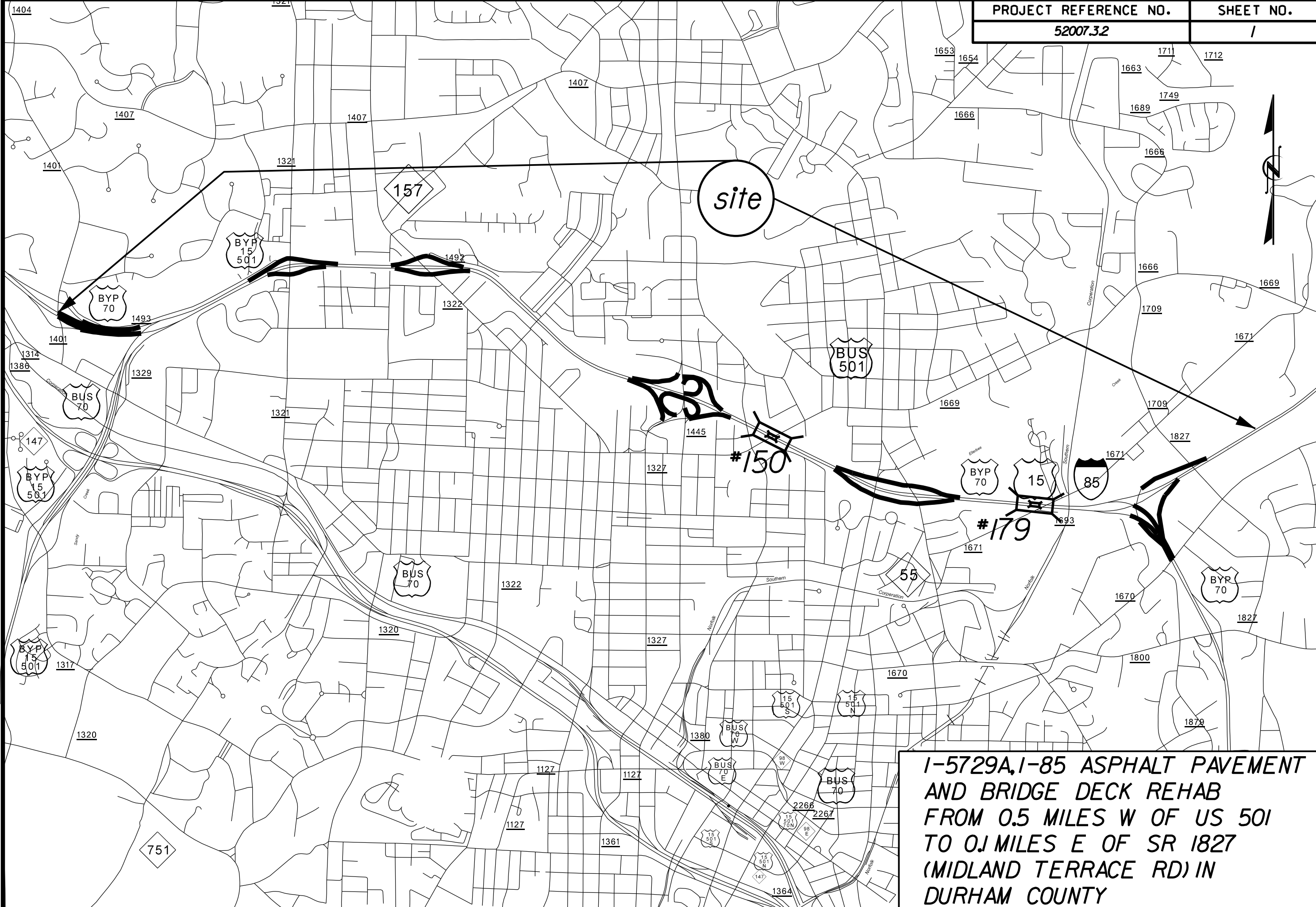


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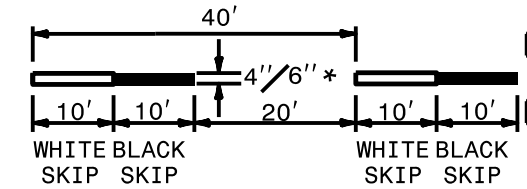
**I-5729A, I-85 ASPHALT PAVEMENT
AND BRIDGE DECK REHAB
FROM 0.5 MILES W OF US 501
TO 0.1 MILES E OF SR 1827
(MIDLAND TERRACE RD) IN
DURHAM COUNTY**

PAVEMENT SCHEDULE

C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVG. RATE OF 224 LBS PER SQ. YD.
J	PROP. 6" AGGREGATE BASE COURSE, AS DIRECTED BY THE ENGINEER
S	PROP. SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW, AS DIRECTED BY THE ENGINEER
U1	EXISTING ASPHALT PAVEMENT
V1	PROP. 2" MILLING ASPHALT PAVEMENT
V2	PROP. CONTINUOUS MILLED RUMBLE STRIP (ASPHALT CONCRETE), AS DIRECTED BY THE ENGINEER

BLACK - WHITE COMBINATION 10' WHITE SKIP LINES 10' BLACK SKIP LINES

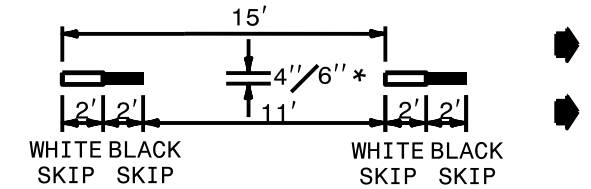
FOR USE ON CONCRETE PAVEMENTS TO PROVIDE CONTRAST FOR THE WHITE LANE LINE, ALONG THRU LANES AND RAMP LANES.



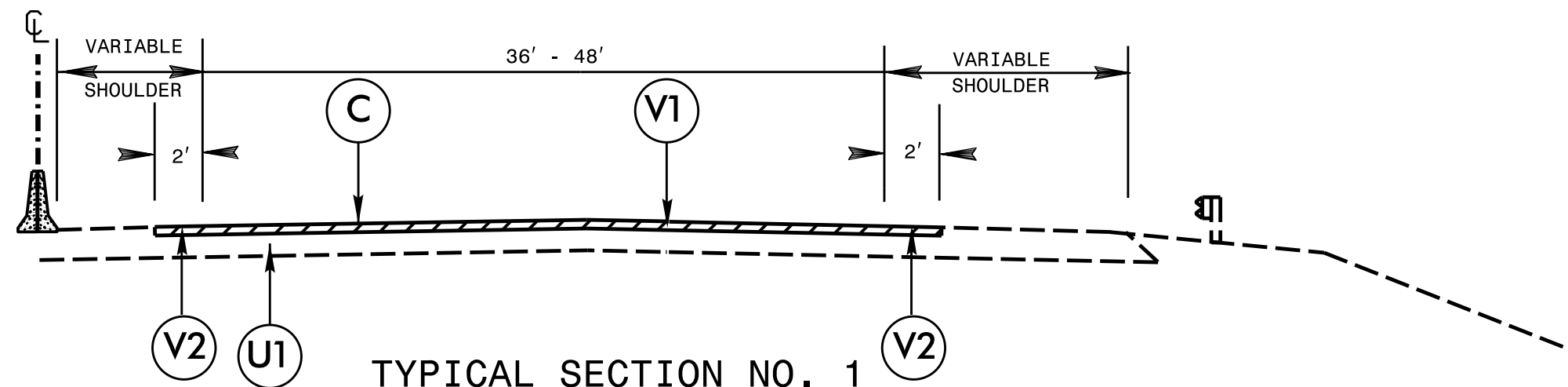
*NOTE:
WHERE TWO WIDTHS ARE INDICATED, THE FIRST WIDTH APPLIES TO A "NORMAL" WIDTH LINE, THE SECOND WIDTH APPLIES TO A "WIDE" LINE.
"WIDE" LINES ARE REQUIRED WHEN DESIGNATED IN THE PLANS, OR WHEN DIRECTED BY THE ENGINEER.

BLACK - WHITE COMBINATION 2' MINI WHITE SKIP LINES 2' MINI BLACK SKIP LINES

FOR USE ON CONCRETE PAVEMENTS TO PROVIDE CONTRAST FOR THE WHITE LANE LINE, ALONG THRU LANES AND RAMP LANES.



*NOTE:
WHERE TWO WIDTHS ARE INDICATED, THE FIRST WIDTH APPLIES TO A "NORMAL" WIDTH LINE, THE SECOND WIDTH APPLIES TO A "WIDE" LINE.
"WIDE" LINES ARE REQUIRED WHEN DESIGNATED IN THE PLANS, OR WHEN DIRECTED BY THE ENGINEER.

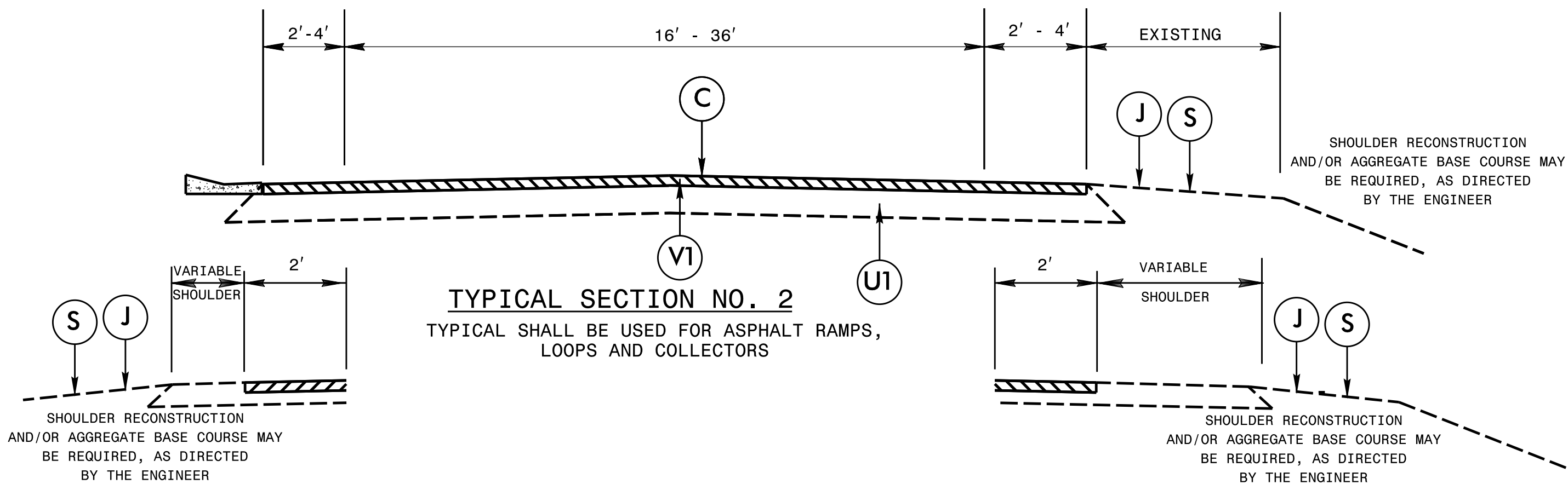
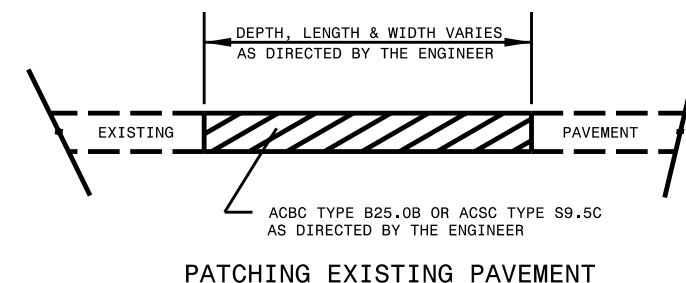


