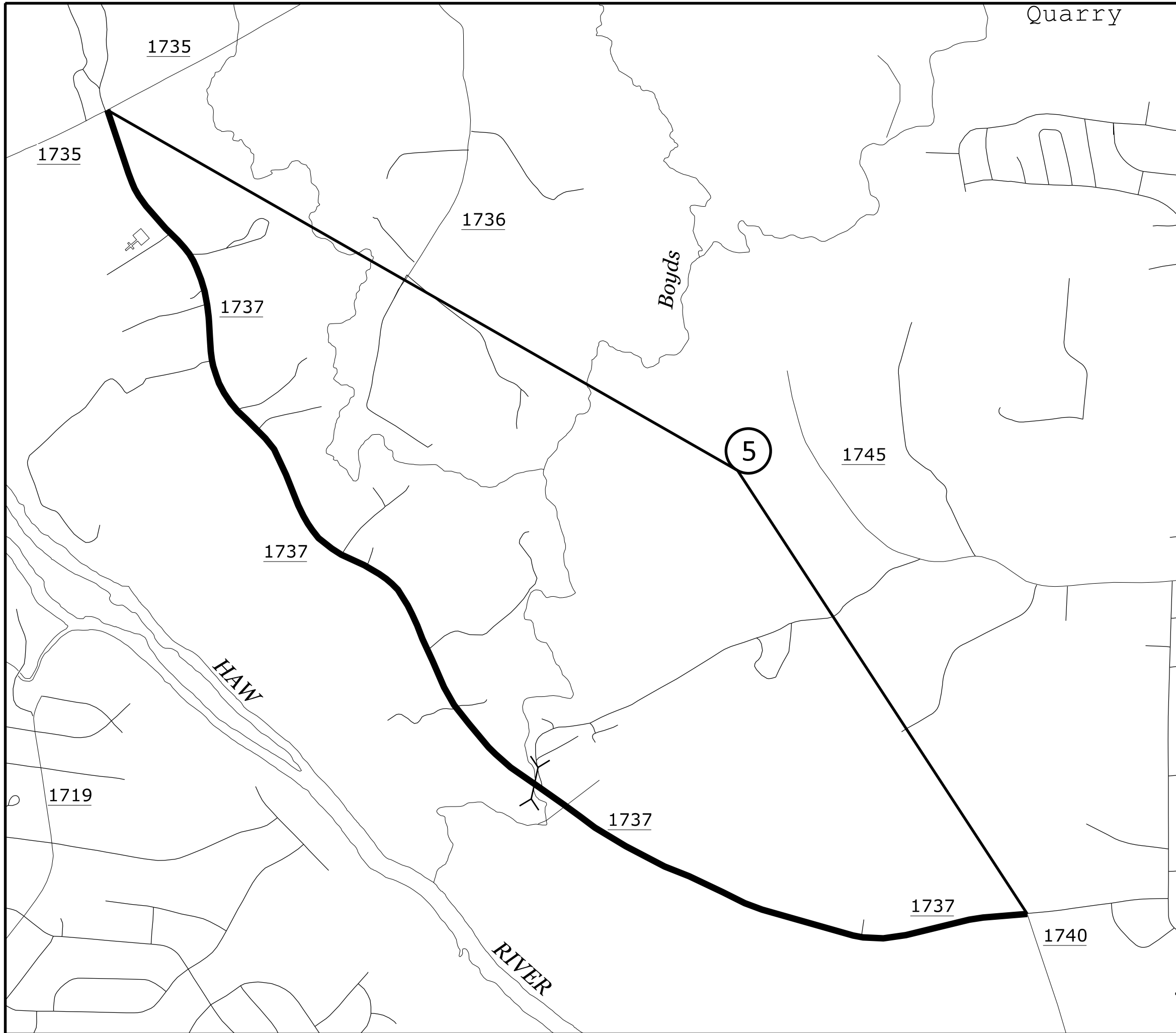


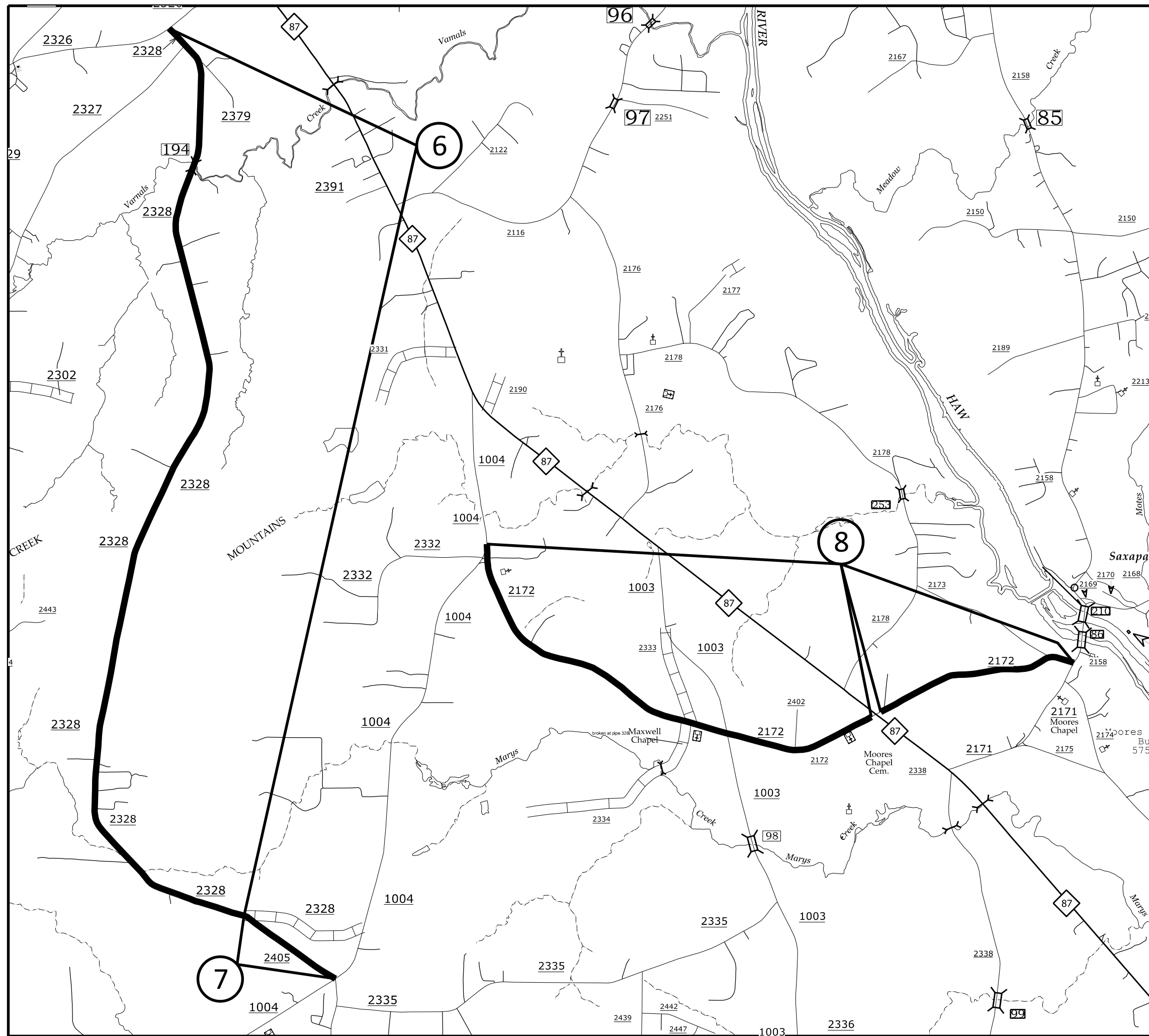
- Map 1 SR 2286 - Brandywyne Dr
- Map 2 SR 2289 - Bordeaux Dr
- Map 3 SR 2290 - Brisbane Ct
- Map 4 SR 2608 - St Bride Ct



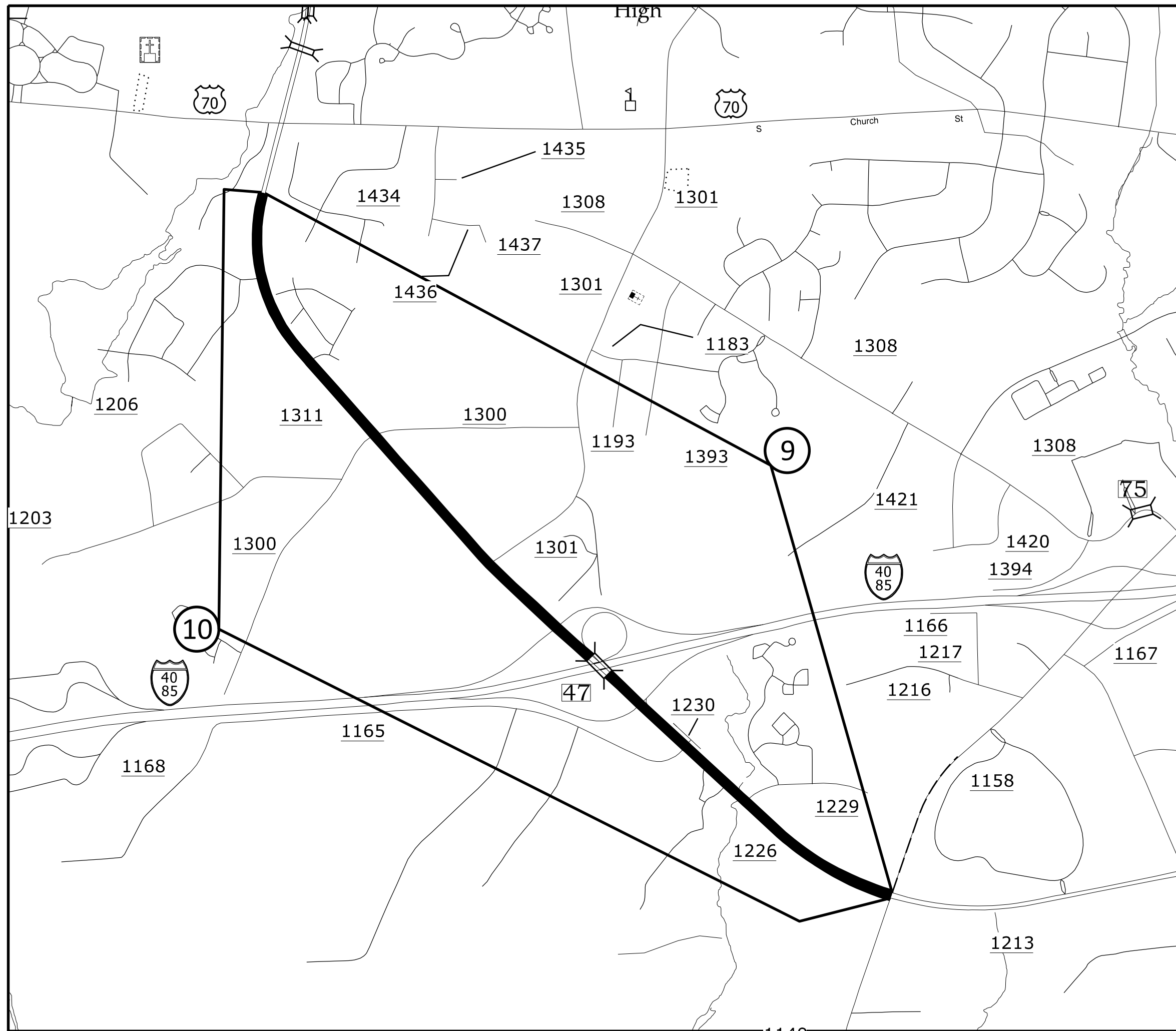
PROJECT REFERENCE NO.	SHEET NO.
2025CPT.07.09.20011	2

