

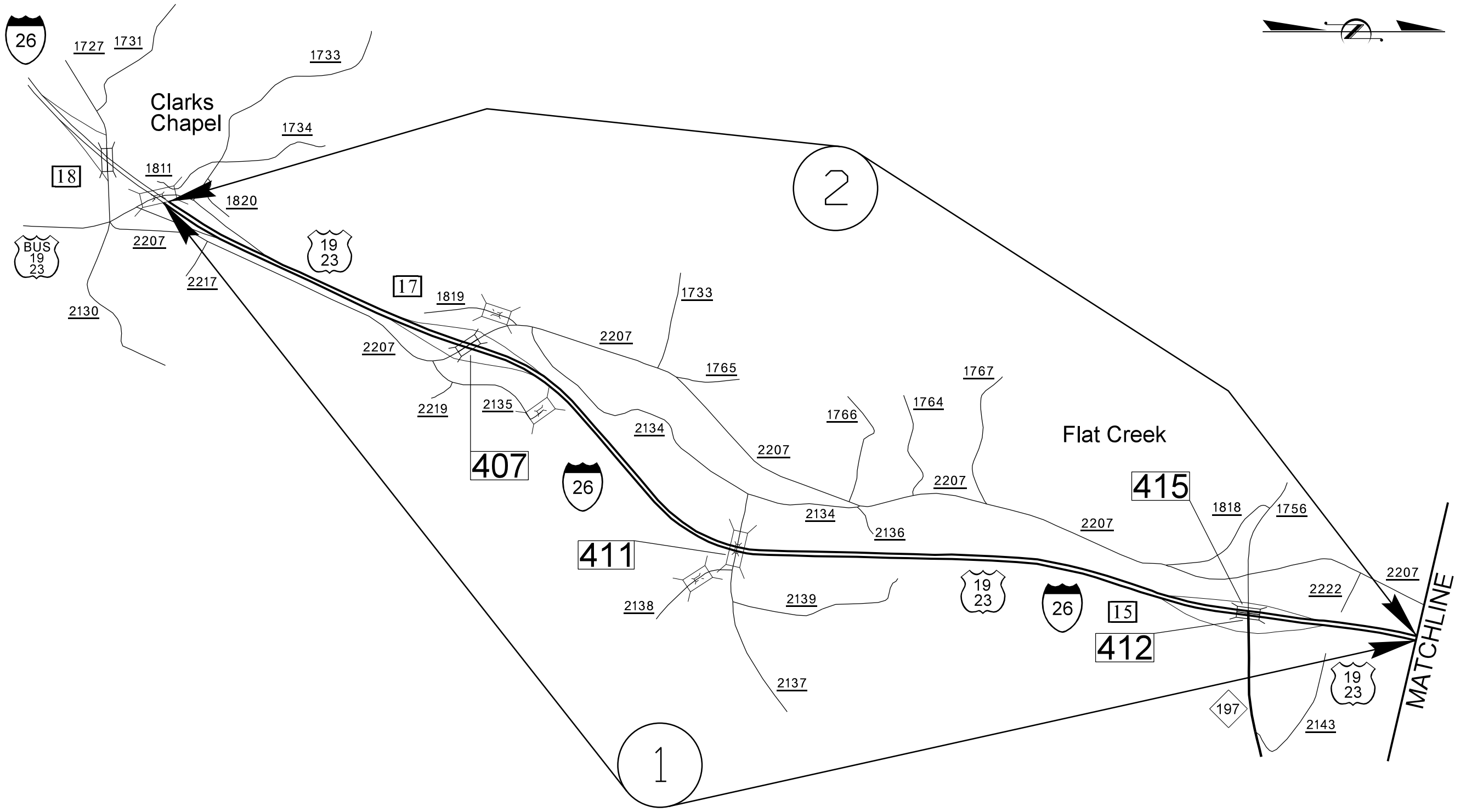
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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5892	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46413.1.1	NHPP-0026(007)	PE	
46413.3.1	NHPP-0026(007)	CONST.	



TIP PROJECT: I-5892

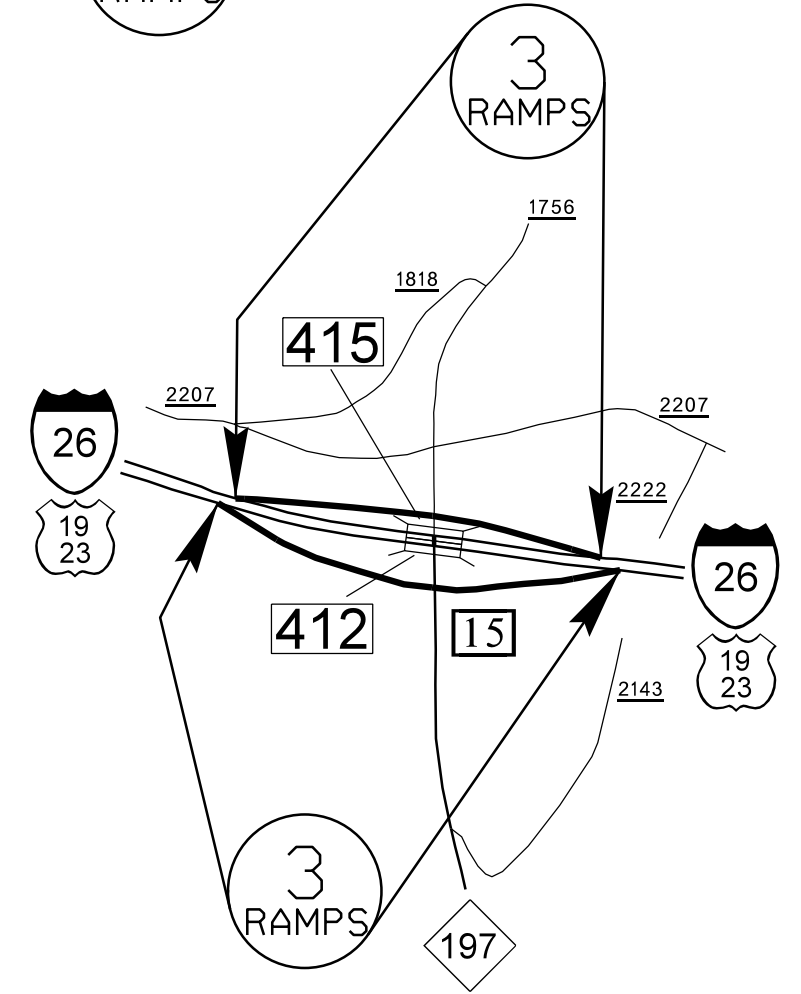
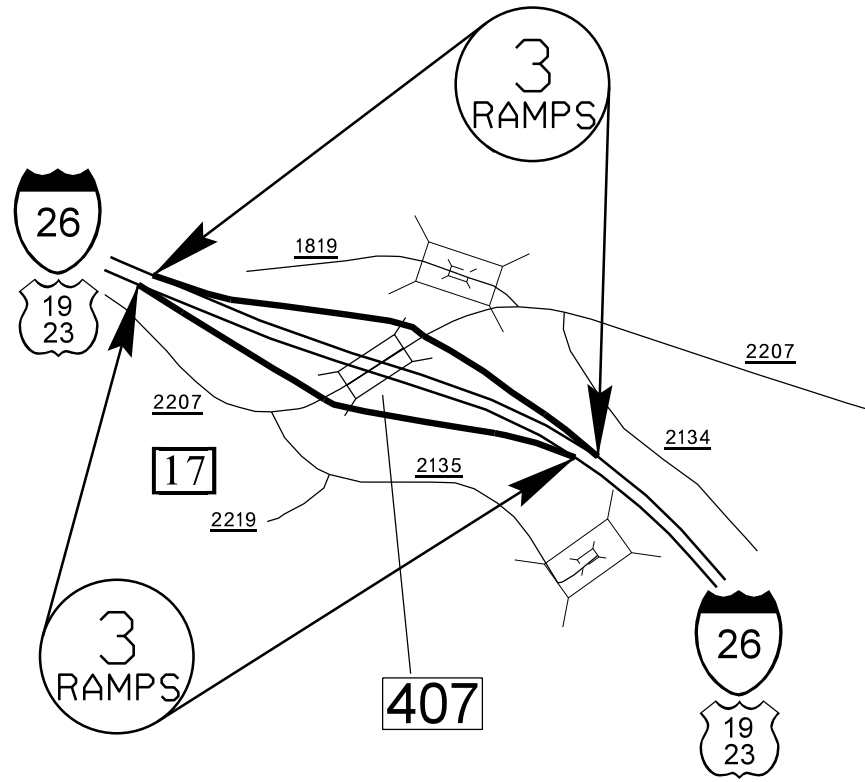
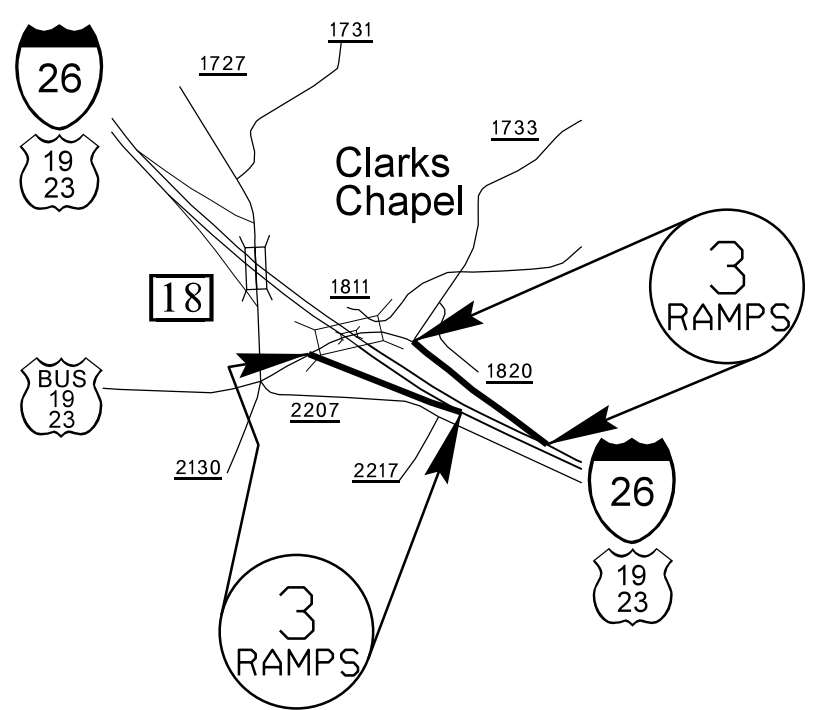
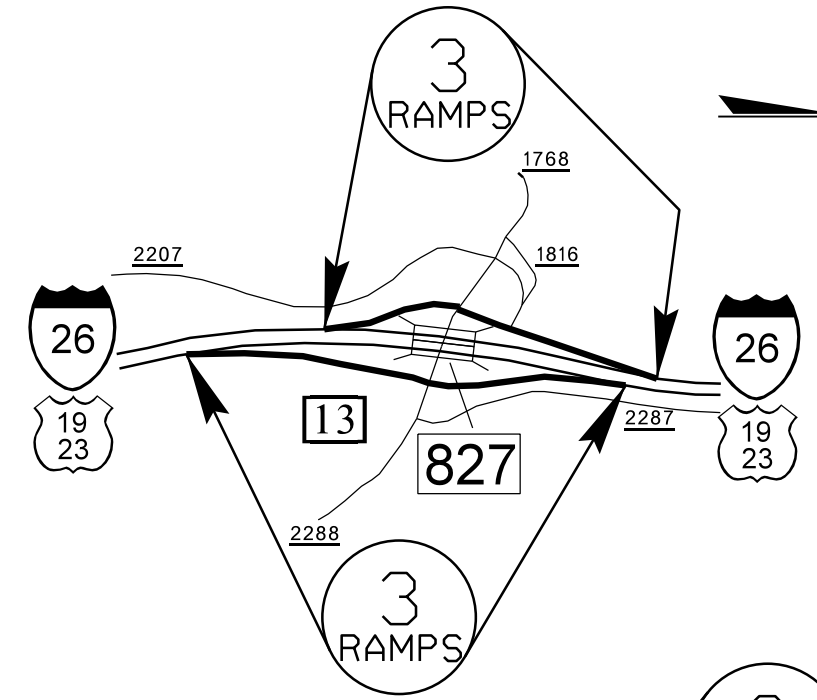
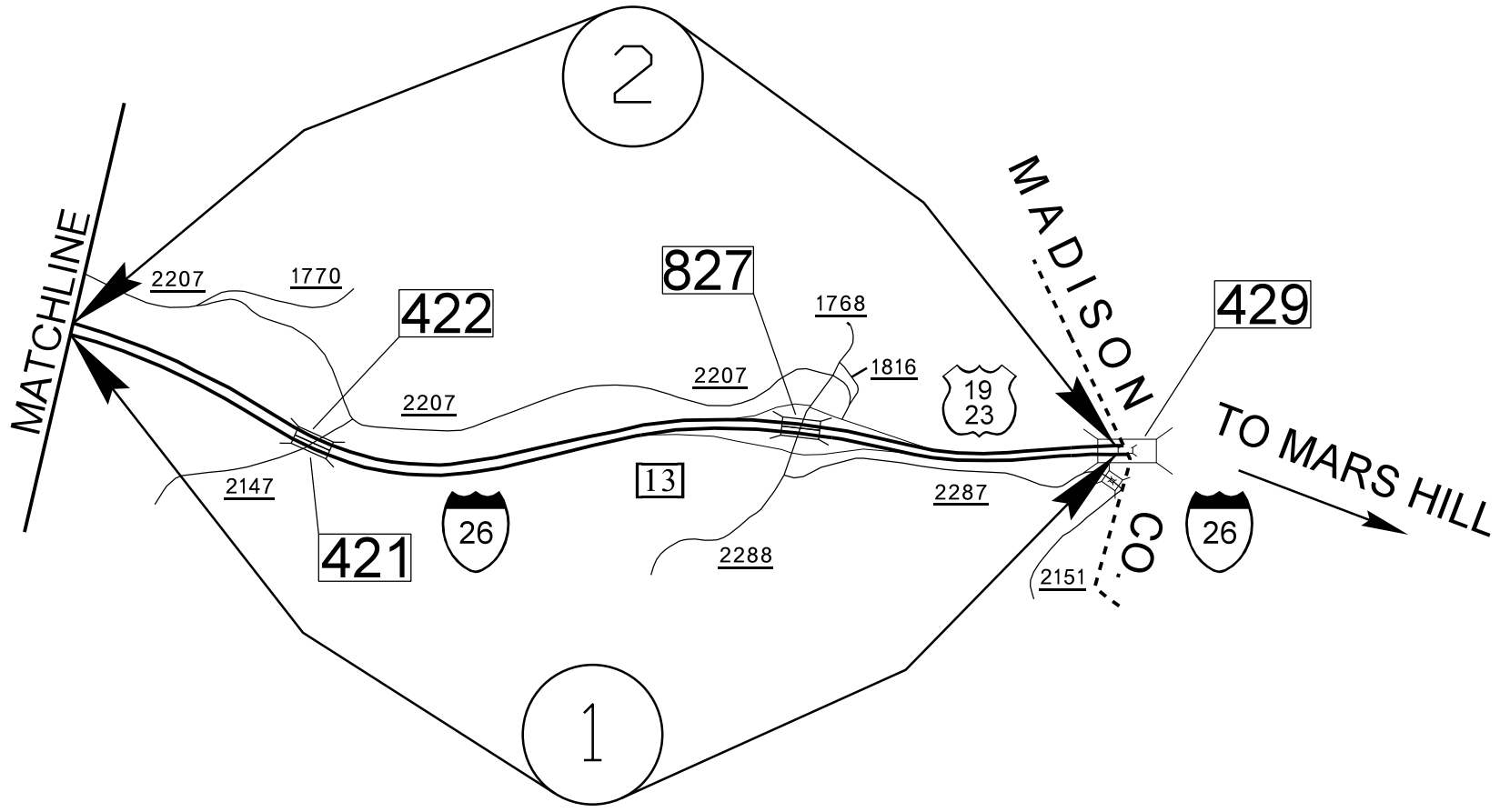
CONTRACT: C203873

