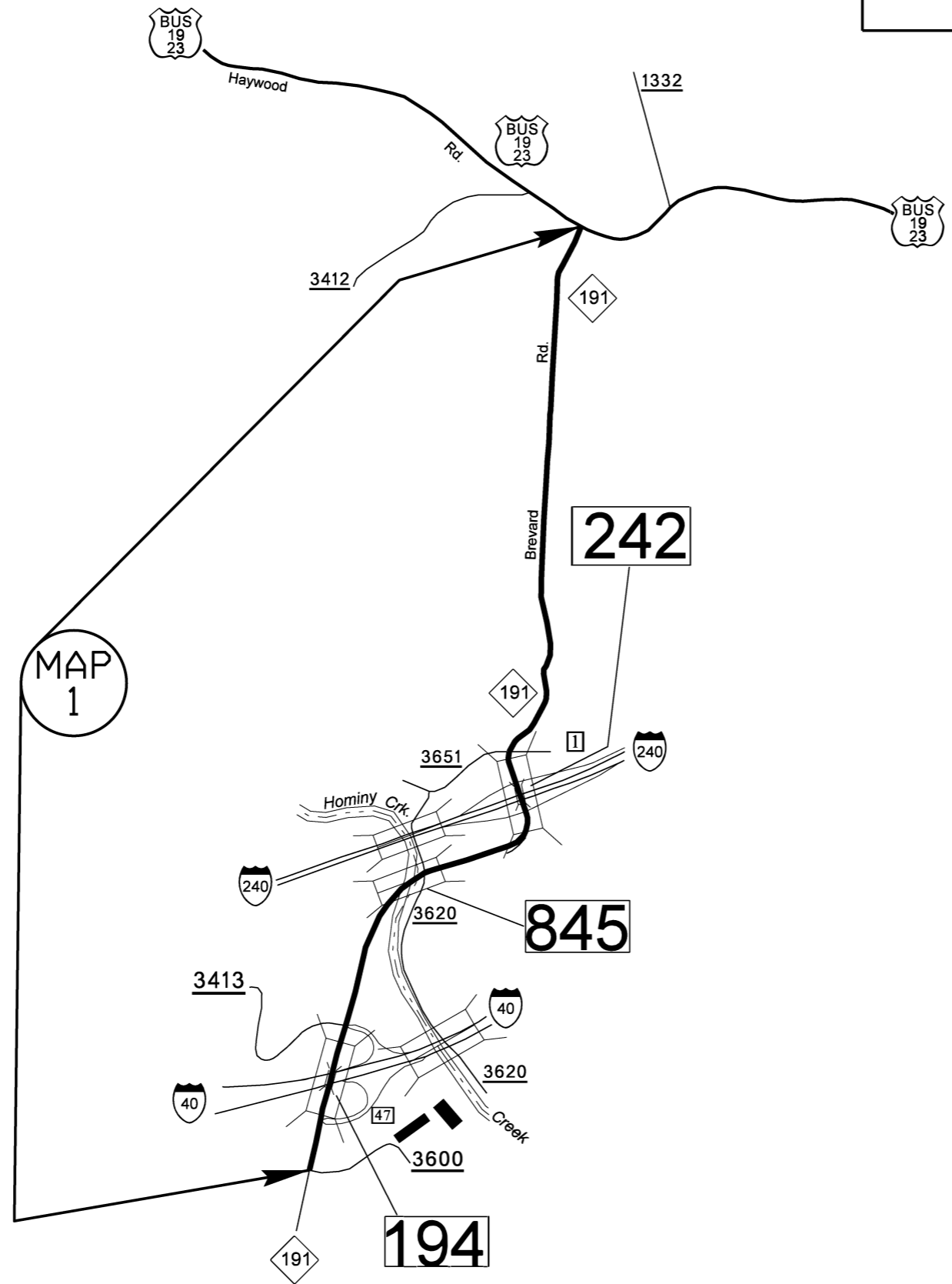
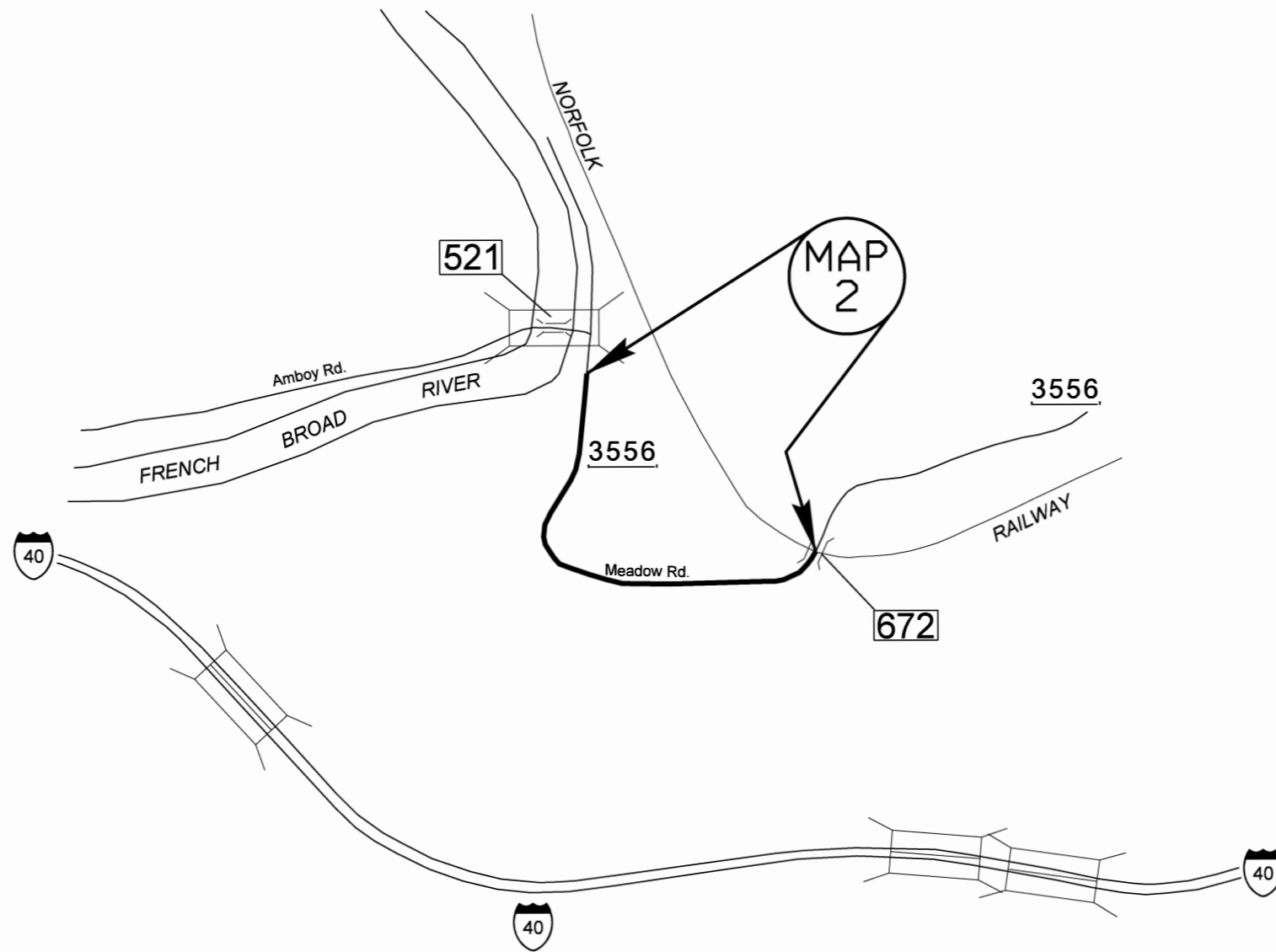


PROJECT NO.	SHEET NO.	TOTAL SHEETS
2022CPT.13.01.10111, 2022CPT.13.01.20111	<b>1</b>	<b>24</b>



**BUNCOMBE COUNTY**

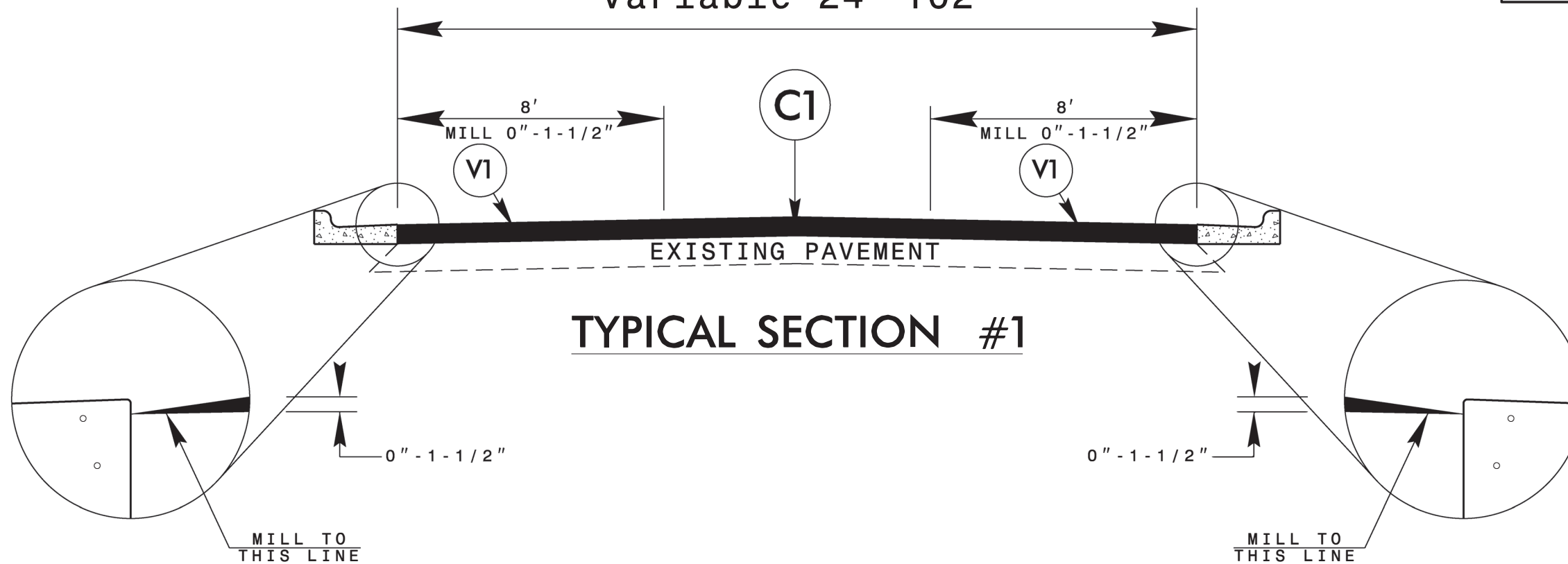
PROJECT NO.	SHEET NO.	TOTAL SHEETS
2022CPT.13.01.10111, 2022CPT.13.01.20111	2	24



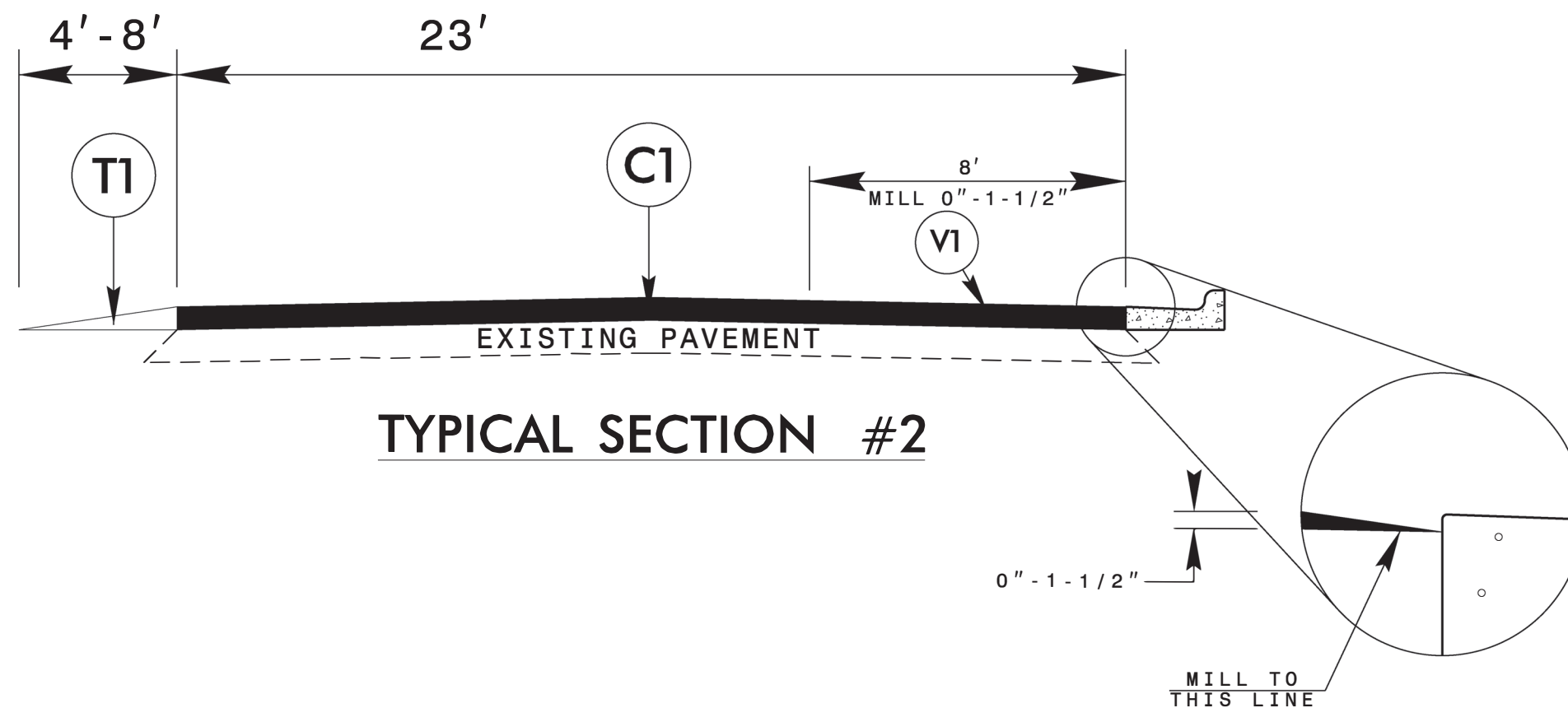
**BUNCOMBE COUNTY**



Variable 24'-102'



