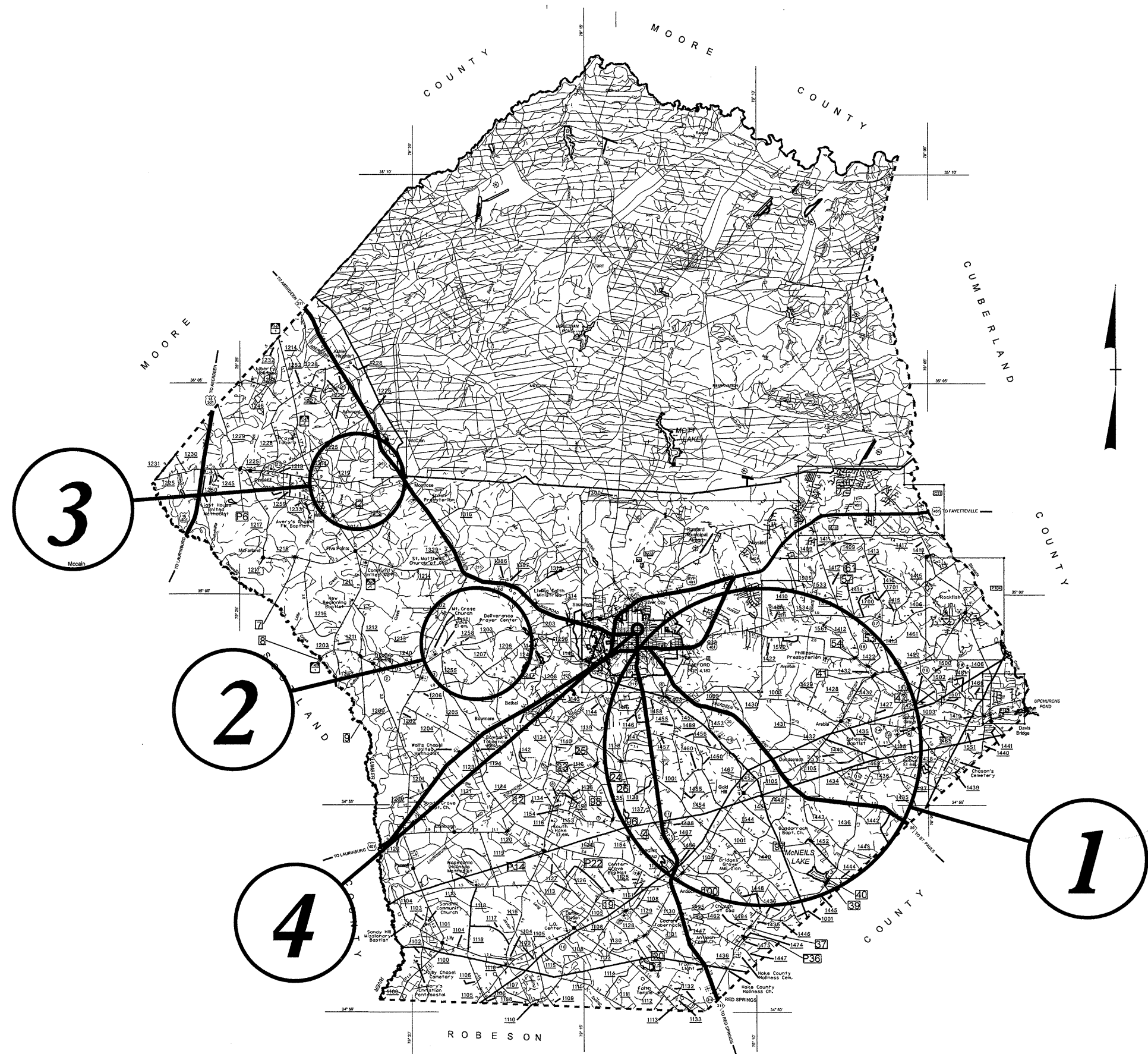
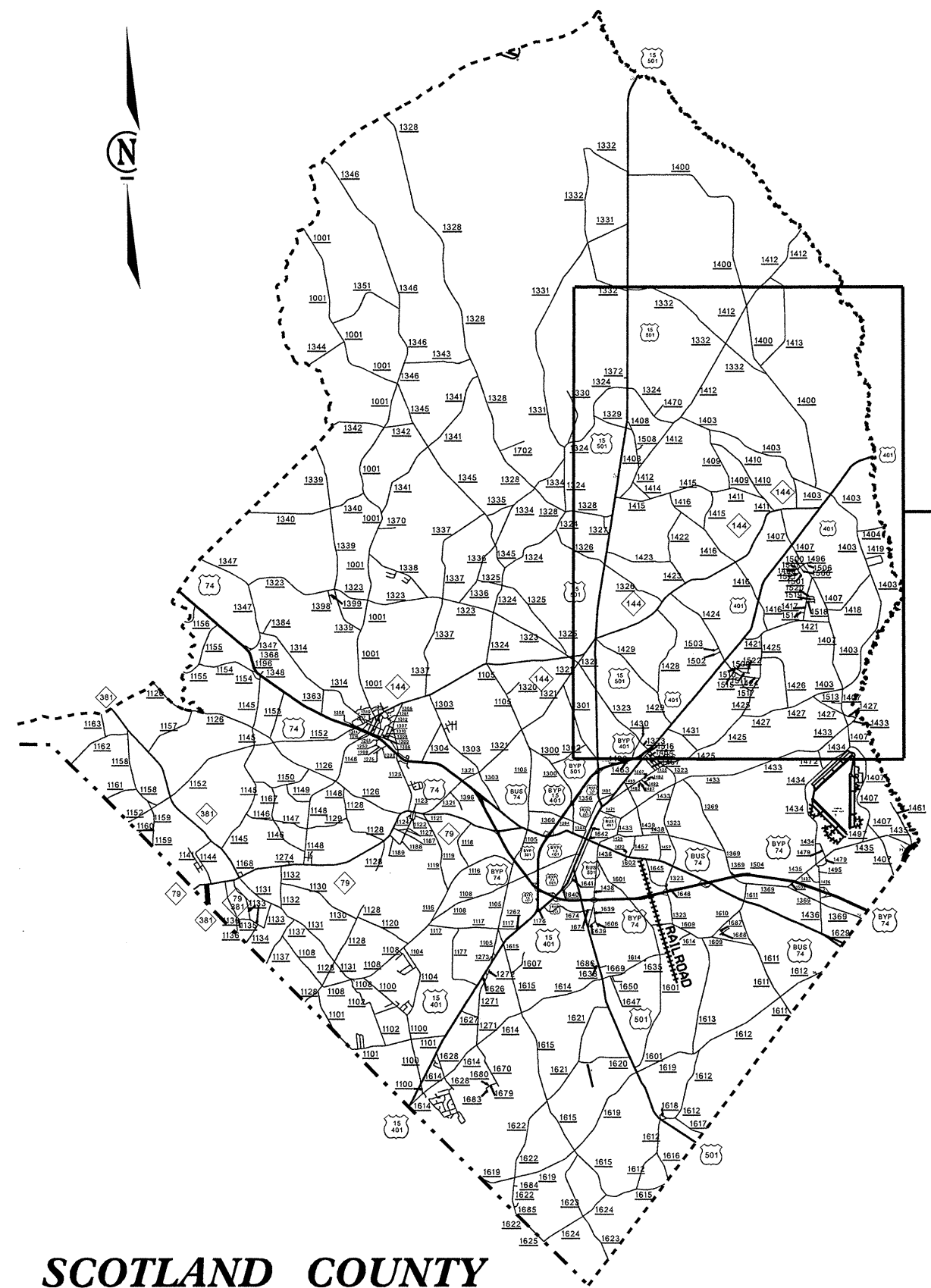