Map 5 SR 1737 - Haw River Hopedale Rd

ALAMANCE COUNTY
NORTH CAROLINA

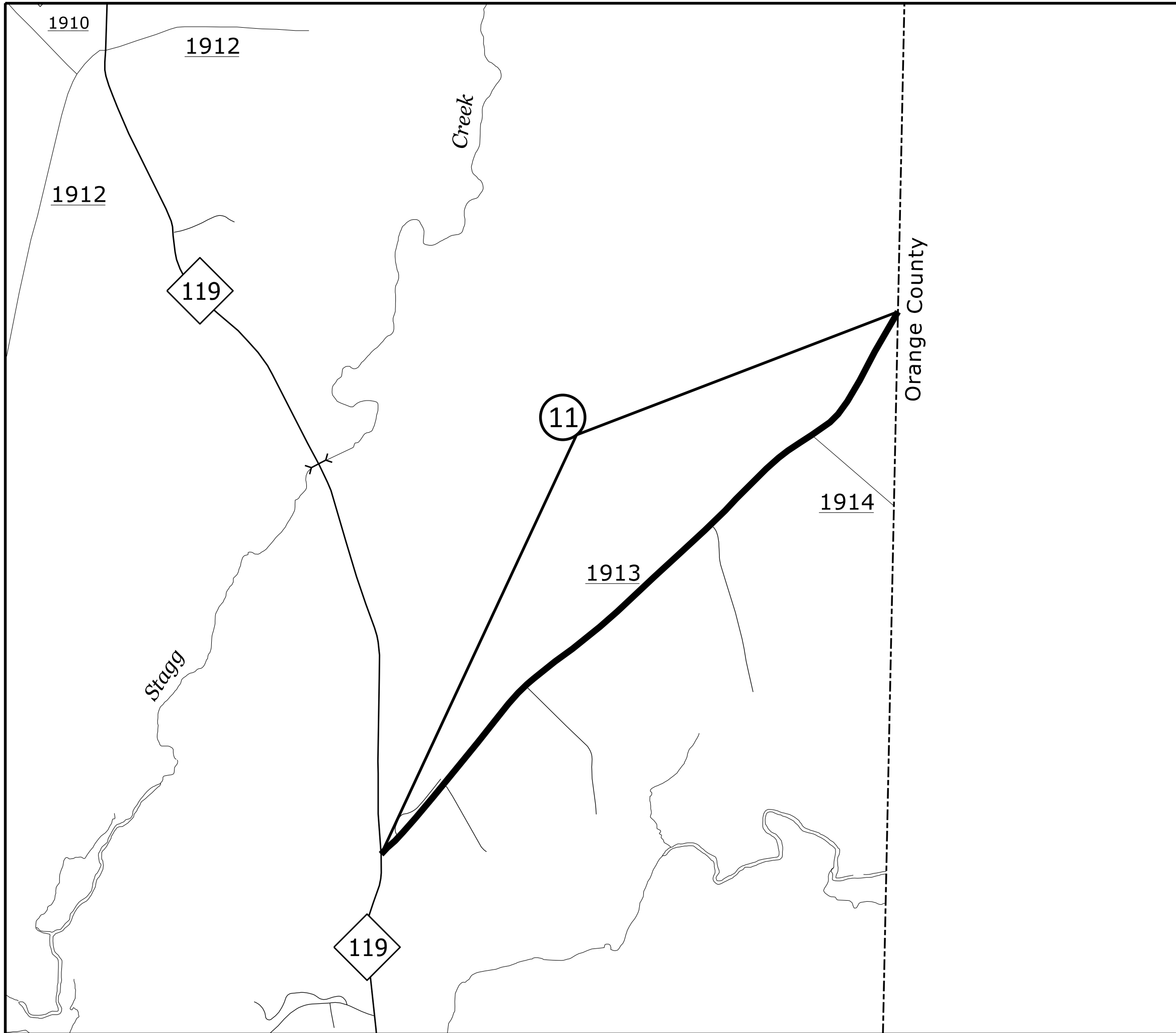


- Map 6 SR 2328 - Thompson Mill Rd
Skip SR 2327 Bass Mountain Rd
DO NOT Pave through
Bridge # 194 - Resurface
- Map 7 SR 2405 - Bethel South Fork Rd
- Map 8 SR 2172 - Moore's Chapel Cemetery Rd
Skip NC 87 DO NOT Pave through



Map 9 SR 1226 - University Dr (North Bound)
 Bridge #47 DO NOT Pave
 Match Joint at Construction
 Project U-6010

Map 10 SR 1226 - University Dr (South Bound)
 Match Joint at Construction
 Project U-6010
 Bridge #47 DO NOT Pave

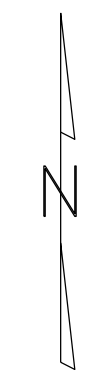
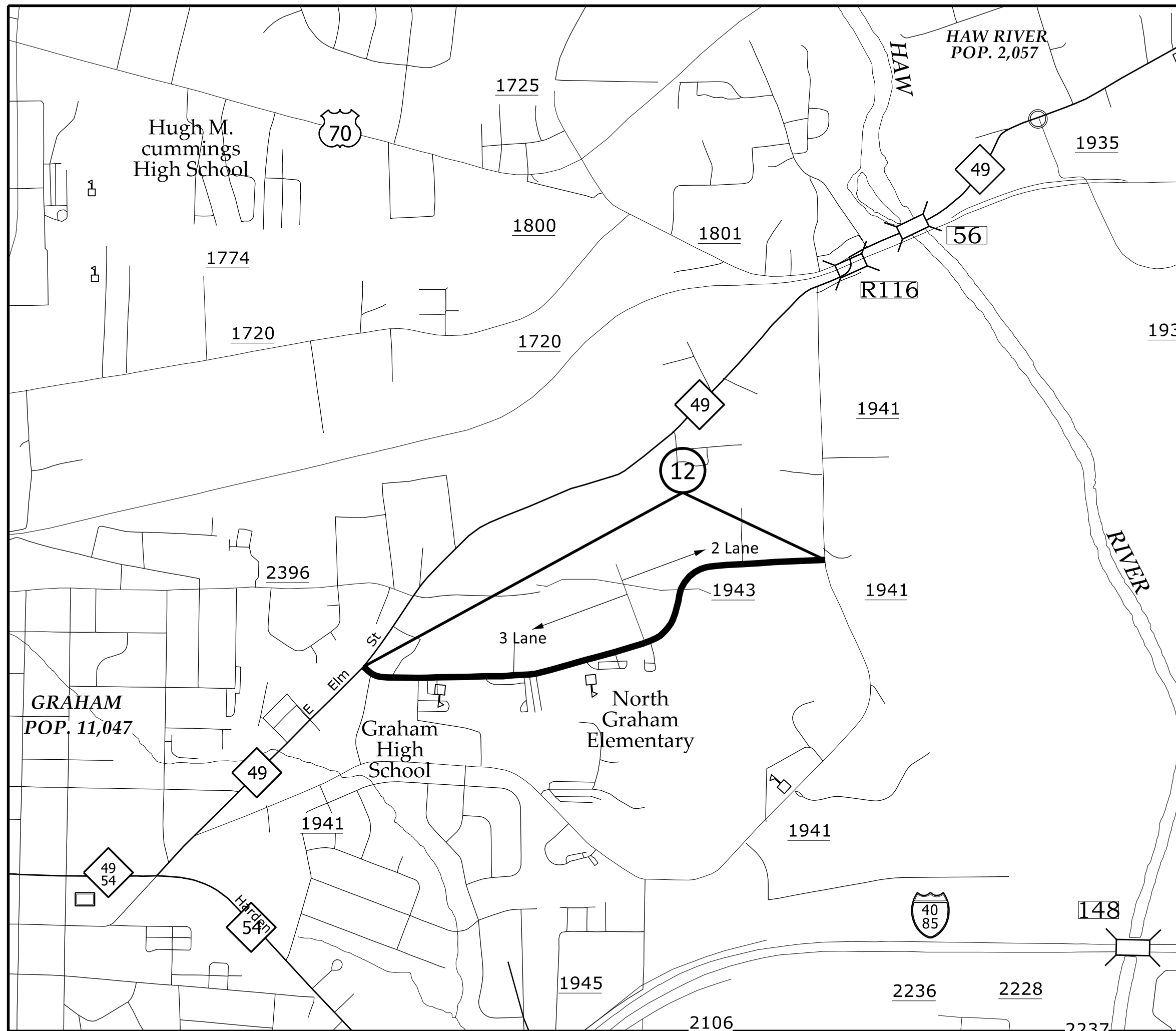


PROJECT REFERENCE NO.	SHEET NO.
2025CPT.07.09.20011	5



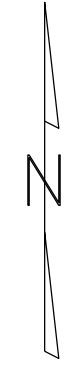
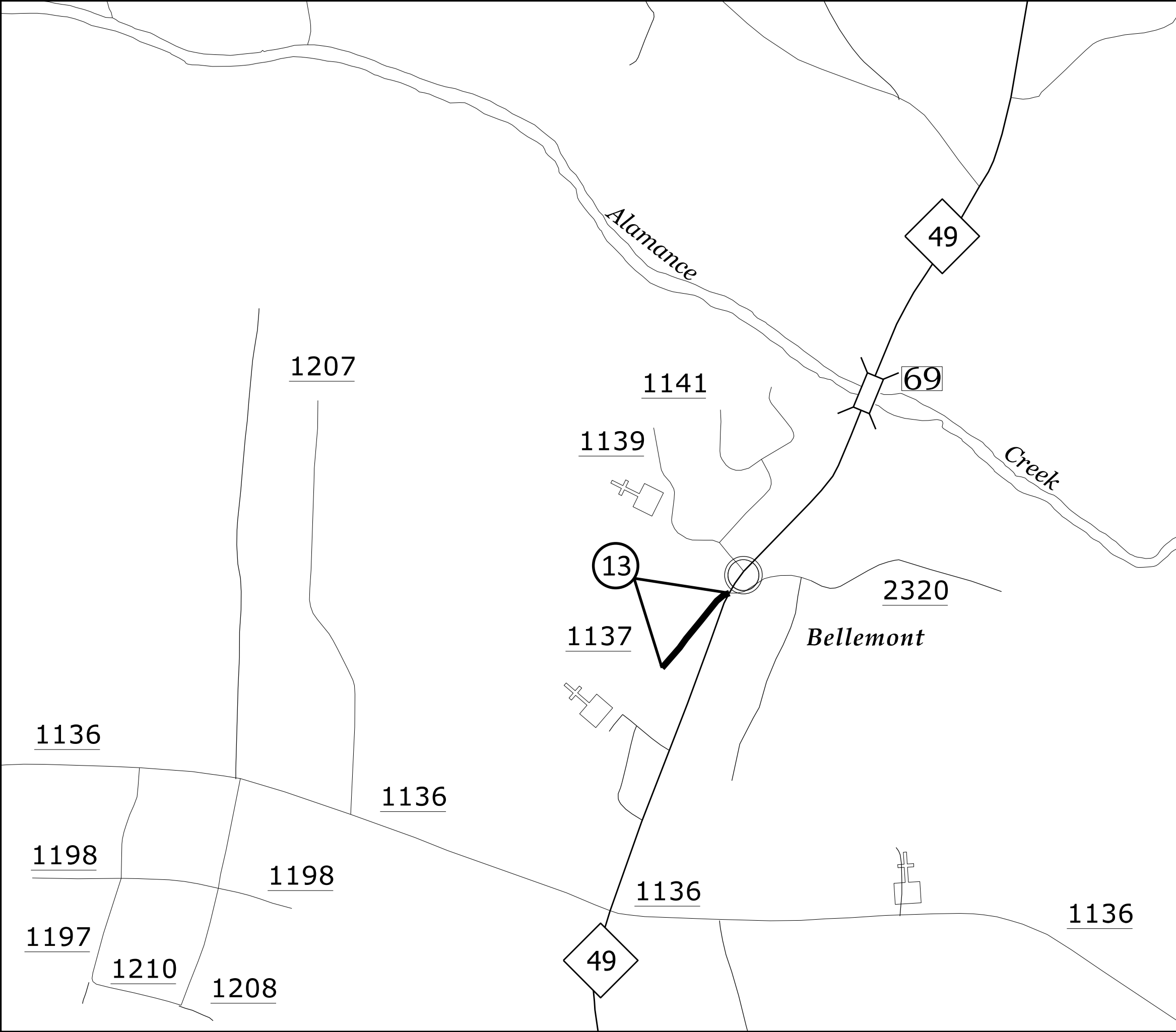
Map 11 SR 1913 - Lynch Store Rd

