

09/28/99

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

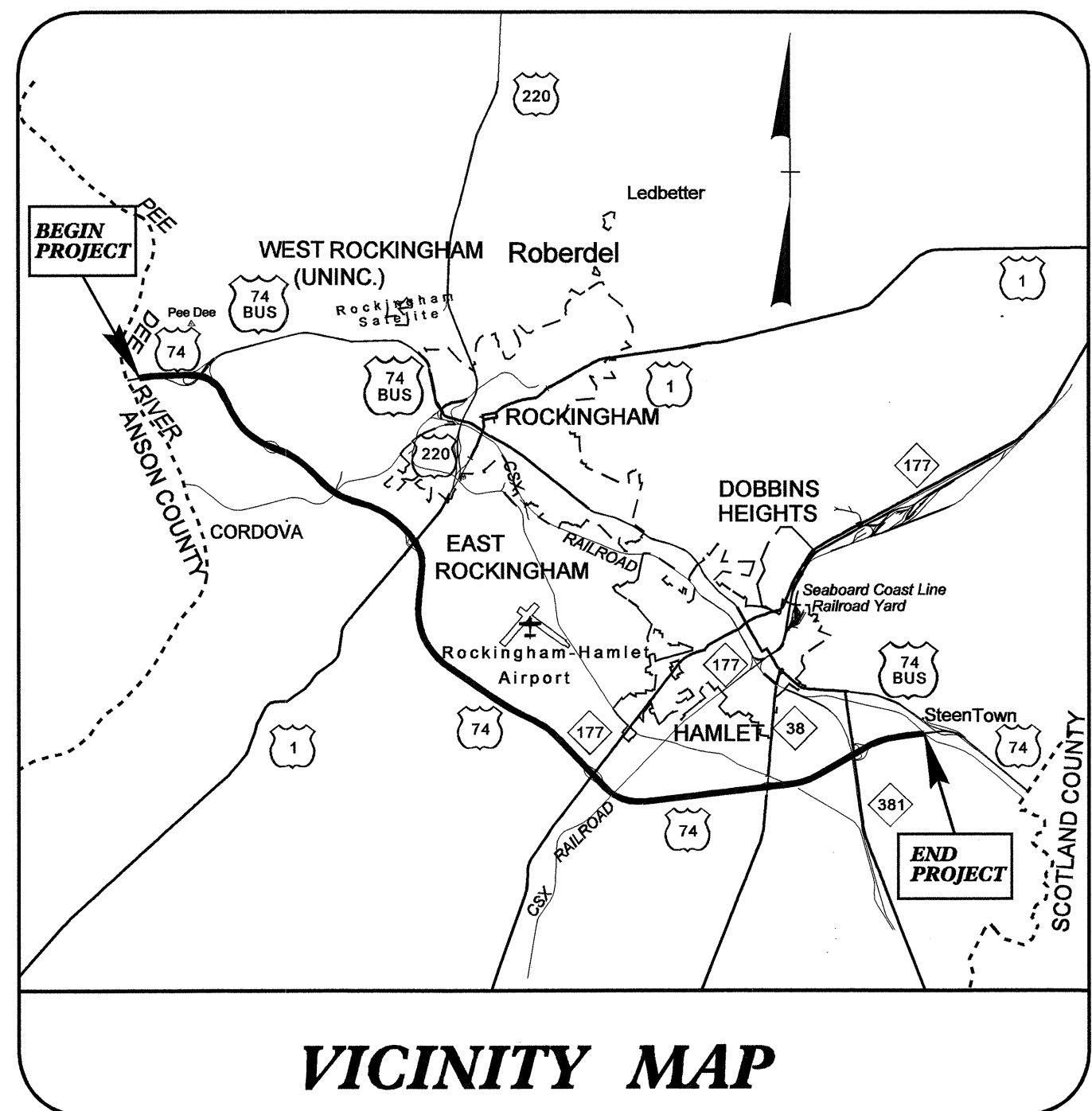
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4738	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38151.1.1	NHS-74(85)	PE	
38151.3.1	NHS-74(85)	CONST.	

RICHMOND COUNTY

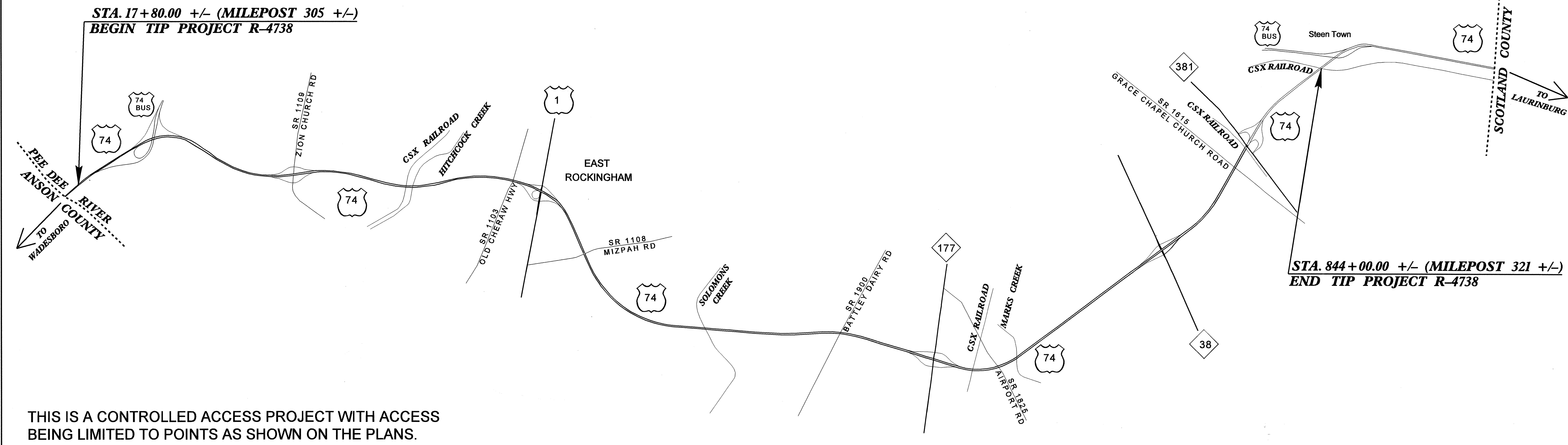
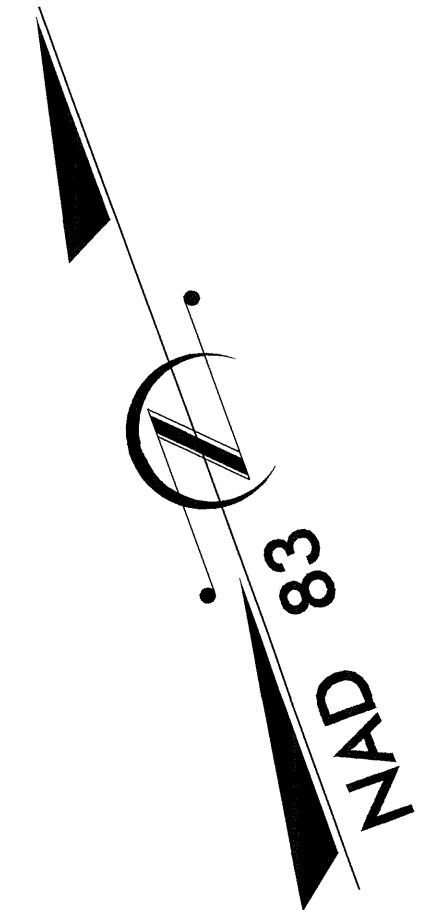
LOCATION: US 74 (ROCKINGHAM-HAMLET BYPASS) FROM THE PEE DEE RIVER TO EAST OF NC 381

TYPE OF WORK: MEDIAN GUARDRAIL & GUIDERAIL

TIP PROJECT: R-4738

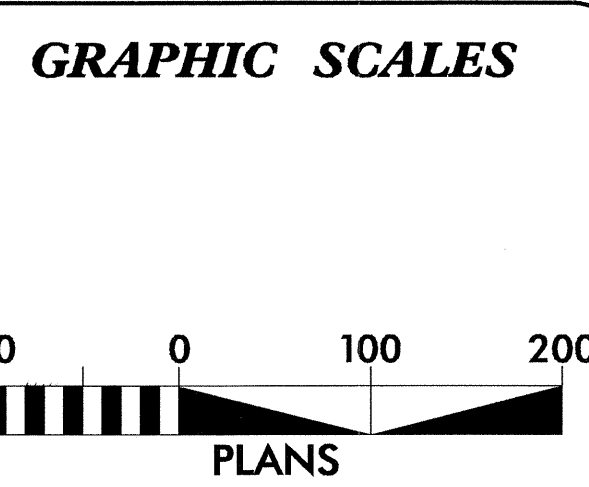


VICINITY MAP



THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

CONTRACT: C201567



DESIGN DATA

ADT 2007 =	13,150
ADT 2027 =	24,650
V =	70 MPH

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT	=	15.648 MILES
TOTAL LENGTH OF STATE PROJECT	=	15.648 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	N/A
LETTING DATE:	JUNE 19, 2007

BRENDA MOORE, PE PROJECT ENGINEER
ROGER KLUCKMAN, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SEAL 22942
ROGER C. KLUCKMAN
ENGINEER
3-22-07

SIGNATURE: *Roger C. Kluckman* P.E.

