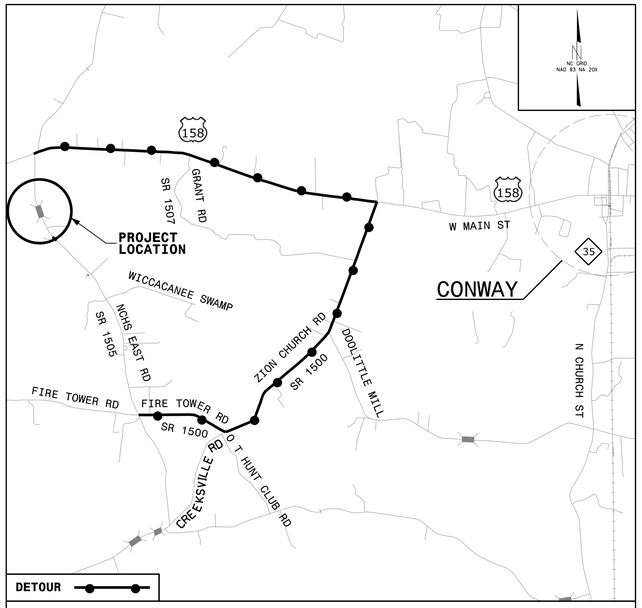
09/08/99

TIP PROJECT: 17BP.1.R.90

CONTRACT: C204519

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

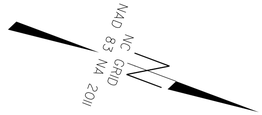
NORTHAMPTON COUNTY

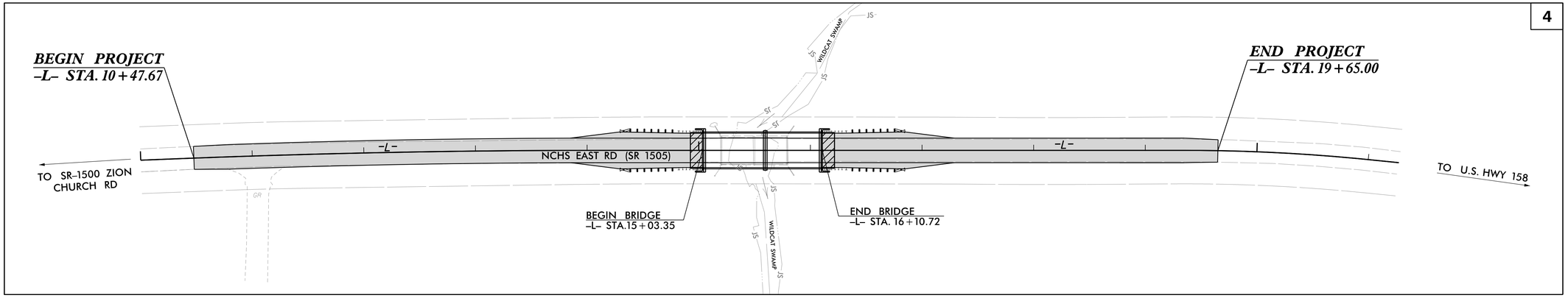
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.90	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.1.R.90		PE
17BP.1.R.90		R/W, UTILITIES
17BP.1.R.90		CONSTRUCTION

LOCATION: BRIDGE NO. 650015 ON SR 1505 (NCHS EAST ROAD) OVER WILDCAT SWAMP

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE





DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 860
ADT 2020 = 900
V = 55 MPH
T = 6%*
(*TTST 3% + DUALS 3%)

FUNC CLASS = LOCAL

SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.1.R.90	=	0.154 MILES
LENGTH STRUCTURES TIP PROJECT 17BP.1.R.90	=	0.020 MILES
TOTAL LENGTH TIP PROJECT 17BP.1.R.90	=	0.174 MILES

NCDOT CONTACT: DAVID STUTTS, PE
SMU PROJECT MANAGER

Prepared in the Office of:

KCA KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayettville St.,
Suite 1500
Raleigh, NC 27601
(919)882-7839

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 02/05/2020

LETTING DATE: 07/20/2021

JOHN P. MAZERES, P.E.
PROJECT ENGINEER

JASON DEBONE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by: Samuel Cullum 19C9709SC75A467...
4/14/2021
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 043571 ENGINEER SAMUEL L CULLUM P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by: John Mazeres C86F1C5ED67940E...
4/14/2021
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 043935 ENGINEER JOHN P MAZERES P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

14-APR-2021 10:43
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jduke

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	1A

ROADWAY DESIGN ENGINEER

3/12/2021

NORTH CAROLINA PROFESSIONAL SEAL 043935 ENGINEER JOHN P MAZERES

DocuSigned by: John Mazeres C86F1C5ED67940E...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES

NC FIRM LICENSE No: C-1506
301 Fayettville St.,
Suite 1500
Raleigh, NC 27601
(919)882-7839

INDEX OF SHEETS

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01–16–2018

GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 II.

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 SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO 560.01.

SUBSURFACE DRAINS:

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

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104–7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS–SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

NORTHAMPTON COUNTY WATER AND SEWER
CENTURYLINK

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT–OF–WAY MARKERS:

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

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	
200.02	METHOD OF CLEARING – METHOD II.
225.02	GUIDE FOR GRADING SUBGRADE – SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION – TWO LANE PAVEMENT
DIVISION 3 – PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
DIVISION 4 – MAJOR STRUCTURES	
422.02	BRIDGE APPROACH FILLS – TYPE II MODIFIED APPROACH FILL
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION – HIGH SIDE OF SUPERELEVATED CURVE – METHOD I
DIVISION 8 – INCIDENTALS	
815.02	SUBSURFACE DRAIN
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.25	ANCHORAGE FOR FRAMES
840.29	FRAMES AND NARROW SLOT FLAT GRATES
840.35	TRAFFIC BEARING GRATED DROP INLET
840.46	TRAFFIC BEARING PRECAST DRAINAGE STRUCTURES
840.66	DRAINAGE STRUCTURE STEPS
846.01	CONCRETE CURB, GUTTER AND CURB AND GUTTER
846.04	DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.03	STRUCTURE ANCHOR UNITS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

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idebone

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
17BPJ.R.90	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — 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:

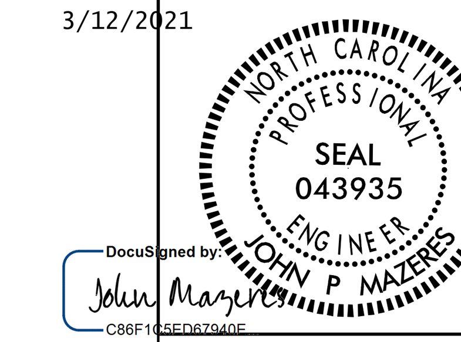
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)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

6/2/99

BRIDGE No. 650015

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

3/12/2021



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PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES

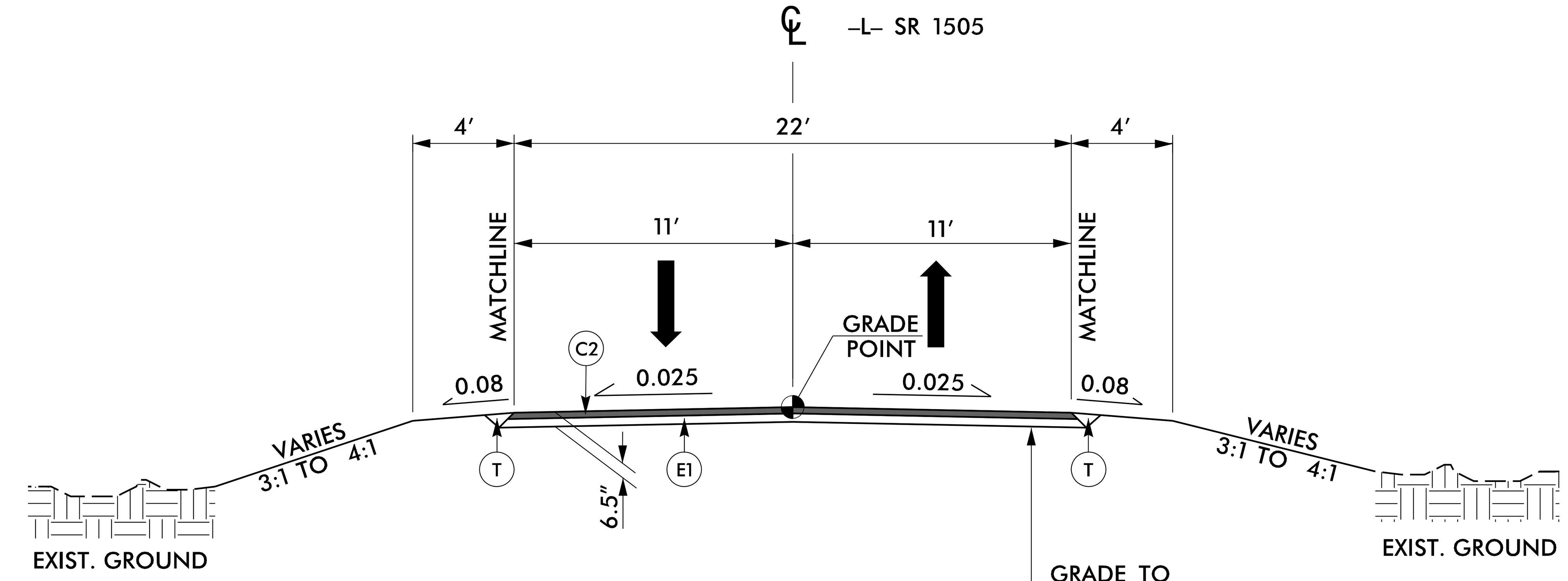
NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7839

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110.0 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR TO EXCEED 1.5" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

NOTE: FINAL PAVEMENT DESIGN PER PAVEMENT DESIGN MEMO DATED 07/31/2019 FROM CLARK S. MORRISON, PhD, P.E.

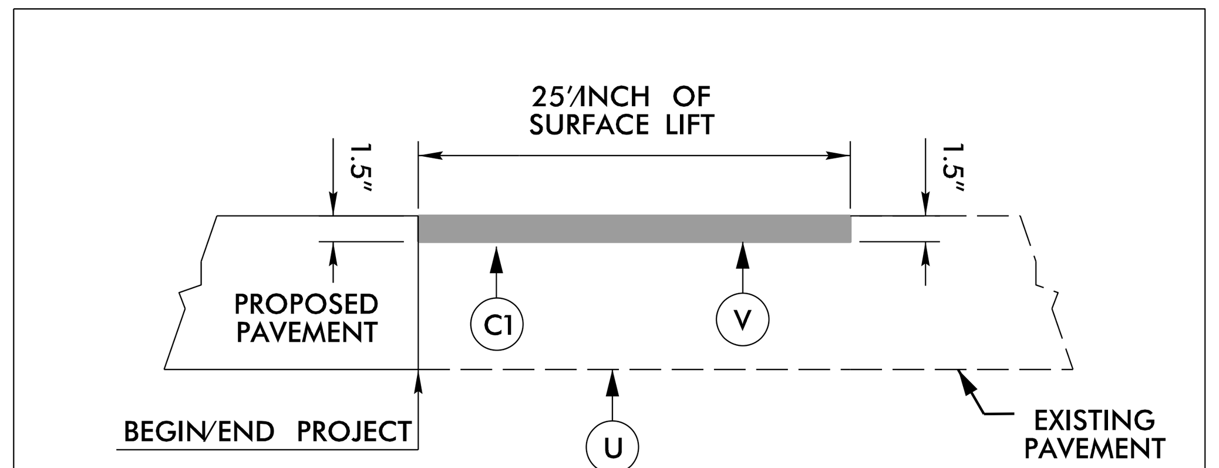


TYPICAL SECTION NO. 1

-L- (SR 1505)

