

ALL WORK ON THESE MAPS TO BE NIGHT TIME ONLY 8 P.M. TO 6 A.M., Monday-Sunday.

Map 1
 Bus 40/US 421/NC 150 East Bound Right and Left Shoulders Mill 2" Depth only. Pave back SHOULDERS ONLY 2" \$9.5C. Replace Milled Rumble Strips. Mill and Pave back same day. Replace Polyurea Markings and snow plowable markers on concrete pavement.

Map 2
 Bus 40/US 421/NC 150 East Bound Fine Mill Travel lanes including deceleration and acceleration lanes approximately 5/8" depth. Pave Back with Ultra-thin Bonded Wearing Course. Right and Left Shoulders Mill 2" Depth only. Pave back SHOULDERS ONLY 2" \$9.5C. Replace Milled Rumble Strips. Mill and Pave back same day.

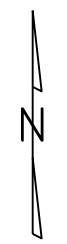
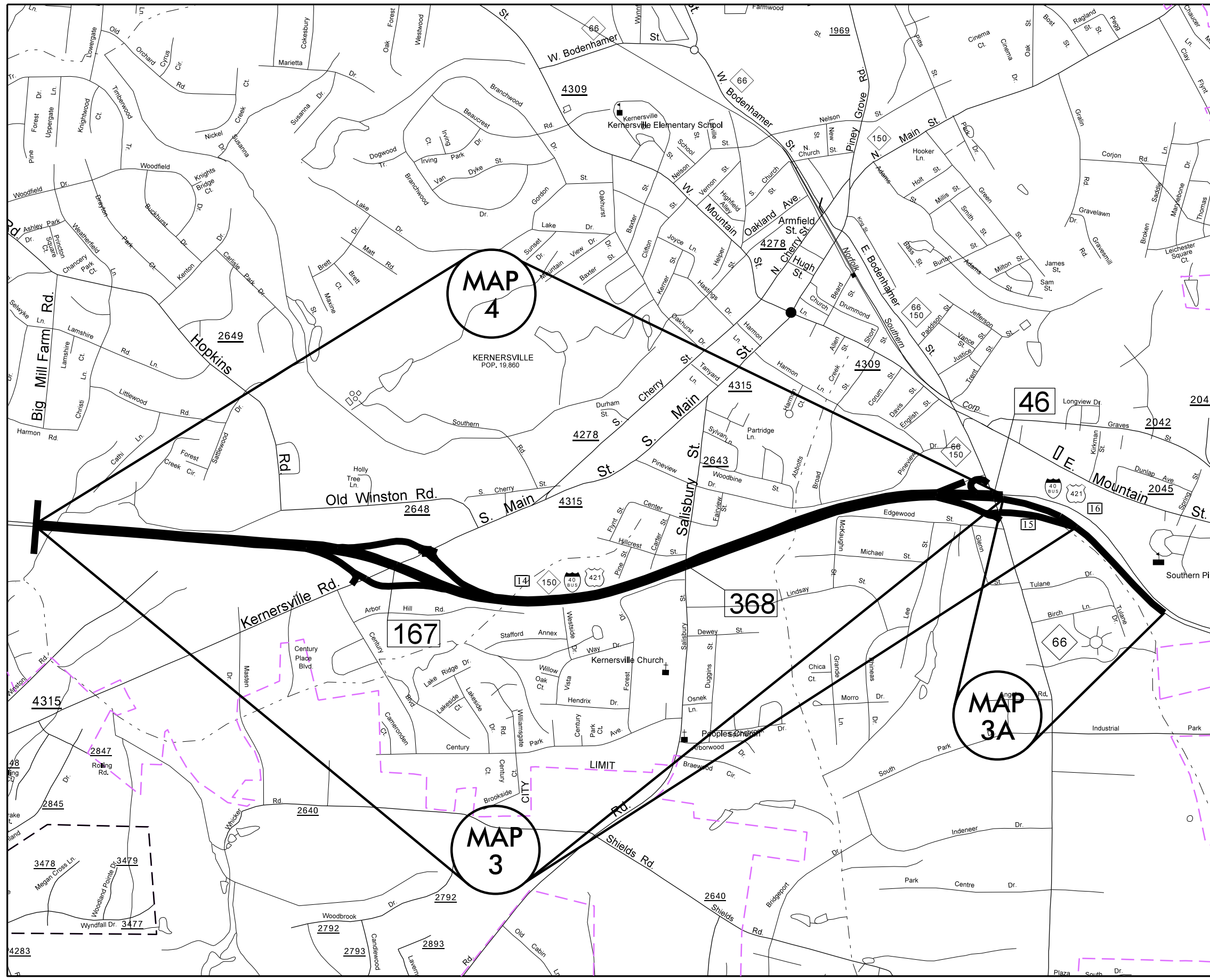
Eastbound RAMP Exit#10 Linville Rd. Mill 2" depth in existing asphalt lanes from end of ultra thin overlay to edge of pavement at Linville Rd/Old Greensboro Rd. Pave back 2" \$9.5C, ASPHALT LANE SURFACE SHOULD BE FLUSH WITH CONCRETE PAVEMENT. Mill and Pave back same day.

Map 5
 Bus 40/US 421/NC 150 West Bound Fine Mill Travel lanes including deceleration and acceleration lanes approximately 5/8" depth. Pave Back with Ultra-thin Bonded Wearing Course. Right and Left Shoulders Mill 2" Depth only. Pave back SHOULDERS ONLY 2" \$9.5C. Replace Milled Rumble Strips. Mill Pave back same day.

Westbound RAMP Exit#10 Linville Rd. Mill 2" depth from end of ultra thin overlay to end of existing asphalt. Pave back 2" \$9.5C, ASPHALT LANE SURFACE SHOULD BE FLUSH WITH CONCRETE PAVEMENT. Mill and Pave back same day.

Map 6
 Bus 40/US 421/NC 150 West Bound Right and Left Shoulders Mill 2" Depth only. Pave back SHOULDERS ONLY 2" \$9.5C. Replace Milled Rumble Strips. Mill and Pave back same day. Replace Polyurea Markings and snow plowable markers on concrete pavement.

FORSYTH COUNTY
 NORTH CAROLINA



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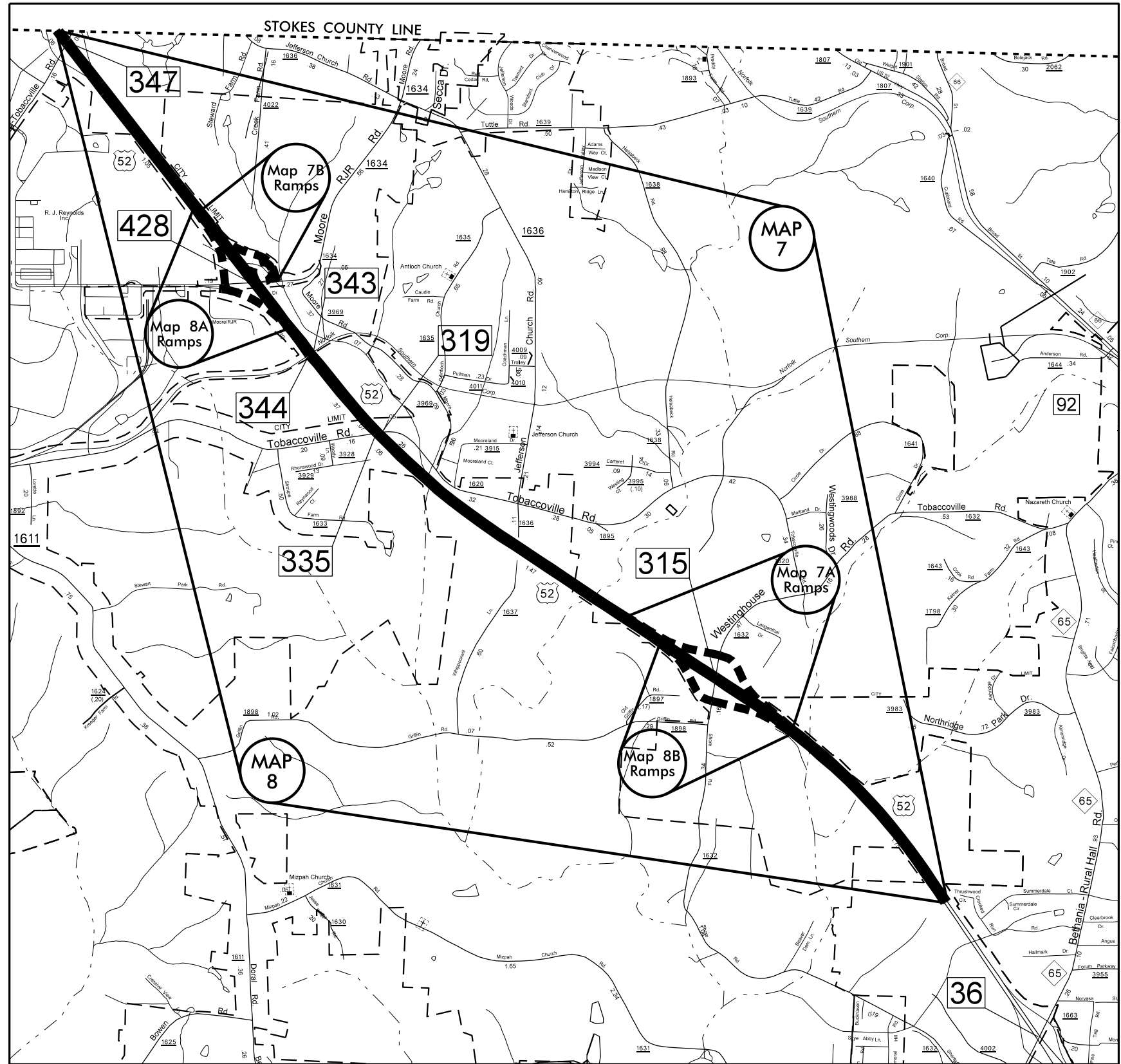
Map 3
 Bus 40/US 421/NC 150 East Bound
 Fine Mill Travel lanes including deceleration and acceleration lanes approximately 5/8" depth.
 Pave Back with Ultra-thin Bonded Wearing Course.
 Right and Left Shoulders Mill 2" Depth only.
 Pave back SHOULDERS ONLY 2" \$9.5C.
 Replace Milled Rumble Strips.
 Mill and Pave back same day.

Eastbound On and Off RAMPs Exit#14,
 Main St. SR4315
 Eastbound On and Off RAMPs Exit#15,
 NC 66
 Begin/End at Grass Gores
 Mill 2" depth.
 Pave back 2" \$9.5C.
 Mill Ramps and Pave back same day.

Map 3A
 Bus 40/US 421/NC 150 East Bound
 From pavement jt. near bridge to 0.52 miles east
 Begin acceleration lane at Grass Gore
 Mill 1 1/2" depth from edge of pavement to edge of pavement.
 Pave back 2" \$9.5C.

Map 4
 Bus 40/US 421/NC 150 West Bound
 Fine Mill Travel lanes including deceleration and acceleration lanes approximately 5/8" depth.
 Pave Back with Ultra-thin Bonded Wearing Course.
 Right and Left Shoulders Mill 2" Depth only.
 Pave back SHOULDERS ONLY 2" \$9.5C.
 Replace Milled Rumble Strips.
 Mill and Pave back same day.

Westbound On and Off RAMPs Exit#14,
 Main St. SR4315
 Westbound On and Off RAMPs Exit#15,
 NC 66
 Begin/End at Grass Gores
 Mill 2" depth.
 Pave back 2" \$9.5C.
 Mill Ramps and Pave back same day.



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North Bound

MAP 7
 US 52 North Bound
 Fine Mill and Replace with Ultra-thin Bonded Wearing Course
 Replace Milled Rumble Strips each side.

MAP 7 US 52 North Bound
 Shoulder Rebuild-Right and Left side existing widths
 Mill 6" depth rebuild with 4 1/2" B25.0C,
 1 1/2" S9.5C

North Bound Ramps
 Westinghouse Exit#120
 Map 7A-Off Ramp, On Ramp
 Shoulder Rebuild-Right and Left side existing widths
 Mill 6" depth rebuild with 4 1/2" B25.0C,
 1 1/2" S9.5C
 Replace Polyurea Markings on concrete pavement.
 Replace Thermo Arrows.

North Bound Ramps
 Moore RJR Dr. Exit#122
 Map 7B-Off Ramp, On Ramp
 Mill 1 1/2" Depth tie into existing edge of pavement to Moore RJR Dr. SR 1634
 Pave back with 1 1/2" S9.5C

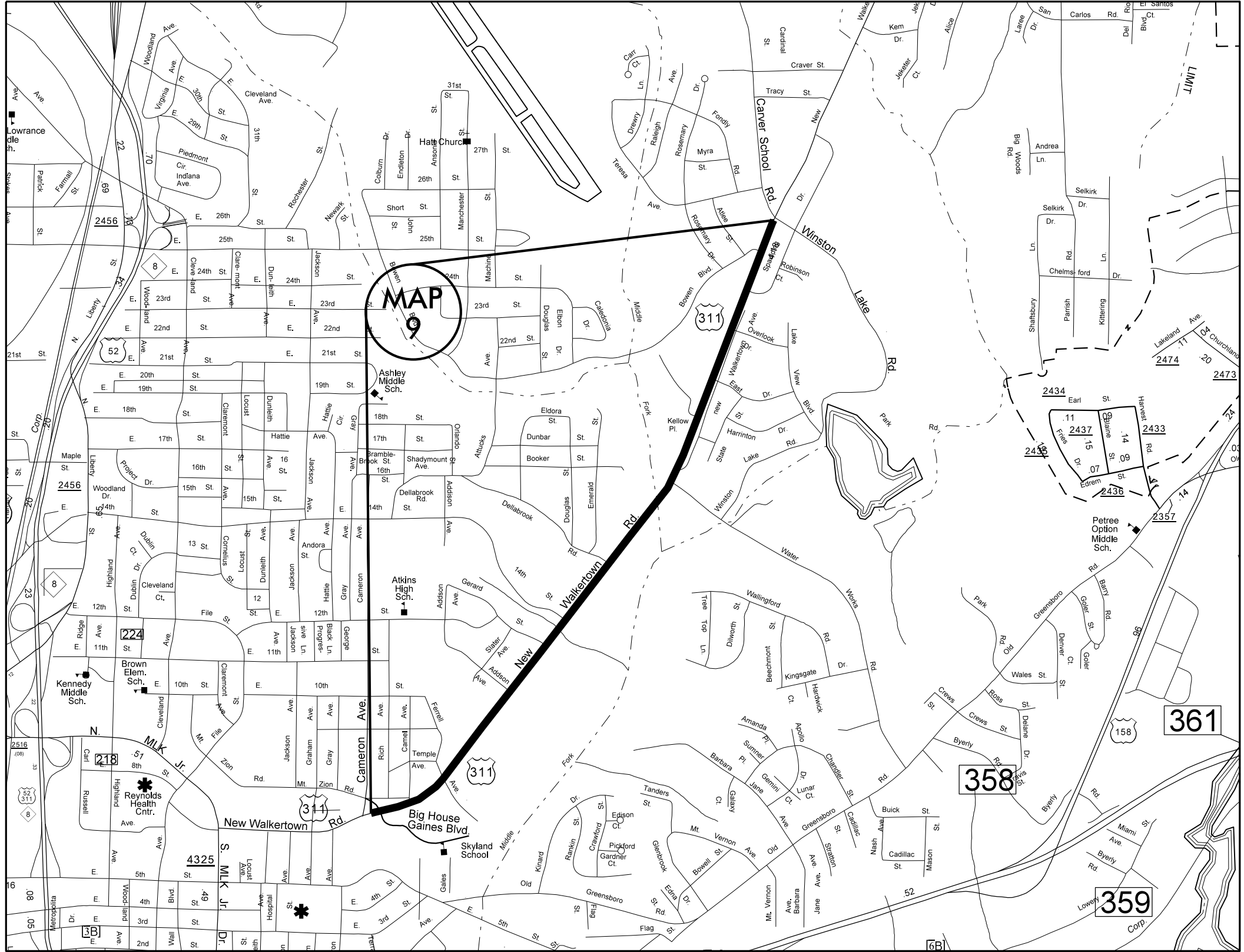
South Bound

MAP 8
 US 52 South Bound
 Fine Mill and Replace with Ultra-thin Bonded Wearing Course
 Replace Milled Rumble Strips each side.