BUNCOMBE COUNTY

\\DEC-2016 15:36 S:\DDC\rdy\interstate Maintenance Preservation Program\Buncombe\I-5892\Vicinity Maps\I-5892_Location_Map.dgn \$\$\$USERNAME\$\$\$

09/08/99

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5892	2	

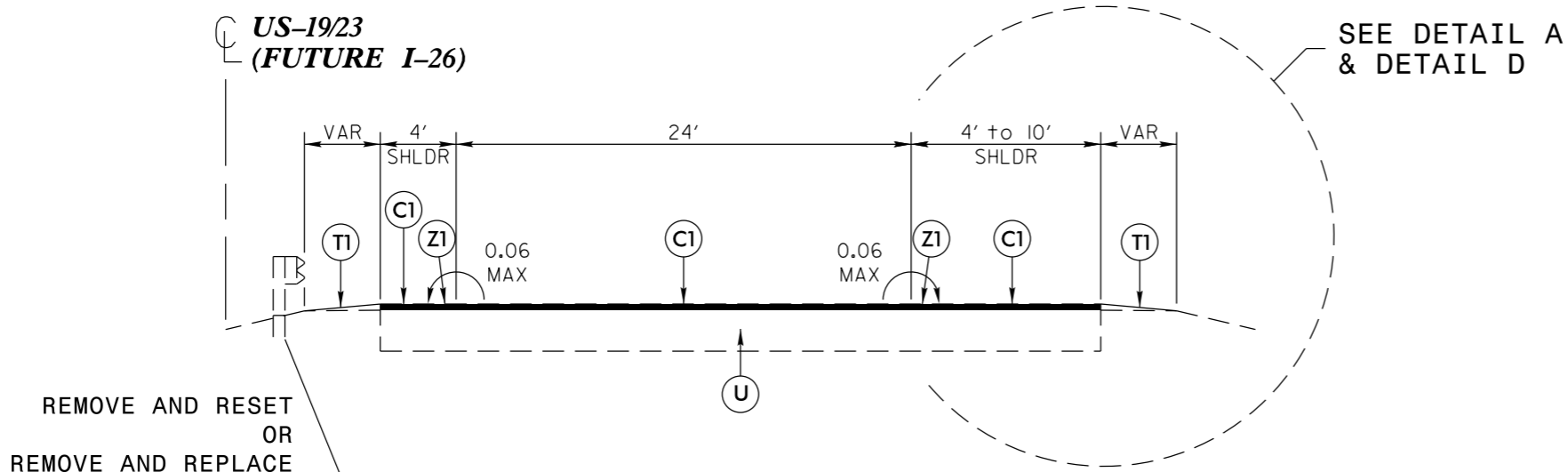


BUNCOMBE COUNTY

I:\DEC-2016 15:38
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 \$\$\$USERNAME\$\$\$

09/08/99

PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	3	



TYPICAL SECTION NO. 1

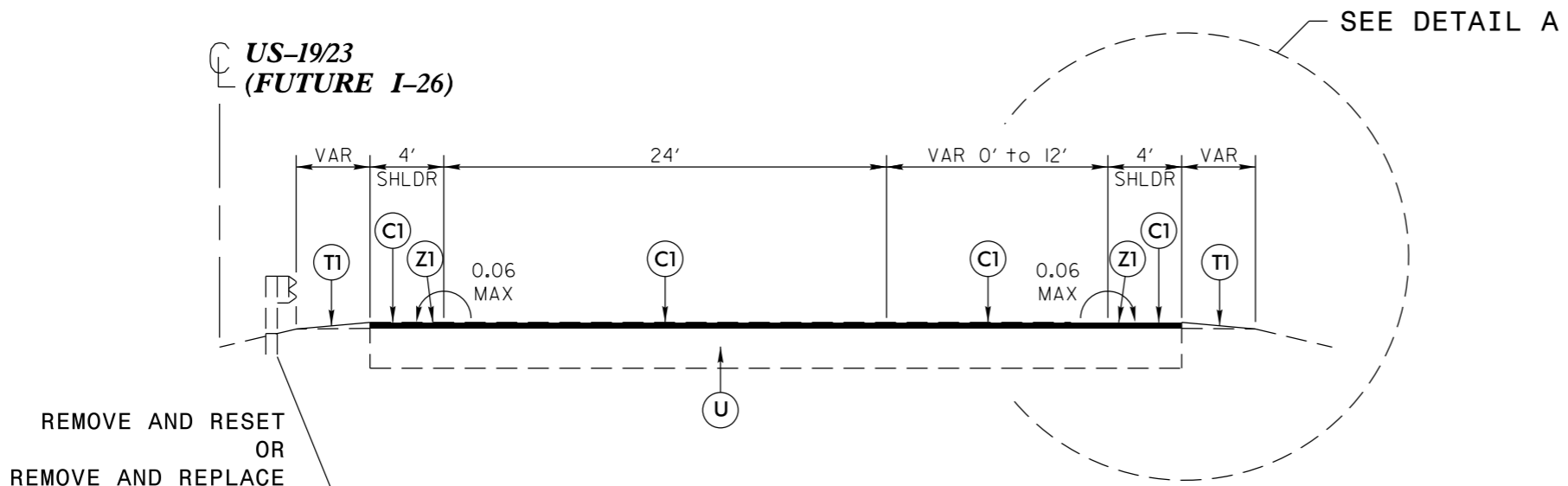
**CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD
DRAWING 560.01 & 560.02
BEFORE RE-INSTALLING GUARDRAIL
IN AREAS AS DIRECTED BY THE ENGINEER**

