

* "PATCHING EXISTING PAVEMENT" HAS BEEN INCLUDED AS A PAY ITEM ON MAPS. PATCHING MAY OR MAY NOT BE NEEDED DEPENDING ON CONDITION OF MAP SURFACE AT TIME THAT PAVING SEASON BEGINS. AREAS TO BE DELINIATED BY THE ENGINEER.

* INCIDENTAL MILLING AT LOCATIONS AS DIRECTED BY THE ENGINEER

*** LEVELING AT LOCATIONS AS DIRECTED BY THE ENGINEER



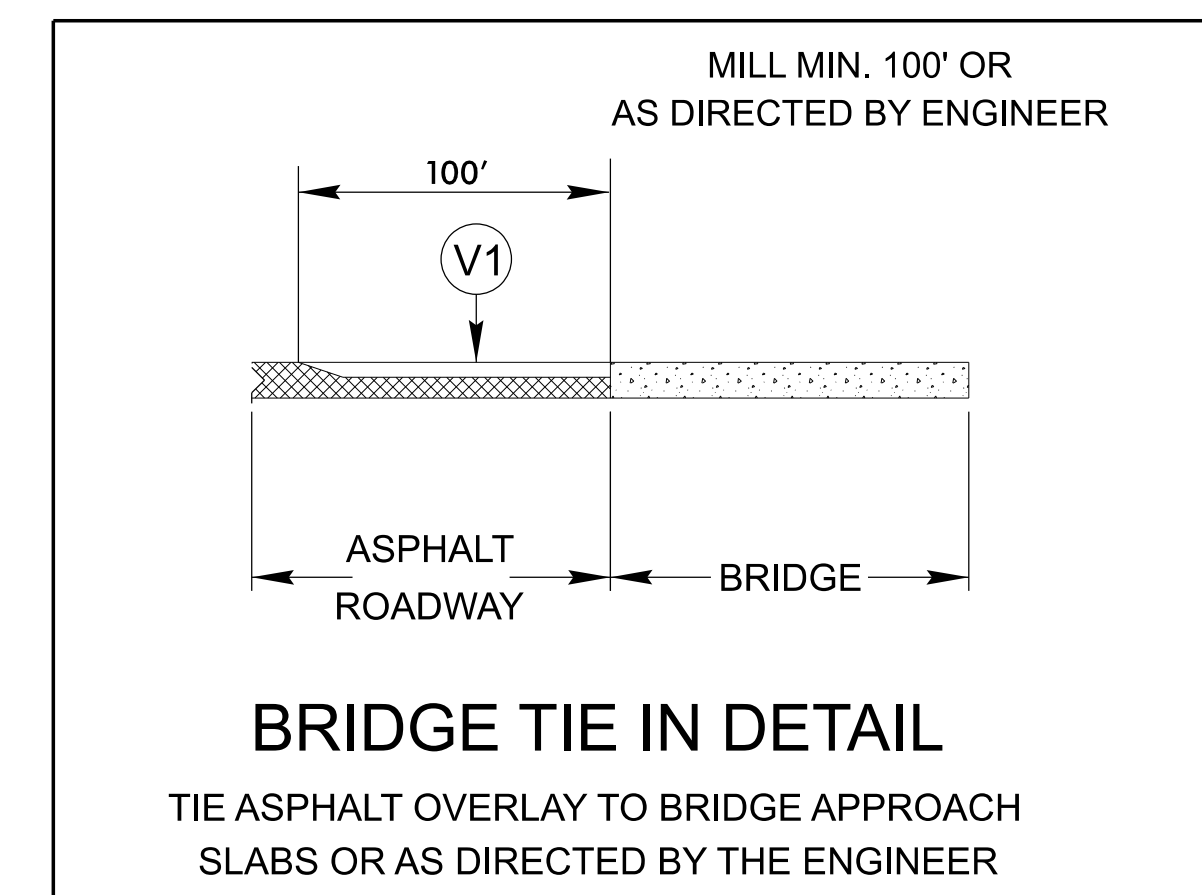
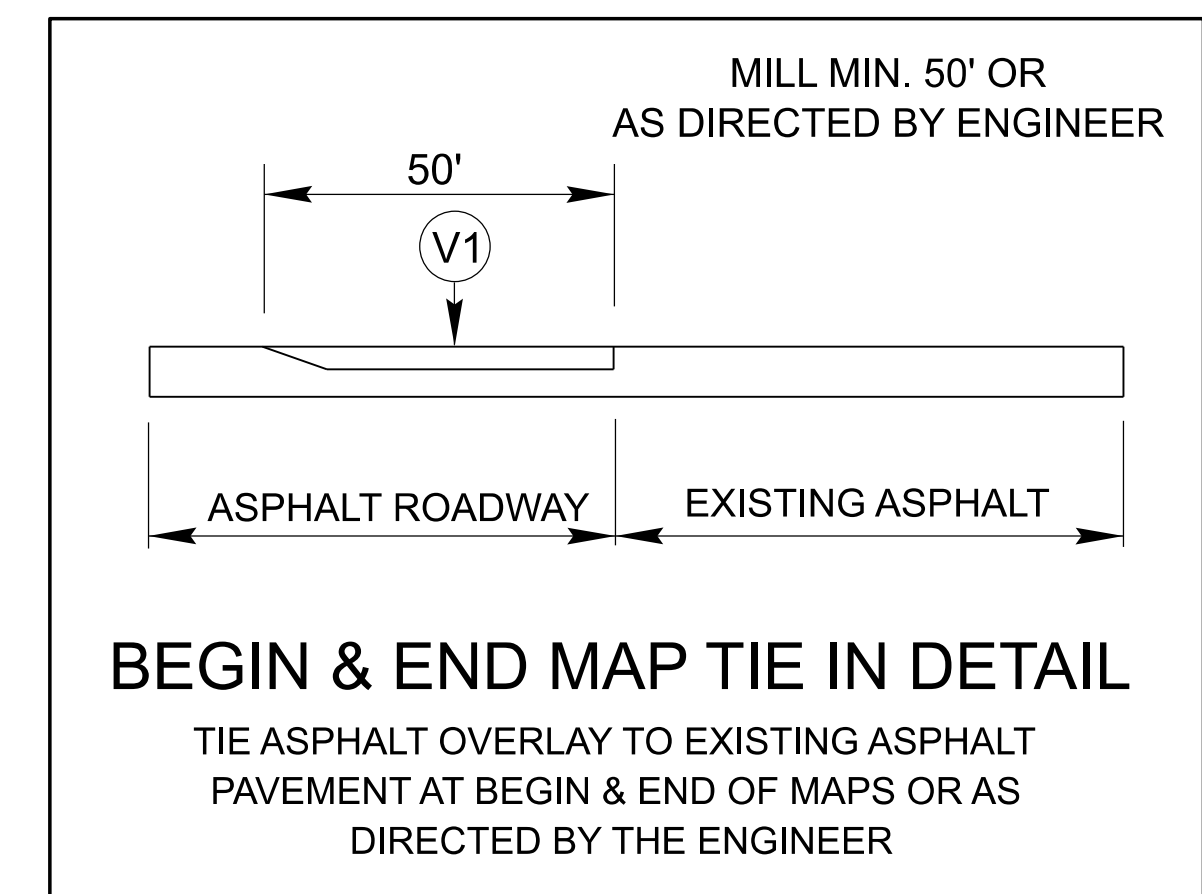
TYPICAL SECTION NO. 2

*** MAP 1 - SR 1106 MULLIN HILL FROM US 19 E TO NC 194
*(Mill & Fill overlay for bridge #49 on Map No.1)

*** MAP 5 - SR 1370 AVERY COUNTY HIGH SCHOOL FROM NC 181 TO SR 1500

*** MAP 6 - SR 1500 OLD MONTEZUMA/AVERY COUNTY HIGH SCHOOL FROM BOP TO NC 194

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING (See Tie in Detail)