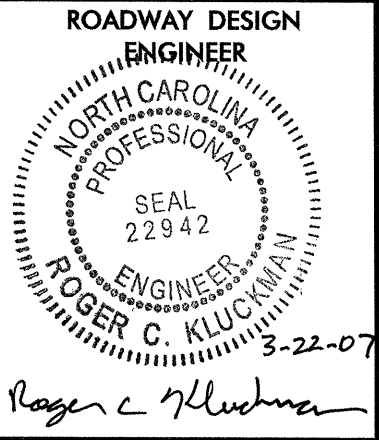
**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

Art McMillan
P.E.
STATE HIGHWAY DESIGN ENGINEER

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS



SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	TYPICAL SECTIONS
2-A	DETAIL OF MEDIAN TREATMENT AT UNDERPASS
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DOUBLE FACE GUIDERAIL
3-B	GUARDRAIL SUMMARY
4 THRU 14	PLAN SHEET
TCP-1 THRU TCP- 6	TRAFFIC CONTROL PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-18-06

EFF. 07-18-06

SPECIAL MEDIAN GRADING:

10:1 OR FLATTER SLOPES ARE REQUIRED FOR GUARDRAIL AND IMPACT ATTENUATOR INSTALLATION IN THE MEDIAN. SPECIAL MEDIAN GRADING MAY BE NECESSARY IN THE VICINITY OF THE MEDIAN HAZARDS FOR INSTALLATION OF THE GUARDRAIL AND IMPACT ATTENUATORS. MEDIAN GRADING SHALL BE PERFORMED IN ACCORDANCE WITH STD. NO. 862.01 (SHEET 1 OF 11) AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. CARE SHOULD BE TAKEN TO MAINTAIN PROPER DRAINAGE IN THE MEDIAN.

2006 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
865.01	Cable Guiderail

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.

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	○
Property Corner	⊗
Property Monument	⊠
Parcel/Sequence Number	(123)
Existing Fence Line	---x---x---x---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing High Quality Wetland Boundary	---HQ WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	---RBB---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Swamp Marsh	⊠
Proposed Lateral, Tail, Head Ditch	---FLOW---
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	⊙
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	⊙
Proposed Control of Access	⊙
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Proposed Precast Single Face Conc. Barrier	-----
Equality Symbol	⊙
Pavement Removal	-----

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	⊠
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊙
TV Pedestal	⊠
TV Tower	⊙
U/G TV Cable Hand Hole	⊠
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

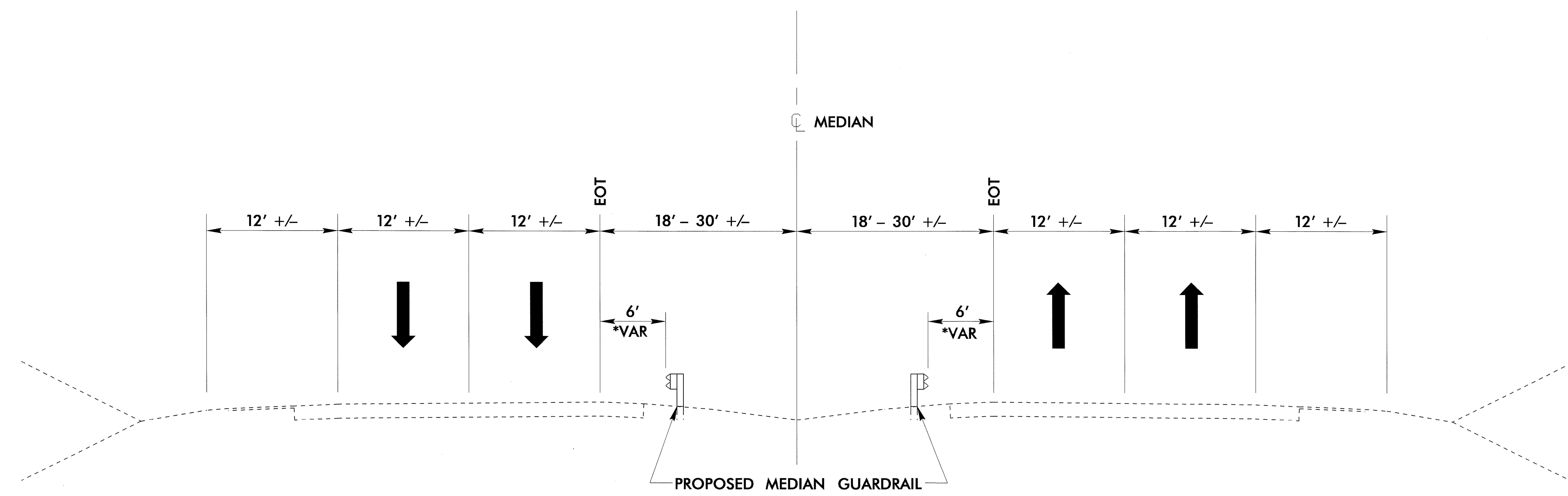
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊠
A/G Tank; Water, Gas, Oil	⊠
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

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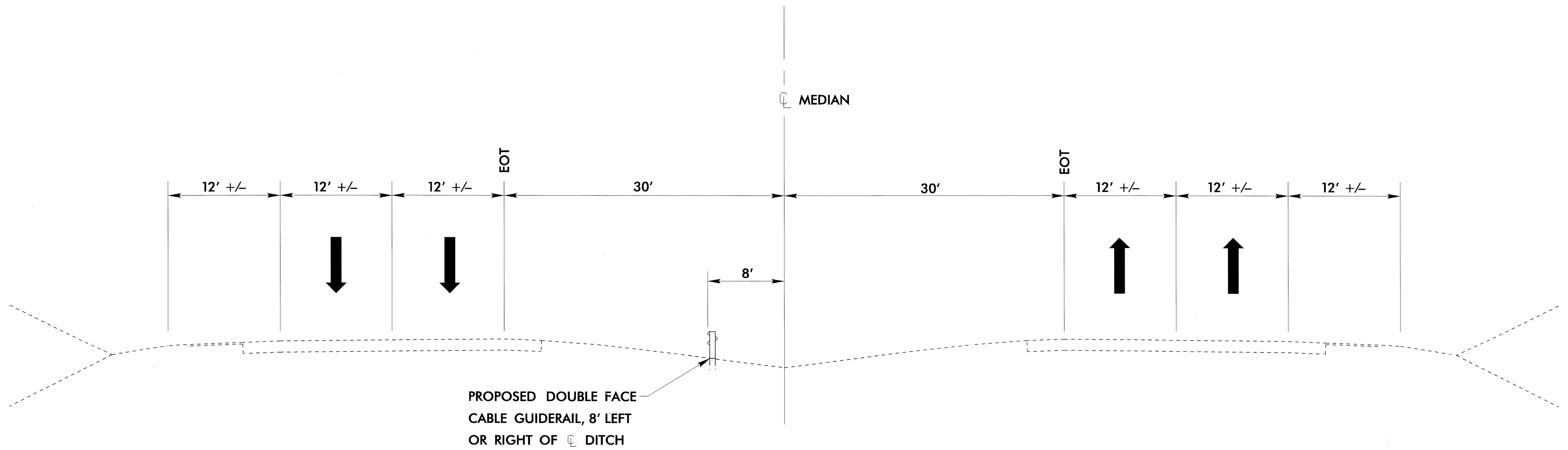
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ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22942 ROGER C. KLUCKMAN 3-21-07 R.C. Kluckman	PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 1

-L- STA 17+80 +/- TO -L- 50+12 +/-
 * -L- STA 50+12 +/- TO -L- 63+70 +/-

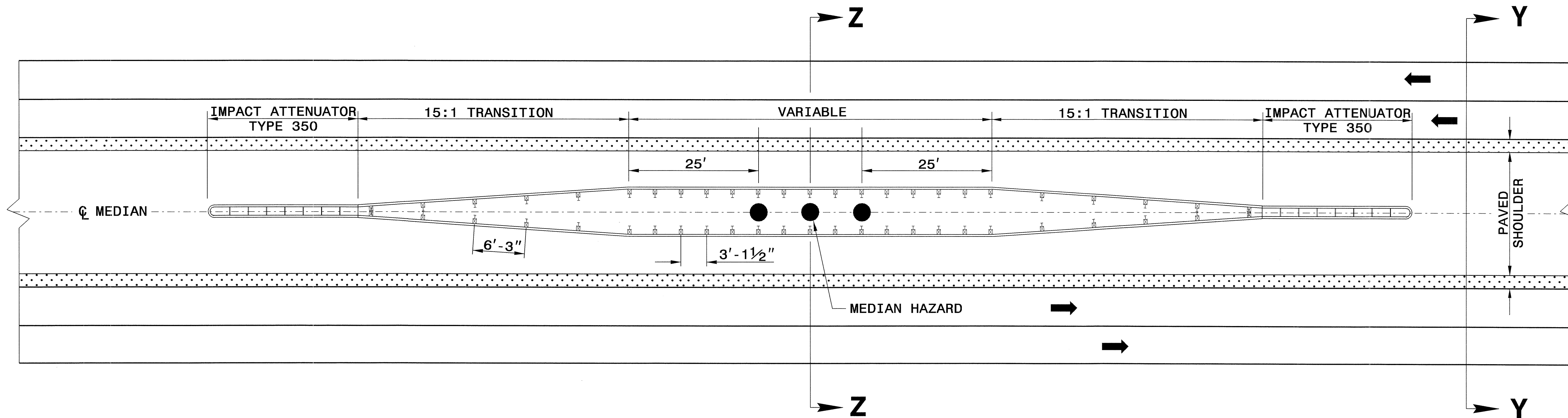
NOTE: END STEEL BEAM GUARDRAIL AT -L- STA. 63+70+/-.
 BEGIN CABLE GUIDERAIL AT -L- STA. 64+22+/-.



