
-Y3- STA 14+92
ELEV = 110.38'
SEE -Y5- FOR
DITCH CONT.

END SPECIAL
DITCH GRADE LT
-Y3- STA 14+94
ELEV = 110.53'

BEGIN SPECIAL
DITCH GRADE LT
-Y3- STA 15+45
ELEV = 110.52'

END SPECIAL
DITCH GRADE LT
-Y3- STA 16+85
ELEV = 112.00'

BEGIN SPECIAL
DITCH GRADE LT
-Y3- STA 17+15
ELEV = 111.96'

EXISTING GROUND

-Y7- STA 21+25 LT
ELEV = 110.25'

125 115 105 95 85

10 11 12 13 14 15 16 17 18 19 20 21 22

-Y3- SERVICE ROAD 1

SEE SHEET NO.5 FOR -Y3- PLAN

CULVERT HYDRAULIC DATA
1 @ 18" RCP
(NOT BURIED)

DESIGN DISCHARGE	= 2.60 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 111.42 FT
BASE DISCHARGE	= 3.00 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 111.50 FT
OVERTOPPING DISCHARGE	= 8.0 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 112.40 FT

CULVERT HYDRAULIC DATA
1 @ 18" RCP
(NOT BURIED)

DESIGN DISCHARGE	= 2.40 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 111.36 FT
BASE DISCHARGE	= 2.80 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 111.44 FT
OVERTOPPING DISCHARGE	= 9.0 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 112.50 FT

CULVERT HYDRAULIC DATA
1 @ 18" RCP
(NOT BURIED)

DESIGN DISCHARGE	= 5.80 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 112.28 FT
BASE DISCHARGE	= 6.80 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 112.45 FT
OVERTOPPING DISCHARGE	= N/A
OVERTOPPING FREQUENCY	= N/A
OVERTOPPING ELEVATION	= N/A

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	16

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 032613 ENGINEER JASON D. LAWING
10/10/2022

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 032613 ENGINEER JASON D. LAWING
10/10/2022

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CULVERT HYDRAULIC DATA
1 @ 18" RCP
(NOT BURIED)

DESIGN DISCHARGE	= 2.50 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 112.30 FT
BASE DISCHARGE	= 3.00 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 112.39 FT
OVERTOPPING DISCHARGE	= N/A
OVERTOPPING FREQUENCY	= N/A
OVERTOPPING ELEVATION	= N/A

PROPOSED GRADE

PI = 23+00.00
EL = 113.62'
VC = 80'
K = 46
DS = 30 MPH

(-)0.5000%

(+)1.2519%

PI = 24+75.00
EL = 115.81'
VC = 100'
K = 28
DS = 30 MPH

(-)2.2556%

END GRADE
-Y3- STA 25+77.00
ELEV = 113.51'
GRADE TO TIE TO
EXIST GROUND

(+)0.33%

(-)0.38%

18" RCP

EXISTING GROUND

END SPECIAL
DITCH GRADE LT
-Y3- STA 22+30
ELEV = 111.20'

BEGIN SPECIAL
DITCH GRADE LT
-Y3- STA 22+60
ELEV = 112.25'

END SPECIAL
DITCH GRADE LT
-Y3- STA 24+80
ELEV = 111.42'

125 115 105 95 85

21 22 23 24 25 26

-Y3- SERVICE ROAD 1

SEE SHEET NO.6 FOR -Y3- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	17

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032615 JASON D. LAWING — DocuSigned by: Jason Lawing B53ABA2D65E1407... 10/10/2022	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032615 JASON D. LAWING — DocuSigned by: Jason Lawing B53ABA2D65E1407... 10/10/2022