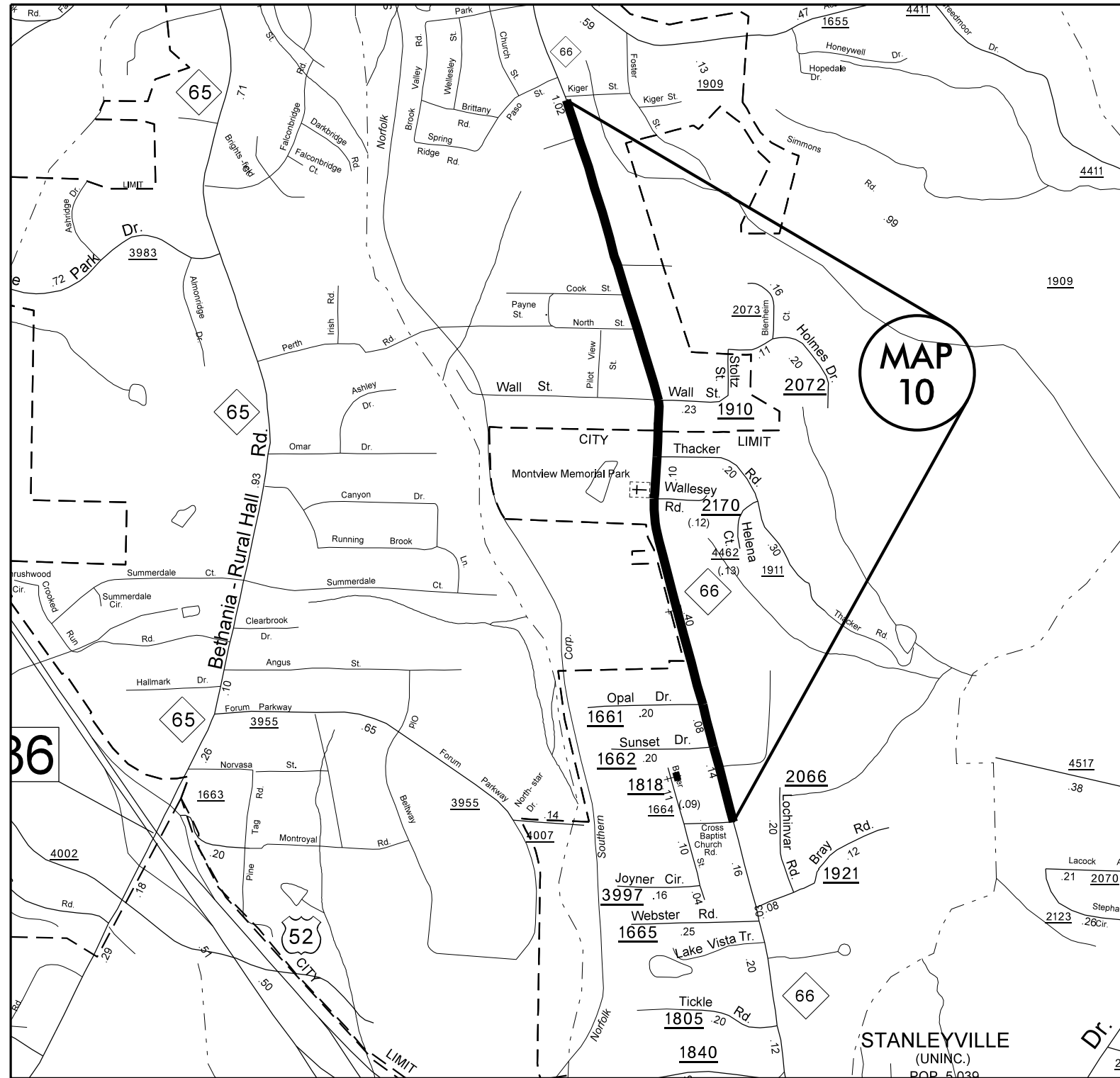
MAP 8 US 52 South Bound
 Shoulder Rebuild-Right and Left side existing widths
 Mill 6" depth rebuild with 4 1/2" B25.0C,
 1 1/2" S9.5C

South Bound Ramps
 Moore RJR Dr. Exit#122
 Map 8A-Off Ramp, On Ramp
 Mill 1 1/2" Depth tie into existing edge of pavement to Moore RJR Dr. SR 1634
 Pave back with 1 1/2" S9.5C

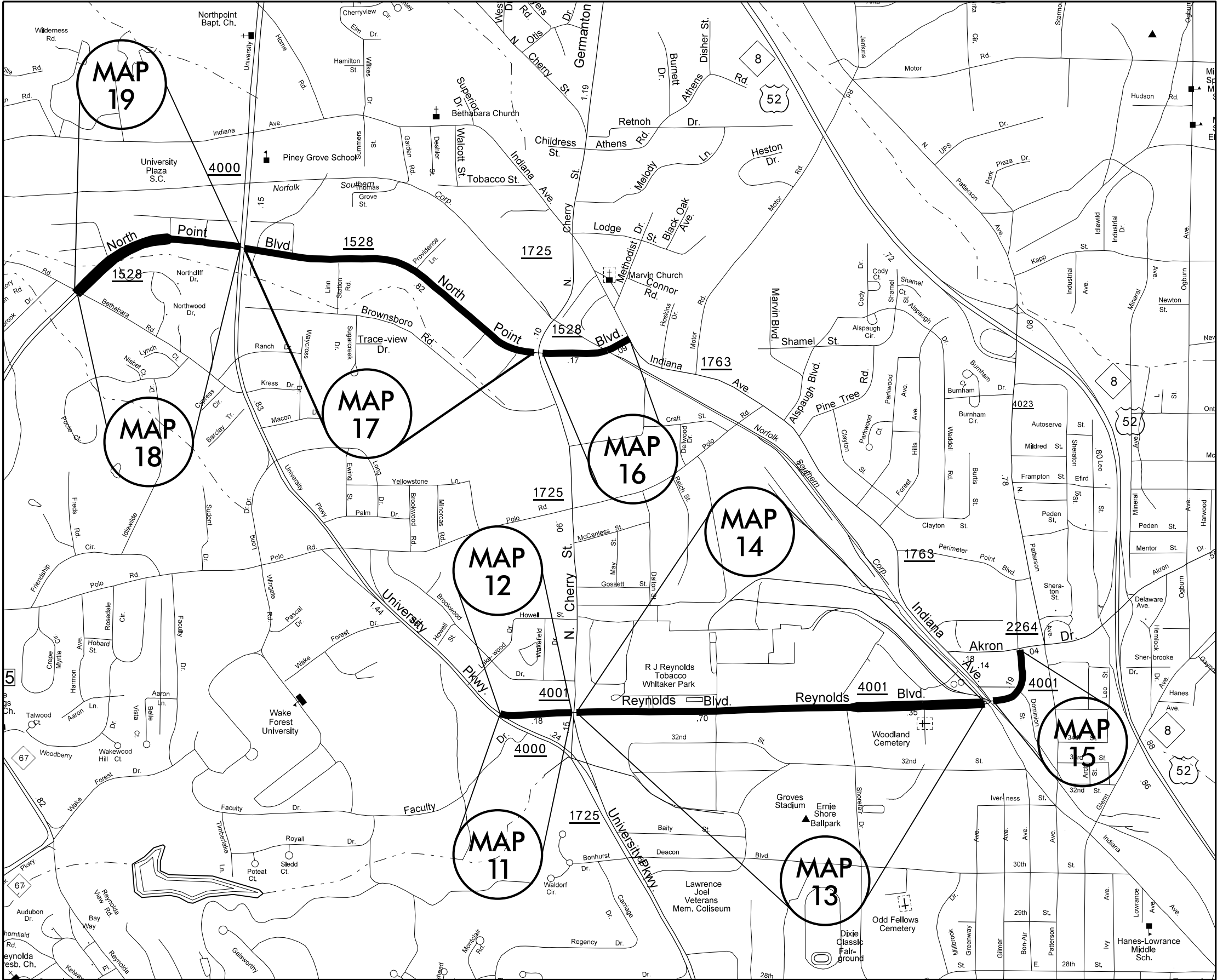
South Bound Ramps
 Westinghouse Exit#120
 Map 8B-Off Ramp, On Ramp
 Shoulder Rebuild-Right and Left side existing widths
 Mill 6" depth rebuild with 4 1/2" B25.0C,
 1 1/2" S9.5C
 Replace Polyurea Markings on concrete pavement.
 Replace Thermo Arrows.



Map 9
 US 311 / New Walkertown Rd.
 Mill entire width 1 1/2" Depth to expose gutter,
 then Mill 0-1 1/2" at face of gutter a 12 foot
 width each side. Pave 1 1/2" S9.5C flush to top
 of gutter.



Map 10
 NC 66 BROAD ST.
 Mill entire width 1½" Depth
 IN CURB SECTION ONLY.
 Pave entire Map with 1½" S9.5C
 Butt Mill at Tie in at south side of Map.



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Map 11
Reynolds Blvd. SR 4001
Mill 3" Depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH CHERRY ST.

Map 12
Reynolds Blvd. SR 4001
Mill 3" Depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH CHERRY ST.

Map 13
Reynolds Blvd. SR 4001
Mill 3" Depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH CHERRY ST.

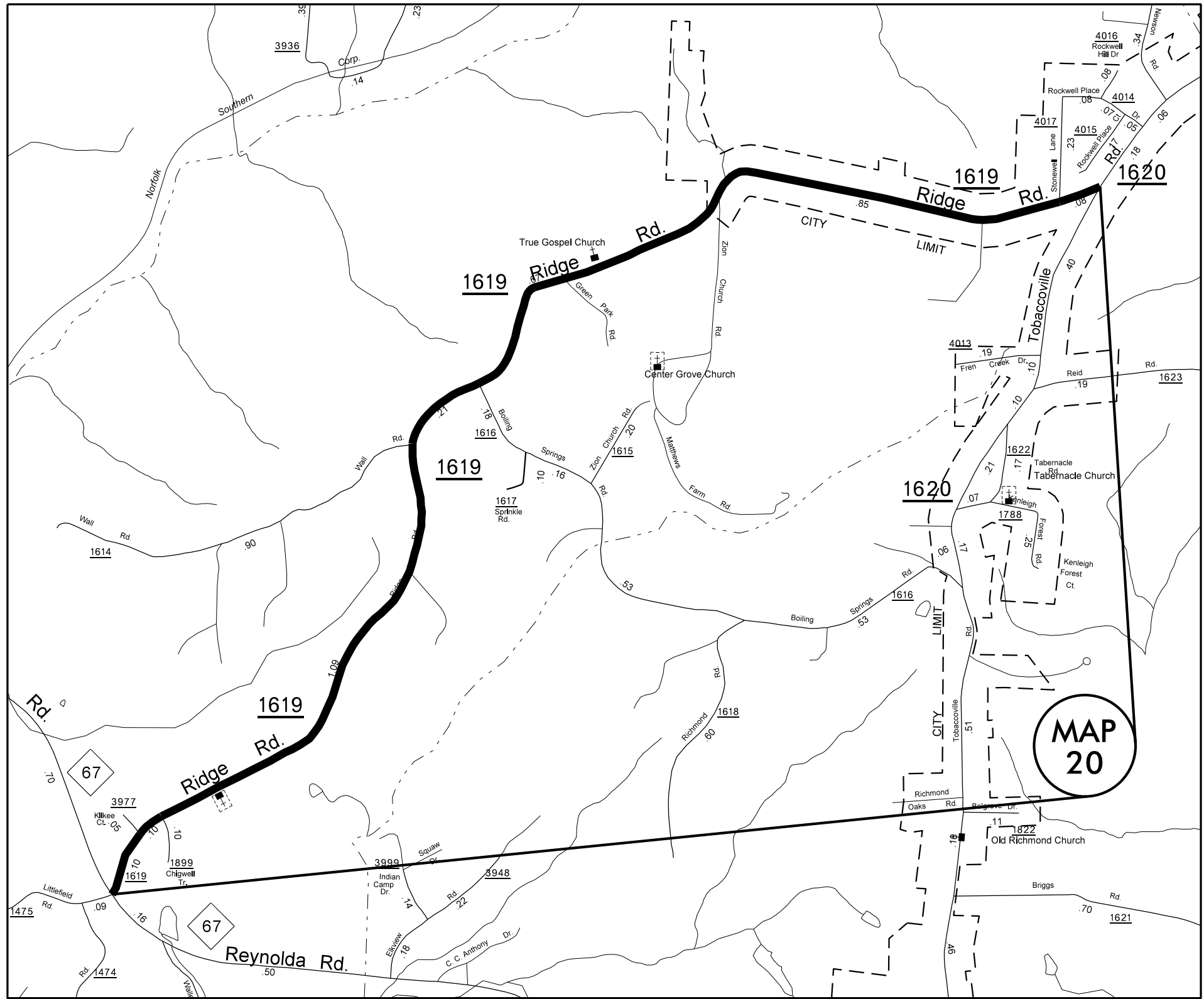
Map 14
Reynolds Blvd. SR 4001
Mill 3" Depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH CHERRY ST.

Map 15
Reynolds Blvd. SR 4001
Mill 3" Depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH INDIANA AVE.

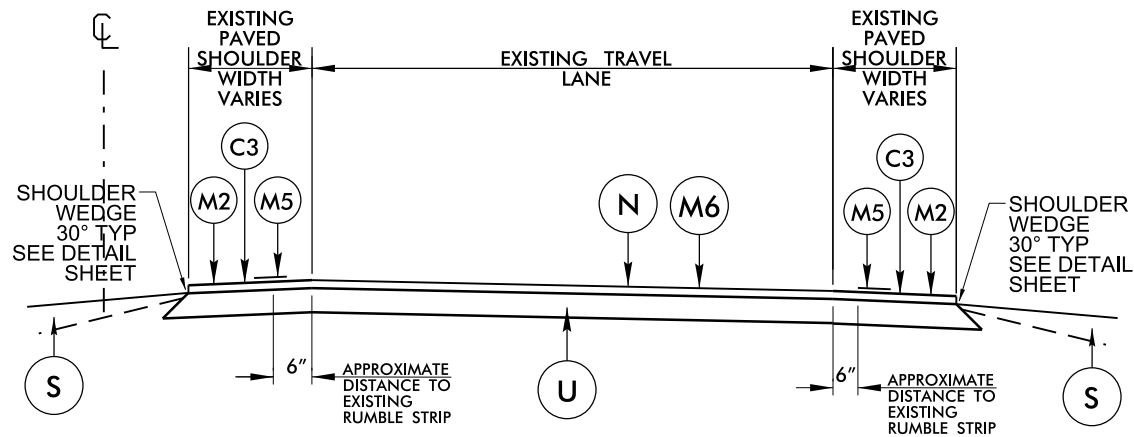
Map 16
North Point Blvd. SR 1528
Mill 1½" depth full width
Pave back with 1½" S9.5C
DO NOT PAVE THROUGH CHERRY ST.

Map 17
North Point Blvd. SR 1528
Mill entire width both directions
1½" Depth to expose gutter,
then Mill 0-1½" at face of gutter
a 12 foot width each side.
Pave back 1½" S9.5C flush to
top of gutter.
DO NOT PAVE THROUGH CHERRY ST.
DO NOT PAVE THROUGH UNIVERSITY PKWY.

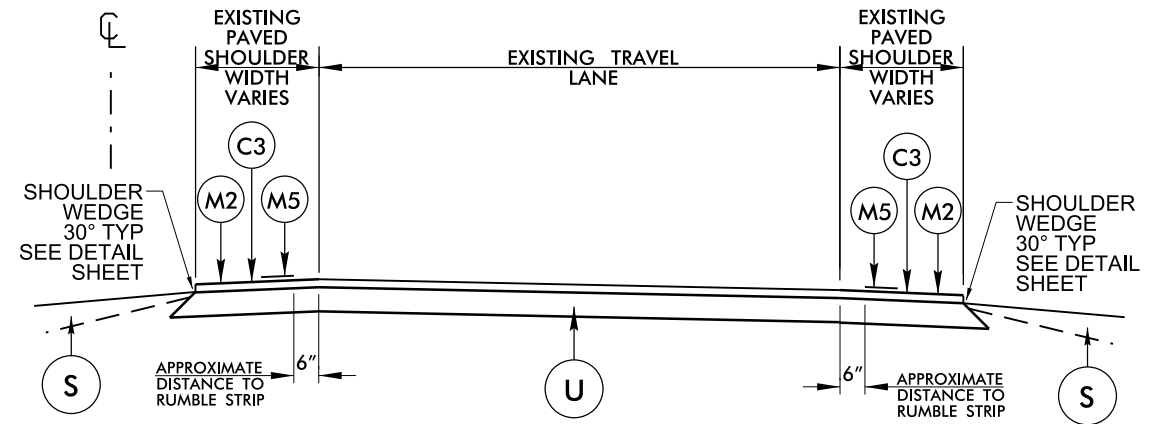
Map 18
Map 19
North Point Blvd. SR 1528
Mill entire width both directions
1½" Depth to expose gutter,
then Mill 0-1½" at face of gutter
a 12 foot width each side.
Pave back 1½" S9.5C flush to
top of gutter.
DO NOT PAVE THROUGH UNIVERSITY PKWY.