*EFF. 01-17-2012
REV. 02-29-2016*

2012 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 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
850.01	Concrete Paved Ditches
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

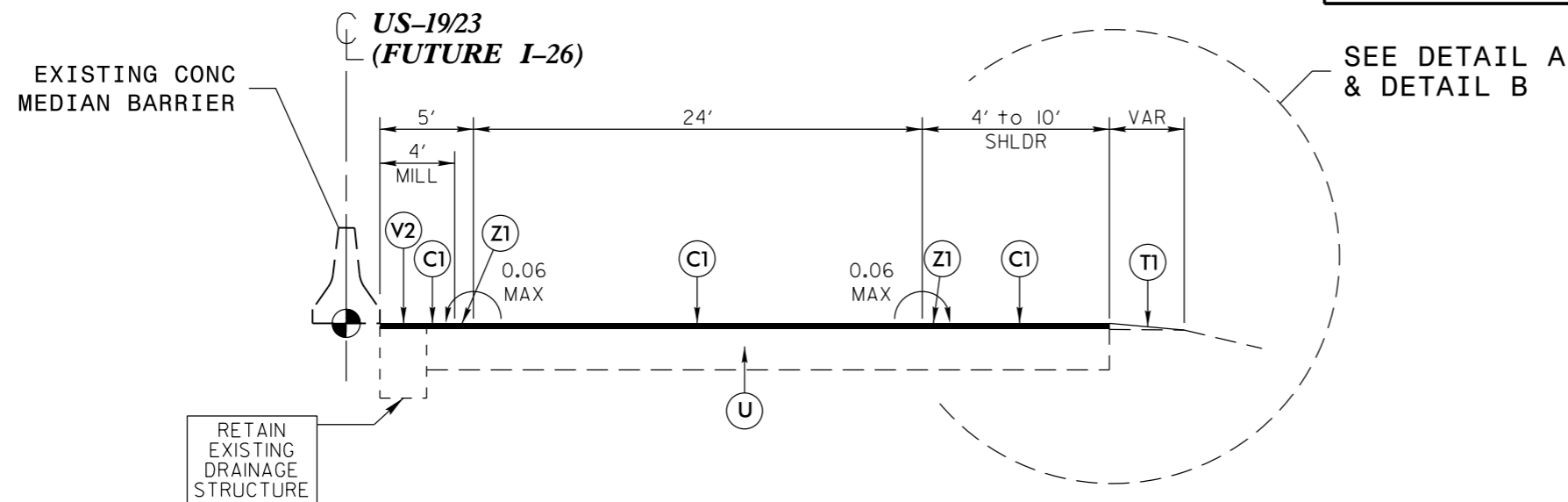


TYPICAL SECTION NO. 2

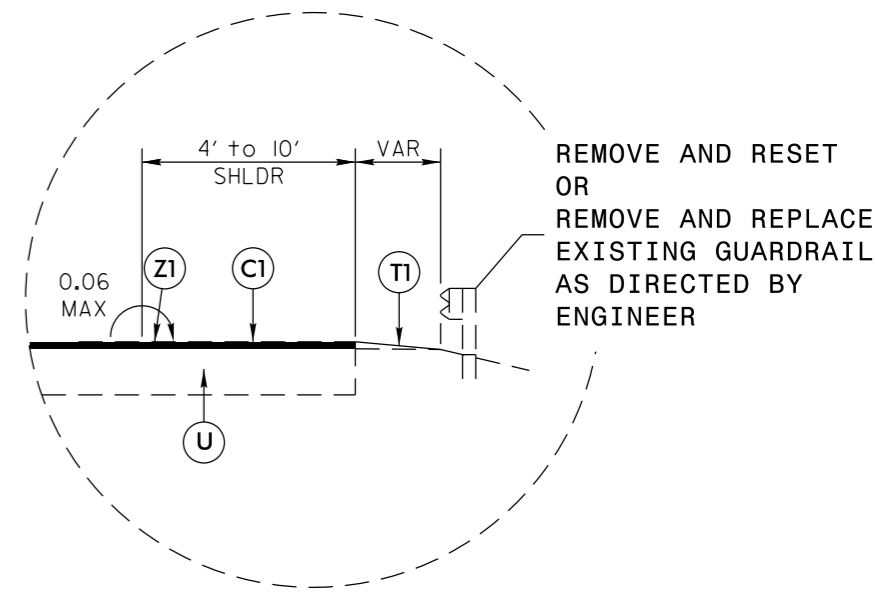
**CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD
DRAWING 560.01 & 560.02
BEFORE RE-INSTALLING GUARDRAIL
IN AREAS AS DIRECTED BY THE ENGINEER**

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH
V3	MILLING ASPHALT PAVEMENT, 0" TO 5" DEPTH
V4	INCIDENTAL MILLING
Z1	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)

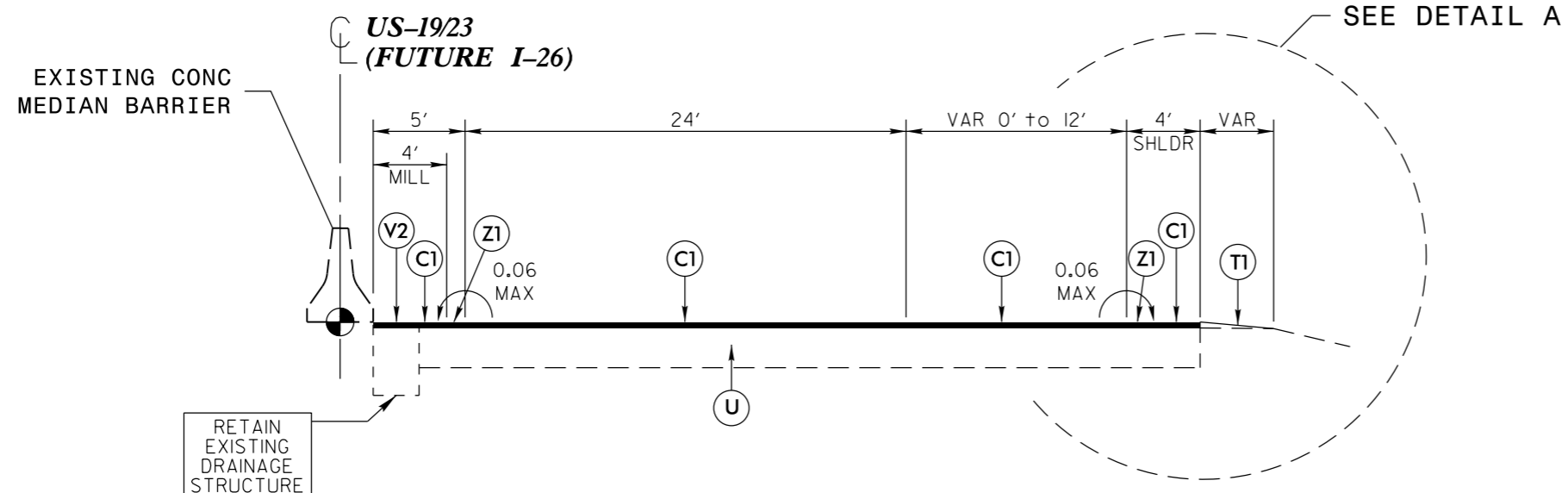
PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	4	



TYPICAL SECTION NO. 3
CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD
DRAWING 560.01 & 560.02
BEFORE RE-INSTALLING GUARDRAIL
IN AREAS AS DIRECTED BY THE ENGINEER



DETAIL A
VARIOUS LOCATIONS

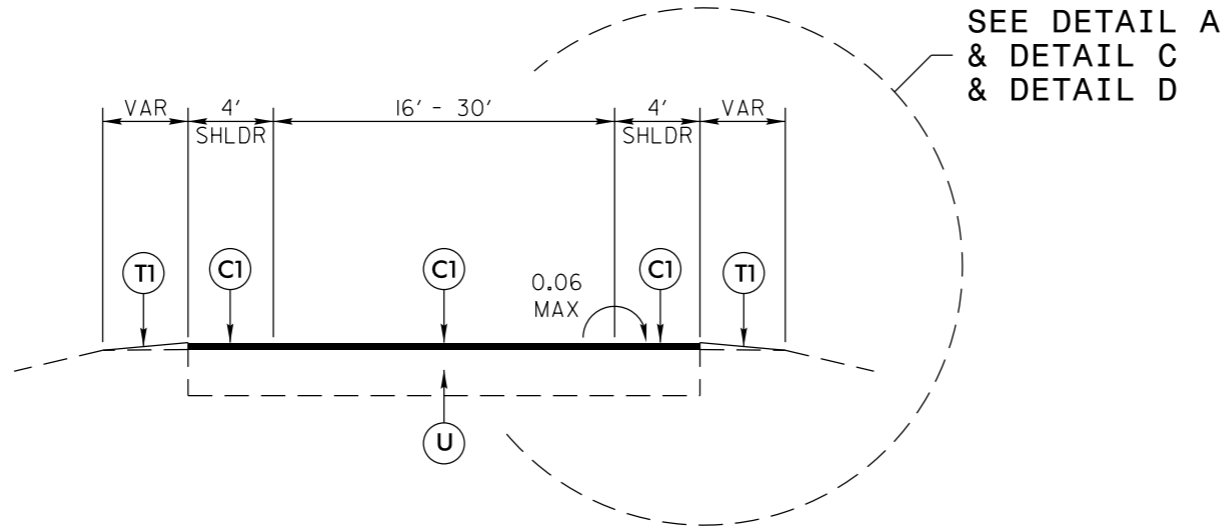


TYPICAL SECTION NO. 4
CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD
DRAWING 560.01 & 560.02
BEFORE RE-INSTALLING GUARDRAIL
IN AREAS AS DIRECTED BY THE ENGINEER

