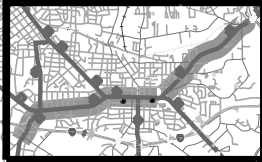


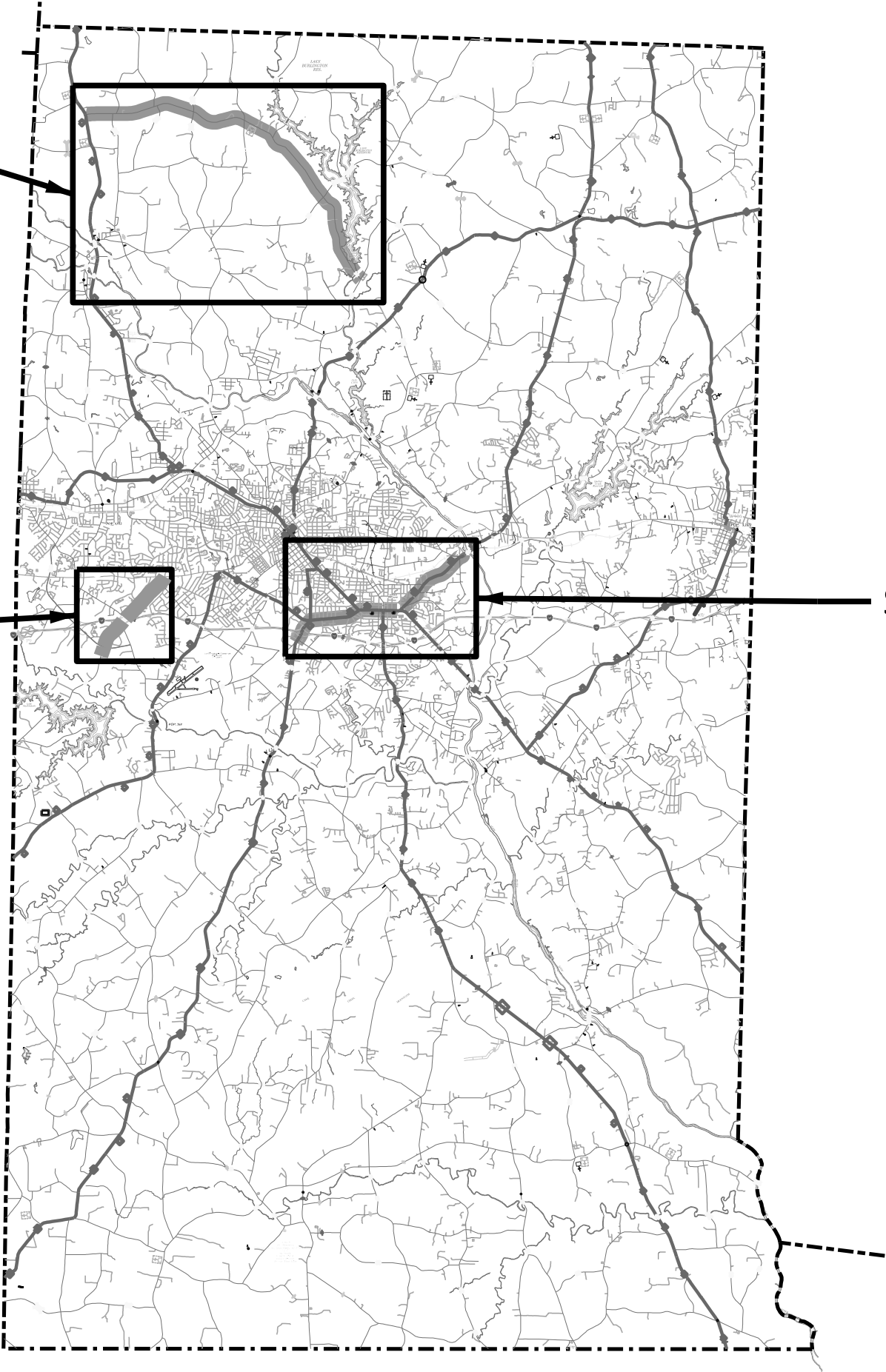
SHEET 3

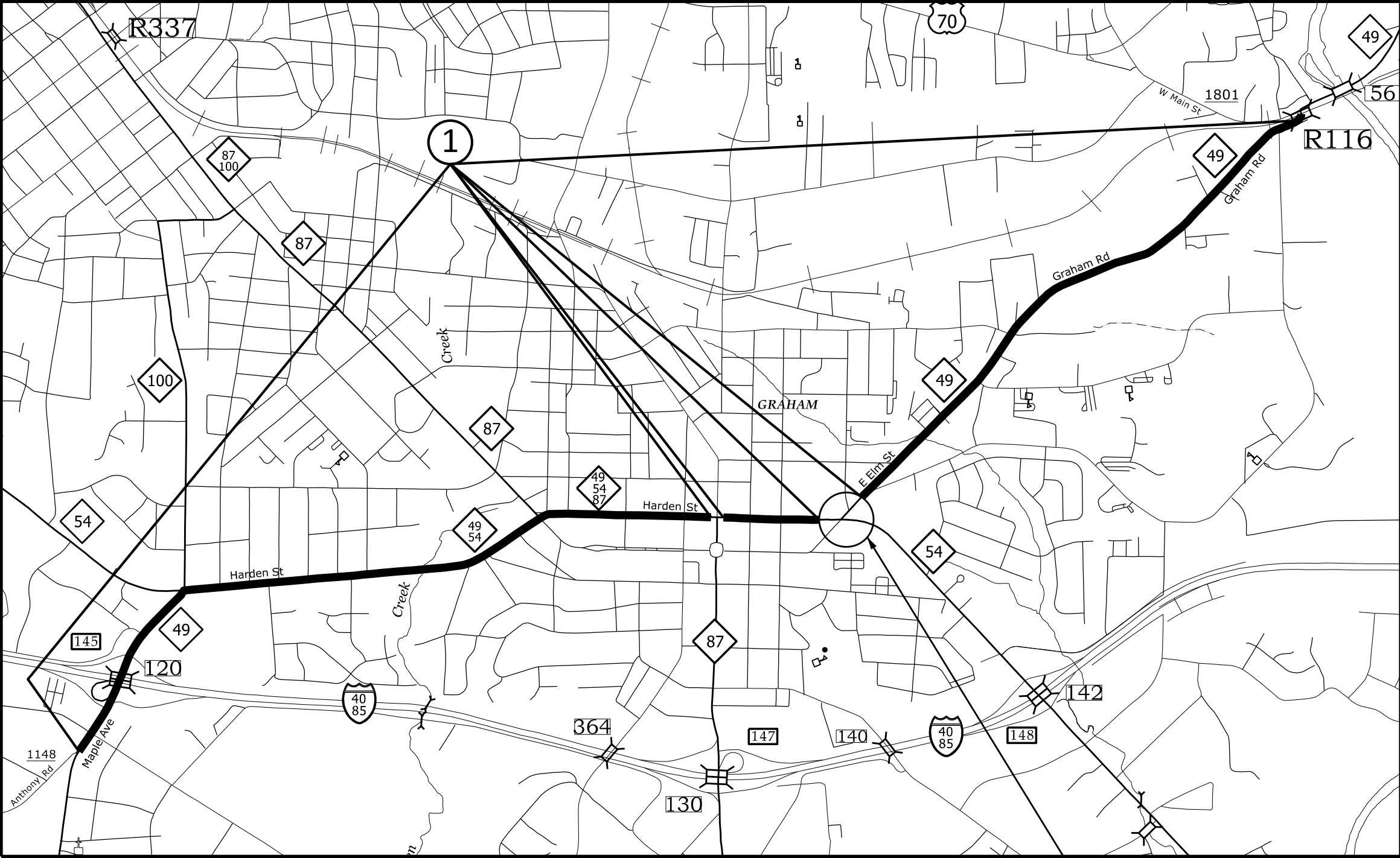


SHEET 4



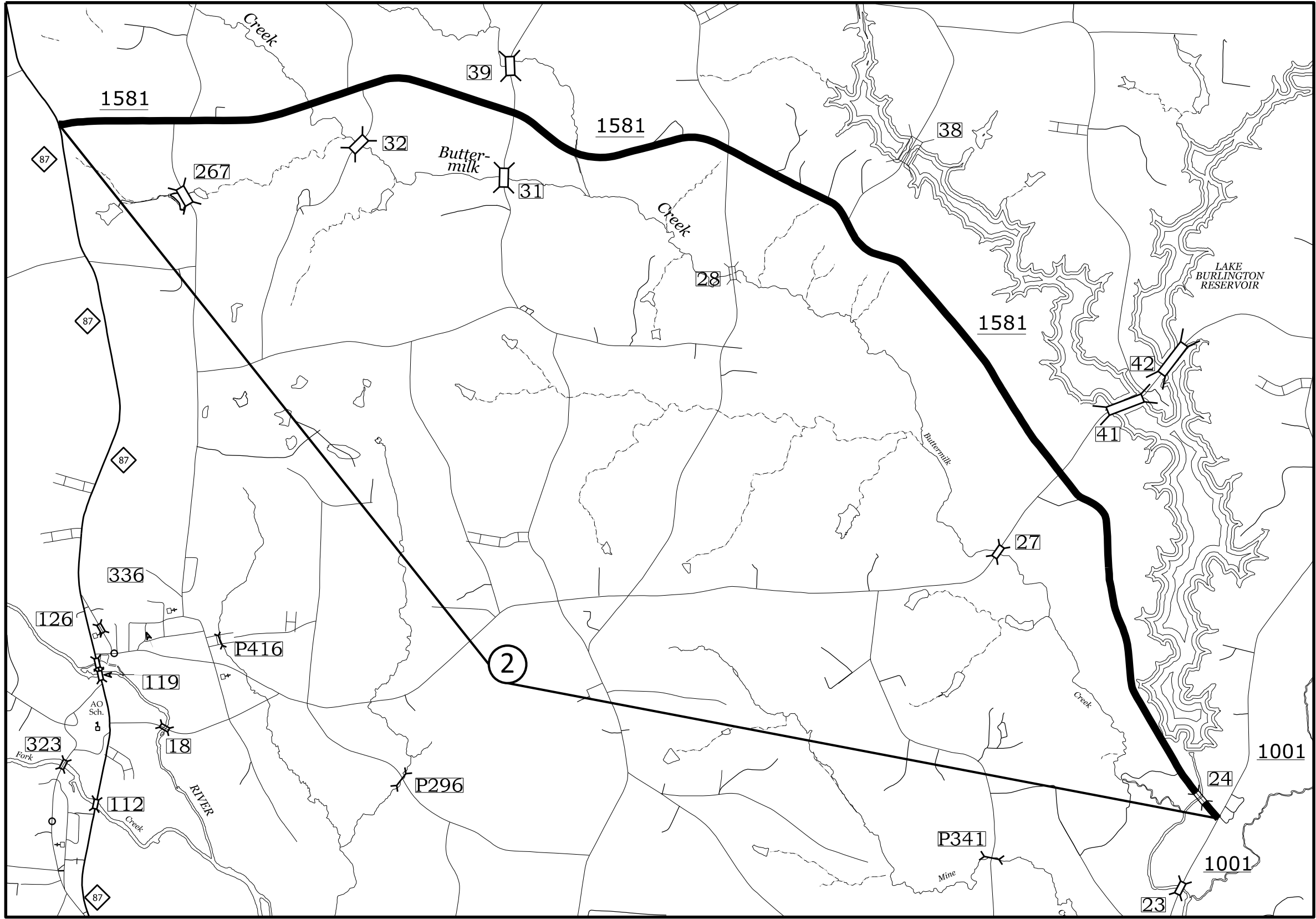
SHEET 2



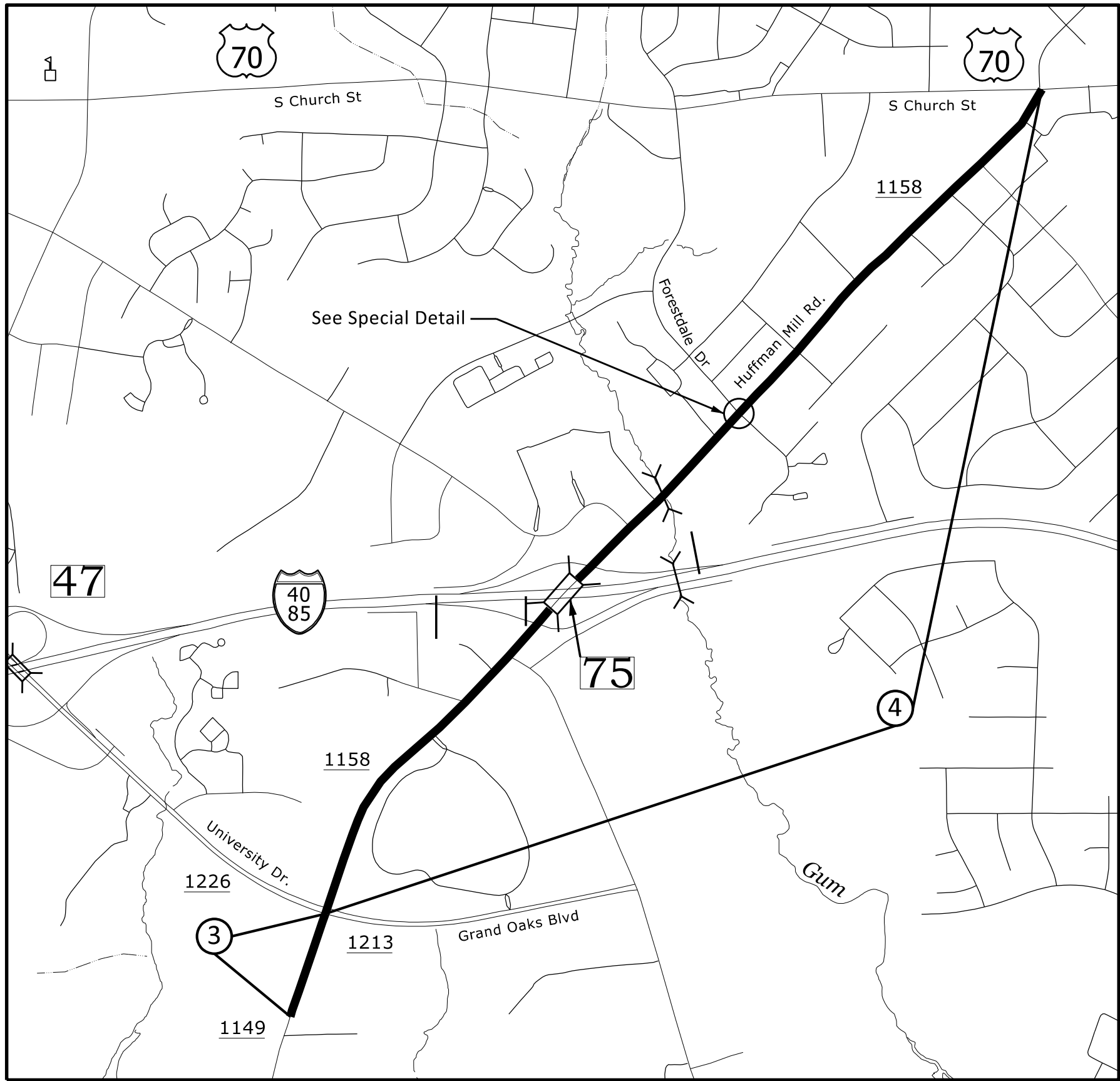


Map 1 NC-49/NC-54/NC-87/Maple Ave/
Harden St/E Elm St/Graham Rd
Mill & Fill 1.5" S9.5B
Tie to DG00613 Project Limits
*Tie to new asphalt at
NC-87/N Main St*

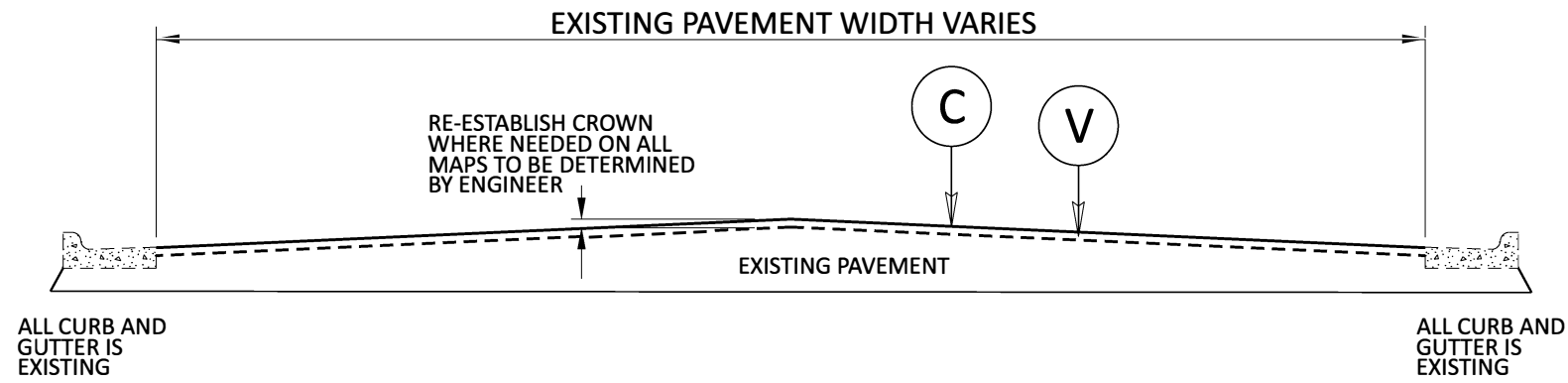
— DG00613 Intersection Improvement Project



Map 2 SR 1581 - Stoney Creek Church Rd
78M Mat Seal and 1.5" S9.5B
Do not resurface Bridge #24