TYPICAL SECTION NO. 1

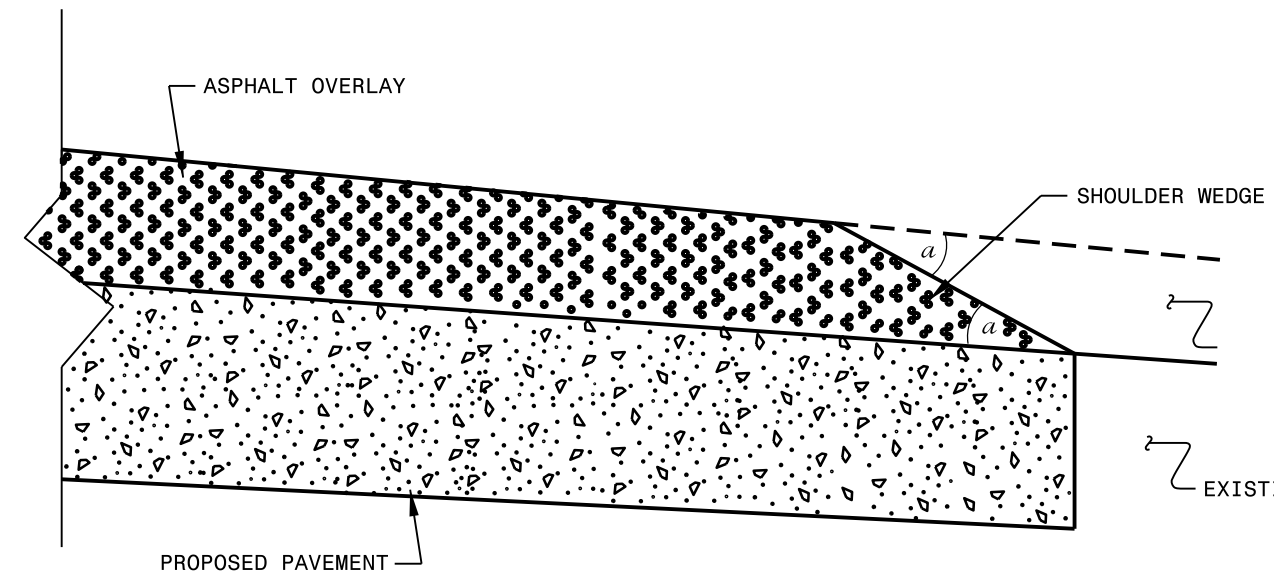
TYPICAL SHALL BE USED FOR ASPHALT MAINLINE SECTION BETWEEN STRUCTURE OVER COLE MILL RD AND BEGINNING OF CONCRETE PAVEMENT

PAVEMENT SCHEDULE

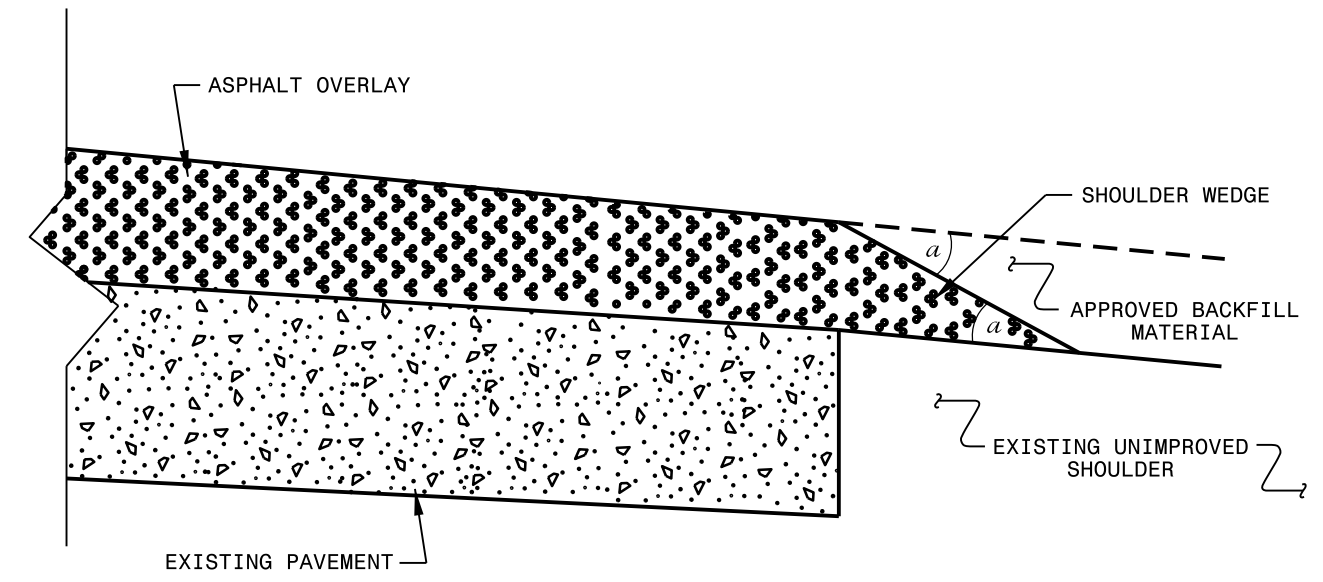
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVG. RATE OF 224 LBS PER SQ. YD.	V1	PROP. 2" MILLING ASPHALT PAVEMENT
J	PROP. 6" AGGREGATE BASE COURSE, AS DIRECTED BY THE ENGINEER	V2	PROP. CONTINUOUS MILLED RUMBLE STRIP (ASPHALT CONCRETE), AS DIRECTED BY THE ENGINEER
S	PROP. SHOULDER RECONSTRUCTION WITH AGGREGATE SHOULDER BORROW, AS DIRECTED BY THE ENGINEER		
U1	EXISTING ASPHALT PAVEMENT		



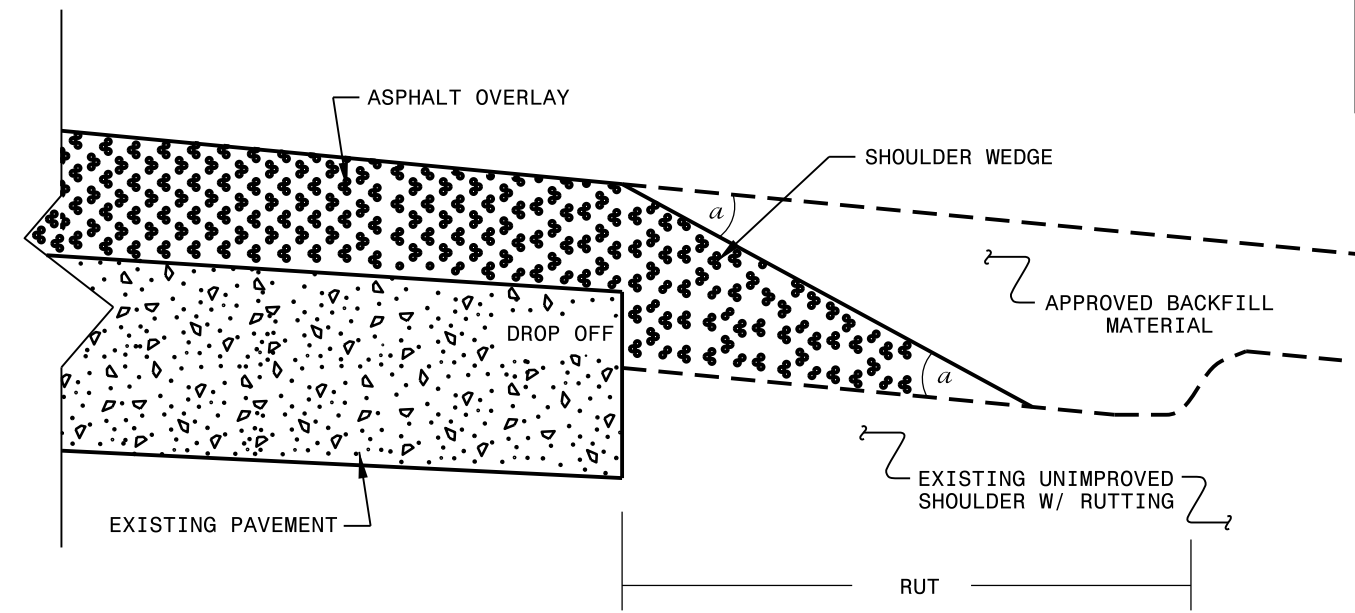
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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: 2/2/16
 CHECKED BY: DATE:
 FILE SPEC.: susr/details/stand/shoulderwedgedetail.dgn

SYSTEMS DESIGN
 USER NAME

PROJECT NO.	SHEET NO.	TOTAL NO.
52007.3.2		

SUMMARY OF QUANTITIES

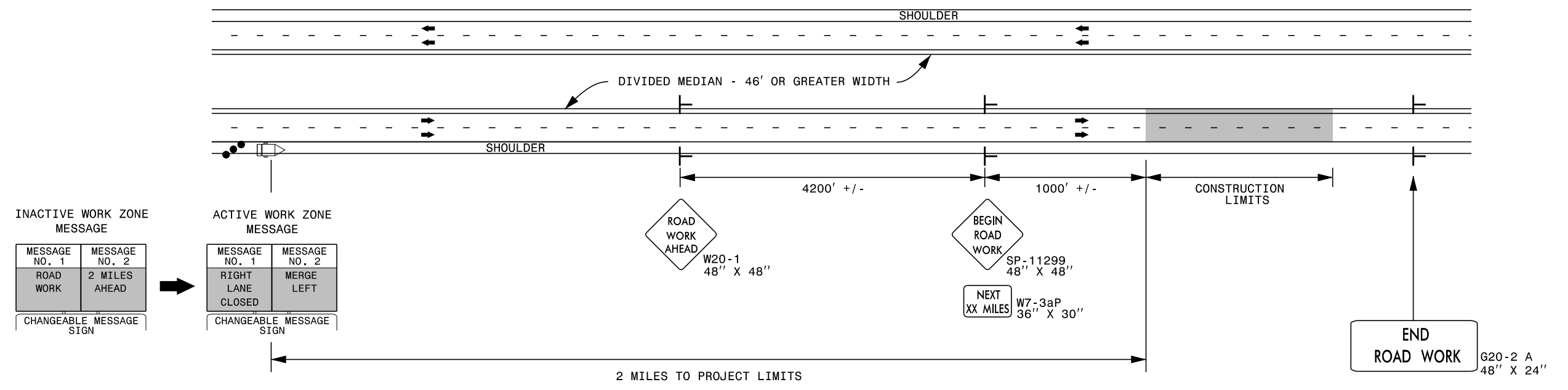
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	AGGREGATE SHOULDER BORROW (ASB) TON	AGGREGATE BASE COURSE TONS	SHOULDER RECONSTRUCTION SMI	2" MILLING SY	SURFACE COURSE, S9.5C TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TONS	MILLED RUMBLE STRIPS (ASPHALT CEMENT CONCRETE) LF	PORTABLE LIGHTING LS	INDUCTIVE LOOP LF	CLASS II, SURFACE PREPARATION SY	FOAM JOINT SEALS LS	VOLUMETRIC MIXER LS	REPLACEMENT OF FOAM JOINT SEALS LF	SILICONE JOINT SEALANT LF	CONCRETE FOR DECK REPAIR CF	ELASTOMERIC CONCRETE SF	BRIDGE JOINT DEMOLITION SF	SHOTBLAST BRIDGE DECK SY	SILANE DECK TREATMENT SY
52007.3.2	Durham	1	I-85 NORTH BOUND	ASPHALT PAVEMENT FROM STRUCTURE OVER COLE MILL RD TO ASPHALT PAVEMENT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD)	1, 2	5		NO	NO	5.61	72	353	350	1.87	53,909	6,340	374	100	3,325	0.50	3,016	22.20	0.50	0.50	160.00	561.00	50.00	232.00	850.00	4,806.00	4,806.00
TOTAL FOR MAP NO. 1										5.61		353	350	1.87	53,909	6,340	374	100	3,325	0.50	3,016	22.20	0.50	0.50	160.00	561.00	50.00	232.00	850.00	4,806.00	4,806.00
52007.3.2	Durham	2	I-85 SOUTH BOUND	ASPHALT PAVEMENT FROM ASPHALT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD) TO STRUCTURE OVER COLE MILL RD	1, 2	5		NO	NO	5.61	72	178	148	0.94	58,746	6,909	408	100	3,420	0.50	4,630	22.20	0.50	0.50	159.00	560.00	50.00	231.00	850.70	4,806.00	4,806.00
TOTAL FOR MAP NO. 2										5.61		178	148	0.94	58,746	6,909	408	100	3,420	0.50	4,630	22.20	0.50	0.50	159.00	560.00	50.00	231.00	850.70	4,806.00	4,806.00
TOTAL FOR PROJ NO. 52007.3.2										11.22		531	498	2.81	112,655	13,249	782	200	6,745	1.00	7,646	44.40	1.00	1.00	319.00	1,121.00	100.00	463.00	1,700.70	9,612.00	9,612.00
GRAND TOTAL										11.22		531	498	2.81	112,655	13,249	782	200	6,745	1.00	7,646	44.40	1.00	1.00	319.00	1,121.00	100.00	463.00	1,700.70	9,612.00	9,612.00

