STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5778 WBS 44799.3.1	1	

STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION

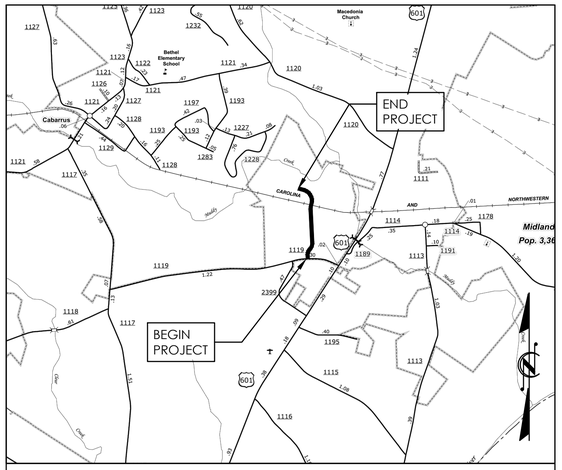
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

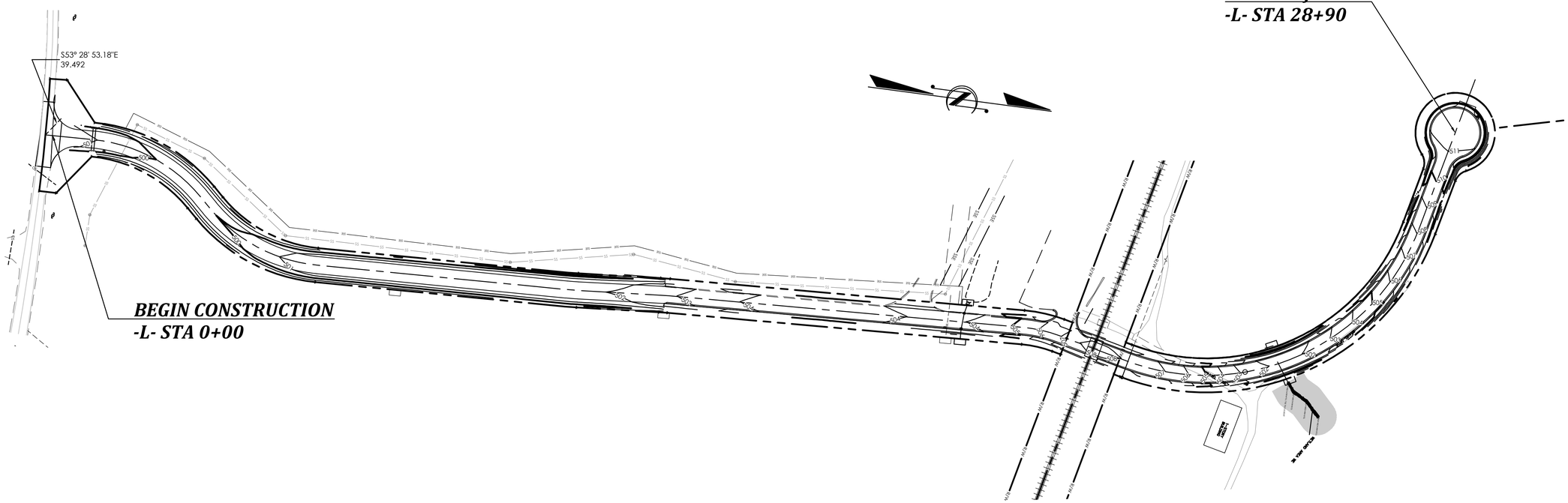
LOCATION: BILL McGEE ROAD S.R. 3049
IN
MIDLAND, NC

TYPE OF WORK: ROAD WIDENING, GRADING, DRAINAGE AND PAVING

SEE SHEET IA FOR INDEX OF SHEETS
SEE SHEET IB FOR CONVENTIONAL SHEET SYBMOLS



VICINITY MAP



CONTRACT: R-5778 WBS 44799.3.1

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 = 00
ADT 2035 = 00
K = 0%
D = 0%
T = 0%
V = 0 MPH
* TTST = 0% DUAL N/A
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT WBS - 44799.3.1 = 0.557 mi.
LENGTH STRUCTURE TIP PROJECT WBS - 44799.3.1 = 0.000 mi.
TOTAL LENGTH TIP PROJECT WBS - 44799.3.1 = 0.557 mi.

PREPARED IN THE OFFICE OF:
BURTON ENGINEERING ASSOCIATES
CIVIL ENGINEERS
LAND PLANNERS
5950 Fairview Rd. •Suite 100 •Charlotte, NC 28210
(704) 553-8881 • Fax (704) 553-8860
Firm License # 1557

RIGHT OF WAY DATE:

LETTING DATE:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS AND DETAILS
3B-1	SUMMARY OF EARTHWORK PAVEMENT REMOVAL SUMMARY SUMMARY OF BREAKING EXISTING ASPHALT
3D-1	DRAINAGE SUMMARY SHEET
4 THRU 8	PLAN SHEETS
TMP-1	TRAFFIC CONTROL GENERAL NOTES AND PHASING NOTES
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
UBO-1 THRU UBO-4	UTILITY CONNECTION PLANS
X-1 THRU X-14	CROSS-SECTIONS

GENERAL NOTES

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 II.

SUBSURFACE PLANS:
NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE:
CITY OF CONCORD

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS. SEE UBO PLANS FOR WATERLINE INSTALLATION INFORMATION.

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

STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards appear in "Roadway Standard Drawings" Highway Design Branch - N.C. Department of Transportation - Raleigh, N.C., Dated January, 2012 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
225.06	METHOD OF GRADING SIGHT DISTANCE AT INTERSECTIONS
240.01	GUIDE FOR BERM DITCH CONSTRUCTION
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
DIVISION 8 - INCIDENTALS	
838.80	PRECAST CONCRETE ENDWALL
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.02	CONCRETE CATCH BASIN - 12" THRU 54" PIPE
840.03	FRAME, GRATES AND HOOD - FOR USE ON STANDARD CATCH BASIN
840.25	ANCHORAGE FOR FRAMES - BRICK, CONCRETE OR PRECAST
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.45	PRECAST DRAINAGE STRUCTURES
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
840.72	PIPE COLLAR
846.01	CONCRETE CURB, GUTTER AND CURB AND GUTTER
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.02	TEMPORARY LANE CLOSURES - 2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED
DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATION	
1205.01	PAVEMENT MARKINGS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS SHEET 2 OF 2
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	TEMPORARY SILT FENCE
1606.01	SPECIAL SEDIMENT CONTROL FENCE
1607.01	GENERAL CONSTRUCTION ENTRANCE
1630.03	TEMPORARY SILT DITCH
1631.01	MATTING INSTALLATION
1632.03	ROCK INLET SEDIMENT TRAP TYPE C
1634.02	TEMPORARY ROCK SEDIMENT DAM TYPE B
1640.01	COIR FIBER BAFFLE

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	IB

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap — V
- Sign — S
- Well — W
- Small Mine — M
- Foundation
- Area Outline
- Cemetery — y
- Building
- School — X
- 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 — Z
- Disappearing Stream
- Spring
- Wetland — K
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker — h
- 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
- 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 — X
- Single Shrub — Y
- 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 — m
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole — P
- Proposed Power Pole
- Existing Joint Use Pole — R
- Proposed Joint Use Pole
- Power Manhole — p
- Power Line Tower
- Power Transformer — }
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole — Q
- Proposed Telephone Pole
- Telephone Manhole — i
- Telephone Booth — e
- Telephone Pedestal — b
- Telephone Cell Tower — /
- U/G Telephone Cable Hand Hole —]
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — 4
- Water Meter — a
- Water Valve — I
- Water Hydrant — H
- Recorded U/G Water Line
- Designated U/G Water Line (S.U.E.*)
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish — r
- TV Pedestal — |
- TV Tower
- U/G TV Cable Hand Hole —]
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve — c
- Gas Meter — n
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole — d
- Sanitary Sewer Cleanout — o
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base — F
- Utility Located Object — S
- Utility Traffic Signal Box — 3
- Utility Unknown U/G Line — ?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 (S.U.E.*) — ?
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	1C

ROADWAY DESIGN ENGINEER

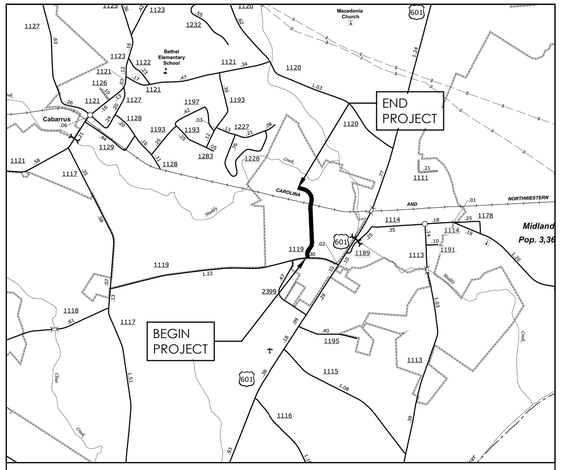
NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

SURVEY CONTROL SHEET

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED
ON THE STATE PLANE COORDINATES ESTABLISHED BY THE GPS FOR MONUMENT "MIDLAND"
WITH NAD83 (2011) STATE PLANE GRID COORDINATES OF
NORTHING: 543,051.34
EASTING: 1,550,103.10
ELEVATION: 520.6±
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS 0.99985313
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE
FROM MONUMENT "MIDLAND" TO -L- STATION 0 + 00 IS S41° 02' 28"W 4,406.71 .
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88.



VICINITY MAP

CONTROL POINT

CP #1
ELEVATION: 501.76'
COORDINATES: N539750.64, E1547177.49
STATION: STA. 0+73.99
DESCRIPTION: MAG HUB

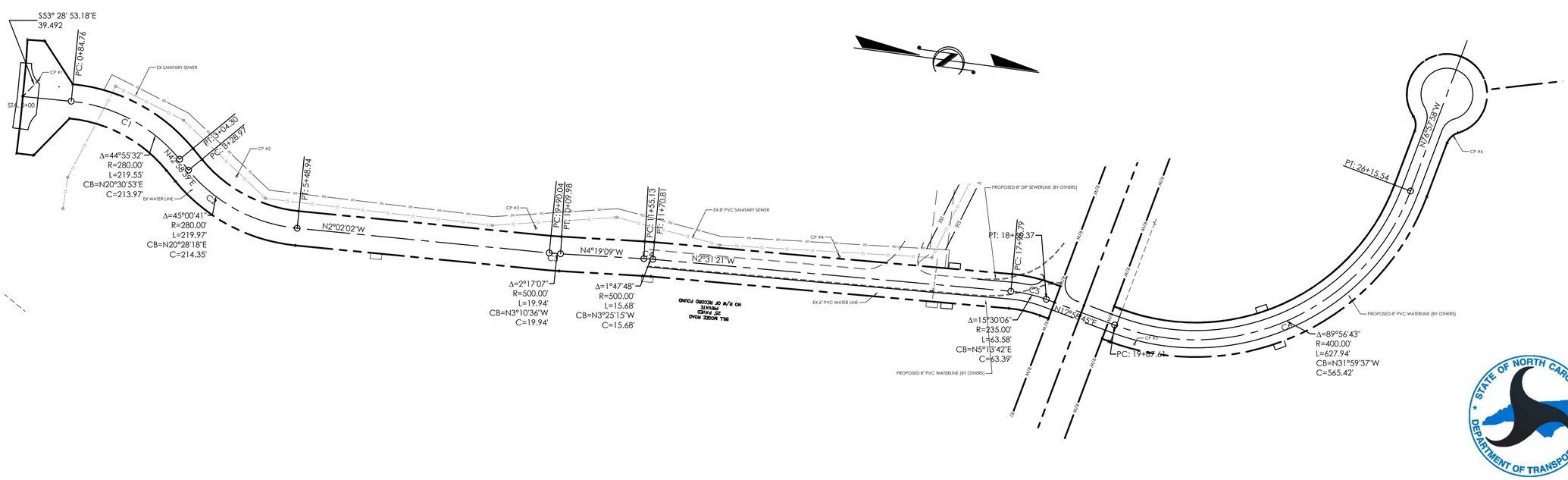
CP #2
ELEVATION: 500.73'
COORDINATES: N540114.67, E1547297.69
STATION: STA. 4+53.93
DESCRIPTION: MAG HUB

CP #3
ELEVATION: 502.02'
COORDINATES: N540643.06, E1547317.82
STATION: STA. 10+12.03
DESCRIPTION: MAG HUB

CP #4
ELEVATION: 506.44'
COORDINATES: N541173.69, E1547296.81
STATION: STA. 15+43.49
DESCRIPTION: MAG HUB

CP #5
ELEVATION: 507.92'
COORDINATES: N541703.05, E1547379.97
STATION: STA. 20+78.66
DESCRIPTION: MAG HUB

CP #6
ELEVATION: 505.60'
COORDINATES: N542205.83, E1546946.92
STATION: STA. 27+80.97
DESCRIPTION: MAG HUB



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	2A-1

ROADWAY DESIGN ENGINEER

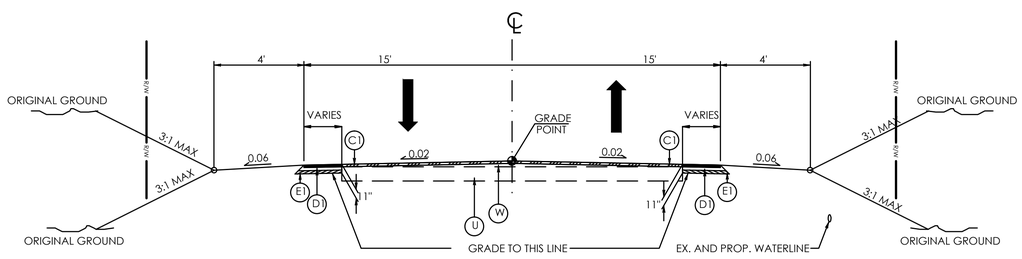
NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

PAVEMENT SCHEDULE
(FINAL)

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	U	EXISTING PAVEMENT.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	V2	MILLING OF EXISTING PAVEMENT, 0" - 3" IN DEPTH (PROFILE MILLING)
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 21/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	X	EXISTING CURB
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		
R1	2'-6" CONCRETE CURB AND GUTTER.		
T	EARTH MATERIAL.		

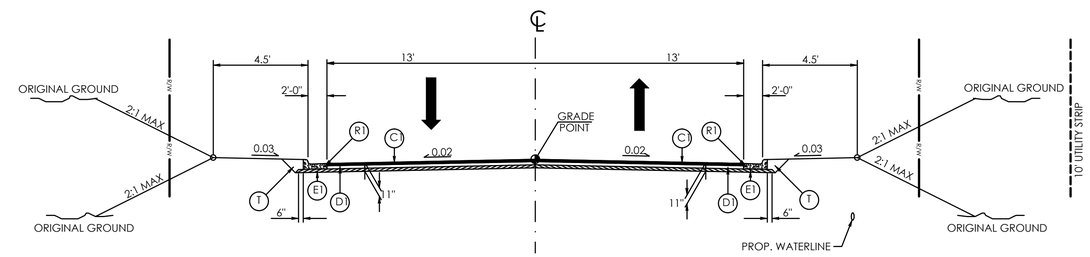
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

FROM STA 0+00 TO 12+11.80

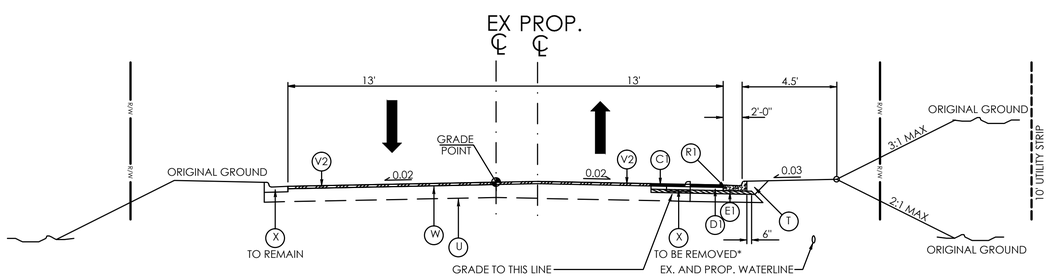
-L-



TYPICAL SECTION NO. 3

FROM STA 17+37.70 TO 27+87.80

-L-

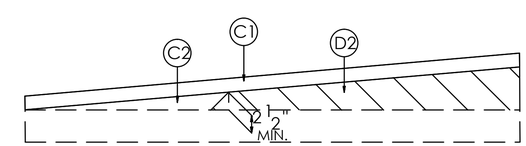


TYPICAL SECTION NO. 2

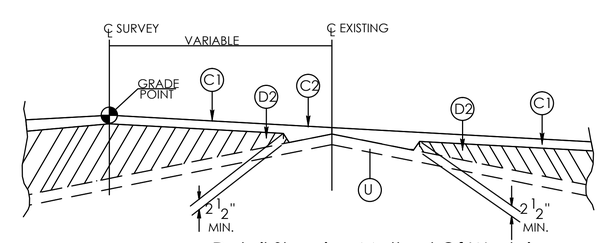
FROM STA 12+11.80 TO 17+37.70

-L-

*NOTE: SAWCUT EXISTING EDGE OF PAVEMENT ON ALL WIDENING. SAWCUT EXISTING PAVEMENT 12" FROM CURB & GUTTER



Wedging Detail For Resurfacing



Detail Showing Method Of Wedging

COMPUTED BY:_____ DATE:_____
CHECKED BY:_____ DATE:_____

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
0+00	12+11.80	654	480	0	174
12+11.80	17+37.70	16	78	62	0
17+37.70	27+87.80	1332	839	0	493
SUBTOTALS:					
SUBTOTALS:					
SUBTOTALS:					
SUBTOTALS:					
PROJECT TOTALS:		2002	1397	62	667
GRAND TOTALS:		2002	1397	0	605
SAY:		2100	1450	0	650

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/ RT/ CL	YD^2
-L-	10+27	11+45	RT	258.58
-L-	10+27	11+45	LT	200.35
-L-	17+36.68	18+83.32	CL	668.14
			TOTAL:	1127.07
			SAY:	1130

COMPUTED BY:	DATE:
CHECKED BY:	DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	3D-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	CLASS III R.C. PIPE ELLIPTICAL (UNLESS NOTED OTHERWISE) 30"x19"	CLASS III R.C. PIPE OR ALUMINIZED C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
16+59.25	LT	PROP CB-A2		504.04																											1			1																	
		PROP CB-A2	PROP CB-A1		498.99	498.82	0.60				30																																								
16+59.25	RT	PROP CB-A1		503.55																										1				1																	
		PROP CB-A1	PROP CB-A		498.62	498.44	0.60				29																																								
16+95.36	LT	EX RISER		505.33																																															
		EX RISER	PROP CB-A		498.46	498.44	1.17									47																																			
16+87.71	RT	PROP CB-A		503.66																										1						1															
MODIFIED		PROP CB-A	EX HW3		498.24	498.09	1.04																																												
16+87.05	RT	EX HW3		501.54																																															
18+94.70	CL																																																		
19+37.73	CL																																																		
22+60.70	LT	PROP HWA		498.60																								0.818																							
		PROP HWA	PROP CB-B		494.85	494.70	0.75				20																																								
22+75.75	LT	PROP CB-B		501.54																											1			1																	
		PROP CB-B	PROP CB-C		494.65	494.50	0.50				30																																								
22+75.75	RT	PROP CB-C		501.54																											1			1																	
		PROP CB-C	PROP HW B		494.40	494.30	0.52				20																																								
22+67.57	RT	PROP HW B		496.44																								0.818																							

