TIP PROJECT: 49218.1

CONTRACT: DF00297

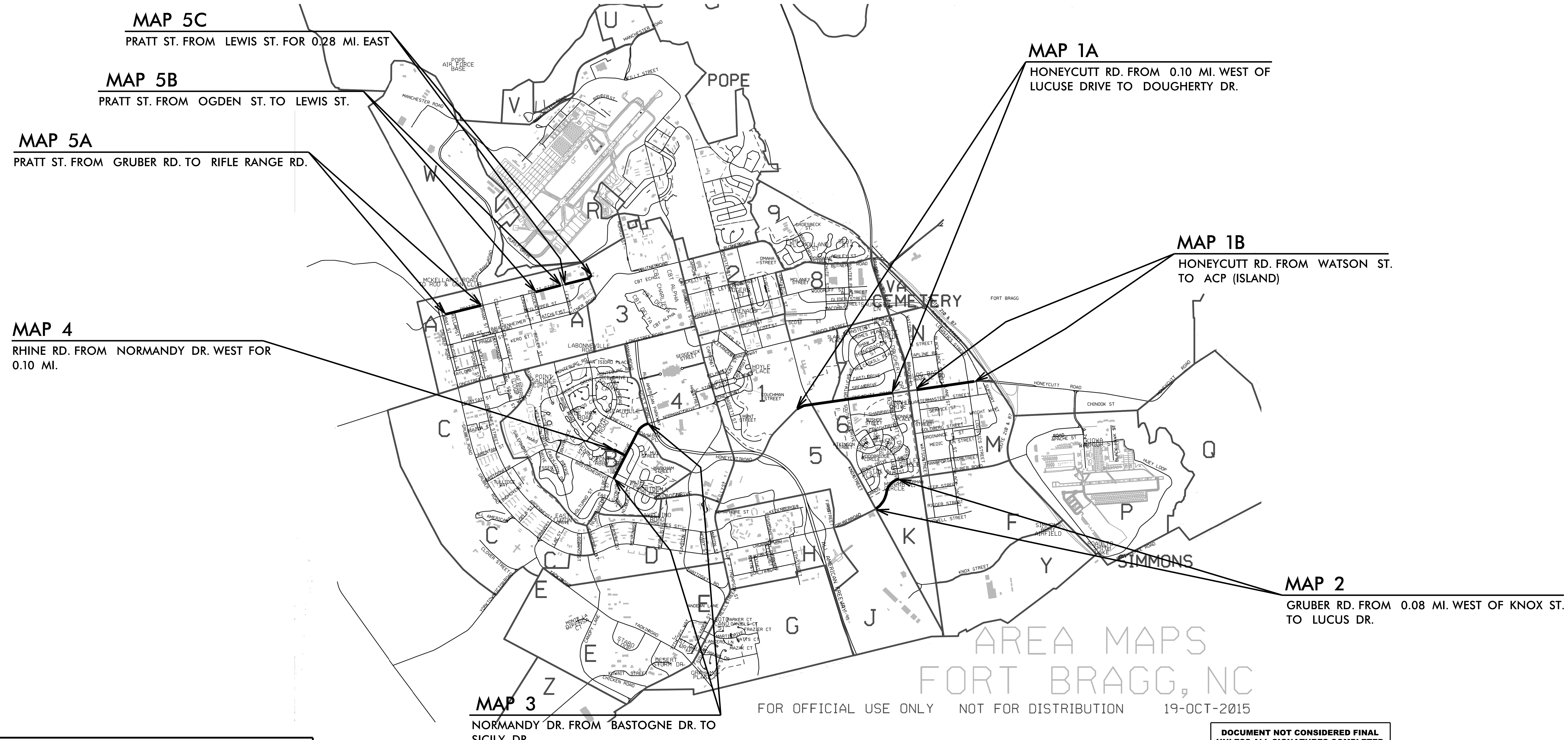
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49218.1	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
49218.1		PE
49218.1		CONST.

FORT BRAGG MILITARY BASE

LOCATION: FORT BRAGG, N.C. , CUMBERLAND COUNTY

TYPE OF WORK: RESURFACING, PAVEMENT REHABILITATION, MILLING GRADING, DRAINAGE IMPROVEMENTS, SIDEWALK, CURB AND GUTTER, ADA RAMPS AND PAVEMENT MARKINGS



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INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 – 8	RESURFACING MAPS
9 – 13	ADA RAMP MAPS
14 – 17	TYPICAL SECTIONS
18	PAVEMENT MARKING PLAN
19 – 20	TRAFFIC CONTROL STANDARD DETAILS
21 – 31	ADA STANDARD DETAILS
32	DRAINAGE STRUCTURE STANDARD DETAIL
33 – 34	SUMMARY OF QUANTITIES
35 – 40	EROSION CONTROL PLANS AND DETAILS
41	SIGNAL LOOP DETAIL

PROJECT LENGTH

MAP 1	HONEYCUTT ROAD	=	1.000 MILES
MAP 2	GRUBER ROAD	=	0.430 MILES
MAP 3	NORMANDY DRIVE	=	0.600 MILES
MAP 4	RHINE ROAD	=	0.110 MILES
MAP 5	PRATT STREET	=	0.830 MILES

TOTAL LENGTH TIP PROJECT 49218.1 = 2.970 MILES

2018 STANDARD SPECIFICATIONS

LETTING DATE:
DECEMBER 1, 2021

WETHERILL ENGINEERING

Prepared for Fort Bragg in the Office of:

1223 JONES FRANKLIN ROAD
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

NORTH CAROLINA PROFESSIONAL SEAL 018981 ENGINEER R.K. MURPHY, JR.
11/3/2021

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

R.K. MURPHY, JR., PE
PROJECT DESIGN ENGINEER

11/3/2021
\VP01_49218_Rdy_TSH 01.dgn
USER:skennedy
09/08/99

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
49218.1	2

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10/26/2021

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1A. HONEYCTT RD.
1B. HONEYCTT RD.

49218.1
FORT BRAGG RESURFACING

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PROJECT REFERENCE NO.	SHEET NO.
49218.1	3

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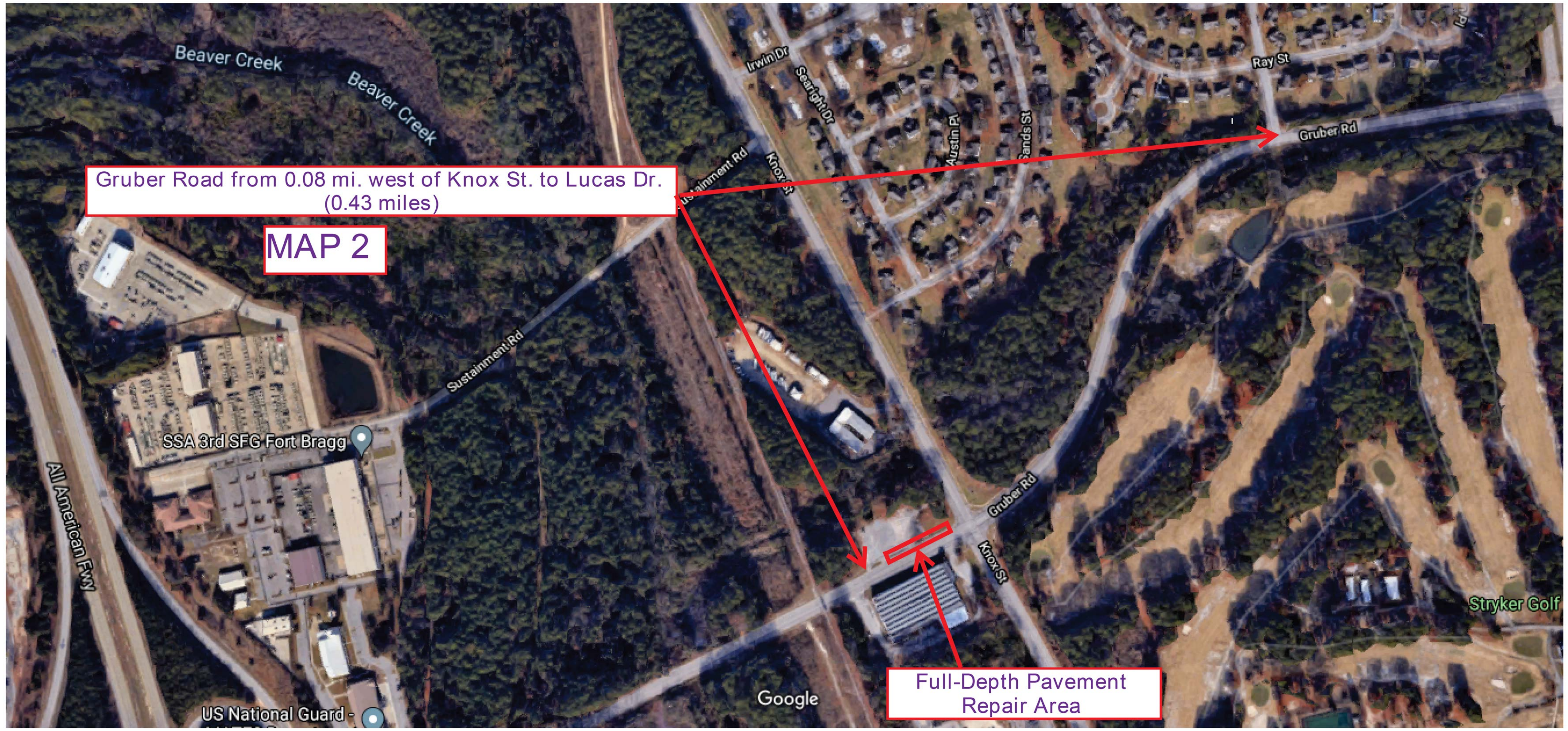

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2. GRUBER RD.

49218.1

FORT BRAGG RESURFACING

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49218.1	4

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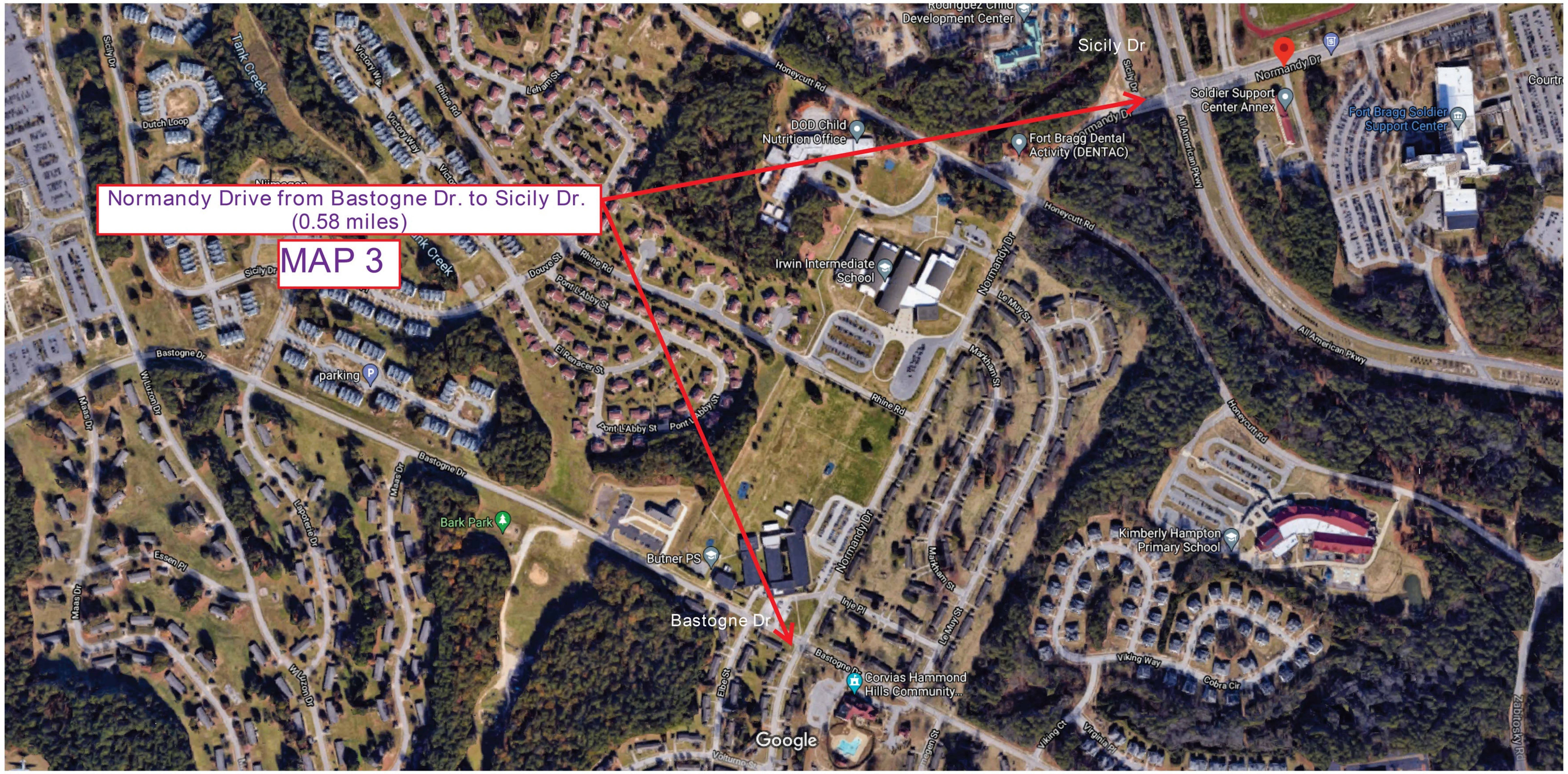

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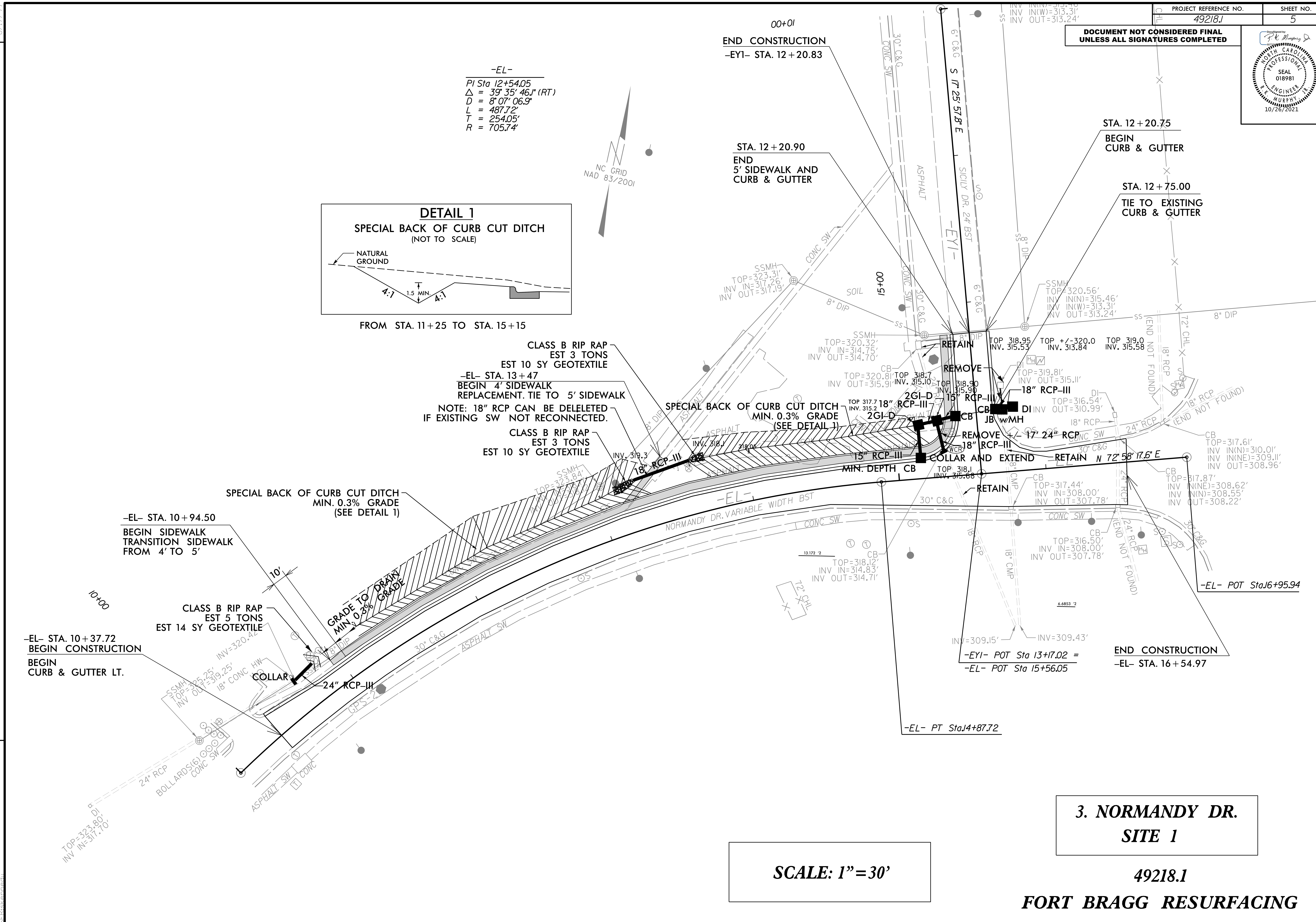
3. NORMANDY DR.

49218.1

FORT BRAGG RESURFACING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SHEET NO. 5
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NORTH CAROLINA PROFESSIONAL SEAL 018981 ENGINEER MURPHY
10/26/2021
-EL-
PI Sta 12+54.05
Δ = 39° 35' 46.1" (RT)
D = 8° 07' 06.9"
L = 487.72'
T = 254.05'
R = 705.74'
NC GRID NAD 83/2001
DETAIL 1
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)
NATURAL GROUND
4:1
1.5 MIN.
4:1
FROM STA. 11+25 TO STA. 15+15
00+01
END CONSTRUCTION
-EY1- STA. 12+20.83
STA. 12+20.90
END
5' SIDEWALK AND CURB & GUTTER
STA. 12+20.75
BEGIN
CURB & GUTTER
STA. 12+75.00
TIE TO EXISTING CURB & GUTTER
S 17° 25' 57.8" E
SICILY DR. 24' BST
-EY1-
CLASS B RIP RAP
EST 3 TONS
EST 10 SY GEOTEXTILE
-EL- STA. 13+47
BEGIN 4' SIDEWALK REPLACEMENT. TIE TO 5' SIDEWALK
NOTE: 18" RCP CAN BE DELELETED IF EXISTING SW NOT RECONNECTED.
CLASS B RIP RAP
EST 3 TONS
EST 10 SY GEOTEXTILE
SPECIAL BACK OF CURB CUT DITCH
MIN. 0.3% GRADE
(SEE DETAIL 1)
RETAIN
REMOVE
18" RCP-III
2GI-D
15" RCP-III
CB
DI
JB w/MH
REMOVE +/- 17' 24" RCP
18" RCP-III
15" RCP-III
COLLAR AND EXTEND
MIN. DEPTH CB
RETAIN
N 72° 58' 17.6" E
RETAIN
SPECIAL BACK OF CURB CUT DITCH
MIN. 0.3% GRADE
(SEE DETAIL 1)
-EL- STA. 10+94.50
BEGIN SIDEWALK TRANSITION SIDEWALK FROM 4' TO 5'
10'
GRADE TO DRAIN MIN. 0.3% GRADE
CLASS B RIP RAP
EST 5 TONS
EST 14 SY GEOTEXTILE
-EL- STA. 10+37.72
BEGIN CONSTRUCTION
BEGIN CURB & GUTTER LT.
COLLAR
24" RCP-III
NORMANDY DR. VARIABLE WIDTH BST
-EL-
10+00
15+00
-EY1- POT Sta 13+17.02 =
-EL- POT Sta 15+56.05
-EL- PT Sta14+87.72
-EL- POT Sta16+95.94
END CONSTRUCTION
-EL- STA. 16+54.97
SCALE: 1"=30'
3. NORMANDY DR.
SITE 1
49218.1
FORT BRAGG RESURFACING

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
49218J	6

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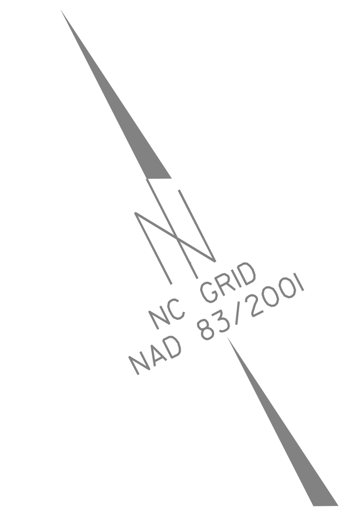
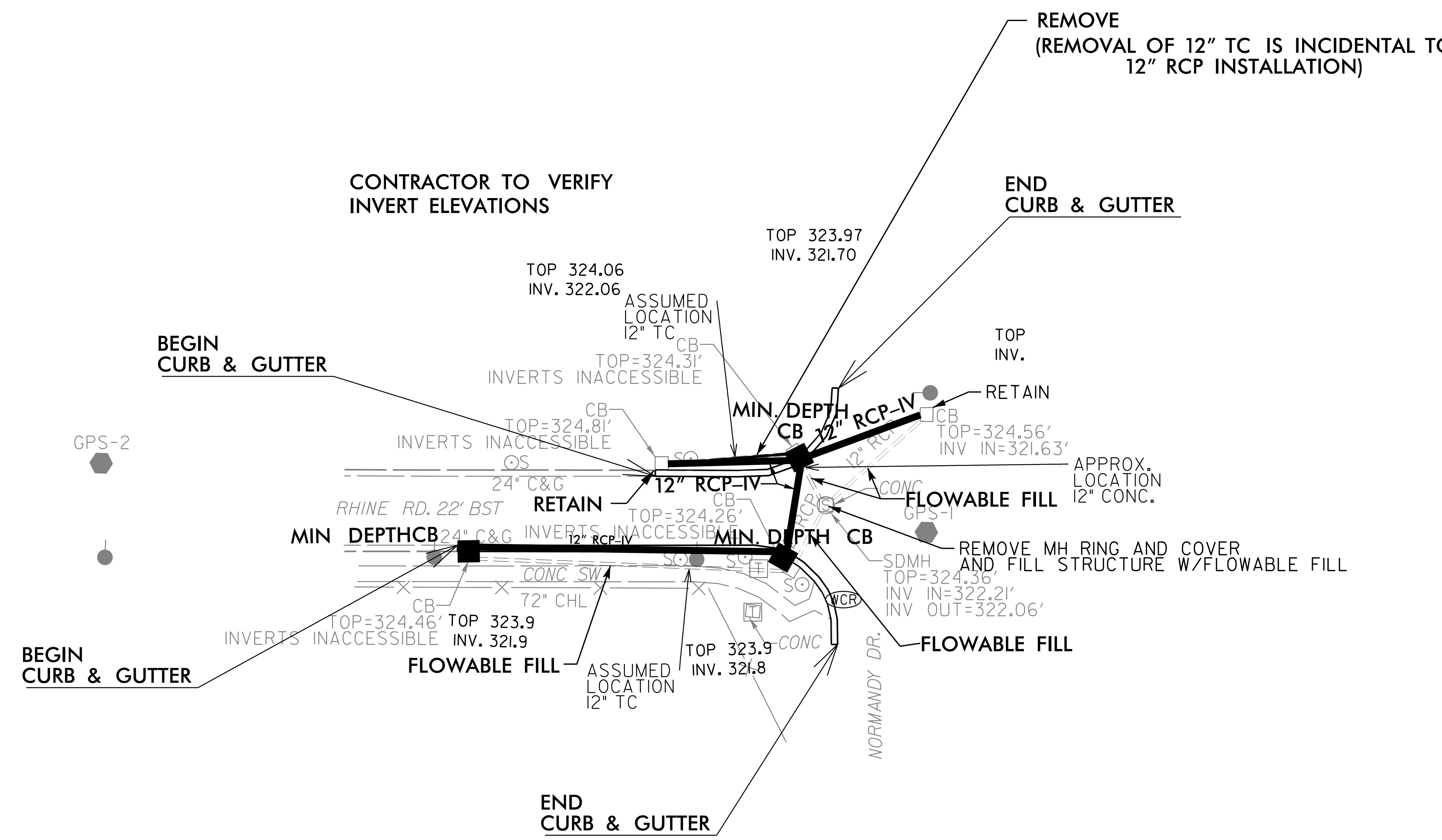
10/26/2021





SCALE: 1"=30'

3. NORMANDY DR.
SITE 2

49218.1
FORT BRAGG RESURFACING

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49218.1	7

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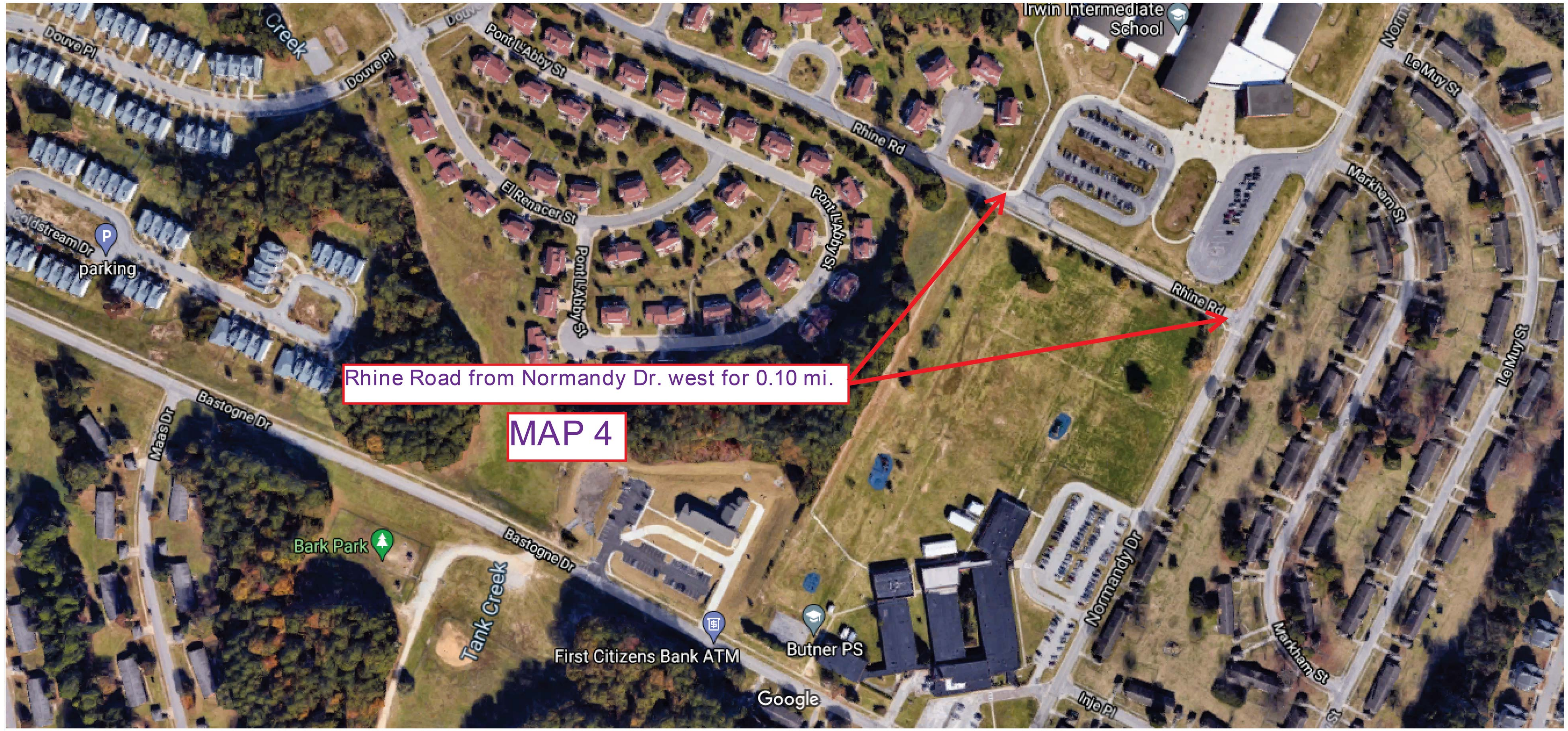

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4. RHINE RD.

49218.1

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49218.1	8

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5A, 5B, 5C. PRATT ST.

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PROJECT REFERENCE NO.	SHEET NO.
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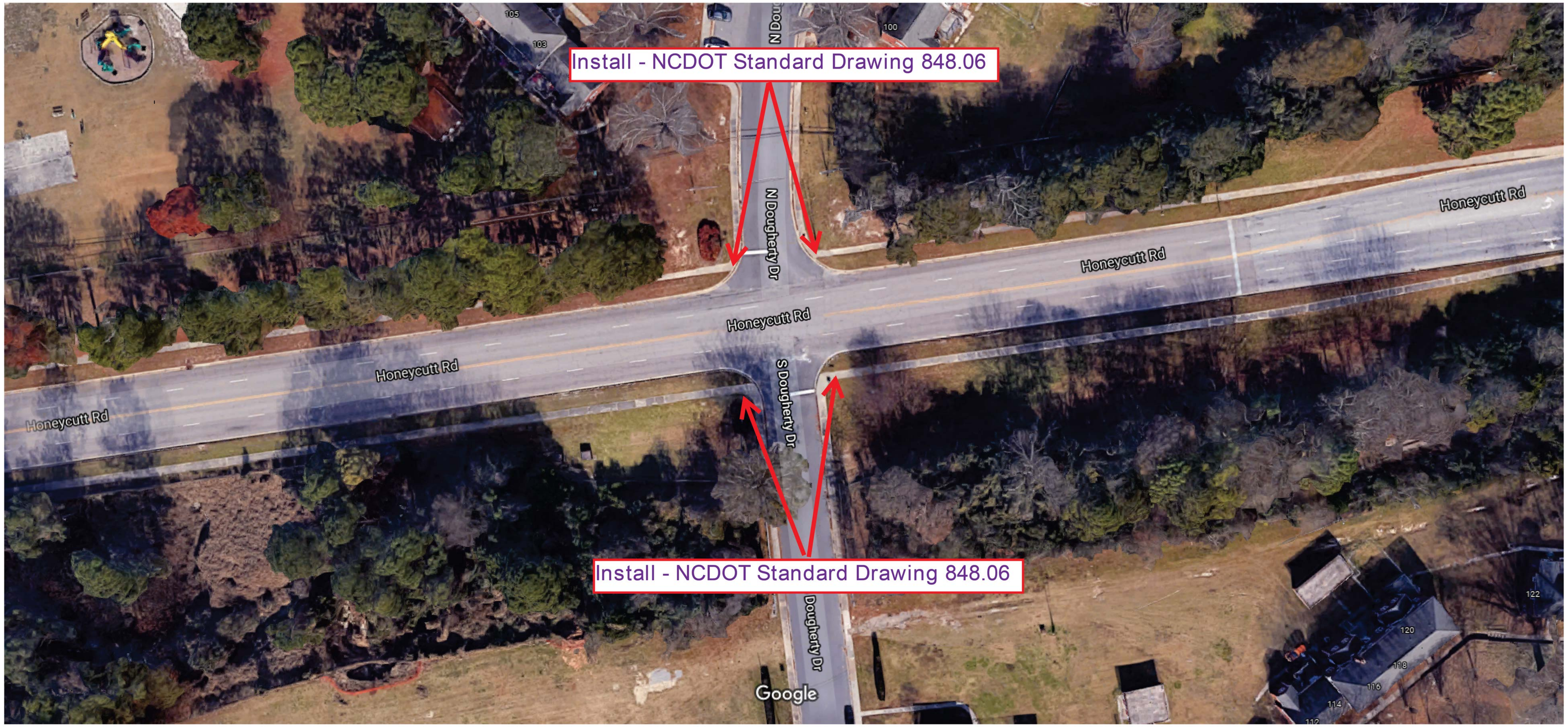

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ADA RAMPS MAP 1A
HONEYCUTT RD. AT DOUGHERTY DR.