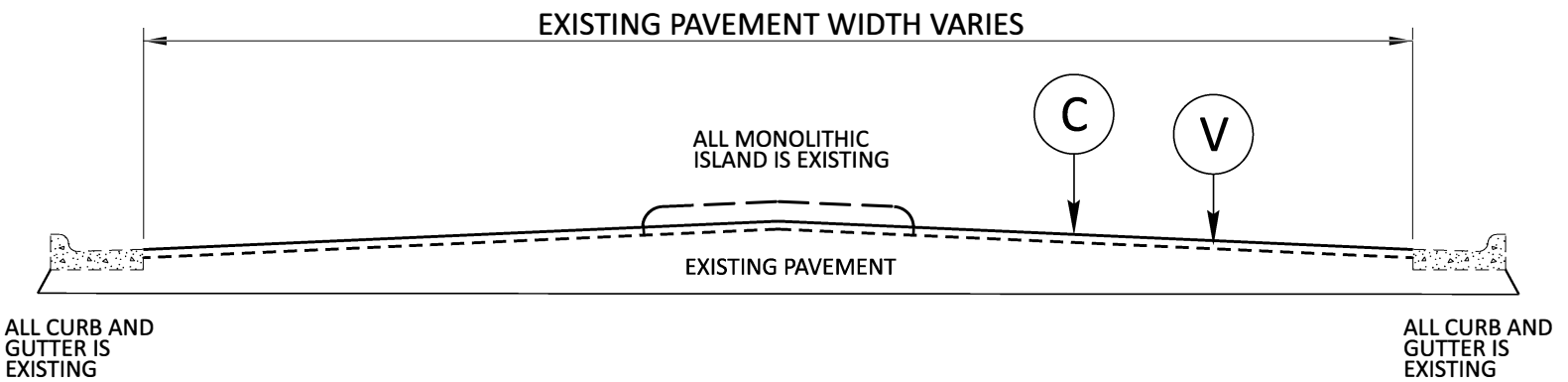


- Map 3 SR 1149 - Huffman Mill Rd
Mill & Fill 1.5" S9.5B
- Map 4 SR 1158 - Huffman Mill Rd
Mill & Fill 1.5" S9.5B
Do Not Resurface Bridge #75



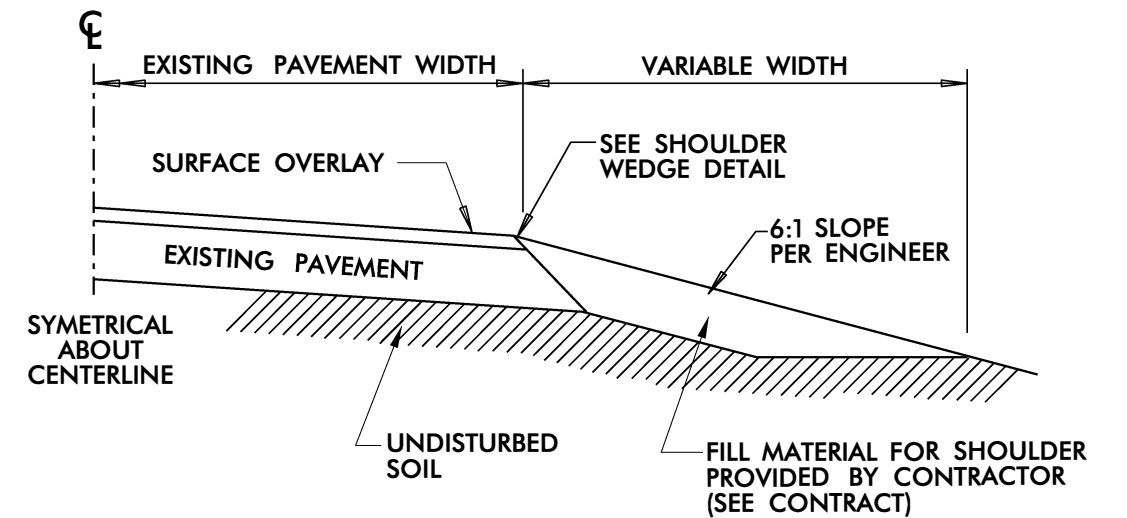
TYPICAL SECTION NO. 1

- Map 1 NC 49
STA 0+00 TO STA 8+60
STA 31+57 TO STA 229+95
- Map 3 SR 1149 - Huffman Mill Rd
- Map 4 SR 1158 - Huffman Mill Rd
STA 0+00 TO STA 32+75
STA 54+08 TO STA 105+55



TYPICAL SECTION NO. 2

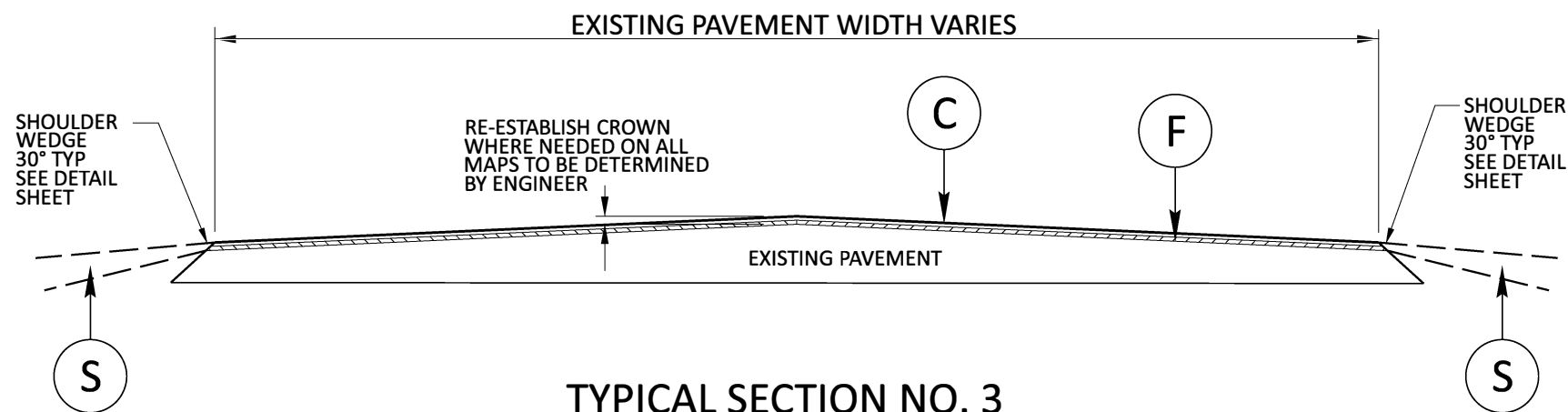
- Map 1 NC 49
STA 8+60 TO STA 31+57
- Map 4 SR 1158 - Huffman Mill Rd
STA 32+75 TO STA 54+08