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.)	GRATED DROP INLET (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

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"	BITUMINOUS COATED C.S. PIPE TYPE B 54" .109	54" .138	54" .168	54" SHOP ELONGATED .138	54" SHOP ELONGATED .168	60" .138	60" .168	66" .138	66" .168	72" .138	72" .168	STRUCTURAL PLATE PIPE 60" 12	60" 10	66" 12	66" 10	72" 12	72" 10	REINFORCED ENDWALLS WITH R.C. - C.Y.	WITH C.S. - C.Y.	MASONRY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN.FT.	REMARKS

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.)	GRATED DROP INLET (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

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NOTES: ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED

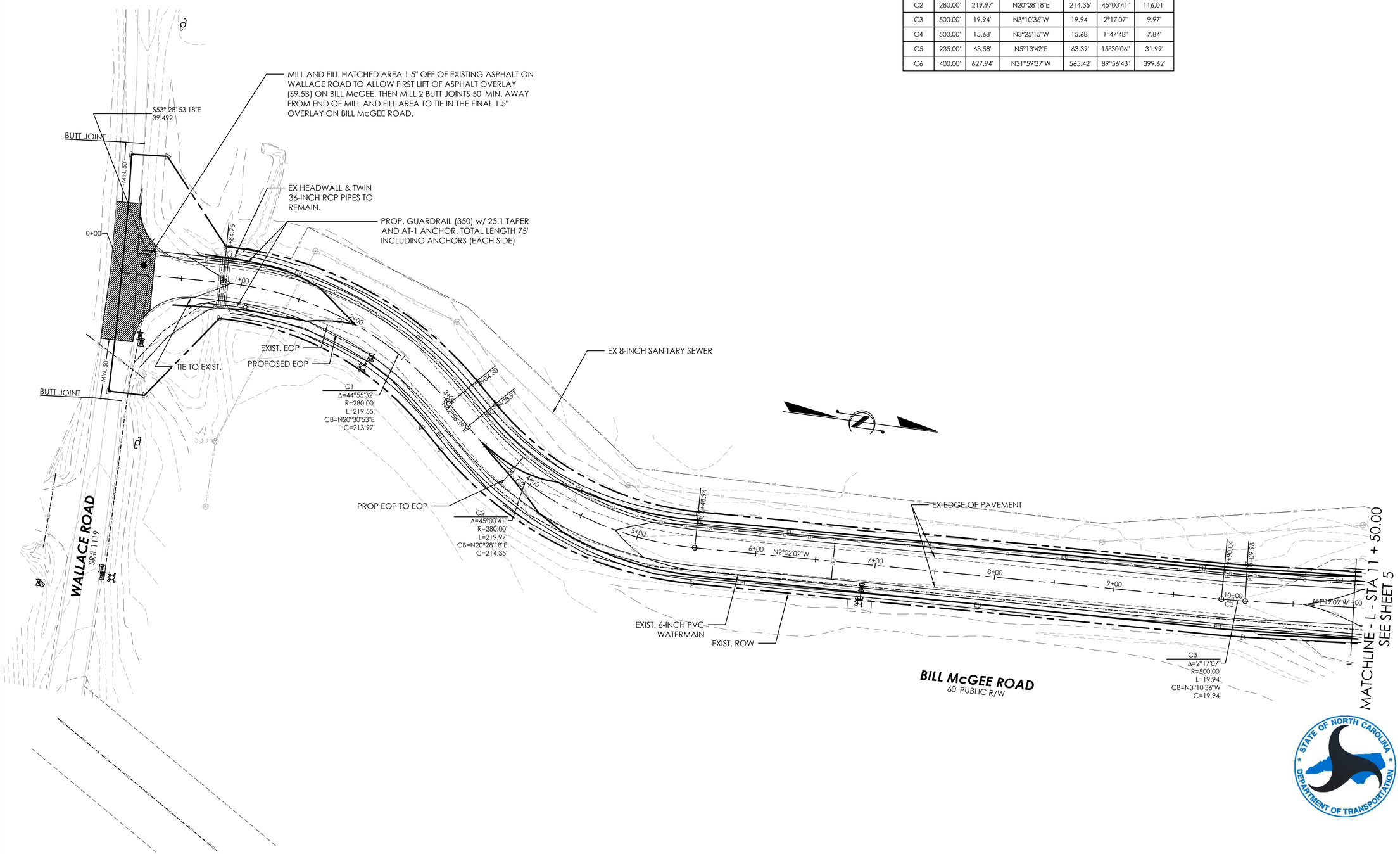
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	280.00'	219.55'	N20°30'53"E	213.97'	44°55'32"	115.77'
C2	280.00'	219.97'	N20°28'18"E	214.35'	45°00'41"	116.01'
C3	500.00'	19.94'	N3°10'36"W	19.94'	2°17'07"	9.97'
C4	500.00'	15.68'	N3°25'15"W	15.68'	1°47'48"	7.84'
C5	235.00'	63.58'	N5°13'42"E	63.39'	15°30'06"	31.99'
C6	400.00'	627.94'	N31°59'37"W	565.42'	89°56'43"	399.62'



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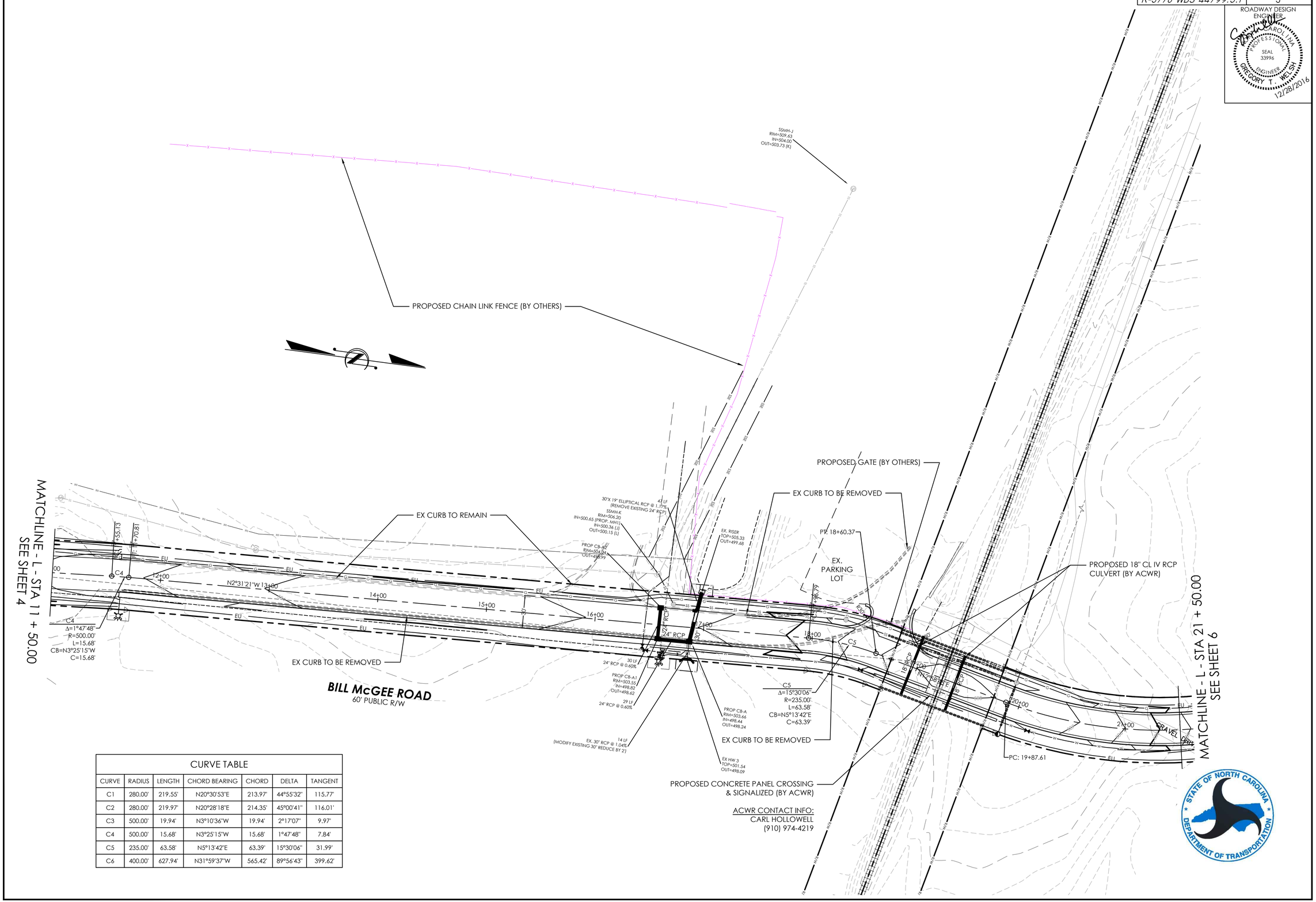
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016



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PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
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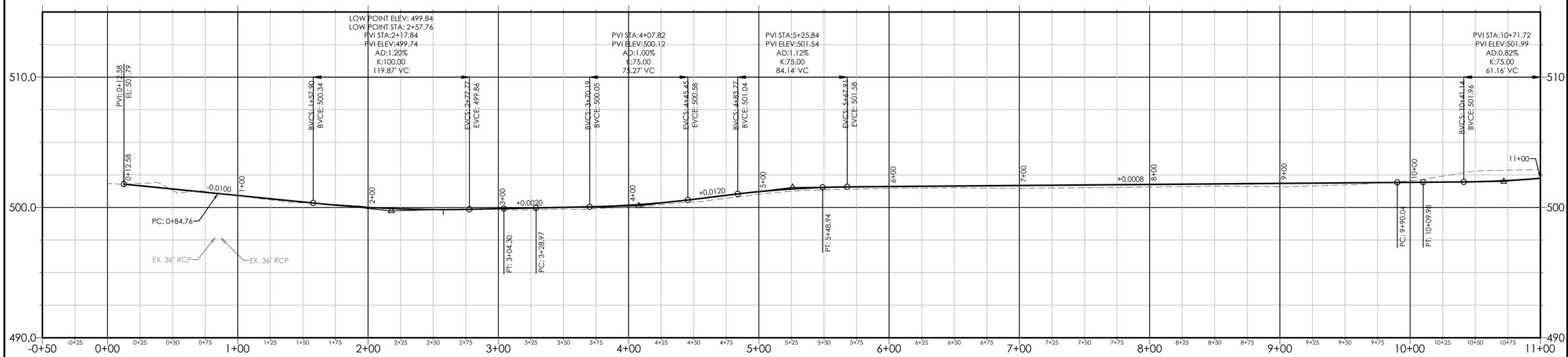
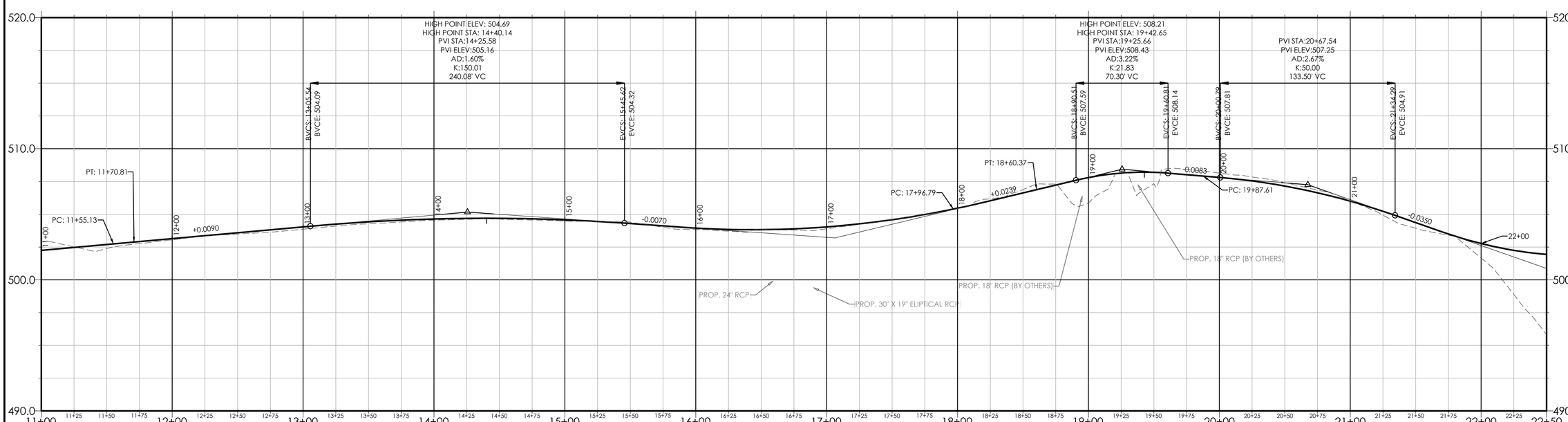
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	7

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016



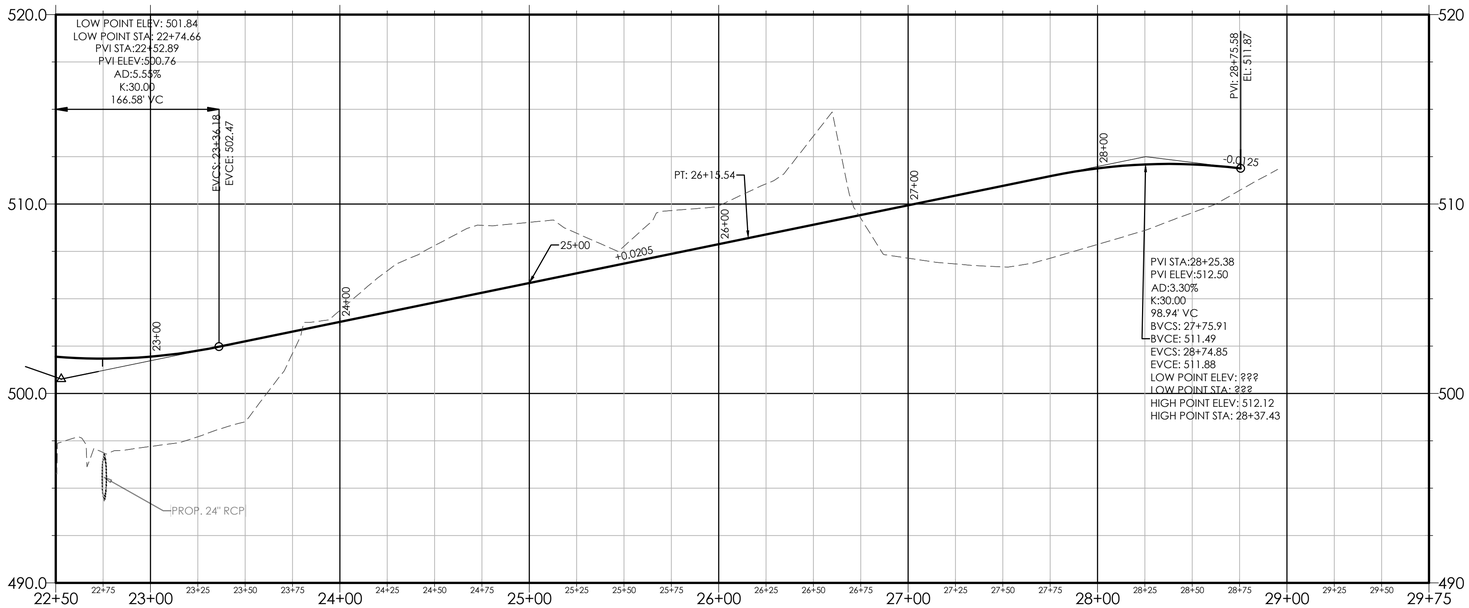


NOTES: ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	8

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016



PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	TMP-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

TRAFFIC CONTROL GENERAL NOTES AND PHASING NOTES

TRAFFIC CONTROL GENERAL NOTES:

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A. DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS SUCH AS NEW YEARS, EASTER, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING AND CHRISTMAS. DO NOT CLOSE OR NARROW TRAVEL LANES BETWEEN 7:00AM THE DAY BEFORE THE HOLIDAY TO 6:00 PM THE DAY AFTER THE HOLIDAY .

LANE AND SHOULDER CLOSURE REQUIREMENTS

B. REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

C. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

D. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F. DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

G. BACKFILL AT 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45

TRAFFIC CONTROL GENERAL NOTES (CONTINUED):

MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF LESS THEN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

H. DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS(W8-11) 100' IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

I. NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

J. INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

K. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

L. INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2)AND/OR "BUMP" SIGNS (W8-1) 100' IN ADVANCE OF THE UNEVEN AREAS, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

M. WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK ARES NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

N. PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

O. PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

P. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

Q. REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

R. LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

S. ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

TRAFFIC CONTROL GENERAL NOTES (CONTINUED):

TRAFFIC CONTROL PHASING

PROJECT WILL BE CONSTRUCTED IN THREE PHASES

MAINTAIN TRAFFIC TO ALL HOMES AND BUSINESSES DURING CONSTRUCTION . RETURN TRAFFIC TO EXISTING PATTERN AT THE END OF EACH DAYS WORK. PROTECT ALL CONSTRUCTION AREAS.

INSTALL ADVANCED WARNING SIGNS IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.01.

CONTRACT: R-5778 WBS 44799.3.1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

LOCATION: BILL McGEE ROAD

PLAN FOR PROPOSED
PAVEMENT MARKING

ROADWAY STANDARD DRAWINGS	
THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. , DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCED HERBY ARE CONSIDERED A PART OF THESE PLANS:	
STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES

INDEX	
SHEET NO.	TITLE
PMP-1	PAVEMENT MARKING COVER SHEET AND PM SCHEDULE
PMP-2	PAVEMENT MARKINGS - INTERSECTIONS
PMP-3	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES

PAVEMENT MAKING SCHEDULE	
SYMBOL	DESCRIPTION
THERMOPLASTIC (24", 120 MILS) T2	WHITE STOP BAR
THERMOPLASTIC (4", 90 MILS) TA	WHITE EDGE LINE
TB	YELLOW EDGE LINE
THERMOPLASTIC (4", 120 MILS) TC	10 FT. WHITE SKIP
TD	3 FT. - 9 FT. /SP WHITE MINI SKIP
TE	WHITE SOLID LANE LINE
TF	10 FT. YELLOW SKIP
TH	YELLOW SINGLE CENTER
TI	YELLOW DOUBLE CENTER
T8	2 FT. - 6 FT. / SP WHITE MINI SKIP
T9	2 FT. - 6 FT. / SP YELLOW MINI SKIP

PAVEMENT MARKING GENERAL NOTES:

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A. INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
BILL McGEE	THERMOPLASTIC	RAISED

B. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT LINES.

