

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION 6

# PLANS

**Letting Date: November 17, 2021**

**CONTRACT ID: DF00295**

**TIP NO.: -----**

**FEDERAL AID NO.: STATE FUNDED**

**WBS ELEMENT NO.: 2022CPT.06.09.10261.1 & 2022CPT.06.09.20261.1**

**ROUTE NO.: US 301, NC 59 and VARIOUS SR ROUTES**

**LOCATION: VARIES**

**COUNTY: CUMBERLAND**

**LENGTH OF PROJECT: 15.92 MILES**

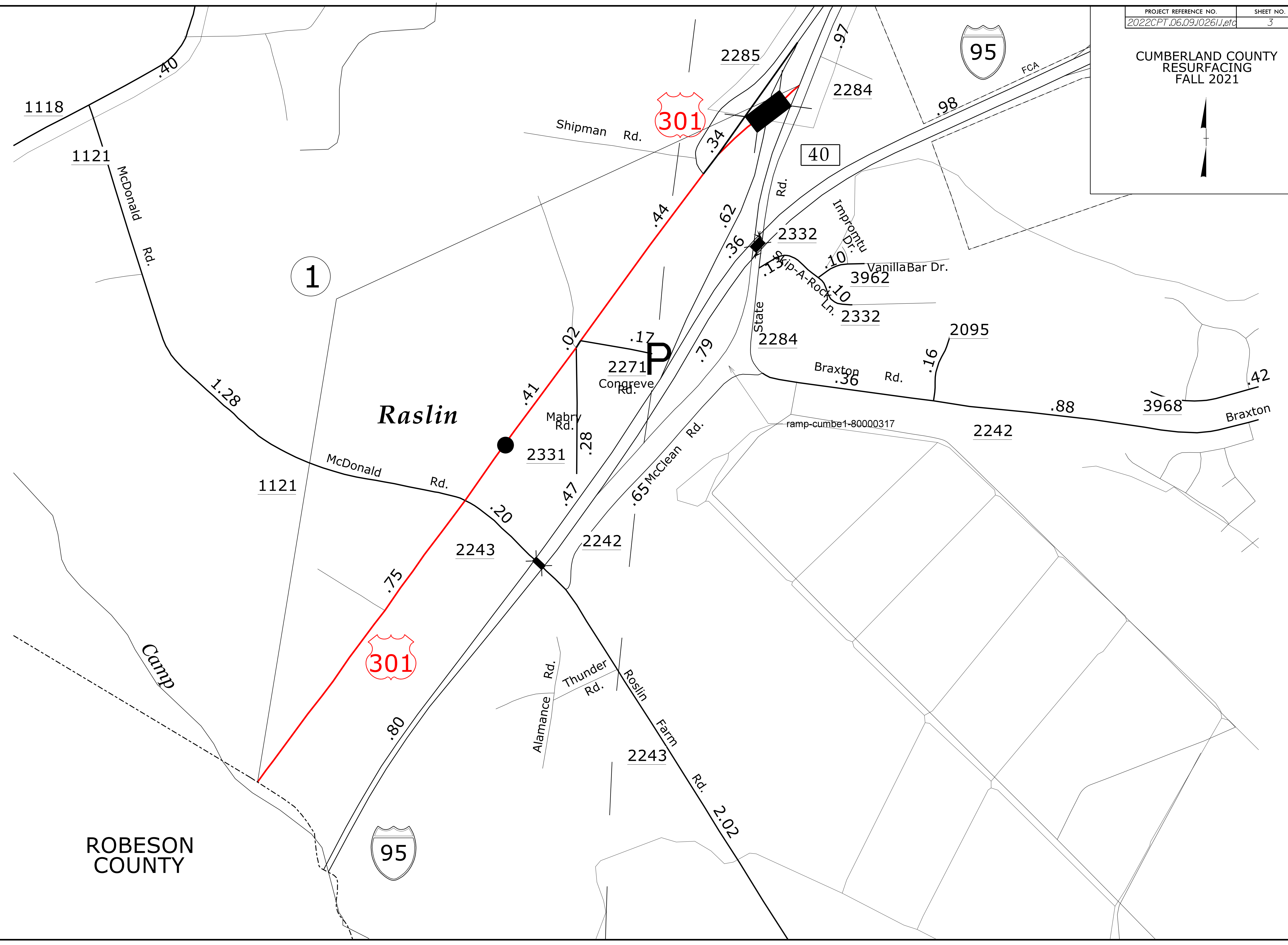
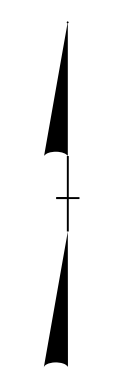
**TYPE OF WORK: RESURFACING, MILLING, WIDENING, MAT SEAL & PVT. MKGS.**

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CUMBERLAND COUNTY RESURFACING FALL 2021

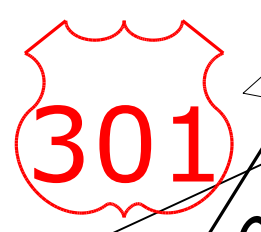


REVISIONS

8/17/99

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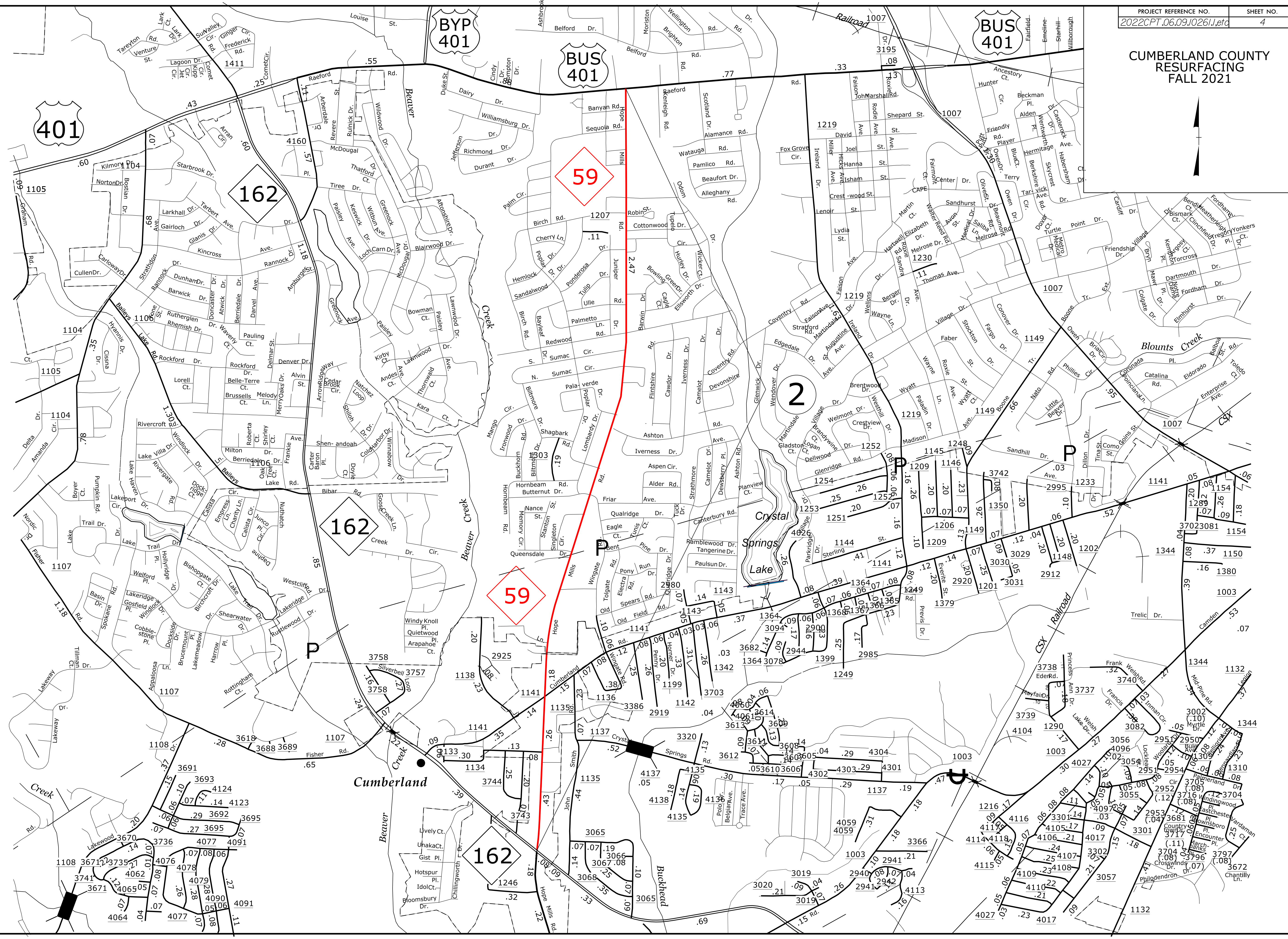
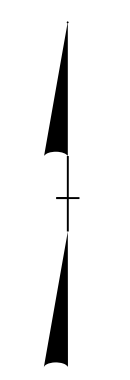
ROBESON COUNTY



1

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### CUMBERLAND COUNTY RESURFACING FALL 2021



401

BUS 401

BUS 401

162

59

2

162

59

162

Cumberland

Crystal Springs Lake

CSX Railroad

Blounts Creek

Creek

Beaver Creek

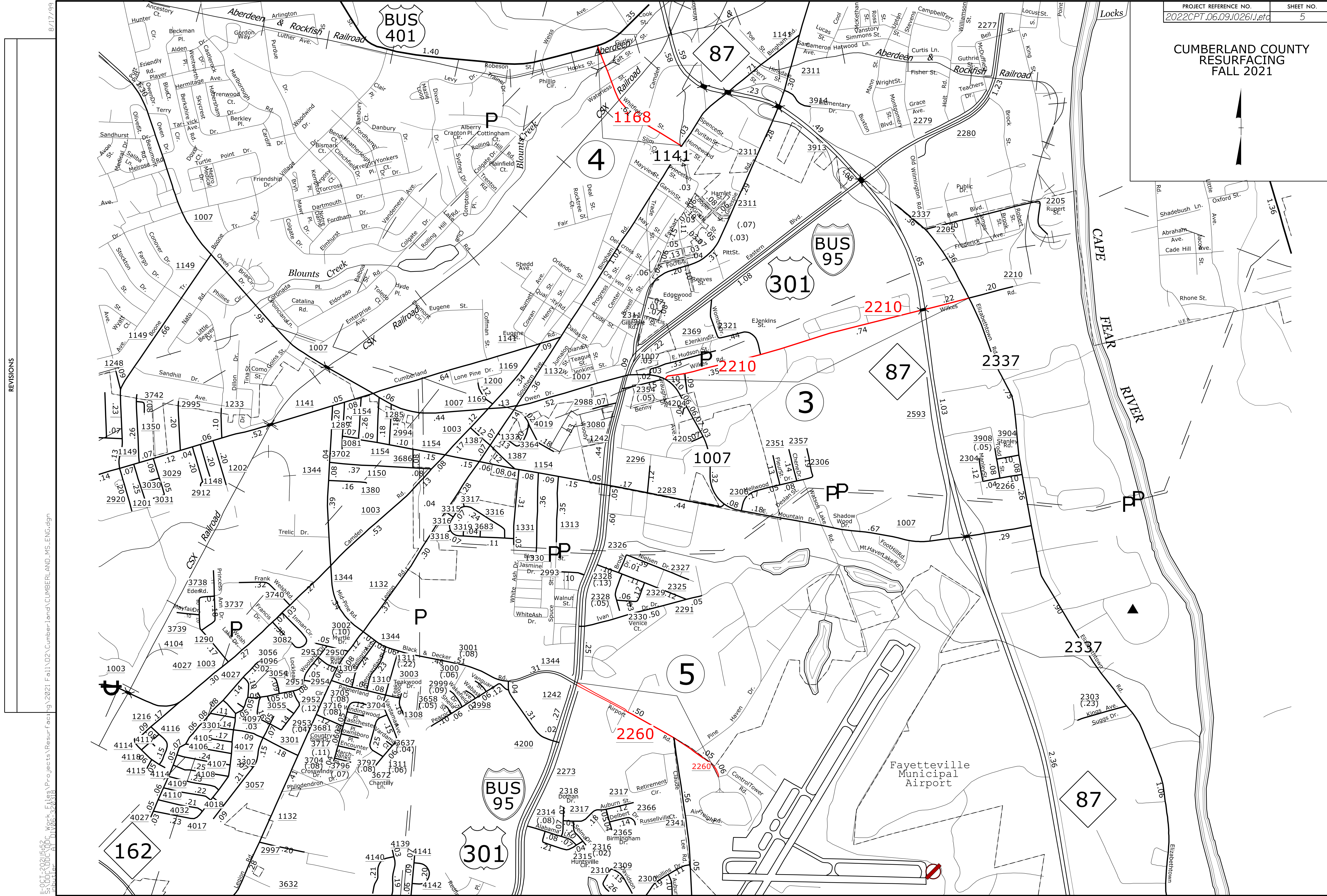
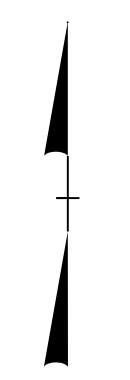
Creek

REVISIONS

8/17/99

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Author: A111065-24318

### CUMBERLAND COUNTY RESURFACING FALL 2021



REVISIONS

8/17/99

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Shaulder A 11/16/21

162

BUS 401

BUS 95

BUS 95

301

87

4

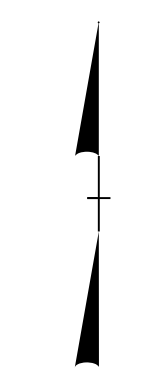
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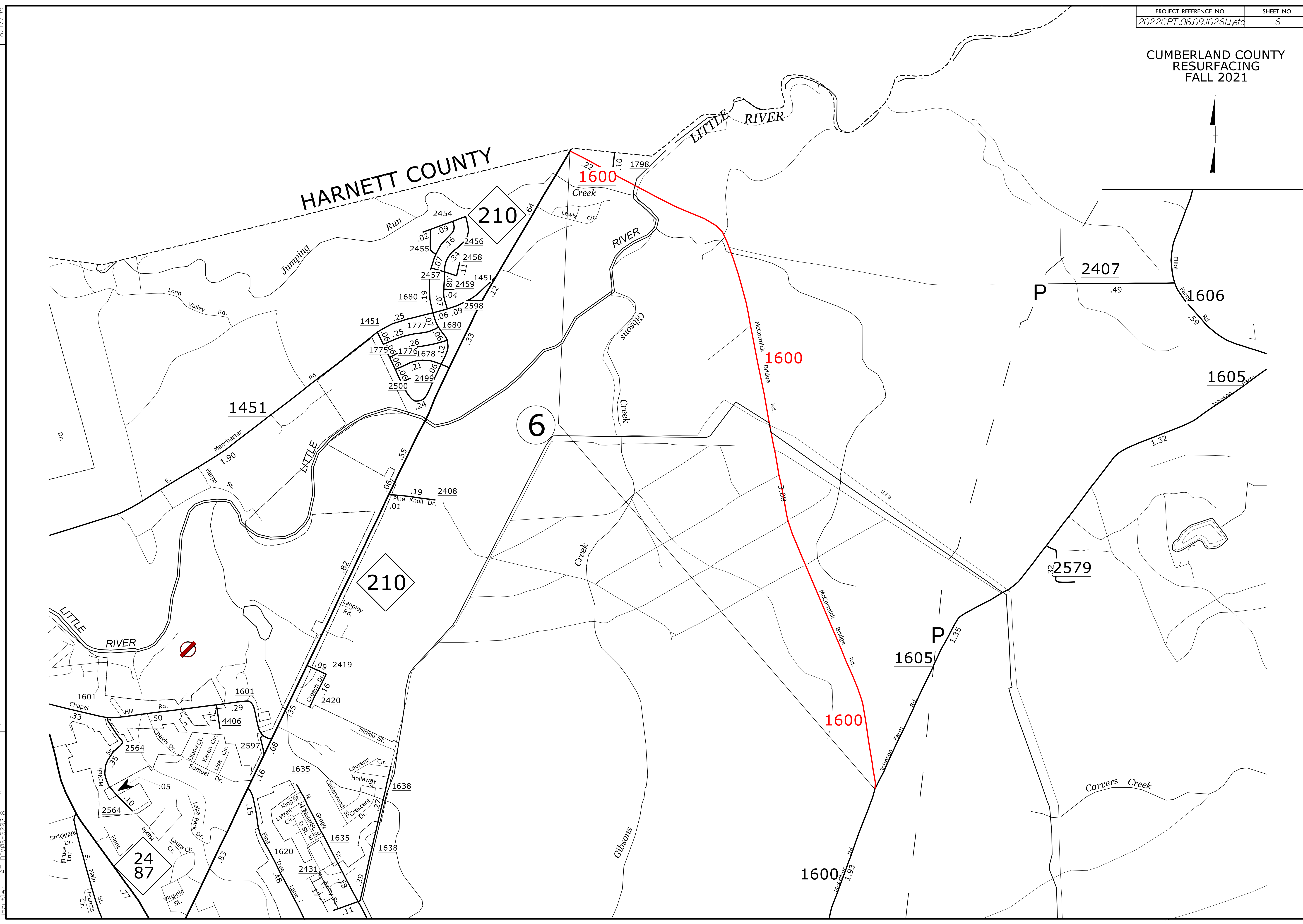
87

Map labels include street names (e.g., Aberdeen, Blounts Creek, Fayetteville Municipal Airport), railroad lines (e.g., Blounts Creek Railroad, CSX Railroad), and various project numbers (e.g., 1168, 2210, 2260) highlighted in red. The map also shows topographic features like Blounts Creek and the Cape Fear River.

