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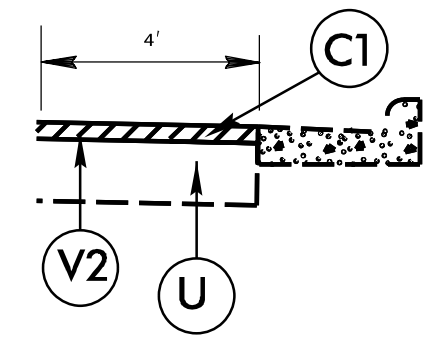
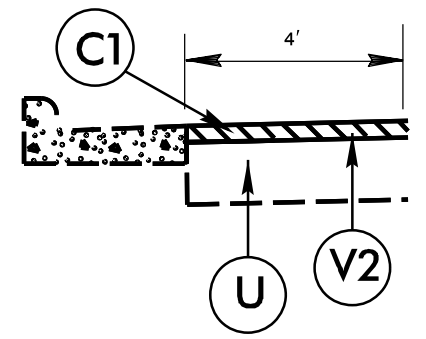
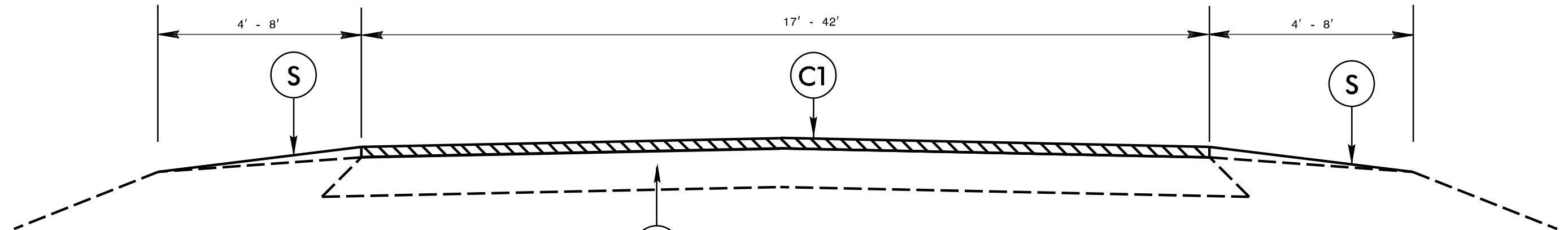
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PAVEMENT SCHEDULE

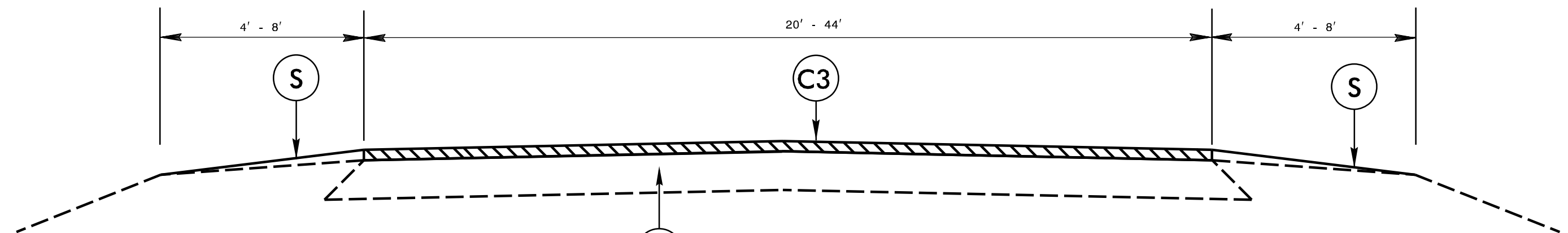
PROJECT REFERENCE NO.
2017CPT.05.04.20911.1, etc.

SHEET NO.
8

		U	EXISTING PAVEMENT
C1	1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	V1	1½" MILLING
C2	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	V2	0"-1¼" MILLING
C3	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.		
S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)		



TYPICAL SECTION NO. 1

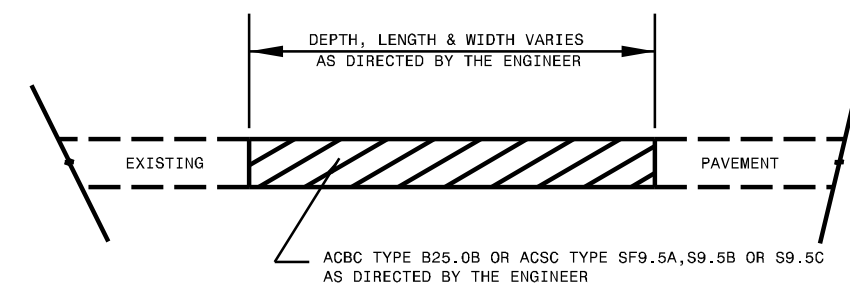


TYPICAL SECTION NO. 2

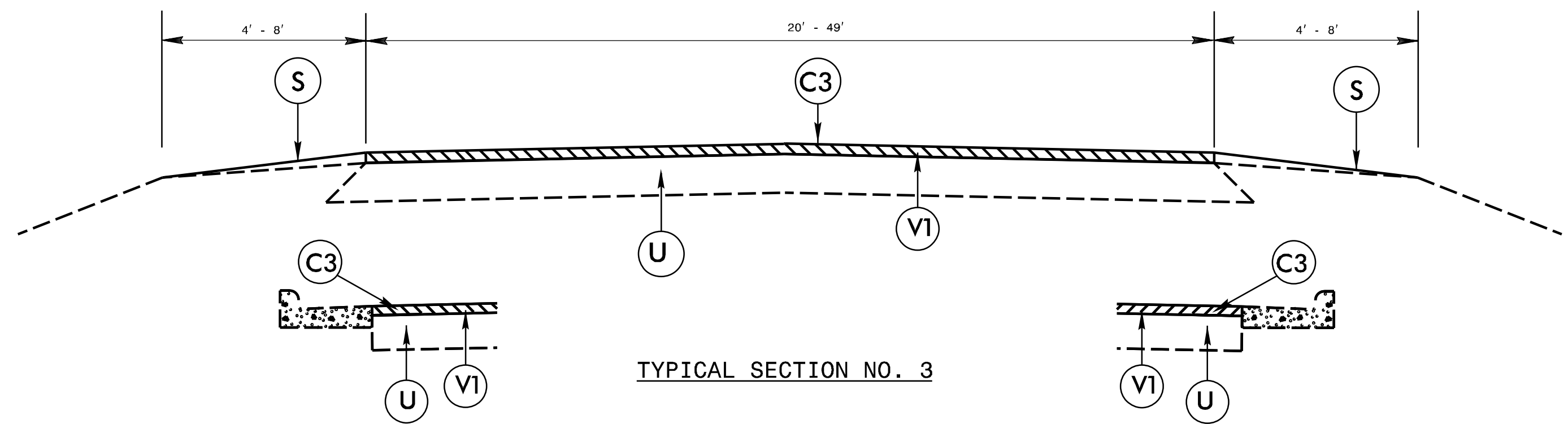
PAVEMENT SCHEDULE

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S	SHOULDER GRADING ASB REQUIRED (EXCEPT AT RESIDENTIAL AREAS)		

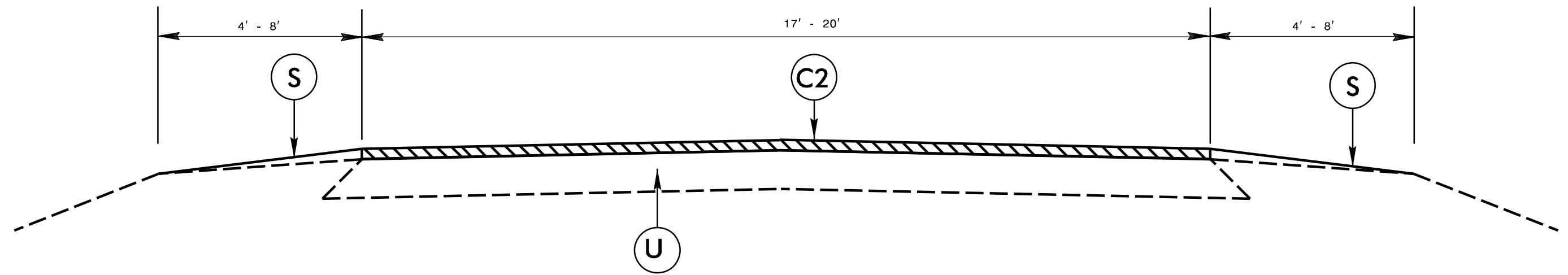
PROJECT REFERENCE NO.	SHEET NO.
2017CPT.05.04.20911.1, etc.	9