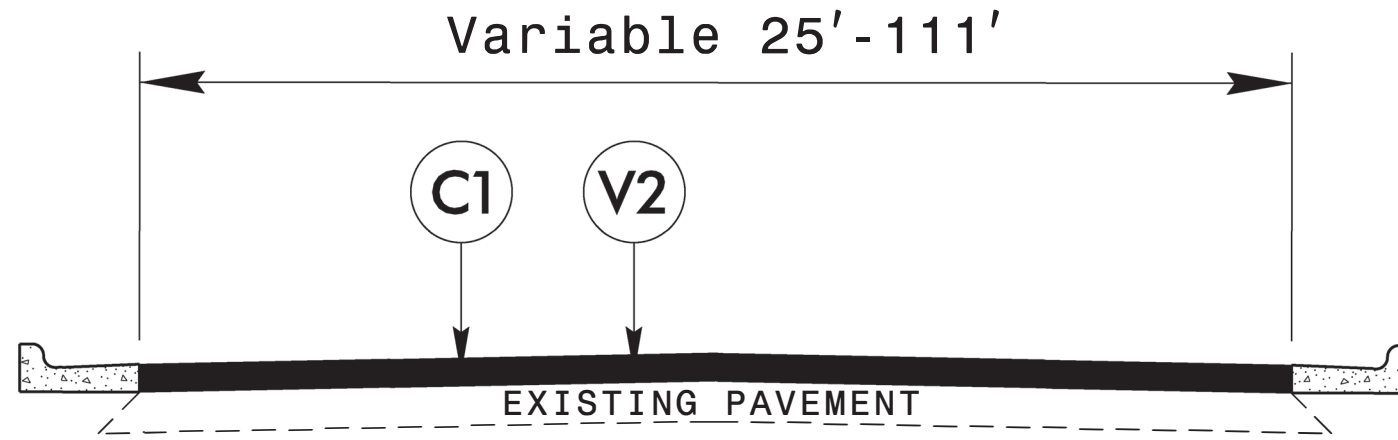
**TYPICAL SECTION #1**



**TYPICAL SECTION #2**

**PAVEMENT SCHEDULE**

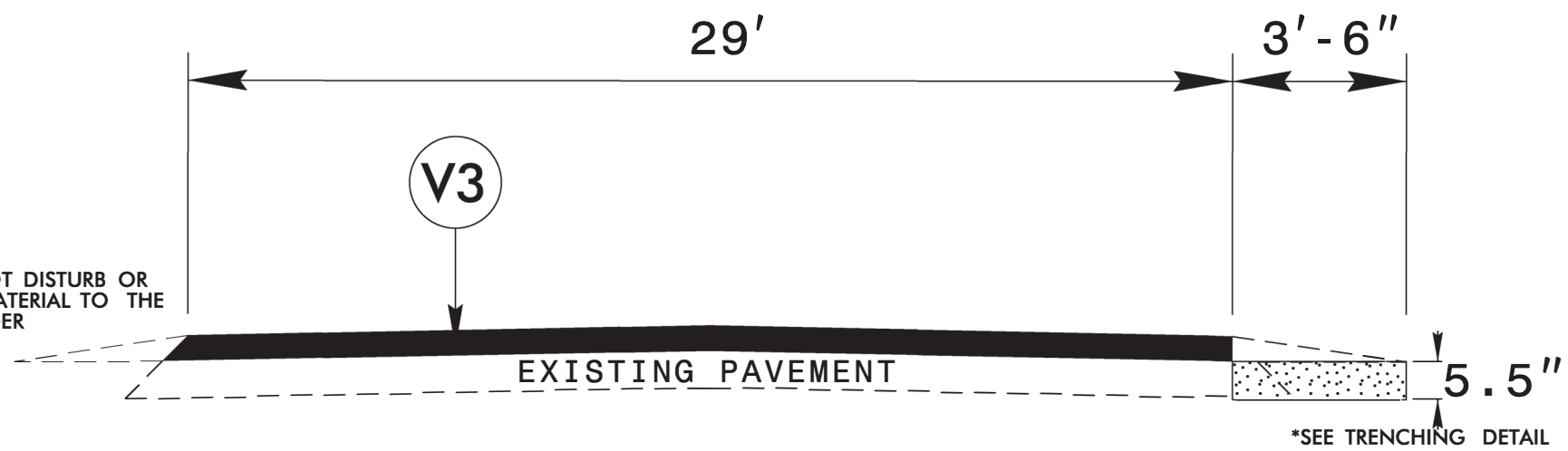
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YARD
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
F1	ULTRA THIN BONDED WEARING COURSE
V1	MILLING ASPHALT PAVEMENT, 0- TO 1-1/2" DEPTH
V2	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH
V3	MILLING ASPHALT PAVEMENT, 2-1/2" DEPTH
V4	INCIDENTAL MILLING
M	CENTERLINE MILLED RUMBLE STRIPS
T1	SHOULDER RECONSTRUCTION



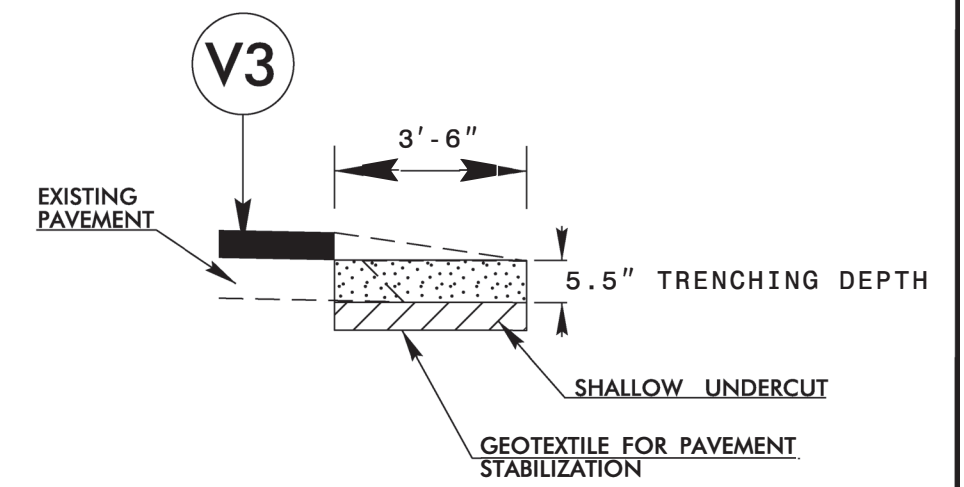
**TYPICAL SECTION #3**

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

DO NOT DISTURB OR ADD MATERIAL TO THE SHOULDER

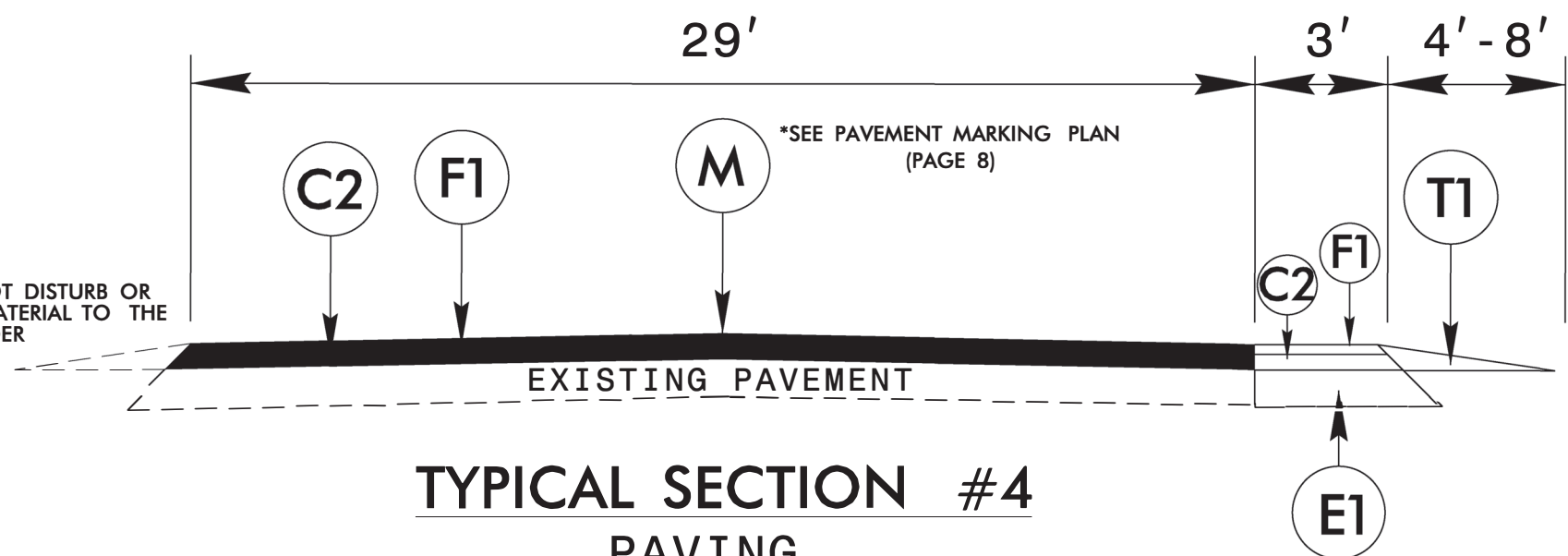


**TYPICAL SECTION #4**  
MILLING



**TRENCHING DETAIL**

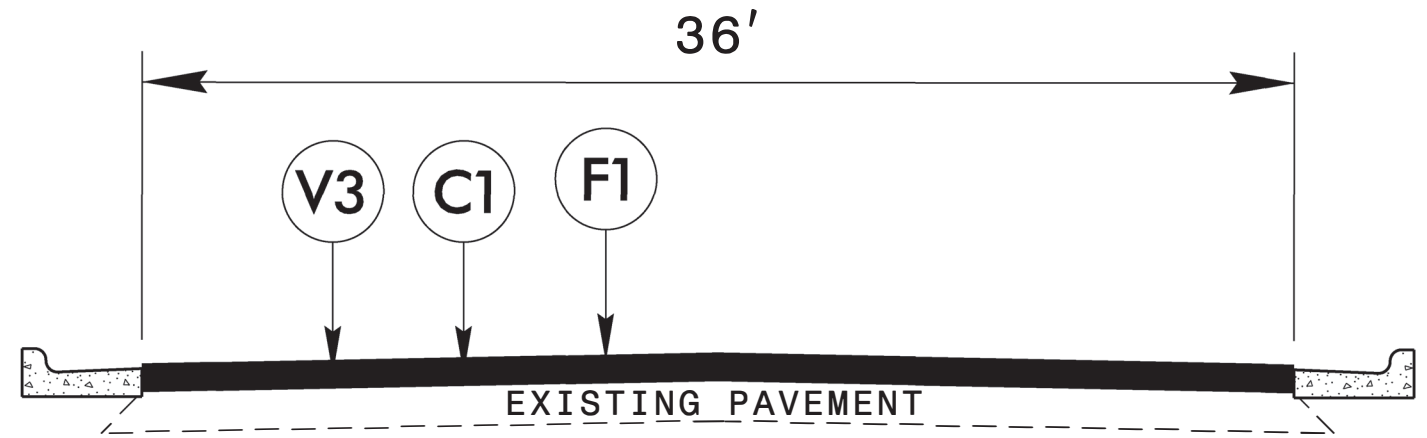
DO NOT DISTURB OR ADD MATERIAL TO THE SHOULDER



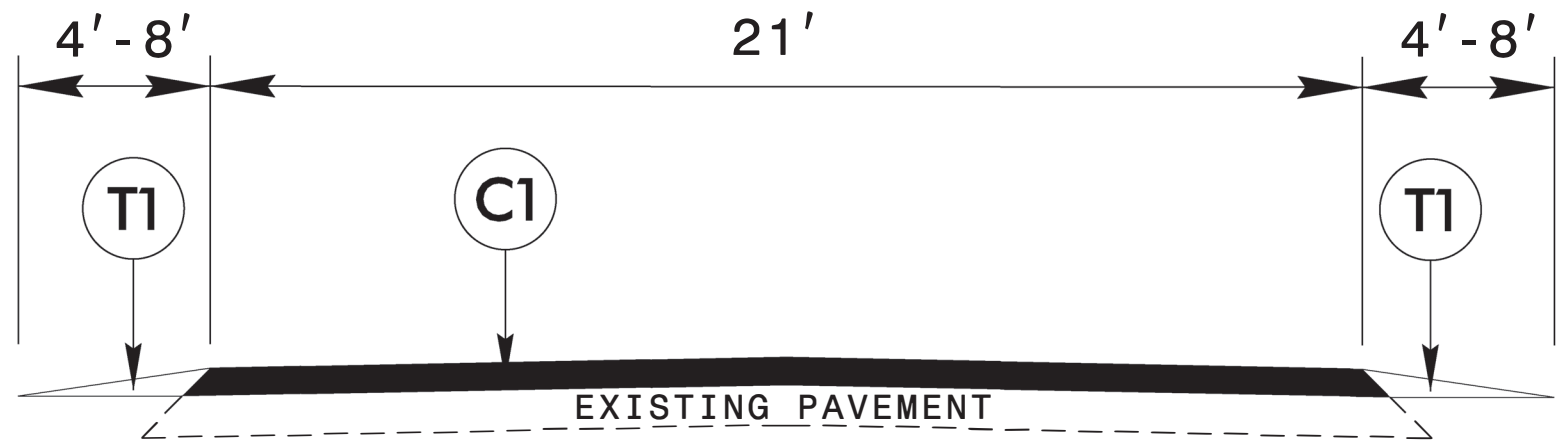
**TYPICAL SECTION #4**  
PAVING

PAVEMENT SCHEDULE	
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YARD
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
F1	ULTRA THIN BONDED WEARING COURSE
V3	MILLING ASPHALT PAVEMENT, 2-1/2" DEPTH
M	CENTERLINE MILLED RUMBLE STRIPS *
T1	SHOULDER RECONSTRUCTION