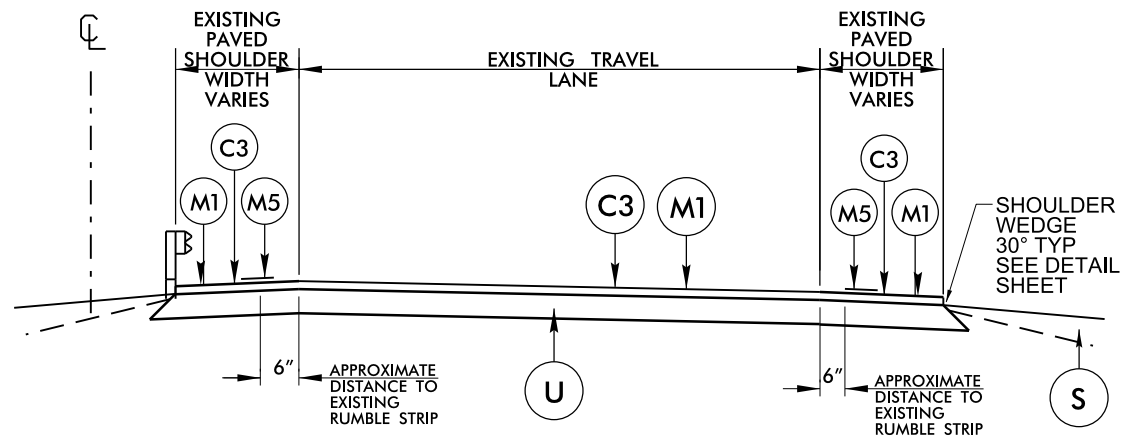
Map 20
 Ridge Rd. SR 1619
 Butt Mill Map ends.
 Pave 1½" S9.5B



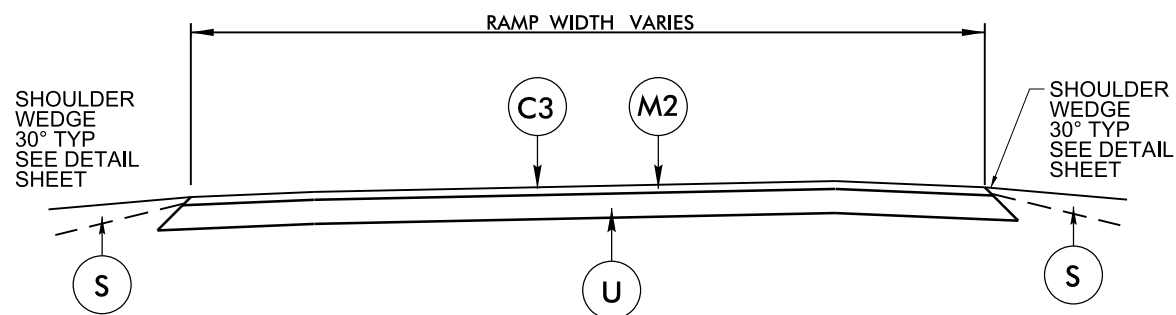
TYPICAL SECTION NO.1
 MAP 2 Bus 40/US 421/NC 150
 MAP 3 Bus 40/US 421/NC 150
 MAP 4 Bus 40/US 421/NC 150
 MAP 5 Bus 40/US 421/NC 150



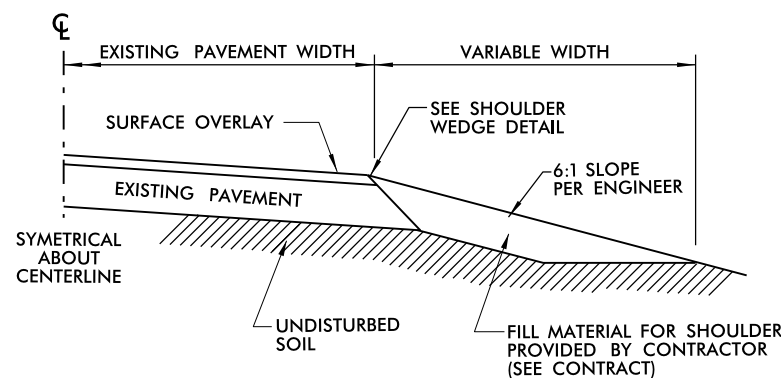
TYPICAL SECTION NO.2
 MAP 1 Bus 40/US 421/NC 150
 MAP 6 Bus 40/US 421/NC 150
 *SHOULDER WORK ONLY THESE MAPS
 Replace Polyurea Markings on concrete pavement



TYPICAL SECTION NO.1A
 MAP 3A Bus 40/US 421/NC 150



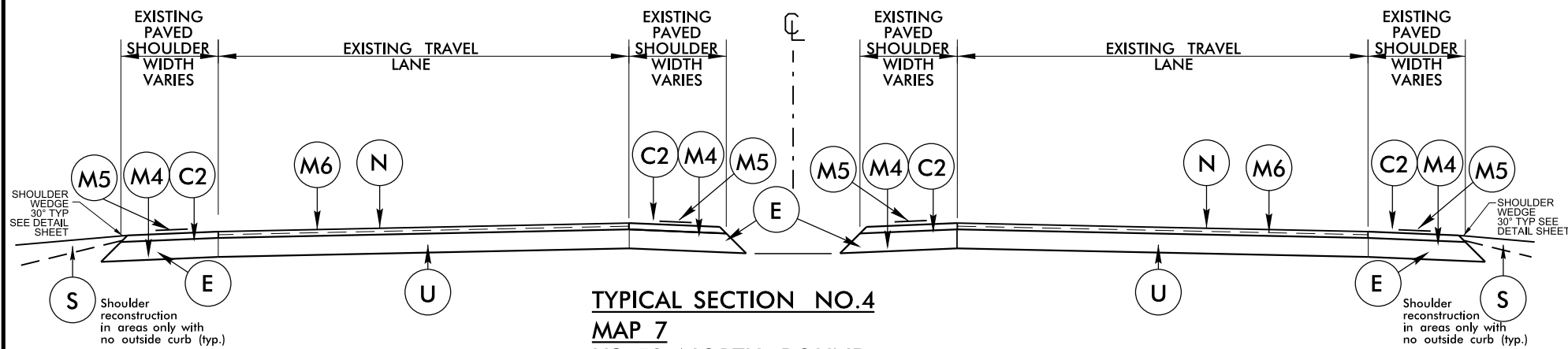
TYPICAL SECTION NO. 3
 MAP 2 RAMPS ONLY
 MAP 3 RAMPS ONLY
 MAP 4 RAMPS ONLY
 MAP 5 RAMPS ONLY



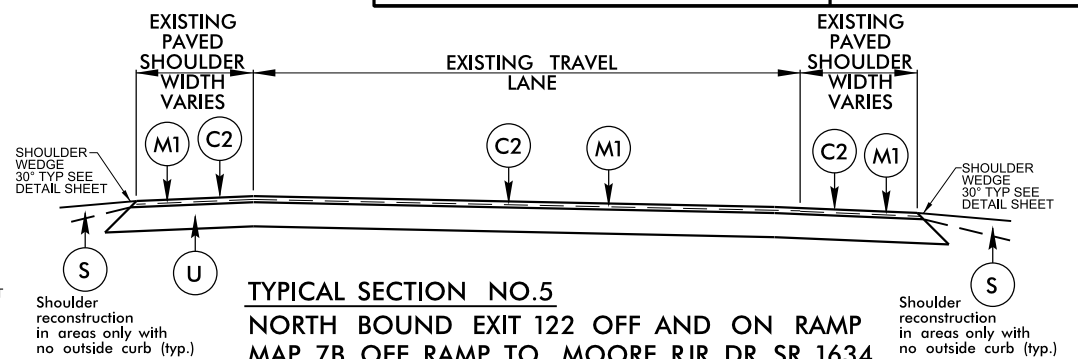
SHOULDER RECONSTRUCTION

* MAP 1 SHOULDERS ONLY
 MAP 6 SHOULDERS ONLY
 RAMP SHOULDERS ONLY

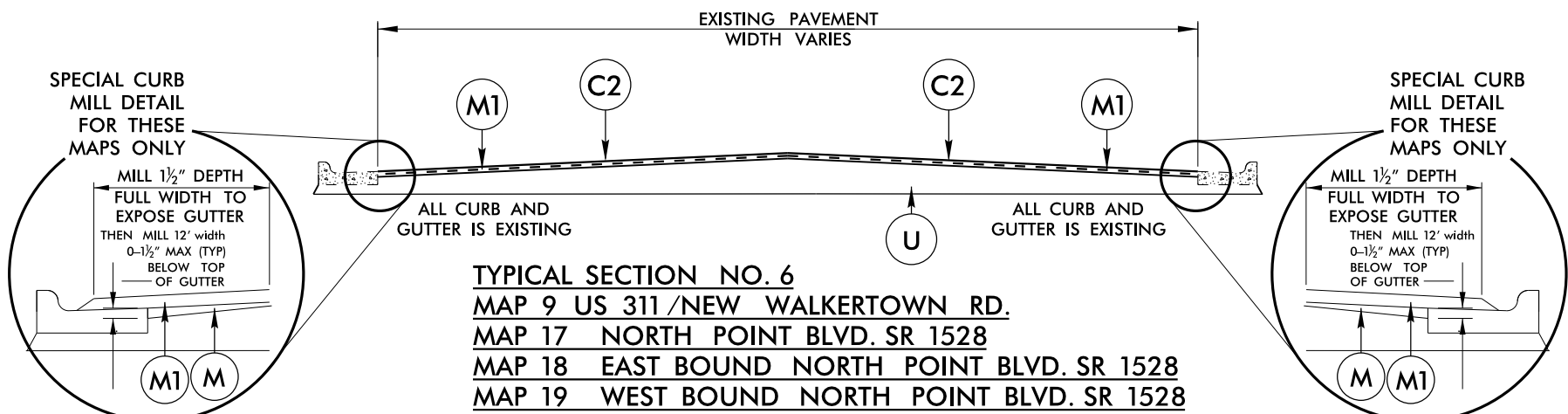
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 165 LBS PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 224 LBS PER SQ. YD.
E	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, TO BE APPLIED AT AN AVERAGE RATE OF 513 LBS PER SQ. YD.
M	MILL ASPHALT PAVEMENT, 0" TO 1½"
M1	MILL ASPHALT PAVEMENT, 1½" DEPTH
M2	MILL ASPHALT PAVEMENT, 2" DEPTH
M3	MILL ASPHALT PAVEMENT, 3" DEPTH
M4	MILL ASPHALT PAVEMENT, 6" DEPTH
M5	MILLED RUMBLE STRIP
M6	FINE MILLING
N	PROP. APPROX. 5/8" ULTRATHIN HOT MIX BONDED WEARING SURFACE COURSE, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT



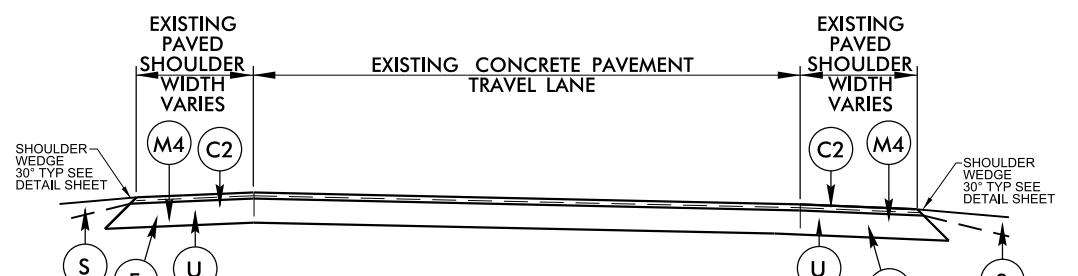
TYPICAL SECTION NO.4
MAP 7
US 52 NORTH BOUND
MAP 8
US 52 SOUTH BOUND



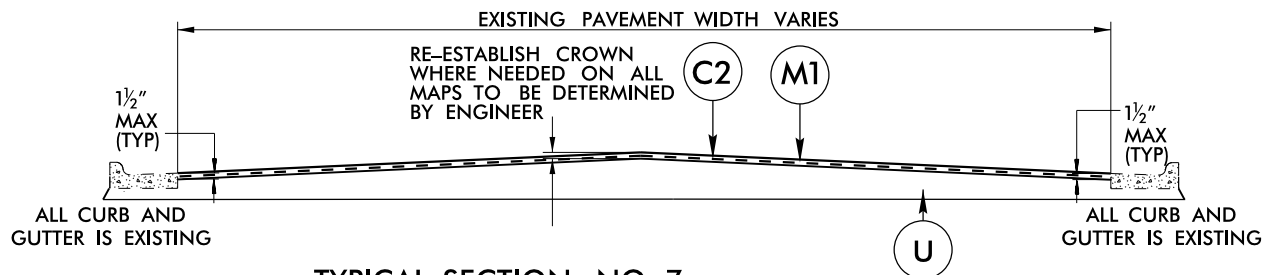
TYPICAL SECTION NO.5
NORTH BOUND EXIT 122 OFF AND ON RAMP
MAP 7B OFF RAMP TO MOORE RJR DR. SR 1634
MAP 7B ON RAMP FROM MOORE RJR DR. SR 1634
SOUTH BOUND EXIT 122 OFF AND ON RAMP
MAP 8A OFF RAMP TO MOORE RJR DR. SR 1634
MAP 8A ON RAMP FROM MOORE RJR DR. SR 1634



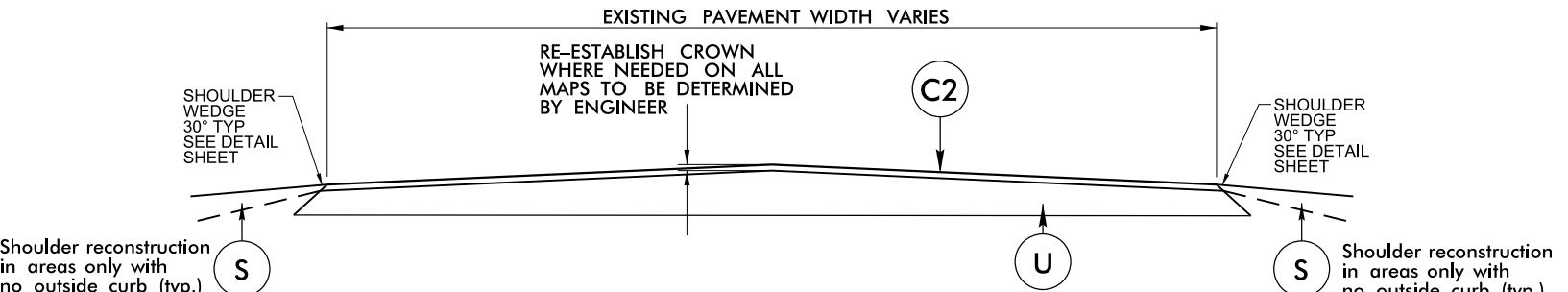
TYPICAL SECTION NO. 6
MAP 9 US 311 /NEW WALKERTOWN RD.
MAP 17 NORTH POINT BLVD. SR 1528
MAP 18 EAST BOUND NORTH POINT BLVD. SR 1528
MAP 19 WEST BOUND NORTH POINT BLVD. SR 1528



TYPICAL SECTION NO.5A
NORTH BOUND EXIT 120 OFF AND ON RAMP
MAP 7A OFF RAMP TO WESTINGHOUSE RD. SR 1632
MAP 7A ON RAMP FROM WESTINGHOUSE RD. SR 1632
SOUTH BOUND EXIT 120 OFF AND ON RAMP
MAP 8B OFF RAMP TO WESTINGHOUSE RD. SR 1632
MAP 8B ON RAMP FROM WESTINGHOUSE RD. SR 1632