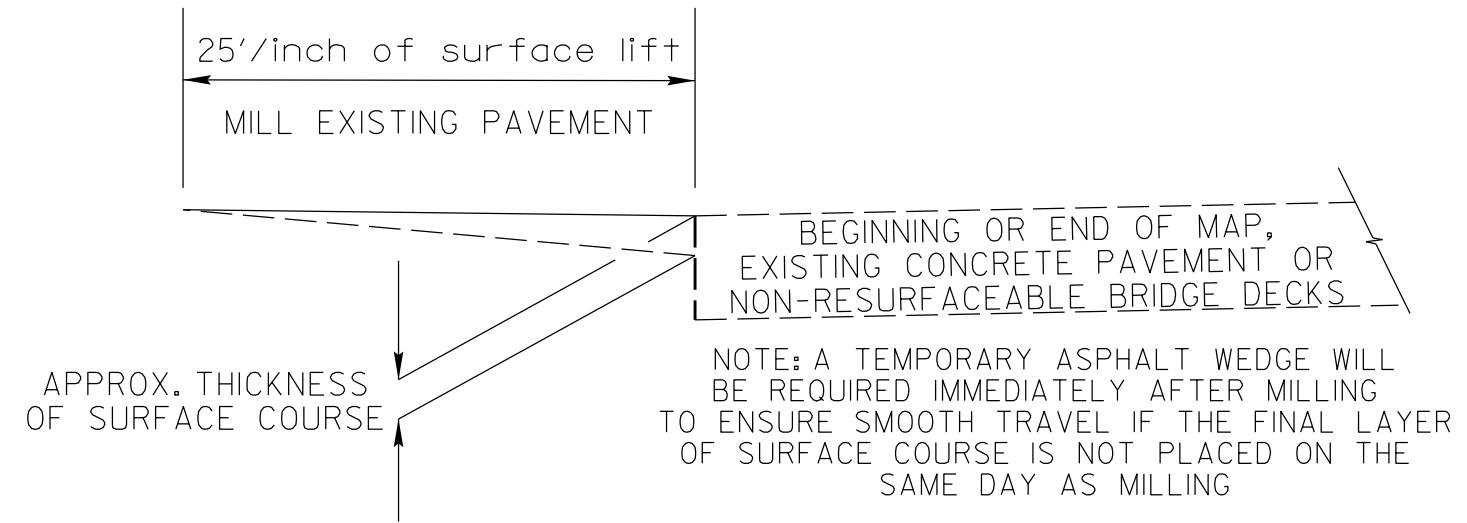
PATCHING EXISTING PAVEMENT
MILLING (IF REQUIRED BY TYPICAL) TO BE PERFORMED PRIOR TO PATCHING



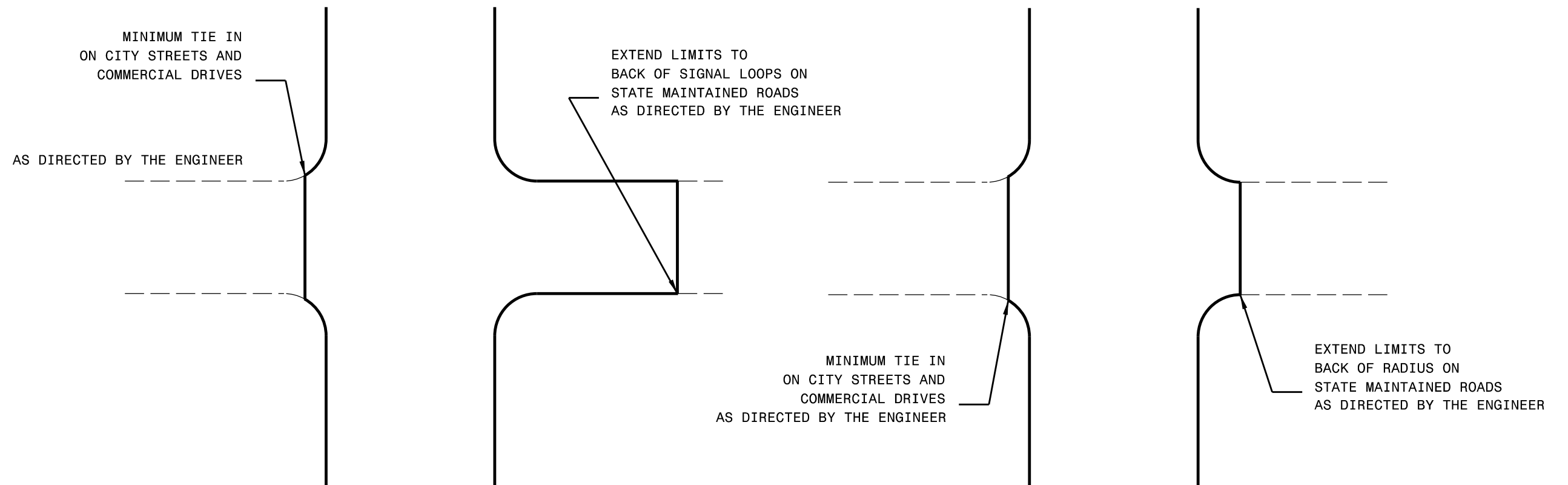
TYPICAL SECTION NO. 3



TYPICAL SECTION NO. 4



DETAIL OF INCIDENTAL MILLING



DETAIL OF PROJECT LIMITS AT
SIGNALIZED Y LINES

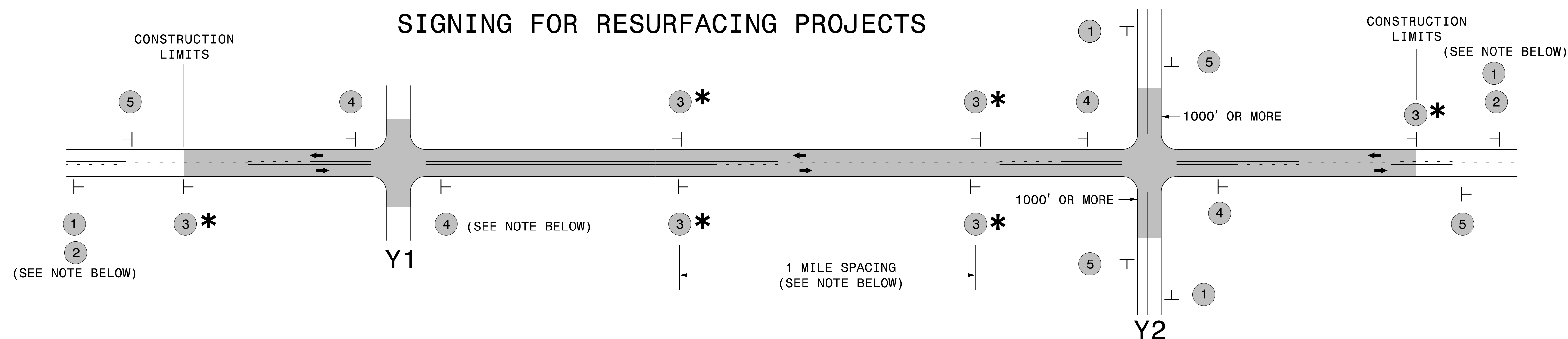
DETAIL OF PROJECT LIMITS AT
UNSIGNALIZED Y LINES