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49218.1	10

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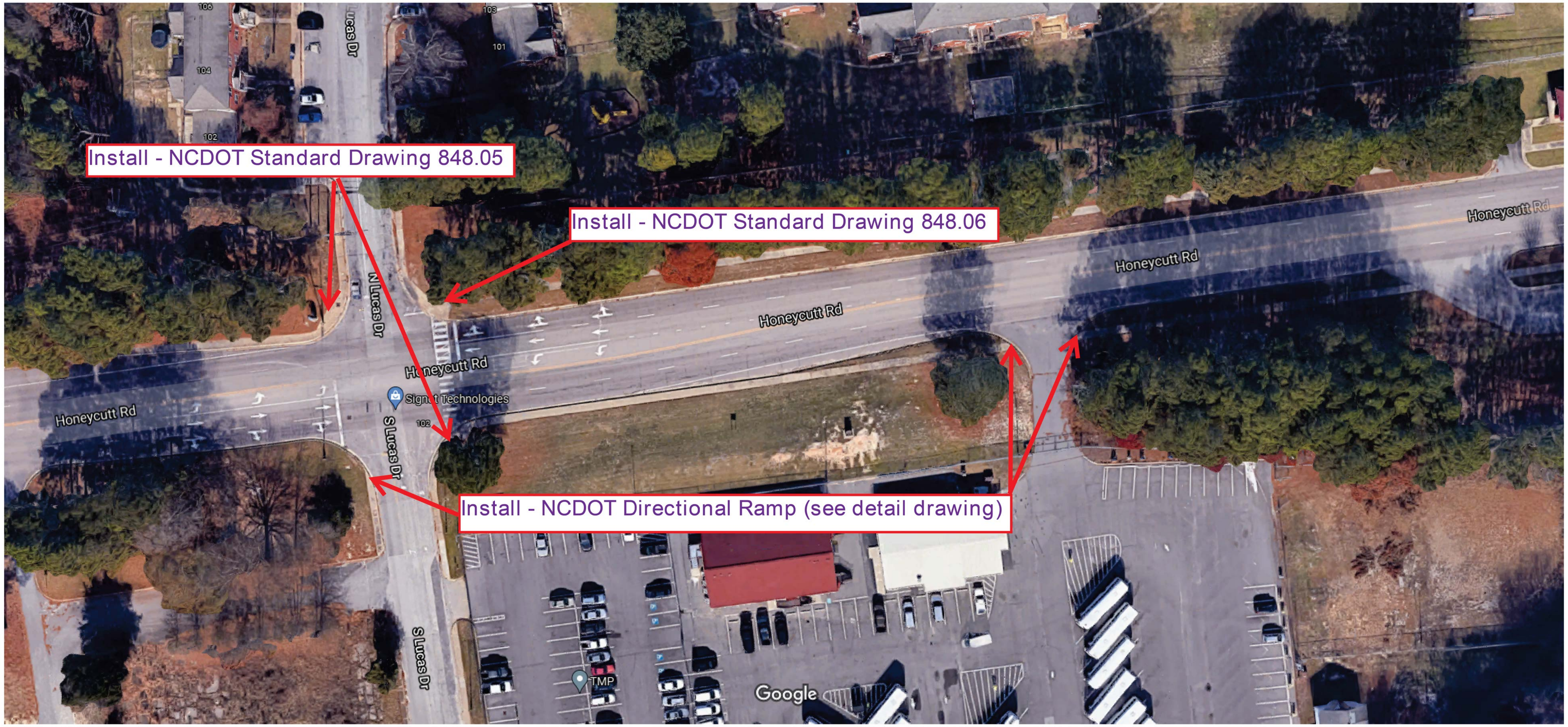

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ADA RAMPS MAP 1B
HONEYCUTT RD. AT LUCAS DR.

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FORT BRAGG RESURFACING

PROJECT REFERENCE NO.	SHEET NO.
49218.1	11

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ADA RAMPS MAP 2
GRUBER RD. AT LUCAS DR.

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ADA RAMPS MAP 3
NORMANDY RD. AT BASTOGNE DR.

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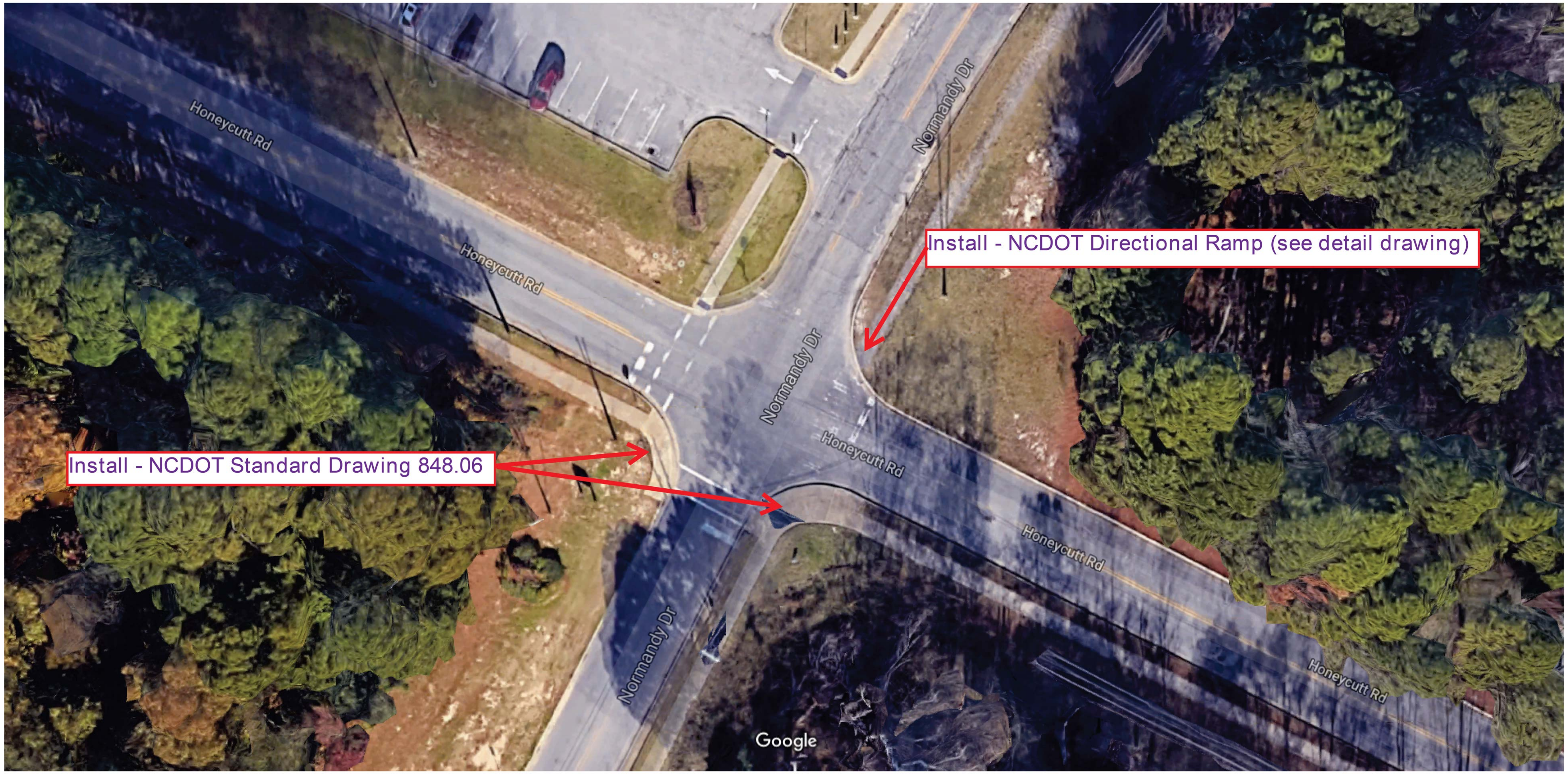

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ADA RAMPS MAP 3
NORMANDY DR. AT HONEYCUTT RD.

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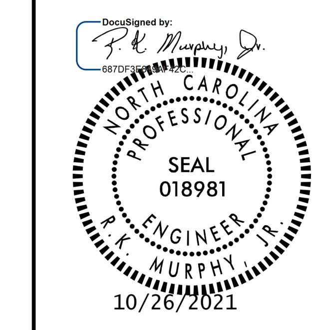
49218J	14



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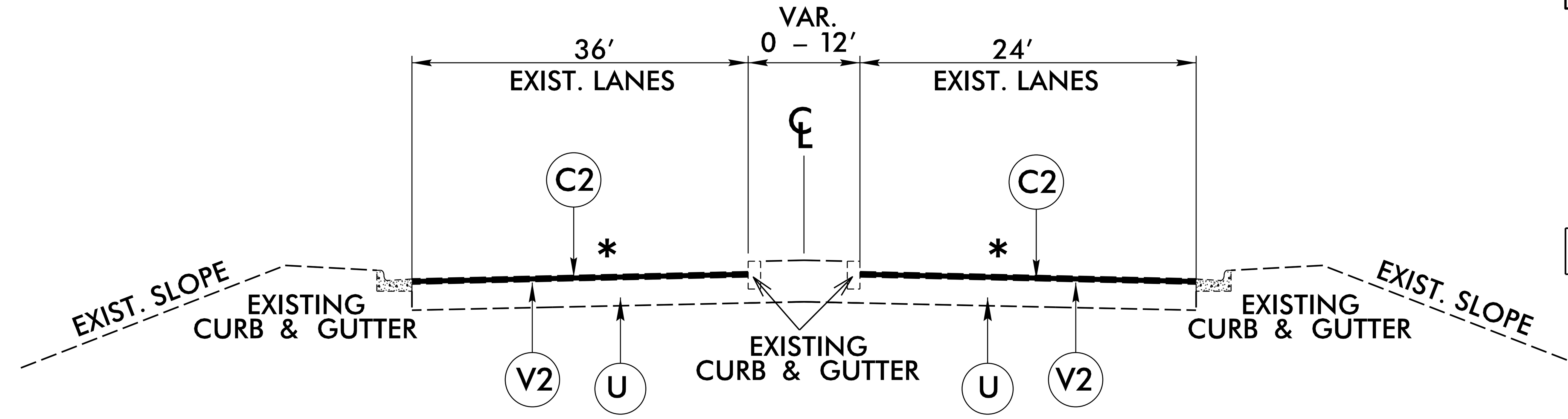
PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 132 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D3	PROP. APPROX. 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 228 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	2'-6" CURB & GUTTER
S1	4" CONCRETE SIDEWALK
U	EXISTING PAVEMENT
V1	MILL 1.5" OF EXISTING ASPHALT PAVEMENT
V2	MILL 3" OF EXISTING ASPHALT PAVEMENT
V3	MILL 7" OF EXISTING ASPHALT PAVEMENT
V4	MILL 6.5" OF EXISTING ASPHALT PAVEMENT
V5	MILL 9" OF EXISTING ASPHALT PAVEMENT

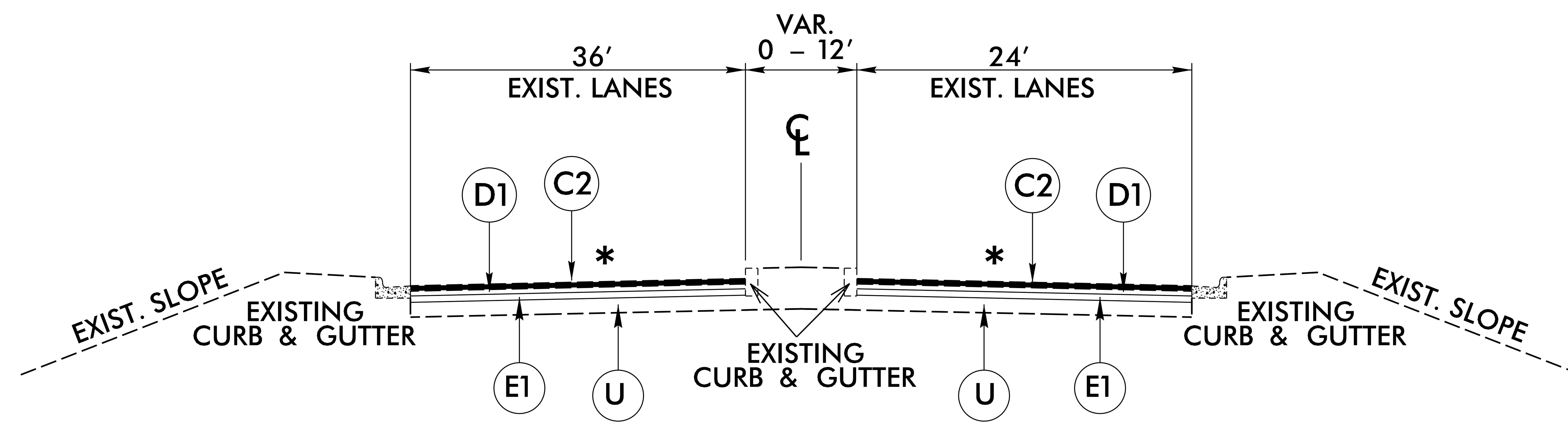


* MATCH EXISTING CROSS SLOPES

TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

MAP 1B HONEYCUTT RD.



* MATCH EXISTING CROSS SLOPES

ASPHALT PAVEMENT REPAIR DETAIL

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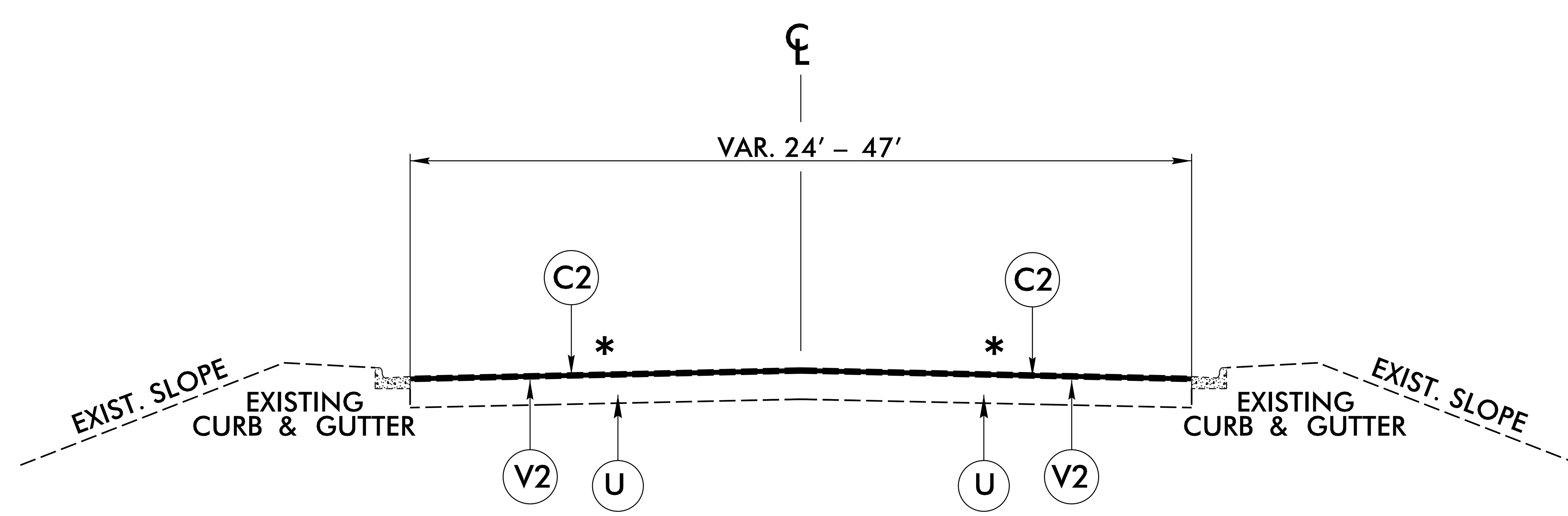
AT LOCATIONS SHOWN ON PLAN SHEET NO. 2



* MATCH EXISTING CROSS SLOPES

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

MAP 1A HONEYCUTT RD.

PROJECT REFERENCE NO.	SHEET NO.
49218J	15

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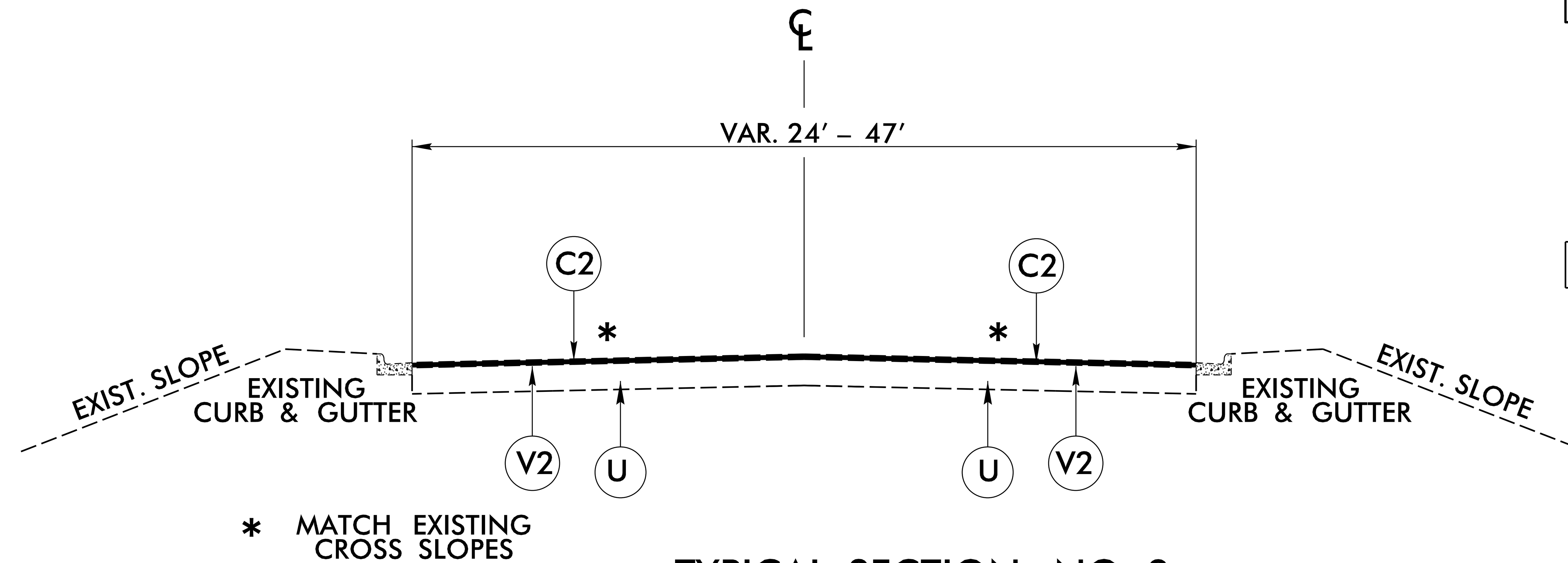
PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

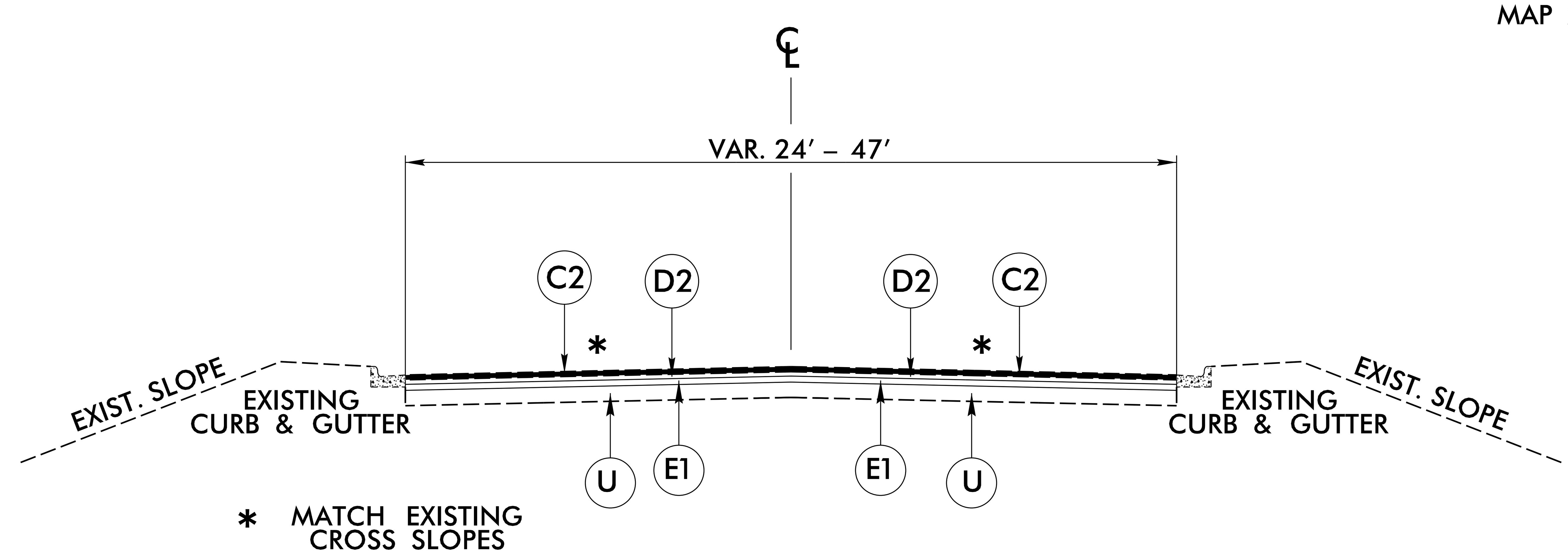
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 132 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D3	PROP. APPROX. 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 228 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	2'-6" CURB & GUTTER
S1	4" CONCRETE SIDEWALK
U	EXISTING PAVEMENT
V1	MILL 1.5" OF EXISTING ASPHALT PAVEMENT
V2	MILL 3" OF EXISTING ASPHALT PAVEMENT
V3	MILL 7" OF EXISTING ASPHALT PAVEMENT
V4	MILL 6.5" OF EXISTING ASPHALT PAVEMENT
V5	MILL 9" OF EXISTING ASPHALT PAVEMENT



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

MAP 2 GRUBER RD.



ASPHALT PAVEMENT REPAIR DETAIL

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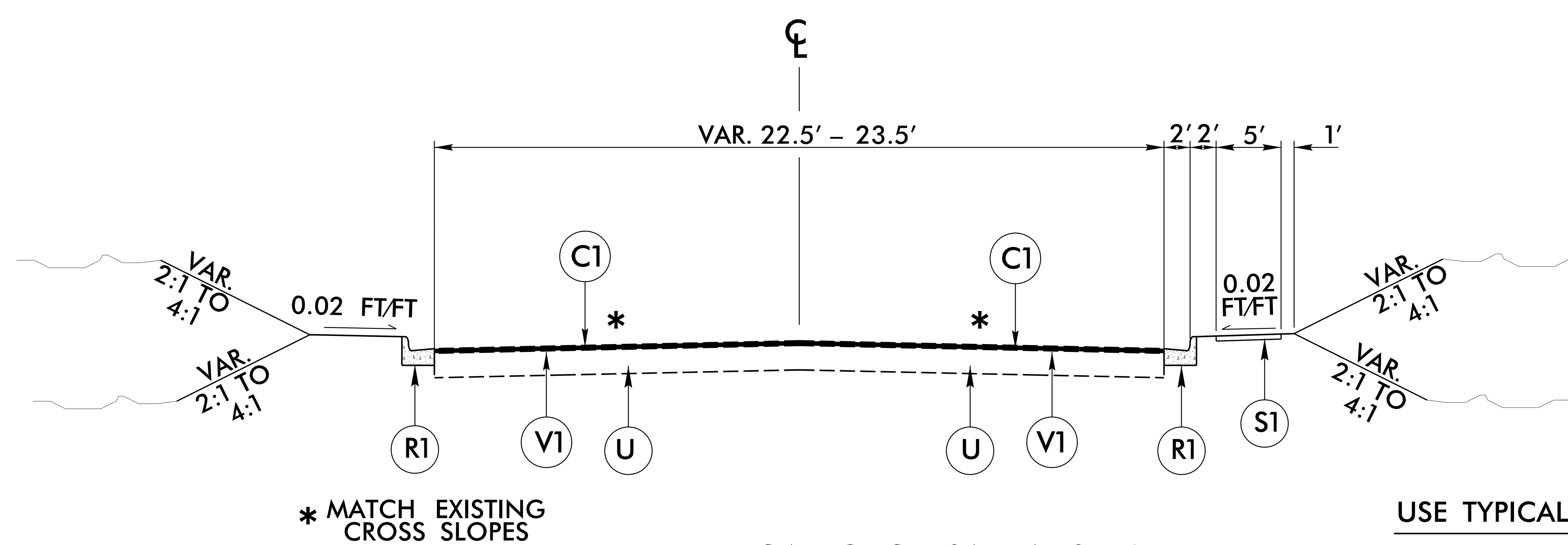

TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

MAP 3 SICILY DR.

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PROJECT REFERENCE NO.	SHEET NO.
49218J	16

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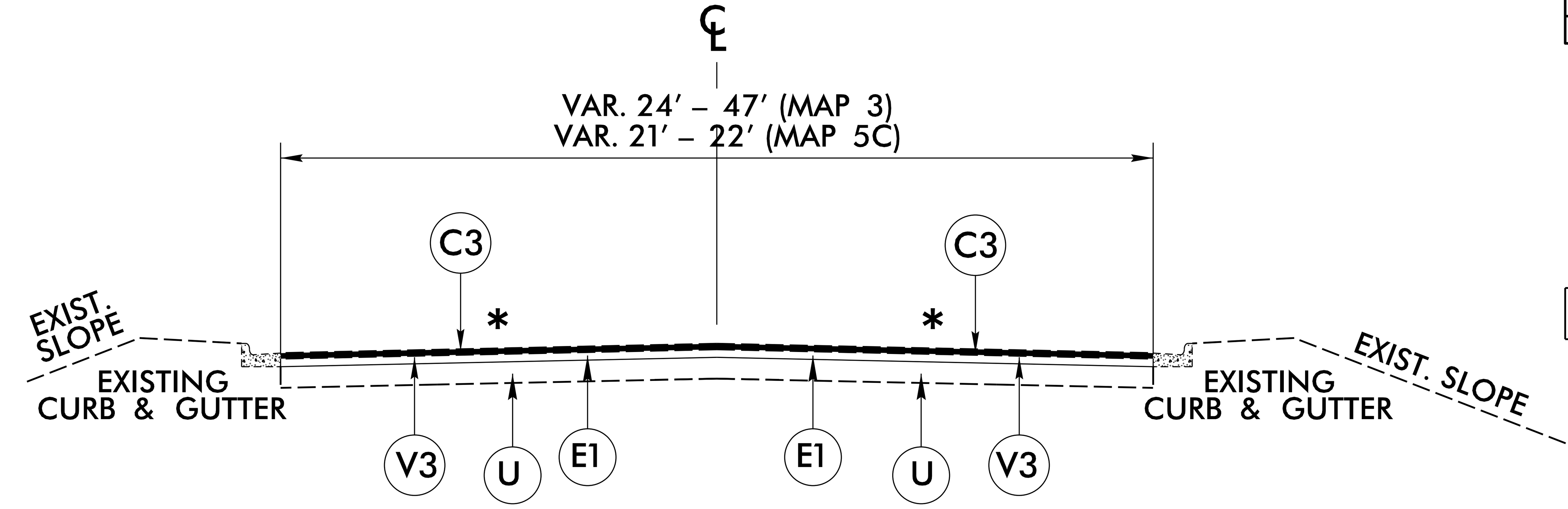
PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 132 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D3	PROP. APPROX. 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 228 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	2'-6" CURB & GUTTER
S1	4" CONCRETE SIDEWALK
U	EXISTING PAVEMENT
V1	MILL 1.5" OF EXISTING ASPHALT PAVEMENT
V2	MILL 3" OF EXISTING ASPHALT PAVEMENT
V3	MILL 7" OF EXISTING ASPHALT PAVEMENT
V4	MILL 6.5" OF EXISTING ASPHALT PAVEMENT
V5	MILL 9" OF EXISTING ASPHALT PAVEMENT

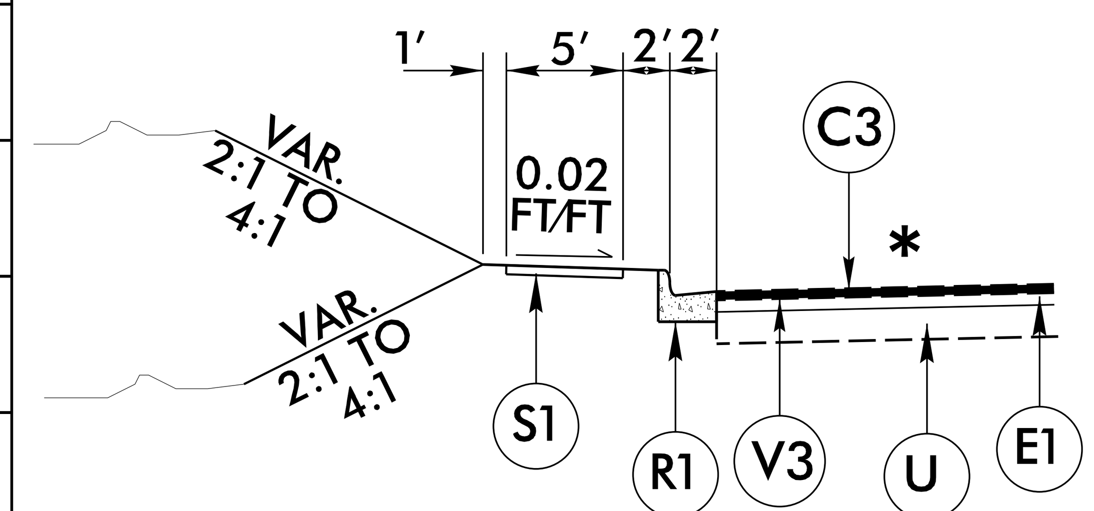


* MATCH EXISTING CROSS SLOPES

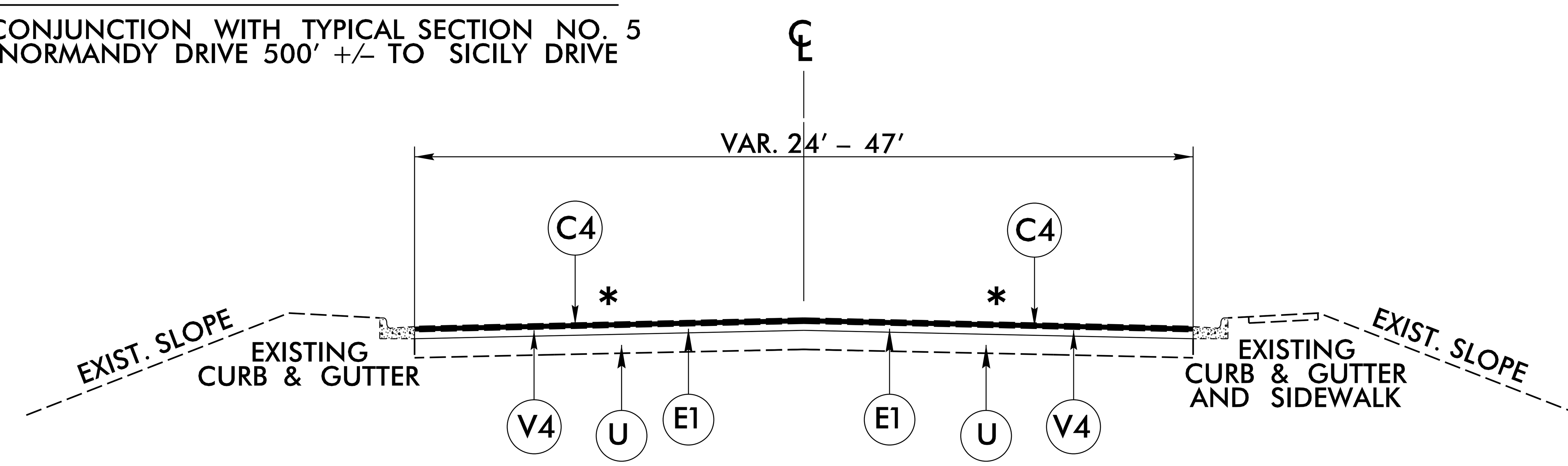
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

MAP 3 NORMANDY DRIVE
MAP 5C PRATT STREET



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 5
MAP 3 NORMANDY DRIVE 500' +/– TO SICILY DRIVE

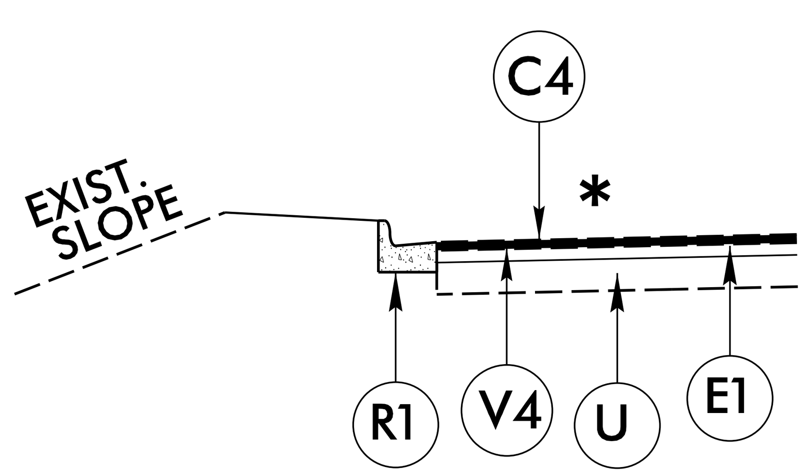


* MATCH EXISTING CROSS SLOPES

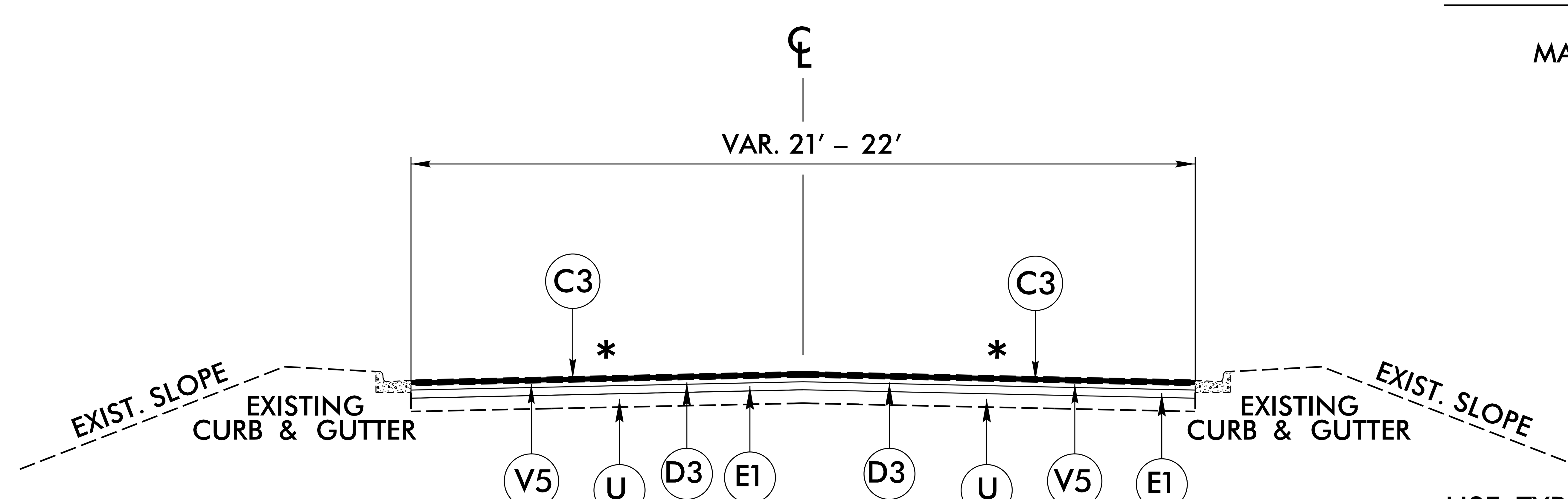
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

MAP 4 RHINE RD.