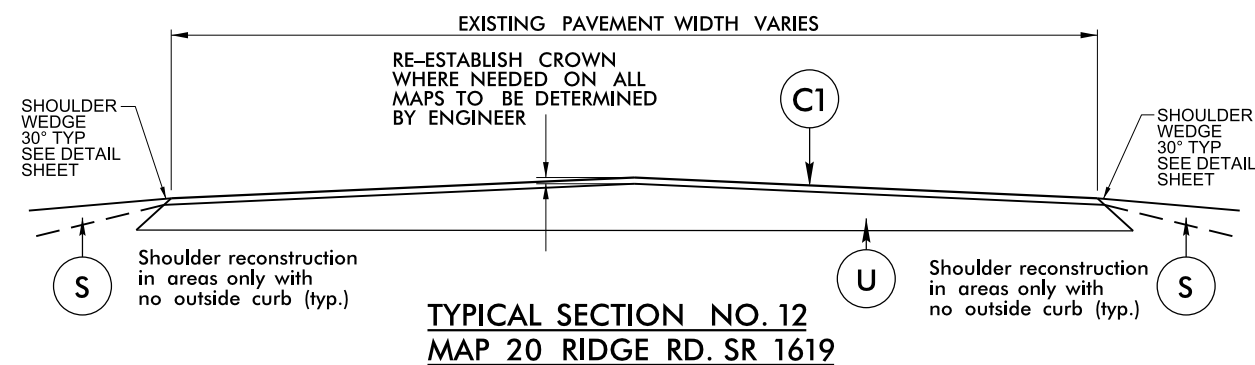
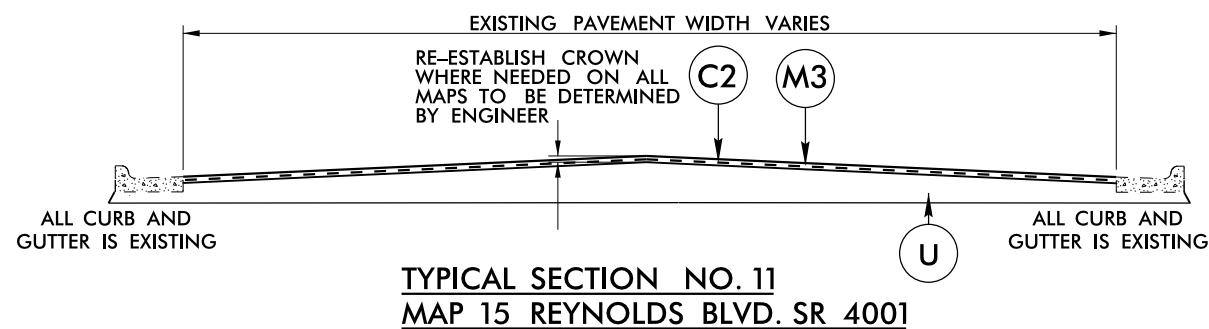
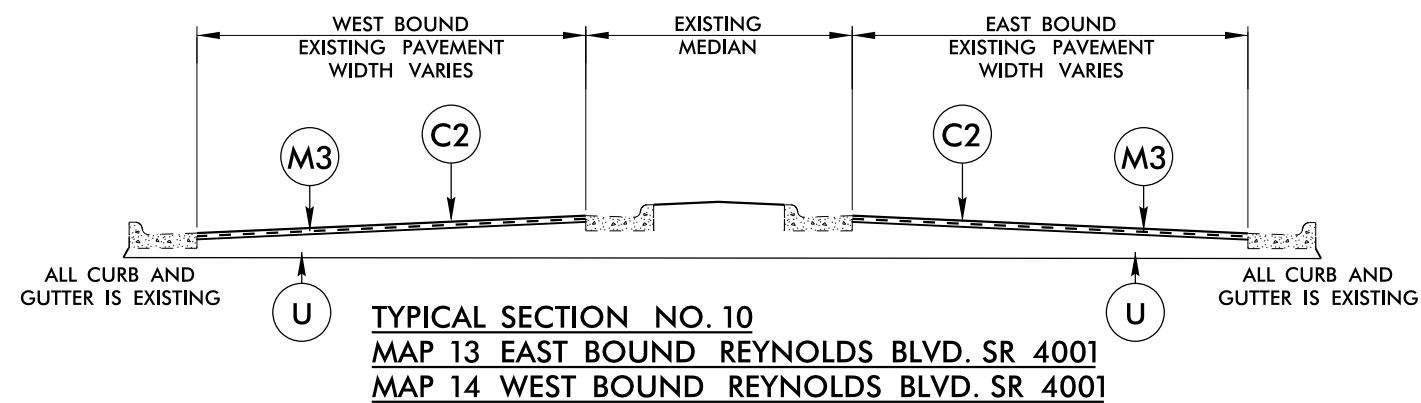
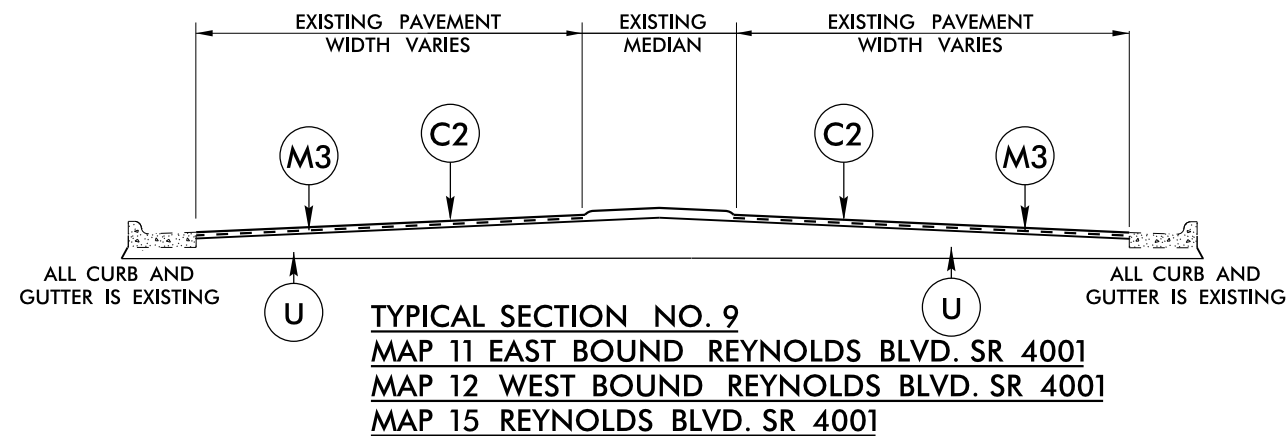


TYPICAL SECTION NO. 7
MAP 10 NC 66 /UNIVERSITY PKWY./BROAD ST.
MAP 16 NORTH POINT BLVD. SR 1528

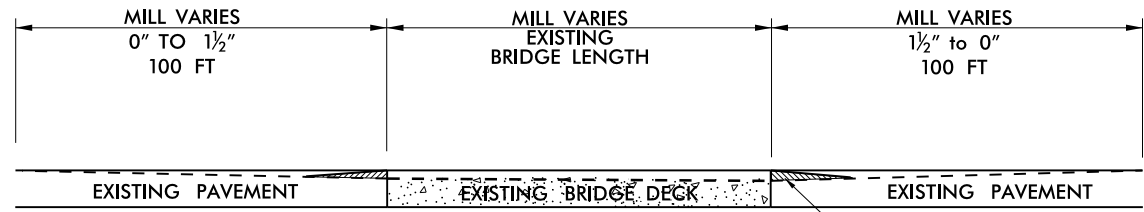


TYPICAL SECTION NO. 8
MAP 10 NC 66 /UNIVERSITY PKWY./BROAD ST.

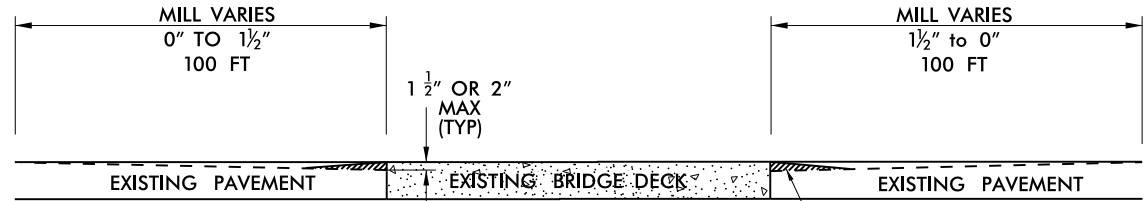
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, TO BE APPLIED AT AN AVERAGE RATE OF 224 LBS PER SQ. YD.
E	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, TO BE APPLIED AT AN AVERAGE RATE OF 513 LBS PER SQ. YD.
M	MILL ASPHALT PAVEMENT, 0" TO 1½"
M1	MILL ASPHALT PAVEMENT, 1½" DEPTH
M2	MILL ASPHALT PAVEMENT, 2" DEPTH
M3	MILL ASPHALT PAVEMENT, 3" DEPTH
M4	MILL ASPHALT PAVEMENT, 6" DEPTH
M5	MILLED RUMBLE STRIP
M6	FINE MILLING
N	PROP. APPROX. 5/8" ULTRATHIN HOT MIX BONDED WEARING SURFACE COURSE, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT



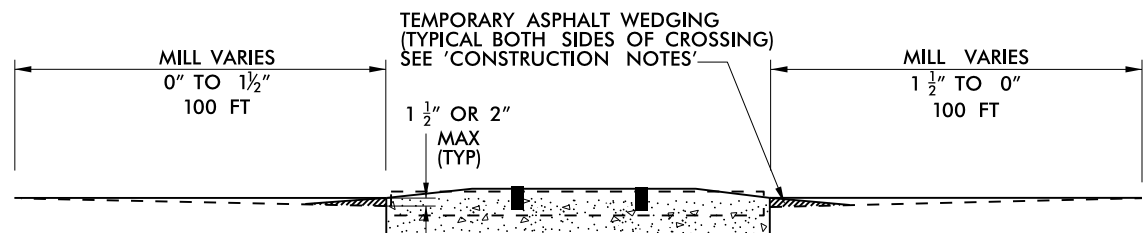
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S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT



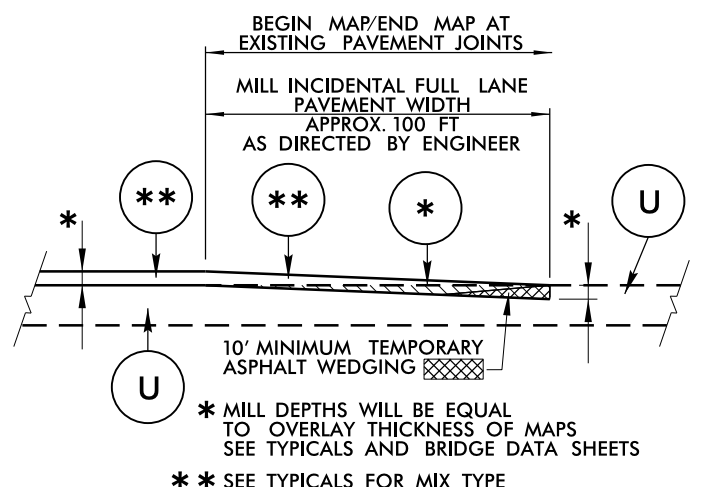
**MILLING
BRIDGE DECK
AND APPROACHES**
(SEE BRIDGE DATA SHEET)



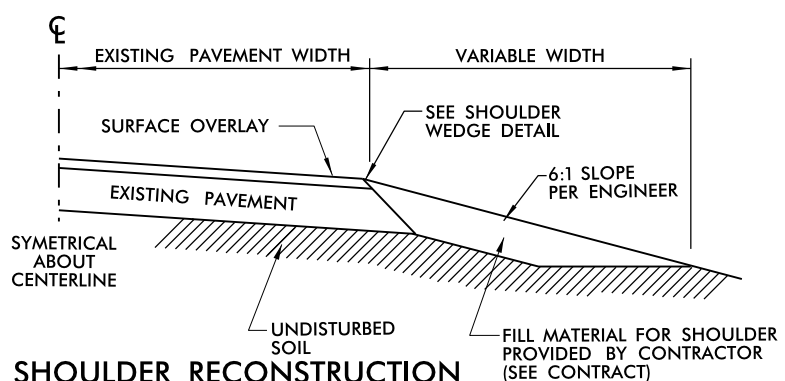
**INCIDENTAL MILLING
BRIDGE APPROACHES**
(SEE BRIDGE DATA SHEET)



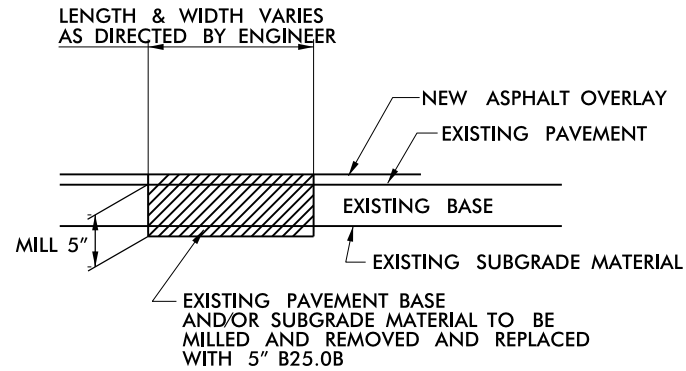
**INCIDENTAL MILLING
RAILROAD CROSSING
APPROACHES**



INCIDENTAL MILLING AT TIE-IN DETAIL



SHOULDER RECONSTRUCTION

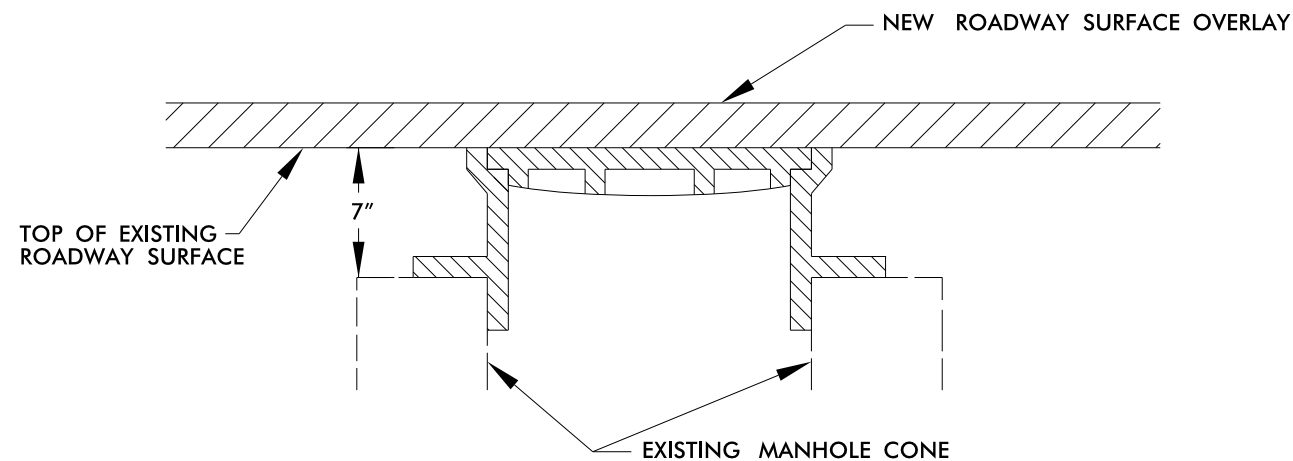


**PATCHING EXISTING PAVEMENT
PRIOR TO RESURFACING**

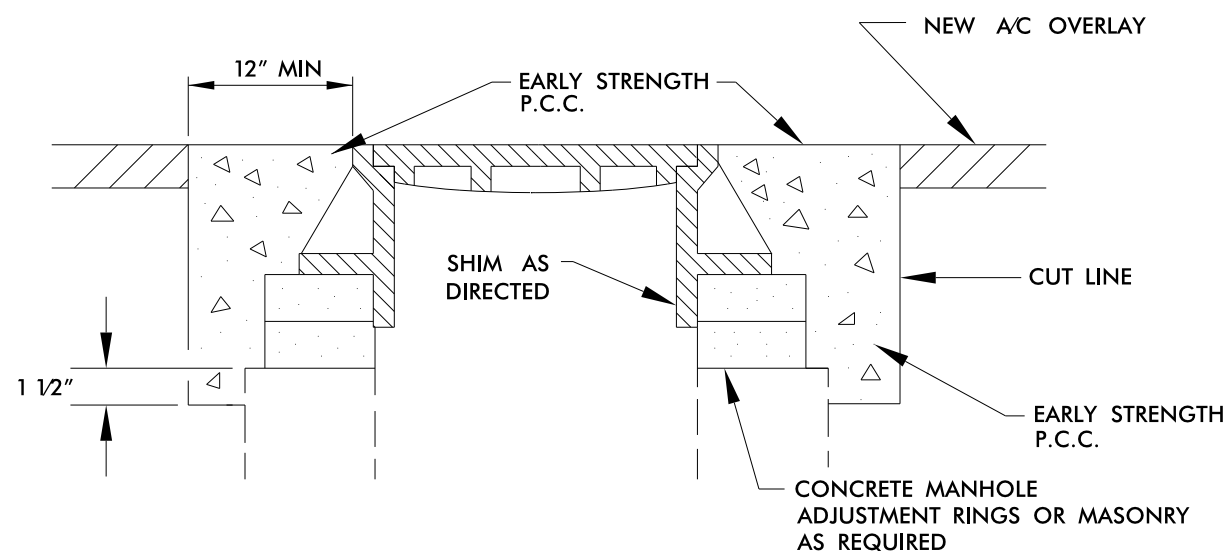
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M1	MILL ASPHALT PAVEMENT, 1 1/2" DEPTH
M2	MILL ASPHALT PAVEMENT, 2" DEPTH
M3	MILL ASPHALT PAVEMENT, 3" DEPTH
M4	MILL ASPHALT PAVEMENT, 6" DEPTH
M5	MILLED RUMBLE STRIP
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N	PROP. APPROX. 5/8" ULTRATHIN HOT MIX BONDED WEARING SURFACE COURSE, TYPE B, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
S	SHOULDER RECONSTRUCTION (SEE DETAIL)
U	EXISTING PAVEMENT

CONSTRUCTION NOTES:

1. ALL QUANTITIES ARE "ESTIMATED" AS INDICATED IN THE "SUMMARY OF QUANTITIES".
2. CONSTRUCTION SHALL PROGRESS IN PHASES, IN THE ORDER INDICATED BELOW:
 - PHASE 1 - MILLING AND PATCHING (WHEN REQUIRED)
 - PHASE 2 - SURFACE OVERLAY
 - PHASE 3 - SHOULDER DROP-OFF REPAIR (AS NEEDED AND DIRECTED BY ENGINEER)
 - PHASE 4 - UTILITY ADJUSTMENTS (MANHOLE RING/COVER, VALVE/METER BOX RING/COVER, CATCH BASIN GRATE/COVER, DROP INLET GRATE/COVER, ETC.) WHEN REQUIRED.
3. BRIDGES THAT HAVE FLOOR DRAINS, SHALL HAVE ALL FLOOR DRAINS LEFT OPEN. EXTRA CARE SHALL BE EXERCISED IN MILLING (IF REQUIRED) AND IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE.
4. TEMPORARY ASPHALT WEDGING SHALL BE PLACED ON THE SAME DAY THAT BRIDGE AND/OR RAILROAD APPROACHES ARE MILLED (AND IF APPROACHES ARE MILLED PRIOR TO BRIDGE DECK).
5. FOR TWO-LANE ROADWAYS - IT SHALL BE UNDERSTOOD THAT TYPICALLY ON A ROADWAY MEASURING 20 FEET OR LESS IN WIDTH, THE CENTER OF THE WHITE EDGELINE SHALL BE LOCATED SIX INCHES FROM THE EDGE OF PAVEMENT ON EITHER SIDE OF THE ROADWAY; ON A ROADWAY MEASURING 22 FEET IN WIDTH, TRAVEL LANES SHALL MEASURE 10 FEET FROM THE EDGE OF PAVEMENT ON EITHER SIDE; ON A ROADWAY MEASURING 24 FEET IN WIDTH, TRAVEL LANES SHALL MEASURE 11 FEET AND THE WHITE EDGELINE SHALL BE LOCATED ONE FOOT FROM THE EDGE OF PAVEMENT ON EITHER SIDE; ON A ROADWAY MEASURING 26 FEET OR MORE IN WIDTH, TRAVEL LANES SHALL MEASURE 12 FEET AND THE WHITE EDGELINE SHALL BE LOCATED NO LESS THAN ONE FOOT FROM THE EDGE OF PAVEMENT ON EITHER SIDE. THIS SHALL BE STANDARD PRACTICE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. PAPER JOINTS ARE TO BE PLACED BETWEEN DAYS OF PAVING OPERATIONS AS SPECIFIED IN THE STANDARD SPECIFICATIONS SECTION 610-11.
7. ALL MILLED AREAS WILL BE PAVED WITHIN 72 HOURS UNLESS APPROVED BY THE ENGINEER.
9. REPLACE ANY PORTION OF STOP BARS AND OTHER PAVEMENT MARKINGS AT ANY INTERSECTION INCLUDING Y-LINES NOT ACTUALLY BEING PAVED OVER, THAT ARE OBLITERATED BY THE PAVING OPERATION EITHER BY HAULING WHEEL TRACKS OR TACK TRUCK BY THE END OF EACH RESURFACING OPERATION



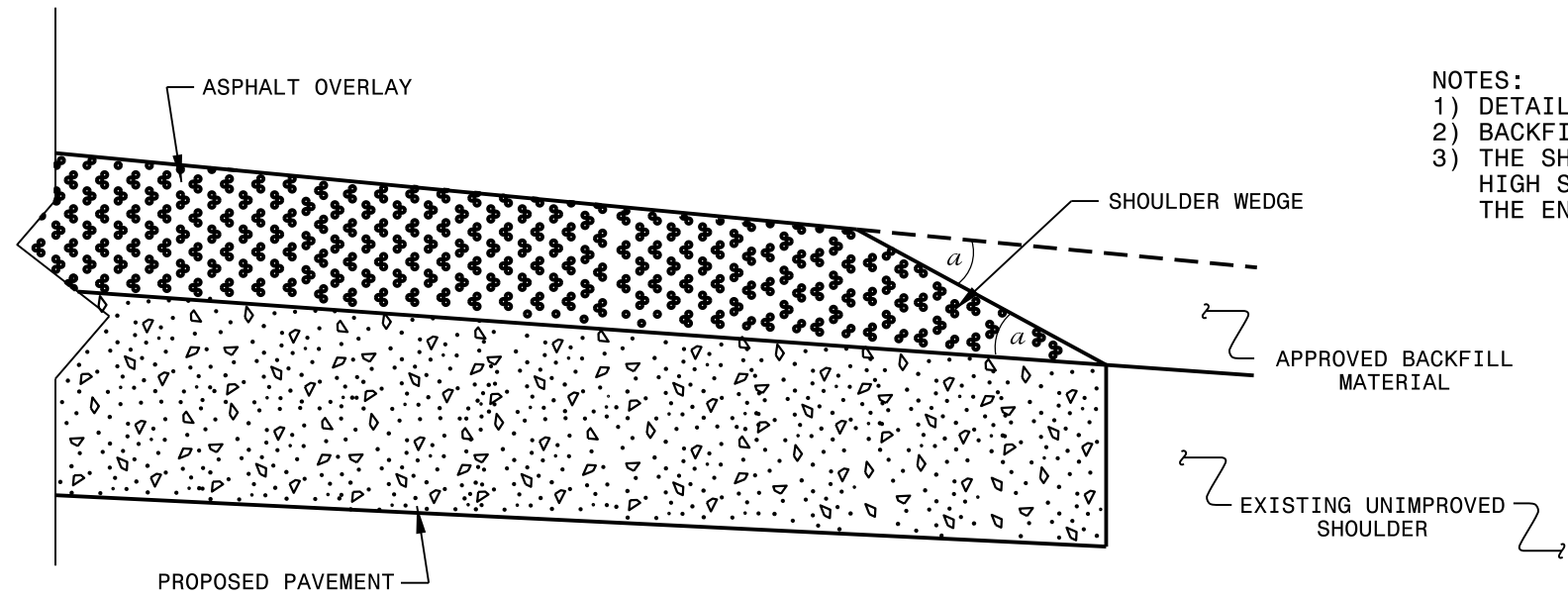
STEP 1



STEPS 2,3, & 4

- STEP 1 COVER EXISTING MANHOLE WITH APPROVED MATERIAL AND CONSTRUCT OVERLAY ACROSS TOP OF MANHOLE
- STEP 2 SAW CUT EXCAVATION AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.
- STEP 3 RAISE MANHOLE FRAME RINGS TO FINISH PAVEMENT PROFILE AND CROSS SLOPE.
- STEP 4 BACKFILL WITH EARLY STRENGTH P.C.C. TO DEPTHS AS DIRECTED.

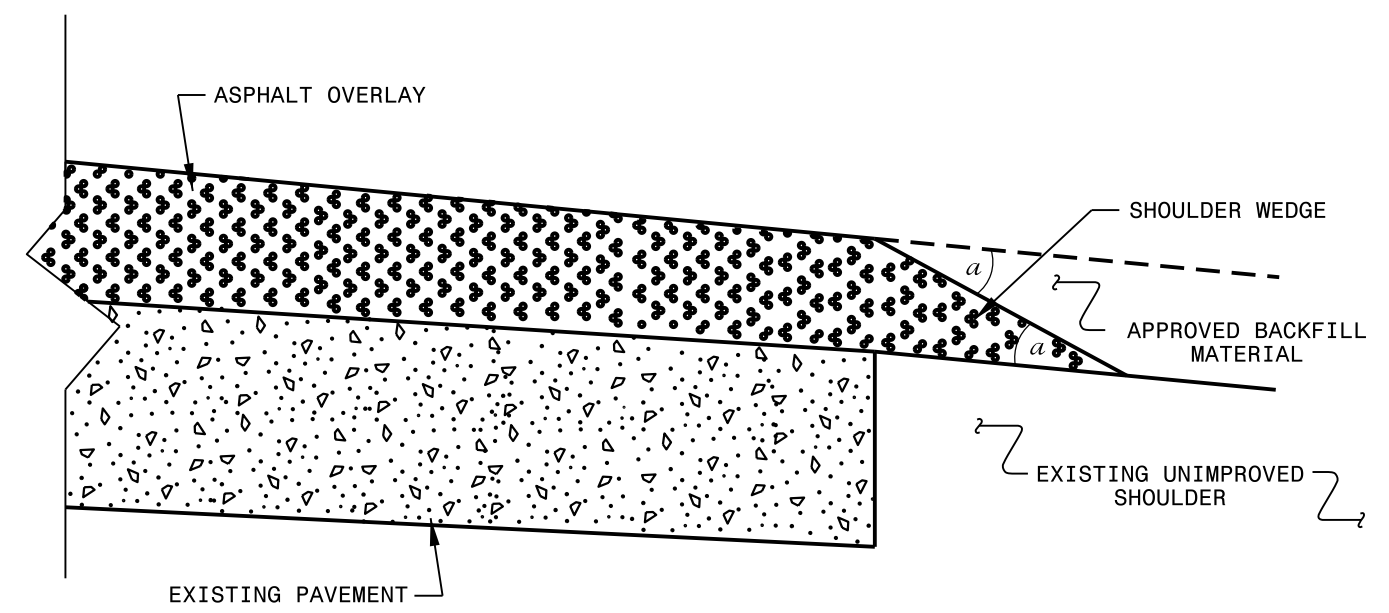
MANHOLE ADJUSTMENT DETAIL



- NOTES:
 1) DETAIL DOES NOT APPLY TO OGAFCC 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.

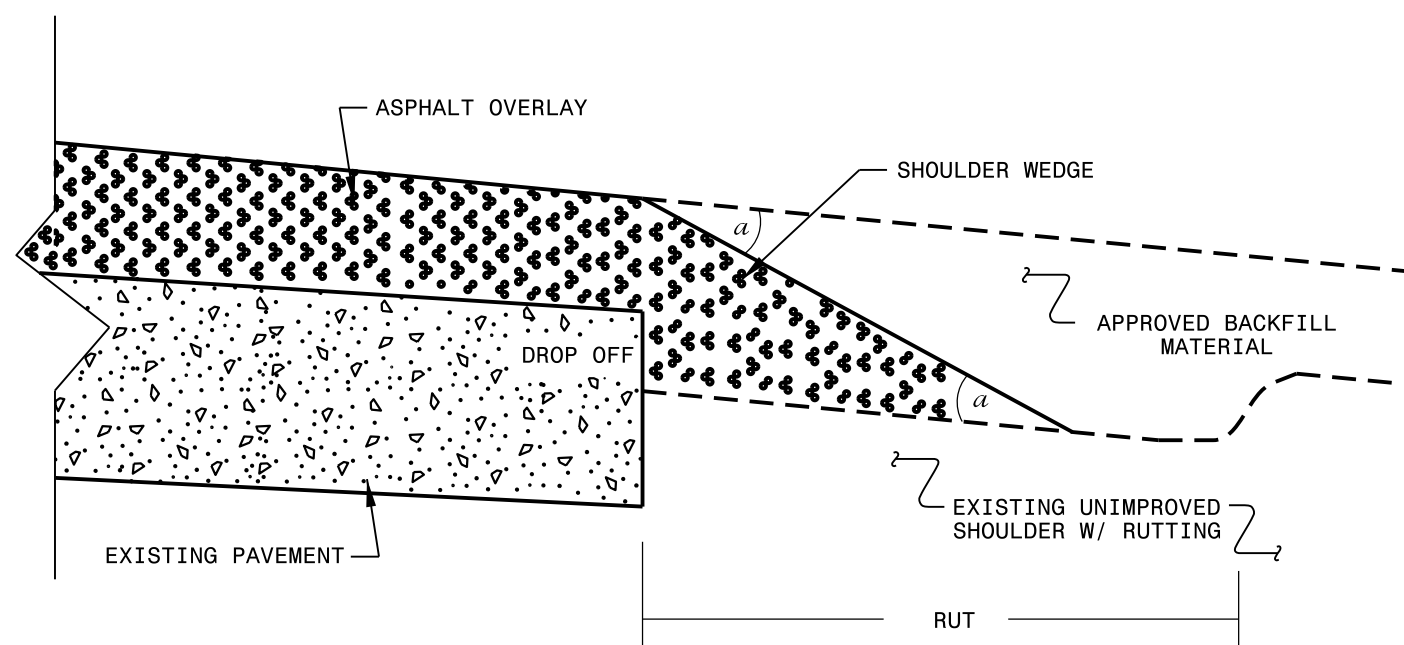
SHOULDER WEDGE DETAIL

(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°

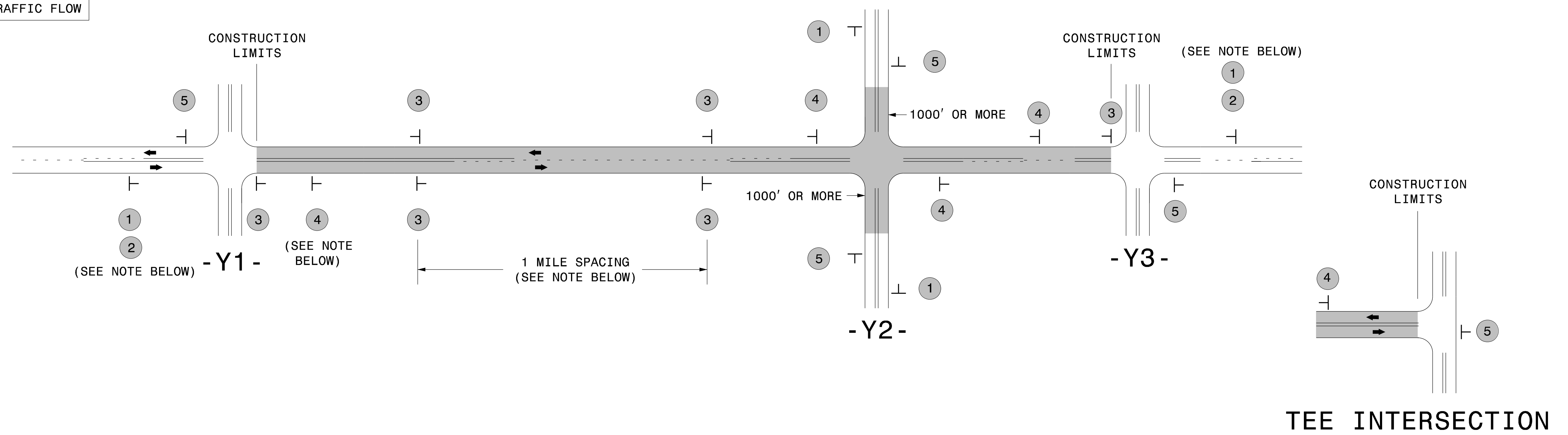
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
SHOULDER WEDGE DETAILS	
ORIGINAL BY: T.SPELL	DATE: 7-19-11
MODIFIED BY:	DATE: 10/16/12
CHECKED BY:	DATE:
FILE SPEC.: s:\usr\details\stand\shoulderwedgedetail.dgn	

BRIDGE DATA

									PROJECT NO.		SHEET NO.	
									2020CPT.09.05.10341		2020CPT.09.06.20341	
Map No.	Route No.	Route Name	Bridge No.	Feature Intersected	Floor Construction	Clear Roadway Width (Ft)	Horizontal Clearance Under (Ft.)	Vertical Clearance Under	Length (Ft)	Posting	Recommended Treatment, From Bridge Maintenance	
1	I40 BUS EBL	I40 BUS EBL	360	SALEM LAKE	8.5 RC SLAB	54.8	NA	NA	393	NA	DO NOT PAVE DO NOT MILL	
1	I40 BUS EBL	I40 BUS EBL	362	SOUTHERN RAILWAY	8 7/16 RC SLAB	55	NA	NA	240	NA	DO NOT PAVE DO NOT MILL	
6	I40 BUS WBL	I40 BUS WBL	361	SALEM LAKE	8 7/16 RC SLAB	55.3	NA	NA	393	NA	DO NOT PAVE DO NOT MILL	
6	I40 BUS WBL	I40 BUS WBL	363	SOUTHERN RAILWAY	8 7/16 RC SLAB	54.8	NA	NA	205	NA	DO NOT PAVE DO NOT MILL	
2,5	SR 2662	OLD GREENSBORO RD. LINVILLE RD.	364	I-40 BUS	7 RC SLAB, 2 AWS	NA	51	16FT 05 IN EBL 17FT 06 IN WBL	304	NA	MAINTAIN CLEARANCE	
2,5	SR 2667	HASTINGS HILL RD.	366	I-40 BUS	8.5" RC Deck	NA	49.16 EB 63.17 WB	19.58 FT in EB Direction 18.83 FT in WB Direction	217	NA	INFORMATION ONLY	
3,4	SR 4315	MAIN ST.	167	I-40 BUS & US 421	8 3/4 RC SLAB	NA	48.5	17FT 02 IN EBL 17FT 10 IN WBL	271	NA	MAINTAIN CLEARANCE	
3,4	SR 2643	SALISBURY ST.	368	I-40 BUS & US 421	8 3/4 RC SLAB	NA	56.04' EB 55.68' WB	16.94 FT EBL 17.14 FT WBL	203	NA	MAINTAIN CLEARANCE	
3,4	NC66, NC150	NC 66	46	I-40 BUS & US 421	8 3/4 RC SLAB	NA	63.2	18FT 05 IN EBL 17FT 02 IN WBL	212	NA	MAINTAIN CLEARANCE	
7,8	NC 65	NC 65	36	US 52	7.5 RC, 4.5 AWS	NA	42	15FT 00 IN SBL 15FT 03 NBL	247	NA	MAINTAIN CLEARANCE	
7,7A,8,8B	SR 1632	WESTINGHOUSE RD.	315	US 52	7 RC SLAB	NA	40	15FT 11 IN SBL 14FT 11 IN NBL	233	NA	MAINTAIN CLEARANCE	
7	US52 NBL	US52 NBL	319	SR 1620	9" RC	29.167	NA	17.0830 FT	113	NA	DO NOT PAVE DO NOT MILL	
8	US52 SBL	US52 SBL	335	SR 1620	9"RC	28	NA	15FT 08 IN	197	NA	DO NOT PAVE DO NOT MILL	
7	US52 NBL	US52 NBL	343	SOUTHERN RAILWAY	7.75 RC, 0.5 AWS	28	NA	NA	167	NA	MILL AND PAVE	
8	US52 SBL	US52 SBL	344	SOUTHERN RAILWAY	7 3/4 RC, 0.5" AWS	44.1	NA	NA	167	NA	MILL AND PAVE	
7,7B,8,8A	SR 1634	MOORE RJR DR.	428	US52 SBL US52 NBL	3.5 PPC, 4.75 RC	42	54	16FT 09IN NBL 17FT 08IN SBL	220	NA	MAINTAIN CLEARANCE	
7,8	SR 1611	S. MAIN ST.	347	US52 SBL US52 NBL	9 1/4" RC SLAB	NA	76.3	17FT 10 IN NBL 18FT 06 IN SBL	239	NA	MAINTAIN CLEARANCE	