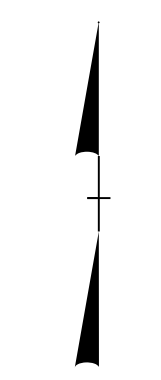
CUMBERLAND COUNTY RESURFACING FALL 2021



REVISIONS

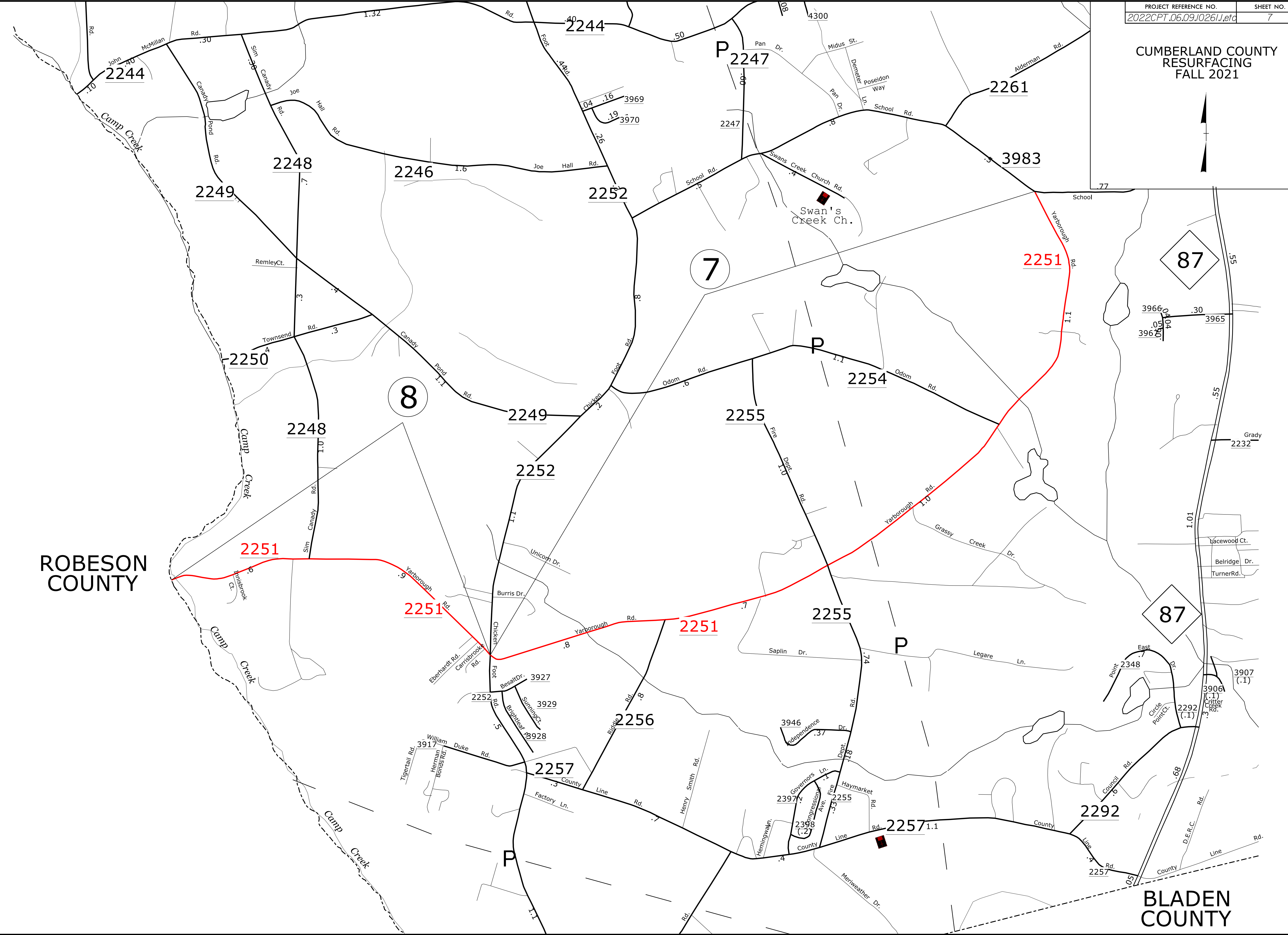


CUMBERLAND COUNTY RESURFACING FALL 2021



ROBESON COUNTY

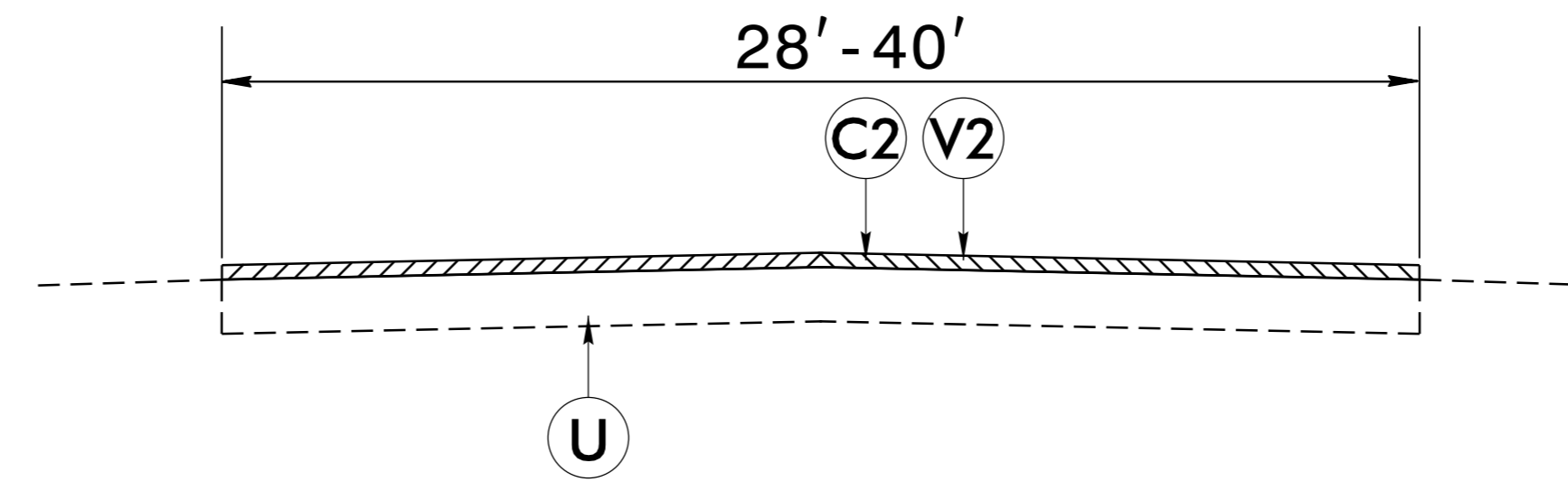
BLADEN COUNTY



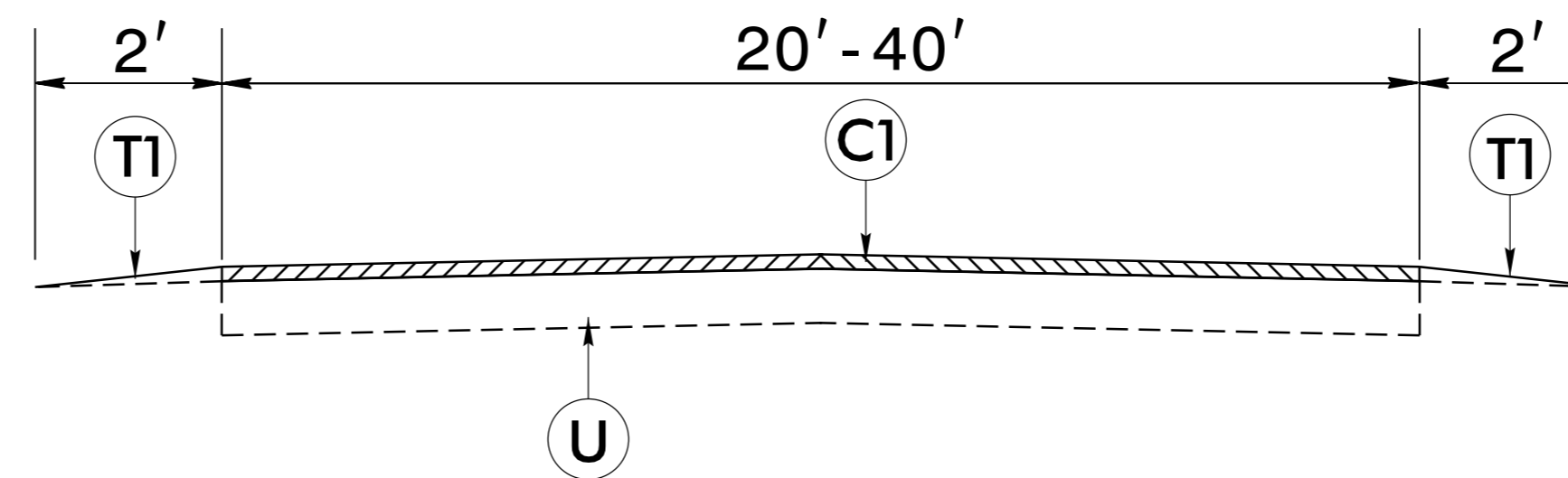
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PAVEMENT SCHEDULE	
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
E1	5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
F1	#67M MAT COAT
T1	SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW
U	EXISTING ASPHALT PAVEMENT
V1	0"-1½" MILLING
V2	¾" MILLING
V3	1½" MILLING

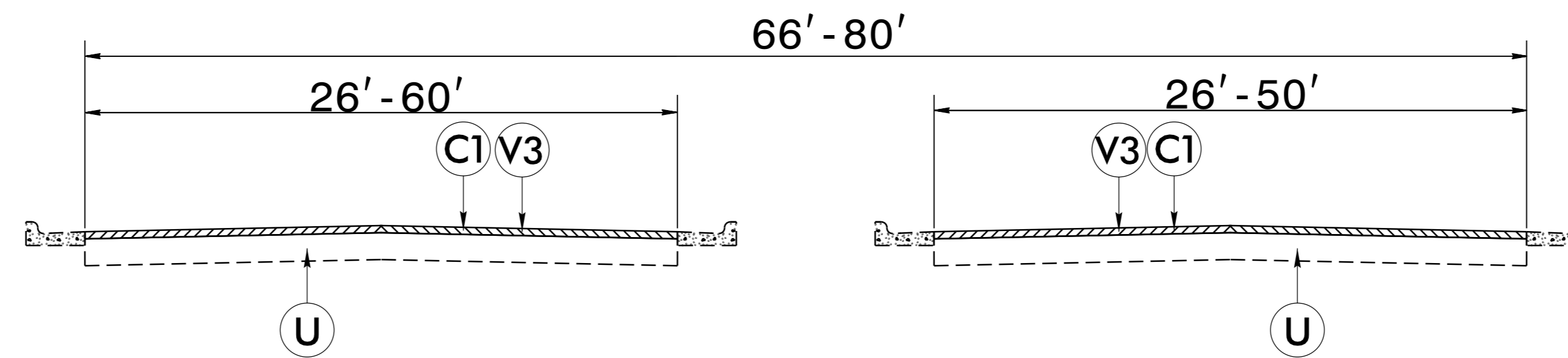


TYPICAL SECTION NO. 1

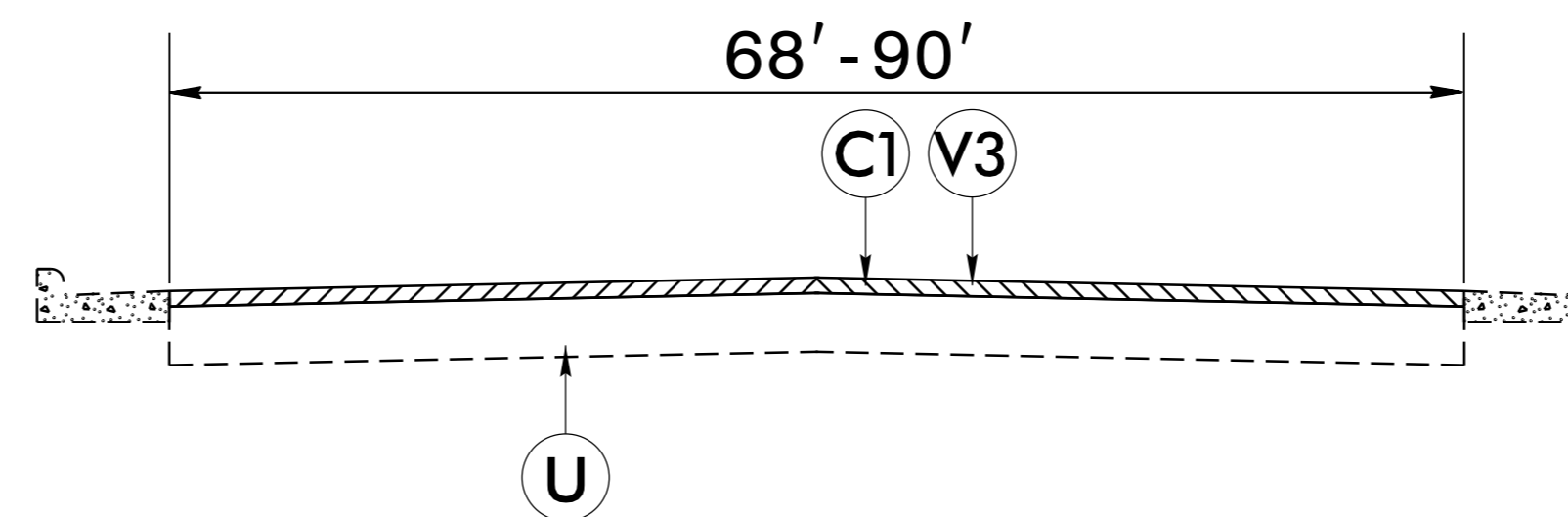


TYPICAL SECTION NO. 2

\*PLUS ADDITIONAL 2'  
INSIDE CURVE WIDENING  
ON MAP 7  
(SEE DETAIL)



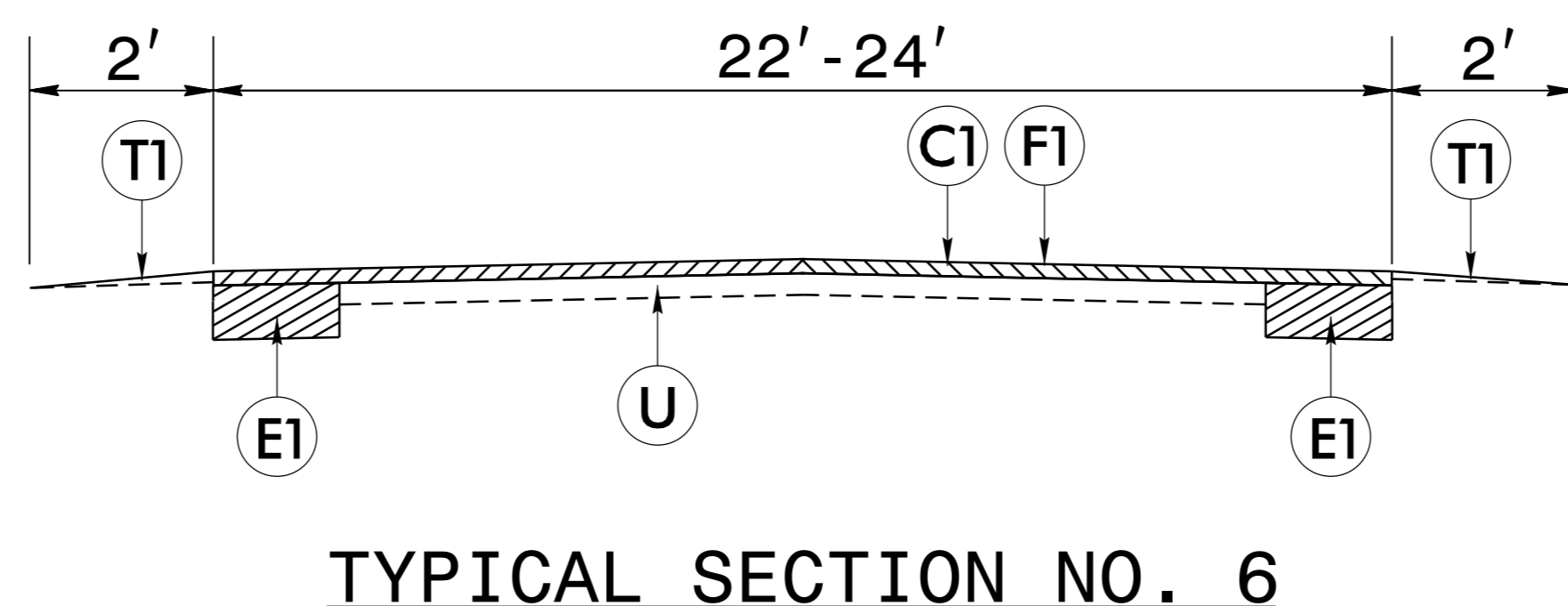
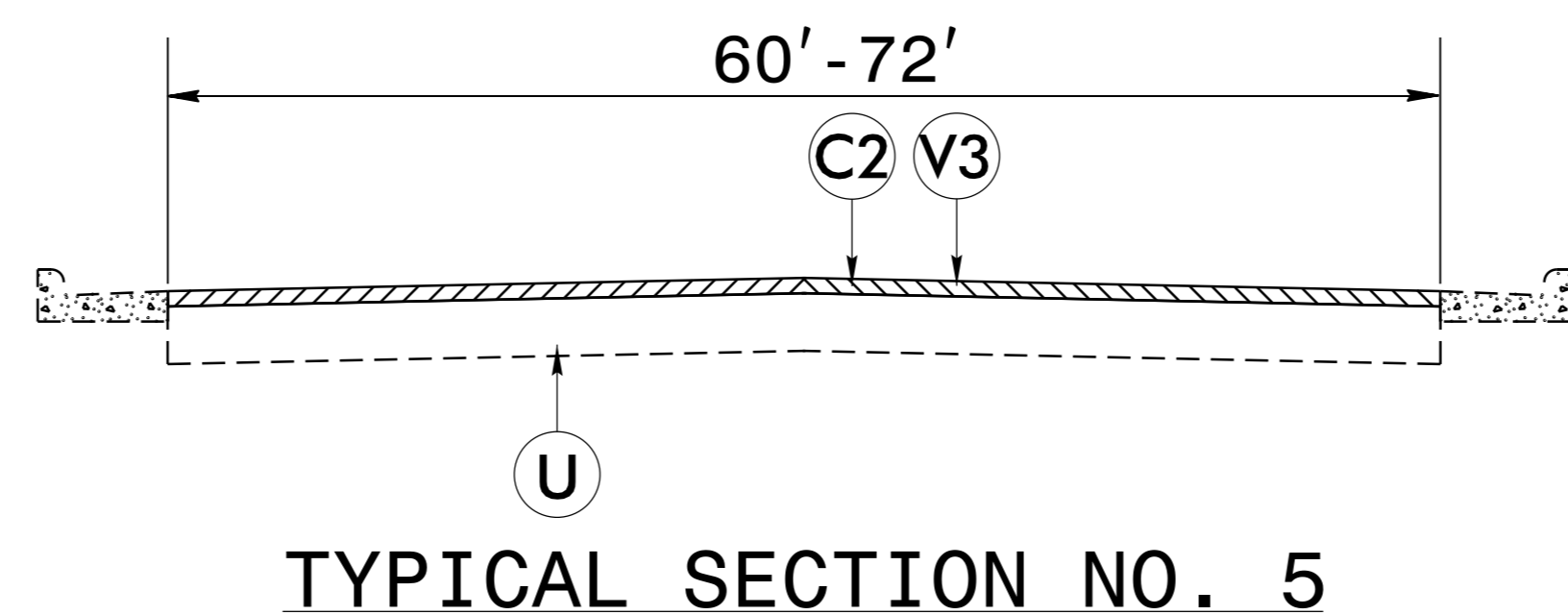
TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4



PAVEMENT SCHEDULE	
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
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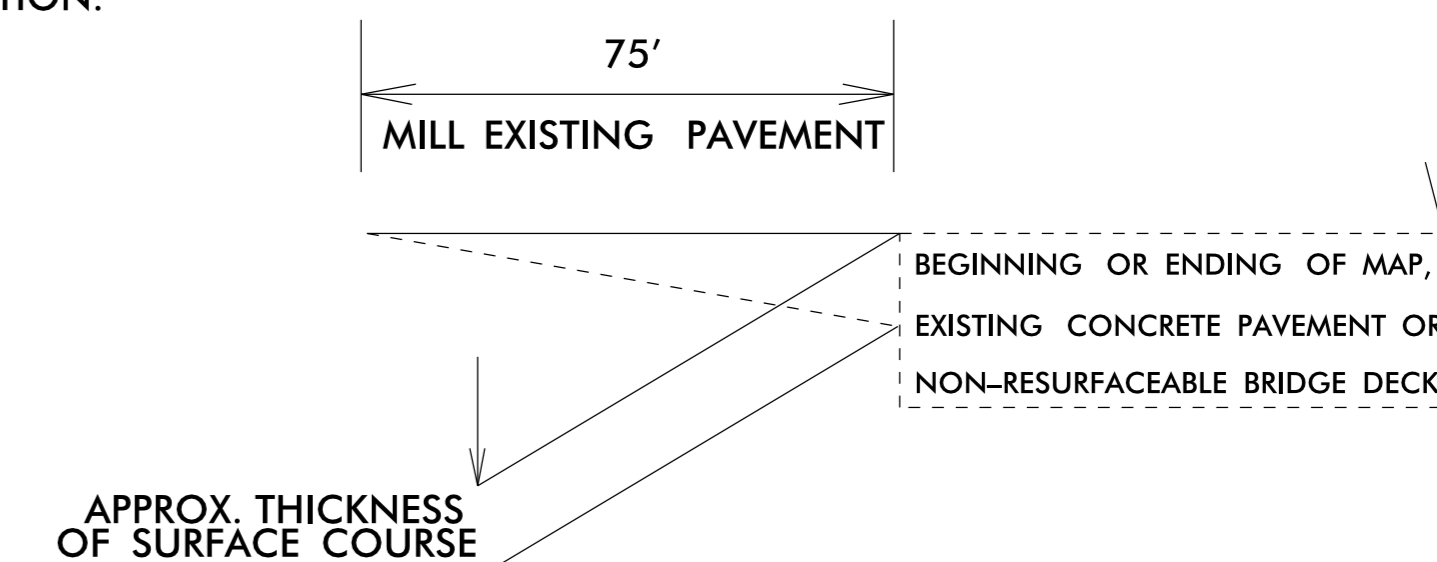


