See Sheet 1A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA & IREDELL COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5915A	1	

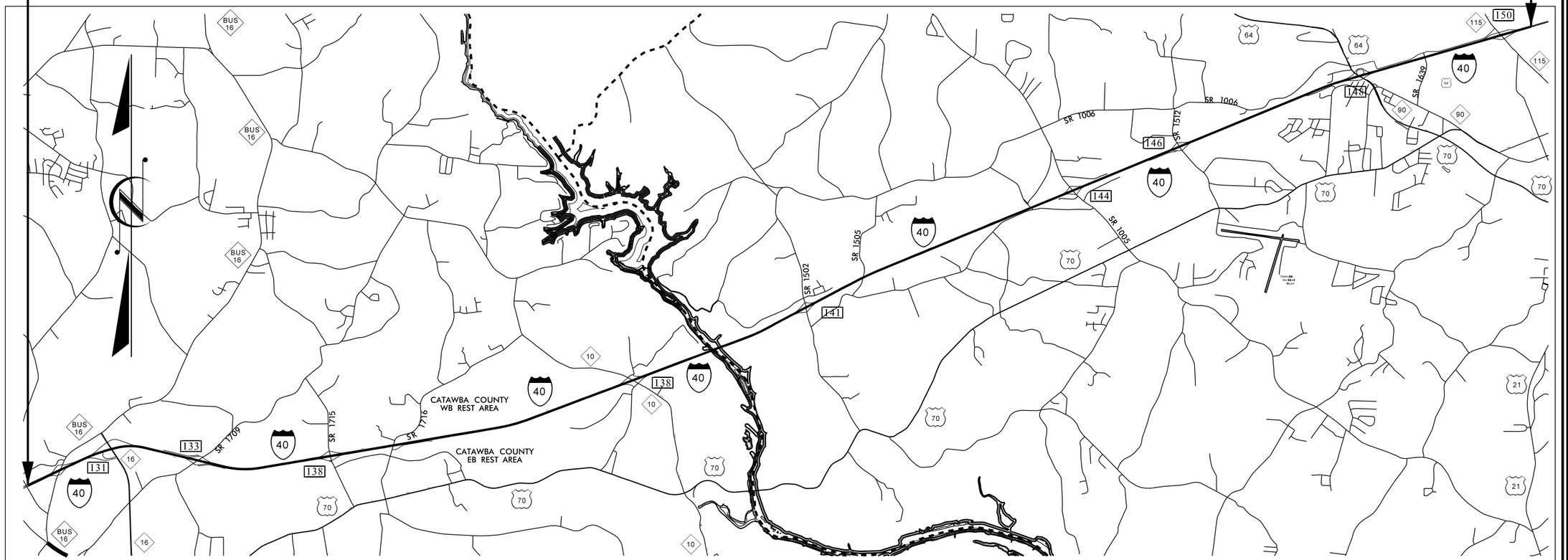
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45919.1.2	NHPIM-0040(074)	PE
45919.3.2	NHPIM-0040(074)	CONST.

LOCATION: *I-40 FROM END OF BRIDGES OVER 4TH AVE. (BRIDGES #171 AND #172) TO BEGINNING OF PROJECT I-3819A (-L- STA. 23+65 EB) AND (-L- STA. 16+50 WB)*

TYPE OF WORK: *PAVEMENT REHABILITATION, GUARDRAIL, MILLING, SHOULDER RECONSTRUCTION*

BEGIN PROJECT I-5915A
MILE MARKER +/- 130.7

END PROJECT I-5915A
MILE MARKER +/- 150.21



PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5915A = 20 MILES

TOTAL LENGTH TIP PROJECT I-5915A = 20 MILES

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

2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	C.G. GURLEY, PE *PROJECT ENGINEER*
LETTING DATE: JUNE 19, 2018	R.E. HUMPHRIES *PROJECT DESIGN ENGINEER*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

TIP PROJECT: I-5915A

CONTRACT: C204155

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	1-A

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-4	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-14	ROADWAY DETAILS
2C-1 THRU 2C-2	BURIED IN CUT SPECIAL DETAILS
2C-3	GUARDRAIL INSTALLATION SPECIAL DETAIL
3B-1 THRU 3B-8	GUARDRAIL SUMMARY, CABLE GUIDERAIL SUMMARY, & SOO
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018

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.

EFF. 01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method Of Shoulder Construction - Method I
560.02	Method Of Shoulder Construction - Method II
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
857.01	Precast Reinforced Concrete Barrier
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

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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
1-5915A	1-B

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

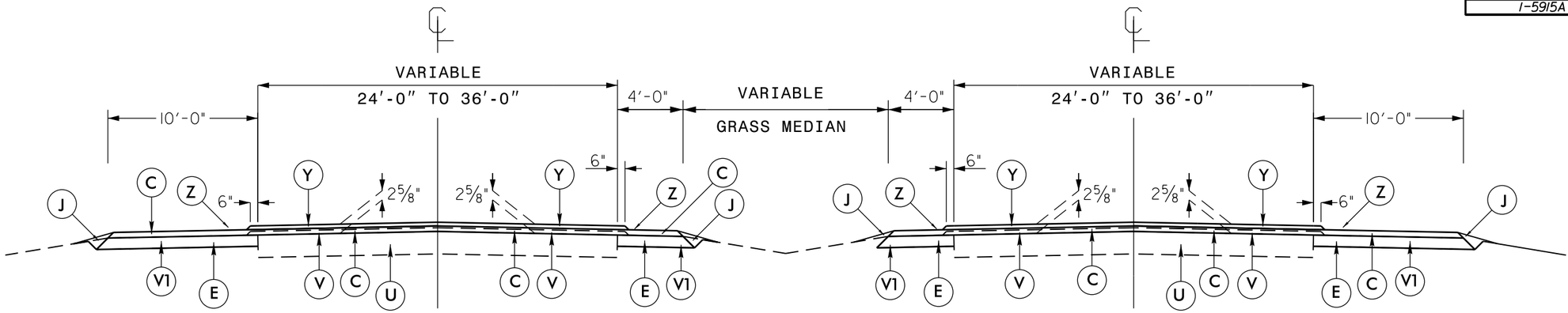
SANITARY SEWER:

- 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.

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2A-1

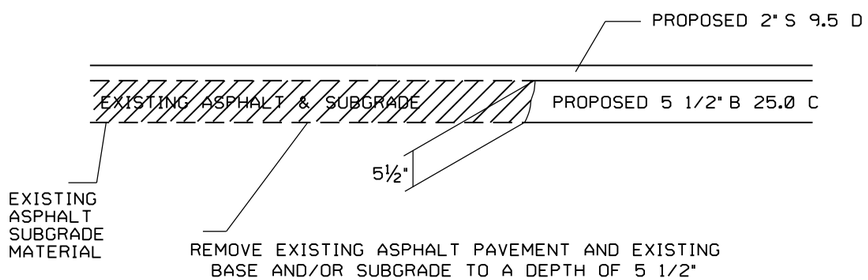


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS

FROM END OF BRIDGES OVER 4TH AVENUE (BRIDGES #171 & #172)
TO BEGIN BRIDGE OVER CATAWBA RIVER AT COUNTY LINE (BRIDGES #6 EAST BOUND)
AND TO BEGINNING OF WEST BOUND OFF-RAMP AT EXIT #138.

DO NOT OVERLAY ANY BRIDGES ON THIS PROJECT
SEE BRIDGE APPROACH AND DEPARTURE DETAIL
FOR PAVEMENT TRANSITIONS AT BRIDGES



(FULL DEPTH PAVED SHOULDER WORK IS INCLUDED IN MILLING AND ASPHALT PAY ITEMS)

FDPS RECONSTRUCTION

USE WITH TYPICAL NO. 1

PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
E	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YARD
J	SHOULDER RECONSTRUCTION
U	EXISTING CONCRETE PAVEMENT.
U1	EXISTING ASPHALT PAVEMENT.
V	MILLING ASPHALT PAVEMENT 5/8" DEPTH
V1	MILLING ASPHALT PAVEMENT 5 ½" DEPTH
Y	PROP. APPROX. ⅝" ULTRA-THIN TYPE B BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD. PER ⅝" DEPTH
Z	MILLED RUMBLE STRIPS

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

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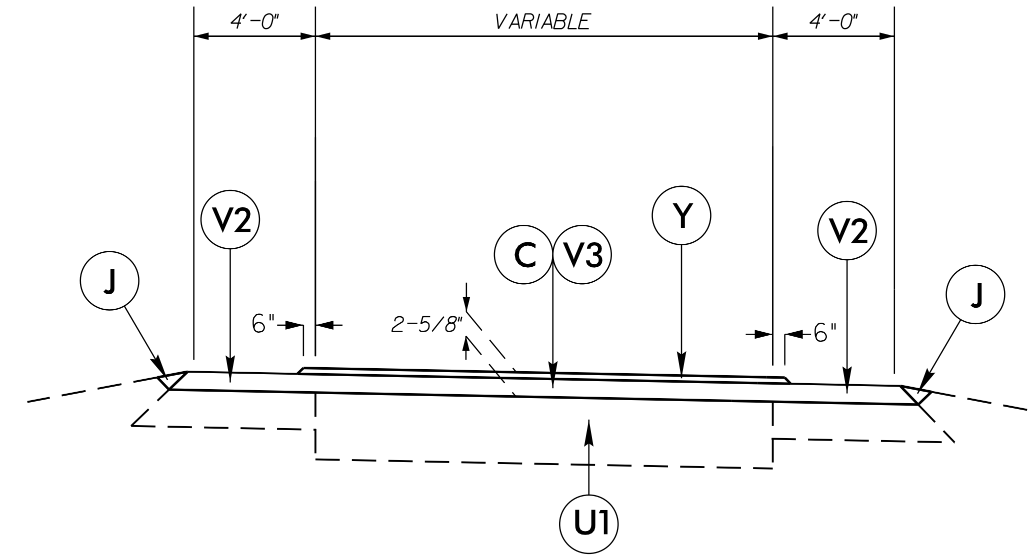
PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
J	SHOULDER RECONSTRUCTION
U1	EXISTING ASPHALT PAVEMENT.
V3	MILLING ASPHALT PAVEMENT 2-5/8" DEPTH
V2	MILLING ASPHALT PAVEMENT 2" DEPTH
Y	PROP. APPROX.5/8" ULTRA-THIN TYPE B BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD. PER 5/8" DEPTH

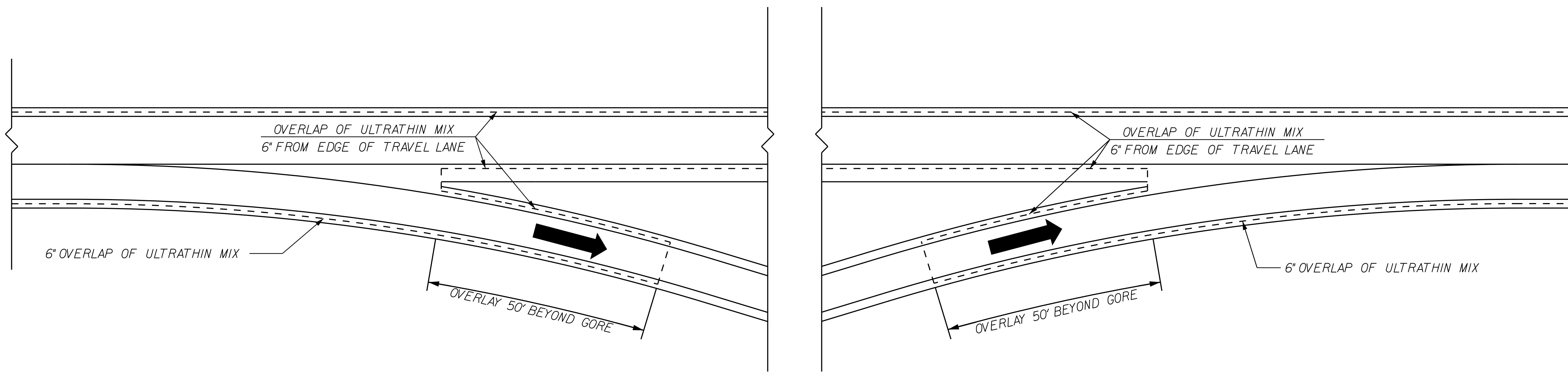
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1A

USE TYPICAL SECTION NO. 1A AS FOLLOWS

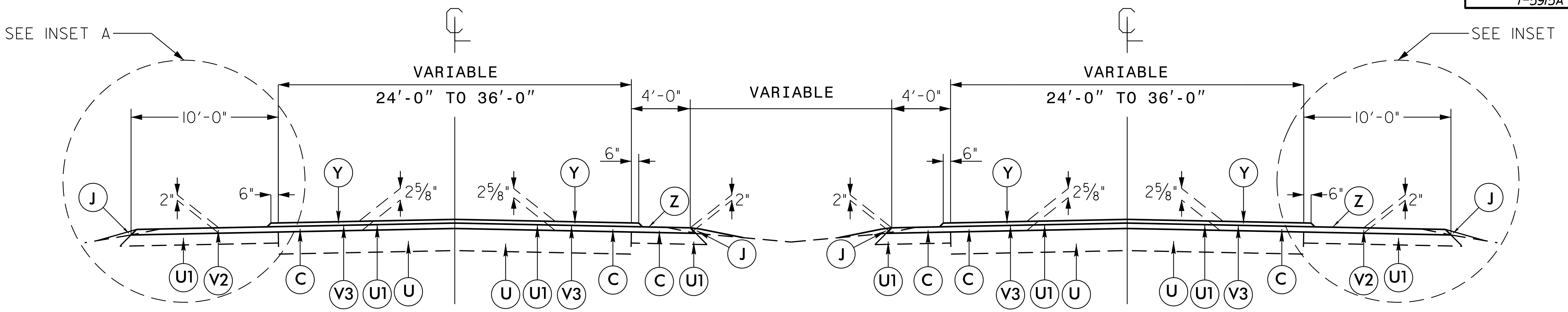
ON RAMPS UP TO 50' BEYOND GORE AREA IN CONJUNCTION WITH TYPICAL NO. 1, TYPICAL NO. 2, AND TYPICAL NO. 3



DETAIL GORE AND RAMP ULTRATHIN PLACEMENT

USE DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO.1, NO.2, AND NO.3

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2A-3

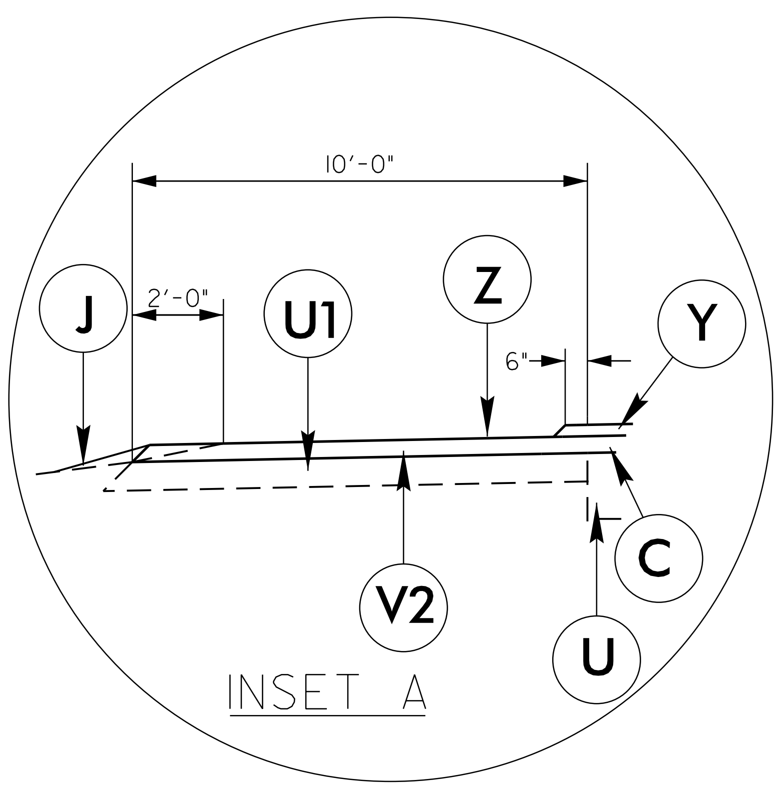


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS

EAST BOUND FROM END OF BRIDGES OVER CATAWBA RIVER /COUNTY LINE (BRIDGE #6) TO END OF EXISTING CONCRETE PAVEMENT AT EXIT 146.