C. REMOVE / REPLACE ANY CONFLICT / DAMAGED PAVEMENT MARKINGS AND MARKERS.

D. STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

PREPARED IN THE OFFICE OF:
BURTON ENGINEERING ASSOCIATES
CIVIL ENGINEERS
LAND PLANNERS
5950 Fairview Rd. •Suite 100 •Charlotte, NC 28210
(704) 553-8881 • Fax (704) 553-8860
Firm License #1557

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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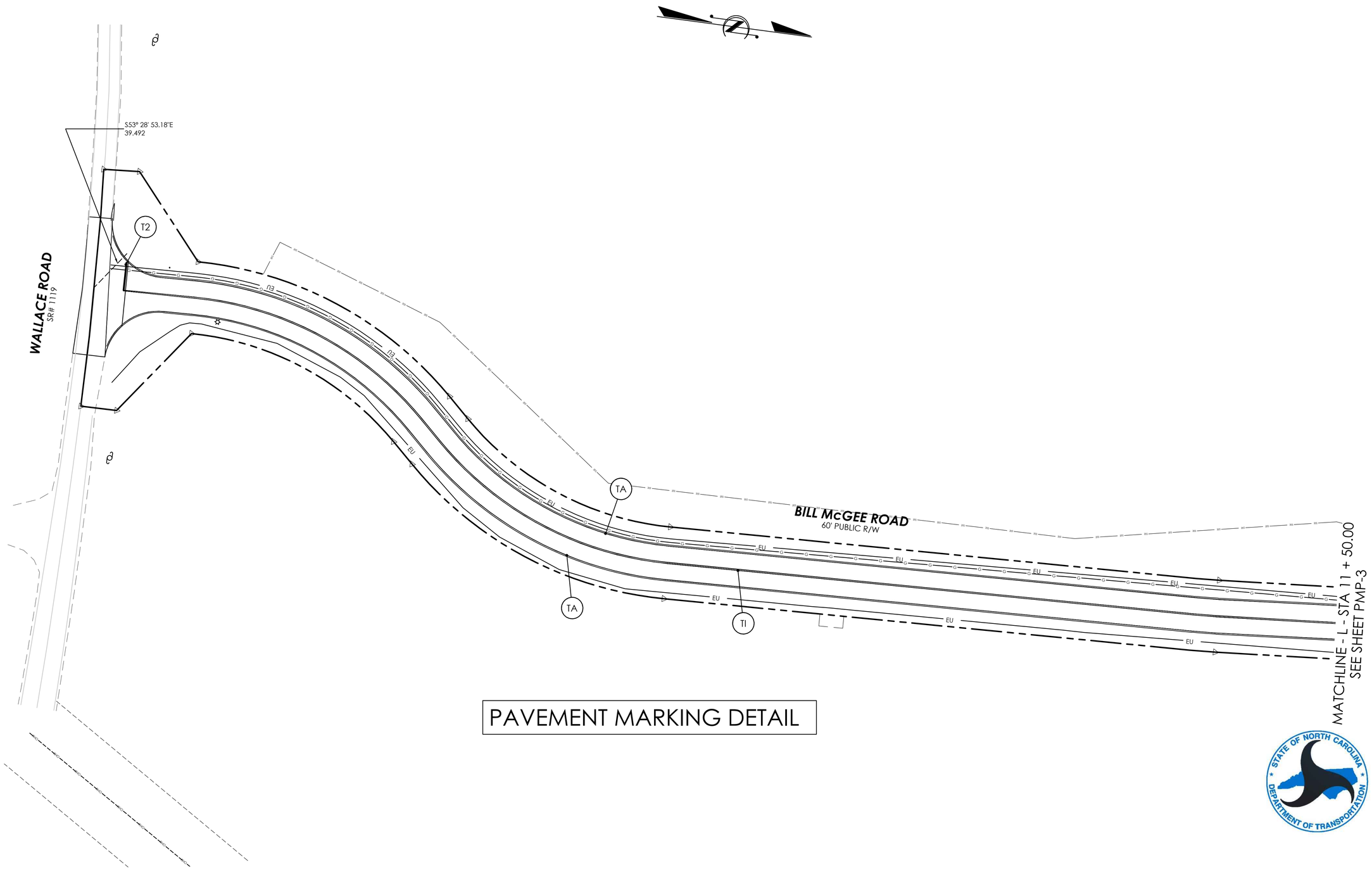
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	PMP-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016



PAVEMENT MARKING DETAIL

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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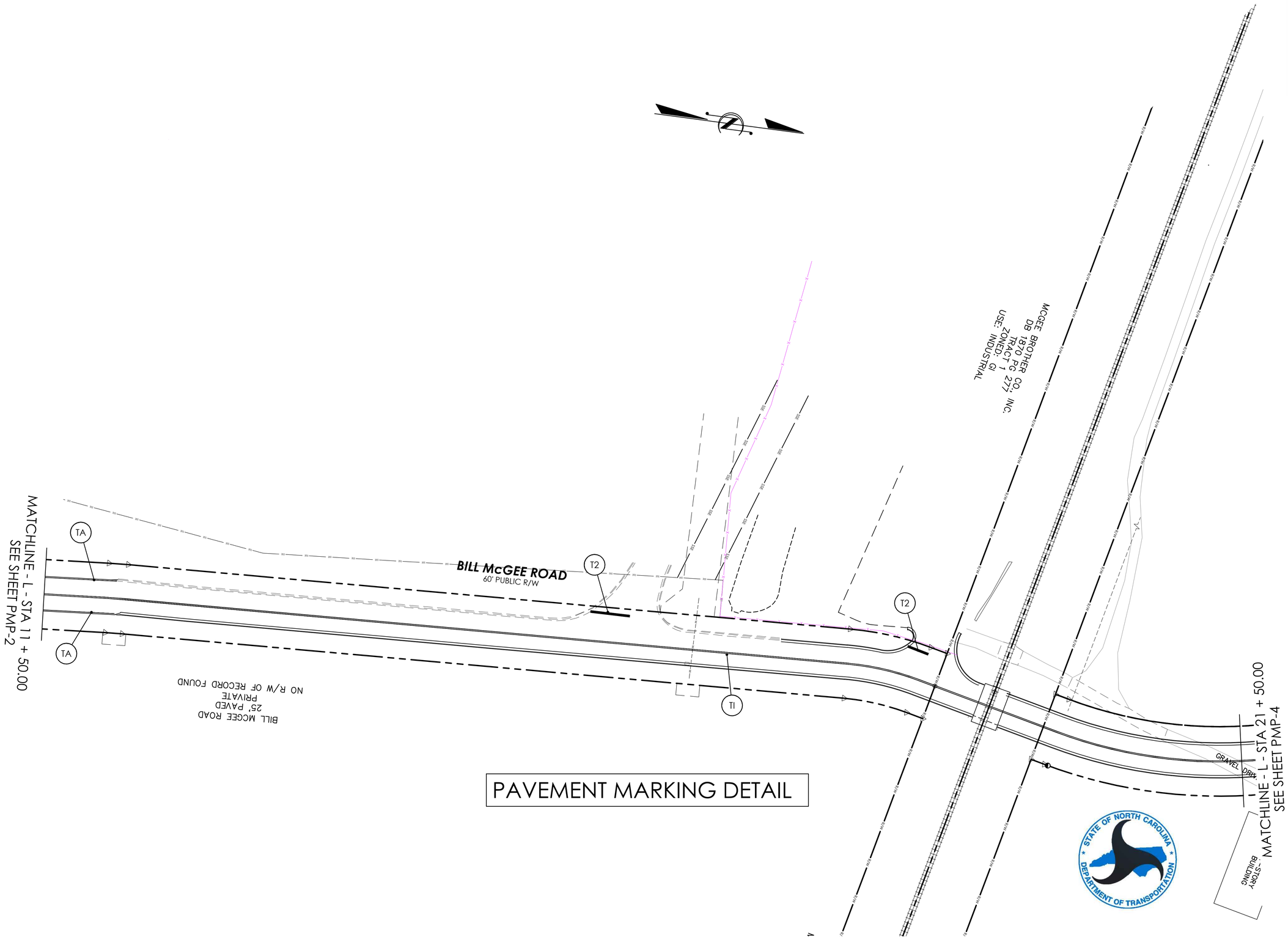
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	PMP-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016



PAVEMENT MARKING DETAIL

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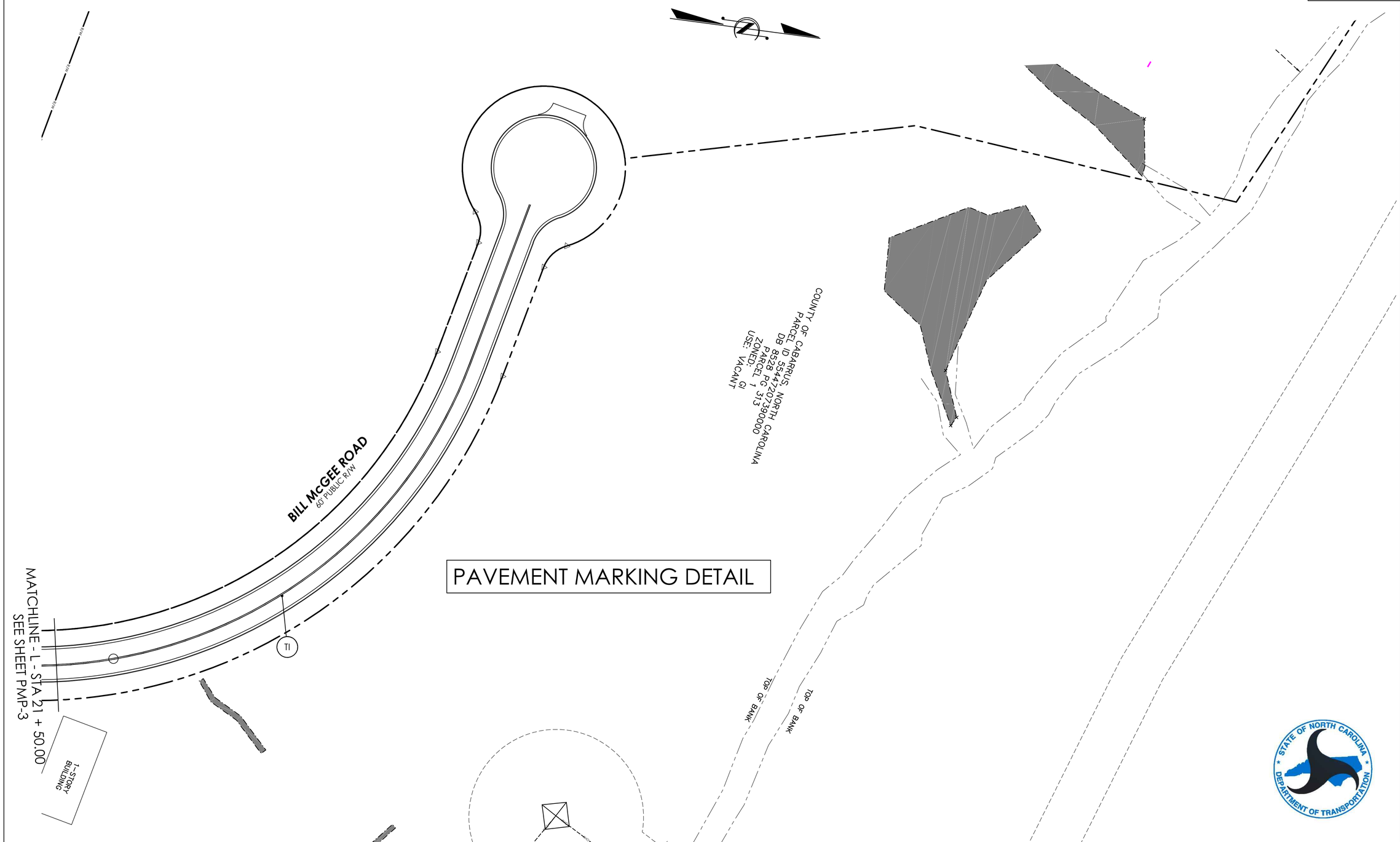
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	PMP-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016



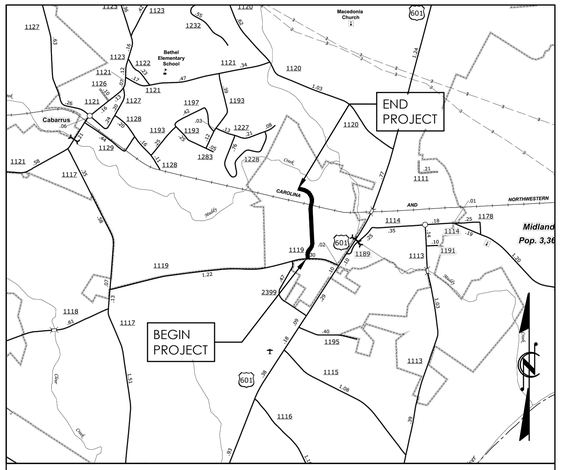
PAVEMENT MARKING DETAIL

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	EC-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016

SEE SHEET 1A FOR INDEX OF SHEETS
SEE SHEET 1B FOR CONVENTIONAL SHEET SYBMOLS



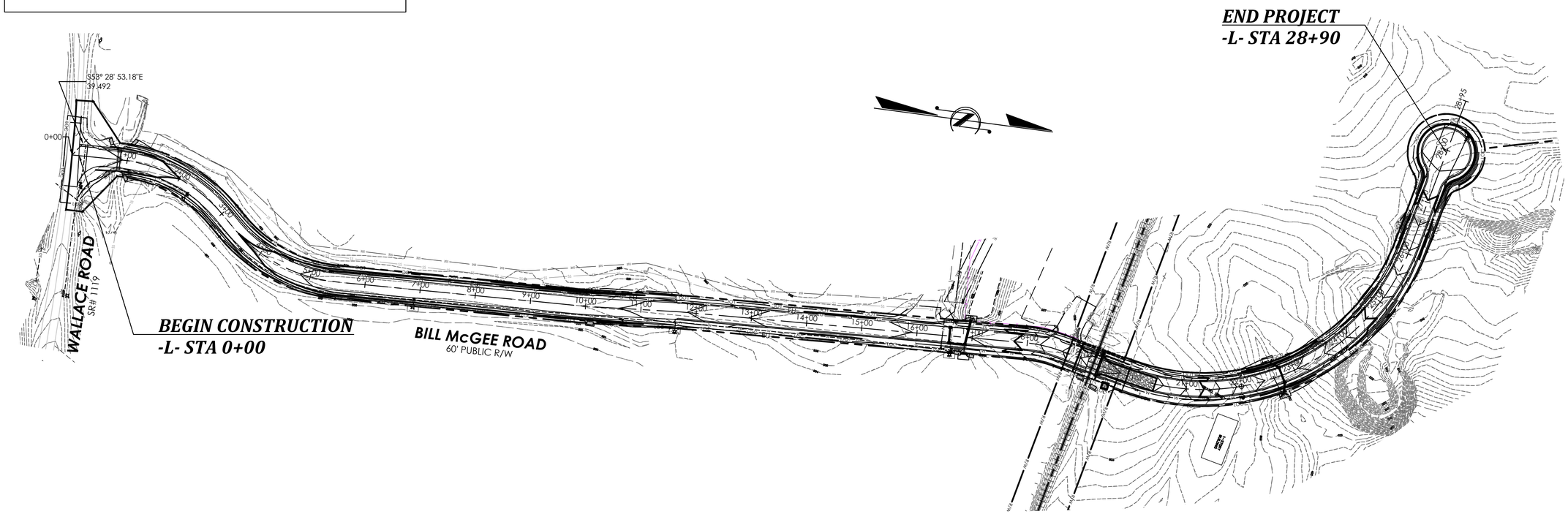
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

LOCATION: BILL McGEE ROAD

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



CONTRACT: R-5778 WBS 44799.3.1

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 = 00
ADT 2035 = 00
K = 0%
D = 0%
T = 0%
V = 0 MPH
* TTST = 0% DUAL N/A
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT WBS - 44799.3.1 = 0.557 mi.
LENGTH STRUCTURE TIP PROJECT WBS - 44799.3.1 = 0.000 mi.
TOTAL LENGTH TIP PROJECT WBS - 44799.3.1 = 0.557 mi.