THERMOPLASTIC AND PAINT QUANTITIES

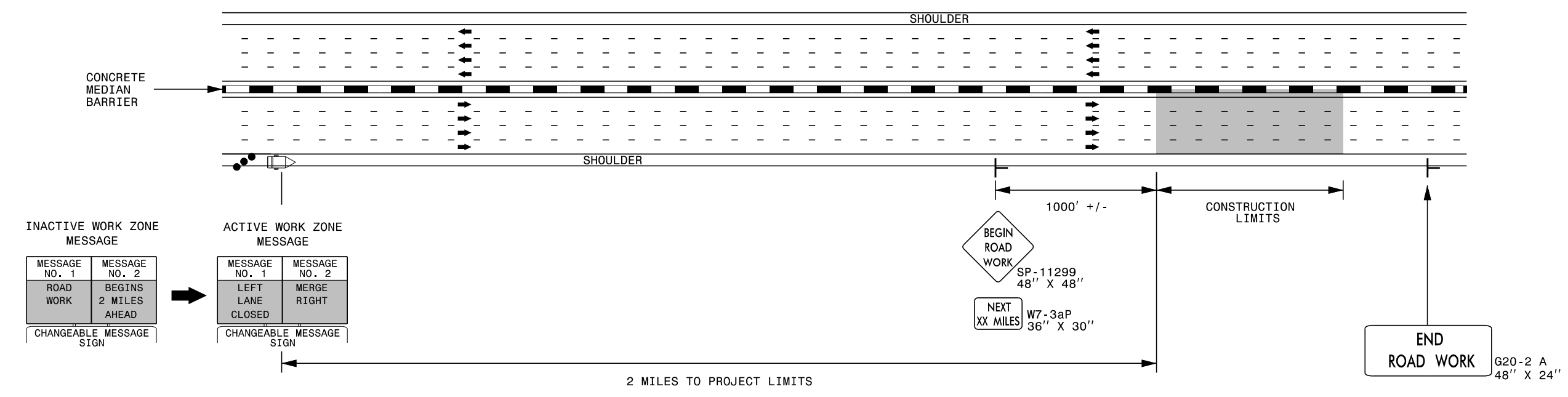
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	LENGTH	WIDTH	4400000000-E	4405000000-E	4410000000-E	4415000000-N	4420000000-N	4422000000-N	4430000000-N	4445000000-E	4480000000-N	4510000000-N	4600000000-N				4688000000-E		4690000000-E	4695000000-E	4697000000-E	4700000000-E	4710000000-E	4721000000-E			
										STATIONARY WORK ZONE SIGN SF	PORTABLE WORK ZONE SIGN SF	BARRICADE MOUNTED WORK ZONE SIGN SF	FLASHING ARROW BOARD EA	CHANGABLE MESSAGE SIGNS EA	CHANGABLE MESSAGE SIGNS (SHORT TERM) DAY	DRUMS EA	TYPE III BARRICADE LF	TMA EA	LAW ENFORCEMENT HR	PRESENCE LIGHTING EA	SEQUENTIAL FLASHING WARNING LIGHTS EA	WORK ZONE DIGITAL SPEED LIMIT SIGNS EA	6" X 90 M YELLOW THERMO LF	6" X 90 M WHITE THERMO LF	6" X 120 M WHITE THERMO LF	8" X 90 M WHITE THERMO LF	8" X 120 M WHITE THERMO LF	12" X 90 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA				
52007.3.2	Durham	1	I-85 NORTH BOUND	FROM STRUCTURE OVER COLE MILL RD TO ASPHALT PAVEMENT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD)	1, 2	5		5.61	72	262	256	90	1	2.00	22	100	16	1	350	6	16	4	14,880	12,730	3,766	2,310	945	790	218					
TOTAL FOR MAP NO. 1										5.61		262	256	90	1	2.00	22	100	16	1	350	6	16	4	14,880	12,730	3,766	2,310	945	790	218			
52007.3.2	Durham	2	I-85 SOUTH BOUND	FROM ASPHALT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD) TO STRUCTURE OVER COLE MILL RD	1, 2	5		5.61	72	262	256	90	1	2.00	22	100	16	1	350	6	16	4	13,866	12,665	5,073	2,060	1,025	1,040	330	8				
TOTAL FOR MAP NO. 2										5.61		262	256	90	1	2.00	22	100	16	1	350	6	16	4	13,866	12,665	5,073	2,060	1,025	1,040	330	8		
TOTAL FOR PROJ NO. 52007.3.2										11.22		524	512	180	2	4	44	200	32	2	700	12	32	8	28,746	25,395	8,839	4,370	1,970	1,830	548	8		
GRAND TOTAL										11.22		524	512	180	2	4	44	200	32	2	700	12	32	8	28,746	25,395	8,839	4,370	1,970	1,830	548	8		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LANES	LANE TYPE	LENGTH	WIDTH	4725000000-E						4815000000-E			4820000000-E	4825000000-E	4835000000-E	4840000000-N	4845000000-N					4900000000-N	4905000000-N				
										THERMO RT ARROW 90 M EA	THERMO LT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	THERMO MERGE ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO YIELD TRIANGLE 90M EA	6" YELLOW PAINT LF	6" WHITE PAINT LF	6" BLACK PAINT LF	8" WHITE PAINT LF	12" WHITE PAINT LF	24" WHITE PAINT LF	PAINT MSG ONLY EA	PAINT RT ARROW EA	PAINT LT ARROW EA	PAINT STR & LT ARROW EA	PAINT MERGE ARROW EA	PAINT STR ARROW EA	PAINT YIELD TRIANGLE EA	PAINT STR & RT ARROW EA	CRYSTAL & RED MARKERS EA	SNOW PLOWABLE MARKERS EA		
52007.3.2	Durham	1	I-85 NORTH BOUND	FROM STRUCTURE OVER COLE MILL RD TO ASPHALT PAVEMENT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD)	1, 2	5		5.61	72	7	6	7	6	4	18	15,870	18,530	1,044	3,255	790	218		7	6	7	6	4	18	30	354			
TOTAL FOR MAP NO. 1										5.61		7	6	7	6	4	18	15,870	18,530	1,044	3,255	790	218		7	6	7	6	4	18	30	354	
52007.3.2	Durham	2	I-85 SOUTH BOUND	FROM ASPHALT JOINT EAST OF SR 1827 (MIDLAND TERRACE RD) TO STRUCTURE OVER COLE MILL RD	1, 2	5		5.61	72	18	10	8		4	7	14,856	19,772	1,044	3,085	1,040	330	16	20	10	8		4	7	2	30	360		
TOTAL FOR MAP NO. 2										5.61		18	10	8		4	7	14,856	19,772	1,044	3,085	1,040	330	16	20	10	8		4	7	2	30	360
TOTAL FOR PROJ NO. 52007.3.2										11.22		25	16	15		8	25	30,726	38,302	2,088	6,340	1,830	548	16	27	16	15	6	8	25	2	60	714
GRAND TOTAL										11.22		25	16	15		8	25	30,726	38,302	2,088	6,340	1,830	548	16	27	16	15	6	8	25	2	60	714

DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



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

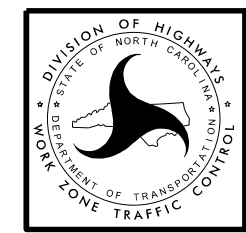


NOTES:

- 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

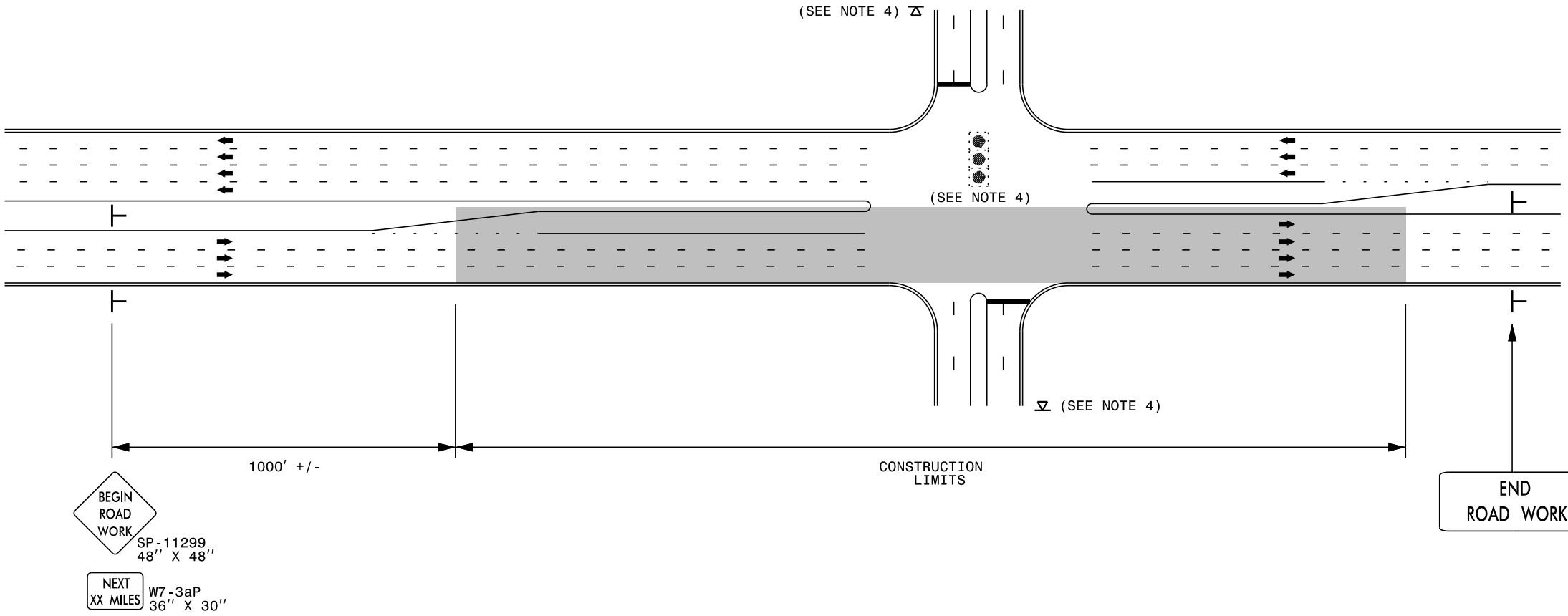
- CHANGEABLE MESSAGE SIGN (CMS)
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DRUM



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

10/3/2013 8:11:11 AM S:\T\U\W\ZTC\Resurfacing\2013\Documents\New_Procedures_05_09_2013\Resurfacing_AdvWarn_HSpd.dgn User:frmgarratt

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.

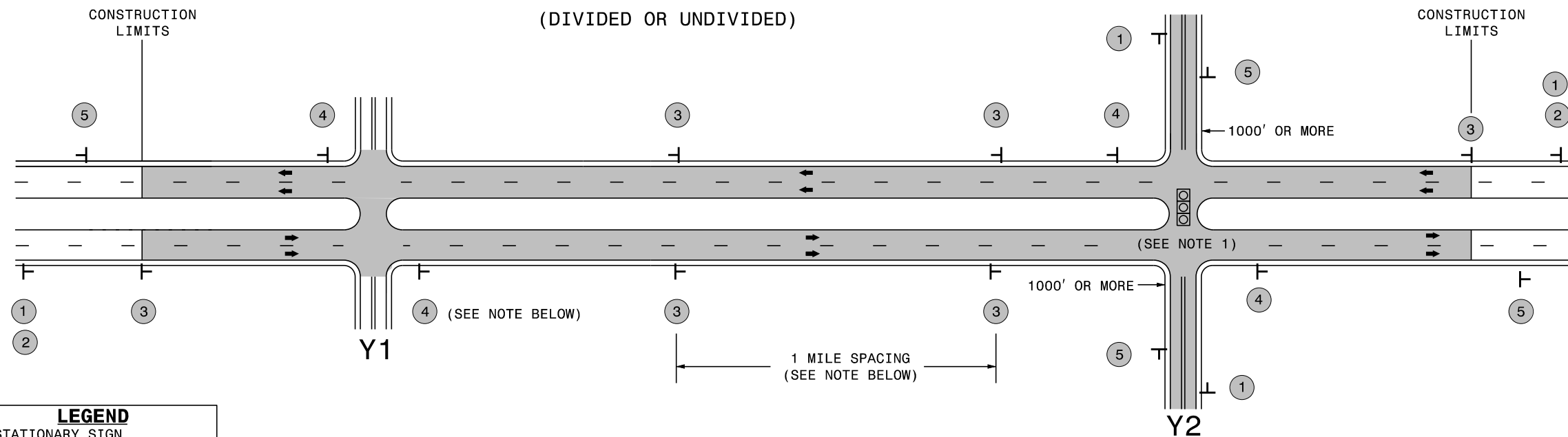
LEGEND	
└	STATIONARY SIGN
➔	DIRECTION OF TRAFFIC FLOW



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

2/24/2014 S:\TMD\WZTC\Resurfacing\2013Documents\New_Procedures_05_09_2013\Resurfacing_AdvWarn_UrSub.dgn

SIGNING FOR RURAL AND SUBURBAN MULTI-LANE ROADWAYS WITH SHOULDER SECTIONS (DIVIDED OR UNDIVIDED)



LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	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.	<p style="text-align: center;">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 style="text-align: center;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 <small>W7-3aP 24" X 18"</small>	#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)	
	3	 <small>SP 13107 48" X 48"</small>	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.	
	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.	
5	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		

NOTES:

- 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.