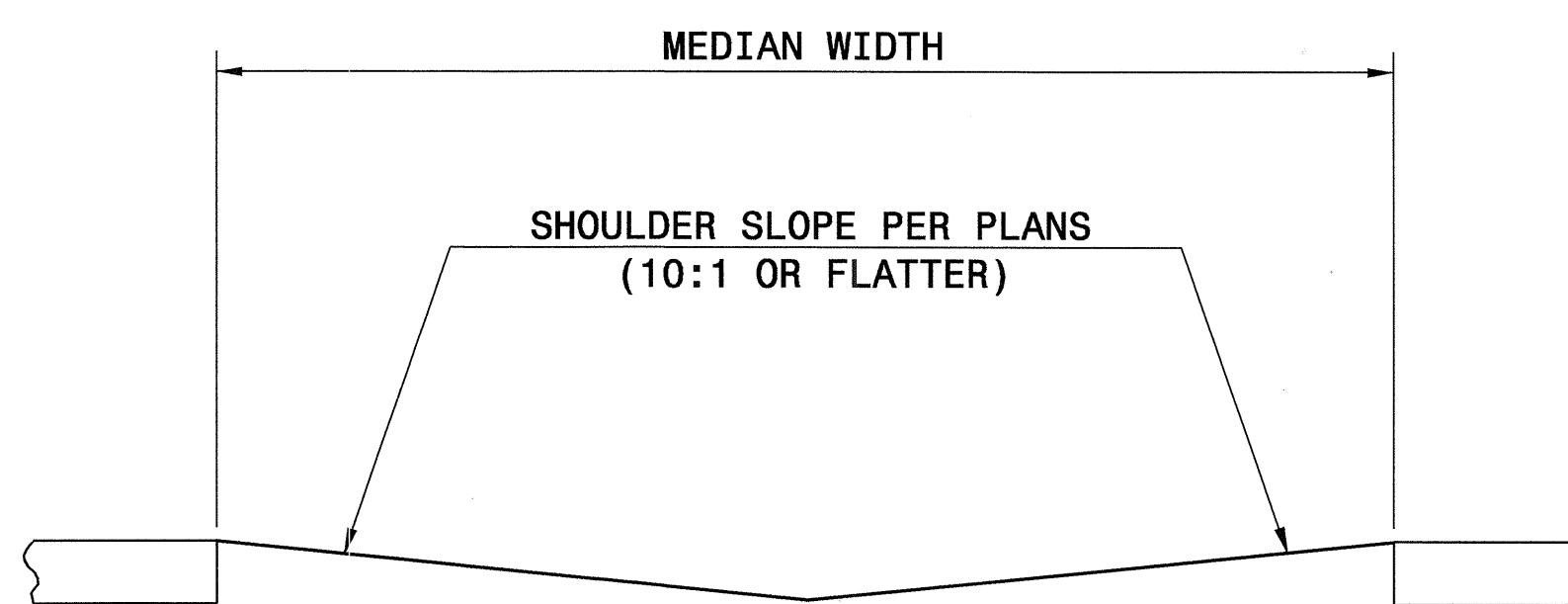
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-L- STA 64+22 +/- TO -L- 839+30 +/-

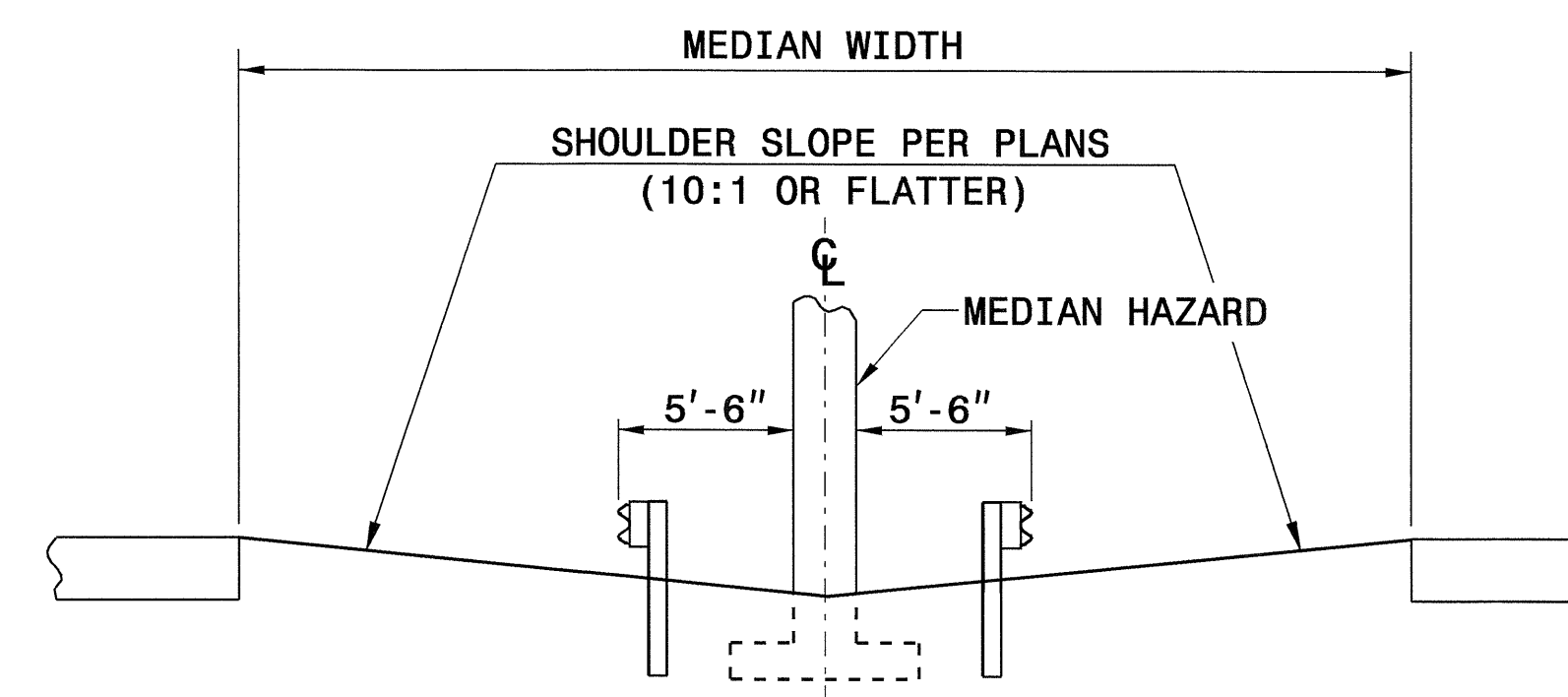
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NOTE: GRADE MEDIAN IN THE VICINITY OF THE MEDIAN HAZARD AS ILLUSTRATED IN THE ROADWAY STANDARD DRAWINGS (STANDARD 862.01 SHEET 1 OF 11).
GRADE TO DRAIN.