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 6
MAP 4 RHINE RD.
CURB & GUTTER LT. – 75' +/–
CURB & GUTTER RT. – 140' +/– REVERSE TYPICAL



* MATCH EXISTING CROSS SLOPES

TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

MAP 5A PRATT STREET
MAP 5B PRATT STREET

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PROJECT REFERENCE NO.	SHEET NO.
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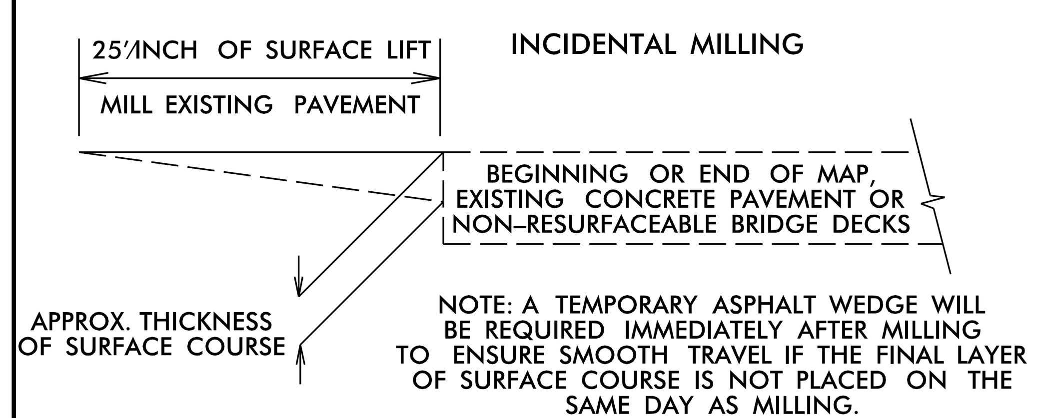
REVISIONS

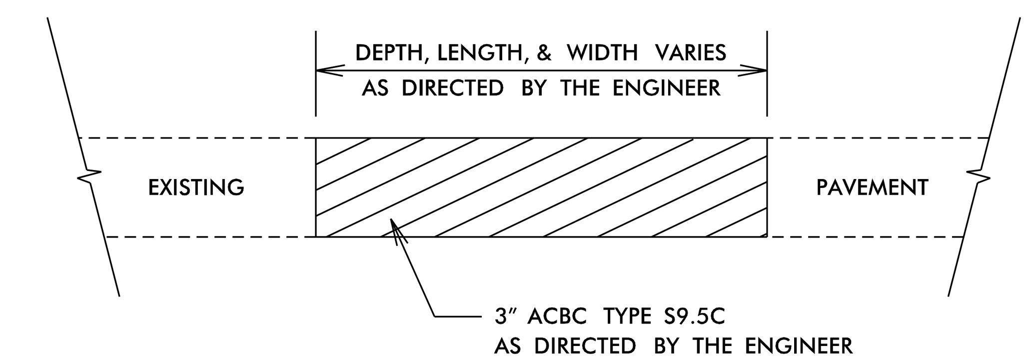
NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.

NOTES TO CONTRACTOR

Perform the work in accordance with Section 607 of the January 2018 North Carolina Department of Transportation Standard Specifications for Roads and Structures. Resurfacing will be accomplished at the same time as the milling operation.

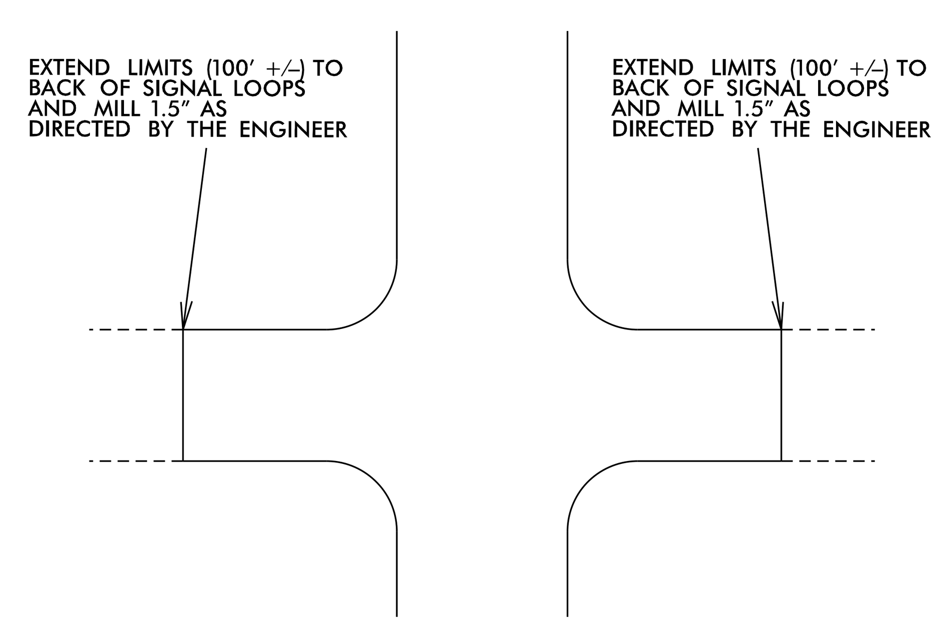




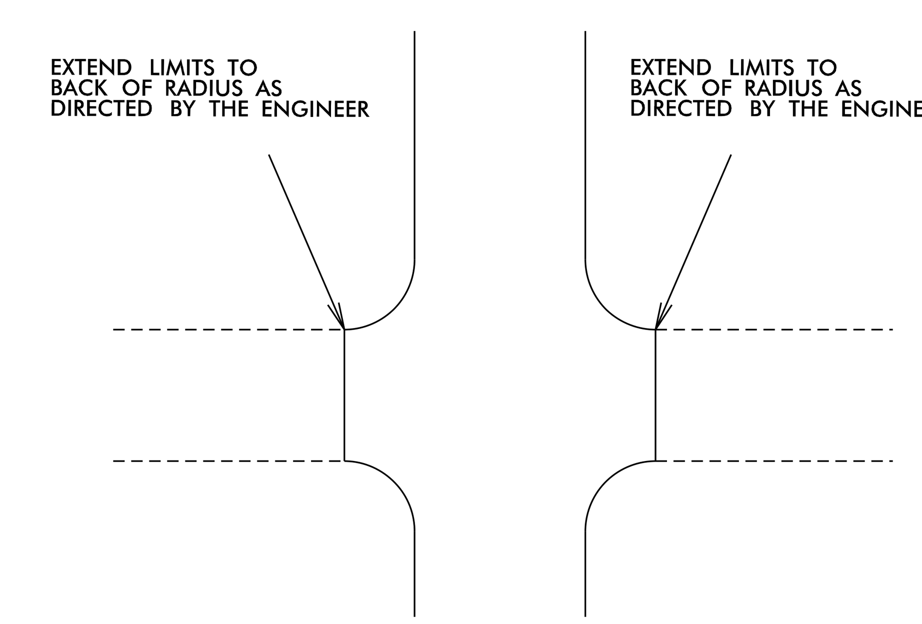
PATCHING EXISTING PAVEMENT
MILLING TO BE PERFORMED PRIOR TO PATCHING

SIGNALIZED INTERSECTIONS

HONEYCUTT RD. AT LUCAS DR.
HONEYCUTT RD. AT BLACKJACK ST.
HONEYCUTT RD. AT LOGISTICS ST.
GRUBER RD. AT KNOX ST.



DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES



DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

UNSIGNALIZED INTERSECTIONS

HONEYCUTT RD. AT DOUGHERTY DR.
GRUBER RD. AT LUCAS DR.
NORMANDY DR. AT BASTOGNE DR.
NORMANDY DR. AT INJE PL.
NORMANDY DR. AT MARKHAP ST.
NORMANDY DR. AT LEMUY ST.
NORMANDY DR. AT HONEYCUTT RD.
PRATT ST. AT KELLAM ST.
PRATT ST. AT OGDEN ST.

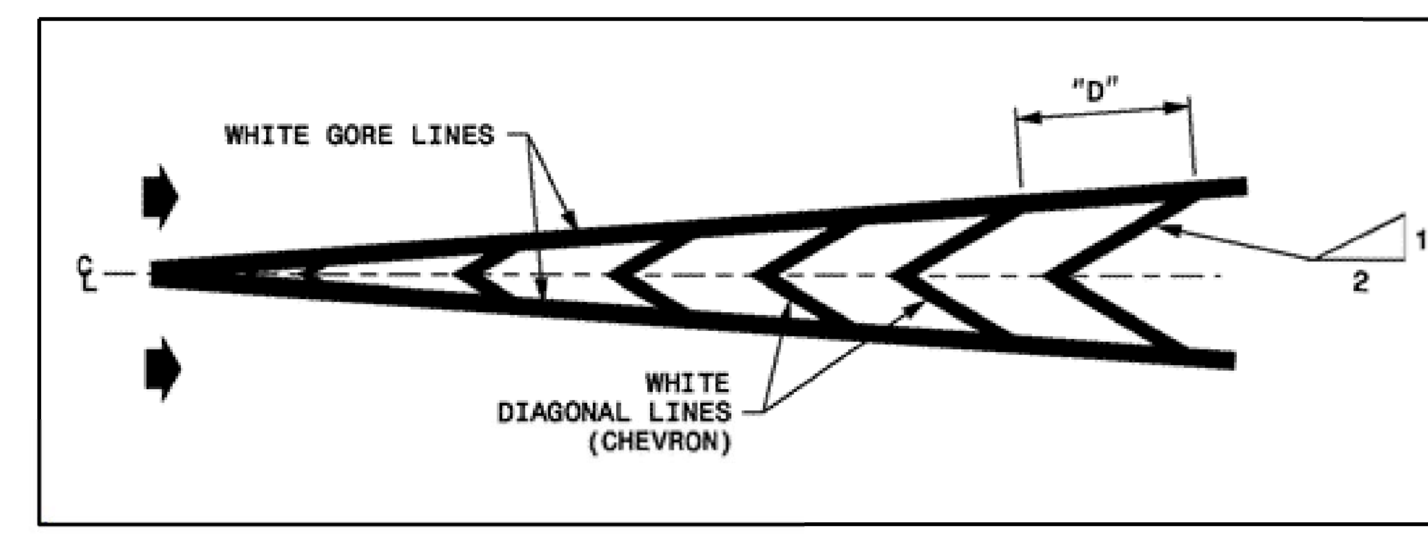
10/26/2021 ...\49218J_Rdy_psh17_Typ.dgn

NOTES

1. Design to Fort Bragg Installation Design Guideline and MUTCD standards.
2. Thermoplastic material used shall meet NCDOT Standard Specification 1205.

Estimated Quantities

Description	Quantity	Units
Remove 4" THERMOPLASTIC	750	LF
Remove 24" THERMOPLASTIC	250	LF
Install 4" 90 MIL WHITE THERMOPLASTIC	950	LF
Install 4" 90 MIL YELLOW THERMOPLASTIC	3450	LF
Install 24" 90 MIL WHITE THERMOPLASTIC	1700	LF
Install 24" 90 MIL YELLOW THERMOPLASTIC	25	LF
THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	16	EA



REVISIONS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MOTT MACDONALD
PO Box 700
Fuquay-Varina, NC 27526
www.mottmac.com
License No. F-0669

Blackjack Street Pavement Marking Plan

PLAN DATE:	JANUARY 2021	REVIEWED BY:	RW THOMPSON
PREPARED BY:	DE FOWLER	REVIEWED BY:	

SCALE 0 60 1"=60'

REVISIONS	INIT.	DATE

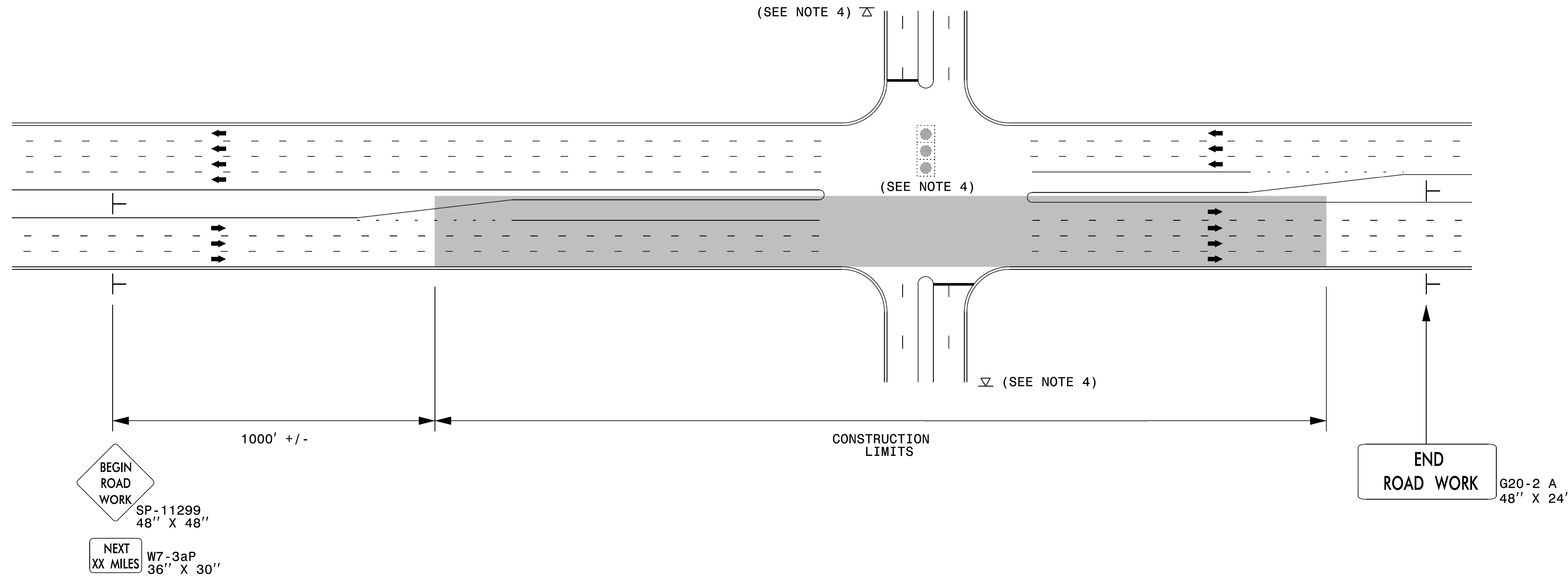
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032711 ENGINEER RUSSELL W. THOMPSON

DocuSigned by: Rusty Thompson
SIGNATURE: 21 October 2021 DATE

8/17/99

REVISIONS

URBAN / SUBURBAN WORKZONES



NOTES:

1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
4) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS.THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

LEGEND

├ STATIONARY SIGN

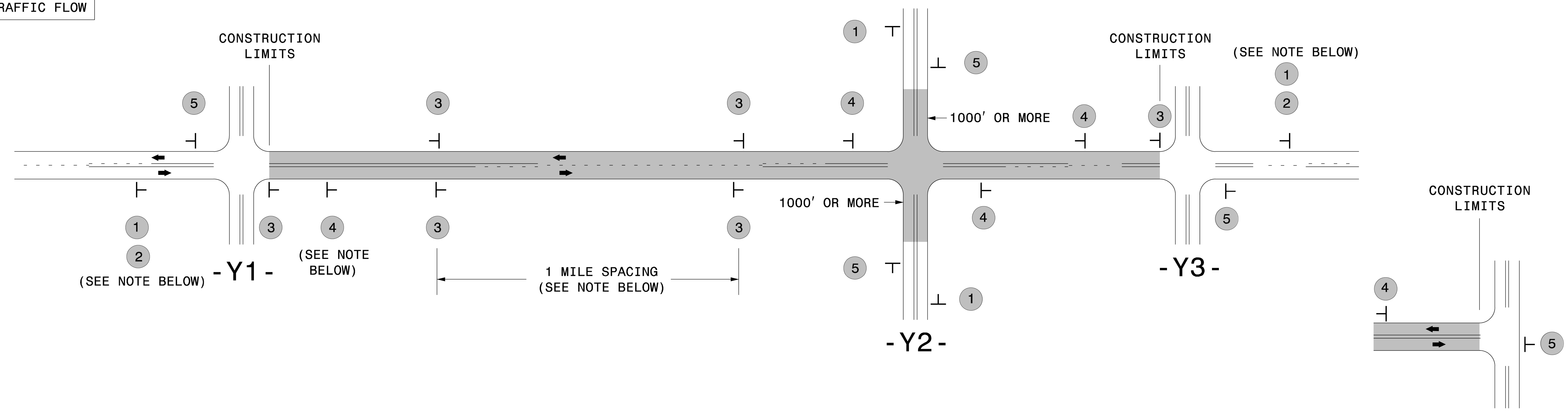
➡ DIRECTION OF TRAFFIC FLOW

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

RESURFACING ADVANCE WARNING SIGNS FOR URBAN / SUBURBAN FACILITIES

SIGNING FOR RESURFACING PROJECTS

LEGEND
├ STATIONARY SIGN
← DIRECTION OF TRAFFIC FLOW



TEE INTERSECTION

MAINLINE (-L-) SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION

1	ROAD WORK AHEAD W20-1 48″ X 48″	PLACE 1000′ PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000′ ALONG -Y- LINE.
2	NEXT XX MILES W7-3aP 24″ X 18″	#2 SIGN ONLY USED WHEN CONSTRUCTION LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER.(NO FRACTIONAL OR DECIMAL NUMBERS)
3	LOW/SOFT SHOULDER SP 13107 48″ X 48″	- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY ½ MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.
4	ROAD UNDER CONST SP 13106 48″ X 48″	- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. - DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. - INSTALL 500′ +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. - FOR MULTIPLE -Y- LINES THAT ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500′ OF EACH APPROACH. - A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500′ +/- OF THE INTERSECTION ALONG -L- LINE.
5	END ROAD WORK G20-2 A 48″ X 24″	PLACE 500′ FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.

THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

MAPS LESS THAN 2 MILES	FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.

-Y- LINE SIGNING

NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:

1) LESS THAN 1000′ OF RESURFACING ALONG -Y- LINE
2) SUBDIVISION ROADS
3) DEAD END ROADS

WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, PORTABLE ADVANCE WARNING SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.

ROAD WORK AHEAD W20-1 48″ X 48″
PLACED 500′ IN ADVANCE OF FLAGGER.

W20-7 A 48″ X 48″
PLACED 250′ IN ADVANCE OF FLAGGER.

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

ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING

REVISIONS

8/17/99

5/15/2017
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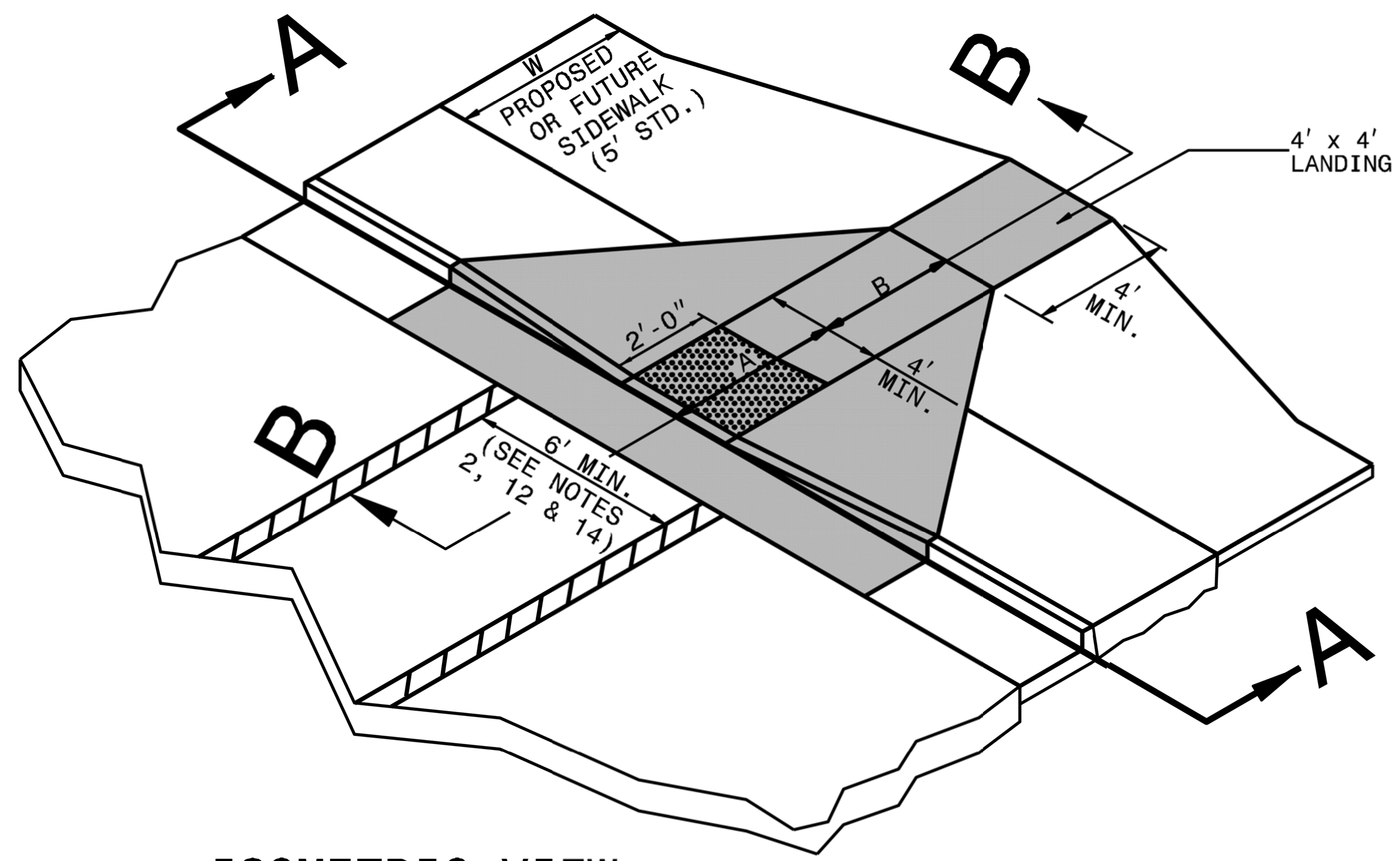
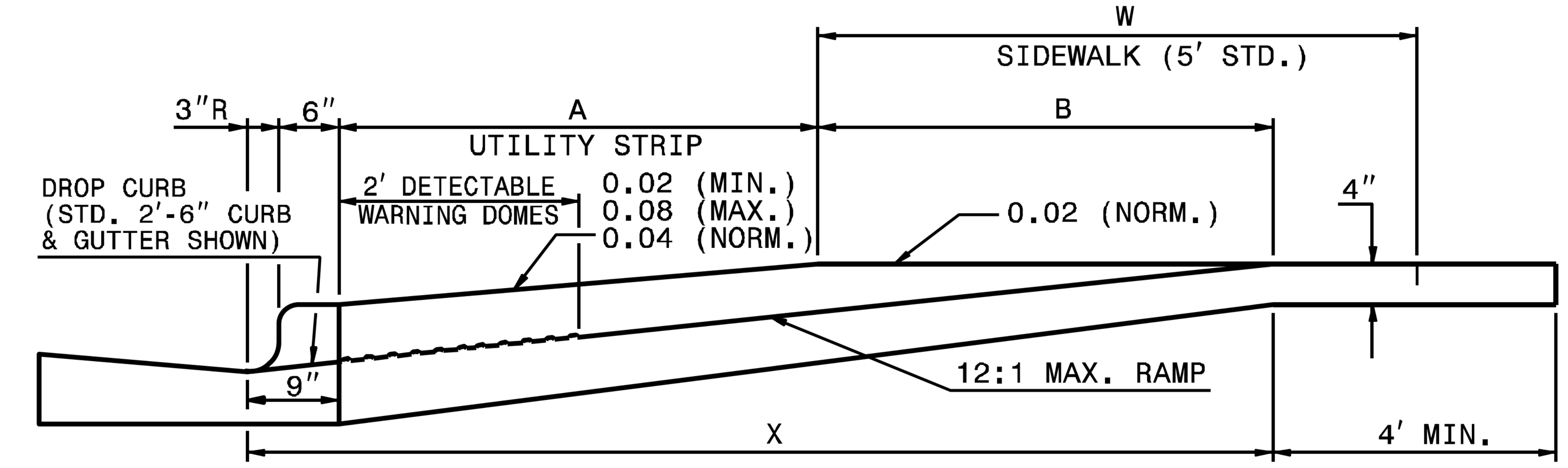
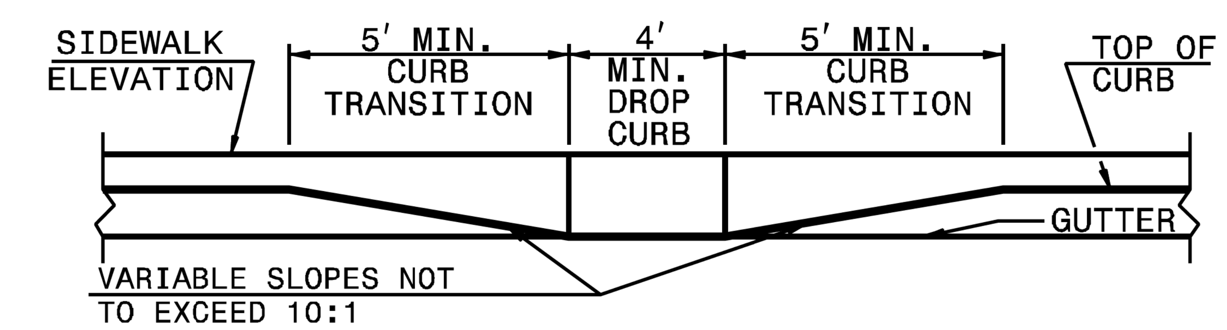


ISOMETRIC VIEW

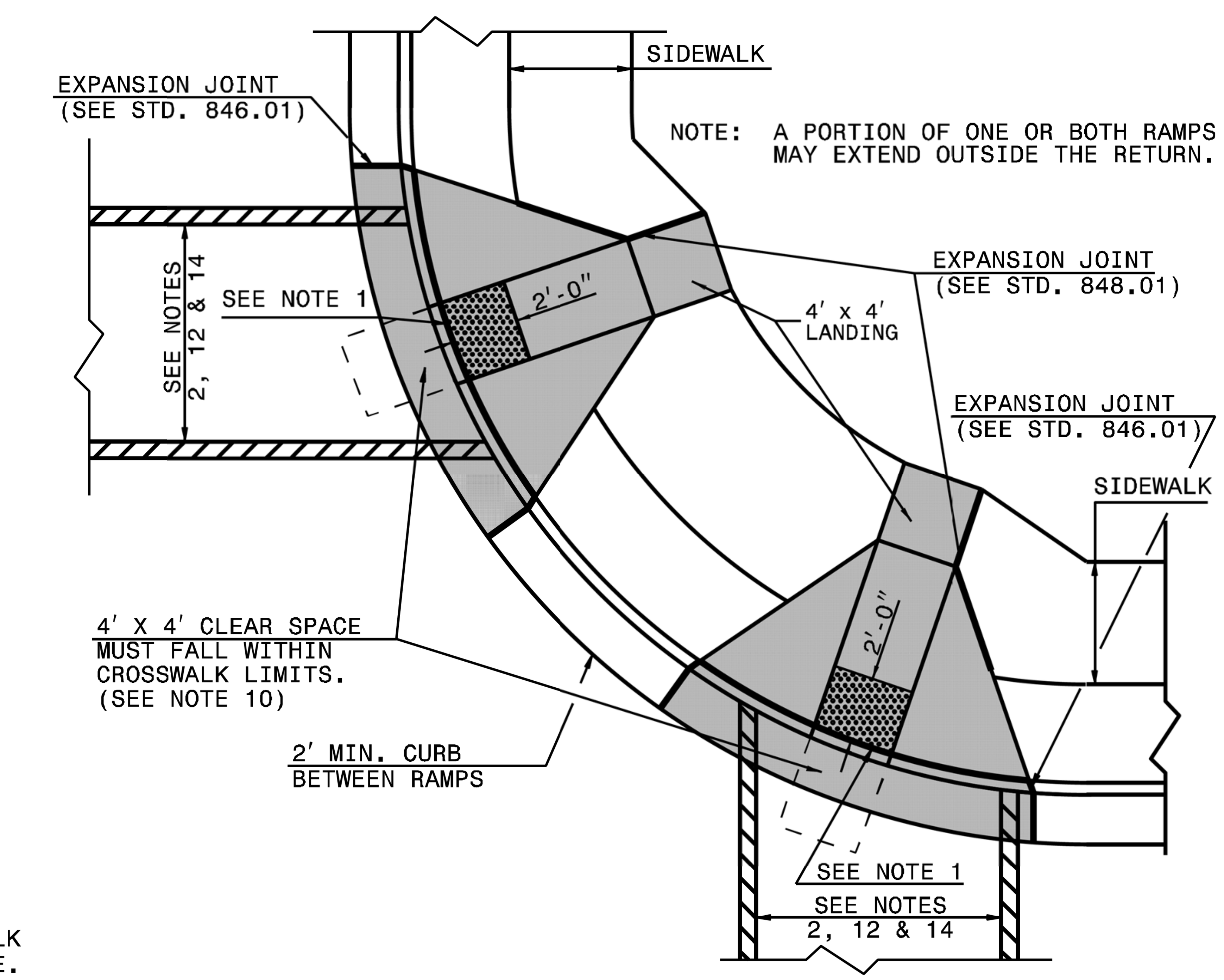
PAY LIMITS FOR CURB RAMP



SECTION B-B



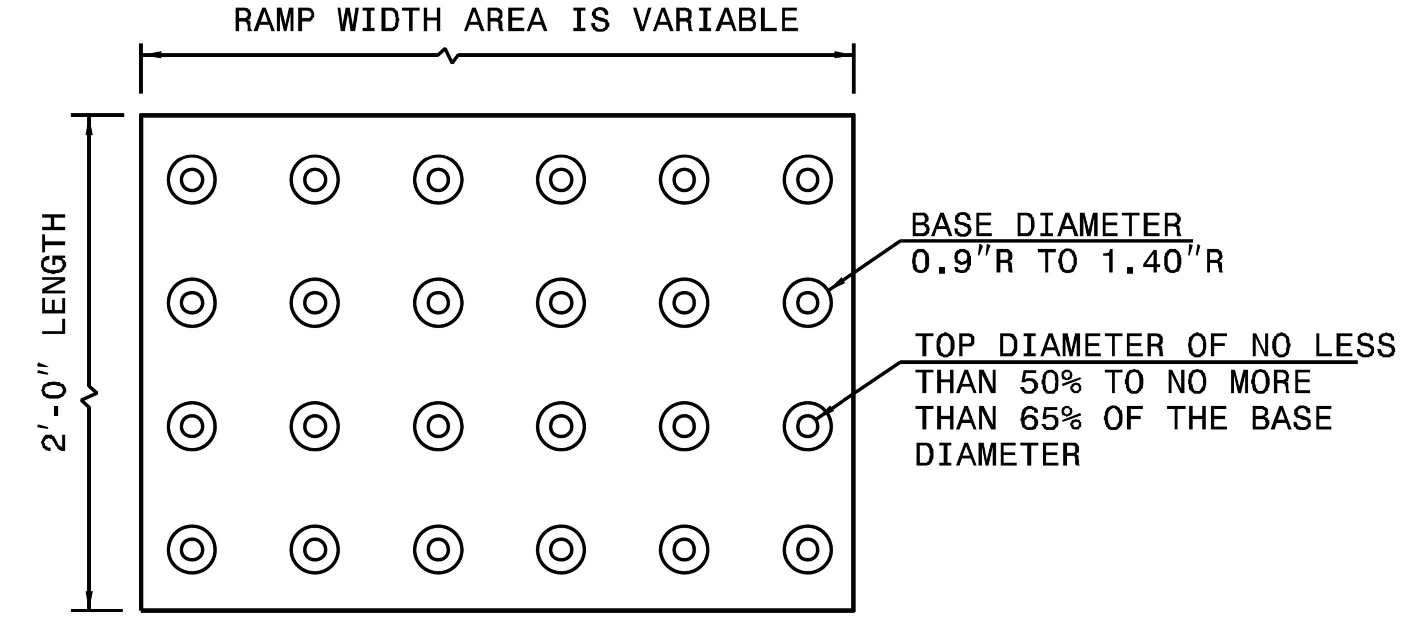
SECTION A-A

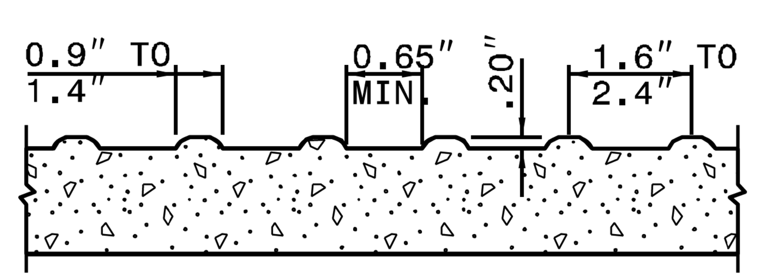


PLAN VIEW

DUAL RAMPS
ANY RADII
(4' MIN. FLOOR WIDTH)

NOTES:
1. DETECTABLE WARNING DOMES WILL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.