WEST BOUND FROM BEGINNING OF CONCRETE PAVEMENT AT EXIT 146 TO OFF–RAMP AT EXIT 138



PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
J	SHOULDER RECONSTRUCTION
U	EXISTING CONCRETE PAVEMENT.
U1	EXISTING ASPHALT PAVEMENT.
V2	MILLING ASPHALT PAVEMENT 2" DEPTH
V3	MILLING ASPHALT PAVEMENT 2 5/8" DEPTH
Y	PROP. APPROX. 5/8" ULTRA-THIN TYPE B BONDED WEARING COURSE, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD. PER 5/8" DEPTH
Z	MILLED RUMBLE STRIPS

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

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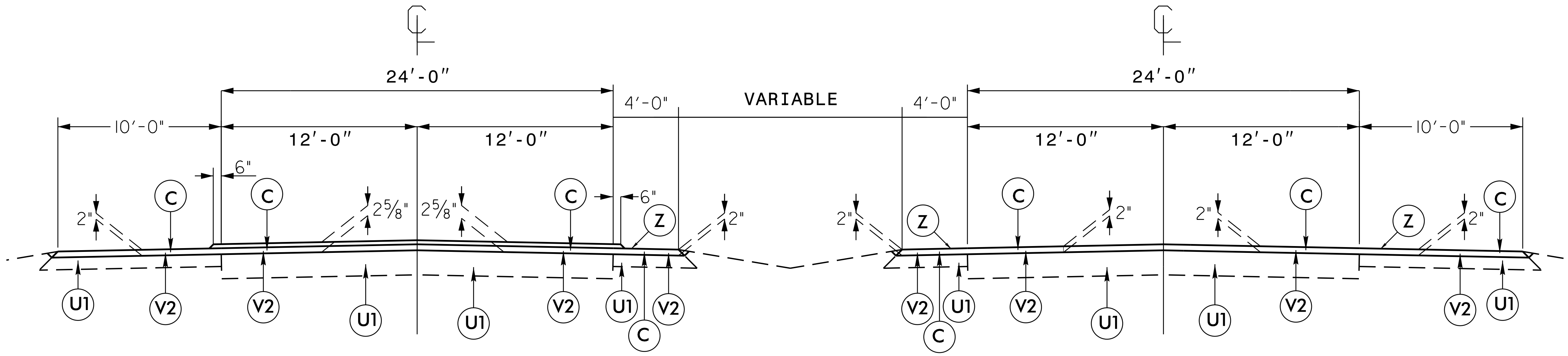
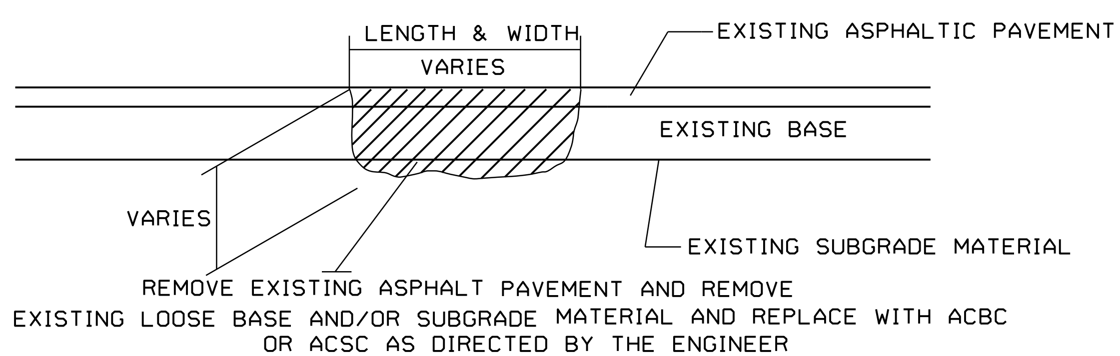
PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2A-4



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS

FROM END OF CONCRETE PAVEMENT NEAR (EXIT 146)
TO BEGINNING OF PROJECT #I-3819A NEAR (EXIT 150)



PATCHING EXISTING PAVEMENT

USE WITH TYPICALS NO. 1A, NO. 2, AND NO. 3, WHERE SHOULDER PATCHING MAY BE NECESSARY

PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
J	SHOULDER RECONSTRUCTION
U1	EXISTING ASPHALT PAVEMENT.
V2	MILLING ASPHALT PAVEMENT 2" DEPTH
Z	MILLED RUMBLE STRIPS

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

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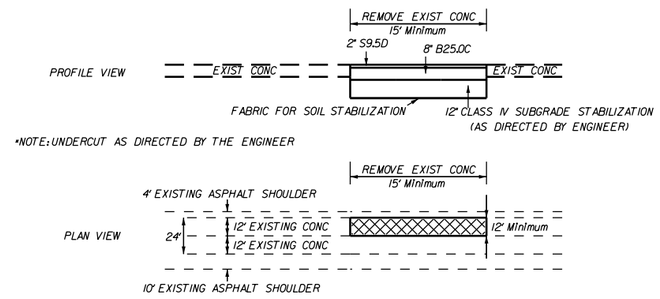
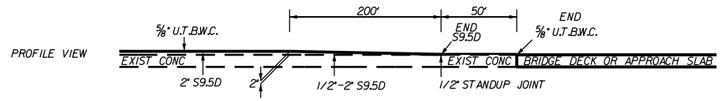
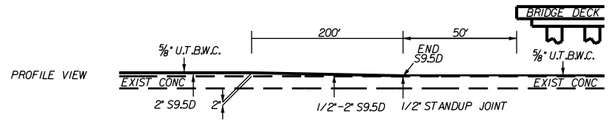


REPAIR OF EXISTING CONC. PAVEMENT DETAIL



USE DETAIL AT THE FOLLOWING LOCATIONS

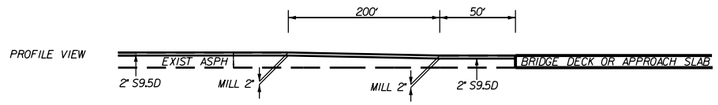
IN CONJUNCTION WITH TYPICAL SECTION NO. 1 AND NO. 2
AT ALL OVERPASS BRIDGES
DO NOT OVERLAY ANY BRIDGES ON THIS PROJECT



USE DETAIL AT THE FOLLOWING LOCATIONS

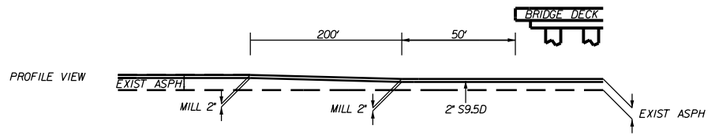
IN CONJUNCTION WITH TYPICAL SECTION NO. 1 AND NO. 2
AT THE FOLLOWING UNDERPASS BRIDGES: #173 (SR 1709), #176 (SR 1716)
#179 (SR 1717), #90 (SR 1005)

BRIDGE APPROACH AND DEPARTURE DETAILS



USE DETAIL AT THE FOLLOWING LOCATIONS

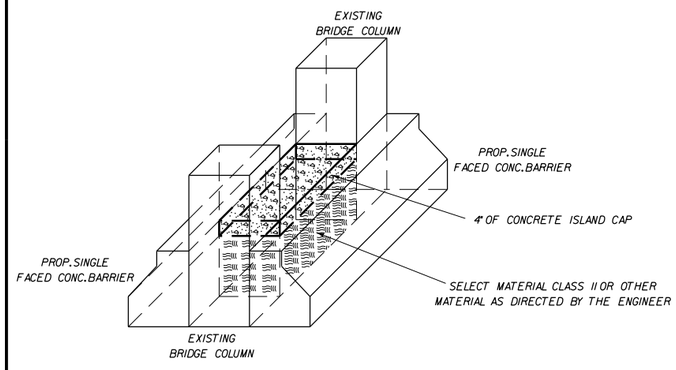
IN CONJUNCTION WITH TYPICAL SECTION NO. 3
AT ALL OVERPASS BRIDGES AND END OF CONSTRUCTION
DO NOT OVERLAY ANY BRIDGES ON THIS PROJECT



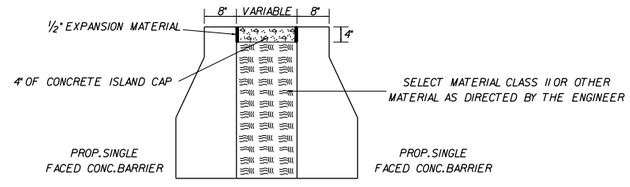
USE DETAIL AT THE FOLLOWING LOCATIONS

IN CONJUNCTION WITH TYPICAL SECTION NO. 3
AT THE FOLLOWING UNDERPASS BRIDGES: #R-112 (ALEXANDER RR), #118 (SR 1639)

BRIDGE APPROACH AND DEPARTURE DETAILS



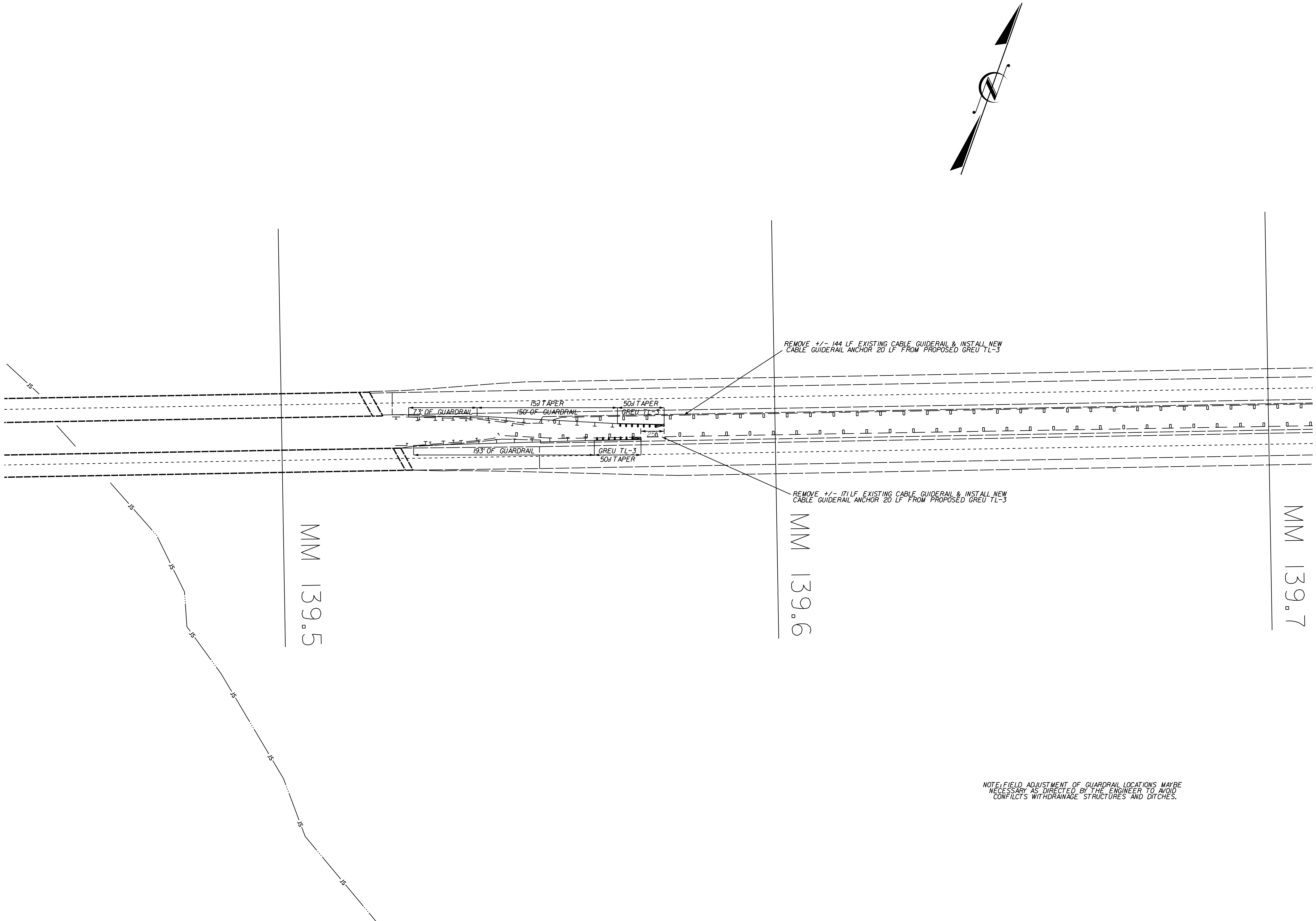
ISOMETERIC VIEW



FRONT VIEW

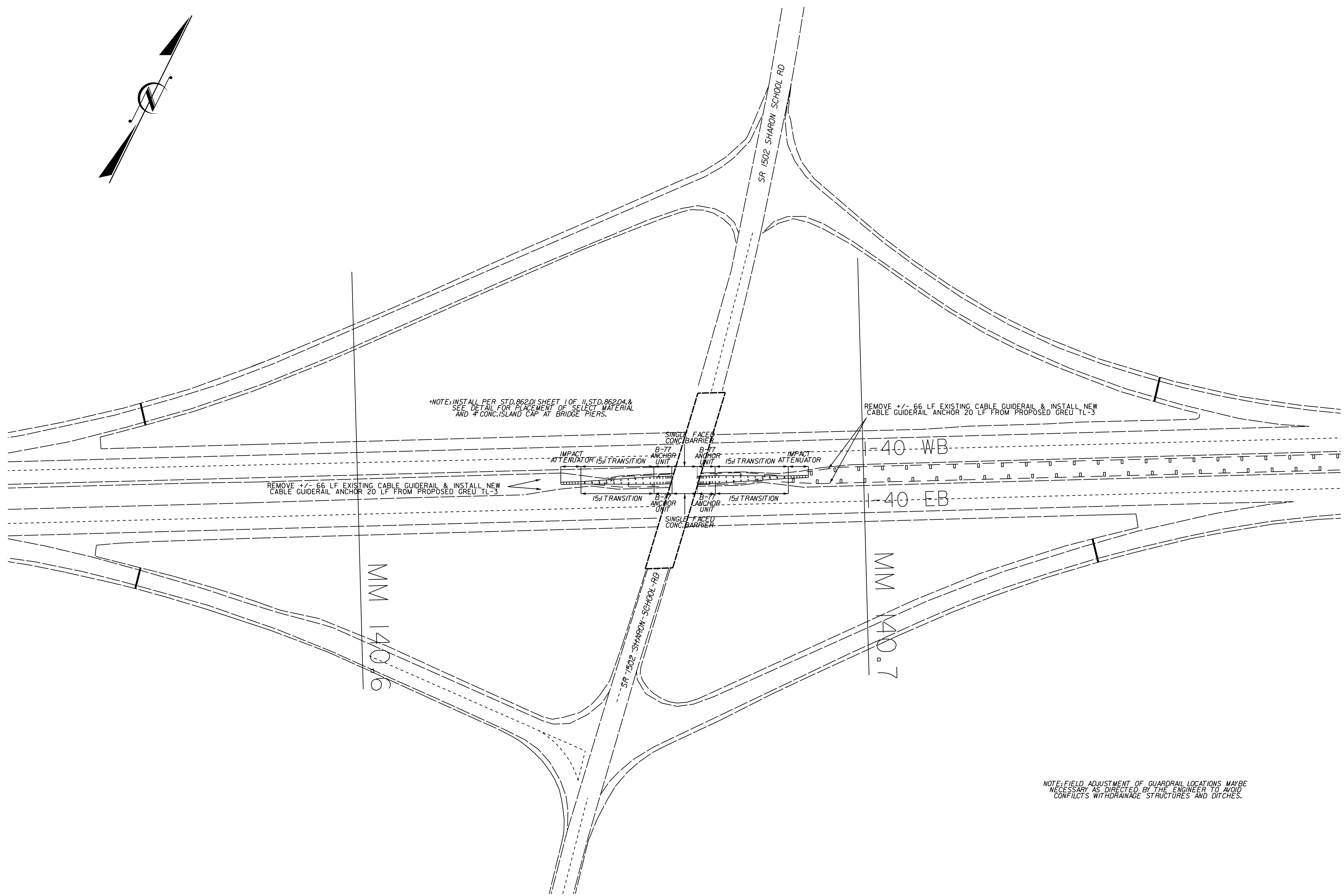
DETAIL FOR PLACEMENT OF SELECT MATERIAL AND 4" CONC. ISLAND CAP AT BRIDGE PIERS

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-2



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-3


SR 1502 SHARON SCHOOL RD
*NOTE: INSTALL PER STD.862.01 SHEET 1 OF 11, STD.862.04, & SEE DETAIL FOR PLACEMENT OF SELECT MATERIAL AND 4" CONC. ISLAND CAP AT BRIDGE PIERS.
REMOVE +/- 66 LF EXISTING CABLE GUIDERAIL & INSTALL NEW CABLE GUIDERAIL ANCHOR 20 LF FROM PROPOSED GREU TL-3
SINGLE FACED CONC. BARRIER
IMPACT ATTENUATOR
15:1 TRANSITION
B-77 ANCHOR UNIT
I-40 WB
REMOVE +/- 66 LF EXISTING CABLE GUIDERAIL & INSTALL NEW CABLE GUIDERAIL ANCHOR 20 LF FROM PROPOSED GREU TL-3
I-40 EB
MM 140.6
MM 140.7
SR 1502 SHARON SCHOOL RD

NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRANAGE STRUCTURES AND DITCHES.

