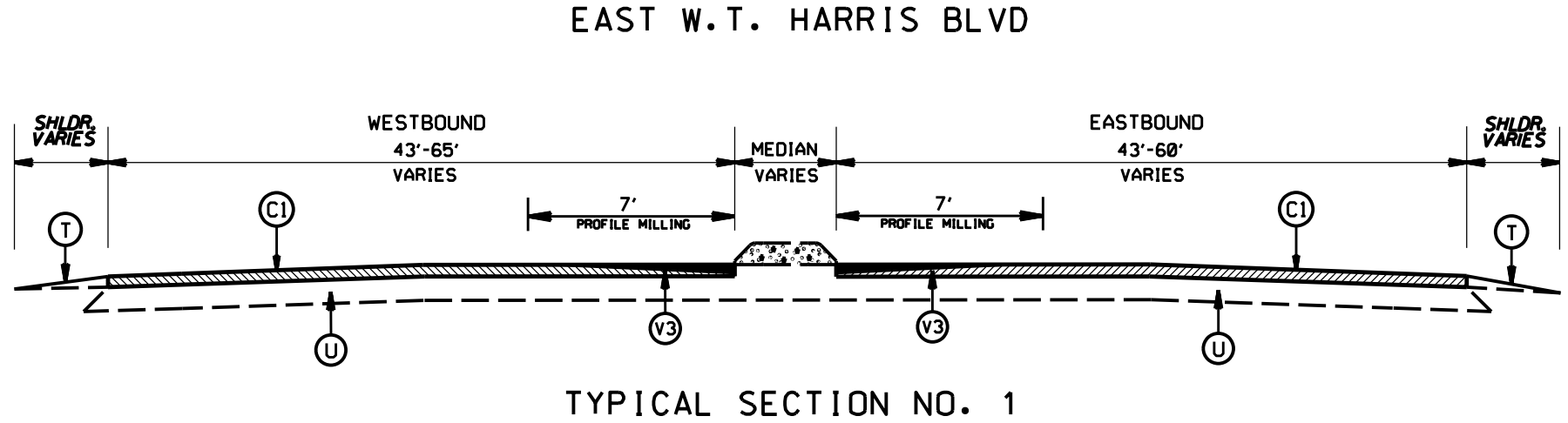
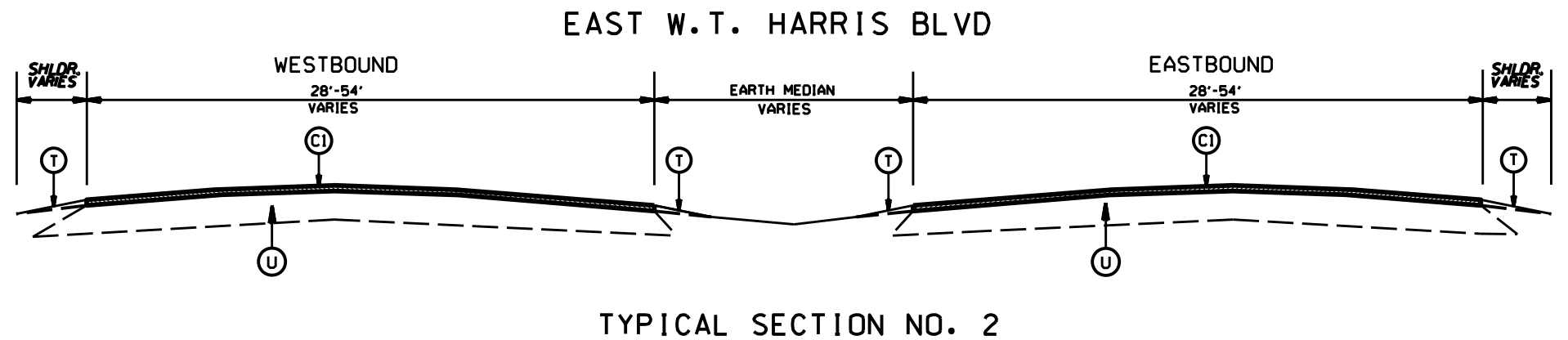
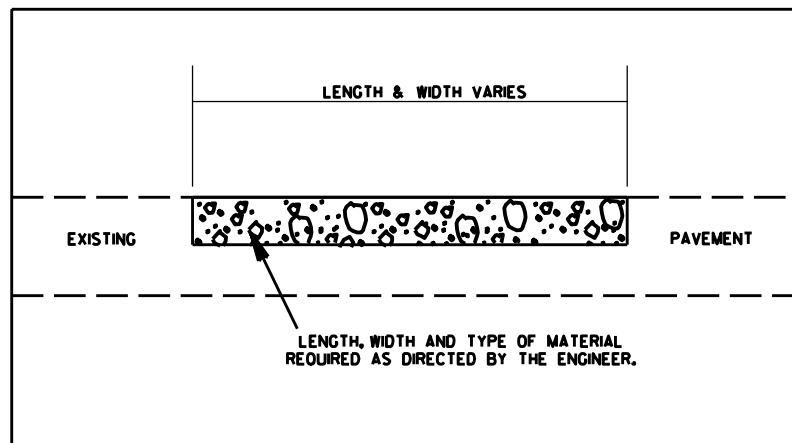


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT,10,07,10601 2024CPT,10,07,20601		

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING
V2	MILLING 1.5" DEPTH
V3	PROFILE MILLING 0" TO 1.5"



PATCHING DETAIL



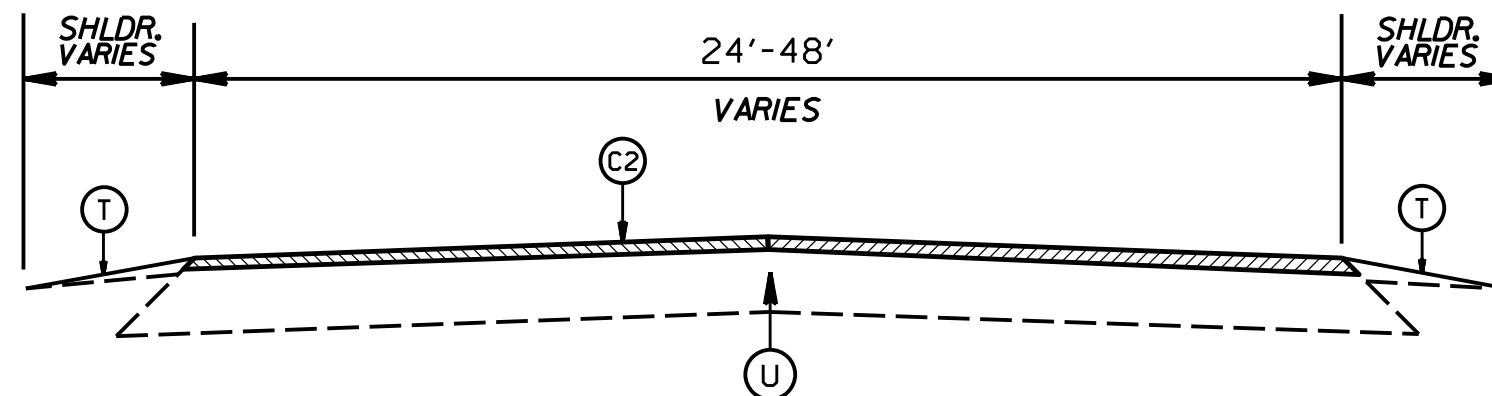
2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-NA-		REVISIONS
DATE			
DWG. BY	JHE		
DESIGN BY			
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.JO.07.J0601 2024CPT.JO.07.20601		

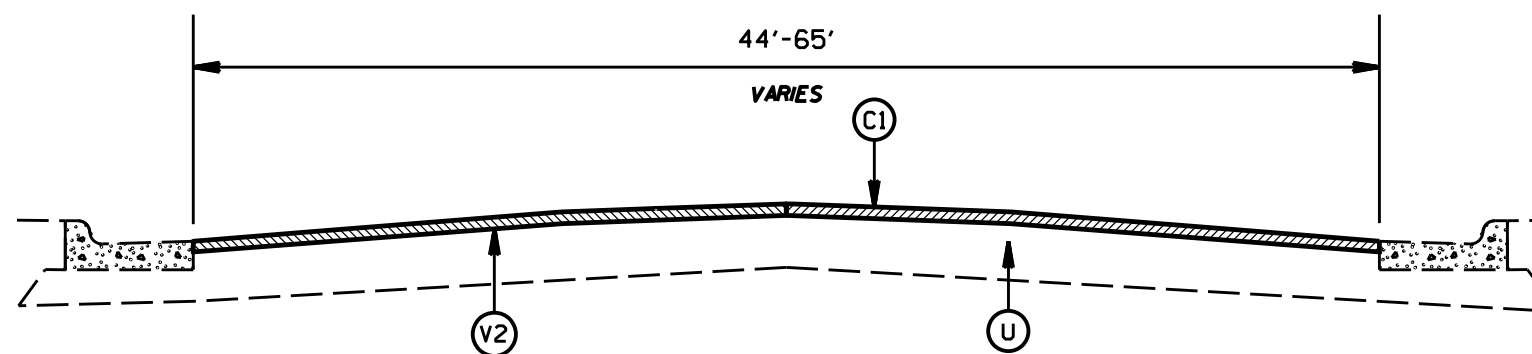
PAVEMENT SCHEDULE	
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V1	INCIDENTAL MILLING
V2	MILLING 1.5" DEPTH
V3	PROFILE MILLING 0" TO 1.5"

BALLANTYNE COMMONS PARKWAY



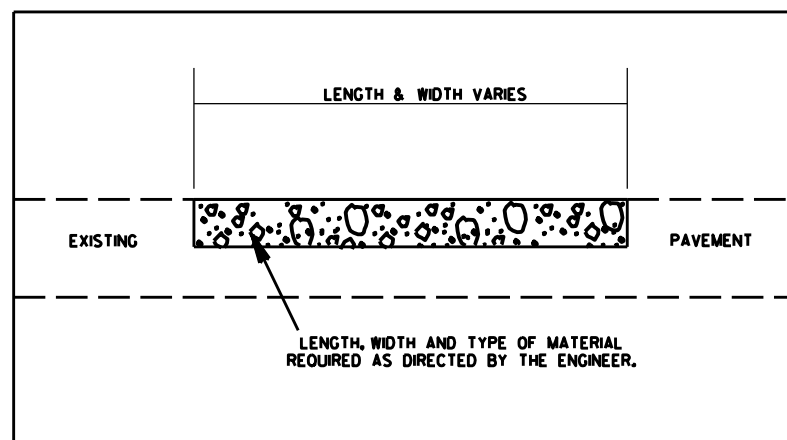
TYPICAL SECTION NO. 3

MONROE ROAD



TYPICAL SECTION NO. 4

PATCHING DETAIL



2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

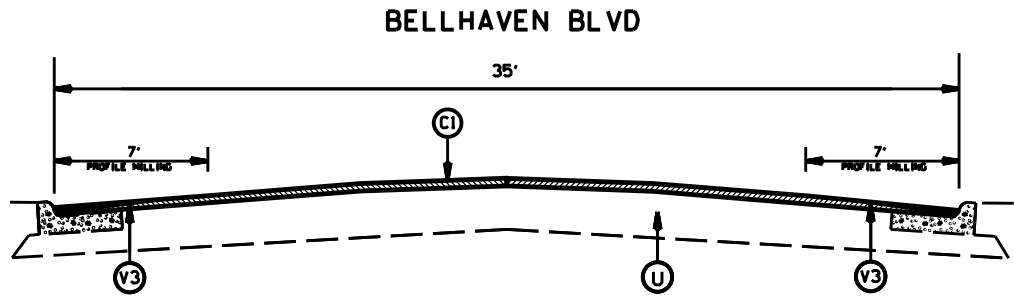
SCALE	-NA-
DATE	
DWG. BY	JHE
DESIGN BY	
APPROVED	



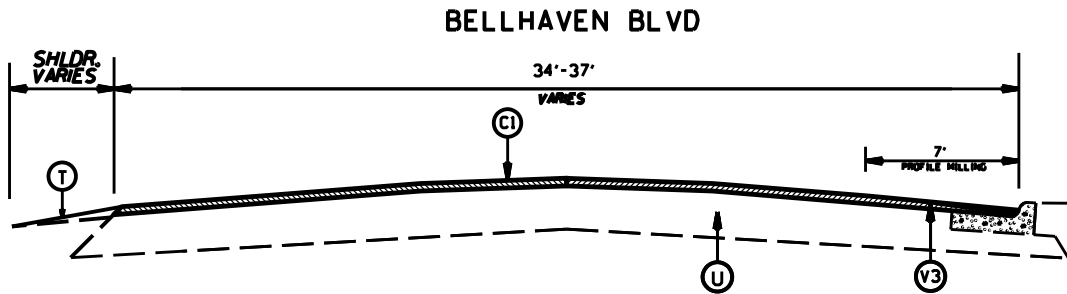
REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
DBS NO.	2024CP1.0.07.050 2024CP1.0.07.2050		

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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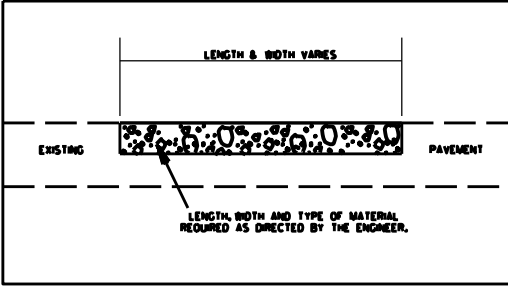


TYPICAL SECTION NO.5



TYPICAL SECTION NO.6

PATCHING DETAIL



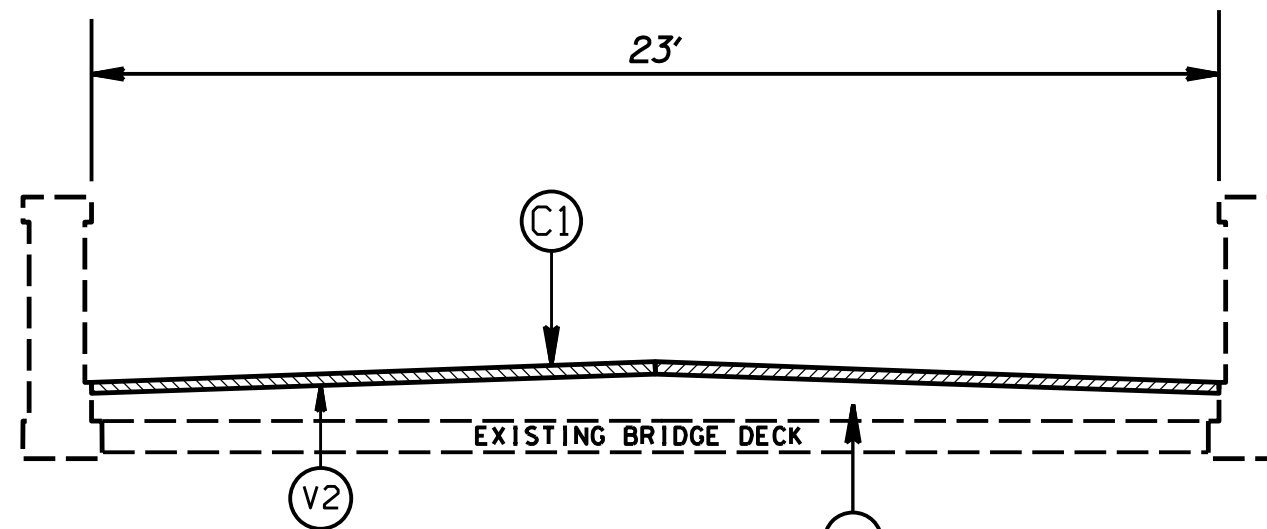
2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-24-		REVISIONS
DATE			
DESIGNED BY	JHE		
DESIGNED BY			
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.J0.07.J0601 2024CPT.J0.07.20601		