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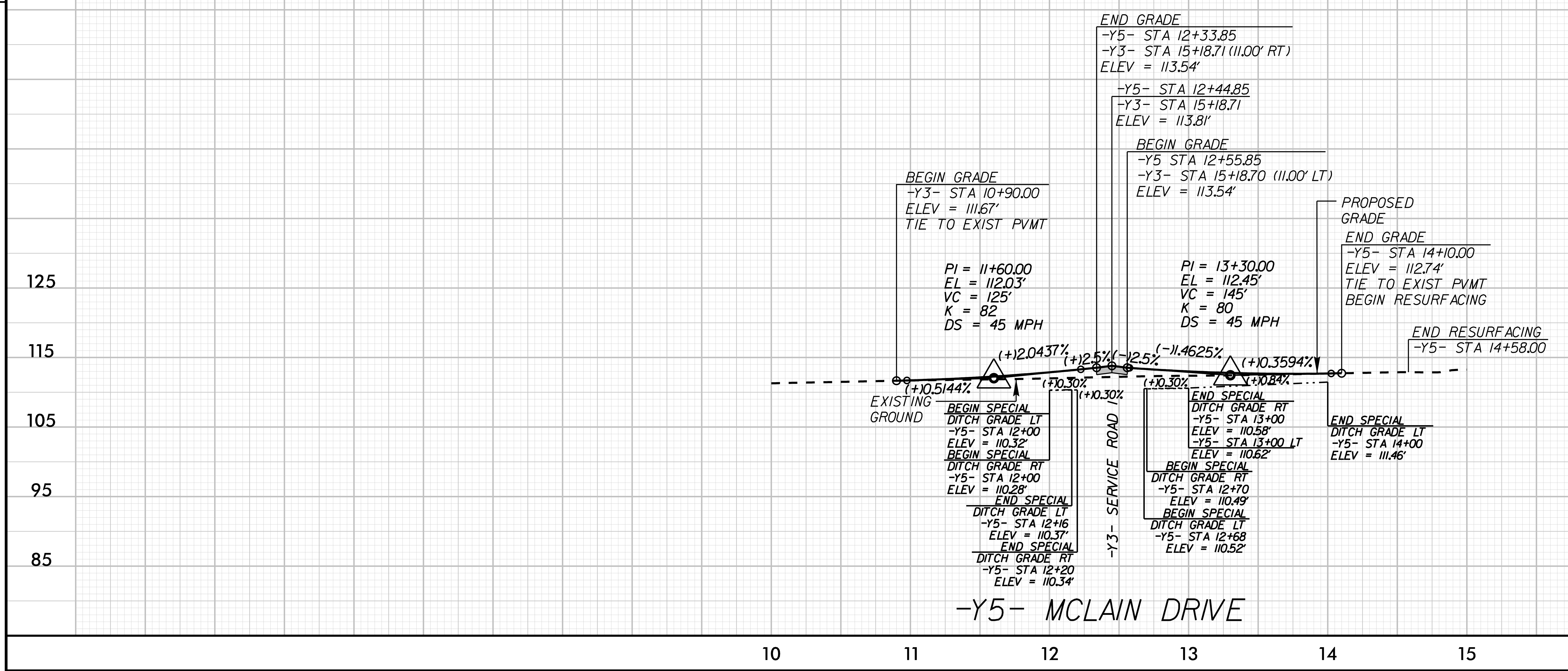

SEE SHEET NO.5 FOR -Y5- PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-5724	18