NOTE: TYPICALS ARE NOT TO SCALE

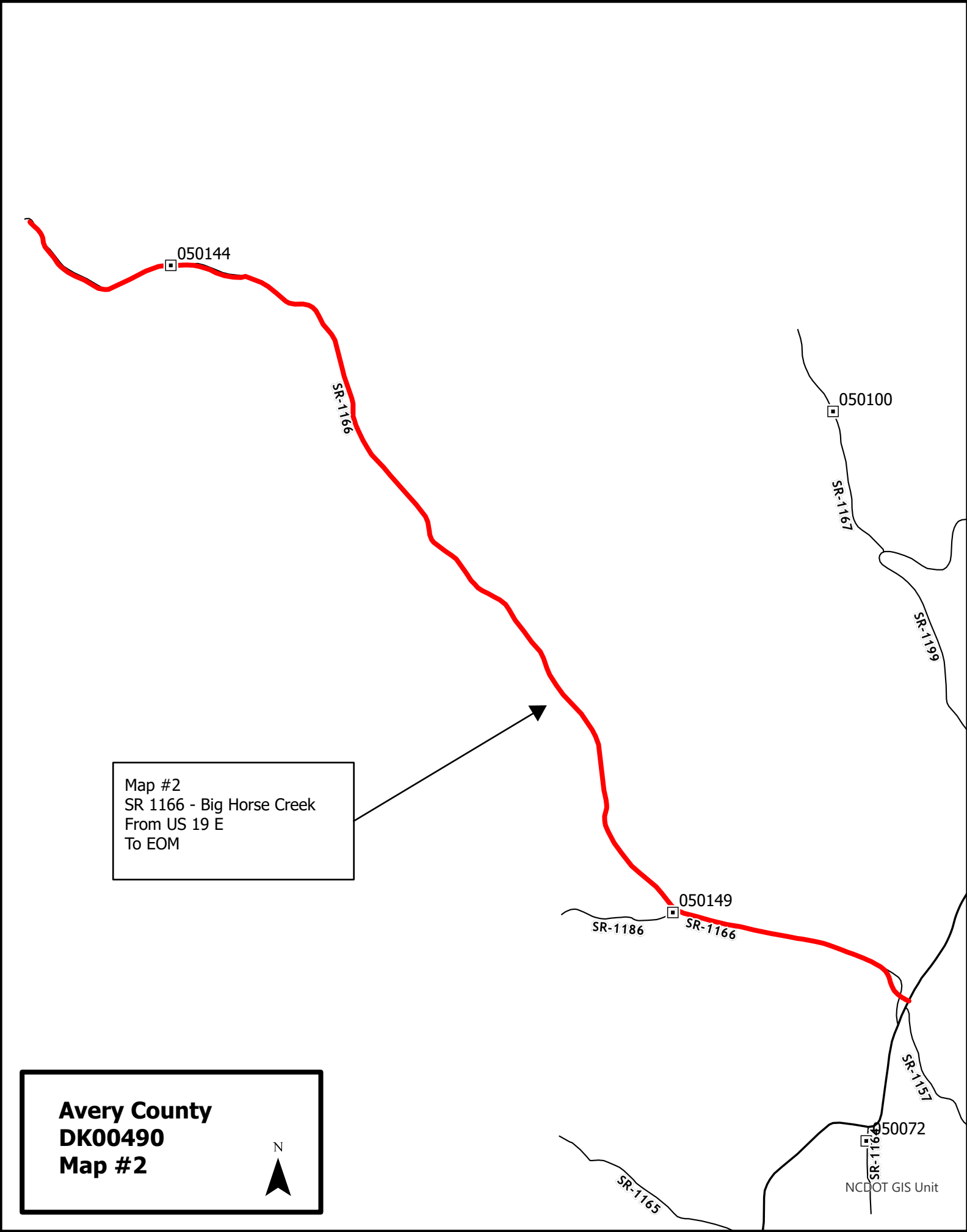
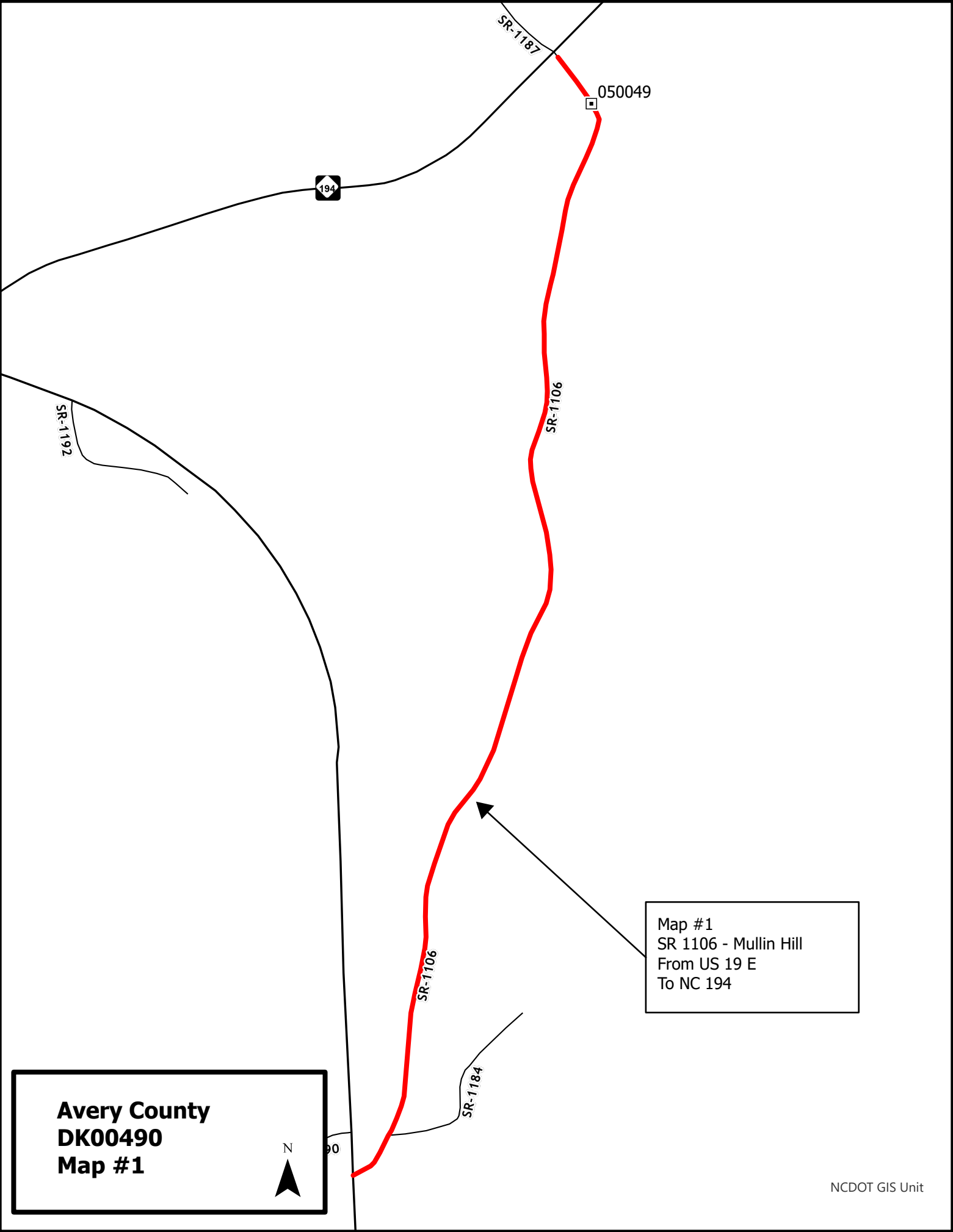
																						CONTRACT #	SHEET NO.
																						DK00490	2
SUMMARY OF QUANTITIES																							
												1220000000-E	1245000000-E	1260000000-E	1330000000-E	1519000000-E	1520000000-E	1523000000-E	1524000000-E	1575000000-E	1704000000-E	7444000000-E	
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MILE POST	END MILE POST	INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	INCIDENTAL MILLING	SURFACE COURSE, TYPE S9.5B	LEVELING COURSE, TYPE S9.5B	SURFACE COURSE, TYPE S9.5C	LEVELING COURSE, TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	INDUCTIVE LOOP SAWCUT	
								MI	FT			TON	SMI	TON	SY	TONS	TON	TONS	TON	TON	TONS	LF	
2027CPT.11.02.20061	Avery	1	SR 1106 / MULLIN HILL ROAD	FROM US 19 E TO NC 194	2	2	2WU	1.170	18	0.000	1.170	24	2.3	230	20			1,097	347	87	30		
2027CPT.11.02.20061	Avery	2	SR 1166 / BIG HORSE CREEK ROAD	FROM US 19E TO END OF MAINTENANCE	1	2	2WU	2.153	16	0.000	2.153	44	4.1	408	10	1,764	557			152	30		
2027CPT.11.02.20061	Avery	3	SR 1310 / SAM ELLER ROAD	FROM BEGIN PAVEMENT TO SR 1308	1	2	2WU	0.684	18	1.254	1.938	14	1.3	130	10	630	199			55	20		
2027CPT.11.02.20061	Avery	4	SR 1326 / PUCKETT ROAD	FROM NC 194 TO END OF MAINTENANCE	1	2		0.500	16	0.000	0.500	10	1.0	96	15	410	129			36	20		
2027CPT.11.02.20061	Avery	5	SR 1370 / AVERY COUNTY HIGH SCHOOL ROAD	FROM NC 181 TO SR 1500	2	2	2WU	0.530	20	0.000	0.530	11	1.1	106	200			552	174	44	30		
2027CPT.11.02.20061	Avery	6	SR 1500 / OLD MONTEZUMA/AVERY COUNTY HIGH SCHOOL ROAD	FROM BOP TO NC 194	2	2	2WU	0.710	20	1.030	1.740	15	1.4	142	222			739	234	58	15	200	
2027CPT.11.02.20061	Avery	7	SR 1536 / GREENE ROAD	FROM US 19E TO END OF MAINTENANCE	1	2	2WU	0.100	18	0.000	0.100	2	0.2	20	80	92				6			
TOTAL FOR PROJ NO. 2027CPT.11.02.20061								5.847				120	11.4	1,132	557	2,896	885	2,388	755	438	145	200	
GRAND TOTAL								5.847				120	11.4	1,132	557	2,896	885	2,388	755	438	145	200	