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**

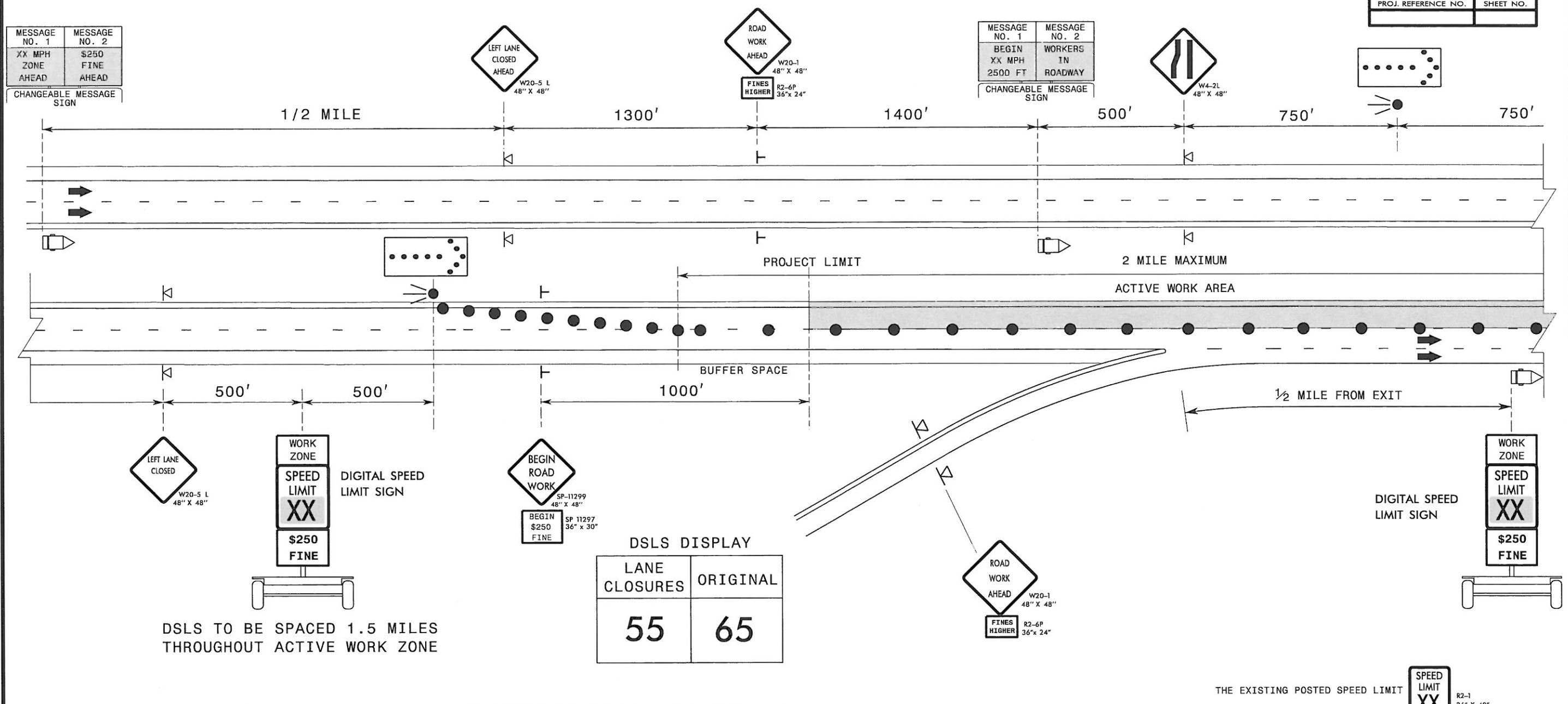
2/24/2014 S:\TMU\WZTC\Resurfacing\2013Documents\New_Procedures_05_09_2013\Resurfacing_AdvWarn_UrSu_Shldr.dgn User:rmgarratt

MESSAGE NO. 1	MESSAGE NO. 2
XX MPH	\$250 FINE
AHEAD	AHEAD

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
BEGIN XX MPH	WORKERS IN ROADWAY
2500 FT	

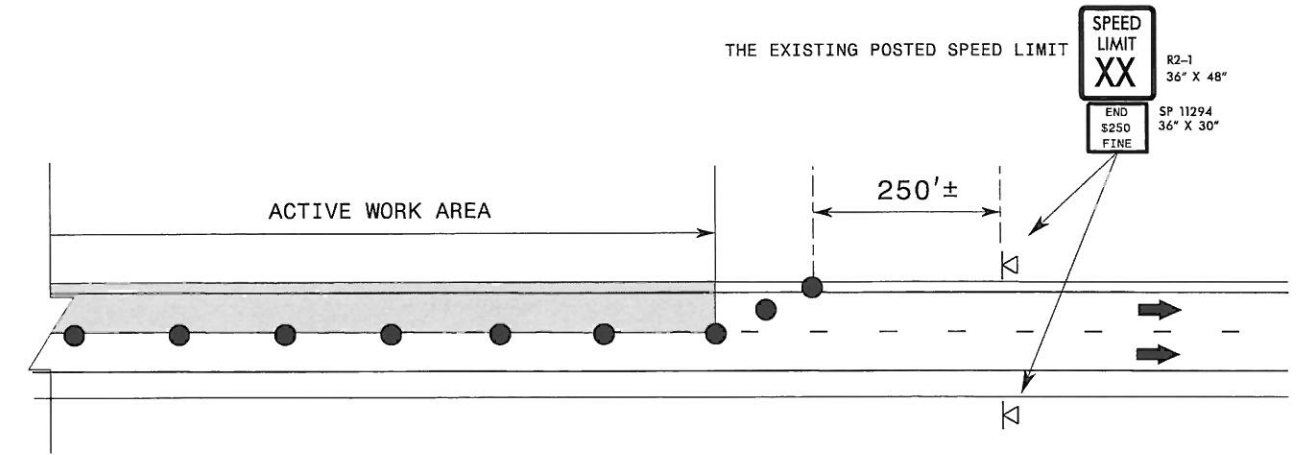
CHANGEABLE MESSAGE SIGN



DSLS TO BE SPACED 1.5 MILES THROUGHOUT ACTIVE WORK ZONE

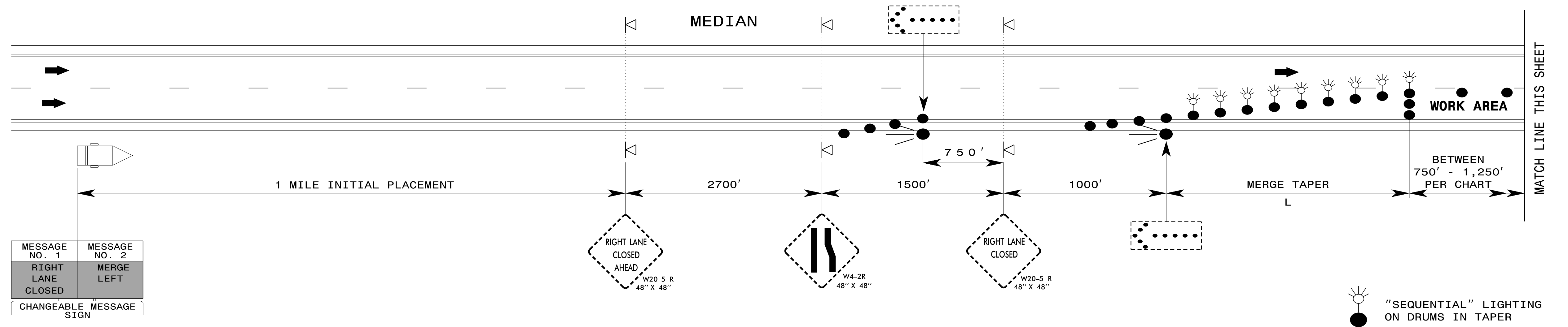
GUIDELINES

1. NCDOT HAS SOLE AUTHORITY OF THE SPEED LIMITS DISPLAYED ON THE DIGITAL SPEED LIMIT SIGNS.
2. THE WORK ZONE VARIABLE SPEED LIMIT REDUCTION ("WZVSLR") IS FOR USE ONLY AFTER AN ENGINEERING INVESTIGATION HAS BEEN PERFORMED BY THE REGIONAL TRAFFIC ENGINEER, THE DIVISION AND THE WORK ZONE TRAFFIC CONTROL SECTION.
3. THE "WZVSLR" IS INTENDED FOR USE ON FREEWAYS WITH ORIGINAL SPEED LIMITS 60 MPH OR GREATER. THE POSTED SPEED LIMITS DISPLAYED WITHIN THE ACTIVE WORK ZONE MAY VARY BETWEEN 55 MPH TO 70 MPH, DEPENDENT UPON ROAD WORK CONDITIONS AND THE ORIGINAL SPEED LIMIT OF THE FACILITY.
4. THIS APPLICATION IS FOR SHORT-TERM ACTIVITIES (i.e. LANE CLOSURES AND ROAD CLOSURES). THE MAXIMUM LANE CLOSURE LENGTH IS 2 MILES UNLESS OTHERWISE SHOWN IN THE PLANS. THE "WZVSLR" SHALL NOT BE IN OPERATION CONTINUOUSLY (24/7) FOR A PERIOD EXCEEDING 30 CALENDAR DAYS.
5. ALL ORIGINAL SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED. THE DIGITAL SPEED LIMIT SIGNS WILL TAKE THE PLACE OF ALL ORIGINAL STATIONARY SPEED LIMIT SIGNS. THE DIGITAL SPEED LIMIT SIGNS MAY BE TRAILER MOUNTED OR STATIONARY MOUNTED.
6. THE STATE TRAFFIC ENGINEER HAS TO ORDINANCE THE "WZVSLR" IN ORDER FOR THE REDUCTION AND/OR \$250 SPEEDING FINE TO BE VALID AND ENFORCEABLE. NO SPEED LIMIT MESSAGES/SIGNS SHALL BE INSTALLED PRIOR TO RECEIVING A SIGNED ORDINANCE. IN ADDITION, THE \$250 SPEEDING FINE ALSO REQUIRES A SEPARATE SIGNED ORDINANCE BY THE STATE TRAFFIC ENGINEER.
6. EACH DIRECTION OF THE PROJECT IS TO BE EVALUATED FOR THE "WZVSLR". THIS DRAWING INTENTIONALLY HAS 1 DIRECTION SIGNED AS A REMINDER TO CAREFULLY CONSIDER WHETHER BOTH DIRECTIONS OF THE PROJECT NEED TO HAVE THE SPEED LIMIT REDUCED.

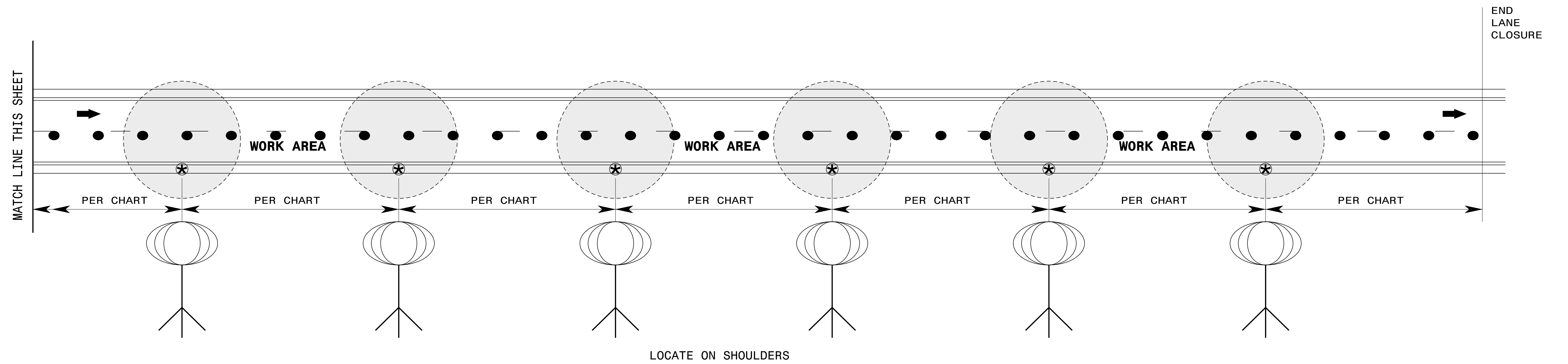


WORK ZONE "VARIABLE" SPEED LIMIT REDUCTION USING DIGITAL SPEED LIMIT SIGNS

ADVANCE WARNING AREA



WORK ZONE AREA



SPACING CHART

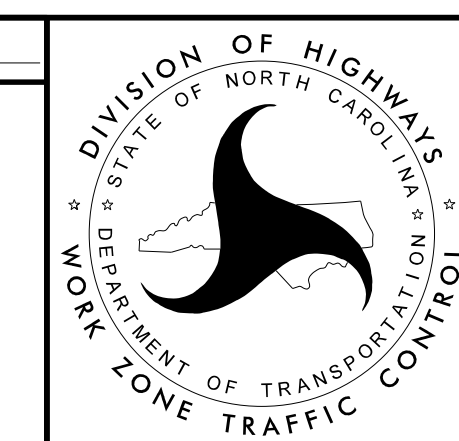
LIGHT OUTPUT (LUMENS)	MINIMUM LIGHTED FIXTURE AREA (SQUARE FEET)	MAXIMUM SPACING (FEET)	LIGHT UNITS (PER MILE)
50,000 TO 65,000	5.5	750'	6
66,000 TO 80,000	5.5	1,000'	5
81,000 TO 100,000	36	1,250'	4

NOTES

- 1) SPACE LIGHT UNITS ACCORDING TO THE CHART.
- 2) EACH LIGHT UNIT SHALL BE CAPABLE OF ELEVATING TO A MINIMUM HEIGHT OF 14' ABOVE THE PAVEMENT.
- 3) PLACE ON PAVED SHOULDER IF POSSIBLE.