6/2/99  
 23-APR-2021 08:48  
 S:\DUL\Resurfacing\2022 Supplemental Resurfacing\Buncombe CR Maps and typicals\Buncombe-ddc-dsn-TypandDetails.dgn



**TYPICAL SECTION #5**



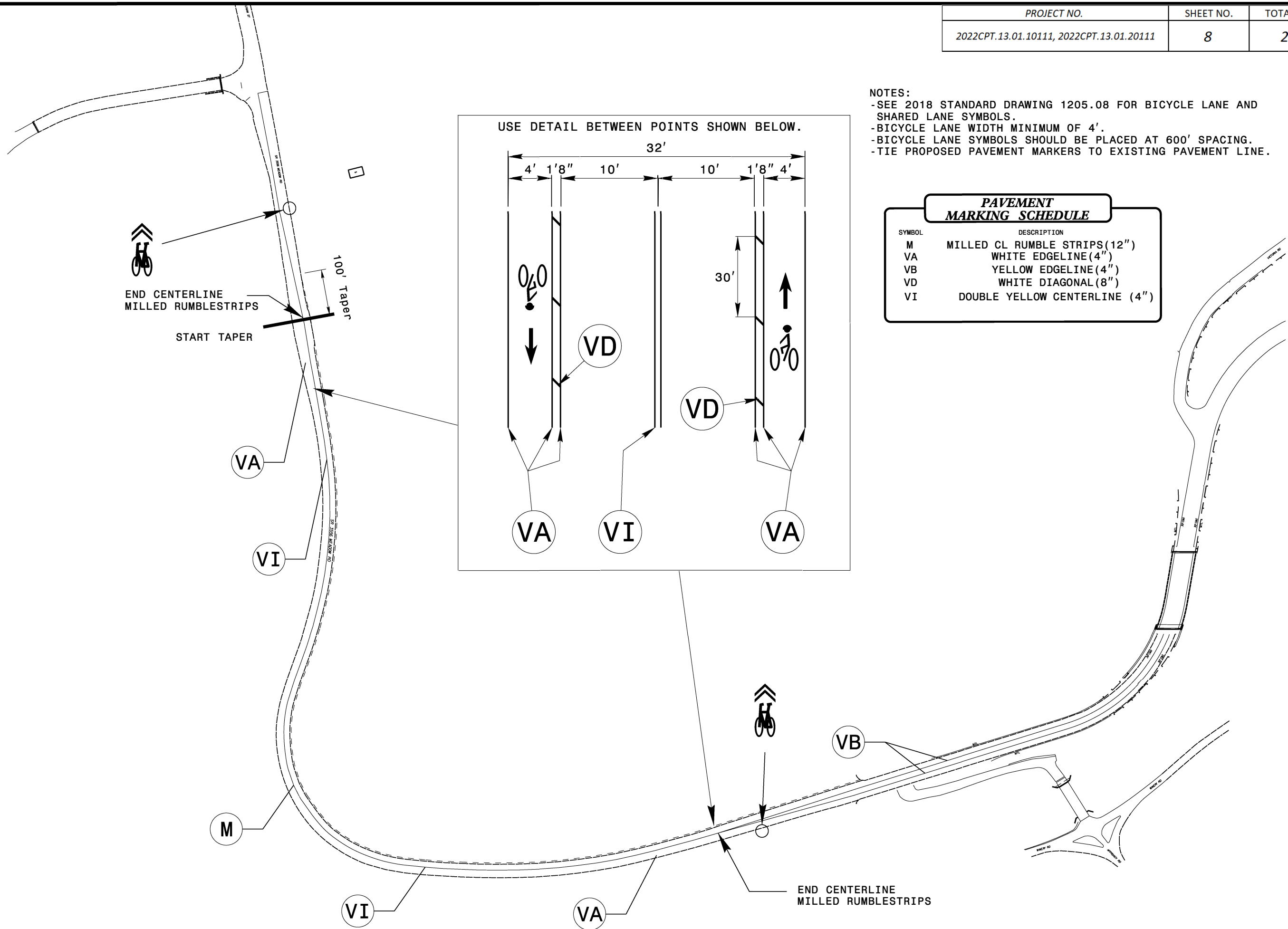
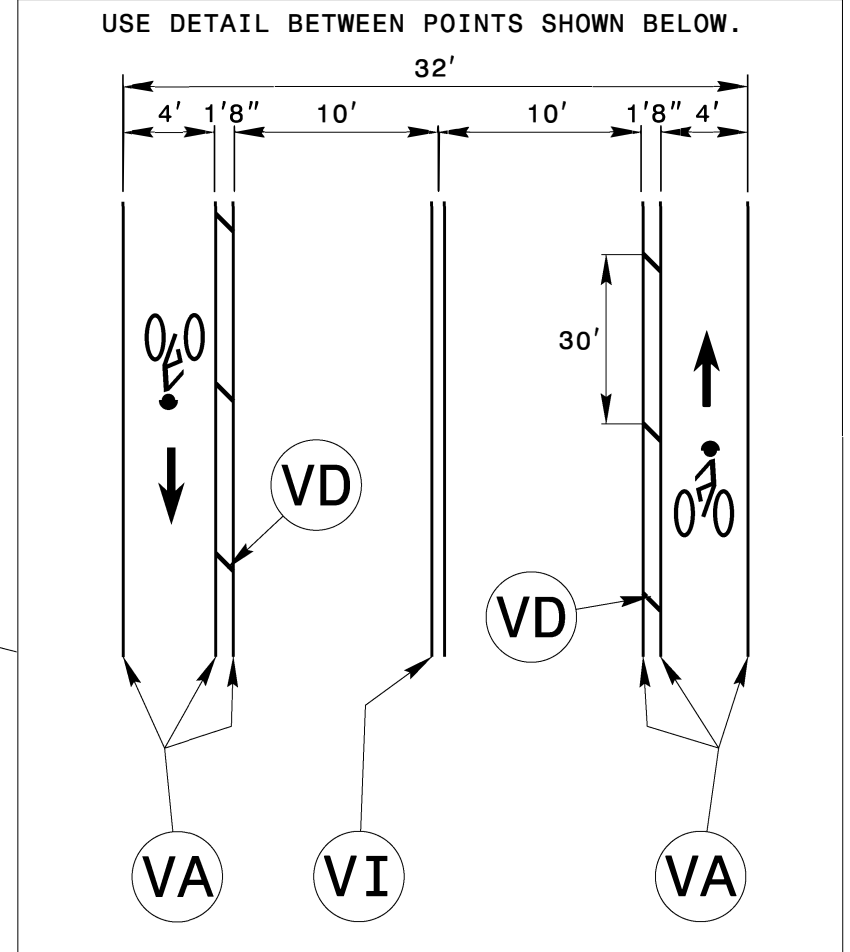
**TYPICAL SECTION #6**

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD
F1	ULTRA THIN BONDED WEARING COURSE
V3	MILLING ASPHALT PAVEMENT, 2-1/2" DEPTH
T1	SHOULDER RECONSTRUCTION

09-APR-2021 08:49  
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 \$\$\$\$

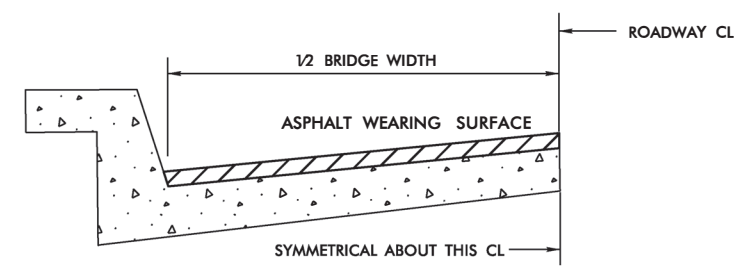
NOTES:  
 -SEE 2018 STANDARD DRAWING 1205.08 FOR BICYCLE LANE AND SHARED LANE SYMBOLS.  
 -BICYCLE LANE WIDTH MINIMUM OF 4'.  
 -BICYCLE LANE SYMBOLS SHOULD BE PLACED AT 600' SPACING.  
 -TIE PROPOSED PAVEMENT MARKERS TO EXISTING PAVEMENT LINE.

PAVEMENT MARKING SCHEDULE	
SYMBOL	DESCRIPTION
M	MILLED CL RUMBLE STRIPS (12")
VA	WHITE EDGELINE (4")
VB	YELLOW EDGELINE (4")
VD	WHITE DIAGONAL (8")
VI	DOUBLE YELLOW CENTERLINE (4")



REVISIONS





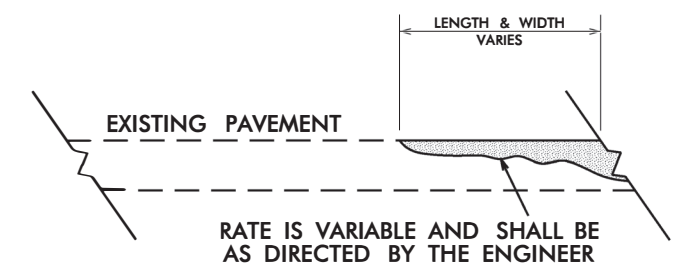
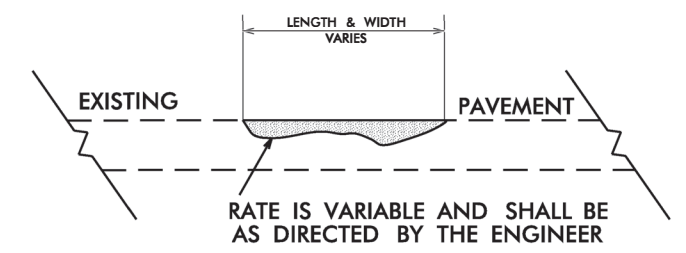
**BRIDGE HALF TYPICAL SECTION**

FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

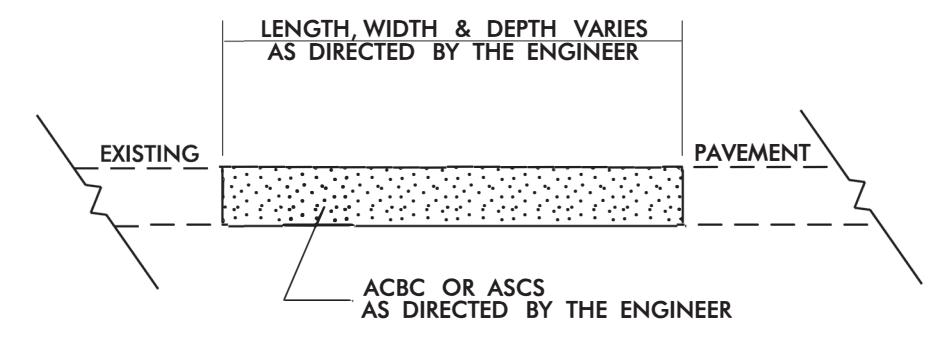
THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. THE MINIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1/2", S9.5B 1", S9.5C,D 1.5" - 2". ULTRA-THIN HOT MIX ASPHALT - TYPE A 3/4". ULTRA-THIN HOT MIX ASPHALT - TYPE B 5/8". ULTRA-THIN HOT MIX ASPHALT - TYPE C 1/2". THE MAXIMUM THICKNESS SHOULD DEPEND ON PAVEMENT TYPE AS FOLLOWS: S4.75A 1", S9.5B 1.5", S9.5C,D 2". ULTRA-THIN HOT MIX ASPHALT - TYPE A 3/4", ULTRA-THIN HOT MIX ASPHALT - TYPE B 5/8", ULTRA-THIN HOT MIX ASPHALT - TYPE C 1/2".

**NOTES**

- ALL UNPAVED 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.
- SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE INDICATED.
- BRIDGES ARE TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

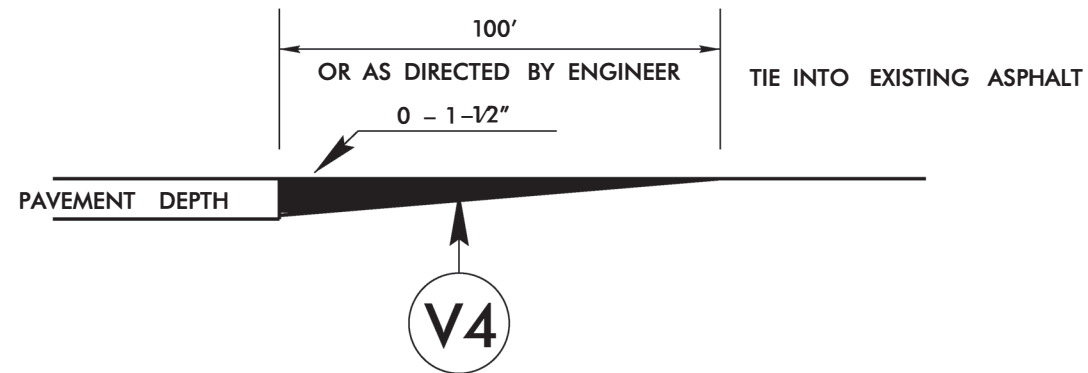


**DETAIL SHOWING METHOD OF WEDGING**



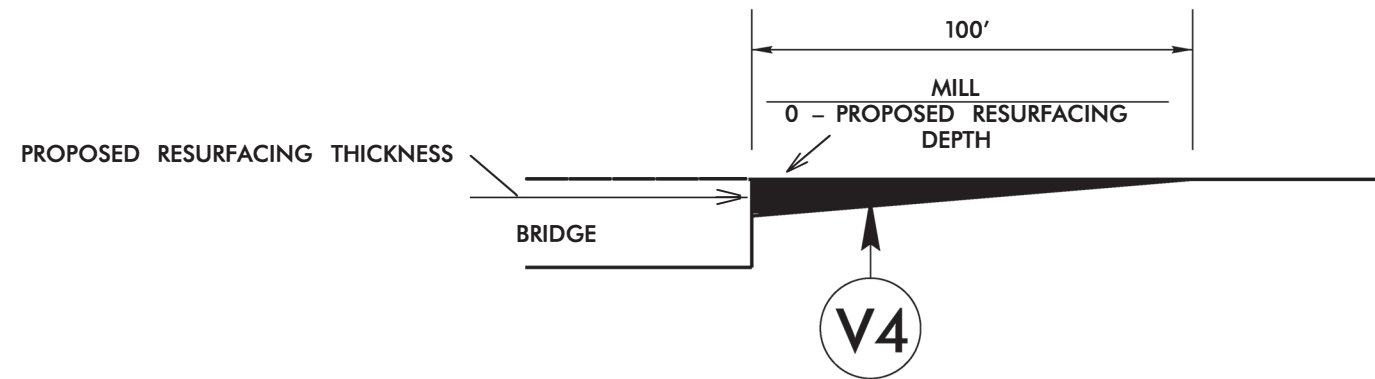
**PATCHING EXISTING PAVEMENT**

09-APR-2021 08:50  
 S:\DDC\Resurfacing\2022 Supplemental Resurfacing\Buncombe CR\Maps and typicals\Buncombe-ddc-dsn-TypandDetails.dgn  
 6/2/19