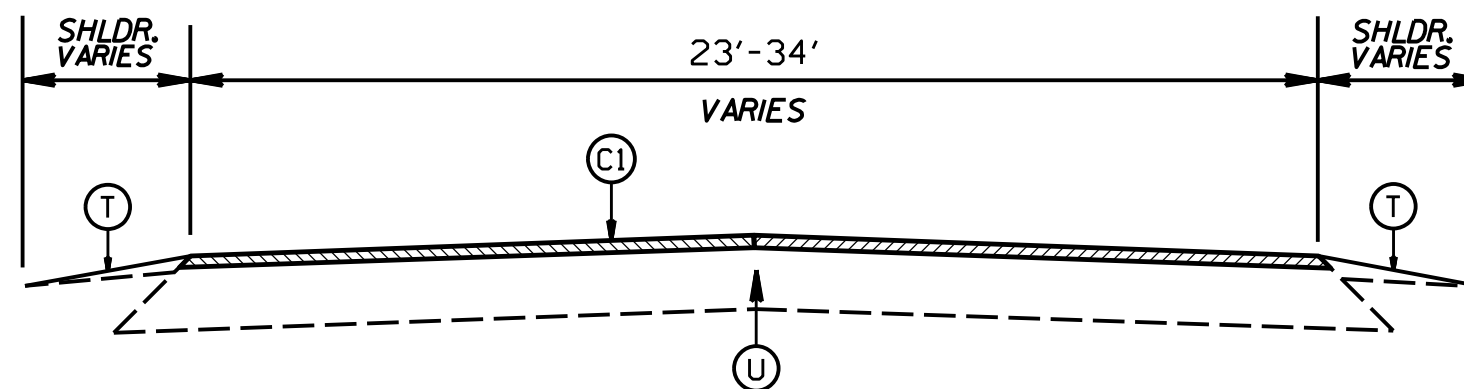
PAVEMENT SCHEDULE	
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V1	INCIDENTAL MILLING
V2	MILLING 1.5" DEPTH
V3	PROFILE MILLING 0" TO 1.5"

BELLHAVEN BLVD BRIDGE



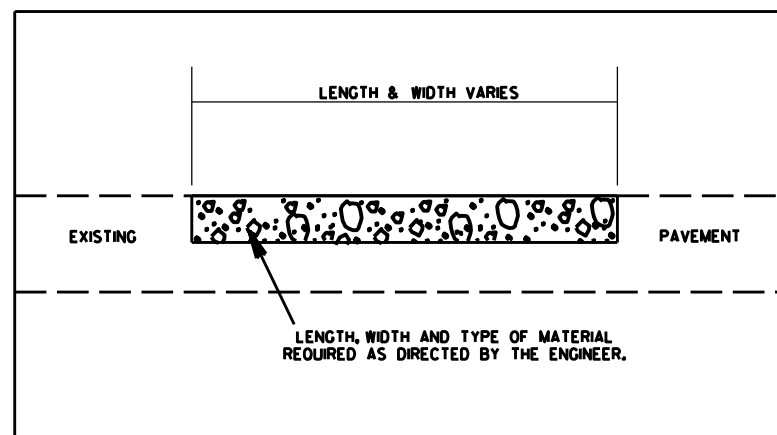
TYPICAL SECTION NO. 7

BELLHAVEN BLVD



TYPICAL SECTION NO. 8

PATCHING DETAIL



2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

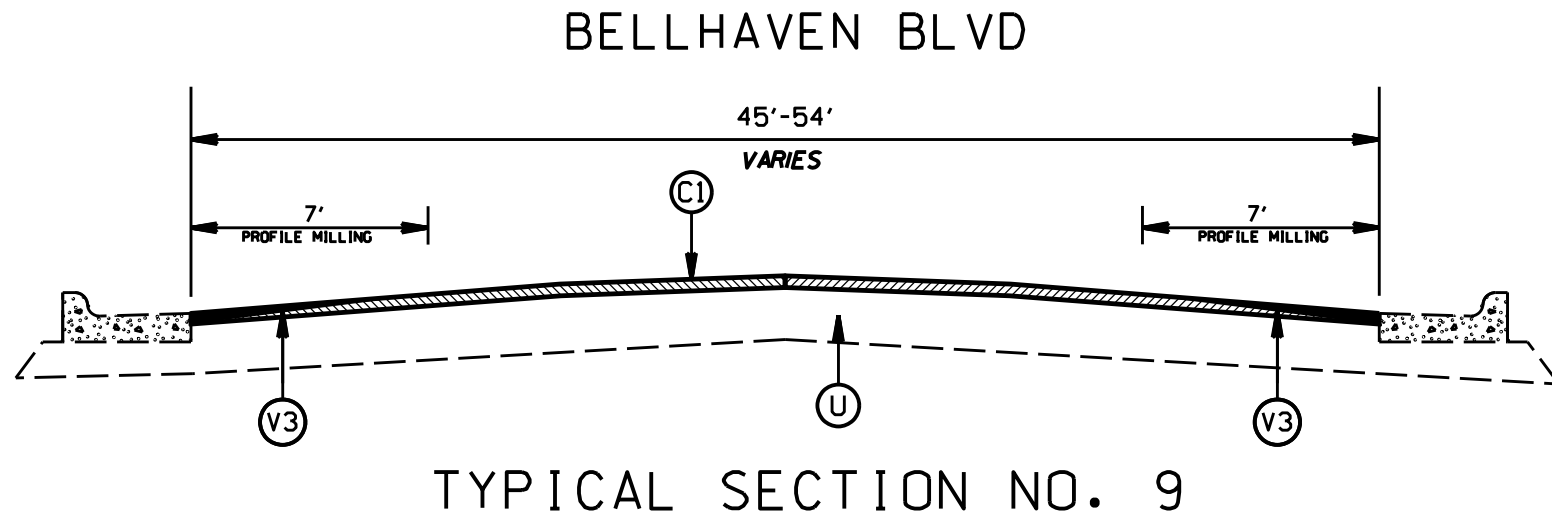
SCALE	-NA-
DATE	
DWG. BY	JHE
DESIGN BY	
APPROVED	



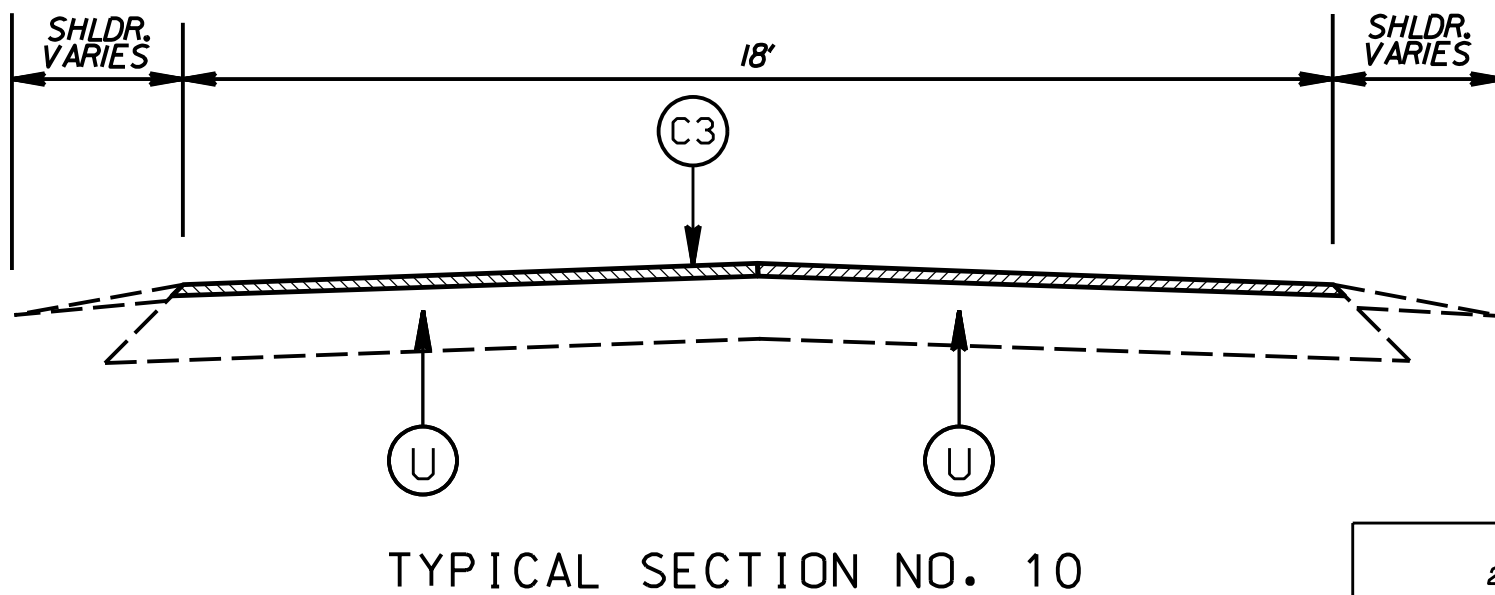
REVISIONS	

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.JO.07.J0601 2024CPT.JO.07.20601		

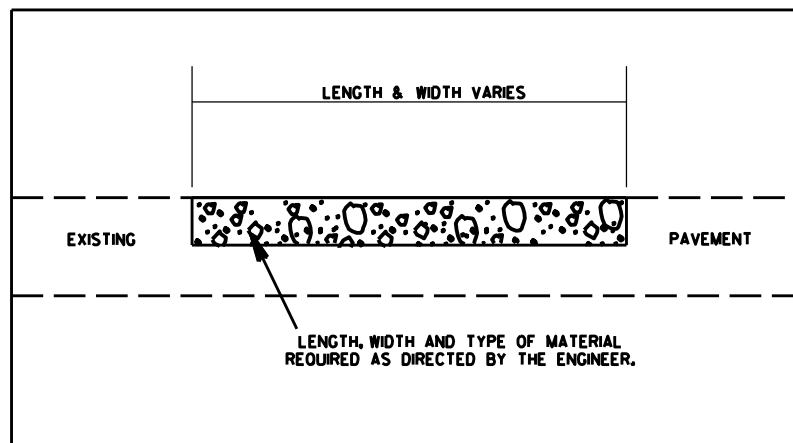
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
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V3	PROFILE MILLING 0" TO 1.5"



TORRENCE BRANCH ROAD
REGENA LANE
APPLING LANE
SORREL COURT



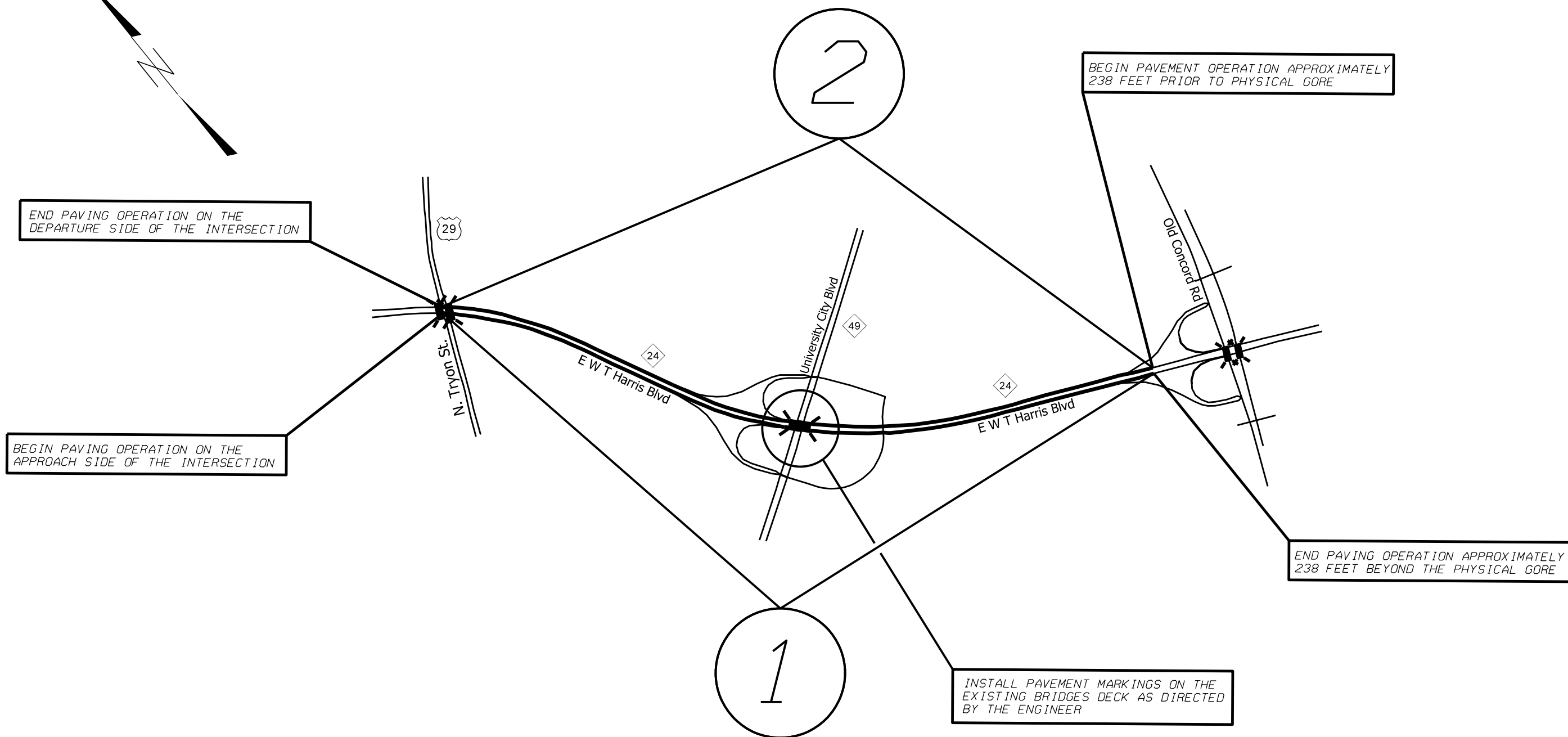
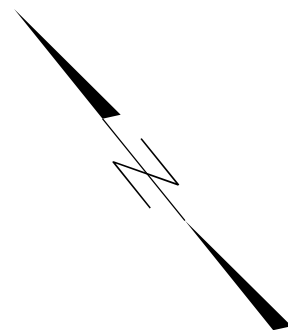
PATCHING DETAIL



2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-NA-		REVISIONS
DATE			
DWG. BY	JHE		
DESIGN BY			
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT. 10.07.10601 2024CPT. 10.07.20601		