8/17/99

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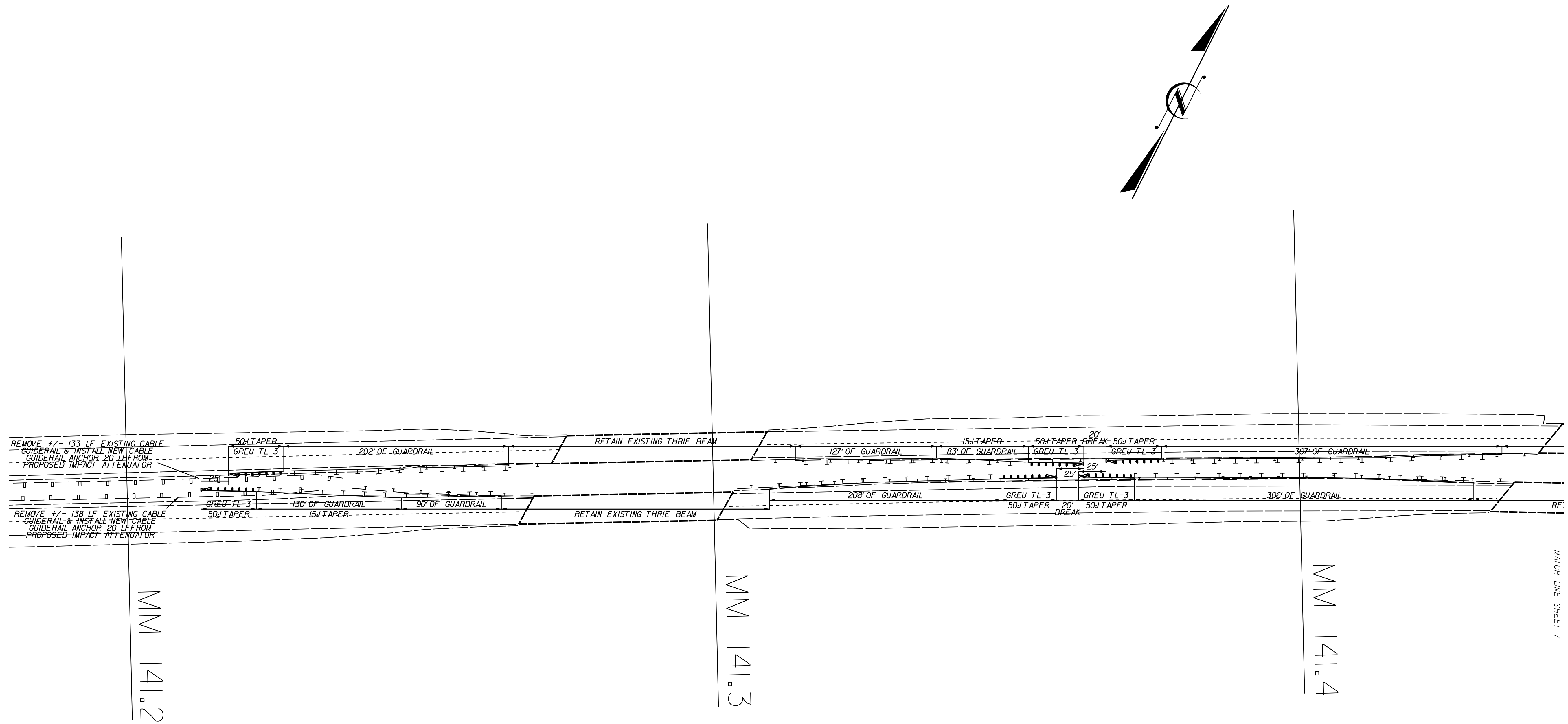
PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-4



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

REVISIONS

8/17/99

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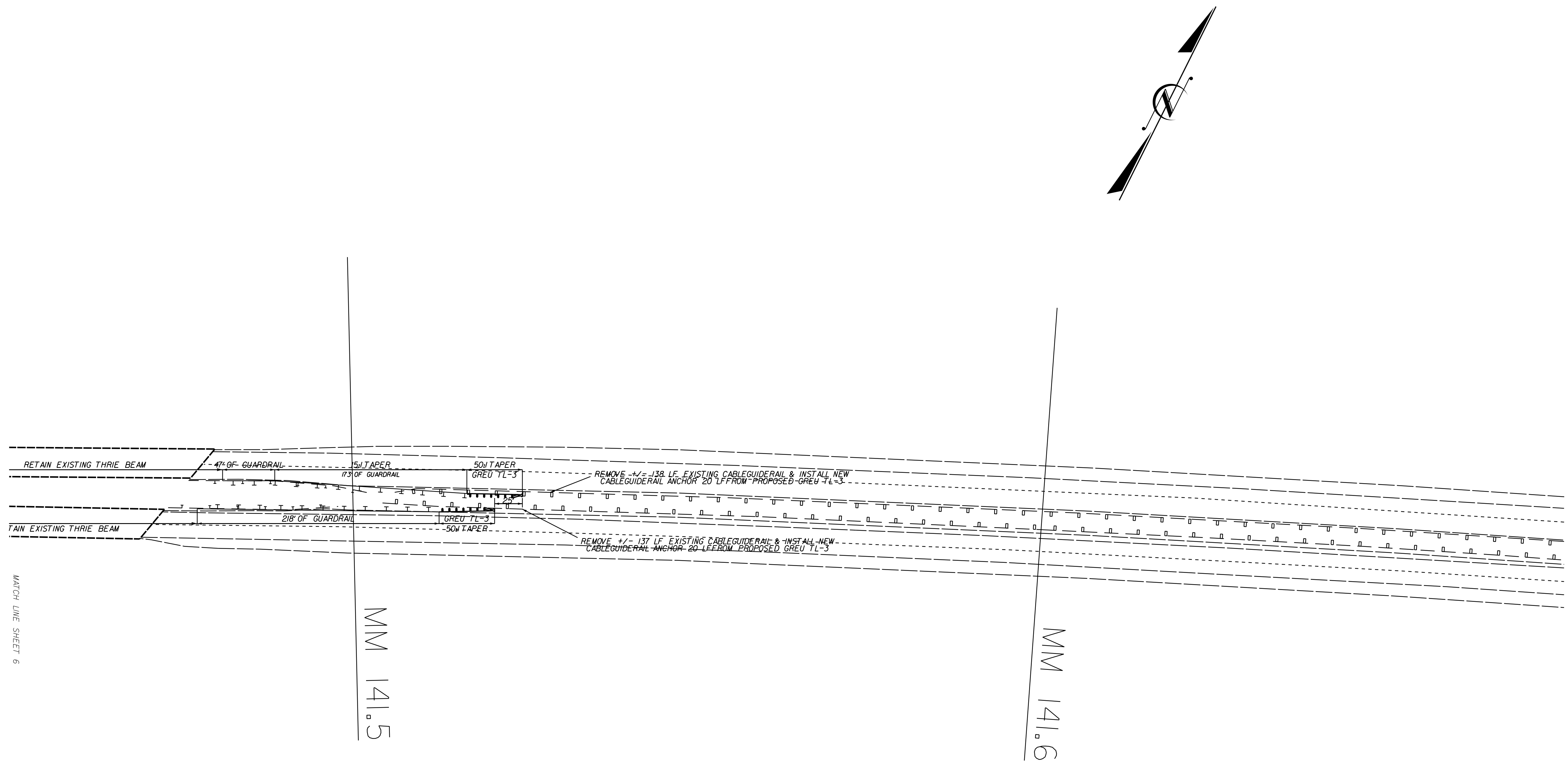
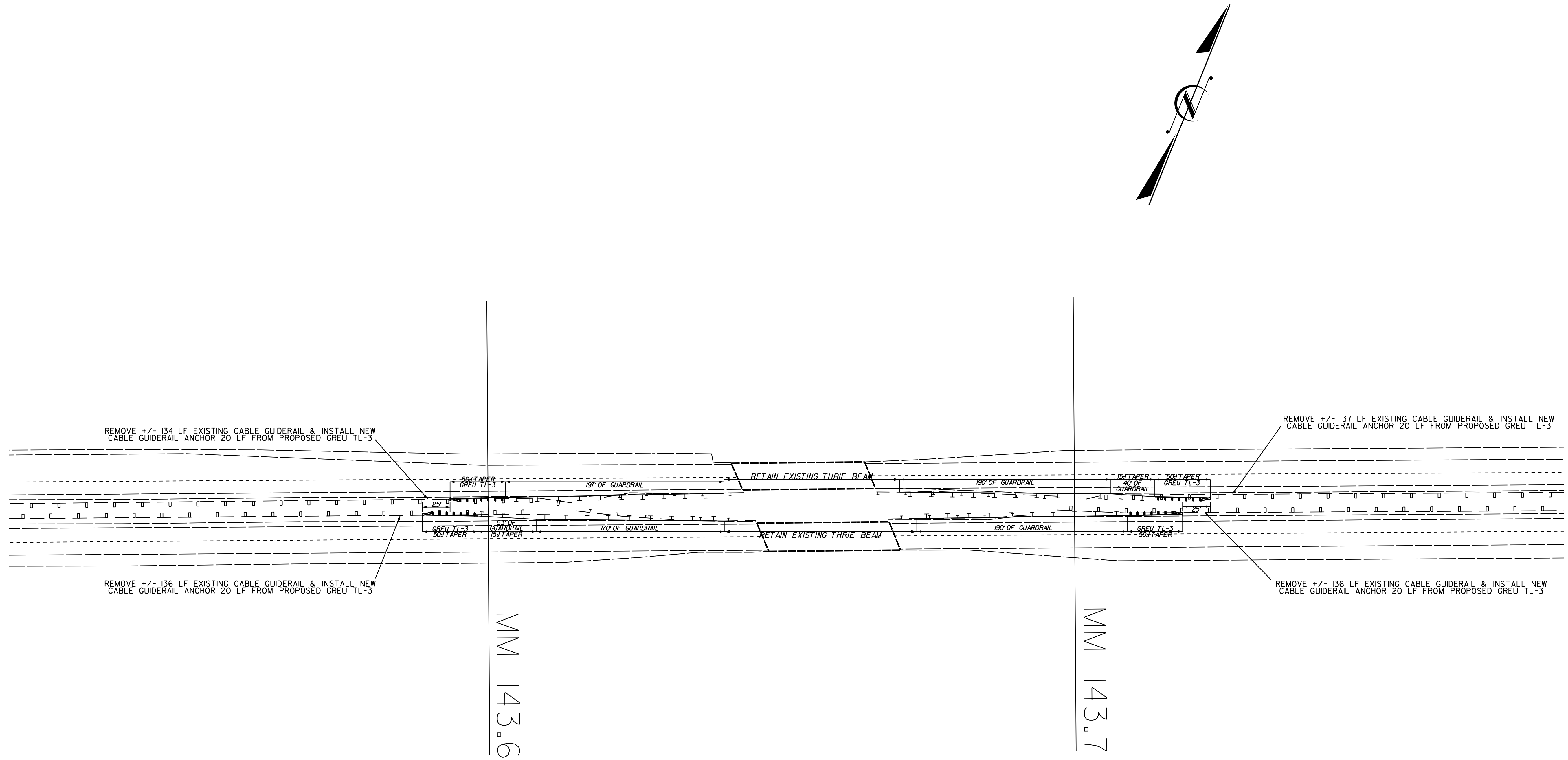
PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-5



RETAIN EXISTING THRIE BEAM
47' OF GUARDRAIL
15:1 TAPER
173' OF GUARDRAIL
50:1 TAPER
GREU TL-3
REMOVE +/- 138 LF EXISTING CABLEGUIDERAIL & INSTALL NEW CABLEGUIDERAIL ANCHOR 20 LFFROM PROPOSED GREU TL-3
25'
TAIN EXISTING THRIE BEAM
218' OF GUARDRAIL
GREU TL-3
50:1 TAPER
REMOVE +/- 137 LF EXISTING CABLEGUIDERAIL & INSTALL NEW CABLEGUIDERAIL ANCHOR 20 LFFROM PROPOSED GREU TL-3
MATCH LINE SHEET 6
MM 141.5
MM 141.6

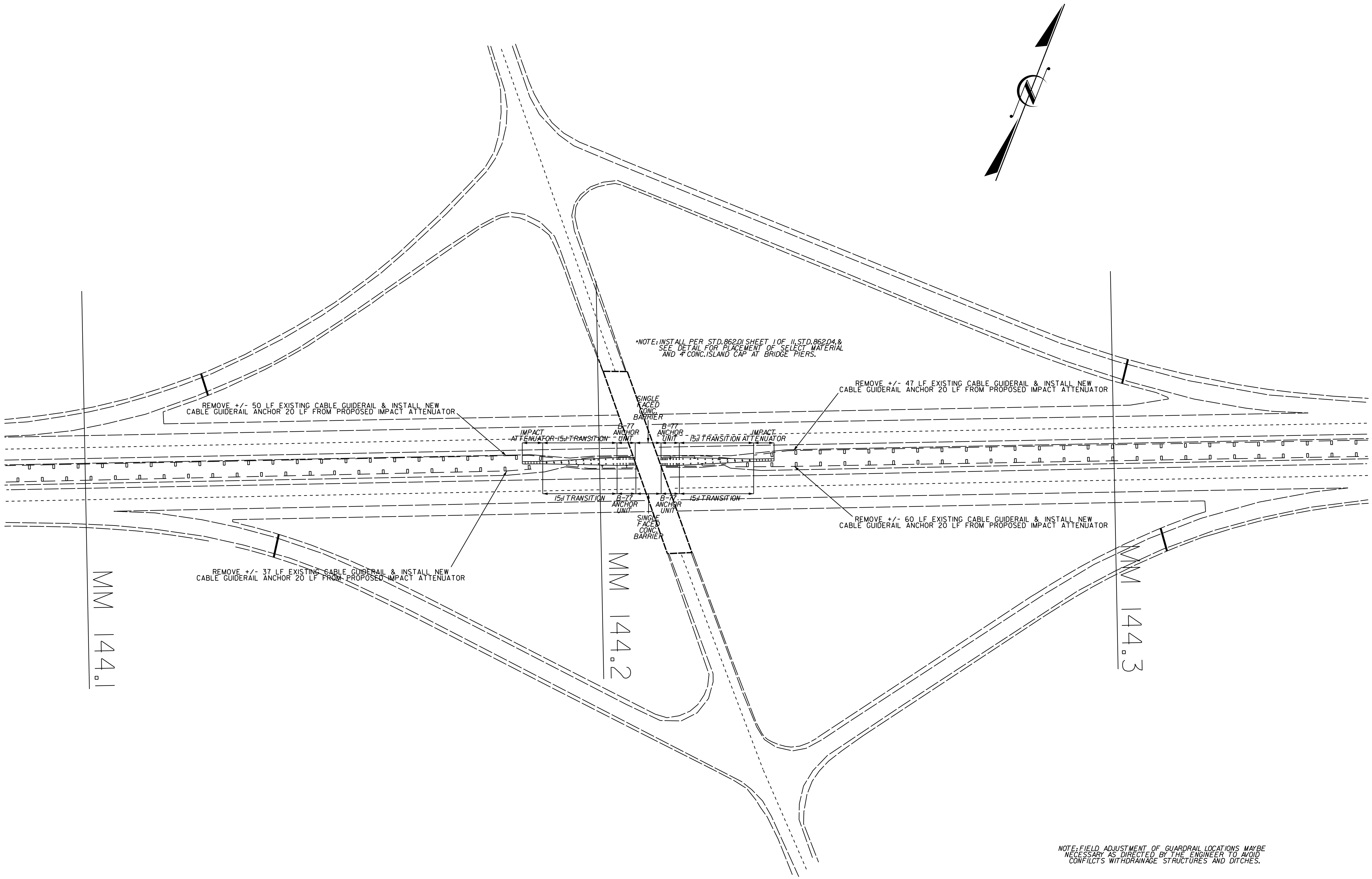
NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-6



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-7

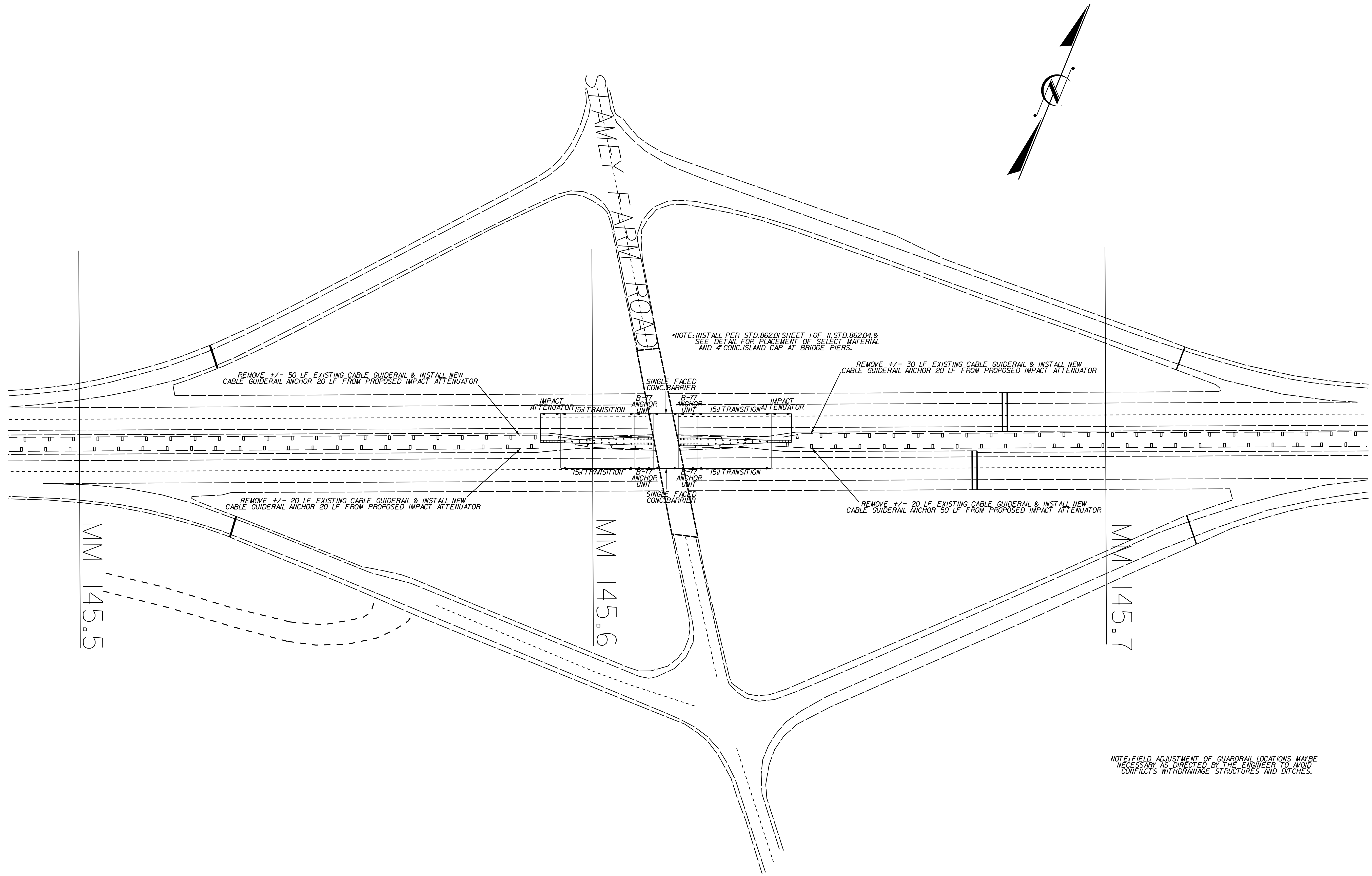


NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE
NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID
CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