USE TYPICAL SECTION NO. 1

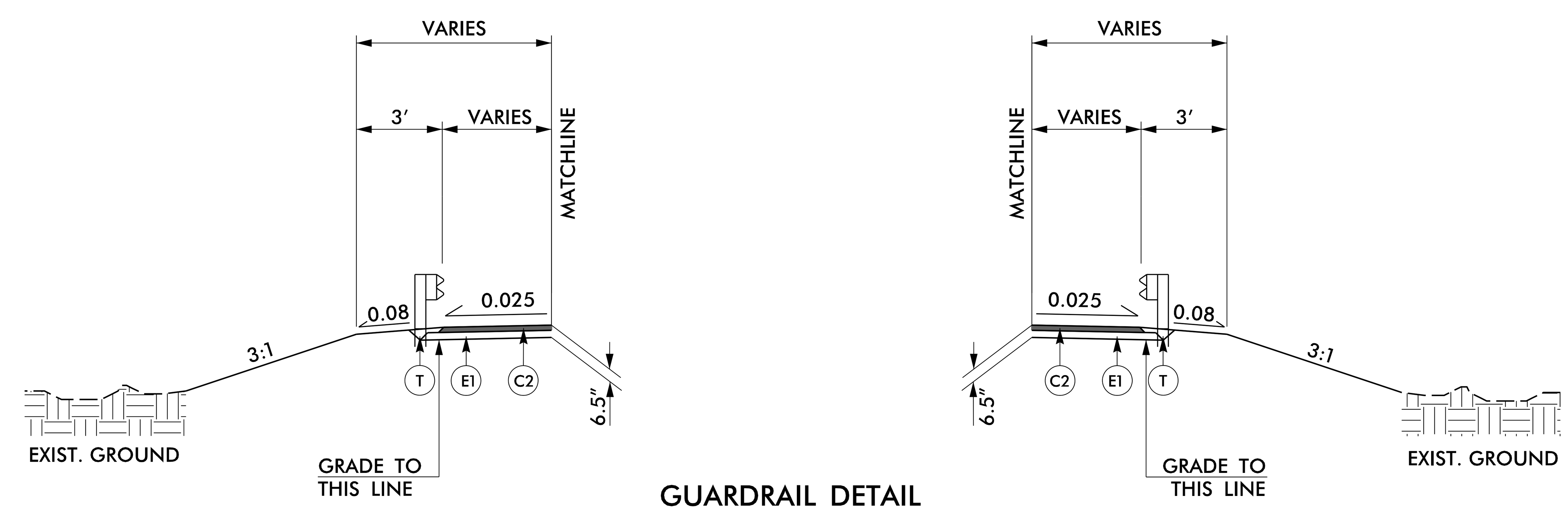
-L- STA. 10+47.67 TO STA. 15+03.35 (BEGIN BRIDGE)
-L- STA. 16+10.72 (END BRIDGE) TO STA. 19+65.00



INCIDENTAL MILLING PAVEMENT KEY-IN DETAIL (TIE-IN)

-L- STA. 9+97.67 TO STA. 10+47.67
-L- STA. 19+65.00 TO STA. 20+15.00

STATION RANGES ARE APPROXIMATE ONLY. GRADE AND MILLING LIMITS MAY BE ADJUSTED BY THE ENGINEER TO ENSURE A PROPER TIE-IN.

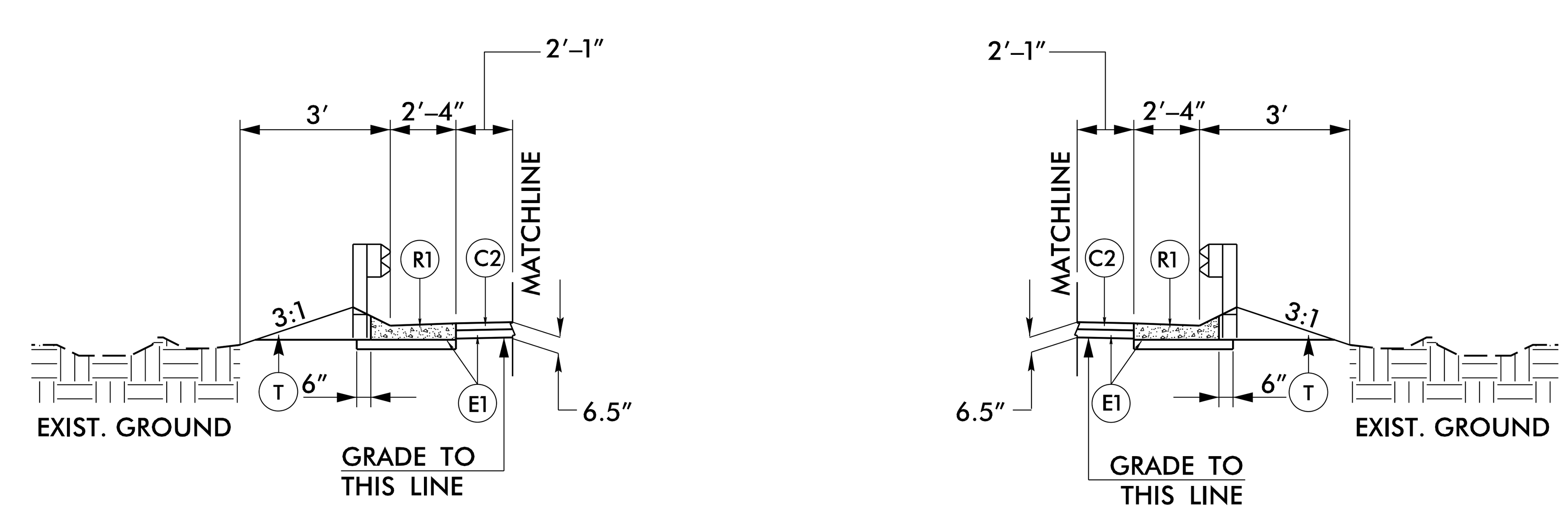


GUARDRAIL DETAIL

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 14+28.75 TO STA. 15+03.35 (BEGIN BRIDGE)
-L- STA. 16+10.72 (END BRIDGE) TO STA. 16+85.72



SHOULDER BERM GUTTER (SBG) DETAIL

TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1 AND GUARDRAIL DETAIL

-L- STA. 14+77.00 TO -L- STA. 14+92.47

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6/2/99

BRIDGE No. 650015

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

3/12/2021

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043935 JOHN P. MAZERES

DocuSigned by: John Mazeres

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PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
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(919)882-7839

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T	EARTH MATERIAL.
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V	INCIDENTAL MILLING