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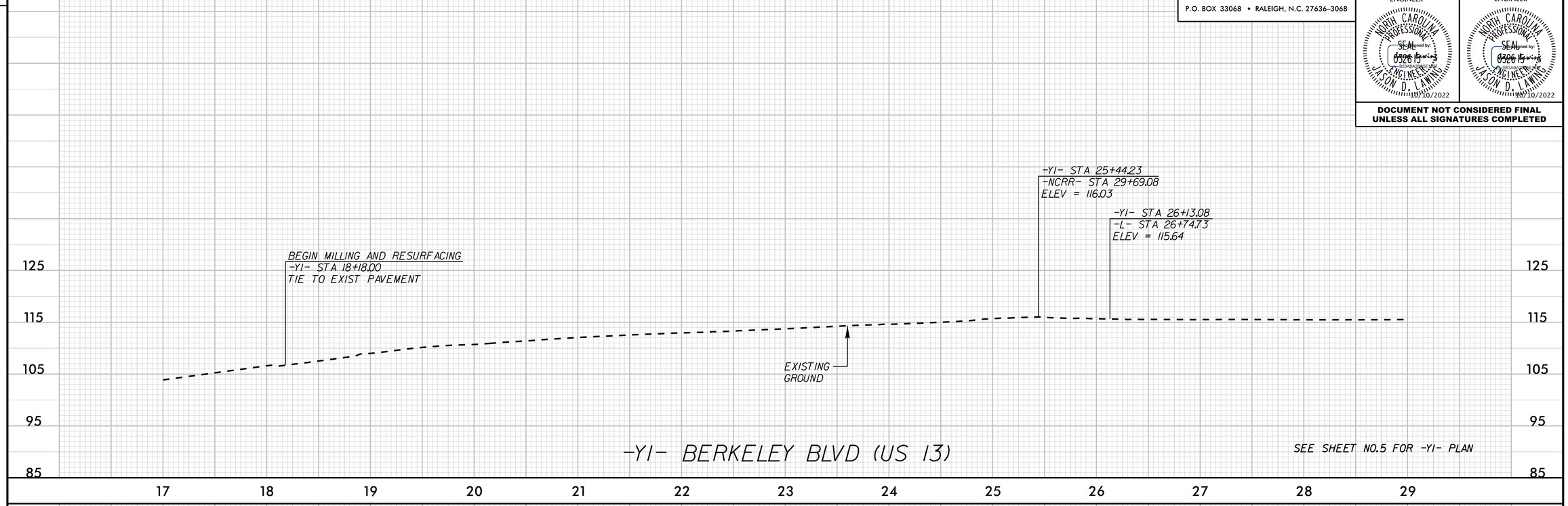
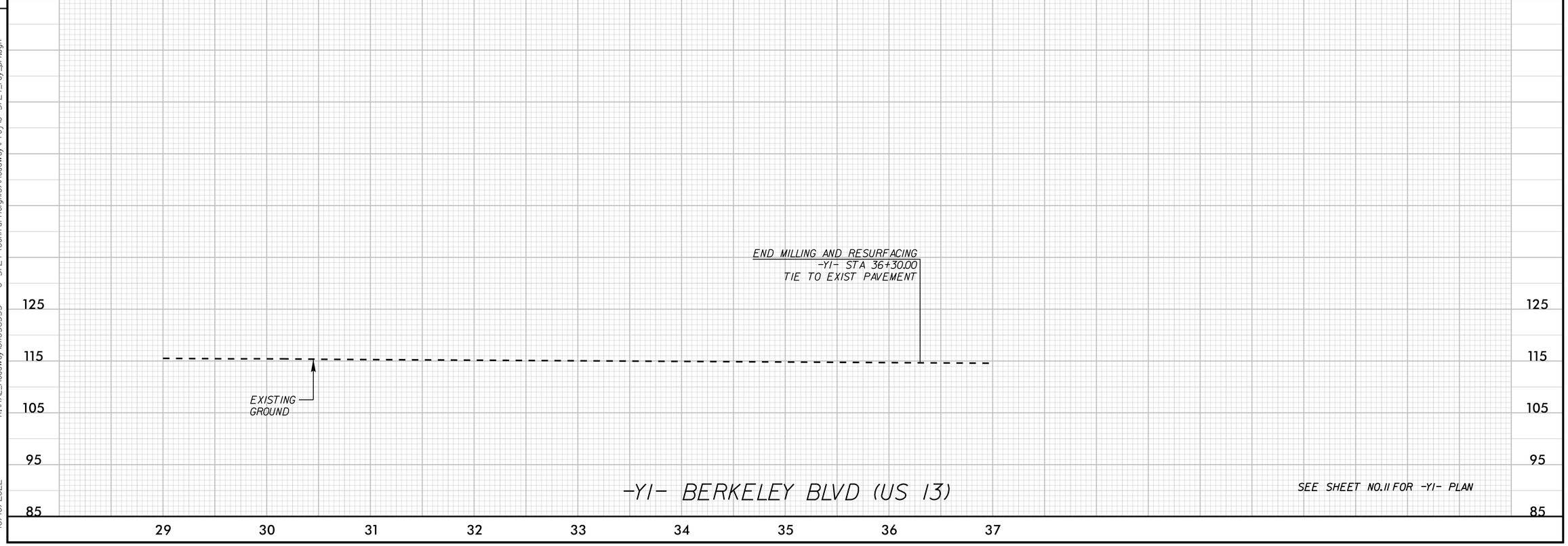


-Y1- BERKELEY BLVD (US 13)

SEE SHEET NO.5 FOR -Y1- PLAN



-Y1- BERKELEY BLVD (US 13)