8/17/99

06-APR-2018 12:34
S:\Contracts\Contracts\Resurfacing Projects\Division 12\I-5915 Catawba Iredell May 2018\I-5915_Rdy_dtl_2B-7.dgn
njporter AT CSD-292592

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-8



8/17/99

06-APR-2018 12:38
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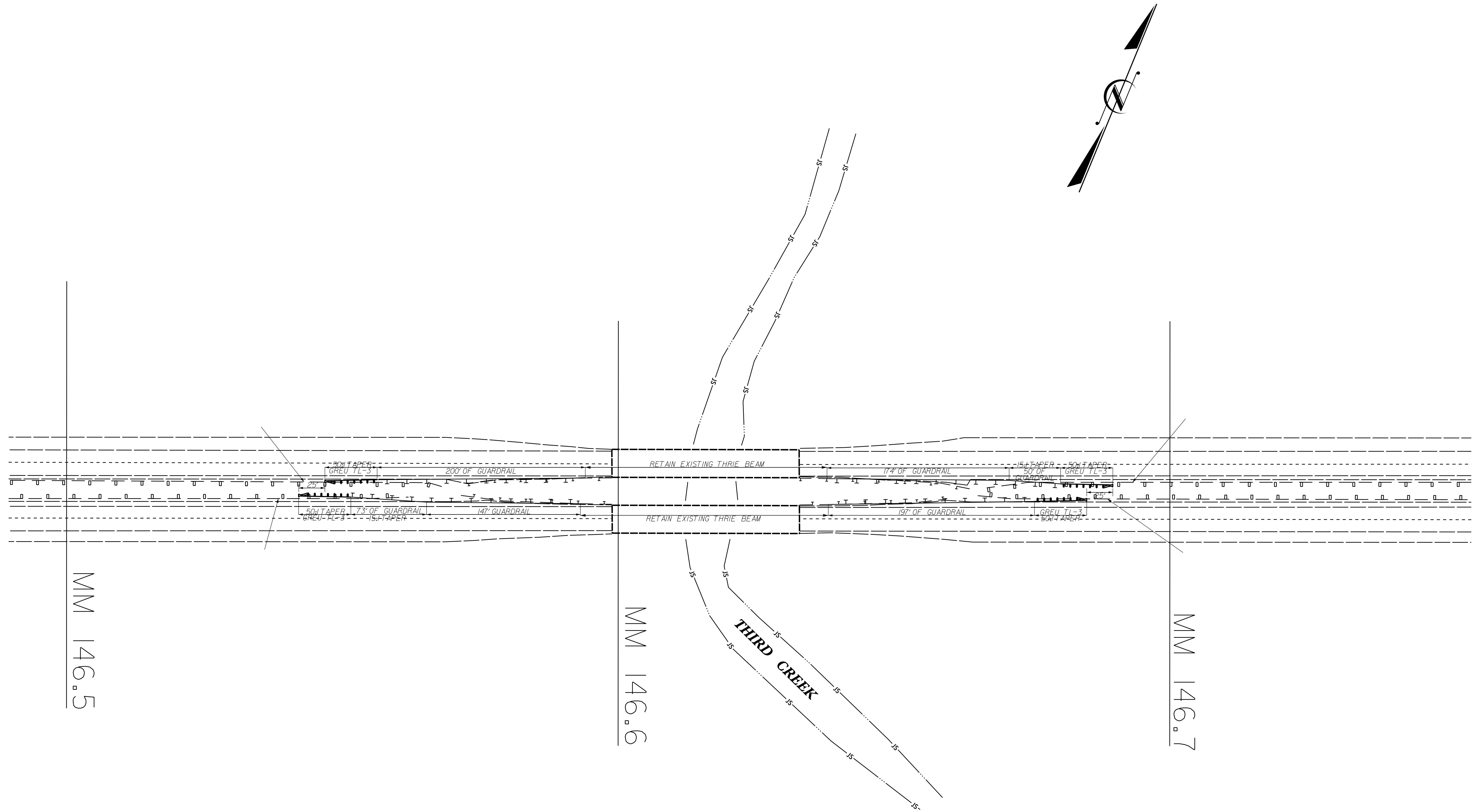
pjporter AT CSD-292592

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-9



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

8/17/99

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-10

REMOVE +/- 106 LF EXISTING CABLE GUIDERAIL & INSTALL NEW CABLE GUIDERAIL ANCHOR 20 LF FROM PROPOSED GREU TL-3

50:1 TAPER
GREU TL-3
162' OF GUARDRAIL
25'
GREU TL-3
50:1 TAPER
122' OF GUARDRAIL
15:1 TAPER
97' OF GUARDRAIL

RETAIN EXISTING THRIE BEAM

RETAIN EXISTING THRIE BEAM

REMOVE +/- 100 LF EXISTING CABLE GUIDERAIL & INSTALL NEW CABLE GUIDERAIL ANCHOR 20 LF FROM PROPOSED GREU TL-3

MM 147.8

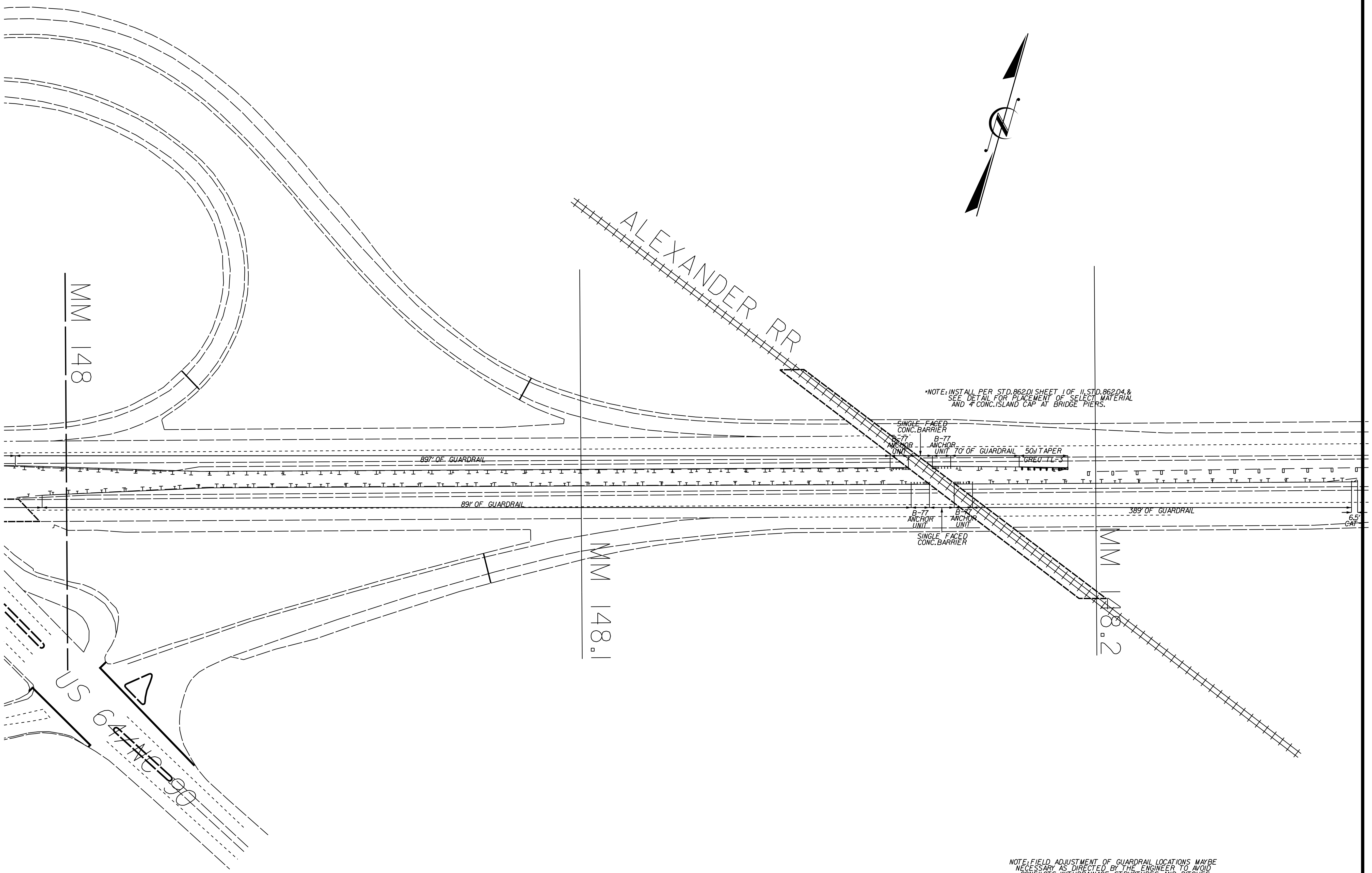
MM 147.9

NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITH DRAINAGE STRUCTURES AND DITCHES.

MATCH LINE SHEET 13

06-APR-2018 12:40
S:\Contracts\Contracts\Resurfacing Projects\Division 12\I-5915 Catawba Iredell May 2018\I-5915_Rdy_dtl_2B-10.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-11


ALEXANDER RR
MM 148
MM 148.1
MM 148.2
US 64/NC 90
*NOTE: INSTALL PER STD.862.01 SHEET 1 OF 11, STD.862.04,&
SEE DETAIL FOR PLACEMENT OF SELECT MATERIAL
AND 4" CONC.ISLAND CAP AT BRIDGE PIERS.
SINGLE FACED CONC.BARRIER
B-77 ANCHOR UNIT
B-77 ANCHOR UNIT
70' OF GUARDRAIL
50:1 TAPER
GREU TL-3
897' OF GUARDRAIL
891' OF GUARDRAIL
B-77 ANCHOR UNIT
B-77 ANCHOR UNIT
SINGLE FACED CONC.BARRIER
389' OF GUARDRAIL
6.5' CAT

NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

8/17/99

06-APR-2018 12:41
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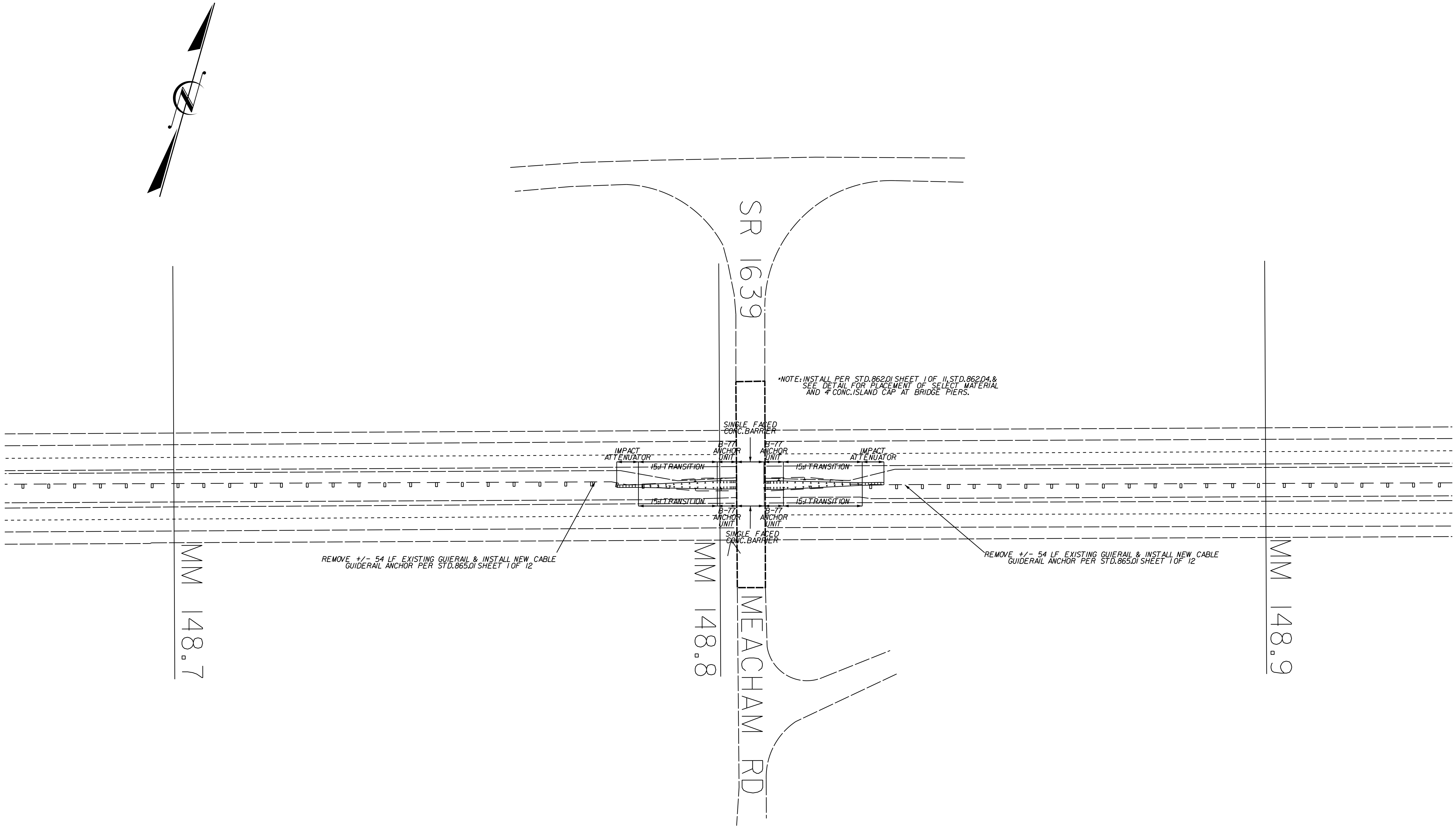
pjporter AT CSD-292592

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-12



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

8/17/99

06-APR-2018 12:42
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PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-13

8/17/99

REMOVE +/- 25 LF EXISTING GUIDERAIL & INSTALL NEW CABLE GUIDERAIL ANCHOR 20' FROM PROPOSED GREU TL-3

50' TAPER

GREU TL-3

25'

GREU TL-3

50' TAPER

90' OF GUARDRAIL

952' OF GUARDRAIL

NC 115

RETAIN EXISTING TH

RETAIN EXISTING

MM 149.5

MM 149.6

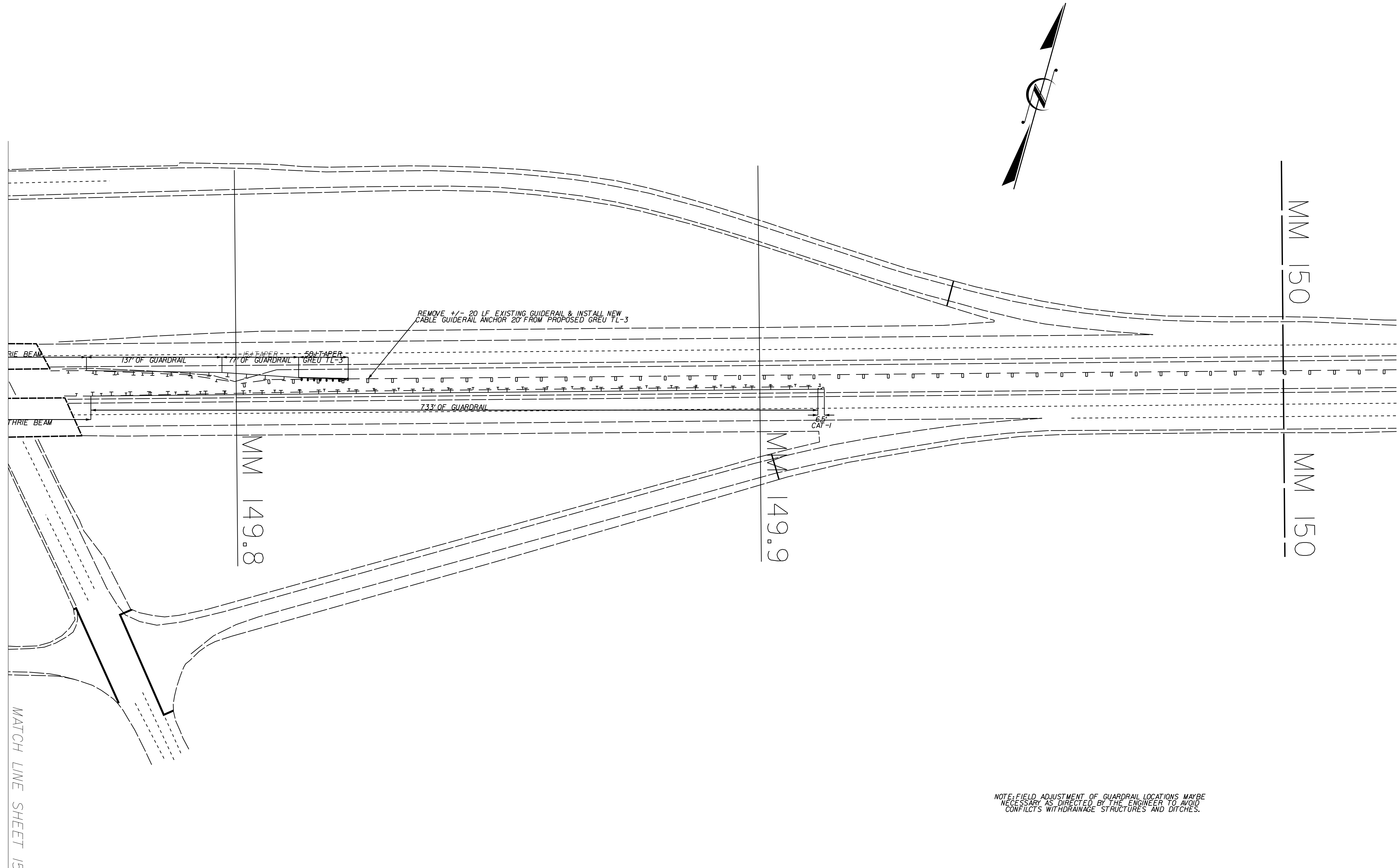
MM 149.7

NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS WITH DRAINAGE STRUCTURES AND DITCHES.