PROJECT NO.	SHEET NO.	TOTAL NO.
2017CPT.05.04.20911.1, etc.		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	BORROW CY	AGGREGATE SHOULDER BORROW (ASB) TON	SHOULDER GRADING SMI	INCIDENTAL STONE BASE TONS	1 1/2" MILLING SY	0" TO 1.25" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TON	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TONS	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP LF	
2017CPT.05.04.20911.1	Vance	1	SR 1276 - NOTTINGHAM CT	SR 1273 - S STRATFORD DR TO CUL-DE-SAC	1	2		NO	NO	0.09	20	18		0.18	4				94	6	10				13	40	0.13		
TOTAL FOR MAP NO. 1										0.09		18		0.18	4				94	6	10				13	40	0.13		
2017CPT.05.04.20911.1	Vance	2	SR 1274 - E STRATFORD	SR 1273 - S STRATFORD DR TO CUL-DE-SAC	1	2		NO	NO	0.23	18	46		0.46	12				206	14	150			3	33	90	0.34		
TOTAL FOR MAP NO. 2										0.23		46		0.46	12				206	14	150			3	33	90	0.34		
2017CPT.05.04.20911.1	Vance	3	SR 1533 - VICKSBORO RD	NC 39 TO SR 1524 -	3	2		NO	NO	5.27	25-49	527	506	10.54	132	82,832		1,400	7,463	448	300				383	960	3.83		
TOTAL FOR MAP NO. 3										5.27		527	506	10.54	132	82,832		1,400	7,463	448	300				383	960	3.83		
2017CPT.05.04.20911.1	Vance	4	SR 1235 - LONG CREEK CIR	SR 1105 - KITTRELL COLLEGE RD TO SR 1105 - KITTRELL	1	2		NO	NO	0.17	17	33		0.33	8				123	8	15				24	70	0.24		
TOTAL FOR MAP NO. 4										0.17		33		0.33	8				123	8	15				24	70	0.24		
2017CPT.05.04.20911.1	Vance	5	SR 1273 - S STRATFORD DR	US 158 TO DEAD END	1	2		NO	NO	0.517	22	103		1.03	26			76	494	33	300			2	75	190	0.75		
TOTAL FOR MAP NO. 5										0.517		103		1.03	26			76	494	33	300			2	75	190	0.75		
2017CPT.05.04.20911.1	Vance	6	SR 1524 - VICKSBORO RD	SR 1533 - VICKSBORO RD TO WARREN COUNTY	3	2		NO	NO	0.87	25	87	84	1.75	22	9,596		3,560	1,166	70	100				63	160	0.64		
TOTAL FOR MAP NO. 6										0.87		87	84	1.75	22	9,596		3,560	1,166	70	100				63	160	0.64		
2017CPT.05.04.20911.1	Vance	7	SR 1277 - CANTERBURY CT	SR 1274 - WINDSOR CT TO END MAINT.	1	2		NO	NO	0.36	20	72		0.72	18				331	22	20				52	140	0.52		
TOTAL FOR MAP NO. 7										0.36		72		0.72	18				331	22	20				52	140	0.52		
2017CPT.05.04.20911.1	Vance	8	SR 1165 - BECKFORD DR	US 1 BUS/US 158 TO SR 1162 DABNEY DR	3	2		NO	NO	2.39	20-48	263		2.63	66	50,713		1,840	4,651	279	35				191	480	1.92	1,464	
TOTAL FOR MAP NO. 8										2.39		263		2.63	66	50,713		1,840	4,651	279	35				191	480	1.92	1,464	
2017CPT.05.04.20911.1	Vance	9	SR 1101 - S LYNNBANK RD/CHARLIE GRISSOM RD	BRIDGE TO SR 1107 - COMMUNITY HOUSE	2	2		NO	NO	2.99	20-22	239	344	5.97	60			873	3,408	204	45				173	440	1.74		
TOTAL FOR MAP NO. 9										2.99		239	344	5.97	60			873	3,408	204	45				173	440	1.74		
2017CPT.05.04.20911.1	Vance	10	SR 1326 - KELLY RD	SR 1303 - HICKSBORO RD TO SR 1308 - GLEBE RD	4	2		NO	NO	2.52	20	126	363	5.04	32			490	2,657	178	40				91	230	0.92		
TOTAL FOR MAP NO. 10										2.52		126	363	5.04	32			490	2,657	178	40				91	230	0.92		
2017CPT.05.04.20911.1	Vance	11	SR 1303 - HICKSBORO RD	SR 1326 - KELLY RD TO SR 1304 - DABNEY RD	4	2		NO	NO	0.265	20	27	25	0.53	7				324	22	10				19	50	0.19		
TOTAL FOR MAP NO. 11										0.265		27	25	0.53	7				324	22	10				19	50	0.19		
TOTAL FOR PROJ NO. 2017CPT.05.04.20911.1										15.672		1,541	1,322	29.18	387	143,141			8,239	16,688	4,229	1,284	1,025		5	1,117	2,850	11.22	1,464
2017CPT.05.04.20931.1	Warren	12	SR 1217 - MARTIN RD	SR 1218 - BURCHETTE RD TO SR 1210 - OINE RD	1	2		NO	NO	2.29	23	114	330	4.59	28			595	2,296	154	50				83	210	0.83		
TOTAL FOR MAP NO. 12										2.29		114	330	4.59	28			595	2,296	154	50				83	210	0.83		
2017CPT.05.04.20931.1	Warren	13	SR 1305 - WARREN PLAINS	US 158 TO US 158 BUS	1	2		NO	NO	2.41	22-36	214	206	4.30	54		1,242	1,433	2,500	167	200	5	14	156	400	1.56	594		
TOTAL FOR MAP NO. 13										2.41		214	206	4.30	54		1,242	1,433	2,500	167	200	5	14	156	400	1.56	594		
TOTAL FOR PROJ NO. 2017CPT.05.04.20931.1										4.7		328	536	8.89	82		1,242	2,028	4,796	321	250	5	14	239	610	2.39	594		
GRAND TOTAL										20.372		1,869	1,858	38.07	469	143,141	1,242	10,267	16,688	9,025	1,605	1,275	5	19	1,356	3,460	13.61	2,058	

SIGNING FOR RESURFACING PROJECTS



LEGEND	
	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.		
	2	 <small>W7-3aP 24" X 18"</small>	#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)		
	3 *	 <small>SP 13107 48" X 48"</small>	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.		
	4	 <small>SP 13106 48" X 48"</small>	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.		
5	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.	<p style="text-align: center;">NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <p style="text-align: center;">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> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;"> <small>W20-7 A 48" X 48"</small> </div> </div> <p style="text-align: center;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>		

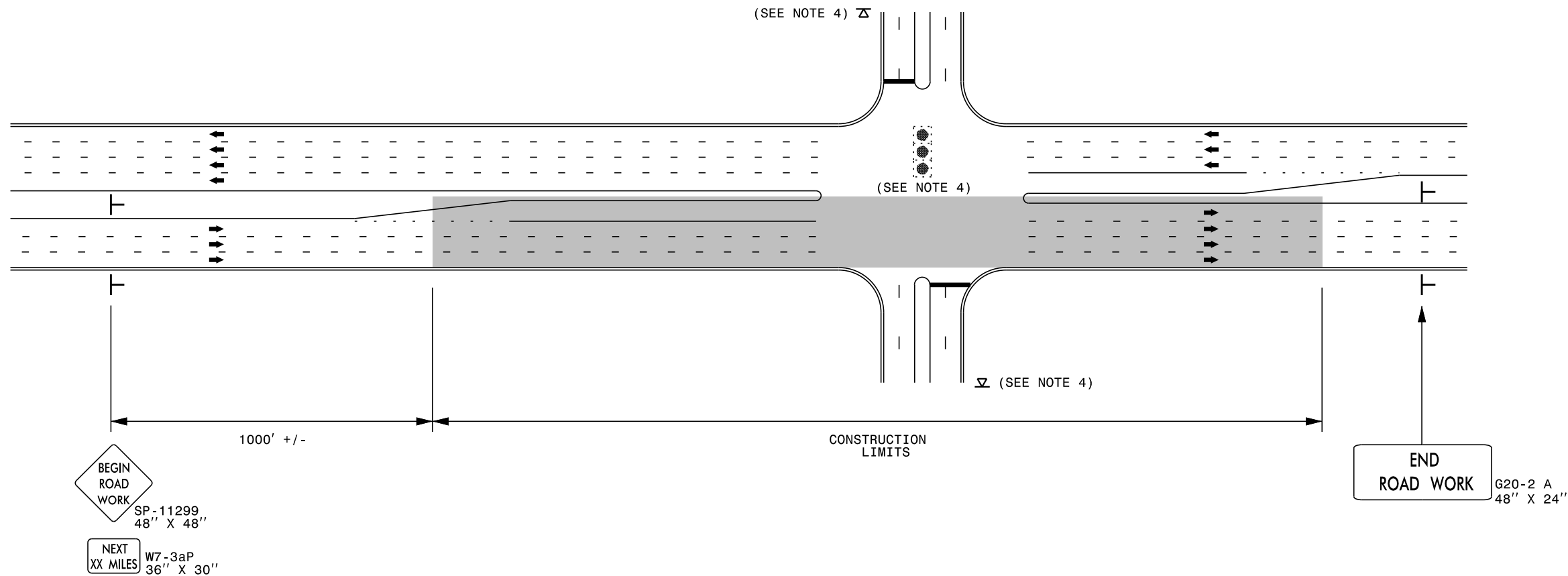
* SIGNING FOR ASPHALT SURFACE TREATMENTS (ONLY)

SUBSTITUTE LOW/SOFT SHOULDER SIGNS BY ALTERNATING THE FOLLOWING TWO SIGNS:
 STARTING WITH "UNMARKED PAVEMENT AHEAD" (SP 06026) FOLLOWED BY "LOOSE GRAVEL" (W8-7).