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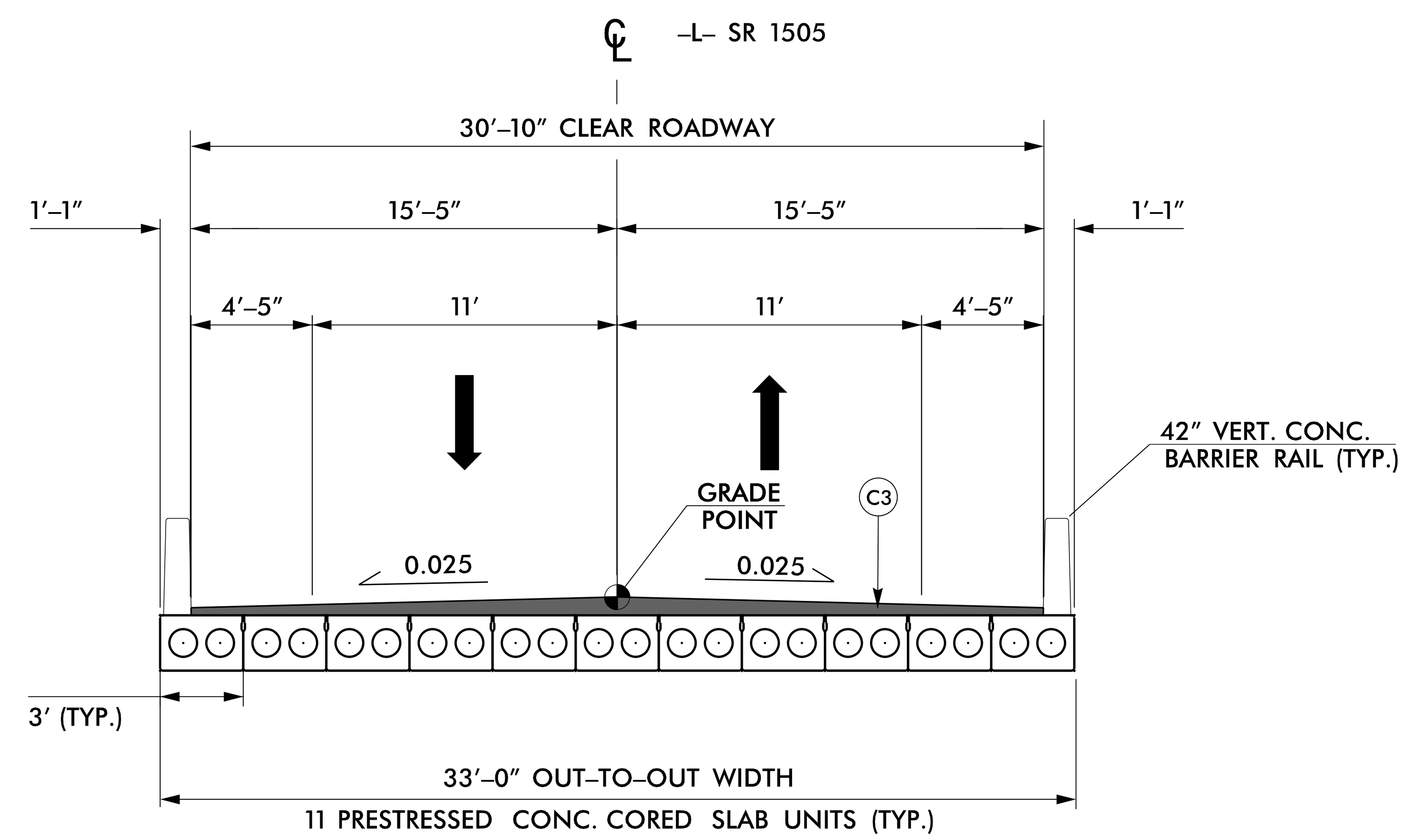
NOTE: FINAL PAVEMENT DESIGN PER PAVEMENT DESIGN MEMO DATED 07/31/2019 FROM CLARK S. MORRISON, PhD, P.E.



TYPICAL SECTION NO. 2 ON STRUCTURE

BRIDGE 650015 OVER WILDCAT CREEK
-L- STA. 15+03.35 TO STA. 16+10.72
** SEE STRUCTURES PLANS FOR AWS THICKNESS

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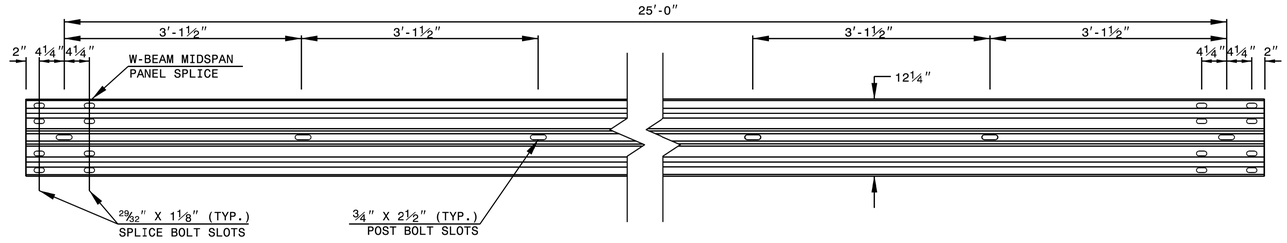
PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	2C-1
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

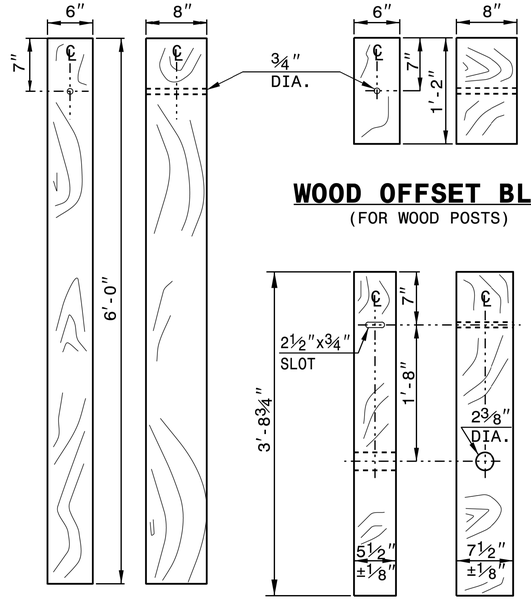
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



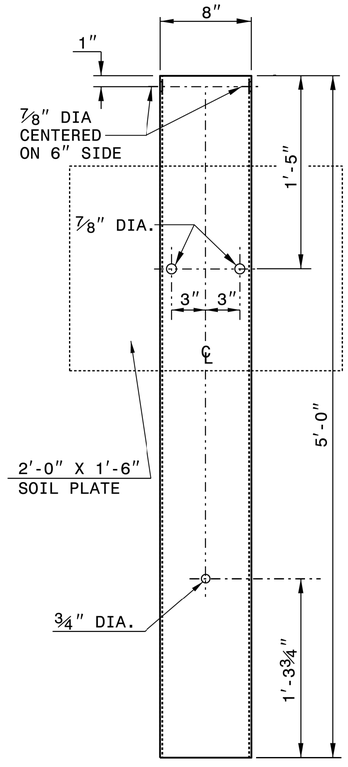
STANDARD W-BEAM GUARDRAIL



WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

SHORT WOOD BREAKAWAY POST



STEEL TUBE
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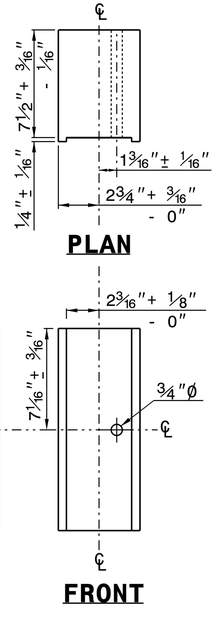