**NOTES TO CONTRACTOR**

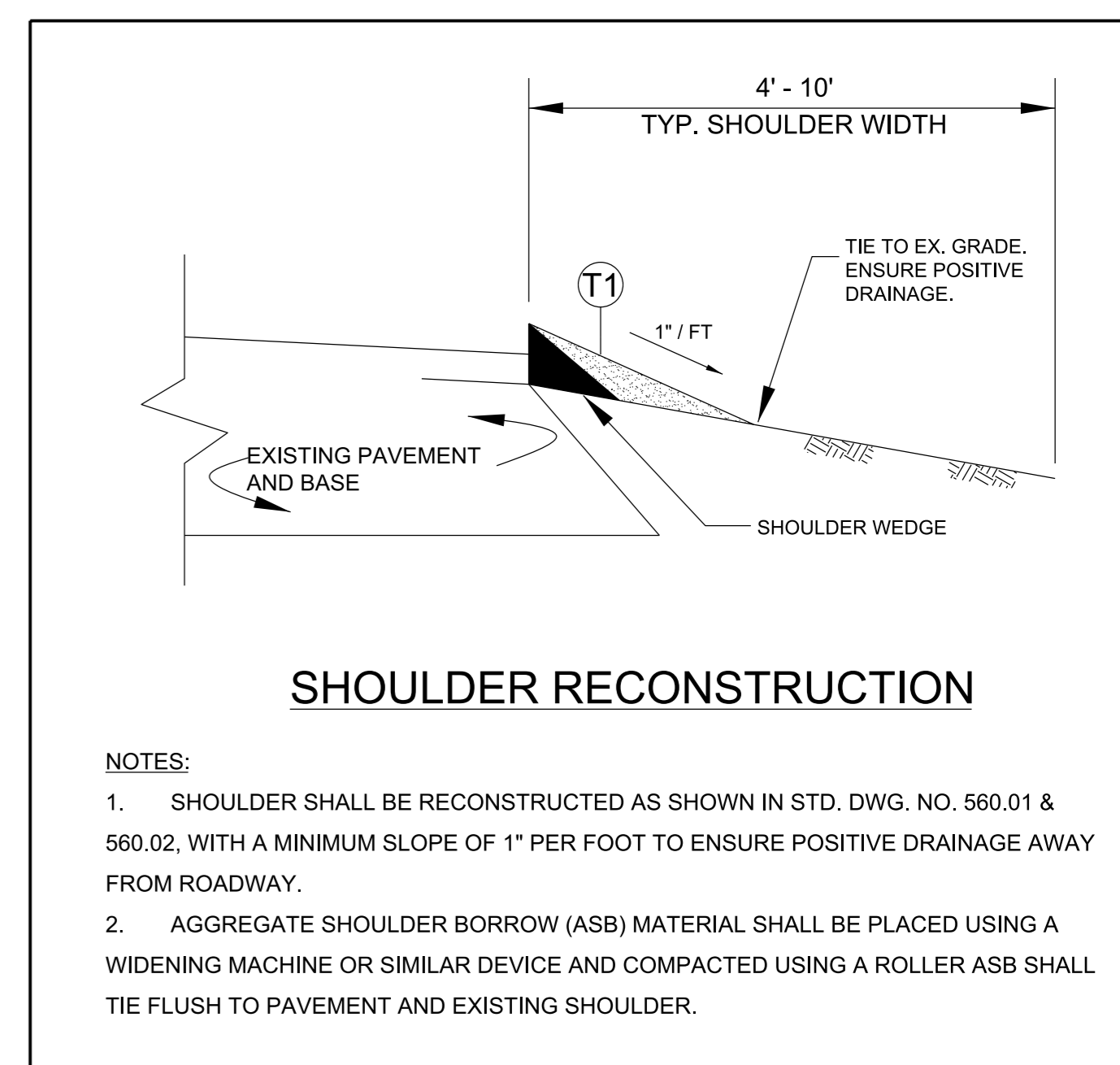
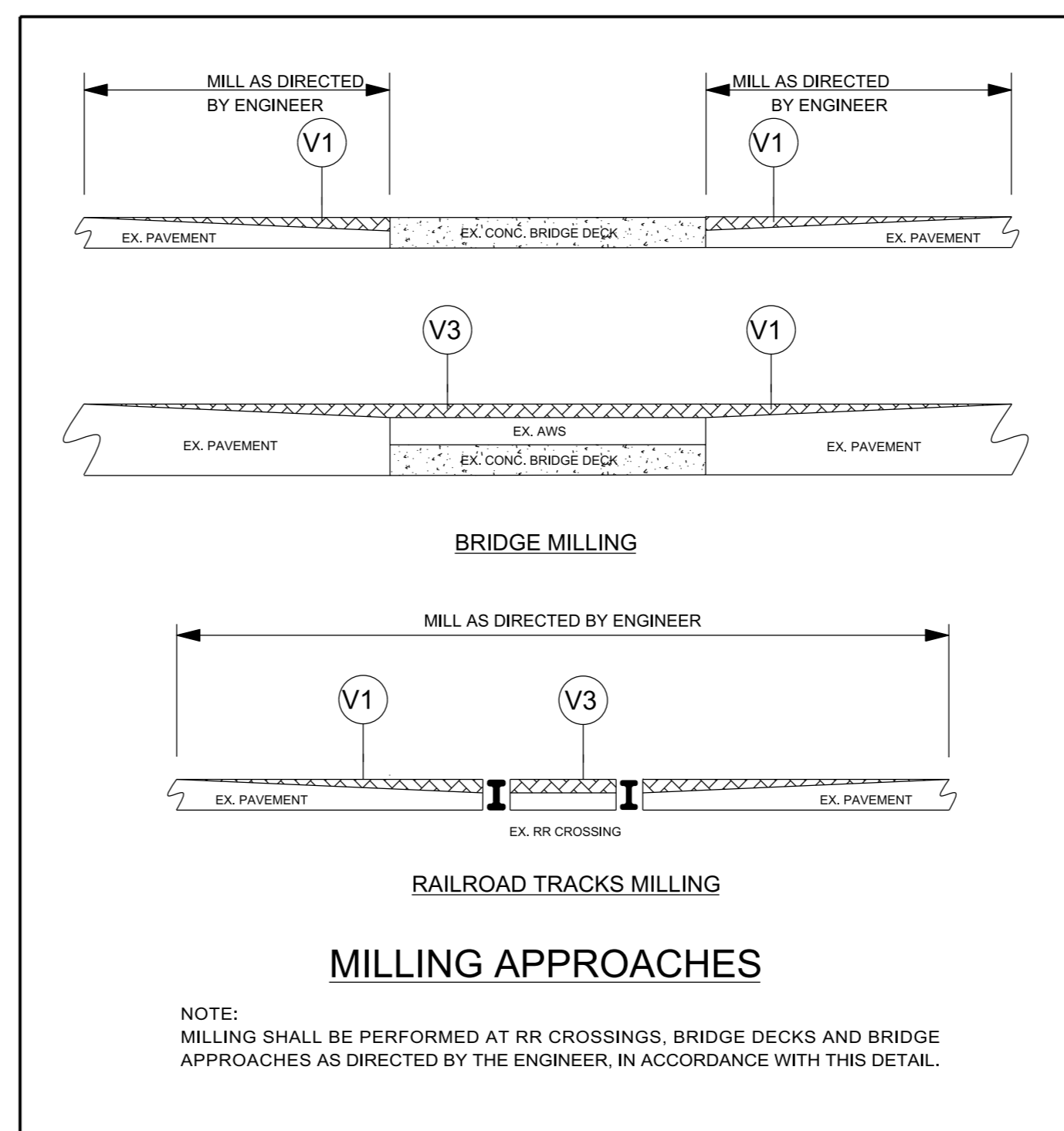
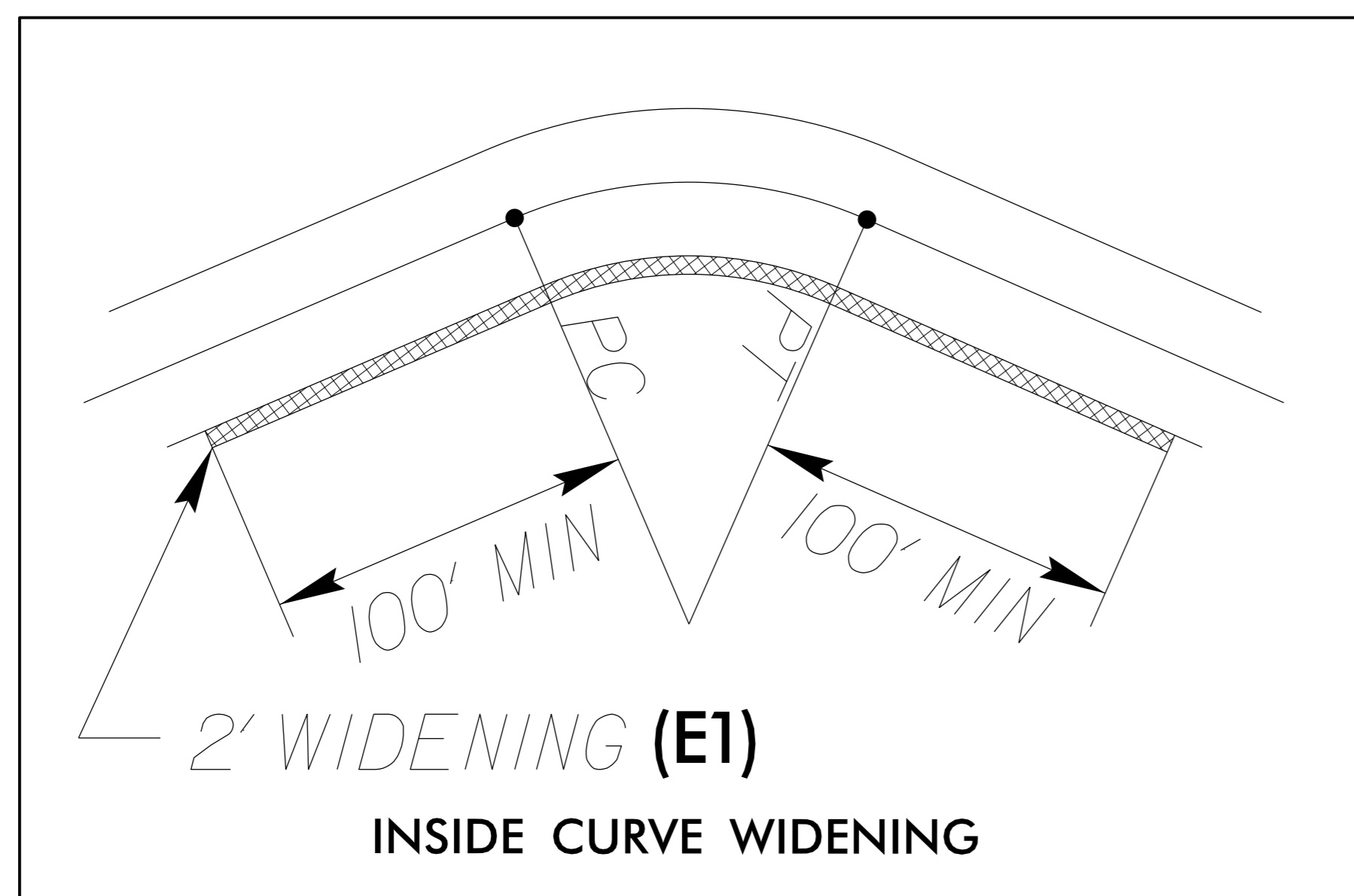
FOR SURFACE MIXES OVER 1" IN THICKNESS, MILL THE EXISTING PAVEMENT IN ACCORDANCE WITH THE FOLLOWING SKETCH AS DIRECTED BY THE ENGINEER.

LOCATIONS SHALL INCLUDE TIES INTO EXISTING CONCRETE PAVEMENT, AT BRIDGE APPROACHES WHERE THE BRIDGE WILL NOT BE RESURFACED, AND AT THE BEGINNING AND ENDING POINT OF EACH RESURFACING MAP.

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.



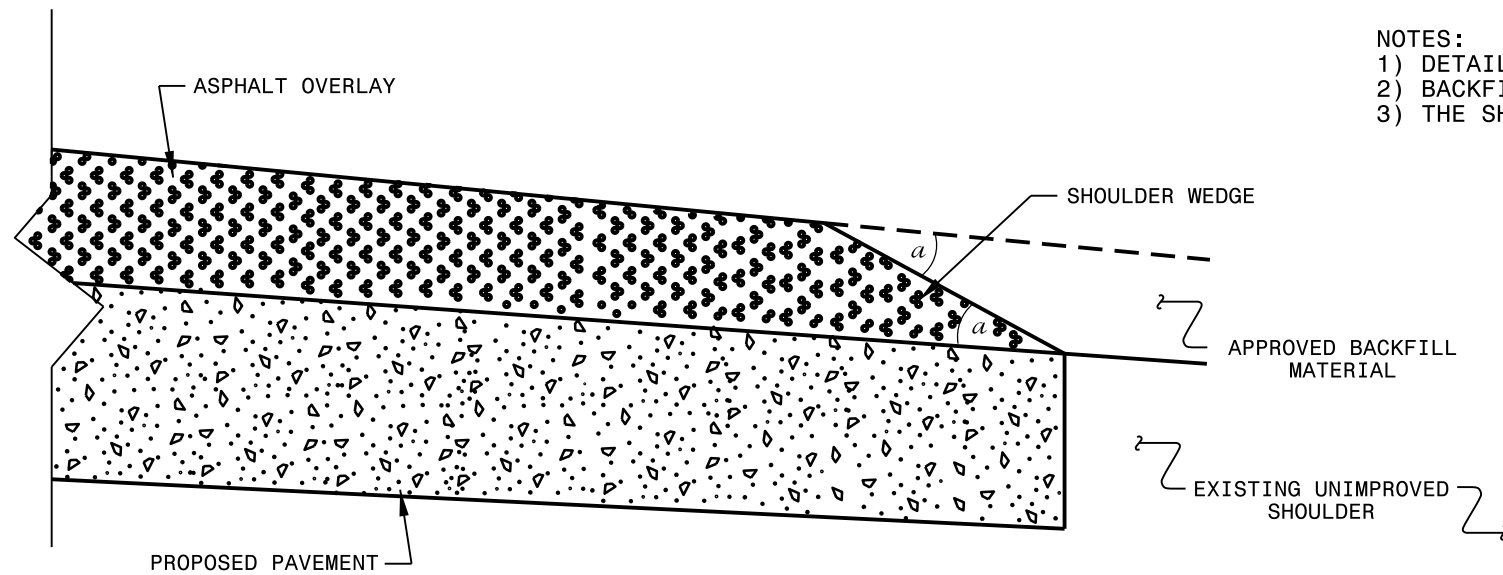
**MILLING AT PAVEMENT TIE-INS DETAIL**



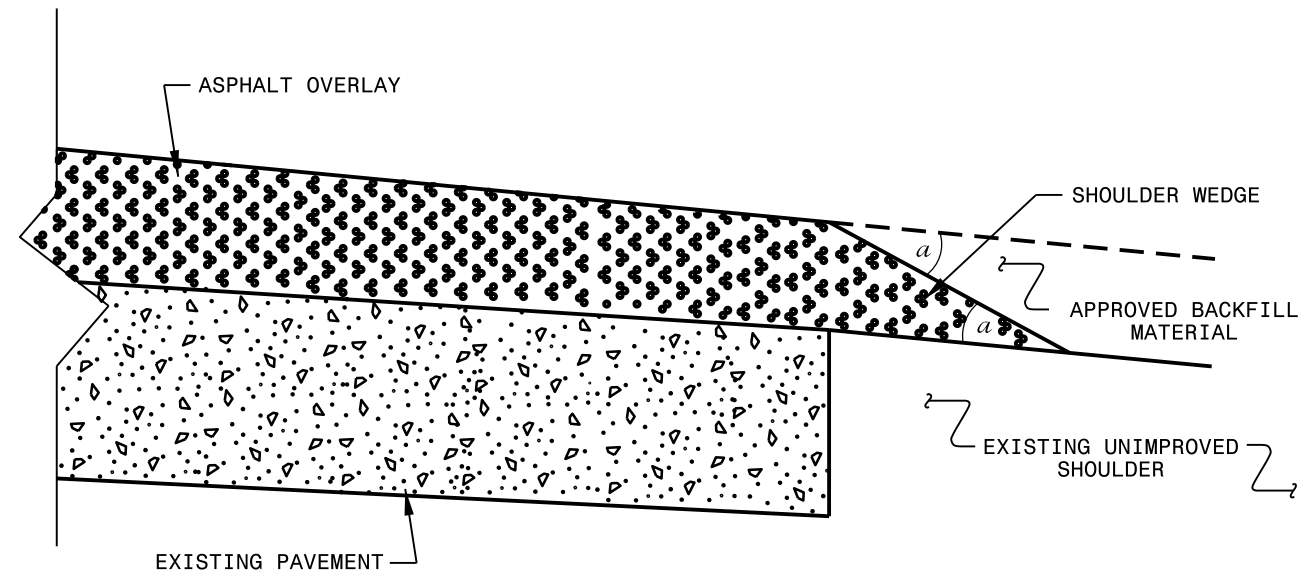
6/2/99

IL-001-20215456 Work Files\Projects\Resurfacing\2021 Fall\11\12\CumberLand\top.dgn

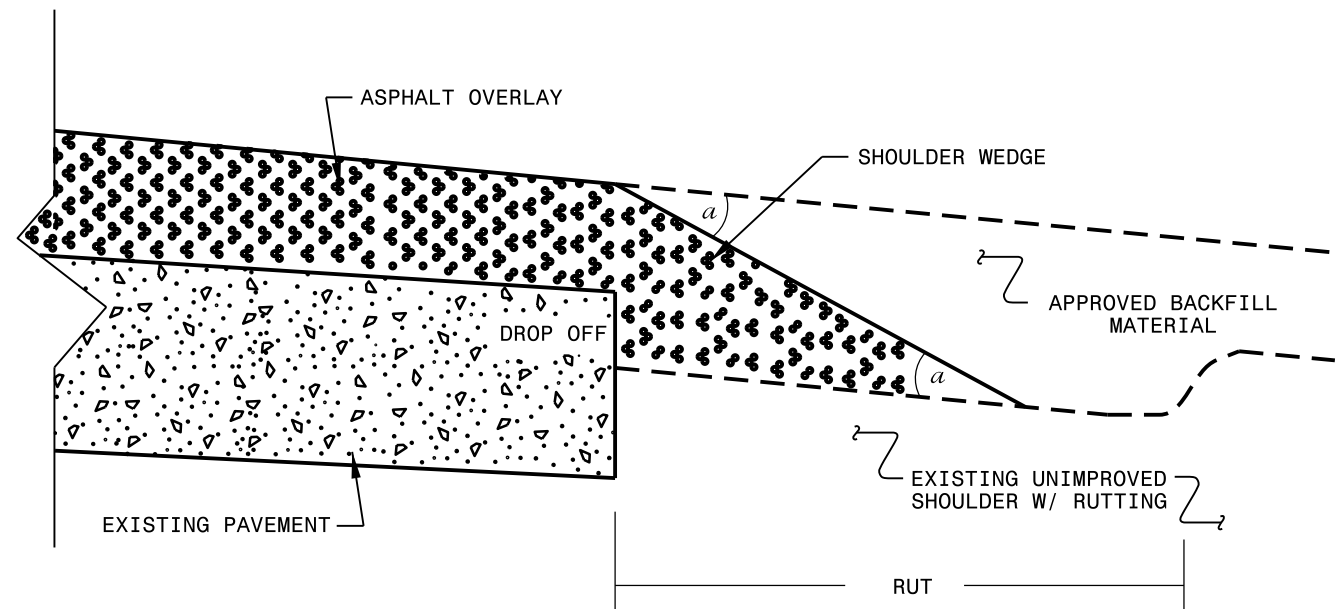
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