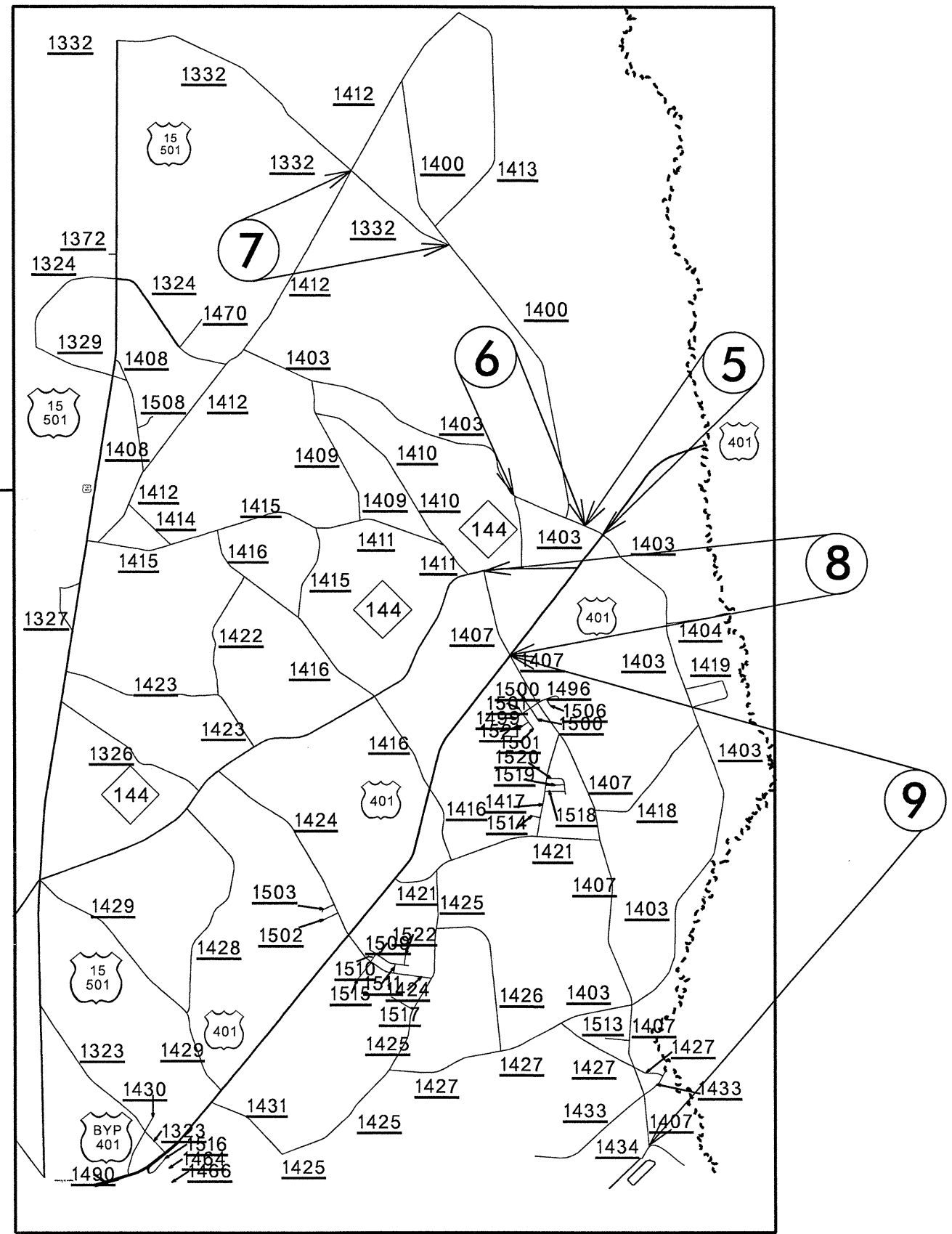
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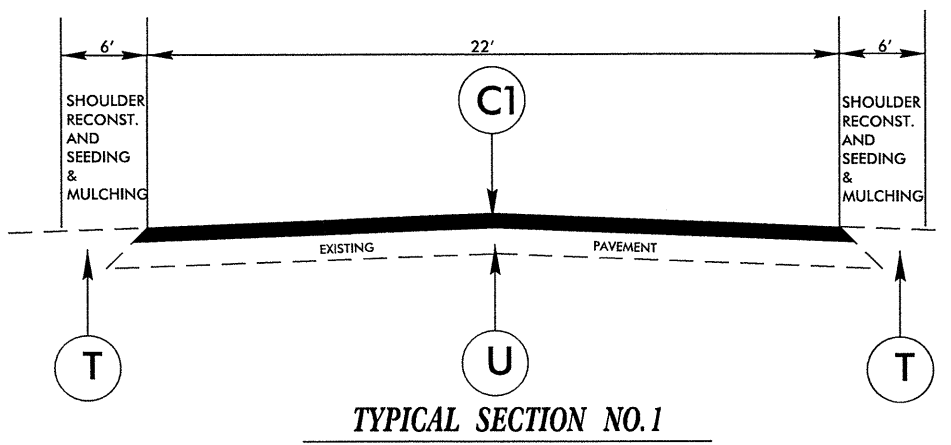