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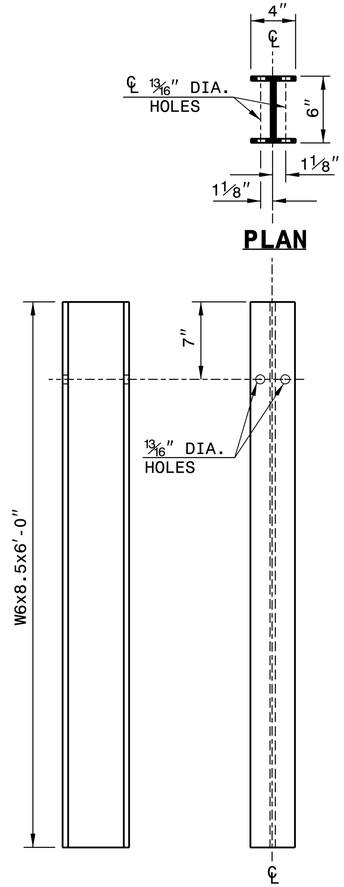


"W6" STEEL POST

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

3/12/2021

DocuSigned by:
Joel S. Howerton
873F3D17DCDC45F...

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL S. HOWERTON

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

SEE TITLE BLOCK

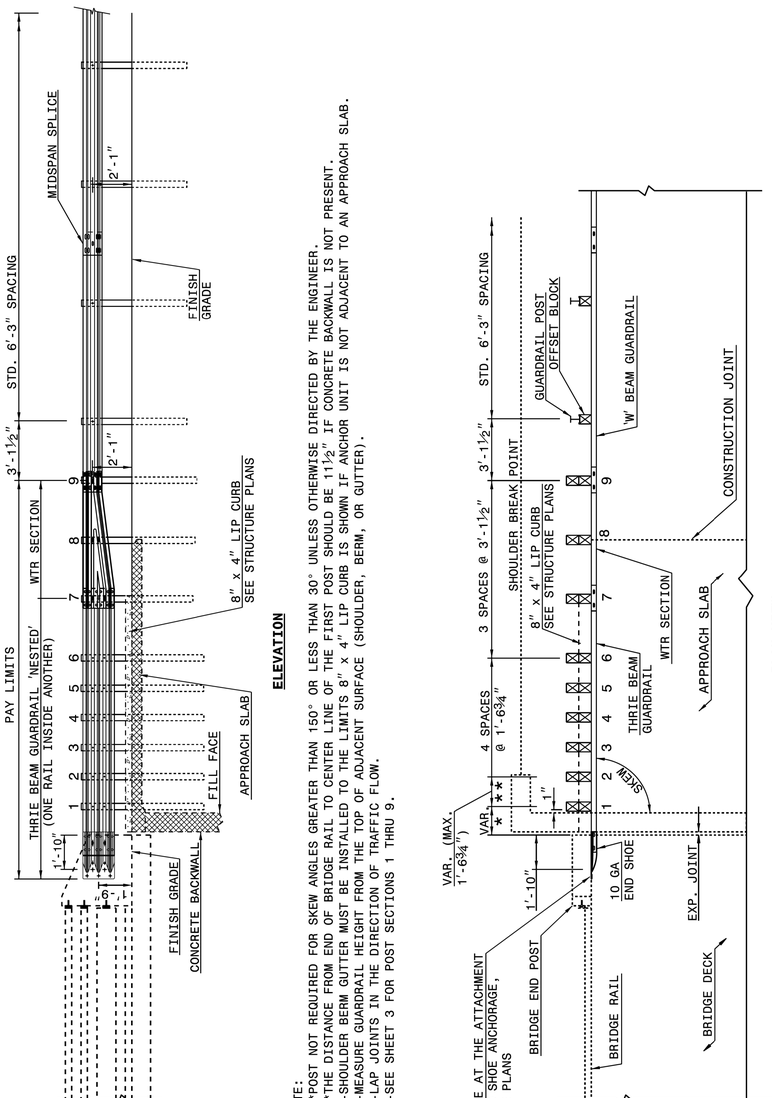
ORIGINAL BY: J.HOWERTON DATE: 3-7-2018
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	2C-2

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03



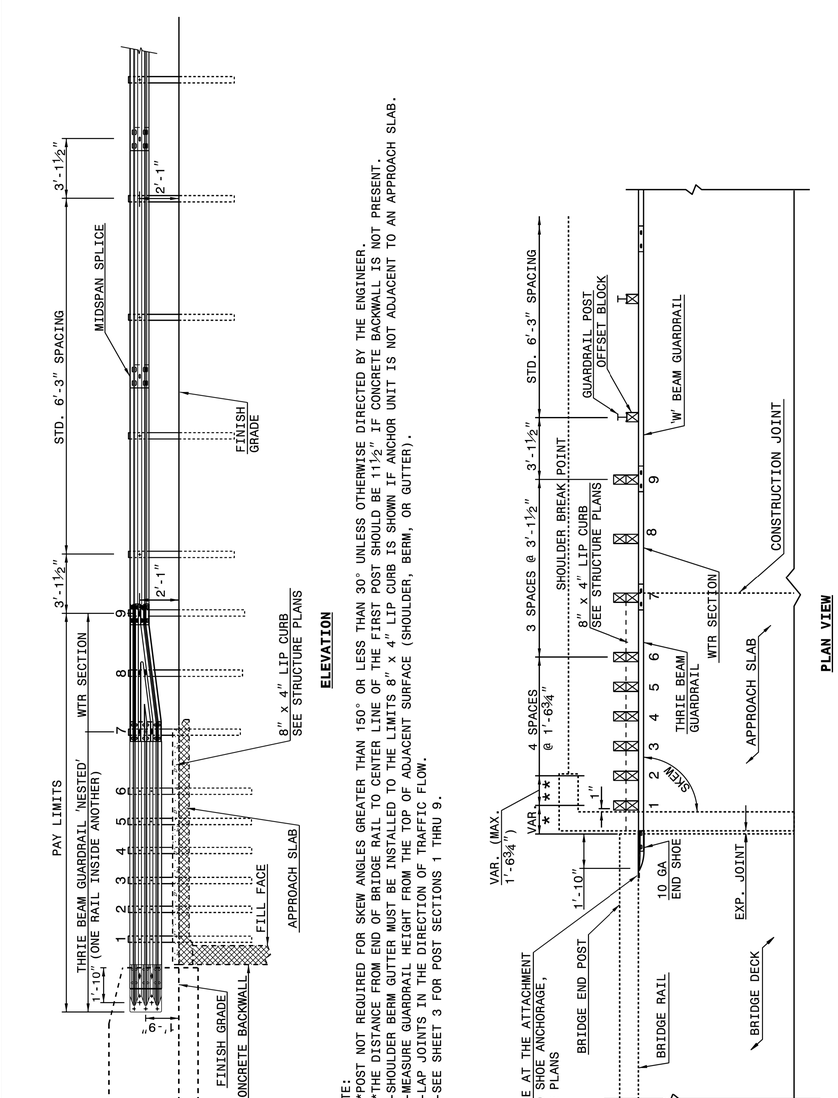
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03



GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
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-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

3/12/2021

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DocuSigned by: Joel S. Howerton 873F3D17DCDC45F...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

5/9/06

COMPUTED BY: AJM DATE: 02/06/2020
CHECKED BY: JPM DATE: 02/06/2020

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	3B-1

PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7839

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- STA 10+47.67	-L- STA 15+03.35 (Begin Bridge)	39	509	470	
-L- STA 16+10.72 (End Bridge)	-L- STA 19+65.00	0	616	616	
PROJECT SUBTOTAL:		39	1125	1086	
PROJECT TOTALS:		**39**	**1125**	**1086**	
REPLACE TOP SOIL ON BORROW PIT (5%):				54	
GRAND TOTALS:		39	1125	1140	
SAY:		**50**		**1260**	

NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	10+48	15+20	LT/RT/CL	1049.07			
-L-	15+80	19+65	LT/RT/CL	856.27			
		TOTAL:		1905			
		SAY:		**1910**			

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LINE	Station	Station	LENGTH
-L- RT	14+77.00	14+92.47	15.47
-L- LT	14+77.00	14+92.47	15.47
		TOTAL:	30.94
		SAY:	**31**

COMPUTED BY: AJM DATE: 02/06/2020
CHECKED BY: JPM DATE: 02/06/2020

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REF. NO.	SHEET NO.
17BP.1.R.90	3B-1

"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

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS									ADDITIONAL GUARDRAIL POSTS	IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	M-350	III	CAT-1	VI MOD	BIC			G	NG				
-L-	14+28.35	15+03.35	RT	75.00'			14+28.35	Bridge	4.54	7.54	50		1				1		1											
-L-	14+28.35	15+03.35	LT	75.00'			Bridge	14+28.35	4.54	7.54		50		1			1		1											
-L-	16+10.72	16+85.72	RT	75.00'			Bridge	16+85.72	4.54	7.54		50		1			1		1											
-L-	16+10.72	16+85.72	LT	75.00'			16+85.72	Bridge	4.54	7.54	50		1				1		1											
			SUBTOTAL:	300.00'													4		4					5						
		Less 4 GREU TL-3 @ 50' Each		200.00'																										
		Less 4 Type III @ 18.75' Each		75.00'																										
			PROJECT TOTALS:	25.00'													4		4					5						

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12/06/07

COMPUTED BY: WNK DATE: 09/25/2019
CHECKED BY: EPA DATE: 09/26/2019

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	3D-1

PREPARED IN THE OFFICE OF:
KCA
KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville St.,
Suite 1500
Raleigh, NC 27601
(919)882-7839

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

COMPUTED BY: WNK DATE: 9/25/2019
CHECKED BY: EPA DATE: 9/26/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
17BP.1.R.90	3D-1

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

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

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)											
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
THICKNESS OR GAUGE		FROM	TO																
L 14+83	14 LT	400		97.4															
		400	401		94.6	89.9			20							X			
L 14+83	14 RT	402		97.4															
		402	403		94.6	91.4			20							X			
SHEET TOTALS									40										

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO.		C.S. PIPE								R.C. PIPE CLASS III								R.C. PIPE CLASS IV							
SIZE				12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE		FROM	TO	.064	.064	.064	.064	.079	.079	.109	.109																
L 14+83	14 LT	400																									
		400	401																								
L 14+83	14 RT	402																									
		402	403																								
SHEET TOTALS																											

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO.		** " R.C. PIPE (CLASS V)	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	***" RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS		QUANTITIES FOR DRAINAGE STRUCTURES	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT.		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE			CONCRETE TRANSITIONAL SECTION		T.B.D.I. STD. 840.35	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29			15" DRAINAGE PIPE ELBOW	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
		FROM	TO						R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	A 5.0' THRU 10.0'	B 10.0' AND ABOVE		E	F	G	DROP INLET	CATCH BASIN									
L 14+83	14 LT	400									1									1	1							
		400	401																					1				
L 14+83	14 RT	402									1									1	1							
		402	403																					1				
SHEET TOTALS											2									2	2			2				

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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COMPUTED BY: AJM DATE: 02/06/2020
CHECKED BY: JHD DATE: 02/06/2020

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	3G-1

PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES
NC FIRM LICENSE No: C-1506
301 Fayetteville St., Suite 1500
Raleigh, NC 27601
(919)882-7839

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF SUBSURFACE DRAINAGE

IN LINEAR FEET

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.I.R.90	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