SEE SHEET NO.11 FOR -Y1- PLAN

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	19

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HYDRAULICS ENGINEER

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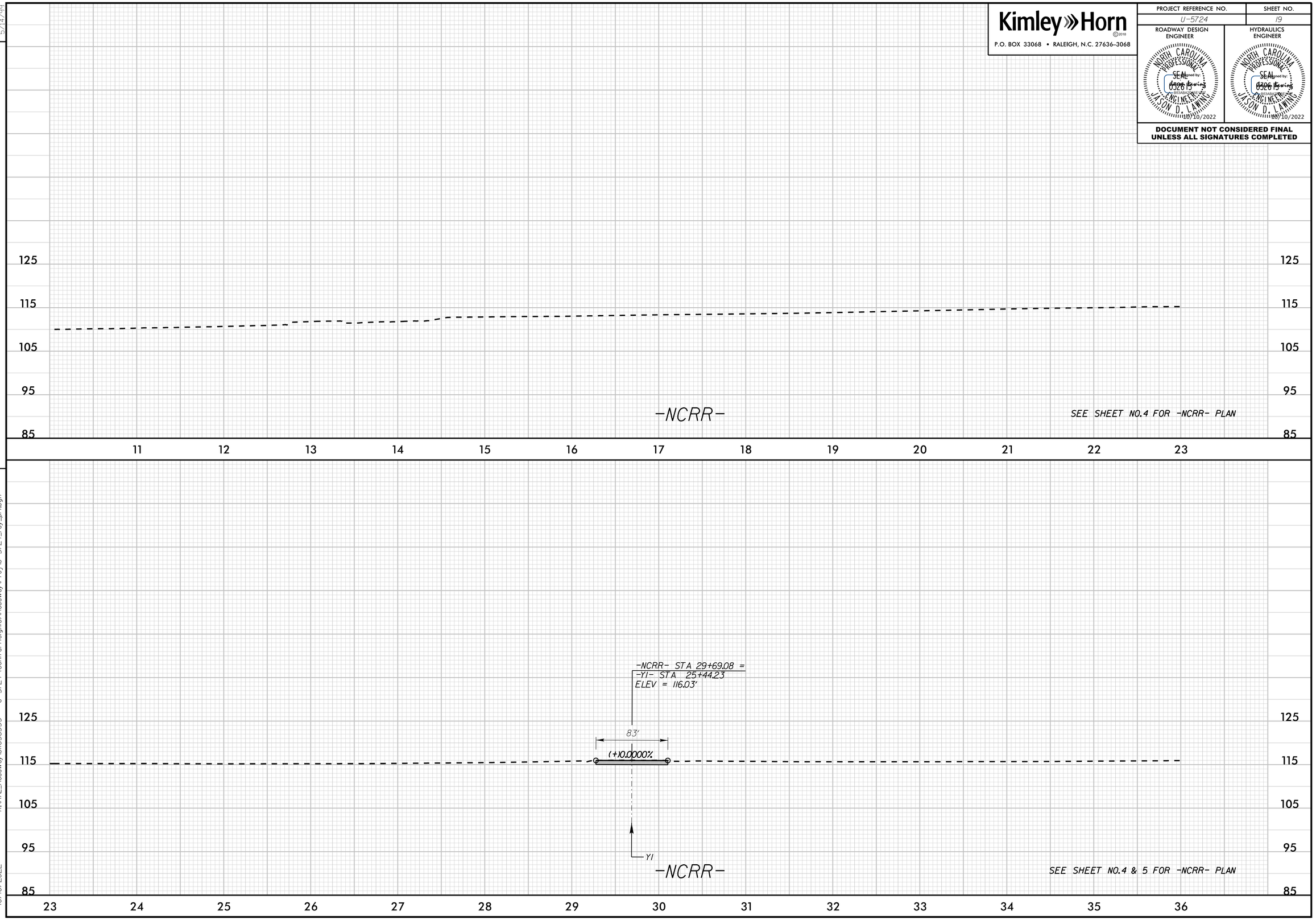

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PROJECT REFERENCE NO.	SHEET NO.
U-5724	20