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

URBAN / SUBURBAN WORKZONES

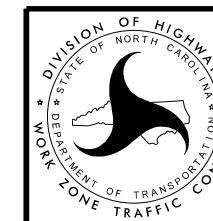


NOTES:

- 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.

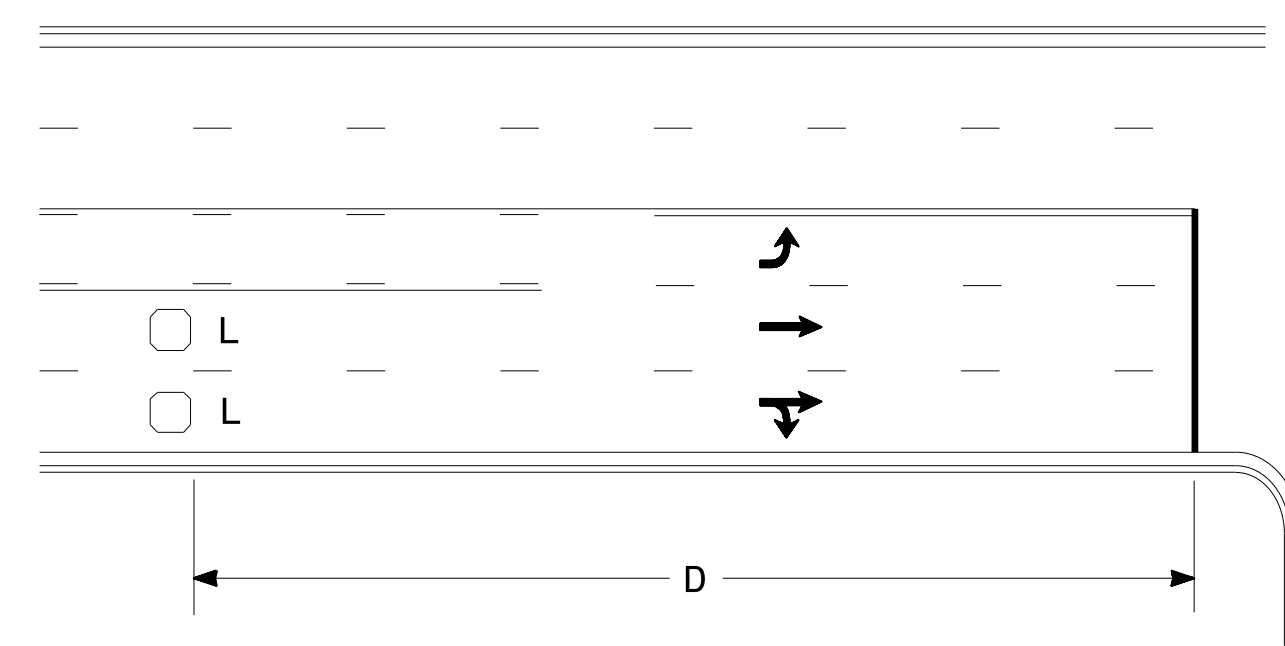
LEGEND

- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW



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

High Speed Detection (≥40 mph)