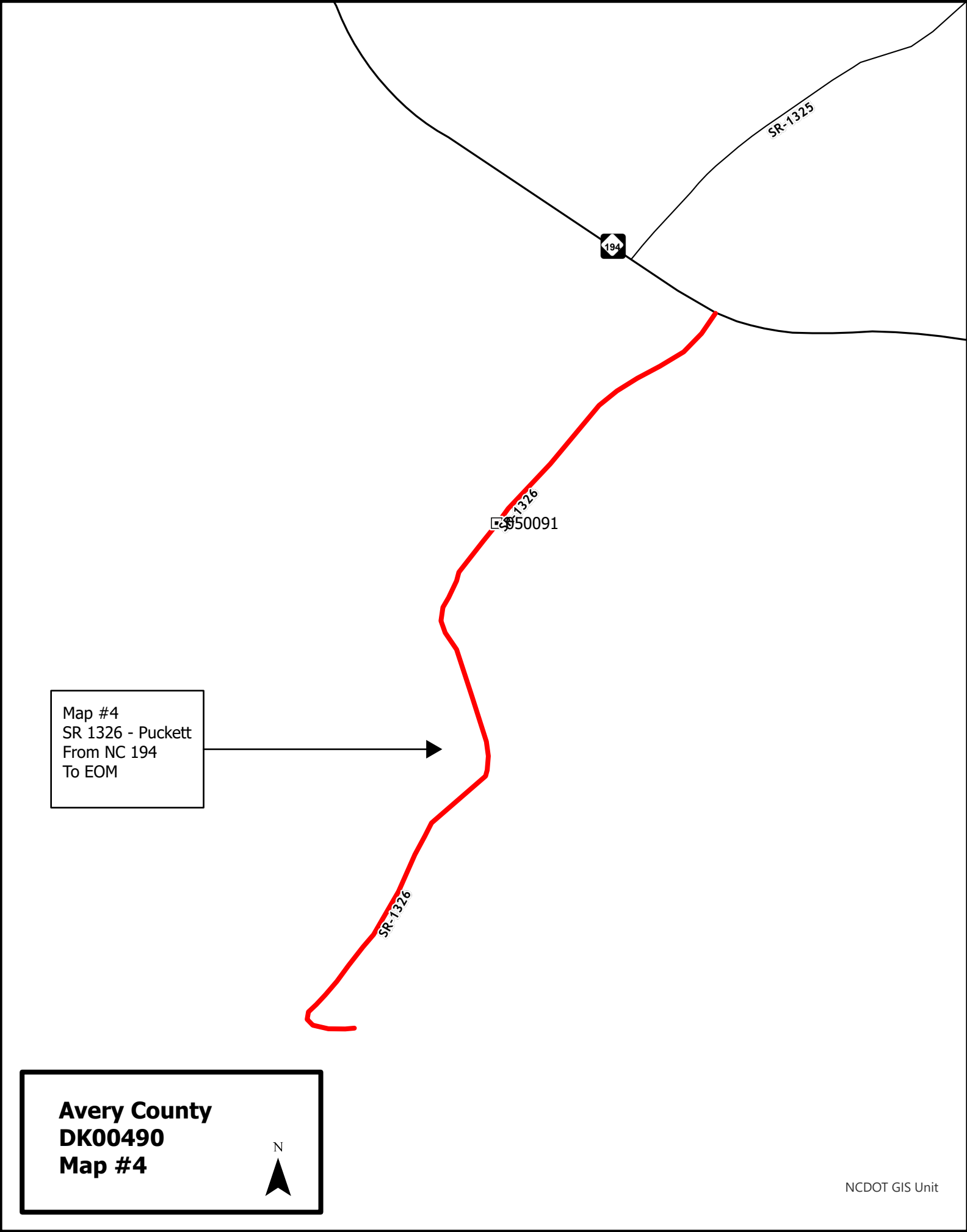
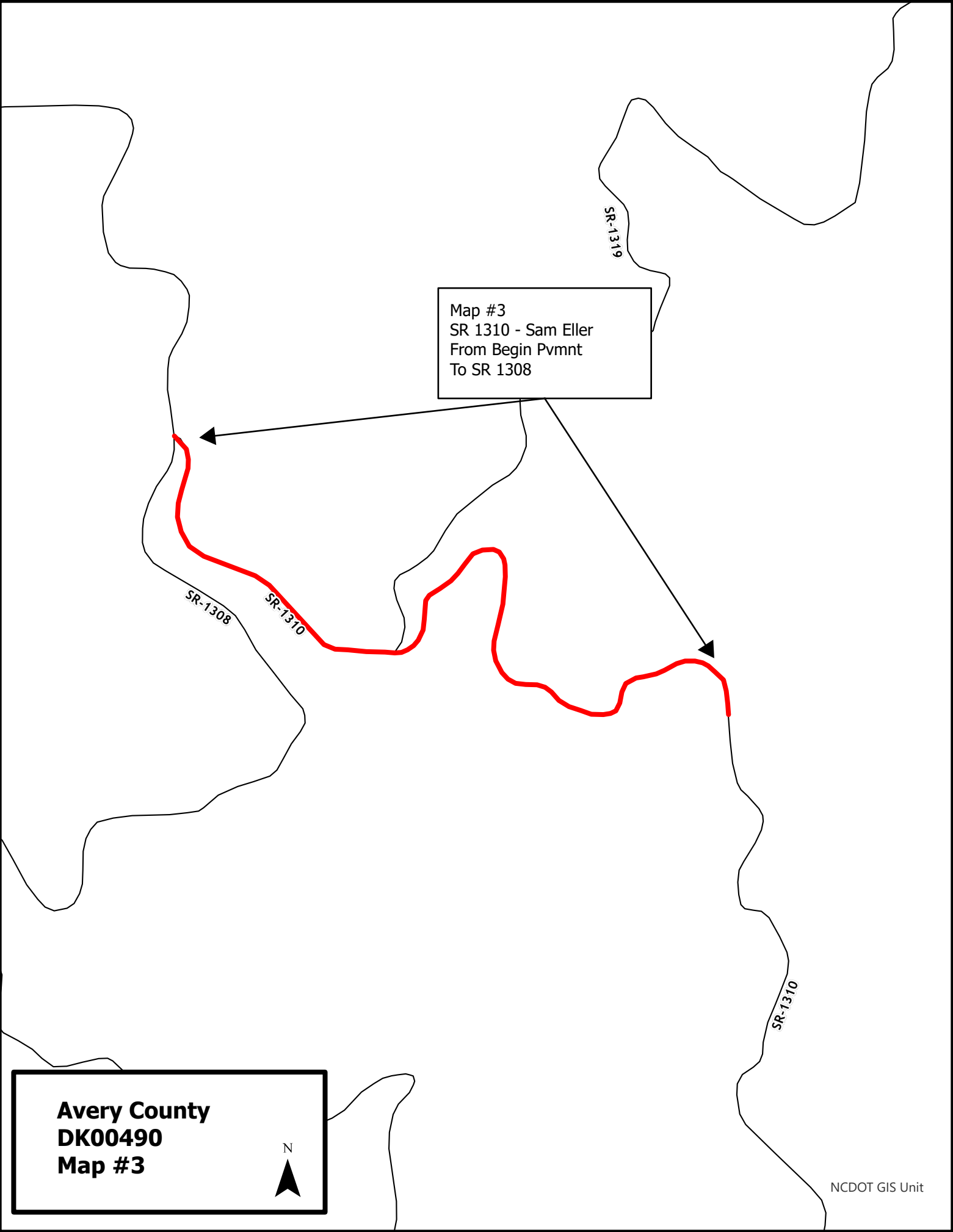
Mile Post Map

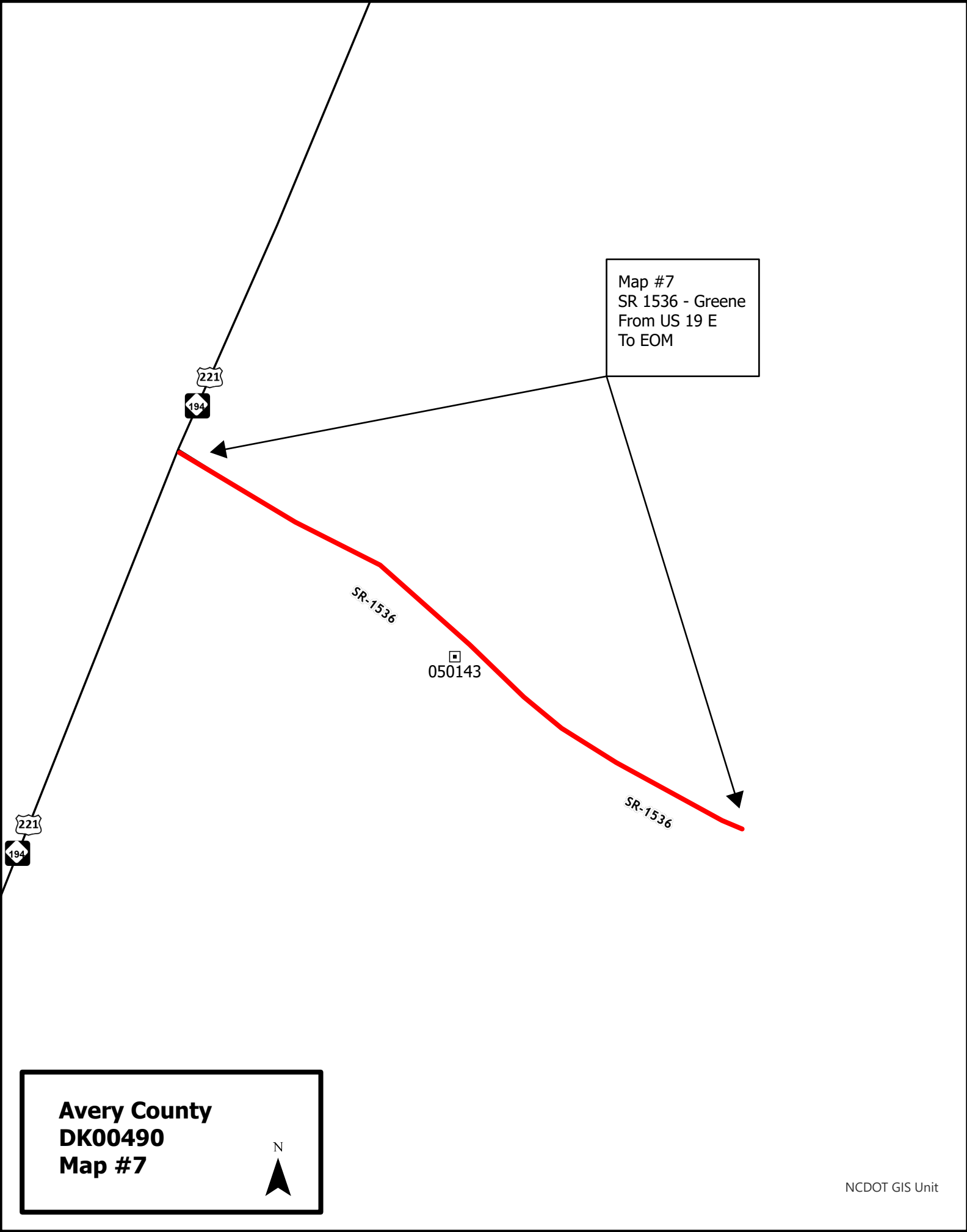
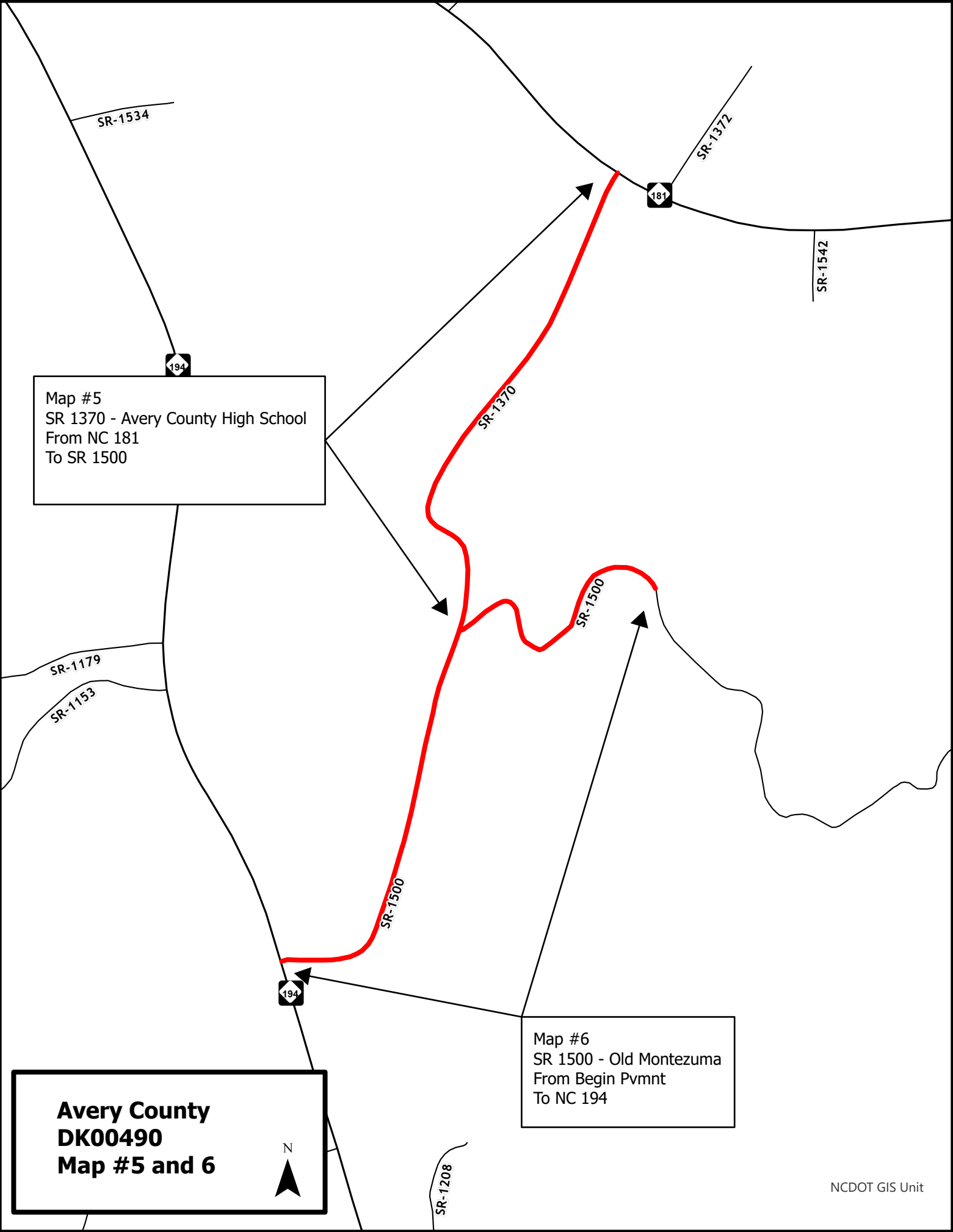
[Mile Post Map](#)