**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)

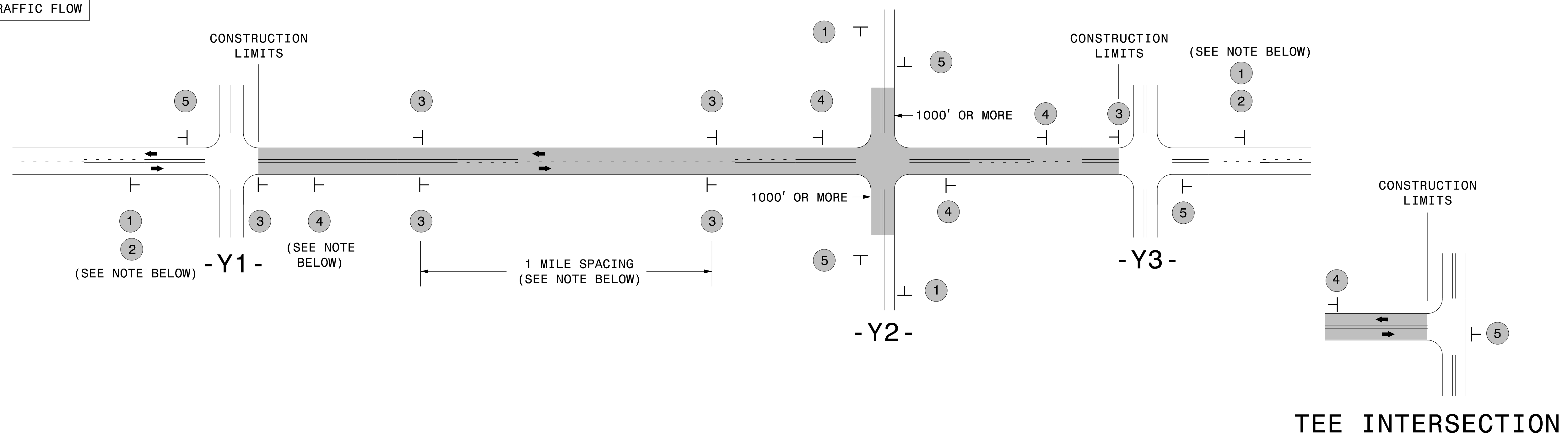
- SHOULDER WEDGE ANGLE = 30°

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>			
Office 919-707-6950		FAX 919-250-4119	
<b>SHOULDER WEDGE DETAILS</b>			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 10/16/12		
CHECKED BY:	DATE:		
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn			

SYSTEMS DESIGN  
USER NAME

# SIGNING FOR RESURFACING PROJECTS

**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW



## MAINLINE (-L-) SIGNING

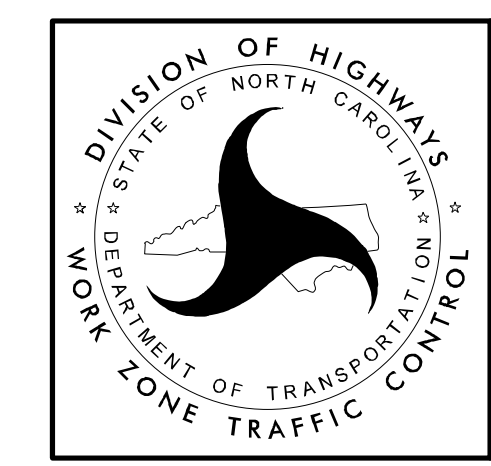
## -Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1		PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <p>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.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">             W20-1 48" X 48"            PLACED 500' IN ADVANCE OF FLAGGER.         </div> <div style="text-align: center;">             W20-7 A 48" X 48"            PLACED 250' IN ADVANCE OF FLAGGER.         </div> </div>
	2		#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		- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.	
	4		- 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		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**

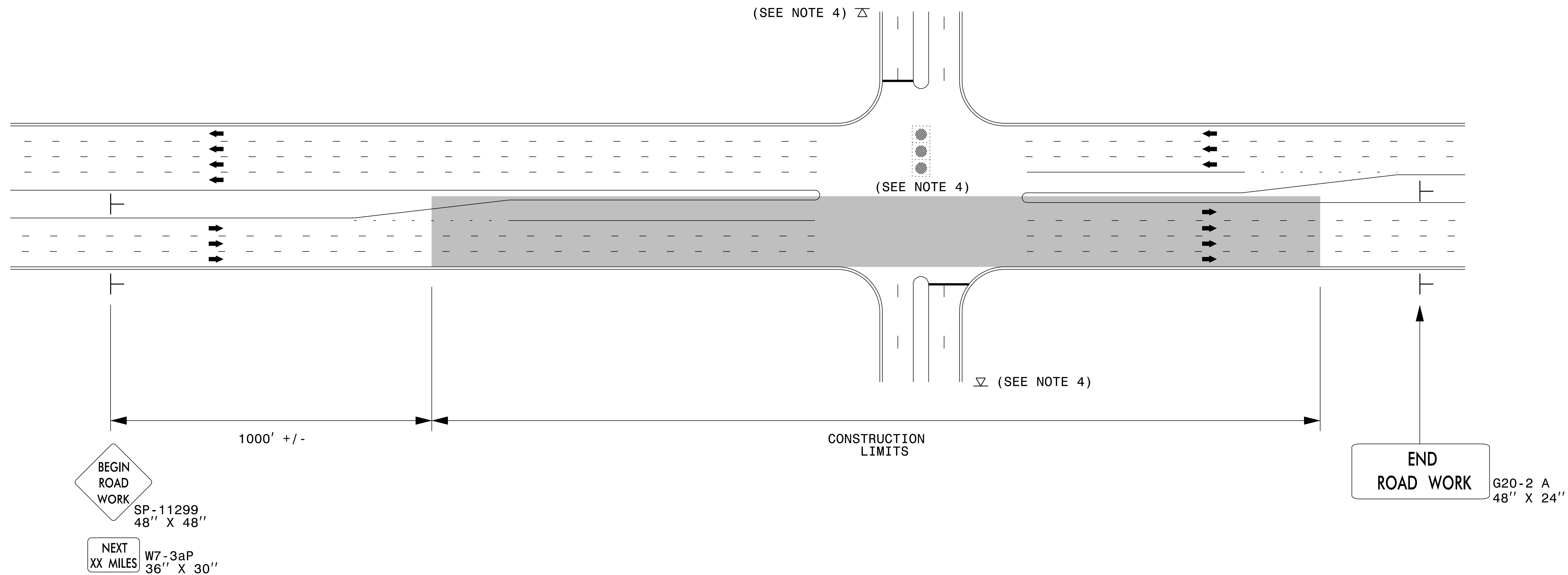
FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



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

5/15/2017 S:\TUX\WZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing\_AdvWarn\_2Ln.dgn User:kadai

## URBAN / SUBURBAN WORKZONES

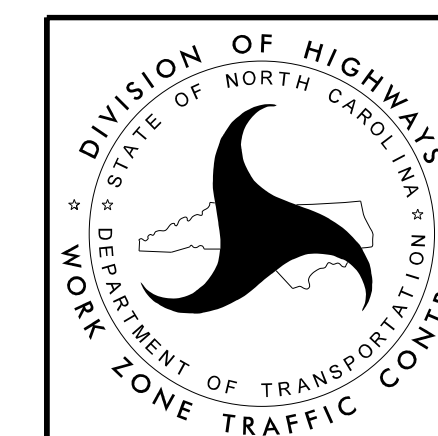


### NOTES:

- 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.

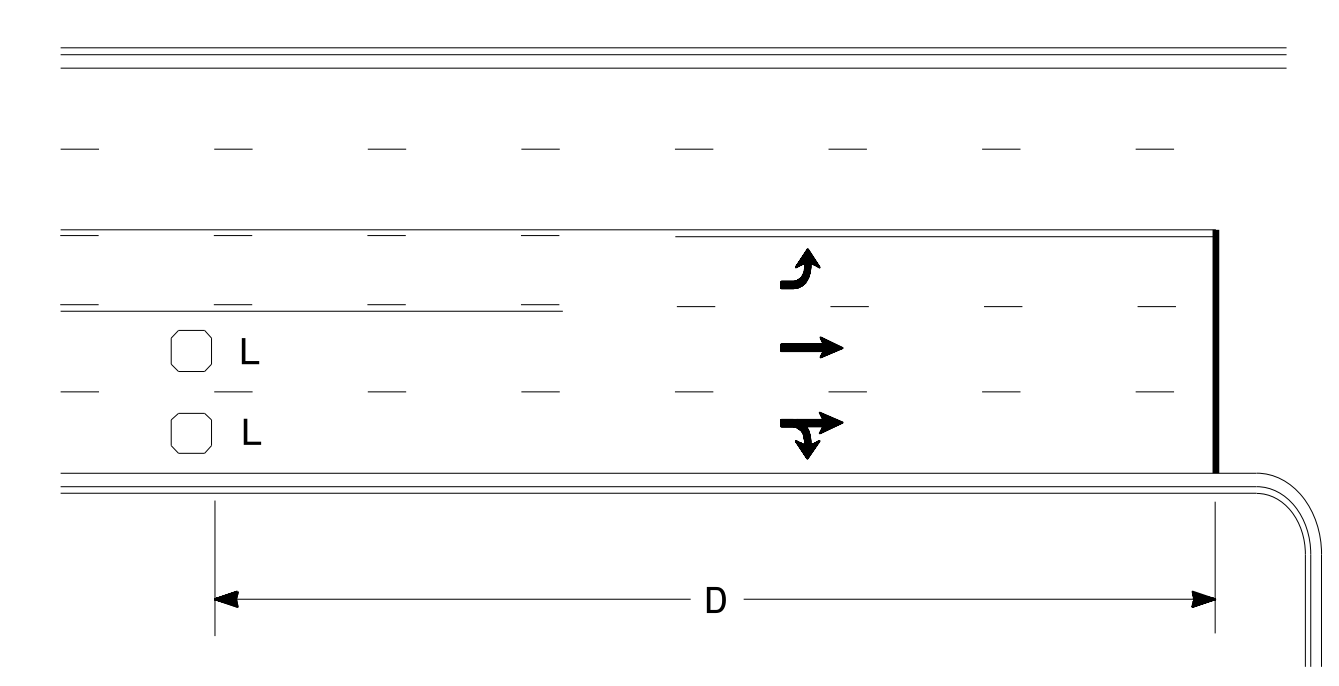
### LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



**RESURFACING ADVANCE  
WARNING SIGNS FOR  
URBAN / SUBURBAN  
FACILITIES**

### High Speed Detection (≥40 mph)

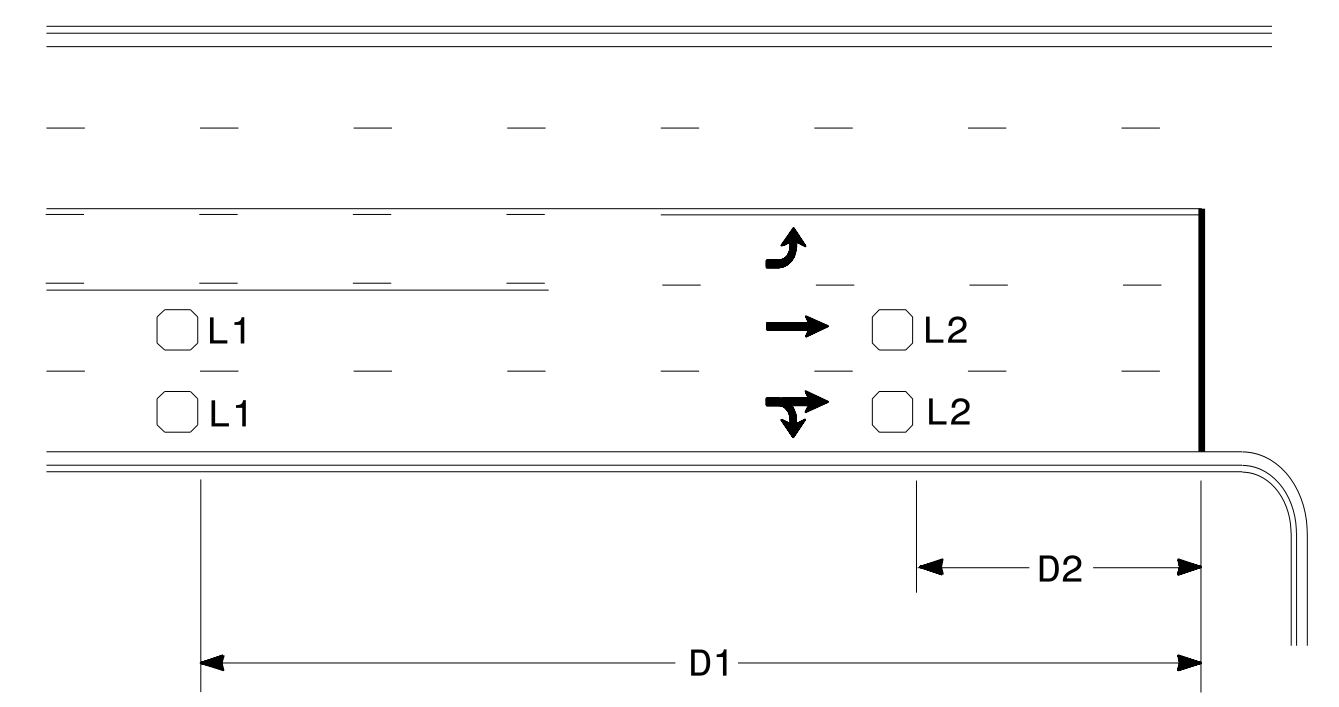


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

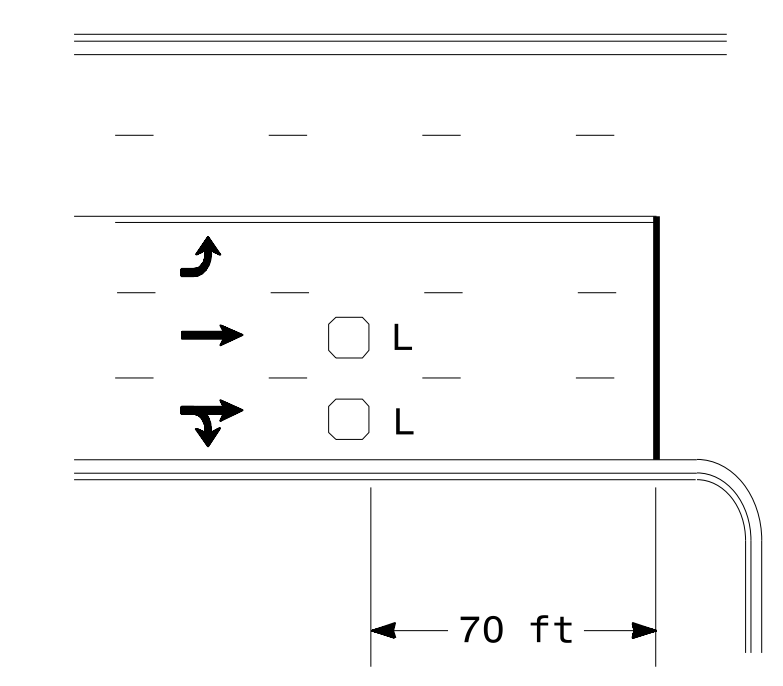


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft  
Wired in series  
L2 = 6ft X 6ft  
Wired in series

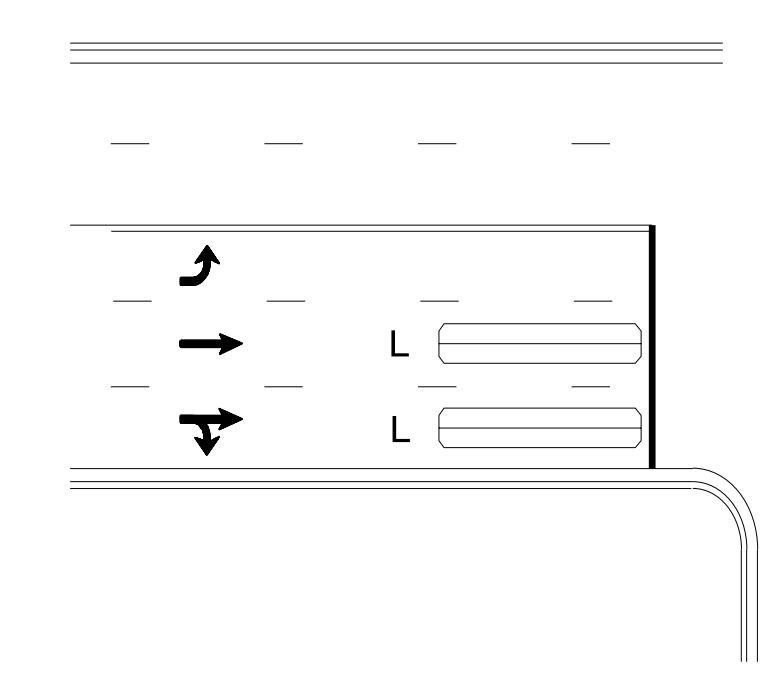
"Stretch" Operation

### Low Speed Detection (≤35 mph)



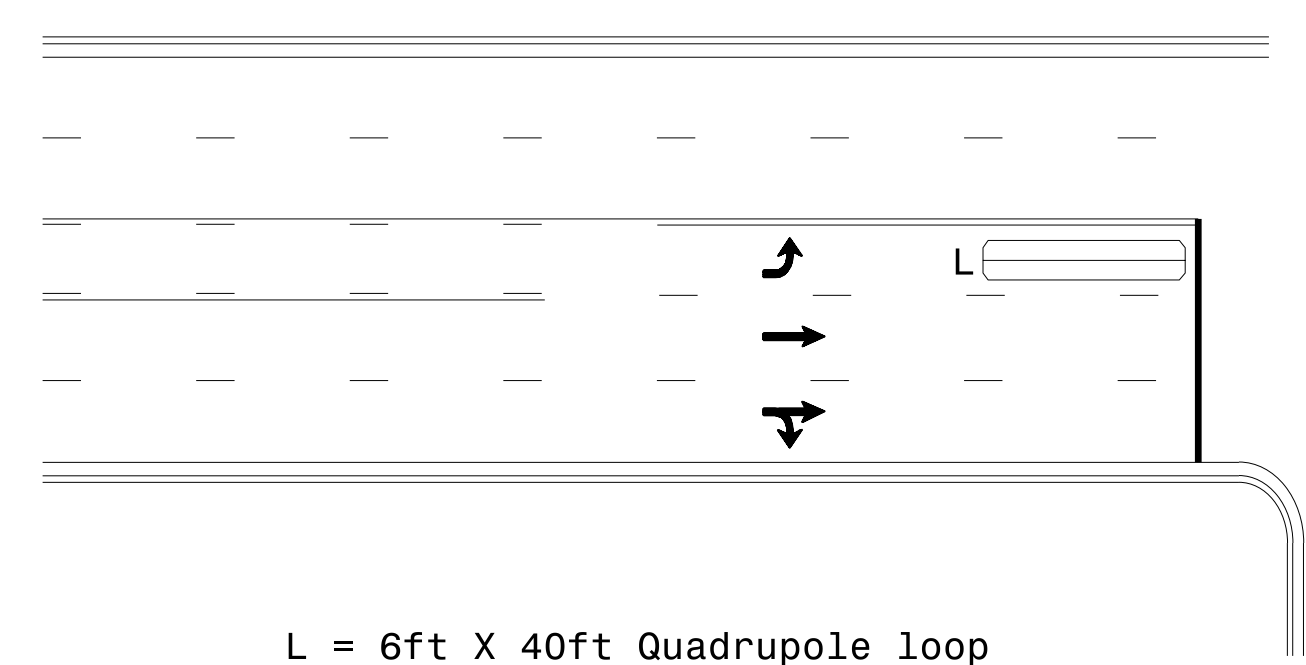
L = 6ft X 6ft  
Wired in series

OR



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

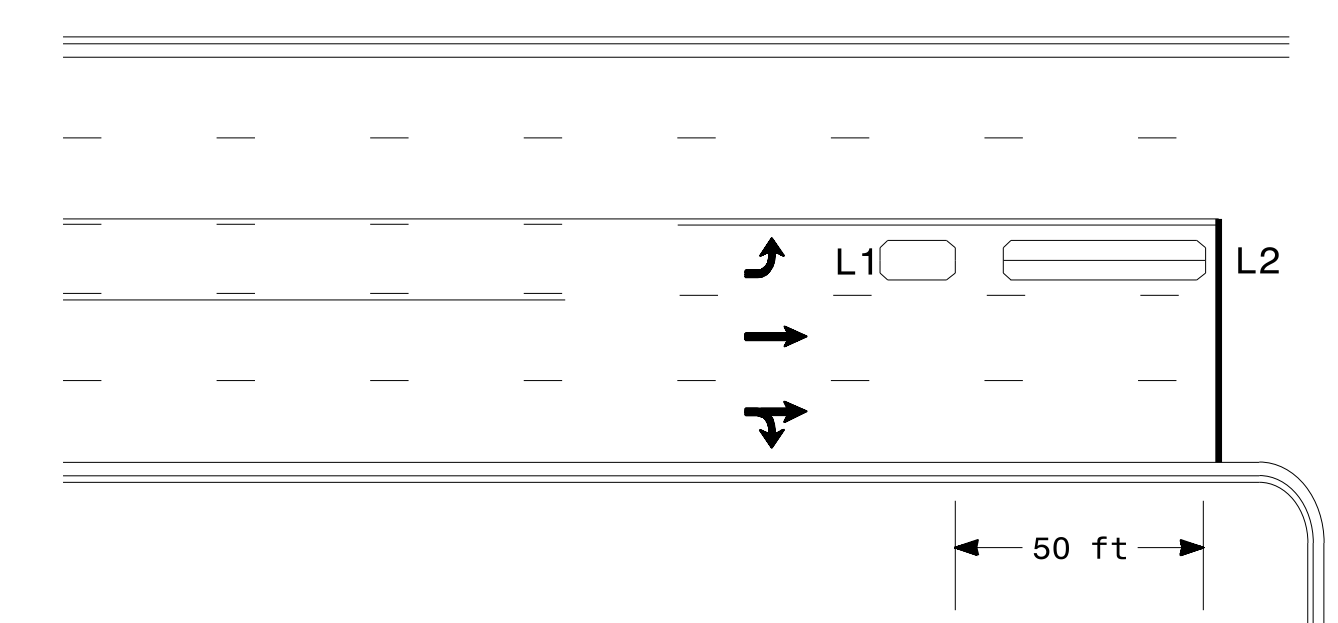
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