SHOULDER RECONSTRUCTION

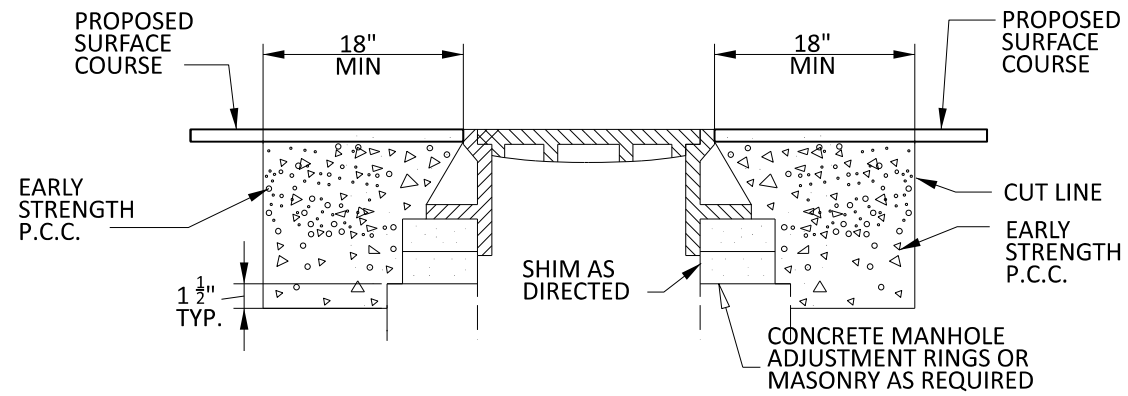
* PLACE ASB OR BORROW AS DIRECTED BY THE ENGINEER

PAVEMENT SCHEDULE	
C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 165 LBS PER SQ YD.
F	AST MAT COAT, #78M
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
V	MILL ASPHALT PAVEMENT, 1½" DEPTH



TYPICAL SECTION NO. 3

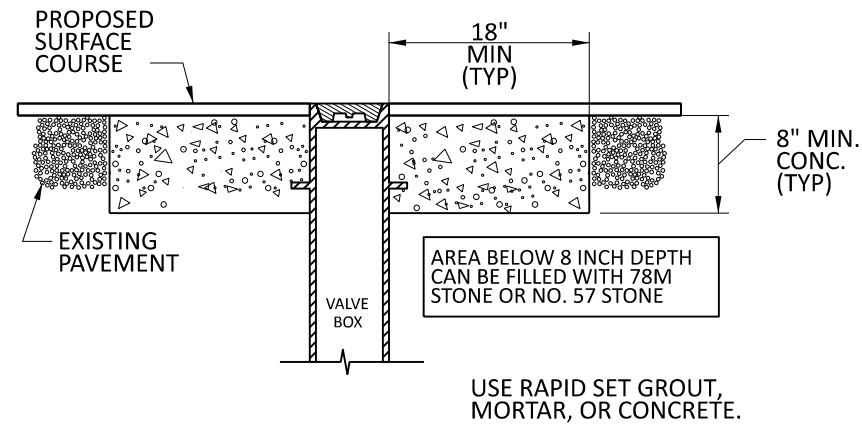
- Map 2 SR 1581 - Stoney Creek Church Rd



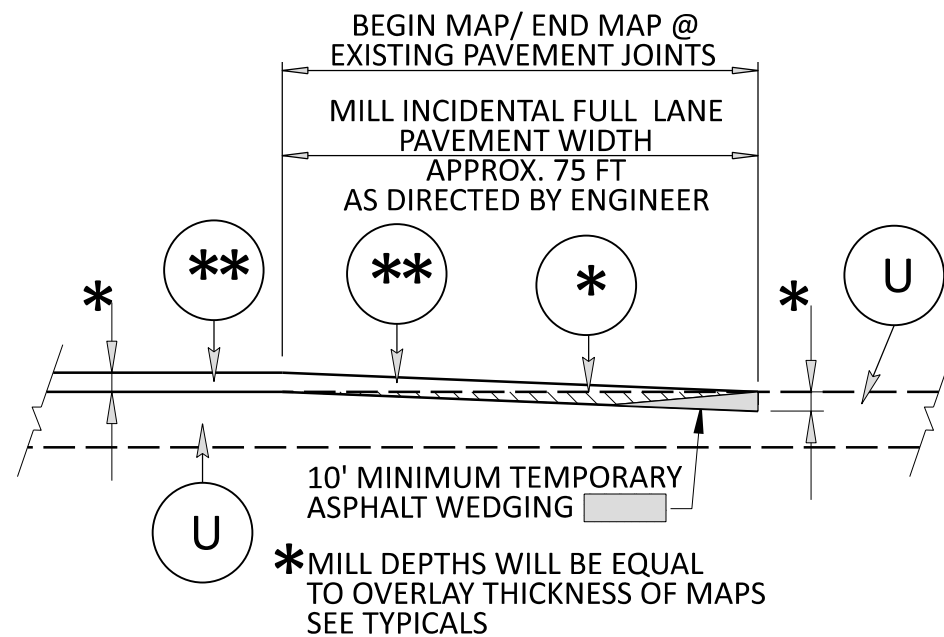
NOTES:

1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

STANDARD CONCRETE ENCASEMENT FOR MANHOLE CASTINGS IN PAVEMENT

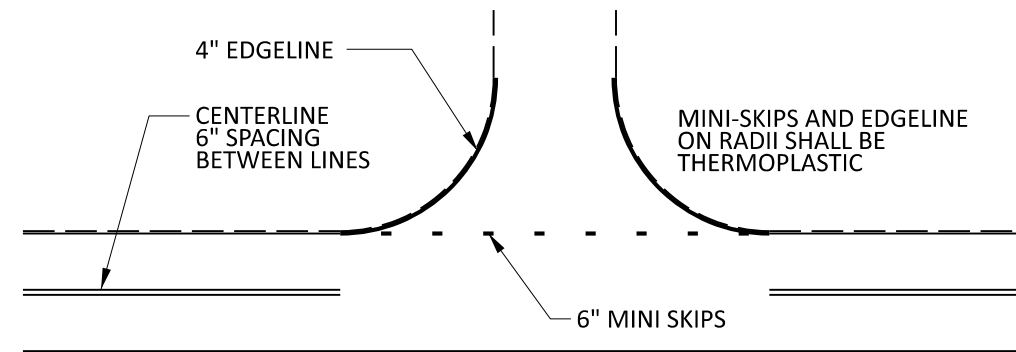


STANDARD CONCRETE ENCASEMENT FOR VALVE CASTINGS IN PAVEMENT



INCIDENTAL MILLING AT TIE-IN DETAIL

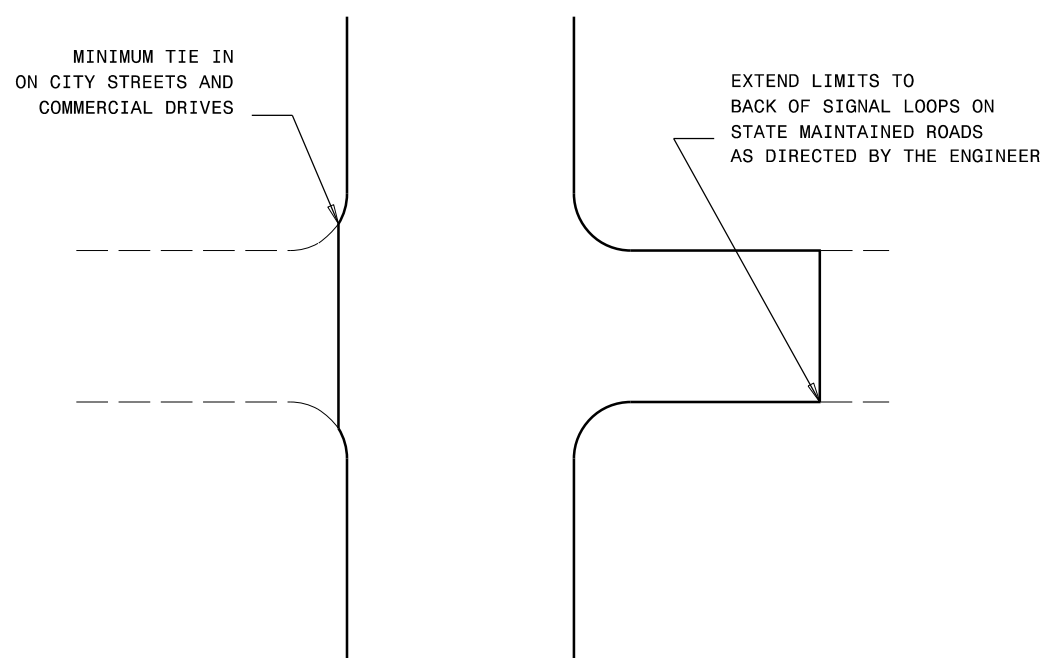
- * MILL DEPTHS WILL BE EQUAL TO OVERLAY THICKNESS OF MAPS SEE TYPICALS
- ** SEE TYPICALS FOR MIX TYPE



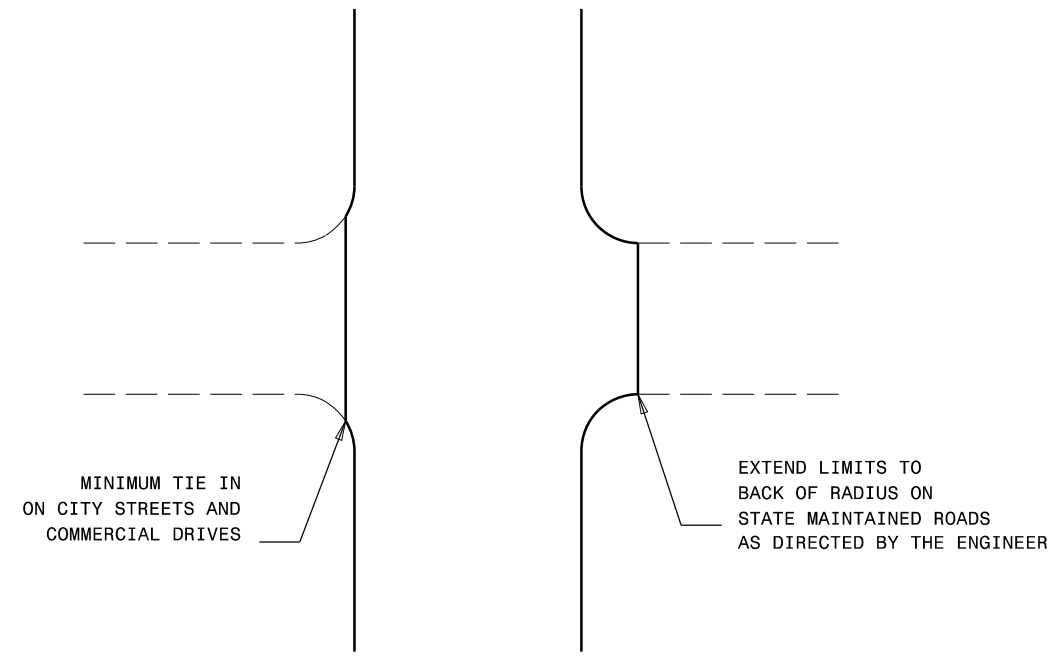
NOTE: MINI SKIPS SHALL BE PLACED ON A 8' CYCLE, CONTAINING A 6' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