DETECTABLE WARNING DOMES

W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X-(A+9")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.

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

1-18

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 1 OF 3
848.05

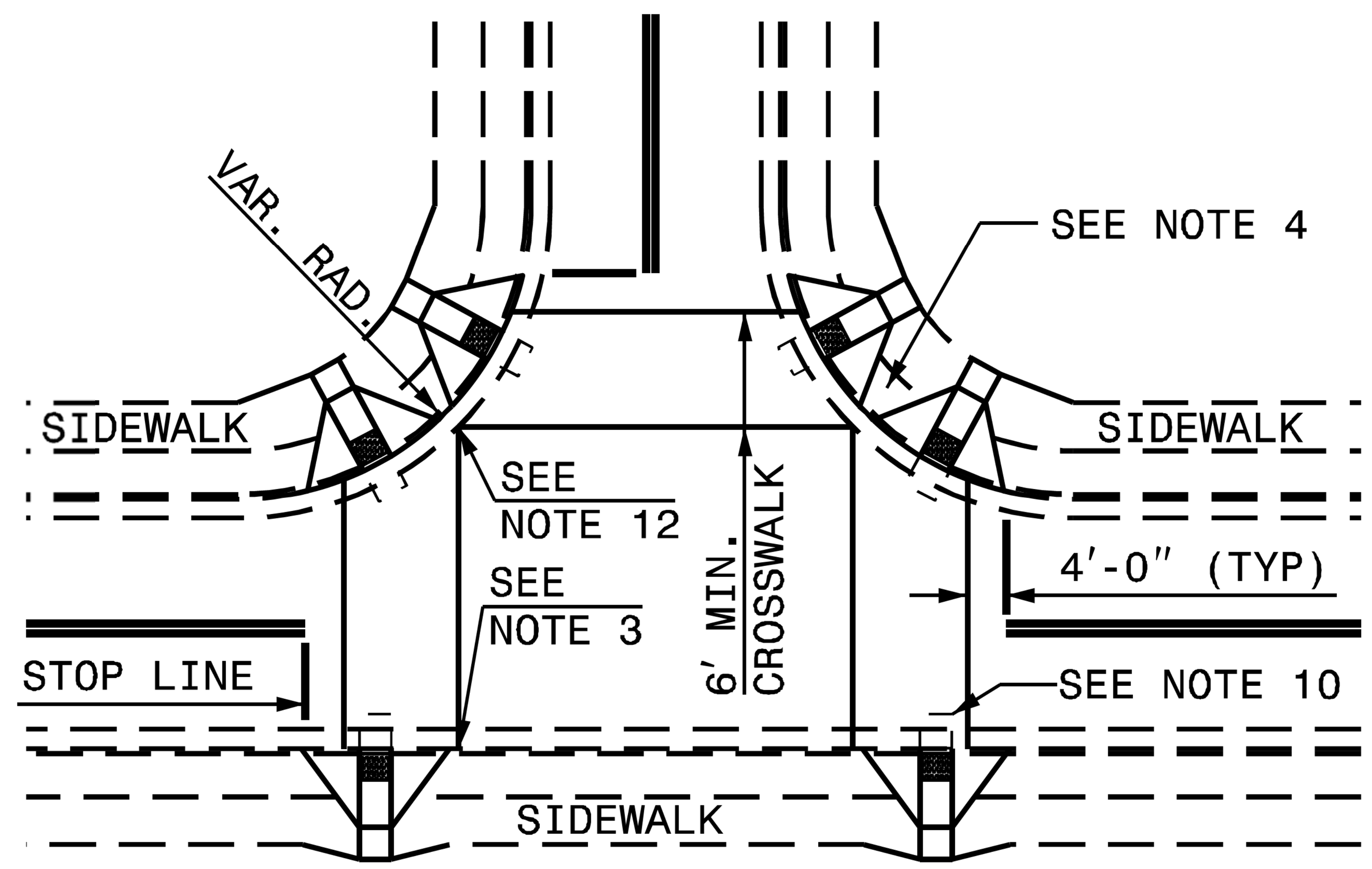
REVISIONS

8/17/99

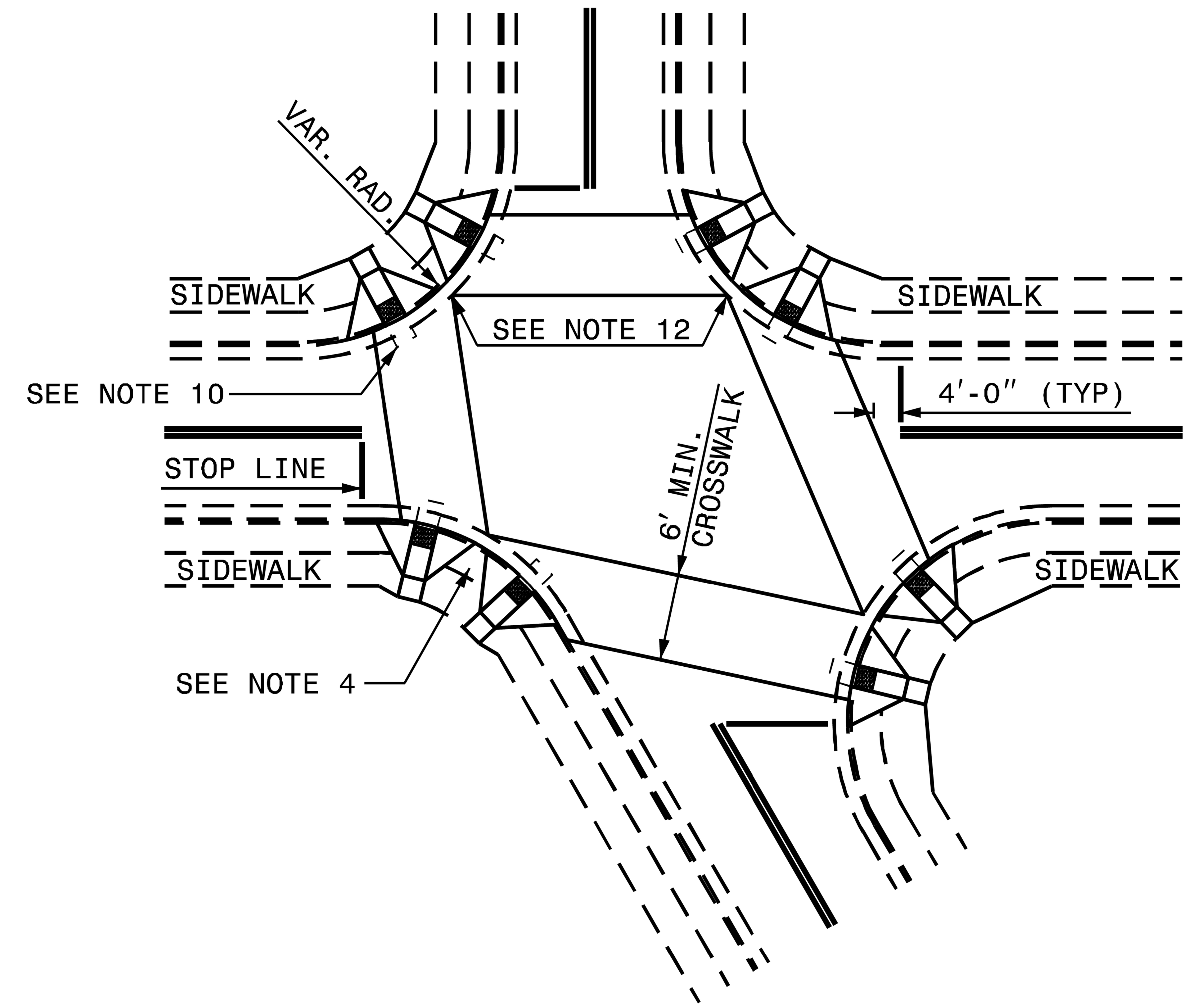
PROJECT REFERENCE NO.	SHEET NO.
49218.1	22

8/17/99

REVISIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

ROADWAY PLAN SYMBOL

CR

FOR PROPOSED CURB RAMP

PROPOSED CURB RAMP W/ LANDING

PROPOSED OR FUTURE SIDEWALK

ALLOWABLE LOCATIONS

DUAL RAMP RADII..........ANY

1-18

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

ROADWAY STANDARD DRAWING FOR

CURB RAMP

PROPOSED CURB AND GUTTER

SHEET 2 OF 3

848.05

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4′x4′ CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4′ MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20′ BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4′ WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4′x4′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5′x5′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6′ WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5′X5′ LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½″ EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

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

1-18

ROADWAY STANDARD DRAWING FOR
CURB RAMPS
NOTES

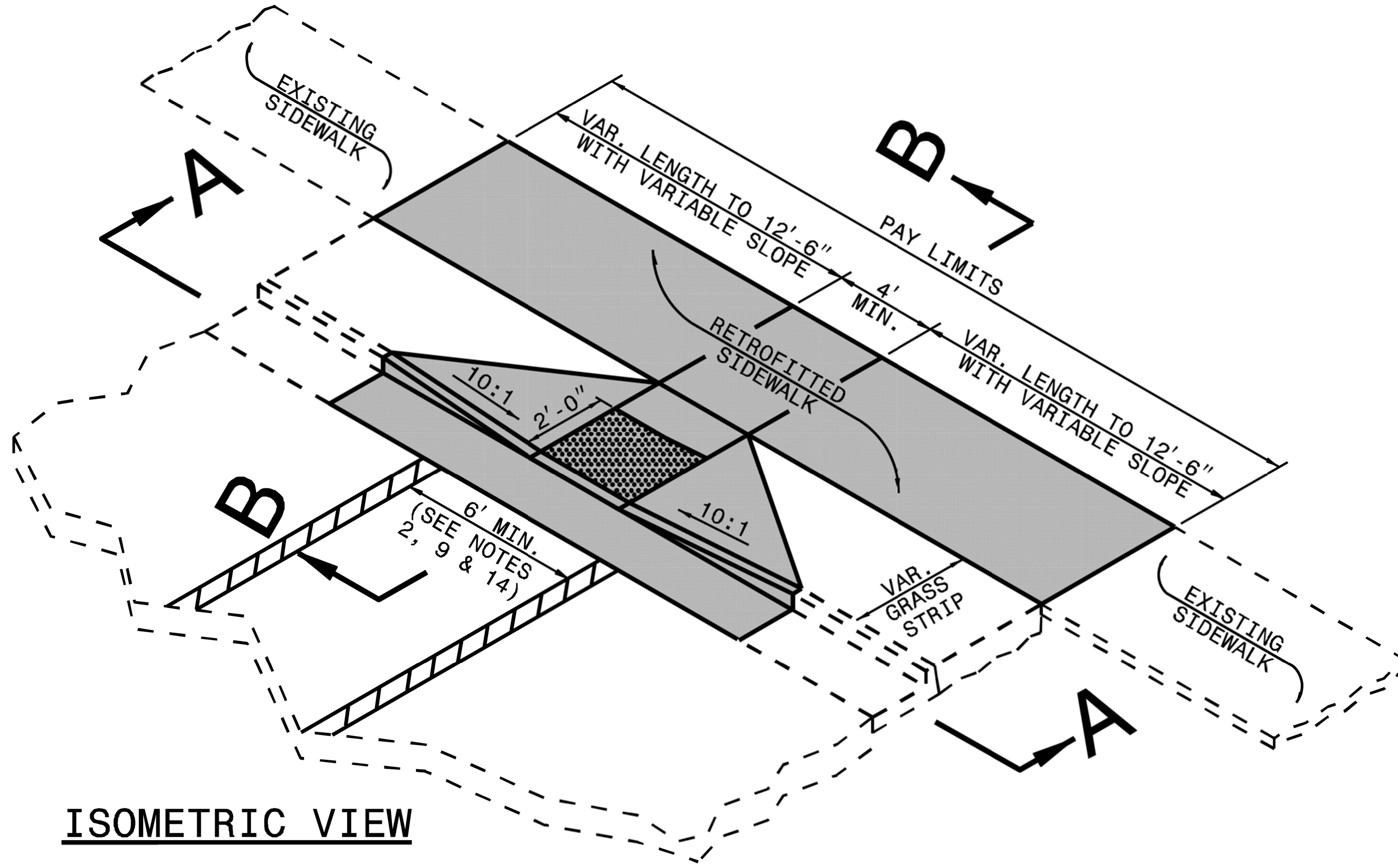
SHEET 3 OF 3
848.05

REVISIONS
8/17/99

8/17/99

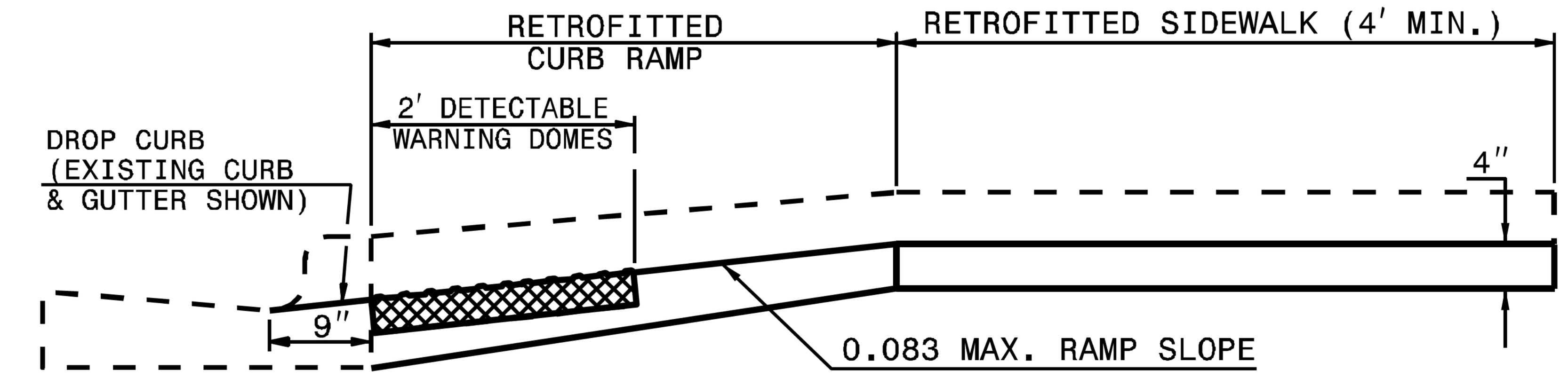
REVISIONS

CURB RAMP AND EXISTING SIDEWALK WITH GRASS STRIP

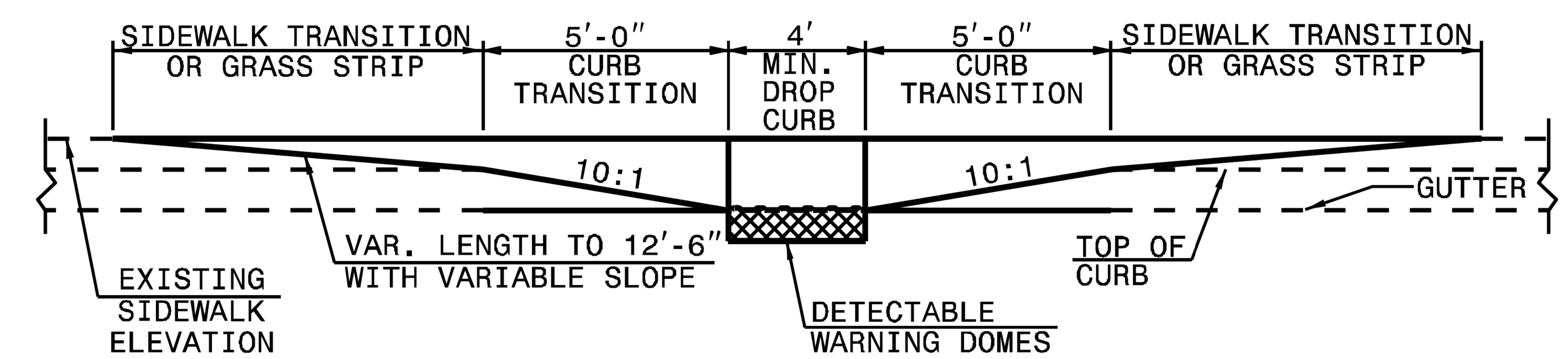


ISOMETRIC VIEW

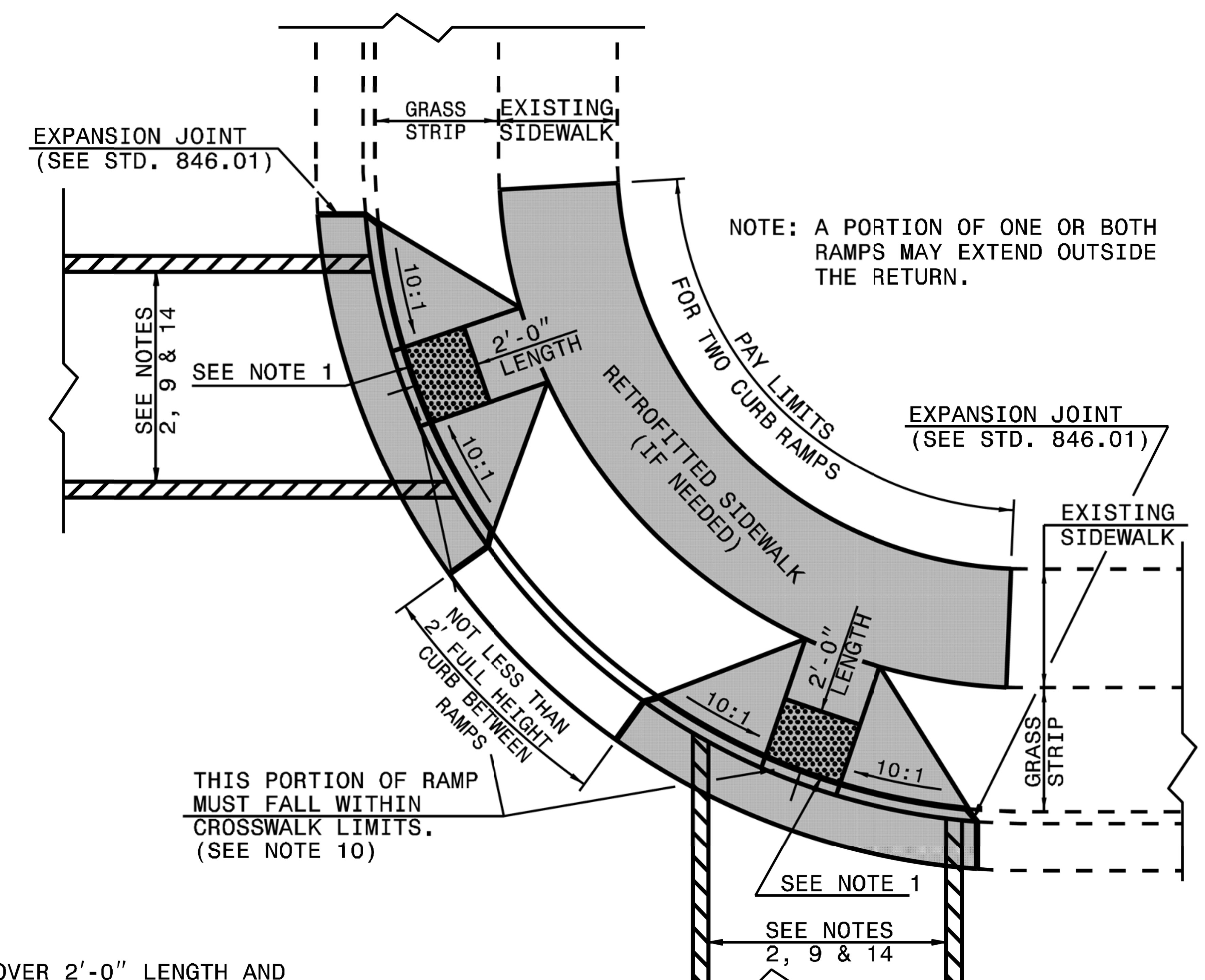
PAY LIMITS OF CURB RAMP



SECTION B-B

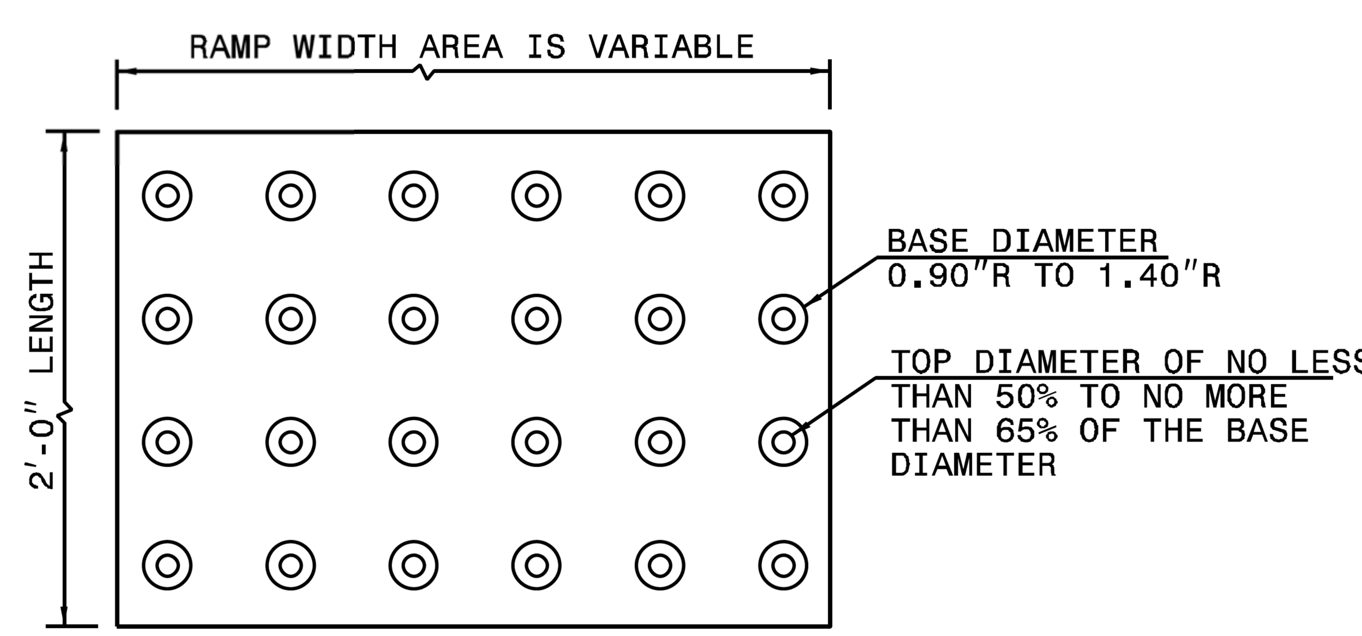


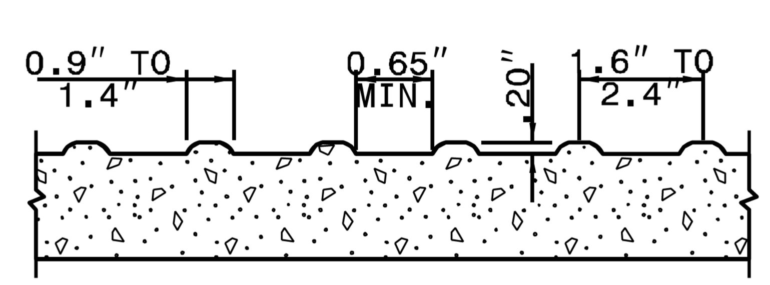
SECTION A-A



PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)