PREPARED IN THE OFFICE OF:
BURTON ENGINEERING ASSOCIATES
CIVIL ENGINEERS
LAND PLANNERS
5950 Fairview Rd. •Suite 100 •Charlotte, NC 28210
(704) 553-8881 • Fax (704) 553-8860
Firm License # 1557

RIGHT OF WAY DATE:

LETTING DATE:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	EC-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

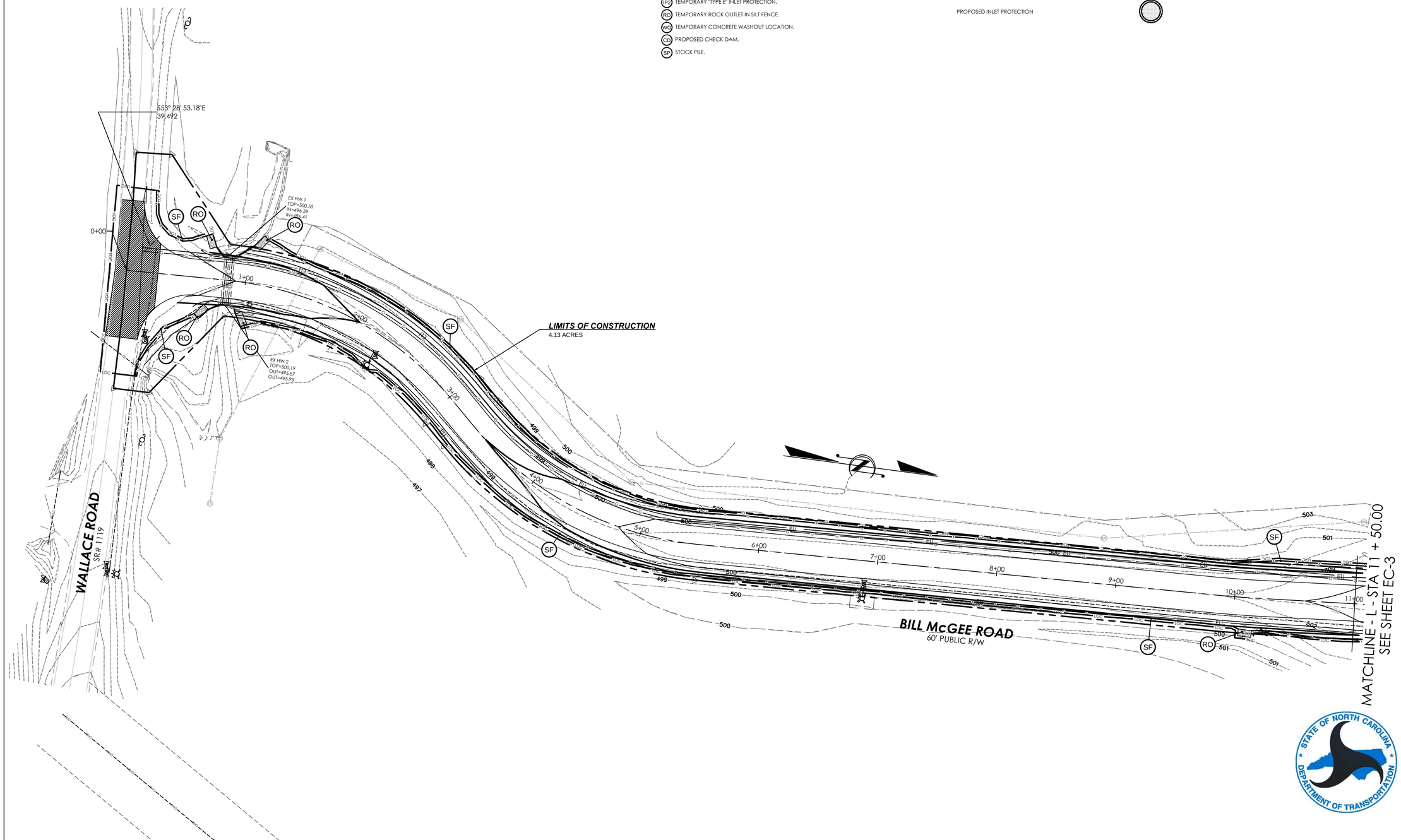
12/28/2016

EROSION CONTROL KEYS

- (CE) TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
- (OP) **PERMANENT** RIP RAP APRON.
- (PB) TEMPORARY POROUS BAFFLES IN SKIMMER BASIN.
- (SF) TEMPORARY SILT FENCING.
- (SF2) TEMPORARY DOUBLE ROW OF SILT FENCE.
- (SK) FAIRCLOTH SKIMMER (OR APPROVED EQUAL).
- (CW) CLEAN WATER DIVERSION DITCH.
- (SD) TEMPORARY SLOPE DRAIN (IF APPLICABLE).
- (IP1) TEMPORARY "TYPE B" INLET PROTECTION.
- (IP2) TEMPORARY "TYPE E" INLET PROTECTION.
- (RO) TEMPORARY ROCK OUTLET IN SILT FENCE.
- (WO) TEMPORARY CONCRETE WASHOUT LOCATION.
- (CD) PROPOSED CHECK DAM.
- (SP) STOCK PILE.

EROSION CONTROL LEGEND

- EXISTING CONTOUR — 100
- PROPOSED CONTOUR — 100
- PROPOSED LIMITS OF CONSTRUCTION — LOC
- PROPOSED SILT FENCE — X
- PROPOSED SPECIAL SILT FENCE — SSF
- PROPOSED DIVERSION DITCH
- PROPOSED POROUS BAFFLE — PB
- PROPOSED RIPRAP APRON
- PROPOSED INLET PROTECTION



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	EC-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

EROSION CONTROL KEYS

- CE TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
- OP **PERMANENT** RIP RAP APRON.
- PB TEMPORARY POROUS BAFFLES IN SKIMMER BASIN.
- SF TEMPORARY SILT FENCING.
- SF2 TEMPORARY DOUBLE ROW OF SILT FENCE.
- SK FAIRCLOTH SKIMMER (OR APPROVED EQUAL).
- CW CLEAN WATER DIVERSION DITCH.
- SD TEMPORARY SLOPE DRAIN (IF APPLICABLE).
- IP1 TEMPORARY "TYPE B" INLET PROTECTION.
- IP2 TEMPORARY "TYPE E" INLET PROTECTION.
- RO TEMPORARY ROCK OUTLET IN SILT FENCE.
- WO TEMPORARY CONCRETE WASHOUT LOCATION.
- CD PROPOSED CHECK DAM.
- SP STOCK PILE.

EROSION CONTROL LEGEND

- EXISTING CONTOUR — 100
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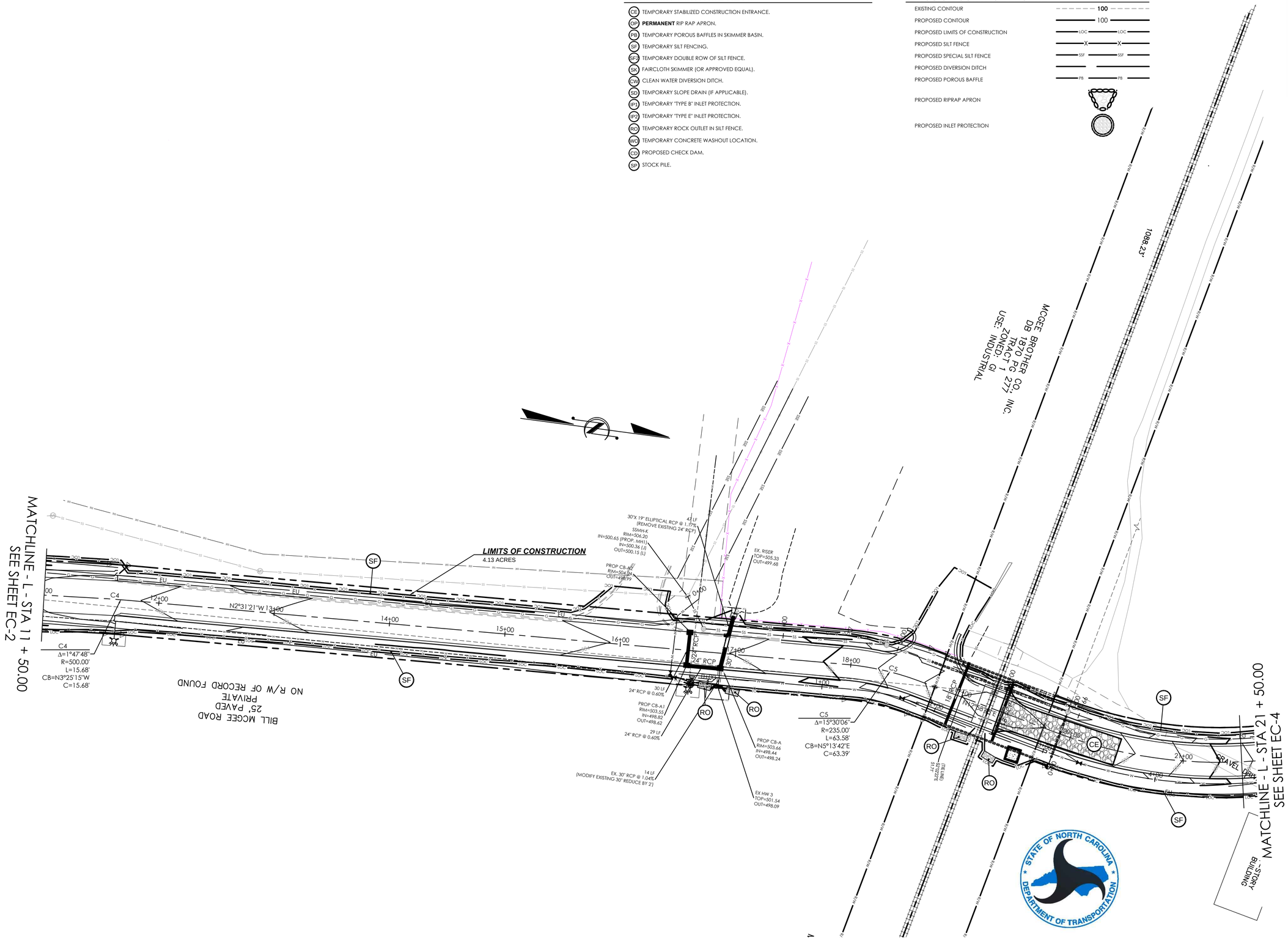


NOTES: ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	EC-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

EROSION CONTROL KEYS

- CE TEMPORARY STABILIZED CONSTRUCTION ENTRANCE.
- OP **PERMANENT** RIP RAP APRON.
- PB TEMPORARY POROUS BAFFLES IN SKIMMER BASIN.
- SF TEMPORARY SILT FENCING.
- SF2 TEMPORARY DOUBLE ROW OF SILT FENCE.
- SK FAIRCLOTH SKIMMER (OR APPROVED EQUAL).
- CW CLEAN WATER DIVERSION DITCH.
- SD TEMPORARY SLOPE DRAIN (IF APPLICABLE).
- IP1 TEMPORARY "TYPE B" INLET PROTECTION.
- IP2 TEMPORARY "TYPE E" INLET PROTECTION.
- RO TEMPORARY ROCK OUTLET IN SILT FENCE.
- WO TEMPORARY CONCRETE WASHOUT LOCATION.
- CD PROPOSED CHECK DAM.
- SP STOCK PILE.

EROSION CONTROL LEGEND

EXISTING CONTOUR	100
PROPOSED CONTOUR	100
PROPOSED LIMITS OF CONSTRUCTION	LOC LOC
PROPOSED SILT FENCE	X X
PROPOSED SPECIAL SILT FENCE	SSF SSF
PROPOSED DIVERSION DITCH	
PROPOSED POROUS BAFFLE	PB PB
PROPOSED RIPRAP APRON	
PROPOSED INLET PROTECTION	

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UB0-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016

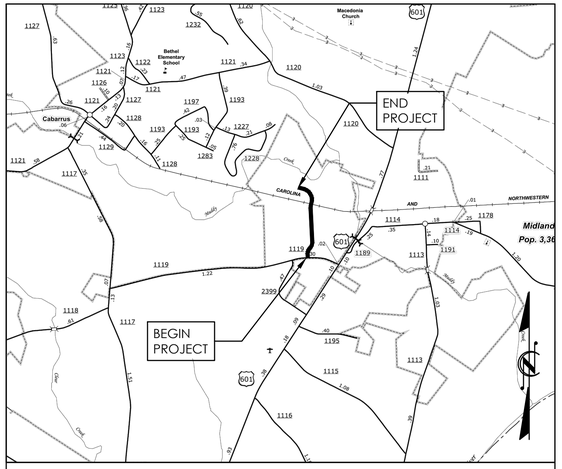
SEE SHEET 1A FOR INDEX OF SHEETS
SEE SHEET 1B FOR CONVENTIONAL SHEET SYBMOLS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

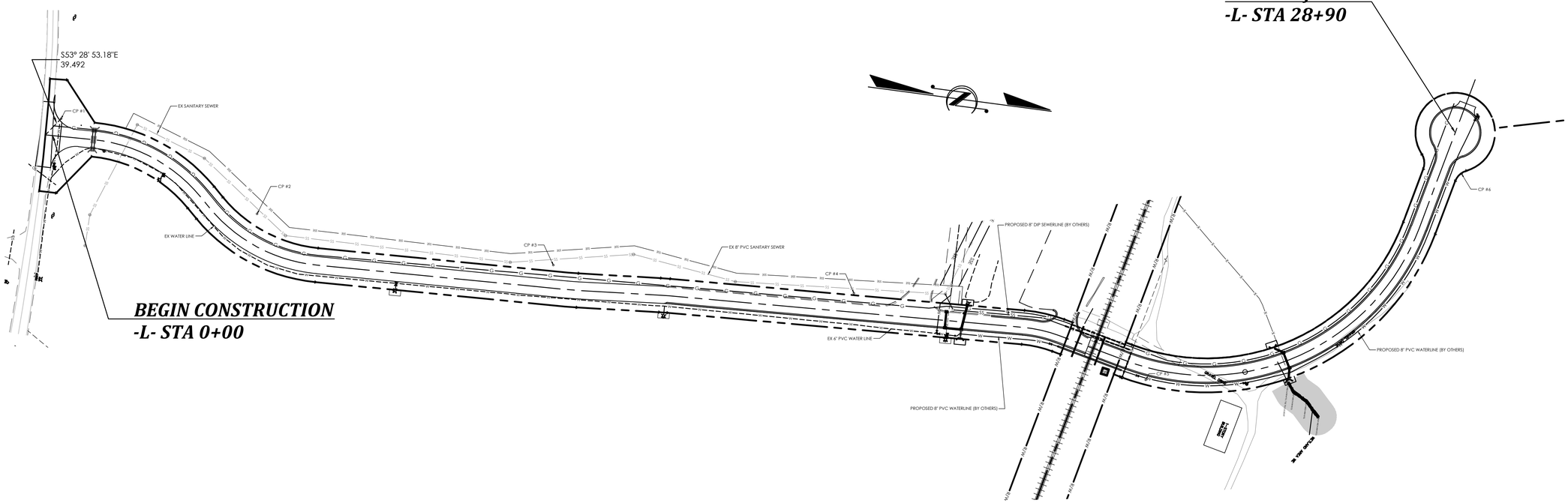
CABARRUS COUNTY

LOCATION: BILL McGEE ROAD

UTILITY CONSTRUCTION PLANS
BILL McGEE ROAD



VICINITY MAP



CONTRACT: R-5778 WBS 44799.3.1

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 = 00
ADT 2035 = 00
K = 0%
D = 0%
T = 0%
V = 0 MPH
* TTST = 0% DUAL N/A
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT WBS - 44799.3.1 = 0.557 mi.
LENGTH STRUCTURE TIP PROJECT WBS - 44799.3.1 = 0.000 mi.
TOTAL LENGTH TIP PROJECT WBS - 44799.3.1 = 0.557 mi.

PREPARED IN THE OFFICE OF:
BURTON ENGINEERING ASSOCIATES
CIVIL ENGINEERS
LAND PLANNERS
5950 Fairview Rd. •Suite 100 •Charlotte, NC 28210
(704) 553-8881 • Fax (704) 553-8860
Firm License # 1557

RIGHT OF WAY DATE:

LETTING DATE:

PROJECT ENGINEER

PROJECT DESIGN ENGINEER

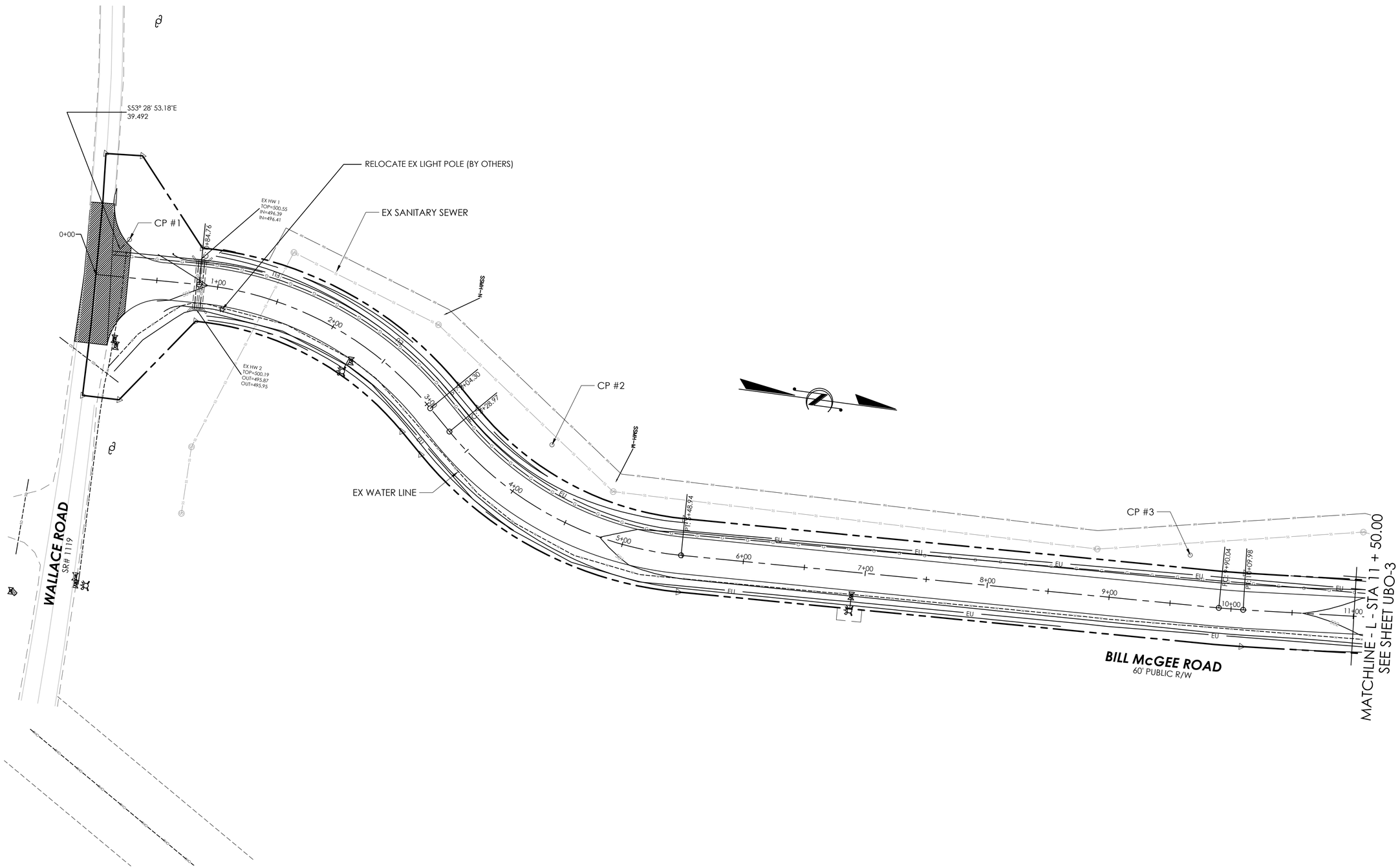
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UBO-2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