MAP

DESCRIPTION

1 EB NC 24 W.T. HARRIS BLVD

FROM N. TRYON STREET TO OLD CONCORD RD

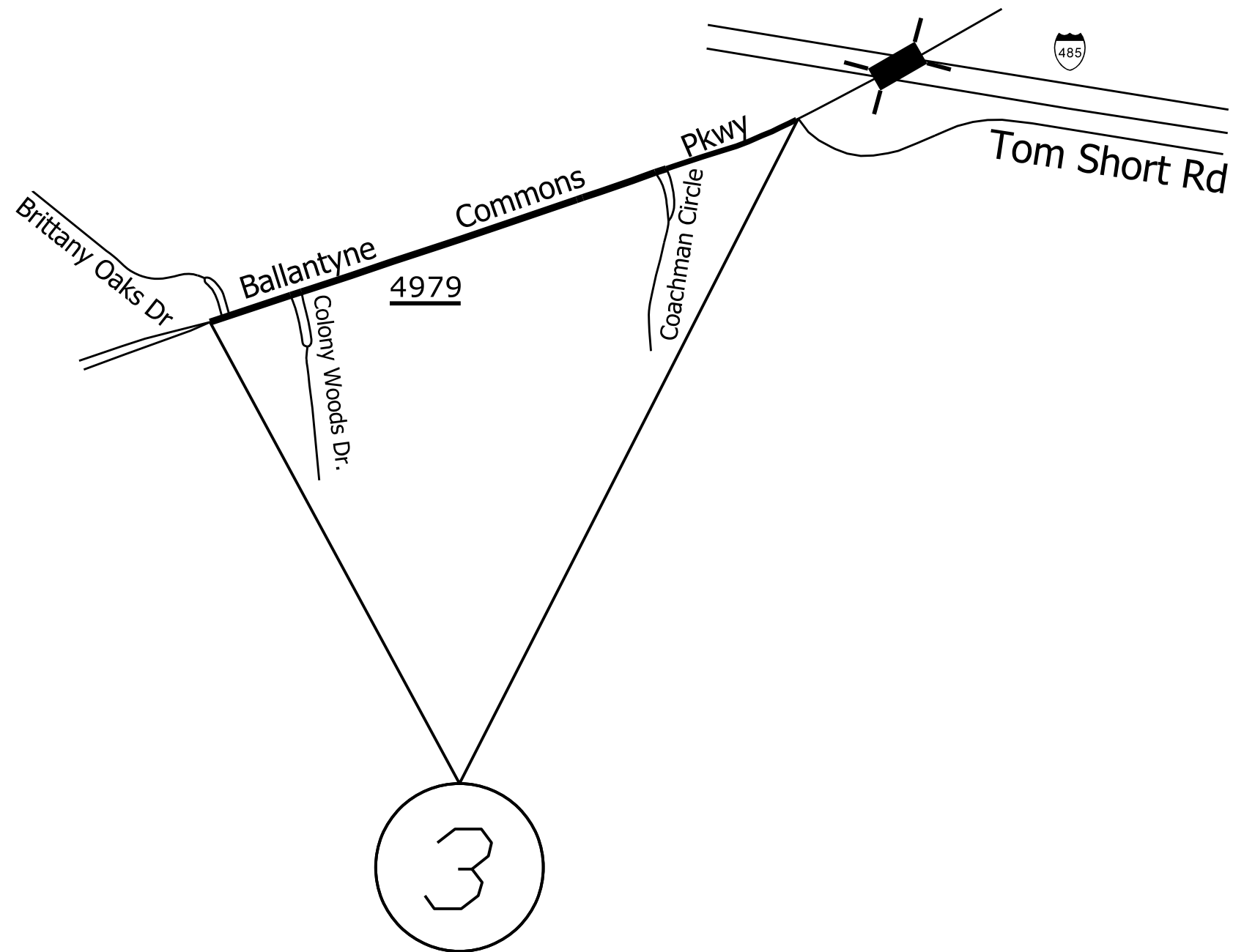
2 WB NC 24 W.T. HARRIS BLVD

FROM OLD CONCORD ROAD TO N. TRYON ST

2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-NA-		REVISIONS	
DATE				
DWG. BY	JHE			
DESIGN BY	JHE			
APPROVED				

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.10.07.10601 2024CPT.10.07.20601		



MAP

DESCRIPTION

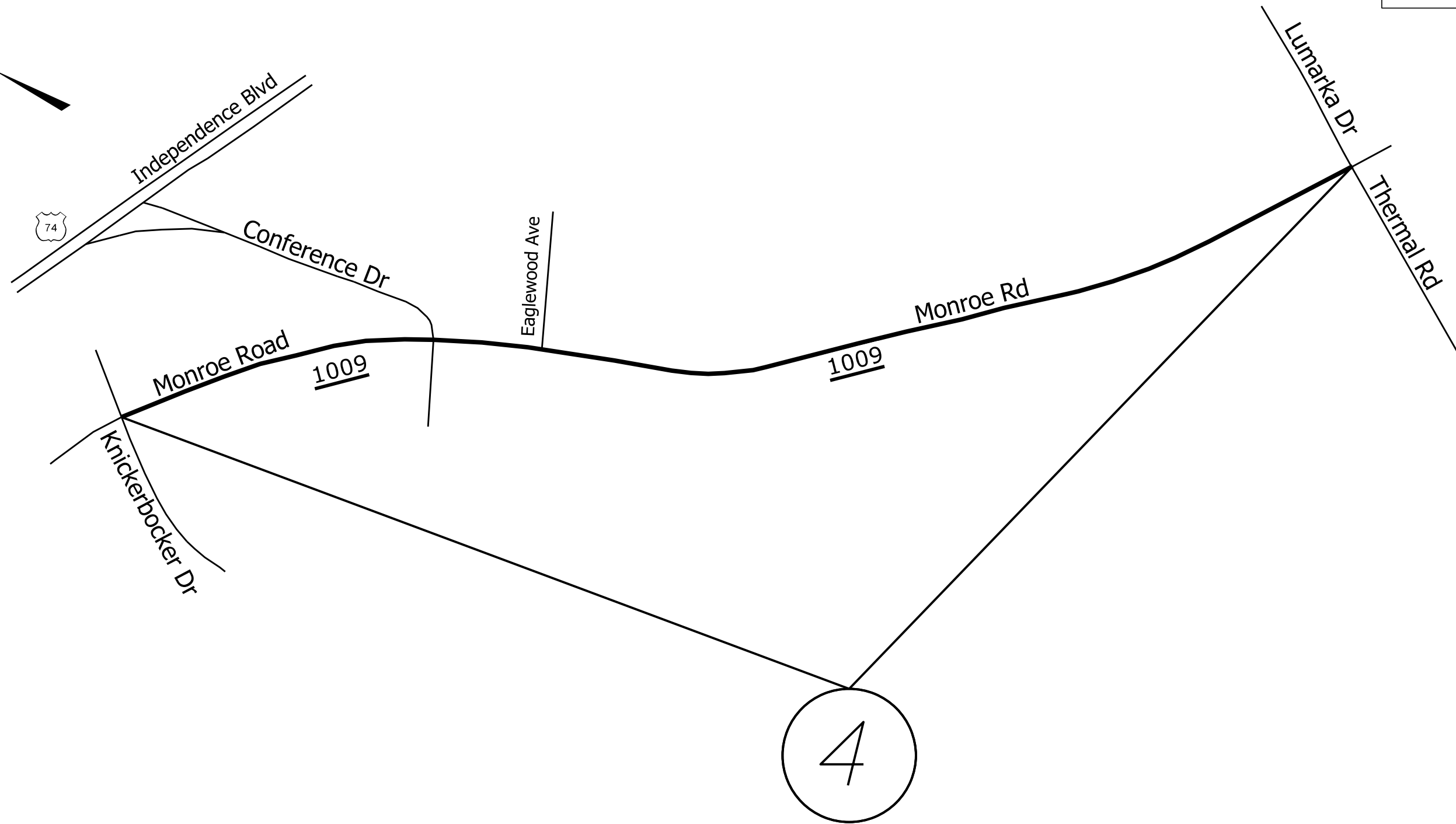
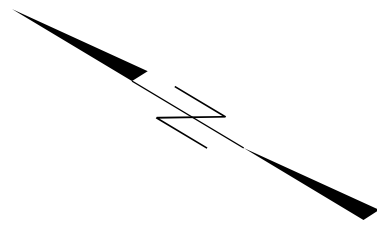
3 SR 4979 BALLANTYNE COMMONS PKWY

FROM TOM SHORT ROAD TO BRITTANY OAKS DRIVE

2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-#A-		REVISIONS	
DATE				
DWG. BY	JHE			
DESIGN BY				
APPROVED				

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.10.07.10601 2024CPT.10.07.20601		



MAP

DESCRIPTION

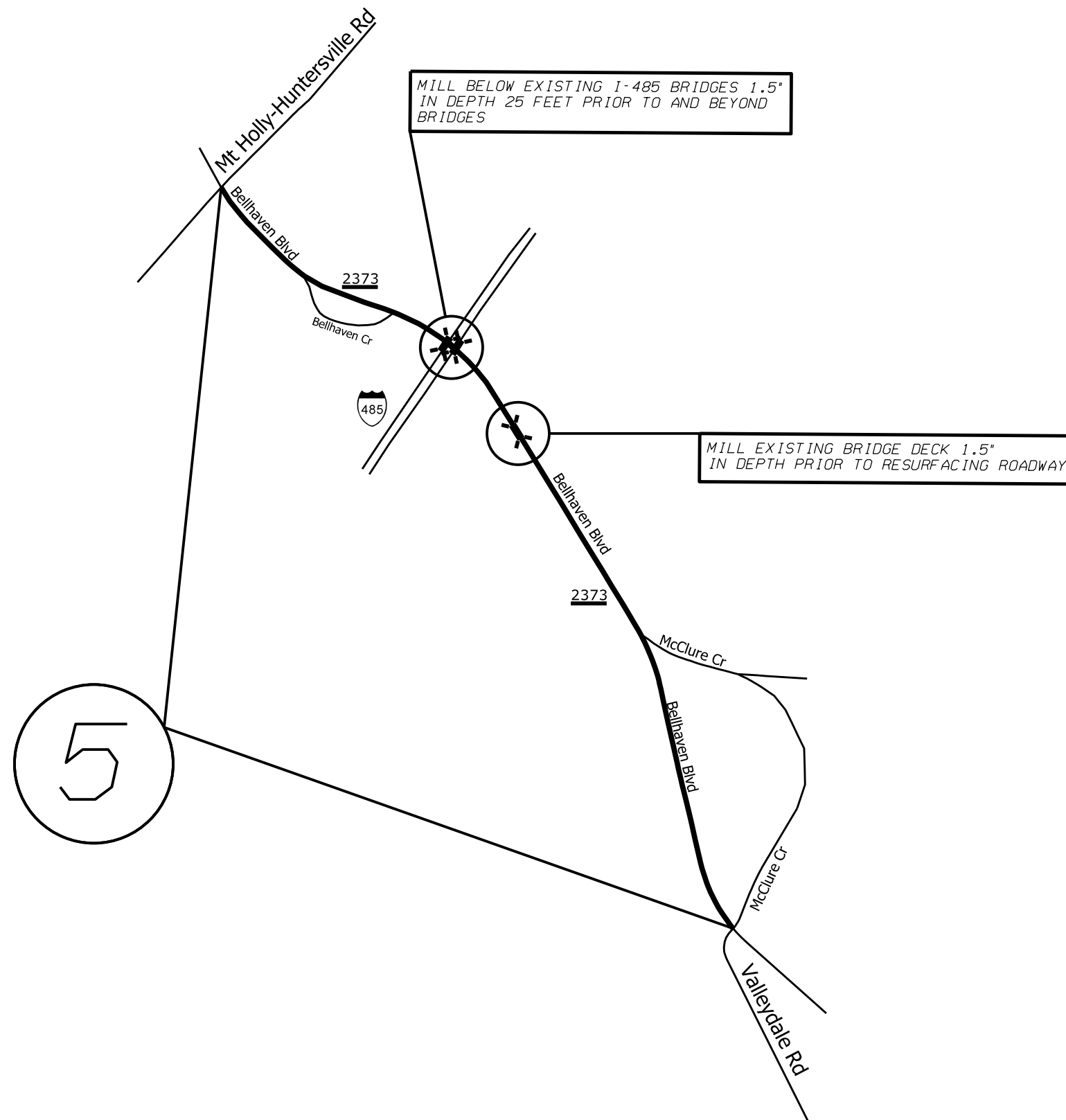
4 SR 1009 MONROE ROAD

FROM LUMARKA DRIVE TO KNICKERBOCKER DRIVE

2024 MECKLENBURG COUNTY RESURFACING CONTRACT 3		
SCALE	-NA-	REVISIONS
DATE		
DWG. BY	JHE	
DESIGN BY	JHE	
APPROVED		



STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT. 10.07.10601		
	2024CPT. 10.07.20601		



MAP

#5 SR 2373 BELLHAVEN BLVD

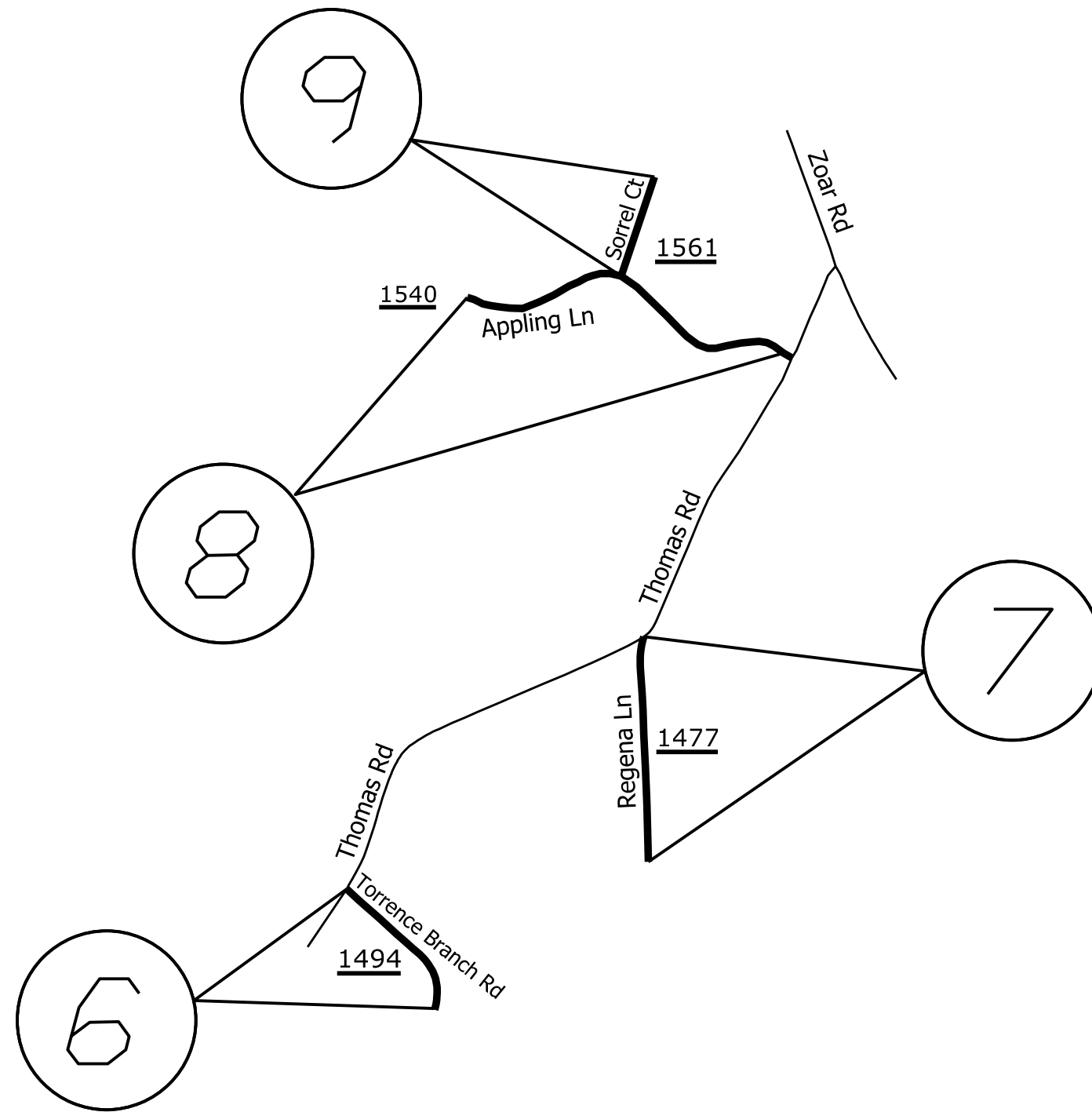
DESCRIPTION

FROM VALLEYDALE ROAD TO MT. HOLLY HUNTERSVILLE RD

2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-NA-		REVISIONS	
DATE				
DWG. BY	JHE			
DESIGN BY				
APPROVED				

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT. 10.07.10601 2024CPT. 10.07.20601		