DETECTABLE WARNING DOMES

NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

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

1-18

ROADWAY STANDARD DRAWING FOR

CURB RAMP

EXISTING CURB AND GUTTER

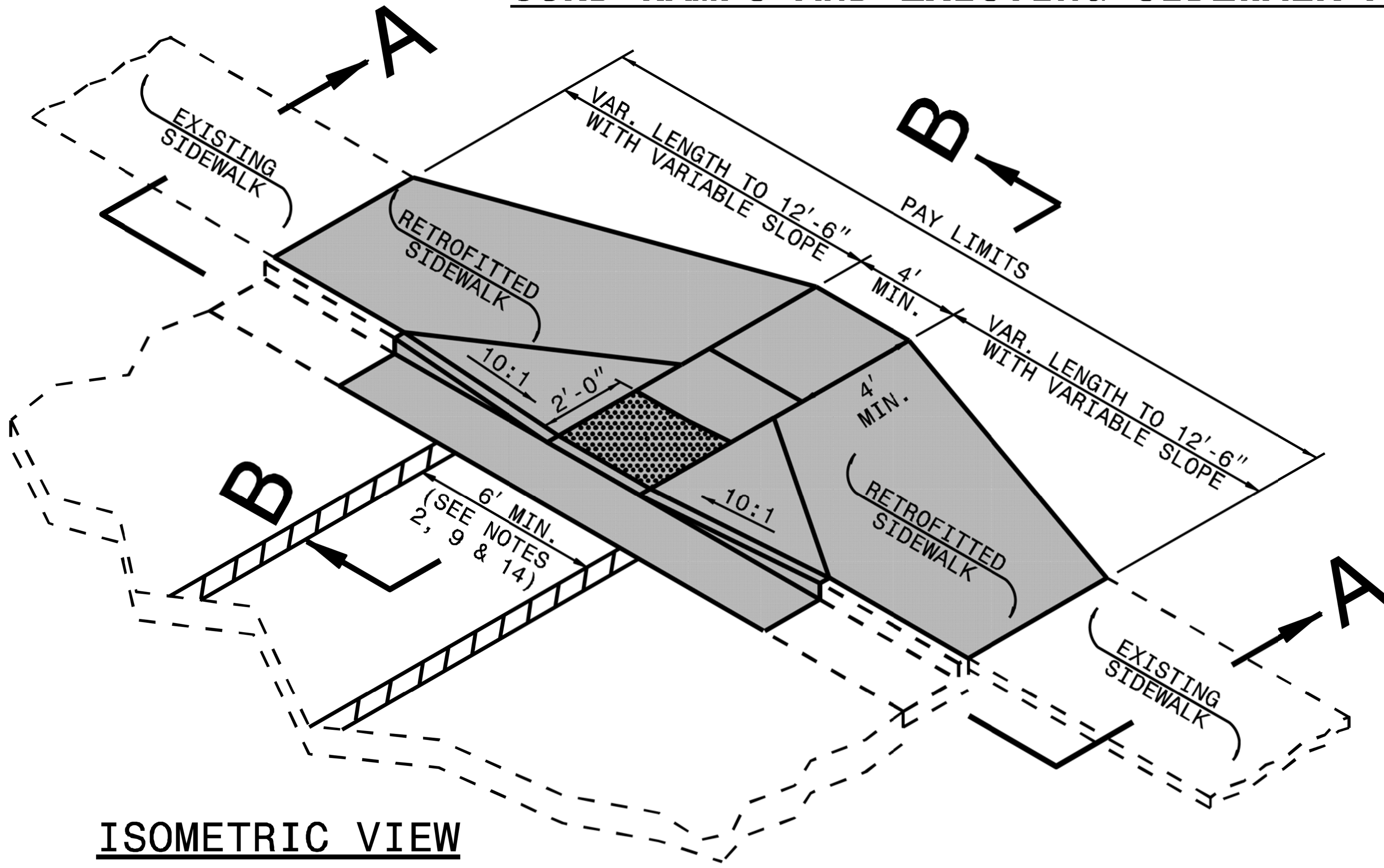
SHEET 1 OF 5

848.06

8/17/99

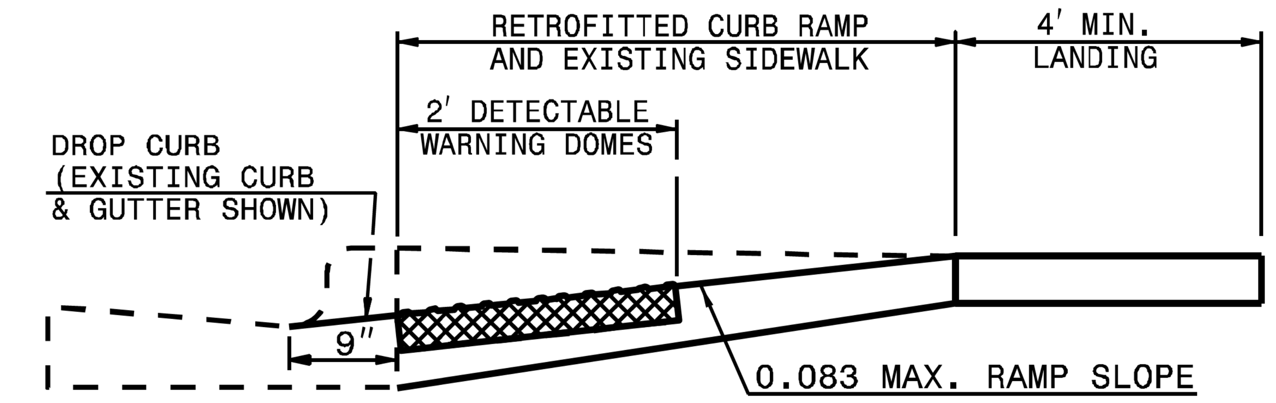
REVISIONS

CURB RAMPS AND EXISTING SIDEWALK ADJACENT TO CURB

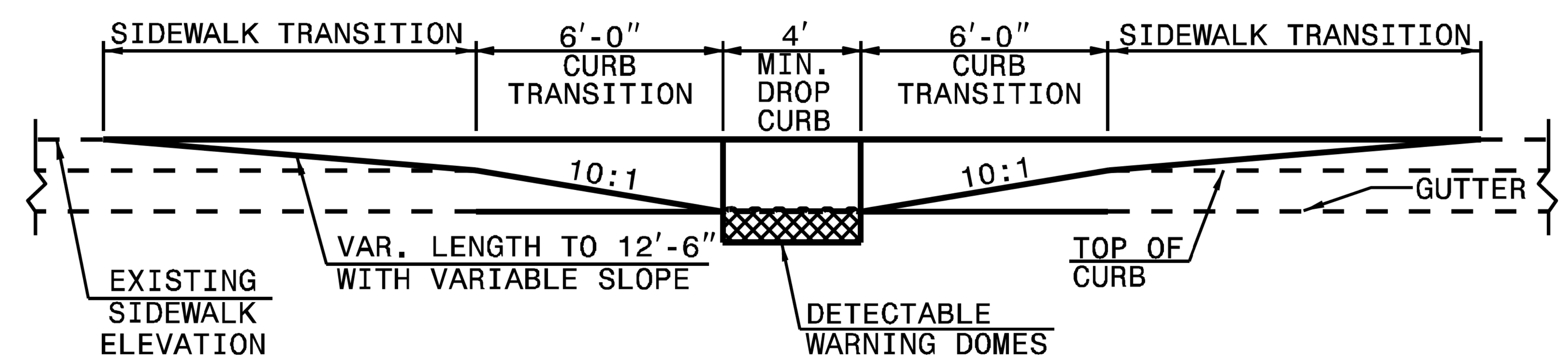


ISOMETRIC VIEW

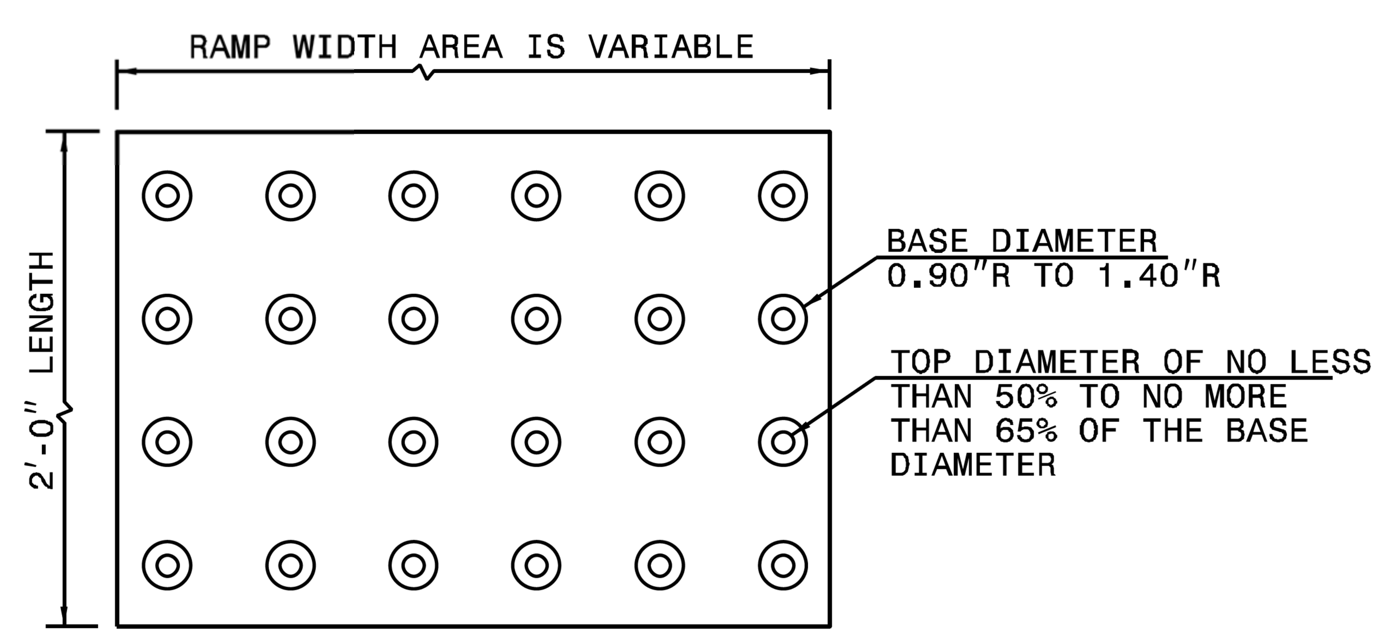
PAY LIMITS OF CURB RAMP

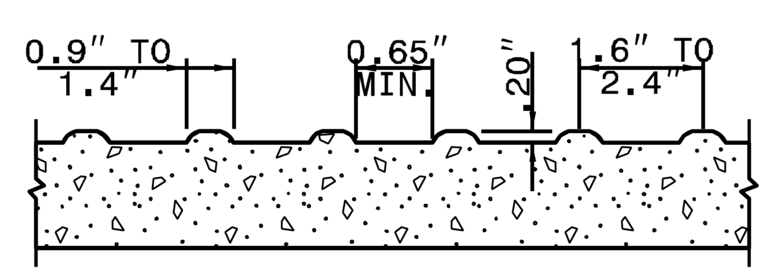


SECTION B-B



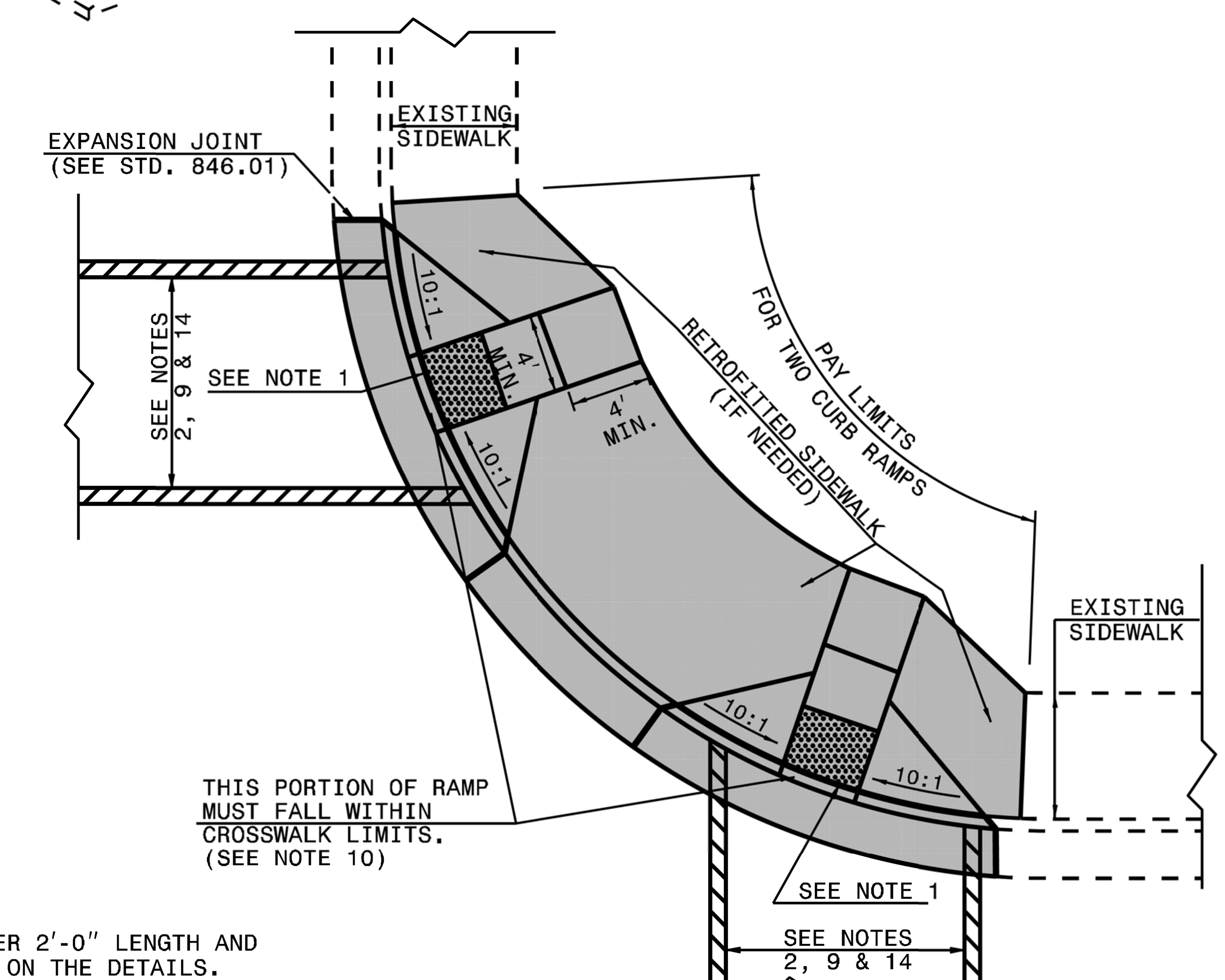
SECTION A-A





DETECTABLE WARNING DOMES

NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

1-18

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

ROADWAY STANDARD DRAWING FOR

CURB RAMP

EXISTING CURB AND GUTTER

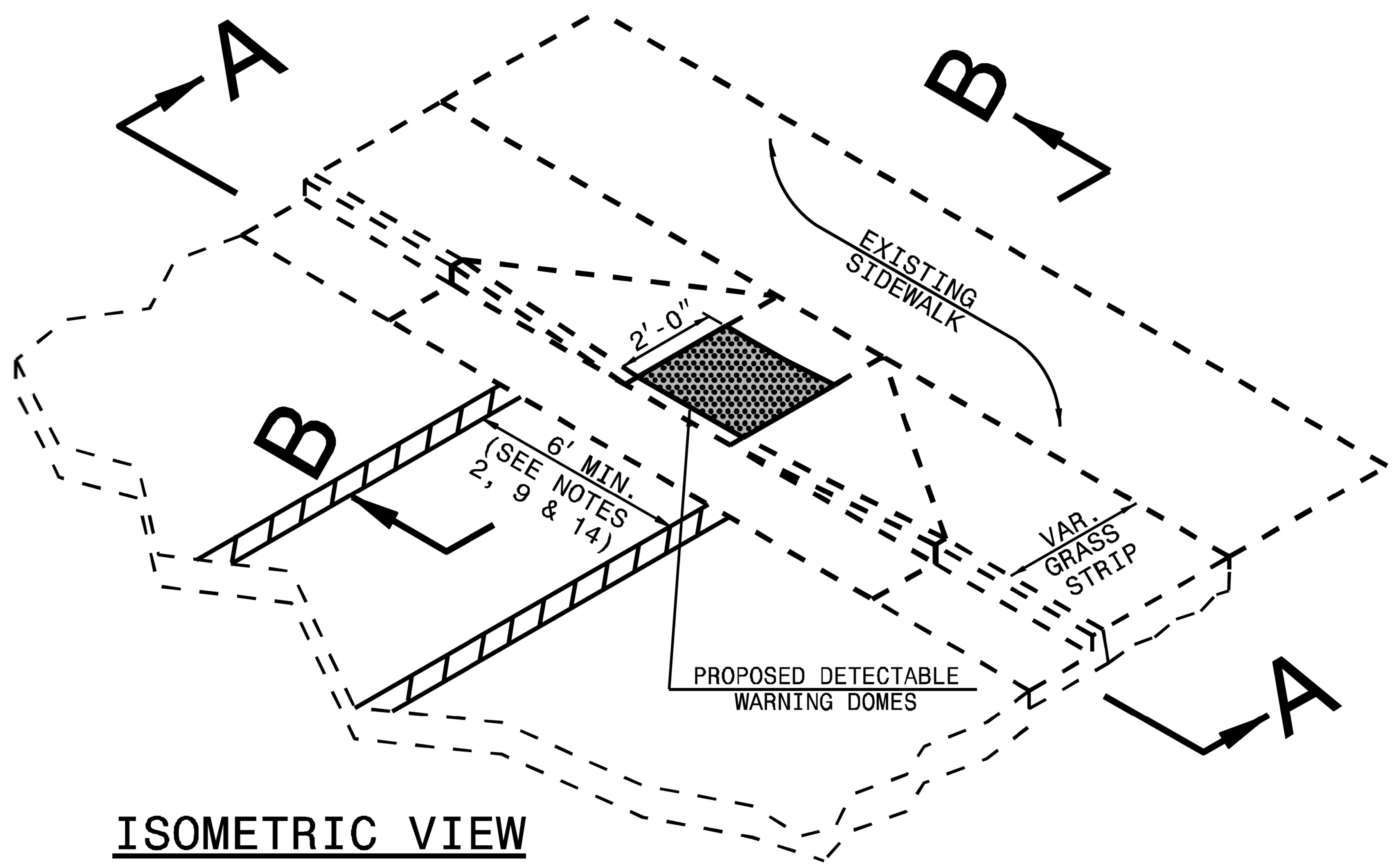
SHEET 2 OF 5

848.06

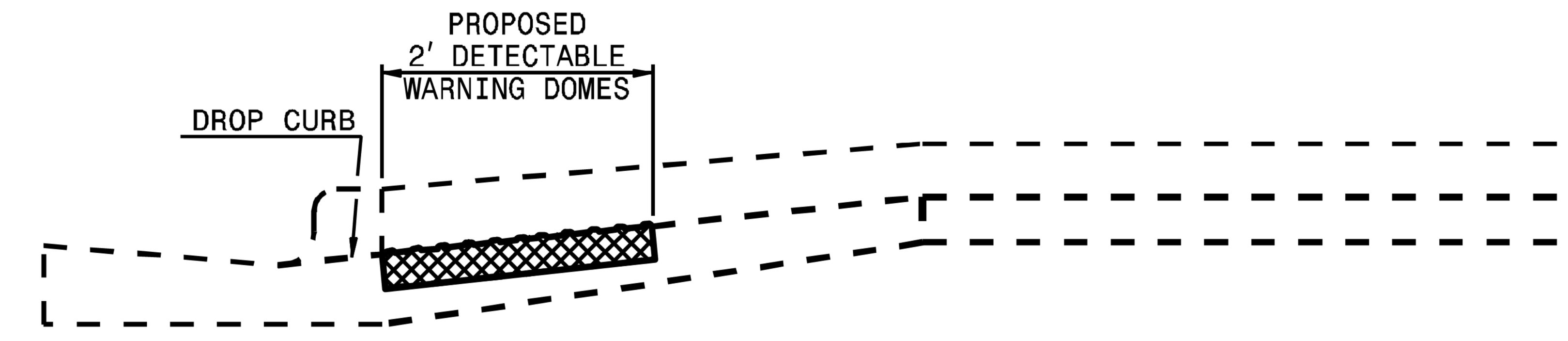
8/17/99

REVISIONS

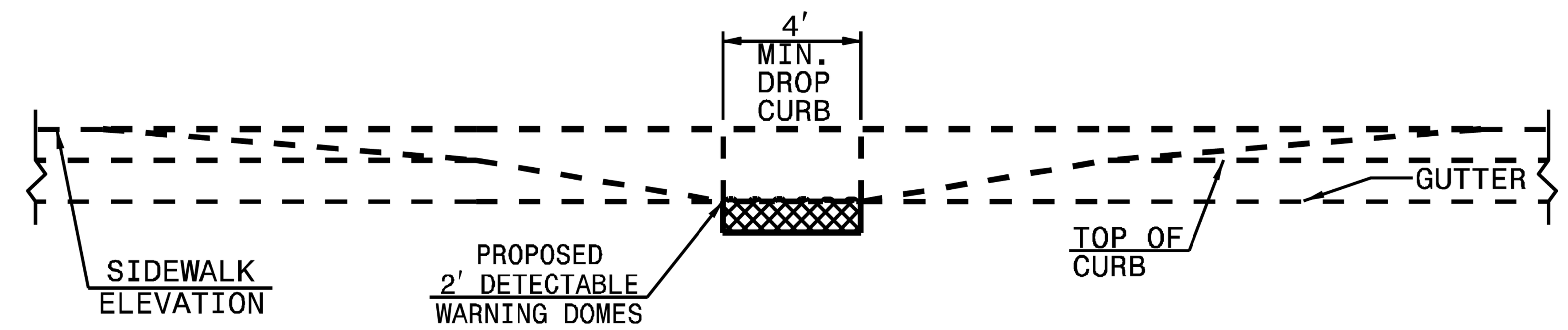
RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING CURB RAMP



ISOMETRIC VIEW

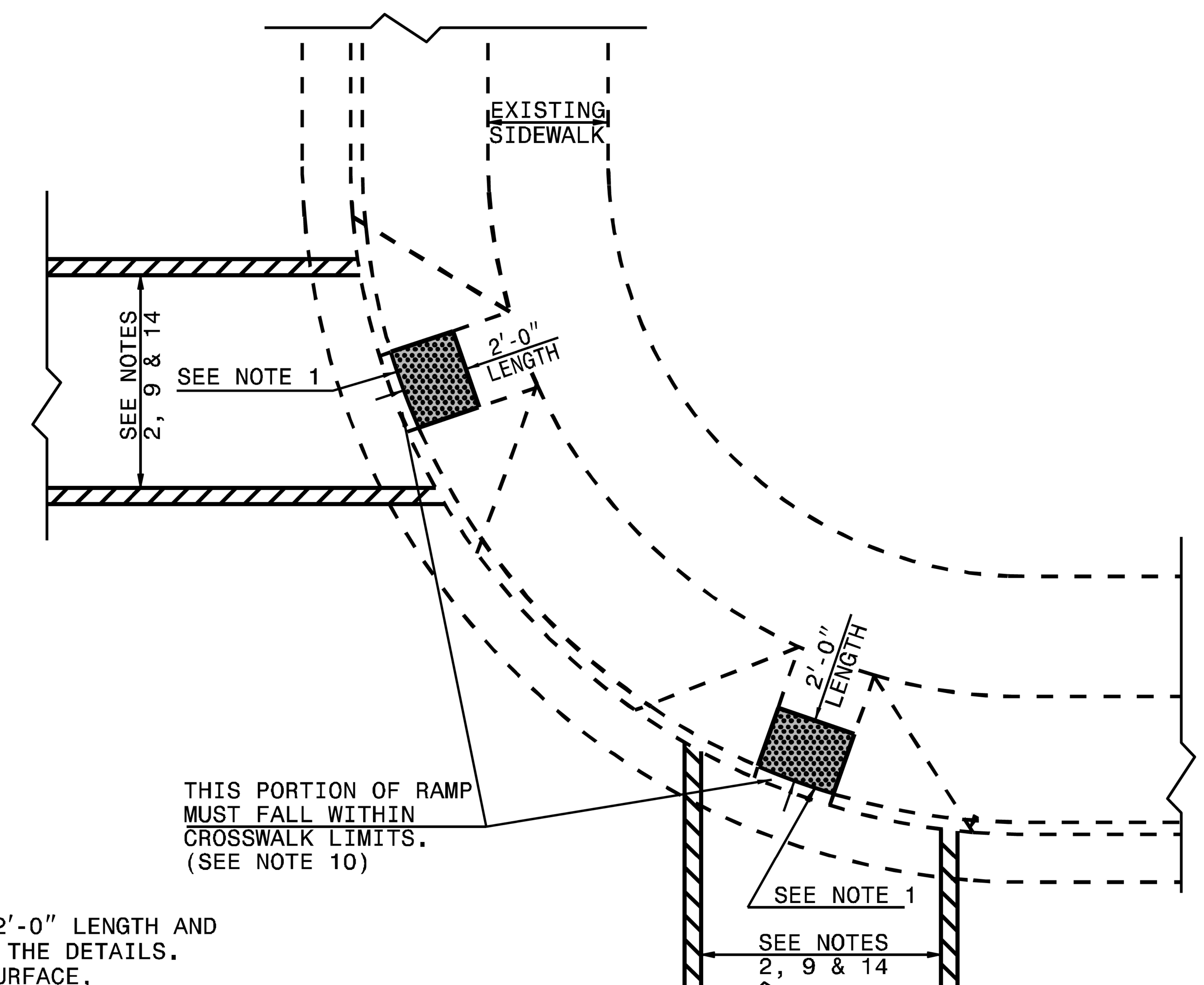


SECTION B-B



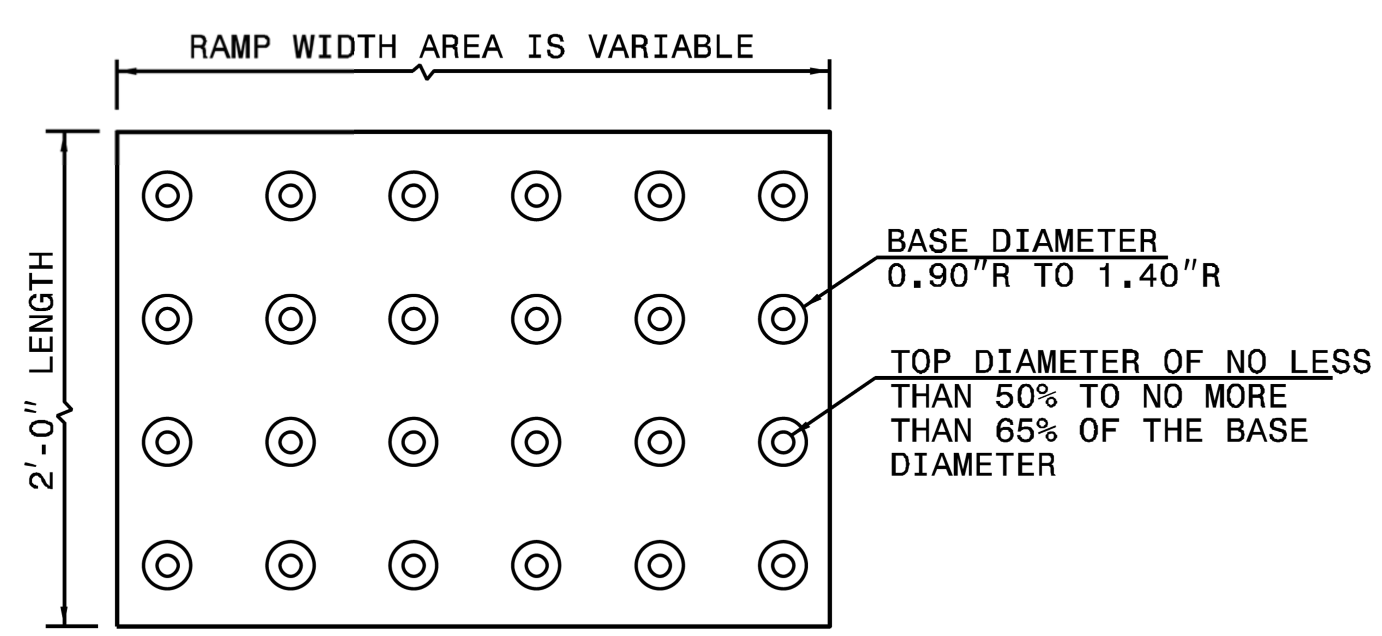
SECTION A-A

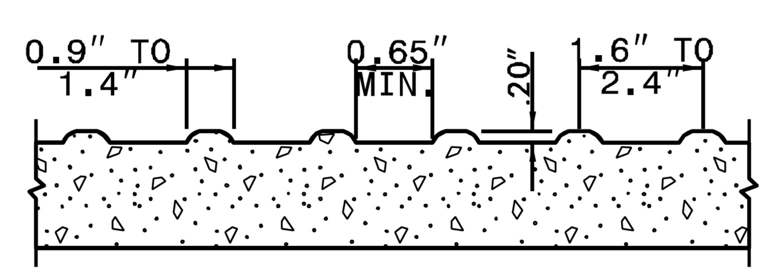
PAY LIMITS OF RETROFIT CURB RAMP



PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)





DETECTABLE WARNING DOMES

NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

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ROADWAY STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

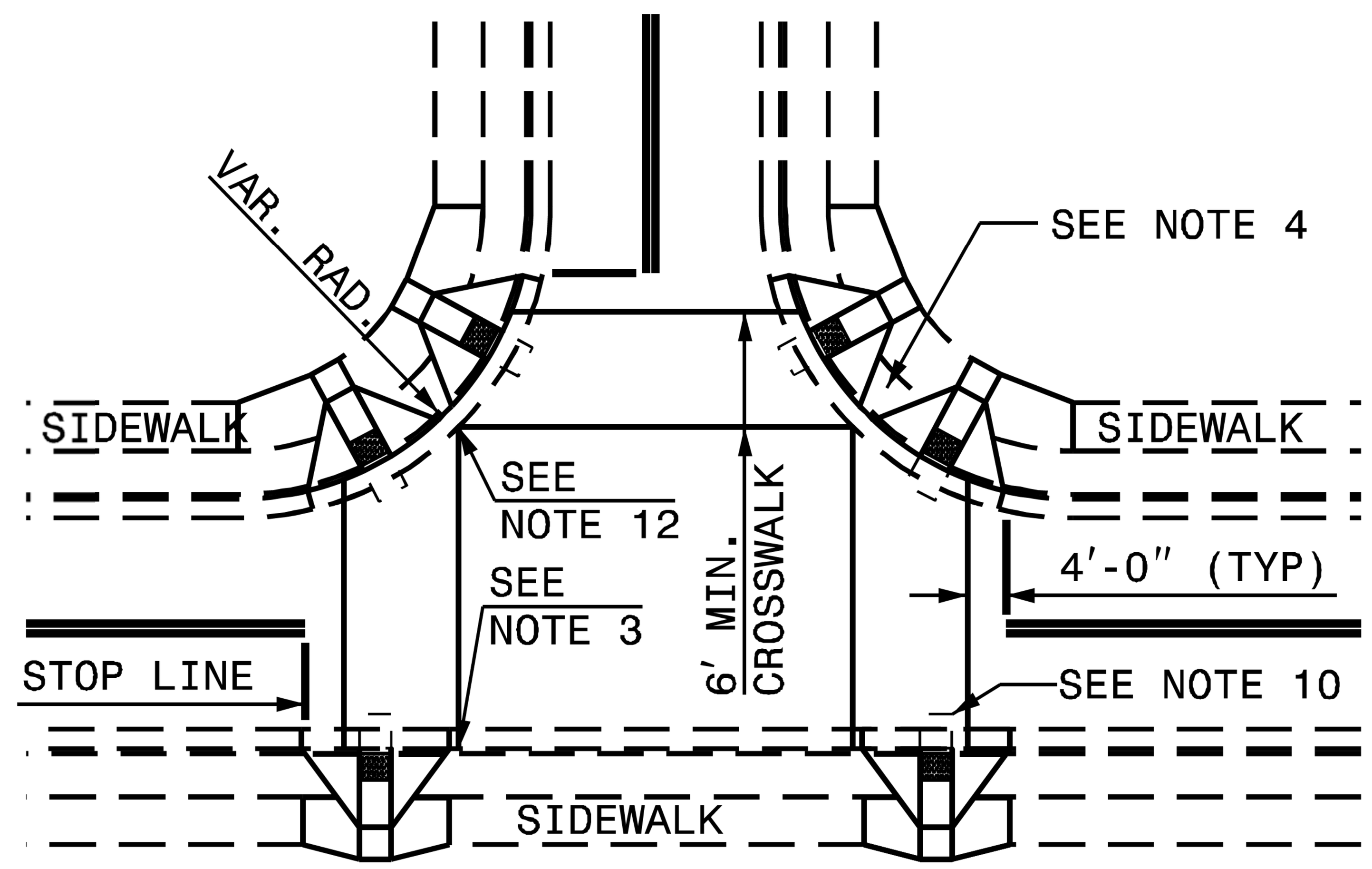
SHEET 3 OF 5

848.06

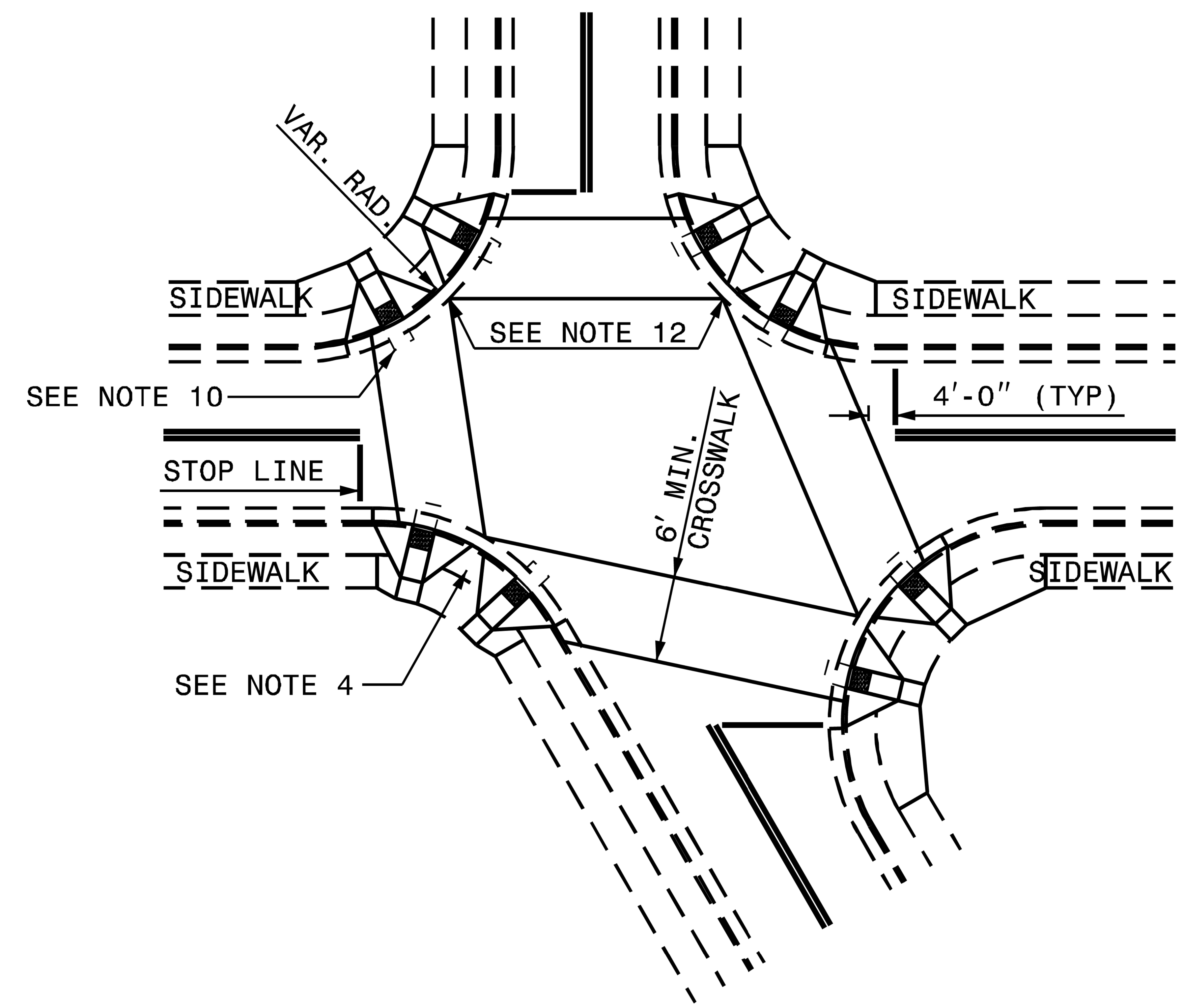
REVISIONS

8/17/99

CURB RAMPS AND EXISTING SIDEWALK



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

RESURFACING PROJECTS

PROPOSED CURB RAMP W/ LANDING FOR RESURFACING PROJECTS

EXISTING SIDEWALK

ALLOWABLE LOCATIONS

DUAL RAMP RADII..........ANY

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

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ROADWAY STANDARD DRAWING FOR

CURB RAMP

EXISTING CURB AND GUTTER

SHEET 4 OF 5

848.06

CURB RAMP AND EXISTING SIDEWALK

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4′x4′ CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4′ MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20′ BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4′ WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4′x4′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5′x5′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6′ WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5′X5′ LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½″ EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

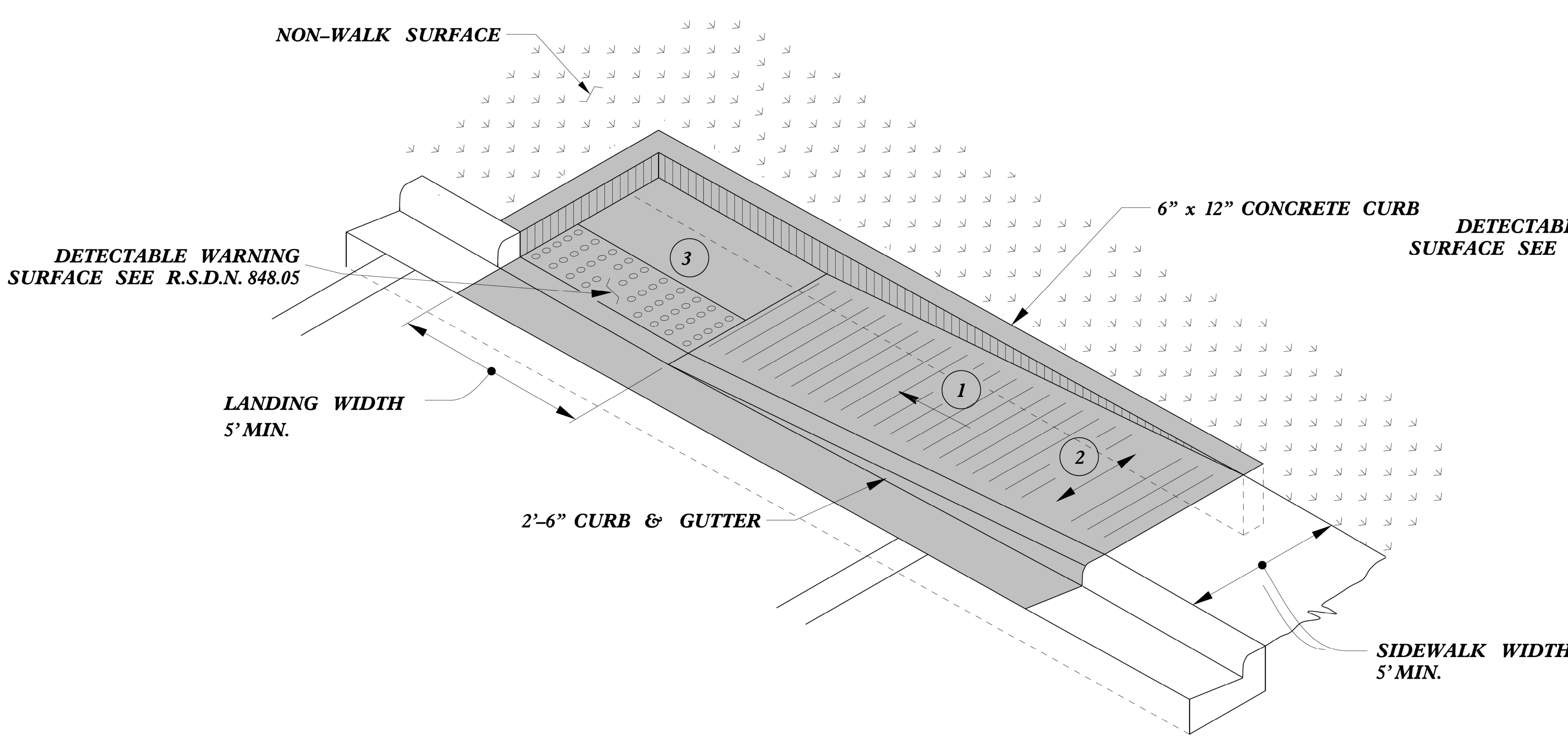
SHEET 5 OF 5
848.06

REVISIONS

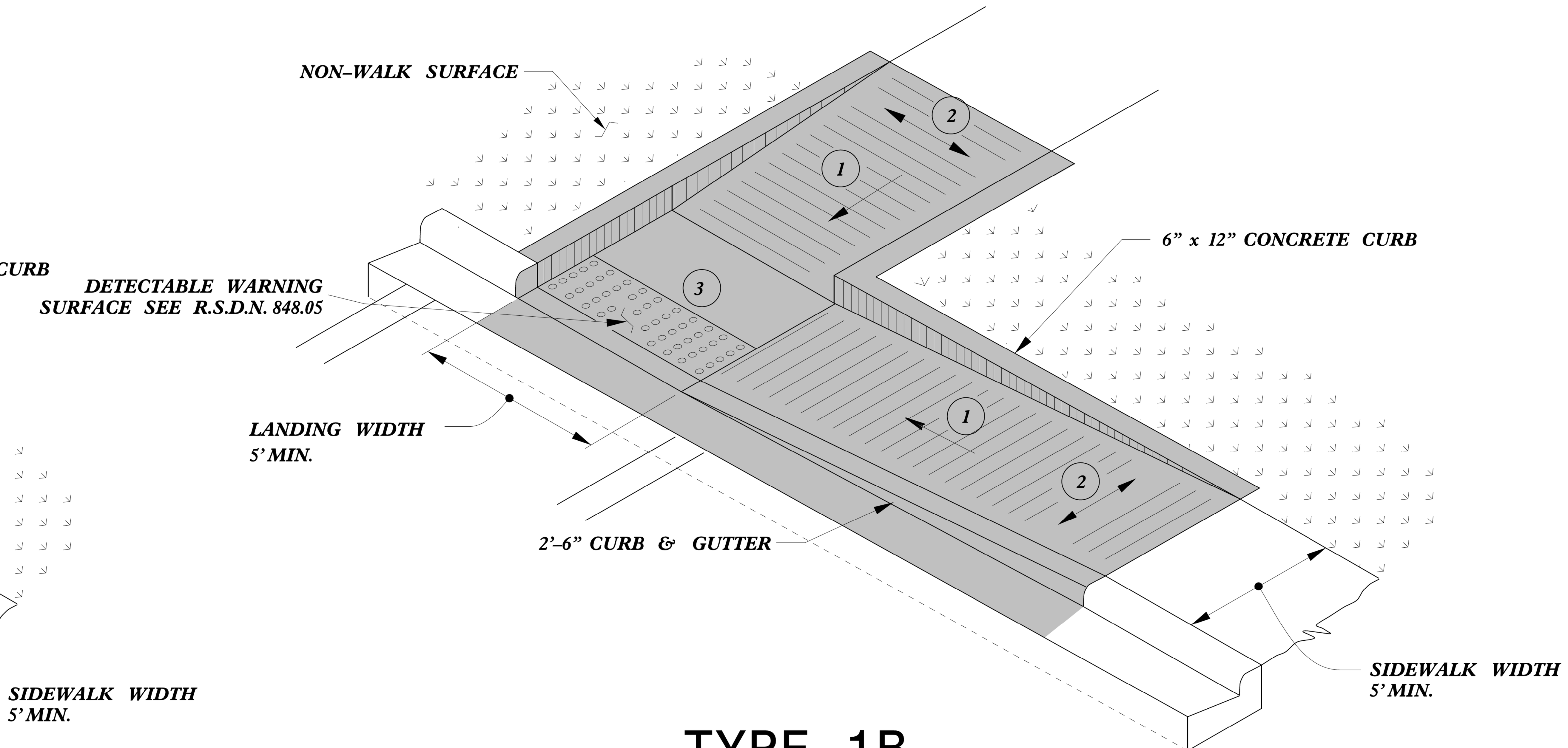
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
49218.1	29