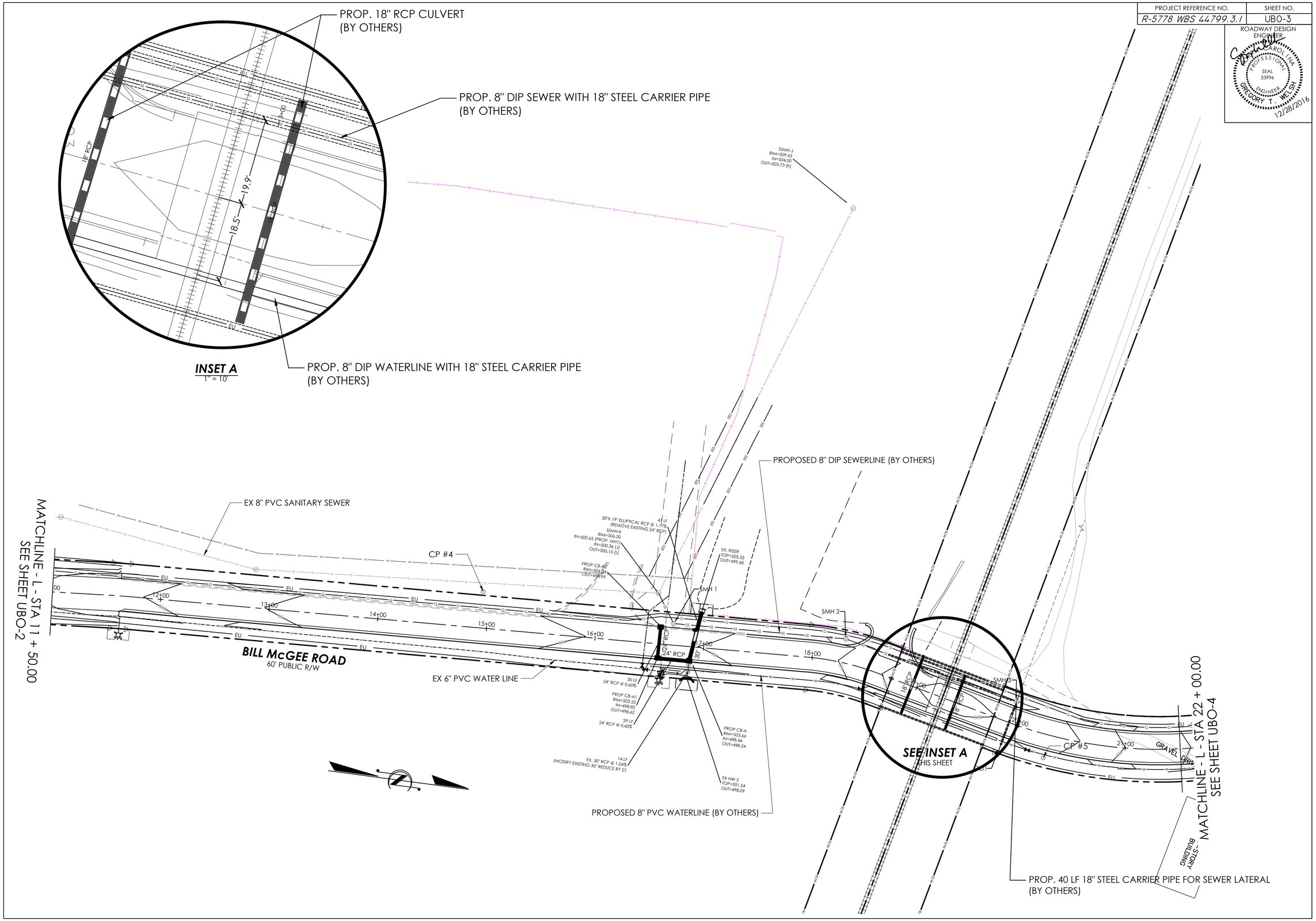
12/28/2016



PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UBO-3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016



PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UBO-4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016

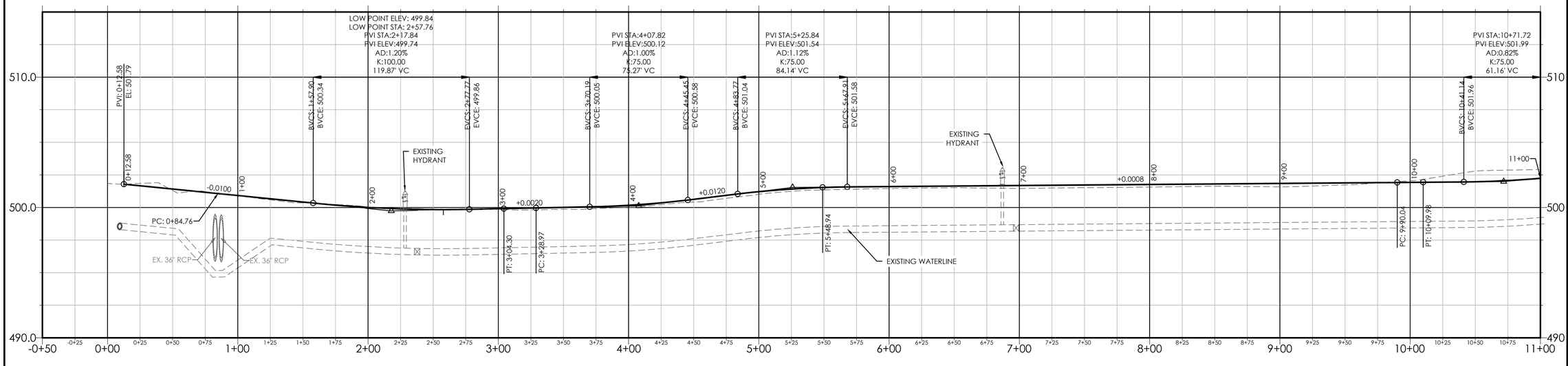
NOTES: ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED

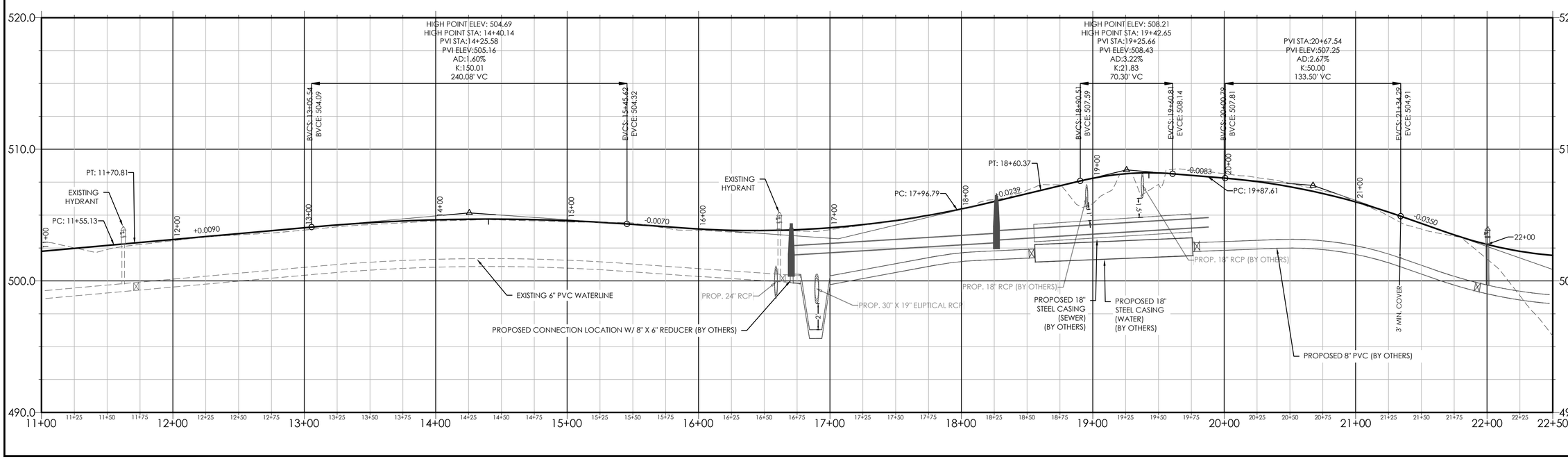
PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UB0-5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH

12/28/2016



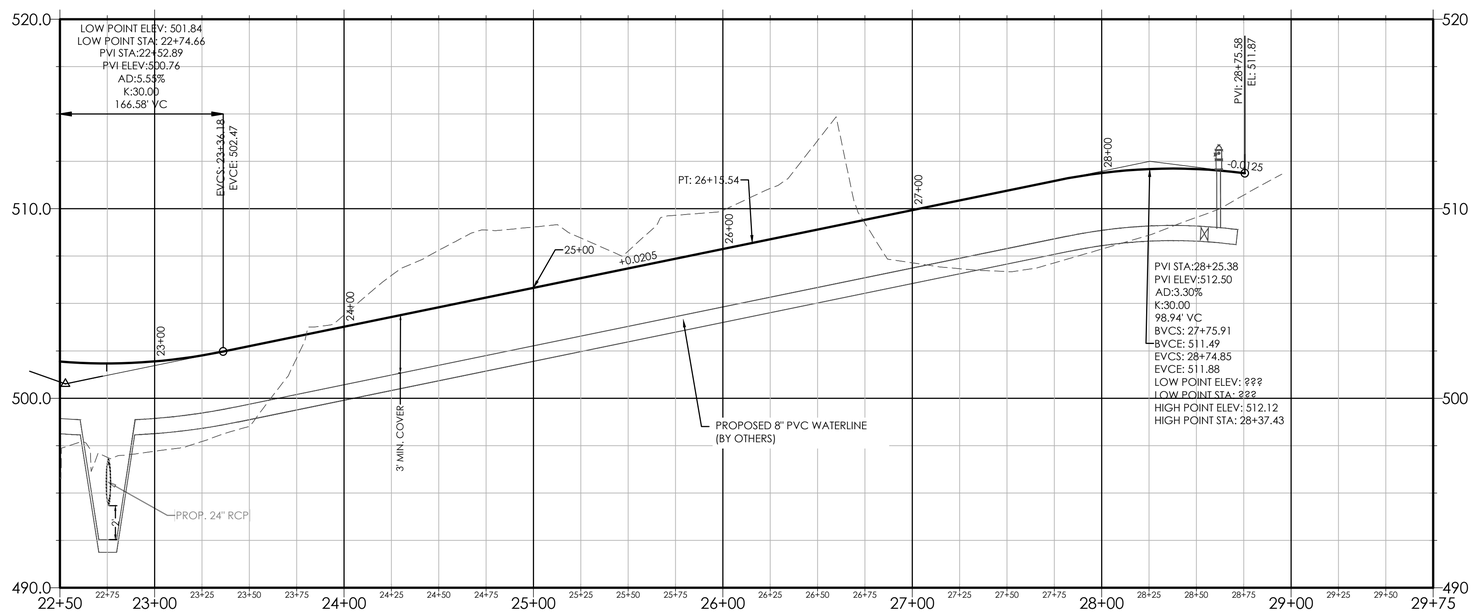


NOTES: ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	UB0-6

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33996 ENGINEER GREGORY T. WELSH 12/28/2016



PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-1

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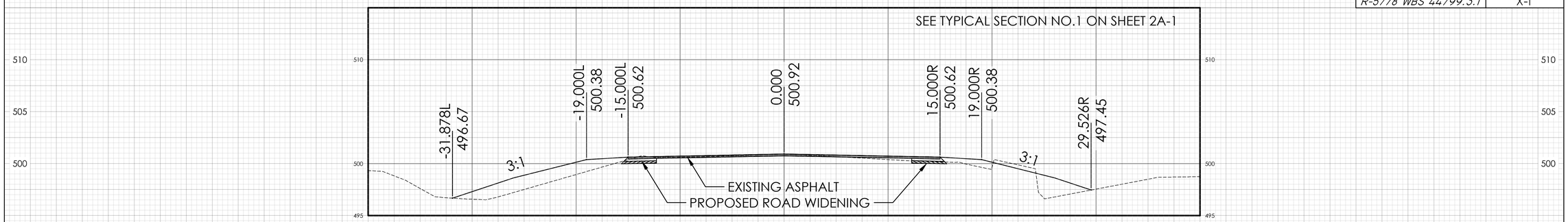

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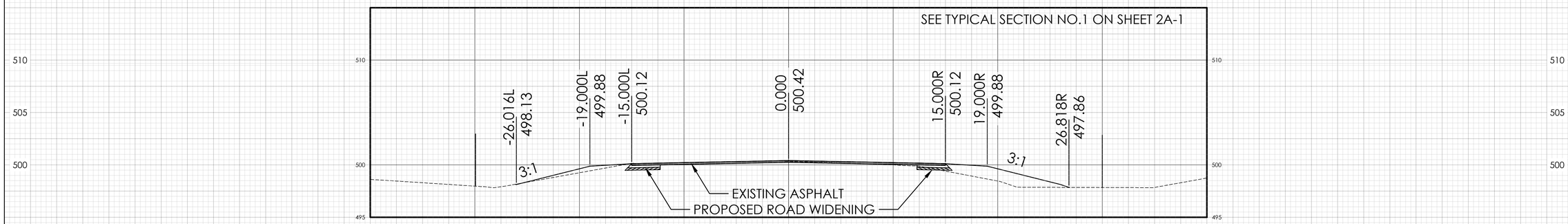

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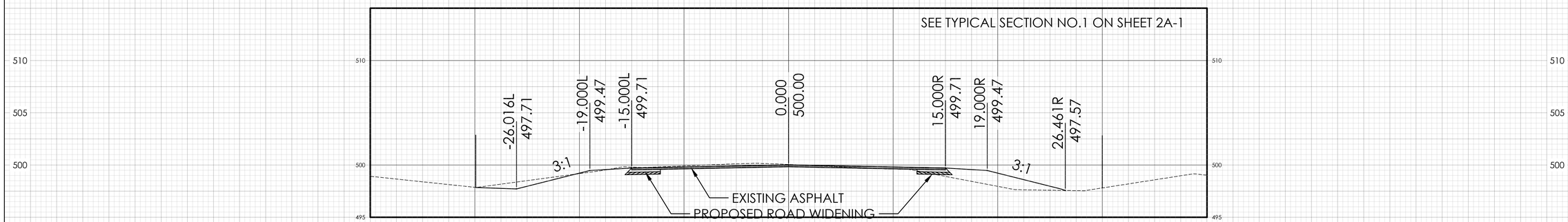

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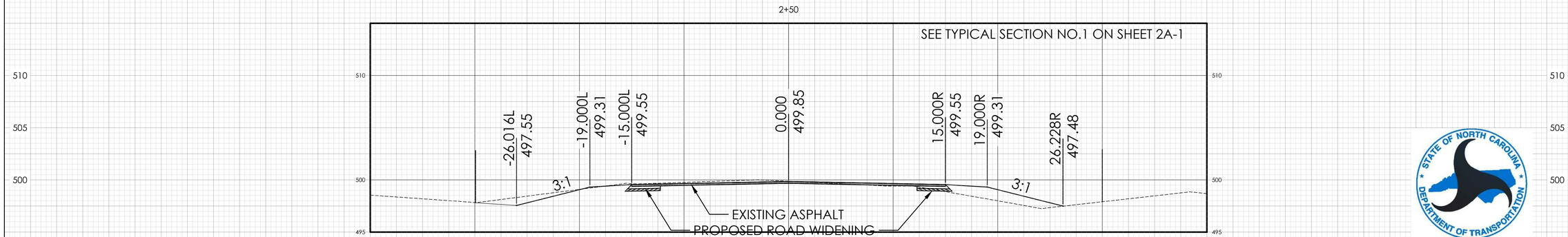

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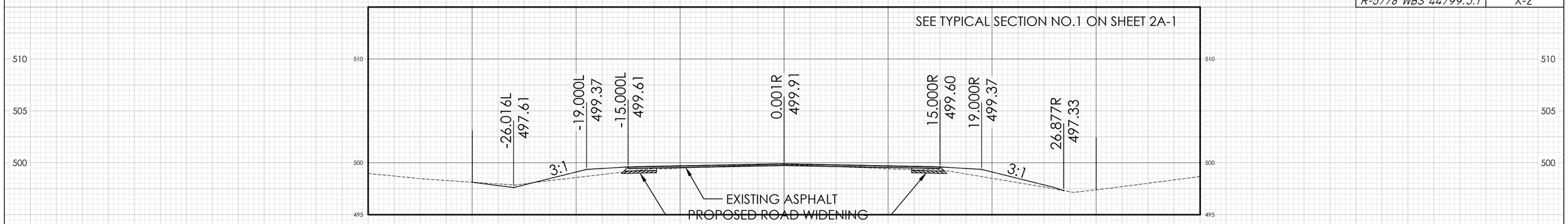
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-2

3+00



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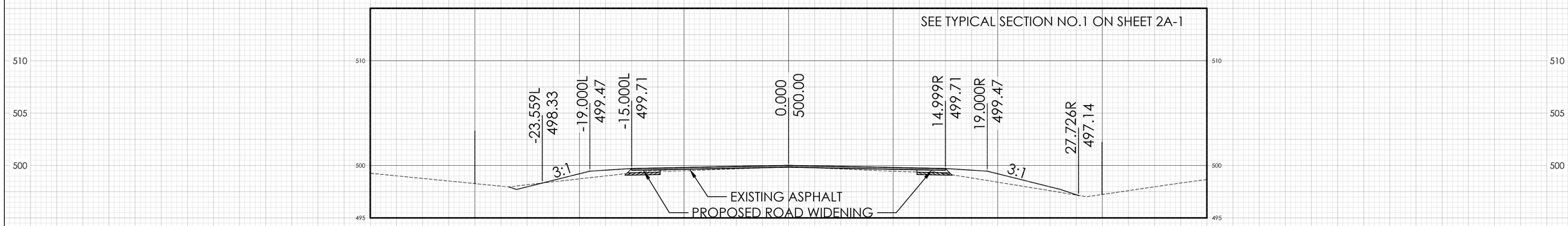

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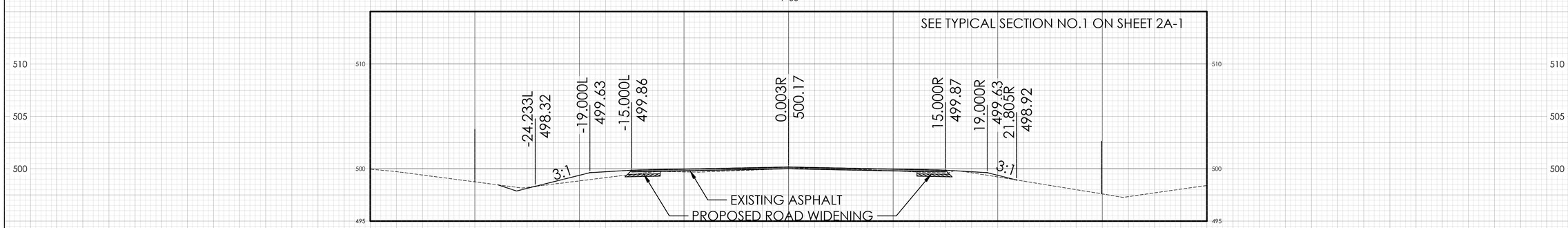