APPROVED: _____ DATE: _____

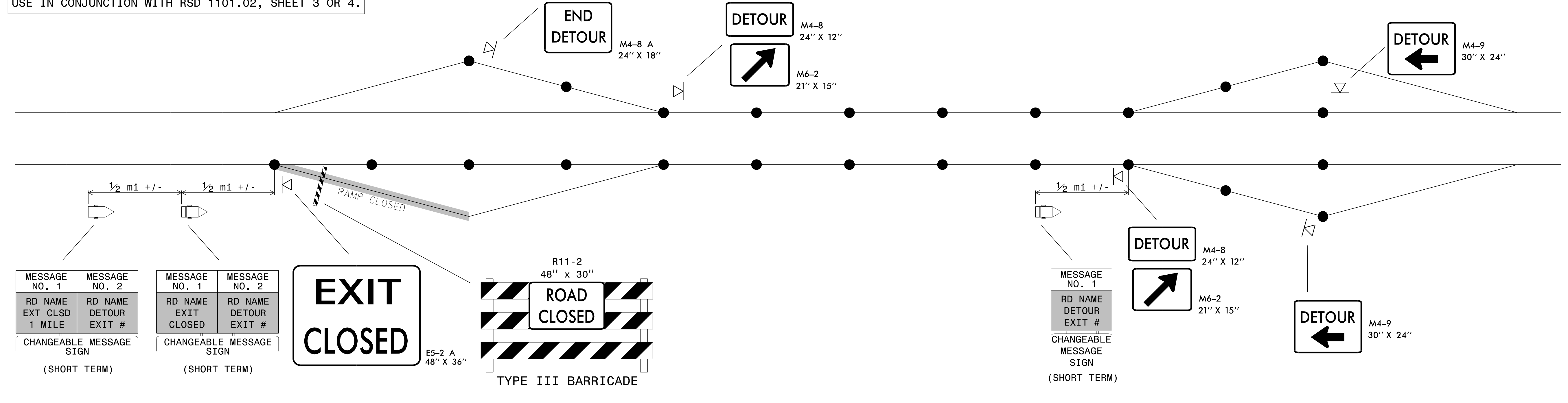
SEAL **DRAFT**



**WORK ZONE
"PRESENCE"
LIGHTING**

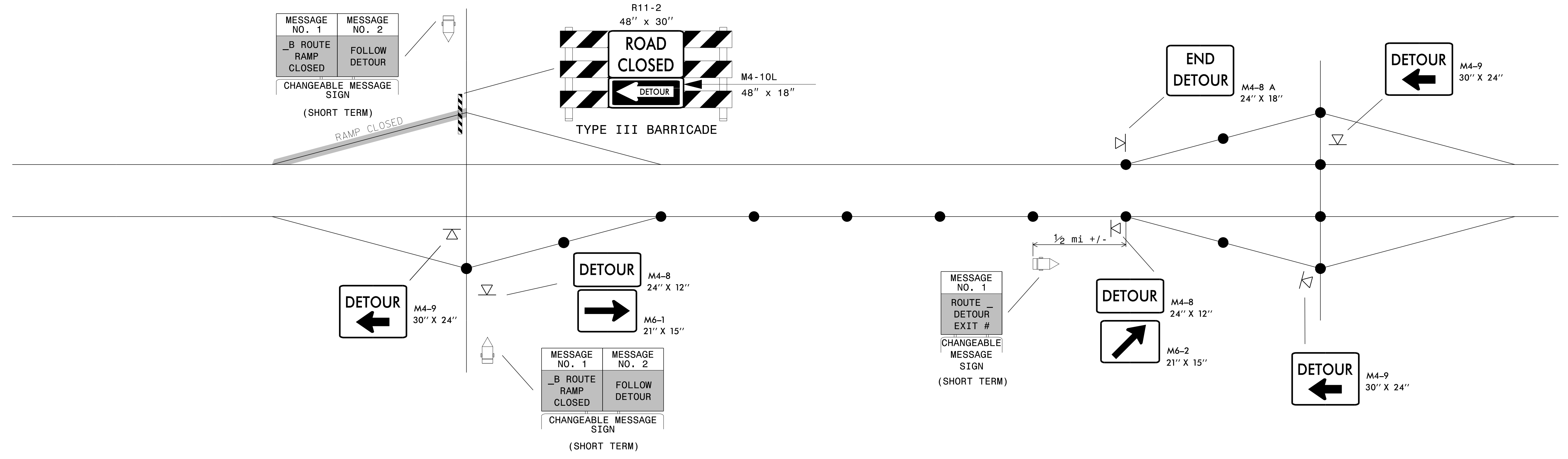
SHORT TERM CLOSURE AND DETOUR OF OFF-RAMP TO ADJACENT INTERCHANGE

USE IN CONJUNCTION WITH RSD 1101.02, SHEET 3 OR 4.

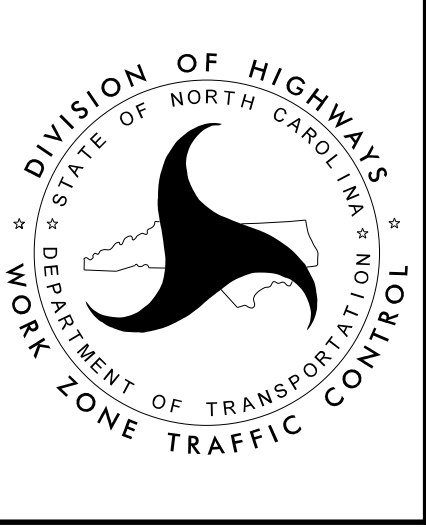
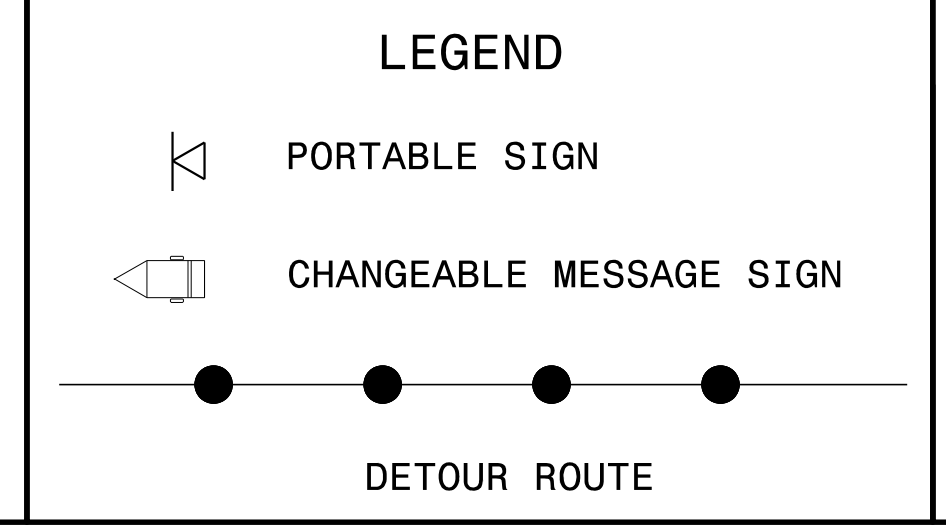


SHORT TERM CLOSURE AND DETOUR OF ON-RAMP TO ADJACENT INTERCHANGE

USE IN CONJUNCTION WITH RSD 1101.02, SHEET 3 OR 4.



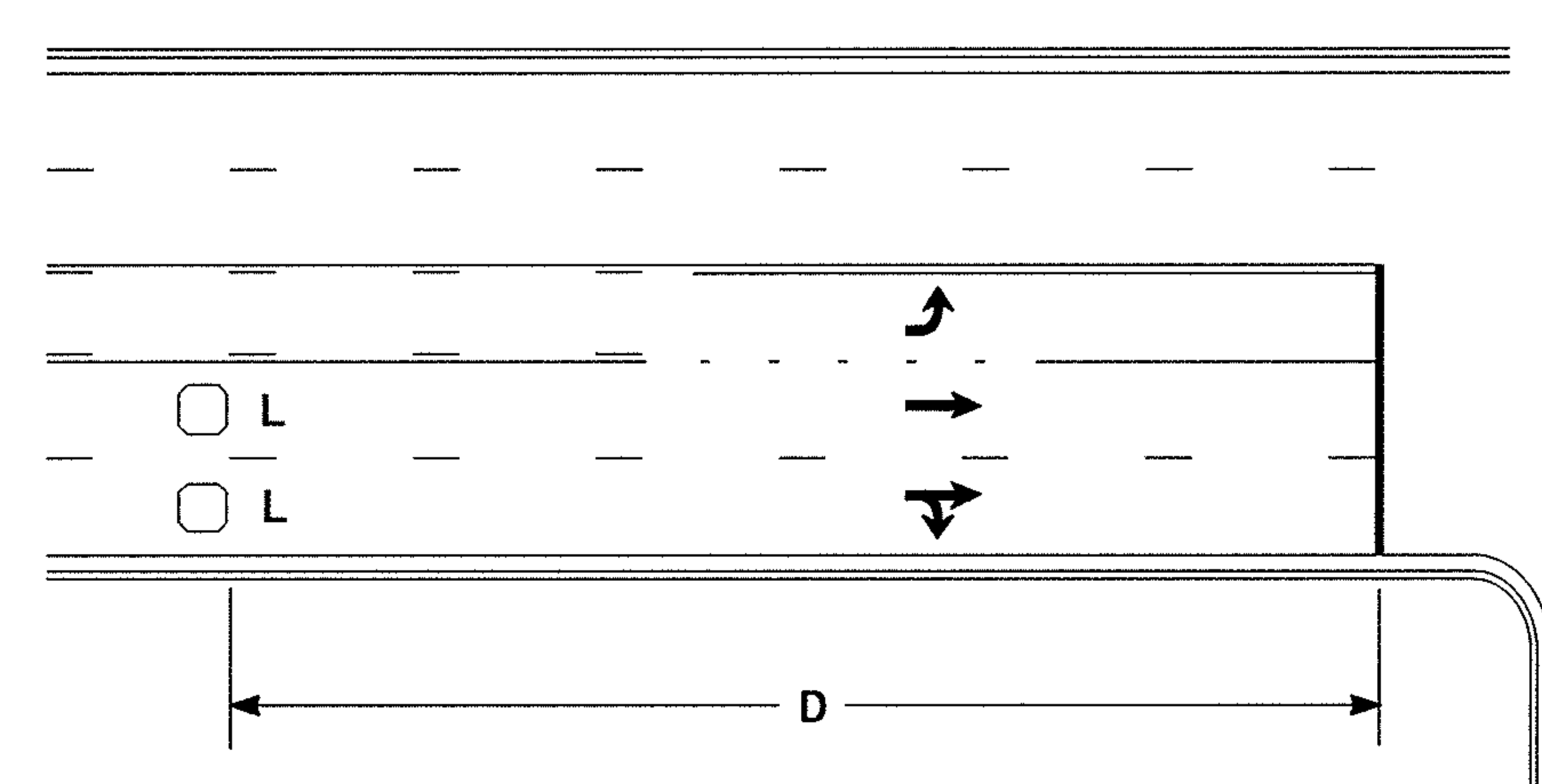
- GENERAL NOTES:**
1. THIS DRAWING IS INTENDED FOR USE DURING SHORT TERM CLOSURES OF INTERSTATE AND FREEWAY RAMPS.
 2. RAMP CLOSURES SHALL BE APPROVED BY THE ENGINEER.
 3. IF RAMP CLOSURE RESTRICTIONS APPLY, SEE SPECIAL PROVISION, "INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES".
 4. ADDITIONAL CHANGEABLE MESSAGE SIGNS AND POSSIBLE DETOUR SIGNS MAY BE NECESSARY FOR MORE COMPLEX CLOSURES/DETOURS. COMPENSATION FOR ADDITIONAL DEVICES SHALL BE MADE BASED ON THE UNIT BID PRICE FOR THE RESPECTIVE DEVICE.