3/12/2021 — SEAL 043935, NORTH CAROLINA PROFESSIONAL ENGINEER, JOHN P MAZERS

3/12/2021 — SEAL 043571, NORTH CAROLINA PROFESSIONAL ENGINEER, SAMUEL L CULLUM

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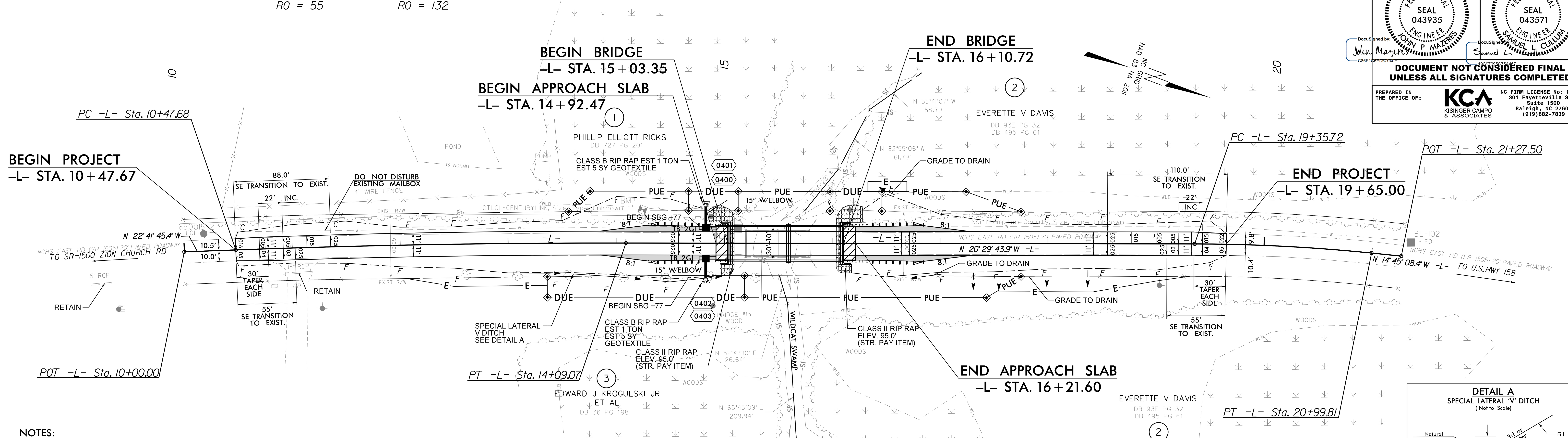
PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES — NC FIRM LICENSE No: C-1506, 301 Fayetteville St., Suite 1500, Raleigh, NC 27601, (919)882-7839

REVISIONS

8/17/99

-L-

PI Sta 12+28.40	PI Sta 20+17.84
Δ = 2° 12' 01.5" (RT)	Δ = 5° 44' 35.5" (RT)
D = 0° 36' 32.0"	D = 3° 30' 00.0"
L = 361.39'	L = 164.09'
T = 180.71'	T = 82.11'
R = 9,410.00'	R = 1,637.02'
SE = NC	SE = MATCH EXIST.
RO = 55	RO = 132



NOTES:

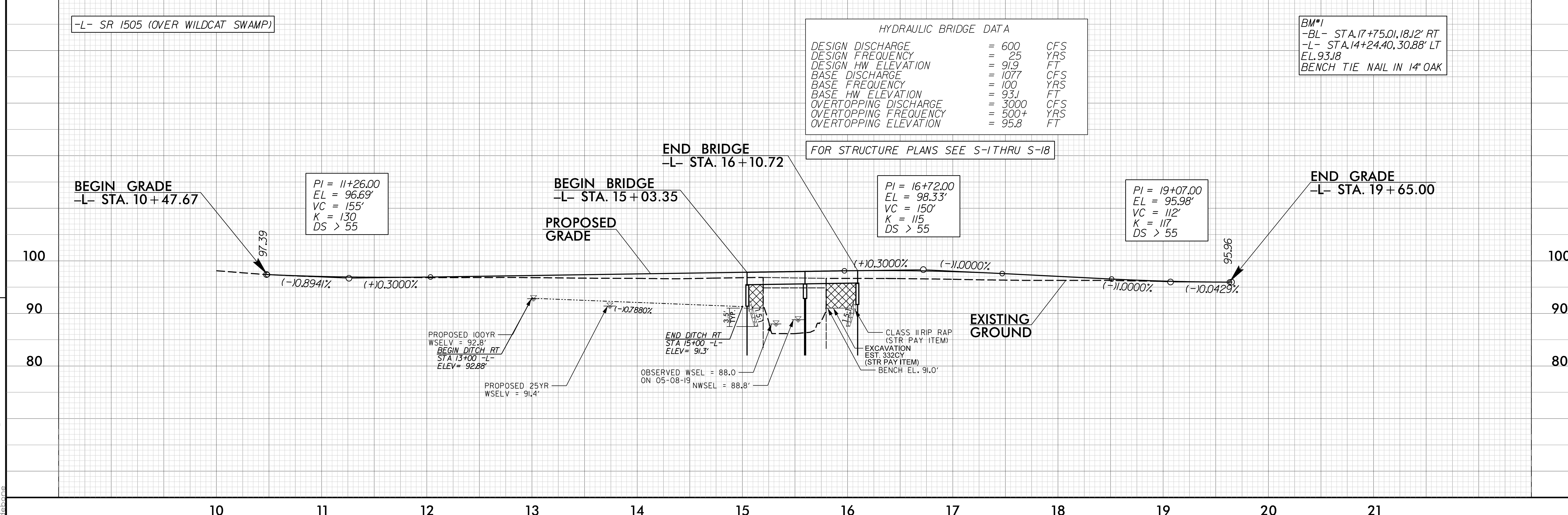
1. ALL BRIDGE ANCHOR UNITS ARE TYPE III.
2. ALL GUARDRAIL END UNITS ARE GREU TL-3.
3. FOR R/W AND EASEMENT STATIONS AND OFFSETS SEE SHEET 4A.

-L- SR 1505 (OVER WILDCAT SWAMP)

HYDRAULIC BRIDGE DATA		
DESIGN DISCHARGE	= 600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 91.9	FT
BASE DISCHARGE	= 1077	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 93.1	FT
OVERTOPPING DISCHARGE	= 3000	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 95.8	FT

FOR STRUCTURE PLANS SEE S-1 THRU S-18

BM#1
-BL- STA.17+75.01, 18.12' RT
-L- STA.14+24.40, 30.88' LT
EL.93.18
BENCH TIE NAIL IN 14" OAK



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PROJECT REFERENCE NO.	SHEET NO.
17BP.1.R.90	4A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — SEAL 043935 — JOHN P. MAZERS — 3/12/2021

HYDRAULICS ENGINEER — SEAL 043571 — SAMUEL L. CULLUM — 3/12/2021

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PREPARED IN THE OFFICE OF: KCA KISINGER CAMPO & ASSOCIATES — NC FIRM LICENSE No: C-1506, 301 Fayetteville St., Suite 1500, Raleigh, NC 27601, (919)882-7839