**DETAIL TO TIE INTO EXIST PAVEMENT**

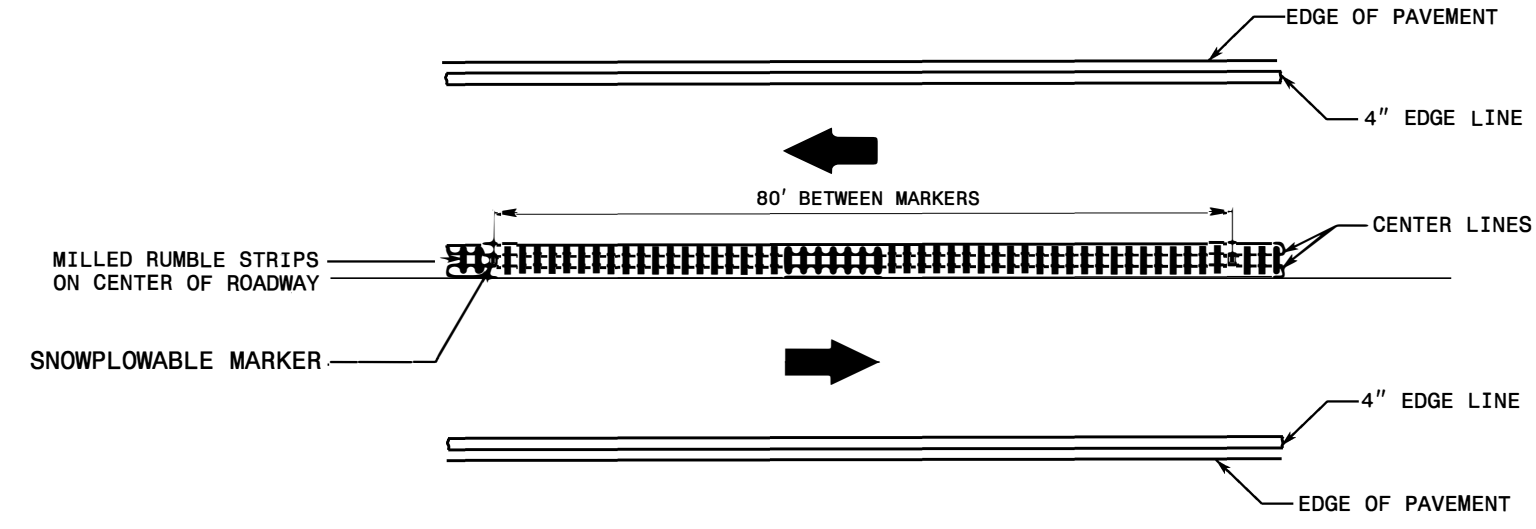
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE WILL BE REQUIRED TO MILL THE EXISTING ASPHALT PAVEMENT TO ENSURE A PROPER TIE-IN WITH THE EXISTING SURFACE AT THE BEGINNING, END AND Y LINES OF EACH MAP TO BE RESURFACED WITH ASPHALT CONC SURFACE COURSE, TYPE S9.5C. THIS WILL BE PAID FOR AS INCIDENTAL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



**MILLING DETAIL AT BRIDGE APPROACHES**

WHERE BRIDGES WILL NOT BE RESURFACED. THIS WILL BE PAID FOR AS INCIDENTAL MILLING. USE AT BRIDGE NUMBER: 185, 194 AND 242 MAP 1.

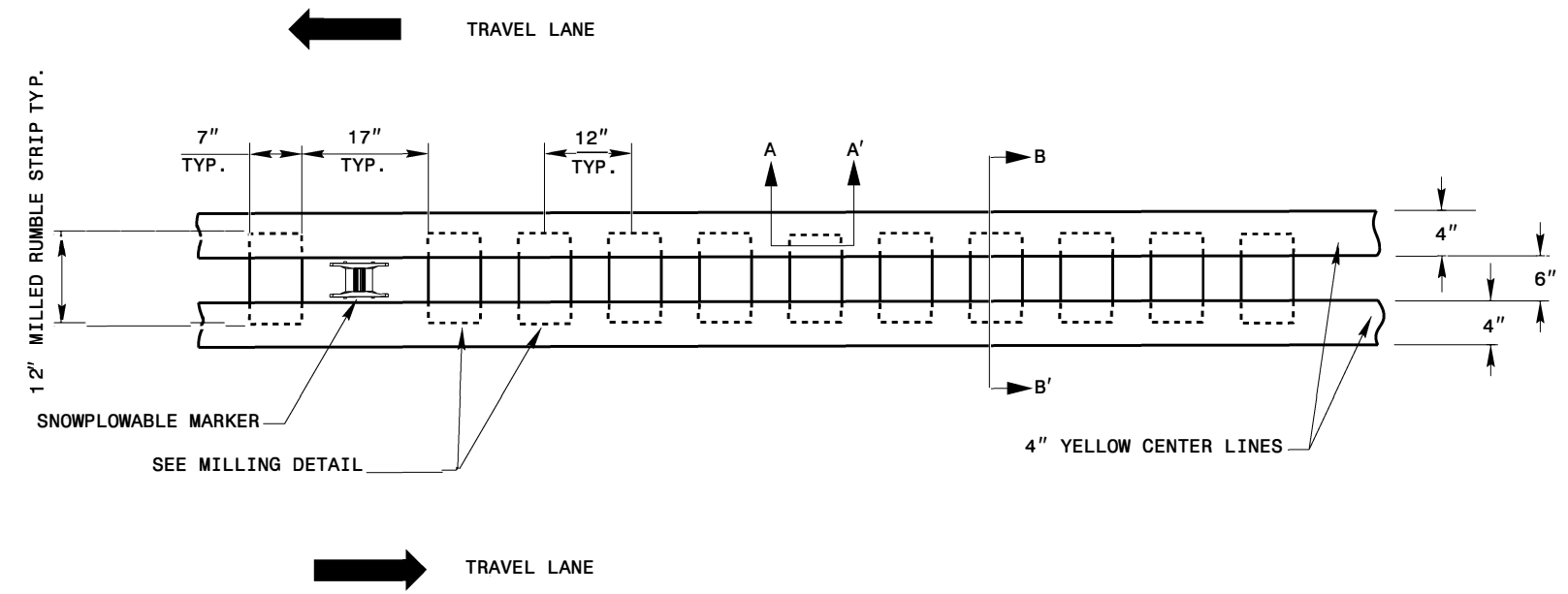
### LANE TREATMENT



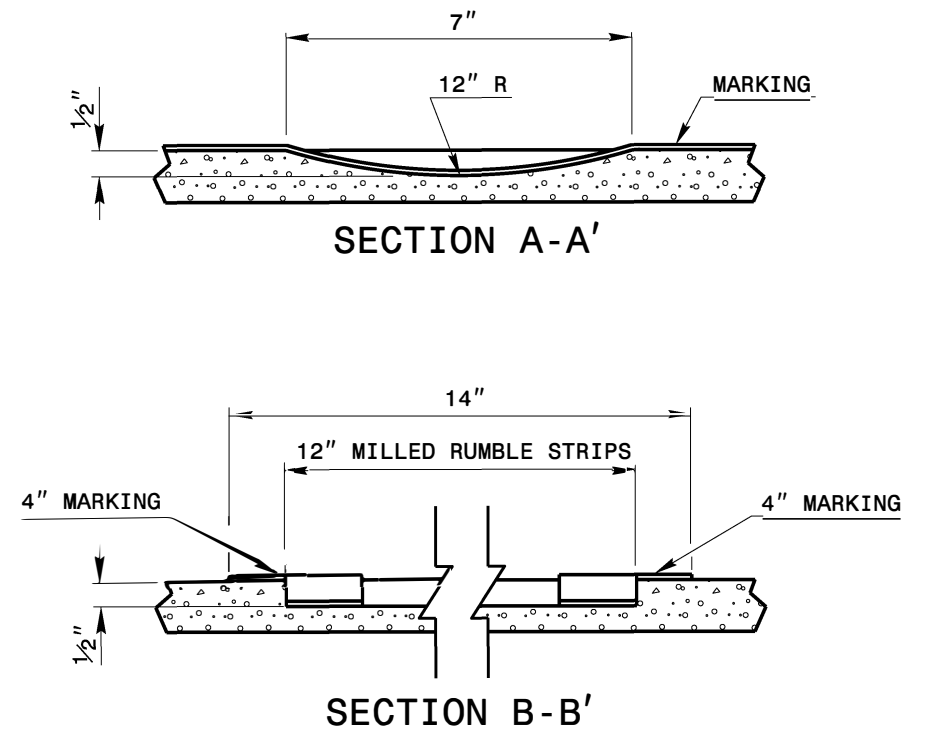
**NOTES:**

- 1) USING A VACUUM IN THE SAME OPERATION, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 2) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING LINES.
- 3) INSTALL SNOWPLOWABLE MARKERS AT APPROXIMATELY 80' INCREMENTS. DO NOT MILL RUMBLE STRIPS IN SECTION WHERE SNOWPLOWABLE MARKERS ARE INSTALLED.

### CENTER LINE



### MILLING/MARKING DETAILS



**CENTER LINE  
RUMBLE STRIPE**

PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.13.01.10111, 2022CPT.13.01.20111	12	24

**SUMMARY OF QUANTITIES**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH	0196000000-E	1099500000-E	1099700000-E	1220000000-E	1245000000-E	1260000000-E	1297000000-E		1308000000-E	1330000000-E	1491000000-E	1523000000-E	1575000000-E	1577000000-E	1693000000-E	1704000000-E		
												GEOTEXTILE FOR SOIL STABILIZATION	SHALLOW UNDERCUT	CLASS IV SUBGRADE STABILIZATION	INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	MILLING ASPHALT PAVEMENT, 1-1/2" DEPTH	MILLING ASPHALT PAVEMENT, 2-1/2" DEPTH	MILLING ASPHALT PAVEMENT, 0" TO 1-1/2" DEPTH	INCIDENTAL MILLING	ASPHALT CONC BASE COURSE, TYPE B25.0C	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	POLYMER MODIFIED ASPHALT BINDER FOR PLANT MIX	ASPHALT PLANT MIX PAVEMENT REPAIR	PATCHING EXISTING PAVEMENT		
											MI	FT	SY	CY	TON	TON	SMI	TON	SY	SY	SY	SY	TONS	TON	TON	TON	TON	TON	
2022CPT.13.01.10111	Buncombe	1	NC 191 (BREVARD RD)	FROM SR 3600 TO US 19BUS (MP 9.31 - MP 11.07)	4,5	5	MU	NO	YES	1.76	25					0.10	26	9,837		8,840	5,130		4,269	256		20	300		
<b>TOTAL FOR PROJ NO. 2022CPT.13.01.10111</b>											<b>1.76</b>					<b>0.10</b>	<b>26.00</b>	<b>9,837</b>		<b>8,840</b>	<b>5,130</b>		<b>4,269</b>	<b>256</b>		<b>20</b>	<b>300</b>		
																			<b>9,837</b>										
2022CPT.13.01.20111	Buncombe	2	SR 3556 (MEADOW RD)	FROM BRIDGE 672 TO PAVT JOINT (MP 0.85 TO 1.45)	1,2	2	2WU	NO	NO	0.6	30	600	75	50.00	180	0.46	120		11,124			221	1,248	85	22		50		
2022CPT.13.01.20111	Buncombe	3	SR 1620 (ALEXANDER RD)	FROM NC-63 TO SR 1625 MAG SLUDER RD (MP 0.00 TO 3.80)	3	2	2WD	NO	NO	6.31	21				7.60	1,976				1,175		4,100	246				1,900		
<b>TOTAL FOR PROJ NO. 2022CPT.13.01.20111</b>											<b>6.91</b>		<b>600</b>	<b>75</b>	<b>50.00</b>	<b>180</b>	<b>8.06</b>	<b>2,096</b>		<b>11,124</b>		<b>1,175</b>	<b>221</b>	<b>5,348</b>	<b>331</b>	<b>22</b>		<b>1,950</b>	
<b>GRAND TOTAL</b>											<b>8.67</b>		<b>600</b>	<b>75</b>	<b>50.00</b>	<b>180</b>	<b>8.16</b>	<b>2,122</b>		<b>9,837</b>	<b>11,124</b>	<b>8,840</b>	<b>6,305</b>	<b>221</b>	<b>9,617</b>	<b>587</b>	<b>22</b>	<b>20</b>	<b>2,250</b>
																			<b>20,961</b>										

1839140000-E	1881000000-E	2549000000-E	2591000000-E	2605000000-N	2815000000-N	2830000000-N	2845000000-N	5255000000-N	7444000000-E
ULTRA-THIN BONDED WEARING COURSE	MILLED RUMBLE STRIPS 12" WIDTH	2'-6" CONCRETE CURB & GUTTER	4" CONCRETE SIDEWALK	CONCRETE CURB RAMP	ADJUSTMENT OF DROP INLET	ADJUSTMENT OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES	PORTABLE LIGHTING	INDUCTIVE LOOP SAWCUT
TON	LF	LF	SY	EA	EA	EA	EA	LS	LF
		200	60	10	2	5	6	*	3,181
		200	60	10	2	5	6	*	3,181
420	3,175					2	8	*	156
420	3,175					2	8	*	156
420	3,175	200	60	10	2	7	14	1	3,337