HOKE COUNTY

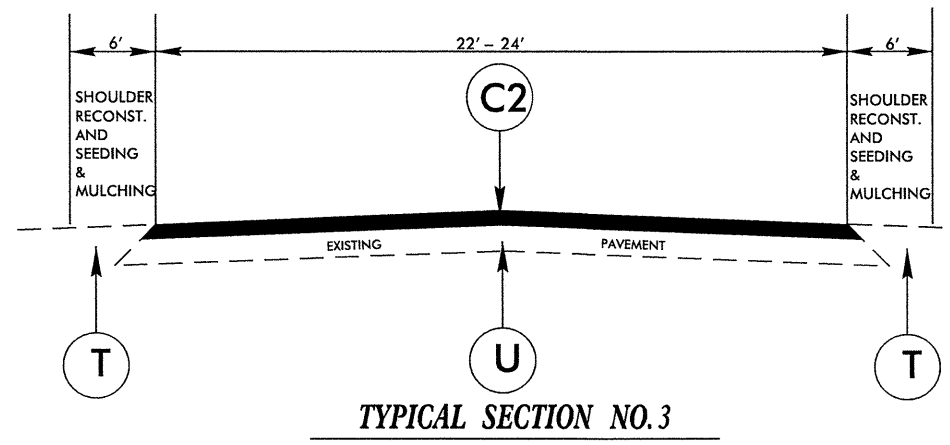


SCOTLAND COUNTY

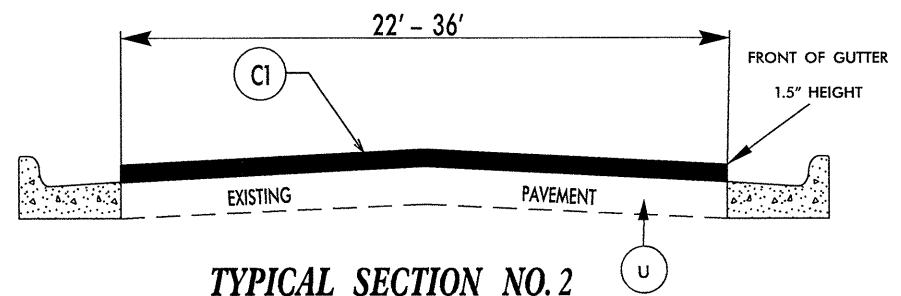




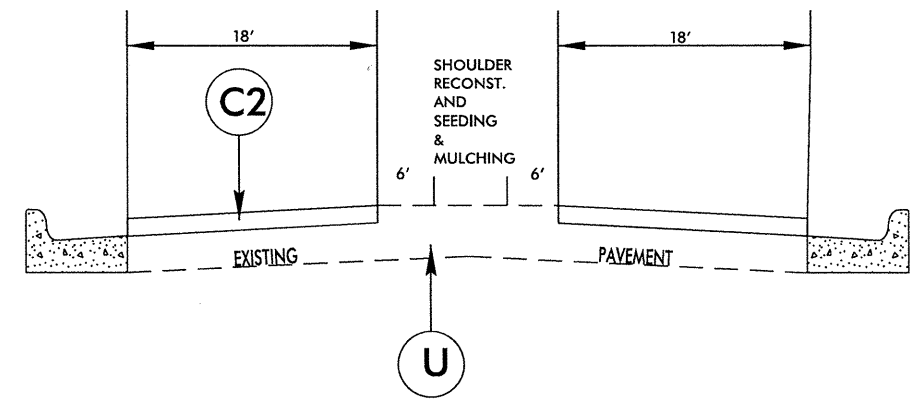
TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 3



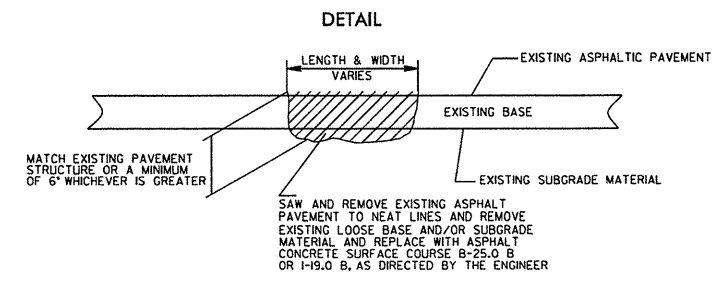
TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 4

NOTE: SOME SECTIONS OF MEDIAN HAVE ASPHALT CURB ON ONE SIDE AT A VARIOUS LOCATIONS. SHOULDER RECONSTRUCTION WILL NOT BE REQUIRED ON THESE SECTIONS.

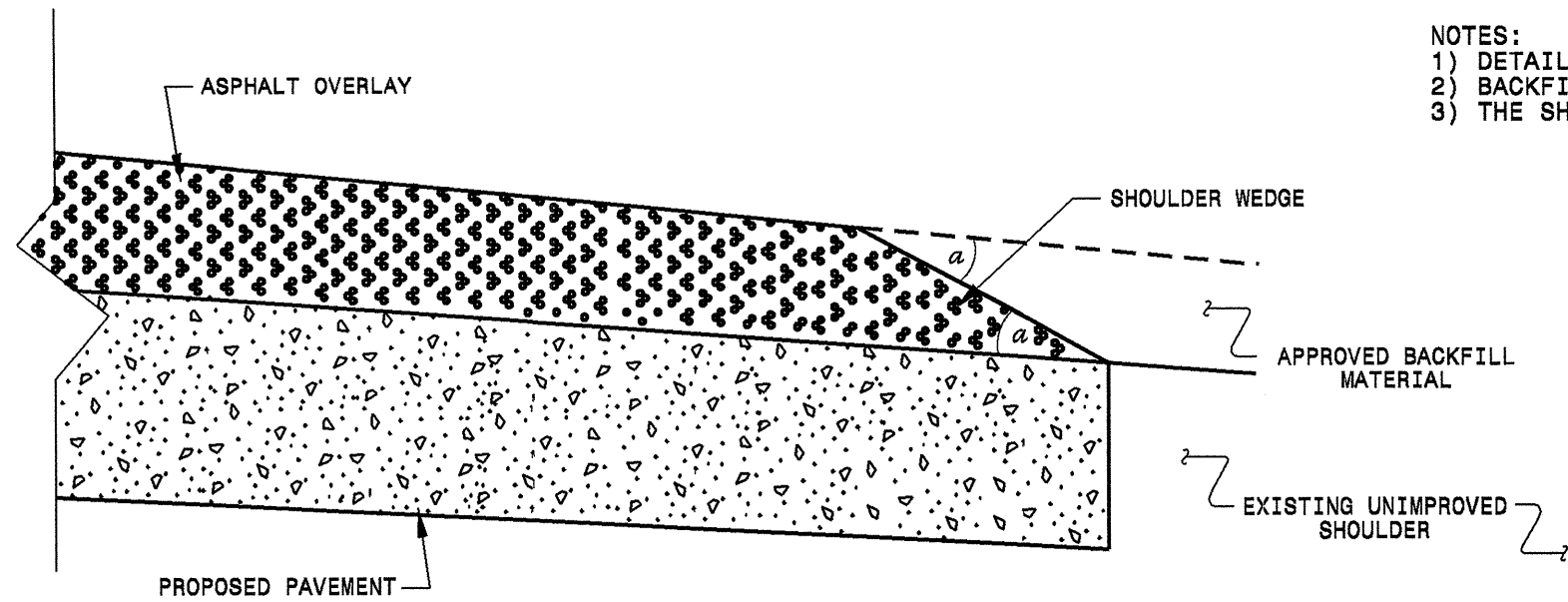
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING



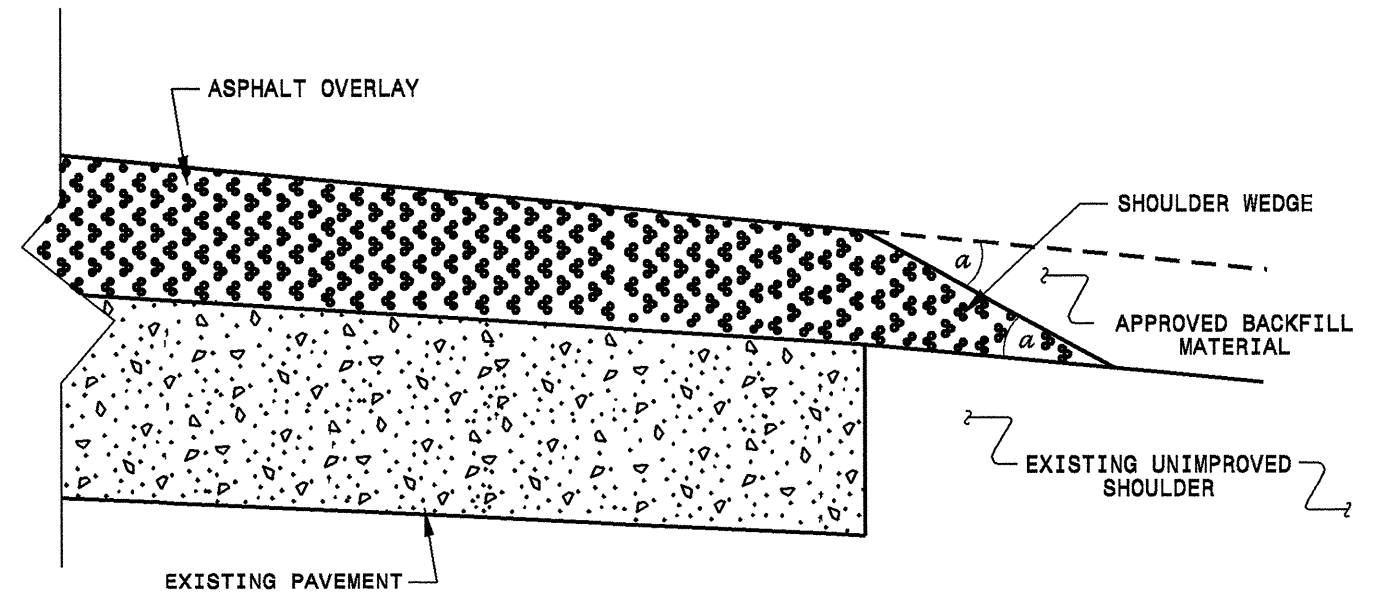
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
S	AGGREGATE SHOULDER BORROW
T	EARTH MATERIAL
U	EXISTING PAVEMENT

5/28/99
17-JAN-2014 13:51
C:\div8.pr\projects\Resurfacing\March_2014\Hoke\typicals.dgn

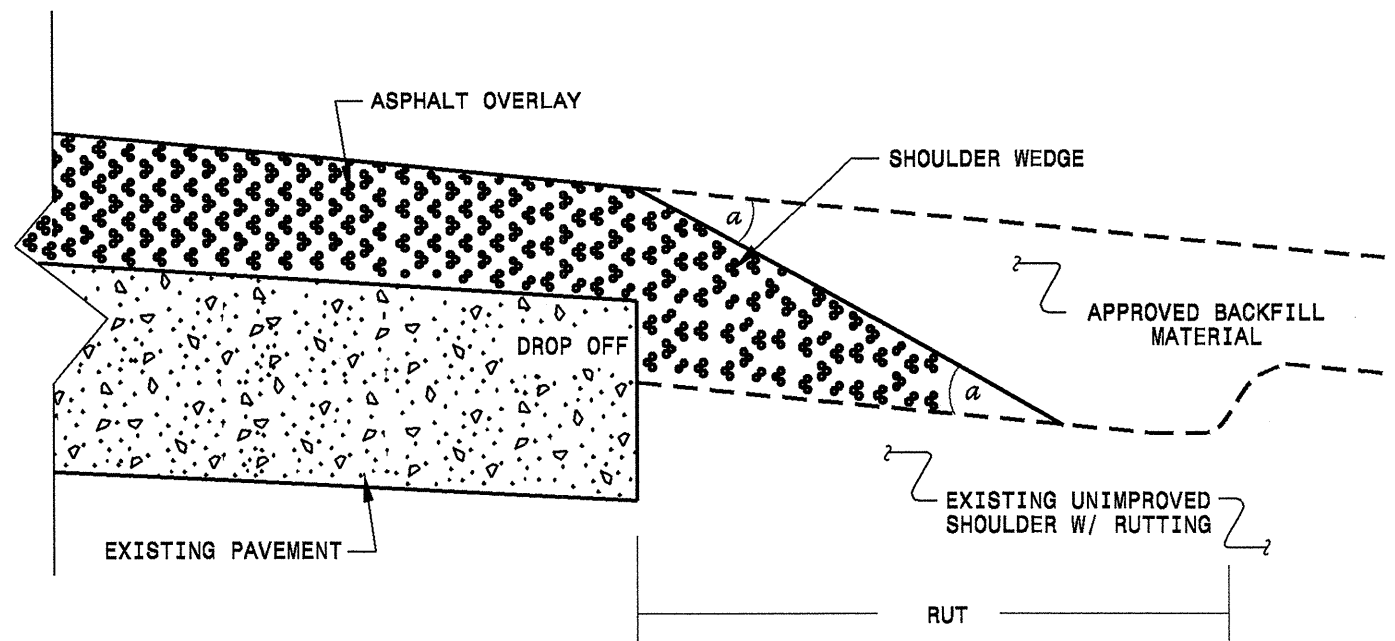
- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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°

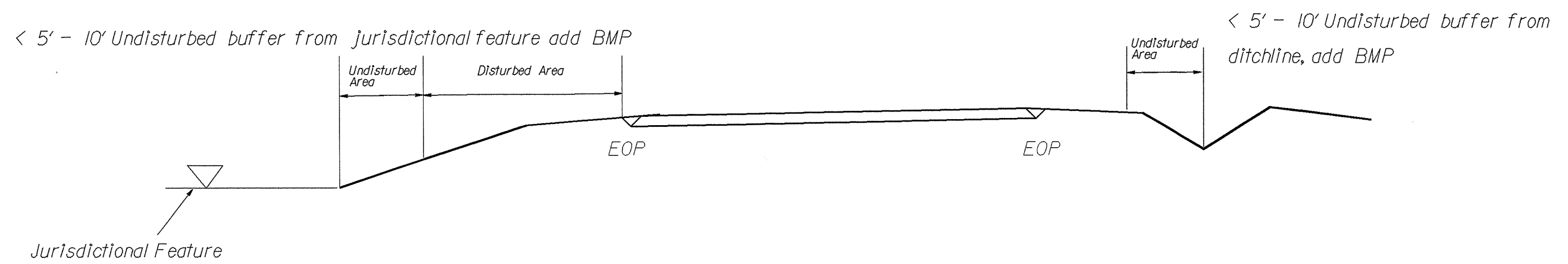
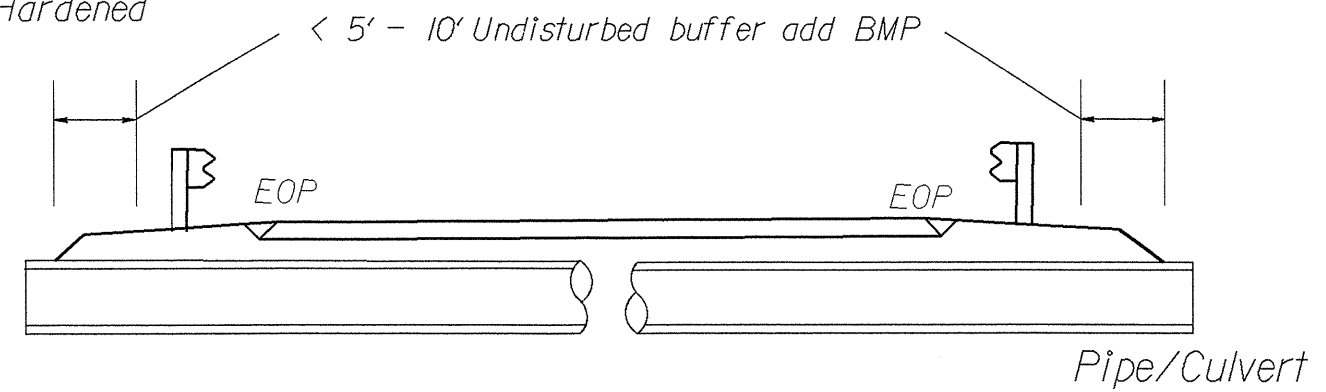
CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
SHOULDER WEDGE DETAILS			
ORIGINAL BY: T.SPELL	DATE: 7-19-11		
MODIFIED BY:	DATE: 10/18/12		
CHECKED BY:	DATE:		
FILE SPEC.: asunc/deta13a/stand/shoulderwedgestd1.dgn			