-L-

PI Sta 12+28.40	PI Sta 20+17.84
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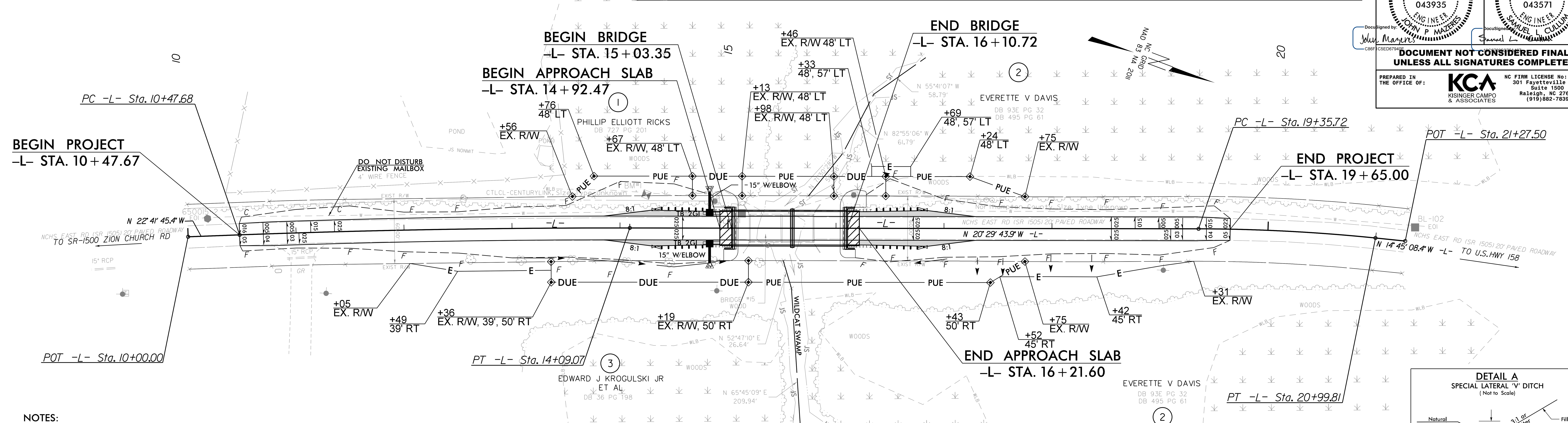
D = 0° 36' 32.0"	D = 3° 30' 00.0"
L = 361.39'	L = 164.09'
T = 180.71'	T = 82.11'
R = 9,410.00'	R = 1,637.02'
SE = NC	SE = MATCH EXIST.
RO = 55	RO = 132

PARCEL ROW INDEX TABLE

PARCEL No.	SHEET No.	PROPERTY OWNER NAME	TCE AREA (SF)	TCE AREA (AC)	PUE AREA (SF)	PUE AREA (AC)	DUE AREA (SF)	DUE AREA (AC)
1	4	PHILLIP ELLIOT RICKS			3085	0.071	826	0.019
2	4	EVERETTE V DAVIS	2024	0.046	6245	0.143	866	0.020
3	4	EDWARD J KROGULSKI JR ET AL	858	0.020			3613	0.083



NOTES:

1. ALL BRIDGE ANCHOR UNITS ARE TYPE III.
2. ALL GUARDRAIL END UNITS ARE GREU TL-3.
3. FOR R/W AND EASEMENT STATIONS AND OFFSETS SEE SHEET 4A.

** DETAIL FOR RIGHT OF WAY AND EASEMENT MONUMENT PLACEMENT (DESIGN FOR INFORMATION ONLY)

DETAIL A — SPECIAL LATERAL 'V' DITCH (Not to Scale) — Natural Ground, 4:1, D, 3:1 or Flatter, Fill Slope, Min. D= 1 Ft. — FROM STA. 13+00 TO STA. 15+00 -L- RT

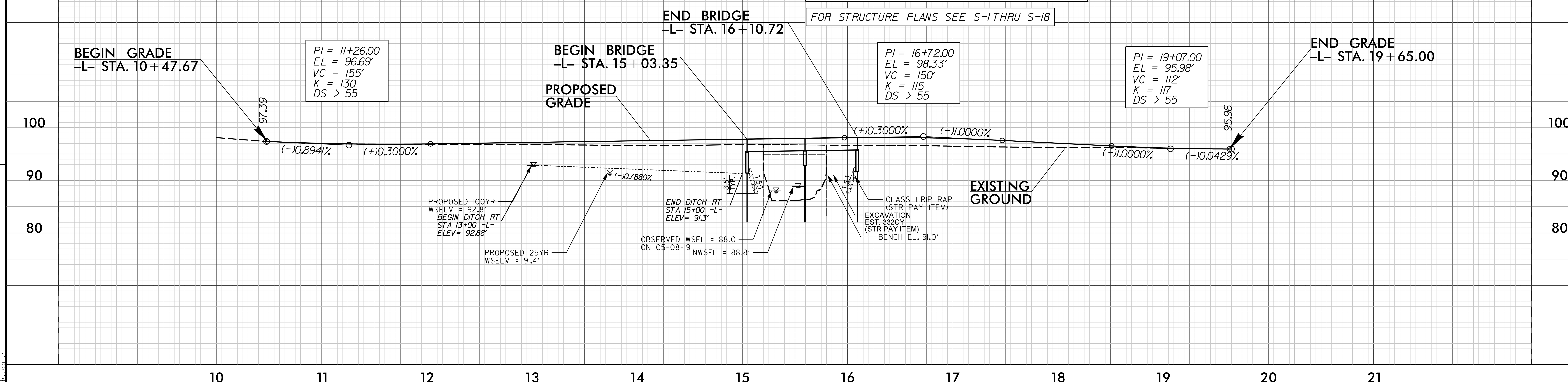
-L- SR 1505 (OVER WILDCAT SWAMP)

HYDRAULIC BRIDGE DATA

DESIGN DISCHARGE	=	600	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	91.9	FT
BASE DISCHARGE	=	1077	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	93.1	FT
OVERTOPPING DISCHARGE	=	3000	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	95.8	FT

FOR STRUCTURE PLANS SEE S-1 THRU S-18

BM#1 -BL- STA.17+75.01, 18.12' RT -L- STA.14+24.40, 30.88' LT EL.93.18 BENCH TIE NAIL IN 14" OAK



REVISIONS

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