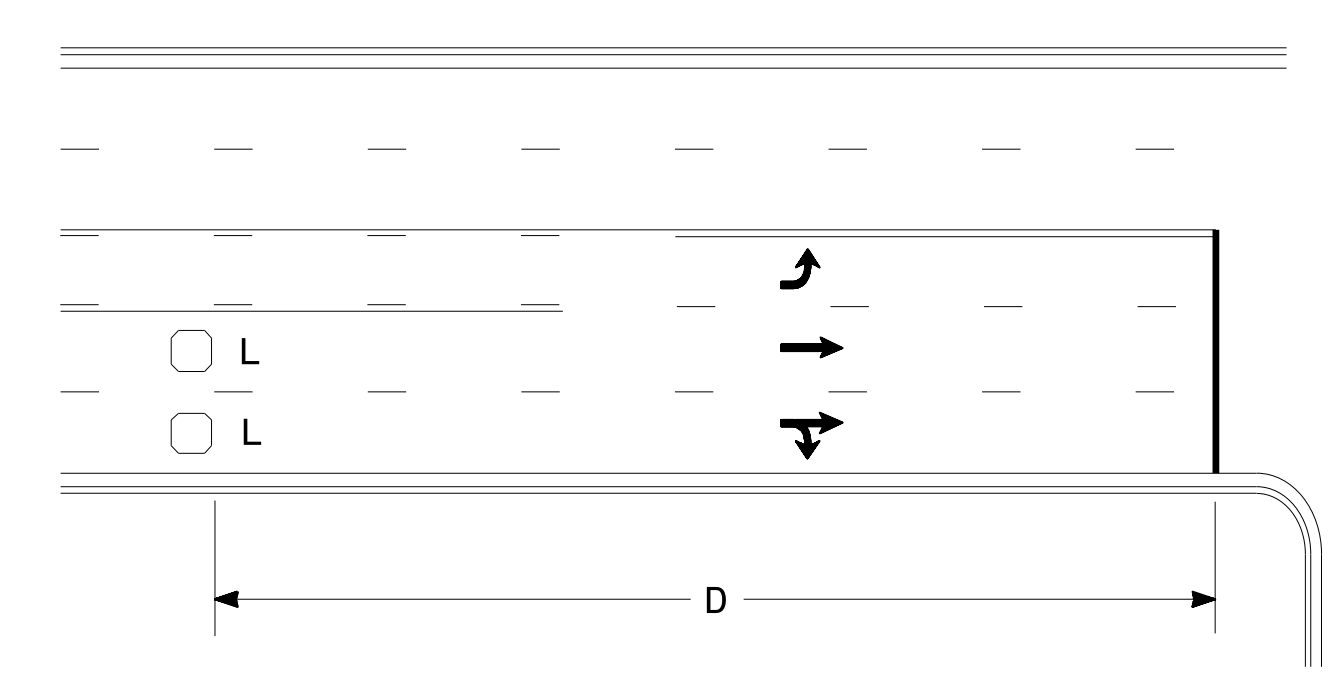
PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.13.01.10111, 2022CPT.13.01.20111	13	24

**THERMOPLASTIC AND PAINT QUANTITIES**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	4405000000-E	4410000000-E	4413000000-E	4447000000-E	4457000000-N	4600000000-N		4695000000-E	4725000000-E				4726110000-E		4810000000-E	4890000000-E						
										WORK ZONE SIGNS (PORTABLE)	WORK ZONE SIGNS (BARRICADE MTD)	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	PEDESTRIAN CHANNELING DEVICES	TEMPORARY TRAFFIC CONTROL	GENERIC TRAFFIC CONTROL ITEM AUDIBLE WARNING DEVICES	GENERIC TRAFFIC CONTROL ITEM TEMPORARY CURB RAMPS	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS) WHITE DIAGONAL	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) LT ARROW	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) STR ARROW	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) RT ARROW	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) STR & RT ARROW	HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) BIKE SYMBOL STR ARROW	HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) SHARROW	PAINT PAVEMENT MARKING LINES (4") YELLOW	POLYUREA PAVEMENT MARKING LINES (4", 20 MILS) WHITE (STANDARD GLASS BEADS)	POLYUREA PAVEMENT MARKING LINES (4", 20 MILS) YELLOW (STANDARD GLASS BEADS)	POLYUREA PAVEMENT MARKING LINES (4", 30 MILS) WHITE (STANDARD GLASS BEADS)	POLYUREA PAVEMENT MARKING LINES (4", 30 MILS) YELLOW (STANDARD GLASS BEADS)	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS) WHITE		
									MI	FT	SF	SF	SF	LF	LS	EA	EA	LF	EA	EA	EA	EA	EA	EA	LF	LF	LF	LF	LF		
2022CPT.13.01.10111	Buncombe	1	NC 191 (BREVARD RD)	FROM SR 3600 TO US 19BUS (MP 9.31 - MP 11.07)	4,5	5	MU	1.76	25	20	10	300	10	*	1	1		14	32	16	2			5,000	6,432	15,796			278		
<b>TOTAL FOR PROJ NO. 2022CPT.13.01.10111</b>									<b>1.76</b>		<b>20</b>	<b>10</b>	<b>300</b>	<b>10</b>	<b>*</b>	<b>1</b>	<b>1</b>		<b>14</b>	<b>32</b>	<b>16</b>	<b>2</b>			<b>5,000</b>	<b>6,432</b>	<b>15,796</b>			<b>278</b>	
																		<b>64</b>							<b>22,228</b>						
2022CPT.13.01.20111	Buncombe	2	SR 3556 (MEADOW RD)	FROM BRIDGE 672 TO PAVT JOINT (MP 0.85 TO 1.45)	1,2	2	2WU	0.6	30			570		*			275	6									9,608	7,596			
2022CPT.13.01.20111	Buncombe	3	SR 1620 (ALEXANDER RD)	FROM NC-63 TO SR 1625 MAG SLUDER RD (MP 0.00 TO 3.80)	3	2	2WD	6.31	21					*			275	6							40,060	39,990			75		
<b>TOTAL FOR PROJ NO. 2022CPT.13.01.20111</b>									<b>6.91</b>				<b>570</b>		<b>*</b>		<b>275</b>	<b>6</b>									<b>40,060</b>	<b>39,990</b>	<b>9,608</b>	<b>7,596</b>	<b>75</b>
<b>GRAND TOTAL</b>									<b>8.67</b>		<b>20</b>	<b>10</b>	<b>870</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>275</b>	<b>20</b>	<b>32</b>	<b>16</b>	<b>2</b>			<b>5,000</b>	<b>46,492</b>	<b>55,786</b>	<b>9,608</b>	<b>7,596</b>	<b>353</b>	
																		<b>70</b>							<b>102,278</b>						

4895000000-N		
GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS) ONLY	GENERIC PAVEMENT MARKING ITEM HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS) BIKE SYMBOL	NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKERS
EA	EA	EA
16		298
16		298
	6	41
	6	41
16	6	339