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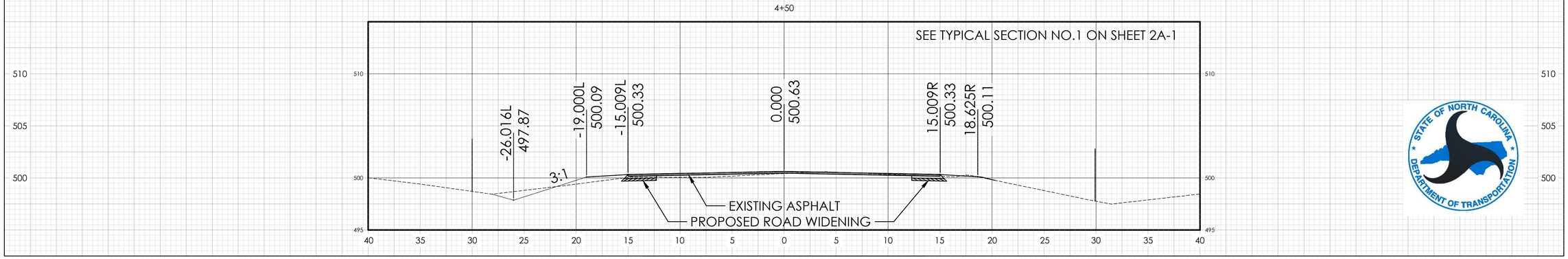
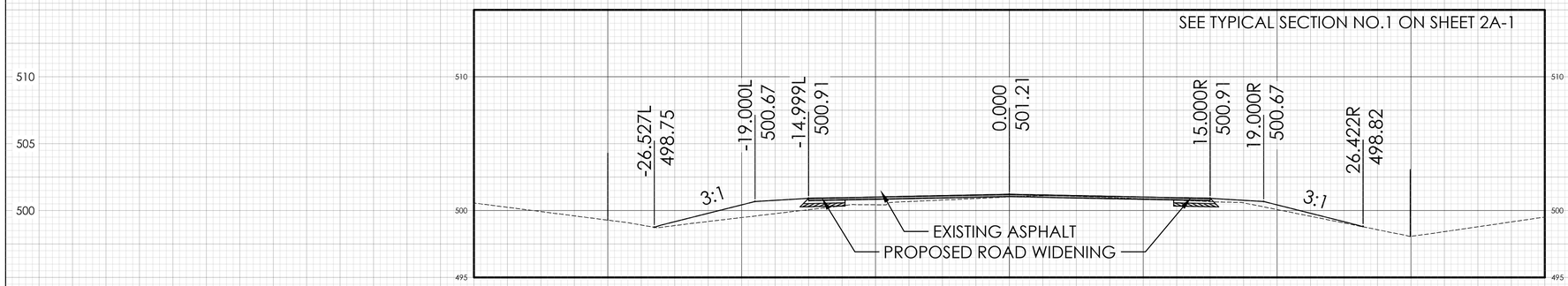


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-3

5+00



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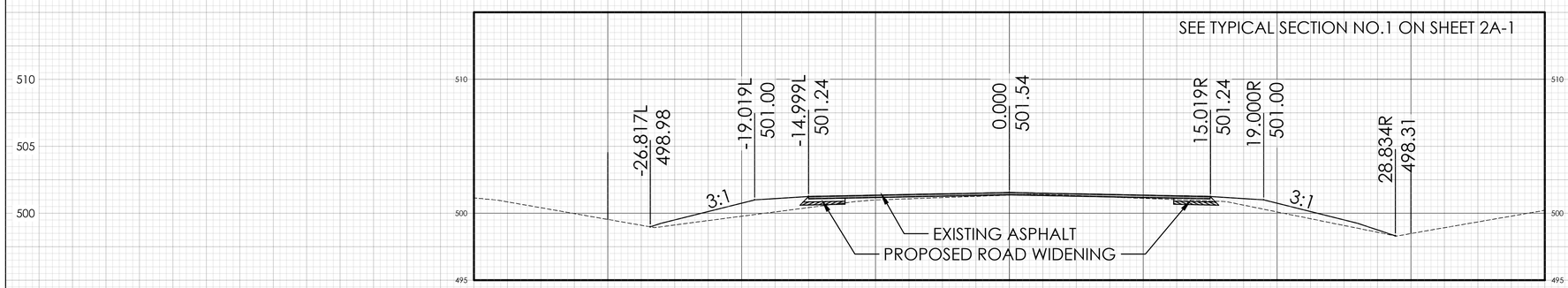

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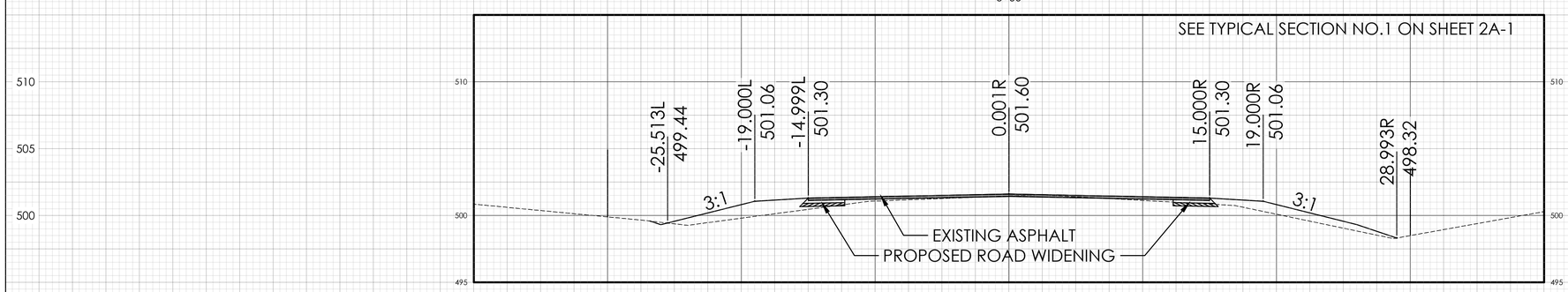

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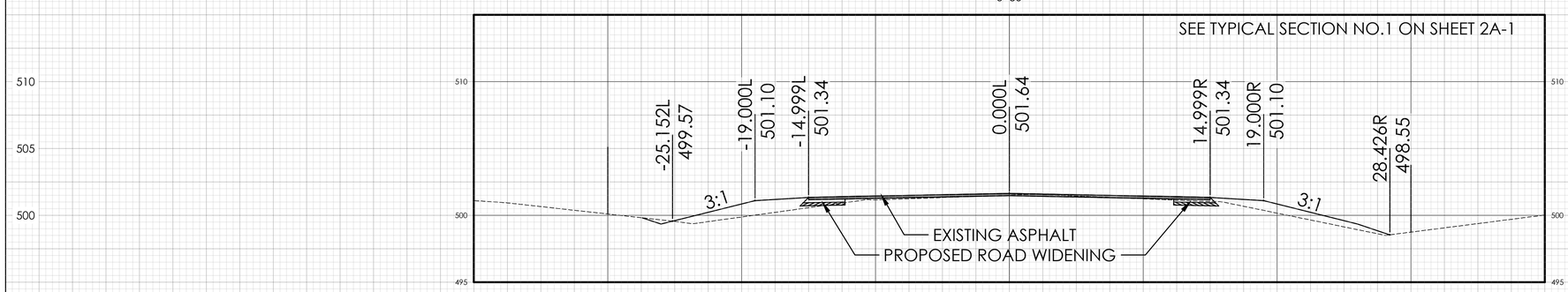

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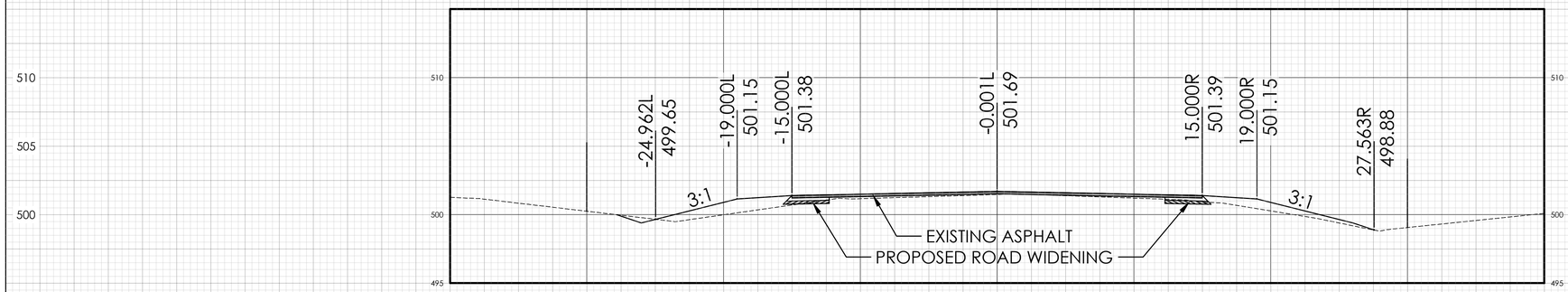
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-4

7+00

SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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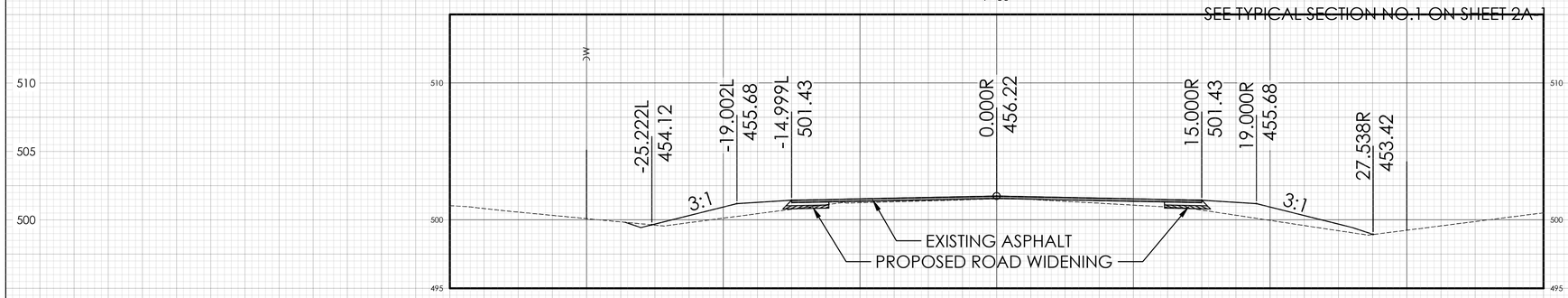
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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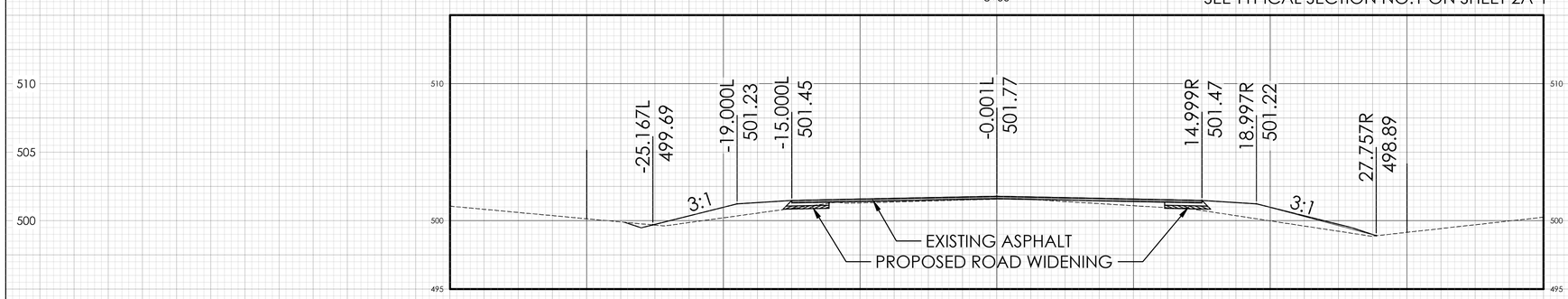
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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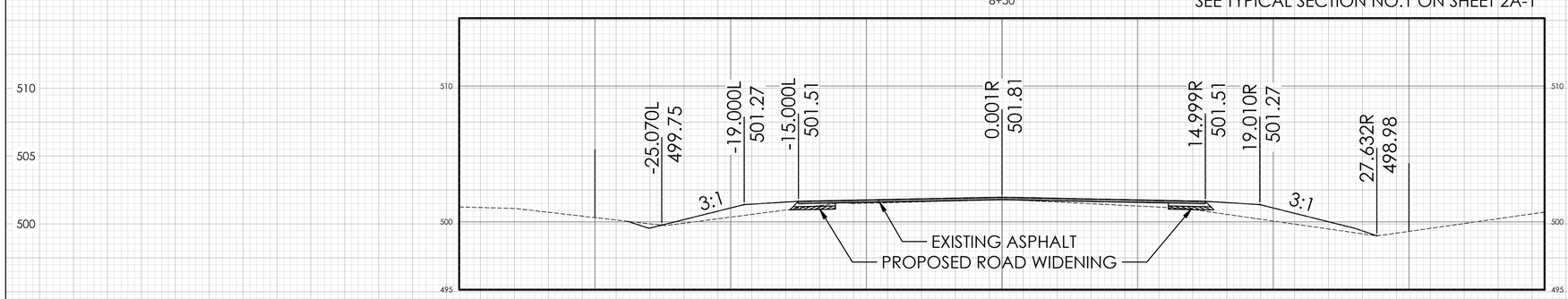
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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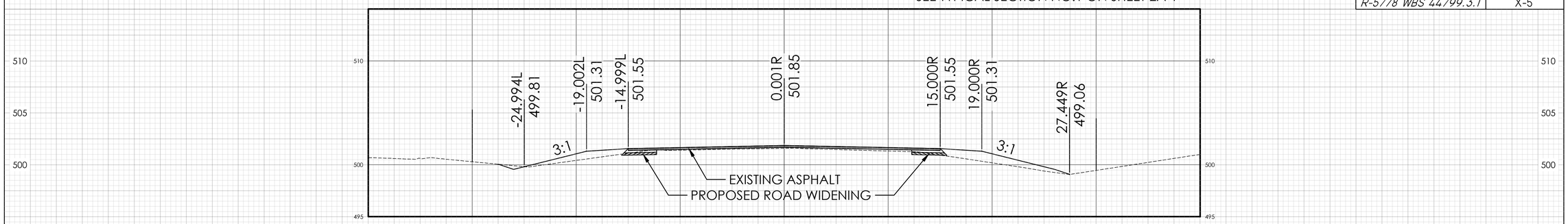
RCW

W

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-5

9+00

SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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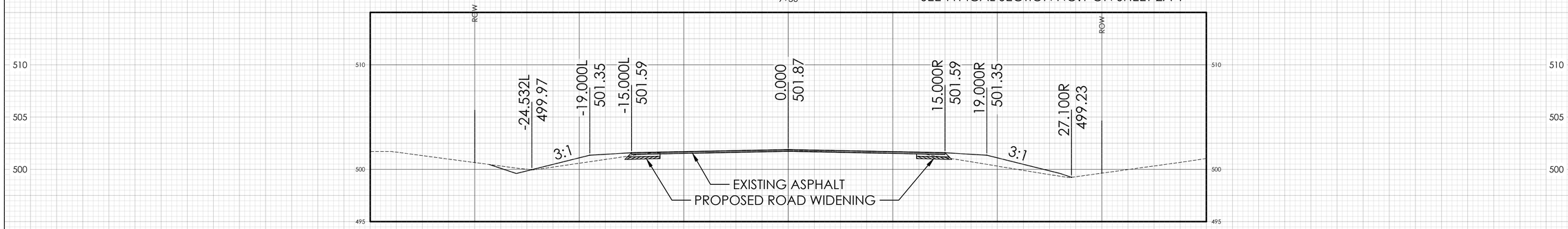
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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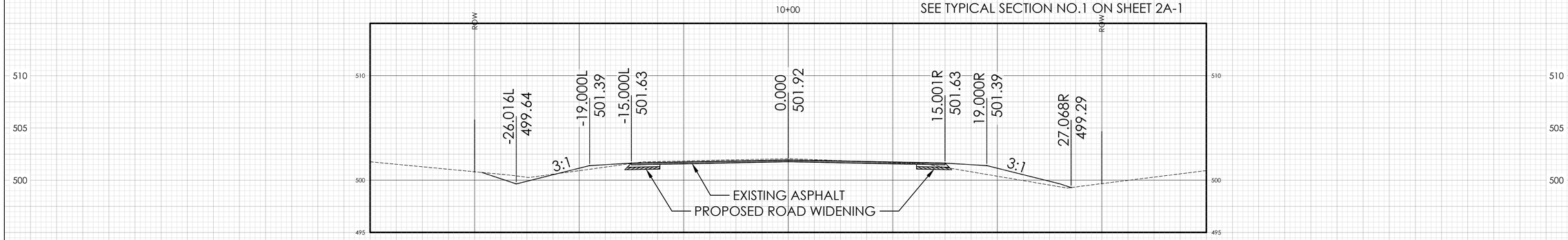
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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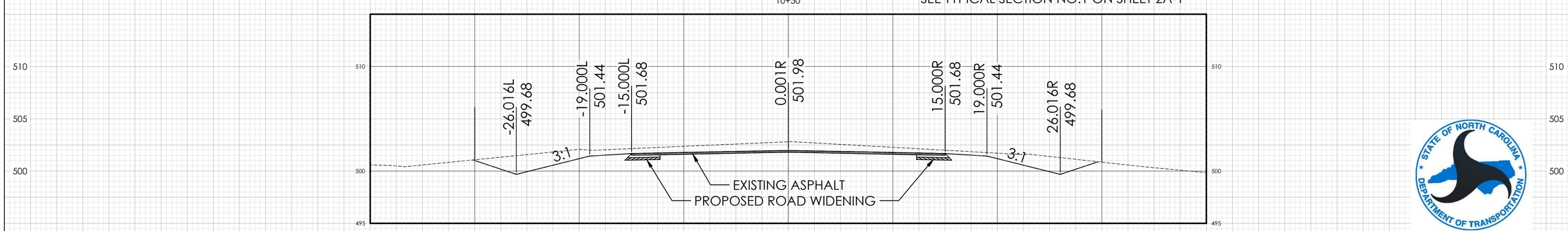
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1



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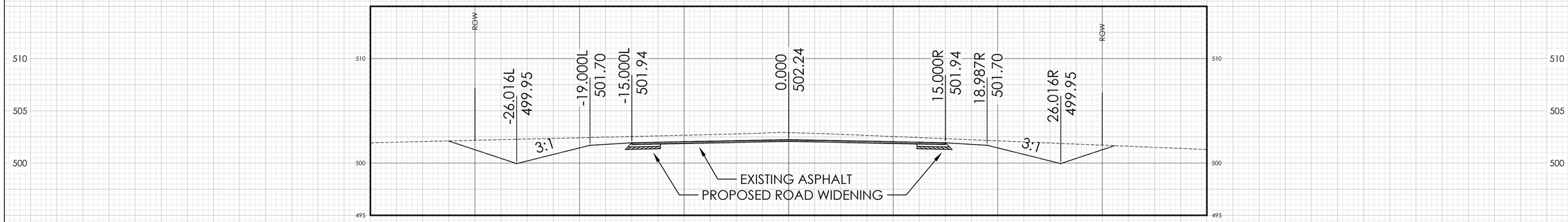
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-6