ALAMANCE COUNTY
NORTH CAROLINA

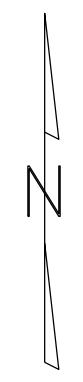
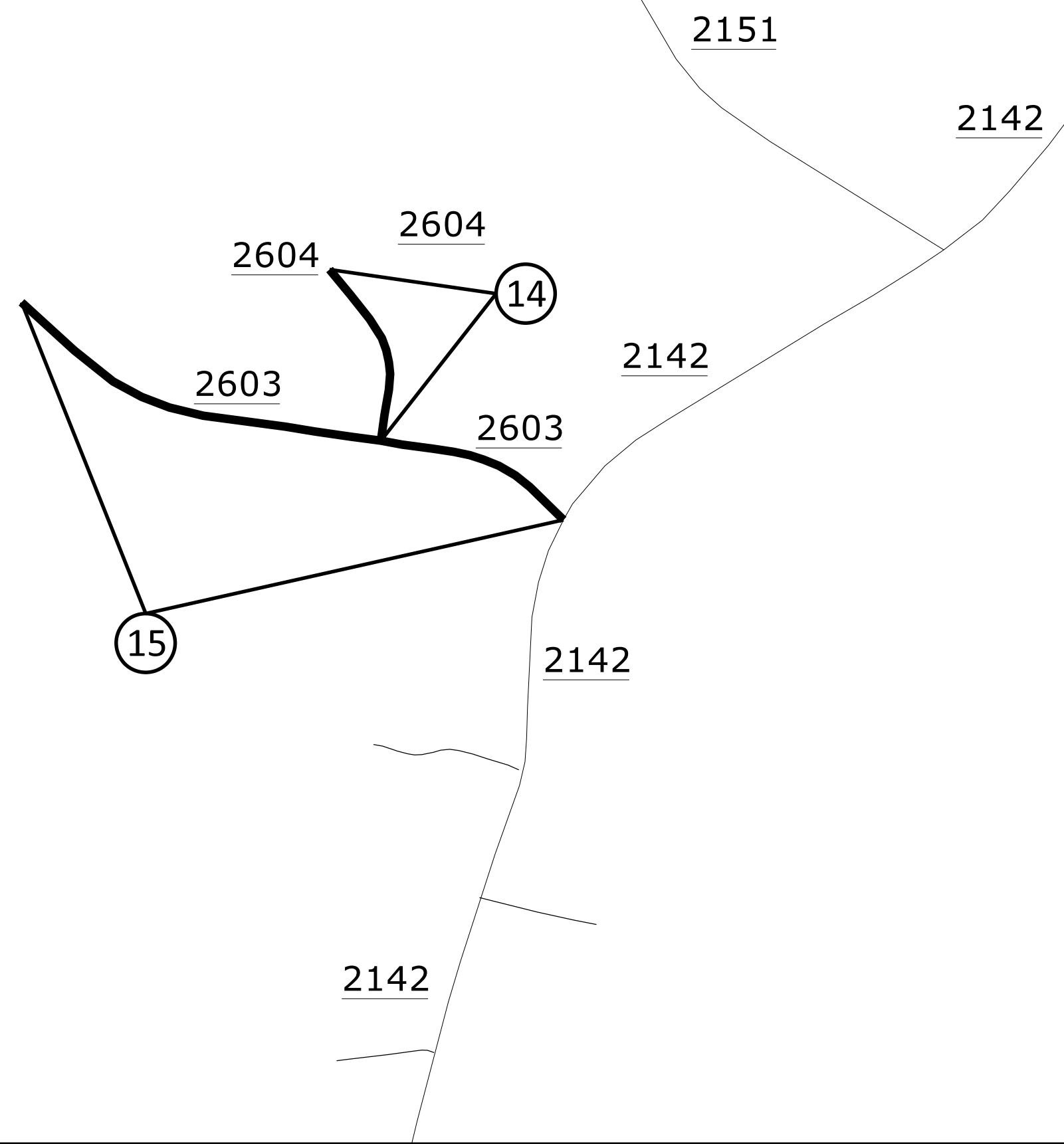


Map 12
 SR 1943 - Trollering Rd
 2 Lane Section Treatment
 From SR 1941 - Town Branch to 3 Lane
 #78 Mat Seal, Pave 1 1/2" S9.5B

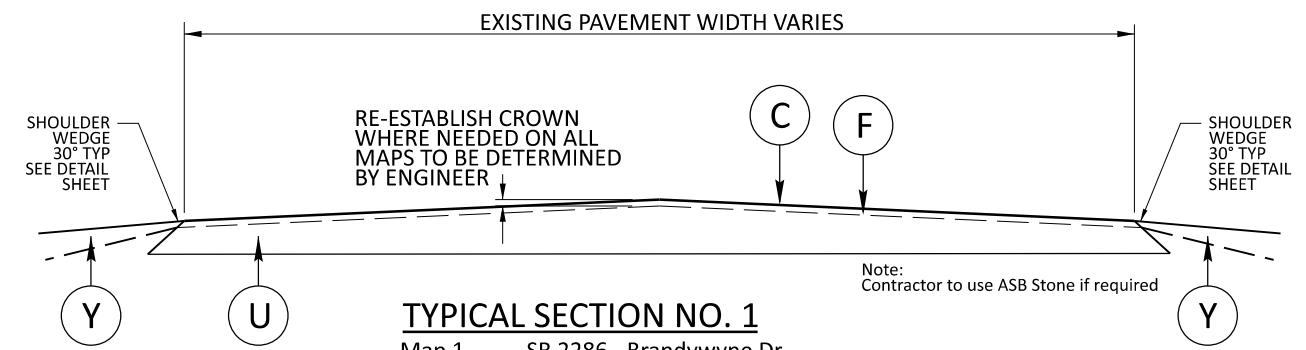
SR 1943 - Trollering Rd
 3 Lane Section Treatment
 From 2 Lane to NC 49/Elm St.
 Mill 1 1/2", Pave 1 1/2" S9.5B



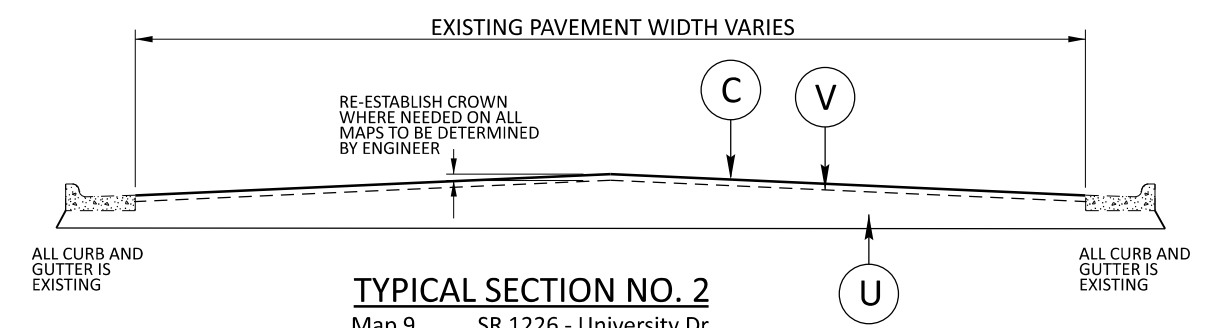
Map 13 SR 1137 - Markwood Dr
Mill 1 1/2", Pave 1 1/2" S9.5B



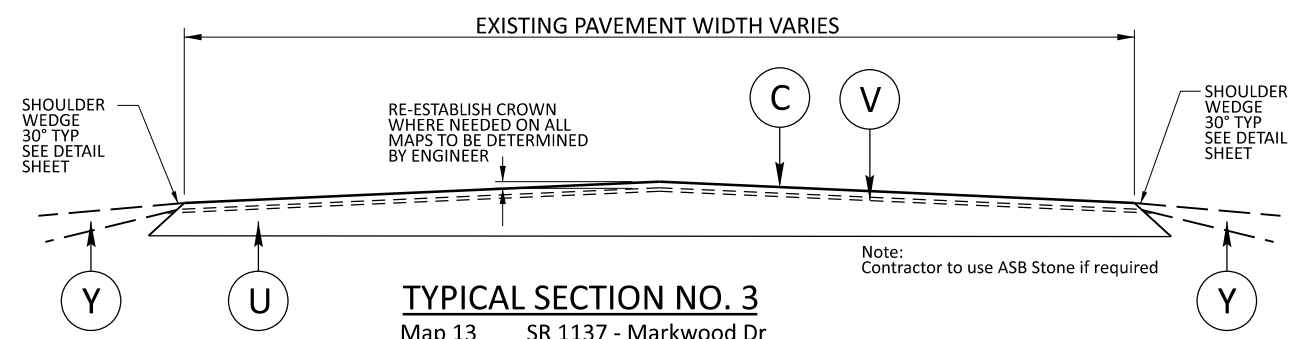
Map 14 SR 2604 - Bridgette Ct
Map 15 SR 2603 - Iris Dr



- TYPICAL SECTION NO. 1**
- Map 1 SR 2286 - Brandywyne Dr
 - Map 2 SR 2289 - Bordeaux Dr
 - Map 3 SR 2290 - Brisbane Ct
 - Map 4 SR 2608 - St Bride Ct
 - Map 5 SR 1737 - Haw River Hopedale Rd
 - Map 6 SR 2328 - Thompson Mill Rd
 - Resurface Bridge #194
 - Map 7 SR 2405 - Bethel South Fork Rd
 - Map 8 SR 2172 - Moores Chapel Cemetary Rd
 - Map 11 SR 1913 - Lynch Store Rd
 - Map 12 SR 1943 - Trollinger Rd
 - Map 14 SR 2604 - Bridgette Ct
 - Map 15 SR 2603 - Iris Dr

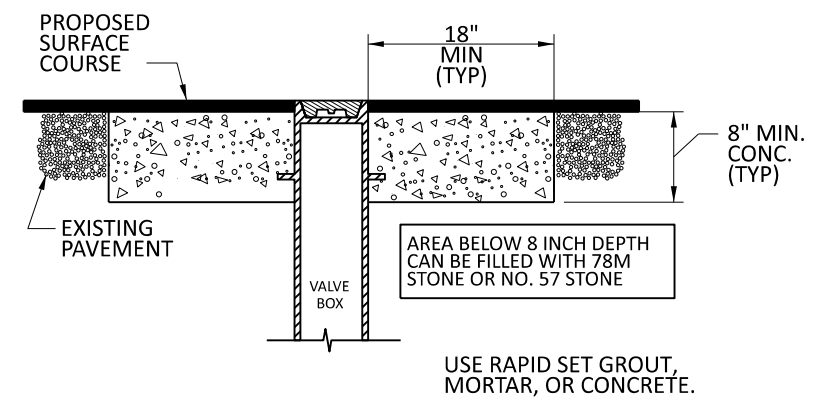


- TYPICAL SECTION NO. 2**
- Map 9 SR 1226 - University Dr
 - Map 10 SR 1226 - University Dr
 - Map 12 SR 1943 - Trollinger Rd

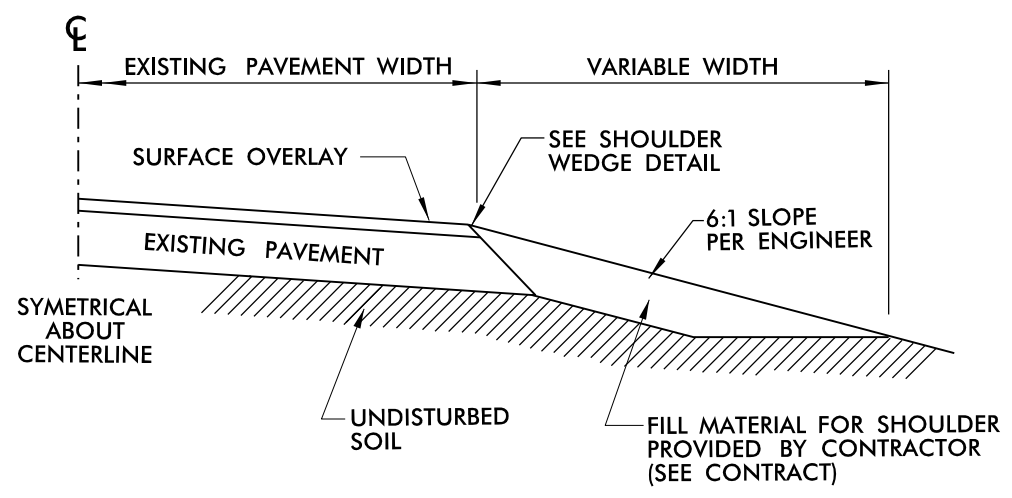


- TYPICAL SECTION NO. 3**
- Map 13 SR 1137 - Markwood Dr

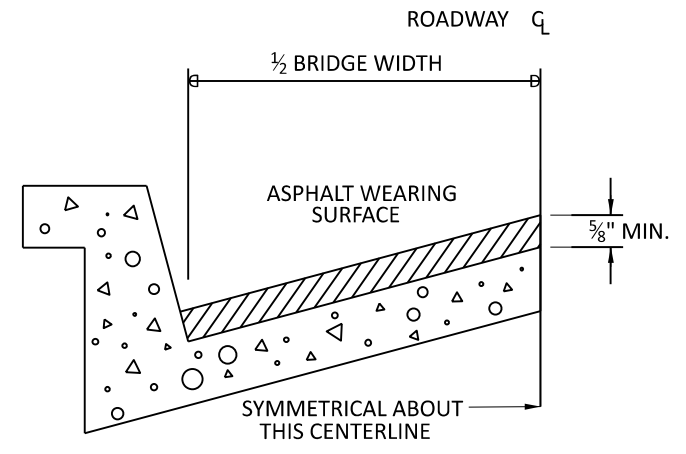
PAVEMENT SCHEDULE	
C	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 165 LBS PER SQ YD.
F	AST MAT COAT, #78M
U	EXISTING PAVEMENT
V	MILL ASPHALT PAVEMENT, 1½" DEPTH
Y	SHOULDER RECONSTRUCTION (SEE DETAIL)