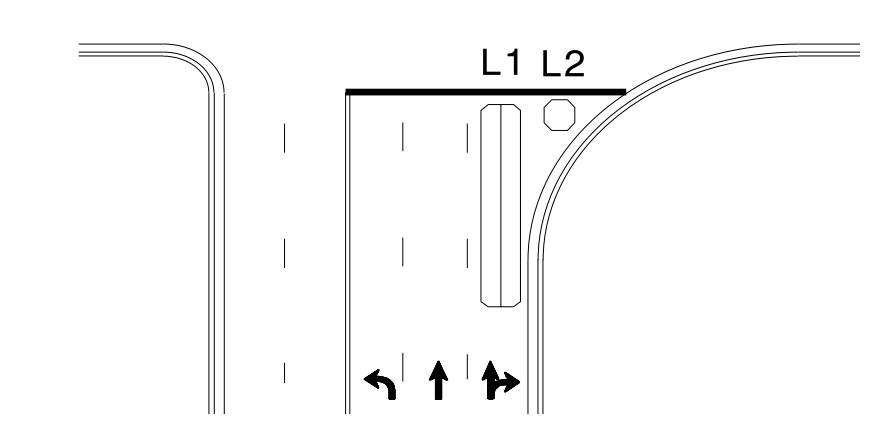
OR



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

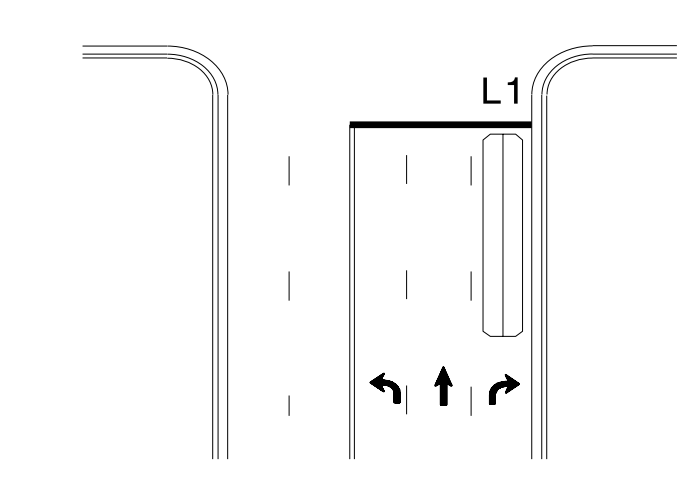
Queue Loop Detection

### Right Turn Lane Detection

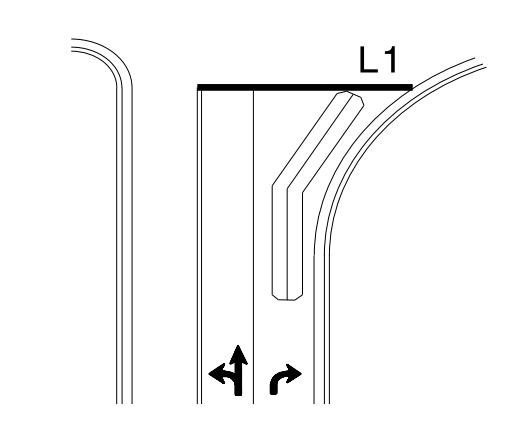


Shared Lane/  
Wide Radius Turn

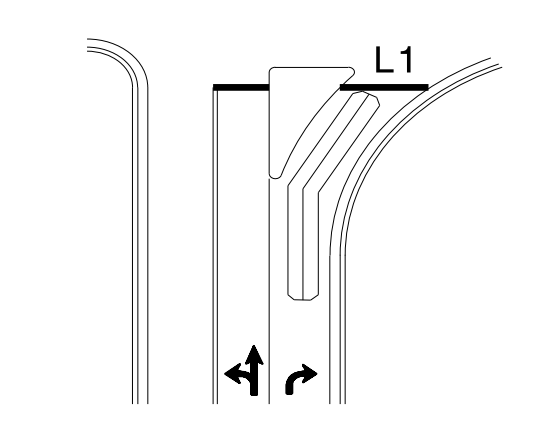
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

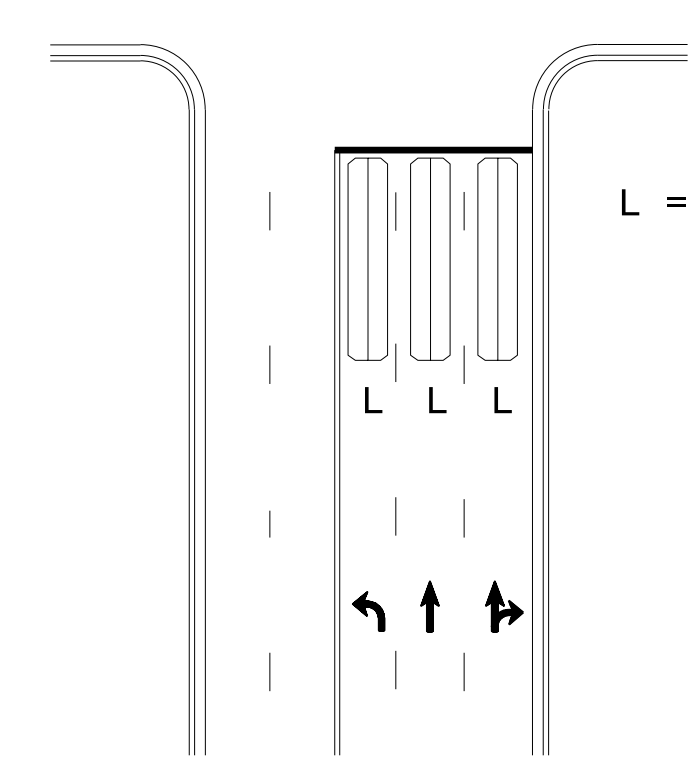


Wide Radius Turn



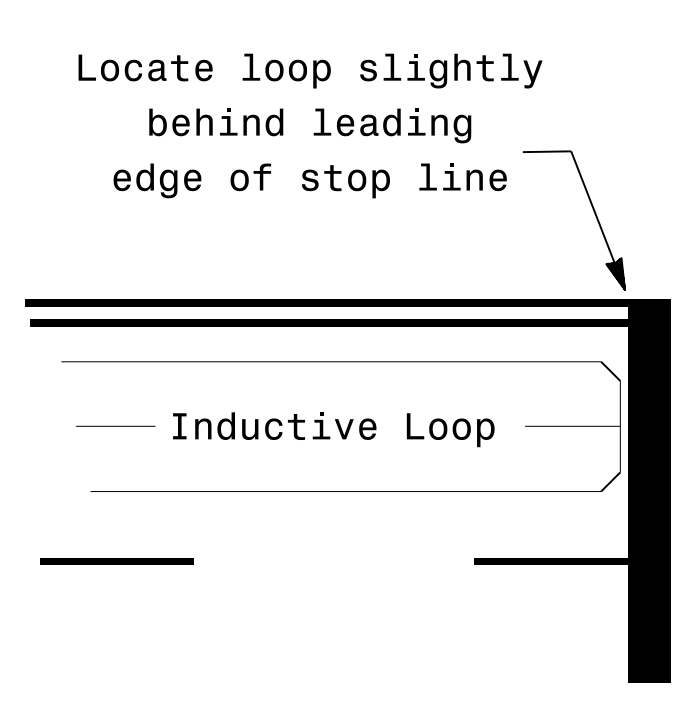
Channelized Turn

### 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

750 N. Greenfield Pkwy, Garner, NC 27529

#### Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
PAMELA L. ALEXANDER  
23489

DocuSigned by:  
*P. Alexander*  
1/30/2015 10:44:44 AM

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 pal alexander

### GUIDELINES FOR LANE WIDTHS ON RESURFACING PROJECTS

Contractor shall place the new pavement markings in accordance with this table and detail unless otherwise directed by the Engineer.

<b>TWO LANE - TWO WAY ROADWAY - 55 MPH</b>		
ROADWAY WIDTH	LANE WIDTH	SHOULDER WIDTH
18'	9' *	0'
20'	10' *	0'
22'	10'	1'
24'	10'	2'
26'	11'	2'
28'	12'	2'
32'	12'	4'

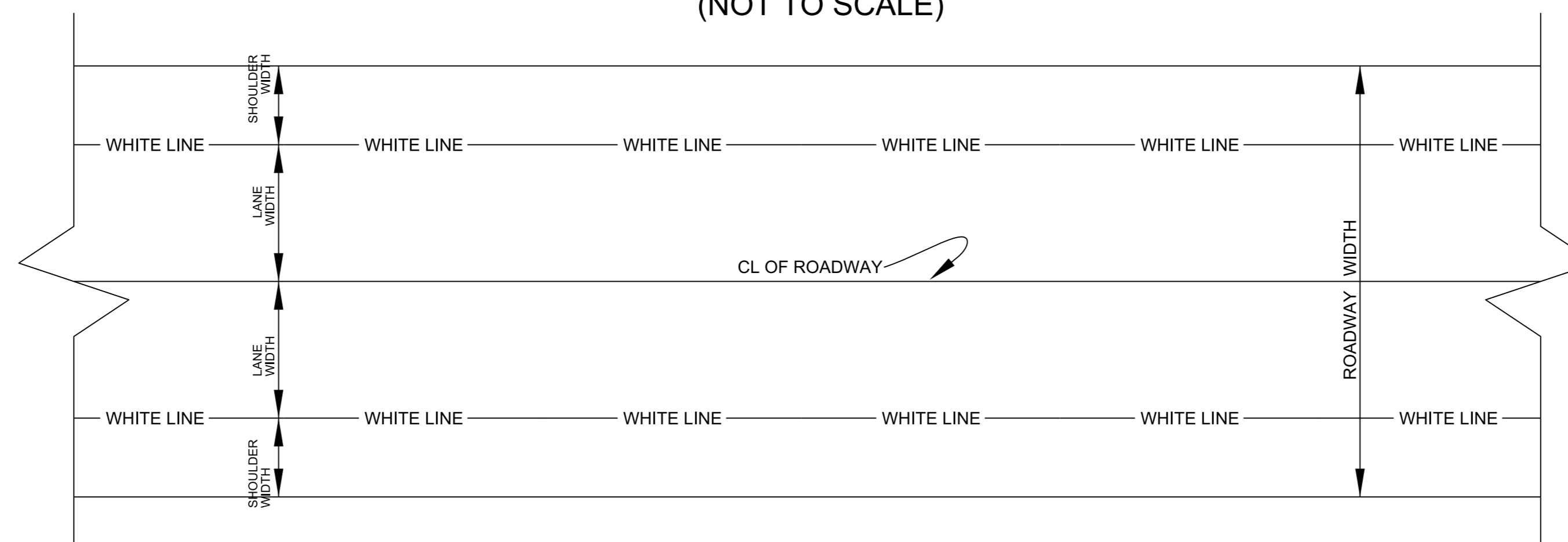
\* May vary due to pavement width

<b>TWO LANE - TWO WAY ROADWAY</b>		<b>50</b>
<b>MPH OR LESS</b>		
ROADWAY WIDTH	LANE WIDTH	SHOULDER WIDTH
18'	9' *	0'
20'	10' *	0'
22'	10'	1'
24'	10'	2'
26'	11'	2'
28'	11'	3'
32'	11'	5'

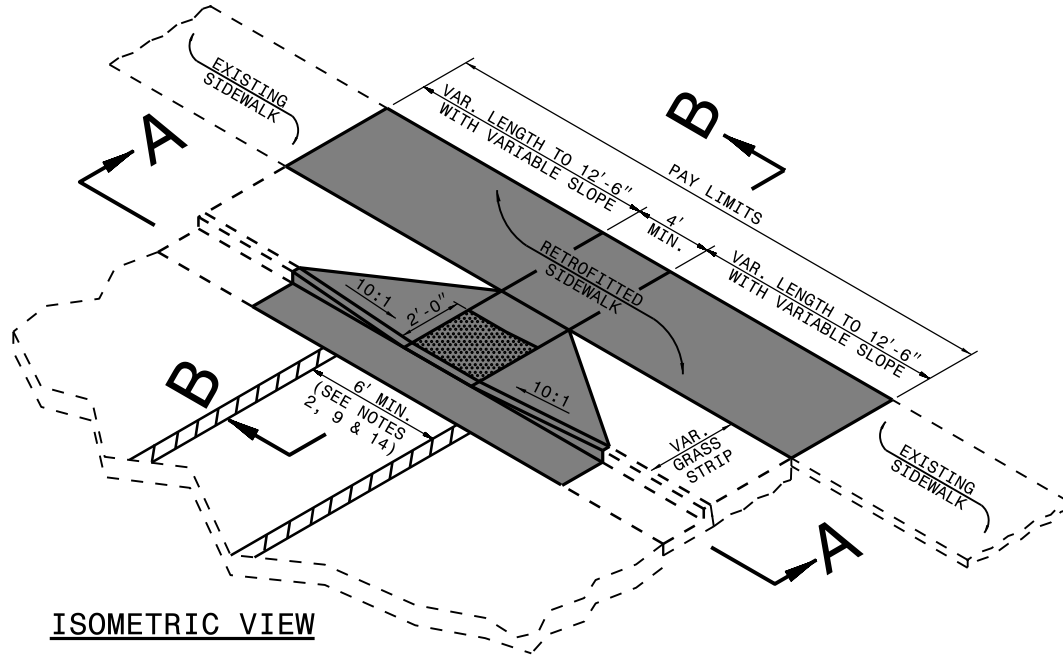
\* May vary due to pavement width

### SCHEMATIC OF ROADWAY


(NOT TO SCALE)

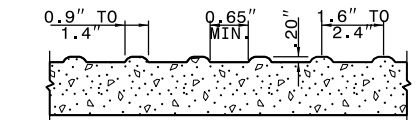
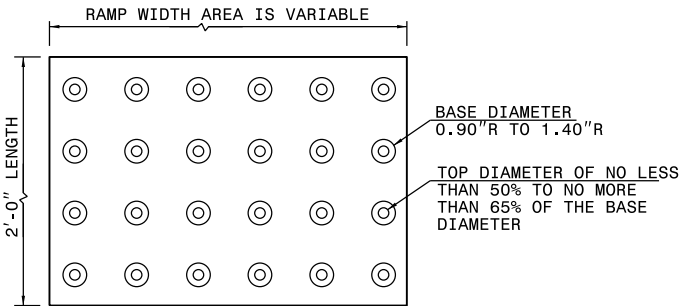


**CURB RAMP AND EXISTING SIDEWALK WITH GRASS STRIP**



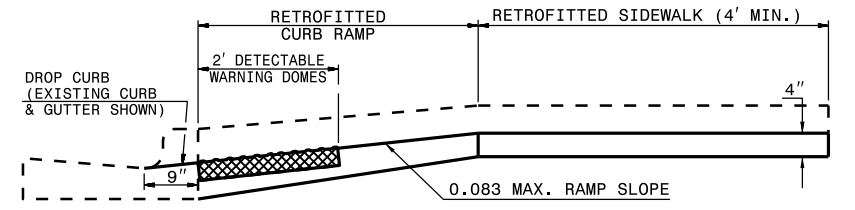
**ISOMETRIC VIEW**

 PAY LIMITS OF CURB RAMP

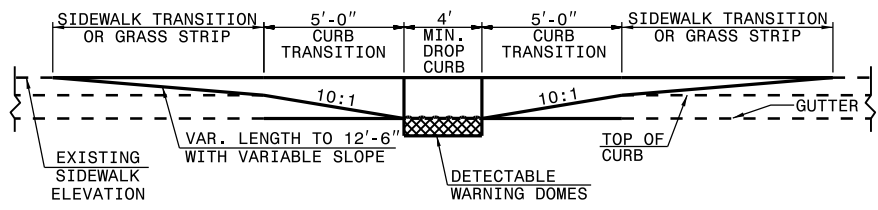


**DETECTABLE WARNING DOMES**

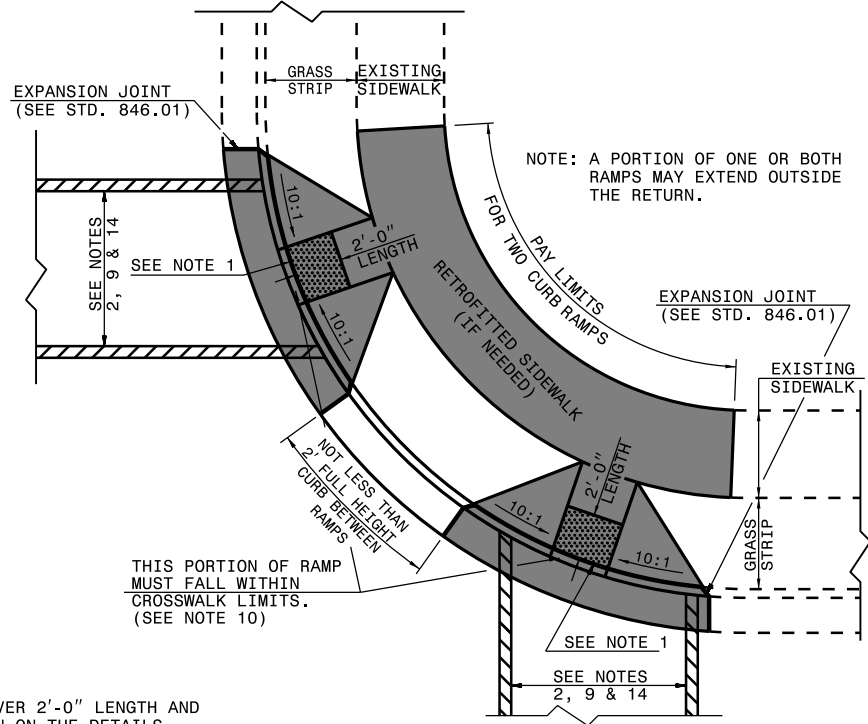
- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
  2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