															CONTRACT # DK00490		SHEET NO. 3		
THERMOPLASTIC AND PAINT QUANTITIES																			
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MILE POST	END MILE POST	4413000000-E WORK ZONE ADVANCE/GENERAL WARNING SIGNING	4709000000-E THERMOPLASTIC PAVEMENT MARKING LINES 24", 90 MILS	4720000000-E THERMOPLASTIC MESSAGE SCHOOL 90 MILS	4890000000-E HOT SPRAY THERMOPLASTIC PAVEMENT MARKING LINES 4", 65 MILS		4810000000-E PAINT PAVEMENT MARKING LINES 4"		4895000000-N POLYCARBONATE H-SHAPED MARKER
								MI	FT			SF	LF	EA	LF	LF		EA	
2027CPT.11.02.20061	Avery	1	SR 1106 / MULLIN HILL ROAD	FROM US 19 E TO NC 194	2	2	2WU	1.17	18	0	1.17	176			24,260			155	
2027CPT.11.02.20061	Avery	2	SR 1166 / BIG HORSE CREEK ROAD	FROM US19E TO END OF MAINTENANCE	1	2	2WU	2.153	16	0	2.153	196			43,000		22,756		
2027CPT.11.02.20061	Avery	3	SR 1310 / SAM ELLER ROAD	FROM BEGIN PAVEMENT TO SR 1308	1	2	2WU	0.684	18	1.254	1.938	112			13,800		7,234		
2027CPT.11.02.20061	Avery	4	SR 1326 / PUCKETT ROAD	From NC 194 To End of Maintenance	1	2		0.5	16	0	0.5	112					5,280		
2027CPT.11.02.20061	Avery	5	SR 1370 / AVERY COUNTY HIGH SCHOOL ROAD	FROM NC 181 TO SR 1500	2	2	2WU	0.53	20	0	0.53		40	6	11,200			70	
2027CPT.11.02.20061	Avery	6	SR 1500 / OLD MONTEZUMA/AVERY COUNTY HIGH SCHOOL ROAD	FROM BOP TO NC 194	2	2	2WU	0.71	20	1.03	1.74	112	40	6	12,000	40		75	
2027CPT.11.02.20061	Avery	7	SR 1536 / GREENE	FROM US 19E TO END OF MAINTENANCE	1	2	2WU	0.1	18	0	0.1	112							
TOTAL FOR PROJ NO. 2027CPT.11.02.20061							5.847					820	80	12	104,260	40		300	
																104,300			
GRAND TOTAL							5.847					820	80	12	104,260	40	35,270	300	
																104,300	35,270		

[Mile Post Map](#)

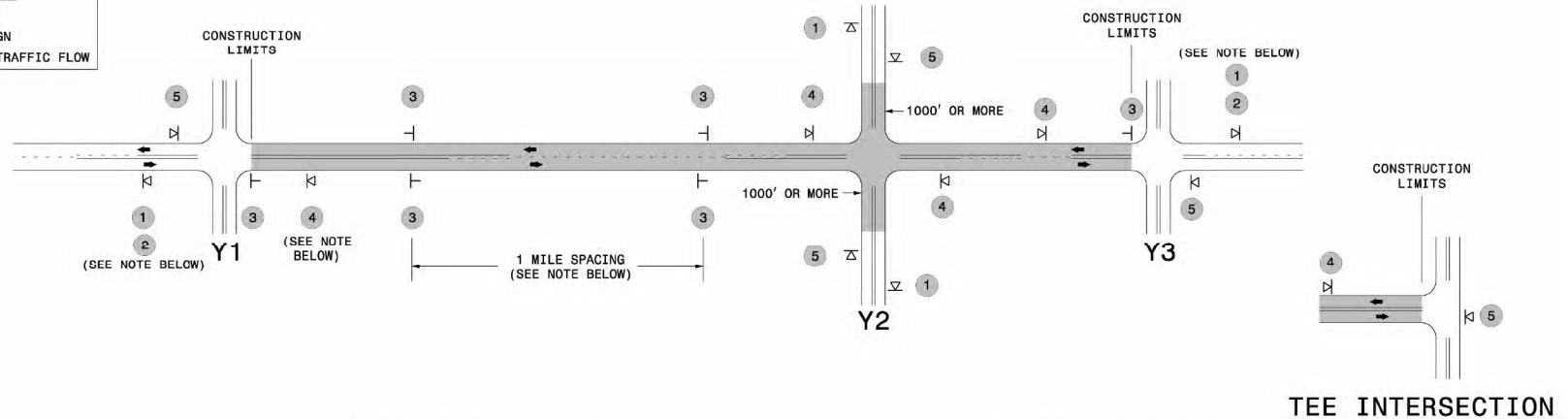






SIGNING FOR ASPHALT SURFACE TREATMENT

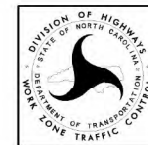
LEGEND	
	PORTABLE SIGN
	STATIONARY SIGN
	DIRECTION OF TRAFFIC FLOW



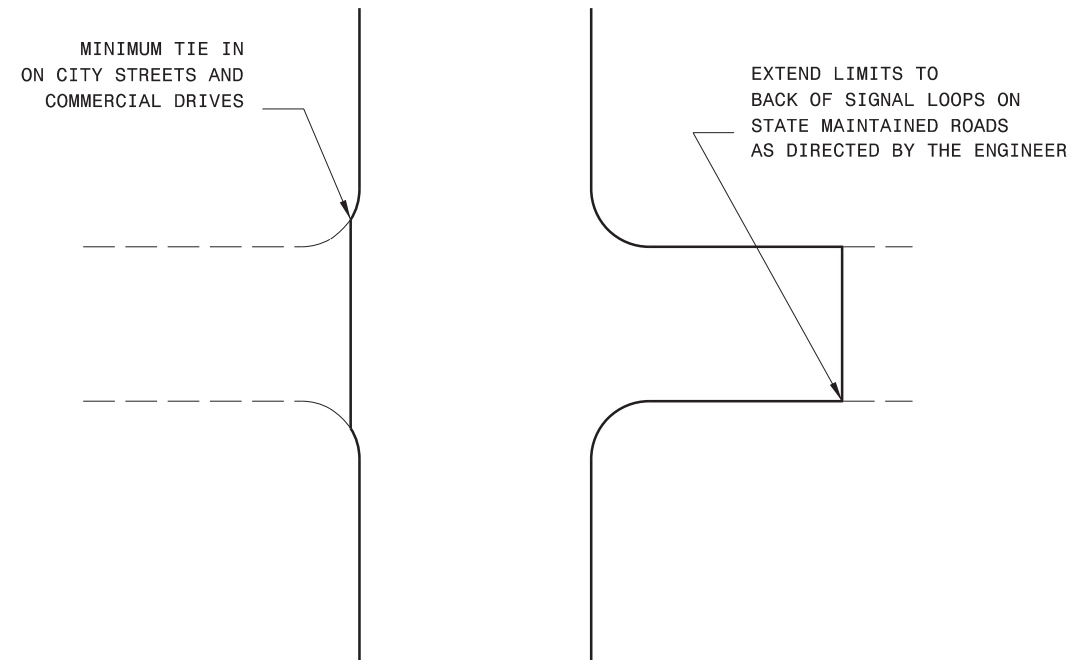
MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

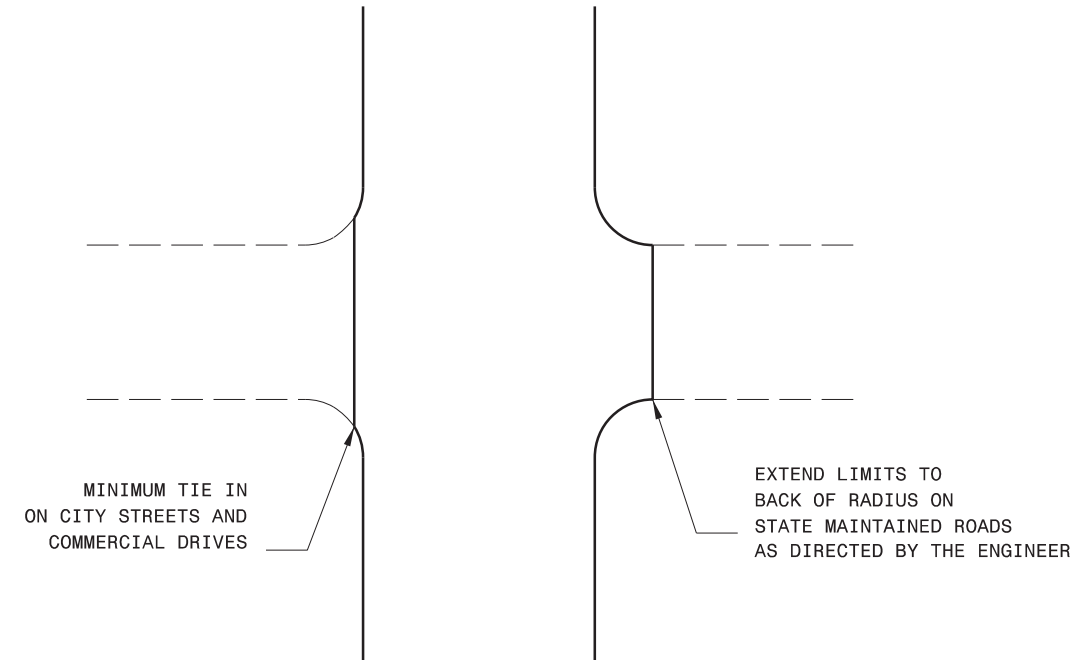
SIGNING NOTES AND PLACEMENT PER DIRECTION	1		- PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	STATIONARY SIGNING NOT REQUIRED FOR THE FOLLOWING -Y- LINE CONDITIONS: 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, PORTABLE ADVANCE WARNING SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.	
	2		- SIGN #2 ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO THE NEAREST WHOLE NUMBER. DO NOT USE FRACTIONAL OR DECIMAL NUMBERS.		
	3		- ALTERNATE THE FOLLOWING TWO SIGNS: - STARTING WITH "LOOSE GRAVEL" (W8-7) FOLLOWED BY "UNMARKED PAVEMENT".		
		- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 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.		
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.			PLACED 500' IN ADVANCE OF FLAGGER.		PLACED 250' IN ADVANCE OF FLAGGER.
PS LESS 2 MILES	FOR AST RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, USE A STATIONARY "LOOSE GRAVEL" SIGN AT THE BEGINNING CONSTRUCTION LIMIT FOLLOWED BY AN "UNMARKED PAVEMENT" SIGN MIDWAY THROUGH AND AN "END ROAD WORK" SIGN AT THE END CONSTRUCTION LIMIT.				