03-FEB-2014 07:17
 S:\Contracts\Resurfacing Projects\Revised Shoulder Wedge Detail.dgn
 \$\$\$USERNAME\$\$\$

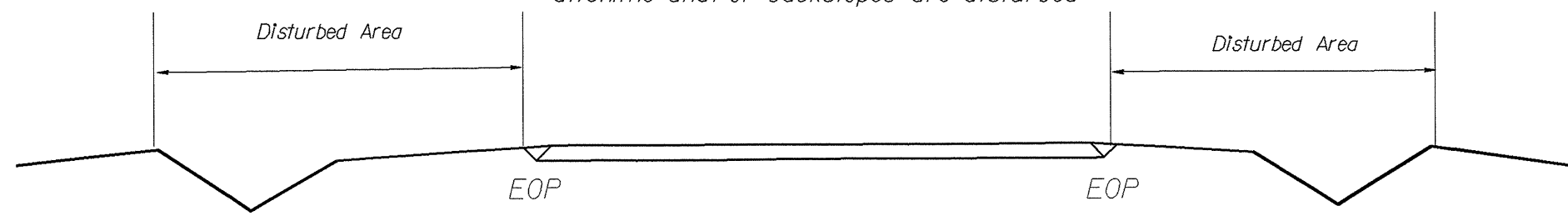
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

EROSION CONTROL DETAIL

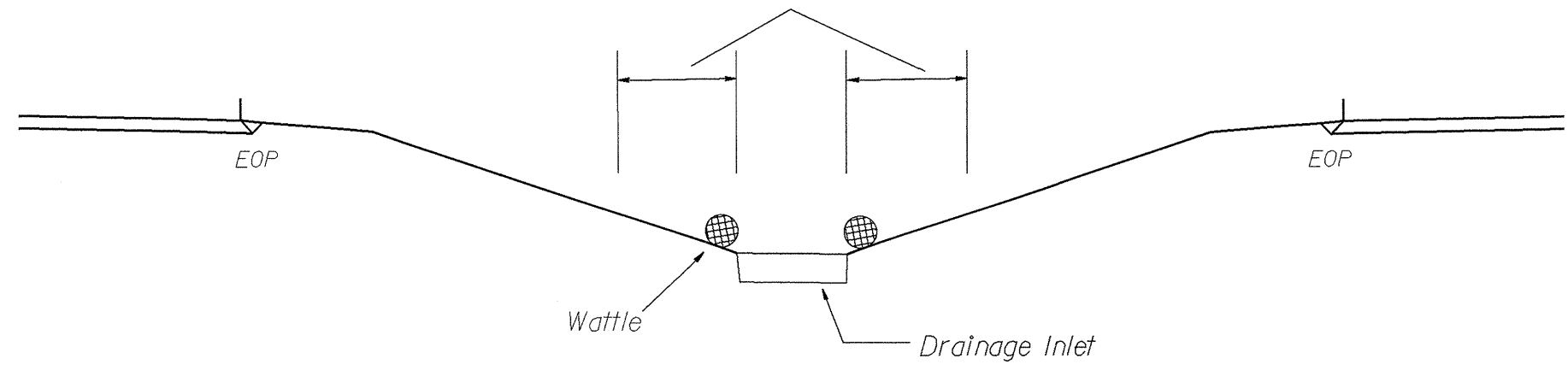
BMP Options: Wattle, Silt Fence or Hardened Aggregate.