MATCH LINE SHEET 16

06-APR-2018 12:43
S:\Contracts\Contracts\Resurfacing Projects\Division 12\I-5915 Catawba Iredell May 2018\I-5915_Rdy_dtl_2B-13.dgn

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2B-14



NOTE: FIELD ADJUSTMENT OF GUARDRAIL LOCATIONS MAYBE NECESSARY AS DIRECTED BY THE ENGINEER TO AVOID CONFILCTS WITHDRAINAGE STRUCTURES AND DITCHES.

8/17/99

06-APR-2018 12:44
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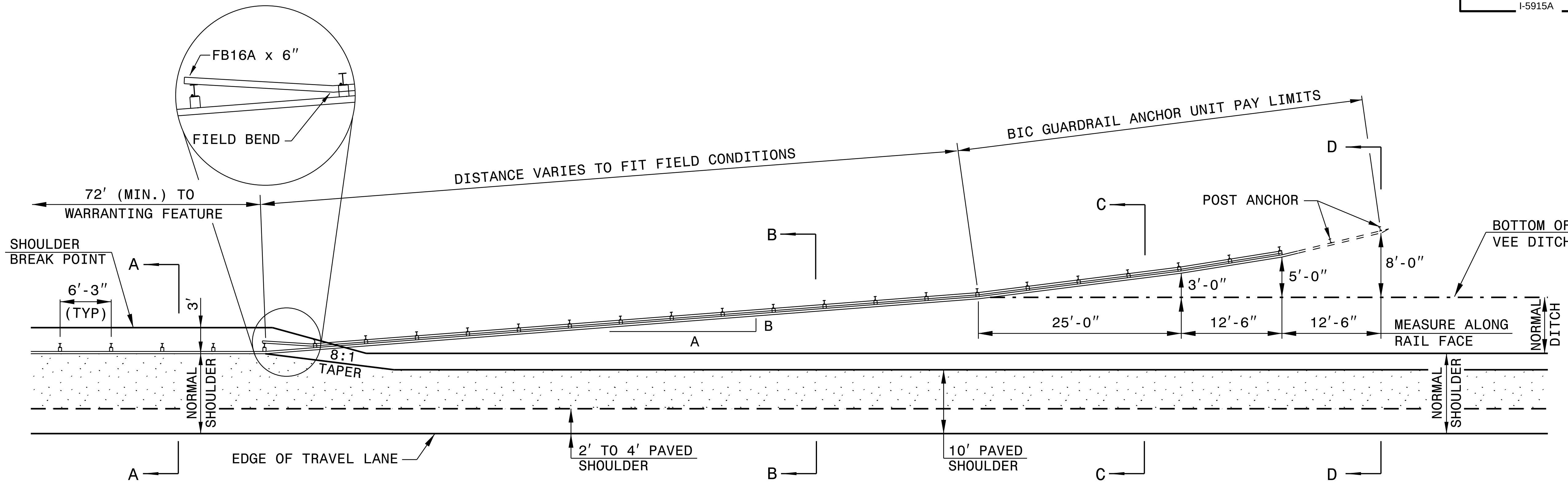
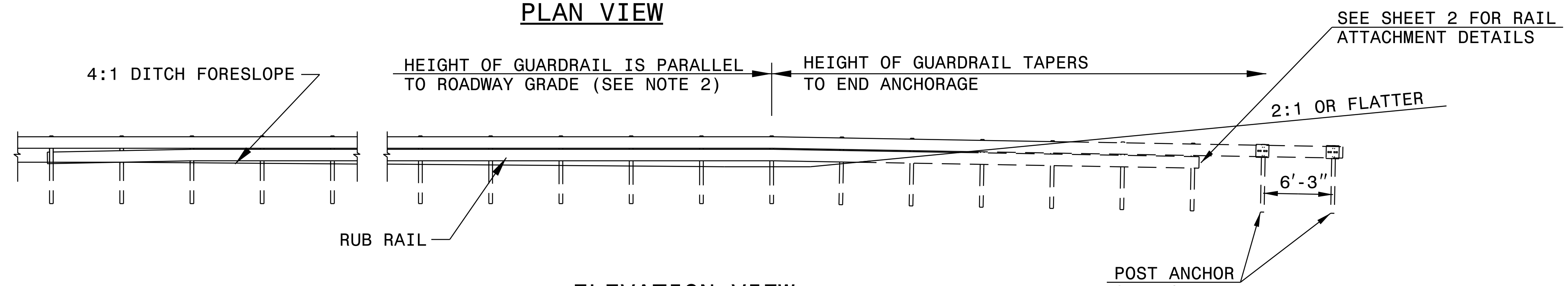
5/14/99

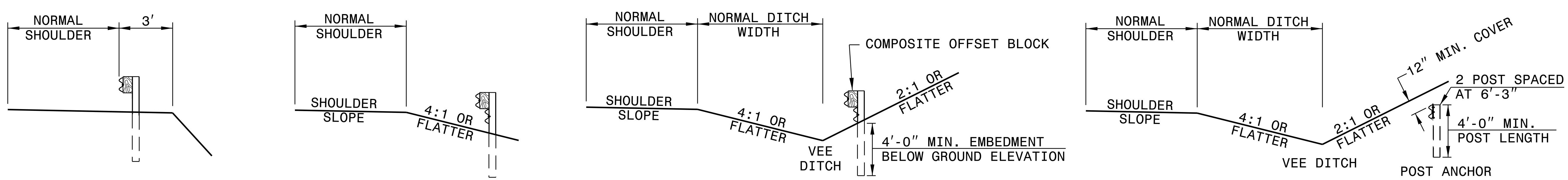


PLAN VIEW

DESIGN SPEED mph	A:B
≥ 60	13:1
55	12:1
50	11:1
45	10:1
40	9:1
30 or less	7:1



ELEVATION VIEW



SECTION A-A

SECTION B-B
(WITH RUBRAIL)

SECTION C-C
(WITH RUBRAIL)

SECTION D-D

NOTES:

1. VARIABLE DITCH OFFSETS MAY BE USED TO FIT FIELD CONDITIONS.
2. HEIGHT OF GUARDRAIL MAY BE TAPERED DOWN IN ELEVATION TO MAINTAIN 3'-9" MAXIMUM HEIGHT.
3. ALL POSTS ARE 8'-0" IN LENGTH FROM WHERE THE GUARDRAIL FLARES AWAY FROM THE SHOULDER BACK TO THE DITCH FLOW LINE. GUARDRAIL POSTS BEYOND THE DITCH FLOW LINE MAY BE SHORTENED AS LONG AS A MINIMUM OF 4 FT. EMBEDMENT REMAINS BELOW THE EXISTING GROUND LINE. POST FOR POST ANCHOR MAY BE REDUCED TO 4 FT., ALL OF WHICH WILL BE BELOW GROUND.
4. REFER TO NCDOT STANDARD DRAWINGS 862.02 FOR GUARDRAIL INSTALLATION NOT COVERED IN THIS DETAIL AND INSTALL IN ACCORDANCE WITH SECTION 862 OF THE STANDARDS SPECIFICATIONS.
5. PAYMENT FOR ANY RUBRAIL INSTALLATION BEYOND BIC GUARDRAIL ANCHOR UNIT PAY LIMIITS WILL BE INCIDENTAL TO PAYMENT FOR BIC ANCHOR UNIT.

SHEET 1 OF 2

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

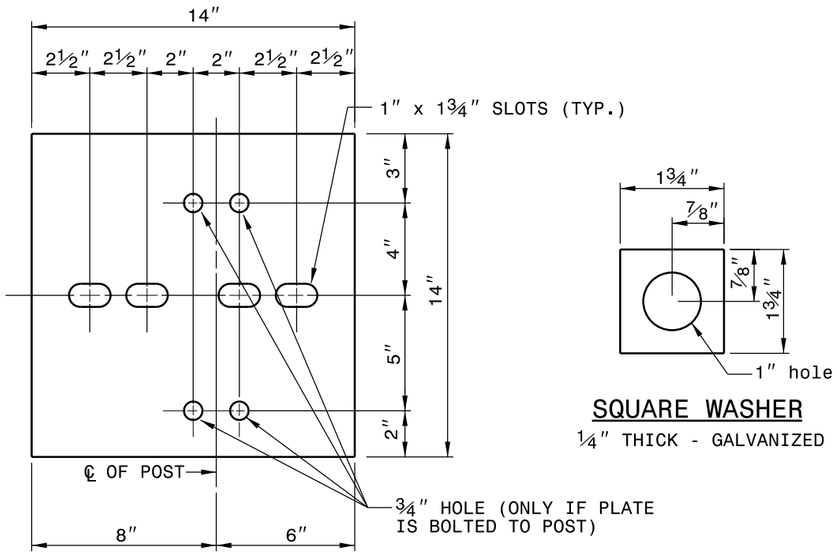
DETAIL OF GUARDRAIL BURIED IN CUT (BIC)

ORIGINAL BY: FHWA-G4 SYSTEM DATE: 8-13-98
MODIFIED BY: E.E. WARD DATE: 12-7-01
CHECKED BY: DATE:
FILE SPEC.: ericward/misc. guardrail/BIC.dgn

$$$$$SYSTIME$$$$$ $$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	2C-2

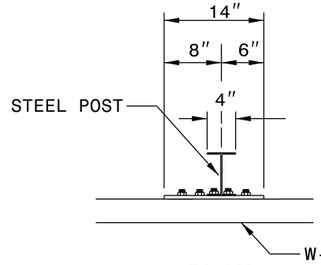


STEEL PLATE - ½″

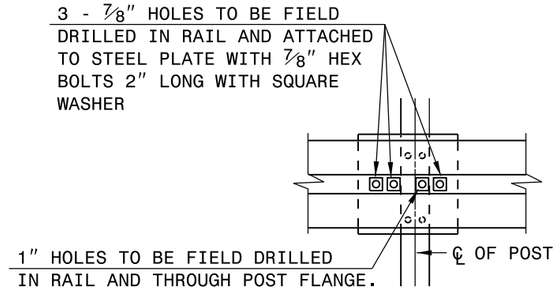
GALVANIZED
WELDED OR BOLTED TO POST

SQUARE WASHER

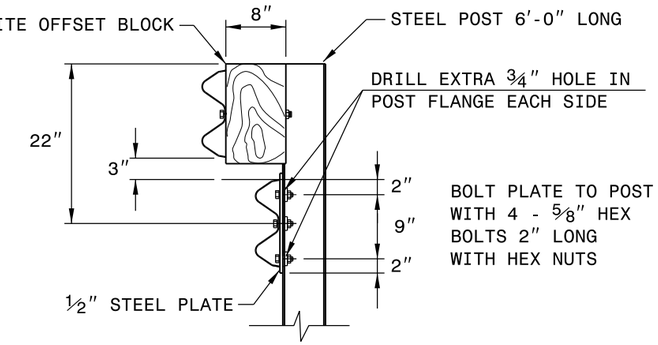
¼″ THICK - GALVANIZED



PLAN

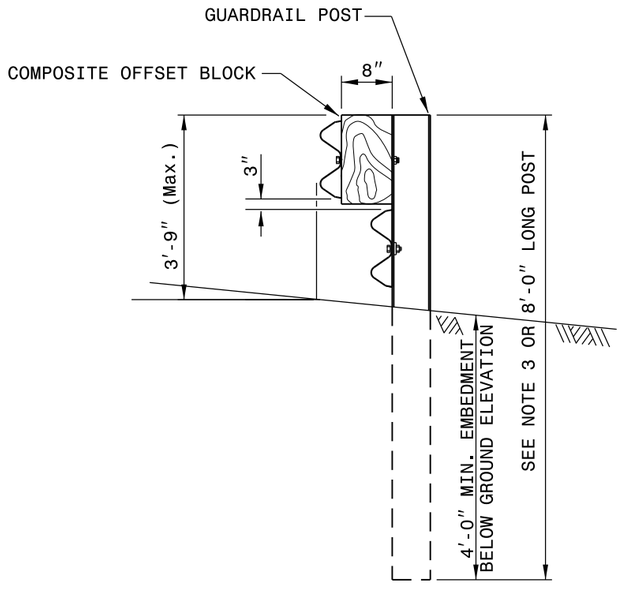


FRONT VIEW



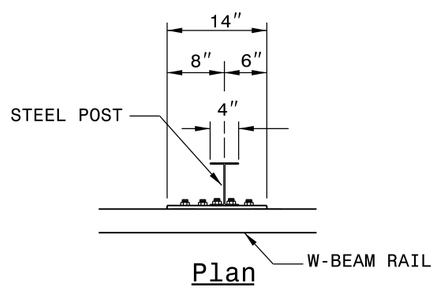
ELEVATION

RUBRAIL ANCHOR DETAILS

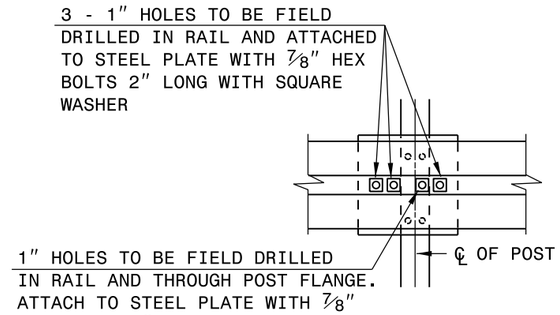


ELEVATION

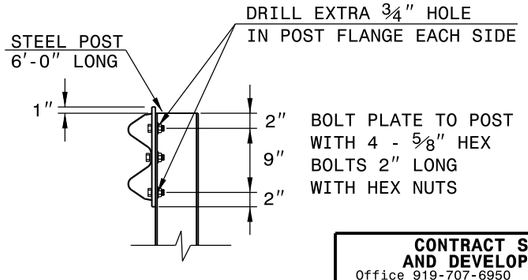
RAIL ATTACHMENT DETAIL



Plan



FRONT VIEW



ELEVATION

POST ANCHOR DETAILS

SHEET 2 OF 2

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

DETAIL OF GUARDRAIL BURIED IN CUT (BIC)

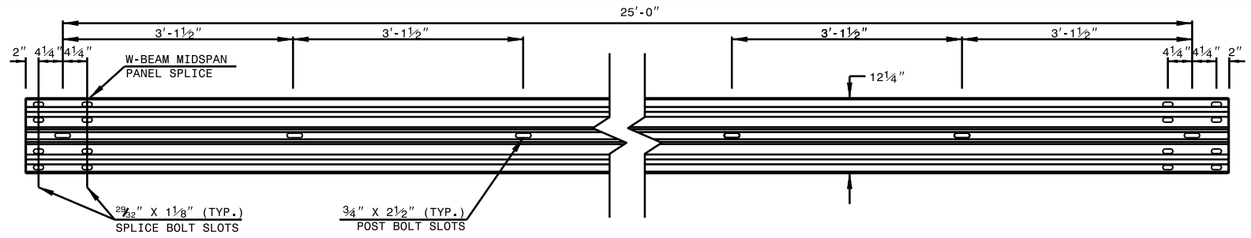
ORIGINAL BY: FHWA-G4 SYSTEM DATE: 8-13-98
MODIFIED BY: E.E. WARD DATE: 12-7-01
CHECKED BY: DATE:
FILE SPEC.: ericward/misc. guardrail/BIC.dgn

$$$$$$SYSTEM$$$$$$
$$$$$$DESIGN$$$$$$
$$$$$$USERNAME$$$$$$

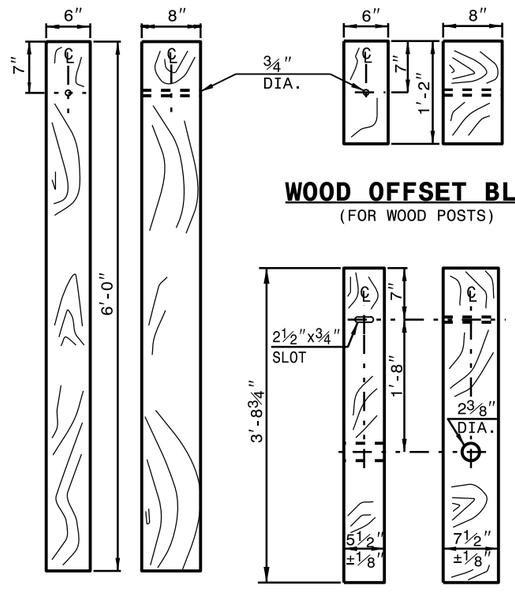
PROJECT REFERENCE NO.	SHEET NO.
I-5915.A	2C-3
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION



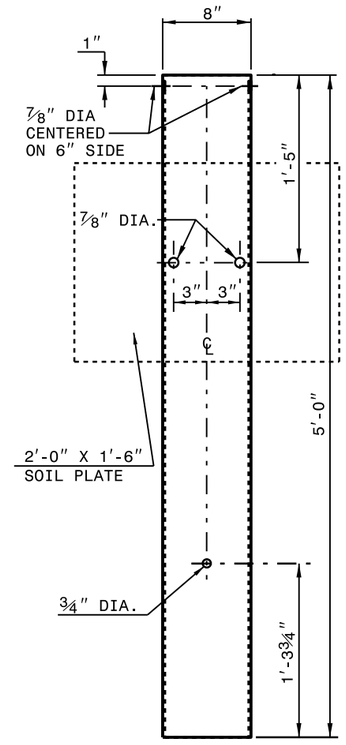
STANDARD W-BEAM GUARDRAIL



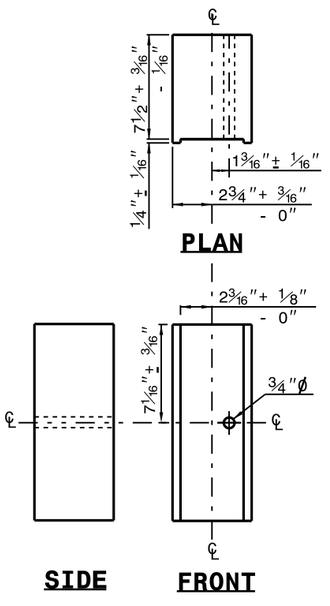
STANDARD LINE POST

WOOD OFFSET BLOCK
(FOR WOOD POSTS)