**SECTION B-B**



**SECTION A-A**



**PLAN VIEW**

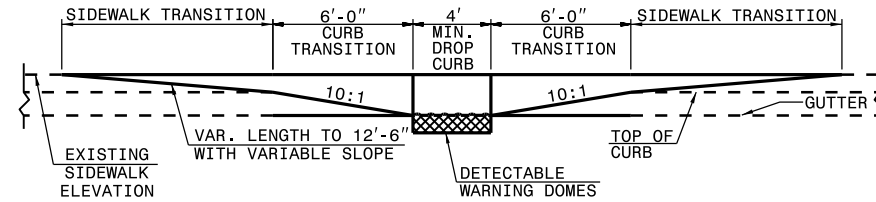
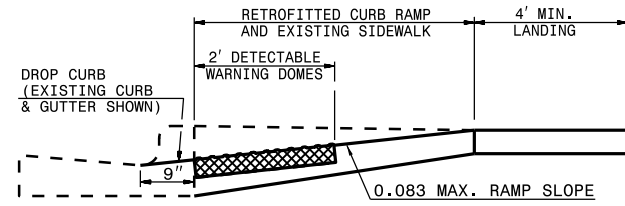
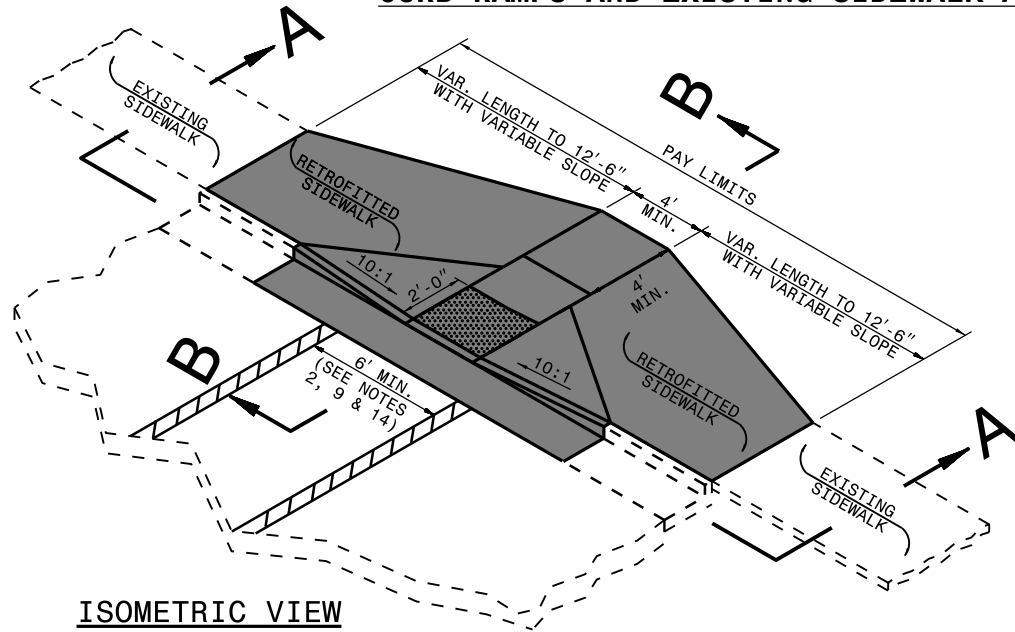
DUAL RAMPS  
ANY RADII  
(40" MIN. FLOOR WIDTH)

1-18

ROADWAY STANDARD DRAWING FOR

**CURB RAMP**  
EXISTING CURB AND GUTTER

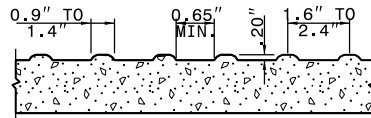
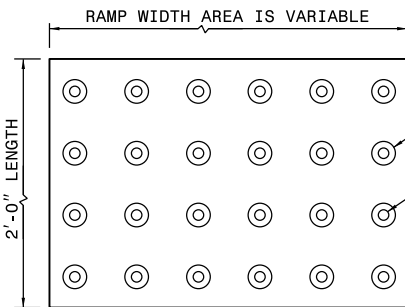
**CURB RAMPS AND EXISTING SIDEWALK ADJACENT TO CURB**



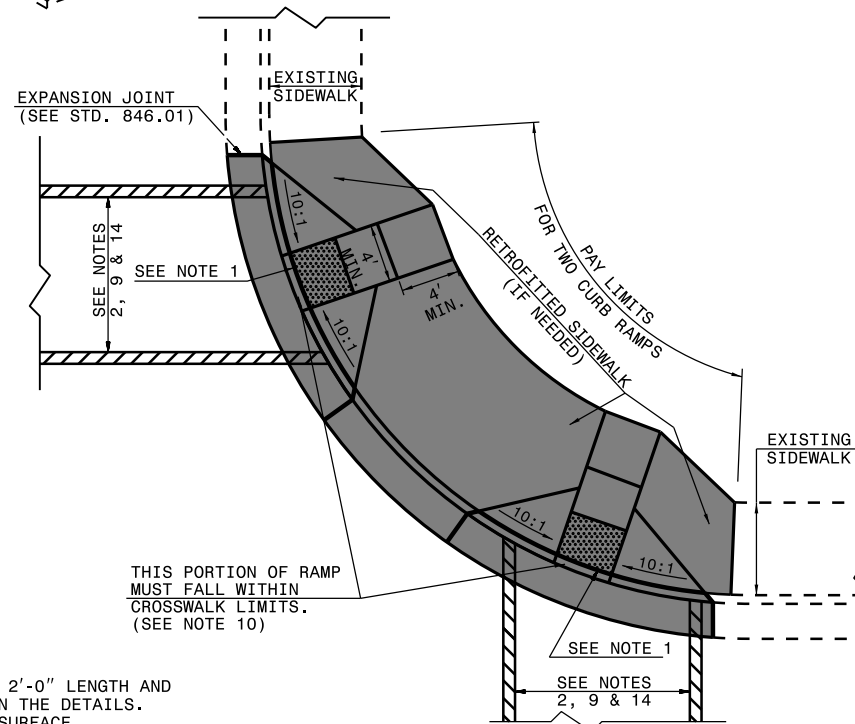
**ISOMETRIC VIEW**

**SECTION A-A**

PAY LIMITS OF CURB RAMP



**DETECTABLE WARNING DOMES**



**PLAN VIEW**

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

- 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.

1-18

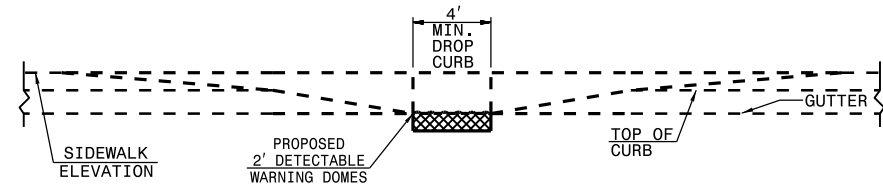
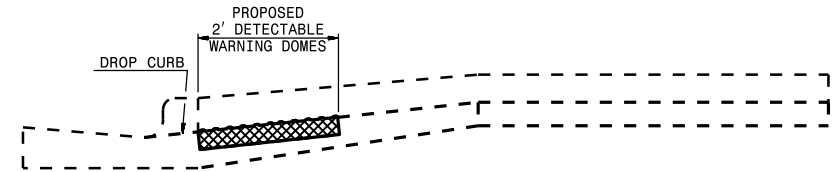
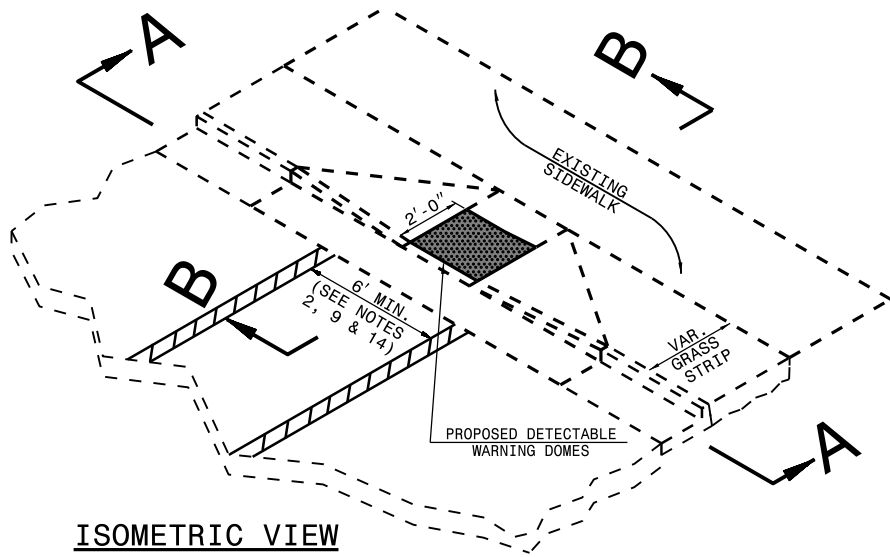
ROADWAY STANDARD DRAWING FOR

**CURB RAMP**

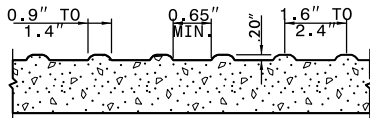
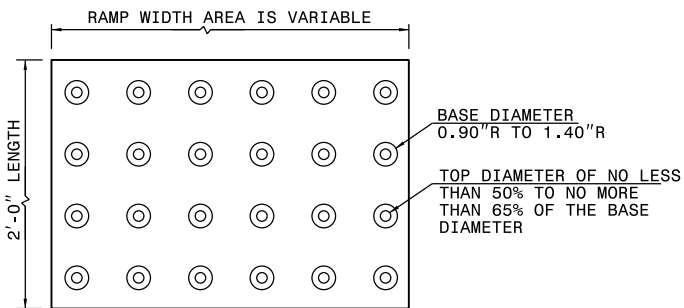
EXISTING CURB AND GUTTER



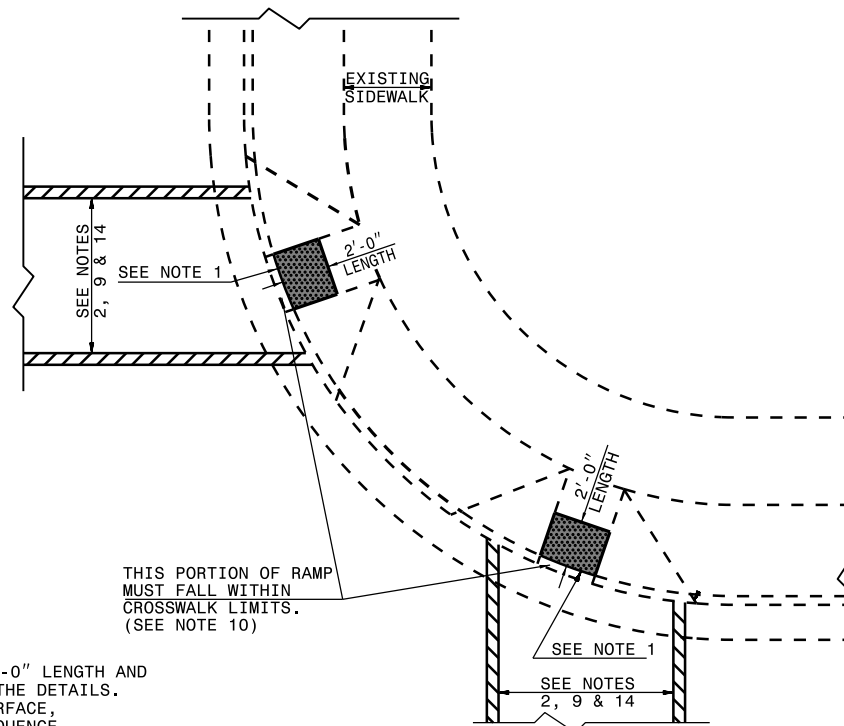
**RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING CURB RAMP**



PAY LIMITS OF RETROFIT CURB RAMP



- 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)

**DETECTABLE WARNING DOMES**

1-18

ROADWAY STANDARD DRAWING FOR

**CURB RAMP**

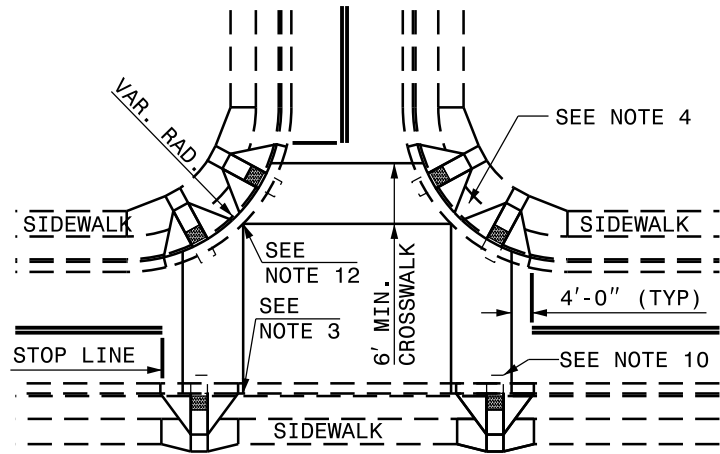
EXISTING CURB AND GUTTER

SHEET 3 OF 5

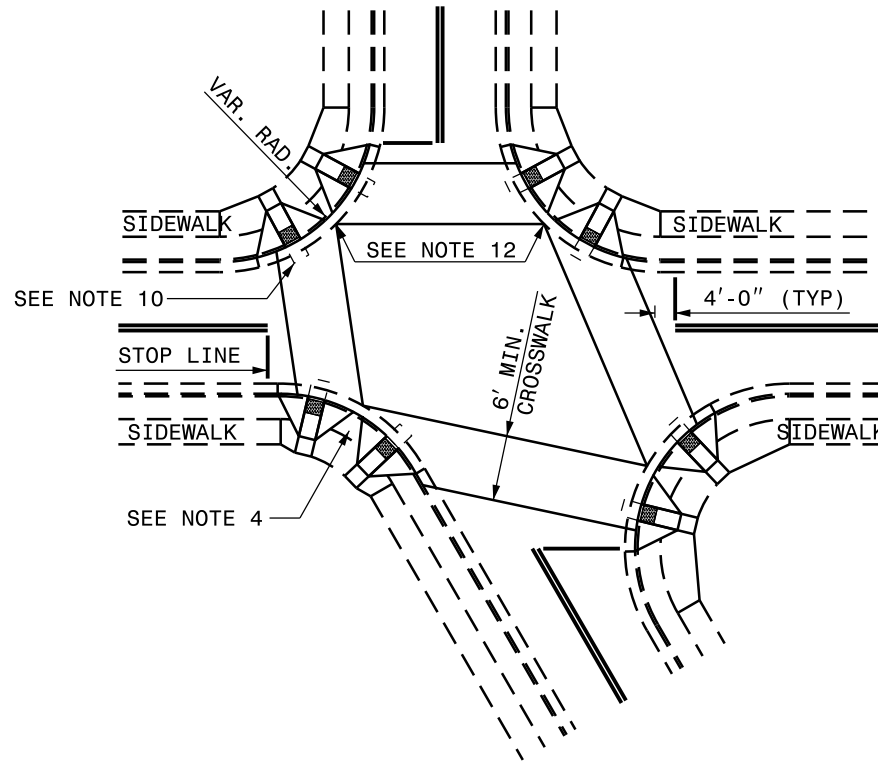
848.06

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

**CURB RAMPS AND EXISTING SIDEWALK**

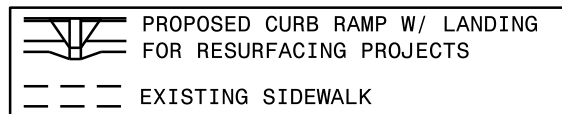


DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



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

**RESURFACING PROJECTS**



ALLOWABLE LOCATIONS  
 DUAL RAMP RADII.....ANY

## 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 THROUGH 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 1/2" 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.