TO BE USED AT ALL NON-SIGNALIZED INTERSECTIONS (NOT TO SCALE)

PAVEMENT SCHEDULE	
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 165 LBS PER SQ YD.
F	AST MAT COAT, #78M
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT
V	MILL ASPHALT PAVEMENT, 1 1/2" DEPTH

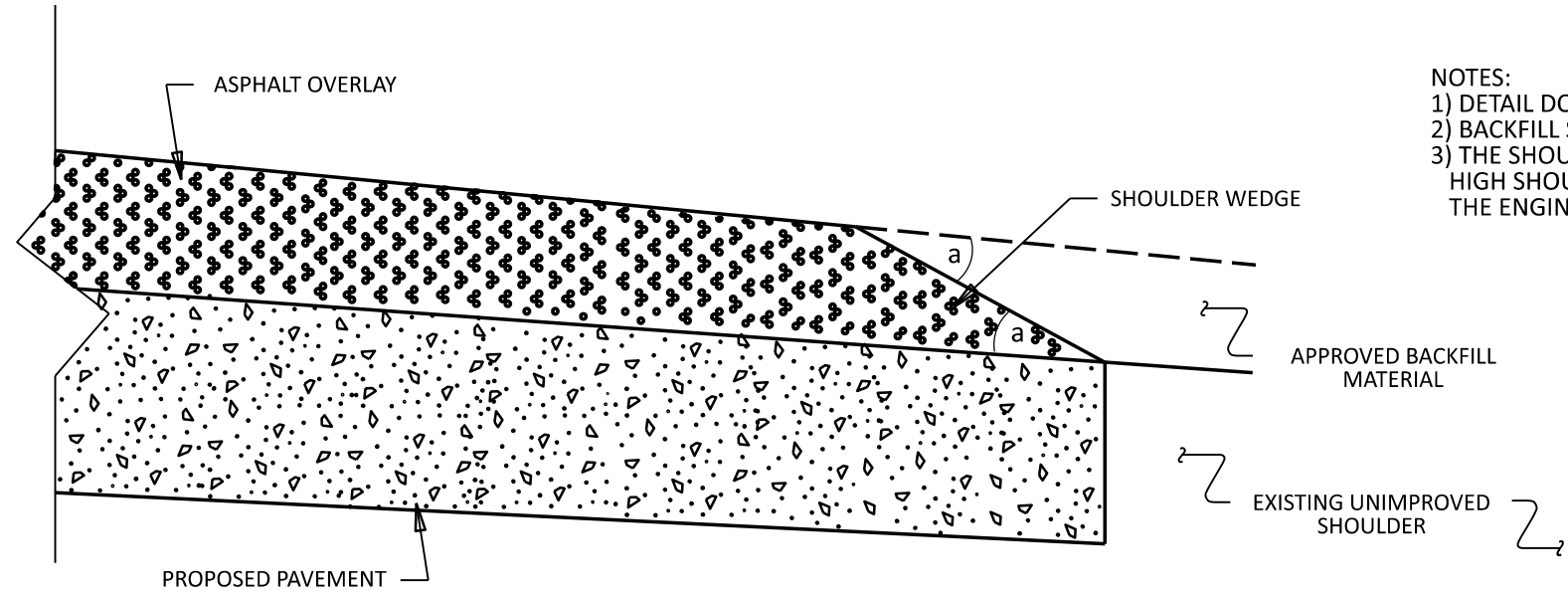


TYPICAL DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES



TYPICAL DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

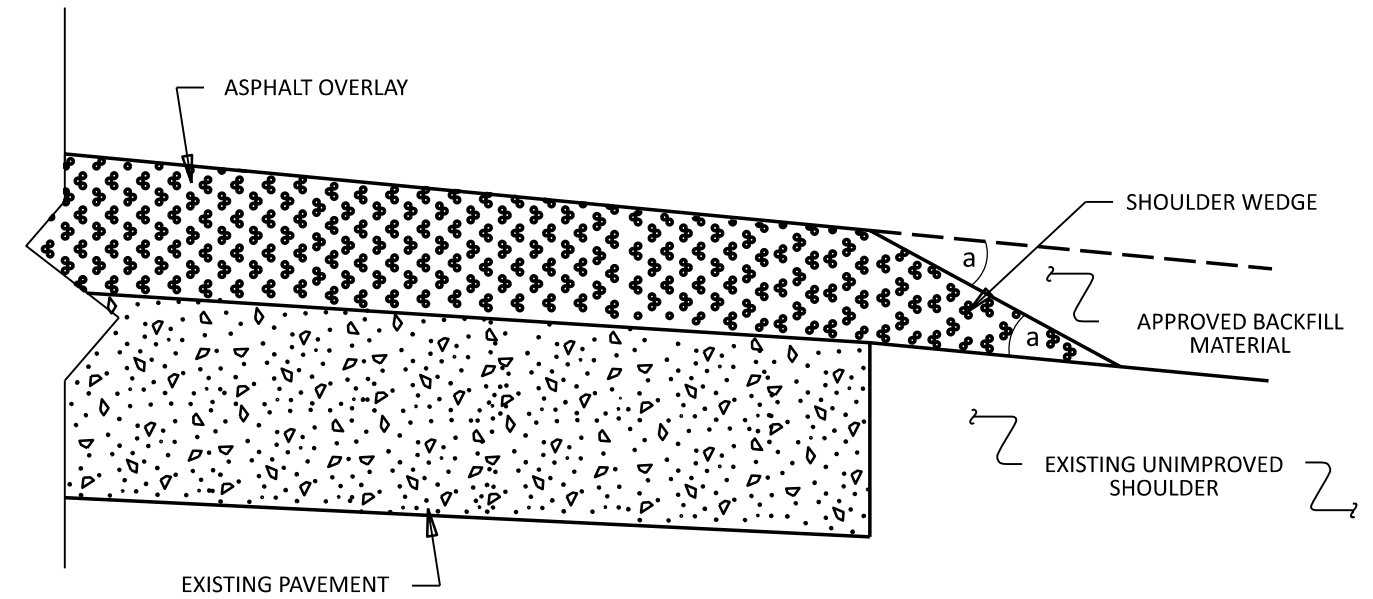
ADDITIONAL INTERSECTIONS (NON-TYPICAL)		
Extend paving limits to back of radius or loop on the following intersections:		
MAP#	STREET NAME	COMMENTS
1	I-40/I-85 On/Off Ramps	Whichever is greater, back of gore, back of loops, end of C&G
1	Chapel Hill Rd	Back of loops
1	Maple Ave (North of NC-49)	Back of loops
1	W Pine Ave	Back of loops
1	W Elm St (South of NC-49)	Back of loops
1	W Elm St (North of NC-49)	Approximately 150' from CL of Harden St/NC-49
1	Townbranch Rd	Pavement joint at back of radius
1	Trollinger Rd	Whichever is greater, pavement joint at Carter Rd or back of loops
4	University Dr/Grand Oaks Blvd	Back of 6x60 loops
4	I-40/I-85 On/Off Ramps	Whichever is greater, back of loops, end of C&G
4	Forestdale Dr	See Special Detail



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, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS DIRECTED BY THE ENGINEER.

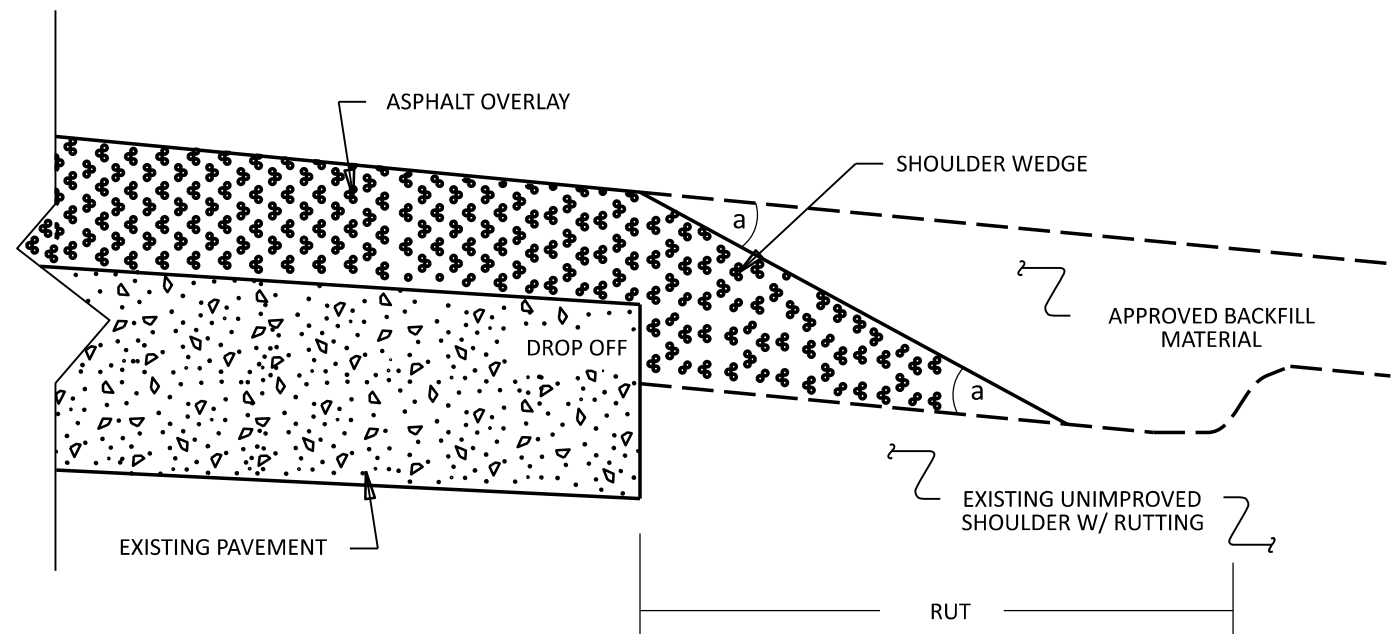
SHOULDER WEDGE DETAIL

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



SHOULDER WEDGE DETAIL

(Resurfacing Projects w/ NO Widening)