ADVANCE WARNING SIGNS
FOR
2-LANE ROADWAY
ASPHALT SURFACE TREATMENT



TYPICAL DETAIL OF PROJECT LIMITS AT
SIGNALIZED Y LINES



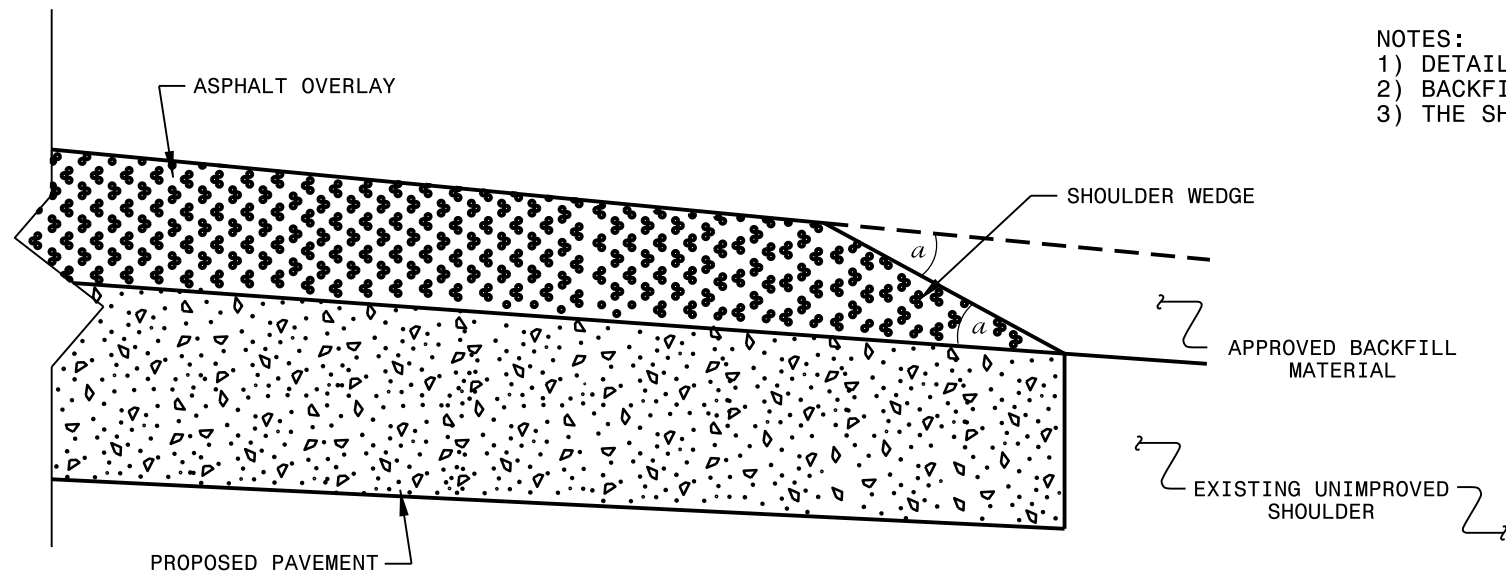
TYPICAL DETAIL OF PROJECT LIMITS AT
UNSIGNALIZED Y LINES

ADDITIONAL INTERSECTIONS (NON-TYPICAL)

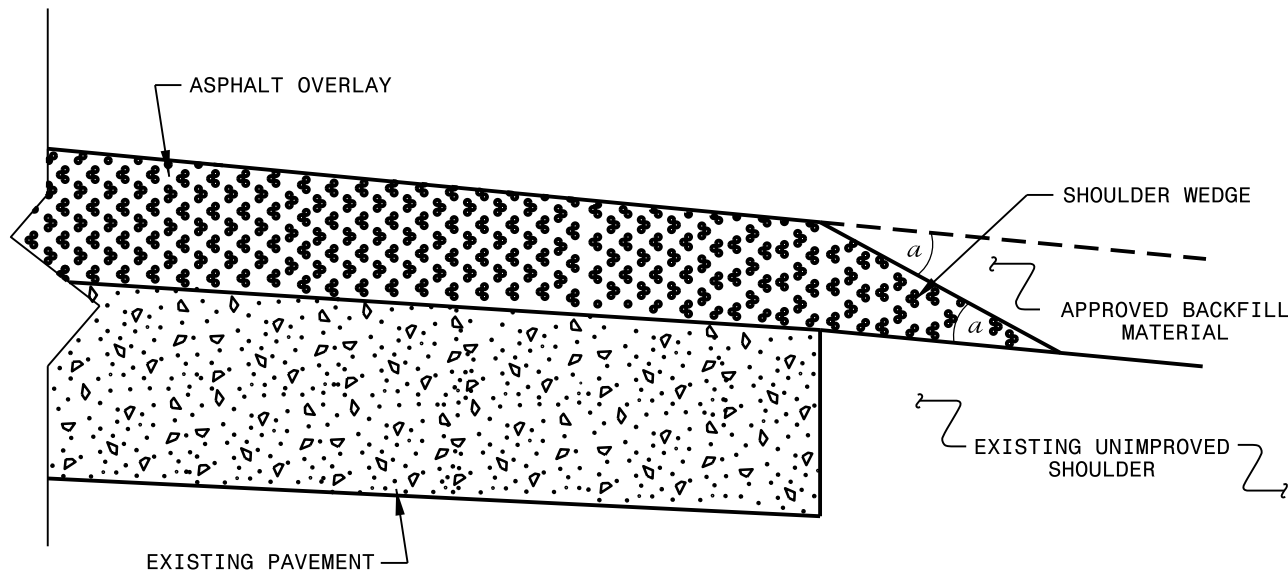
Extend paving limits to back of radius
or loop on the following intersections:

[illegible]

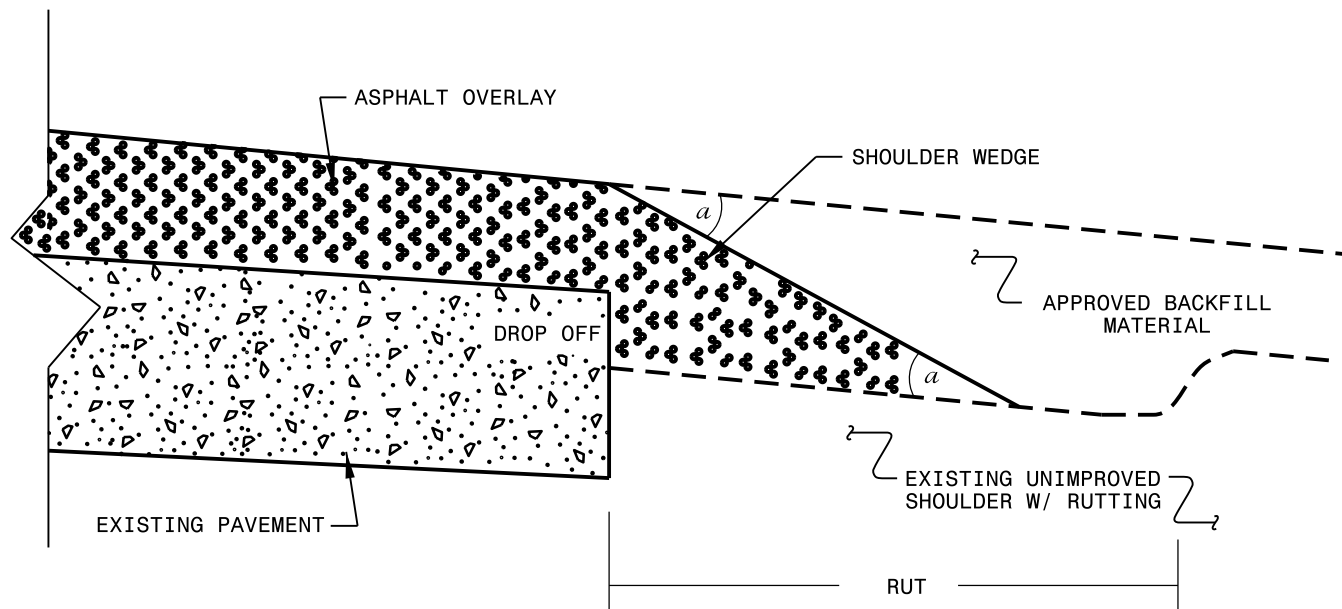
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFD AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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



SHOULDER WEDGE DETAIL
(Resurfacing Projects w/ NO Widening)



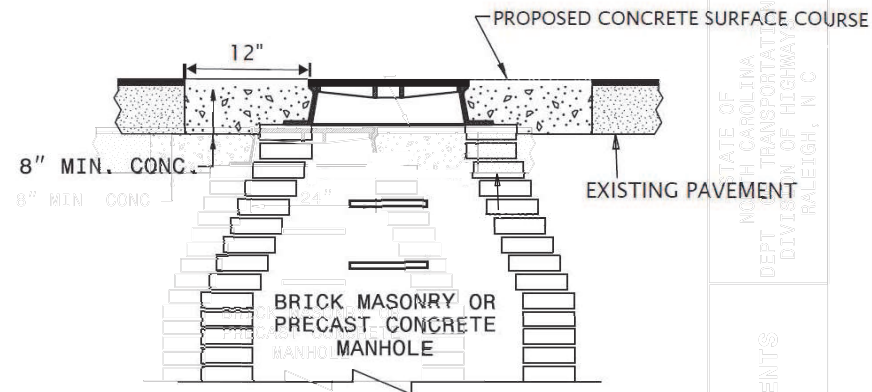
SHOULDER WEDGE DETAIL
(Resurfacing Adjacent to
Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