SHORT WOOD BREAKAWAY POST

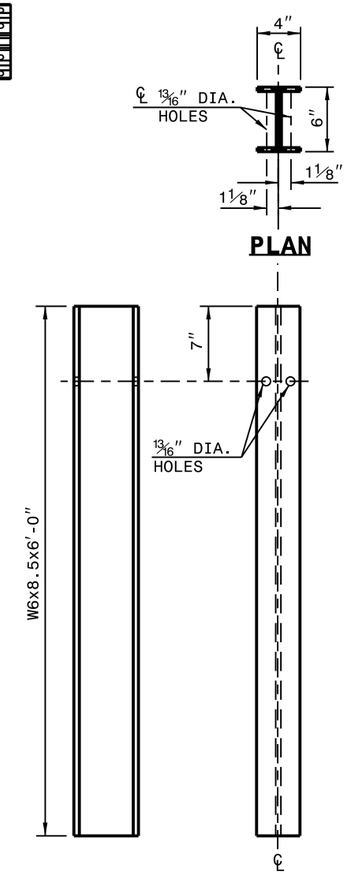


STEEL TUBE
TS 6"x8"x0.1875"



PLAN

ROUTED OFFSET BLOCK



PLAN

"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

SHEET 6 OF 8
862D02

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.: _____

COMPUTED BY: JSC DATE: 12/6/17
CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40	130.7		Lt/Rt																				2					
I-40	130.7	130.83	Lt	644																						705		
I-40	130.7	130.79	Rt	479																						356		
I-40	130.79		Rt																	1								
I-40	130.83		Lt														1											
I-40	131.04		Rt														1											
I-40	131.04	131.15	Rt	495																						552		
I-40	131.12		Lt																	1								
I-40	131.12	131.23	Lt	495																						552		
I-40	131.15		Rt																	1								
I-40	131.23		Lt														1											
I-40	131.34		Lt																	1								
I-40	131.34	131.58	Lt	1271																1						1280		Ends at Project Limits on Ramp into Existing Guardrail
I-40	131.62		Lt																									
I-40	131.62	131.79	Lt	858																1						865		
I-40	131.79		Lt																			1						
I-40	131.83		Lt																									
I-40	131.83	131.85	Lt	49																								
I-40	131.85		Lt														1									105		
I-40	132.07	132.25	Lt	957																								
I-40	132.25		Lt														1									1011		Begins at Project Limits on Ramp into Existing Guardrail
I-40	132.07		Rt														1											
I-40	132.07	132.21	Rt	710																						763		
I-40	132.21		Rt																	1								
I-40	132.55		Lt																	1								
I-40	132.55	132.74	Lt	941																						1002		
I-40	132.74		Lt														1											
I-40	132.59		Rt														1											
I-40	132.59	132.69	Rt	479																						543		
I-40	132.69		Rt																	1								
I-40	132.85		Rt														1											
I-40	132.85	132.88	Rt	84																						157		
I-40	132.88		Rt																				1					Ends in Conc. Barrier for Bridge Pier Protection
I-40	132.9		Lt																				1					
I-40	132.9	132.93	Lt	97																						147		
I-40	132.93		Lt														1											
I-40	133.09		Lt																	1								
I-40	133.09	133.19	Lt	462																						528		
I-40	133.19		Lt														1											
I-40	133.33		Rt														1											
I-40	133.33	133.48	Rt	693																						750		
I-40	133.48		Rt																	1								
I-40	133.34		Lt																	1								
I-40	133.34	133.49	Lt	660																						726		
I-40	133.49		Lt														1											
I-40	133.71		Lt																	1								
I-40	133.71	133.94	Lt	1172																						1238		
I-40	133.94		Lt														1											
I-40	133.73		Rt														1											
I-40	133.73	133.94	Rt	1040																						1092		
I-40	133.94		Rt																	1								
I-40	134.5		Rt														1											
I-40	134.5	134.53	Rt	99																						155		
I-40	134.53		Rt																				1					Ends in Conc. Barrier for Bridge Pier Protection
I-40	134.53		Lt																				1					Begins in Conc. Barrier for Bridge Pier Protection
I-40	134.53	134.56	Lt	99																						155		
I-40	134.56		Lt														1											
I-40	134.67		Rt														1											
I-40	134.67	134.85	Rt	891																						950		
I-40	134.85		Rt																	1								
I-40	134.68		Lt																	1								
I-40	134.68	134.87	Lt	957																						1015		
I-40	134.87		Lt														1											
I-40	135.25		Rt														1											
I-40	135.25	135.3	Rt	198																						250		
I-40	135.3		Rt																				1					Ends in Conc. Barrier for Bridge Pier Protection
I-40	135.32		Lt																				1					Begins in Conc. Barrier for Bridge Pier Protection
I-40	135.32	135.34	Lt	99																						151		
I-40	135.34		Lt														1											
I-40	135.77		Rt														1											
I-40	135.77	135.97	Rt	957																						1010		Ends at Project Limits on Ramp into Existing Guardrail
I-40	135.78		Lt																	1								
I-40	135.78	136.09	Lt	1633																						1633		
			SHEET TOTAL	**16519**													**22**			**17**		**1**	**8**				**17691**		

COMPUTED BY: JSC DATE: 12/6/17
CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	3B-2

"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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40	136.09		Lt														1											
I-40	136.31		Rt														1											
I-40	136.31	136.49	Rt	941																						941	1	Ends at Thrie Beam Transition
I-40	136.34		Lt																	1								
I-40	136.34	136.48	Lt	776																						776	1	Ends at Thrie Beam Transition
I-40	136.52	136.73	Lt	1106																						1106	1	Begins at Thrie Beam Transition
I-40	136.73		Lt														1											
I-40	136.53	136.72	Rt	1023																						1023	1	Begins at Thrie Beam Transition
I-40	136.72		Rt																	1								
I-40	136.87		Rt														1											
I-40	136.87	137.17	Rt	1551																						1551		
I-40	137.17		Rt																	1								
I-40	137.03		Lt																	1								
I-40	137.03	137.19	Lt	825																						825		
I-40	137.19		Lt														1											
I-40	137.62		Rt														1											
I-40	137.62	137.85	Rt	1205																						1205		
I-40	137.85		Rt																	1								
I-40	137.65		Lt																	1								
I-40	137.65	137.94	Lt	1502																						1502		
I-40	137.94		Lt														1											
I-40	138.32		Rt														1											
I-40	138.32	138.35	Rt	149																			1			149		Ends in Conc. Barrier for Bridge Pier Protection
I-40	138.34	138.37	Lt	165																			1			165		Begins in Conc. Barrier for Bridge Pier Protection
I-40	138.37		Lt														1											
I-40	138.73		Rt														1											
I-40	138.73	139.01	Rt	1452																						1452		
I-40	139.01		Rt																	1								
I-40	138.75		Lt																	1								
I-40	138.75	139.11	Lt	1881																1						1881		
I-40	139.11		Lt														1											
I-40	139.24		Rt														1											
I-40	139.24	139.34	Rt	561																						561	1	Ends at Thrie Beam Transition
I-40	139.25		Lt																	1								
I-40	139.25	139.34	Lt	479																						479	1	Ends at Thrie Beam Transition
I-40 Med	130.7		Lt/Rt																				2					Begins in Conc. Barrier for Bridge Pier Protection
I-40 Med	130.7	131.13	Lt/Rt	4340																						2277		
I-40 Med	130.9		Rt														1			1								Proposed Guardrail Break
I-40 Med	131		Lt														1			1								Proposed Guardrail Break
I-40 Med	131.13		Lt/Rt																				2					Ends in Conc. Barrier for Bridge Pier Protection
I-40 Med	131.14		Lt/Rt																				2					Begins in Conc. Barrier for Bridge Pier Protection
I-40 Med	131.14	131.8	Lt/Rt	6815																						4257		
I-40 Med	131.3		Rt														1			1								Proposed Guardrail Break
I-40 Med	131.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	131.82		Lt/Rt																				2					Begins in Conc. Barrier for Bridge Pier Protection
I-40 Med	131.82	136.49	Lt/Rt	47795																						26300		
I-40 Med	132.3		Rt														1			1								Proposed Guardrail Break
I-40 Med	132.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	133.3		Rt														1			1								Proposed Guardrail Break
I-40 Med	133.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	134.3		Rt														1			1								Proposed Guardrail Break
I-40 Med	134.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	135.2		Rt														1			1								Proposed Guardrail Break
I-40 Med	135.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	136.2		Rt														1			1								Proposed Guardrail Break
I-40 Med	136.4		Lt														1			1								Proposed Guardrail Break
I-40 Med	136.52	139.35	Lt/Rt	28974																						15873	2	Begins & Ends at Thrie Beam Transition
I-40 Med	137.2		Rt														1			1								Proposed Guardrail Break
I-40 Med	137.3		Lt														1			1								Proposed Guardrail Break
I-40 Med	138.1		Lt														1			1								Proposed Guardrail Break
I-40 Med	138.2		Rt														1			1								Proposed Guardrail Break
I-40 Med	139.1		Lt														1			1								Proposed Guardrail Break
I-40 Med	139.2		Rt														1			1								Proposed Guardrail Break
I-40	139.52	139.6	Lt	370																						420	1	Begins at Thrie Beam Transition
I-40	139.6		Lt														1											
I-40	139.53	139.61	Rt	414																						420	1	Begins at Thrie Beam Transition
I-40	139.61		Rt																	1								
I-40	139.68	139.87	Rt	972																						1028		
I-40	139.68		Rt														1											
I-40	139.87		Rt																	1								
			SHEET TOTAL	**103296**													**34**			**32**			**10**			**64191**	**10**	

COMPUTED BY: JSC DATE: 12/6/17
CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	3B-3

"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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40	139.72	139.88	Lt	735																						791		
I-40	139.72		Lt																	1								
I-40	139.88		Lt														1											
I-40	140.24	140.55	Rt	1574																						1630		Ends at Project Limits on Ramp into Existing Guardrail
I-40	140.24		Rt														1											
I-40	140.55		Rt																	1								
I-40	140.62	14066	Rt	200																						200		Ends in Conc. Barrier for Bridge Pier Protection
I-40	140.62		Rt														1											
I-40	140.66		Rt																				1			26		
I-40	140.67	140.71	Lt	171																						221		Begins in Conc. Barrier for Bridge Pier Protection
I-40	140.67		Lt																				1			26		
I-40	140.71		Lt																	1								
I-40	140.89	141.27	Rt	1917																						1967	1	Ends at Thrie Beam Transition
I-40	140.89		Rt														1											
I-40	141.24	141.27	Lt	169																						175	1	Ends at Thrie Beam Transition
I-40	141.22		Lt																	1								
I-40	141.31	141.37	Lt	273																						323	1	Begins at Thrie Beam Transition
I-40	141.37		Lt														1											
I-40	141.37	141.43	Rt	275																						325	1	Ends at Thrie Beam Transition
I-40	141.37		Rt														1											
I-40	141.48	141.54	Lt	257																						307	1	Begins at Thrie Beam Transition
I-40	141.54		Lt														1											
I-40	142.22	142.51	Rt	1484																						1540		
I-40	142.22		Rt														1											
I-40	142.51		Rt																	1								
I-40	142.35	142.57	Lt	821																						877		
I-40	142.35		Lt																	1								
I-40	142.57		Lt														1											
I-40	142.9	143.1	Rt	971																						1027		
I-40	142.9		Rt														1											
I-40	143.1		Rt																	1								
I-40	142.93	143.08	Lt	744																						800		
I-40	142.93		Lt																	1								
I-40	143.08		Lt														1											
I-40	143.59	143.65	Rt	270																						320	1	Ends at Thrie Beam Transition
I-40	143.59		Rt														1											
I-40	143.67	143.83	Rt	872																						878	1	Begins at Thrie Beam Transition
I-40	143.83		Rt																	1								
I-40	143.67	143.81	Lt	731																						781	1	Begins at Thrie Beam Transition
I-40	143.81		Lt														1											
I-40	144.17	144.21	Rt	200																						200		Ends in Conc. Barrier for Bridge Pier Protection
I-40	144.17		Rt														1											
I-40	144.21		Rt																				1			26		
I-40	144.21	144.25	Lt	150																						200		Begins in Conc. Barrier for Bridge Pier Protection
I-40	144.21		Lt																				1			26		
I-40	144.25		Lt														1											
I-40	145.58	145.61	Rt	150																						200		Ends in Conc. Barrier for Bridge Pier Protection
I-40	145.58		Rt														1											
I-40	145.61		Rt																				1			26		
I-40	145.61	145.65	Lt	150																						200		Begins in Conc. Barrier for Bridge Pier Protection
I-40	145.61		Lt																				1			26		
I-40 Med	139.52	139.54	Rt	193																						92	1	Begins at Thrie Beam Transition
I-40 Med	139.54		Rt														1											
I-40 Med	139.52	139.55	Lt	223																			1			26	123	1	Begins at Thrie Beam Transition
I-40 Med	139.55		Lt														1											
I-40 Med	140.64		CL																					1				
I-40 Med	140.64	140.65	Lt	76																						75		
I-40 Med	140.65		Lt																									
I-40 Med	140.64	140.65	Rt	76																						76		
I-40 Med	140.65		Rt																									
I-40 Med	140.66		Lt																									
I-40 Med	140.66	140.67	Lt	76																						76		
I-40 Med	140.66		Rt																				1			26		
I-40 Med	140.66	140.67	Rt	76																						76		
I-40 Med	140.68		CL																					1				
I-40 Med	141.21		Lt														1											
I-40 Med	141.21	141.26	Lt	202																						120	1	Ends at Thrie Beam Transition
I-40 Med	141.21		Rt														1											
I-40 Med	141.21	141.26	Rt	210																						132	1	Ends at Thrie Beam Transition
I-40 Med	141.31	141.35	Lt	210																						280	1	Begins at Thrie Beam Transition
			SHEET TOTAL	**13456**													**20**			**9**			**8**		**2**	**208**	**14012**	**13**	

COMPUTED BY: JSC DATE: 12/6/17
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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	3B-4

"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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40 Med	141.35		Lt														1											
I-40 Med	141.31	141.35	Rt	208																						277	1	Begins at Thrie Beam Transition
I-40 Med	141.35		Rt														1											
I-40 Med	141.36		Lt														1											
I-40 Med	141.36	141.43	Lt	307																						356	1	Ends at Thrie Beam Transition
I-40 Med	141.36		Rt														1											
I-40 Med	141.36	141.43	Rt	306																						355		
I-40 Med	141.48	141.53	Lt	220																						130	1	Begins at Thrie Beam Transition
I-40 Med	141.53		Lt														1											
I-40 Med	141.48	141.52	Rt	218																						128	1	Begins at Thrie Beam Transition
I-40 Med	141.52		Rt														1											
I-40 Med	143.59		Lt														1											
I-40 Med	143.59	143.64	Lt	197																						113	1	Ends at Thrie Beam Transition
I-40 Med	143.59		Rt														1											
I-40 Med	143.59	143.64	Rt	223																						133	1	Ends at Thrie Beam Transition
I-40 Med	143.67	143.72	Lt	230																						143	1	Begins at Thrie Beam Transition
I-40 Med	143.72		Lt														1											
I-40 Med	143.67	143.72	Rt	190																						106	1	Begins at Thrie Beam Transition
I-40 Med	143.72		Rt														1											
I-40 Med	144.18		CL																						1			
I-40 Med	144.18	144.2	Lt	76																						70		Bridge Pier Protection
I-40 Med	144.2		Lt																				1			26		
I-40 Med	144.18	144.2	Rt	76																						70		Bridge Pier Protection
I-40 Med	144.2		Rt																				1			26		
I-40 Med	144.21		Lt																				1			26		
I-40 Med	144.21	144.23	Lt	76																						70		Bridge Pier Protection
I-40 Med	144.21		Rt																				1			26		
I-40 Med	144.21	144.23	Rt	76																						70		Bridge Pier Protection
I-40 Med	144.23		CL																						1			
I-40 Med	145.59		CL																						1			
I-40 Med	145.59	145.61	Lt	76																						70		Bridge Pier Protection
I-40 Med	145.61		Lt																				1			26		
I-40 Med	145.59	145.61	Rt	76																						80		Bridge Pier Protection
I-40 Med	145.61		Rt																				1			26		
I-40 Med	145.62		Lt																				1			26		
I-40 Med	145.62	145.63	Lt	76																						80		Bridge Pier Protection
I-40 Med	145.62		Rt																				1			26		
I-40 Med	145.62	145.63	Rt	76																						70		Bridge Pier Protection
I-40 Med	145.63		CL																						1			
I-40	145.87	146.32	Lt	2335																						2391		
I-40	145.87		Lt																	1								
I-40	146.32		Lt														1											
I-40	145.89	146.02	Rt	656																						712		
I-40	145.89		Rt														1											
I-40	146.02		Rt																	1								
I-40	146.13	146.6	Rt	2394																						2444	1	Ends at Thrie Beam Transition
I-40	146.13		Rt														1											
I-40	146.55	146.6	Lt	292																1						298	1	Ends at Thrie Beam Transition
I-40	146.55		Lt																									
I-40	146.63	146.82	Rt	1000																						1006	1	Begins at Thrie Beam Transition
I-40	146.82		Rt																	1								
I-40	146.63	146.82	Lt	970																						1020	1	Begins at Thrie Beam Transition
I-40	146.82		Lt														1											
I-40	147.34	147.61	Rt	1372																						1428		
I-40	147.34		Rt														1											
I-40	147.61		Rt																	1								
I-40	147.38	147.54	Lt	769																						825		
I-40	147.38		Lt																	1								
I-40	147.54		Lt														1											
I-40	147.91	147.95	Rt	122																						172	1	Ends at Thrie Beam Transition
I-40	147.91		Rt														1											
I-40	147.98	148.02	Lt	160																						210	1	Begins at Thrie Beam Transition
I-40	148.02		Lt														1											
I-40	148.14	148.18	Rt	173																						223		
I-40	148.14		Rt														1											
I-40	148.18		Rt																				1			26		
I-40	148.16	148.19	Lt	106																						156		
I-40	148.16		Lt																				1			26		
I-40	148.19		Lt														1											
I-40	148.43		Rt														1											
			SHEET TOTAL	**13056**													**21**			**6**			**10**		**4**	**260**	**13206**	**14**	