REVISIONS



TYPE 1A



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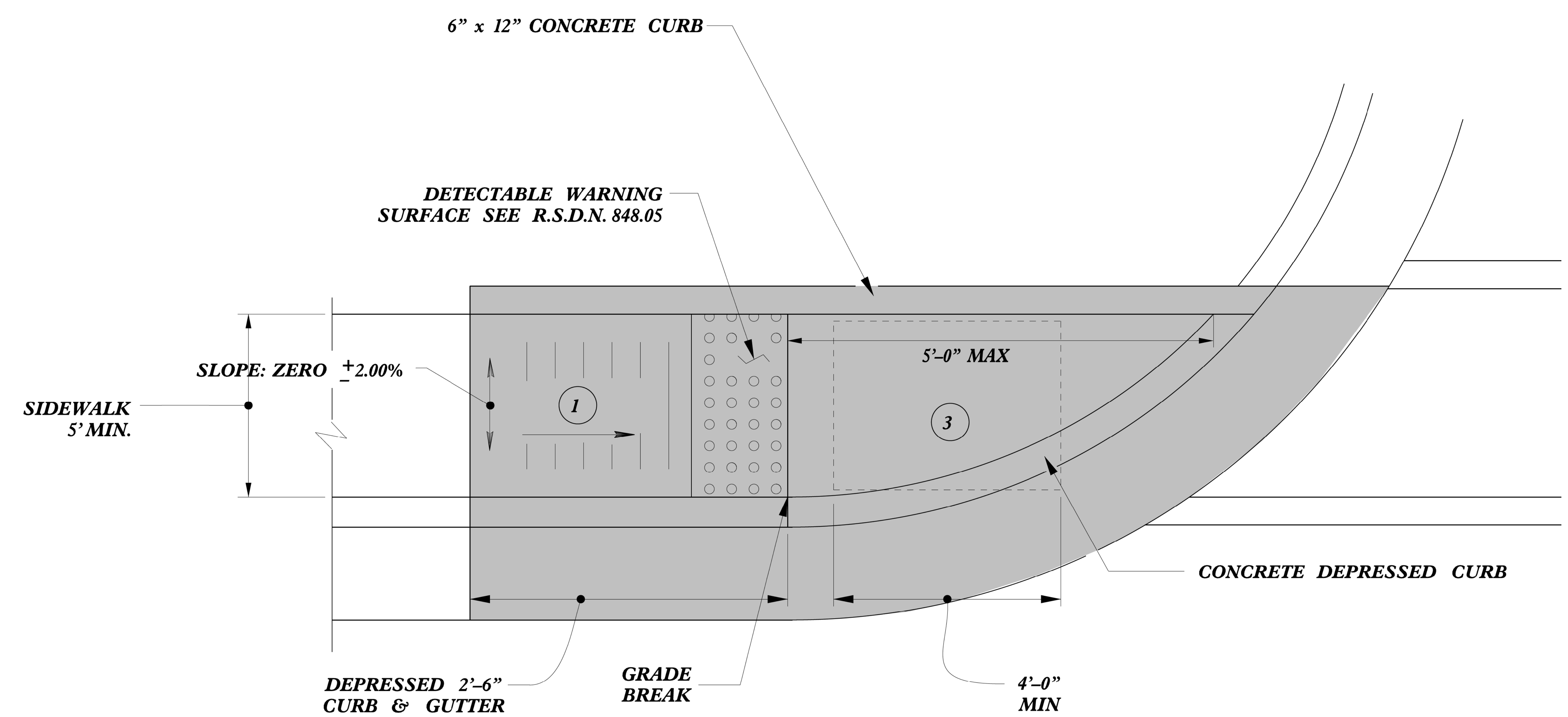

TYPE 1

PAY LIMITS FOR 1 CURB RAMP

(1) 8.33% (12:1) MAX RAMP SLOPE

(2) CROSS SLOPE: 2.00%

(3) CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

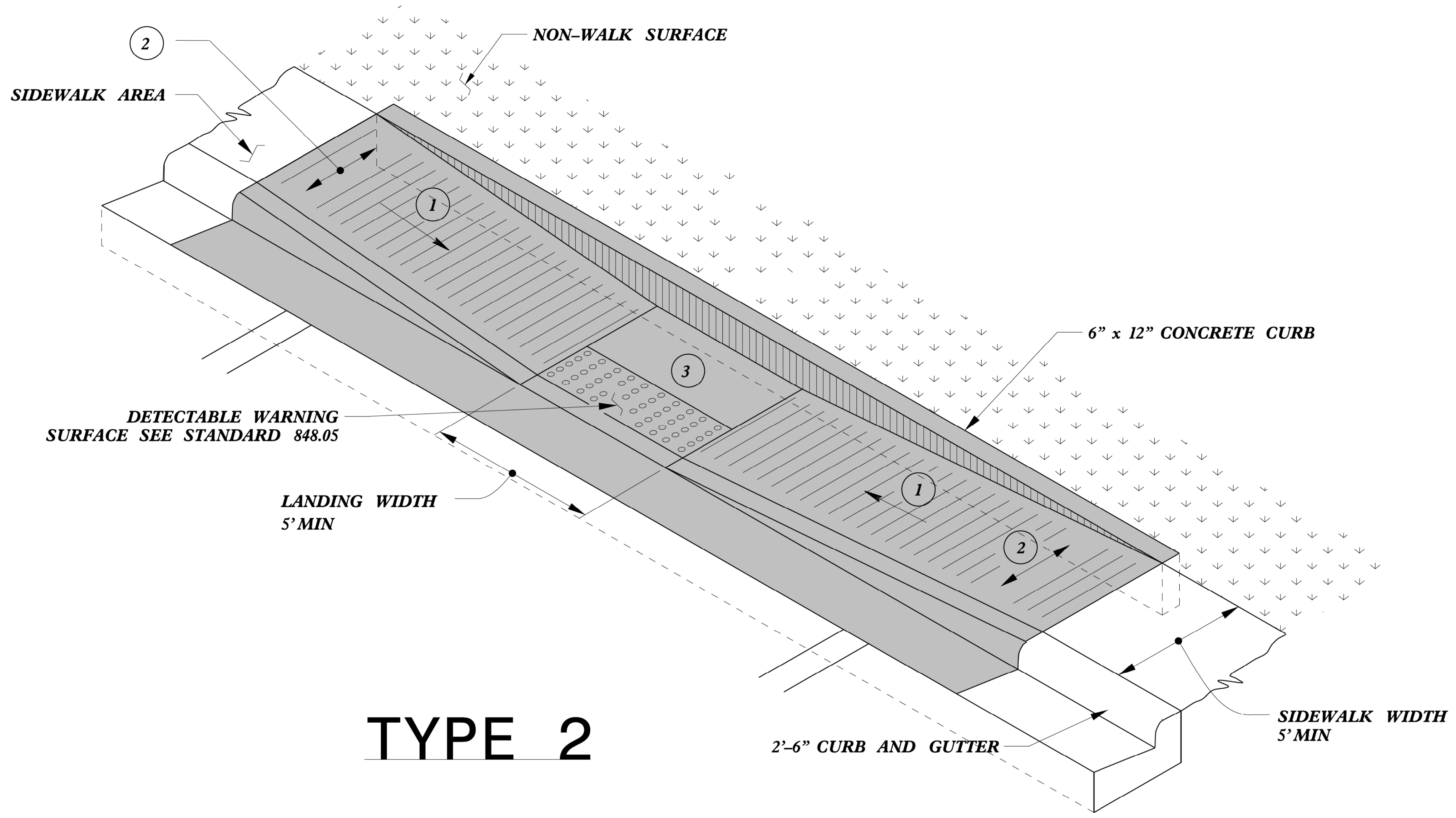
Directional Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

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

PROJECT REFERENCE NO.	SHEET NO.
49218.1	30

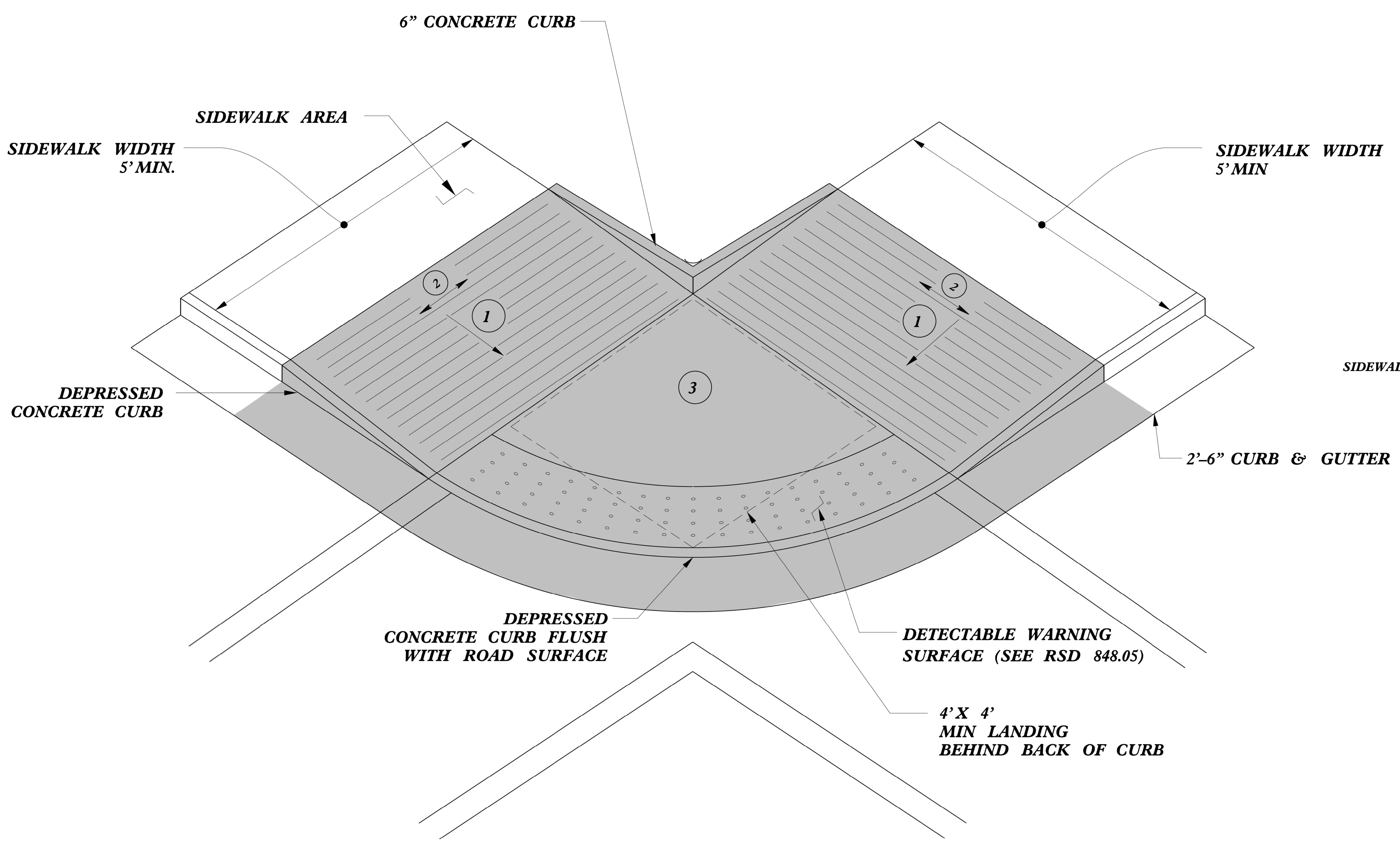
REVISIONS



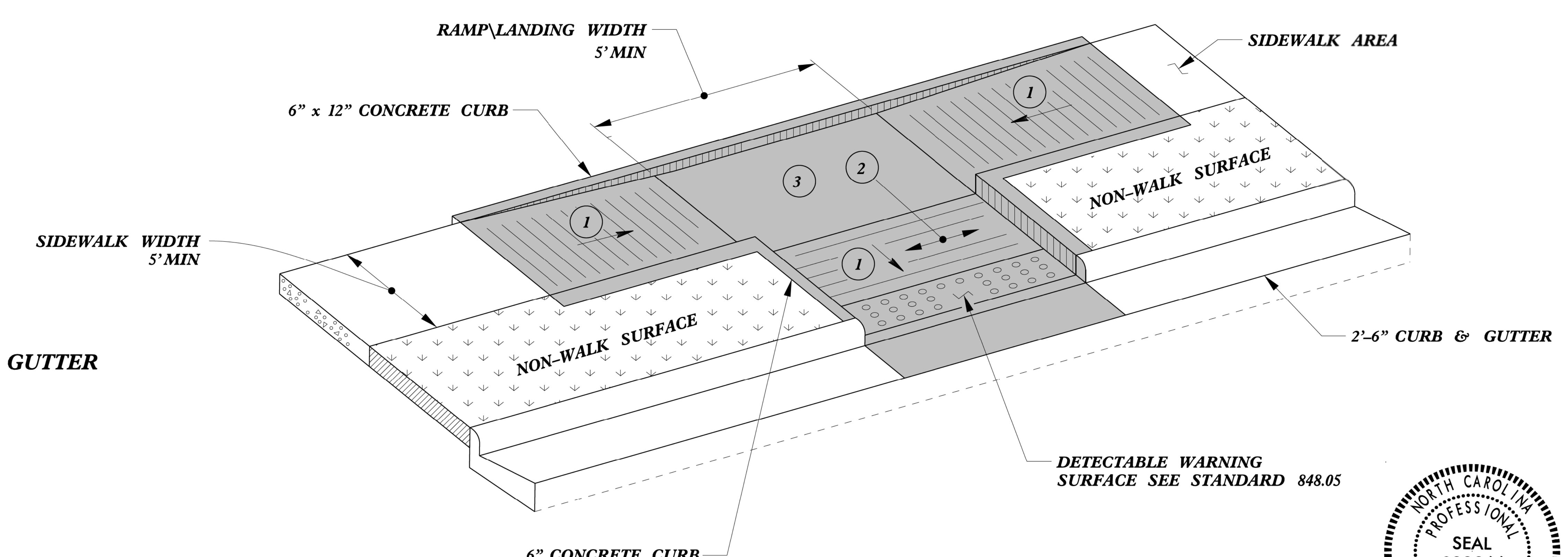
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



TYPE 3

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

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CURB RAMPS
Parallel Ramps

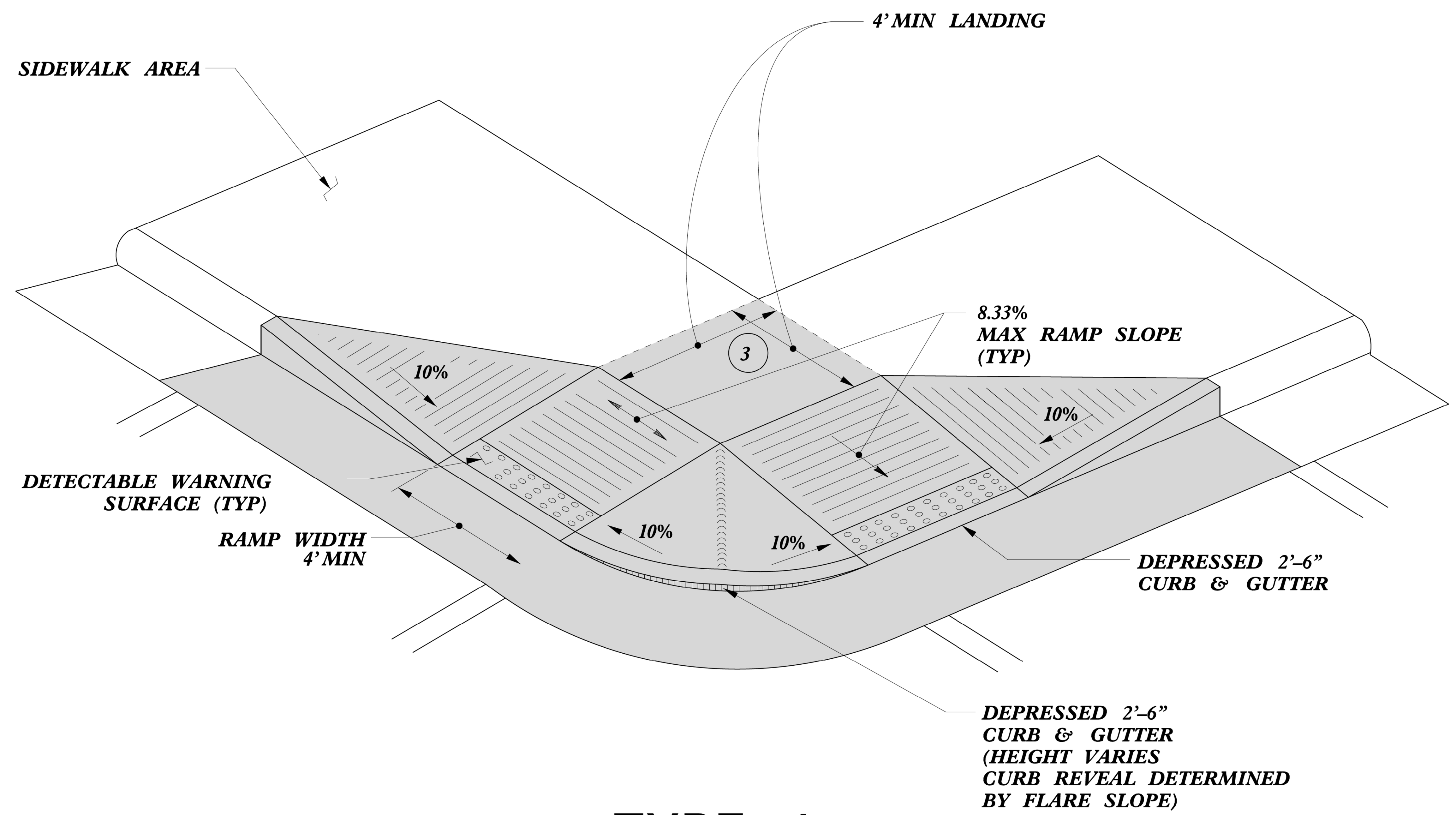
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

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

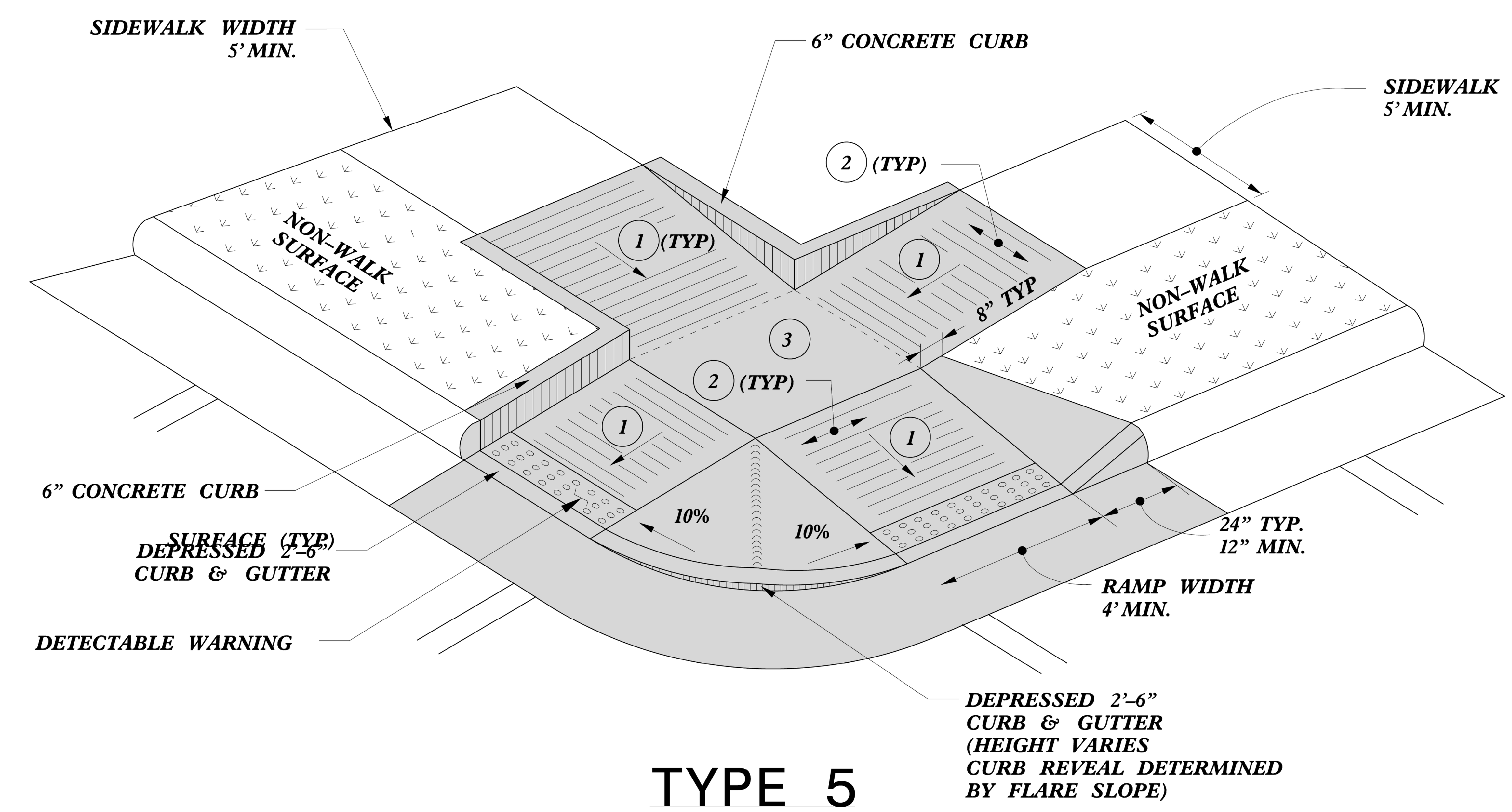
PROJECT REFERENCE NO.	SHEET NO.
49218.1	31

REVISIONS

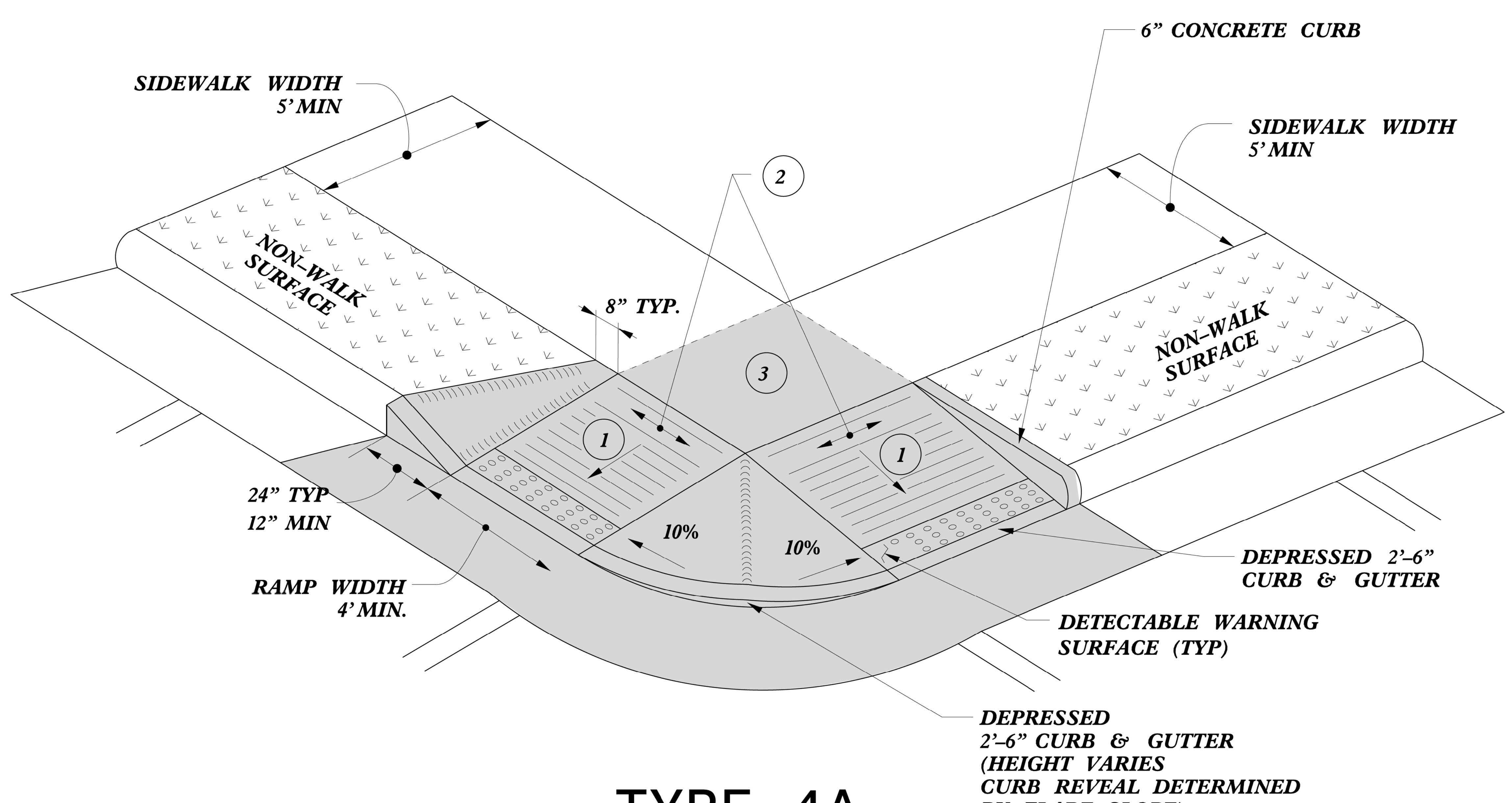
PAY LIMITS FOR 2 CURB RAMPS



TYPE 4



TYPE 5



TYPE 4A

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

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CURB RAMPS

Shared Landing

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

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REVISIONS

10-AUG-2017 10:11
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jhowerton AT CSD-292595

STATE OF
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 1 OF 2
840D02

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

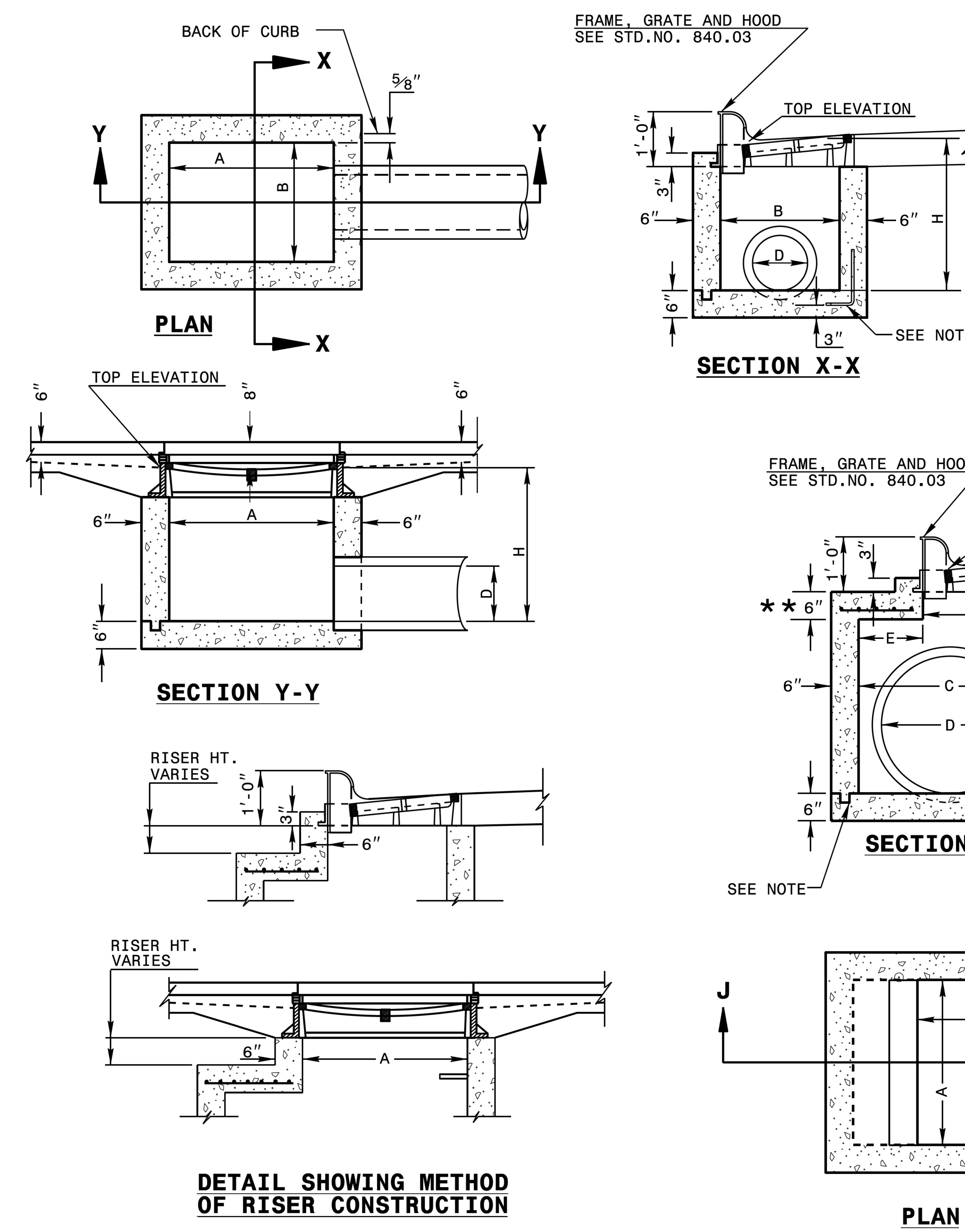
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

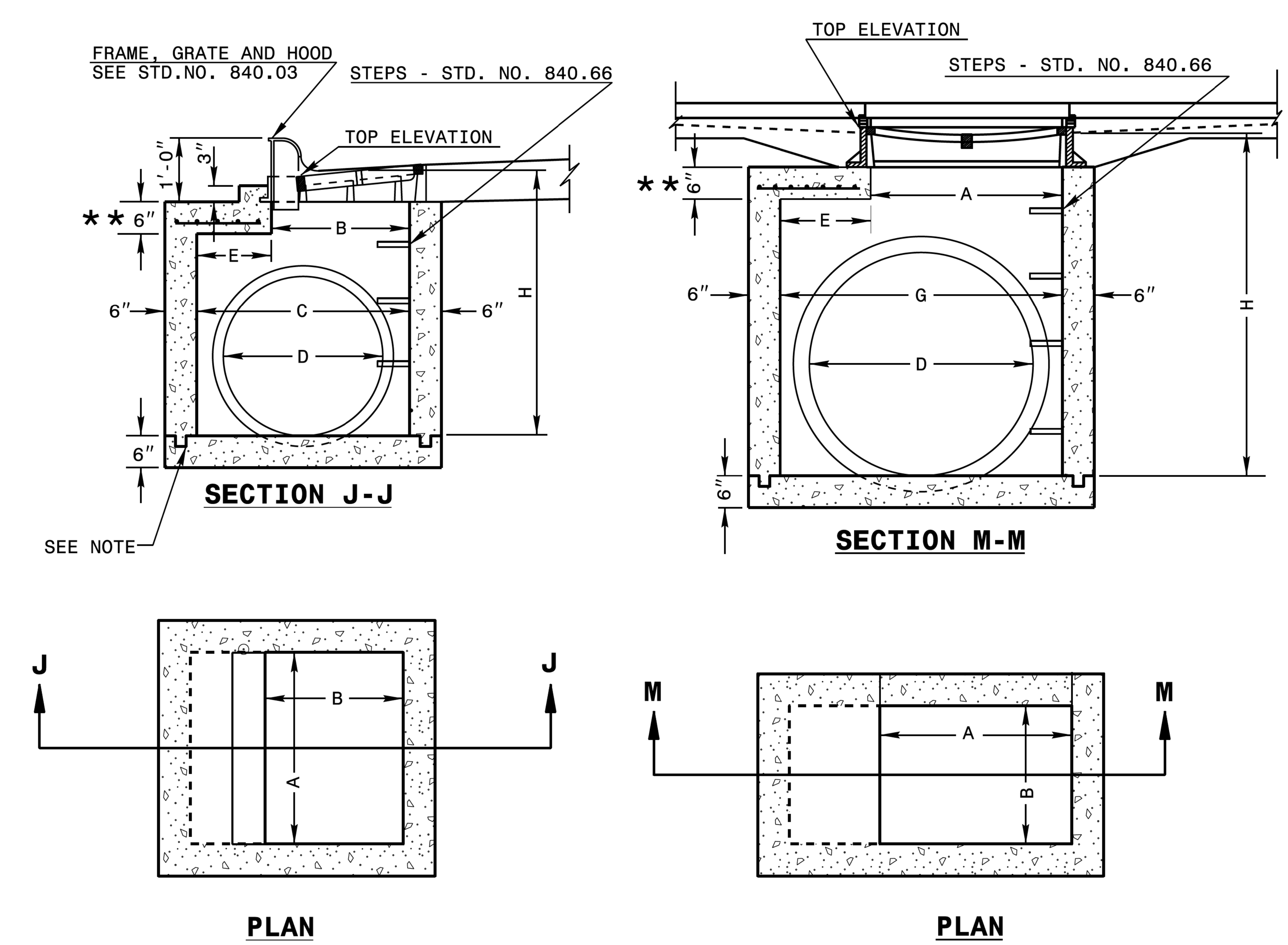
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.