STANDARD CONCRETE ENCASEMENT FOR VALVE CASTINGS IN PAVEMENT



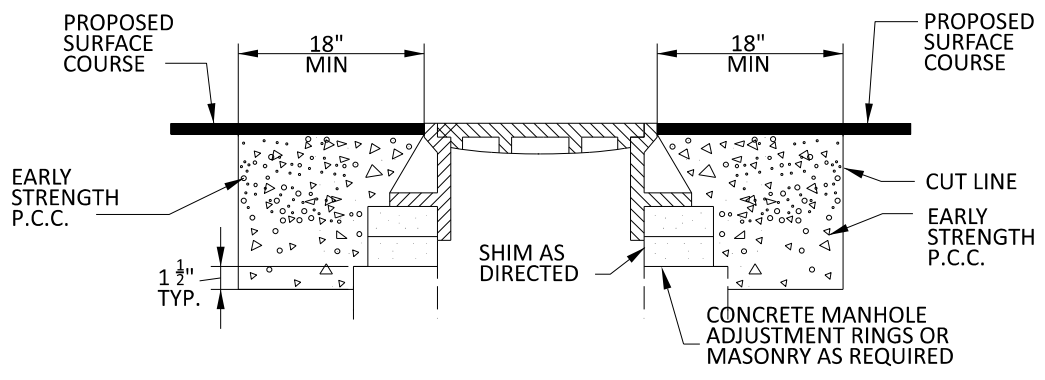
SHOULDER RECONSTRUCTION
* PLACE ASB OR BORROW AS DIRECTED BY THE ENGINEER



BRIDGE HALF TYPICAL SECTION

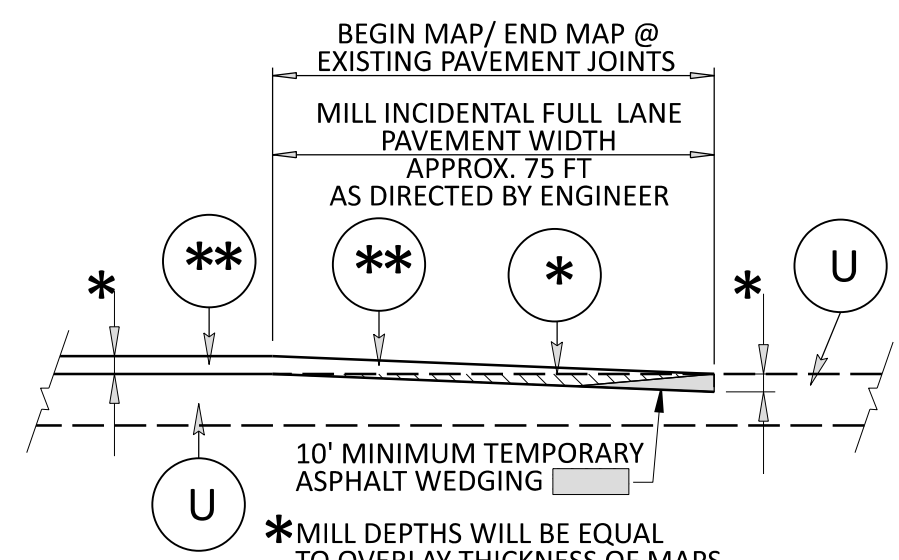
FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN. THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

NOTES
ALL UNPAVED S.R. ROUTES TO BE SURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT.
ALL PAVED S.R. ROUTES TO BE RESURFACED TO END OF RADDII, OR AS DIRECTED BY THE ENGINEER. EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE SUMMARY OF QUANTITIES. BRIDGES TO BE RESURFACED AT LOCATIONS AND DEPTH AS DIRECTED BY THE ENGINEER.

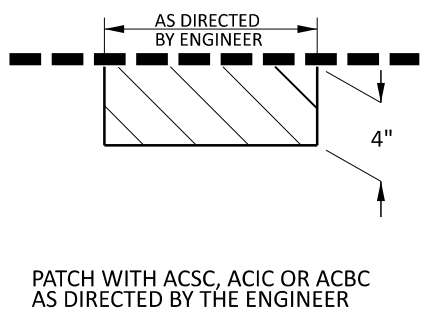


- NOTES:**
- MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
 - ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
 - EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
 - RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS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

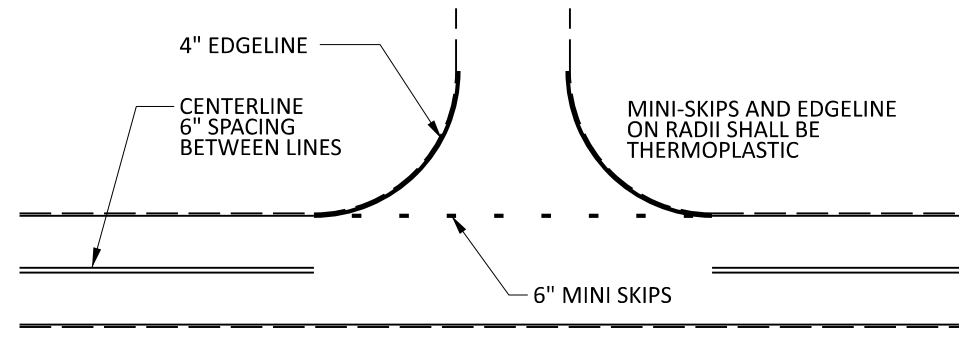
STANDARD CONCRETE ENCASEMENT FOR MANHOLE CASTINGS IN PAVEMENT



INCIDENTAL MILLING AT TIE-IN DETAIL



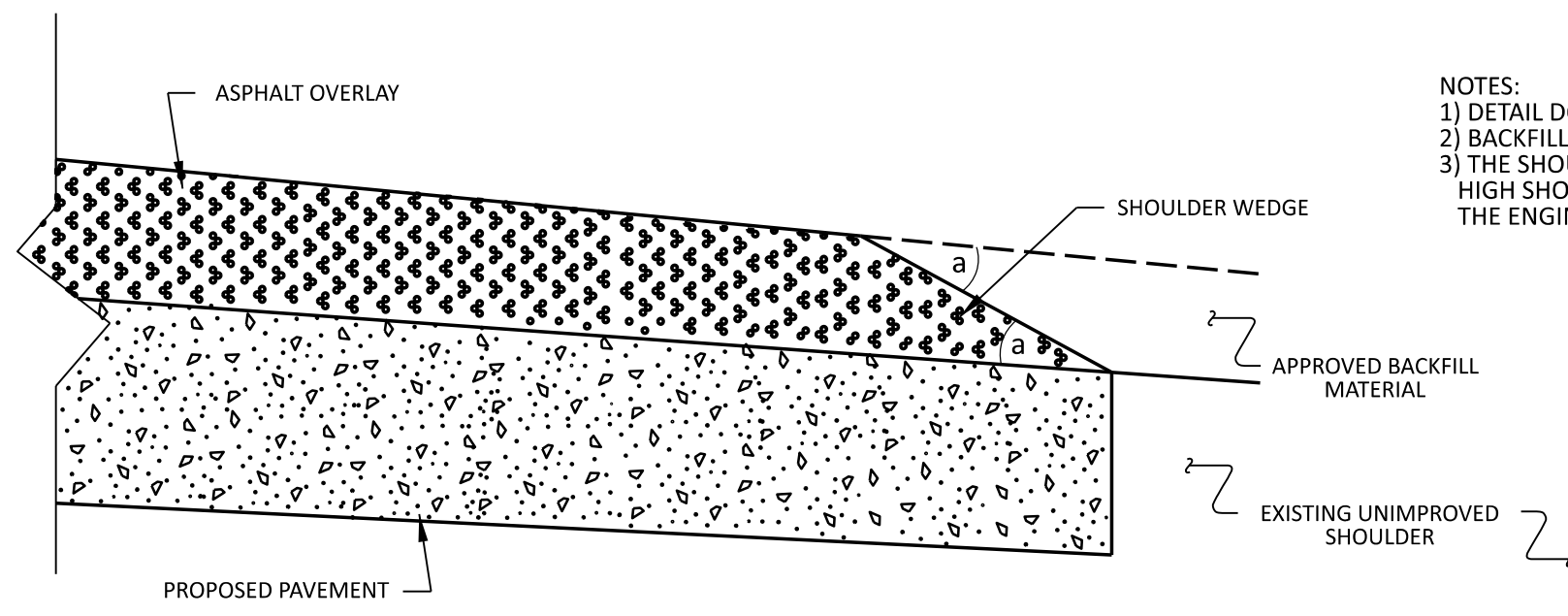
PATCHING EXISTING PAVEMENT DETAIL



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

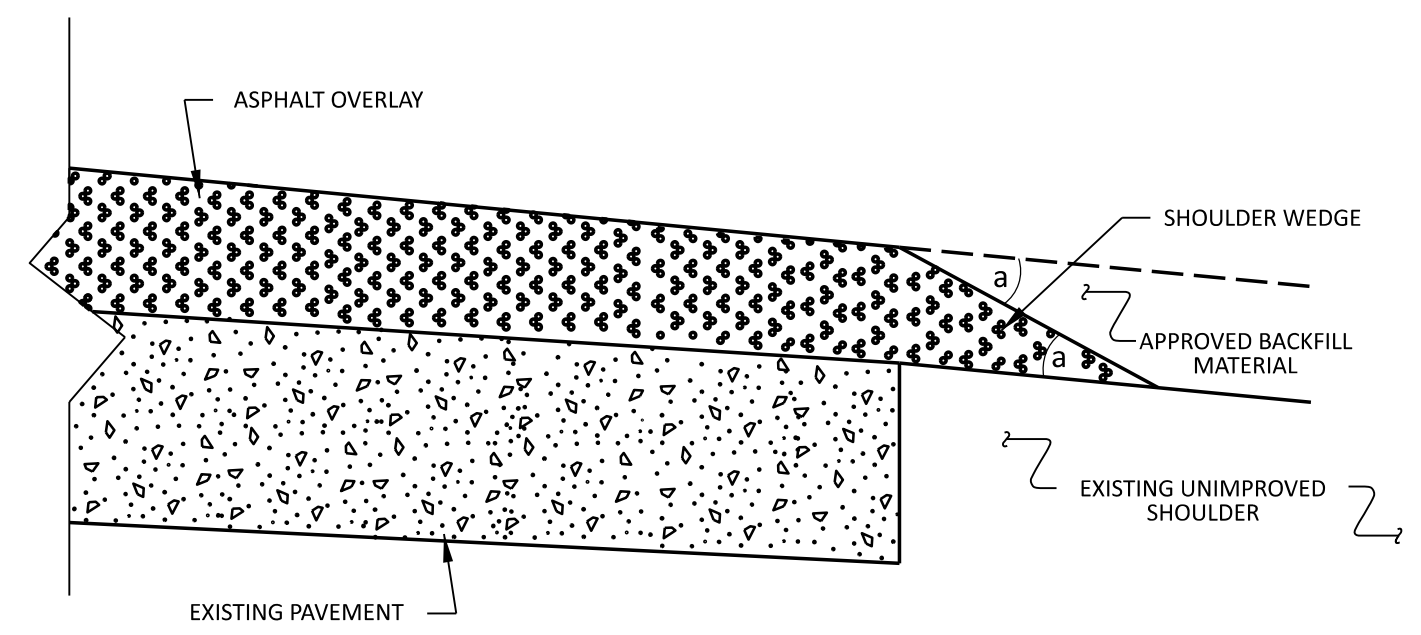
TO BE USED AT ALL NON-SIGNALIZED INTERSECTIONS (NOT TO SCALE)

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
U	EXISTING PAVEMENT
V	MILL ASPHALT PAVEMENT, 1 1/2" DEPTH
Y	SHOULDER RECONSTRUCTION (SEE DETAIL)

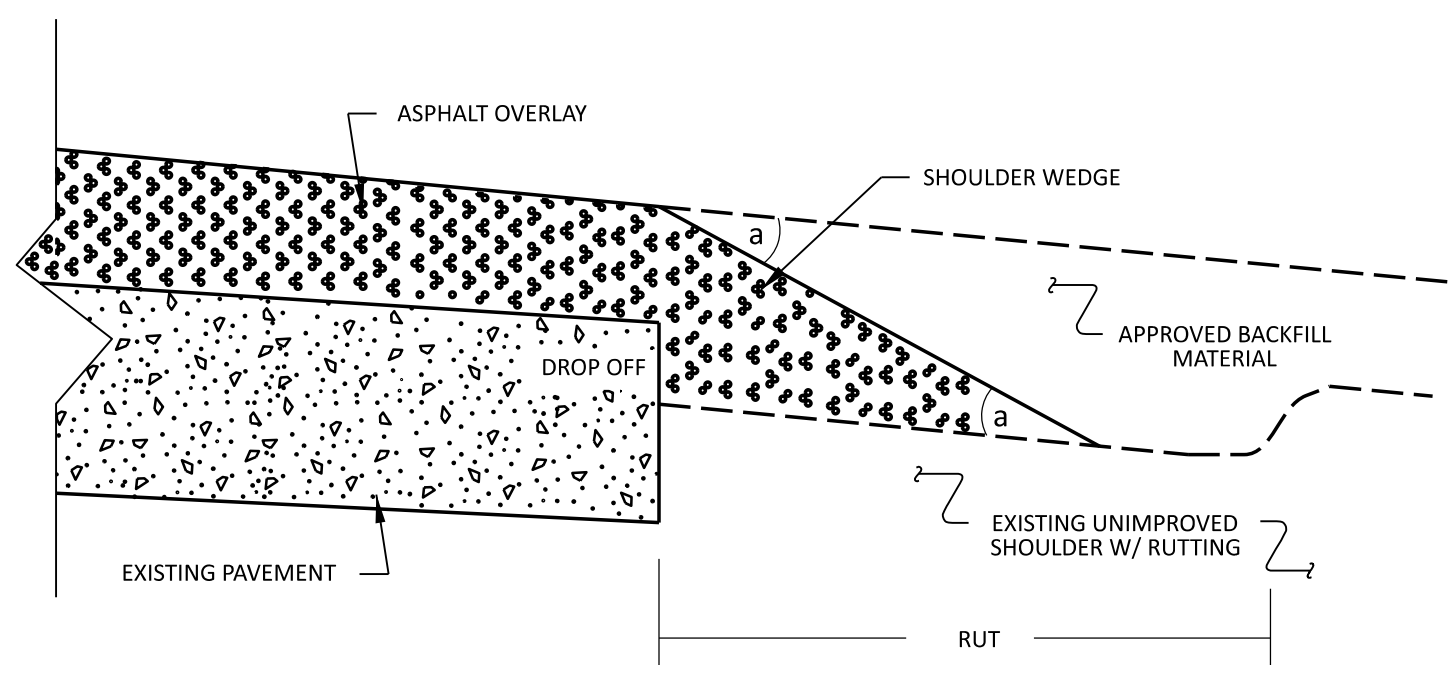


NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFC AND ULTRA-THIN BONDED WEARING COURSE.
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS DIRECTED BY THE ENGINEER.