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

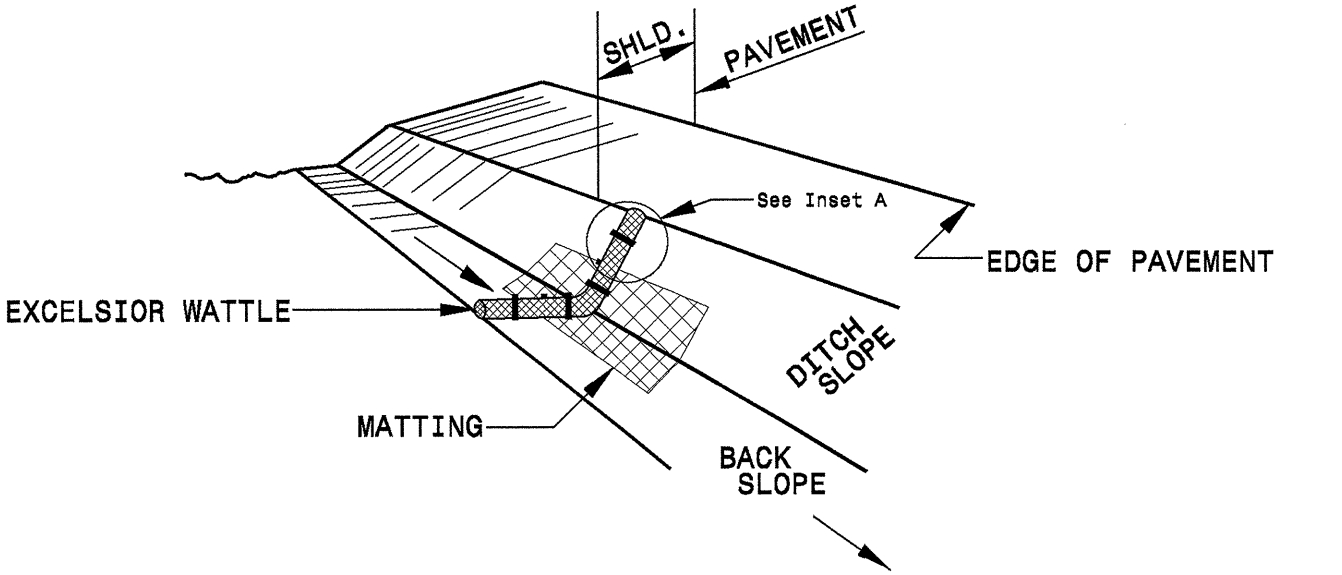


< 5' - 10' Undisturbed buffer from inlet, add wattle

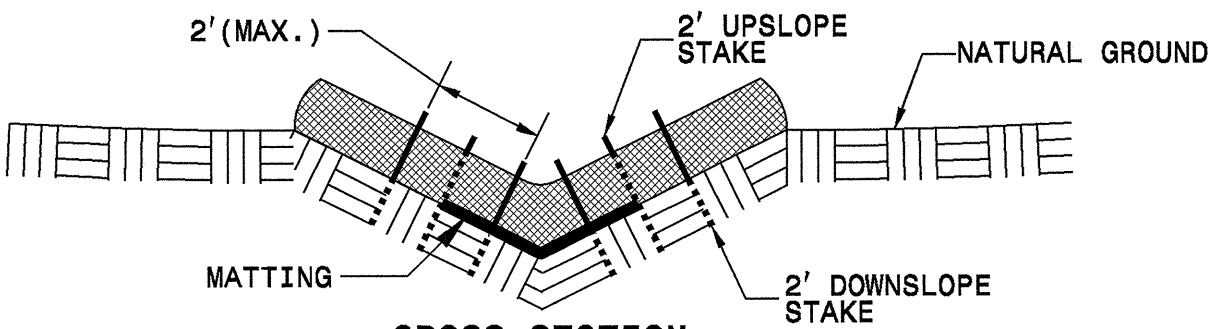


NOT TO SCALE

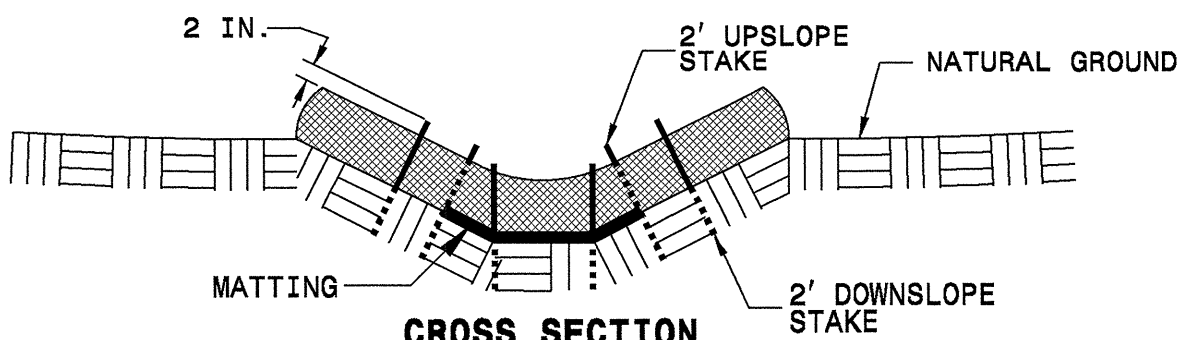
WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

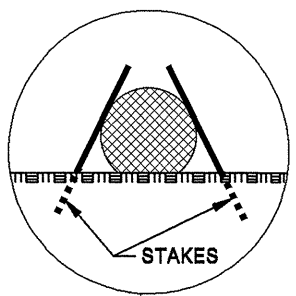
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

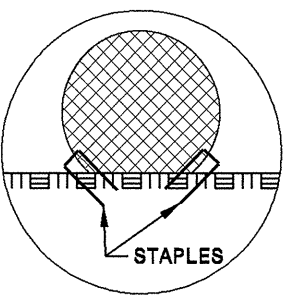
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

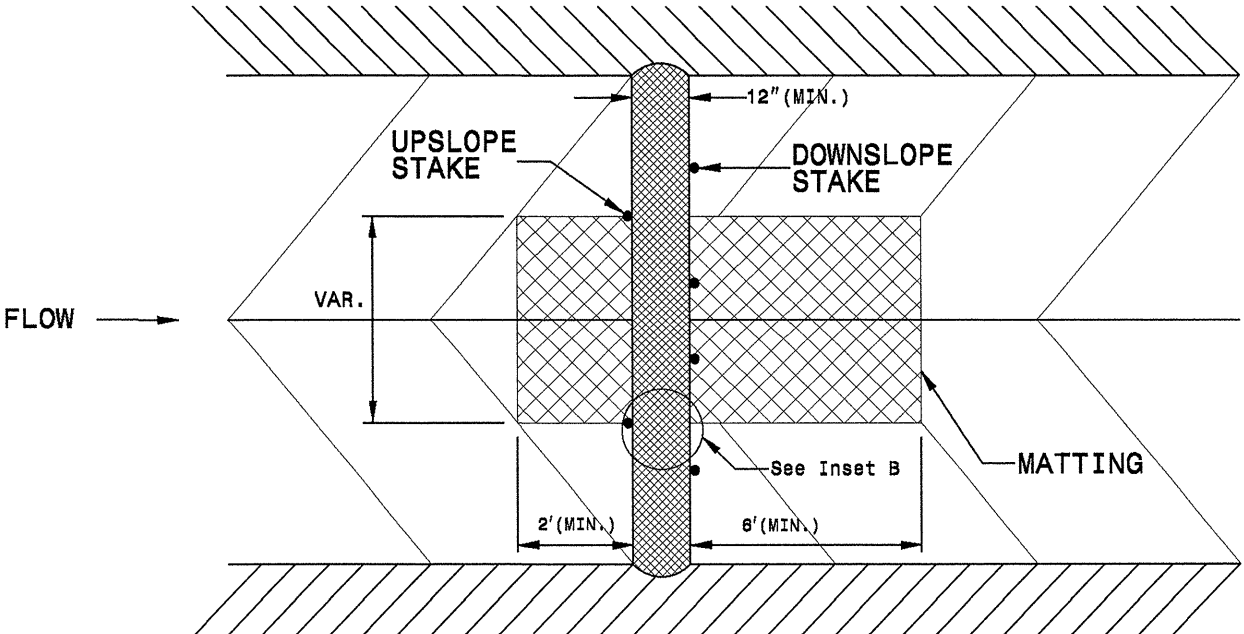
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