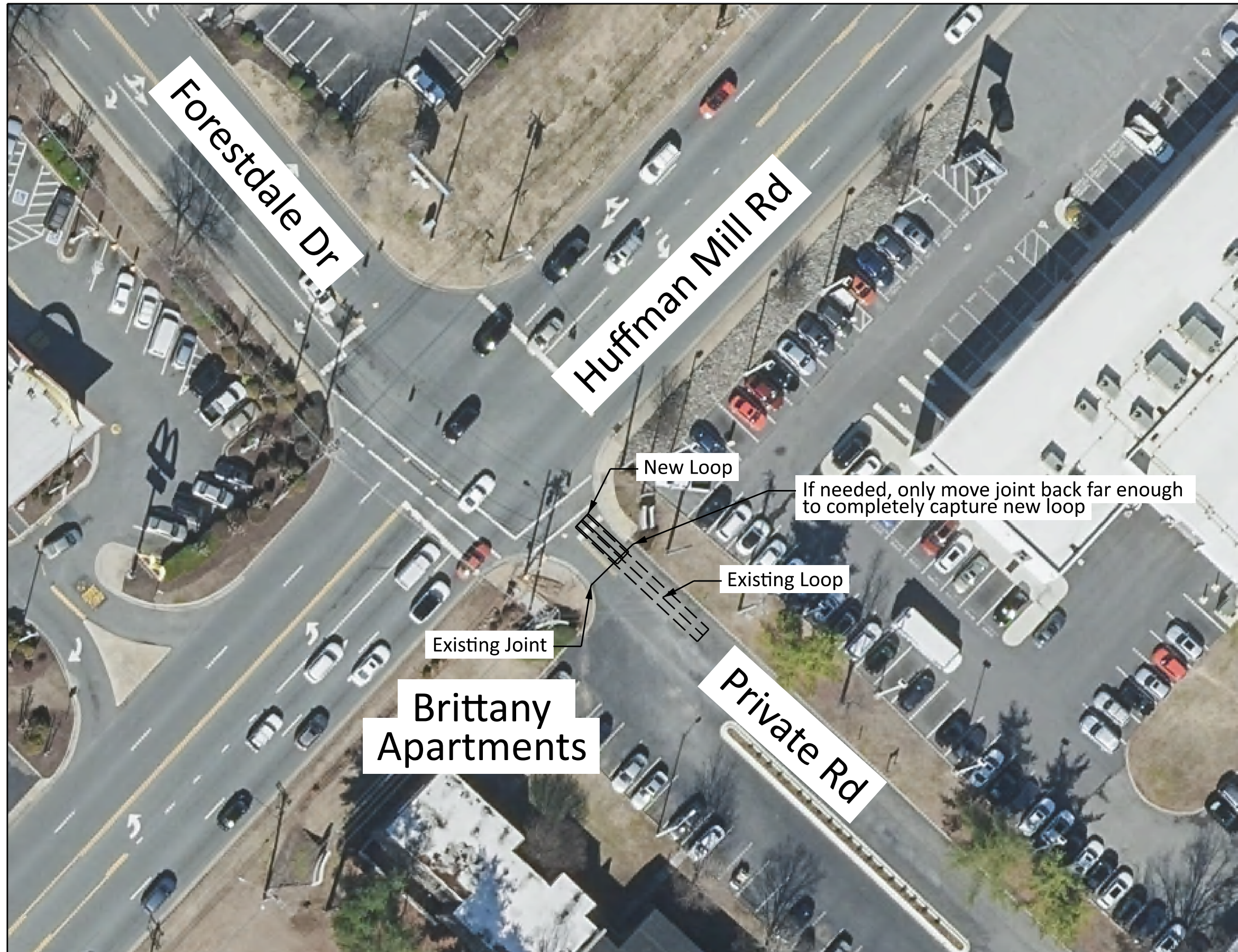


SHOULDER WEDGE DETAIL

(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: 10/16/12
CHECKED BY:	DATE:
FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn	



Map #4 Special Detail:

Adjust pavement joint at Brittany Apartments to insure new 6 x 20 loop is placed in new asphalt.

PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.07.08.10011, 2025CPT.07.08.20011	10	

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LENGTH	WIDTH	0106000000-E	1220000000-E	1245000000-E	1260000000-E	1297000000-E	1330000000-E	1519000000-E	1575000000-E	1704000000-E	1775000000-E	1838000000-E	2830000000-N	2845000000-N	5255000000-N	6000000000-E	6071010000-E	6084000000-E	7990000000-E	
									BORROW EXCAVATION	INCIDENTAL STONE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH	INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	ASPHALT SURFACE TREATMENT, MAT COAT, #78M STONE	EMULSION FOR ASPHALT SURFACE TREATMENT	ADJUSTMENT OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES	PORTABLE LIGHTING	TEMPORARY SILT FENCE	WATTLE	SEEDING & MULCHING	INDUCTIVE LOOP SAW CUT (DEEP CUT)	
							MI	FT	CY	TONS	SMI	TON	SY	SY	TONS	TON	TONS	SY	GAL	EA	EA	LS	LF	LF	AC	LF	
2025CPT.07.08.10011	Alamance	1	NC-49/NC-54/NC-87/MAPLE AVE/HARDEN ST/E ELM ST/GRAHAM RD	FROM SR 1148 - ANTHONY RD TO SR 1801 - W MAIN ST	1,2	2-4	4.33	50	21	60	2.14	61	110,141	13,998	11,266	747	300			72	75	*	428	43	0.08	14,000	
TOTAL FOR MAP NO. 1							4.33		21	60	2.14	61	110,141	13,998	11,266	747	300			72	75		428	43	0.08	14,000	
TOTAL FOR PROJ NO. 2025CPT.07.08.10011							4.33		21	60	2.14	61	110,141	13,998	11,266	747	300			72	75	1.00	428	43	0.08	14,000	
2025CPT.07.08.20011	Alamance	2	SR-1581 / STONEY CREEK CHURCH RD	FROM NC 87 TO SR 1001 - UNION RIDGE RD	3	2	7.91	21	157	360	15.68	445		742	9,190	765	3,500	97,289	32,105				3,148	315	0.57		
TOTAL FOR MAP NO. 2							7.91		157	360	15.68	445		742	9,190	765	3,500	97,289	32,105					3,148	315	0.57	
2025CPT.07.08.20011	Alamance	3	SR-1149 / HUFFMAN MILL RD	FROM 2 LANE SECTION TO SR 1213 - GRAND OAKS BLVD	1	2-4	0.20	25					6,677	173	622	41	10			1						3,200	
TOTAL FOR MAP NO. 3							0.20							6,677	173	622	41	10			1						3,200
2025CPT.07.08.20011	Alamance	4	SR-1158 / HUFFMAN MILL RD	FROM SR 1213 - GRAND OAKS BLVD TO US 70/S CHURCH ST	1,2	2-4	2.00	60					75,687	12,014	7,959	531	290			26	25					13,000	
TOTAL FOR MAP NO. 4							2.00							75,687	12,014	7,959	531	290			26	25					13,000
TOTAL FOR PROJ NO. 2025CPT.07.08.20011							10.11		157	360	15.68	445		82,364	12,929	17,771	1,337	3,800	97,289	32,105	27	25	1.00	3,148	315	0.57	16,200
GRAND TOTAL							14.44		178	420	17.82	506		192,505	26,927	29,037	2,084	4,100	97,289	32,105	99	100	1.00	3,576	358	0.65	30,200

NOTE: All Quantities listed include turn lanes and are estimates; Payment will be based on actual field measurements and quantities received.

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH	WIDTH	4413000000-E	4457000000-N	4685000000-E	4688000000-E	4689500000-E	4700000000-E	4709000000-E	4720000000-E	4725000000-E										4810000000-E		4815000000-E		4820000000-E		4825000000-E	4835000000-E	4840000000-N		4845000000-N						4895000000-N												
								WORK ZONE ADVANCE/ GENERAL WARNING SIGNING	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	6" X 90 M WHITE THERMO	6" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 90 M YELLOW THERMO	12" X 90 M WHITE THERMO	12" X 90 M YELLOW THERMO	24" X 90 M WHITE THERMO	THERMO MSG ONLY 90 M	THERMO MSG YIELD 90 M	THERMO MSG STOP 90 M	THERMO MSG AHEAD 90 M	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR & LT ARROW 90 M	THERMO PVT 24" YIELD LINE SYM 90 M	THERMO MERGE LEFT ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	6" WHITE PAINT	6" YELLOW PAINT	8" WHITE PAINT	8" YELLOW PAINT	12" WHITE PAINT	12" YELLOW PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT MSG YIELD	PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	PAINT STR & LT ARROW	PAINT 24" YIELD LINE SYMBOL	PAINT MERGE LEFT ARROW	POLYCARBONATE H-SHAPED MARKERS CRYSTAL/RED	POLYCARBONATE H-SHAPED MARKERS YELLOW/YELLOW					
MI	FT	SF	LS	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA												
2025CPT.07.08.10011	Alamance	1	NC-49/NC-54/NC-87/MAPLE AVE/HARDEN ST/E ELM ST/GRAHAM RD	FROM SR 1148 - ANTHONY RD TO SR 1801 - W MAIN ST	1,2	4.33	50	549	*	560		17,917	38,319	2,246	5,715	245		1,602	40	5				92	93	28	33	1	11		560		17,917	38,319	2,246	5,715	245		1,602	40	5	92	93	28	33	1	11		531	431				
TOTAL FOR MAP NO. 1						4.33		549		560		17,917	38,319	2,246	5,715	245		1,602	40	5				92	93	28	33	1	11		560		17,917	38,319	2,246	5,715	245		1,602	40	5	92	93	28	33	1	11		531	431				
TOTAL FOR PROJ NO. 2025CPT.07.08.10011						4.33		549	1.00	560		17,917	38,319	2,246	5,715	245		1,602	40	5				92	93	28	33	1	11		560		17,917	38,319	2,246	5,715	245		1,602	40	5	92	93	28	33	1	11		531	431				
										560		56,236	7,961	245				45						258						560		56,236	7,961	245				45						258		962								
2025CPT.07.08.20011	Alamance	2	SR-1581 / STONEY CREEK CHURCH RD	FROM NC 87 TO SR 1001 - UNION RIDGE RD	3	7.91	21	881	*	86,000	66,000	250				200	50																																					
TOTAL FOR MAP NO. 2						7.91		881		86,000	66,000	250				200	50																																					
2025CPT.07.08.20011	Alamance	3	SR-1149 / HUFFMAN MILL RD	FROM 2 LANE SECTION TO SR 1213 - GRAND OAKS BLVD	1	0.20	25		*			1,500	2,500	130		100																																						
TOTAL FOR MAP NO. 3						0.20						1,500	2,500	130		100																																						
2025CPT.07.08.20011	Alamance	4	SR-1158 / HUFFMAN MILL RD	FROM SR 1213 - GRAND OAKS BLVD TO US 70/S CHURCH ST	1,2	2.00	60		*	9,129	21,093	1,276	40	1,172	70	12	1,314	12	10					84	60	23	17	3	12	3	9,129	21,093	1,276	40	1,172	70	12	1,314	12	10	84	60	23	17	3	12	3	40	40					
TOTAL FOR MAP NO. 4						2.00				9,129	21,093	1,276	40	1,172	70	12	1,314	12	10					84	60	23	17	3	12	3	9,129	21,093	1,276	40	1,172	70	12	1,314	12	10	84	60	23	17	3	12	3	40	40					
TOTAL FOR PROJ NO. 2025CPT.07.08.20011						10.11		881	1.00	95,129	87,093	3,026	2,540	1,302	70	200	112	1,364	12	10	4	5	89	66	28	17	3	12	6	9,129	21,093	2,776	2,540	1,302	70	112	1,314	12	10	89	66	28	17	3	12	6	40	40						
										182,222	5,566	1,372	312				31							221						30,222	5,316	1,372				22											221		80					
GRAND TOTAL						14.44		1,430	1.00	95,689	87,093	20,943	40,859	3,548	5,785	445	112	2,966	52	15	4	5	181	159	56	50	4	23	6	9,689	21,093	20,693	40,859	3,548	5,785	245	112	2,916	52	15	181	159	56	50	4	23	6	571	471					
										182,782	61,802	9,333	557				76							479						30,782	61,552	9,333	357			67												479		1,042				

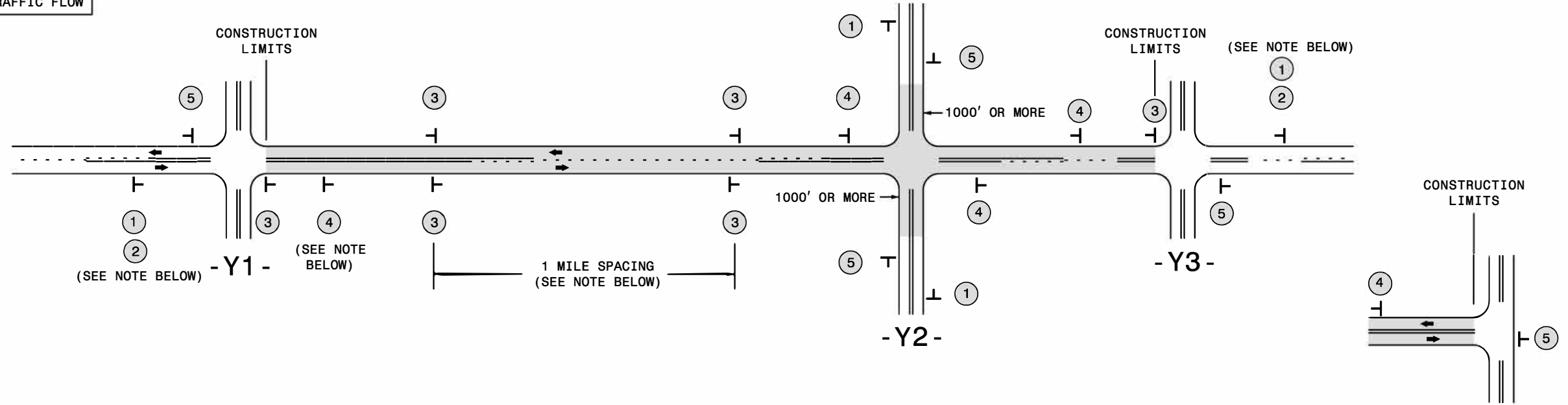
NOTE: All Quantities listed include turn lanes and are estimates; Payment will be based on actual field measurements and quantities received.