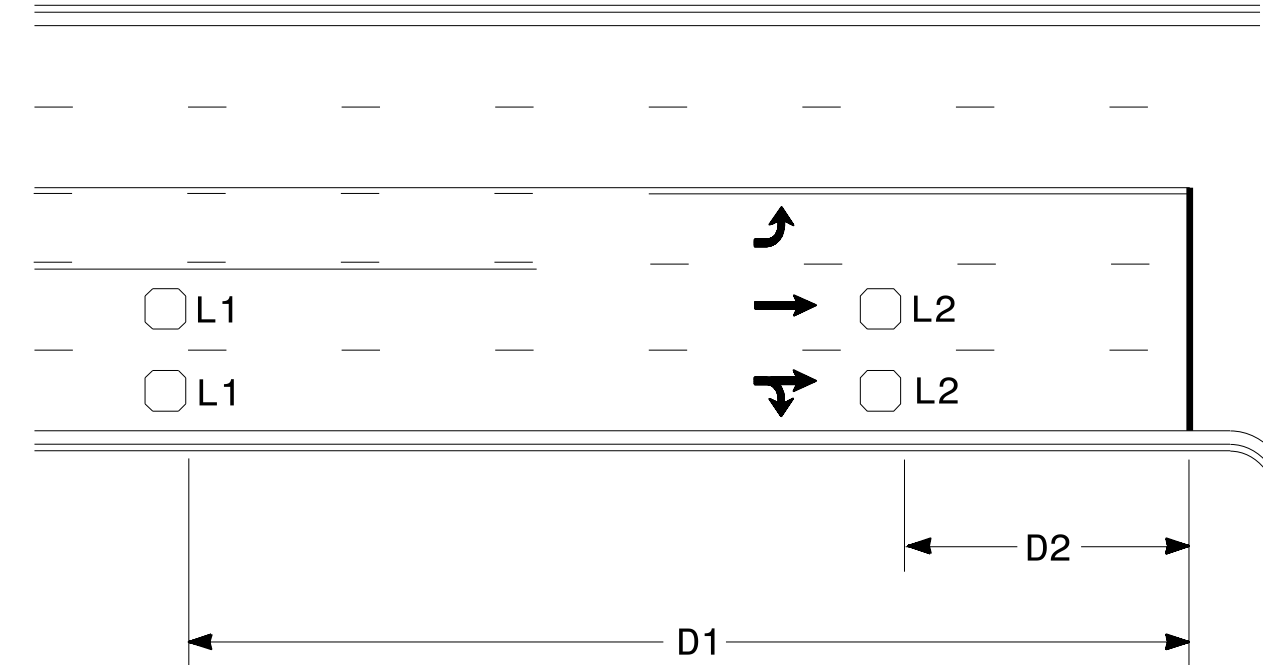


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

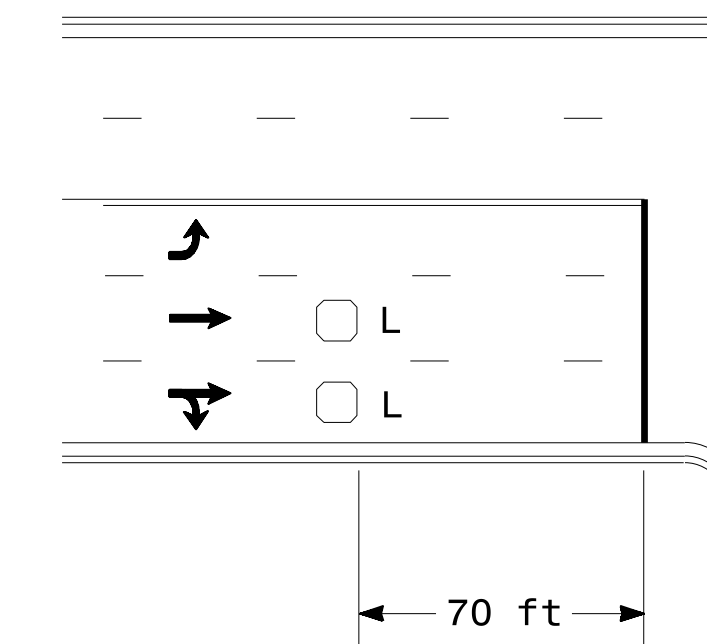


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

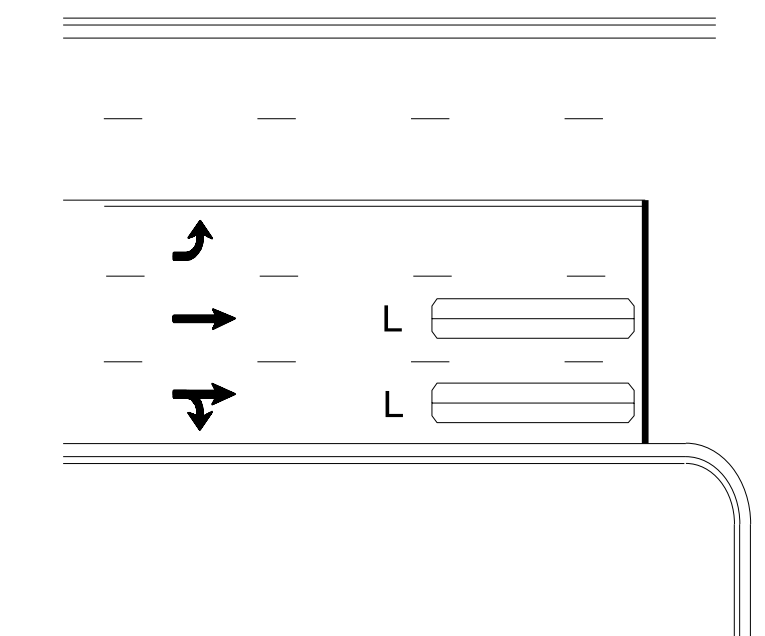
"Stretch" Operation

Low Speed Detection (≤35 mph)



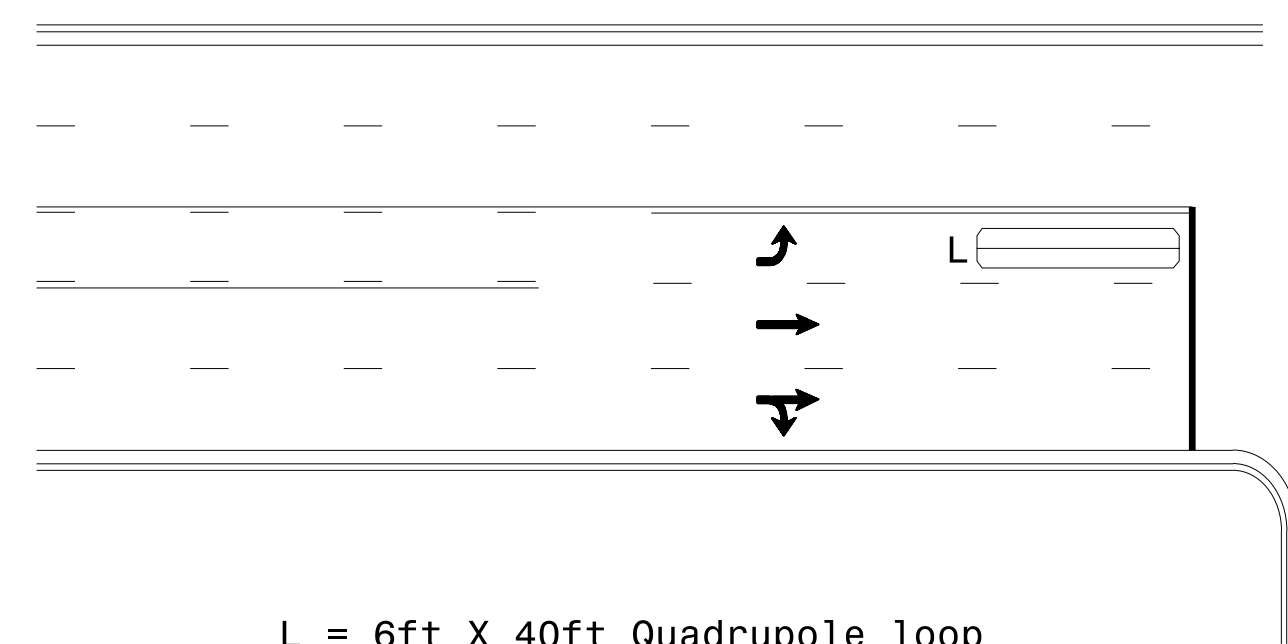
L = 6ft X 6ft
Wired in series

OR



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

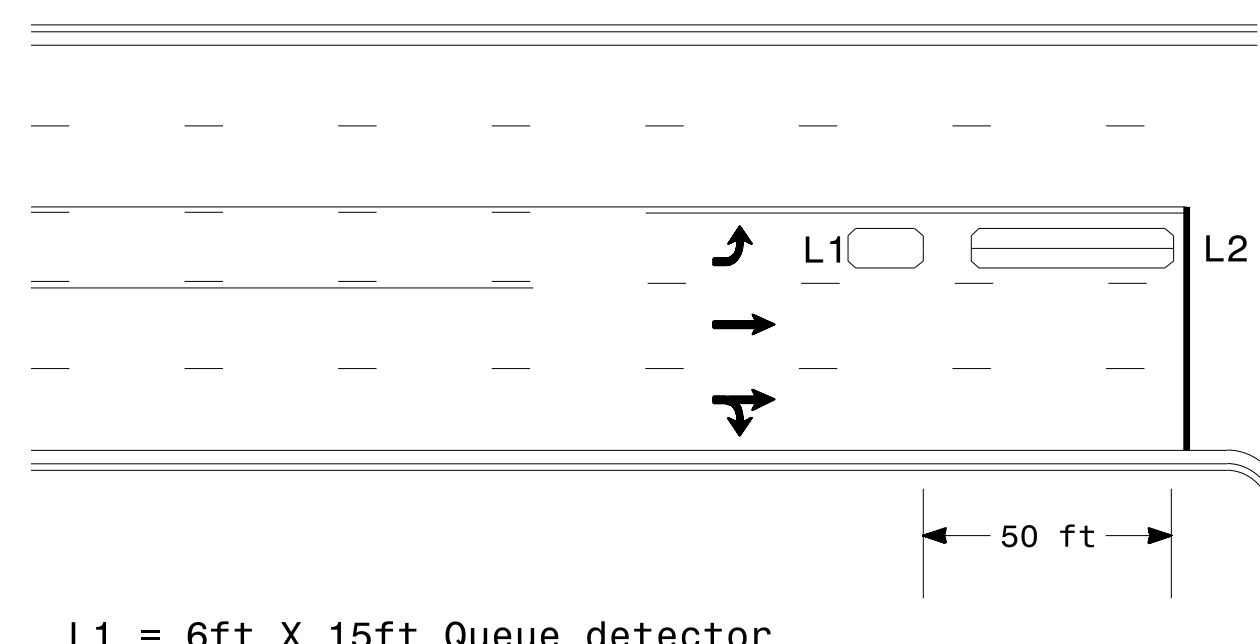
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