SIGNING FOR RESURFACING PROJECTS

LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

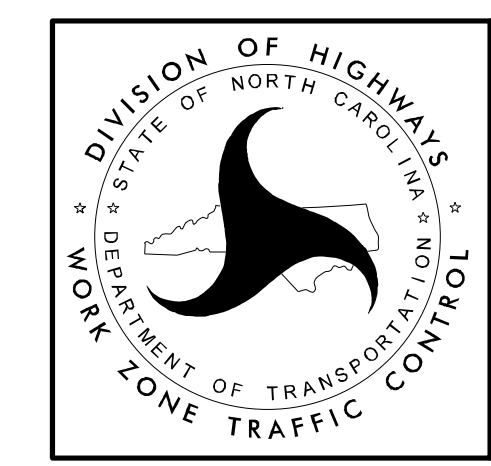
-Y- LINE SIGNING

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"> 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, 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		- 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		- 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.	

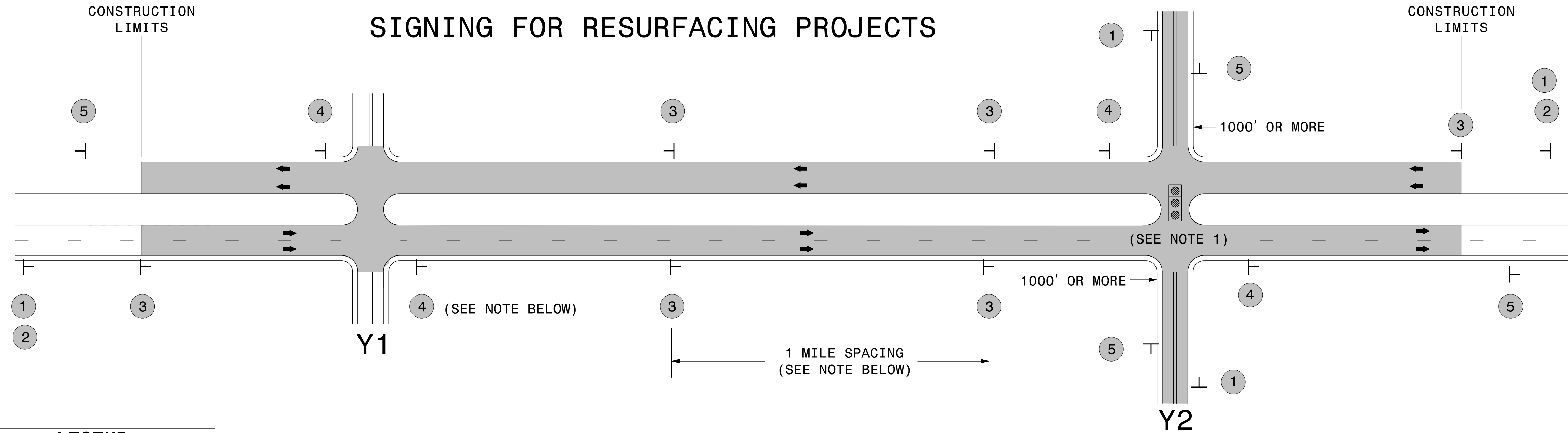
THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

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



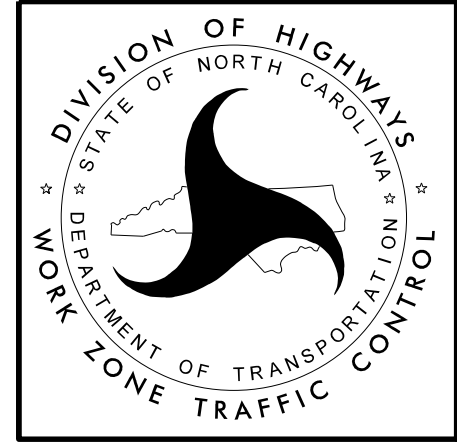
LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

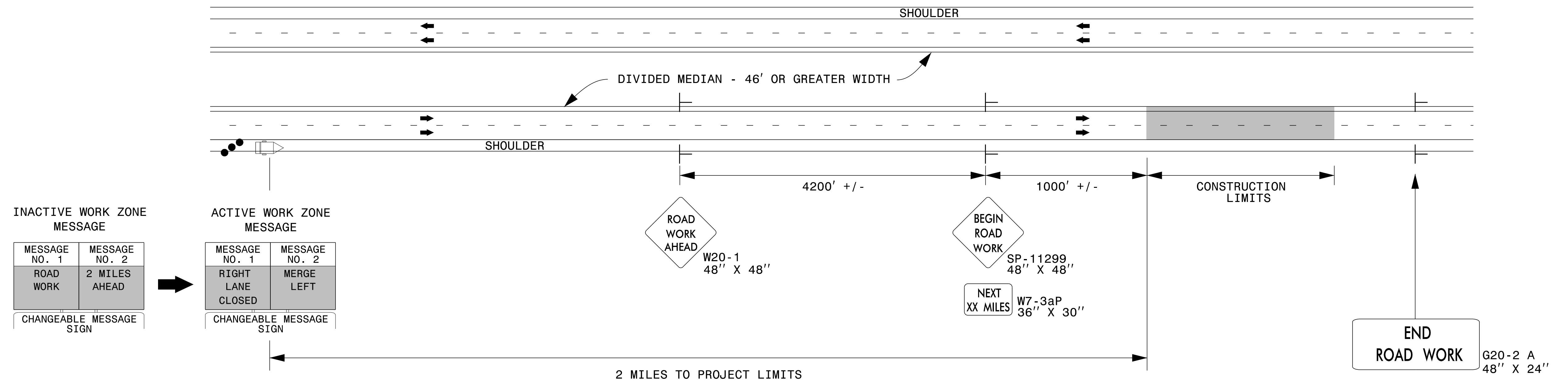
SIGNING NOTES AND PLACEMENT PER DIRECTION	 	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL 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; 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>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_Lr-Su_Shldr.dgn
 User:rmgarrrett

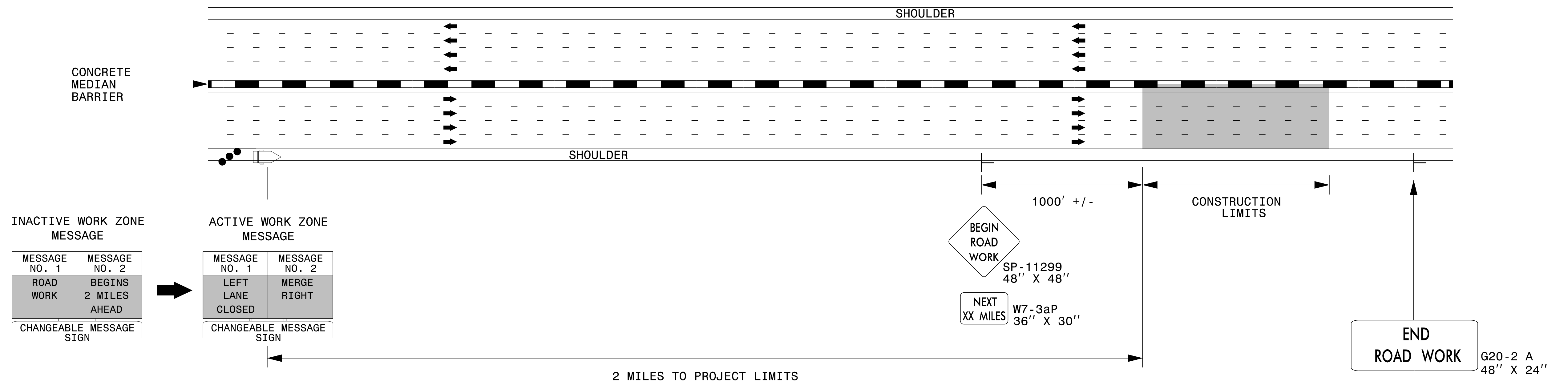


**RESURFACING
 ADVANCE WARNING SIGNS
 FOR RURAL AND SUBURBAN
 MULTI-LANE ROADWAYS
 W/ SHOULDER SECTIONS**

DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



DIVIDED MEDIANS WITH WIDTHS LESS THAN 46' OR WITH PERMANENT MEDIAN BARRIER

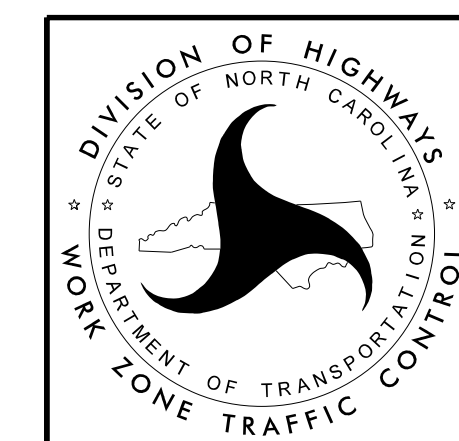


NOTES:

- 1) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 6' AS MEASURED FROM THE EDGE OF PAVEMENT.
- 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) FOR MEDIAN WIDTHS LESS THAN 46' (MEASURED EDGELINE TO EDGELINE) USE THE BOTTOM DRAWING.
- 4) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 5) INSTALL "ROAD WORK AHEAD" (W20-1) ALONG ENTRANCE RAMP 500' PRIOR TO RAMP TERMINAL, AND "END ROAD WORK" (G20-2a) AT THE END OF EXIT RAMP WITHIN THE WORK ZONE.
- 6) 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 AND WITH DIVIDED MEDIANS OF 46' OR GREATER. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

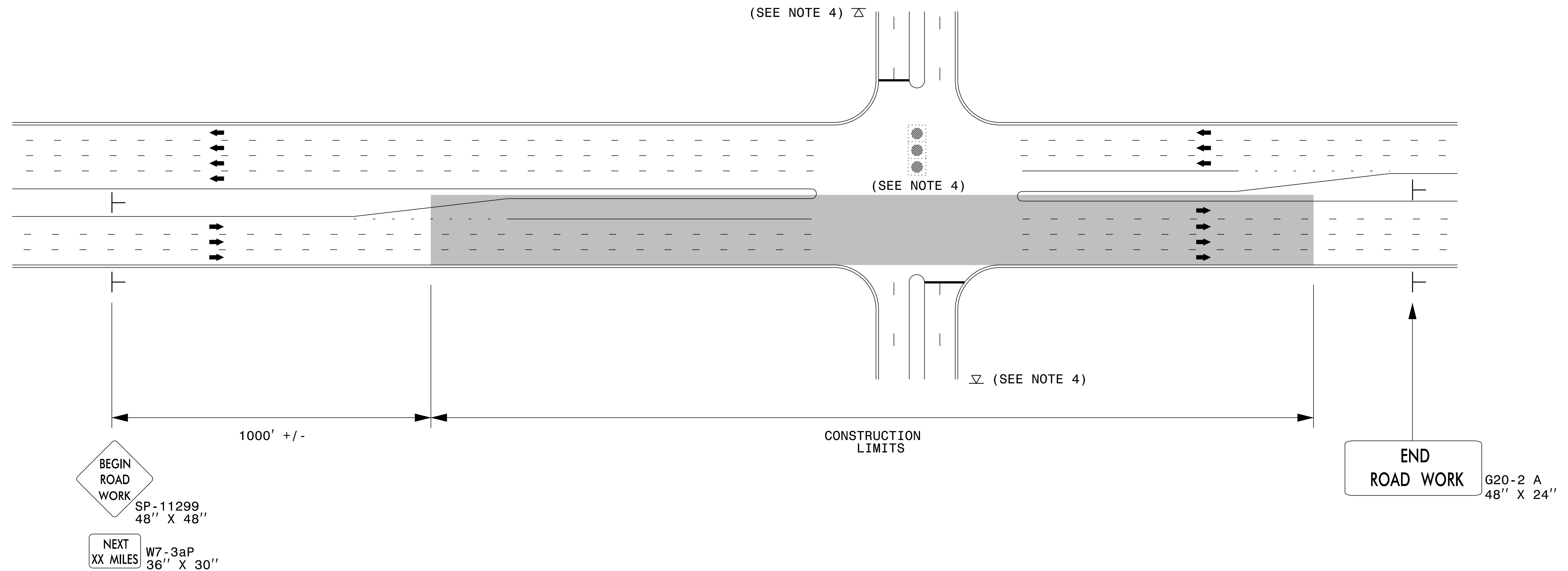
LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DRUM



**RESURFACING ADVANCE
WARNING SIGNS FOR
HIGH SPEED FACILITIES
≥ 60 MPH**

URBAN / SUBURBAN WORKZONES

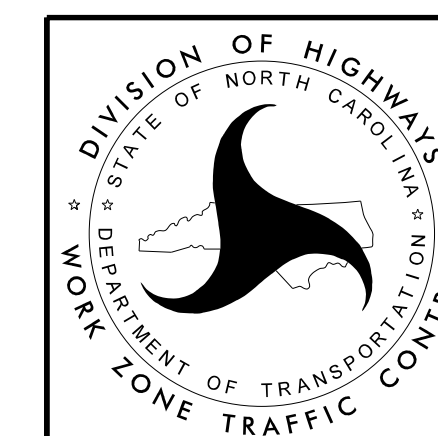


NOTES:

- 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

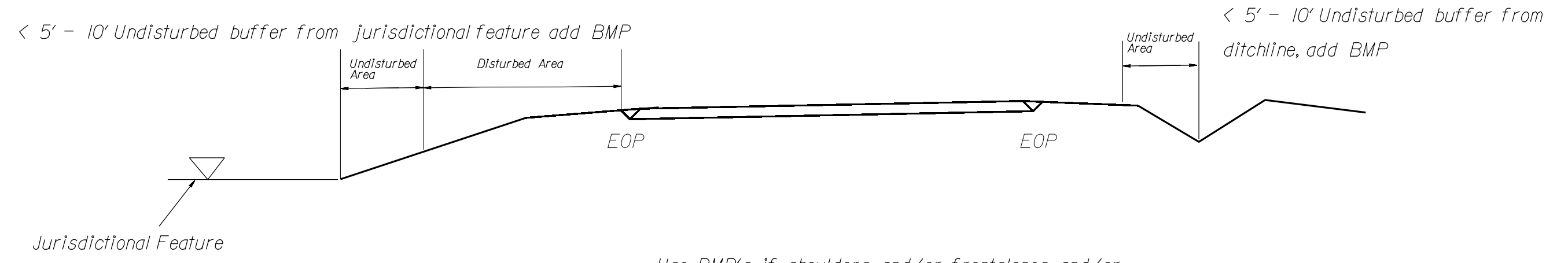
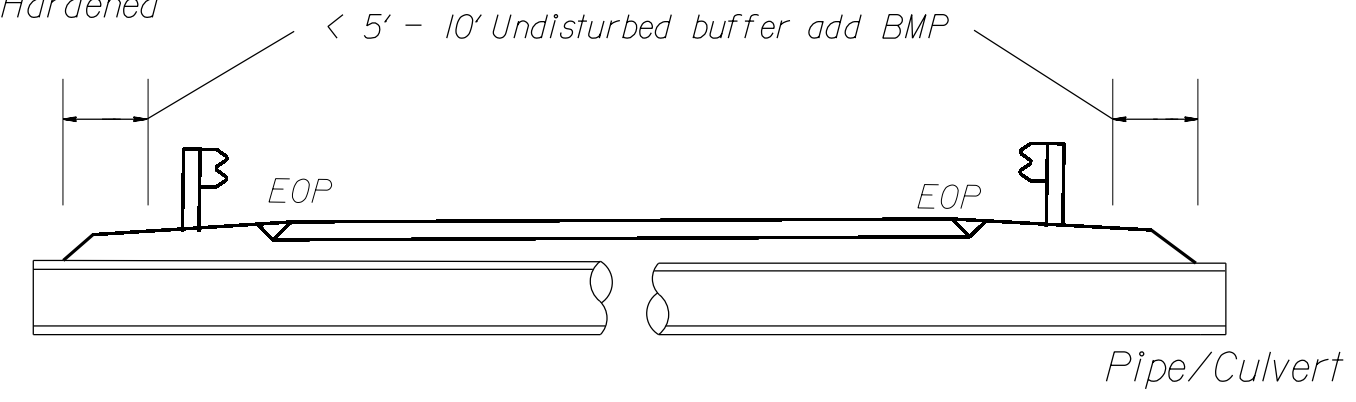