MAP

DESCRIPTION

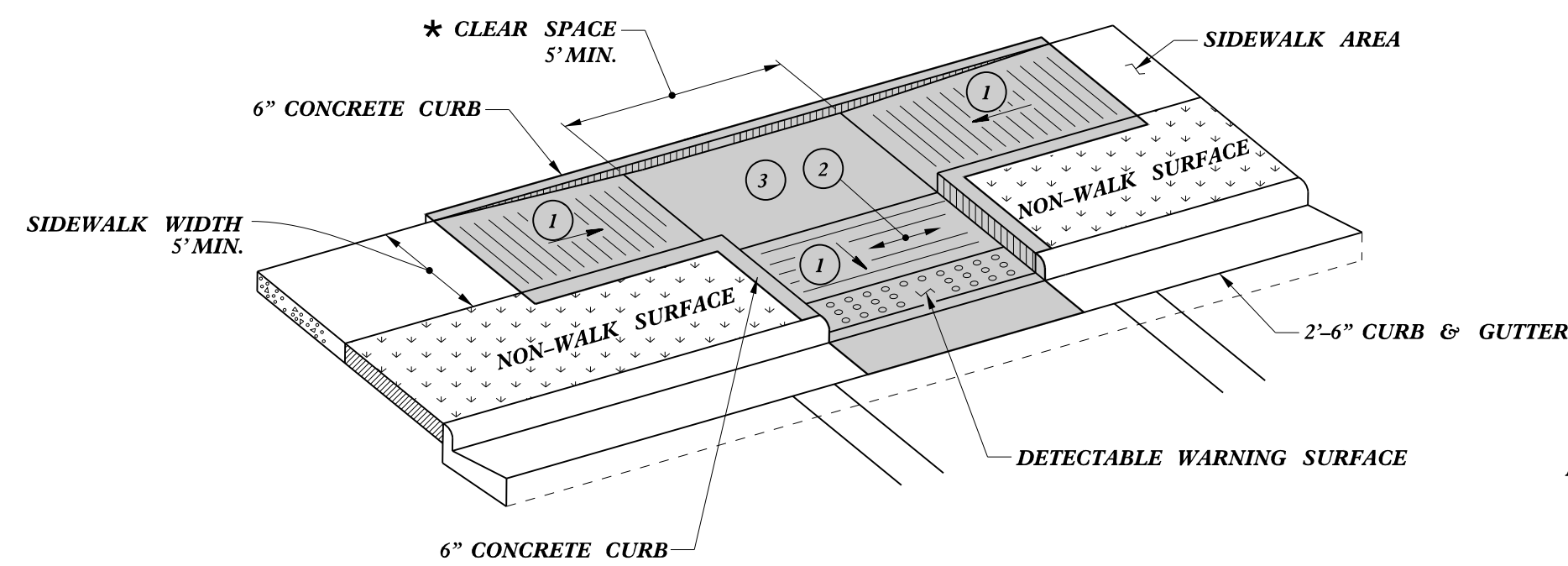
- # 6 SR 1494 TORRENCE BRANCH ROAD
- # 7 SR 1477 REGENA LANE
- # 8 SR 1540 APPLING LANE
- # 9 SR 1561 SORREL COURT

- FROM THOMAS RD TO END OF MAINTENANCE
- FROM THOMAS RD TO END OF MAINTENANCE
- FROM THOMAS RD TO END OF MAINTENANCE
- FROM APPLING LANE TO END OF MAINTENANCE

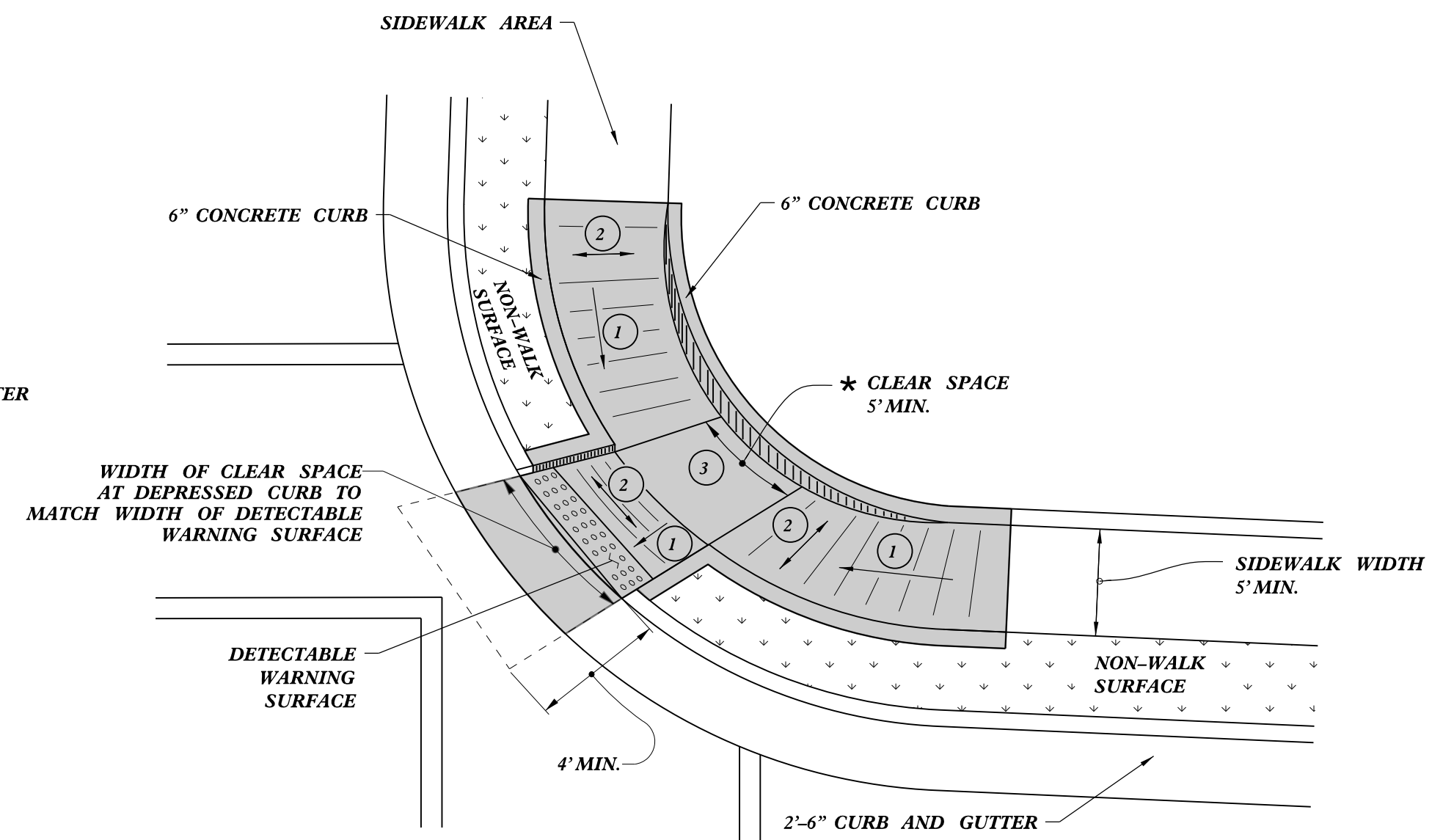
2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-#A-		REVISIONS	
DATE				
DWG. BY	JHE			
DESIGN BY				
APPROVED				

* - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4' MINIMUM X 5' MINIMUM, WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.

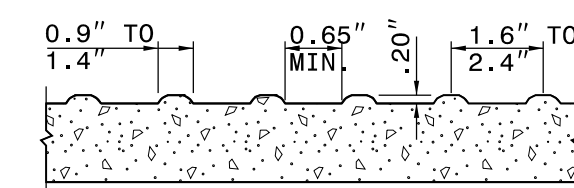
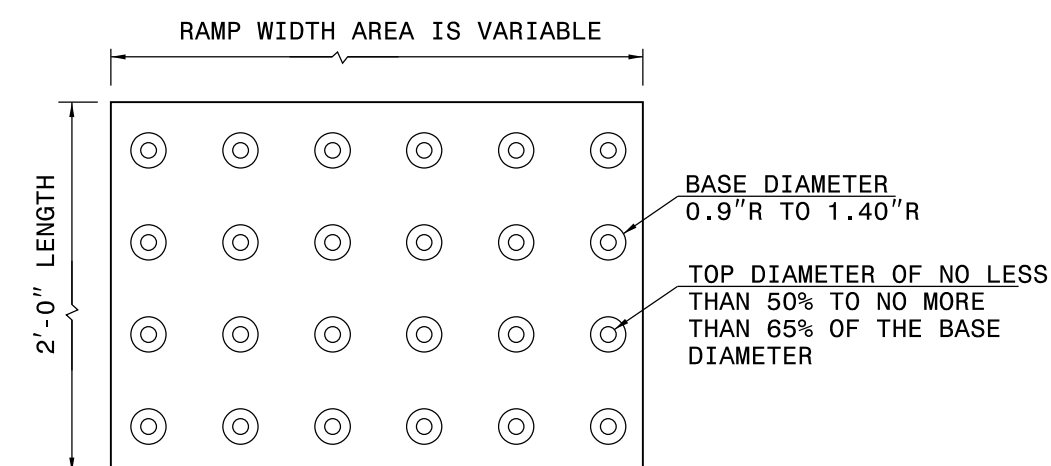