SECT. YY



SECT. ZZ

DETAIL OF GUARDRAIL MEDIAN TREATMENT AT UNDERPASS



MEDIAN TREATMENT AT UNDERPASS

ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

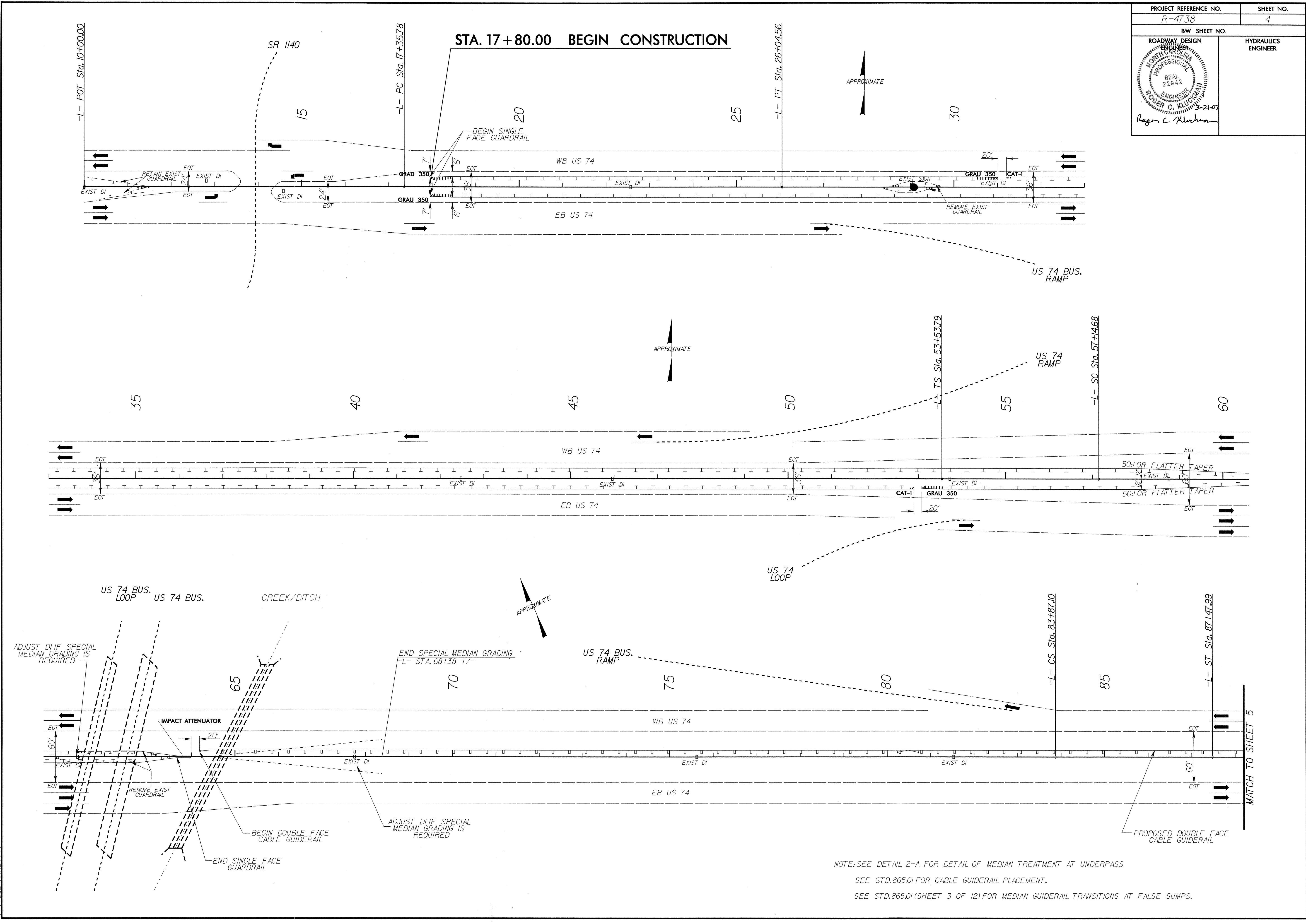
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201567

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0106000000-E	230	150	CY	BORROW EXCAVATION
2815000000-N	858	16	EA	ADJUSTMENT OF DROP INLETS
3000000000-N	SP	15	EA	IMPACT ATTENUATOR UNIT, TYPE 350
3030000000-E	862	14,950	LF	STEEL BM GUARDRAIL
3150000000-N	862	30	EA	ADDITIONAL GUARDRAIL POSTS
3210000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1
3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3285000000-N	SP	14	EA	GUARDRAIL ANCHOR UNITS, TYPE M-350
3317000000-N	862	14	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3360000000-E	863	6,100	LF	REMOVE EXISTING GUARDRAIL
3389400000-E	865	72,000	LF	DOUBLE FACED CABLE GUIDERAIL
3389500000-N	SP	45	EA	ADDITIONAL GUIDERAIL POSTS
3389600000-N	865	88	EA	CABLE GUIDERAIL ANCHOR UNITS
4405000000-E	1110	916	SF	WORK ZONE SIGNS (PORTABLE)
4415000000-N	1115	4	EA	FLASHING ARROW PANELS, TYPE C
4420000000-N	1120	4	EA	CHANGEABLE MESSAGE SIGN
4422000000-N	1120	180	DAY	CHANGEABLE MESSAGE SIGN (SHORT TERM)
4430000000-N	1130	500	EA	DRUMS
4480000000-N	1165	4	EA	TMIA
6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING
6084000000-E	1660	4	ACR	SEEDING & MULCHING
6087000000-E	1660	100	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6108000000-E	1665	3	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	100	HR	SPECIALIZED HAND MOWING

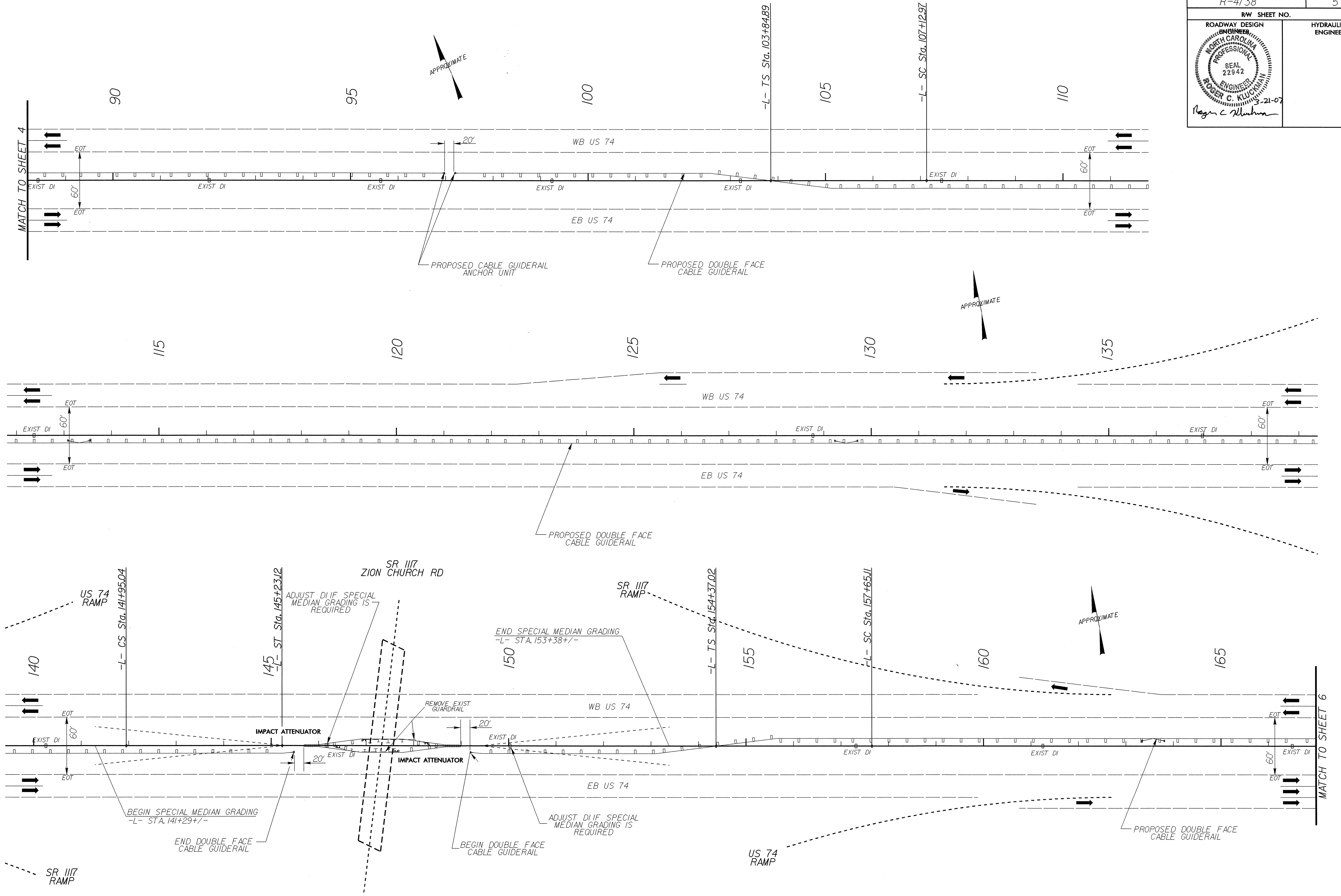
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PROJECT REFERENCE NO. R-4738	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22942 ROGER C. KLUCKHIN 3-21-07 Roger C. Kluckhin	HYDRAULICS ENGINEER



NOTE: SEE DETAIL 2-A FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS
 SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01(SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