1-18

ROADWAY STANDARD DRAWING FOR

**CURB RAMP**

EXISTING CURB AND GUTTER

STATE OF

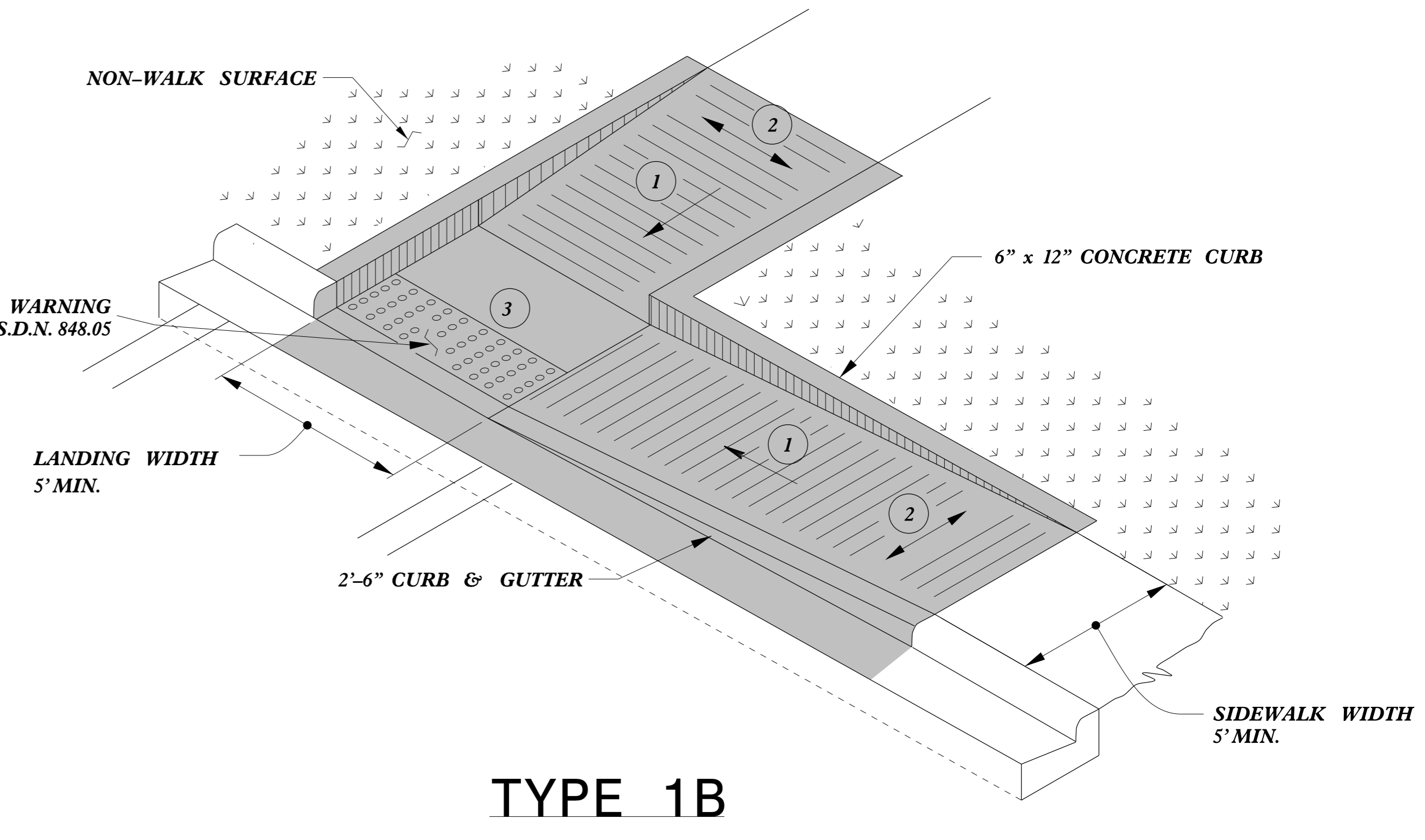
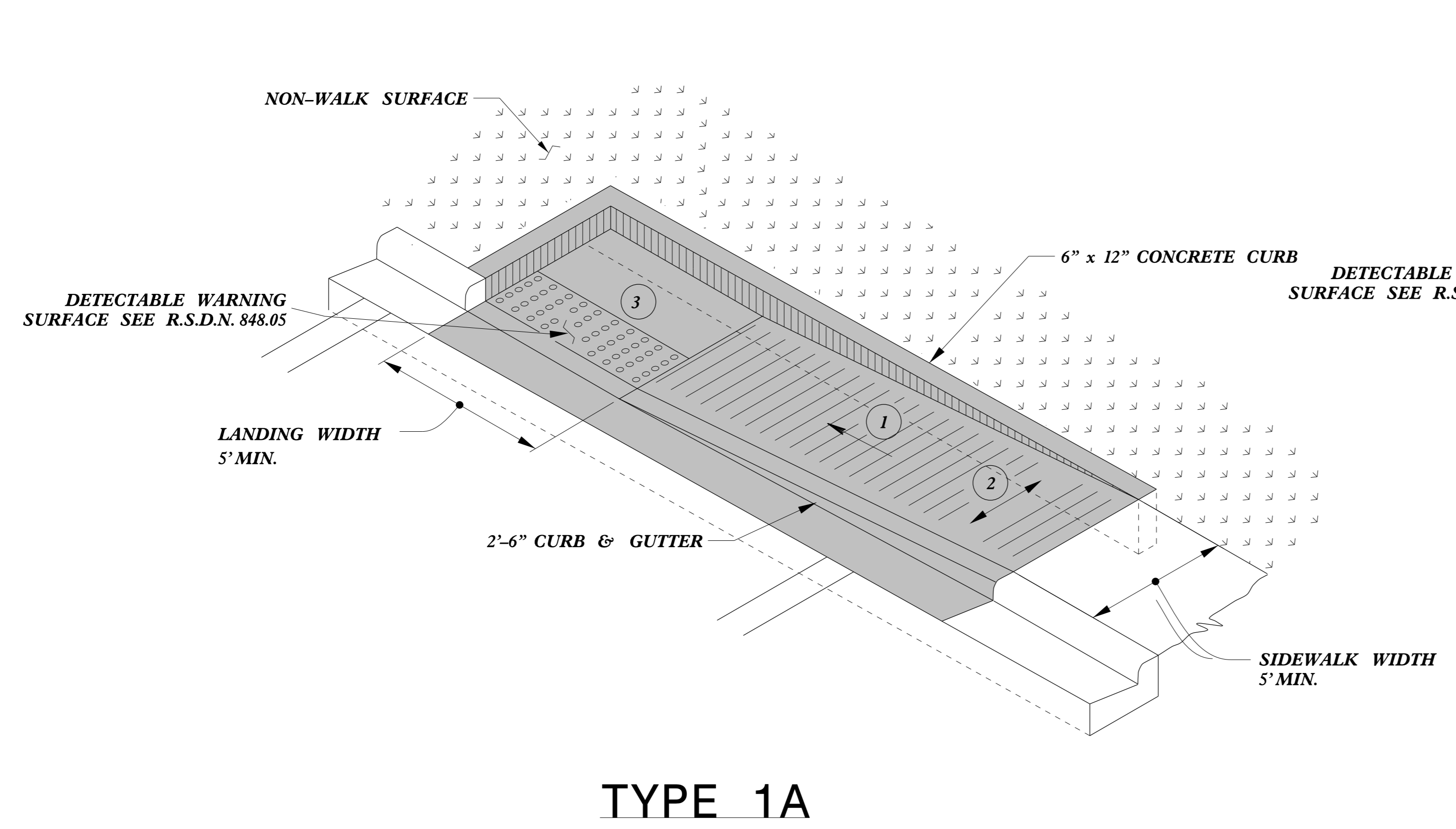
NORTH CAROLINA

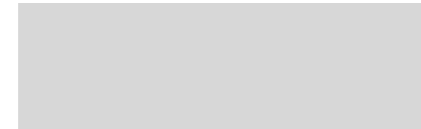
DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

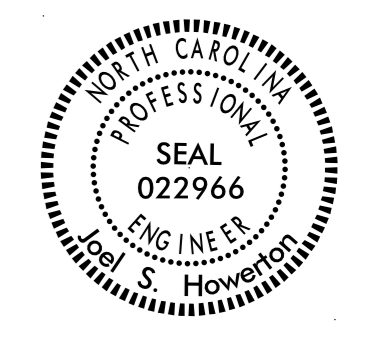
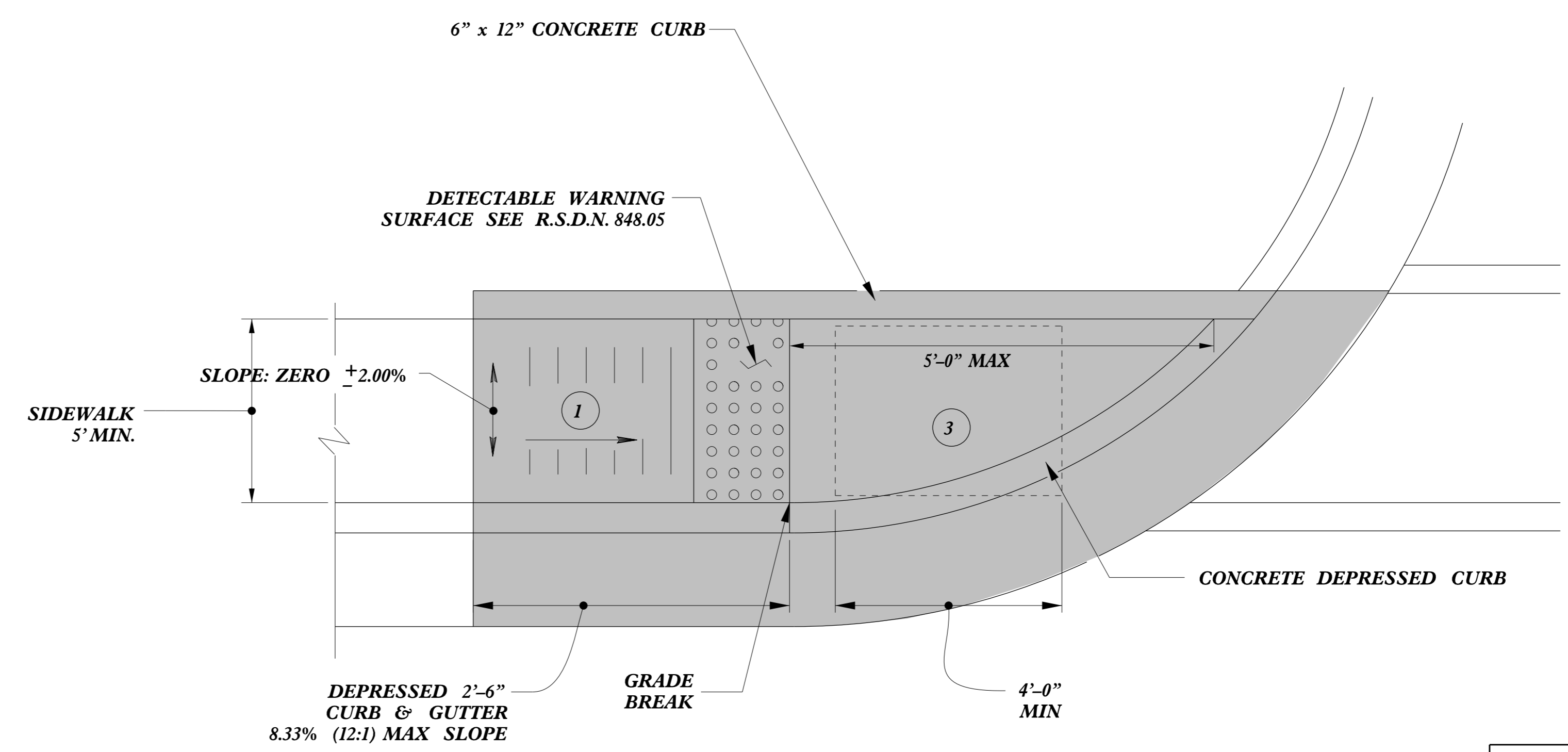
RALEIGH, N.C.

5/14/99



 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.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

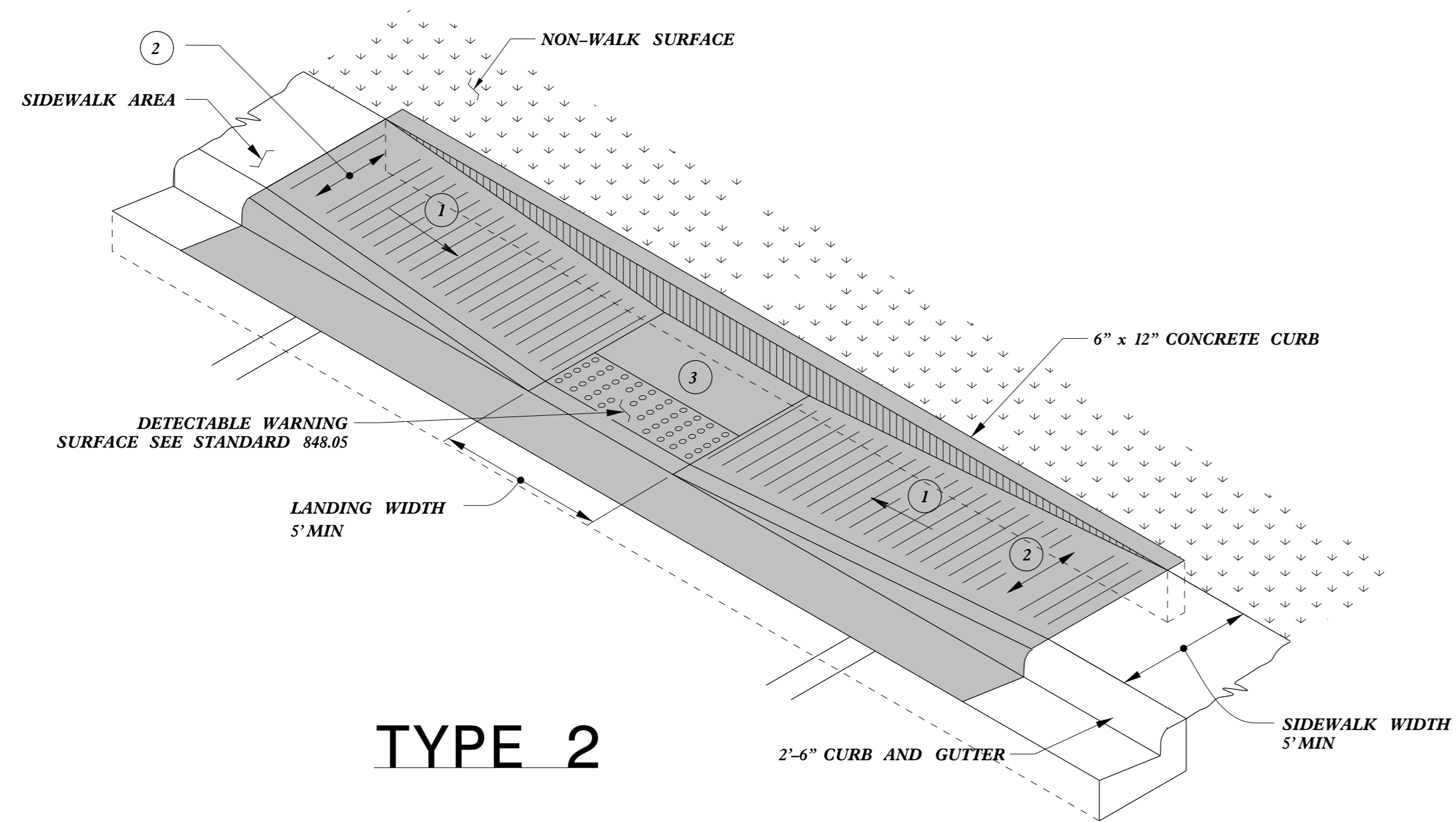
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**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

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

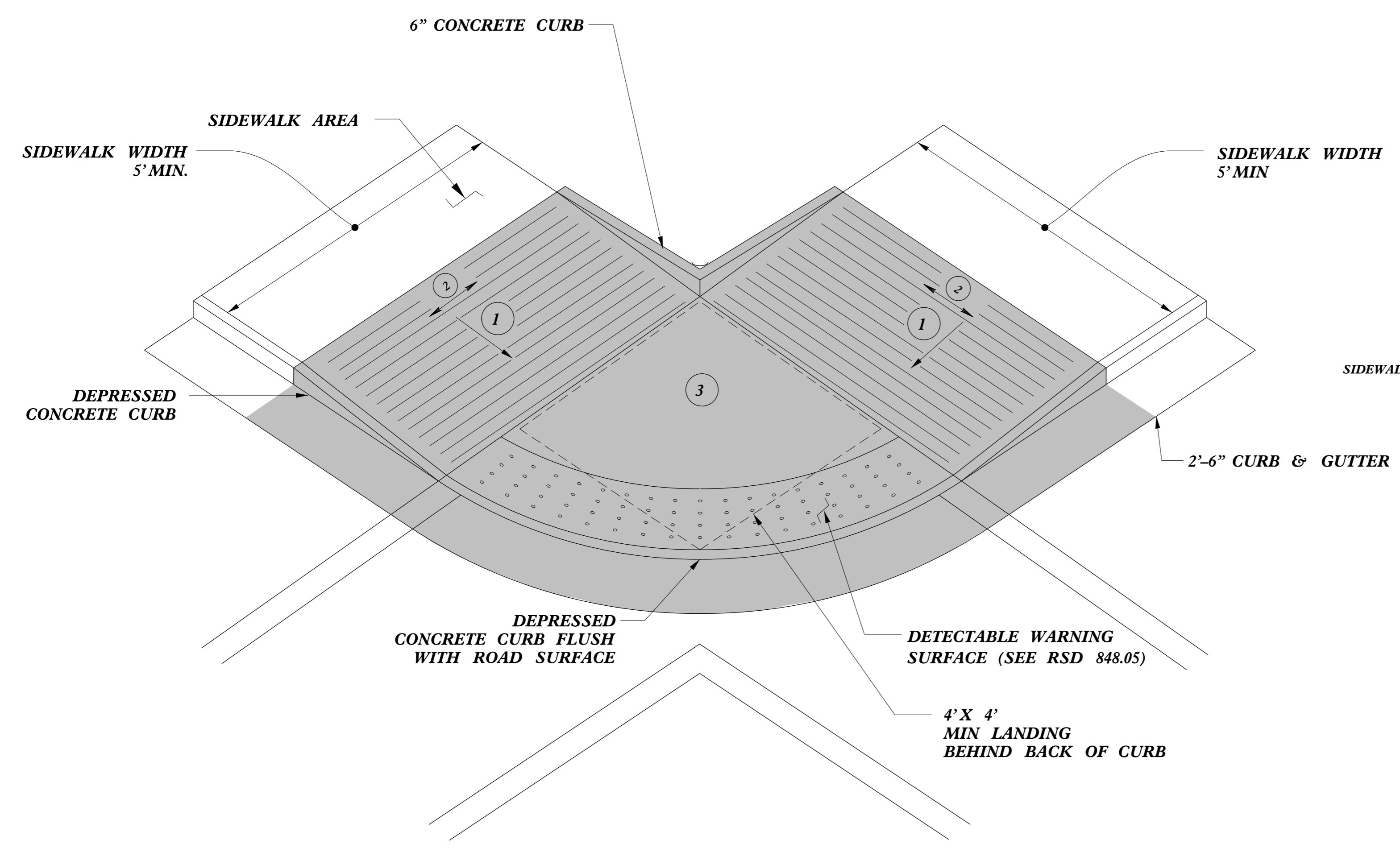
C:\P\2011\110711\110711.dwg  
 USER: JSH  
 DATE: 7/7/11 10:00 AM  
 PLOT: 7/7/11 10:00 AM  
 PLOTTER: HP DesignJet 5000



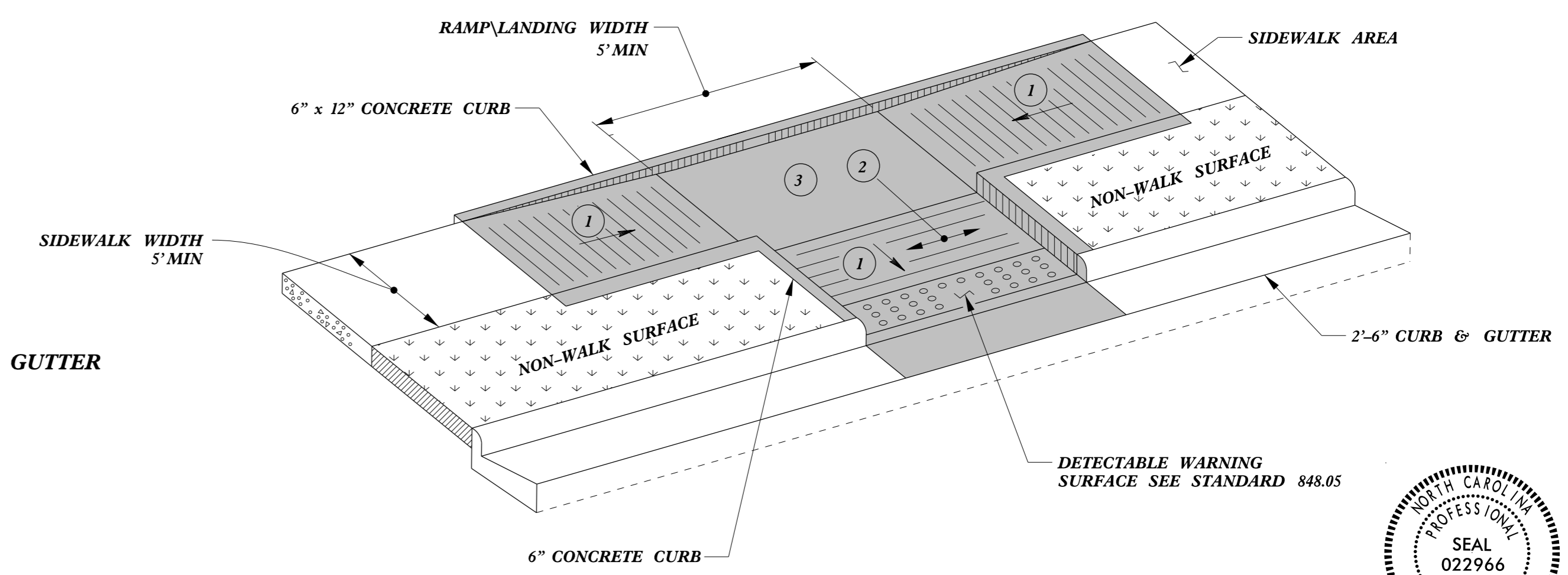
**TYPE 2**

**PAY LIMITS FOR 1 CURB RAMP**

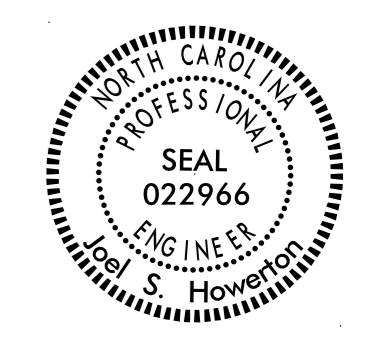
- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