COMPUTED BY: JSC DATE: 12/6/17
CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	3B-5

"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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40	148.43	148.49	Rt	270																						327		
I-40	148.49		Rt																	1								
I-40	148.58	148.69	Rt	585																						641		
I-40	148.58		Rt														1											
I-40	148.69		Rt																	1								
I-40	148.77	148.8	Rt	106																						156		
I-40	148.77		Rt														1											
I-40	148.8		Rt																				1			26		
I-40	148.81	148.83	Lt	100																						150		
I-40	148.81		Lt																				1			26		
I-40	148.83		Lt														1											
I-40	148.91	148.99	Lt	374																						430		
I-40	148.91		Lt																	1								
I-40	148.99		Lt														1											
I-40	149.2	149.33	Lt	662																						718		
I-40	149.2		Lt																	1								
I-40	149.33		Lt														1											
I-40	149.25	149.3	Rt	200																						255		
I-40	149.25		Rt														1											
I-40	149.3		Rt																	1								
I-40	149.54	149.63	Rt	429																						485		
I-40	149.54		Rt														1											
I-40	149.63		Rt																	1								
I-40	149.72	149.74	Rt	126																						176	1	Ends at Thrie Beam Transition
I-40	149.72		Rt														1											
I-40	149.76	149.8	Lt	126																						176	1	Begins at Thrie Beam Transition
I-40	149.8		Lt														1											
I-40	149.98	150.08	Lt	496																						553		
I-40	149.98		Lt																	1								
I-40	150.08		Lt														1											
I-40	149.99	150.04	Rt	149																						205		
I-40	149.99		Rt														1											
I-40	150.04		Rt																	1								
I-40 Med	146.54		Lt														1											
I-40 Med	146.54	146.6	Lt	200																						113	1	Ends at Thrie Beam Transition
I-40 Med	146.54		Rt														1											
I-40 Med	146.54	146.6	Rt	220																						115	1	Ends at Thrie Beam Transition
I-40 Med	146.54	146.69	Lt	224																						136	1	Begins at Thrie Beam Transition
I-40 Med	146.69		Lt														1											
I-40 Med	146.64	146.69	Rt	197																						115	1	Begins at Thrie Beam Transition
I-40 Med	146.69		Rt														1											
I-40 Med	147.9		Lt														1											
I-40 Med	147.9	147.94	Lt	162																						106	1	Ends at Thrie Beam Transition
I-40 Med	147.9		Rt														1											
I-40 Med	147.9	147.94	Rt	219																						152	1	Ends at Thrie Beam Transition
I-40 Med	148	148.16	Lt	897																						956	1	Begins at Thrie Beam Transition
I-40 Med	148.16		Lt																				1			26		
I-40 Med	148	148.16	Rt	891																						956	1	Begins at Thrie Beam Transition
I-40 Med	148.16		Rt																				1			26		
I-40 Med	148.17		Lt																				1			26		
I-40 Med	148.17	148.19	Lt	70																						140		
I-40 Med	148.19		Lt														1											
I-40 Med	148.17		Rt																				1			26		
I-40 Med	148.17	148.25	Rt	891																						891		
I-40 Med	148.25		Rt																	1								
I-40 Med	148.78		CL																					1				
I-40 Med	148.78	148.8	Lt	76																						60		
I-40 Med	148.8		Lt																				1			26		
I-40 Med	148.78	148.8	Rt	76																						75		
I-40 Med	148.8		Rt																				1			26		
I-40 Med	148.81		Lt																				1			26		
I-40 Med	148.81	148.83	Lt	76																						70		
I-40 Med	148.81		Rt																				1			26		
I-40 Med	148.81	148.83	Rt	76																						60		
I-40 Med	148.83		CL																					1				
I-40 Med	149.55		Lt														1											
I-40 Med	149.55	149.73	Lt	910																						910	1	Ends at Thrie Beam Transition
I-40 Med	149.55		Rt														1											
I-40 Med	149.55	149.73	Rt	951																						951	1	Ends at Thrie Beam Transition
			SHEET TOTAL	9759													20			9			10		2	260	10078	12	

COMPUTED BY: JSC DATE: 12/6/17
CHECKED BY: _____ DATE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
I-5915A	3B-6

"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	MM	MM	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	W-TR STEEL BM GUARDRAIL TRANSITIONS	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	XIII	CAT-1	VI MOD	BIC	B-77	G	NG				
I-40 Med	149.77	149.82	Lt	214																						145	1	Begins at Thrie Beam Transition
I-40 Med	149.82		Lt														1											
I-40 Med	149.77	149.91	Rt	733																						733	1	Begins at Thrie Beam Transition
I-40 Med	149.91		Rt																	1								
			Project Total/	157,033													118			74		1	46		8	728	120,056	51	
			Say	158,000													119												
													NOTE: TRIPLE CORRUGATED STEEL BM GUARDRAIL QUANTITY FOR ANY DAMAGED EXISTING TRIPLE CORRUGATED STEEL BM GUARDRAIL ON BRIDGES MARKED TO BE RETAINED. (EST. 500 LF)																	

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

PROJECT NO.	SHEET NO.
I-5915A	3B-7

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABLE GUIDERAIL

IN LINEAR FEET

SURVEY LINE	Mile Marker	Mile Marker	LOCATION LT/RT/CL		Cable Guiderail Removal		Cable Guiderail Anchors
I-40	139.56	139.58	Lt		144		1
I-40	139.56	139.58	Rt		171		1
I-40	140.63	140.65	Lt		66		1
I-40	140.63	140.65	Rt		42		1
I-40	140.68	140.69	Lt		52		1
I-40	140.68	140.69	Rt		63		1
I-40	141.21	141.24	Lt		133		1
I-40	141.21	141.24	Rt		138		1
I-40	141.5	141.53	Lt		138		1
I-40	141.5	141.53	Rt		137		1
I-40	143.59	143.62	Lt		134		1
I-40	143.59	143.62	Rt		136		1
I-40	143.69	143.72	Lt		137		1
I-40	143.69	143.72	Rt		136		1
I-40	144.18	144.19	Lt		50		1
I-40	144.18	144.19	Rt		37		1
I-40	144.22	144.24	Lt		47		1
I-40	144.22	144.24	Rt		60		1
I-40	145.58	145.59	Lt		54		1
I-40	145.58	145.59	Rt		48		1
I-40	145.63	145.64	Lt		45		1
I-40	145.63	145.64	Rt		55		1
I-40	146.54	146.57	Lt		133		1
I-40	146.54	146.57	Rt		124		1
I-40	146.67	146.69	Lt		134		1
I-40	146.67	146.69	Rt		133		1
I-40	147.89	147.91	Lt		106		1
I-40	147.89	147.91	Rt		100		1
I-40	148.2	148.2	Lt		10		1
I-40	148.78	148.79	Lt		58		1
I-40	148.82	148.83	CL		54		1
I-40	149.55	149.55	CL		25		1
		TOTAL:			**2900**		**32**
		SAY:			**3000**		**32**

PROJECT NO.	SHEET NO.
I-5915A 45919.3.2	3B-8

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANES	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	UNDERCUT EXCAVATION	BORROW	REMOVAL OF EXISTING CONCRETE PAVEMENT SLABS	GEOTEXTILE FOR SOIL STABILIZATION	AGGREGATE SHOULDER BORROW	CLASS IV SUBGRADE STABILIZATION	INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	2" MILLING	5/8" MILLING	5.5" MILLING	2-5/8" MILLING	INCIDENTAL MILLING
										MI	FT	CY	CY	SY	SY	TON	TON	TONS	SMI	SY	SY	SY	SY	SY
45919.3.2	Catawba/ Iredell	1	I-40	From Bridge # (171 &172) to Project I-3819A	1,1A, 2,3	vars	vars	NO	NO	20	48-72	1,530	12,000	4,600	4,600	13,500	3,100	1,000	59.2	349,150	309,760	144,040	281,600	1,000
GRAND TOTAL FOR I-5915A										**20**		**1,530**	**12,000**	**4,600**	**4,600**	**13,500**	**3,100**	**1,000**	**59.2**	**349,150**	**309,760**	**144,040**	**281,600**	**1,000**

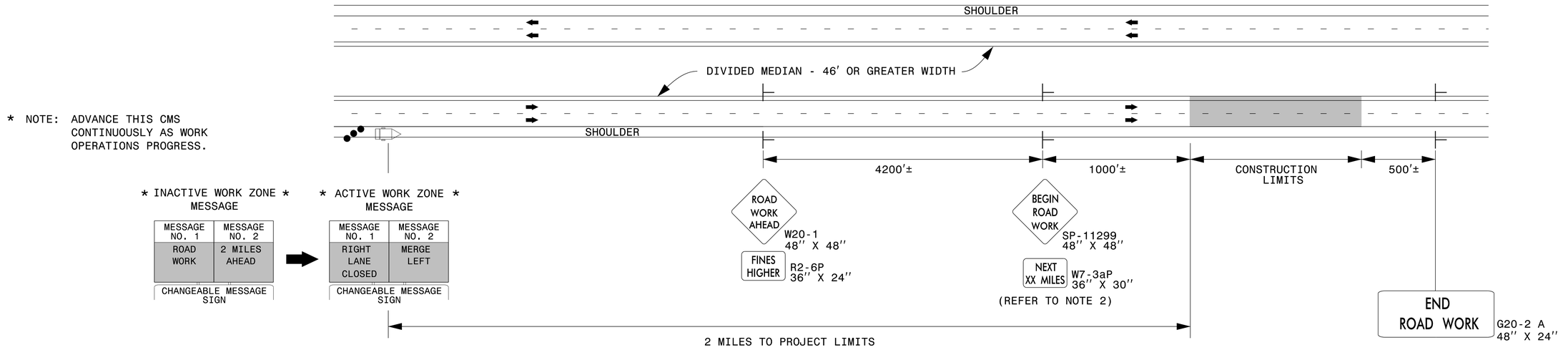
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANES	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPH REQUIRED	LENGTH	WIDTH	BASE COURSE, B25.0C	SURFACE COURSE, S9.5D	ASPHALT BINDER FOR PLANT MIX	POLYMER MODIFIED ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	PATCHING CONCRETE PAVEMENT SPALLS	ULTRA-THIN BONDED WEARING COURSE	MILLED RUMBLE STRIPS (ASPH CONC)	PRECAST REINF. CONC BARRIER, SINGLE FACED	4" CONC ISLAND CAP	IMPACT ATTENUATOR UNIT, TYPE 350	STEEL BM GUARDRAIL	TRIPLE CORRUGATED STEEL BM GUARDRAIL
										MI	FT	TONS	TONS	TONS	TONS	TONS	SF	TON	LF	LF	SY	EA	LF	LF
45919.3.2	Catawba/ Iredell	1	I-40	From Bridge # (171 &172) to Project I-3819A	1,1A, 2,3	vars	vars	NO	NO	20	48-72	47,380	101,060	2,132	6,595	5,000	11,000	15,990	408,500	728	170	8	158,000	500
GRAND TOTAL FOR I-5915A										**20**		**47,380**	**101,060**	**2,132**	**6,595**	**5,000**	**11,000**	**15,990**	**408,500**	**728**	**170**	**8**	**158,000**	**500**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANES	BURIED-IN-CUT (BIC)	W-TR STEEL BM GUARDRAIL TRANSITIO	ADDITIONAL GUARDRAIL POSTS	GUARD- RAIL ANCHOR UNITS, TYPE CAT-1	GUARD- RAIL END UNITS, TYPE TL-3	GUARDRAIL ANCHOR UNITS, TYPE B-77	REMOVE EXISTING GUARDRAIL	REMOVE EXISTING GUIDERAIL	ADD'L GUIDE-RAIL POSTS	CABLE GUIDERAIL ANCHOR UNITS	PORTABLE LIGHTING	LANE CLOSURE	RAMP/ LOOP CLOSURE
								MI	FT	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LS	EA	EA
45919.3.2	Catawba/ Iredell	1	I-40	From Bridge # (171 &172) to Project I-3819A	1,1A, 2,3	vars	vars	20	48-72	1	51	50	74	119	46	120,056	3,000	50	32	*	590	40
GRAND TOTAL FOR I-5915A								**20**		**1**	**51**	**50**	**74**	**119**	**46**	**120,056**	**3,000**	**50**	**32**	**1**	**590**	**40**

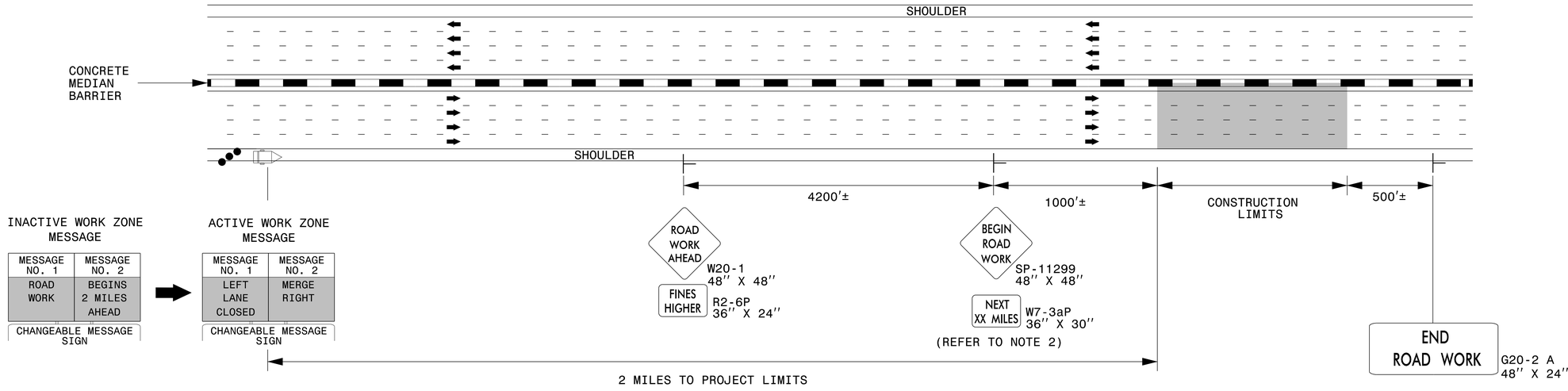
THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4434000000 SEQUENTIAL FLASHING WARNING LIGHTS	4423000(WORK ZONE DIGITAL SPEED LIMIT SIGNS	4424000000- WORK ZONE PRESENCE LIGHTING	4400000000(STATIONARY WORK ZONE SIGN	4510000000-N LAW ENFORCEMENT	4725000000-E THERMO SYMBOL (90 MILS)	4815000000-E PAINT PAV. MARKING LINES (6")	4825000000 PAINT PAV. MARKING LINES (12")	4845000000(PAINT PAV. MARKING SYMBOL	4847040000-E POLYUREA PAV. MARKING (WHITE) LINES (6", 30 MILS)	4847040000-E POLYUREA PAV. MARKING (YELLOW) LINES (6", 30 MILS)	484708000(POLYUR. PM (WHITE) LINES (12", 30 MILS)	4855000000(REMOVAL OF PAV. MARKING LINES (6")	4900000000-N PERMANENT RAISED PAV. MARKERS	4905...-N SNOW PLOWABLE MARKERS
								MI	FT	EA	EA	EA	SF	HR	EA	LF	LF	EA	LF	LF	LF	LF	EA	EA
45919.3.2	Catawba/ Iredell	1	I-40	From Bridge # (171 &172) to Project I-3819A	1,1A, 2,3	vars	MD	20	48-72	16	4	15	990	630	60	510,576	28,000	60	305,576	206,000	14,000	16,745	4,438	3,550
GRAND TOTAL FOR I-5915A								**20**		**16**	**4**	**15**	**990**	**630**	**60**	**510,576**	**28,000**	**60**	**305,576**	**206,000**	**14,000**	**16,745**	**4,438**	**3,550**
																			511,576					

DIVIDED MEDIANS WITH WIDTHS 46′ OR GREATER



DIVIDED MEDIANS WITH WIDTHS LESS THAN 46′ OR WITH PERMANENT MEDIAN BARRIER



NOTES

1. THIS DRAWING IS TO BE USED IN CONJUNCTION WITH THE WORK ZONE VARIABLE SPEED LIMIT USING DIGITAL SPEED LIMIT SIGNS FOR INTERSTATE/FREEWAY RESURFACING PROJECTS DETAIL.
2. FOR SIGN W7-3aP, ROUND TO THE NEAREST MILE.
3. FOR ENTRANCE AND EXIT RAMPS, REFER TO RSD 1101.01, SHEET 1, DETAIL B & C.
4. FOR ADDITIONAL NOTES, REFER TO RSD 1101.01, SHEET 1.

LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DRUM

APPROVED: DocuSigned by: Steve Lutz E27CE30E1DFC442...