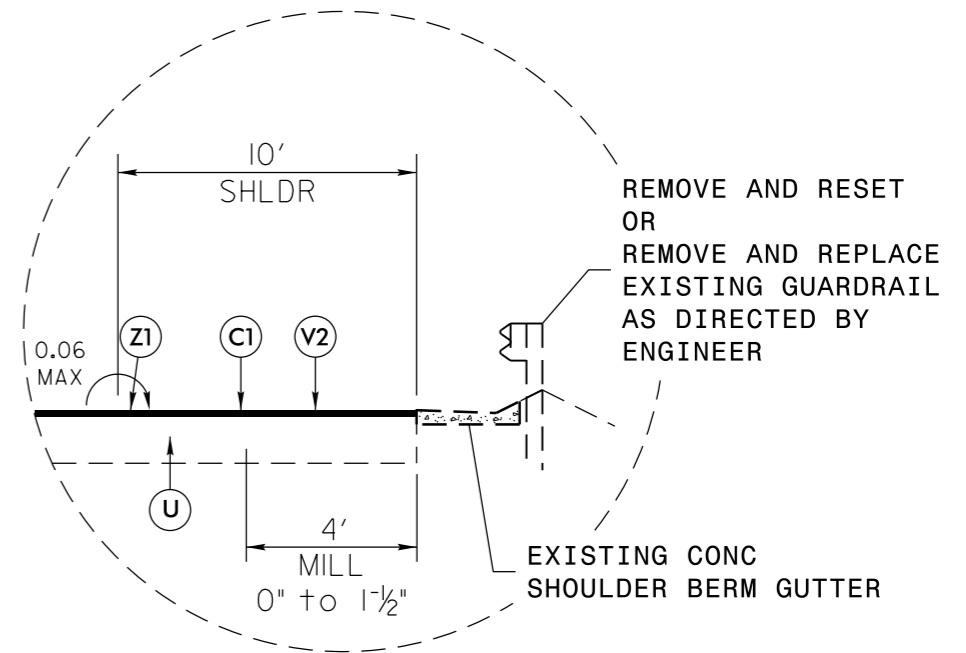
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH
Z1	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)

BUNCOMBE COUNTY

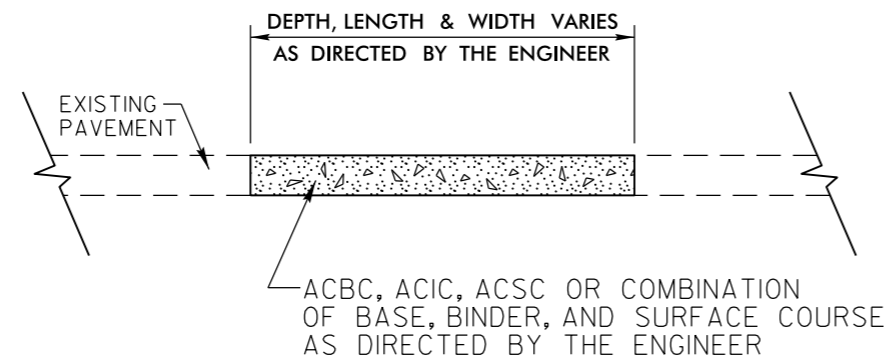
PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	5	



TYPICAL SECTION NO. 5
CLIP/CUT SHOULDERS PER NCDOT STANDARD
DRAWING 560.01 & 560.02
BEFORE RE-INSTALLING GUARDRAIL
IN AREAS AS DIRECTED BY THE ENGINEER



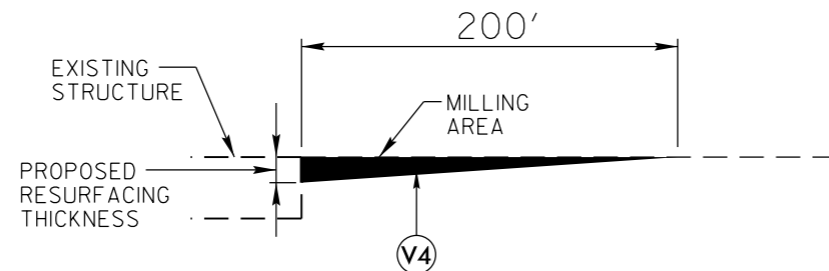
DETAIL B
VARIOUS LOCATIONS



DETAIL FOR
PATCHING EXISTING PAVEMENT

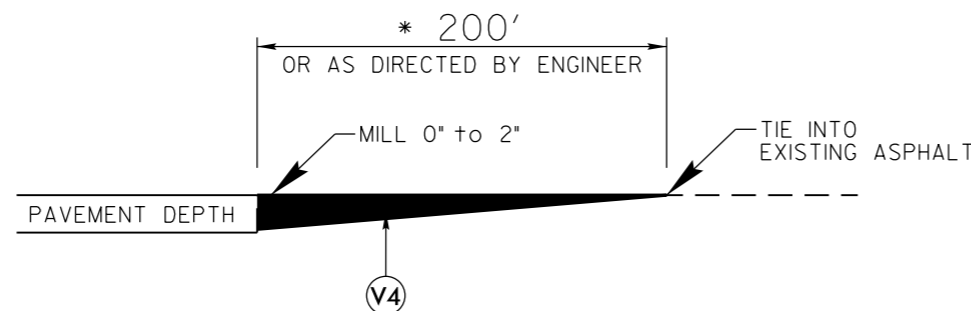
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T1	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH
Z1	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)

PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	6	



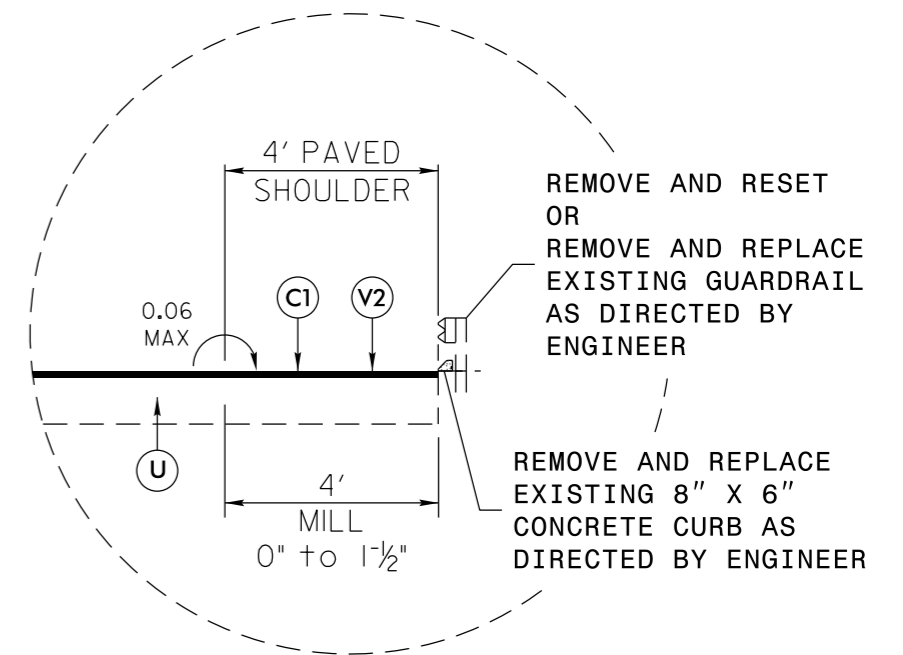
MILLING DETAIL AT BRIDGE APPROACHES

**WHERE BRIDGES WILL NOT BE RESURFACED.
THIS WILL BE PAID FOR AS INCIDENTAL MILLING.
USE AT BRIDGE NUMBERS 429 and 827.**



DETAIL TO TIE INTO EXIST PAVEMENT

**THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE WILL BE REQUIRED TO MILL THE EXISTING ASPHALT PAVEMENT TO ENSURE A PROPER TIE-IN WITH THE EXISTING SURFACE AT THE BEGINNING, END, AND Y LINES OF EACH MAP TO BE RESURFACED WITH ASPHALT CONC SURFACE COURSE, TYPE S9.5C. THIS WILL BE PAID FOR AS INCIDENTAL MILLING.
* USE 100 FT FOR ON/OFF RAMPS**

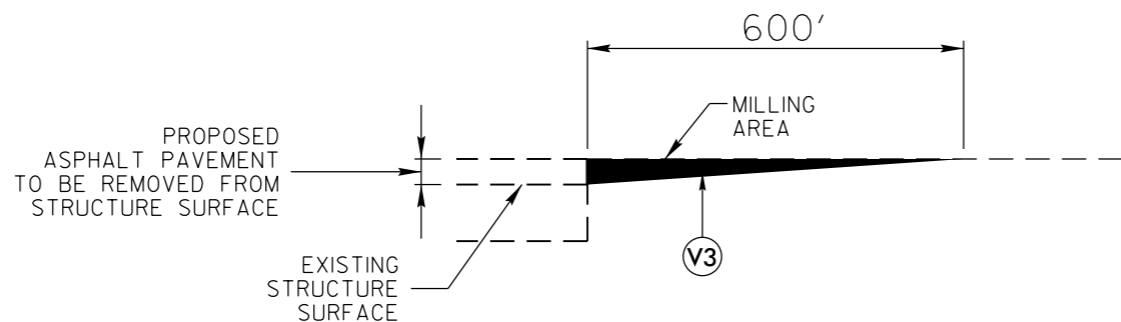


**DETAIL C
VARIOUS LOCATIONS**

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH
V4	INCIDENTAL MILLING

BUNCOMBE COUNTY

PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	7	



SPECIAL MILLING DETAIL AT BRIDGE APPROACHES

WHERE ASPHALT SURFACE TO BE REMOVED FROM BRIDGE DECKS.