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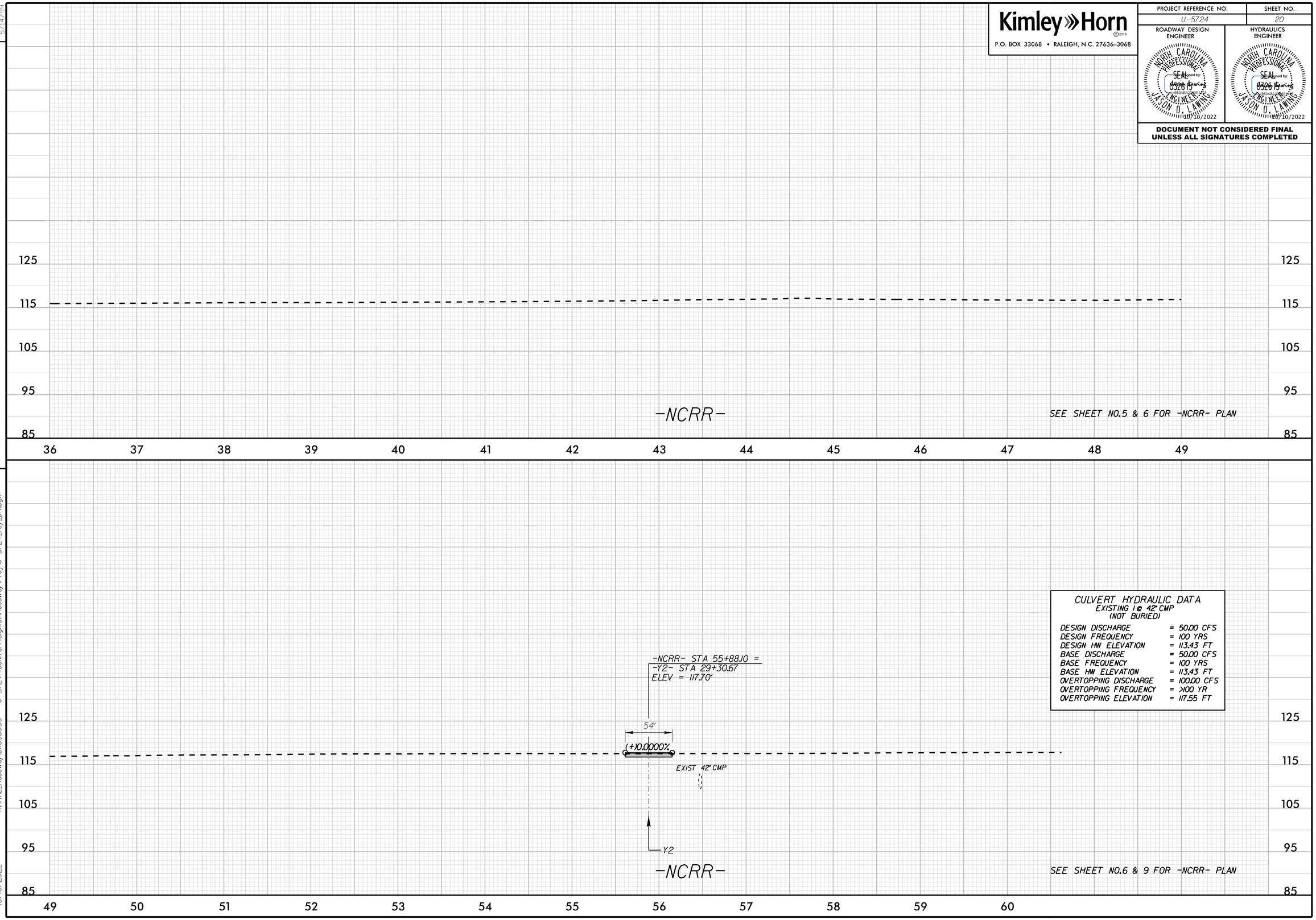

CULVERT HYDRAULIC DATA
EXISTING 1 @ 42" CMP
(NOT BURIED)

DESIGN DISCHARGE	= 50.00 CFS
DESIGN FREQUENCY	= 100 YRS
DESIGN HW ELEVATION	= 113.43 FT
BASE DISCHARGE	= 50.00 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 113.43 FT
OVERTOPPING DISCHARGE	= 100.00 CFS
OVERTOPPING FREQUENCY	= >100 YR
OVERTOPPING ELEVATION	= 117.55 FT

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