SHORT TERM CLOSURE AND DETOUR OF INTERSTATE/FREEWAY RAMPS

8/9/2016 C:\Users\kredais\Desktop\I-5729\Typical\Off-Ramp Detour.dgn User:kredais

High Speed Detection [≥40 mph (64 km/hr)]

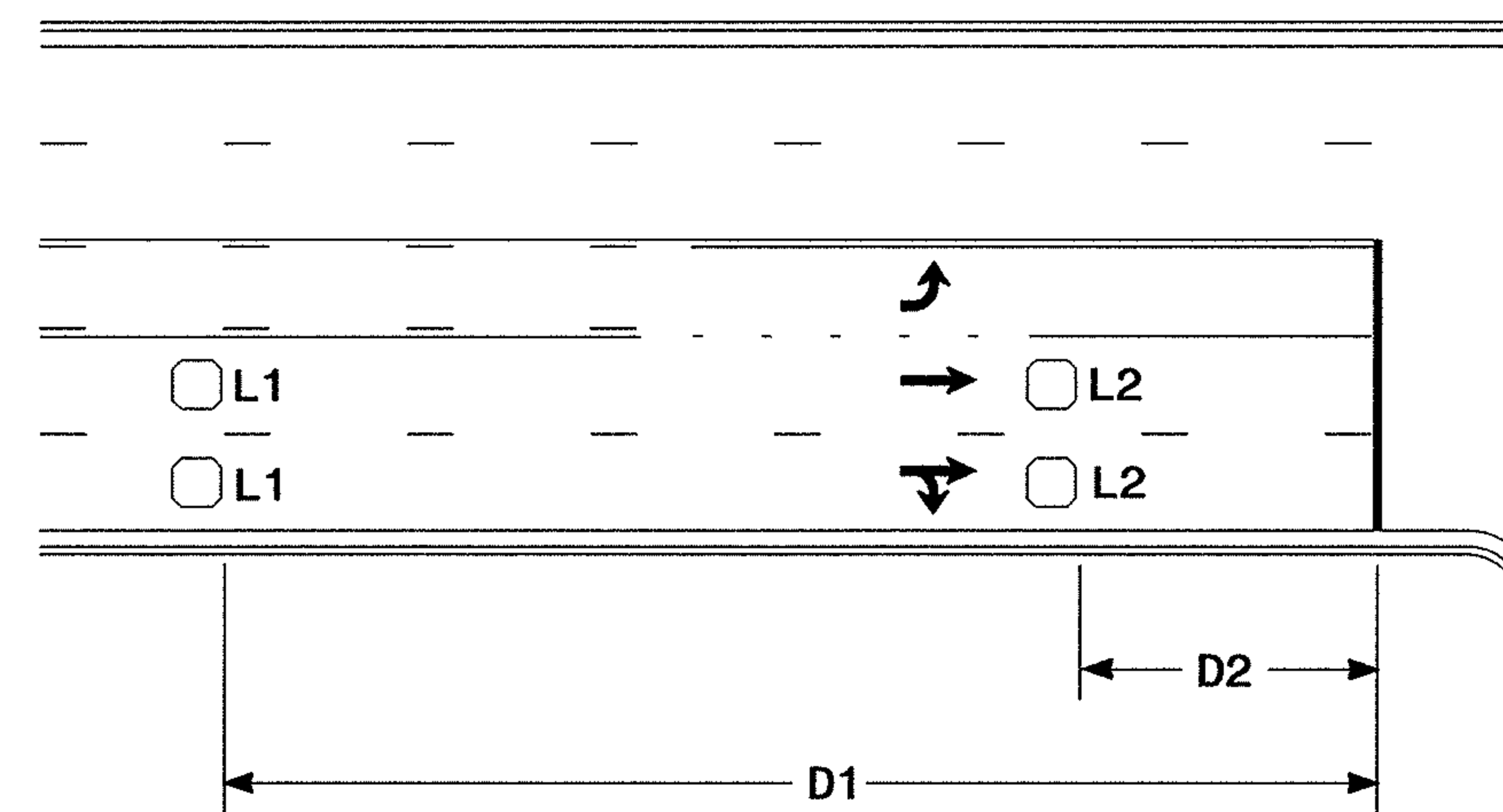


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
Wired in series for TS1
Controllers
Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

OR

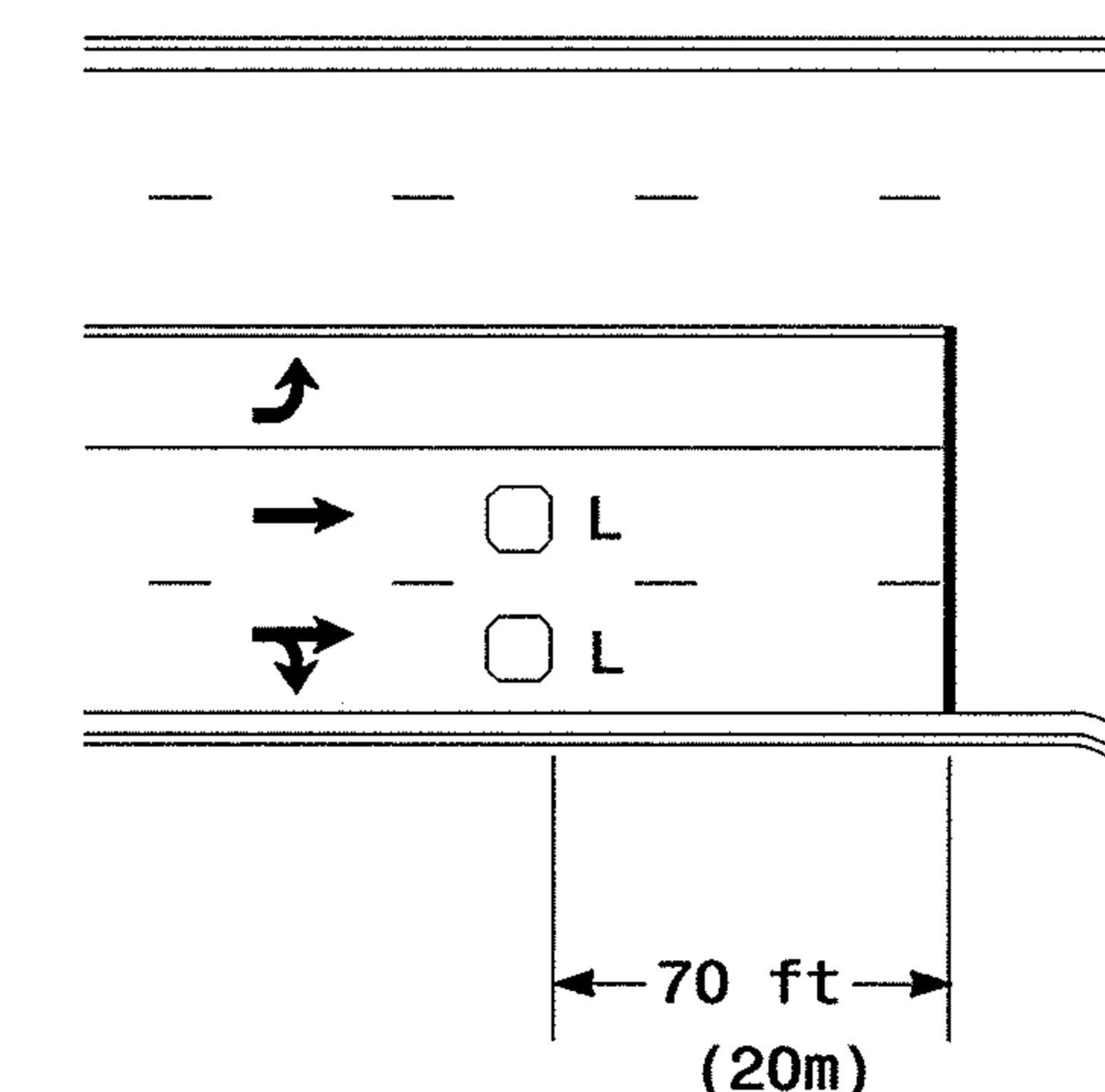


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

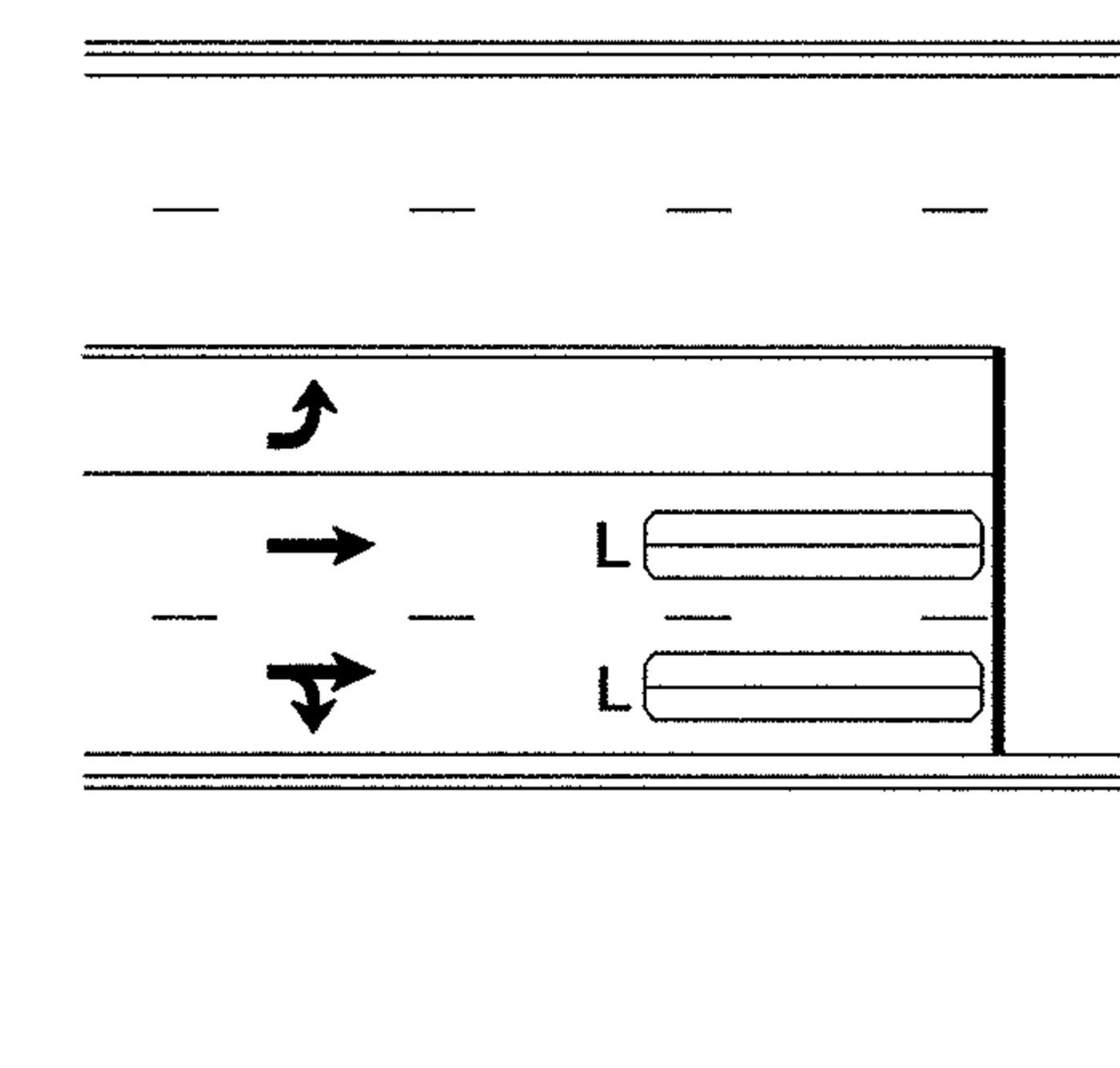
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