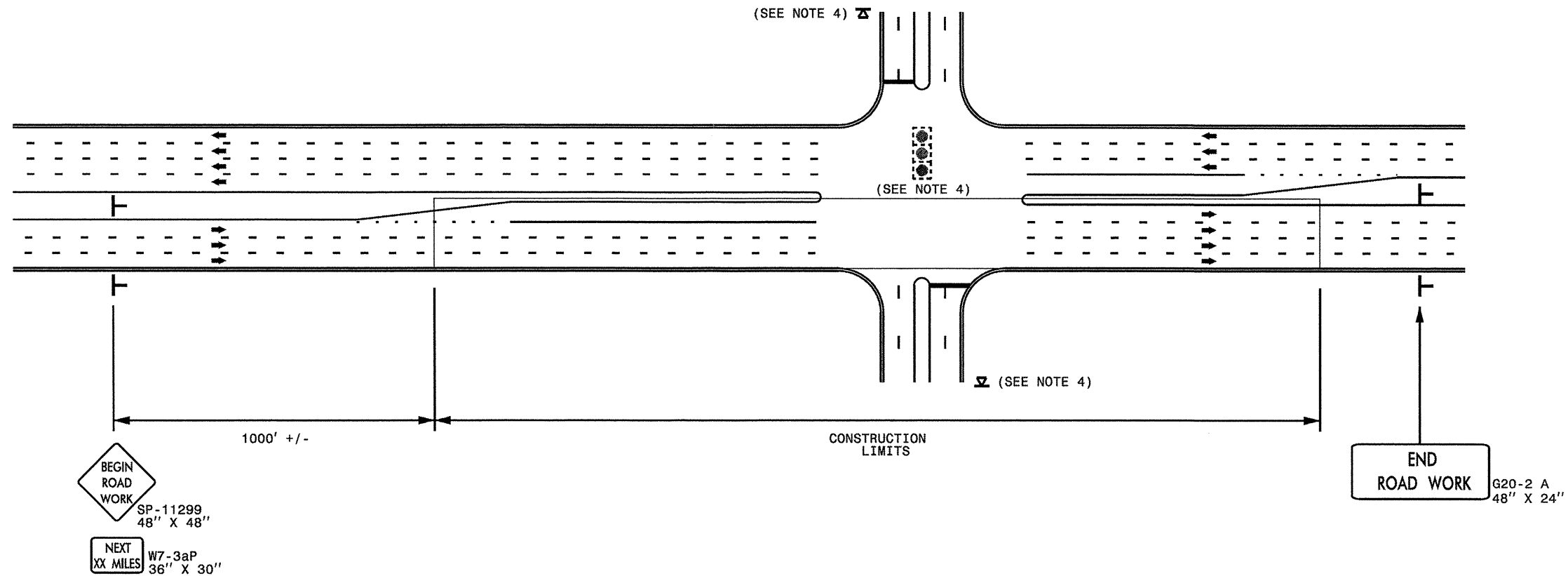
TOP VIEW

PROJECT NO.	SHEET NO.	TOTAL NO.
8CR.10471.23, 8CR.20471.23	9	10
8CR.20831.23,		

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 EXCAVATION CY	GENERIC GRADING ITEM - AGGREGATE SHOULDER BORROW TON	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1.5" MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TON	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP SAWCUT LF
8CR.10471.23	Hoke	1	NC 20	FROM US 401 BUS. TO ROBESON CO LINE	1,2	2	2WU	NO	NO	9.053	22	1,300		365	17.87		880	12,090		725	400			1,320	3,300	13.20	
TOTAL FOR MAP NO. 1										9.053		1,300		365	17.87		880	12,090		725	400			1,320	3,300	13.20	
TOTAL FOR PROJ NO. 8CR.10471.23										9.053		1,300		365	17.87		880	12,090		725	400			1,320	3,300	13.20	
8CR.20471.23	Hoke	2	SR 1203 (TURNPIKE ROAD)	PVT. JOINT WEST OF SR 1206(L MCLAUGHLIN RD) TO SR 1202(FULFORD MCMILLAN RD)	3	2	2WU	NO	NO	3.11	24	460		335	6.23		200		4,250	285	600			315	50	4.52	
TOTAL FOR MAP NO. 2										3.11		460		335	6.23		200		4,250	285	600			315	50	4.52	
8CR.20471.23	Hoke	3	SR 1219(ARMY ROAD)	FROM NC 211 TO SR 1214(CALLOWAY ROAD)	3	2	2WU	NO	NO	2.53	22	380			5.10		50		2,985	200	300			255	40	3.70	
TOTAL FOR MAP NO. 3										2.53		380			5.10		50		2,985	200	300			255	40	3.70	
8CR.20471.23	Hoke	4	SR 1405 (MAIN STREET)	FROM NC 211 TO EAST 7TH STREET	4	2	2WD	NO	NO	0.25	36	40			0.34		80		525	35	60	3	5	25	10	0.25	375
TOTAL FOR MAP NO. 4										0.25		40			0.34		80		525	35	60	3	5	25	10	0.25	375
TOTAL FOR PROJ NO. 8CR.20471.23										5.89		880		335	11.67		330		7,760	520	960	3	5	595	100	8.47	375
8CR.20831.23	Scotland	5	SR 1403 (MCKAY ST)	FROM US 401 TO END OF CURB AND GUTTER	5	2	2WU	NO	NO	0.07	34					1,396			120	8			1				
TOTAL FOR MAP NO. 5										0.07						1,396			120	8			1				
8CR.20831.23	Scotland	6	SR 1403 (MCKAY ST)	FROM END OF CURB AND GUTTER TO SR 1406 (WOODLEY RD)	6	2	2WU	NO	NO	0.85	19		237.00		1.70		100		927	62			3				
TOTAL FOR MAP NO. 6										0.85			237.00		1.70		100		927	62			3				
8CR.20831.23	Scotland	7	SR 1332 (PEACH ORCHARD RD)	FROM SR 1400 (HILL CREEK RD) TO SR 1412 (TURNPIKE RD)	6	2	2WU	NO	NO	1.15	21		300.00		2.30		100		1,176	79							1,000
TOTAL FOR MAP NO. 7										1.15			300.00		2.30		100		1,176	79							1,000
8CR.20831.23	Scotland	8	SR 1407 (AIRBASE RD)	FROM NC 144 TO US 401	6	2	2WU	NO	NO	0.82	25		230.00		1.64		100		1,000	67							500
TOTAL FOR MAP NO. 8										0.82			230.00		1.64		100		1,000	67							500
8CR.20831.23	Scotland	9	SR 1407 (AIRBASE RD)	US 401 TO SR 1434 (AIRPORT RD)	6	2	2WU	NO	NO	4.87	24		1,360.00		9.74		100		5,927	397							
TOTAL FOR MAP NO. 9										4.87			1,360.00		9.74		100		5,927	397							
TOTAL FOR PROJ NO. 8CR.20831.23										7.76			2,127.00		15.38	1,396	400		9,150	613			4				1,500
GRAND TOTAL										22.703		2,180	2,127.00	700	44.92	1,396	1,610	12,090	16,910	1,858	1,360	3	9	1,915	3,400	21.67	1,875

URBAN / SUBURBAN WORKZONES

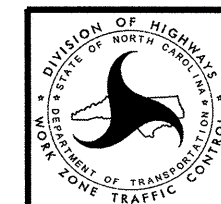


NOTES:

- 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) USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AND 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.