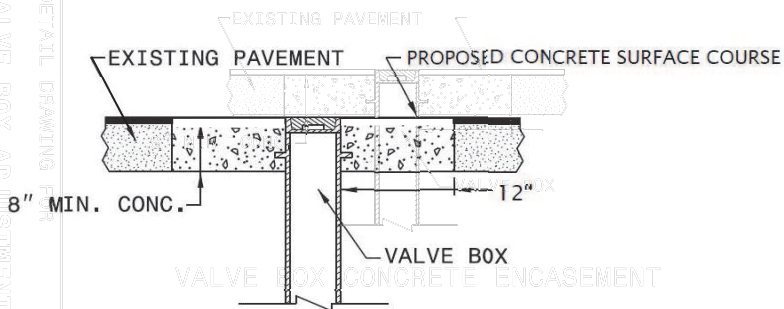
CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
SHOULDER WEDGE DETAILS			
ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	s:\usr\details\stand\shoulderwedgedetail.dgn		

GENERAL NOTES:

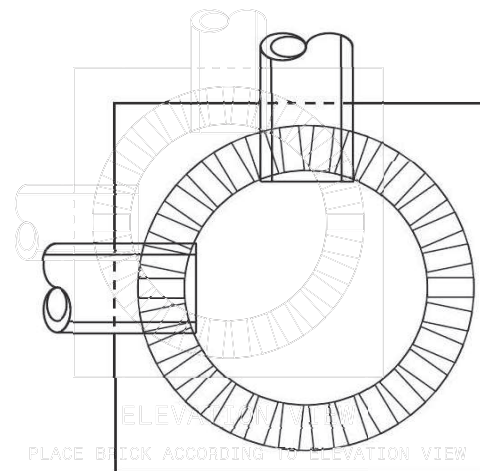
1. USE RAPID SET DYED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
2. REMOVE ALL FAULTY EXISTING BRICKWORK AND REPLACE WITH NEW BRICK MASONRY.
3. SHEER CUT RECTANGULAR EXCAVATION FOR THE ADJUSTMENT ON ALL SIDES. NO OVERSAW CUTS ALLOWED IN CORNERS.
4. FILL AREA BELOW 8" DEPTH WITH 78M OR NO. 57 CLEAN STONE.
5. MIX MORTAR TO NCDOT SPECIFICATIONS.
6. MORTAR JOINTS 1/2" +/- 1/8"



MANHOLE CONCRETE ENCASEMENT



VALVE BOX CONCRETE ENCASEMENT



ELEVATION VIEW

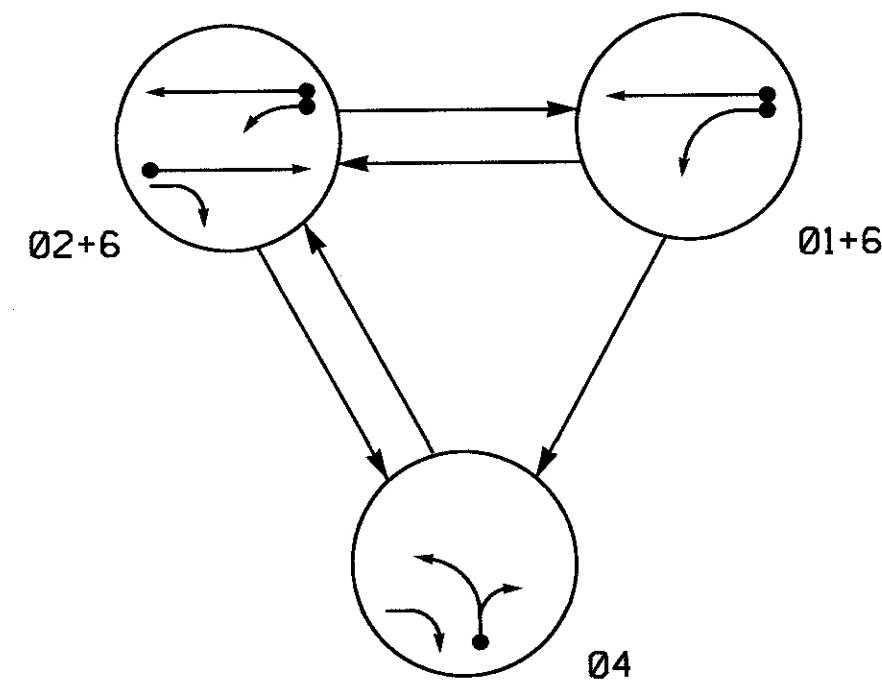
PLACE BRICK ACCORDING TO ELEVATION VIEW

SHEET 1 OF 1
840D55

SHEET 1 OF 1
840D55

REVISIONS

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- — DETECTED MOVEMENT
 — — UNDETECTED MOVEMENT (OVERLAP)
 - - - UNSIGNALIZED MOVEMENT
 - - - PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE			
	01+6	02+6	04	FLASH
21	R	G	R	Y
22	R	G	R	Y
41,42	R	R	G	R
61	G	G	R	Y
62	G	G	R	Y

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	+5	2-4-2	-	1	Y	Y	-	-	15	-	-
2A	6X6	300	5	-	6	Y	Y	Y	-	3	-	-
4A	6X60	+10	2-4-2	-	4	Y	Y	-	-	10	-	-
6A	6X6	300	4	-	6	Y	Y	-	-	-	-	-

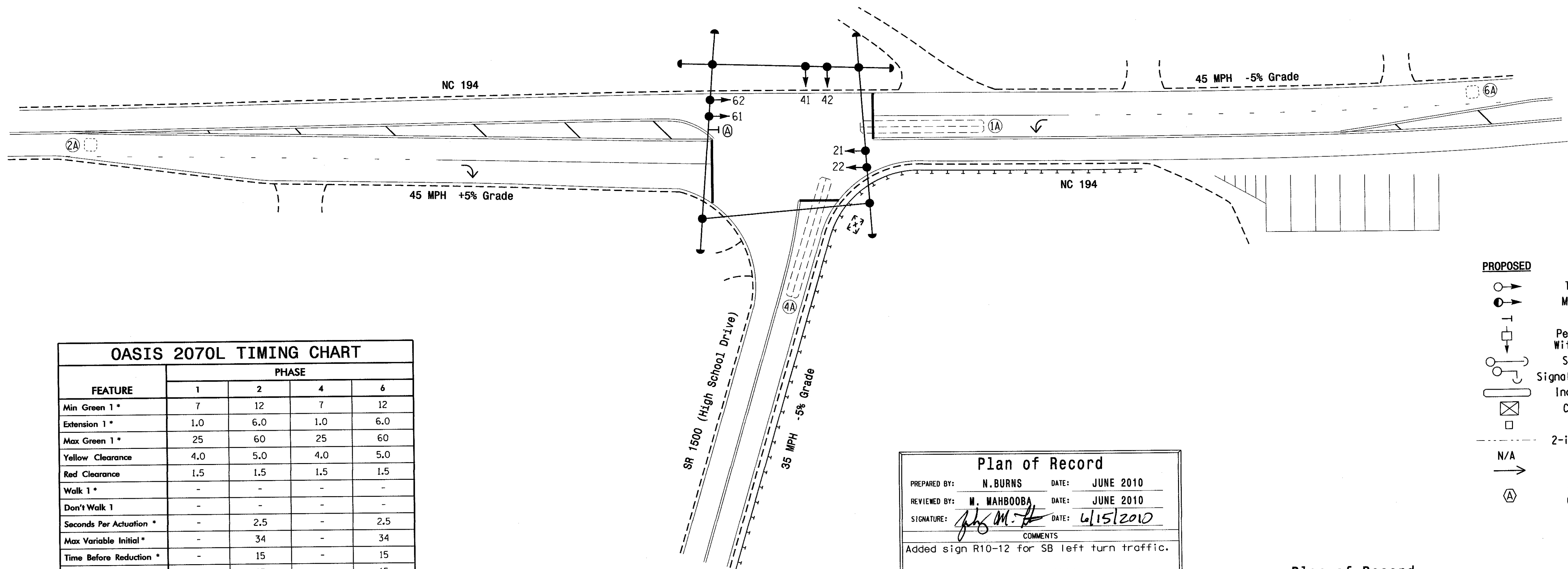
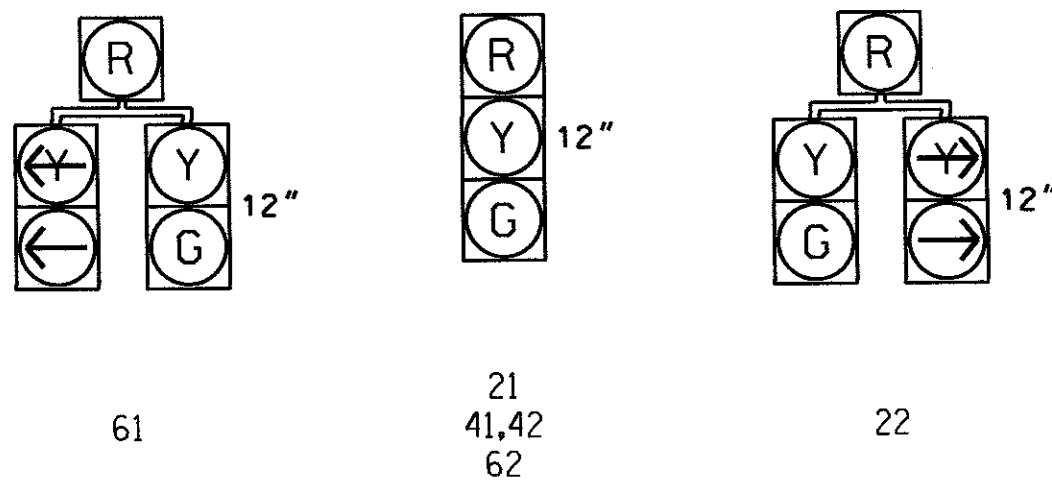
3-Phase
 Fully Actuated
 Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
 3. Set all detector units to presence mode.
 4. Pavement markings are existing.

SIGNAL FACE I.D.

All Heads L.E.D.