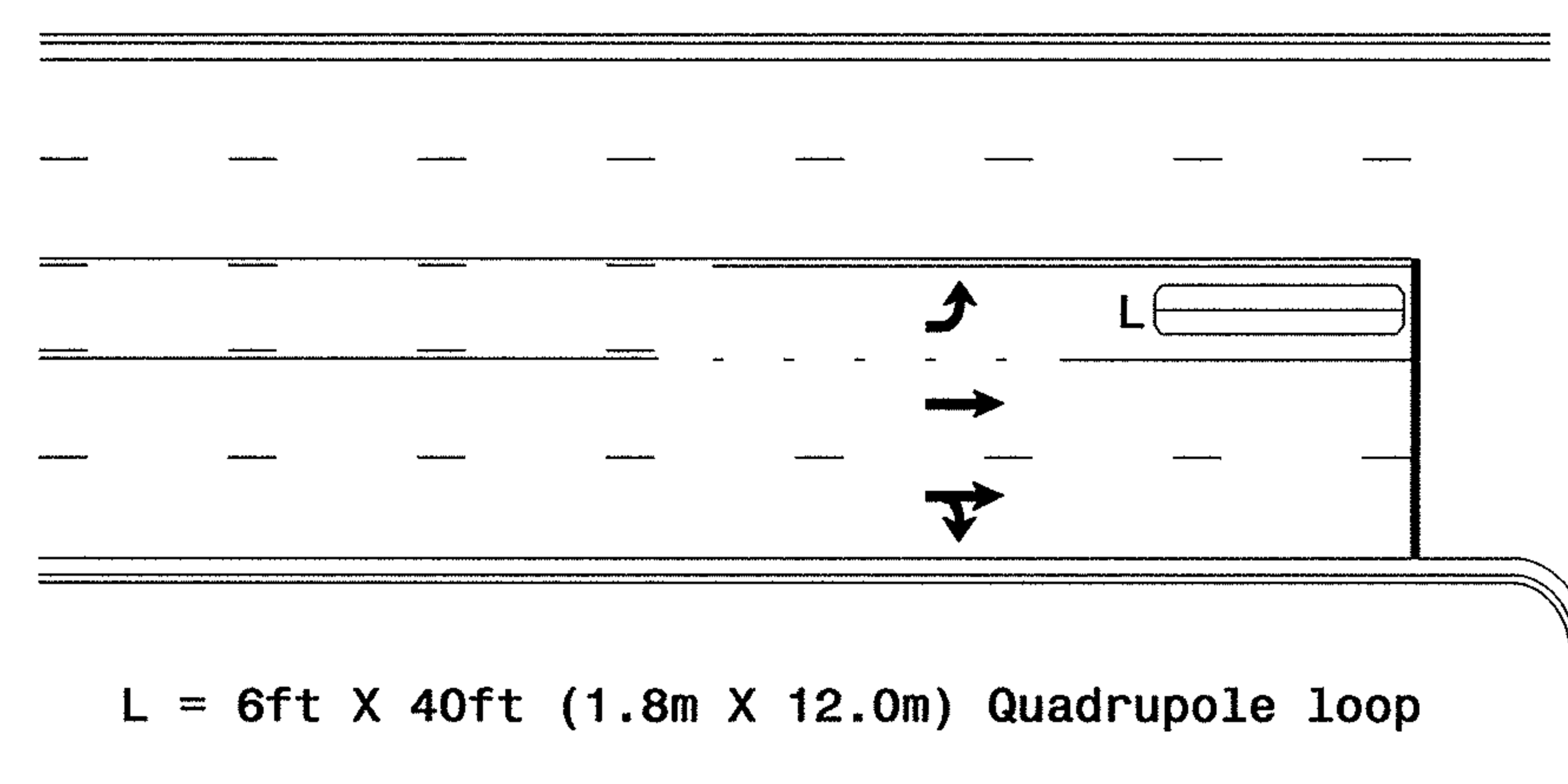
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)
Quadrupole loop, wired separately

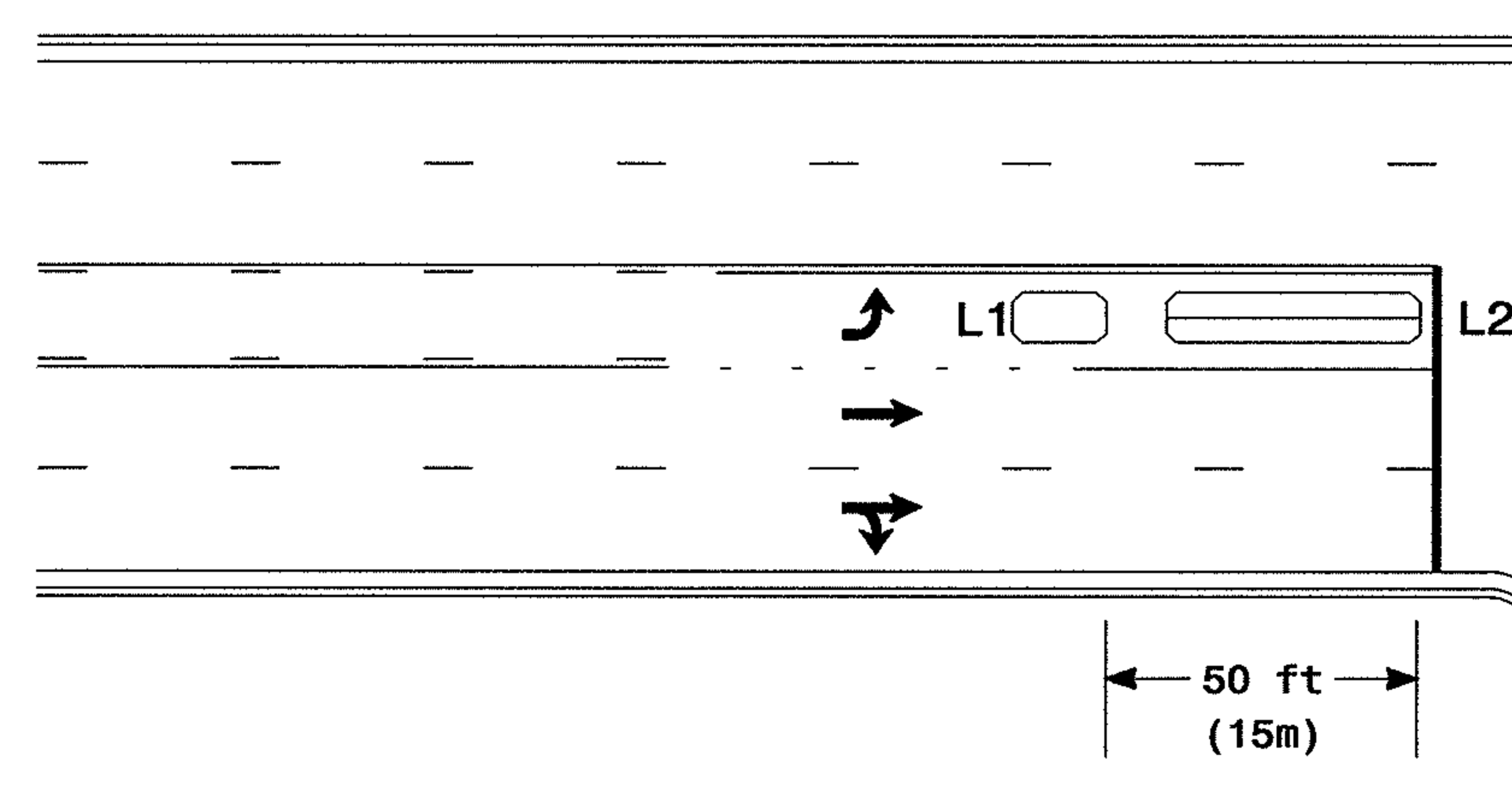
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

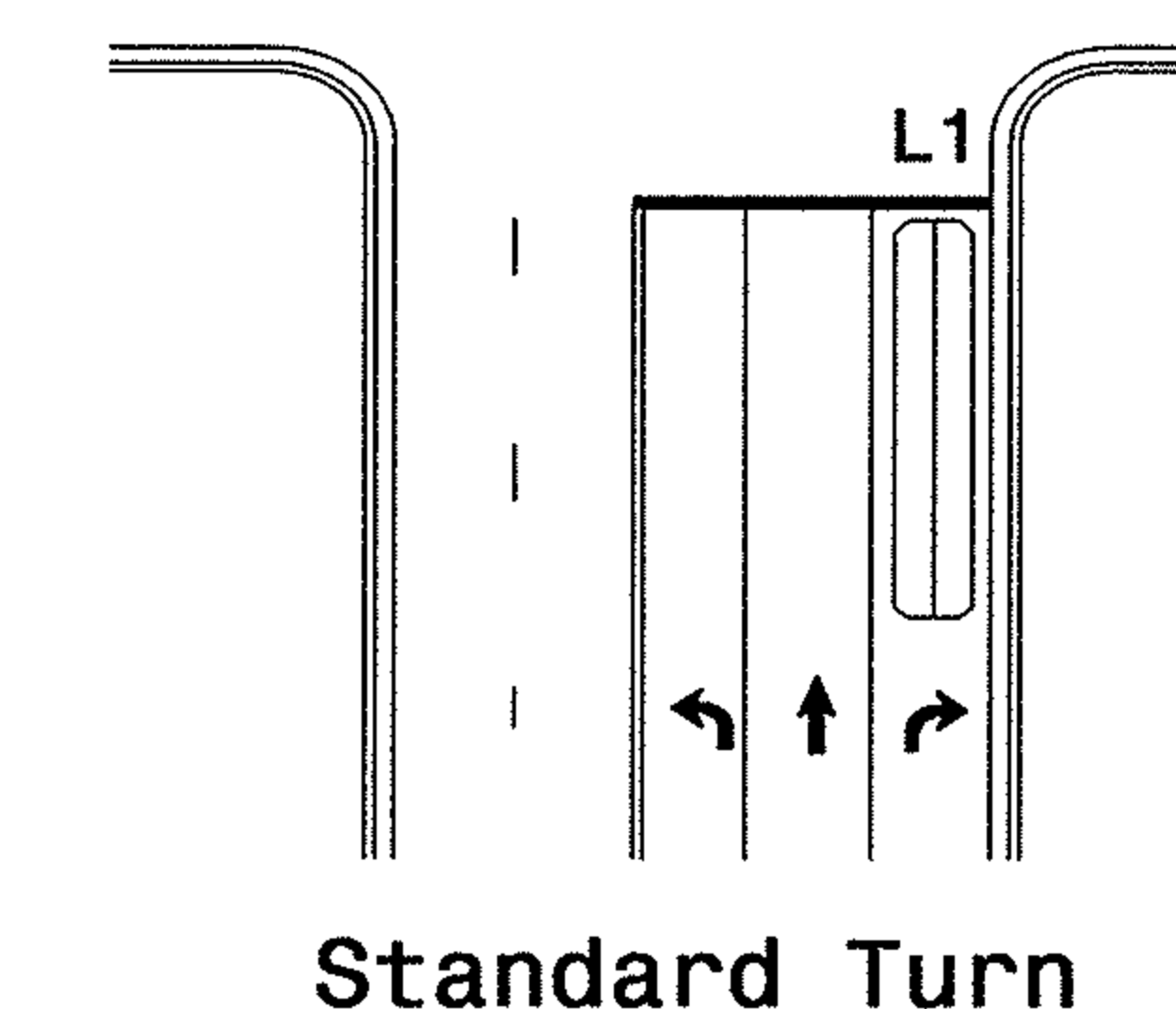
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