DATE: 2/23/2017

NORTH CAROLINA PROFESSIONAL SEAL 022104 ENGINEER JOHN S. KITE III

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

STATIONARY ADVANCE WARNING SIGNS FOR INTERSTATE/FREEWAY RESURFACING PROJECTS

2/23/2017
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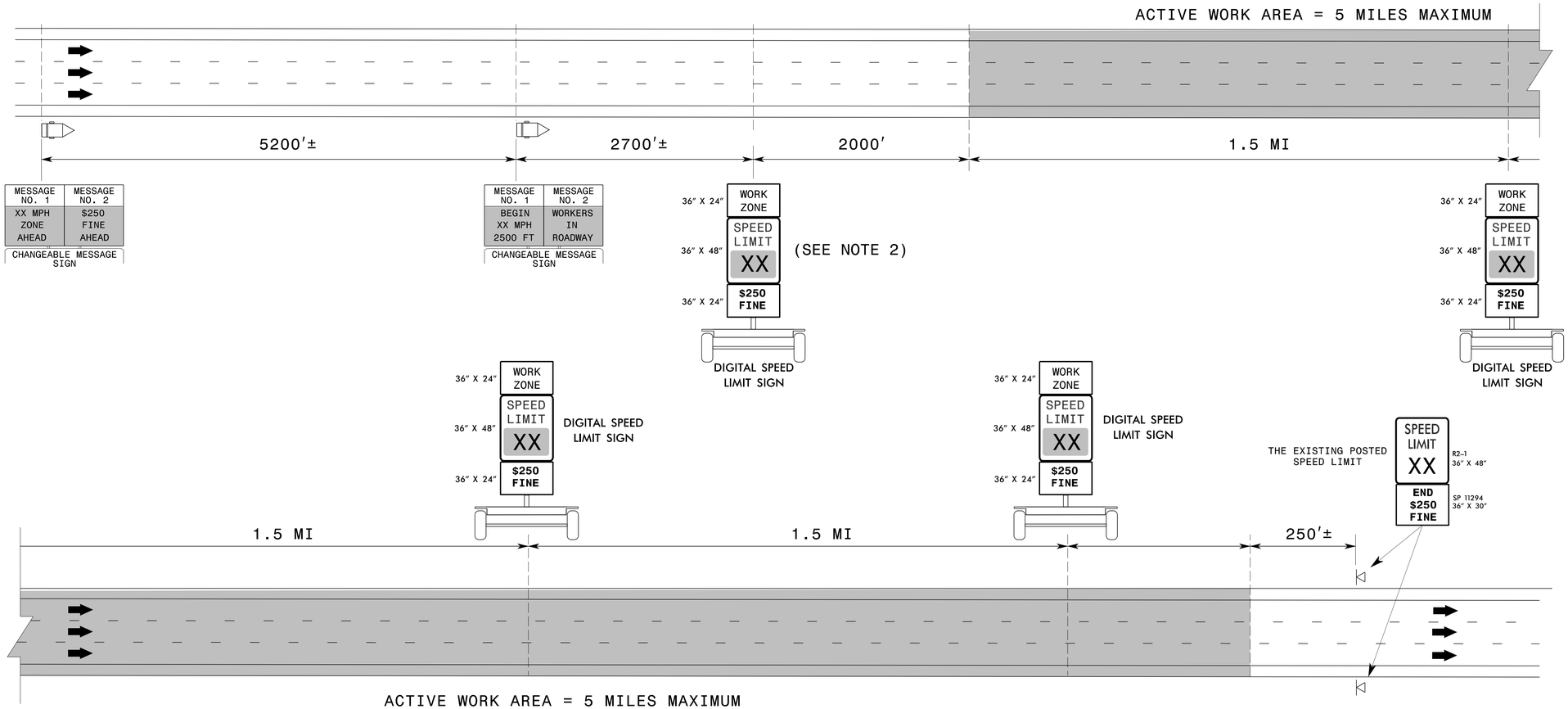
INTERSTATE RESURFACING OPERATIONS WITH DIGITAL SPEED LIMIT SIGNS

I-5915A

SHEET NO.
TMP-2



NOTES

1. THE SPEED LIMITS DISPLAYED WITHIN THE ACTIVE WORK AREA MAY VARY BETWEEN 55 MPH AND 70 MPH, DEPENDENT UPON ROAD WORK CONDITIONS AND THE EXISTING SPEED LIMIT. 55 MPH IS ONLY DISPLAYED DURING ACTIVE LANE CLOSURE OPERATIONS.
2. AT THE FIRST DIGITAL SPEED LIMIT LOCATION, PLACE A DIGITAL SPEED LIMIT SIGN ON BOTH THE INSIDE AND OUTSIDE SHOULDERS, UNLESS DIRECTED OTHERWISE BY THE ENGINEER WHEN THERE IS NOT ENOUGH ROOM ON THE INSIDE SHOULDER DUE TO NARROW MEDIAN AND PERMANENT MEDIAN BARRIER. AT SUBSEQUENT LOCATIONS DOWNSTREAM, PLACE A SINGLE DIGITAL SPEED LIMIT SIGN ON THE OUTSIDE SHOULDER.
3. THE ENGINEER MAY DETERMINE TO INSTALL THE DIGITAL SPEED LIMIT SIGNS ON THE OUTSIDE SHOULDER OR ON THE MEDIAN SIDE IF THE SIGNS ARE NOT HIGHLY VISIBLE TO ALL MOTORISTS. AT THE FIRST DIGITAL SPEED LIMIT
4. THIS APPLICATION IS FOR SHORT-TERM ACTIVITIES. THE MAXIUMUM ACTIVE WORK AREA IS 5 MILES.
5. THE DIGITAL SPEED LIMIT SIGNS TAKE PRECEDENCE OVER EXISTING SPEED LIMIT SIGNS. ALL EXISTING SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED.
6. THE DIGITAL SPEED LIMITS SIGNS WILL BE INSTALLED (TRAILER MOUNTED OR STATIONARY MOUNTED) IN ADVANCE AND SPACED APPROXIMATELY 1.5 MILES THROUGHOUT THE ACTIVE WORK AREA, UNLESS DIRECTED OTHERWISE.
7. NCDOT HAS SOLE AUTHORITY OF THE SPEED LIMITS DISPLAYED ON THE DIGITAL SPEED LIMIT SIGNS.
8. THE WORK ZONE VARIABLE SPEED LIMIT AND THE $250 SPEEDING PENALTY ARE SEPARATE ORDINANCES THAT MUST BE SIGNED BY THE STATE TRAFFIC ENGINEER TO BE VALID AND ENFORCEABLE. WITHOUT A SIGNED ORDINANCE, THE SPEED LIMIT ON A FACILITY SHALL REMAIN UNCHANGED.

WHEN THERE IS NOT ACTIVE WORK IN THE TRAVEL LANE

SPEED LIMIT DISPLAY	CONDITIONS	
	DROP-OFFS BETWEEN OPEN TRAVEL LANES	PAVED SHOULDER DROP-OFFS
USE EXISTING SPEED LIMIT	< 1.0"	≤ 3.0"
REDUCE SPEED LIMIT 5 MPH	1.0" - 2.0"	> 3.0"

DROP-OFFS BETWEEN OPEN TRAVEL LANES SHOULD NOT EXCEED 2.0"

APPROVED: DocuSigned by: Steve Kite E27CE30E1DFC442...

DATE: 2/23/2017

NORTH CAROLINA PROFESSIONAL SEAL 022104 ENGINEER JOHN S. KITE, III

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

WORK ZONE "VARIABLE" SPEED LIMIT USING DIGITAL SPEED LIMIT SIGNS FOR INTERSTATE/ FREEWAY RESURFACING PROJECTS

2/23/2017
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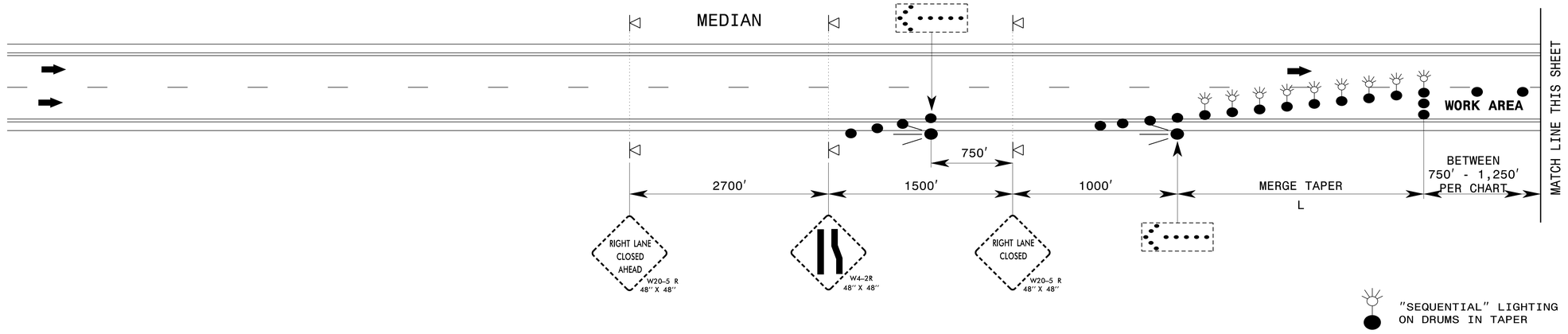
User:kedals

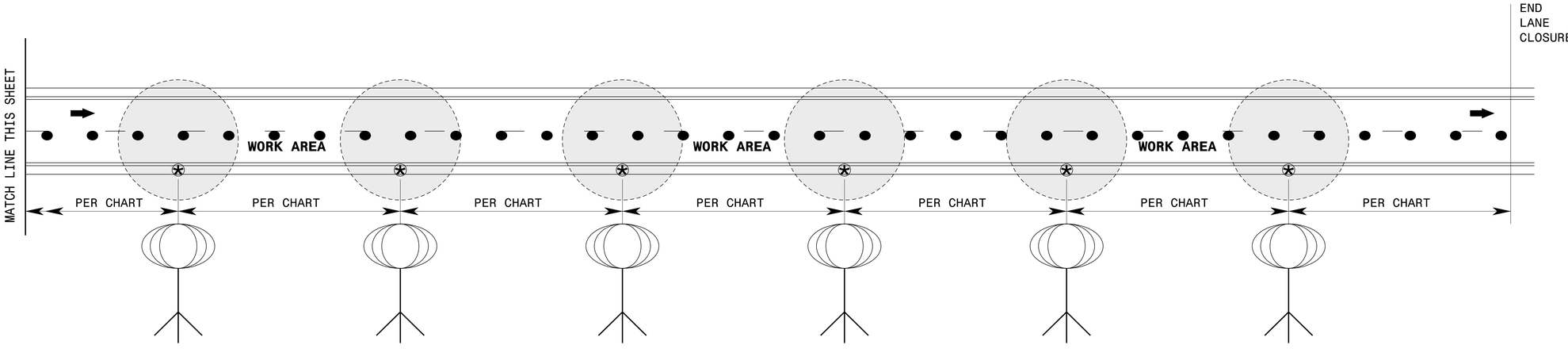
I-5915A

SHEET NO.
TMP-3

ADVANCE WARNING AREA



WORK ZONE AREA



SPACING CHART

LIGHT OUTPUT (LUMENS)	MINIMUM LIGHTED FIXTURE AREA (SQUARE FEET)	MAXIMUM SPACING (FEET)	LIGHT UNITS (PER MILE)
50,000 TO 65,000	5.5	750′	6
66,000 TO 80,000	5.5	1,000′	5
81,000 TO 100,000	36	1,250′	4

NOTES

1) SPACE LIGHT UNITS ACCORDING TO THE CHART.
2) EACH LIGHT UNIT SHALL BE CAPABLE OF ELEVATING TO A MINIMUM HEIGHT OF 14′ ABOVE THE PAVEMENT.
3) PLACE ON PAVED SHOULDER IF POSSIBLE.

APPROVED: DocuSigned by: Steve Kite E27CE30E1DFC442...

DATE: 3/17/2017

NORTH CAROLINA PROFESSIONAL SEAL 022104 ENGINEER JOHN S. KITE III

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SEQUENTIAL FLASHING WARNING LIGHTS AND WORK ZONE PRESENCE LIGHTING

3/17/2017
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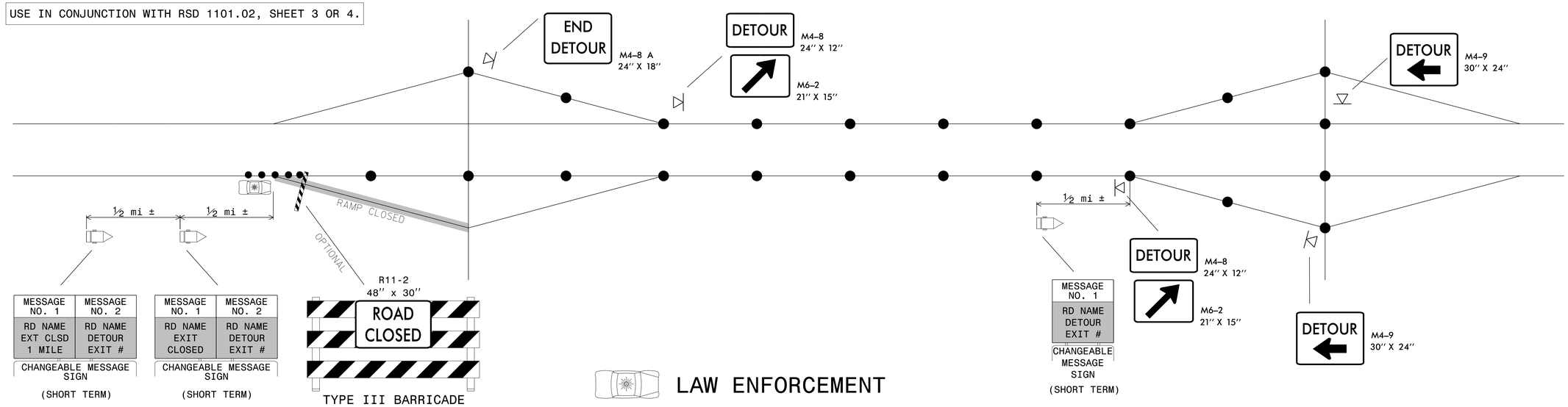
User:kedais

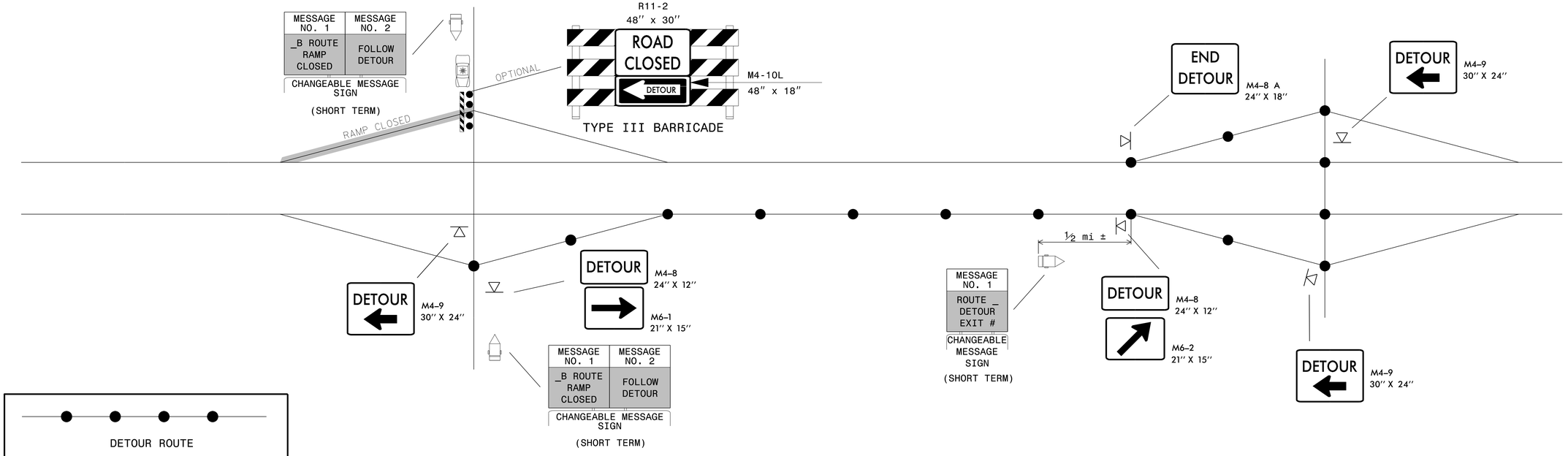
SHORT TERM CLOSURE AND DETOUR OF OFF-RAMP TO ADJACENT INTERCHANGE

USE IN CONJUNCTION WITH RSD 1101.02, SHEET 3 OR 4.



SHORT TERM CLOSURE AND DETOUR OF ON-RAMP TO ADJACENT INTERCHANGE

USE IN CONJUNCTION WITH RSD 1101.02, SHEET 3 OR 4.



GENERAL NOTES:
1. THIS DRAWING IS INTENDED FOR USE DURING SHORT TERM CLOSURES OF INTERSTATE AND FREEWAY RAMPS.
2. RAMP CLOSURES SHALL BE APPROVED BY THE ENGINEER.
3. IF RAMP CLOSURE RESTRICTIONS APPLY, SEE SPECIAL PROVISION, "INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES".
4. ADDITIONAL CHANGEABLE MESSAGE SIGNS AND POSSIBLE DETOUR SIGNS MAY BE NECESSARY FOR MORE COMPLEX CLOSURES/DETOURS. COMPENSATION FOR ADDITIONAL DEVICES SHALL BE MADE BASED ON THE UNIT BID PRICE FOR THE RESPECTIVE DEVICE.

APPROVED: DocuSigned by: Steve Lotz E27CE30E10FC442...
DATE: 2/23/2017

NORTH CAROLINA PROFESSIONAL SEAL 022104 ENGINEER JOHN S KITE JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SHORT TERM CLOSURE AND DETOUR OF INTERSTATE/FREEWAY RAMPS