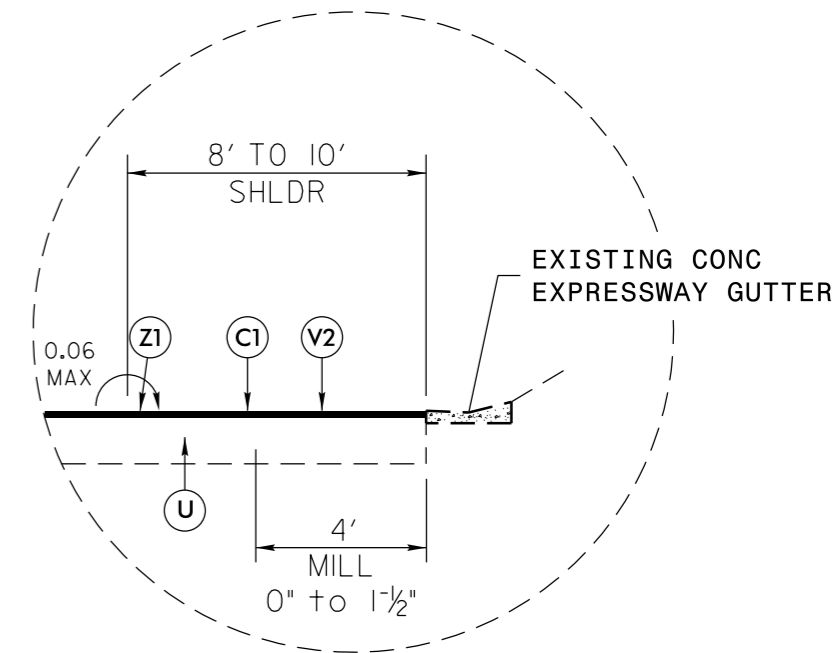
THEN OVERLAY BRIDGE WITH LATEX MODIFIED CONCRETE.

USE AT BRIDGE NUMBERS 412, 415, 421, and 422.

CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD

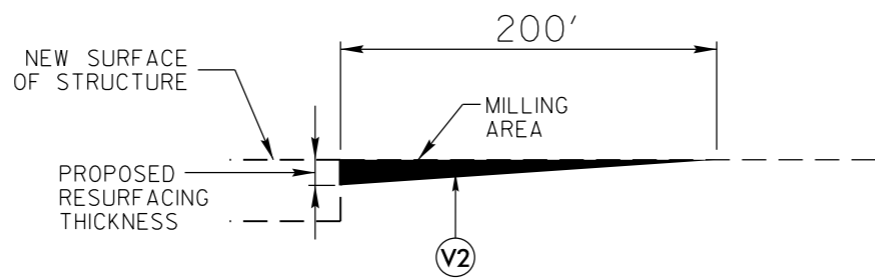
DRAWING 560.01 & 560.02.

SEE SPECIAL SHOULDER DETAIL FOR BINDER PLACEMENT ON SHOULDER.



DETAIL D

VARIOUS LOCATIONS



SPECIAL MILLING DETAIL AT BRIDGE APPROACHES

WHERE ASPHALT SURFACE TO BE REMOVED FROM BRIDGE DECKS.

THEN OVERLAY BRIDGE WITH LATEX MODIFIED CONCRETE.

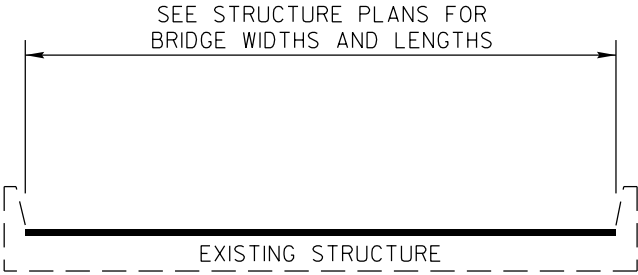
USE AT BRIDGE NUMBERS 412, 415, 421, and 422.

CLIP/CUT/FILL SHOULDERS PER NCDOT STANDARD

DRAWING 560.01 & 560.02.

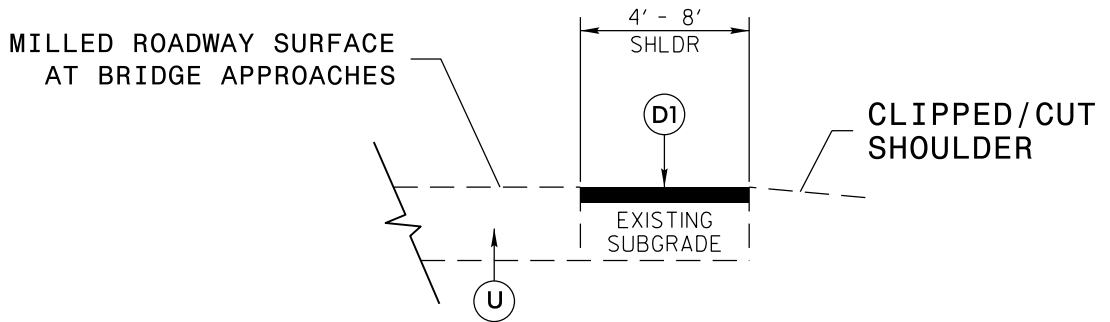
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH
V3	MILLING ASPHALT PAVEMENT, 0" TO 5" DEPTH (OR AS DIRECTED BY ENGINEER)
Z1	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)

PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	8	



BRIDGE DETAIL

**MILL BRIDGE DECKS TO REMOVE ASPHALT PAVEMENT.
REPAIR AND THEN RESURFACE BRIDGE DECKS USING
LATEX MODIFIED CONCRETE AS SHOW IN THE STRUCTURE PLANS.
MILLING OF BRIDGE DECKS WILL BE PAID FOR AS
SCARIFYING BRIDGE DECK.
USE AT BRIDGE NUMBERS 412, 415, 421, AND 422.
SEE SPECIAL MILLING DETAIL AT BRIDGE APPROACHES
FOR ROADWAY TIE-INS AT LISTED BRIDGES.**



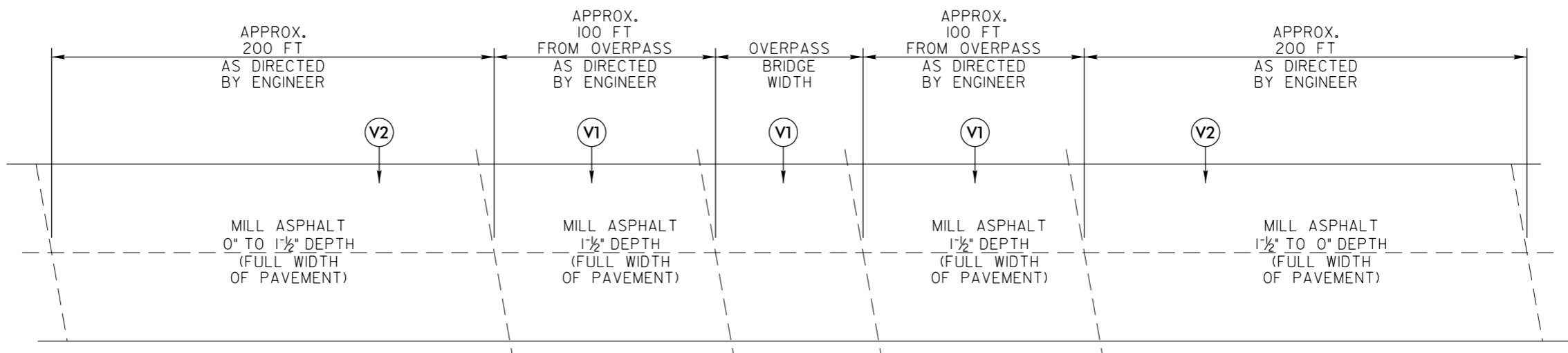
SHOULDER DETAIL AT BRIDGE APPROACHES

**1. REMOVE PAVED SHOULDER MATERIAL.
2. COMPACT SUBGRADE.
3. PLACE BINDER COURSE (I19.0C) ON COMPACTED SUBGRADE UP TO
MILLED SURFACE FOR BRIDGE APPROACHES.
TYPICAL FOR BOTH SIDES OF ROADWAY.
PAYMENT FOR THE REMOVAL OF THE PAVED SHOULDER
AND COMPACTION OF THE SUBGRADE IS INCIDENTAL
TO THE PLACEMENT OF I19.0C.
USE AT BRIDGE NUMBERS 412, 415, 421, AND 422.
SEE SPECIAL MILLING DETAIL AND TYPICAL SECTIONS
FOR FINAL SURFACE COURSE.**

BUNCOMBE COUNTY

PAVEMENT SCHEDULE	
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
U	EXISTING PAVEMENT