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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 1 OF 2
840D02

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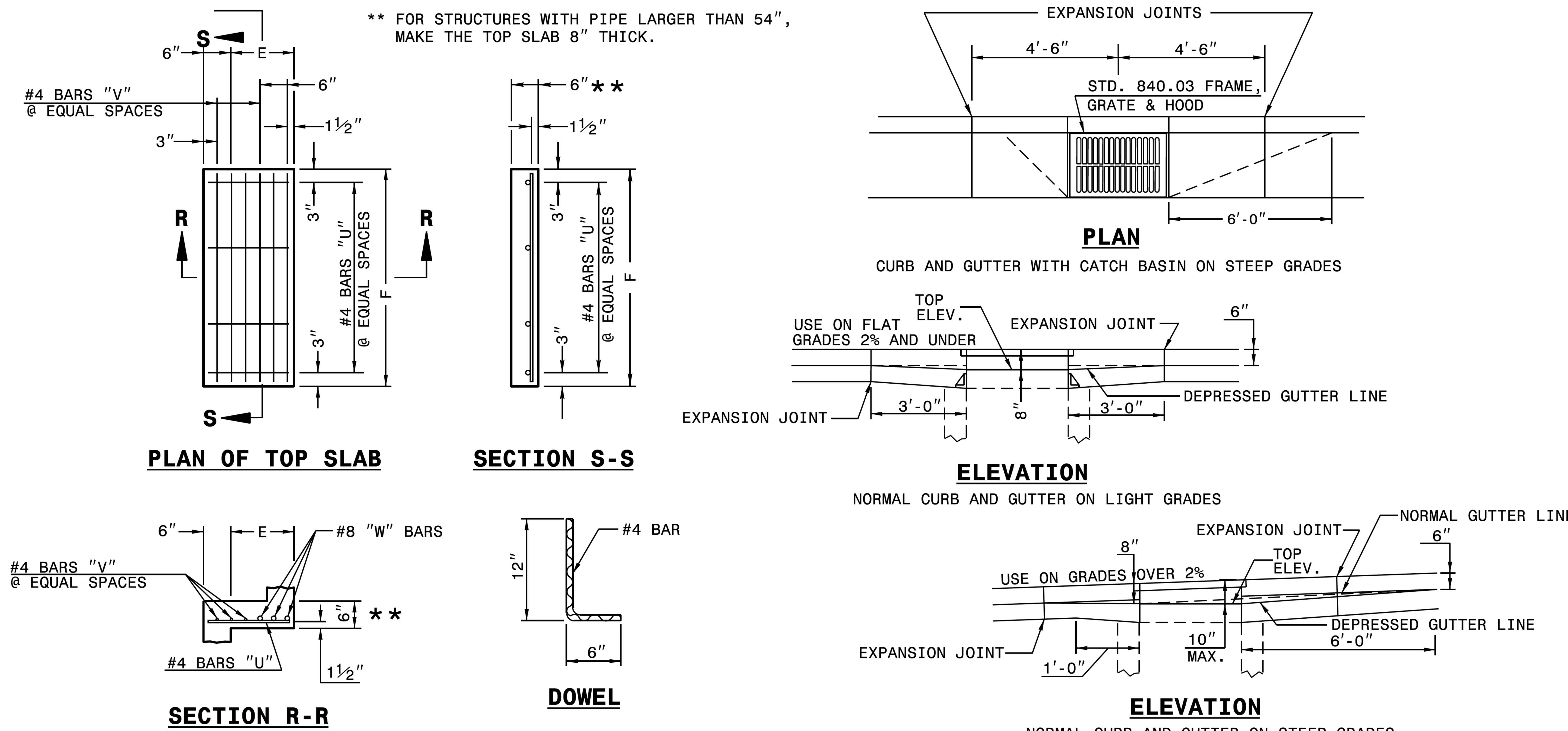
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 2 OF 2
840D02

** FOR STRUCTURES WITH PIPE LARGER THAN 54", MAKE THE TOP SLAB 8" THICK.



* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-0"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			2'-3"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			2'-6"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-1"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"	3'-4"	3'-10"	1'-2"	4'-4"	4	1'-5"	2	4'-1"	3	4'-1"	39	0.123	0.347	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"	3'-10"	4'-6"	1'-8"	4'-10"	4	1'-11"	3	4'-7"	3	4'-7"	43	0.161	0.432	1.714	0.132	0.178
42"	3'-0"	2'-2"	4'-5"	4'-5"	4'-11"	2'-2"	5'-5"	5	2'-5"	4	5'-2"	3	5'-2"	47	0.200	0.543	1.738	0.180	0.243
48"	3'-0"	2'-2"	5'-0"	5'-0"	5'-6"	2'-10"	6'-0"	5	3'-1"	4	5'-9"	3	5'-9"	51	0.235	0.667	2.052	0.235	0.317
54"	3'-0"	2'-2"	5'-7"	5'-7"	6'-0"	3'-5"	6'-7"	6	3'-8"	5	6'-4"	3	6'-4"	56	0.289	0.802	2.387	0.297	0.401
60"	3'-0"	2'-2"	6'-3"	6'-3"	6'-6"	4'-1"	7'-3"	6	4'-4"	5	7'-0"	3	7'-0"	61	0.340	0.973	2.722	0.363	0.546
66"	3'-0"	2'-2"	6'-11"	6'-11"	7'-0"	4'-9"	7'-11"	7	5'-0"	6	7'-8"	3	7'-8"	66	0.391	1.160	3.057	0.440	0.655
72"	3'-0"	2'-2"	7'-6"	7'-6"	7'-6"	5'-3"	8'-6"	7	5'-6"	6	8'-3"	3	8'-3"	72	0.442	1.340	3.392	0.524	0.774
78"	3'-0"	2'-2"	8'-1"	8'-1"	8'-0"	5'-11"	9'-1"	8	6'-2"	7	8'-10"	3	8'-10"	78	0.493	1.530	3.727	0.615	0.893
84"	3'-0"	2'-2"	8'-9"	8'-9"	8'-6"	6'-7"	9'-9"	8	6'-10"	7	9'-6"	3	9'-6"	84	0.544	1.760	4.062	0.713	1.010

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
MINIMUM DEPTH
CONCRETE CATCH BASIN
12" THRU 84" PIPE

SHEET 2 OF 2
840D02

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

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joel S. Howerton

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 Std.840.01 DATE:
MODIFIED BY: E.E. WARD DATE: 3-1-02
CHECKED BY: DATE:
FILE SPEC.: s:Special Details/jhowerton/840d02.dgn

PROJECT REFERENCE NO.	SHEET NO.
49218.1	32

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
49218.1	33

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NORTH CAROLINA PROFESSIONAL SEAL 018981 ENGINEER R.K. MURPHY, JR.
10/26/2021

SUMMARY OF QUANTITIES

												0063000000-N	0106000000-E	0331000000-E	0366000000-E	0372000000-E	0378000000-E	0448000000-E	1220000000-E	1297000000-E				1330000000-E	1491000000-E	1503000000-E	1519000000-E	1523000000-E	1575000000-E	1693000000-E	1704000000-E	2253000000-E	2275000000-E	2286000000-N	2352000000-N				
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	GRADING	BORROW EXCAVATION	GEN DRAINAGE ITEM - DRAINAGE DITCH EXCAV	15" RC PIPE CULVERTS, CLASS III	18" RC PIPE CULVERTS, CLASS III	24" RC PIPE CULVERTS, CLASS III	12" RC PIPE CULVERTS, CLASS IV	INCIDENTAL STONE BASE	3" MILLING	7" MILLING	6.5" MILLING	9" MILLING	INCIDENTAL MILLING	BASE COURSE, B25.0C	INTERMEDIATE COURSE, I19.0C	SURFACE COURSE, S9.5B	SURFACE COURSE, S9.5C	ASPHALT BINDER FOR PLANT MIX	AC PLANT MIX, PAVEMENT REPAIR	PATCHING EXISTING PAVEMENT	PIPE COLLAR	FLOWABLE FILL	MASONRY DRAINAGE STRUCTURES	FRAME WITH GRATE, STD 840.03, TYPE G	FRAME WITH GRATE, STD 840.03, TYPE F	FRAME WITH GRATE, STD 840.03, TYPE E	FRAME WITH GRATE, STD 840.16	FRAME WITH GRATE, STD 840.19
										MI	FT	LS	CY	CY	LF	LF	LF	LF	TONS	SY	SY	SY	SY	SY	TONS	TONS	TONS	TONS	TON	TONS	TONS	CY	CY	EA	EA	EA	EA	EA	EA
49218.1	Cumberland	1	HONEYCUTT RD.	MAPS 1A AND 1B	1, 2	2	2WU	NO	NO	1	47		50						60	28,055				1,200	335	290		4,830	540	100	450								
TOTAL FOR MAP NO. 1										1			50						60	28,055				1,200	335	290		4,830	540	100	450								
49218.1	Cumberland	2	GRUBER RD.		3	2	2WU	NO	NO	0.43	24								60	12,600				750	75	75		1,925	241	150	125								
TOTAL FOR MAP NO. 2										0.43									60	12,600				750	75	75		1,925	241	150	125								
49218.1	Cumberland	3	NORMANDY DR.	MAP 3	4	2	2WU	NO	NO	0.6	24	0.50	500	280.00	40.00	80.00	16.00		120		4,850			750	1,930		1,400		180	50	100	2.00		7.00	1.00	1.00	1.00	1.00	1.00
TOTAL FOR MAP NO. 3										0.6		0.50	500	280.00	40.00	80.00	16.00		120		4,850			750	1,930		1,400		180	50	100	2.00		7.00	1.00	1.00	1.00	1.00	1.00
49218.1	Cumberland	4	RHINE RD.	MAP 4	5	2	2WU	NO	NO	0.11	24	0.50						204.00	20			1,450		75	325		195		29	30		2.00	8.00	3.00		1.00	2.00		
TOTAL FOR MAP NO. 4										0.11		0.50						204.00	20			1,450		75	325		195		29	30		2.00	8.00	3.00		1.00	2.00		
49218.1	Cumberland	5	PRATT ST.	MAPS 5 A, B, C	4, 6	2	2WD	NO	NO	0.83	24										3,285		7,000	750	2,450	810	1,770		246		30								
TOTAL FOR MAP NO. 5										0.83											3,285		7,000	750	2,450	810	1,770		246		30								
TOTAL FOR PROJ NO. 49218.1										2.97		1.00	550	280.00	40.00	80.00	16.00	204.00	260	40,655	8,135	1,450	7,000	3,525	5,115	1,175	3,365	6,755	1,236	330	705	4.00	8.00	10.00	1.00	2.00	3.00	1.00	1.00
																				57,240															8.00				
GRAND TOTAL										2.97		1.00	550	280.00	40.00	80.00	16.00	204.00	260	40,655	8,135	1,450	7,000	3,525	5,115	1,175	3,365	6,755	1,236	330	705	4.00	8.00	10.00	1.00	2.00	3.00	1.00	1.00
																				57,240															8.00				

												2363000000-N	2549000000-E	2591000000-E	2605000000-N	2613000000-N	2830000000-N	2845000000-N	3649000000-E	3656000000-E	5255000000-N	6000000000-E	6006000000-E	6009000000-E	6012000000-E	6030000000-E	6036000000-E	6042000000-E	6071010000-E	6071020000-E	6084000000-E	6117000000-N	7444000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	FRAME WITH TWO GRATES, STD 840.19	2'-6" CURB & GUTTER	4" CONCRETE SIDEWALK	CONCRETE CURB RAMP	REMOVE AND REPLACE CURB RAMPS	ADJUST MANHOLES	ADJUST METER OR VALVE BOX	RIP RAP, CLASS B	GEOTEXTILE FOR DRAINAGE	PORTABLE LIGHTING	TEMPORARY SILT FENCE	STONE FOR EROSION CONTROL , CLASS A	STONE FOR EROSION CONTROL , CLASS B	SEDIMENT CONTROL STONE	SILT EXCAVATION	MATTING FOR EROSION CONTROL	1/4" HARDWARE CLOTH	WATTLE	POLYACRYLAMIDE (PAM)	SEED & MULCHING	RESPONSE FOR EROSION CONTROL	INDUCTIVE LOOP SAWCUT
										MI	FT	EA	LF	SY	EA	EA	EA	EA	TONS	SY	LS	LF	TONS	TONS	TONS	CY	SY	LF	LF	LB	AC	EA	LF
49218.1	Cumberland	1	HONEYCUTT RD.	MAPS 1A AND 1B	1, 2	2	2WU	NO	NO	1	47		200	75	7	6	5	1			1.00												5,125
TOTAL FOR MAP NO. 1										1			200	75	7	6	5	1			1.00												5,125
49218.1	Cumberland	2	GRUBER RD.		3	2	2WU	NO	NO	0.43	24		60	125	2		1	1															2,000
TOTAL FOR MAP NO. 2										0.43			60	125	2		1	1															2,000
49218.1	Cumberland	3	NORMANDY DR.	MAP 3	4	2	2WU	NO	NO	0.6	24	2.00	620	300	2	12			11.00	20.00		300	70.00	40.00	85.00	90.00	20.00	100.00	50.00	15.00	0.50	1	1,000
TOTAL FOR MAP NO. 3										0.6		2.00	620	300	2	12			11.00	20.00		300	70.00	40.00	85.00	90.00	20.00	100.00	50.00	15.00	0.50	1	1,000
49218.1	Cumberland	4	RHINE RD.	MAP 4	5	2	2WU	NO	NO	0.11	24		210	125	1										40.00			180.00			0.10		
TOTAL FOR MAP NO. 4										0.11			210	125	1										40.00			180.00			0.10		
49218.1	Cumberland	5	PRATT ST.	MAPS 5 A, B, C	4, 6	2	2WD	NO	NO	0.83	24																						
TOTAL FOR MAP NO. 5										0.83																							
TOTAL FOR PROJ NO. 49218.1										2.97		2.00	1,090	625	12	18	6	2	11.00	20.00	1.00	300	70.00	40.00	125.00	90.00	20.00	280.00	50.00	15.00	0.60	1	8,125
GRAND TOTAL										2.97		2.00	1,090	625	12	18	6	2	11.00	20.00	1.00	300	70.00	40.00	125.00	90.00	20.00	280.00	50.00	15.00	0.60	1	8,125

REVISIONS

49218.1

FORT BRAGG RESURFACING

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
49218.1	34

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 018981 ENGINEER R.K. MURPHY, JR.
10/26/2021

SUMMARY OF QUANTITIES

										4413000000-E	4420000000-N	4457000000-N	4510000000-N	4685000000-E		4695000000-E		4720000000-E	4725000000-E					4795000000-E	4810000000-E		4850000000-E	4870000000-E	4891000000-E		4900000000-N	
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	CHANGABLE MESSAGE SIGNS	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	THERMO MSG RXR 90 M	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO STR & RT ARROW 90 M	24" X 90 M YELLOW THERMO	4" WHITE PAINT	4" YELLOW PAINT	4" LINE REMOVAL	24" LINE REMOVAL	24" X 90 M WHITE THERMO	16" X 90 M WHITE THERMO	YELLOW & YELLOW MARKERS	CRYSTAL & RED MARKERS
								MI	FT	SF	EA	LS	HR	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	EA	EA
49218.1	Cumberland	1	HONEYCUTT RD.	MAPS 1A AND 1B	1, 2	2	2WU	1	47	416	2.00	0.20		6,947	14,930	400	720	4	23	20	14	10	18	25.00	5,780	11,400	750	250	2,880	100	140	330
TOTAL FOR MAP NO. 1								**1**		**416**	**2**	**0.20**		**6,947**	**14,930**	**400**	**720**	**4**	**23**	**20**	**14**	**10**	**18**	**25**	**5,780**	**11,400**	**750**	**250**	**2,880**	**100**	**140**	**330**
49218.1	Cumberland	2	GRUBER RD.		3	2	2WU	0.43	24	224		0.20	200	2,190	5,350										2,190	5,350			620	100	40	130
TOTAL FOR MAP NO. 2								**0.43**		**224**		**0.20**	**200**	**2,190**	**5,350**										**2,190**	**5,350**			**620**	**100**	**40**	**130**
49218.1	Cumberland	3	NORMANDY DR.	MAP 3	4	2	2WU	0.6	24	528		0.20			5,910														820		40	
TOTAL FOR MAP NO. 3								**0.6**		**528**		**0.20**			**5,910**														**820**		**40**	
49218.1	Cumberland	4	RHINE RD.	MAP 4	5	2	2WU	0.11	24	64		0.20			1,170														20		10	
TOTAL FOR MAP NO. 4								**0.11**		**64**		**0.20**			**1,170**														**20**		**10**	
49218.1	Cumberland	5	PRATT ST.	MAPS 5 A, B, C	4, 6	2	2WD	0.83	24	264		0.20			8,764														40		110	
TOTAL FOR MAP NO. 5								**0.83**		**264**		**0**			**8,764**														**40**		**110**	
TOTAL FOR PROJ NO. 49218.1								**2.97**		**1,496**	**2**	**1**	**200**	**9,137**	**36,124**	**400**	**720**	**4**	**23**	**20**	**14**	**10**	**18**	**25**	**7,970**	**16,750**	**750**	**250**	**4,380**	**200**	**340**	**460**
														45,261		**1,120**			**85**						**24,720**				**4,580**		**800**	
GRAND TOTAL								**2.97**		**1,496**	**2**	**1**	**200**	**9,137**	**36,124**	**400**	**720**	**4**	**23**	**20**	**14**	**10**	**18**	**25**	**7,970**	**16,750**	**750**	**250**	**4,380**	**200**	**340**	**460**
														45,261		**1,120**			**85**						**24,720**						**800**	

REVISIONS

49218.1
FORT BRAGG RESURFACING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	49218.1	EC-1	

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

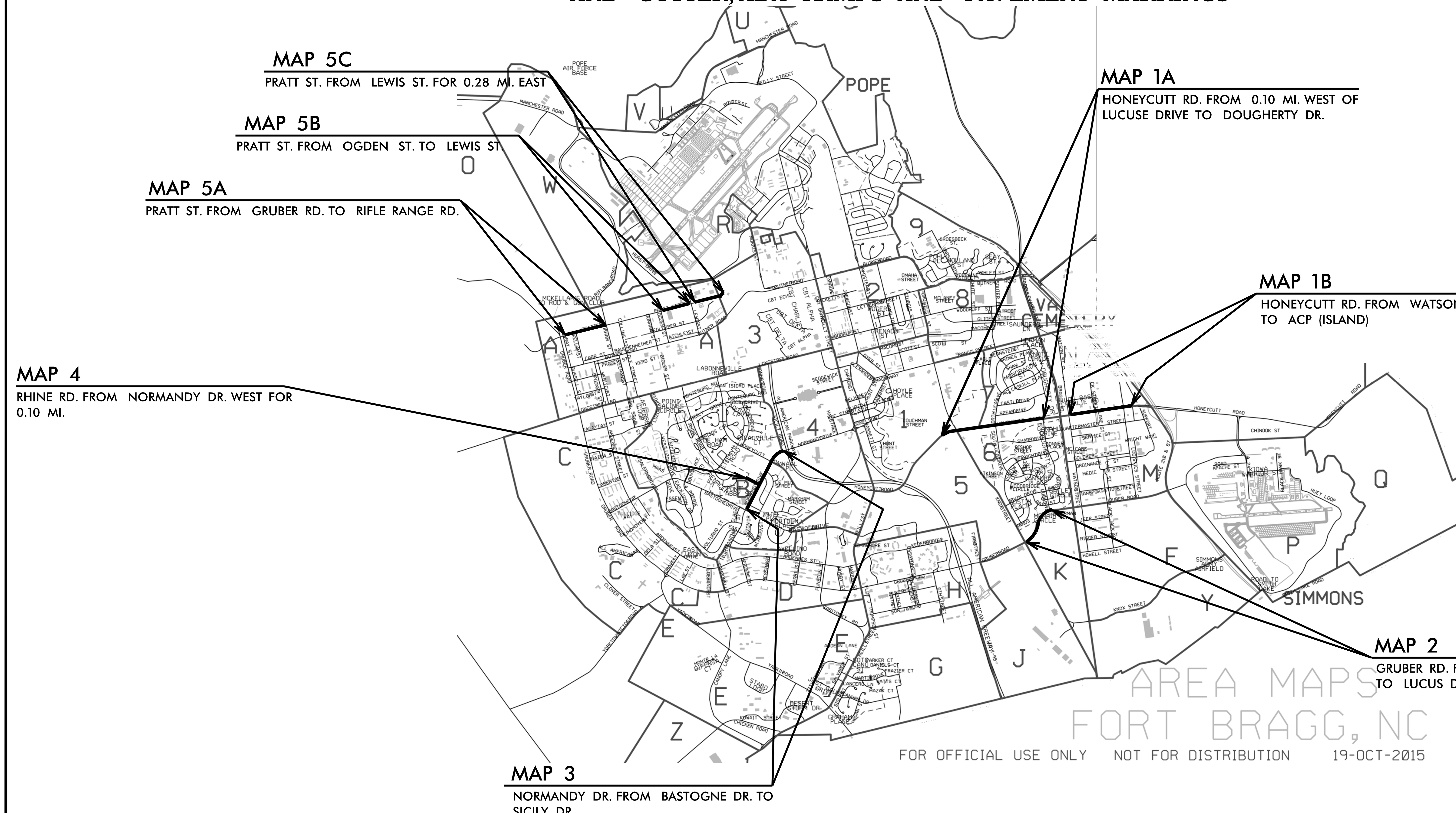
TIP PROJECT: 49218.1

PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

FORT BRAGG MILITARY BASE

LOCATION: FORT BRAGG, N.C.

TYPE OF WORK: RESURFACING, PAVEMENT REHABILITATION, MILLING GRADING, DRAINAGE IMPROVEMENTS, SIDEWALK, CURB AND GUTTER, ADA RAMPS AND PAVEMENT MARKINGS



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared for Fort Bragg in the Office of:

WETHERILL ENGINEERING
1223 JONES FRANKLIN ROAD
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

Designed by:

HARMINDER SINGH 3519
NAME LEVEL III CERTIFICATION NO.

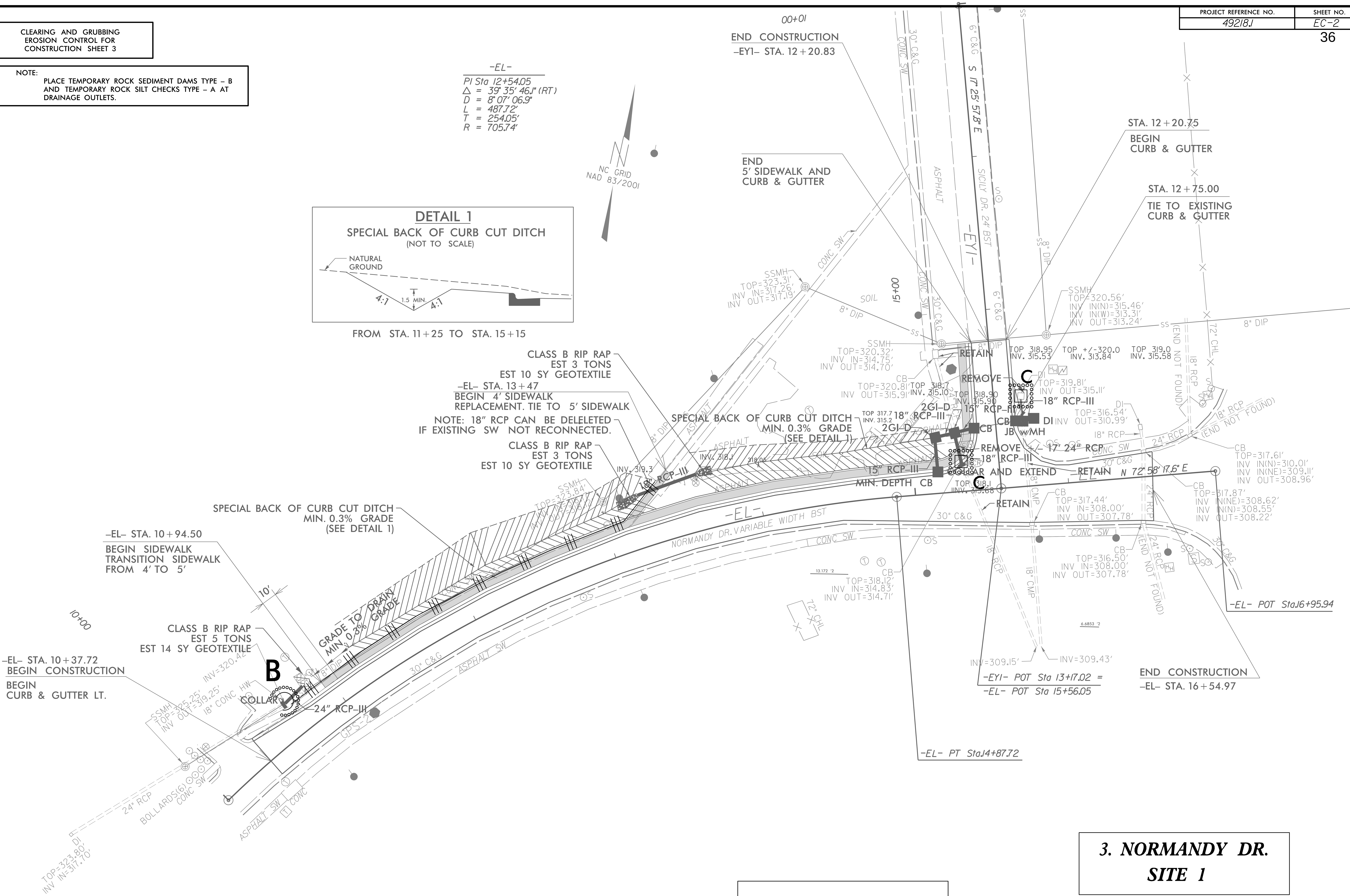
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail
1605.01 Temporary Silt Fence
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1630.01 Riser Basin
1630.02 Silt Basin Type B
1630.03 Temporary Silt Ditch
1630.04 Stilling Basin
1630.05 Temporary Diversion
1630.06 Special Stilling Basin
1631.01 Matting Installation
1632.01 Rock Inlet Sediment Trap Type A
1632.02 Rock Inlet Sediment Trap Type B
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A
1633.02 Temporary Rock Silt Check Type B
1634.01 Temporary Rock Sediment Dam Type A
1634.02 Temporary Rock Sediment Dam Type B
1635.01 Rock Pipe Inlet Sediment Trap Type A
1635.02 Rock Pipe Inlet Sediment Trap Type B
1640.01 Coir Fiber Baffle
1645.01 Temporary Stream Crossing

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 3

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

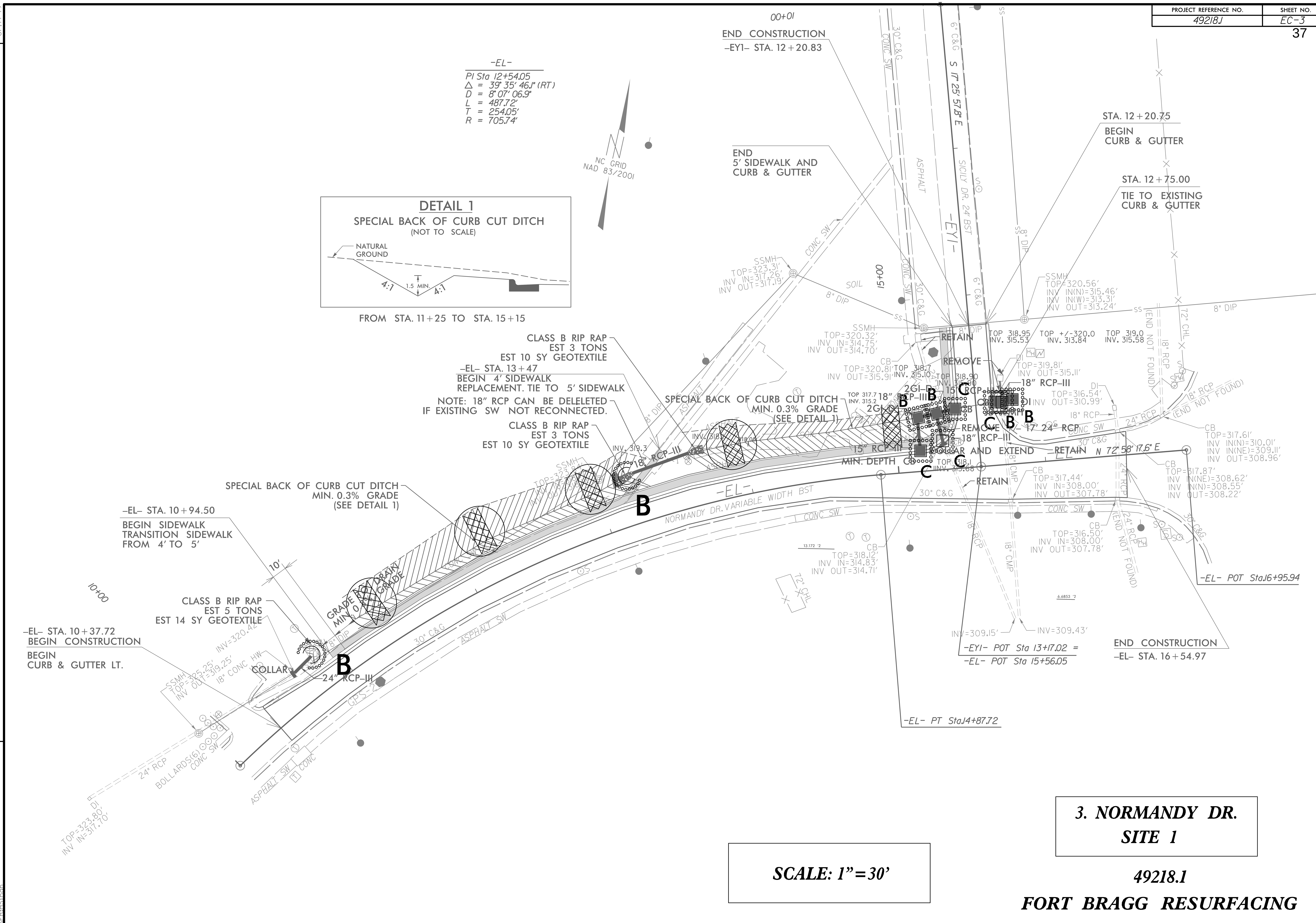


SCALE: 1"=30'

3. NORMANDY DR.
SITE 1

49218.1
FORT BRAGG RESURFACING

PROJECT REFERENCE NO.	SHEET NO.
49218J	EC-3



SCALE: 1"=30'