**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

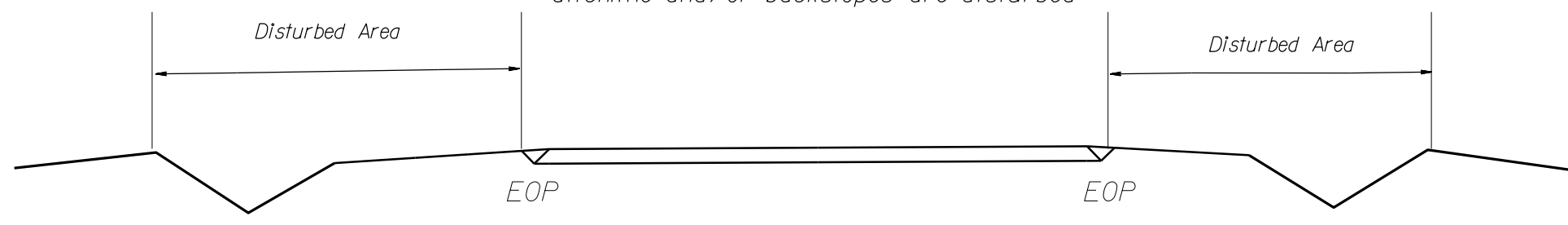
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

EROSION CONTROL DETAIL

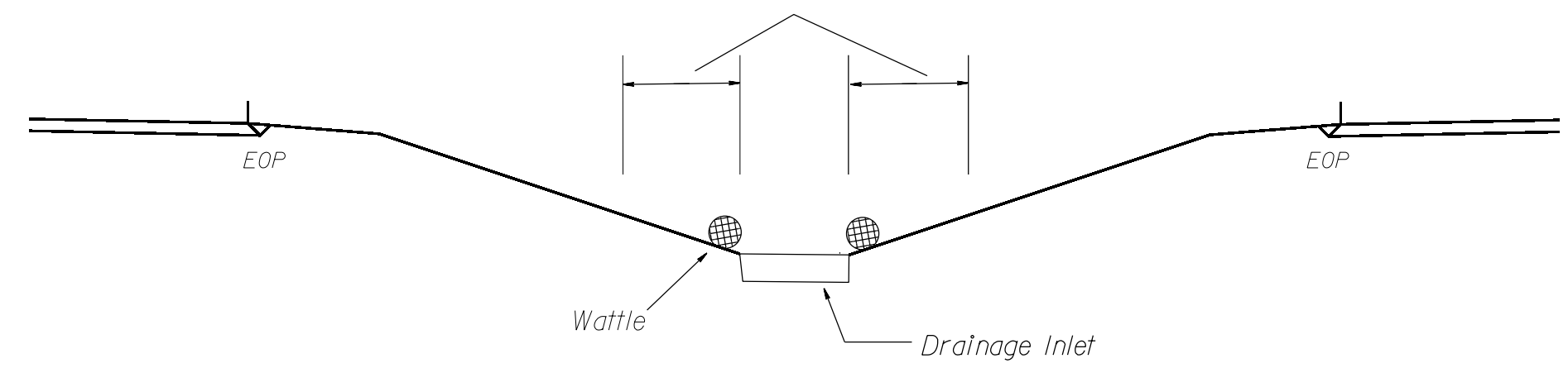
BMP Options: Wattle, Silt Fence or Hardened Aggregate.



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

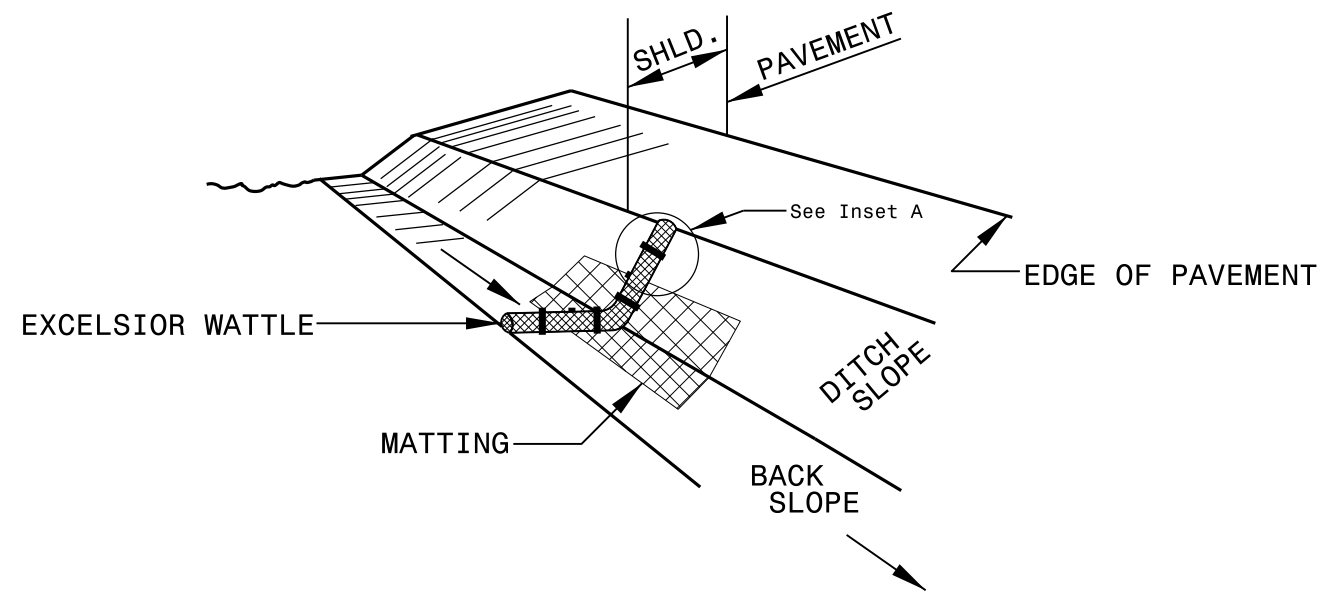


< 5' - 10' Undisturbed buffer from inlet, add wattle

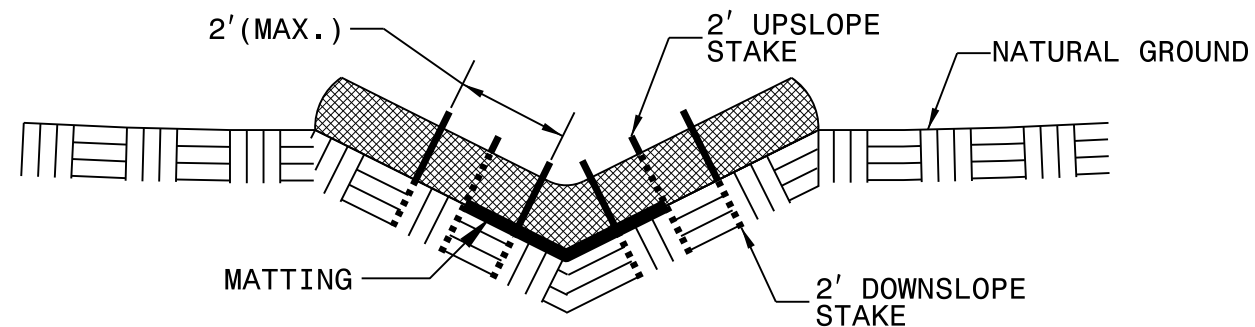


NOT TO SCALE

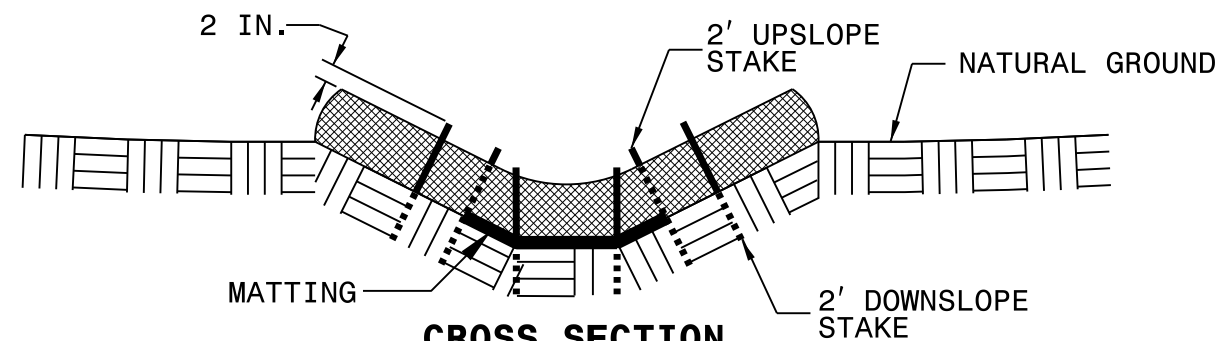
WATTLE DETAIL



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.

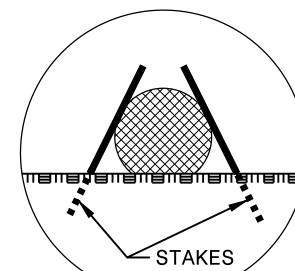
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

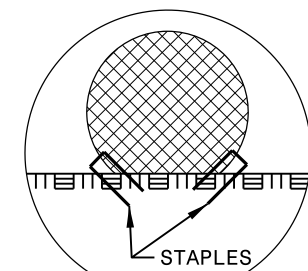
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

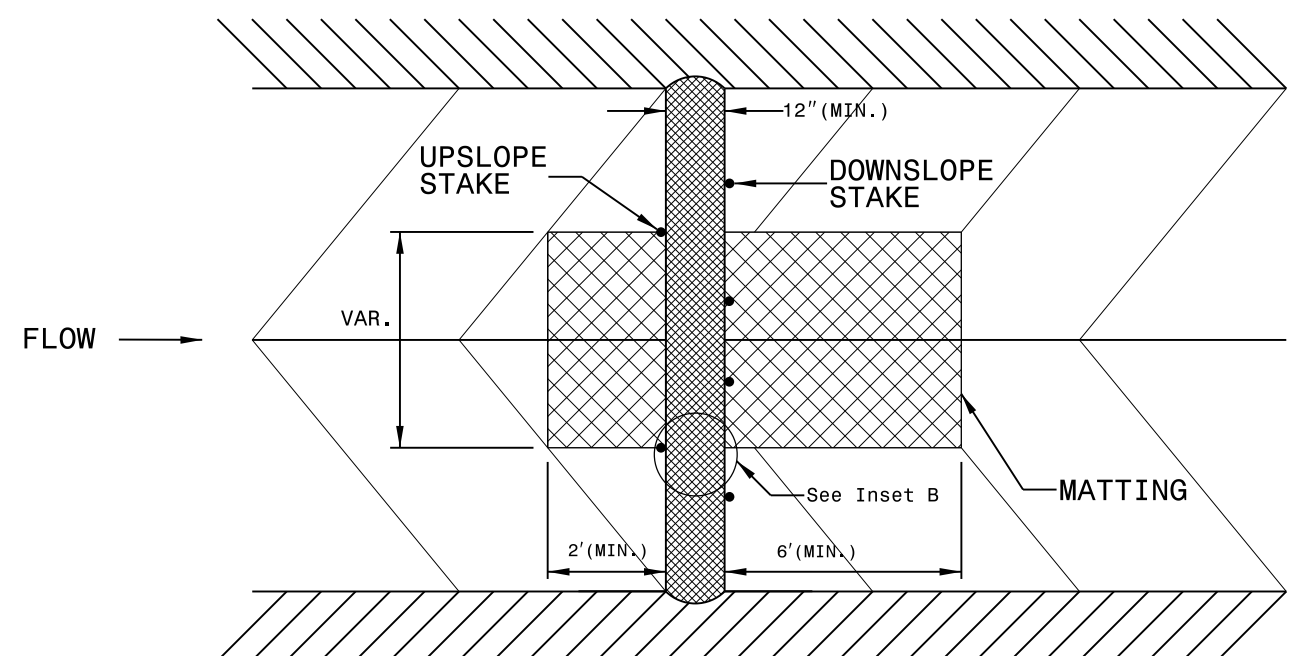
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A

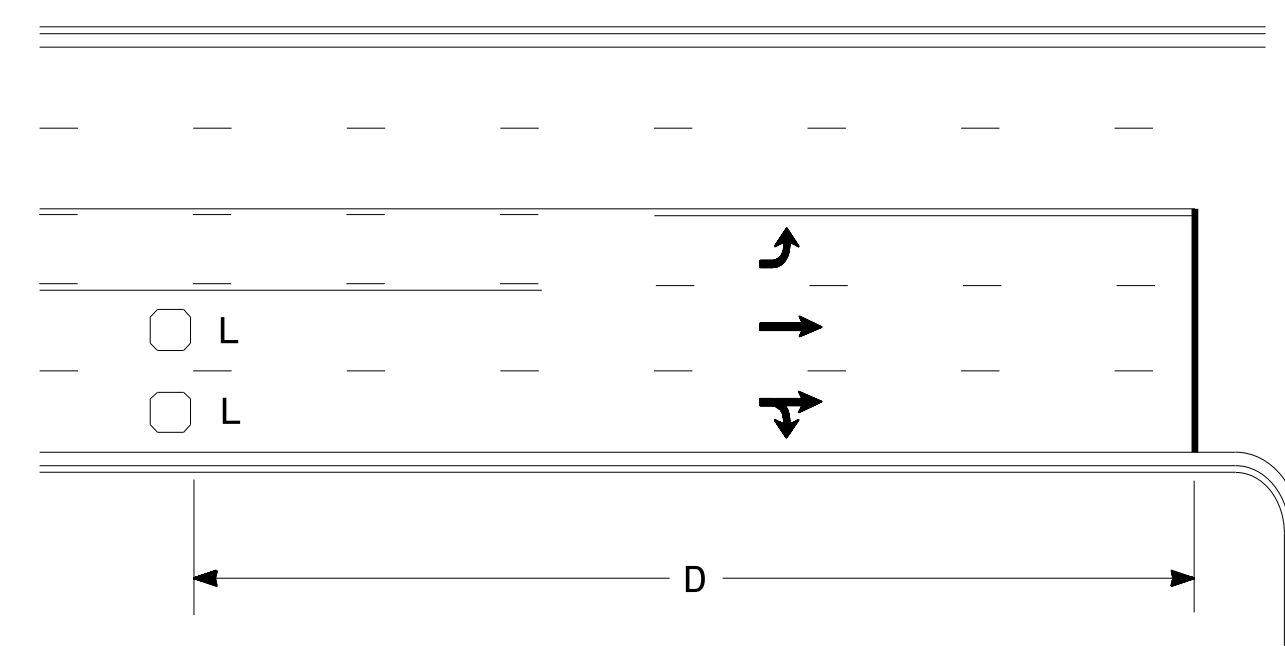


INSET B



TOP VIEW

High Speed Detection (≥40 mph)