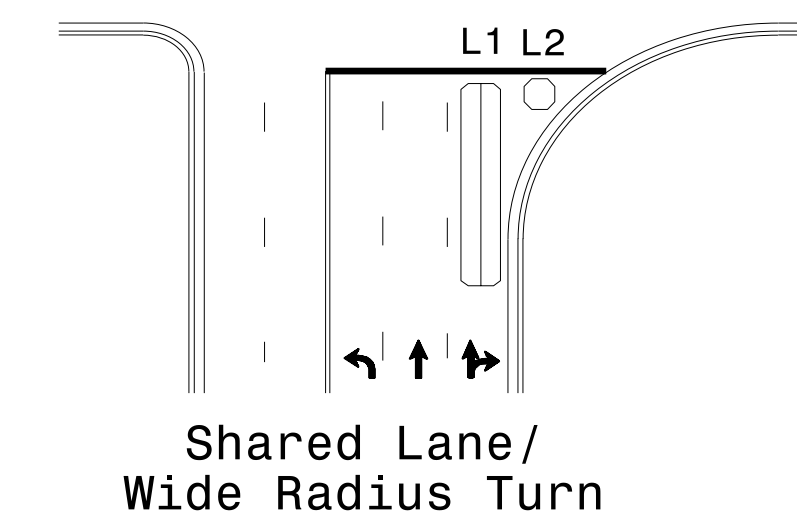
OR



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

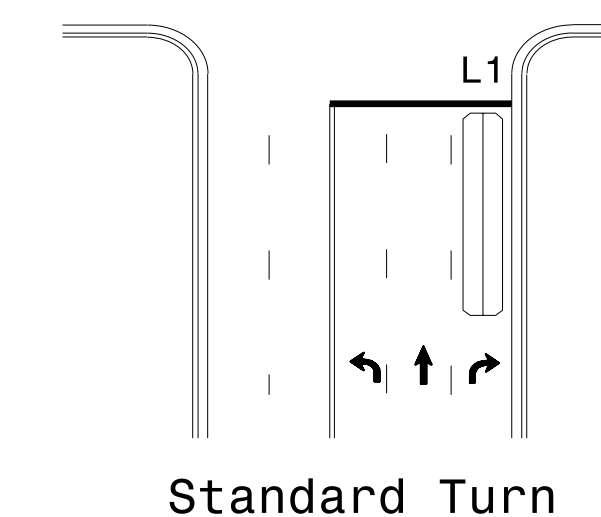
Queue Loop Detection

Right Turn Lane Detection

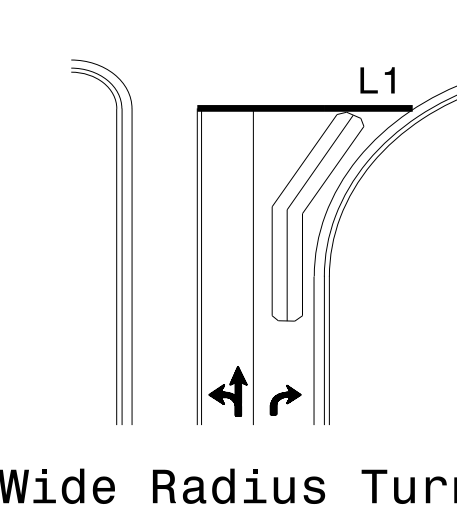


Shared Lane/
Wide Radius Turn

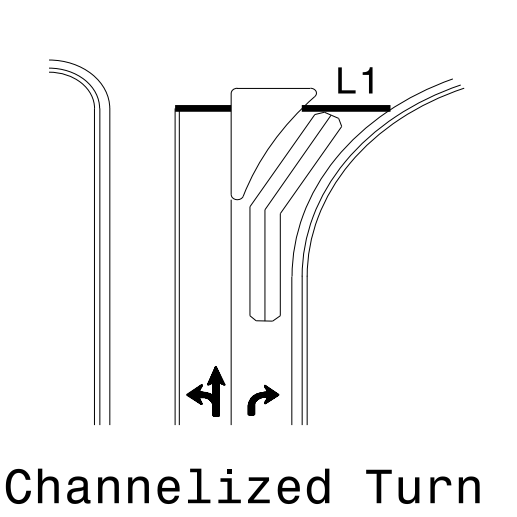
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