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"> LESS THAN 1000' OF RESURFACING ALONG -Y- LINE SUBDIVISION ROADS DEAD END ROADS <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;"> PLACED 500' IN ADVANCE OF FLAGGER. </div> <div style="text-align: center;"> 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		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> 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.

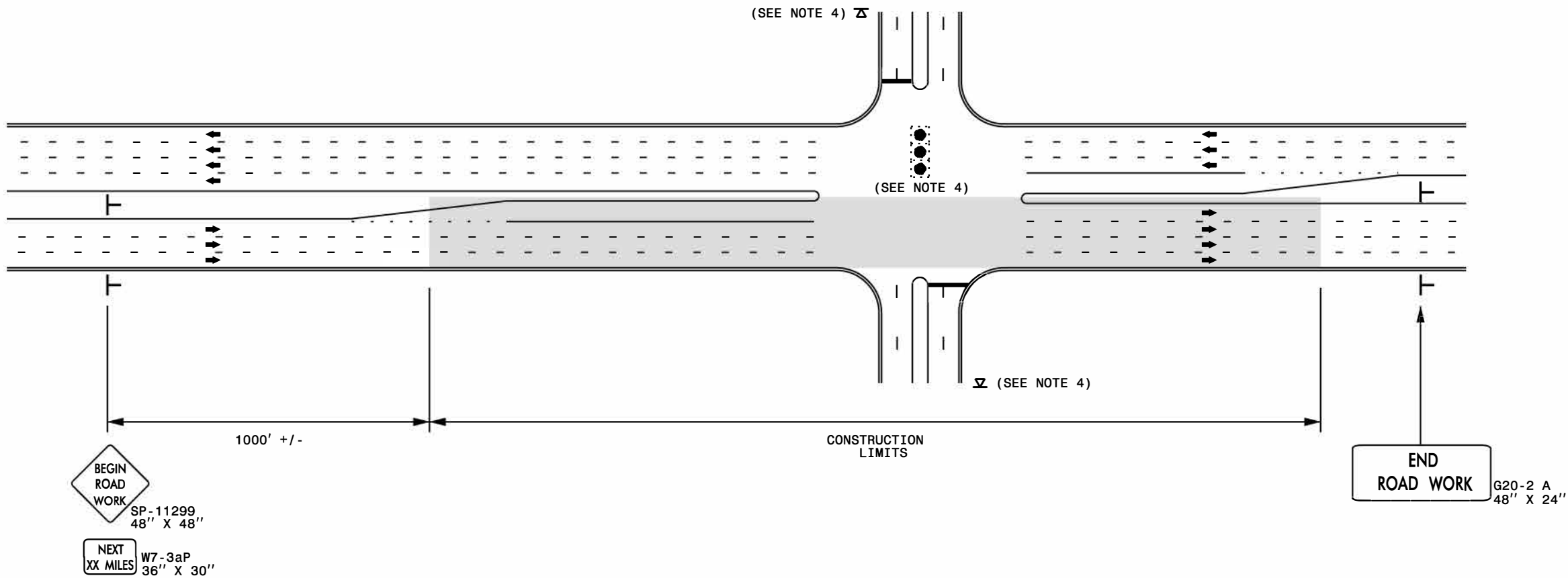
MAPS LESS THAN 2 MILES

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

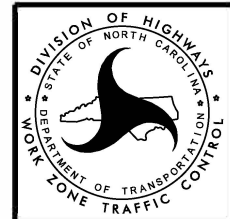
URBAN / SUBURBAN WORKZONES



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

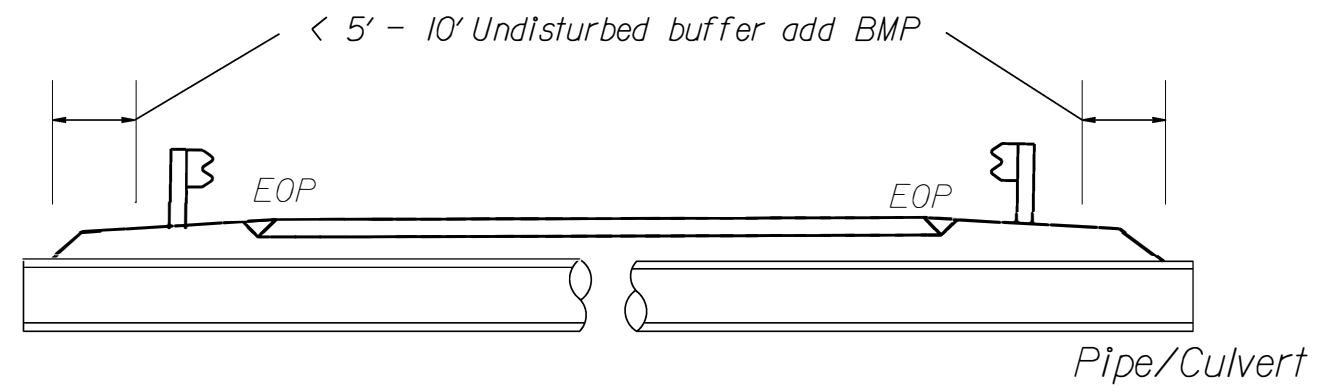


**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

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

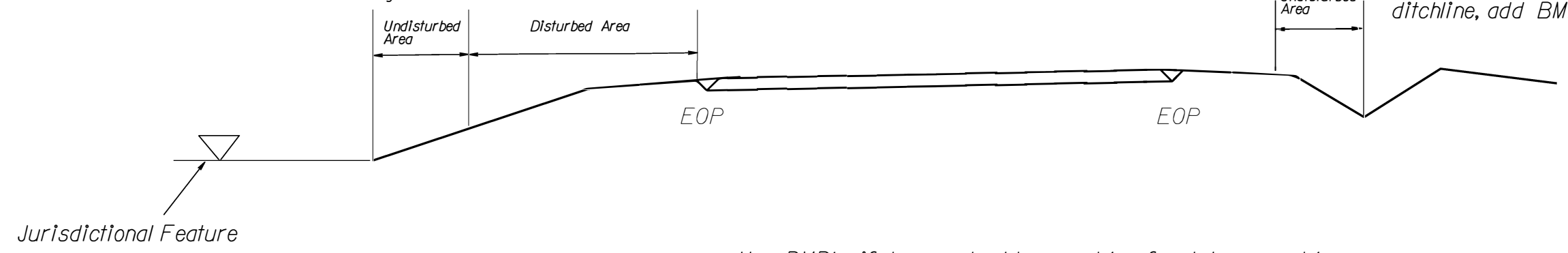
BMP Options: Wattle or Silt Fence

EROSION CONTROL DETAIL

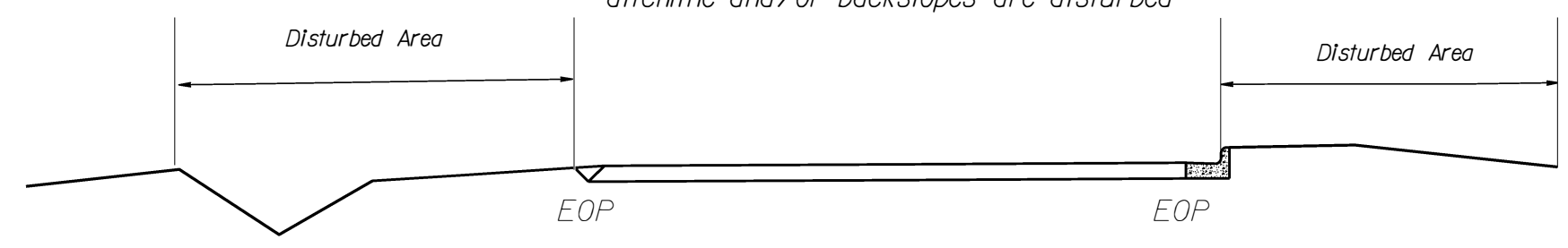


< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP

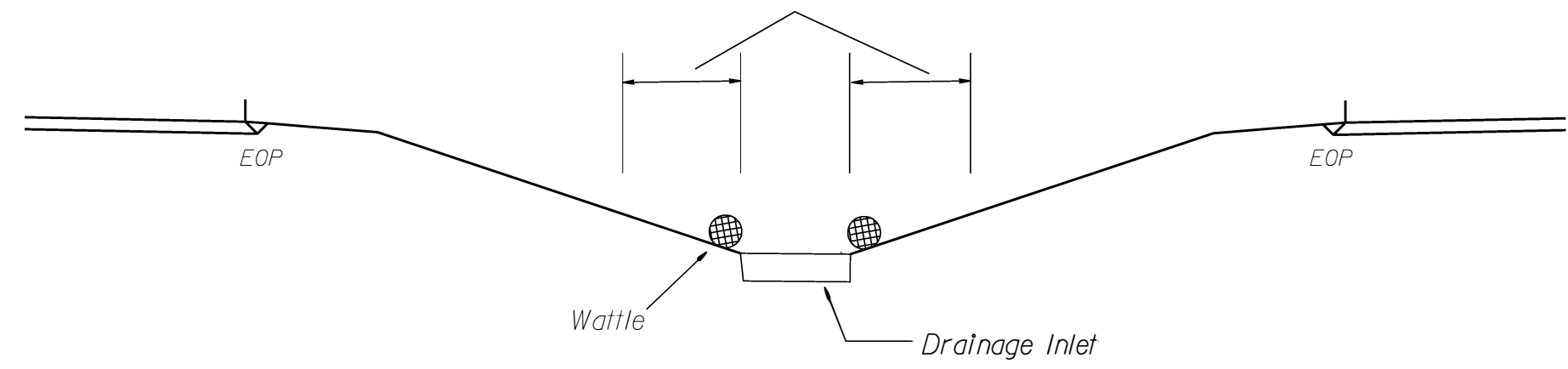
< 5' - 10' Undisturbed buffer from ditchline, add BMP