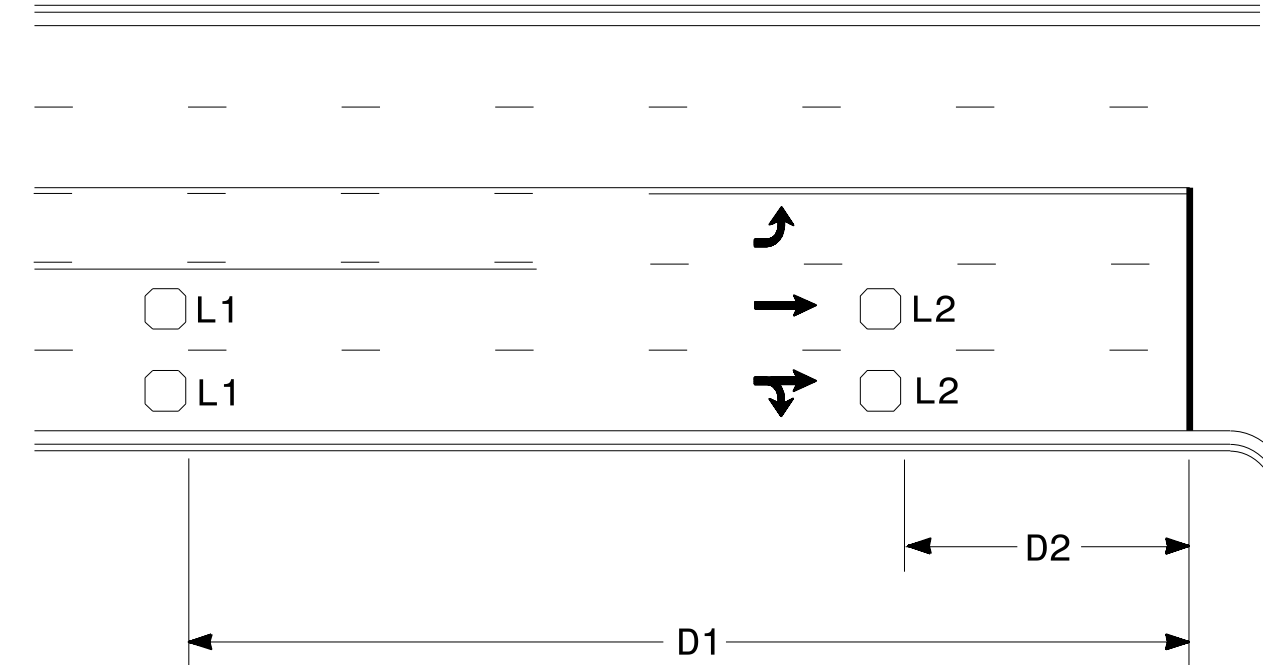


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

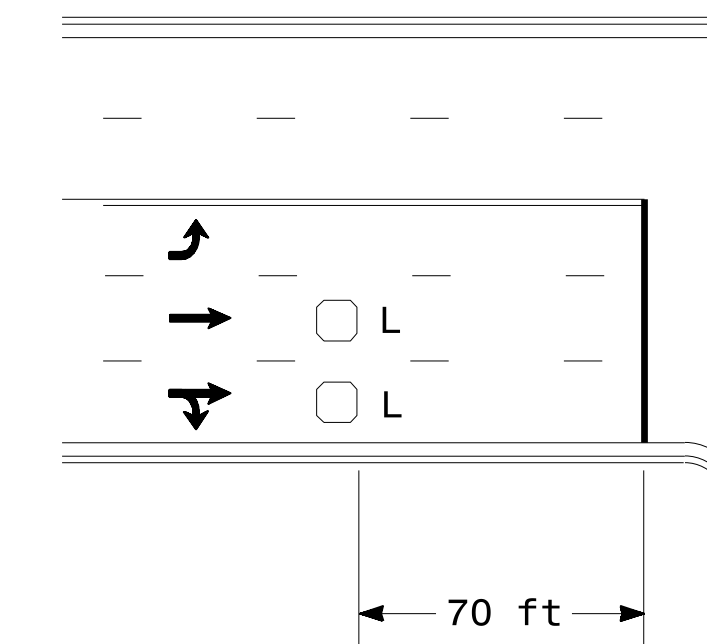


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

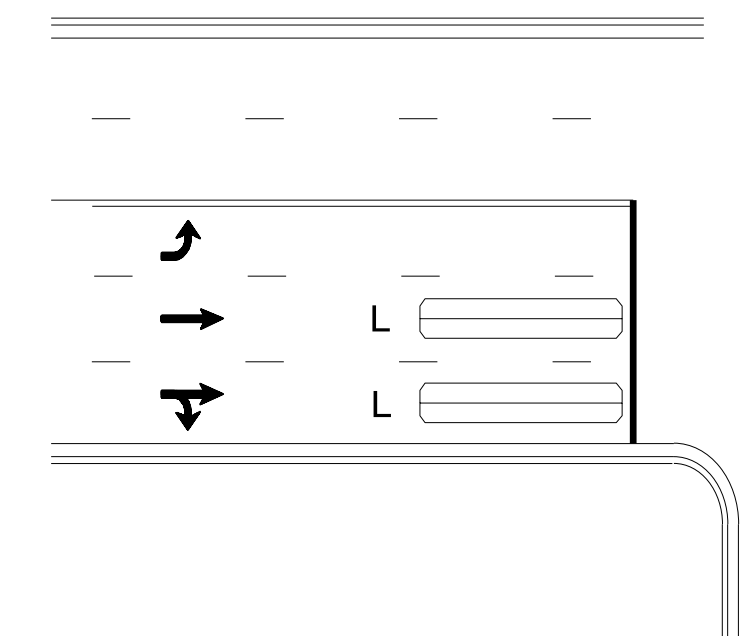
"Stretch" Operation

Low Speed Detection (≤35 mph)



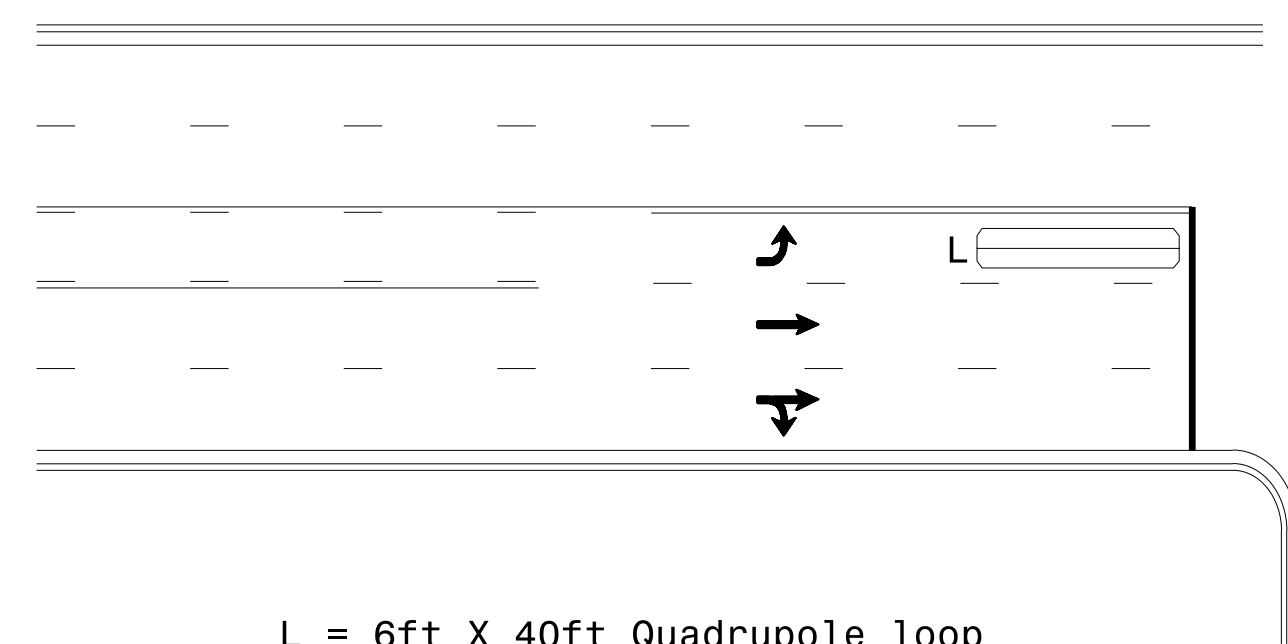
L = 6ft X 6ft
Wired in series

OR



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

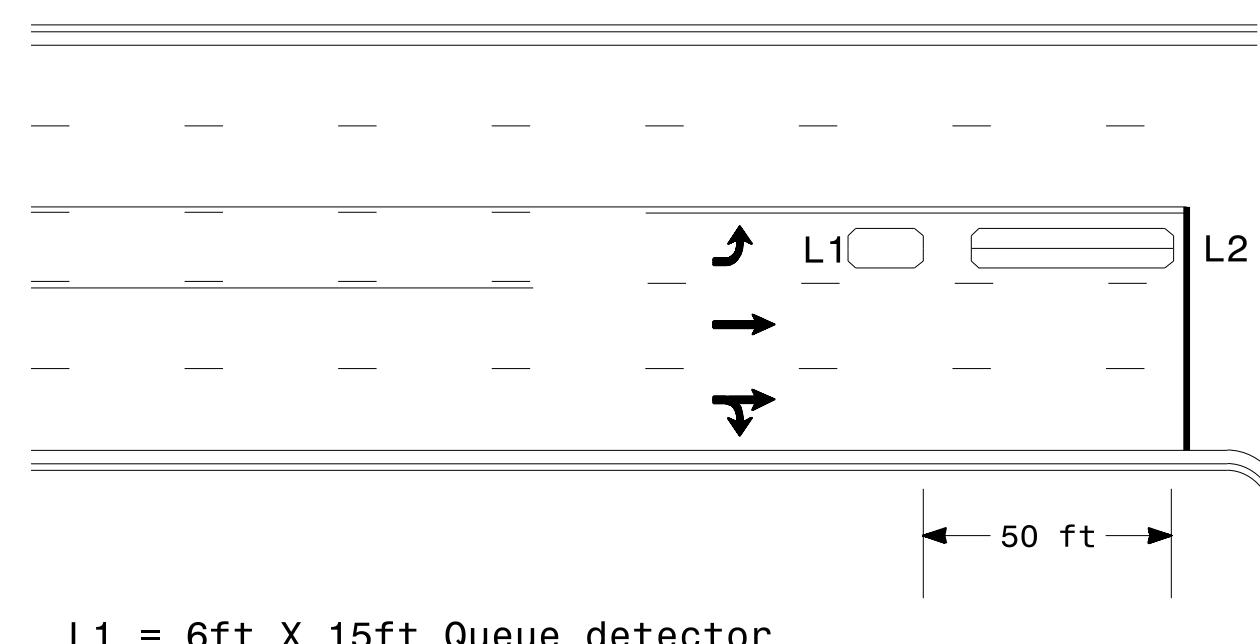
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

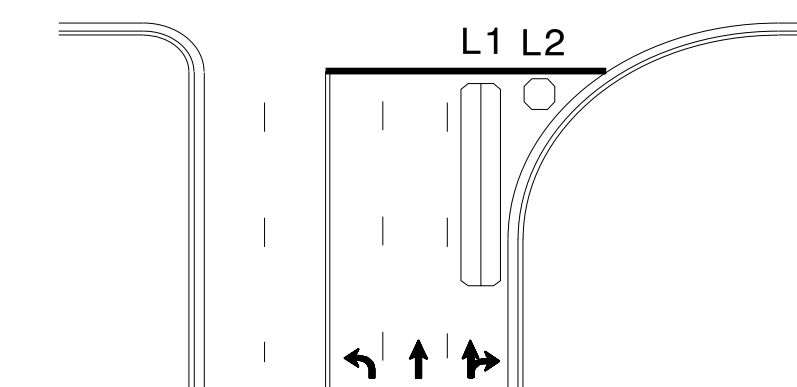
OR



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

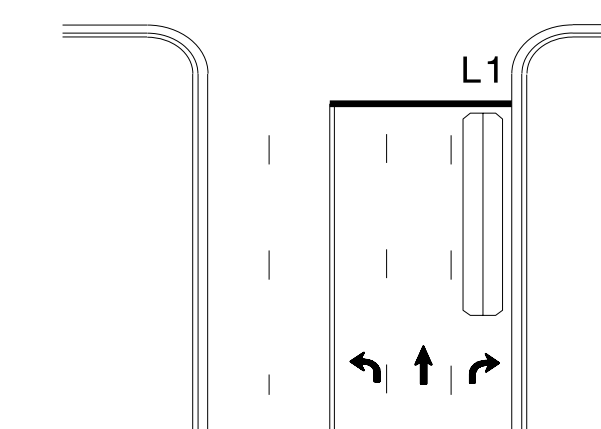
Queue Loop Detection

Right Turn Lane Detection

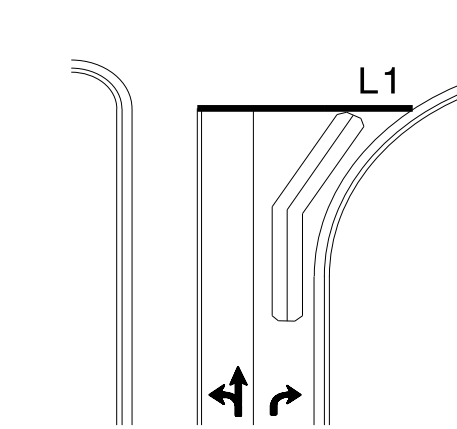


Shared Lane/
Wide Radius Turn

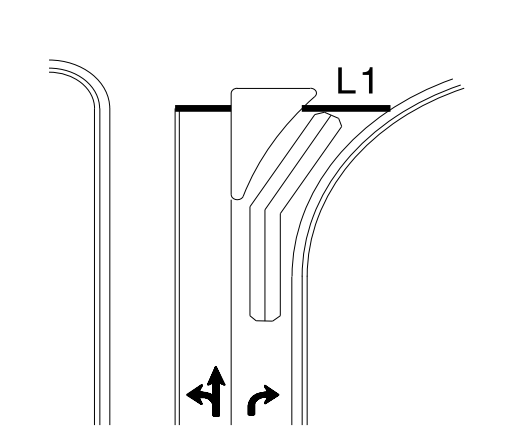
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

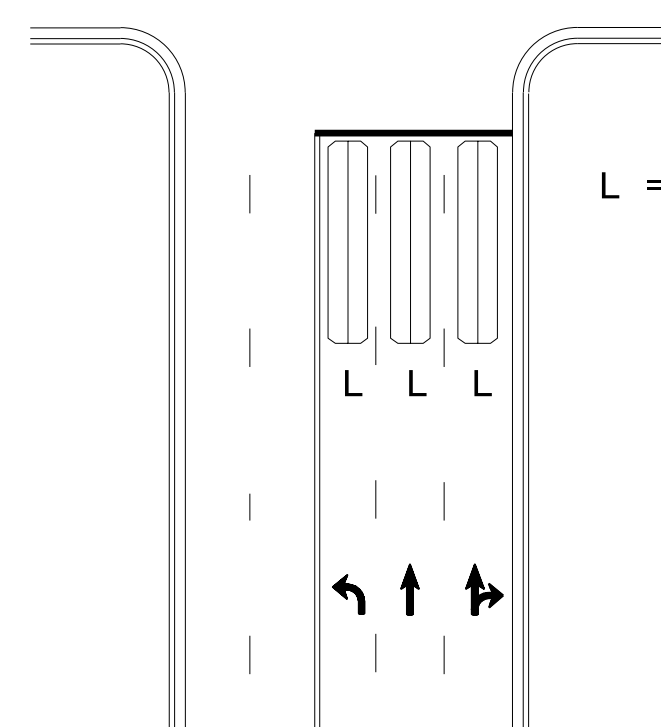


Wide Radius Turn



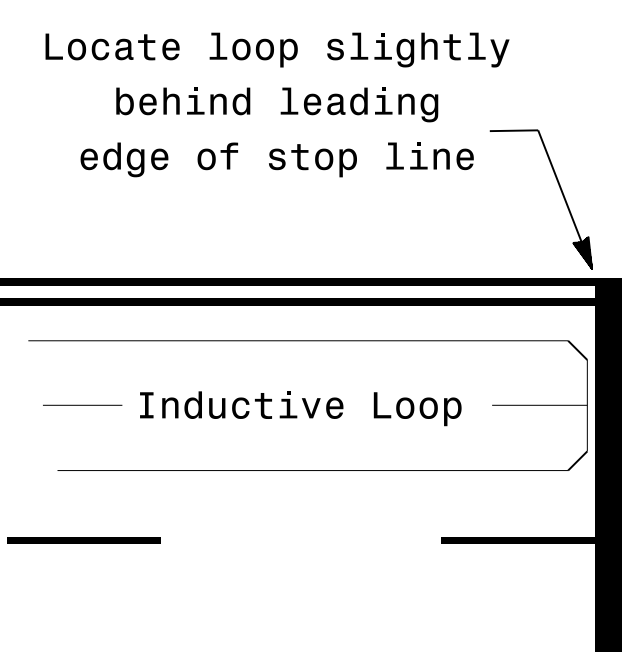
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



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

	<p>Prepared In the Offices of:</p> <p>TRANSPORTATION MOBILITY AND SAFETY DIVISION DEPARTMENT OF TRANSPORTATION SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529</p>		<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER PAMELA L. ALEXANDER 23489</p>	
	<p>PLAN DATE: January 2015</p>		<p>REVIEWED BY: JPG</p>	
<p>PREPARED BY: PLA</p>		<p>REVIEWED BY:</p>		
<p>SCALE N/A</p>	<p>REVISIONS</p>	<p>INIT.</p>	<p>DATE</p>	<p>1/30/2015</p>
<p>SIG. INVENTORY NO.</p>				

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