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)

a - 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

PROJECT NO.	SHEET NO.	TOTAL NO.
2025CPT.07.09.20011	13	

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, ****"DEPTH (1 1/2")	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	ADJ. 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.07.09.20011	Alamance	1	SR-2286 / BRANDYWYNE DR	FROM SR 2135 - S JIM MINOR RD TO CUL-DE-SAC	1	2	0.21	18-19		4		0.42	12		154	254	21	100	2,678	884				83	8	0.02			
TOTAL FOR MAP NO. 1							0.21			4		0.42	12		154	254	21	100	2,678	884				83	8	0.02			
2025CPT.07.09.20011	Alamance	2	SR-2289 / BORDEAUX DR	FROM SR 2286 - BRANDYWYNE DR TO CUL-DE-SAC	1	2	0.33	18-19		7		0.66	19		154	376	39	300	4,045	1,335				133	13	0.02			
TOTAL FOR MAP NO. 2							0.33			7		0.66	19		154	376	39	300	4,045	1,335				133	13	0.02			
2025CPT.07.09.20011	Alamance	3	SR-2290 / BRISBANE CT	FROM SR 2289 - BORDEAUX DR TO CUL-DE-SAC	1	2	0.16	18-19		3		0.32	9		154	198	22	200	2,178	719				64	6	0.01			
TOTAL FOR MAP NO. 3							0.16			3		0.32	9		154	198	22	200	2,178	719				64	6	0.01			
2025CPT.07.09.20011	Alamance	4	SR-2608 / ST BRIDE CT	FROM SR 2289 - BORDEAUX DR TO CUL-DE-SAC	1	2	0.11	18-19		2		0.21	6		154	145	14	100	1,602	529				43	4	0.01			
TOTAL FOR MAP NO. 4							0.11			2		0.21	6		154	145	14	100	1,602	529				43	4	0.01			
2025CPT.07.09.20011	Alamance	5	SR-1737 / HAW RIVER HOPEDALE RD	FROM SR 1740 - ROMA RD TO SR 1735 - FONVILLE RD	1	2	2.59	23-24		52	231	5.19	147		392	3,262	226	300	35,936	11,859		1		1,037	104	0.19			
TOTAL FOR MAP NO. 5							2.59			52	231	5.19	147		392	3,262	226	300	35,936	11,859		1		1,037	104	0.19			
2025CPT.07.09.20011	Alamance	6	SR-2328 / THOMPSON MILL RD	FROM SR 2326 - MT HERMON ROCK CREEK RD TO SR 2328 (AST SECTION)	1	2	4.83	21-26		96	300	9.64	273		746	5,551	375	300	61,163	20,184				1,929	193	0.35			
TOTAL FOR MAP NO. 6							4.83			96	300	9.64	273		746	5,551	375	300	61,163	20,184				1,929	193	0.35			
2025CPT.07.09.20011	Alamance	7	SR-2405 / BETHEL SOUTH FORK RD	FROM SR 2328 (AST SECTION) TO SR 1004 - SNOW CAMP RD	1	2	0.52	21-22		10	15	0.98	28		179	564	41	100	6,223	2,054				196	20	0.04			
TOTAL FOR MAP NO. 7							0.52			10	15	0.98	28		179	564	41	100	6,223	2,054				196	20	0.04			
2025CPT.07.09.20011	Alamance	8	SR-2172 / MOORES CHAPEL CEMETARY RD	FROM SR 2171 - CHURCH RD TO SR 1004 - SNOW CAMP RD	1	2	3.36	20-35		64	195	6.39	181		1,129	3,562	246	300	39,246	12,951				1,279	128	0.23			
TOTAL FOR MAP NO. 8							3.36			64	195	6.39	181		1,129	3,562	246	300	39,246	12,951				1,279	128	0.23			
2025CPT.07.09.20011	Alamance	9	SR-1226 OI / UNIVERSITY DR (NORTH BOUND)	FROM APPROX. 30 FEET BACK FROM NOSE OF ISLAND AT SR 1158 - HUFFMAN MILL RD TO NOSE OF ISLAND APPROX. 720 FEET SOUTH OF US 70	2	2	1.844	26-77						36,542	4,480	3,722	252	200				4	2				7,623		
TOTAL FOR MAP NO. 9							1.844								36,542	4,480	3,722	252	200				4	2				7,623	
2025CPT.07.09.20011	Alamance	10	SR-1226 OO / UNIVERSITY DR (SOUTH BOUND)	FROM NOSE OF ISLAND APPROX. 720 FEET SOUTH OF US 70 TO APPROX. 30 FEET BACK FROM NOSE OF ISLAND AT SR 1158 - HUFFMAN MILL RD	2	2	1.857	23-68						34,453	4,825	3,564	242	220				2					6,072		
TOTAL FOR MAP NO. 10							1.857								34,453	4,825	3,564	242	220				2					6,072	
2025CPT.07.09.20011	Alamance	11	SR-1913 / LYNCH STORE RD	FROM NC 119 TO ORANGE COUNTY LINE	1	2	1.42	22		28	108	2.77	78		379	1,629	135	600	17,951	5,924				553	55	0.10			
TOTAL FOR MAP NO. 11							1.42			28	108	2.77	78		379	1,629	135	600	17,951	5,924						553	55	0.10	
2025CPT.07.09.20011	Alamance	12	SR-1943 / TROLLINGER RD (2 LANE SECTION)	FROM SR 1944 TOWN BRANCH RD TO 3 LANE SECTION	1	2	0.404	21-49		8	18	0.81	23		425	476	33	50	5,249	1,732				162	16	0.03			
2025CPT.07.09.20011	Alamance	12	SR-1943 / TROLLINGER RD (3 LANE SECTION MILLED)	3 LANE SECTION FROM 2 LANE SECTION TO NC 49/ELM ST	2	2	0.566	36-49						12,096	865	1,176	80	75			9	3				850			
TOTAL FOR MAP NO. 12							0.97			8	18	0.81	23		12,096	1,290	1,652	113	125	5,249	1,732		9	3				850	
2025CPT.07.09.20011	Alamance	13	SR-1137 / MARKWOOD DR	FROM NC 49 TO DEAD END	3	2	0.084	18		2	9	0.17	5		896	81	8	50						34	3	0.01			
TOTAL FOR MAP NO. 13							0.084			2	9	0.17	5		896	81	8	50							34	3	0.01		
2025CPT.07.09.20011	Alamance	14	SR-2604 / BRIDGETTE CT	FROM SR 2603 - IRIS DR TO DEAD END	1	2	0.139	20-60		3	21	0.28	8		184	13	25	2,029	670					56	6	0.01			
TOTAL FOR MAP NO. 14							0.139			3	21	0.28	8		184	13	25	2,029	670						56	6	0.01		
2025CPT.07.09.20011	Alamance	15	SR-2603 / IRIS DR	FROM SR 2142 - MT WILLEN RD TO DEAD END	1	2	0.426	20-38		9	12	0.85	24		246	473	33	50	5,206	1,718				170	17	0.03			
TOTAL FOR MAP NO. 15							0.426			9	12	0.85	24		246	473	33	50	5,206	1,718					170	17	0.03		
TOTAL FOR PROJ NO. 2025CPT.07.09.20011							18.85			288	909	28.69	813		83,987	14,282	25,217	1,780	2,970	183,506	60,559		13	8	1	5,739	573	1.05	14,545
GRAND TOTAL							18.85			288	909	28.69	813		83,987	14,282	25,217	1,780	2,970	183,506	60,559		13	8	1	5,739	573	1.05	14,545

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	BEGIN MP	END MP	4413000000-E WORK ZONE ADVANCE/GE NERAL WARNING SIGNING	4457000000-N TEMPORARY TRAFFIC CONTROL	4725000000-E										4845000000-N																		
												4685000000-E 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	24" X 90 M WHITE THERMO	THERMO MSG ONLY 90 M	THERMO MSG SCHOOL 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	4" WHITE PAINT	4" YELLOW PAINT	6" WHITE PAINT	6" YELLOW PAINT	8" WHITE PAINT	8" YELLOW PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	PAINT STR & LT ARROW	POLYCARBON ATE H-SHAPED MARKERS CRYSTAL/RED	POLYCARBON ATE H-SHAPED MARKERS YELLOW/YELL OW
						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					
2025CPT.07.09.20011	Alamance	1	SR-2286 / BRANDYWYNE DR	FROM SR 2135 - S JIM MINOR RD TO CUL-DE-SAC	1	0.21	18-19	0	0.21																															
TOTAL FOR MAP NO. 1						0.21																																		
2025CPT.07.09.20011	Alamance	2	SR-2289 / BORDEAUX DR	FROM SR 2286 - BRANDYWYNE DR TO CUL-DE-SAC	1	0.33	18-19	0	0.33																															
TOTAL FOR MAP NO. 2						0.33																																		
2025CPT.07.09.20011	Alamance	3	SR-2290 / BRISBANE CT	FROM SR 2289 - BORDEAUX DR TO CUL-DE-SAC	1	0.16	18-19	0	0.16																															
TOTAL FOR MAP NO. 3						0.16																																		
2025CPT.07.09.20011	Alamance	4	SR-2608 / ST BRIDE CT	FROM SR 2289 - BORDEAUX DR TO CUL-DE-SAC	1	0.11	18-19	0	0.11																															
TOTAL FOR MAP NO. 4						0.11																																		
2025CPT.07.09.20011	Alamance	5	SR-1737 / HAW RIVER HOPEDALE RD	FROM SR 1740 - ROMA RD TO SR 1735 - FONVILLE RD	1	2.59	23-24	0	2.59	290																														
TOTAL FOR MAP NO. 5						2.59				290																														
2025CPT.07.09.20011	Alamance	6	SR-2328 / THOMPSON MILL RD	FROM SR 2326 - MT HERMON ROCK CREEK RD TO SR 2328 (AST SECTION)	1	4.83	21-26	0.6	5.43	541																														
TOTAL FOR MAP NO. 6						4.83				541																														
2025CPT.07.09.20011	Alamance	7	SR-2405 / BETHEL SOUTH FORK RD	FROM SR 2328 (AST SECTION) TO SR 1004 - SNOW CAMP RD	1	0.52	21-22	0	0.52																															
TOTAL FOR MAP NO. 7						0.52																																		
2025CPT.07.09.20011	Alamance	8	SR-2172 / MOORES CHAPEL CEMETARY RD	FROM SR 2171 - CHURCH RD TO SR 1004 - SNOW CAMP RD	1	3.36	20-35	0	3.36	376																														
TOTAL FOR MAP NO. 8						3.36				376																														
2025CPT.07.09.20011	Alamance	9	SR-1226 OI / UNIVERSITY DR (NORTH BOUND)	FROM APPROX. 30 FEET BACK FROM NOSE OF ISLAND AT SR 1158 - HUFFMAN MILL RD TO NOSE OF ISLAND APPROX. 720 FEET SOUTH OF US 70	2	1.844	26-77	0	1.844																															
TOTAL FOR MAP NO. 9						1.844																																		
2025CPT.07.09.20011	Alamance	10	SR-1226 OO / UNIVERSITY DR (SOUTH BOUND)	FROM NOSE OF ISLAND APPROX. 720 FEET SOUTH OF US 70 TO APPROX. 30 FEET BACK FROM NOSE OF ISLAND AT SR 1158 - HUFFMAN MILL RD	2	1.857	23-68	0.143	2																															
TOTAL FOR MAP NO. 10						1.857																																		
2025CPT.07.09.20011	Alamance	11	SR-1913 / LYNCH STORE RD	FROM NC 119 TO ORANGE COUNTY LINE	1	1.42	22	0	1.42																															
TOTAL FOR MAP NO. 11						1.42																																		
2025CPT.07.09.20011	Alamance	12	SR-1943 / TROLLINGER RD (2 LANE SECTION)	FROM SR 1944 TOWN BRANCH RD TO 3 LANE SECTION	1	0.404	21-49	0	0.404																															
2025CPT.07.09.20011	Alamance	12	SR-1943 / TROLLINGER RD (3 LANE SECTION MILLED)	3 LANE SECTION FROM 2 LANE SECTION TO NC 49/ELM ST	2	0.566	36-49	0.404	0.97																															
TOTAL FOR MAP NO. 12						0.97																																		
2025CPT.07.09.20011	Alamance	13	SR-1137 / MARKWOOD DR	FROM NC 49 TO DEAD END	3	0.084	18	0	0.084																															
TOTAL FOR MAP NO. 13						0.084																																		
2025CPT.07.09.20011	Alamance	14	SR-2604 / BRIDGETTE CT	FROM SR 2603 - IRIS DR TO DEAD END	1	0.139	20-60	0	0.139																															
TOTAL FOR MAP NO. 14						0.139																																		
2025CPT.07.09.20011	Alamance	15	SR-2603 / IRIS DR	FROM SR 2142 - MT WILLEN RD TO DEAD END	1	0.426	20-38	0	0.426																															
TOTAL FOR MAP NO. 15						0.426																																		
TOTAL FOR PROJ NO. 2025CPT.07.09.20011						18.85				1,207	1	153,650	132,700	2,260	400	400	600	1,805	8	12	67	80	42	11	1	15,000	5,000	1,800	400	400	600	1,560	8	48	80	42	11	1	740	25
GRAND TOTAL						18.85				1,207	1	153,650	132,700	2,260	400	400	600	1,805	8	12	67	80	42	11	1	15,000	5,000	1,800	400	400	600	1,560	8	48	80	42	11	1	740	25