### High Speed Detection (≥40 mph)

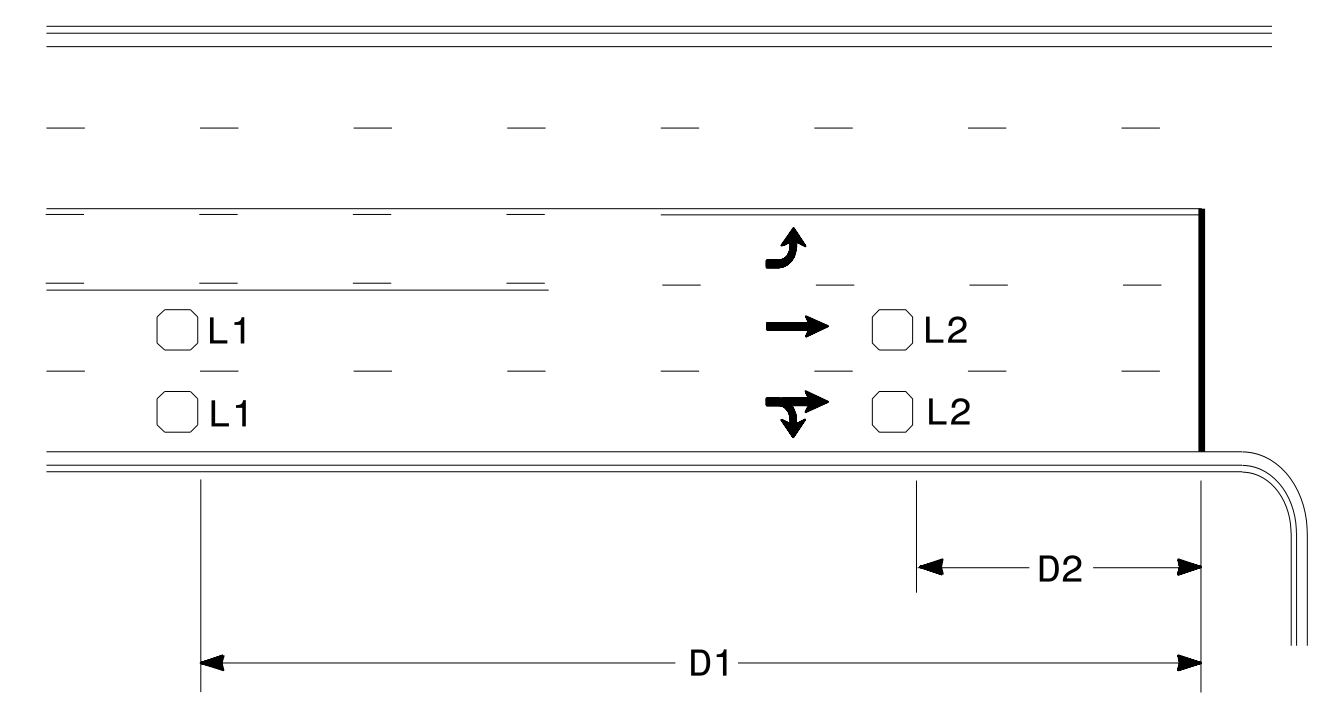


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

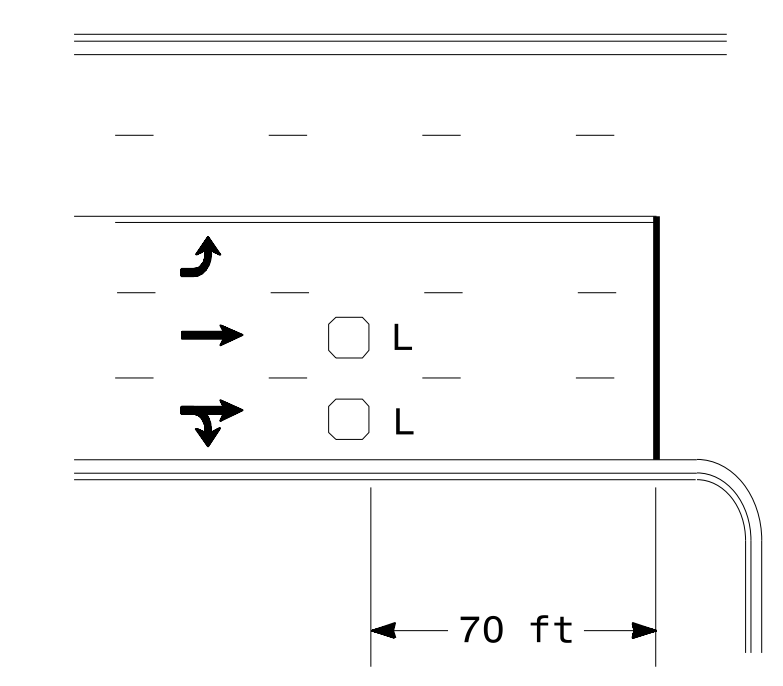


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

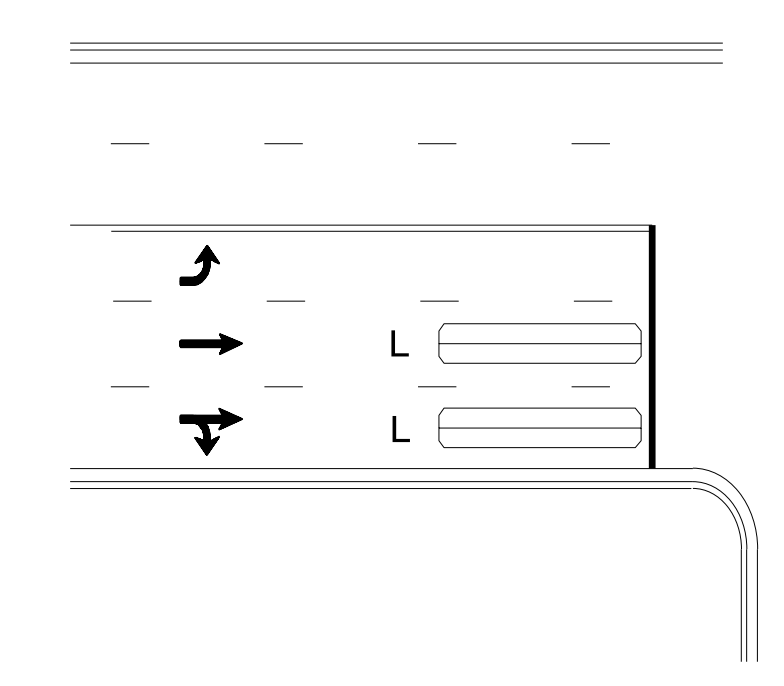
"Stretch" Operation

### Low Speed Detection (≤35 mph)



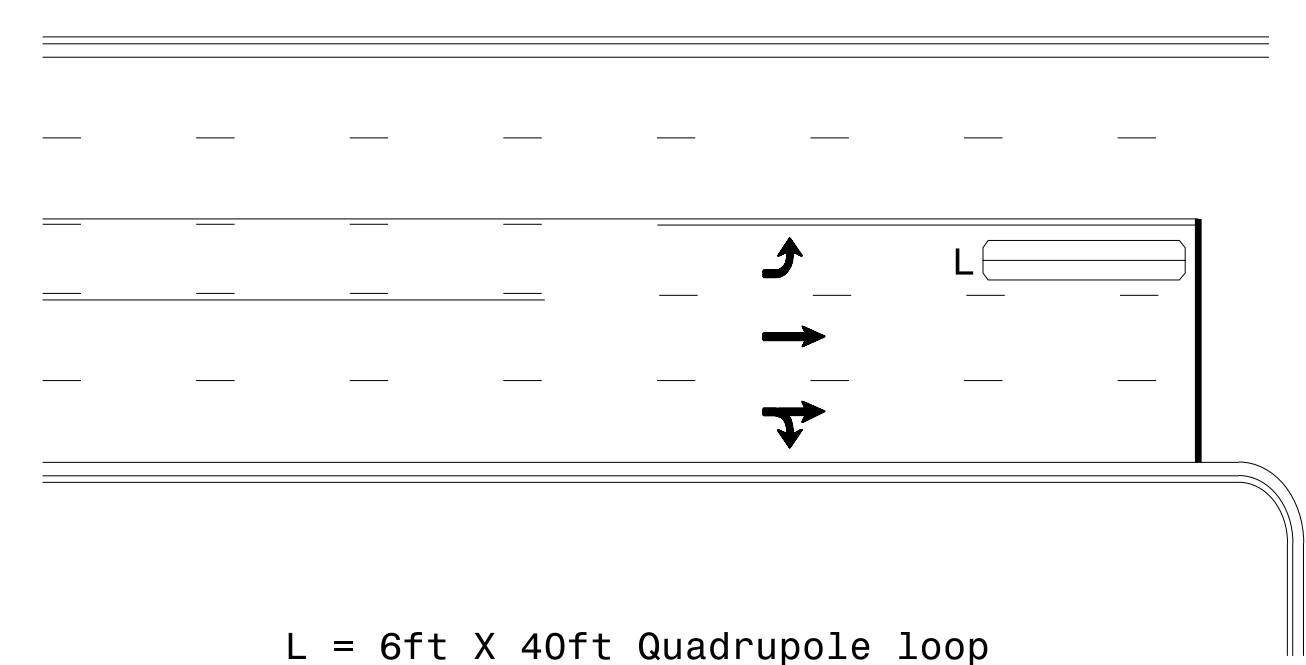
L = 6ft X 6ft  
Wired in series

OR



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

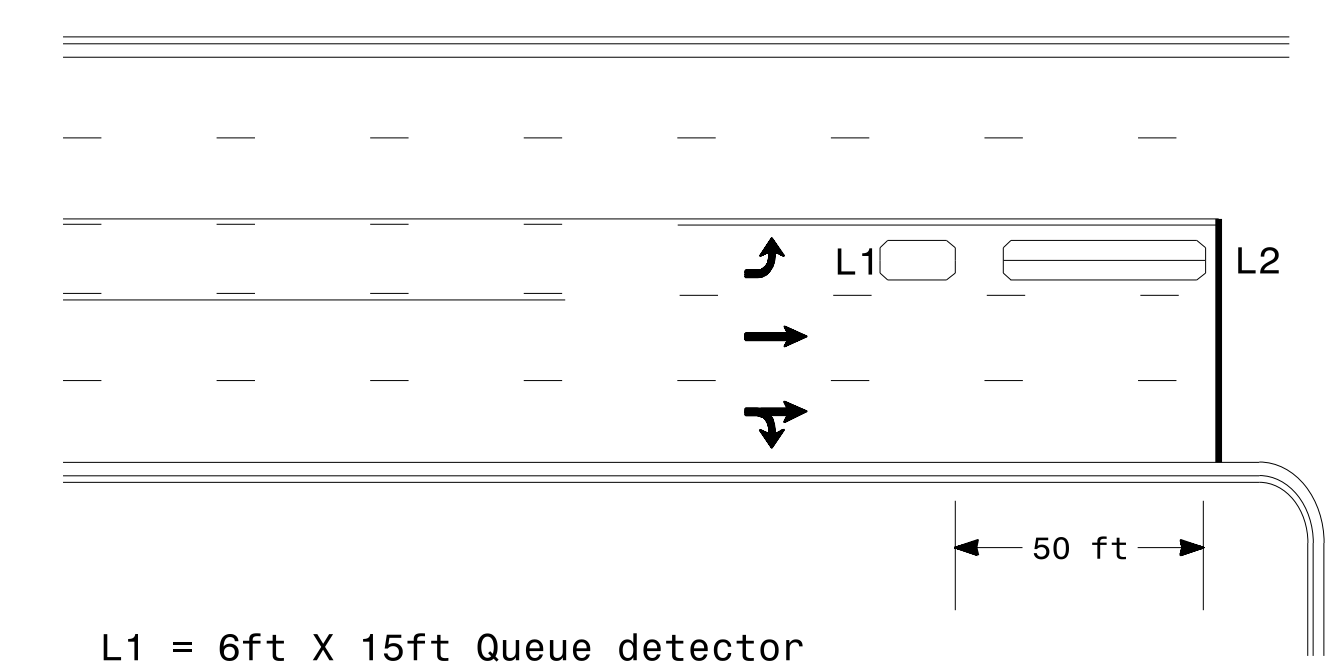
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

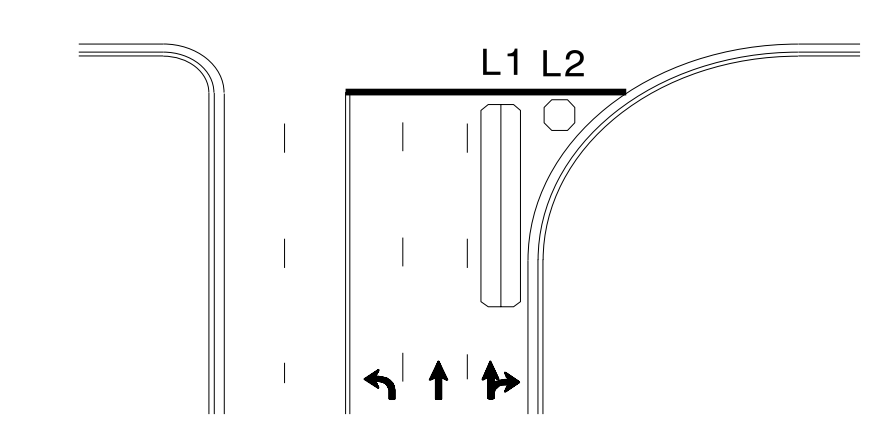
OR



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

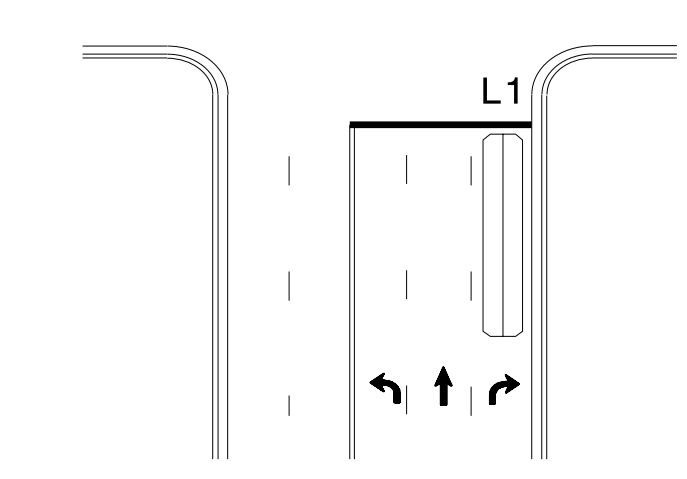
Queue Loop Detection

### Right Turn Lane Detection

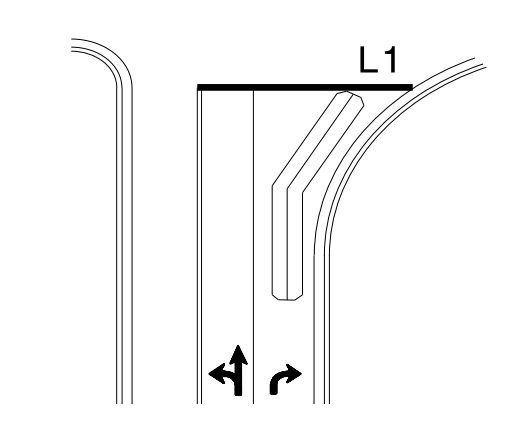


Shared Lane/  
Wide Radius Turn

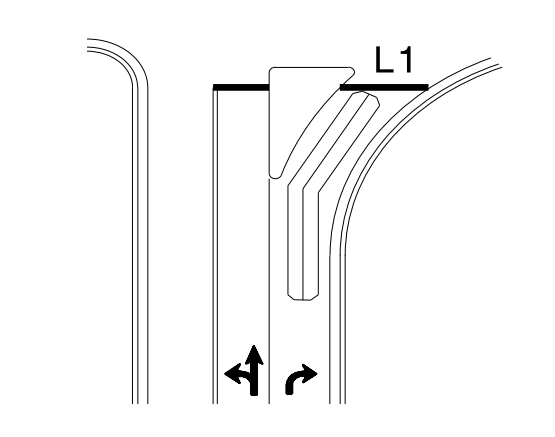
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