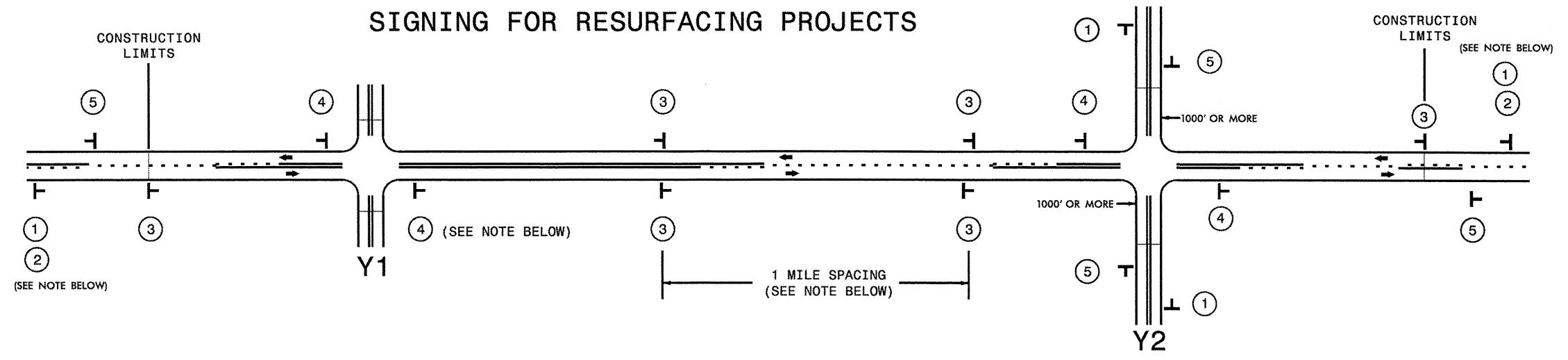
LEGEND

- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW



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

SIGNING FOR RESURFACING PROJECTS



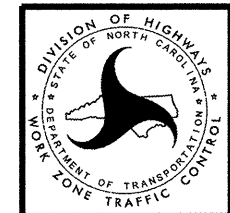
LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

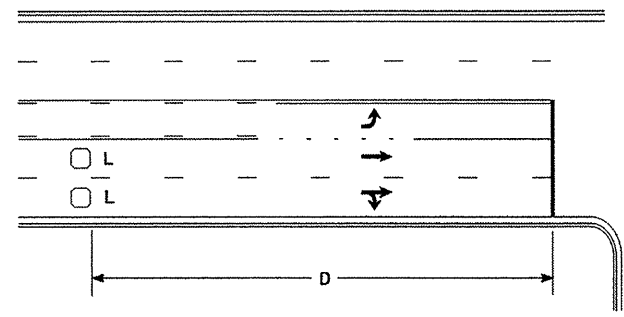
SIGNING NOTES AND PLACEMENT PER DIRECTION	①	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.		
	②	 <small>W7-3aP 24" X 18"</small>	#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES 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; font-size: small;">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; font-size: small;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>		

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

High Speed Detection [≥40 mph (64 km/hr)]

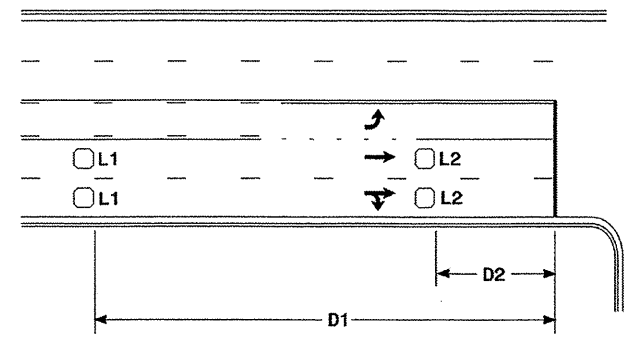


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
Wired in series for TS1
Controllers
Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

OR

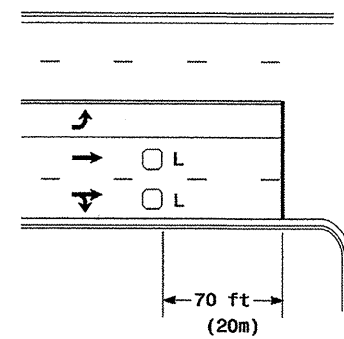


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

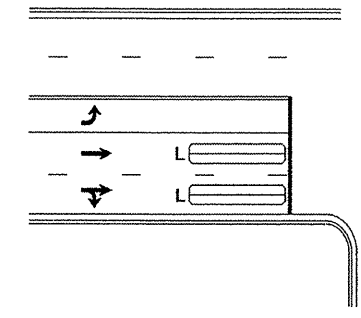
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



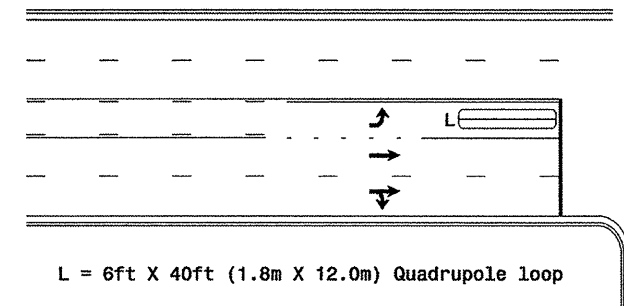
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop, wired separately

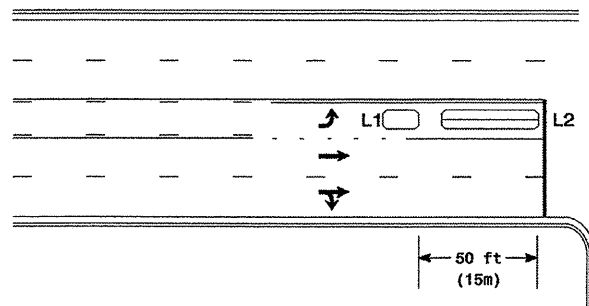
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

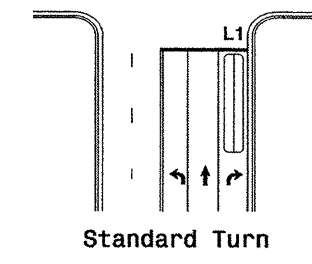
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

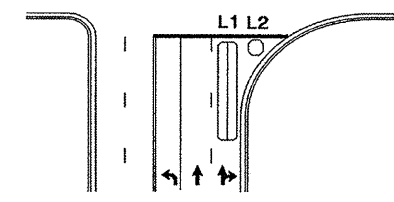
Queue Loop Detection

Right Turn Lane Detection

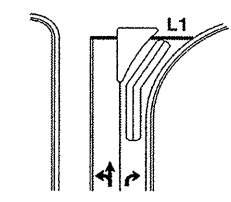


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

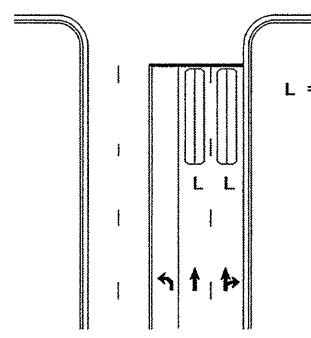


Wide Radius Turn



Channelized Turn

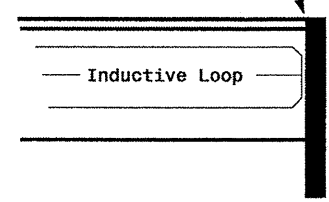
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
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 when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)
loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns
6' X 15' (1.8m X 4.6m) Loops:
Lead-in < 150' (45 m), use 2 turns
Lead-in > 150' (45 m), use 3 turns

	Typical Loop Locations		
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander SCALE: N/A	REVIEWED BY: REVISIONS: INIT.: DATE:	