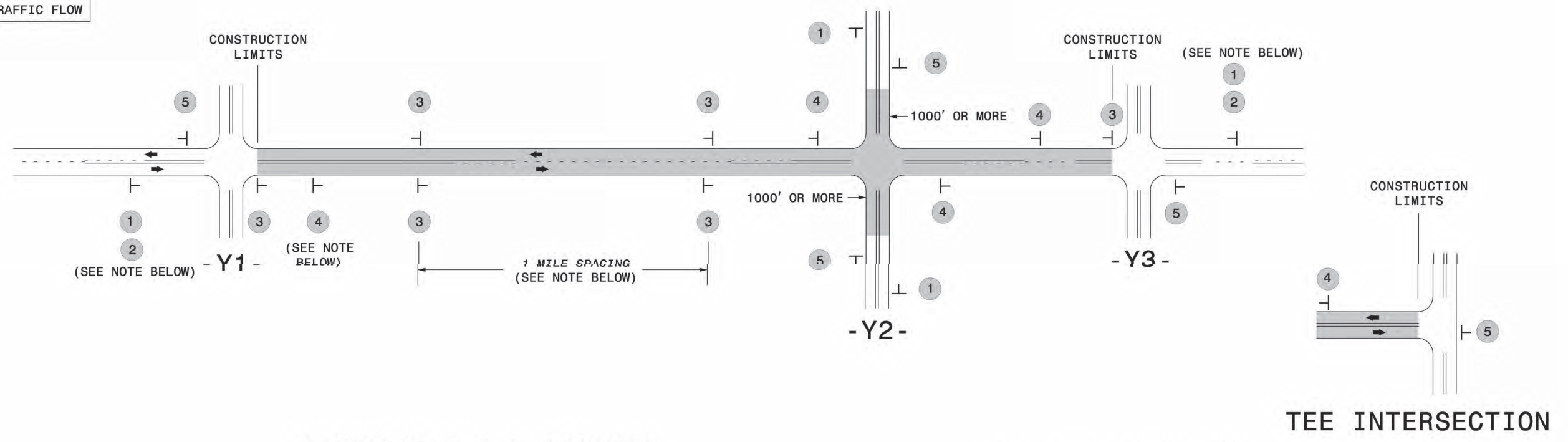
NOTE: All Quantities listed include turn lanes and are estimates; Payment will be based on actual field measurements and quantities received.

SIGNING FOR RESURFACING PROJECTS

LEGEND

┃ STATIONARY SIGN

← DIRECTION OF TRAFFIC FLOW



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 CONSTRUCTION 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 SPACE 1 MILE APART THEREAFTER. - AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART 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. - FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.	
	5	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.	

NO REQUIRED STATIONARY SIGNING 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.

W20-1
48" X 48"
 PLACED 500' IN ADVANCE OF FLAGGER.

W20-7 A
48" X 48"
 PLACED 250' IN ADVANCE OF FLAGGER.

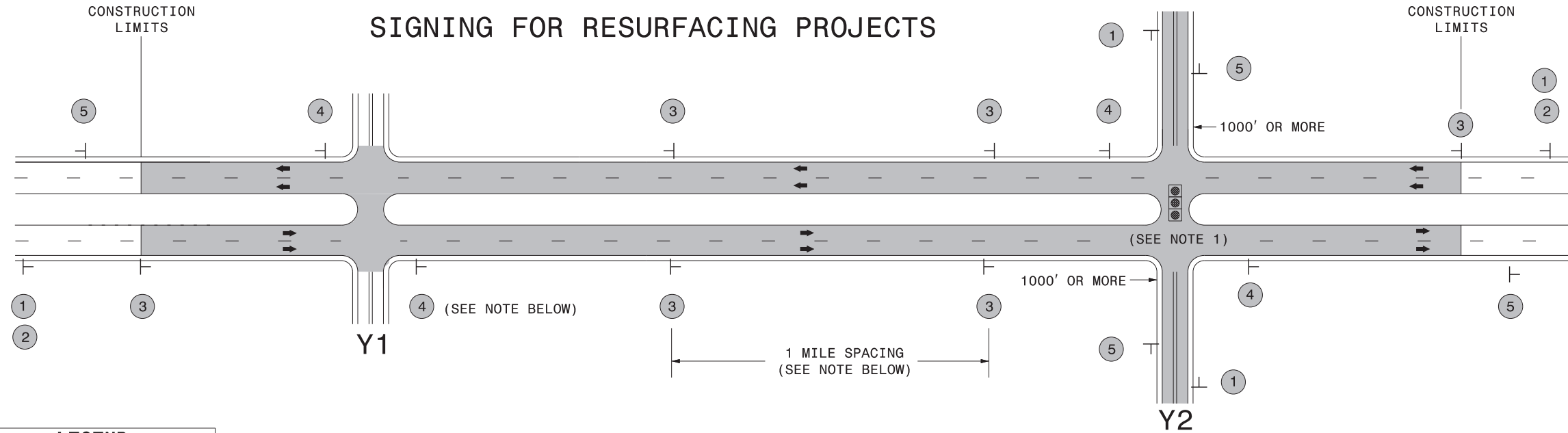
THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

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

5/15/2017 S:\TMD\WZTC\Resurfacing\2L2W & AST Resurfacing Details\Resurfacing_AdvWarn_2Ln.dgn User:keads



LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

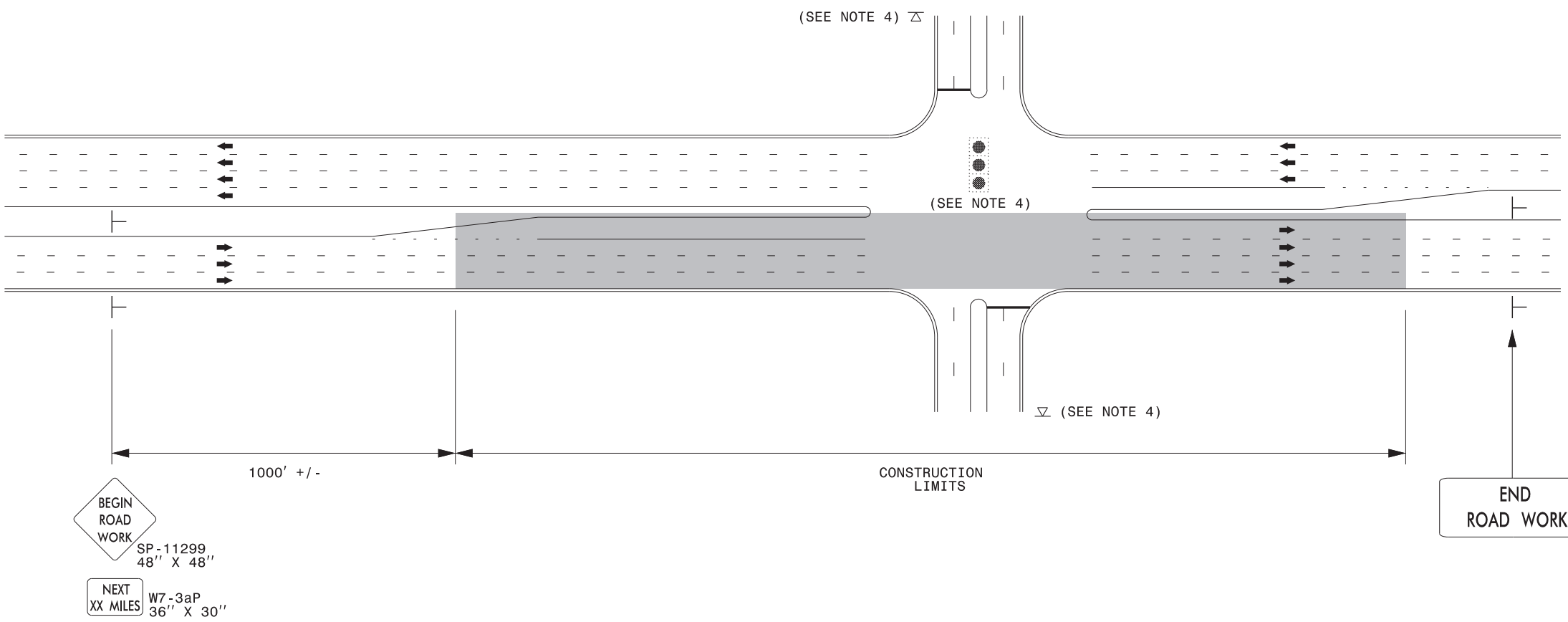
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	 	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>	<p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <p>WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.</p> <div style="display: flex; justify-content: space-around;"> <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>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p>NOTES:</p> <ol style="list-style-type: none"> 1) 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.
		<p>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.</p>	
		<p>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.</p>	
		<p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>	

3/23/2015 C:\Users\rmgarrrett\Downloads\Resurfacing_AdvWarn_LrSu_Shldr.dgn User:rmgarrrett

**RESURFACING
ADVANCE WARNING SIGNS
FOR RURAL AND SUBURBAN
MULTI-LANE ROADWAYS
W/ SHOULDER SECTIONS**

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**

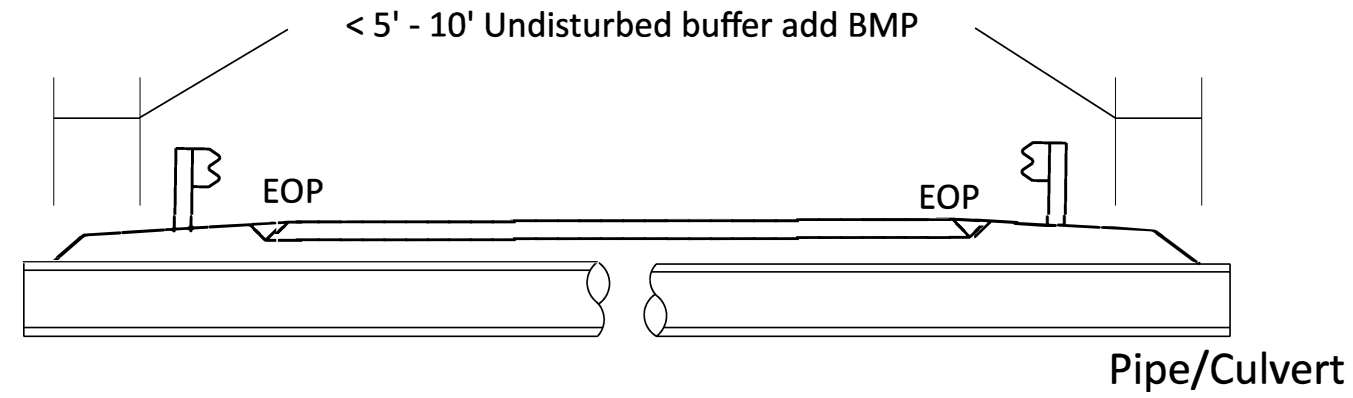
4/8/2015 C:\Users\rmgarrrett\Downloads\Resurfacing_AdvWarn_UrSu (2).dgn User:rmgarrrett

EROSION CONTROL DETAIL

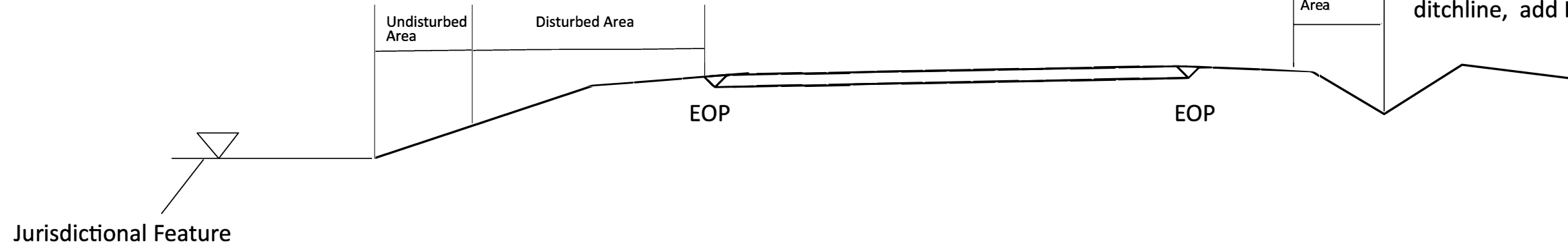
PROJECT REFERENCE NO.	SHEET NO.
2025CPT.07.09.20011	EC-1