**TYPE 2A**



**TYPE 3**

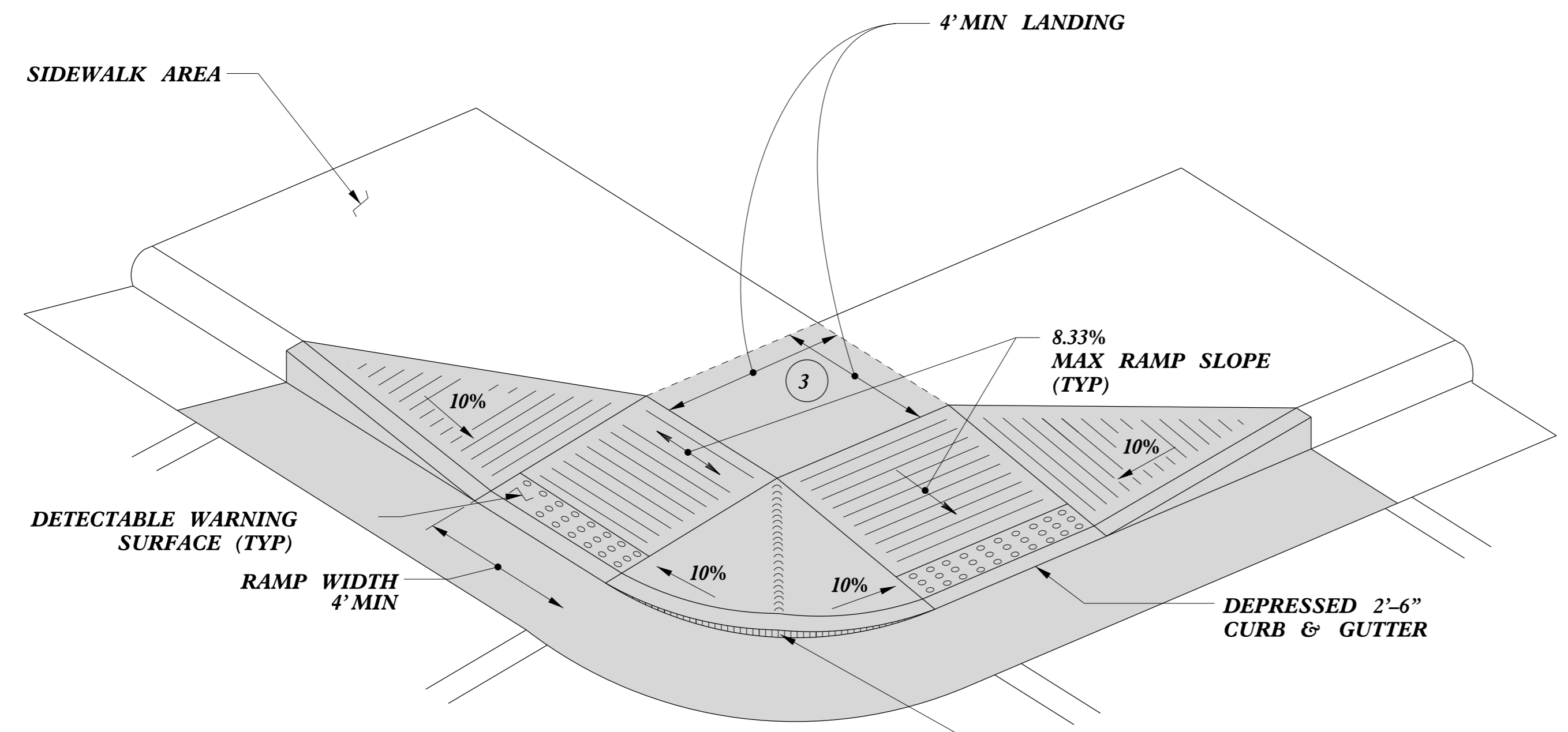


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

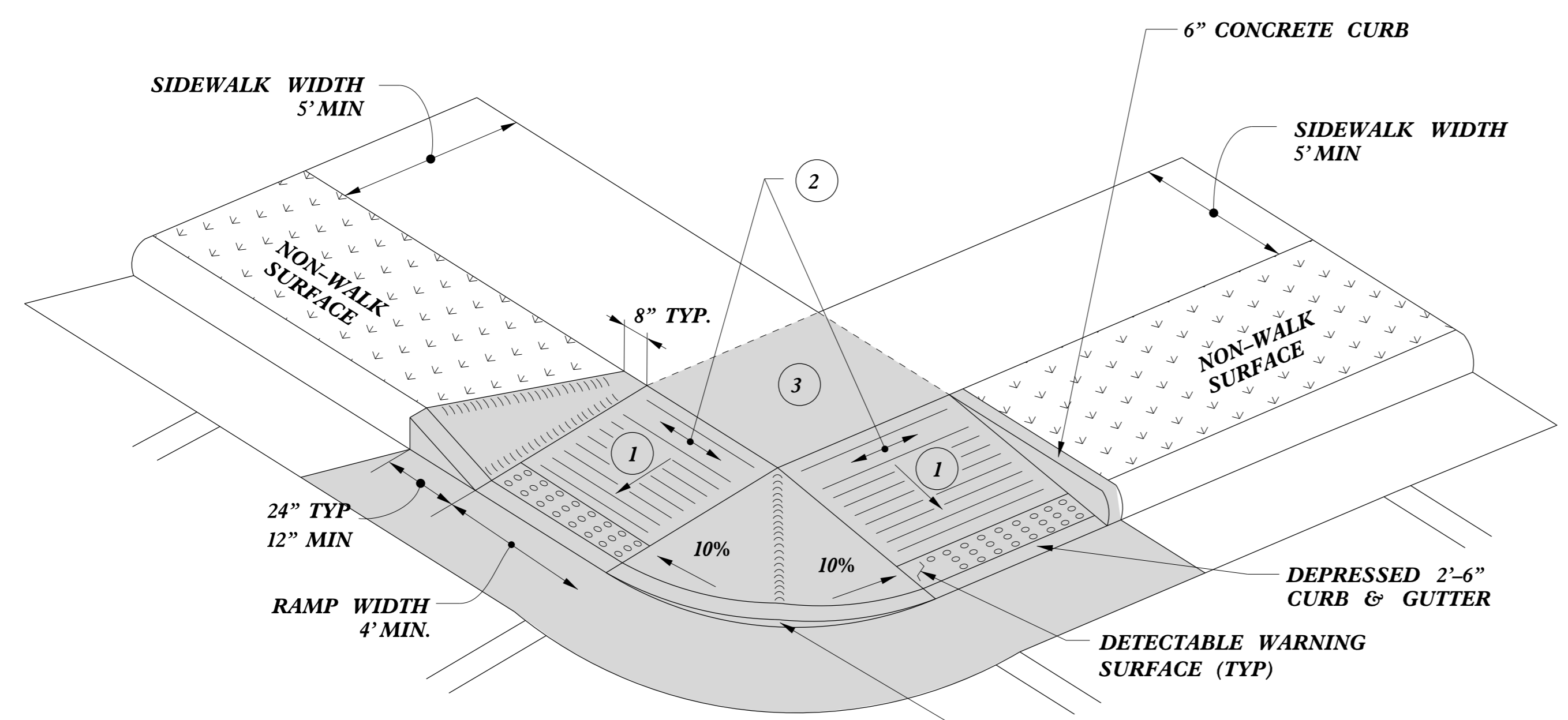
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Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC. :stds/2012CurbRamp/CurbRampDetails.dgn	

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

5/14/99  
C:\ME\DWG\CON\CON\USER\NAME.DWG

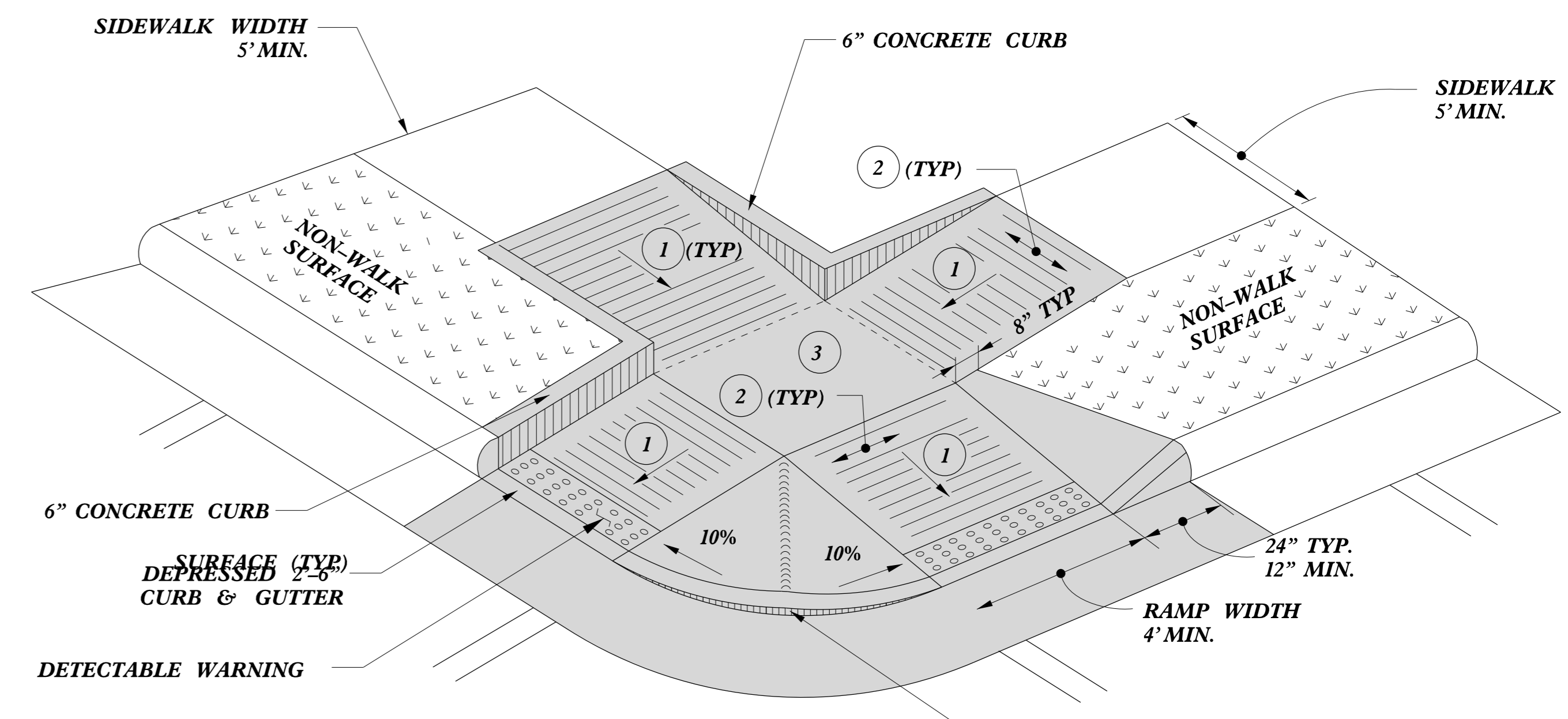


**TYPE 4**



**TYPE 4A**

**PAY LIMITS FOR 2 CURB RAMPS**



**TYPE 5**

- 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.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

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

5/14/99  
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# THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.06.09.10261.1, 2022CPT.06.09.20261.1		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	441300000-E		445700000-N	451000000-N	468500000-E		469500000-E	470000000-E	472000000-E	472500000-E				
								LENGTH	WIDTH	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	LAW ENFORCEMENT	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	12" X 90 M YELLOW THERMO	THERMO MSG SCHOOL 90 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M	THERMO STR & RT ARROW 90 M
										MI	FT	SF	LS	HR	LF	LF	LF	LF	EA	EA	EA
2022CPT.06.09.10261.1	Cumberland	1	US HWY 301	FROM ROBESON CO LINE MP 0.00 TO I 95 BUS MP 1.90	1	2	2WU	1.90	28	257	1.00		20,064	19,674	400	400		EA	EA	EA	EA
<b>TOTAL FOR MAP NO. 1</b>								<b>1.90</b>		<b>257</b>	<b>1</b>		<b>20,064</b>	<b>19,674</b>	<b>400</b>	<b>400</b>		<b>EA</b>	<b>EA</b>	<b>EA</b>	<b>EA</b>
2022CPT.06.09.10261.1	Cumberland	2	NC HWY 59	FROM NC HWY 162 MP 4.98 TO US HWY 401 PVMT JT MP 8.10	5	2	MU	3.12	60	349		40	41,432	1,240		72	86	24	16	9	
<b>TOTAL FOR MAP NO. 2</b>								<b>3.12</b>		<b>349</b>		<b>40</b>	<b>41,432</b>	<b>1,240</b>		<b>72</b>	<b>86</b>	<b>24</b>	<b>16</b>	<b>9</b>	
<b>TOTAL FOR PROJ NO. 2022CPT.06.09.10261.1</b>								<b>5.02</b>		<b>606</b>	<b>1</b>	<b>40</b>	<b>20,064</b>	<b>61,106</b>	<b>1,640</b>	<b>400</b>	<b>72</b>	<b>89</b>	<b>24</b>	<b>16</b>	<b>9</b>
													<b>81,170</b>						<b>138</b>		
2022CPT.06.09.20261.1	Cumberland	3	SR 2210	FROM SR 1007 MP 0.00 TO SR 2337 MP 1.40	2	2	2WU	1.36	27	189			14,800	18,854		300					
<b>TOTAL FOR MAP NO. 3</b>								<b>1.36</b>		<b>189</b>			<b>14,800</b>	<b>18,854</b>		<b>300</b>					
2022CPT.06.09.20261.1	Cumberland	4	SR 1168	FROM US HWY 401 PVMT JT MP 0.07 TO SR 1141 MP 0.61	2	2	M2	0.53	36	59			6,336	10,226		250			2		
<b>TOTAL FOR MAP NO. 4</b>								<b>0.53</b>		<b>59</b>			<b>6,336</b>	<b>10,226</b>		<b>250</b>		<b>2</b>			
2022CPT.06.09.20261.1	Cumberland	5	SR 2260	FROM US HWY 301/I 95 BUS MP 0.00 TO END MAINT MP 0.82	3 & 4	2	MD	0.82	52	126				6,562		100			17	18	
<b>TOTAL FOR MAP NO. 5</b>								<b>0.82</b>		<b>126</b>				<b>6,562</b>		<b>100</b>		<b>17</b>	<b>18</b>	<b>4</b>	
2022CPT.06.09.20261.1	Cumberland	6	SR 1600	FROM SR 16.5 PVMT JT MP 5.34 TO NC HWY 210 MP 8.48	2	2	2WU	3.10	26	347			34,320	29,172		540			2		
<b>TOTAL FOR MAP NO. 6</b>								<b>3.10</b>		<b>347</b>			<b>34,320</b>	<b>29,172</b>		<b>540</b>		<b>2</b>			
2022CPT.06.09.20261.1	Cumberland	7	SR 2251A	FROM SR 3983 MP 0.00 TO SR 2252 MP 3.59	2	2	2WU	3.53	20	395			37,910	32,223							
<b>TOTAL FOR MAP NO. 7</b>								<b>3.53</b>		<b>395</b>			<b>37,910</b>	<b>32,223</b>							
2022CPT.06.09.20261.1	Cumberland	8	SR 2251B	FROM SR 2252 MP 3.59 TO ROBESON CO LINE PVMT JT MP 5.17	6	2	2WU	1.56	18	177			16,262	13,822							
<b>TOTAL FOR MAP NO. 8</b>								<b>1.56</b>		<b>177</b>			<b>16,262</b>	<b>13,822</b>							
<b>TOTAL FOR PROJ NO. 2022CPT.06.09.20261.1</b>								<b>10.90</b>		<b>1,293</b>			<b>109,628</b>	<b>110,859</b>		<b>1,190</b>		<b>19</b>	<b>20</b>	<b>4</b>	
													<b>220,487</b>					<b>43</b>			
<b>GRAND TOTAL</b>								<b>15.92</b>		<b>1,899</b>	<b>1</b>	<b>40</b>	<b>129,692</b>	<b>171,965</b>	<b>1,640</b>	<b>1,590</b>	<b>72</b>	<b>108</b>	<b>44</b>	<b>20</b>	<b>9</b>
													<b>301,657</b>					<b>181</b>			

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	489100000-E		489200000-N	490000000-N				
								LENGTH	WIDTH	GENERIC MARKING, 4" X 90 M WHITE THERMO (SKIP & MINI SKIP)	GENERIC MARKING, 24" X 90 M WHITE THERMO	GENERIC MARKING, 16" X 90 M WHITE THERMO(RXR CROSSBUCK)	GENERIC MARKING, THERMO RXR 90 M	CRYSTAL & RED MARKERS	YELLOW & YELLOW MARKERS
										MI	FT	LF	LF	LF	EA
2022CPT.06.09.10261.1	Cumberland	1	US HWY 301	FROM ROBESON CO LINE MP 0.00 TO I 95 BUS MP 1.90	1	2	2WU	1.90	28	400				11	152
<b>TOTAL FOR MAP NO. 1</b>								<b>1.90</b>		<b>400</b>			<b>11</b>	<b>152</b>	
2022CPT.06.09.10261.1	Cumberland	2	NC HWY 59	FROM NC HWY 162 MP 4.98 TO US HWY 401 PVMT JT MP 8.10	5	2	MU	3.12	60	10,000	950		600	409	
<b>TOTAL FOR MAP NO. 2</b>								<b>3.12</b>		<b>10,000</b>	<b>950</b>		<b>600</b>	<b>409</b>	
<b>TOTAL FOR PROJ NO. 2022CPT.06.09.10261.1</b>								<b>5.02</b>		<b>10,400</b>	<b>950</b>		<b>611</b>	<b>561</b>	
													<b>11,350</b>	<b>1,172</b>	
2022CPT.06.09.20261.1	Cumberland	3	SR 2210	FROM SR 1007 MP 0.00 TO SR 2337 MP 1.40	2	2	2WU	1.36	27	200	20		5	118	
<b>TOTAL FOR MAP NO. 3</b>								<b>1.36</b>		<b>200</b>	<b>20</b>		<b>5</b>	<b>118</b>	
2022CPT.06.09.20261.1	Cumberland	4	SR 1168	FROM US HWY 401 PVMT JT MP 0.07 TO SR 1141 MP 0.61	2	2	M2	0.53	36	232	120	420	8	70	
<b>TOTAL FOR MAP NO. 4</b>								<b>0.53</b>		<b>232</b>	<b>120</b>	<b>420</b>	<b>8</b>	<b>11</b>	<b>70</b>
2022CPT.06.09.20261.1	Cumberland	5	SR 2260	FROM US HWY 301/I 95 BUS MP 0.00 TO END MAINT MP 0.82	3 & 4	2	MD	0.82	52	6,698	100		220	60	
<b>TOTAL FOR MAP NO. 5</b>								<b>0.82</b>		<b>6,698</b>	<b>100</b>		<b>220</b>	<b>60</b>	
2022CPT.06.09.20261.1	Cumberland	6	SR 1600	FROM SR 16.5 PVMT JT MP 5.34 TO NC HWY 210 MP 8.48	2	2	2WU	3.10	26	200			10	450	
<b>TOTAL FOR MAP NO. 6</b>								<b>3.10</b>		<b>200</b>			<b>10</b>	<b>450</b>	
2022CPT.06.09.20261.1	Cumberland	7	SR 2251A	FROM SR 3983 MP 0.00 TO SR 2252 MP 3.59	2	2	2WU	3.53	20					475	
<b>TOTAL FOR MAP NO. 7</b>								<b>3.53</b>						<b>475</b>	
2022CPT.06.09.20261.1	Cumberland	8	SR 2251B	FROM SR 2252 MP 3.59 TO ROBESON CO LINE PVMT JT MP 5.17	6	2	2WU	1.56	18					105	
<b>TOTAL FOR MAP NO. 8</b>								<b>1.56</b>						<b>105</b>	
<b>TOTAL FOR PROJ NO. 2022CPT.06.09.20261.1</b>								<b>10.90</b>		<b>7,330</b>	<b>240</b>	<b>420</b>	<b>8</b>	<b>246</b>	<b>1,278</b>
														<b>7,990</b>	<b>1,524</b>
<b>GRAND TOTAL</b>								<b>15.92</b>		<b>17,730</b>	<b>1,190</b>	<b>420</b>	<b>8</b>	<b>857</b>	<b>1,839</b>
														<b>19,340</b>	<b>2,696</b>