TYPE 3



**TYPE 3 MODIFIED
INSTALLATION IN A RADIUS**

NOTES:
 DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



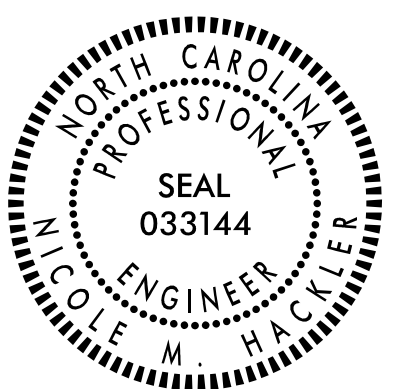
DETECTABLE WARNING SURFACE

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%

PAY LIMITS FOR 1 CURB RAMP

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

ROADWAY STANDARD DRAWING FOR
CURB RAMP
 PARALLEL RAMP



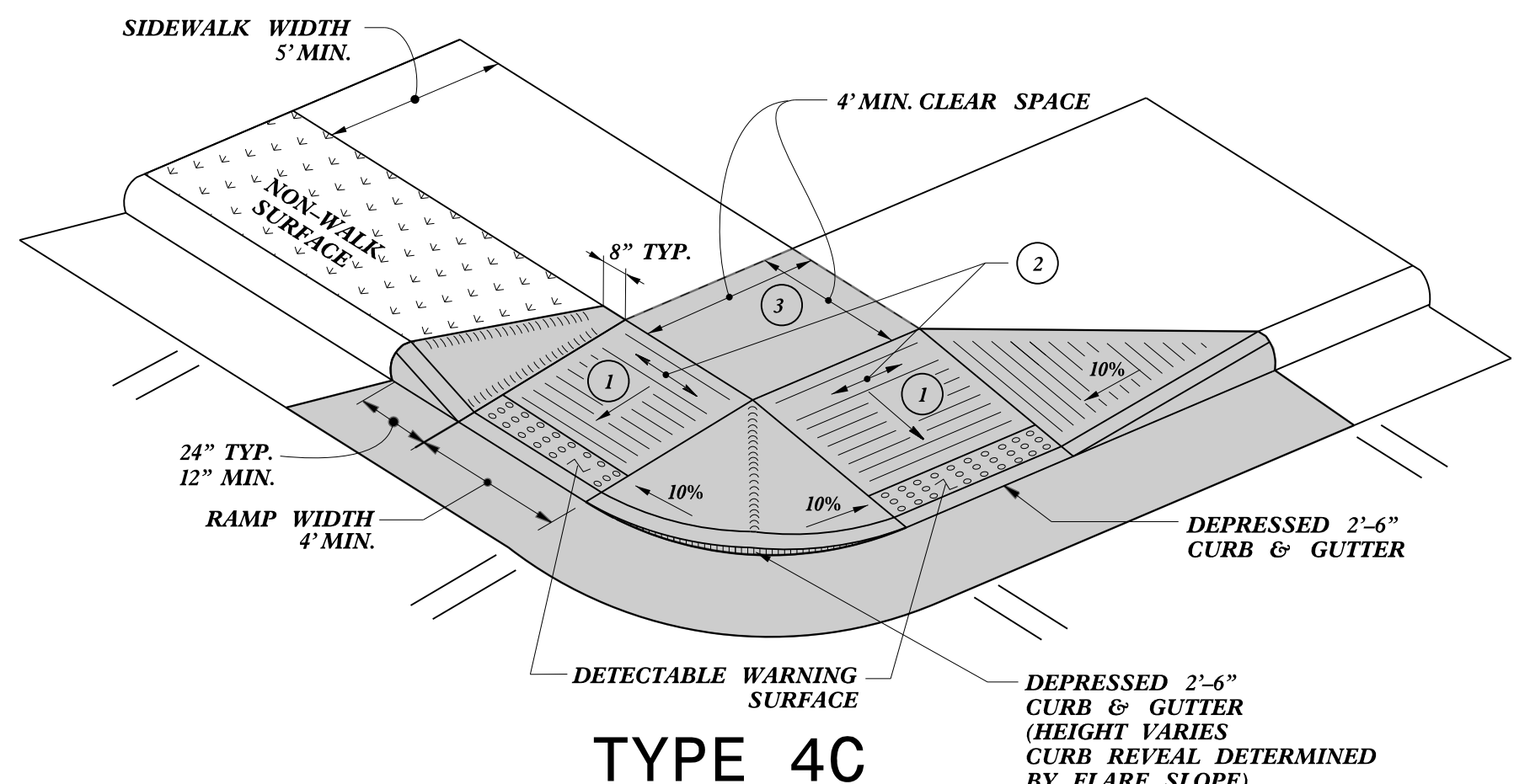
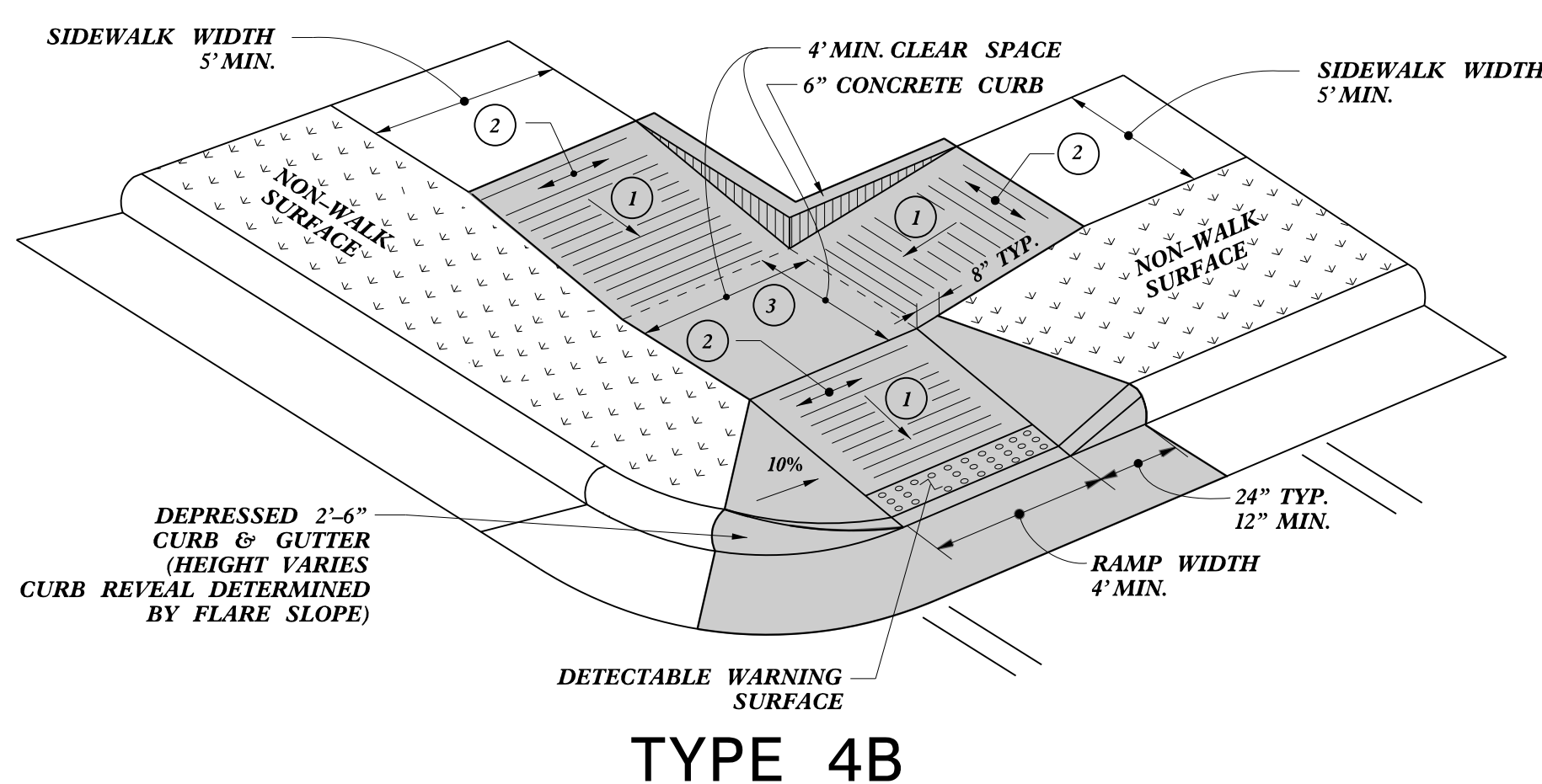
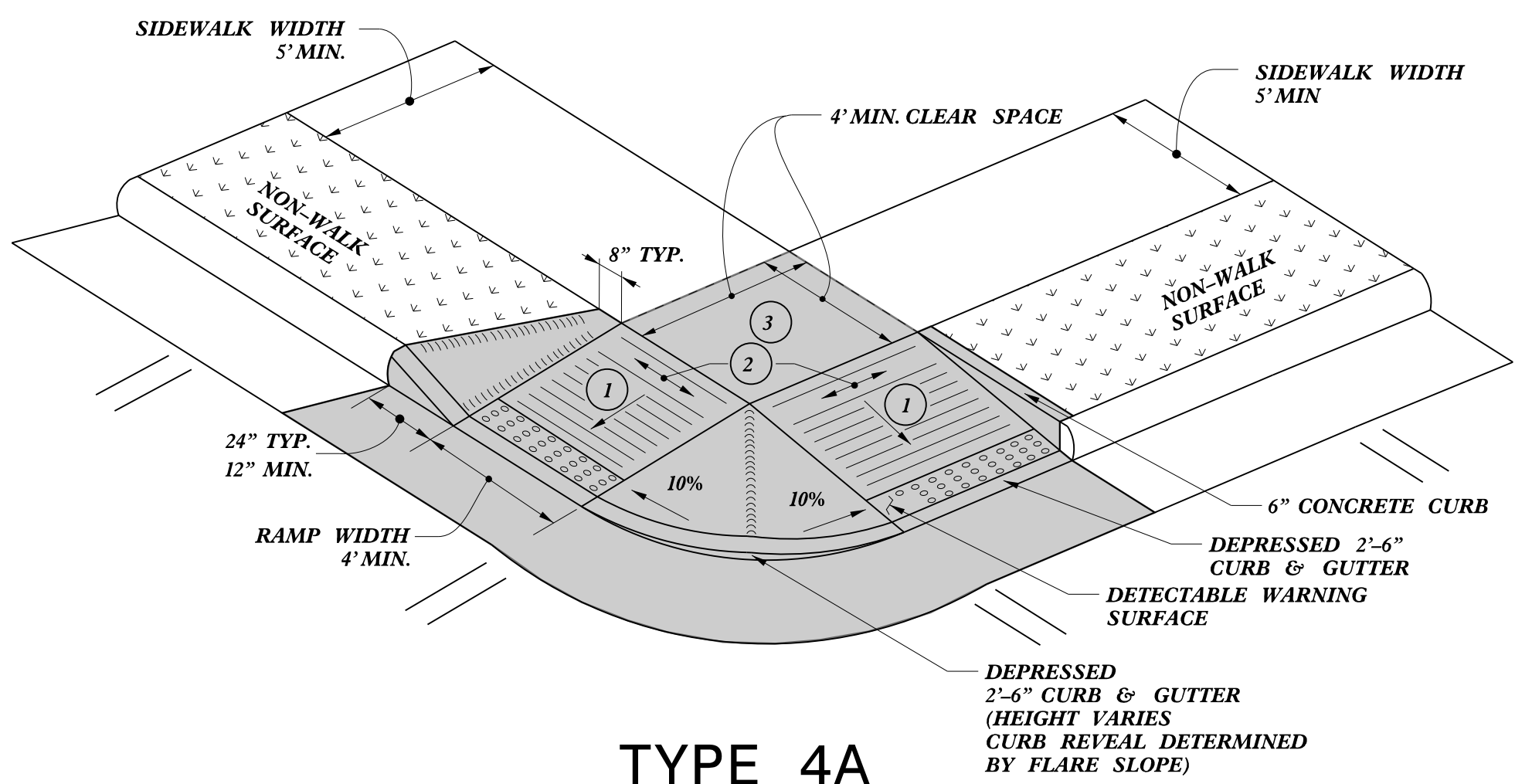
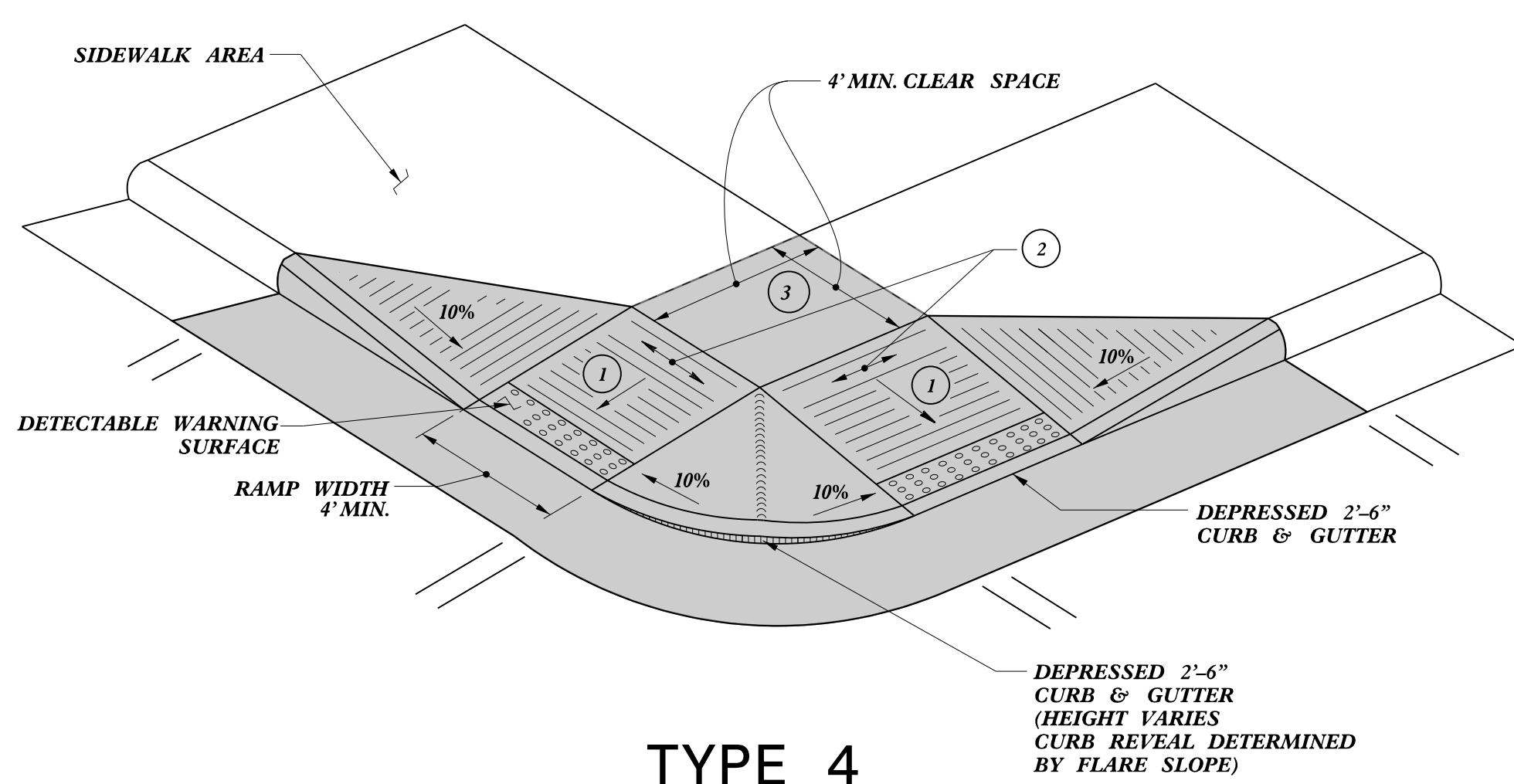
SHEET 9 OF 13
848D06

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

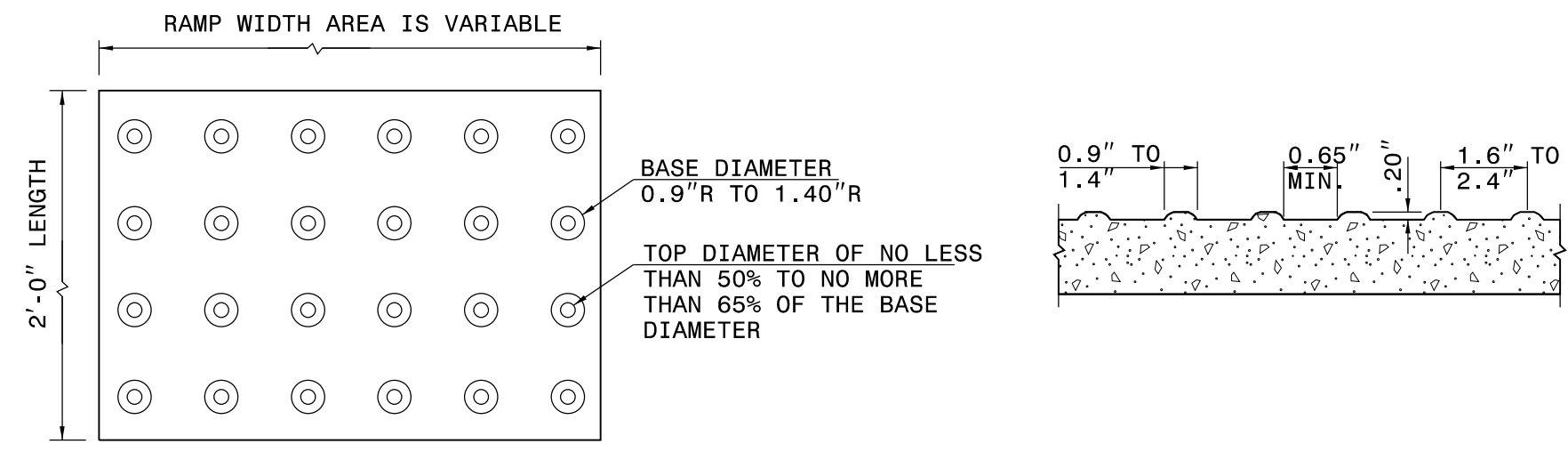
CONTRACTS STANDARDS
 AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 12-22-2023
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: special_details\nmhackler\0609.dgn



NOTES:
 DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%

PAY LIMITS FOR 1 OR 2 CURB RAMPS (CALCULATE BASED ON NUMBER OF SETS OF DETECTABLE WARNING SURFACES)

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

ROADWAY STANDARD DRAWING FOR
CURB RAMP
 SHARED LANDING



SHEET 10 OF 13
848D06

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 12-22-2023
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: special_details\nmhackler\848D0610.dgn

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.			
WBS NO.	2024CPT.J0.07.J0601 2024CPT.J0.07.20601		

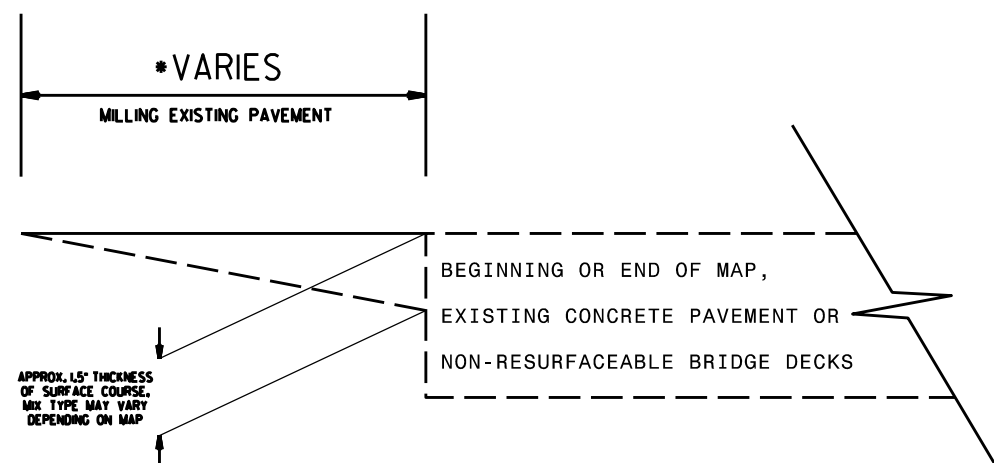
INCIDENTAL MILLING

NOTE:

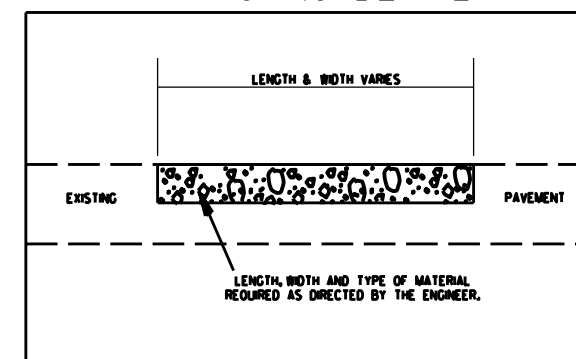
FOR SURFACE MIXES OVER 1" IN THICKNESS, MILL THE EXISTING PAVEMENT IN ACCORDANCE WITH THE FOLLOWING SKETCH AS DIRECTED BY THE ENGINEER.