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

BMP Options: Wattle or Silt Fence

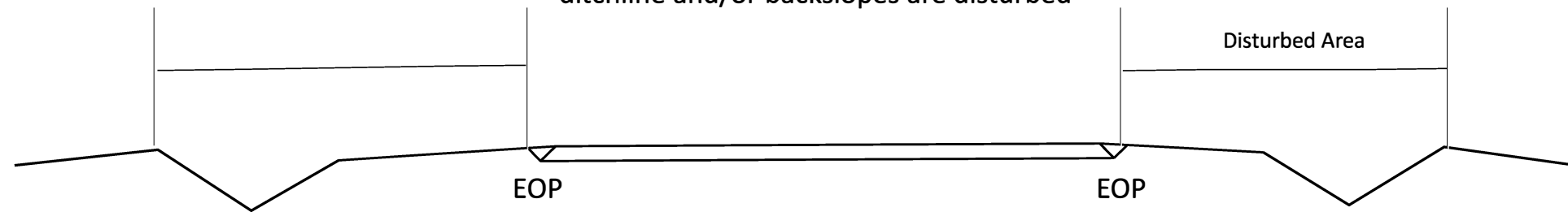


< 5' - 10' Undisturbed buffer from jurisdictional feature add BMP

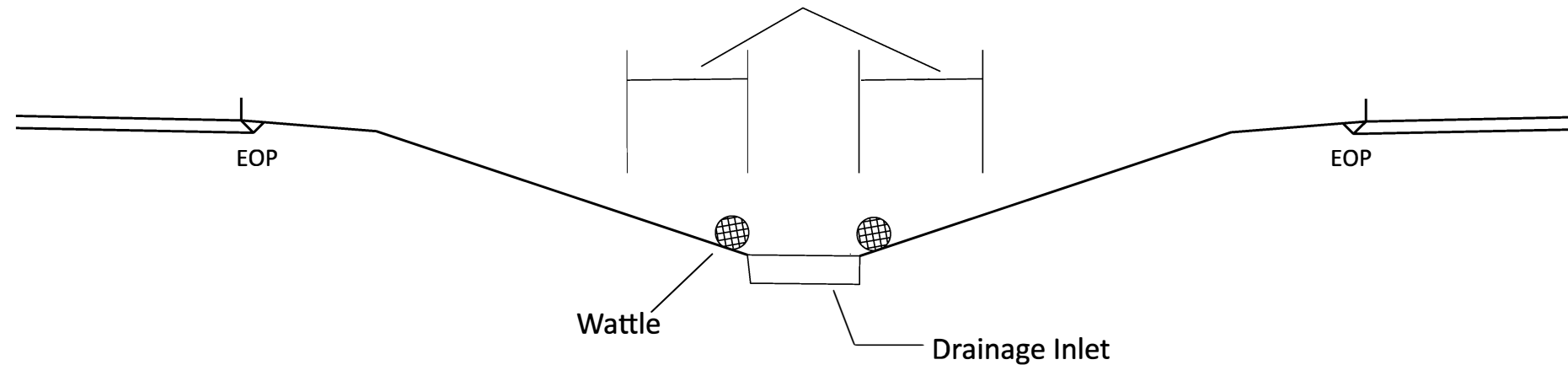


< 5' - 10' Undisturbed buffer from ditchline, add BMP

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

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

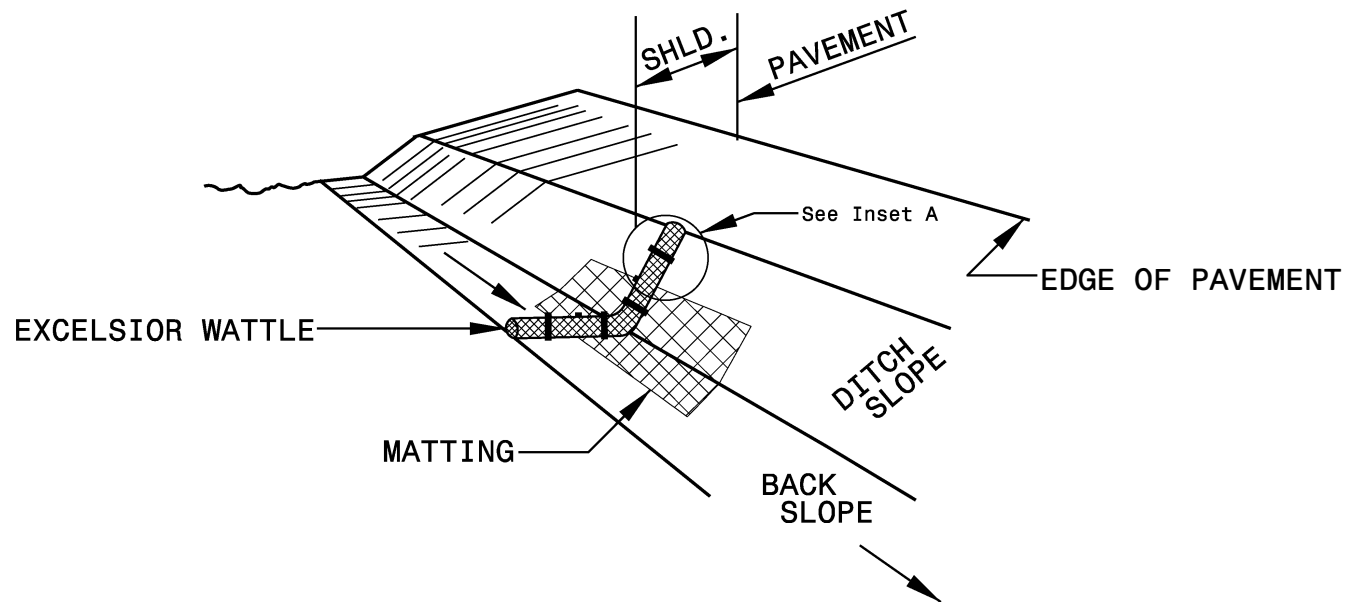
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

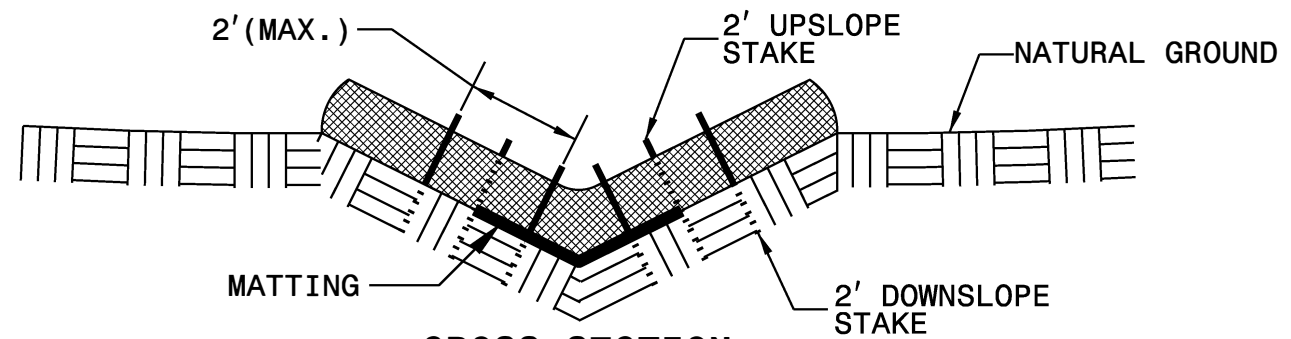
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

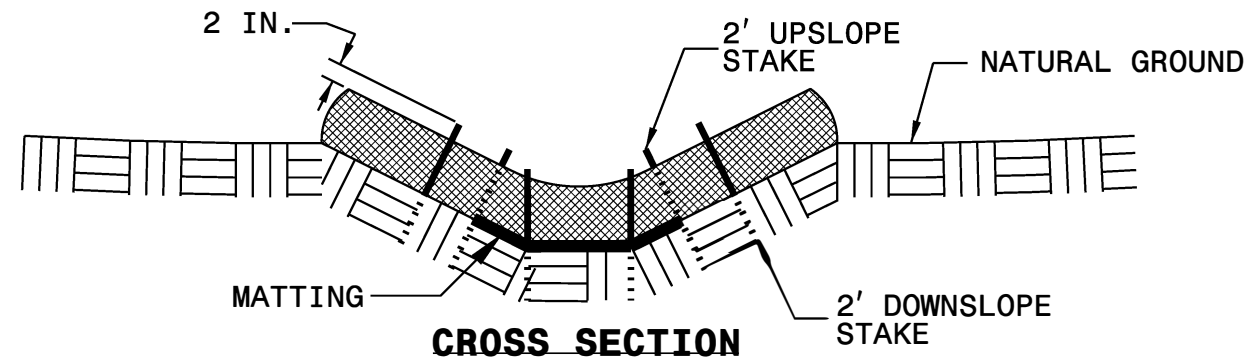
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