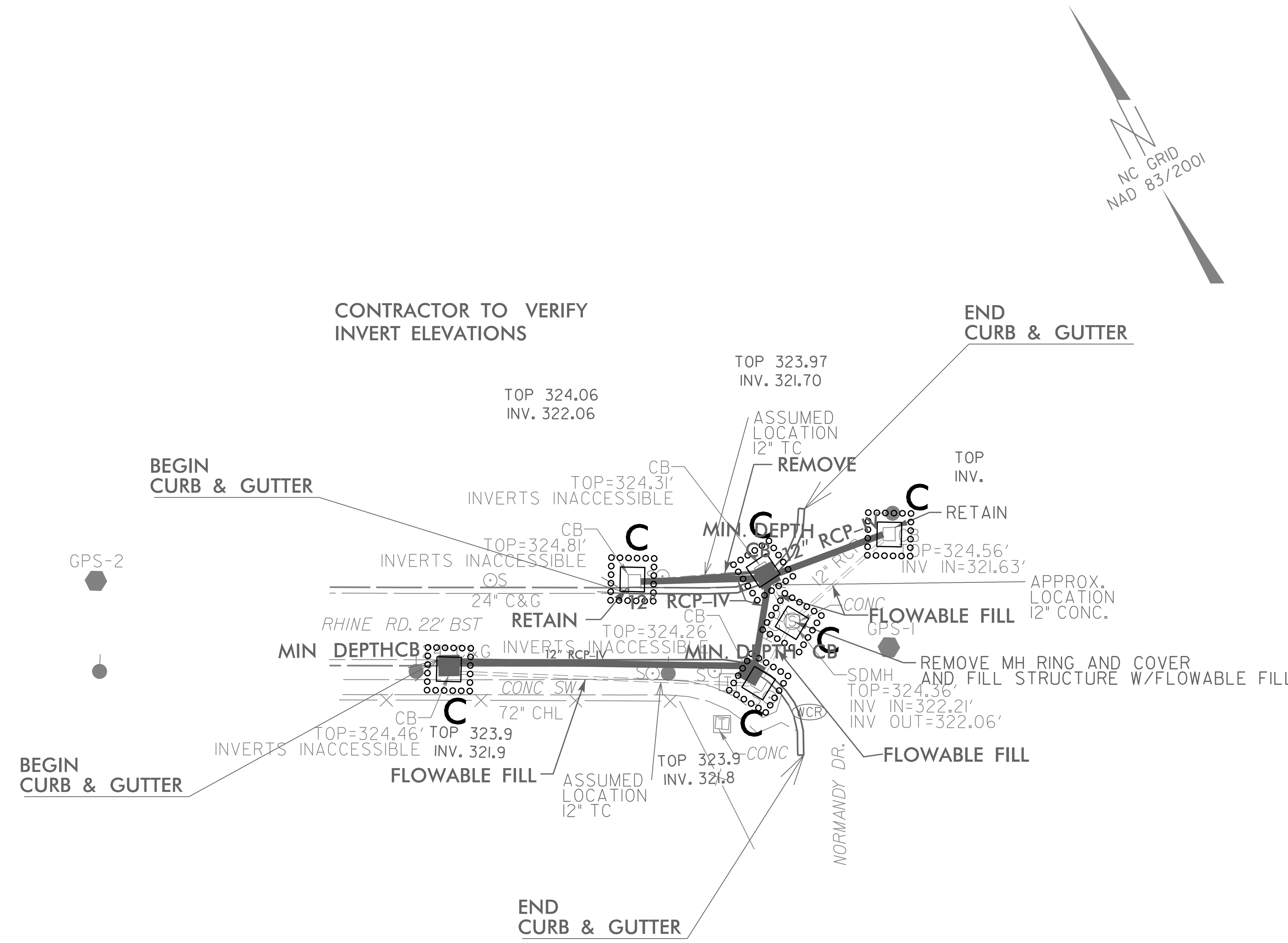
3. NORMANDY DR.
SITE 1

49218.1
FORT BRAGG RESURFACING

PROJECT REFERENCE NO.	SHEET NO.
49218J	EC-4

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

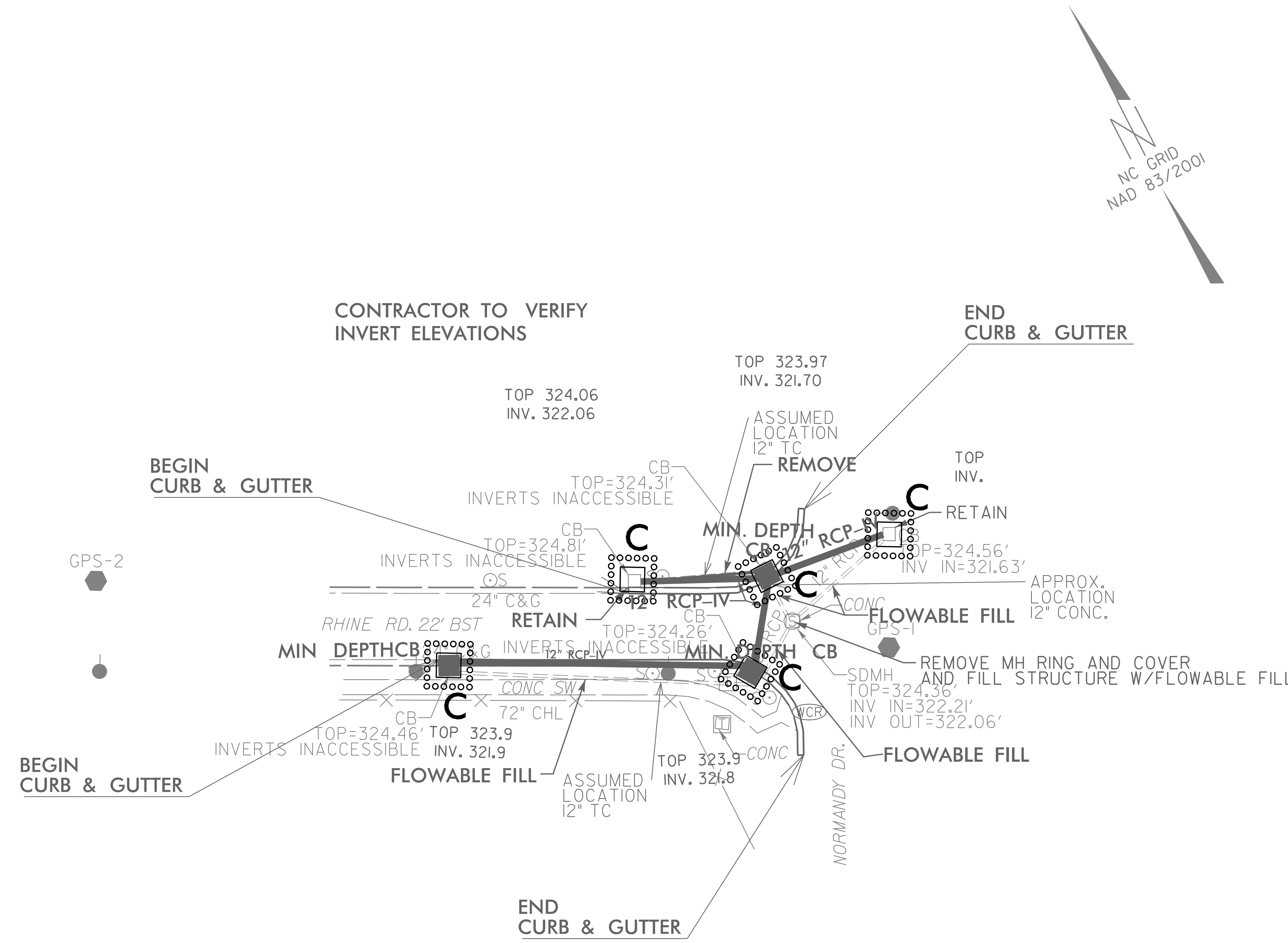


SCALE: 1"=30'

3. NORMANDY DR.
SITE 2

49218.1
FORT BRAGG RESURFACING

8/17/99
10/22/2021
49218.1_EC_SITE2_CG.dgn



SCALE: 1"=30'

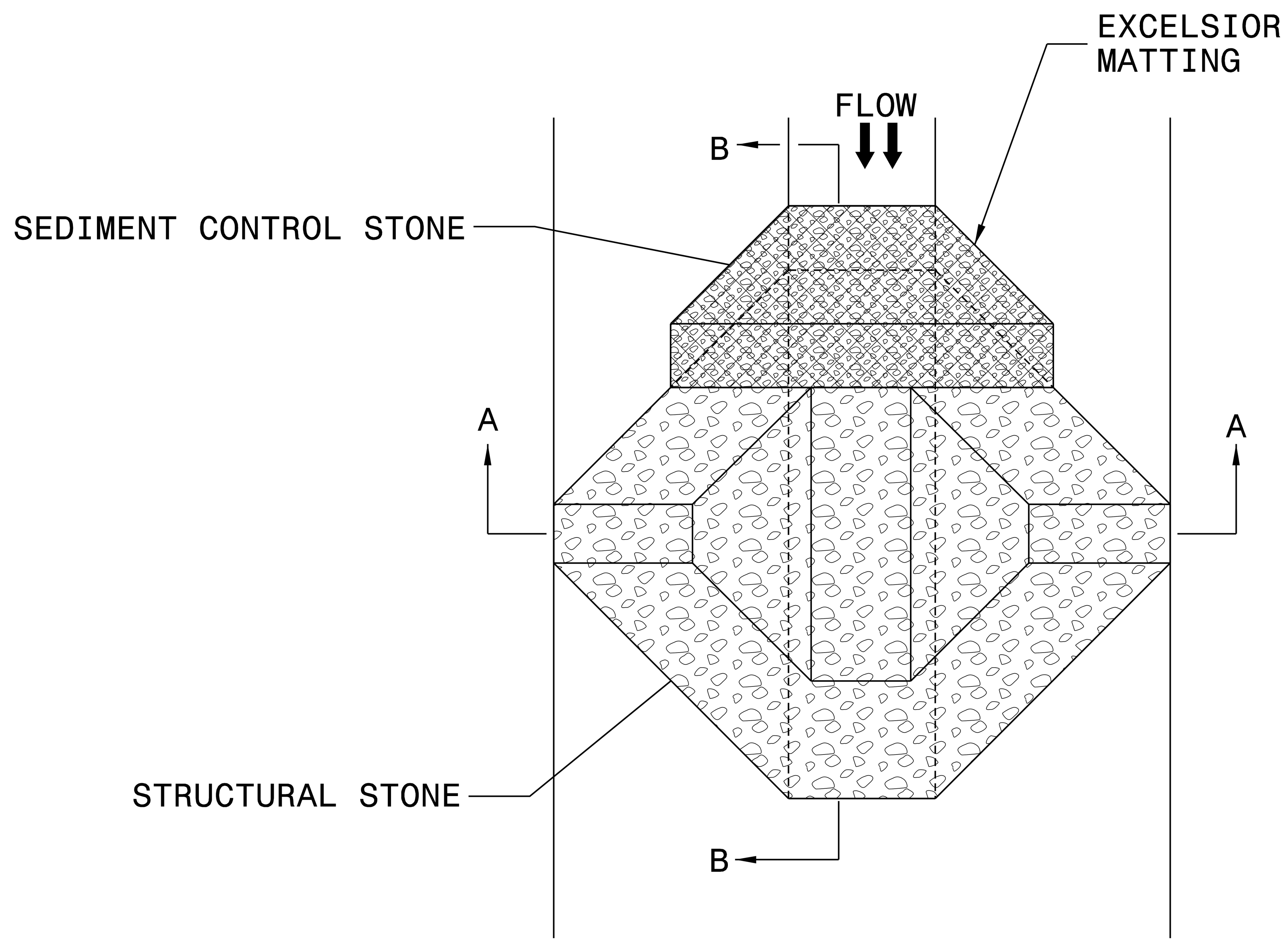
3. NORMANDY DR.
SITE 2

49218.1
FORT BRAGG RESURFACING

8/17/99
10/22/2021
49218.1_EC_SITE2_FINAL.dgn

PROJECT REFERENCE NO.	SHEET NO.
49218.1	EC-6
R/W SHEET NO.	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

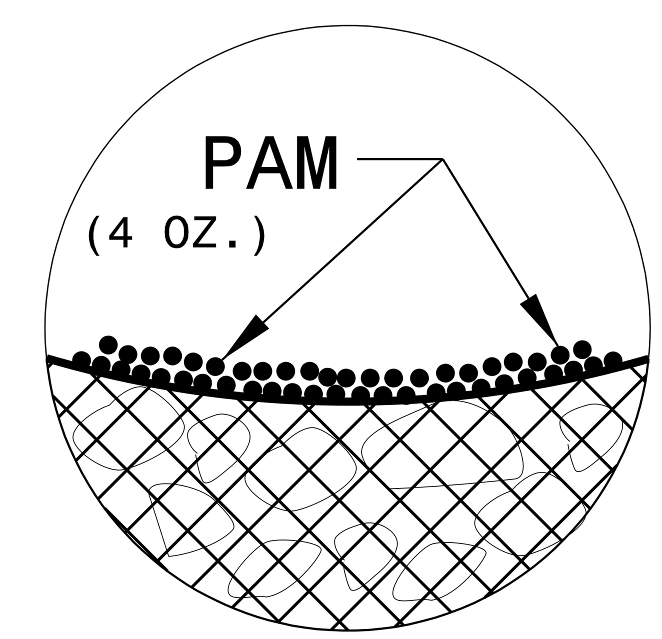
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

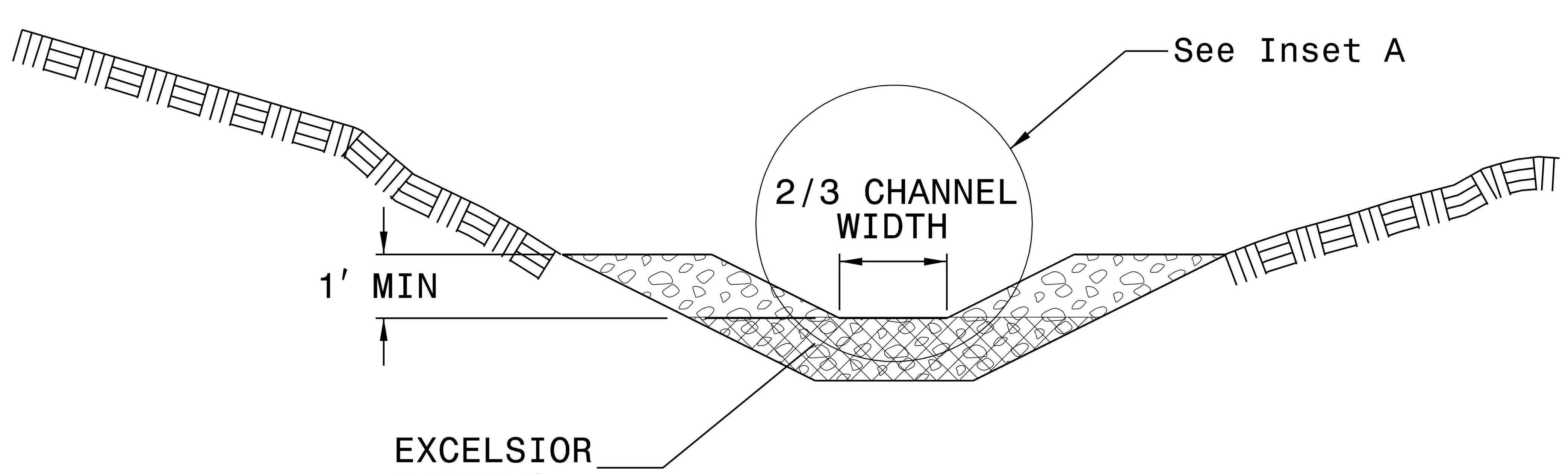
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

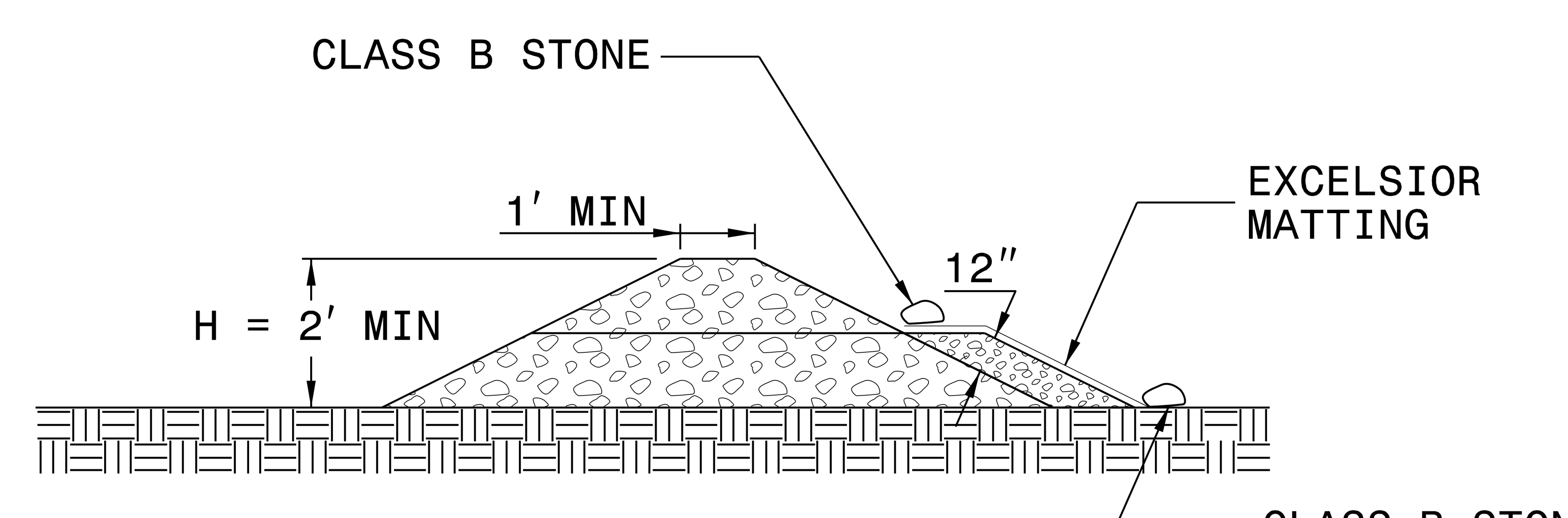
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



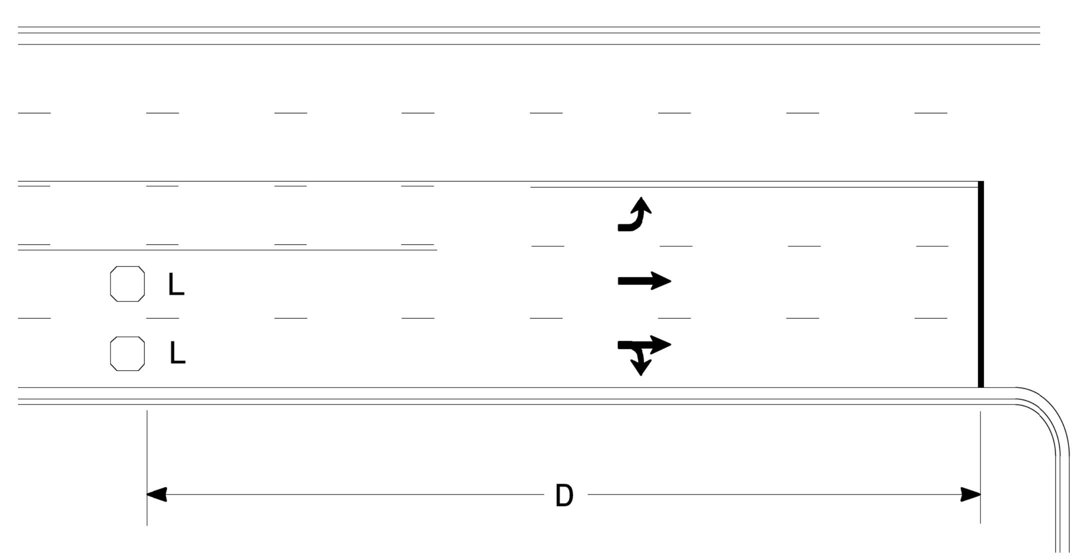
SECTION A-A



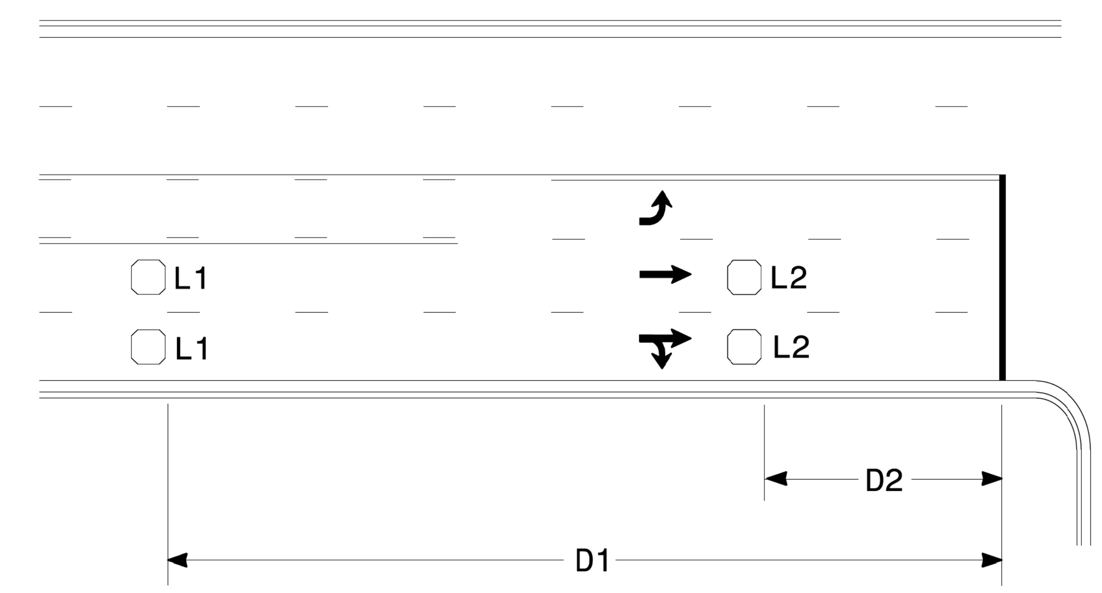
SECTION B-B

NOT TO SCALE

High Speed Detection
(≥40 mph)



OR



Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired in series for TS1 Controllers
Wired separately for TS2, 170, and 2070L Controllers

Volume Density Operation

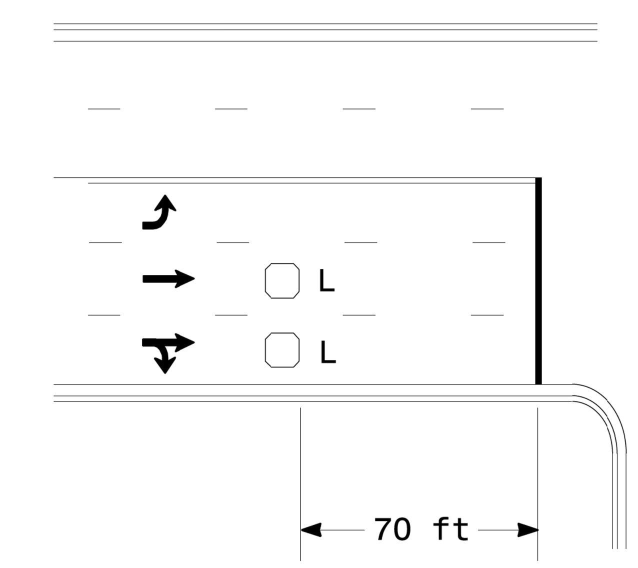
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

Low Speed Detection
(≤35 mph)



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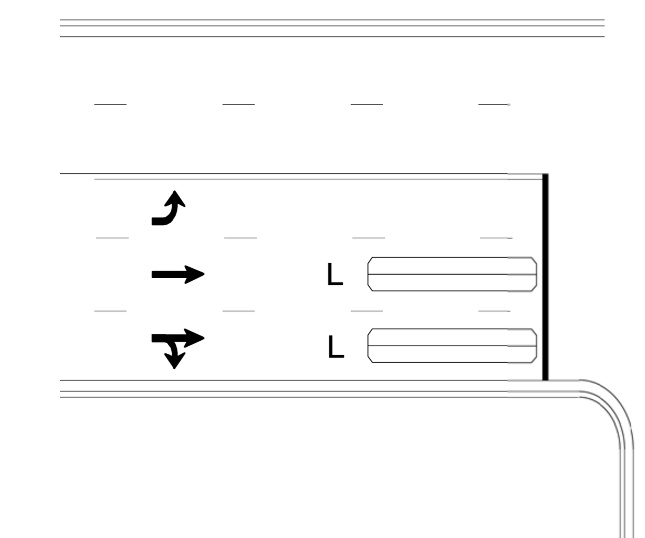
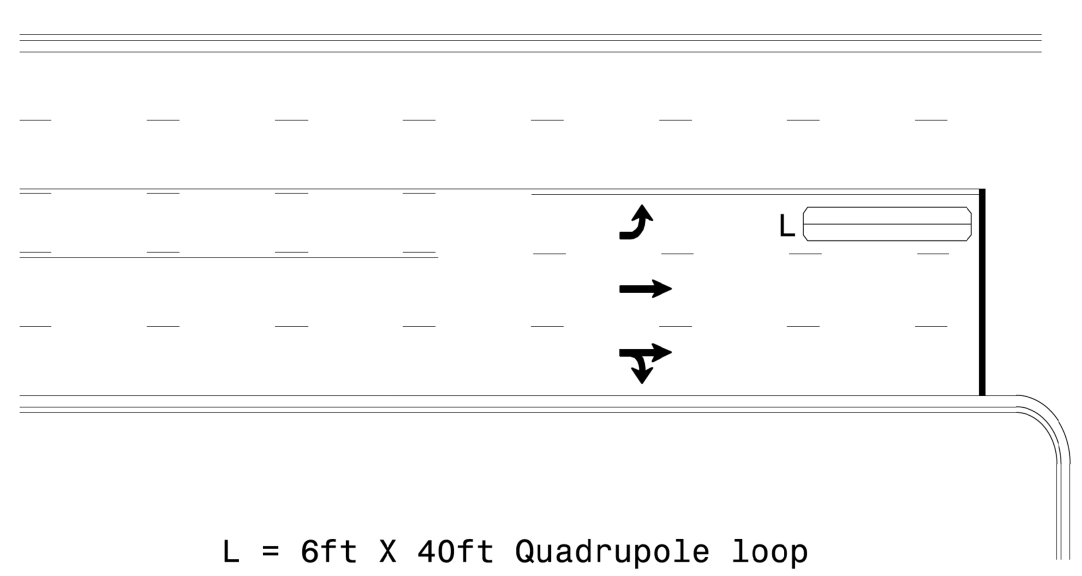


L = 6ft X 6ft
Wired in series

L = 6ft X 40ft
Quadrupole loop, wired separately

Left Turn Lane Detection



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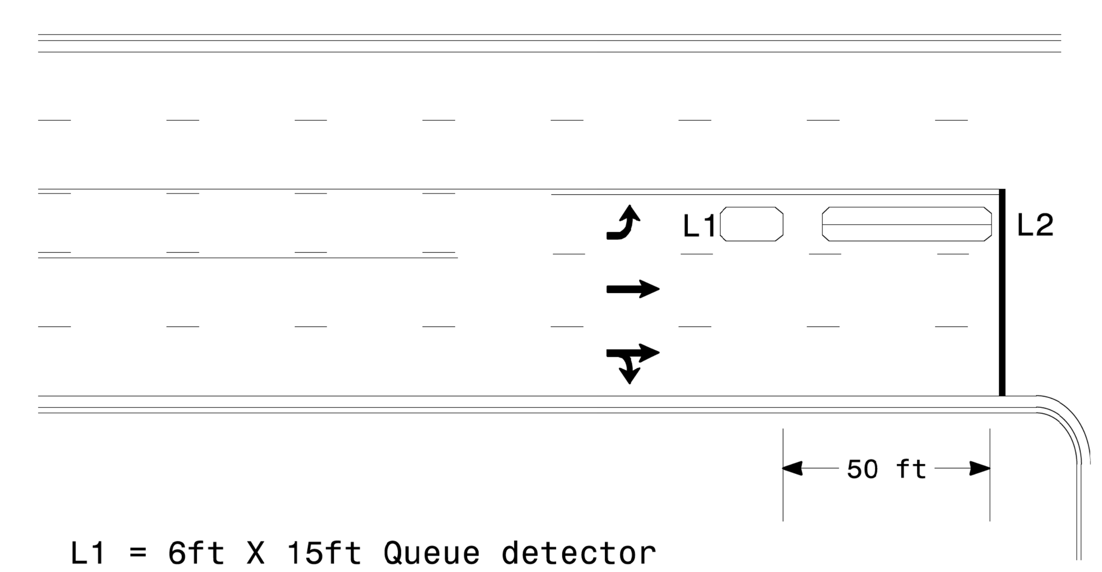


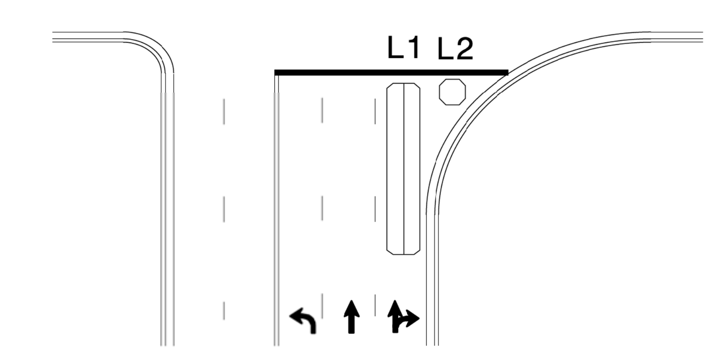
L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

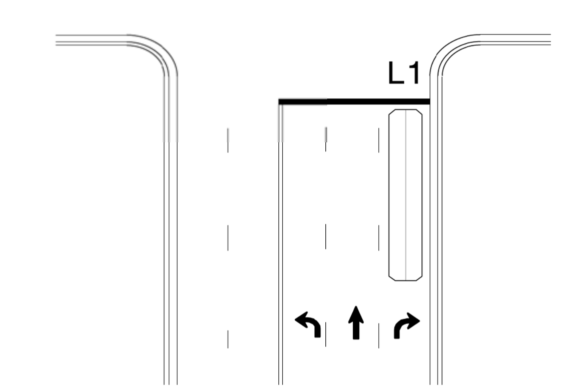
Queue Loop Detection

Right Turn Lane Detection

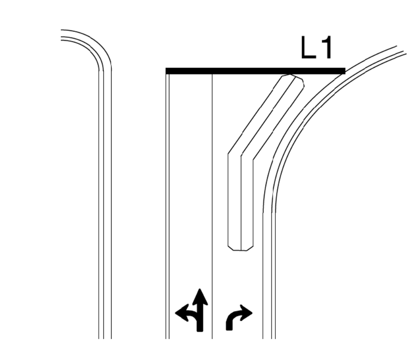


Shared Lane/
Wide Radius Turn

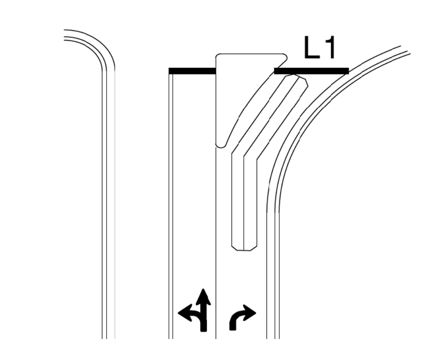
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

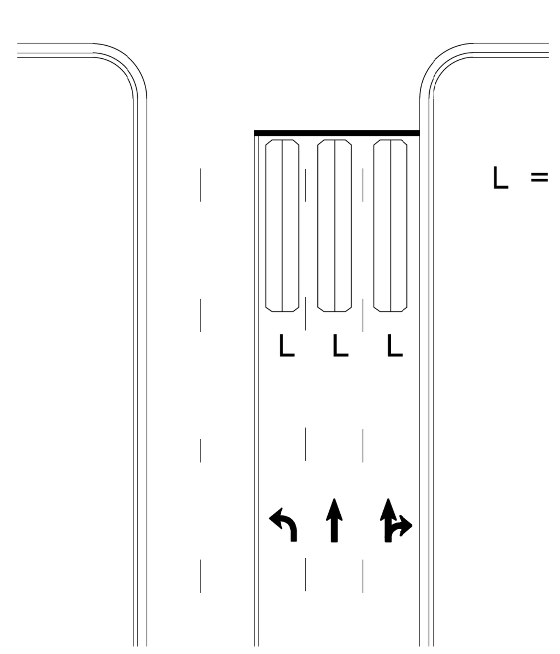


Wide Radius Turn



Channelized Turn

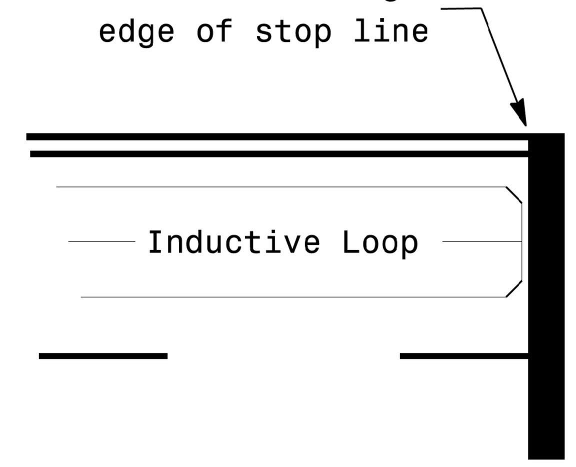
Side Street Detection



L = 6ft X 40ft
Quadrupole loop
Wired to separate detectors/channels

Presence Loop Placement at Stop Lines

Locate loop slightly behind leading edge of stop line



Note:
Loop may be located in advance of stop line under any of the following conditions:
1) stop line is greater than 15′ from edge of intersecting roadway
2) loop detects a permissive or protected/permissive left turn
3) for an exclusive right turn lane

Recommended Number of Turns

Single 6′ X 6′ loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

6′ X 15′ Loops:
Lead-in < 150′, use 2 turns
Lead-in > 150′, use 3 turns

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:

SCALE
N/A

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 23489
PAMELA L. ALEXANDER
DocuSigned by: P.L. Alexander
1/30/2015
DATE

SIG. INVENTORY NO.

REVISIONS

8/17/99

30-JAN-2015 12:39
S:\ITS&SU\ITS Signals\Signal Design Section\Eastern Region\typical2015.dgn
palexander