LOCATIONS SHALL INCLUDE TIES INTO EXISTING CONCRETE PAVEMENT AT BRIDGE APPROACHES WHERE THE BRIDGE WILL NOT BE RESURFACED, AND AT THE BEGINNING AND END POINT OF EACH RESURFACING MAP.

PERFORM THE WORK IN ACCORDANCE WITH SECTION 607 OF THE JANUARY 2018 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. RESURFACING WILL BE ACCOMPLISHED AT THE SAME TIME AS THE MILLING OPERATION.



PATCHING DETAIL

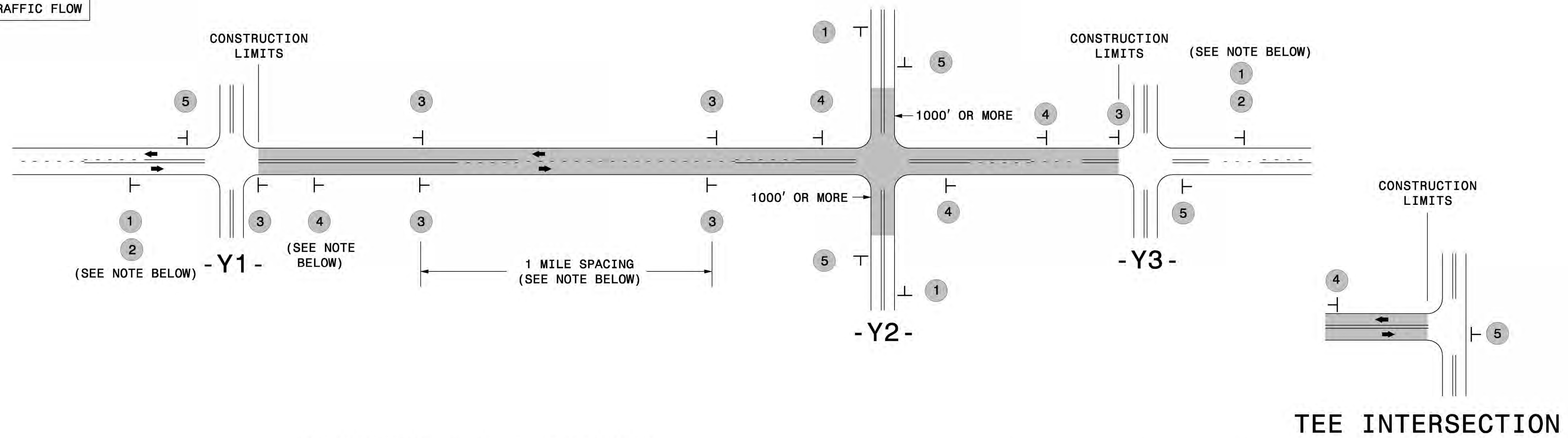


2024 MECKLENBURG COUNTY
RESURFACING CONTRACT 3

SCALE	-NA-		REVISIONS
DATE			
DWG. BY	JHE		
DESIGN BY			
APPROVED			

SIGNING FOR RESURFACING PROJECTS

LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW



MAINLINE (-L-) SIGNING

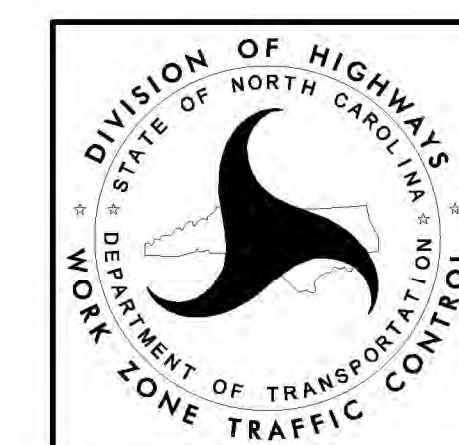
-Y- LINE SIGNING

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.

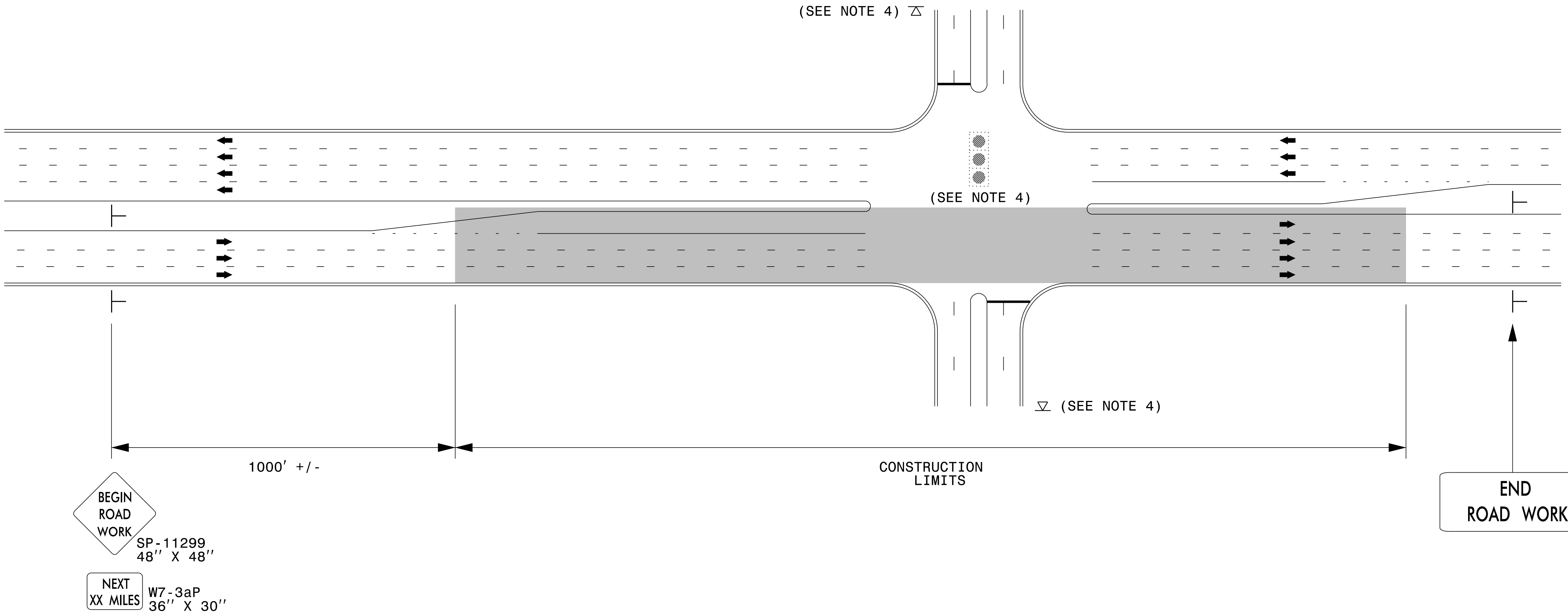
MAPS LESS THAN 2 MILES

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

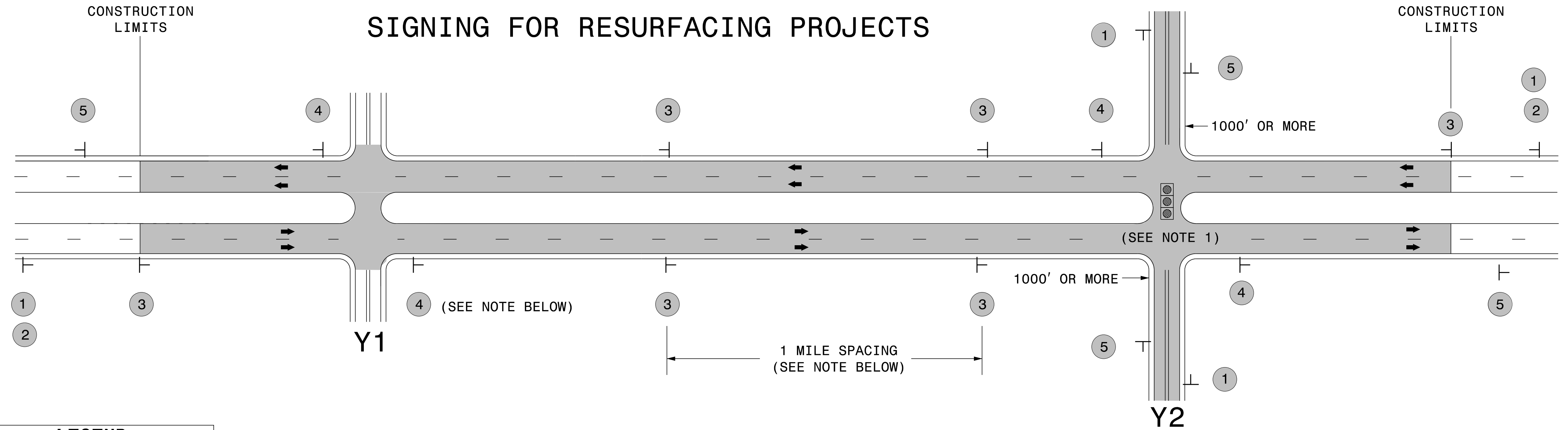
┆ STATIONARY SIGN

➔ DIRECTION OF TRAFFIC FLOW



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

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



LEGEND
 ┆ STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

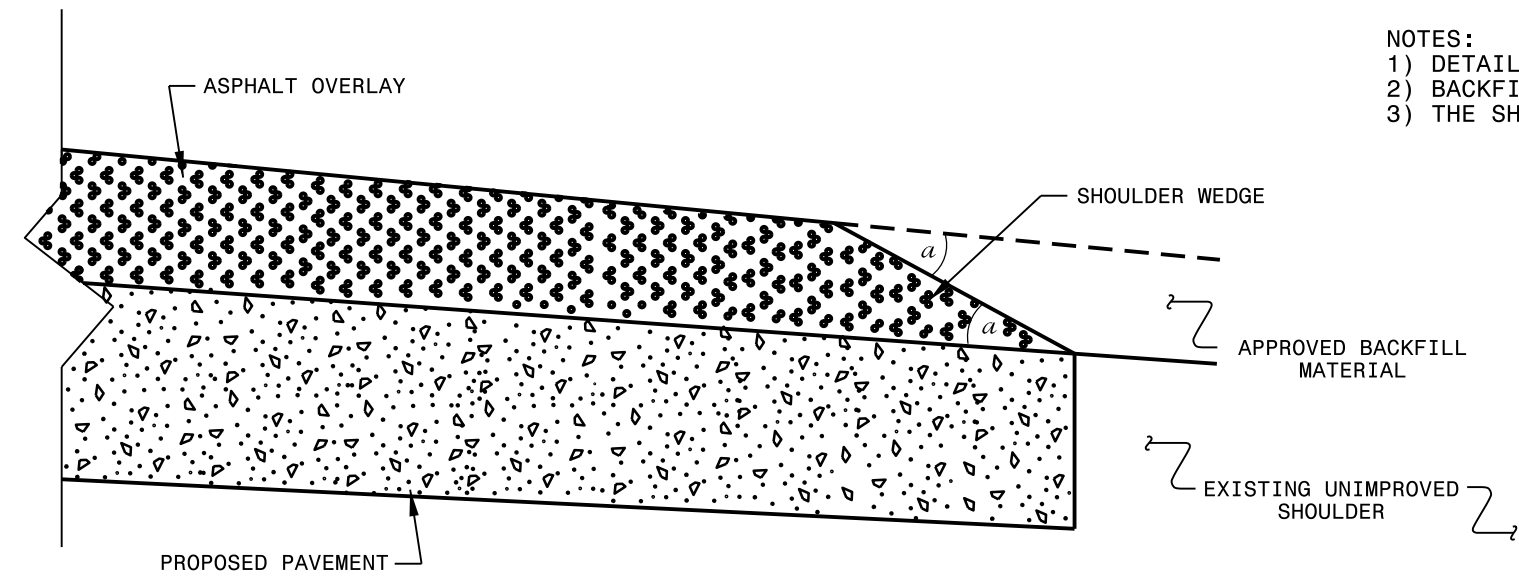
SIGNING NOTES AND PLACEMENT PER DIRECTION	 	<p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL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

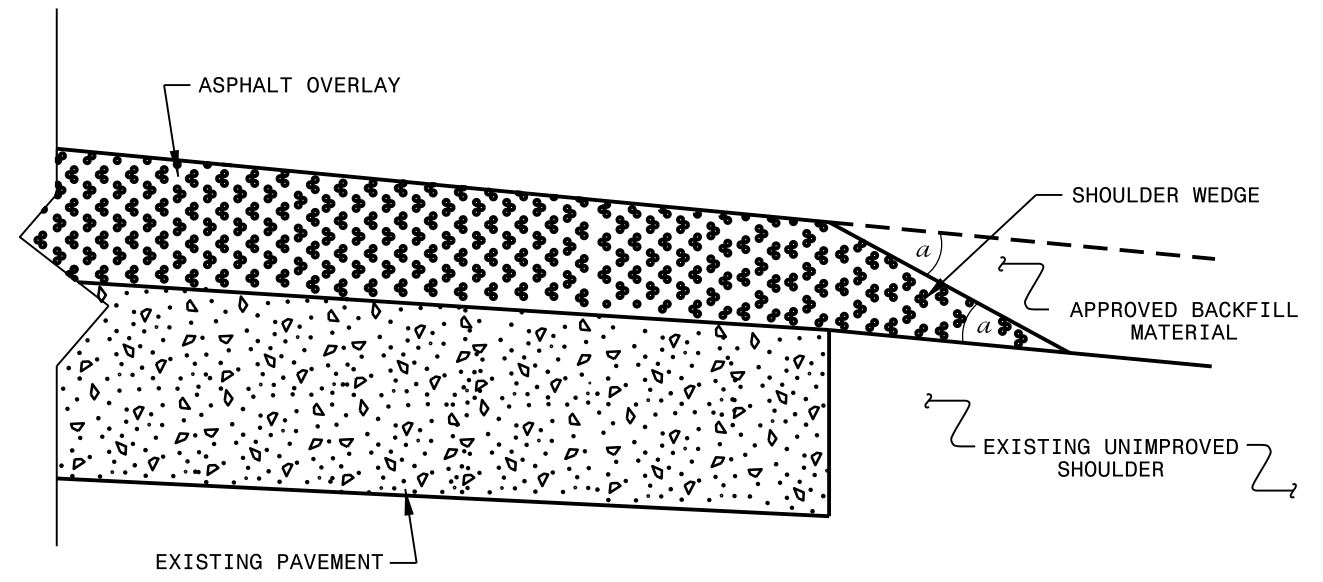
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