PROJECT NO.	SHEET NO.	TOTAL SHEETS
I-5892	9	

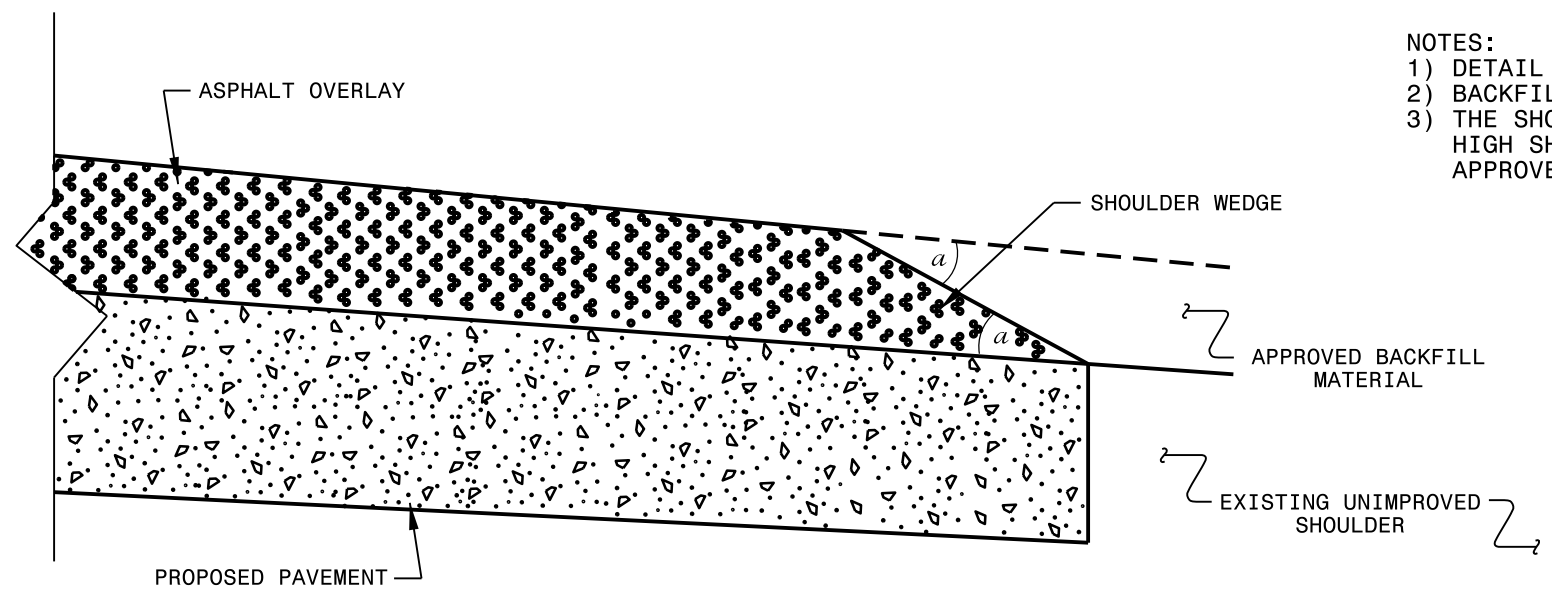


PLAN VIEW FOR
MILLING DETAIL UNDER BRIDGE OVERPASS
USE AT BRIDGE OVERPASS NO. 407

PAVEMENT SCHEDULE	
V1	MILLING ASPHALT PAVEMENT, 1-½" DEPTH
V2	MILLING ASPHALT PAVEMENT, 0" TO 1-½" DEPTH

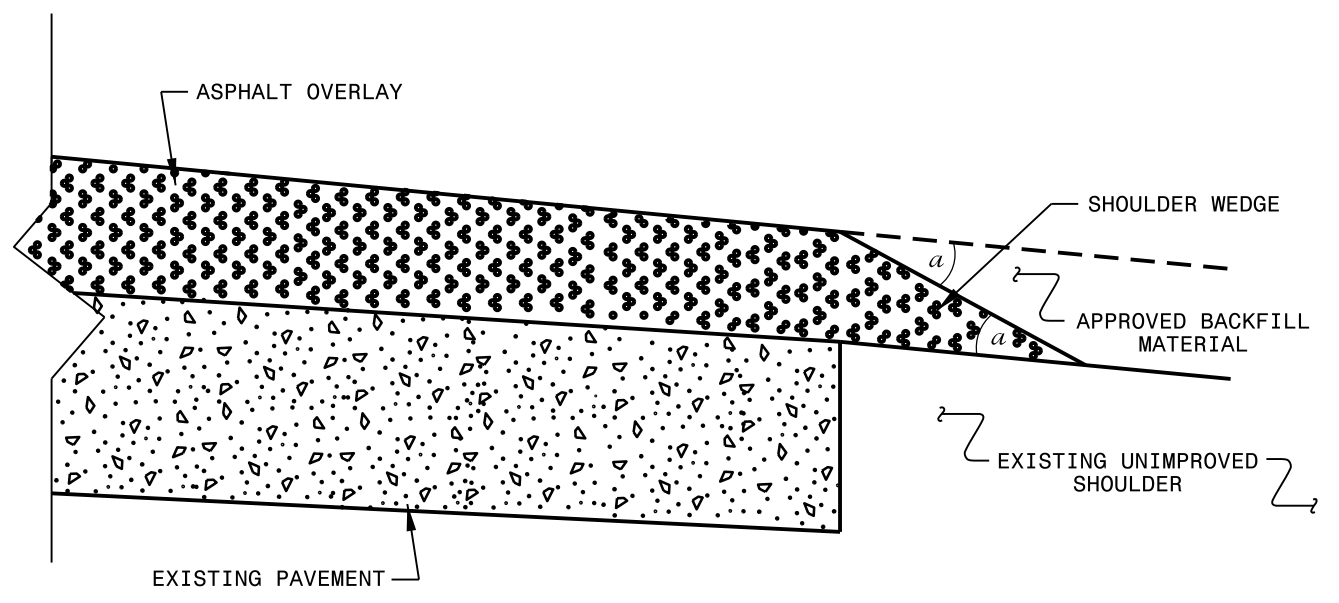
BUNCOMBE COUNTY

- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



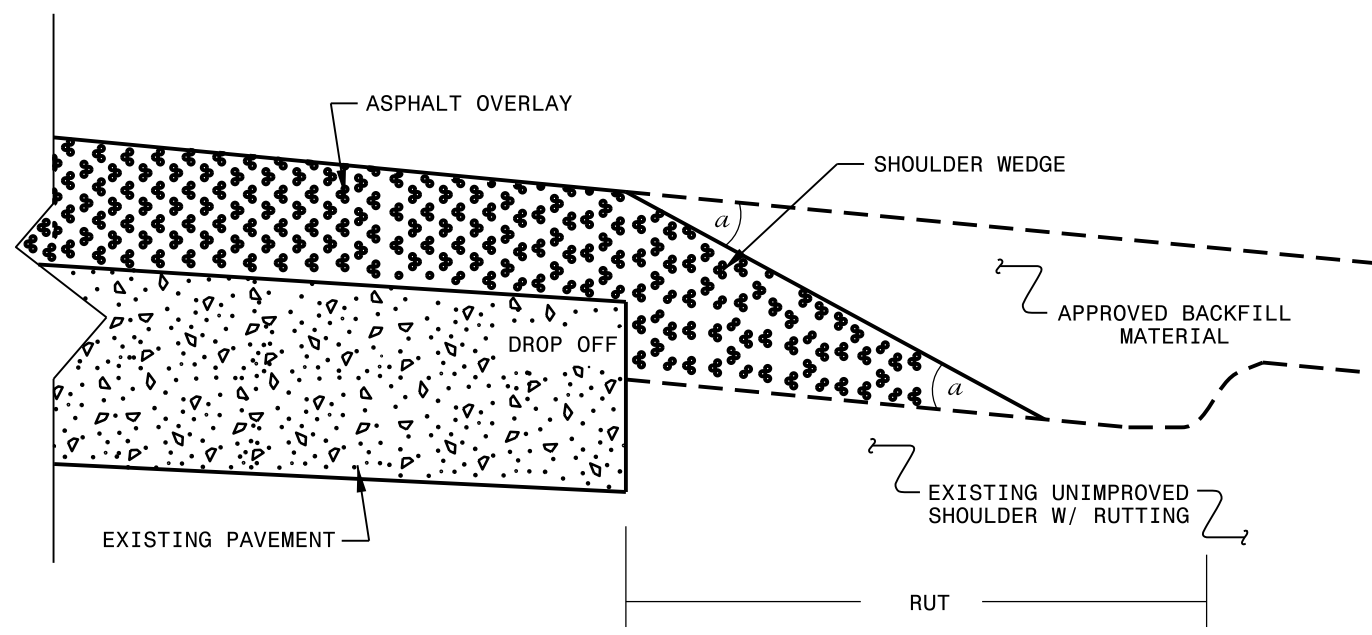
SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ Widening or with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)



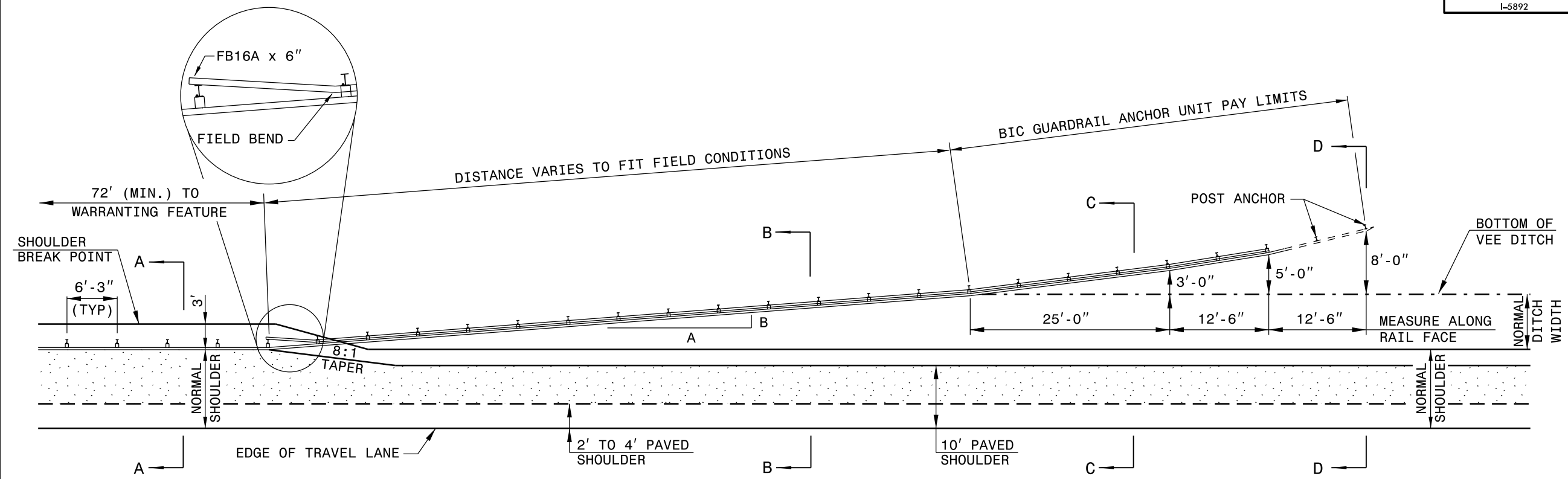
SHOULDER WEDGE DETAIL

(Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

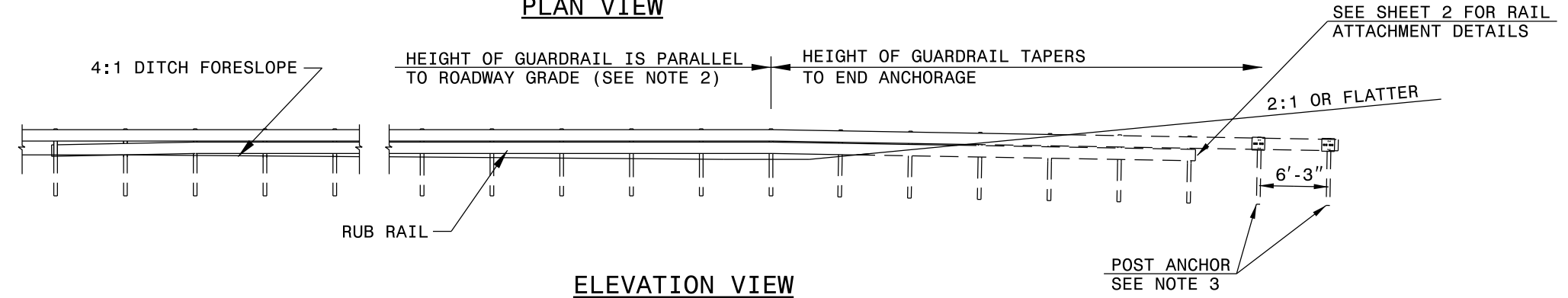
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
SHOULDER WEDGE DETAILS	
ORIGINAL BY: T. SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 2/2/16
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