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

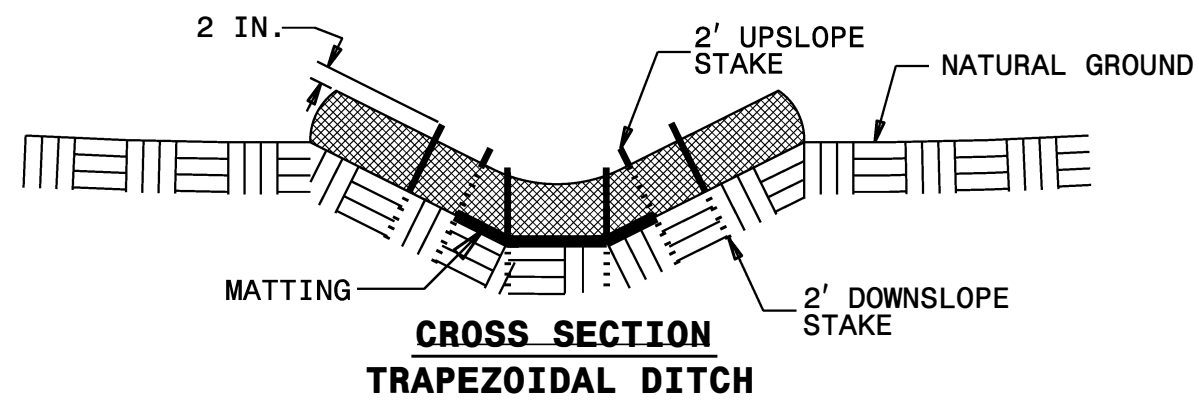
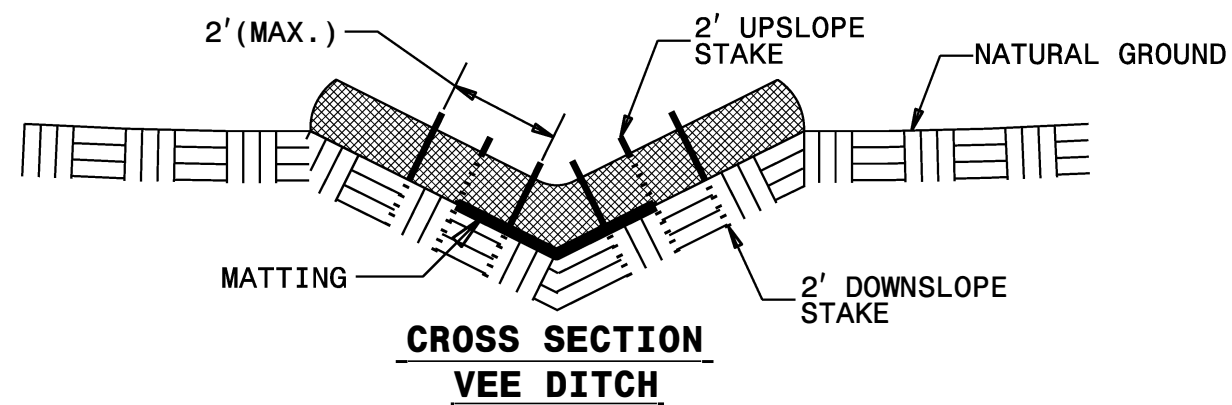
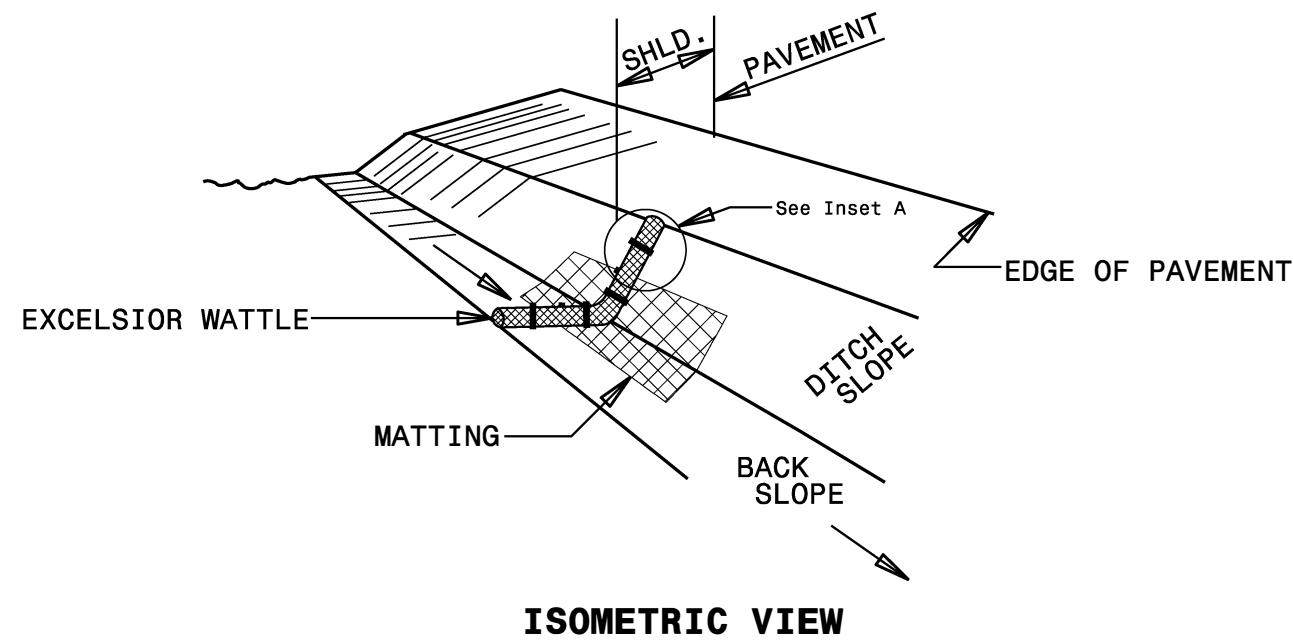


< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

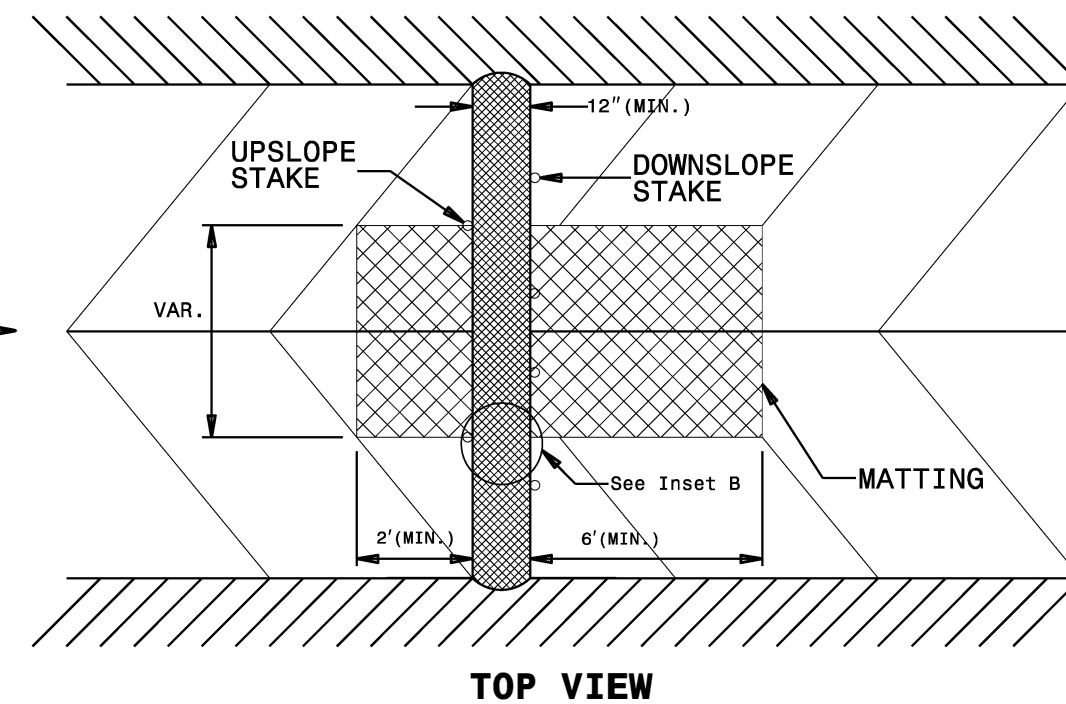
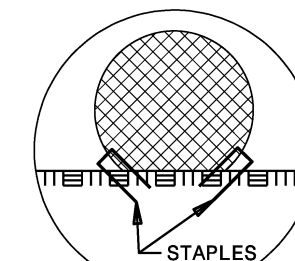
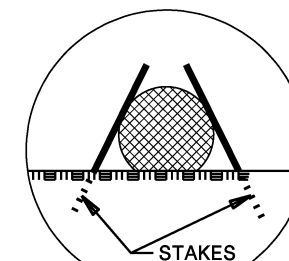
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.



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

ENGLISH STANDARD DRAWING FOR
DEEP-CUT INDUCTIVE DETECTION LOOPS
(FOR INSTALLATION PRIOR TO MILLING)

SHEET 1 OF 1

NOTES

- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS.
- USE A SERIES OF ONE INCH PIECES OF BACKER ROD SPACED ONE FOOT APART ALONG THE ENTIRE LENGTH OF THE FEEDER SLOT AND LOOP SAW SLOT.
- CONSULT LOOP SEALANT MANUFACTURER TO DETERMINE CURING TIME REQUIRED PRIOR TO MILLING.
- REFER TO STANDARD DRAWING 1725.01 SHEETS 2 AND 3 FOR ADDITIONAL REQUIREMENTS.

SAW SLOT DEPTH CHART
ASSUMING 2" MILLING DEPTH

DEPTH (IN)	MAX NO. OF WIRE LAYERS				
	2	3	4	5	6
SAW SLOT DEPTH	4.0	4.5	5.0	5.0	5.0
MINIMUM TOTAL ASPHALT DEPTH REQUIRED	5.0	5.5	6.0	6.0	6.0

LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE

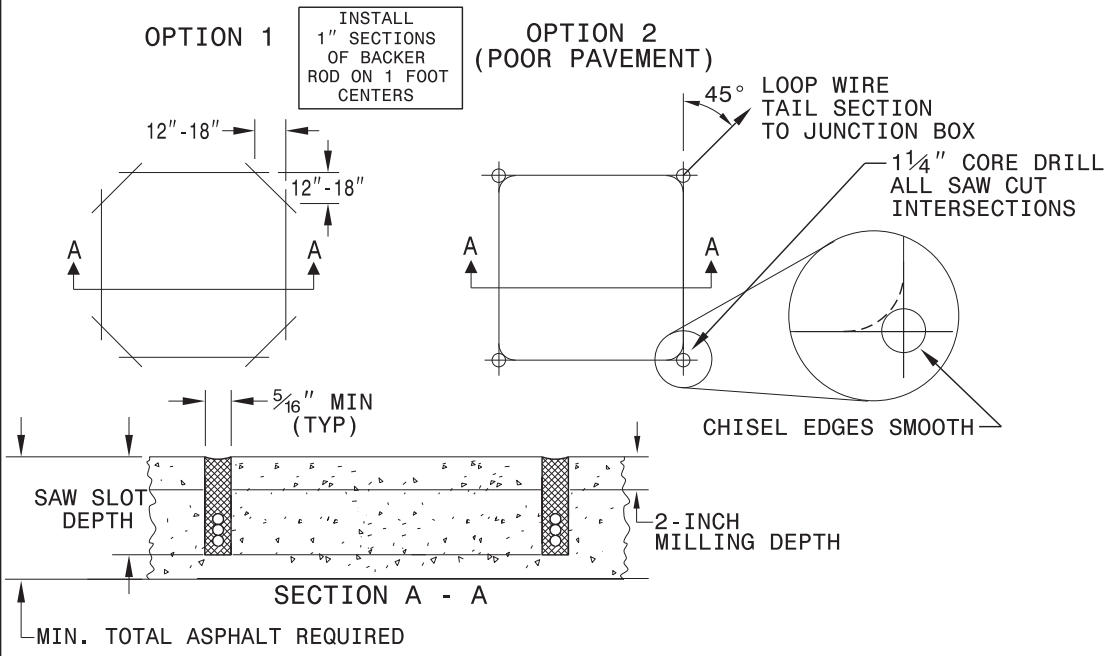


CORRECT WAY TO TWIST WIRE

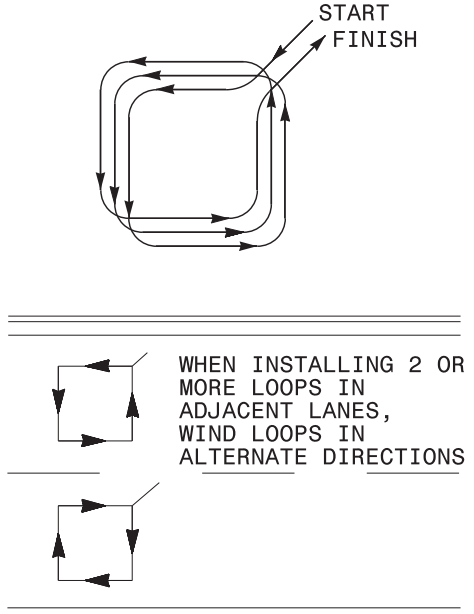


CONVENTIONAL 4-SIDED LOOP

SAW CUT OPTIONS

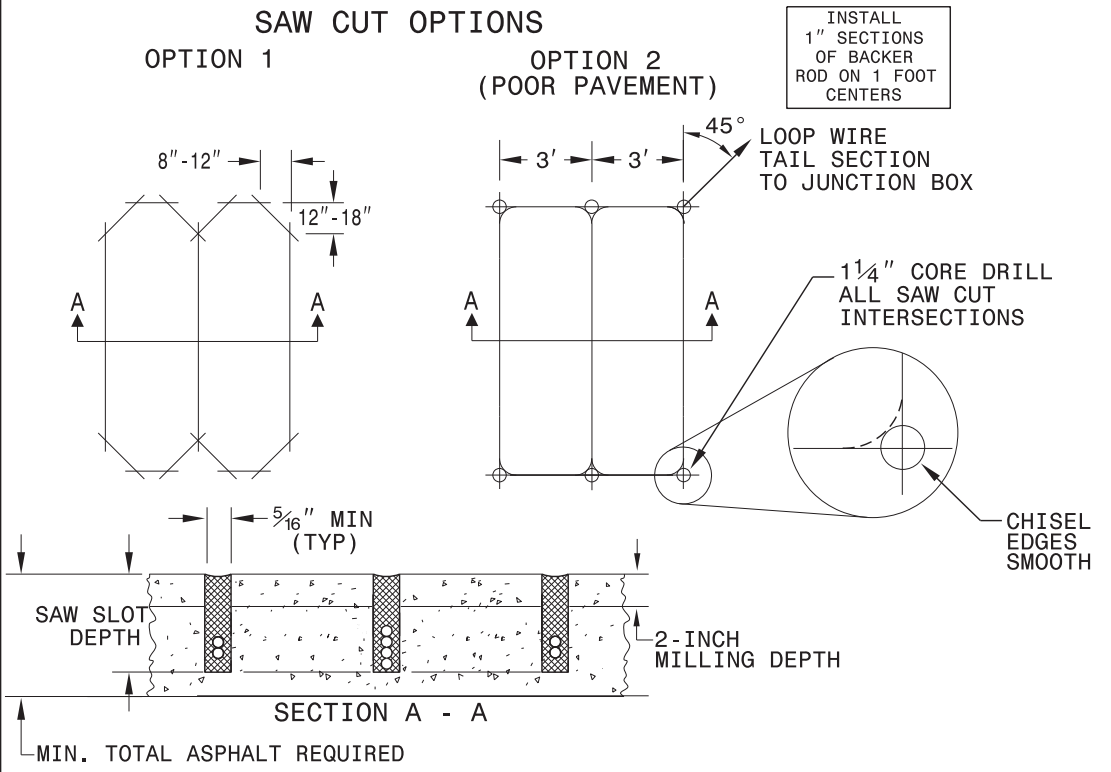


LOOP WINDING METHOD

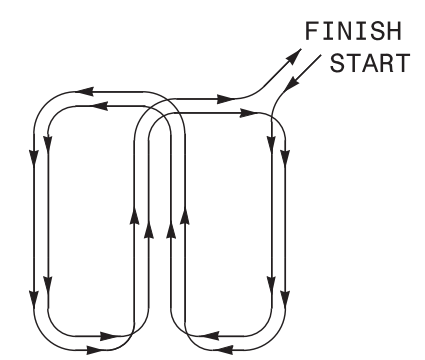


QUADRUPOLE LOOP

SAW CUT OPTIONS

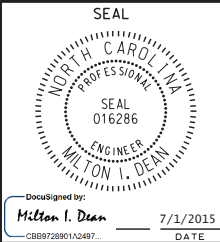
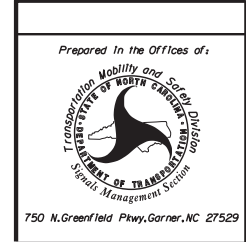


LOOP WINDING METHOD



REVISIONS

1. REMOVED TWISTING NOTES FROM TAIL SECT. TO JUNCTION BOX. 2/26/08 MWH
2. REVISED SECTION A - A DETAILS. 6/29/15 JTP



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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

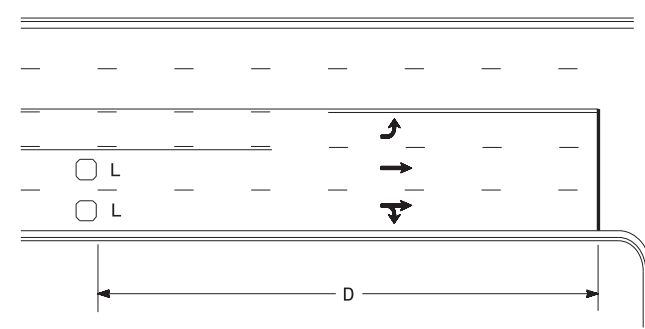
ENGLISH STANDARD DRAWING FOR
DEEP-CUT INDUCTIVE DETECTION LOOPS
(FOR INSTALLATION PRIOR TO MILLING)

SHEET OF

SIG-1

PROJECT REFERENCE NO.
2025CPT.07.08.10011,
2025CPT.07.08.20011
SHEET No.

High Speed Detection (≥40 mph)

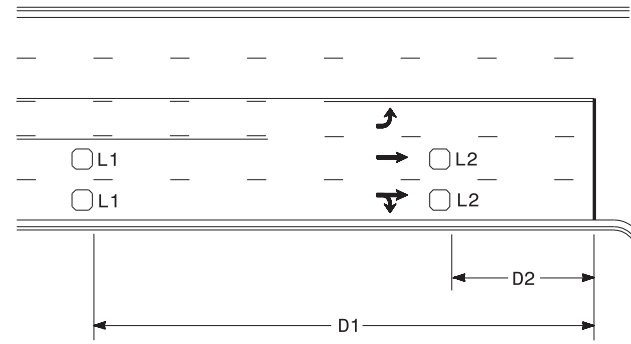


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR



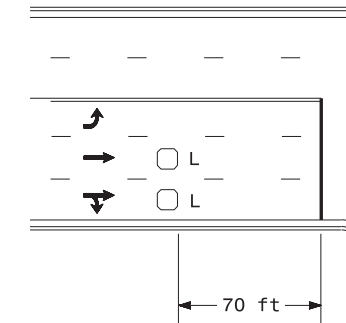
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

L2 = 6ft X 6ft
Wired in series

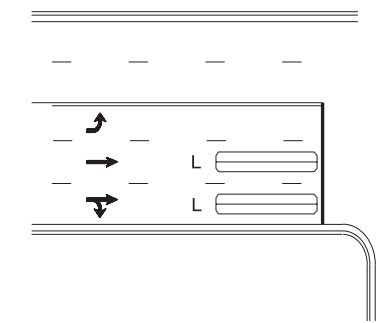
"Stretch" Operation

Low Speed Detection (≤35 mph)



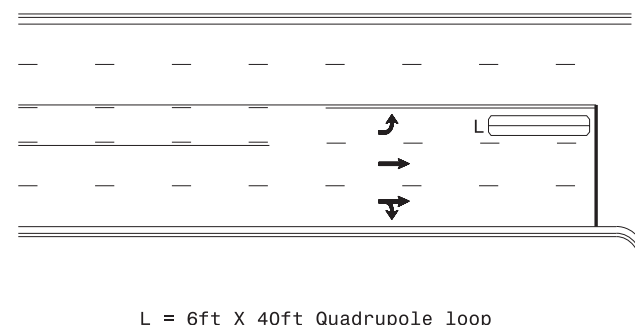
L = 6ft X 6ft
Wired in series

OR



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

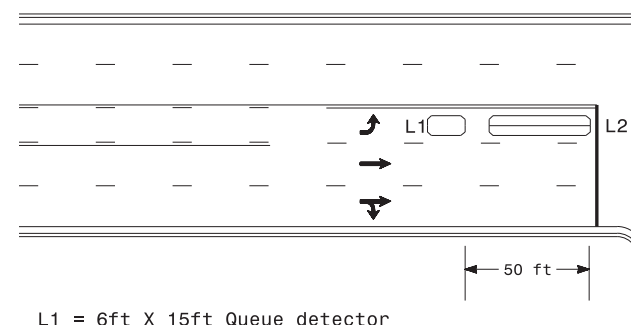
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

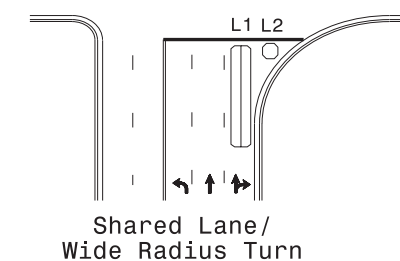
OR



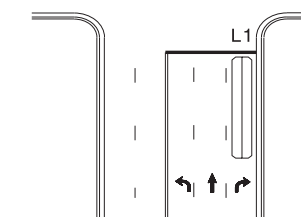
L1 = 6ft X 15ft Queue detector
L2 = 6ft X 40ft Quadrupole loop

Queue Loop Detection

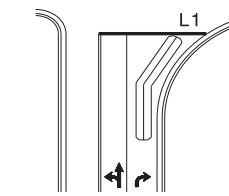
Right Turn Lane Detection



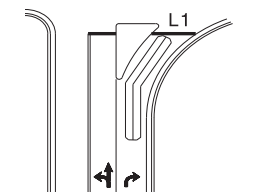
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

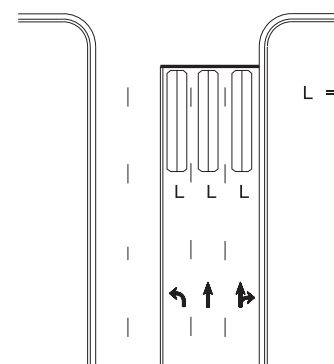


Wide Radius Turn



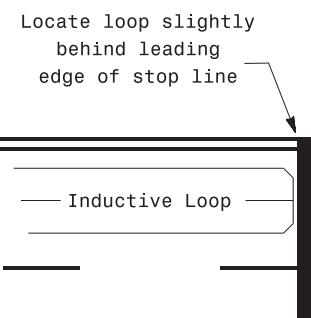
Channelized Turn

Side Street Detection



L = 6ft X 40ft
Quadrupole loop
Wired to separate
detectors/channels

Presence Loop Placement at Stop Lines



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

	Typical Signal Loop Locations	
	PLAN DATE: September 2020 PREPARED BY: PLA	REVIEWED BY: JPG REVIEWED BY:
SCALE: N/A	REVISIONS:	INIT. DATE:
750 N. Greenfield Pkwy, Garner, NC 27529		DATE: 9/8/2020