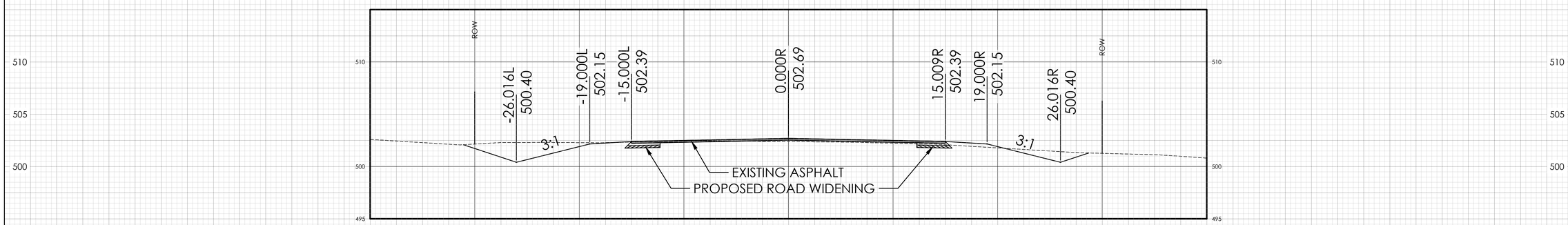
SEE TYPICAL SECTION NO.1 ON SHEET 2A-1

11+00



SEE TYPICAL SECTION NO.1 ON SHEET 2A-1

11+50



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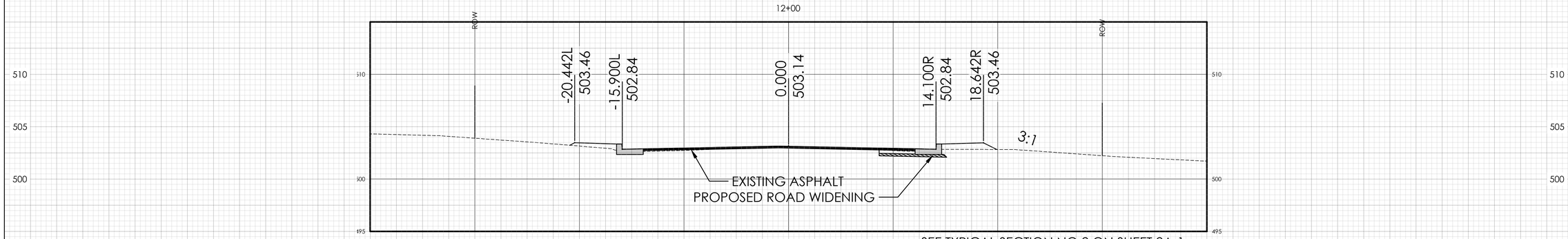
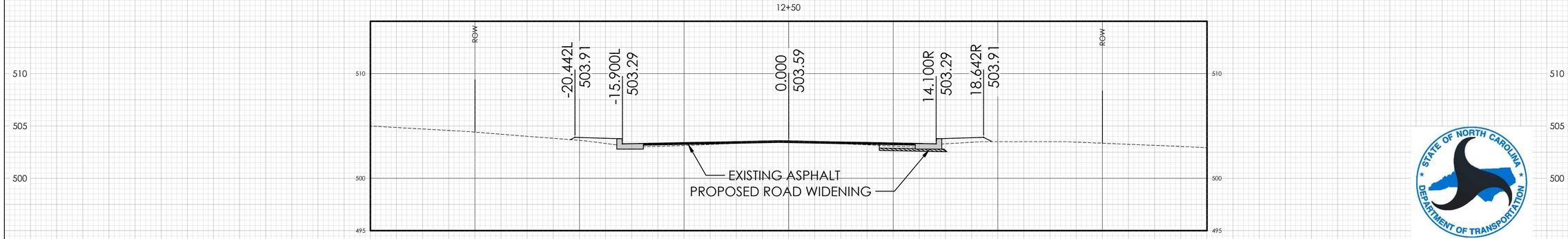
12+00



SEE TYPICAL SECTION NO.2 ON SHEET 2A-1

12+50



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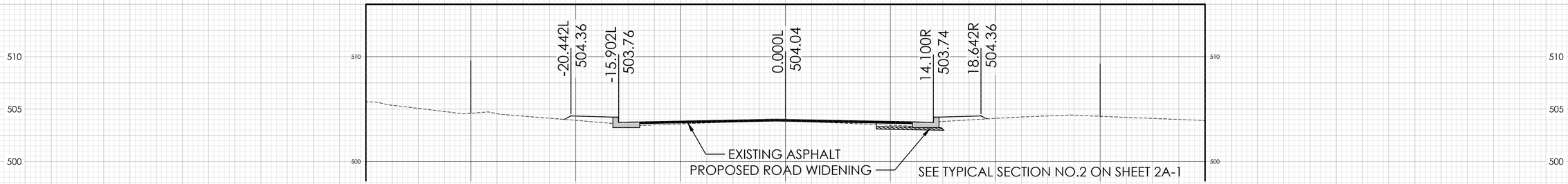
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-7

13+00



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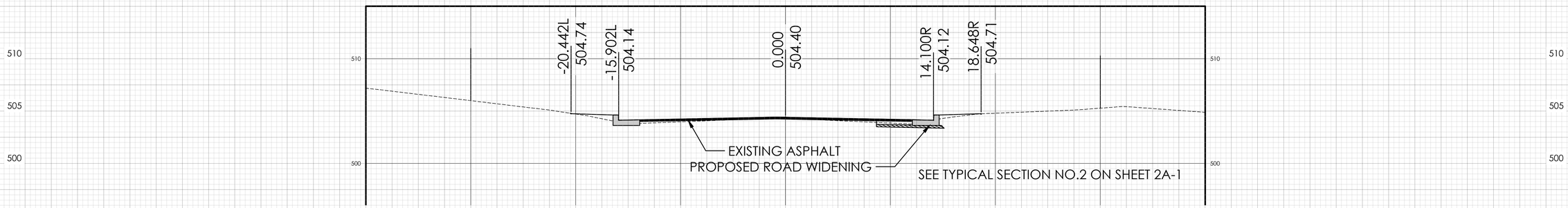

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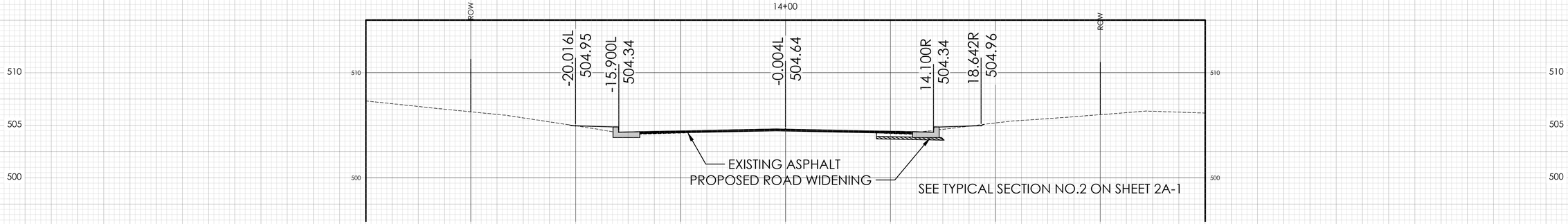

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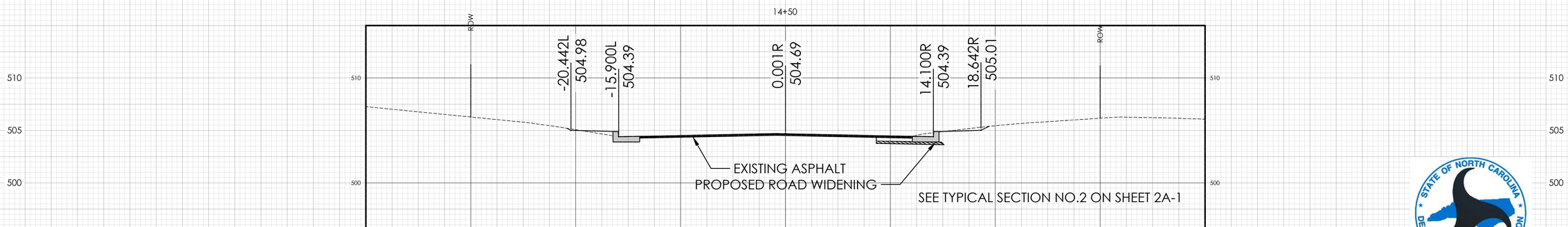

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PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-8

SEE TYPICAL SECTION NO.2 ON SHEET 2A-1

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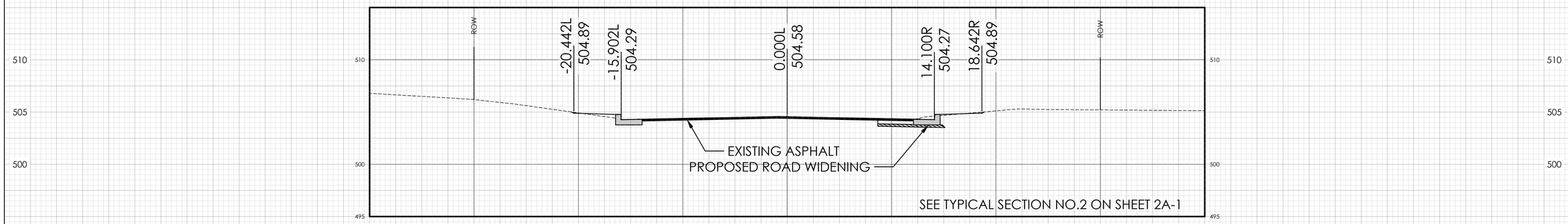

SEE TYPICAL SECTION NO.2 ON SHEET 2A-1

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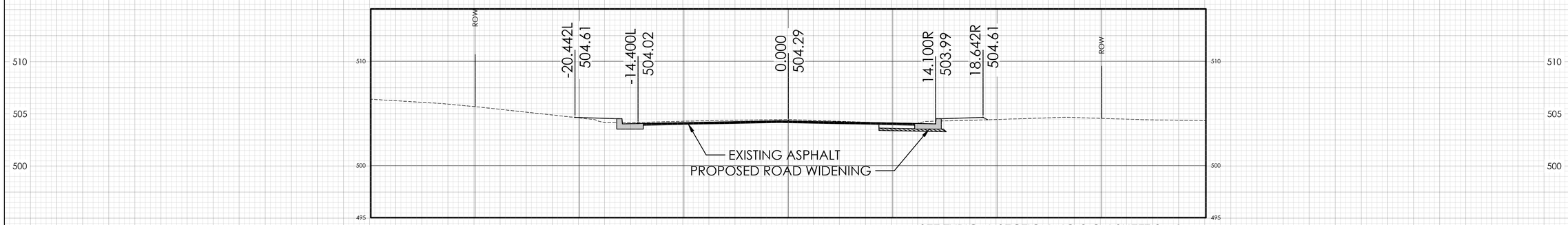
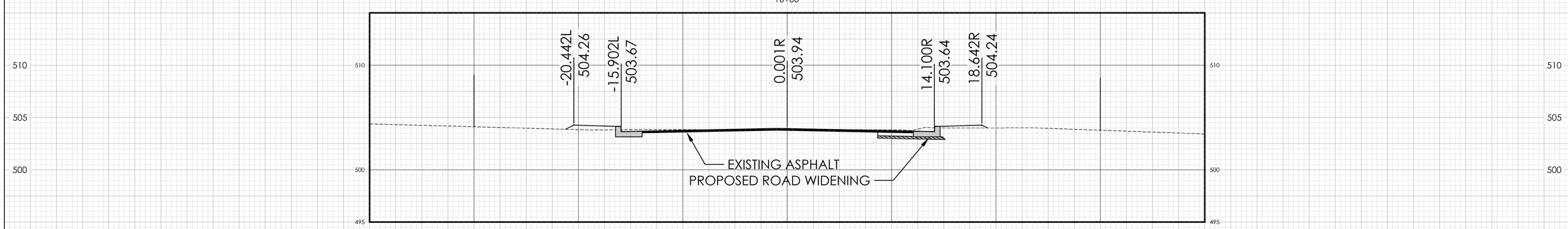


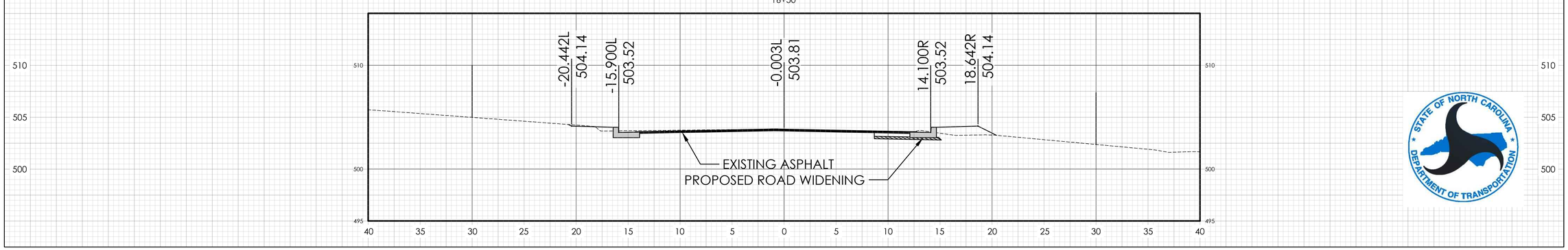
SEE TYPICAL SECTION NO.2 ON SHEET 2A-1

16+00



SEE TYPICAL SECTION NO.2 ON SHEET 2A-1

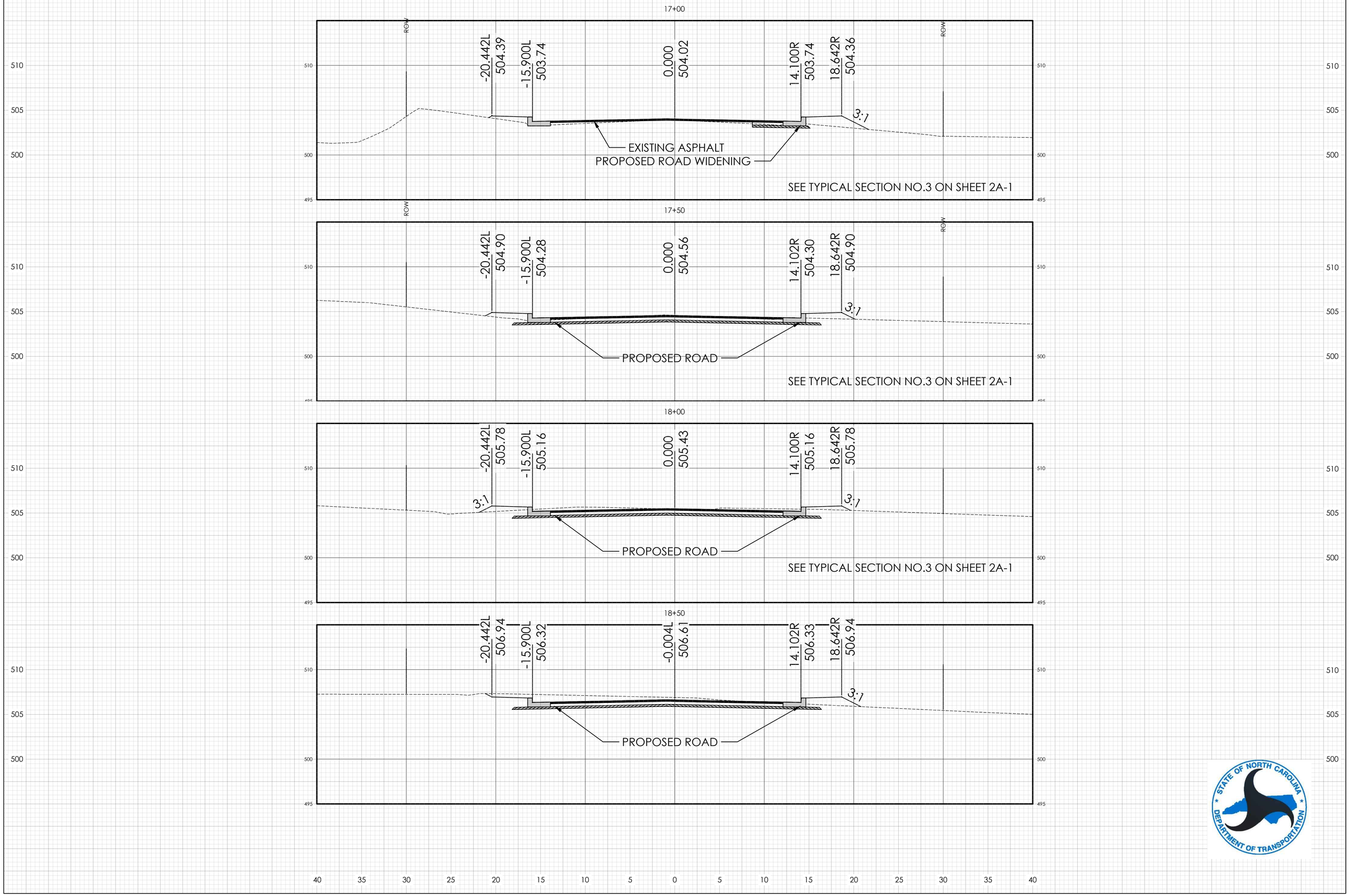
16+50



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
R-5778 WBS 44799.3.1	X-9

SEE TYPICAL SECTION NO.2 ON SHEET 2A-1



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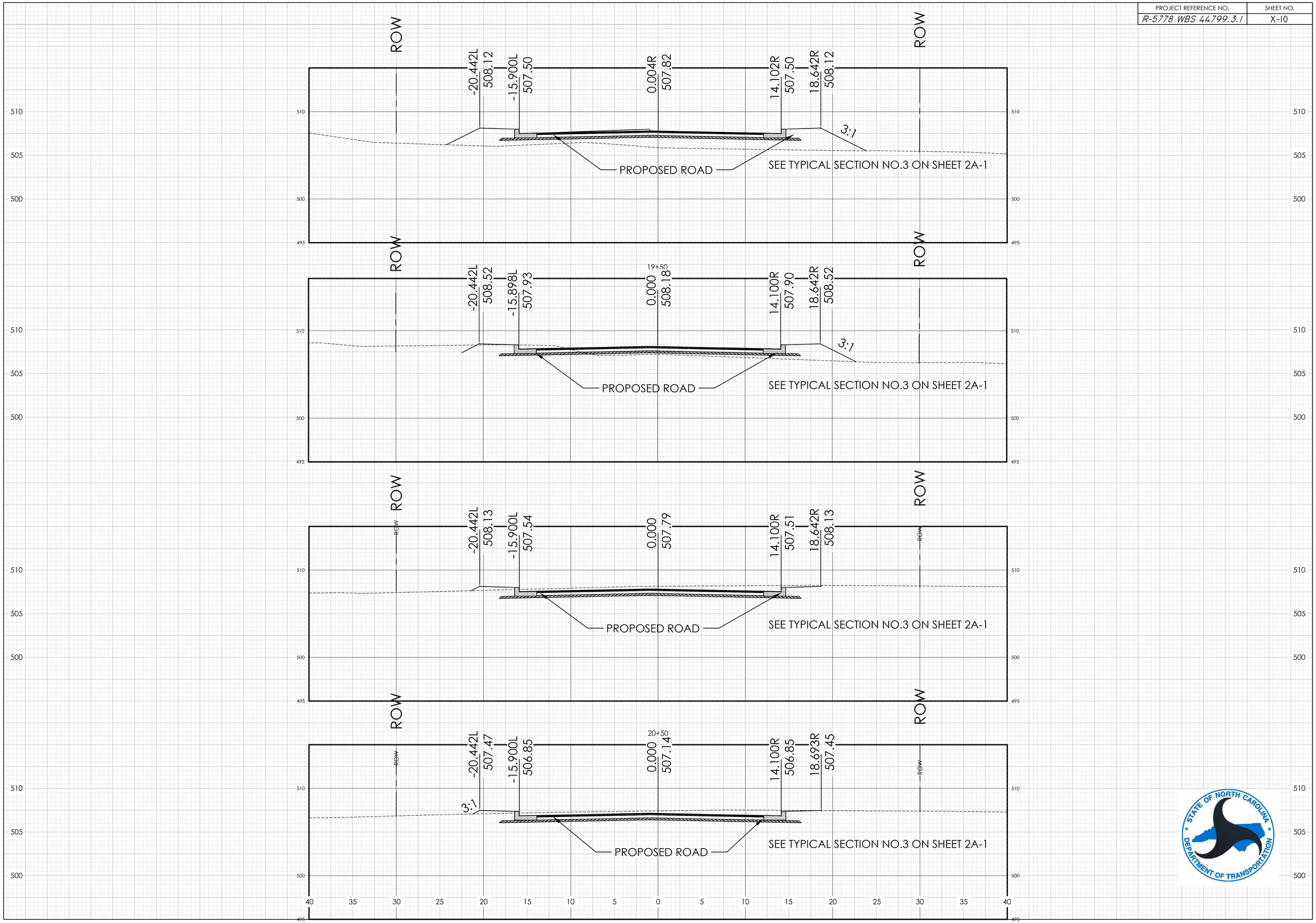
R-5778 WBS 44799.3.1	X-10