C:\JAN-2017\1522\Resurfacing Projects\Shoulder Wedge Details\Revised Shoulder Wedge Detail.dgn
 \$\$\$USERNAME\$\$\$

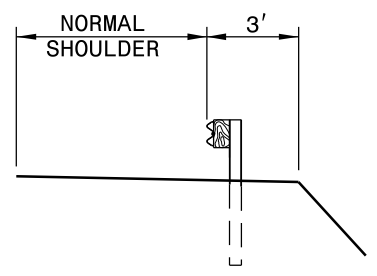


PLAN VIEW

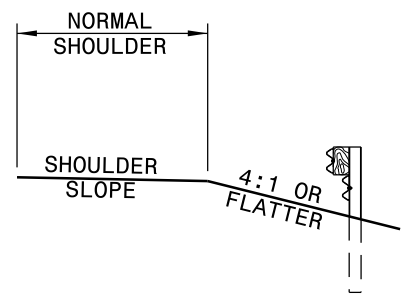
DESIGN SPEED mph	A:B
≥ 60	13:1
55	12:1
50	11:1
45	10:1
40	9:1
30 or less	7:1



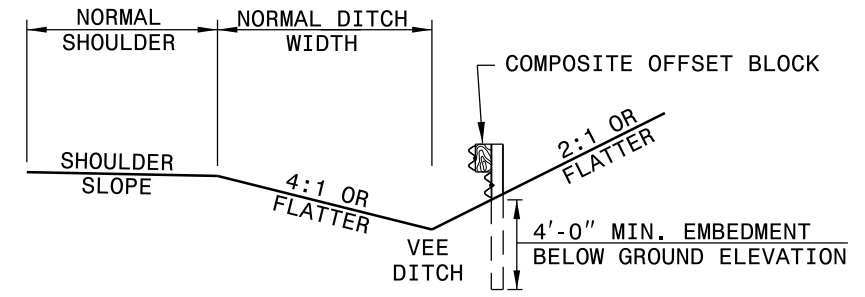
ELEVATION VIEW



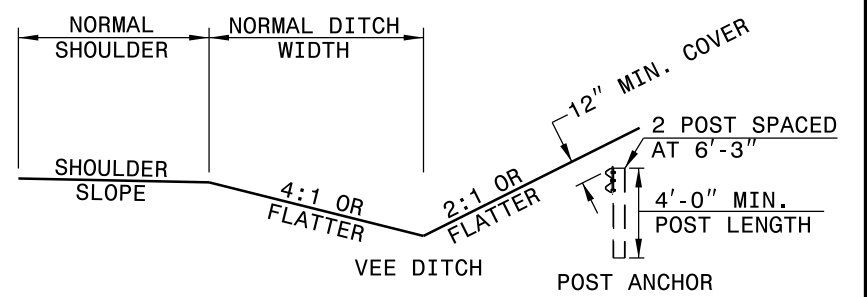
SECTION A-A



**SECTION B-B
(WITH RUBRAIL)**



**SECTION C-C
(WITH RUBRAIL)**

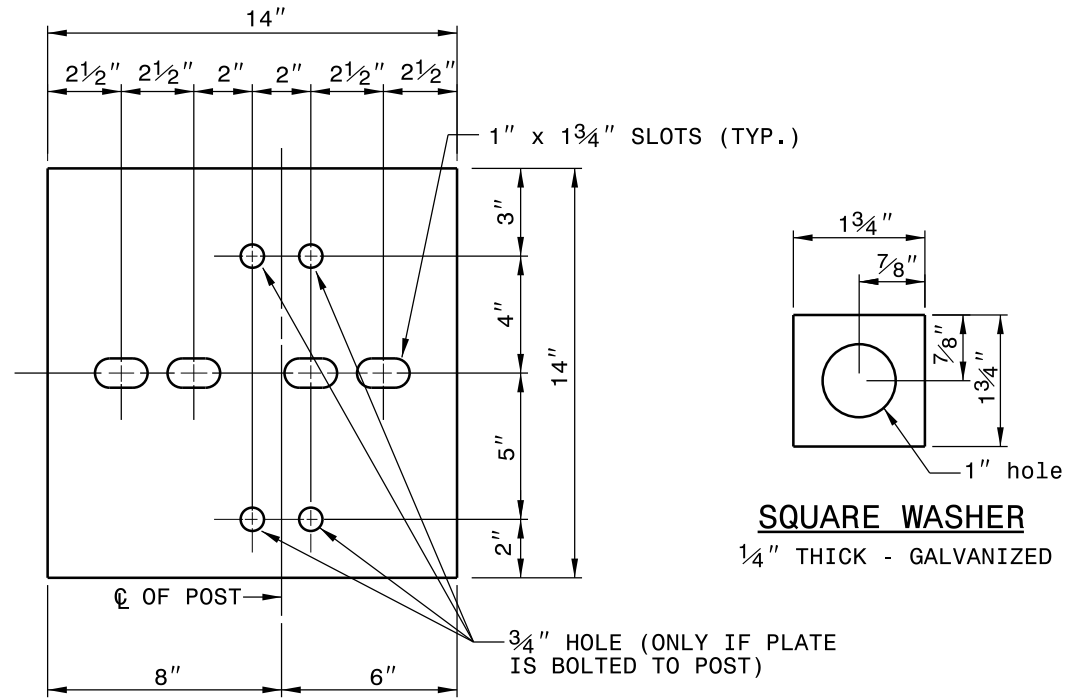


SECTION D-D

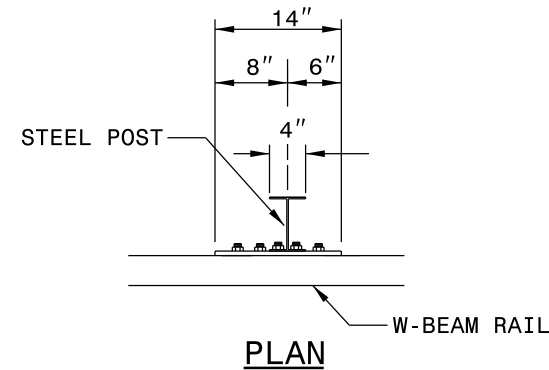
- NOTES:**
- VARIABLE DITCH OFFSETS MAY BE USED TO FIT FIELD CONDITIONS.
 - HEIGHT OF GUARDRAIL MAY BE TAPERED DOWN IN ELEVATION TO MAINTAIN 3'-9" MAXIMUM HEIGHT.
 - ALL POSTS ARE 8'-0" IN LENGTH FROM WHERE THE GUARDRAIL FLARES AWAY FROM THE SHOULDER BACK TO THE DITCH FLOW LINE. GUARDRAIL POSTS BEYOND 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.
 - 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.
 - PAYMENT FOR ANY RUBRAIL INSTALLATION BEYOND BIC GUARDRAIL ANCHOR UNIT PAY LIMITS WILL BE INCIDENTAL TO PAYMENT FOR BIC ANCHOR UNIT.

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.F. WARD	DATE: 12-7-01
CHECKED BY:	DATE:
FILE SPEC.: epicward/misc_guardrail/BIC.dwg	

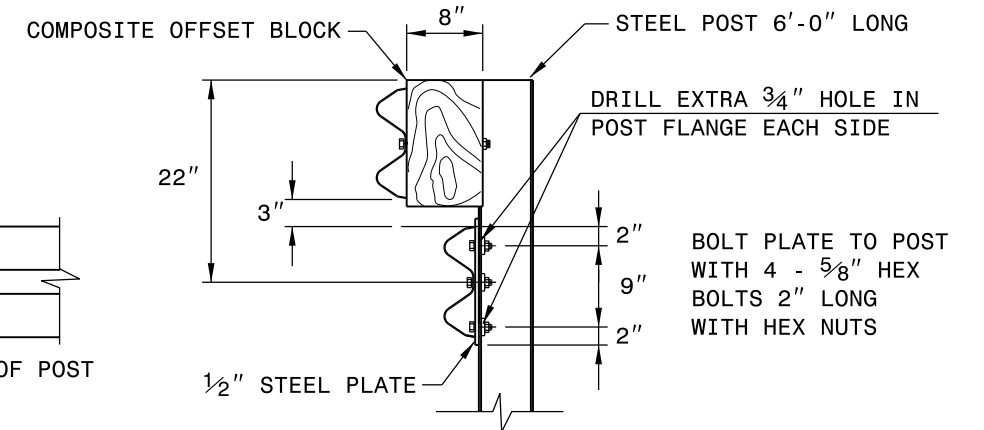
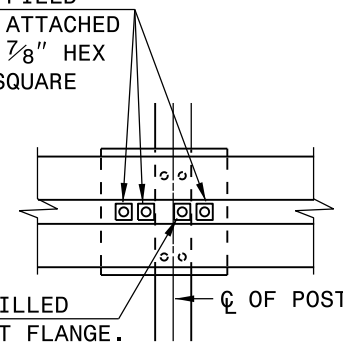
5/14/99