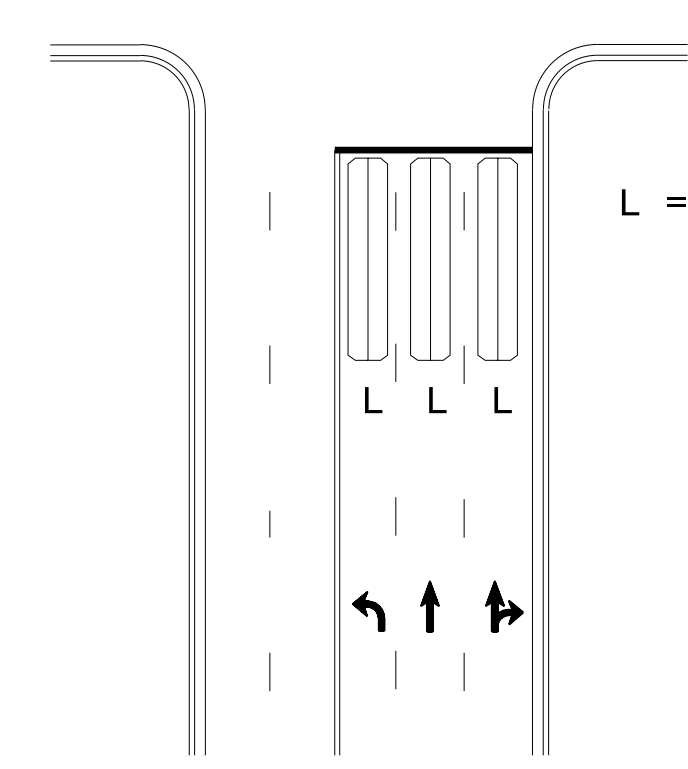


Wide Radius Turn



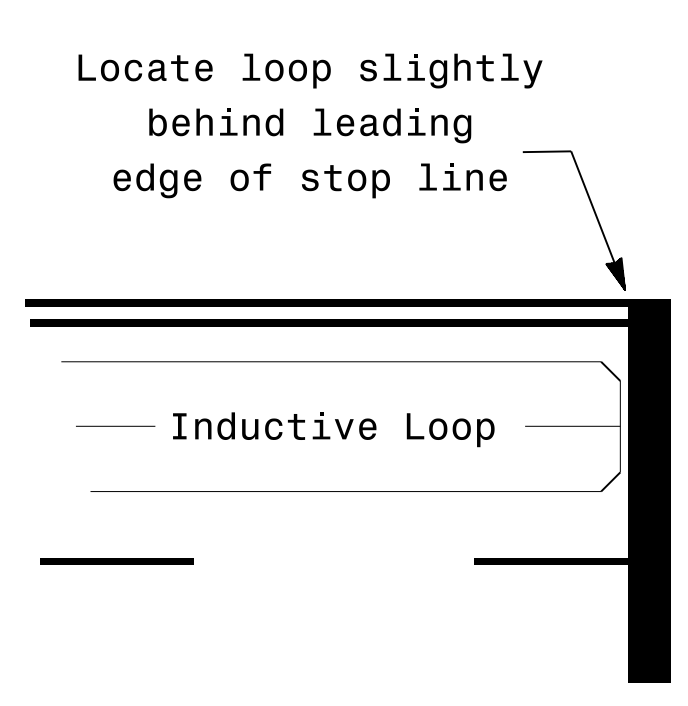
Channelized Turn

### 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

SCALE: N/A

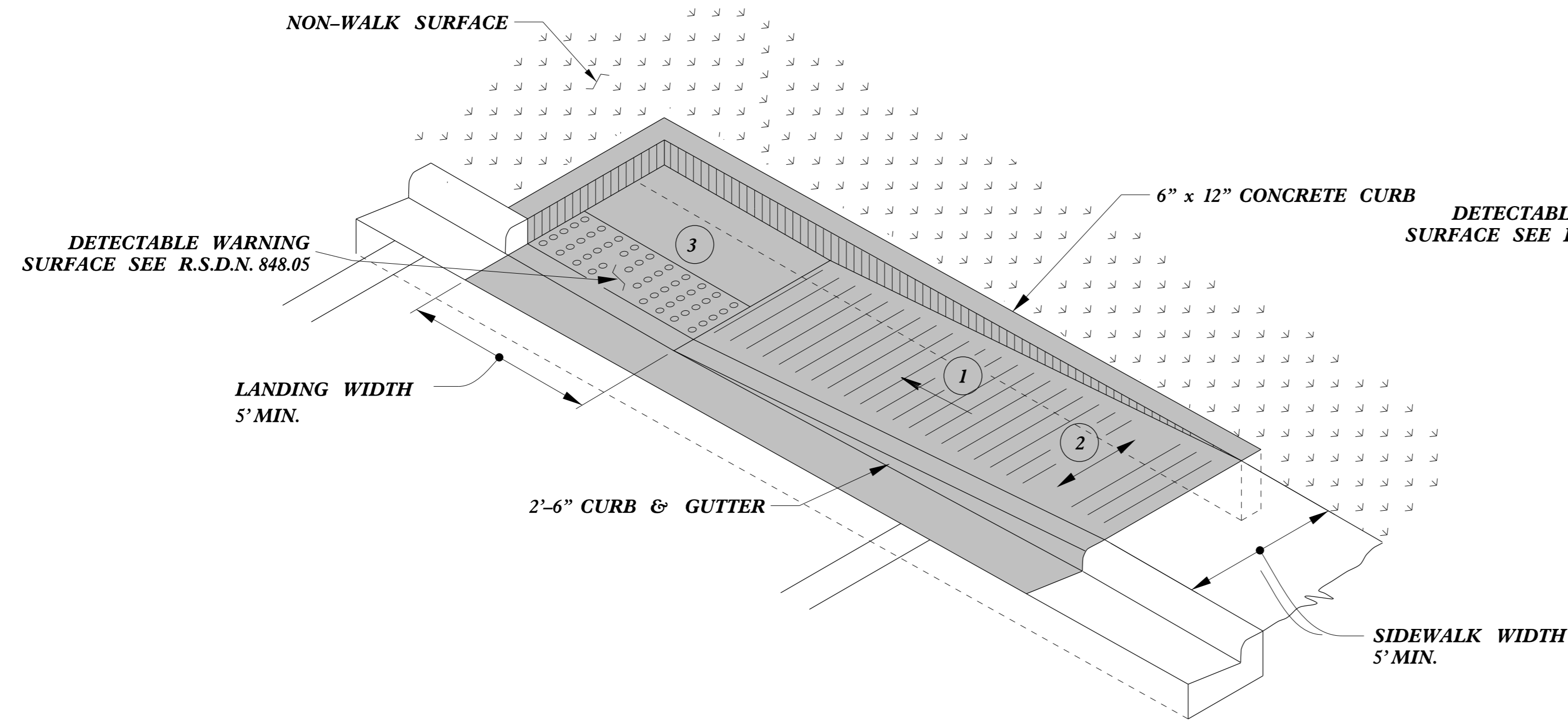
SEAL

1/30/2015

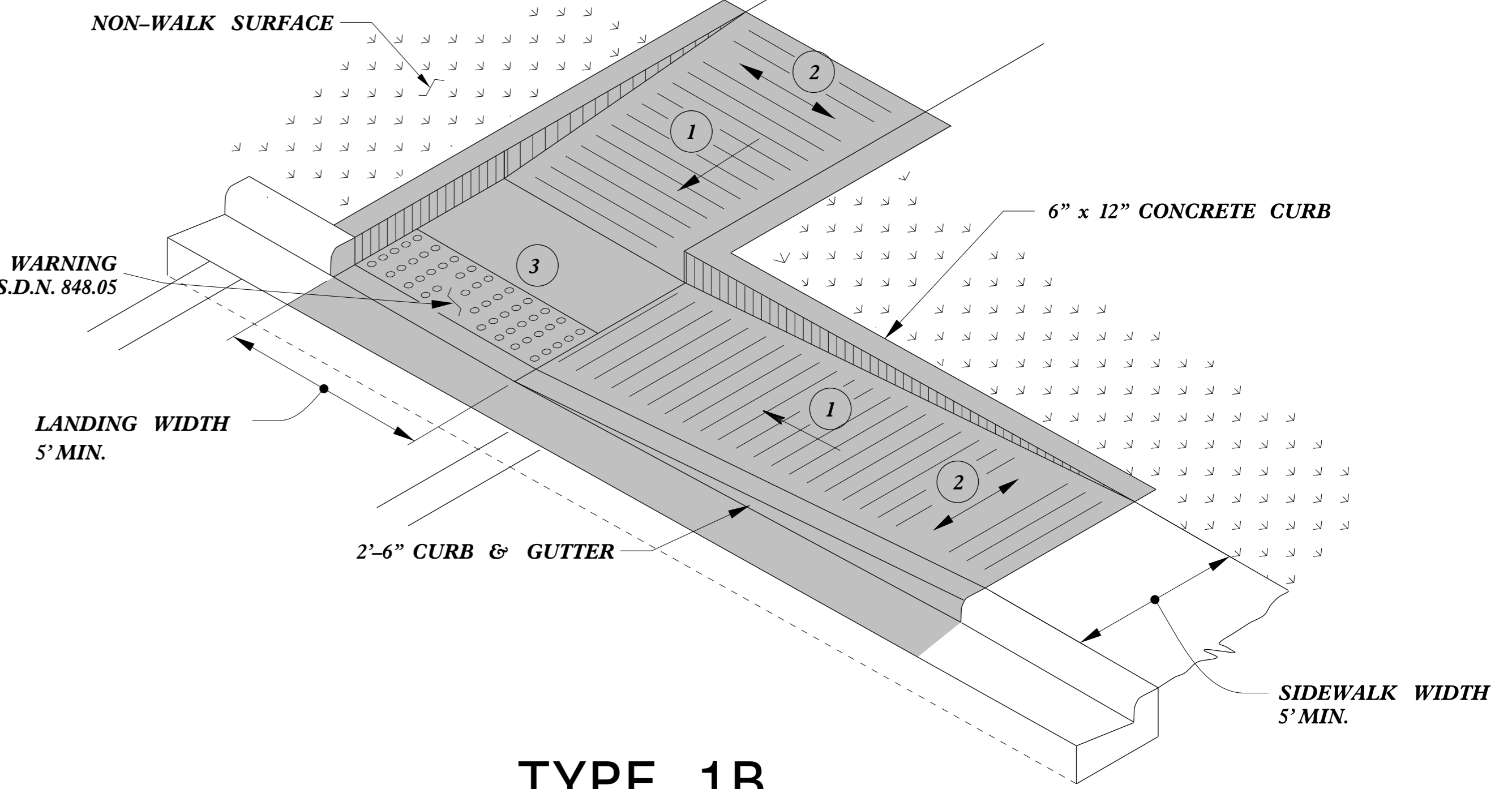
3D:\4146-2015\_13\319  
 S:\ITS\ASST\13\SIGNAL\Signal Design\Section\Eastern\Region\loop\ypj\ca\2015.dgn  
 paalexander

5/14/99

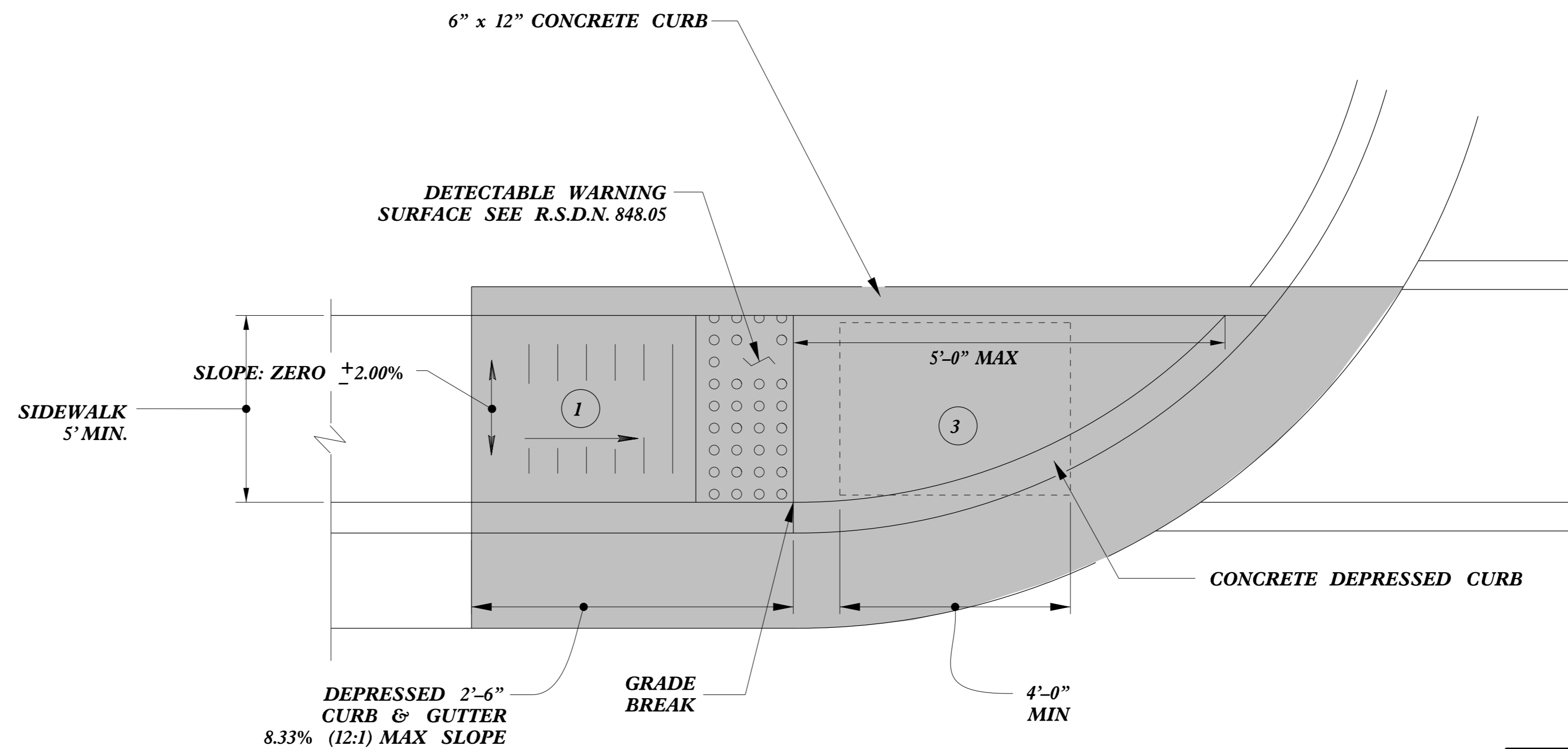
PROJECT NO.	SHEET NO.	TOTAL NO.
2022CPT.13.01.10111, 2022CPT.13.01.20111	15	24



TYPE 1A



TYPE 1B



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

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

5/14/99

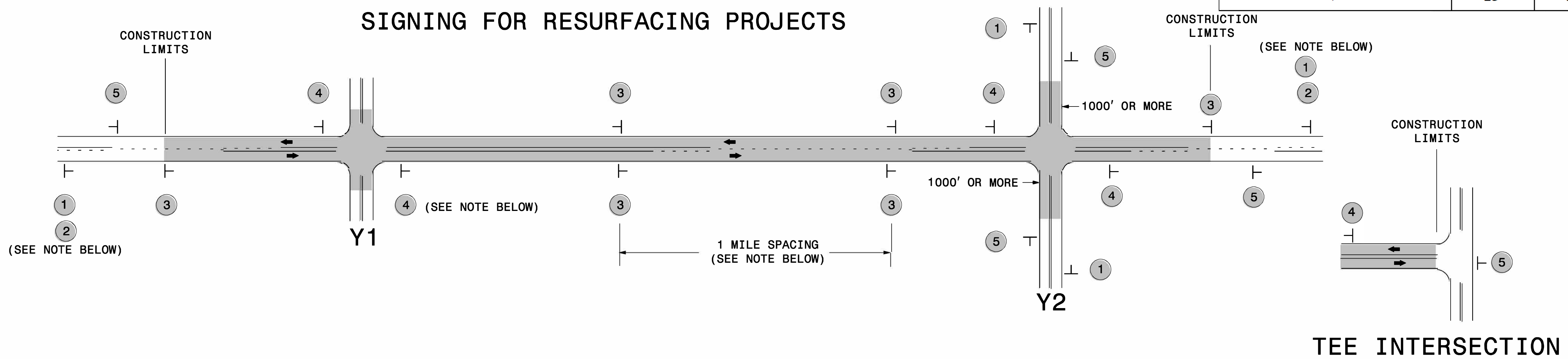








# SIGNING FOR RESURFACING PROJECTS



LEGEND	
┆	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

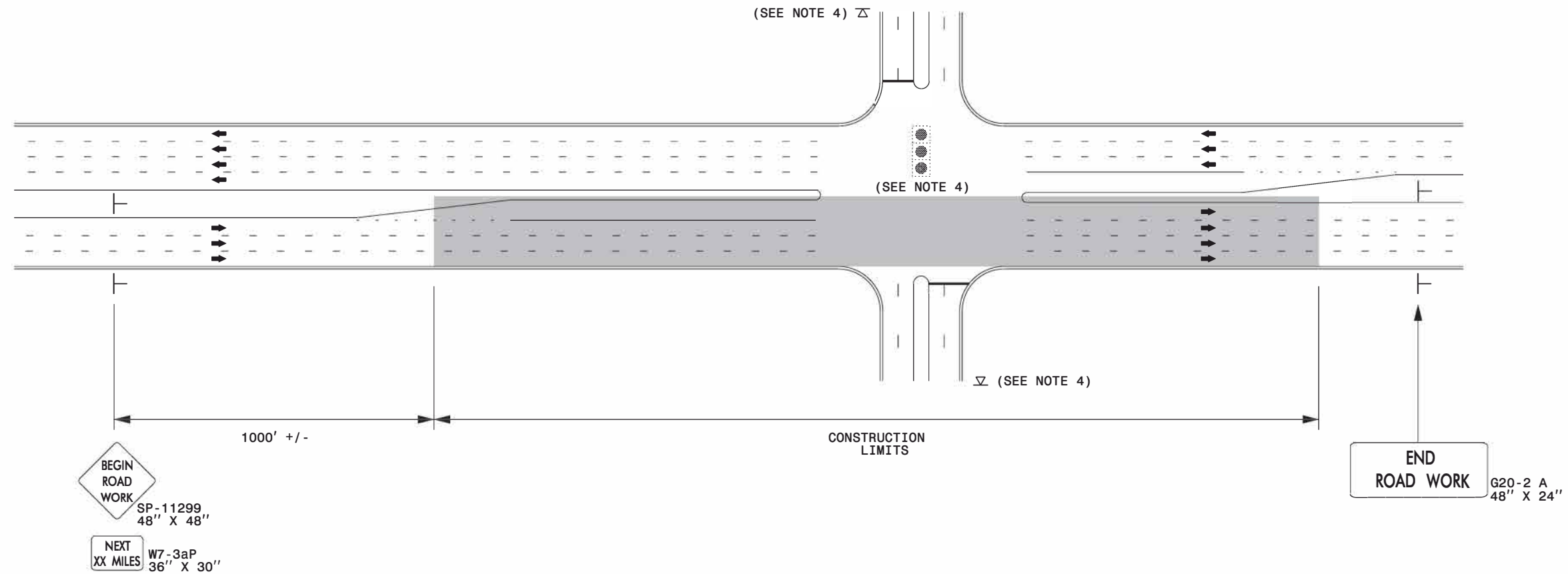
## MAINLINE (-L-) SIGNING

## -Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	2	3	4	5		
						<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>	<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, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.</p> <p> </p> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>