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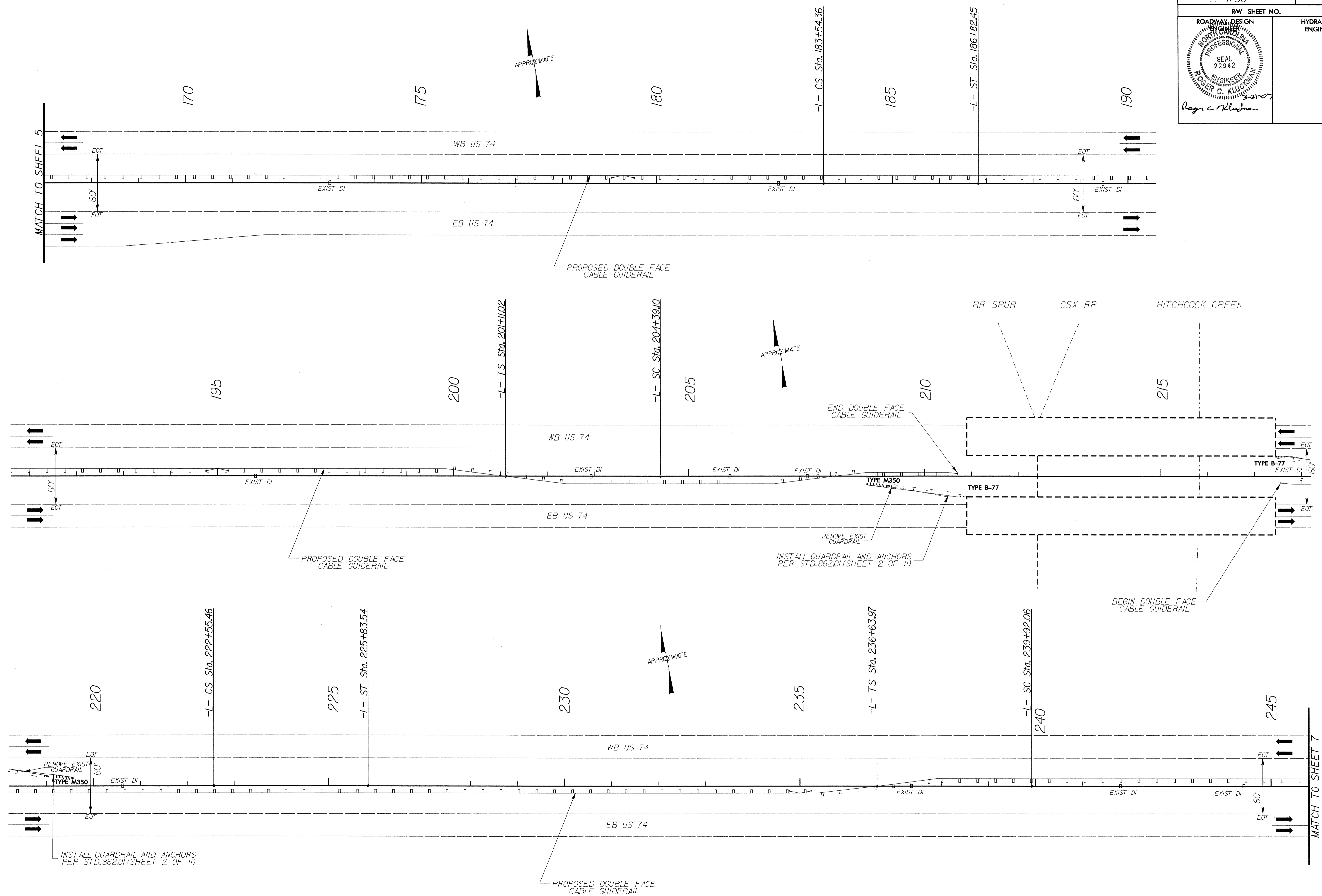
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 SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

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PROJECT REFERENCE NO. R-4738	SHEET NO. 6
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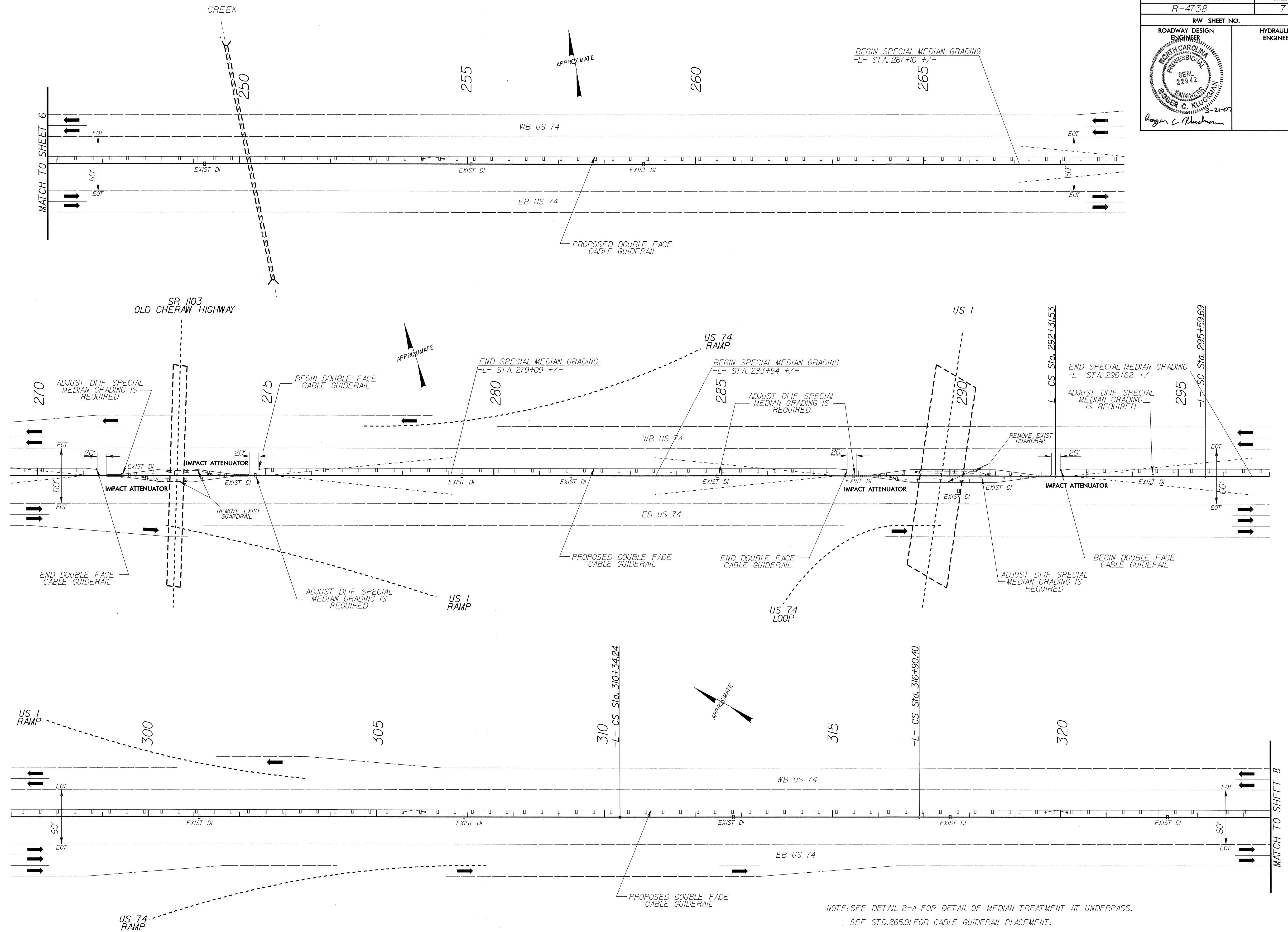


NOTE: SEE STD. 865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD. 865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.
 SEE STD. 862.01 (SHEET 2 OF 11) FOR DETAIL OF GUARDRAIL APPROACHING DUAL LANE BRIDGES.

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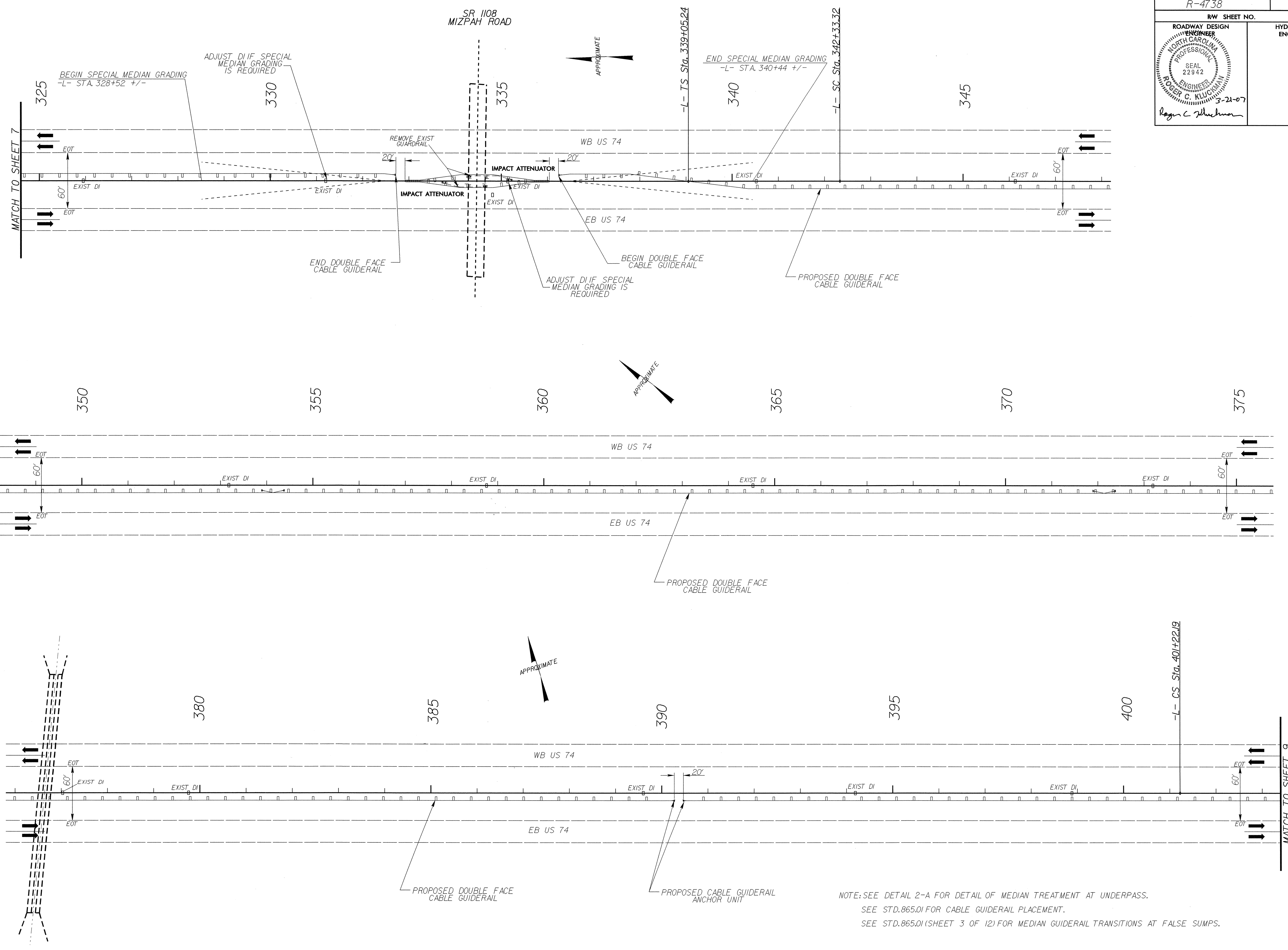
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ROADWAY DESIGN ENGINEER ROGER C. KLUCMAN SEAL 22942 3-21-07	HYDRAULICS ENGINEER