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

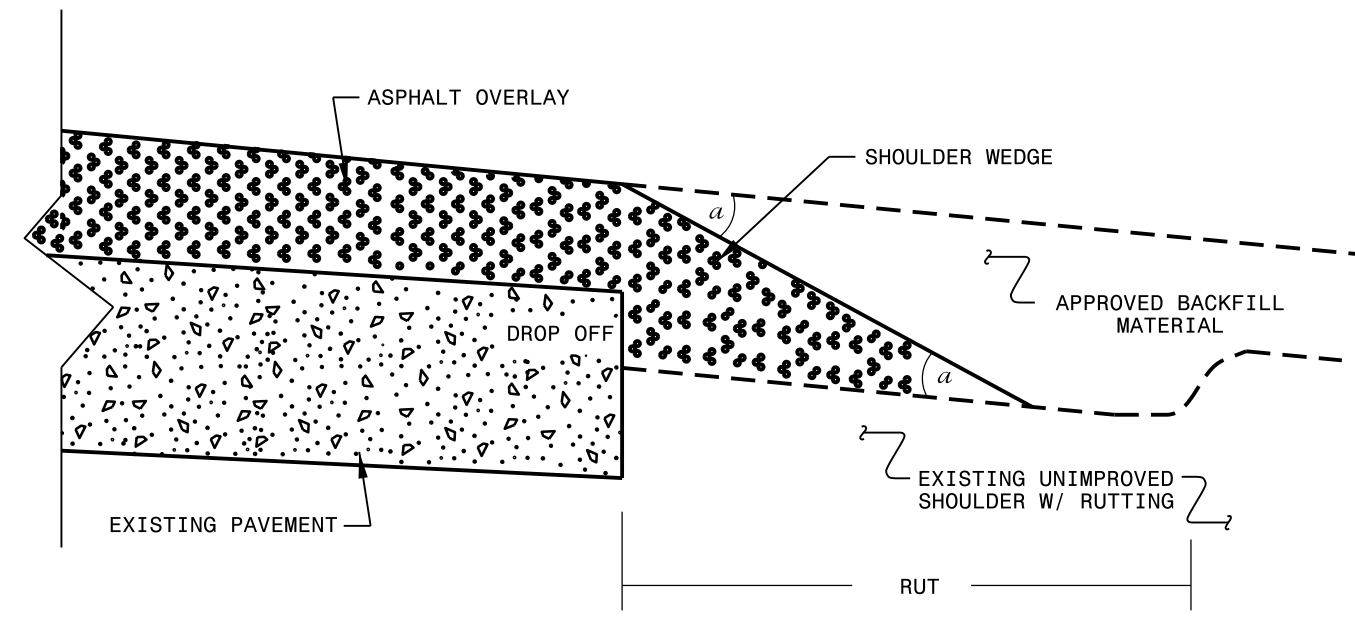
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



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



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



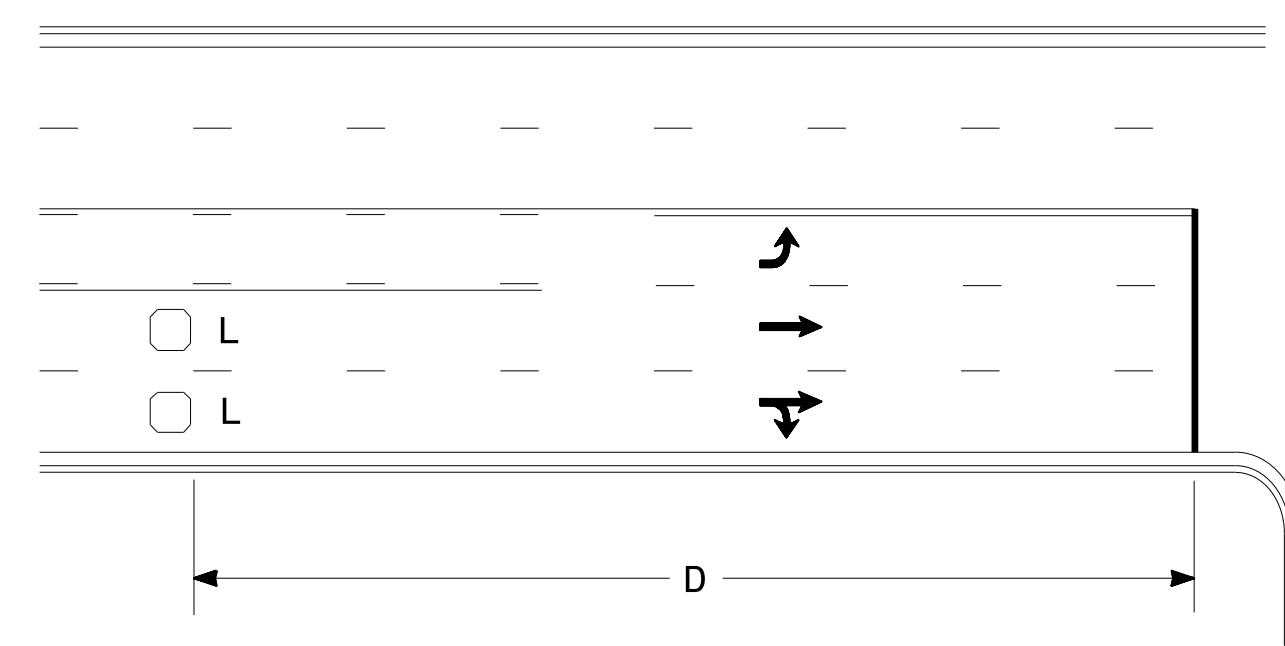
SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

- 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			

SYSTEMS DESIGN
 USER NAME

High Speed Detection (≥40 mph)

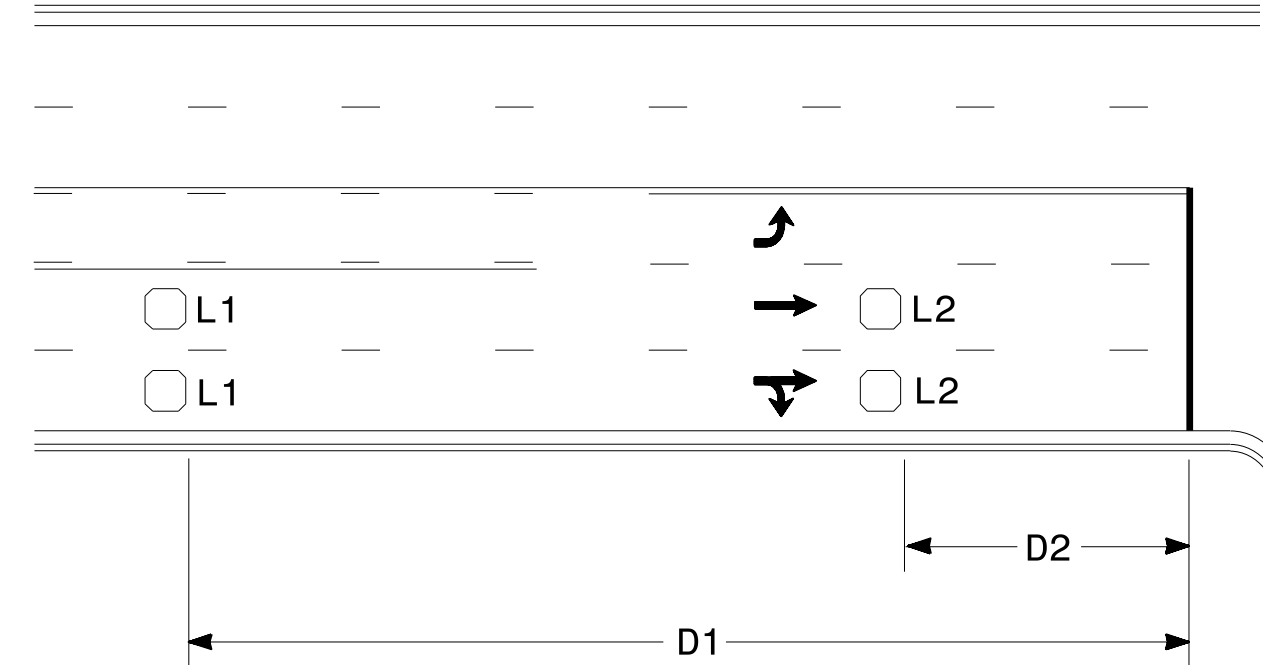


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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

Volume Density Operation

OR

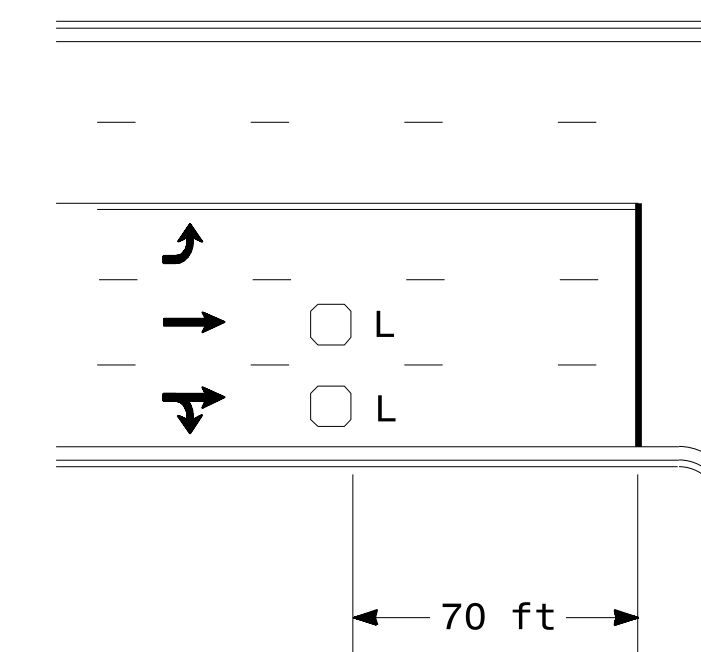


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

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

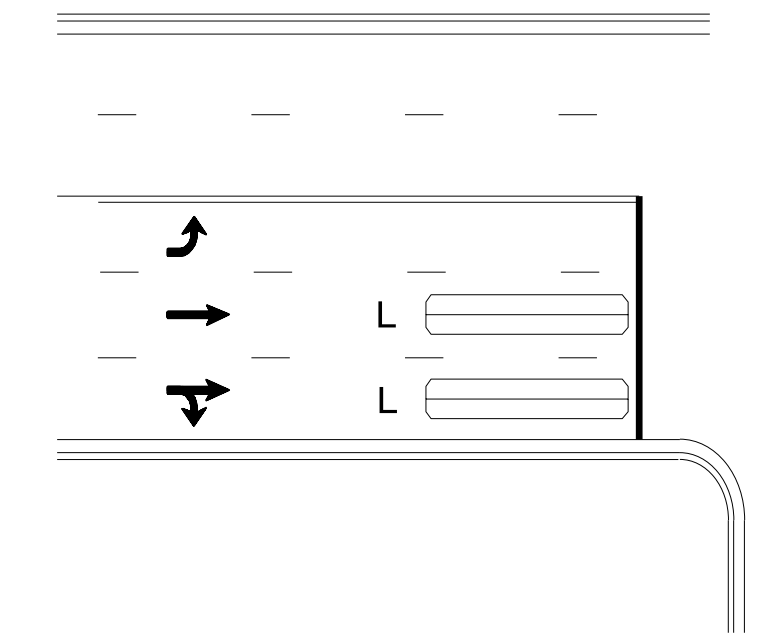
"Stretch" Operation

Low Speed Detection (≤35 mph)



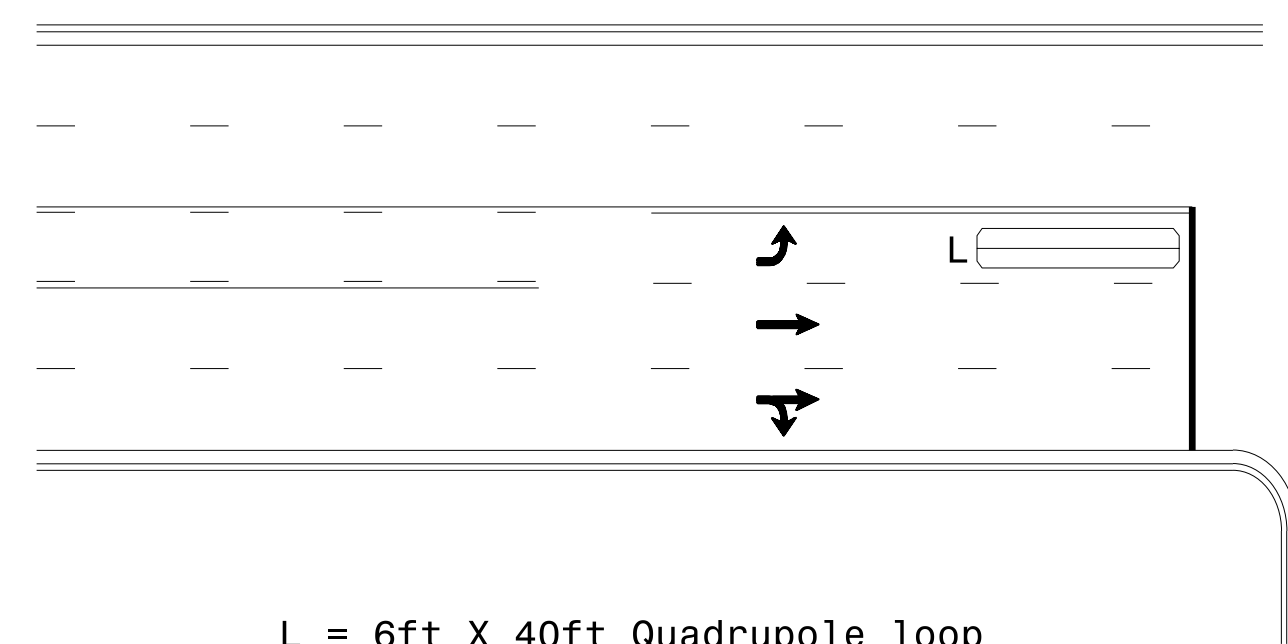
L = 6ft X 6ft
Wired in series

OR



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

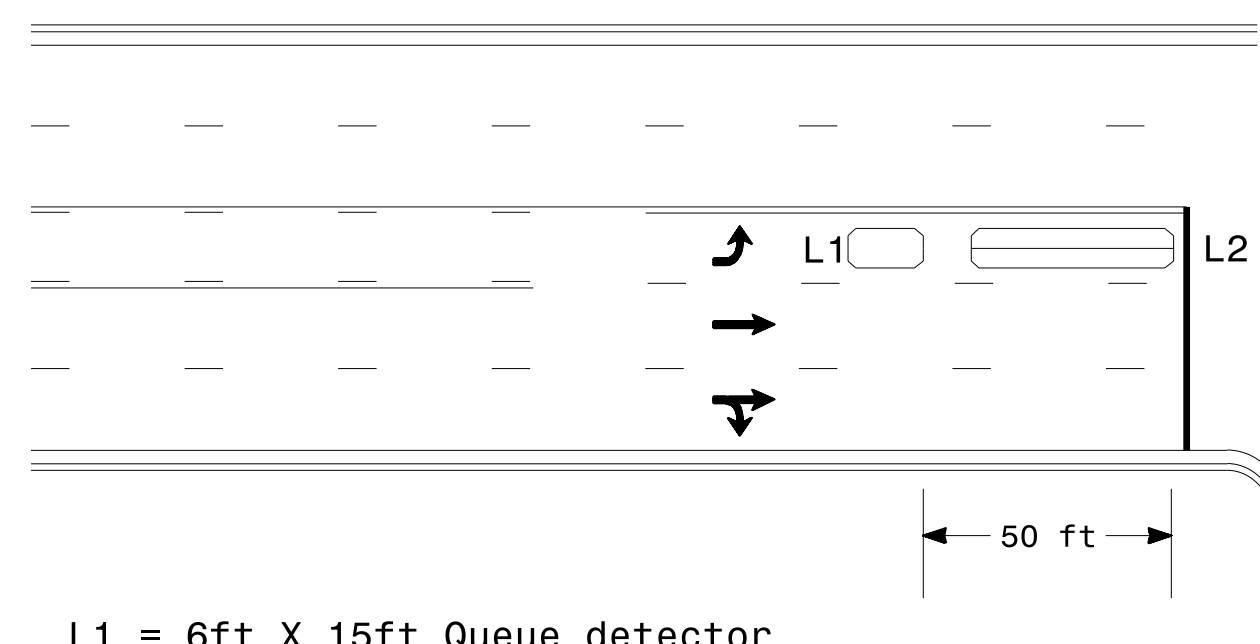
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