FEATURE	PHASE			
	1	2	4	6
Min Green 1 *	7	12	7	12
Extension 1 *	1.0	6.0	1.0	6.0
Max Green 1 *	25	60	25	60
Yellow Clearance	4.0	5.0	4.0	5.0
Red Clearance	1.5	1.5	1.5	1.5
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	2.5	-	2.5
Max Variable Initial *	-	34	-	34
Time Before Reduction *	-	15	-	15
Time To Reduce *	-	15	-	15
Minimum Gap	-	3.0	-	3.0
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

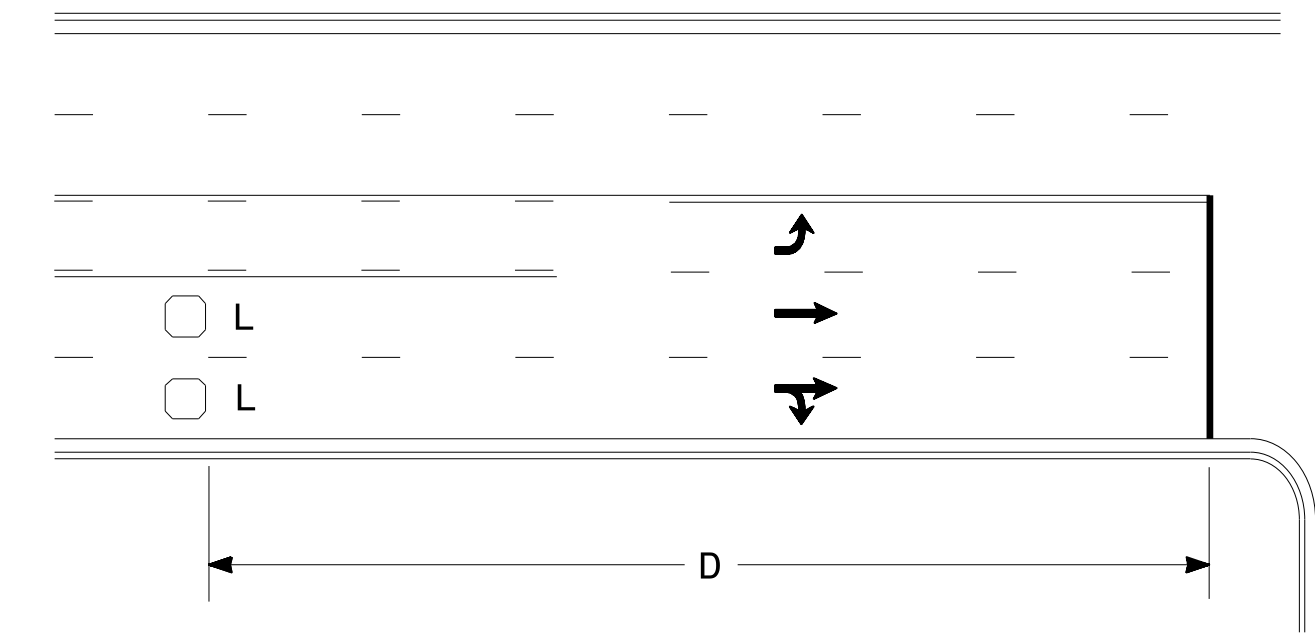
Plan of Record
 PREPARED BY: N. BURNS DATE: JUNE 2010
 REVIEWED BY: M. MAHBOOBA DATE: JUNE 2010
 SIGNATURE: *[Signature]* DATE: 6/15/2010
 COMMENTS:
 Added sign R10-12 for SB left turn traffic.

PROPOSED	LEGEND	EXISTING
○ →	Traffic Signal Head	● →
○ →	Modified Signal Head	N/A
⊥	Sign	⊥
⊥	Pedestrian Signal Head	⊥
⊥	With Push Button & Sign	⊥
⊥	Signal Pole with Guy	⊥
⊥	Signal Pole with Sidewalk Guy	⊥
⊥	Inductive Loop Detector	⊥
⊥	Controller & Cabinet	⊥
⊥	Junction Box	⊥
N/A	2-in Underground Conduit	⊥
→	Right of Way	→
→	Directional Arrow	→
⊙	"LEFT TURN YIELD ON GREEN" Sign (R10-12)	⊙

Plan of Record

	NC 194 at SR 1500 (High School Drive)		Not a certified document. This document originally issued and sealed by James B. Voso, PE #022599 on 5/7/04. This document shall not be considered a certified document.
	Division 11 Avery County South of Newland		
	PLAN DATE: February 2004	REVIEWED BY: Voso	
	PREPARED BY: Richardson	REVIEWED BY:	
REVISIONS		INIT. DATE	
750 N. Greenfield Pkwy, Garner, NC 27529			
SCALE: 0 30 1" = 30'			
SIG. INVENTORY NO. 11-0998			

High Speed Detection
(≥35 mph)

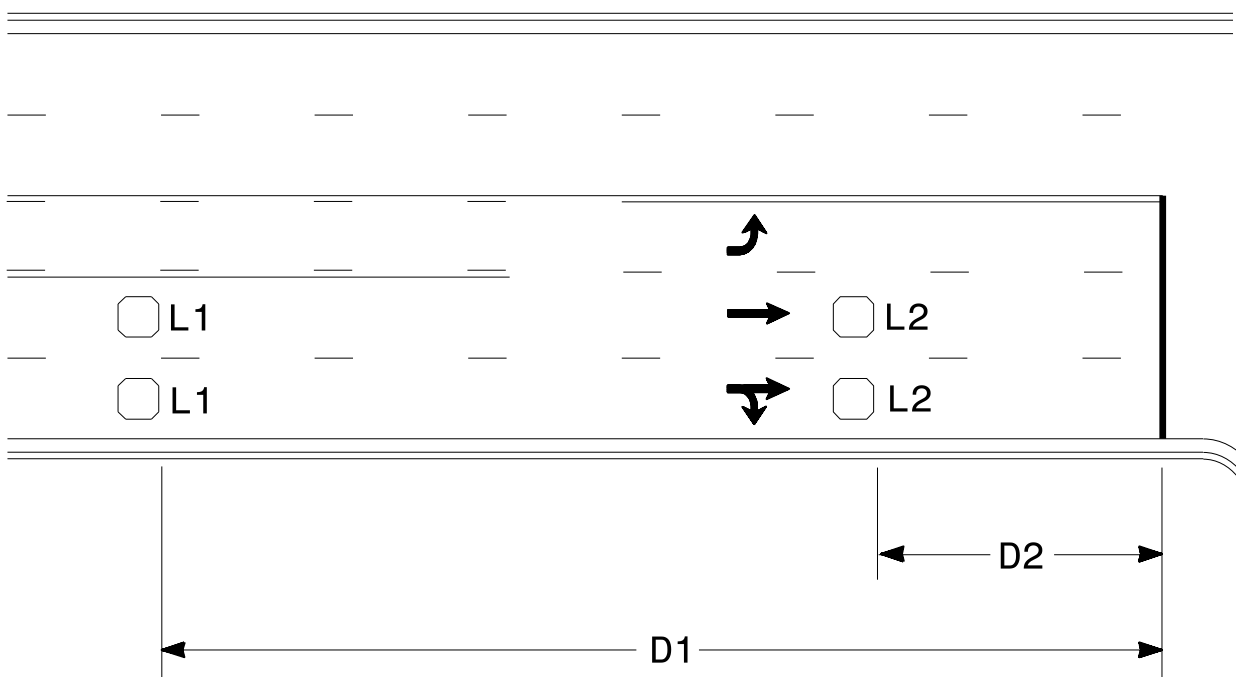


Speed Limit mph	D ft
35	200
40	250
45	300
50	355
55	420
60	475
65	550

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



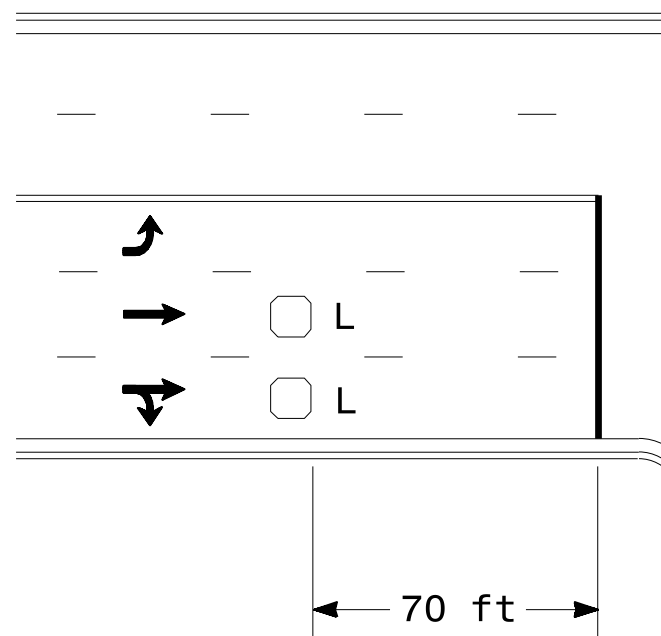
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110
60	475	120
65	550	130

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

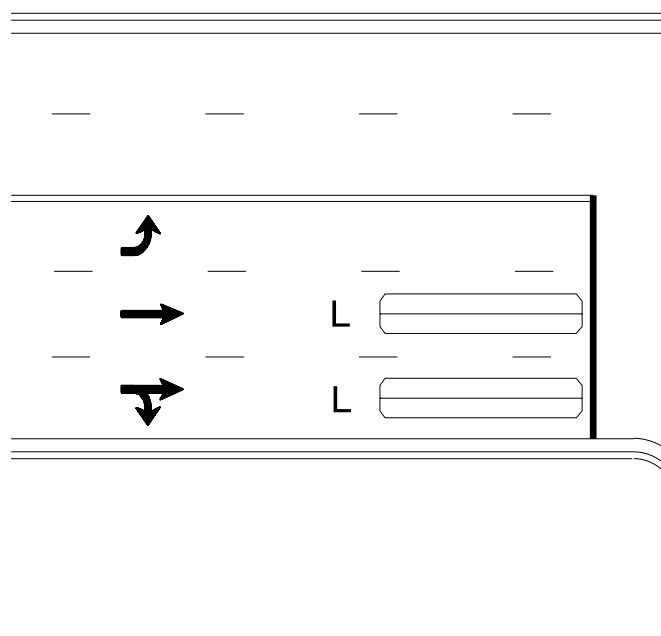
"Stretch" Operation

Low Speed Detection
(≤35 mph)