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R-4738

NOTE: SEE DETAIL 2-A FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS.
SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
SEE STD.865.01(SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

PROJECT REFERENCE NO. R-4738	SHEET NO. 8
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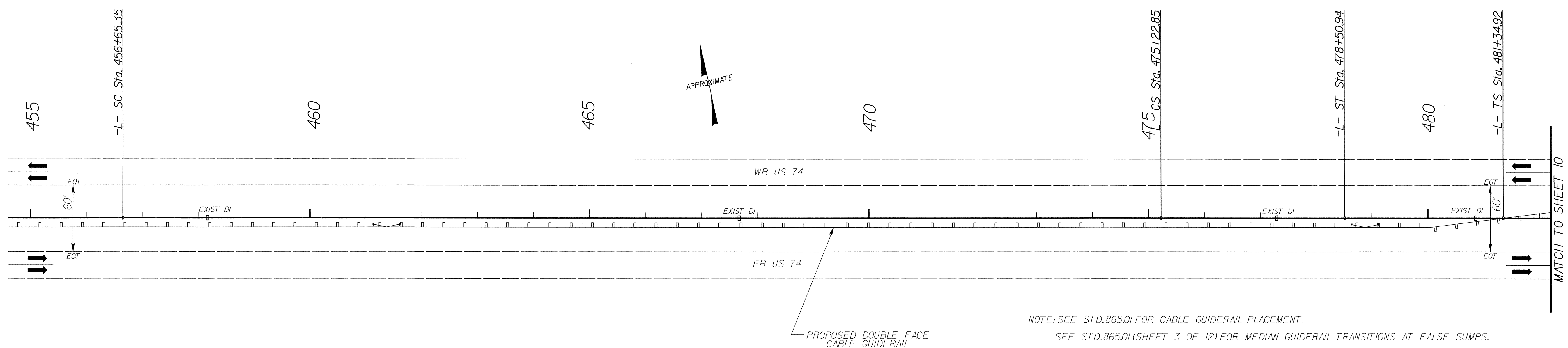
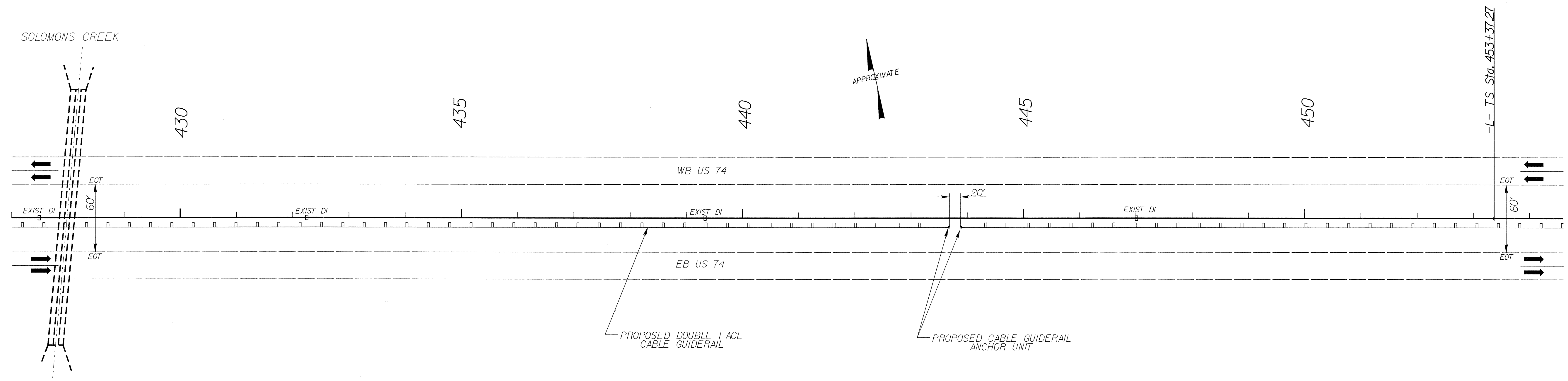
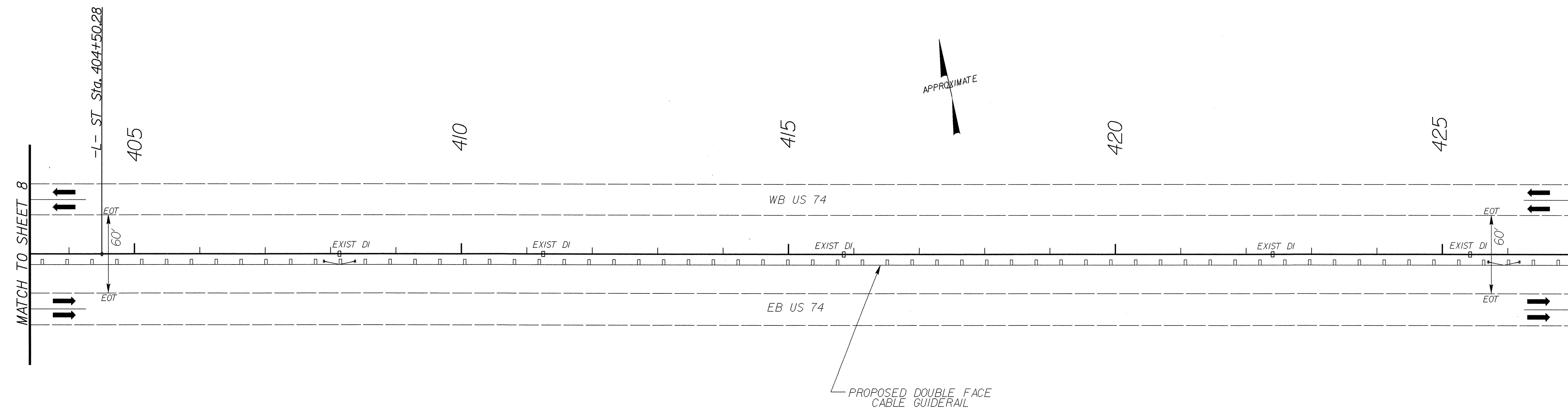
NOTE: SEE DETAIL 2-A FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS.
 SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

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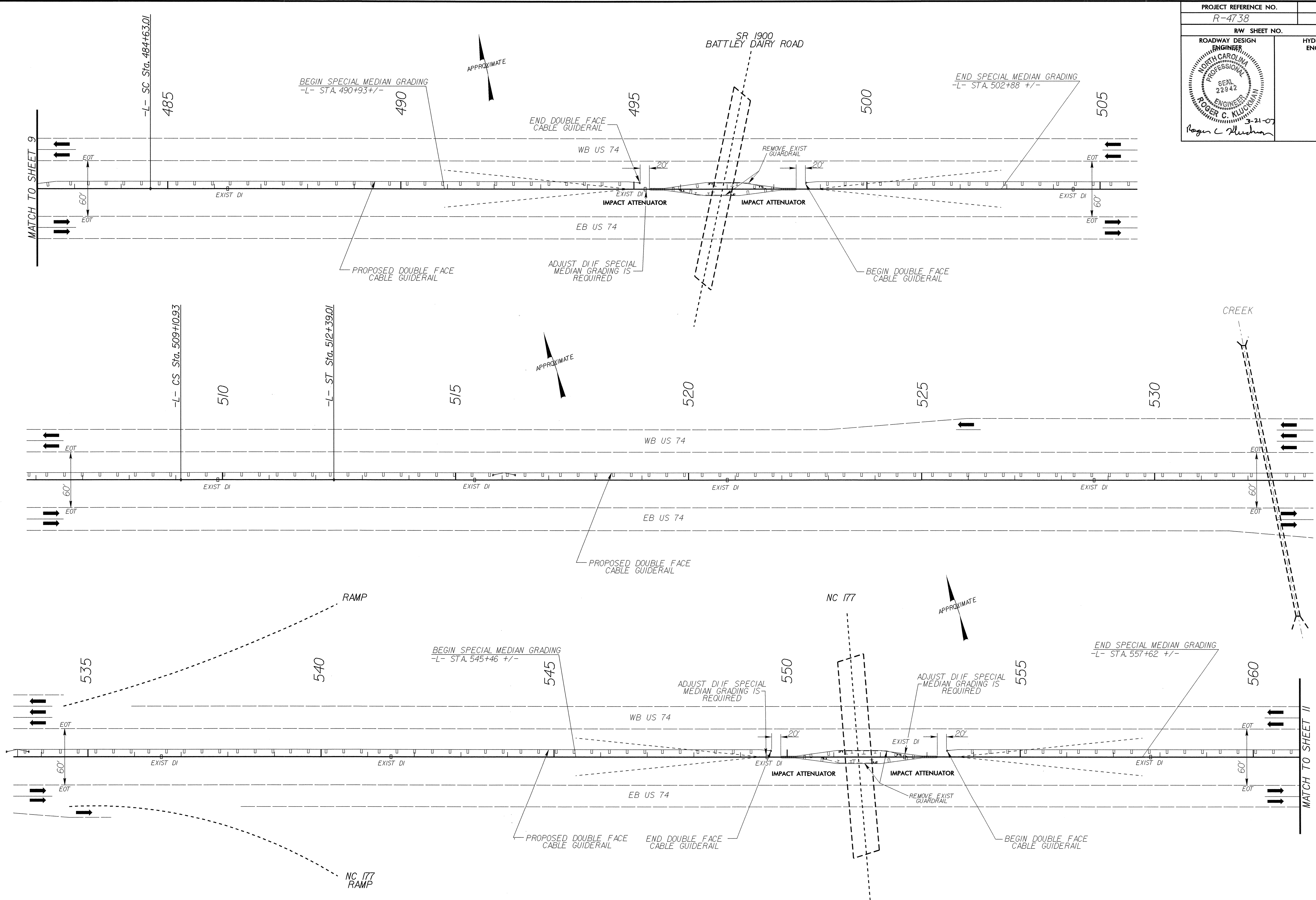
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ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22942 ROGER C. KLUMPHAN 3-21-07	HYDRAULICS ENGINEER