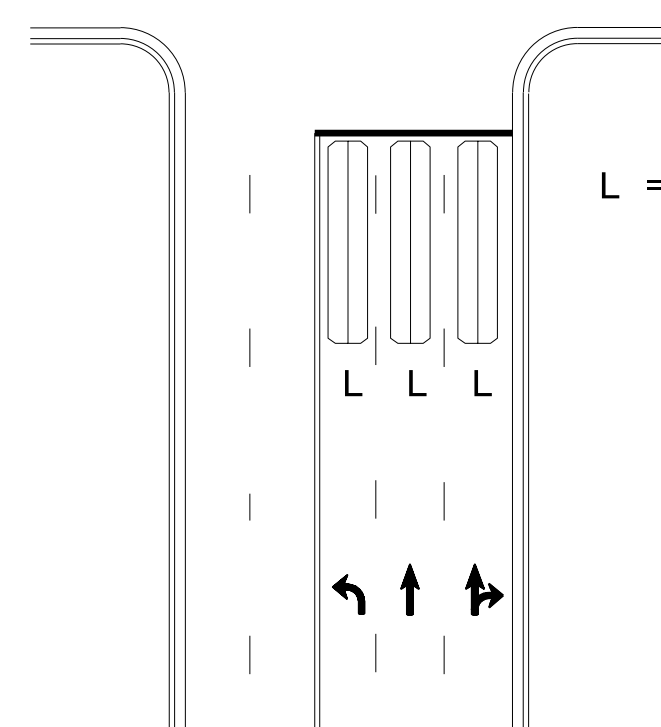


Wide Radius Turn



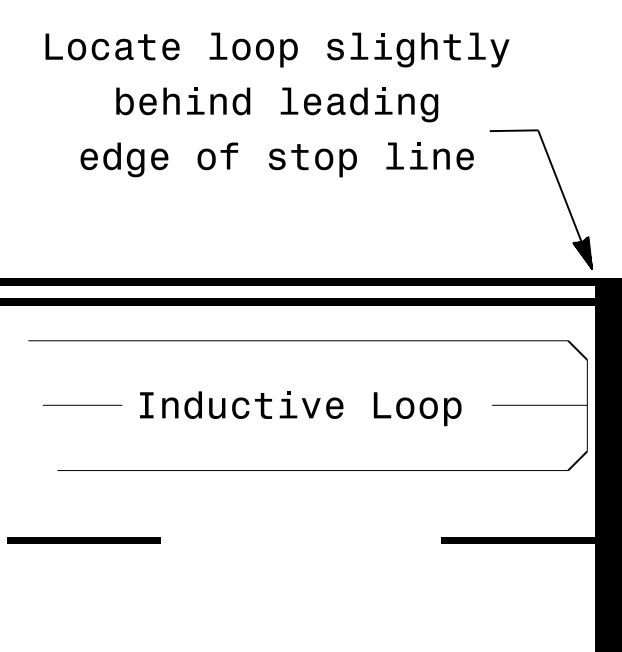
Channelized Turn

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

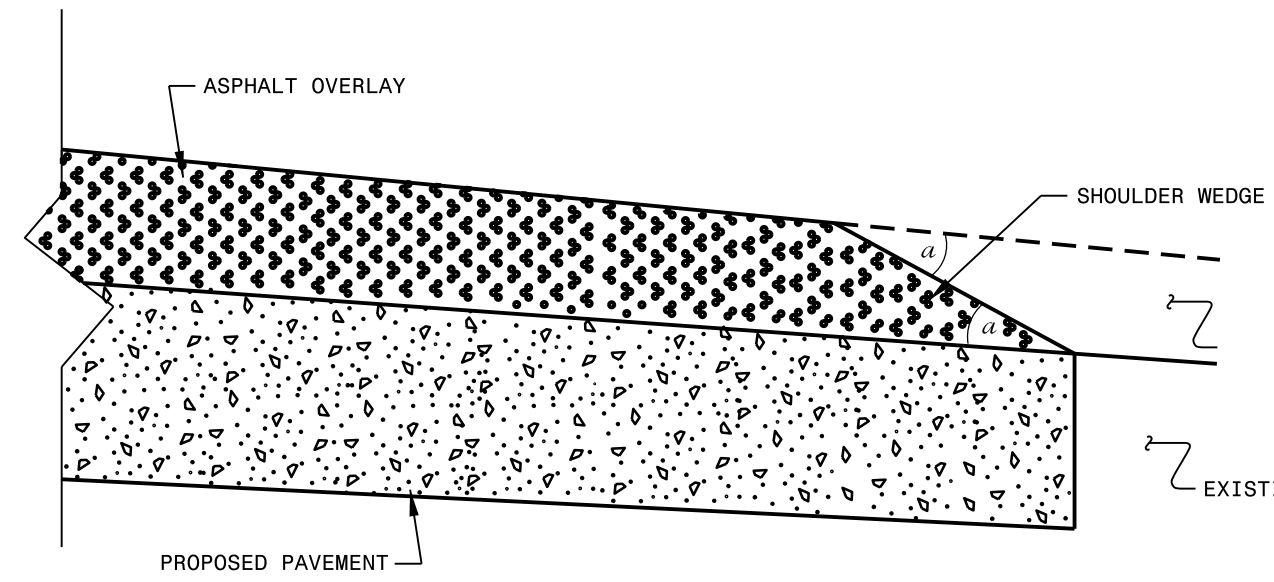
Typical Signal Loop Locations

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

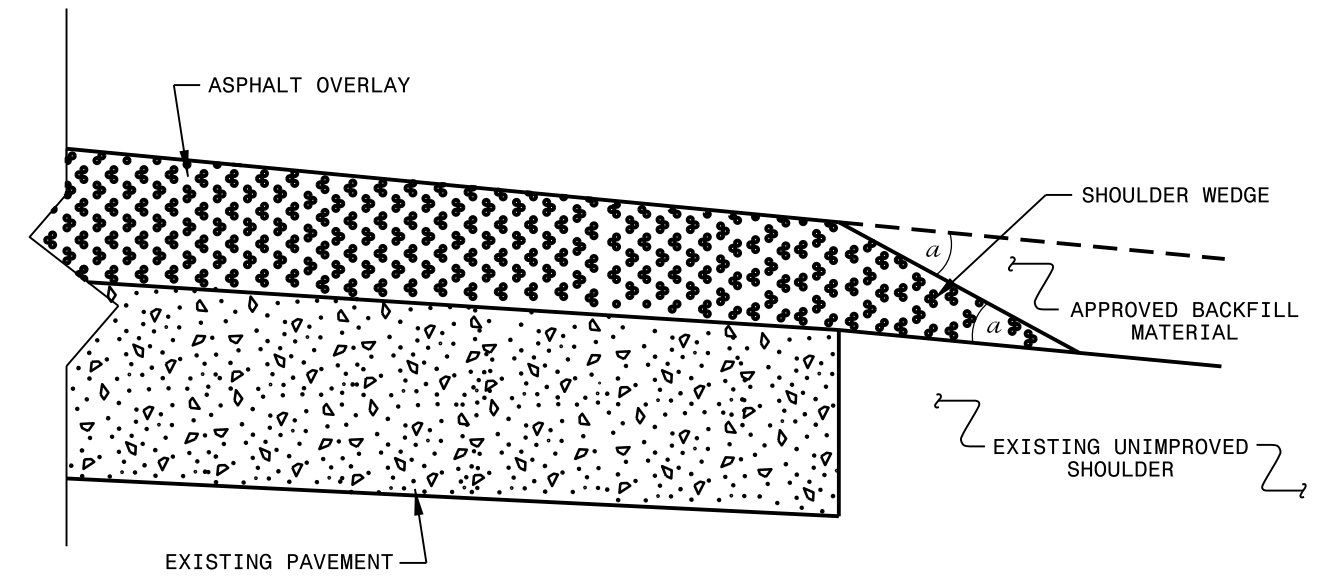
SEAL
NORTH CAROLINA
PROFESSIONAL ENGINEER
PAMELA L. ALEXANDER
23489

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

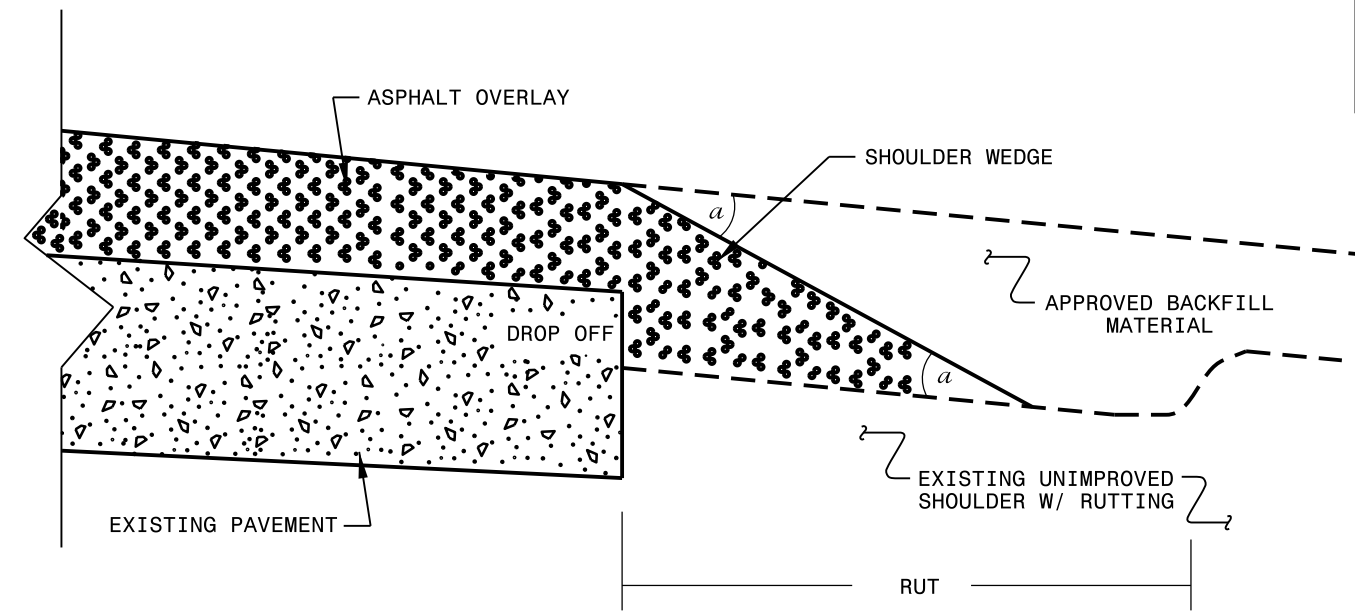
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

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

SYSTEMS DESIGN
 USER NAME

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

SOIL STABILIZATION TIMEFRAMES

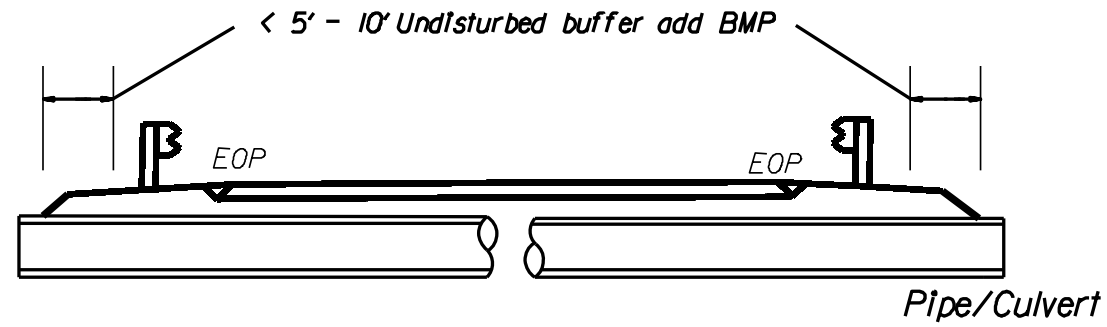
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

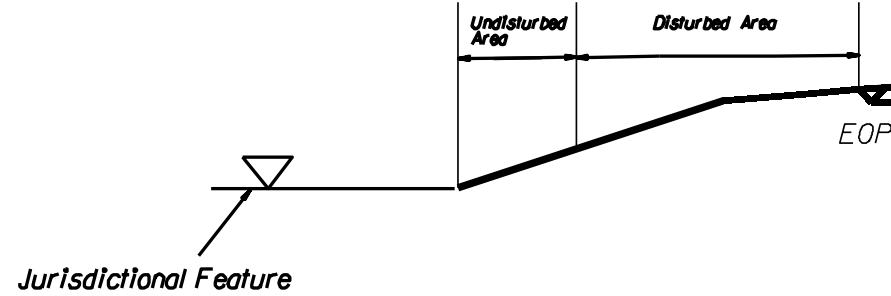
BMP Options: Wattle, Silt Fence, or Hardened Aggregate.

EROSION CONTROL DETAIL

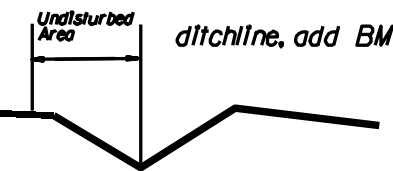
PROJECT REFERENCE NO. 1-1111	SHEET NO. 16-11/01/11
RDW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



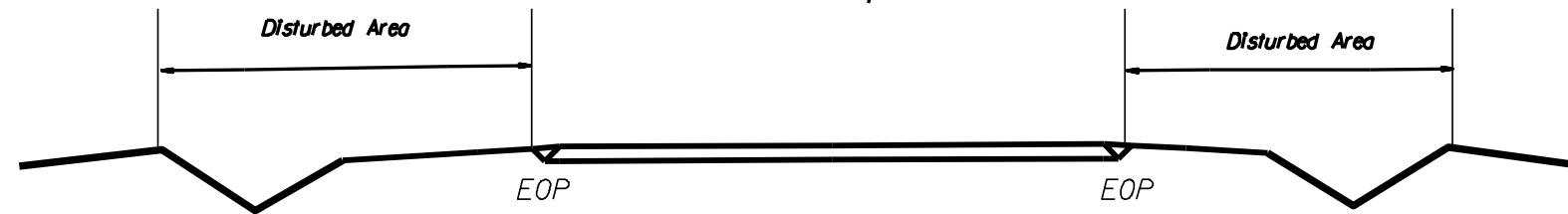
< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP



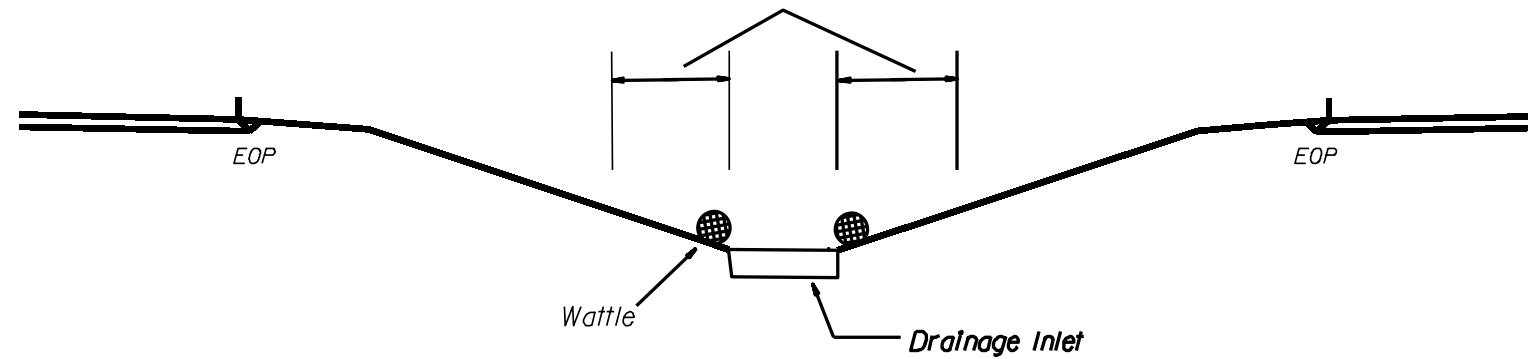
< 5' - 10' Undisturbed buffer from ditchline, add BMP



Use BMP's if shoulders and/or front slopes and/or ditchline and/or backslopes are disturbed

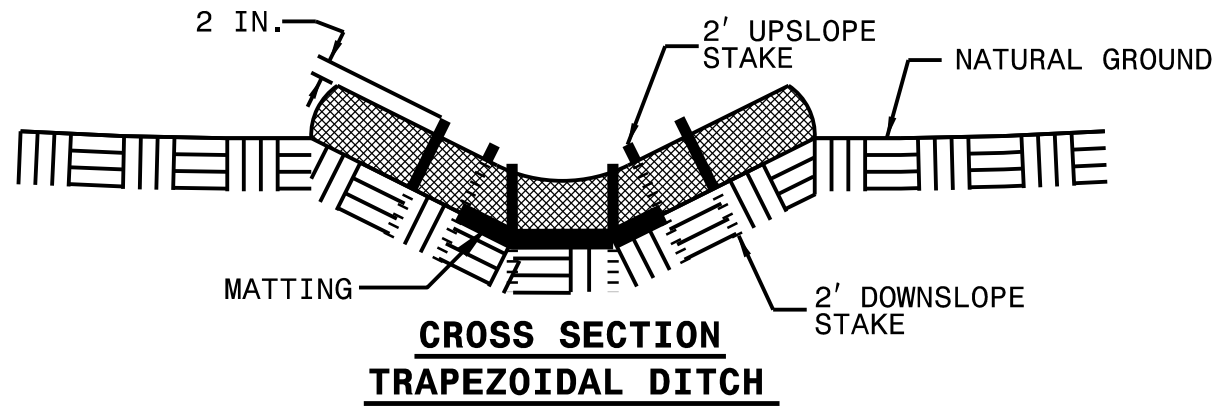
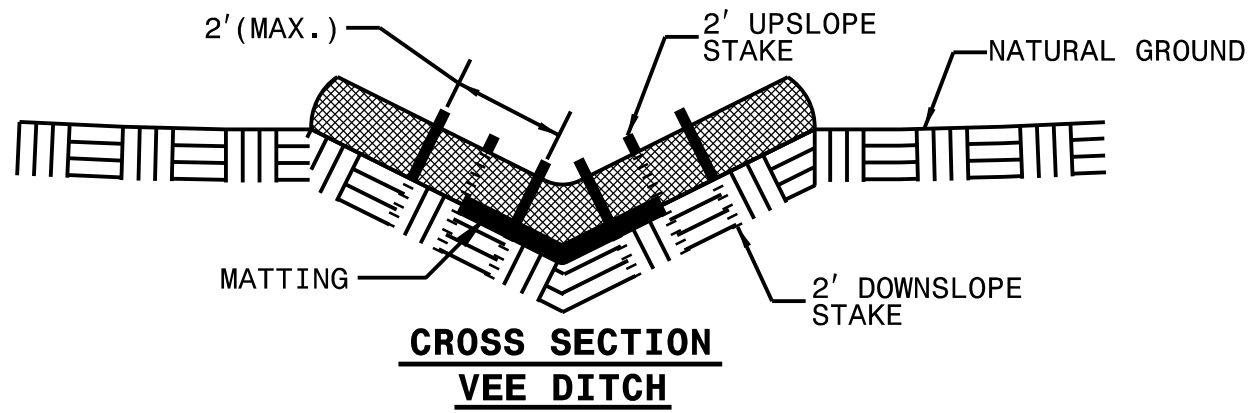
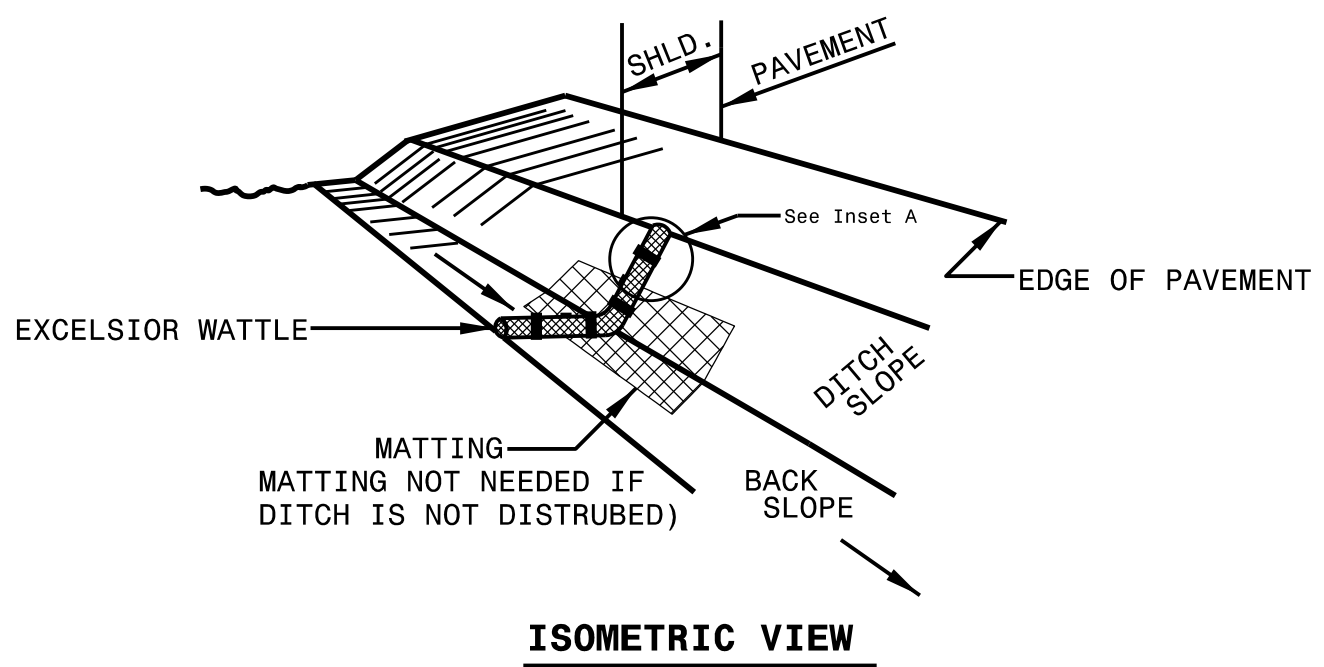


< 5' - 10' Undisturbed buffer from Inlet, add wattle



NOT TO SCALE

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

IF DITCH WILL BE DISTURBED, INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