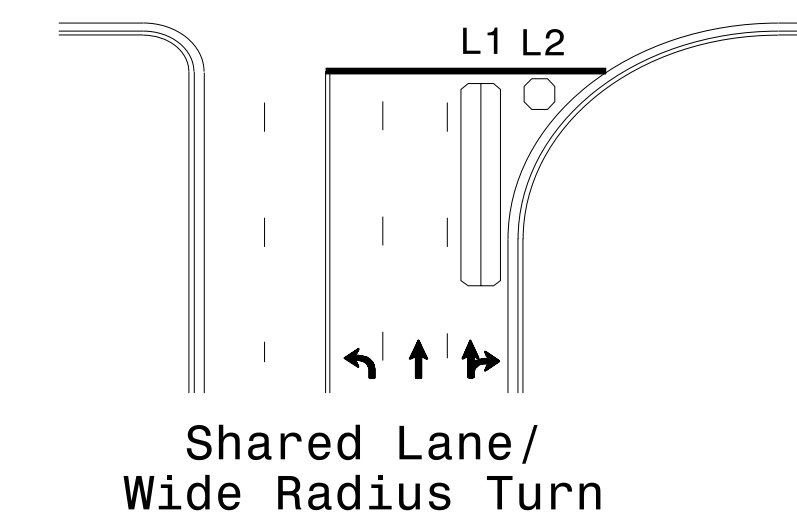
OR



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

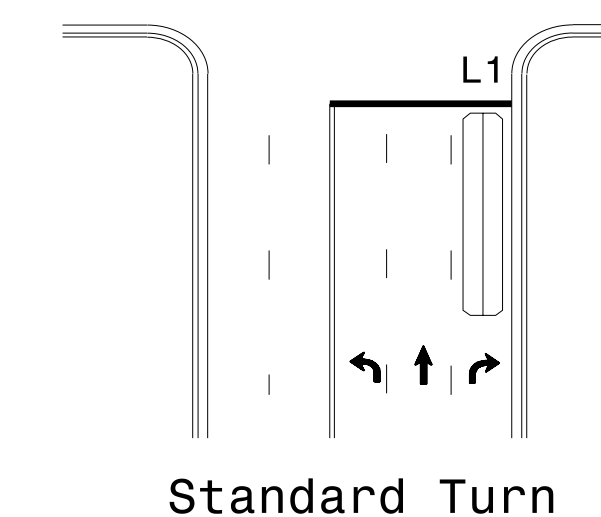
Queue Loop Detection

Right Turn Lane Detection

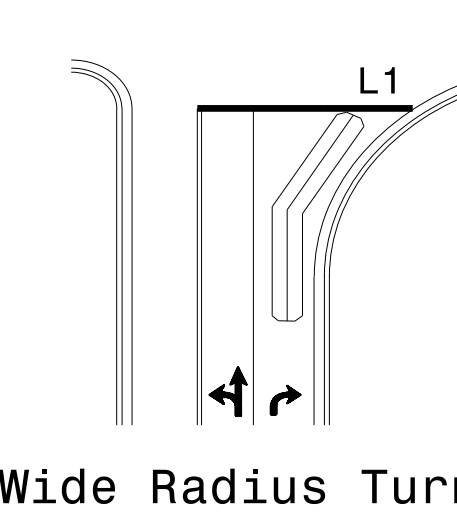


Shared Lane/
Wide Radius Turn

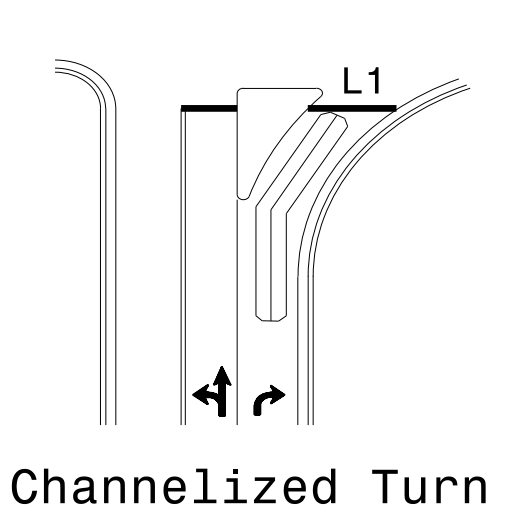
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

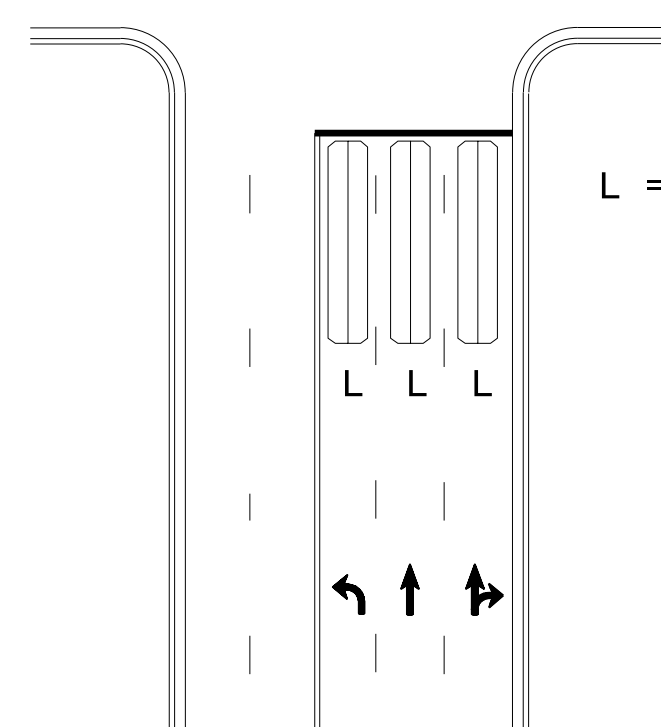


Wide Radius Turn



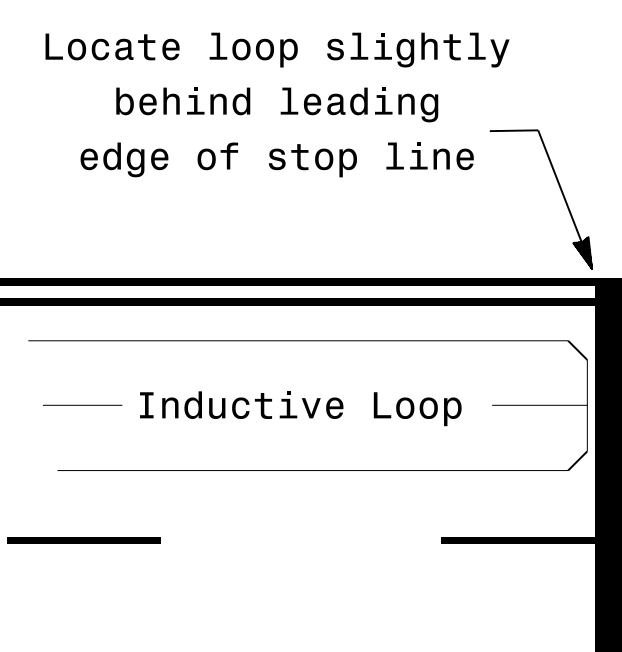
Channelized Turn

Side Street Detection



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

Presence Loop Placement at Stop Lines



Locate loop slightly
behind leading
edge of stop line

Note:
Loop may be located in advance
of stop line under any of the
following conditions:
1) stop line is greater than 15'
from edge of intersecting
roadway
2) loop detects a permissive or
protected/permissive left turn
3) for an exclusive right turn
lane

Recommended Number of Turns

Single 6' X 6' loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

<p>Prepared In the Offices of: TRANSPORTATION MOBILITY AND SAFETY SOLUTIONS, INC. SIGNAL DESIGN SECTION 750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>Typical Signal Loop Locations</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>REVISIONS</p>	<p>INIT. DATE</p>
<p>SIG. INVENTORY NO.</p>			<p>1/30/2015</p>

PROJECT NO.	SHEET NO.	TOTAL NO.
2024CPT.10.07.10601		
2024CPT.10.07.20601		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH	WIDTH		BEGIN MP	END MP	1220000000-E	1245000000-E	1260000000-E	1297000000-E	1308000000-E	1330000000-E	1519000000-E	1523000000-E	1575000000-E	1704000000-E	2612000000-E	2612300000-N	2830000000-N	2845000000-N	5255000000-N	6000000000-E	7444000000-E							
											MI	FT			INCIDENTAL STONE BASE	SHOULDER RECONSTRUCTION	AGGREGATE SHOULDER BORROW	1½" MILLING	0" TO 1.5" MILLING	INCIDENTAL MILLING	SURFACE COURSE, \$9.5B	SURFACE COURSE, \$9.5C	ASPHALT BINDER FOR PLANT MIX	PATCHING EXISTING PAVEMENT	6" DRIVEWAYS	RETROFIT EXISTING CONCRETE CURB RAMPS	ADJ. OF MANHOLES	ADJ. OF METER OR VALVE BOX	PORTABLE LIGHTING	TEMPORARY SILT FENCE	INDUCTIVE LOOP SAWCUT							
											TONS	SMI	TON	SY	SY	SY	TONS	TONS	TONS	TONS	SY	EA	EA	EA	LS	LF	LF											
2024CPT.10.07.10601	Mecklenburg	1	EB NC-24 W T HARRIS BLVD (3000024060)	FROM N. TRYON ST. TO OLD CONCORD ROAD	1,2	2	MD	NO	NO	1.57	24	7.95	9.52			3.14	484		806	7,356		3,706	238	400			3	6	0.2									
TOTAL FOR MAP NO. 1											1.57		484		806	7,356		3,706	238	400				3	6	0.2												
2024CPT.10.07.10601	Mecklenburg	2	WB NC-24 W T HARRIS BLVD (3060024060)	FROM OLD CONCORD ROAD TO N. TRYON ST	1,2	2	MD	NO	NO	1.56	24	14.6	16.16			3.14	484		504	6,281		3,644	239	500			2	6	0.2		950							
TOTAL FOR MAP NO. 2											1.56		484		504	6,281		3,644	239	500				2	6	0.2		950										
TOTAL FOR PROJ NO. 2024CPT.10.07.10601											3.13		968		1,310	13,637		7,350	477	900				5	12	0.4		950										
2024CPT.10.07.20601	Mecklenburg	3	SR-4979 BALLANTYNE COMMONS PWY (40004979060)	FROM TOM SHORT ROAD TO BRITTANY OAKS DRIVE	3	2	2WU	NO	NO	0.49	25	1.65	2.14			0.98	203			1,726	827		78	500			1	4	0.2		315							
TOTAL FOR MAP NO. 3											0.49		203			1,726	827			78	500				1	4	0.2		315									
2024CPT.10.07.20601	Mecklenburg	4	SR-1009 MONROE ROAD (40001009060)	FROM LUMARKA DRIVE TO KNICKERBOCKER DRIVE	4	4	MU	NO	NO	1.32	58	3.2	4.52									3,686	237	400		10	16	11	0.2		1,200							
TOTAL FOR MAP NO. 4											1.32								39,885			3,686	237	400		10	16	11	0.2		1,200							
2024CPT.10.07.20601	Mecklenburg	5	SR-2373 BELLHAVEN BLVD (40002373060)	FROM VALLEYDALE ROAD TO MT. HOLLY-HUNTERSVILLE ROAD	5,6,7,8,9	2	2WU	NO	NO	1.61	24	1.05	2.66	10		3.22	330	380	5,610	2,883		2,990	200	500	30			1	0.2	200	942							
TOTAL FOR MAP NO. 5											1.61		330	380	5,610	2,883		2,990	200	500	30				1	0.2	200	942										
2024CPT.10.07.20601	Mecklenburg	6	SR-1494 TORRENCE BRANCH RD (40001494060)	FROM THOMAS ROAD TO END OF MAINTENANCE	10	2	2WU	NO	NO	0.16	18	0	0.16								225	177		20	150													
TOTAL FOR MAP NO. 6											0.16									225	177		20	150														
2024CPT.10.07.20601	Mecklenburg	7	SR-1477 REGENA LANE (40001477060)	FROM THOMAS ROAD TO END OF MAINTENANCE	10	2	2WU	NO	NO	0.19	18	0	0.19	40							100	165		18	150	20												
TOTAL FOR MAP NO. 7											0.19					40				100	165		18	150	20													
2024CPT.10.07.20601	Mecklenburg	8	SR-1540 APPLING LANE (40001540060)	FROM THOMAS ROAD TO END OF MAINTENANCE	10	2	2WU	NO	NO	0.38	18	0	0.38								137	485		51	400	140												
TOTAL FOR MAP NO. 8											0.38									137	485		51	400	140													
2024CPT.10.07.20601	Mecklenburg	9	SR-1561 SORREL COURT (40001561060)	FROM APPLING LANE TO END OF MAINTENANCE	10	2	2WU	NO	NO	0.05	18	0	0.05									80		15	200	20												
TOTAL FOR MAP NO. 9											0.05										80		15	200	20													
TOTAL FOR PROJ NO. 2024CPT.10.07.20601											4.2		533	40,265	5,610	5,071		1,734	6,676	619	2,300	210	10	17	16	0.6	200	2,457										
GRAND TOTAL											7.33		1,501	40,265	6,920	18,708		1,734	14,026	1,096	3,200	210	10	22	28	1.0	200	3,407										