NOTE: SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
SEE STD.865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

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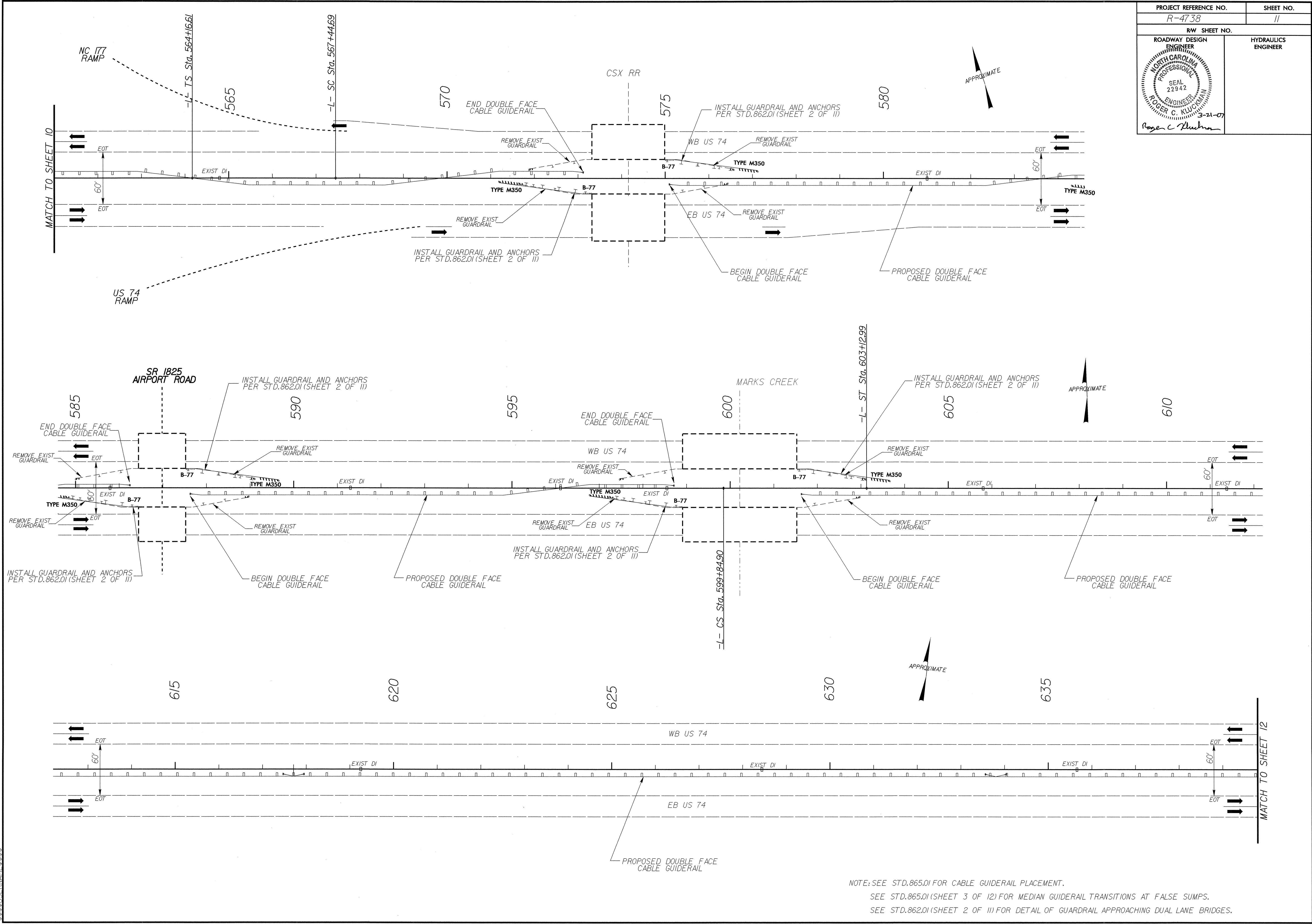
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ROADWAY DESIGN ENGINEER ROGER C. KLUCKMAN SEAL 22942 3-21-07	HYDRAULICS ENGINEER



NOTE: SEE DETAIL 2-A FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS.
 SEE STD. 865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD. 865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.

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PROJECT REFERENCE NO. R-4738	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22942 ROGER C. KLUCKHOFER 3-21-07 Roger C. Kluckhofer	HYDRAULICS ENGINEER

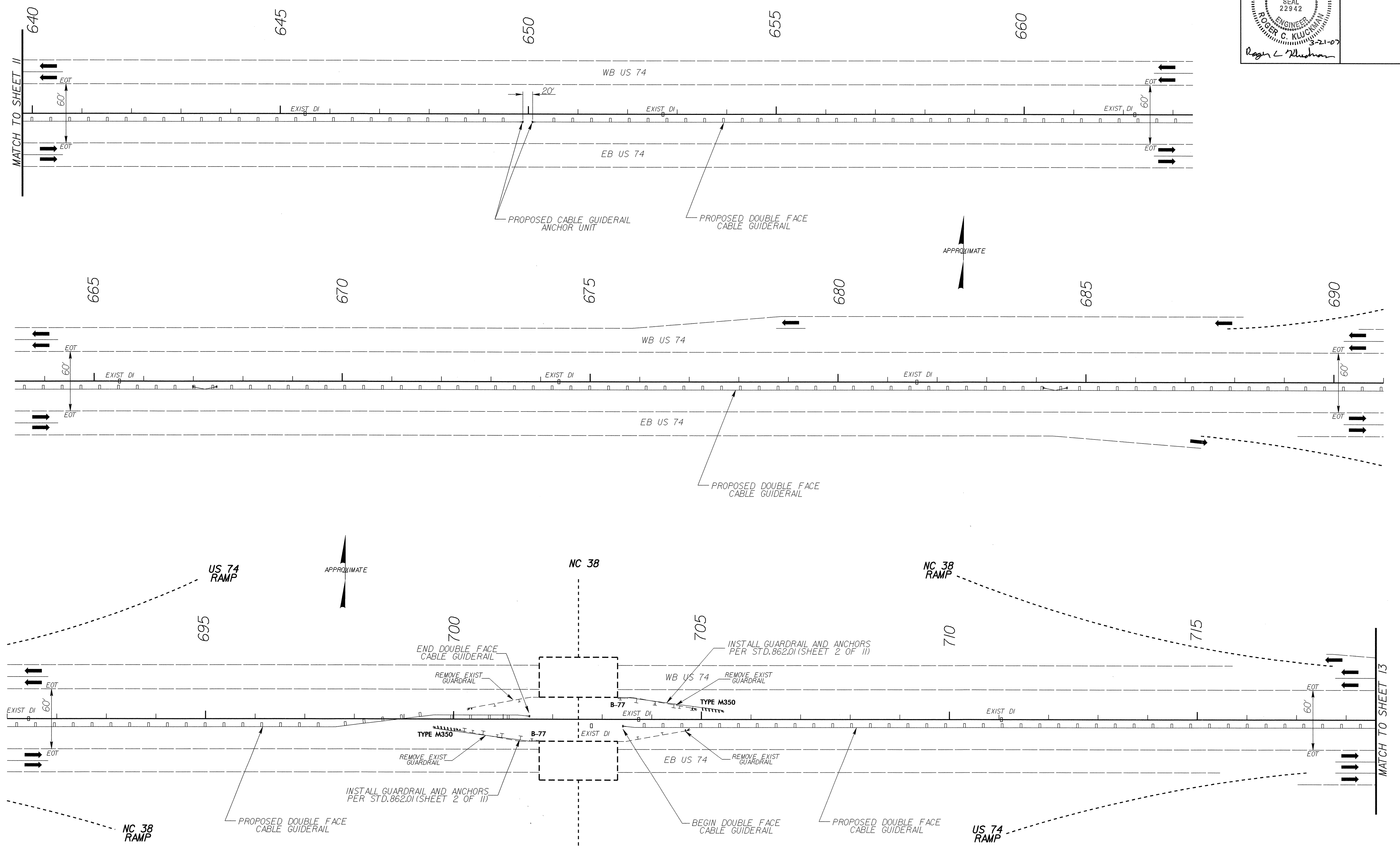


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NOTE: SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01(SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.
 SEE STD.862.01(SHEET 2 OF 11) FOR DETAIL OF GUARDRAIL APPROACHING DUAL LANE BRIDGES.