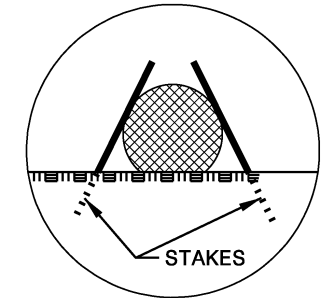
ISOMETRIC VIEW



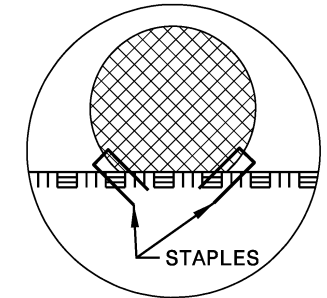
CROSS SECTION VEE DITCH



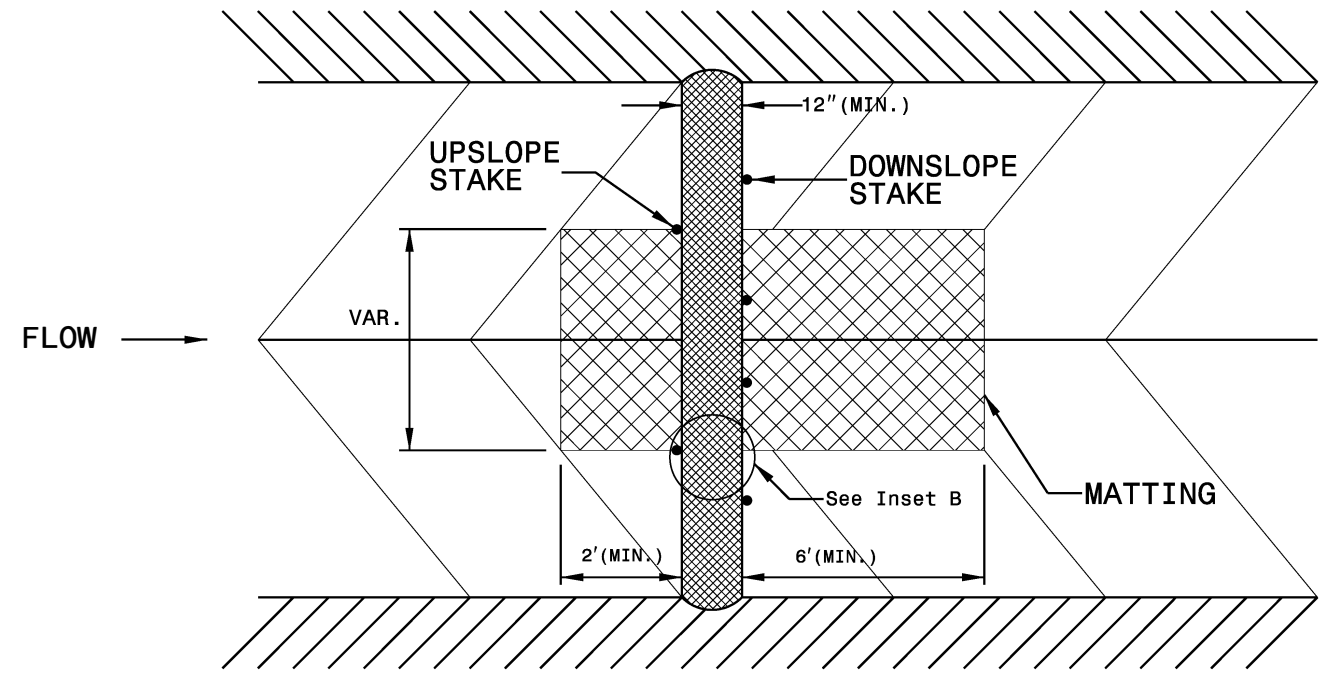
CROSS SECTION TRAPEZOIDAL DITCH



INSET A



INSET B



TOP VIEW

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

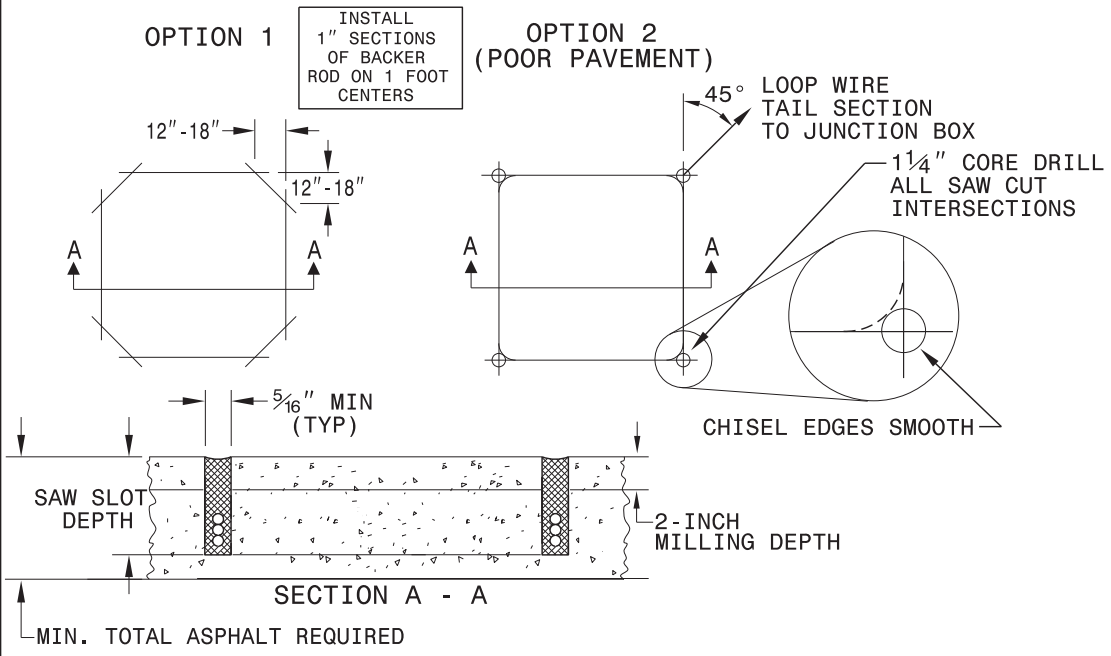


CORRECT WAY TO TWIST WIRE

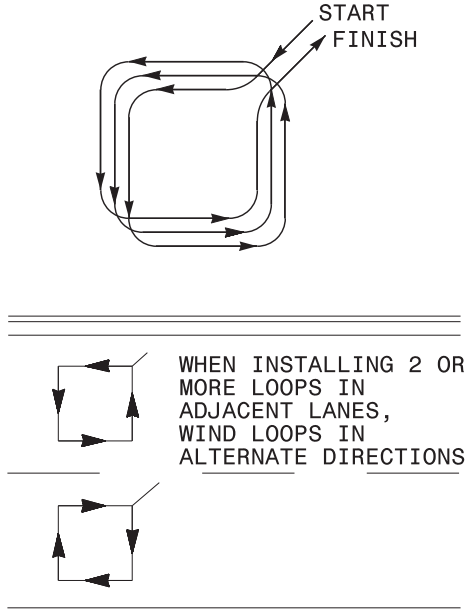


CONVENTIONAL 4-SIDED LOOP

SAW CUT OPTIONS

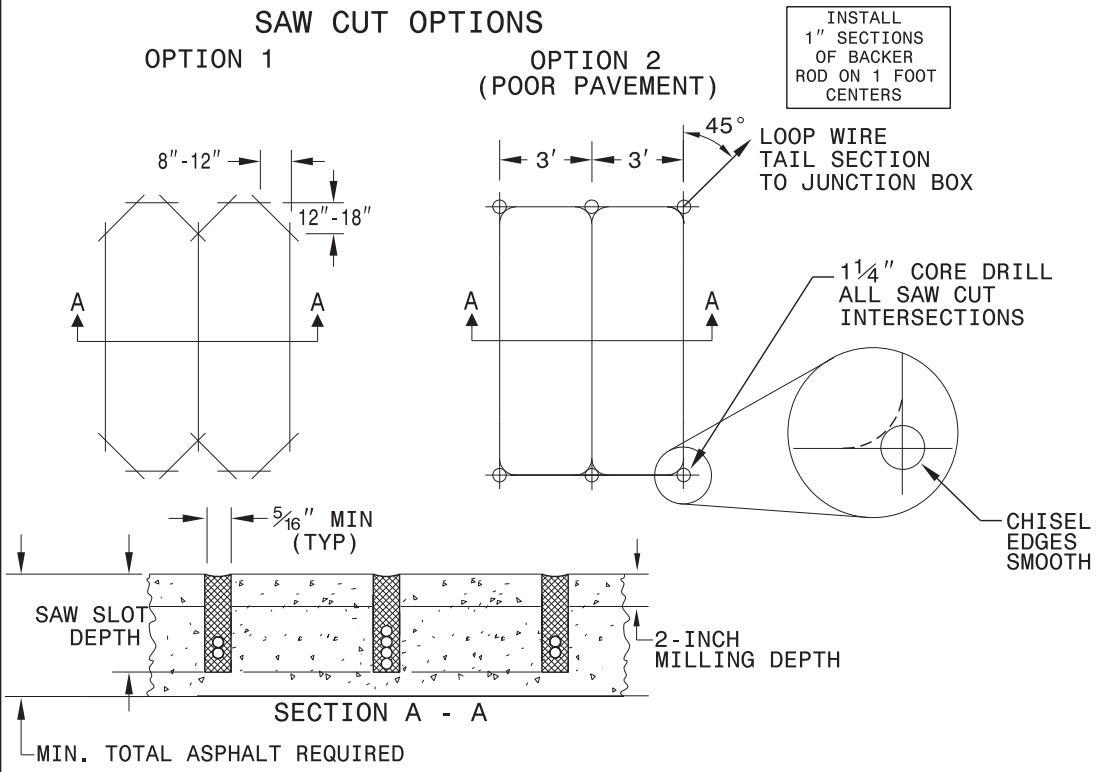


LOOP WINDING METHOD

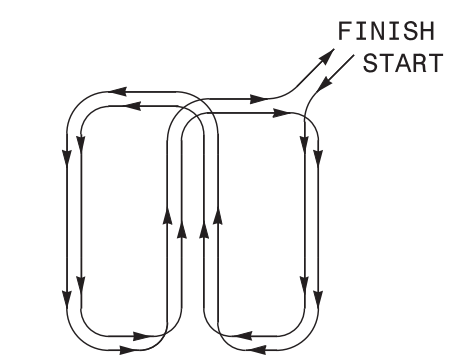


QUADRUPOLE LOOP

SAW CUT OPTIONS

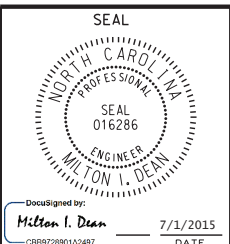
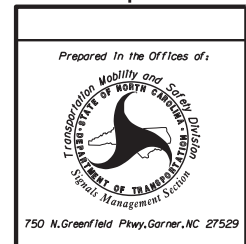


LOOP WINDING METHOD



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



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

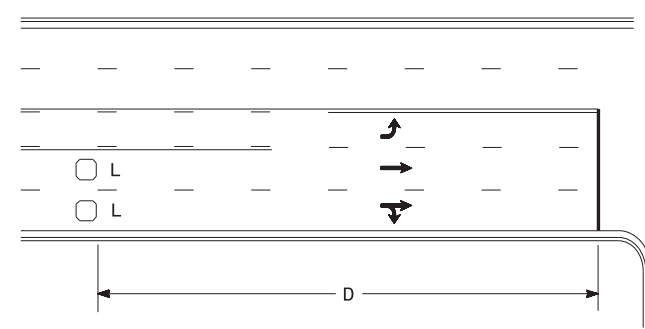
ENGLISH STANDARD DRAWING FOR
DEEP-CUT INDUCTIVE DETECTION LOOPS
(FOR INSTALLATION PRIOR TO MILLING)

SHEET OF

SIG-1

PROJECT REFERENCE NO.
2025CPT.07.09.20011
SHEET No.
20

High Speed Detection (≥40 mph)

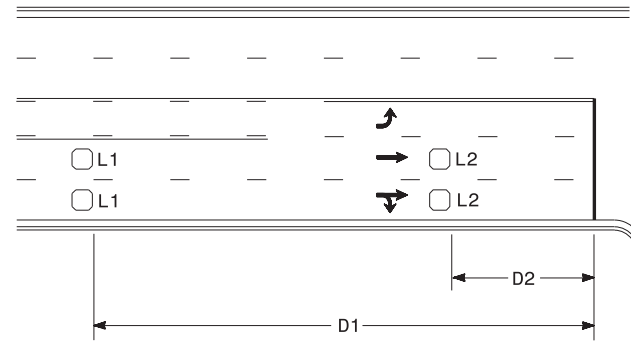


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft
Wired separately

Volume Density Operation

OR

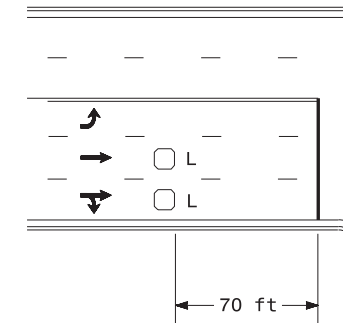


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

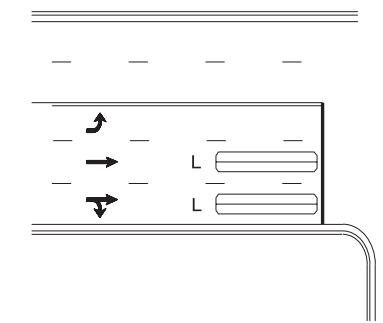
"Stretch" Operation

Low Speed Detection (≤35 mph)



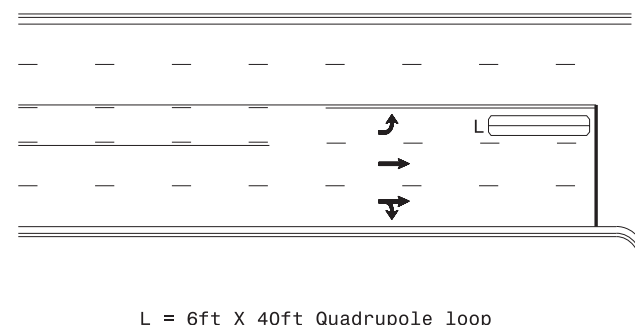
L = 6ft X 6ft
Wired in series

OR



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

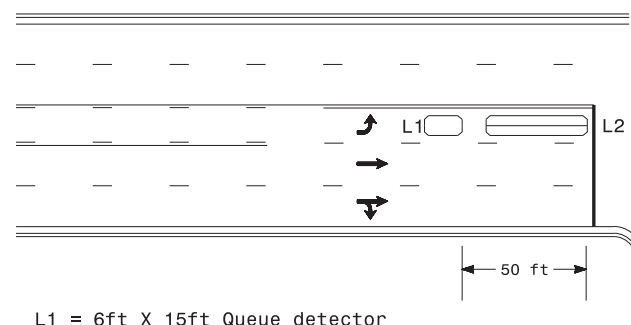
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

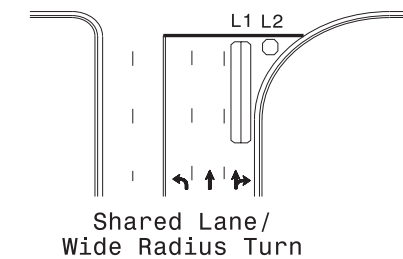
OR



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

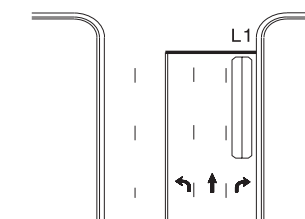
Queue Loop Detection

Right Turn Lane Detection

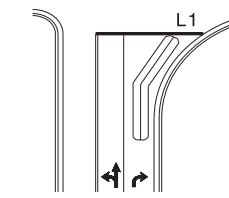


Shared Lane/
Wide Radius Turn

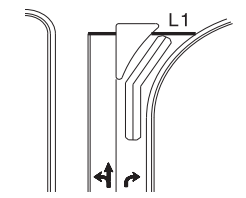
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

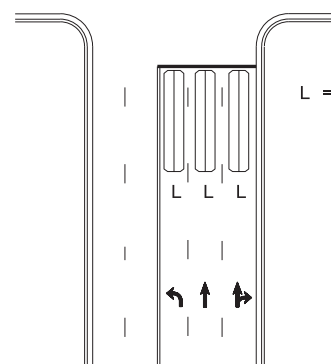


Wide Radius Turn



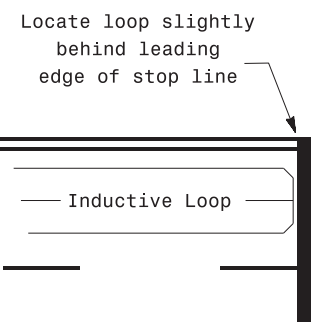
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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

Prepared in the Offices of:

Typical Signal Loop Locations	
PLAN DATE: September 2020	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
SCALE: N/A	REVISIONS: INIT. DATE
DATE: 9/8/2020	