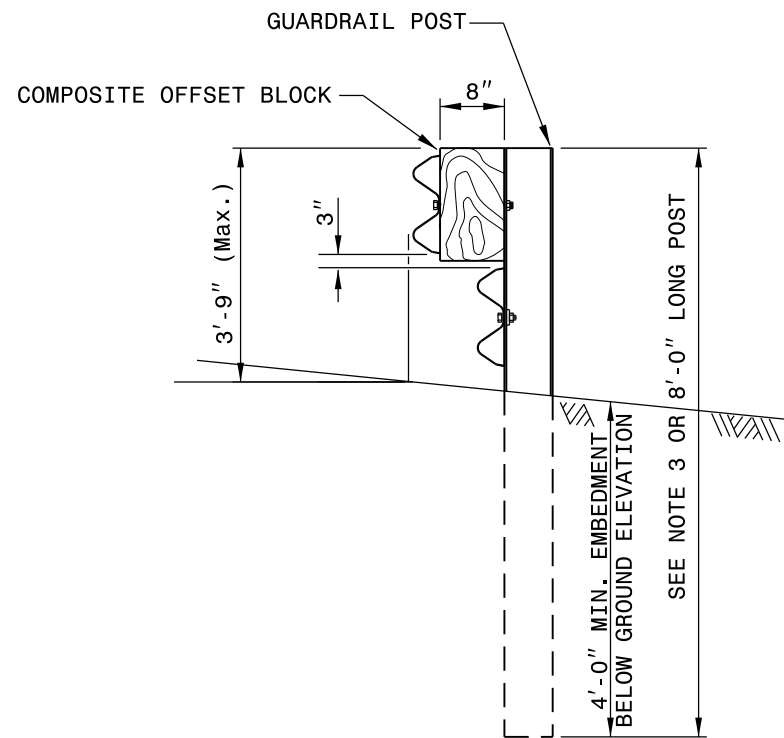
STEEL PLATE - 1/2"
GALVANIZED
WELDED OR BOLTED TO POST



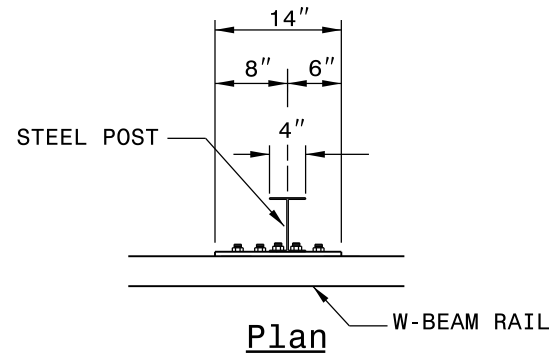
3 - 7/8" HOLES TO BE FIELD DRILLED IN RAIL AND ATTACHED TO STEEL PLATE WITH 7/8" HEX BOLTS 2" LONG WITH SQUARE WASHER



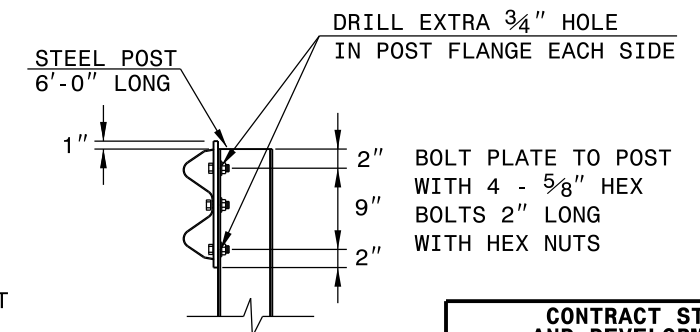
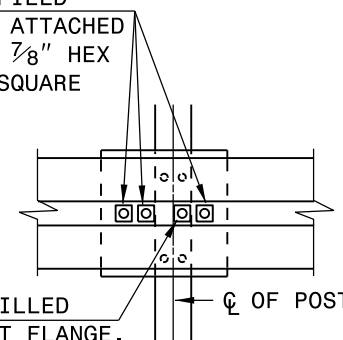
RUBRAIL ANCHOR DETAILS



RAIL ATTACHMENT DETAIL



3 - 1" HOLES TO BE FIELD DRILLED IN RAIL AND ATTACHED TO STEEL PLATE WITH 7/8" HEX BOLTS 2" LONG WITH SQUARE WASHER

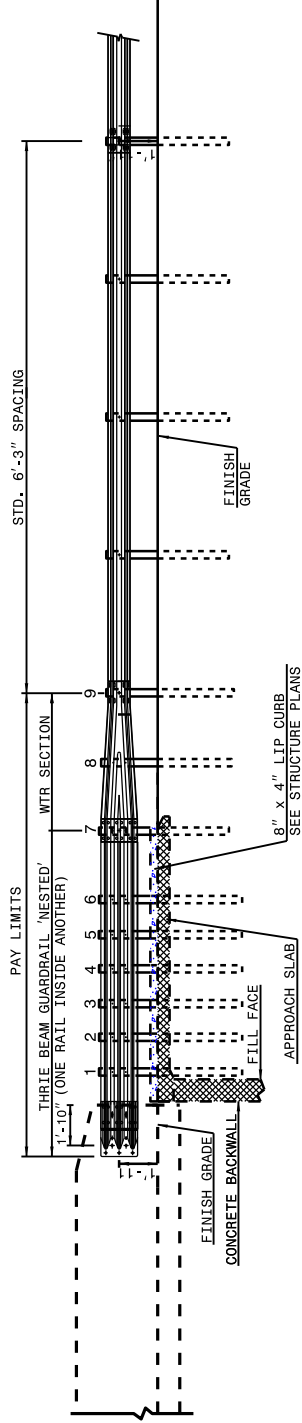


POST ANCHOR DETAILS

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: ericward/misc.	DATE:
FILE SPEC.: ericward/misc.	guardrail/BIC.dwg

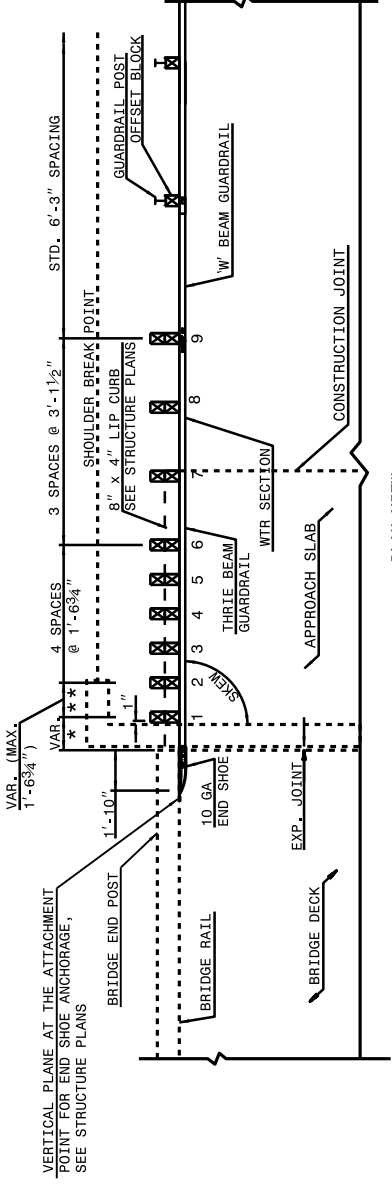
5/14/99

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



ELEVATION

- NOTE:**
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 $\frac{1}{2}$ " IF CONCRETE BACKWALL IS NOT PRESENT.
 - SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 - MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 - LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 - SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

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

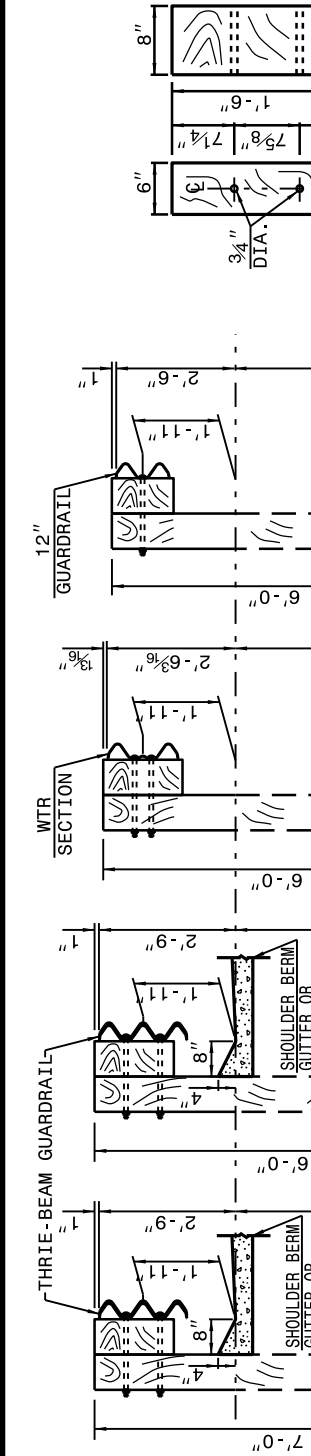
SHEET 2 OF 7
862d03

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

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

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$SUSERSION\$\$\$\$\$
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\$\$\$\$\$SUSERSION\$\$\$\$\$

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



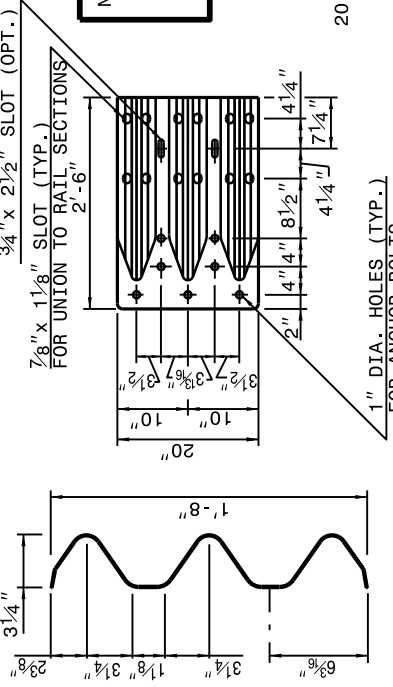
**THRIE-BEAM
OFFSET BLOCK**

**SECTION OF THRIE BEAM
POSTS 1 THRU 6**

**SECTION OF THRIE
BEAM POST 7**

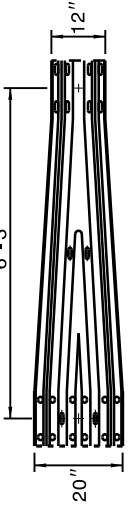
**SECTION OF WTR
BEAM POST 8**

**SECTION OF 'W'
BEAM POST 9**



**THRIE-BEAM
SECTION**

END SHOE



**WTR SECTION
ELEVATION VIEW**

**THRIE-BEAM
LINE POST**

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119
SEE TITLE BLOCK

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