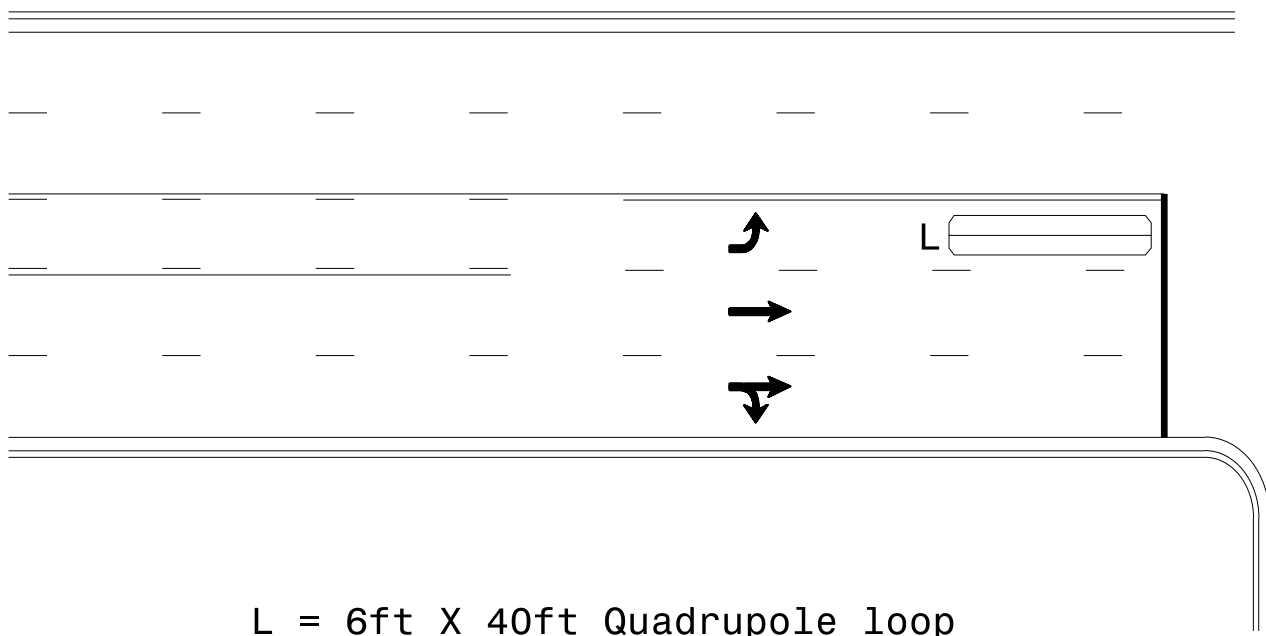
L = 6ft X 6ft
Wired in series

OR



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

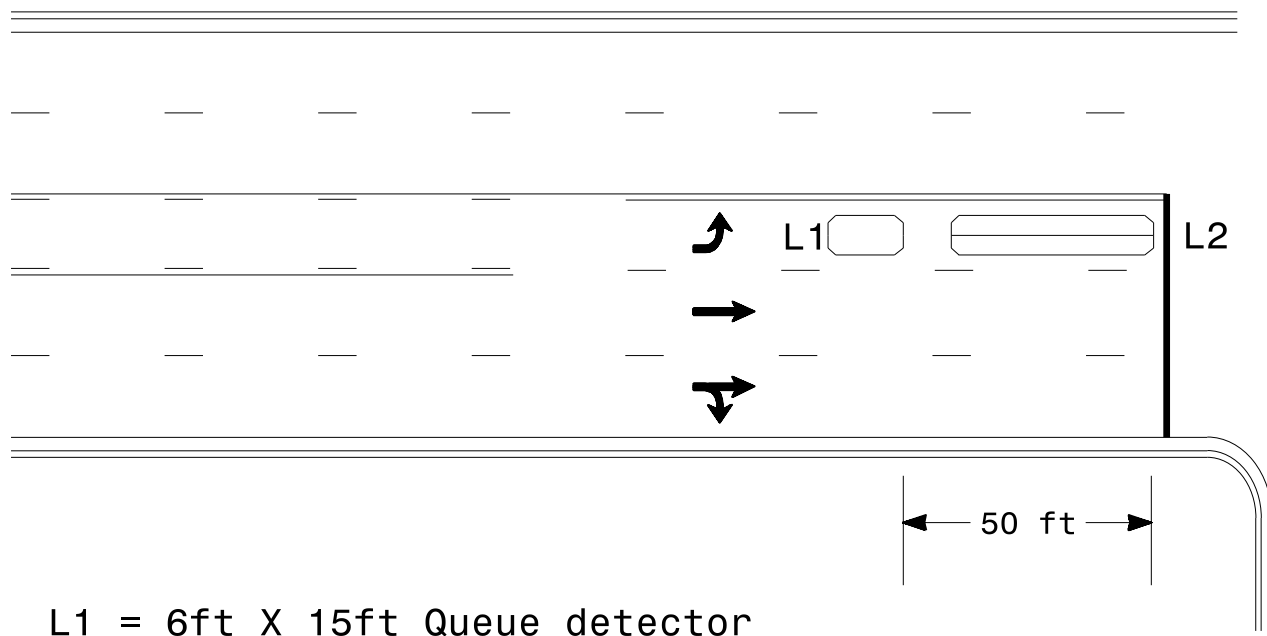
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

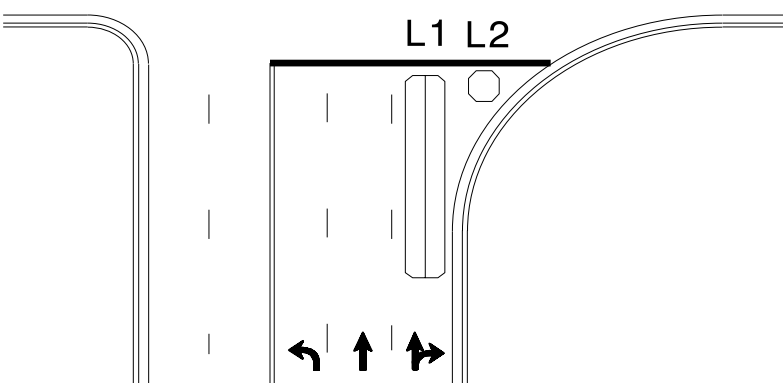
OR



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

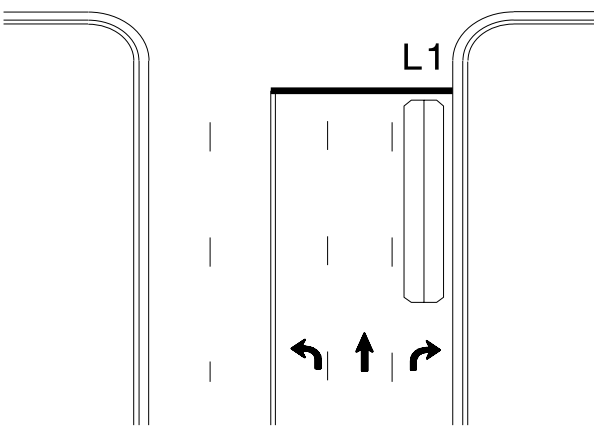
Queue Loop Detection

Right Turn Lane Detection

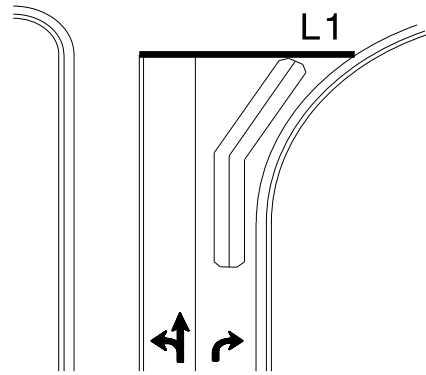


Shared Lane/
Wide Radius Turn

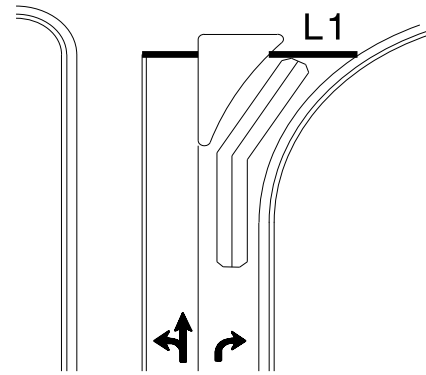
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

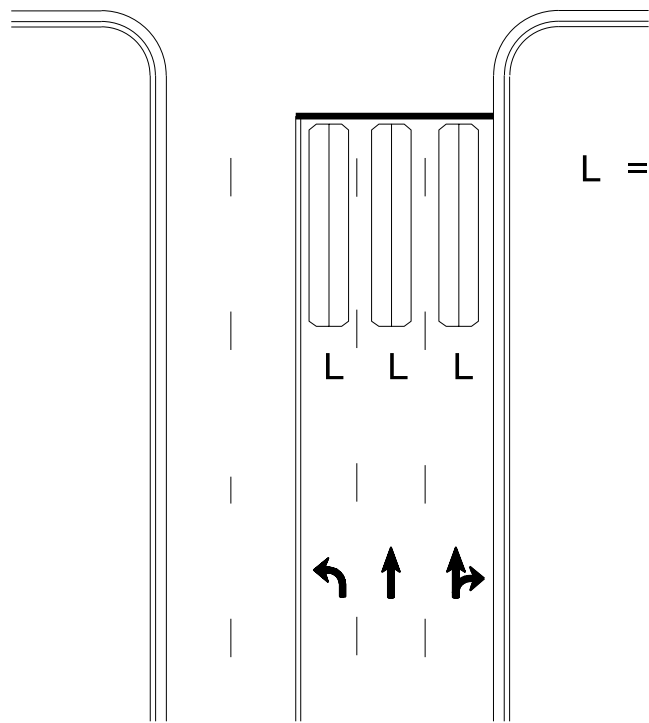


Wide Radius Turn



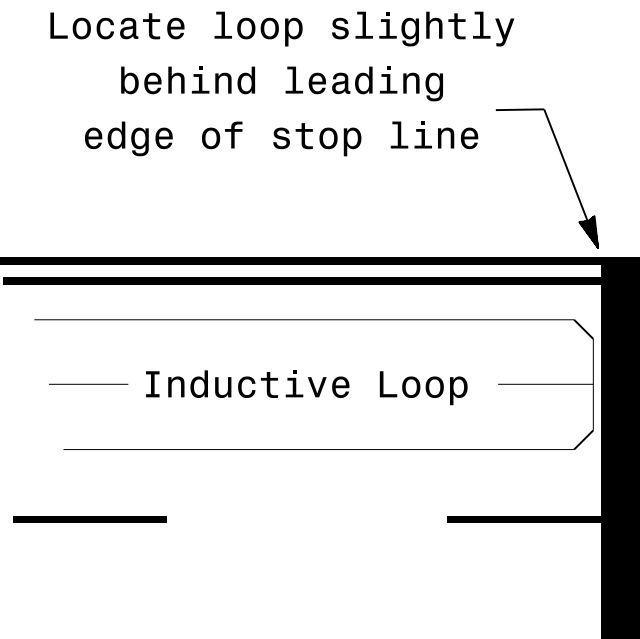
Channelized Turn

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

Prepared In the Offices of:

TRANSPORTATION MOBILITY AND SAFETY DIVISION

DEPARTMENT OF TRANSPORTATION

SIGNAL DESIGN SECTION

750 N. Greenfield Pkwy, Garner, NC 27529

PLAN DATE: September 2025

REVIEWED BY:

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SCALE: N/A

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DATE:

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11/25/2025

DATE

SIG. INVENTORY NO.