**RESURFACING  
ADVANCE WARNING SIGNS  
FOR  
RURAL AND SUBURBAN  
2 LANE ROADWAYS**

## 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.

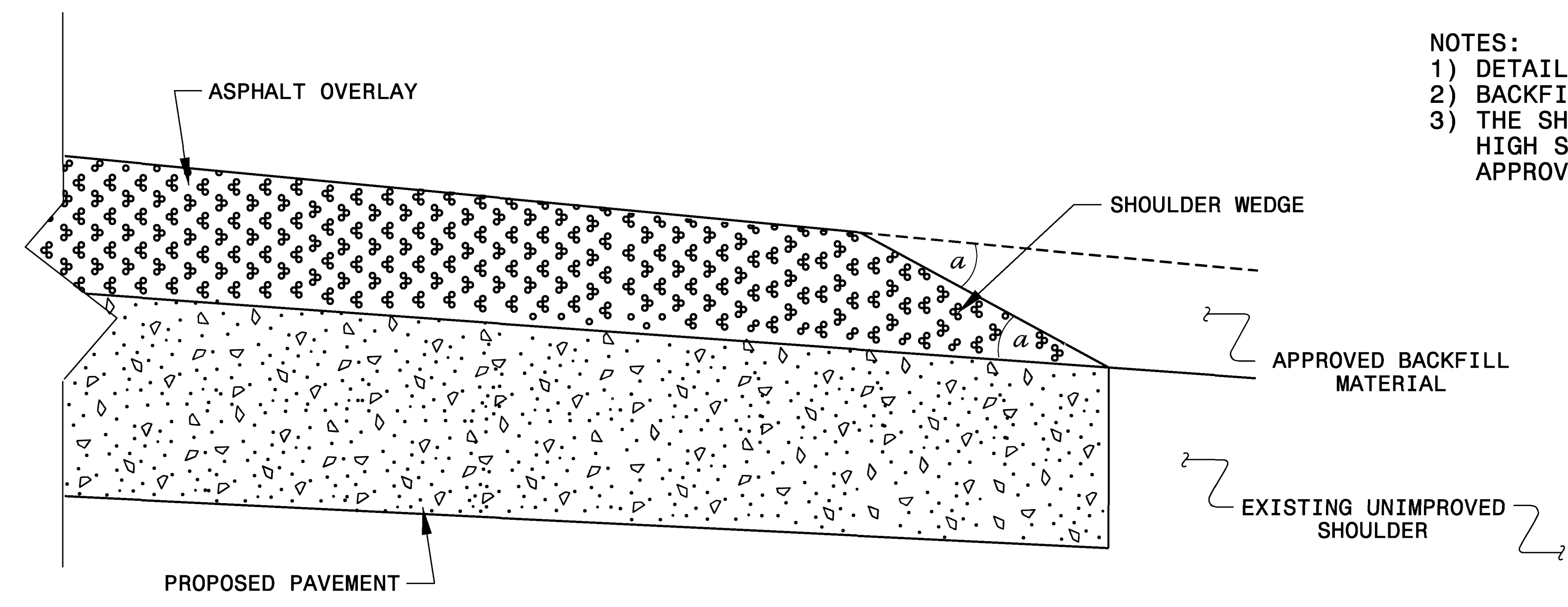
### LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW

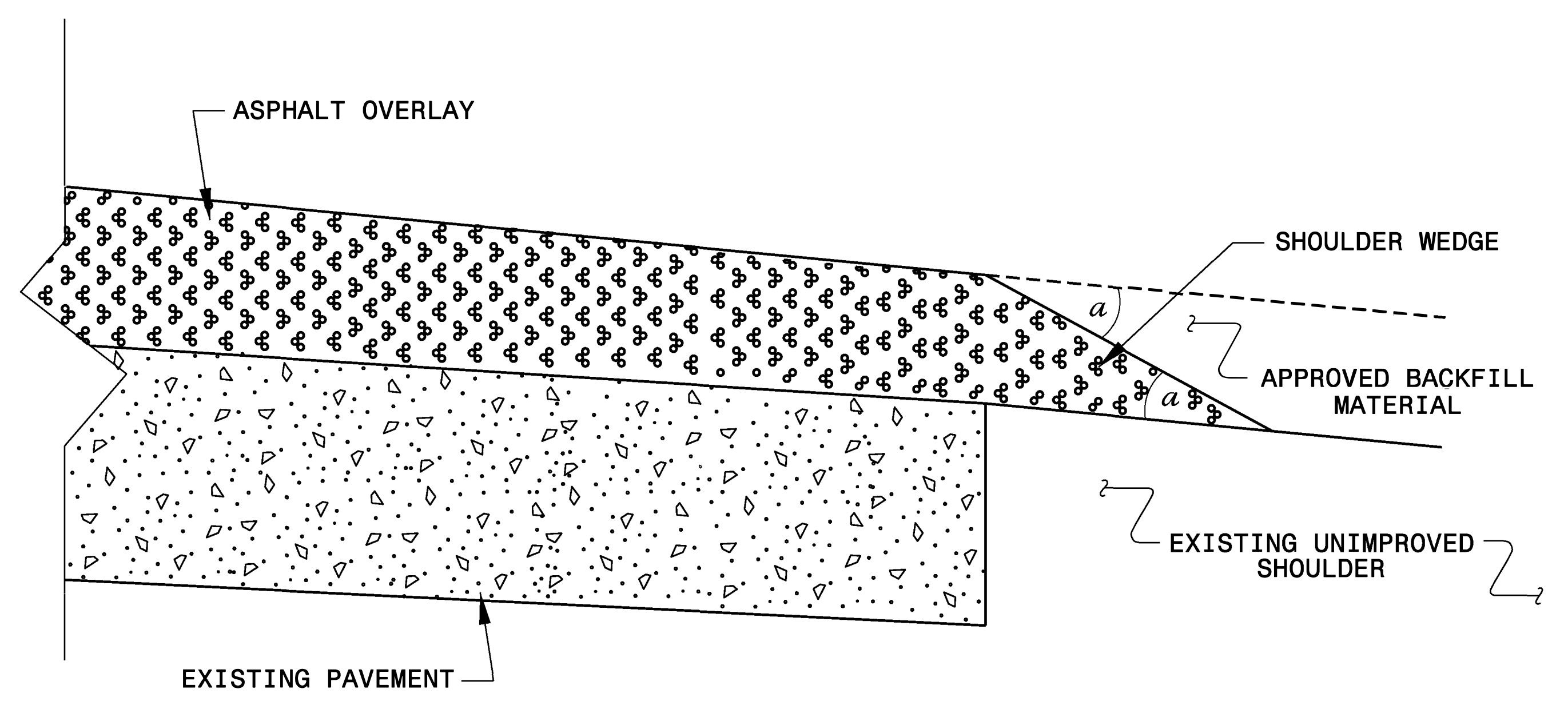


**RESURFACING ADVANCE  
WARNING SIGNS FOR  
URBAN / SUBURBAN  
FACILITIES**

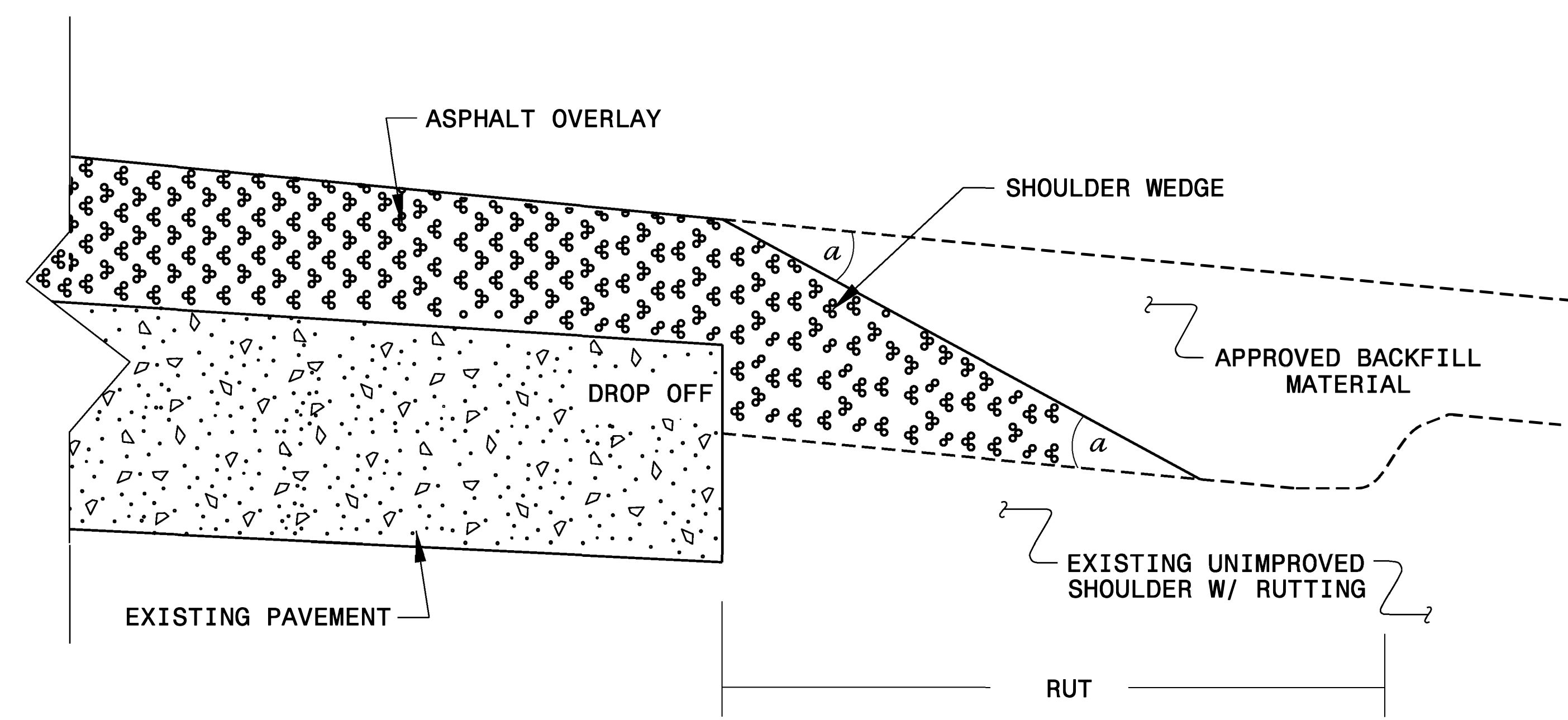
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAF C AND ULTRA-THIN BONDED WEARING COURSE.
  - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
  - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Projects w/ Widening or  
 with Existing Paved Shoulder having no dropoffs)



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Projects w/ NO Widening)



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Adjacent to  
 Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°



<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: 2/2/16
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

12-SEP-2018 10:10 S:\Contracts\Resurfacing Projects\Shoulder Wedge Details\Revised Shoulder Wedge Detail.dgn Jhowerton AT USD-212595



SIGN NUMBER: SP13106  
 TYPE: STATIONARY  
 QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange  
 COPY COLOR: Black

DESIGN BY: B. RASHID  
 PROJECT ID:

CHECKED BY: AIA  
 DIV:

DATE: Apr 26, 2013

SYMBOL	X	Y	WID	HT

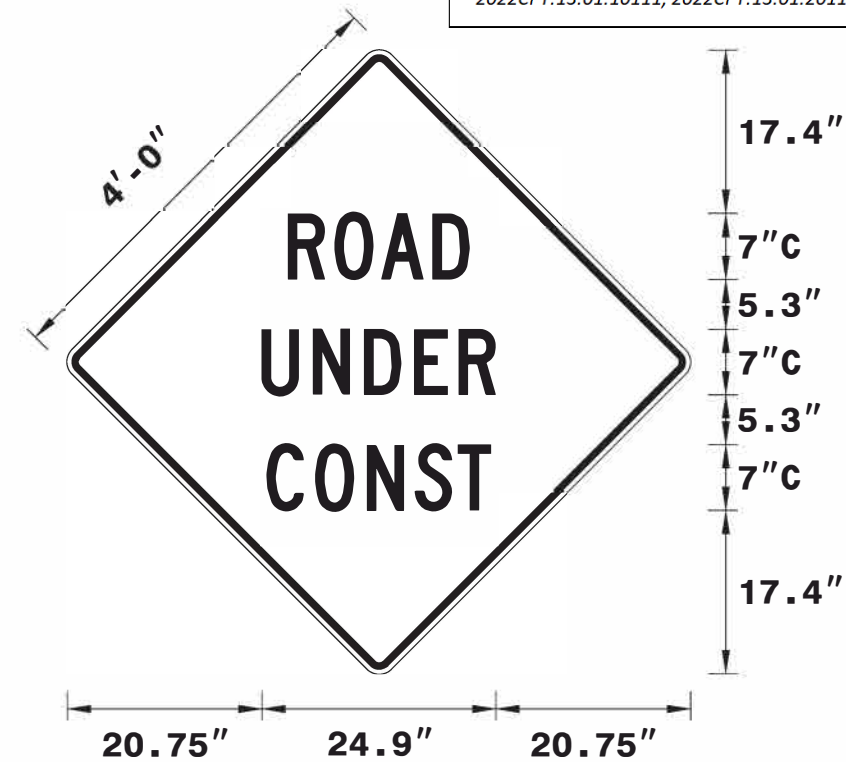
SIGN WIDTH: 4'-0"  
 HEIGHT: 4'-0"  
 TOTAL AREA: 16.00 Sq.Ft.

BORDER TYPE: INSET  
 RECESS: 0.75"  
 WIDTH: 1.25"  
 RADII: 3"

NO. Z BARS:  
 LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

PROJECT NO.	SHEET NO.	TOTAL NO.
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Spacing Factor is 1 unless specified otherwise

USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

LETTER POSITIONS

Letter spacings are to start of next letter													Series/Size Text Length
	R	O	A	D									C 2000
23.5	5	5	5.5	3.9	23.5								19.3
	U	N	D	E	R								C 2000
20.7	5.5	5.5	5.3	4.8	3.9	20.7							24.9
	C	O	N	S	T								C 2000
21.2	5.2	5.5	5.1	4.6	3.6	21.2							23.9