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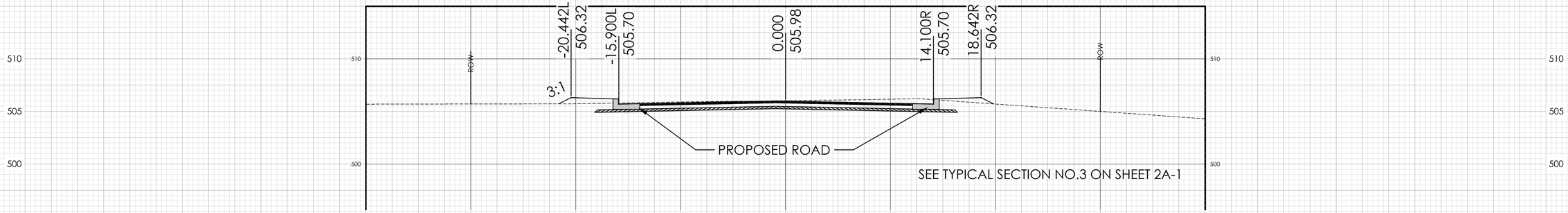
R-5778 WBS 44799.3.1	X-11

21+00



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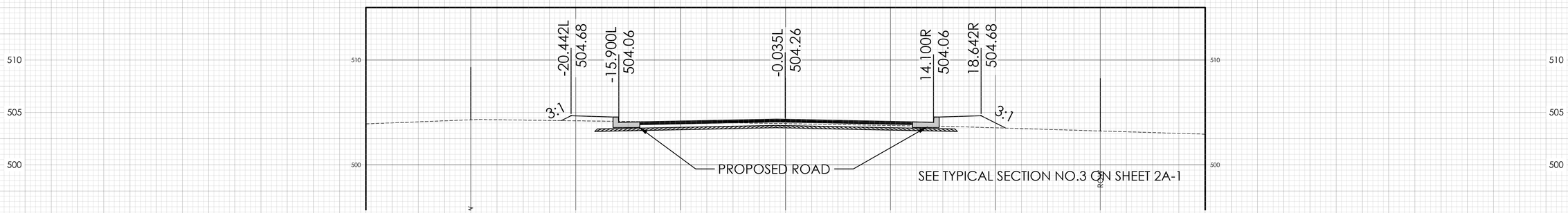

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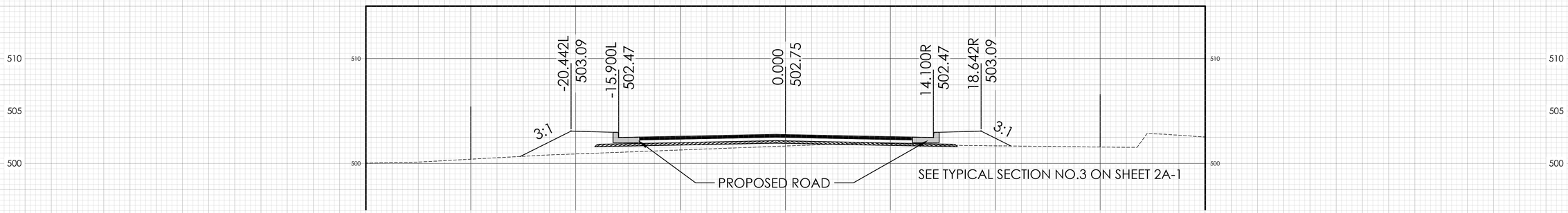

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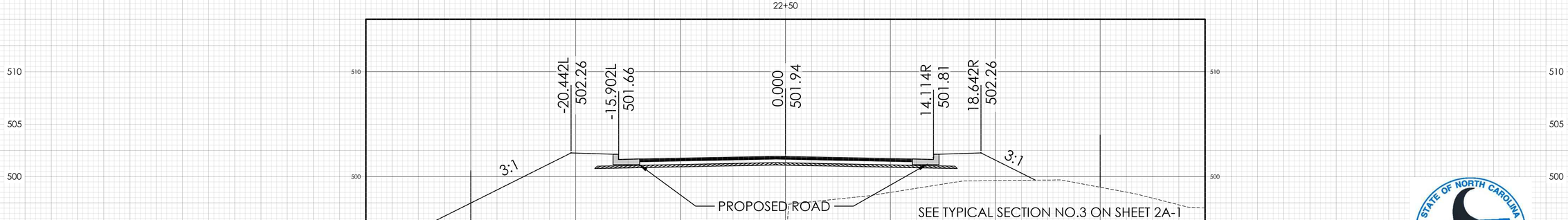

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R-5778 WBS 44799.3.1	X-12

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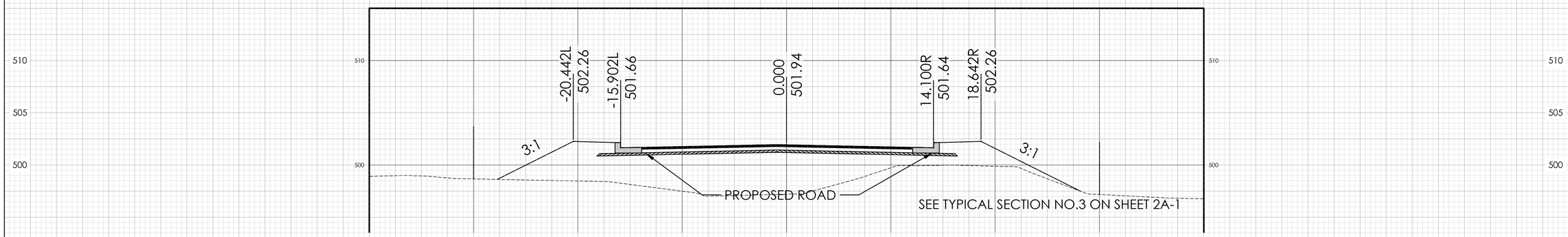

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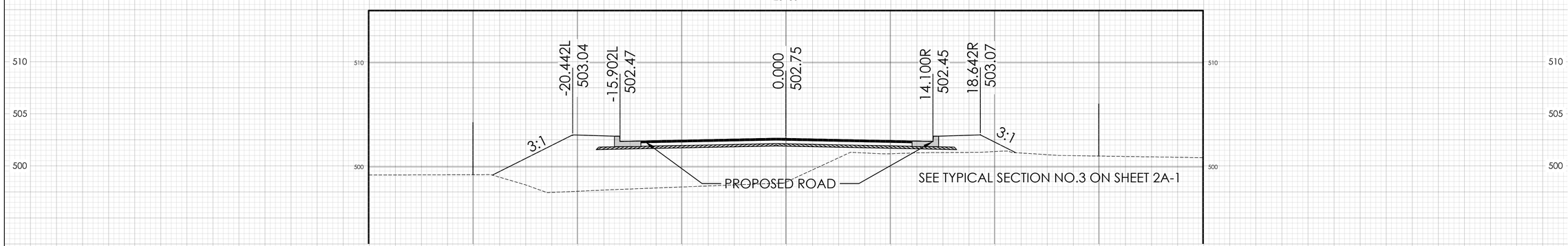

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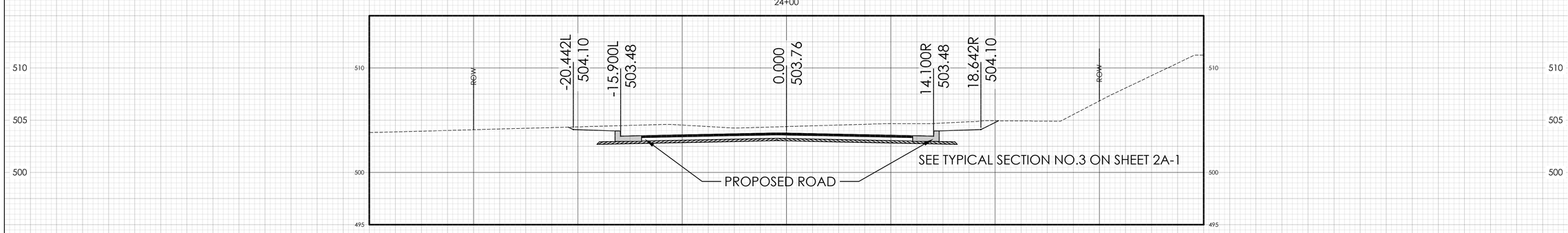

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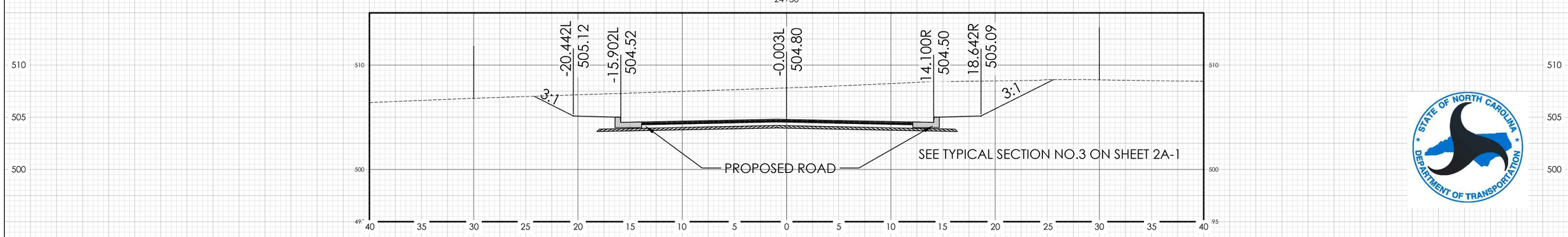

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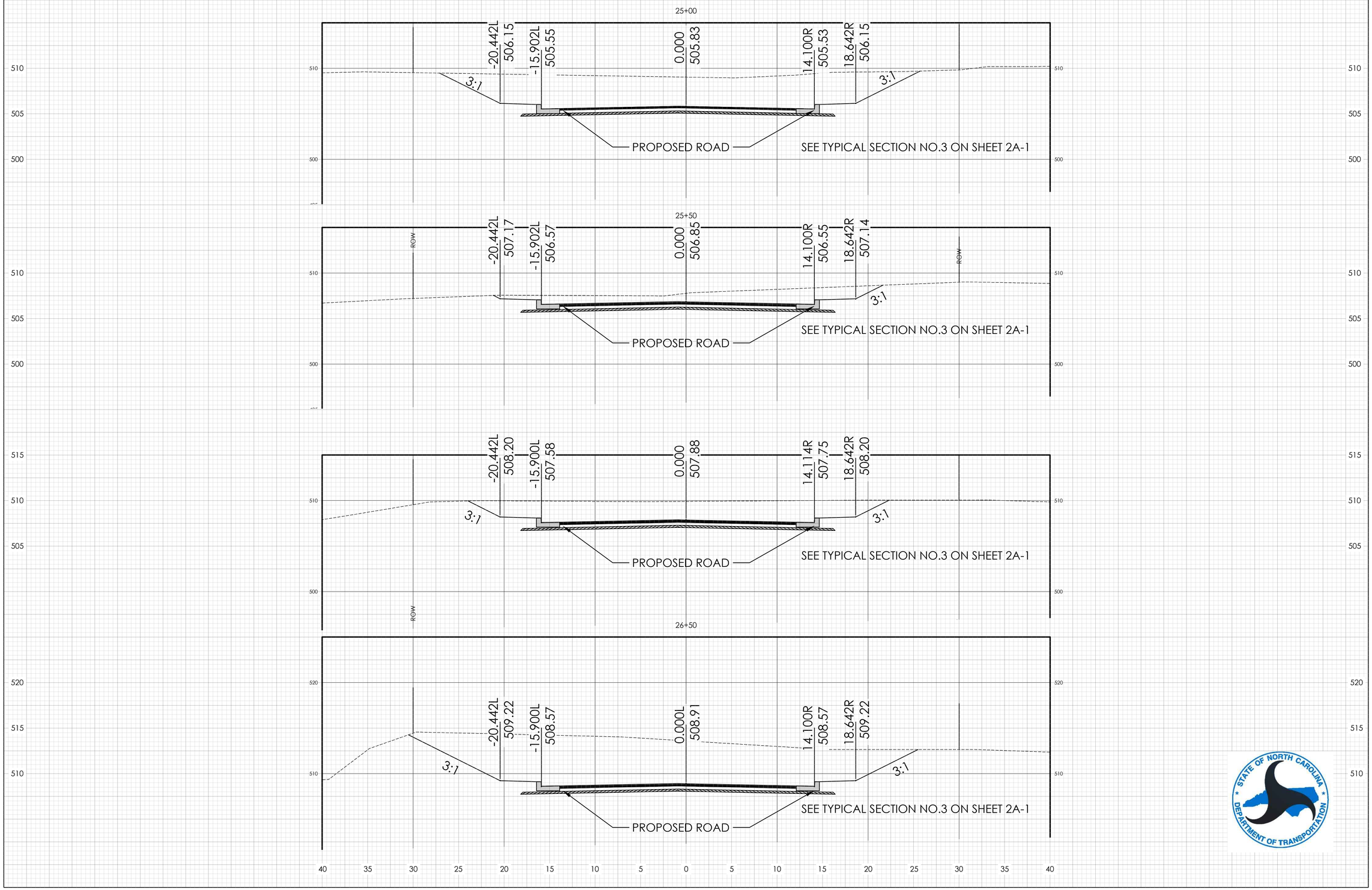
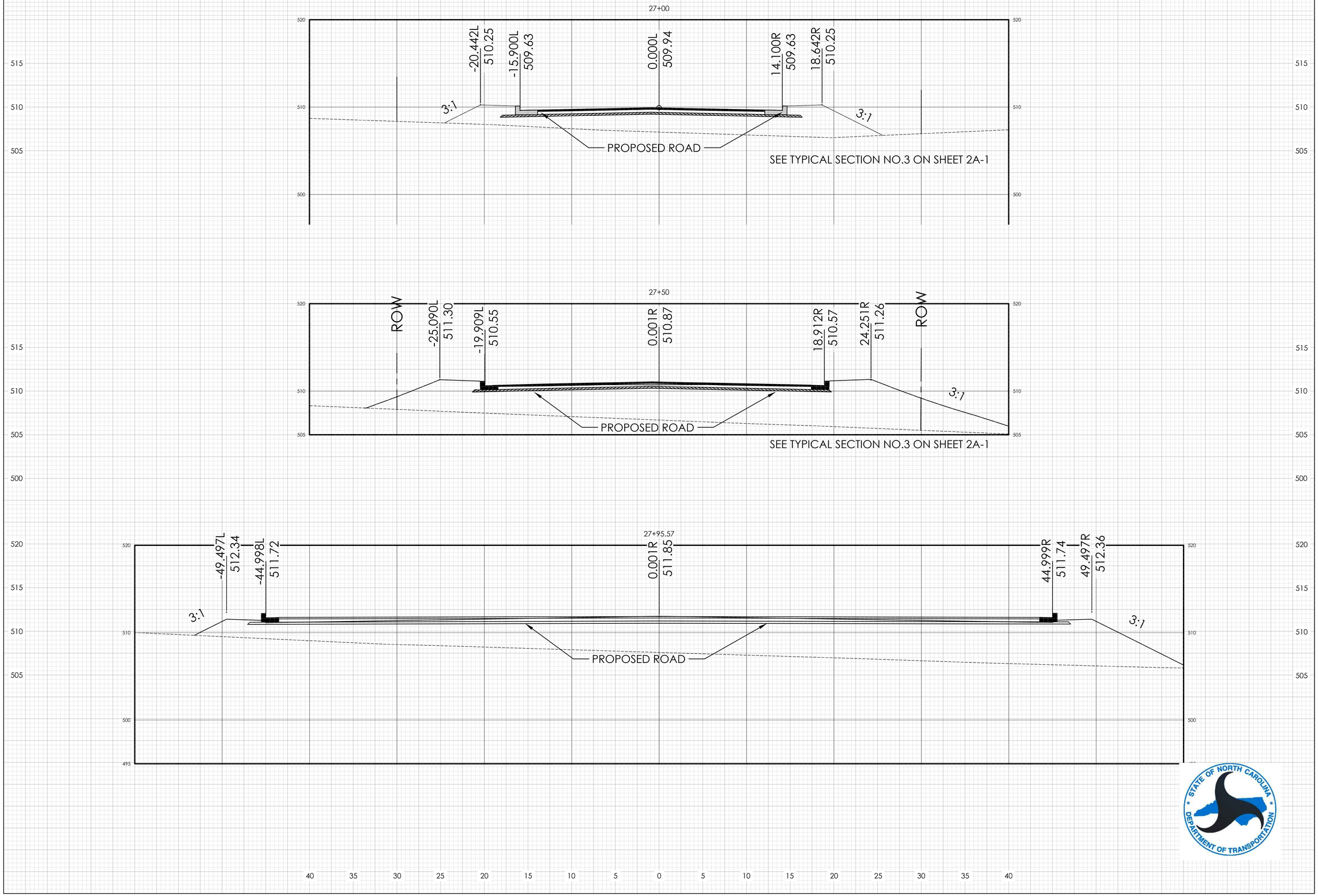
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