8/17/99

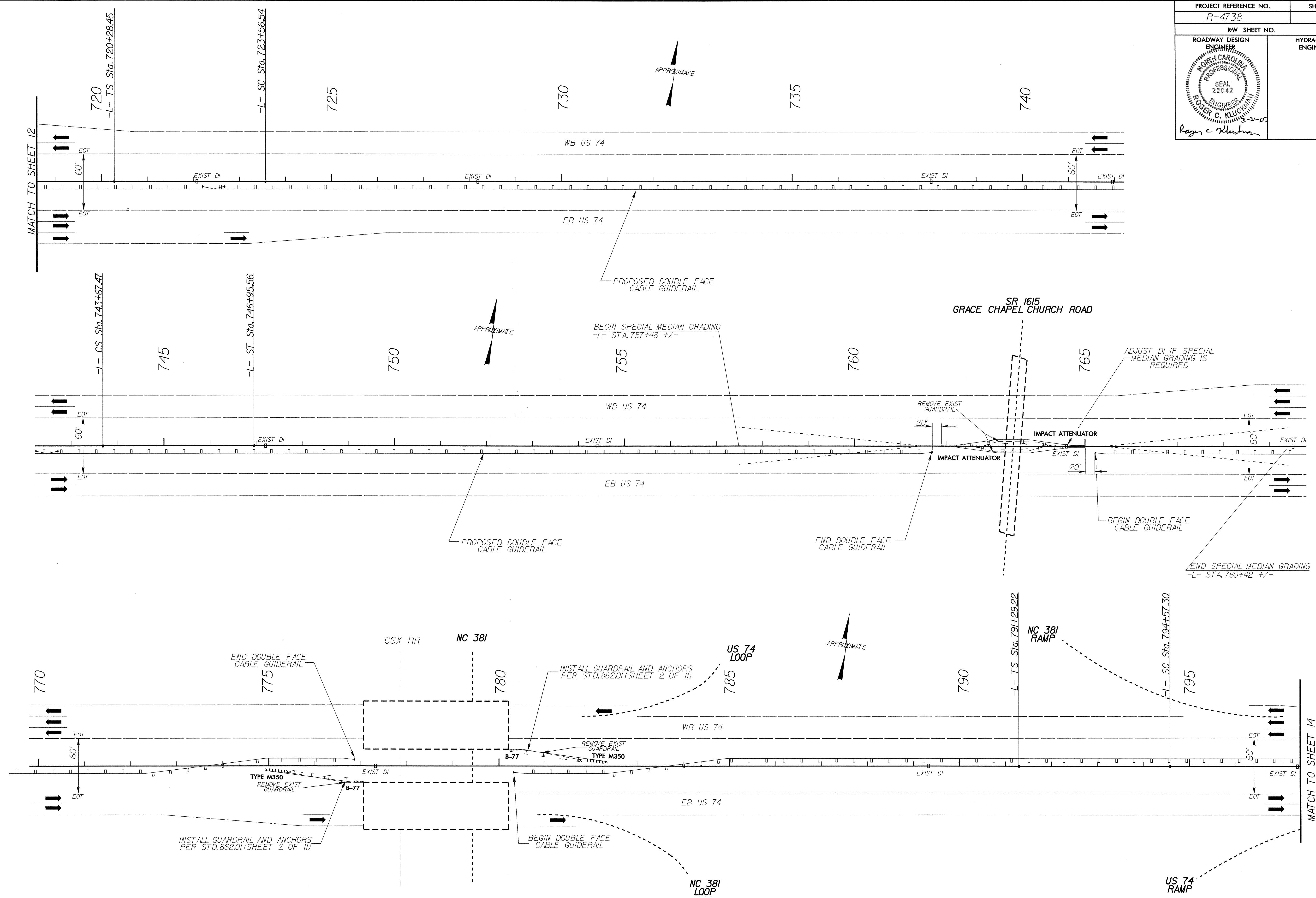
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ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22942 ROGER G. KLUCIK 3-21-07 <i>Roger G. Klucik</i>	HYDRAULICS ENGINEER



NOTE: SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01 (SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.
 SEE STD.862.01 (SHEET 2 OF 11) FOR DETAIL OF GUARDRAIL APPROACHING DUAL LANE BRIDGES.

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PROJECT REFERENCE NO. R-4738	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22942 ROGER C. KLUCHMANN 3-21-07 <i>Roger C. Kluchmann</i>	HYDRAULICS ENGINEER

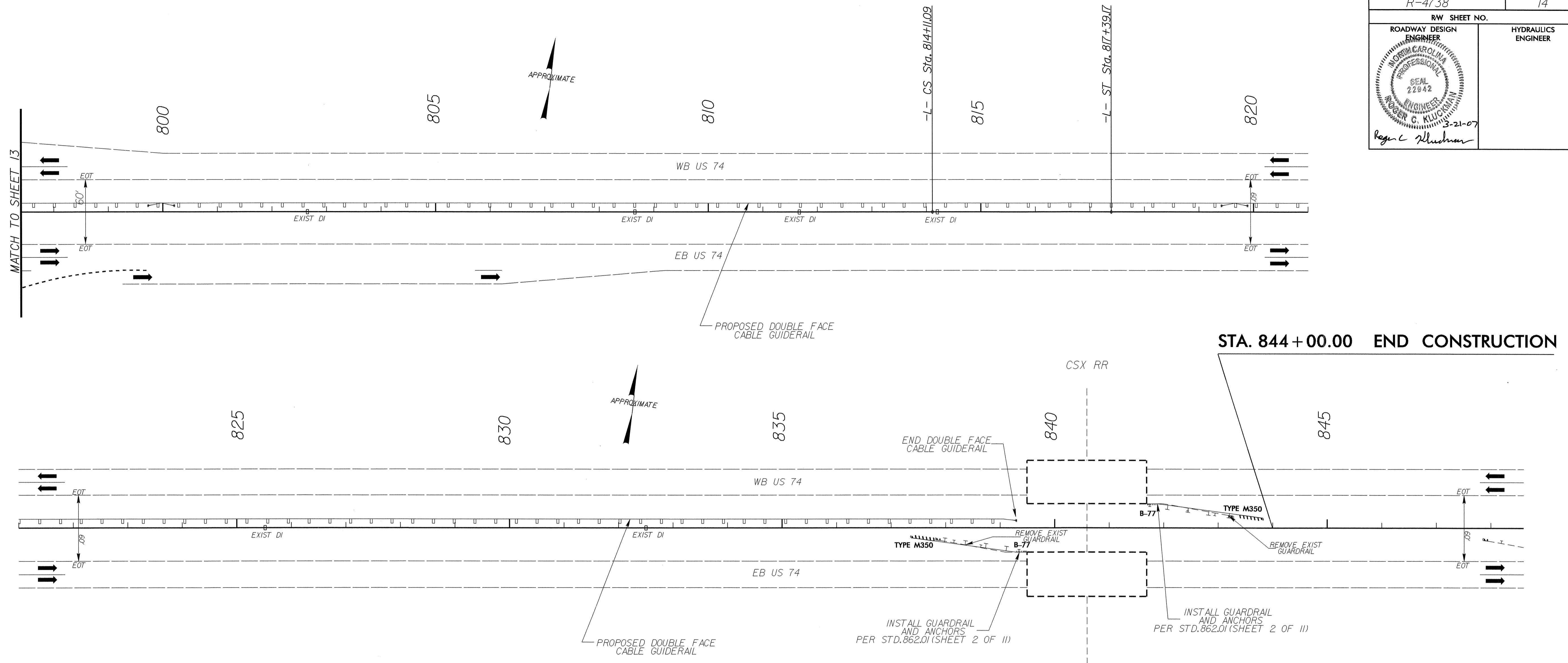


NOTE: SEE DETAIL 2-A FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS.
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 SEE STD. 862.01 (SHEET 2 OF 11) FOR DETAIL OF GUARDRAIL APPROACHING DUAL LANE BRIDGES.

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8/17/99

PROJECT REFERENCE NO. R-4738	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER ROGER C. KLUCMAN SEAL 22842 3-21-07	HYDRAULICS ENGINEER



NOTE: SEE STD.865.01 FOR CABLE GUIDERAIL PLACEMENT.
 SEE STD.865.01(SHEET 3 OF 12) FOR MEDIAN GUIDERAIL TRANSITIONS AT FALSE SUMPS.
 SEE STD.862.01(SHEET 2 OF 11) FOR DETAIL OF MEDIAN TREATMENT AT UNDERPASS.

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