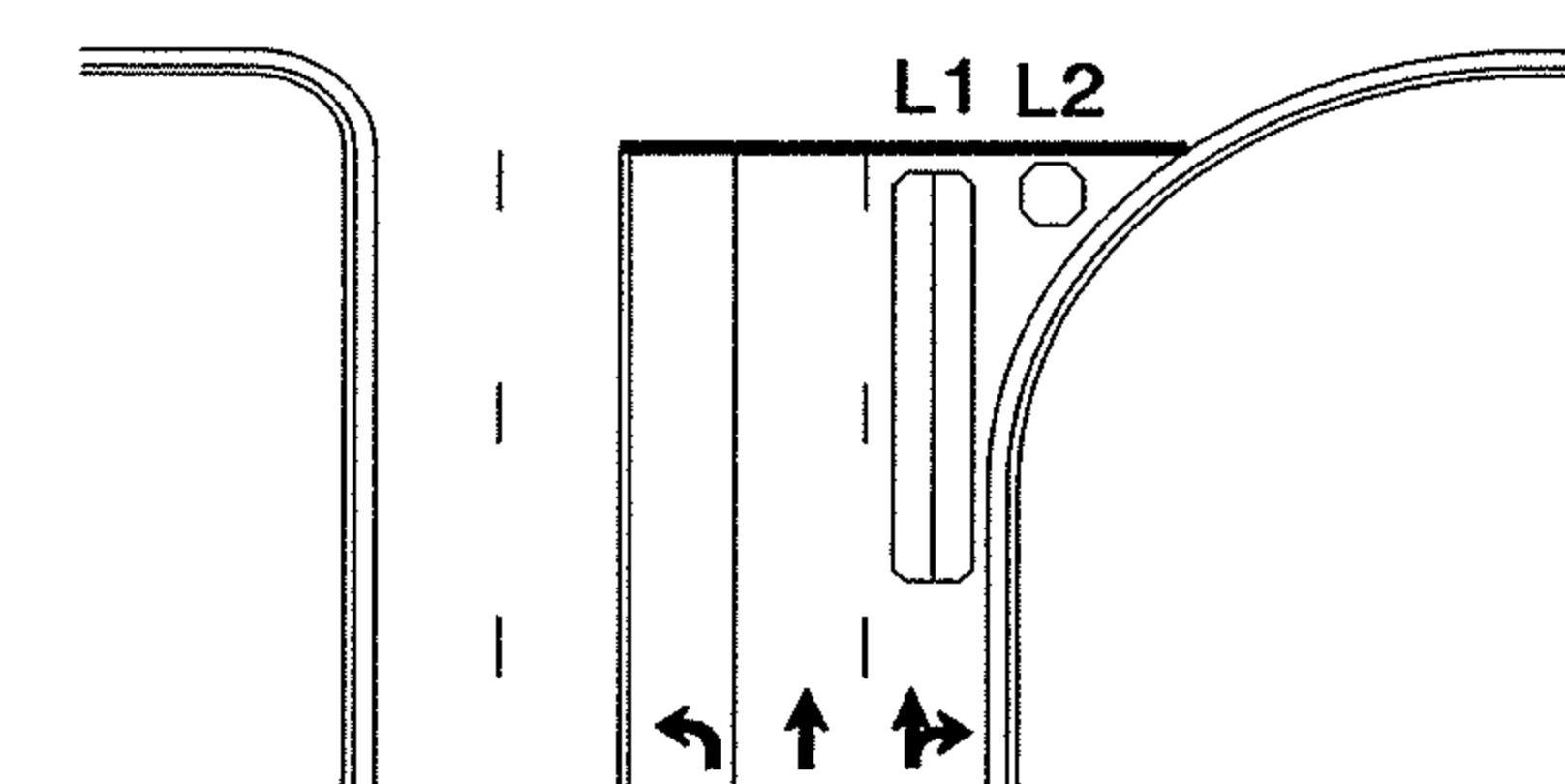
Queue Loop Detection

Right Turn Lane Detection

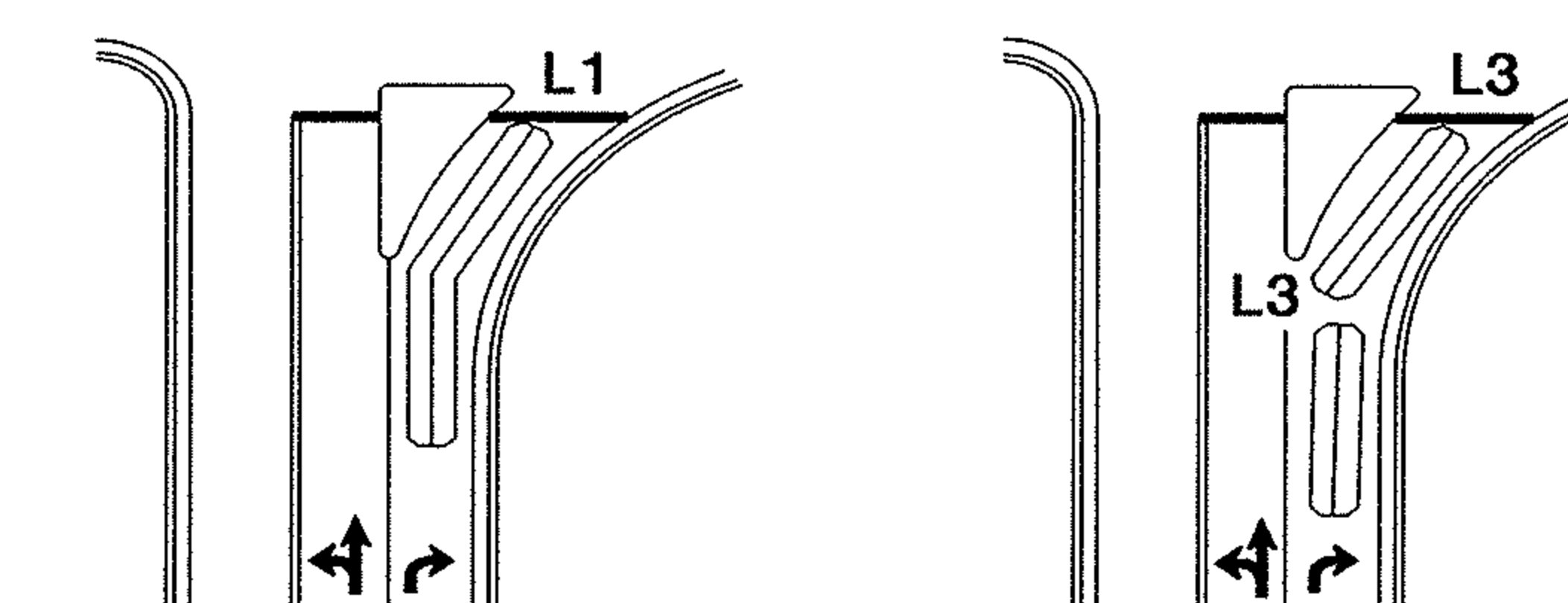


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

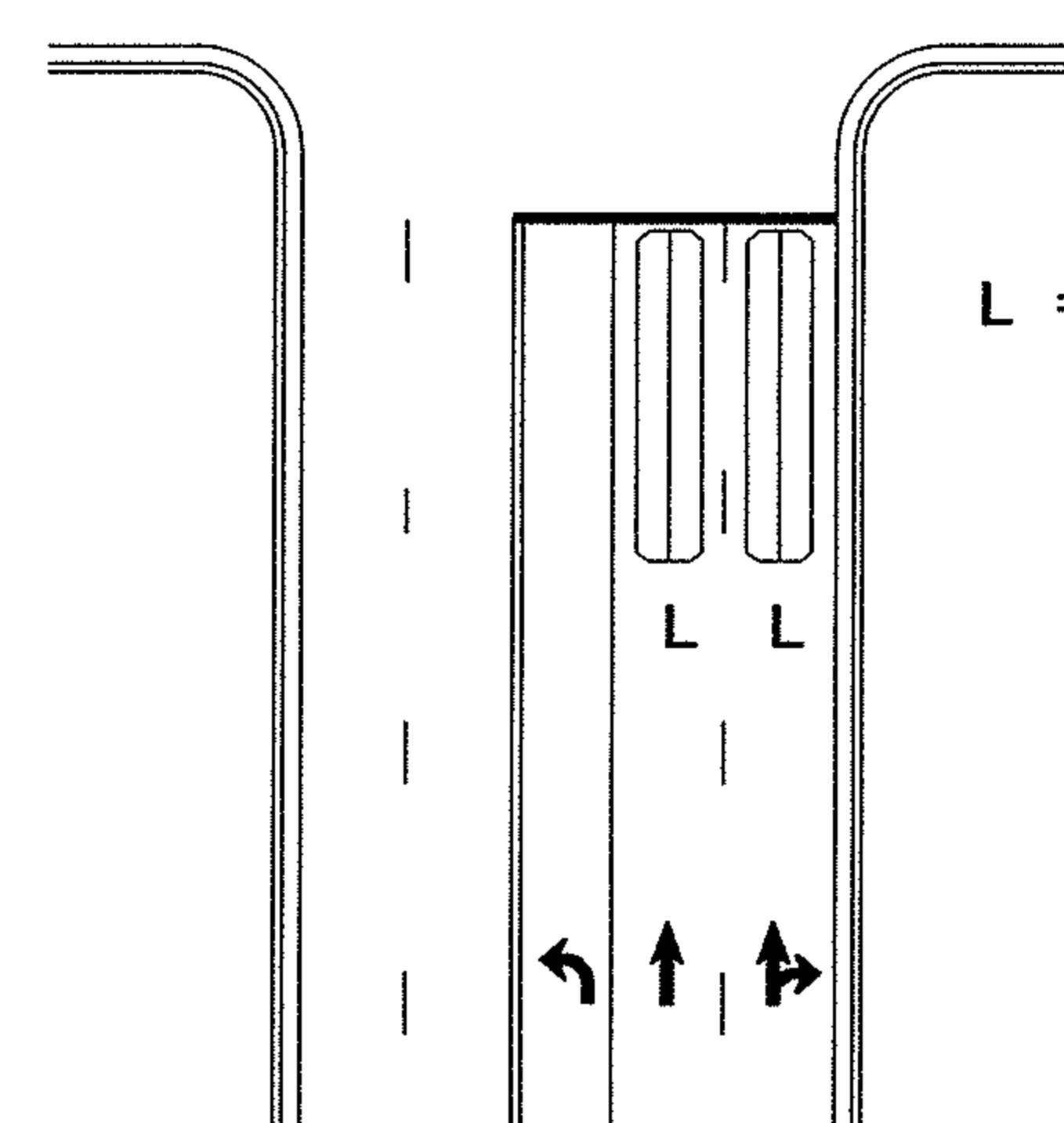


Wide Radius Turn



Channelized Turn

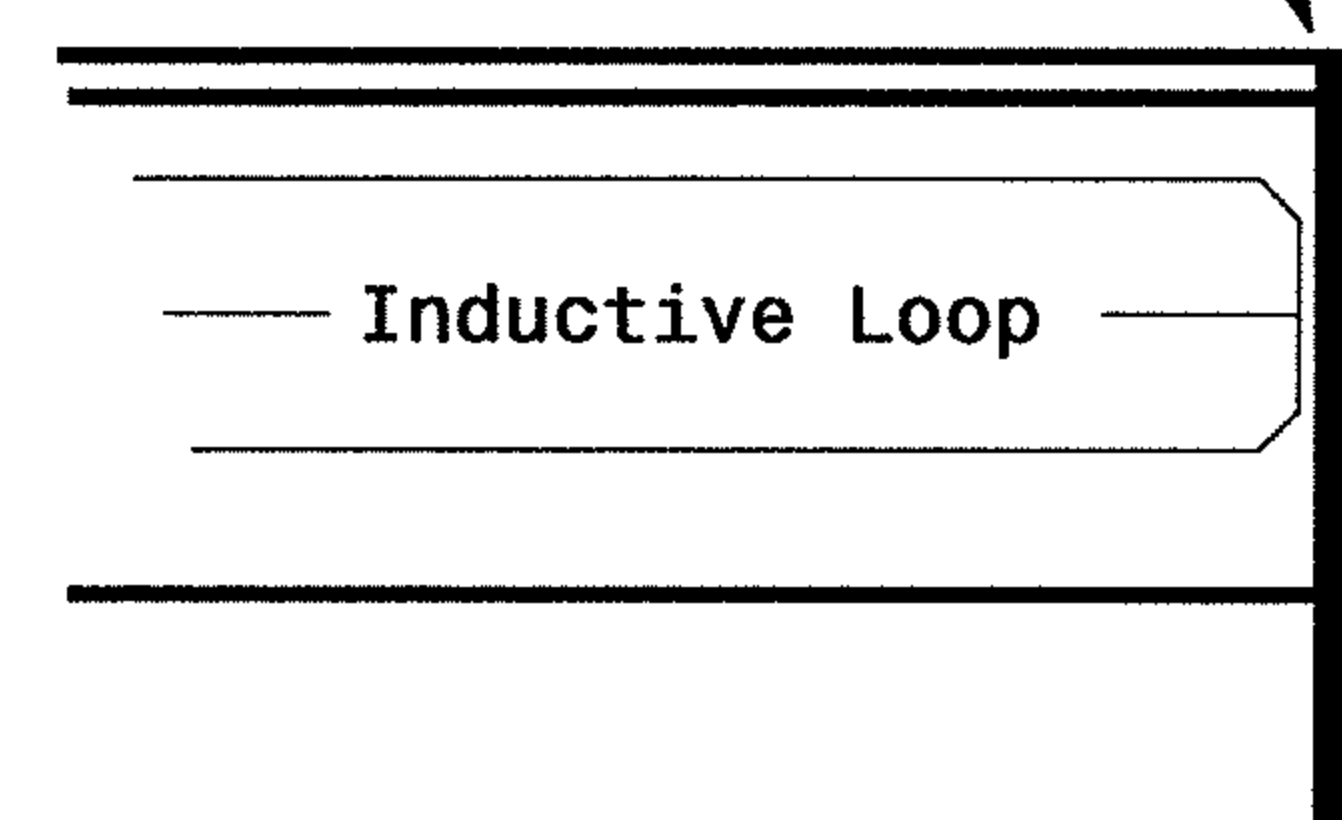
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
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 when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)
loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns
6' X 15' (1.8m X 4.6m) Loops:
Lead-in < 150' (45 m), use 2 turns
Lead-in > 150' (45 m), use 3 turns

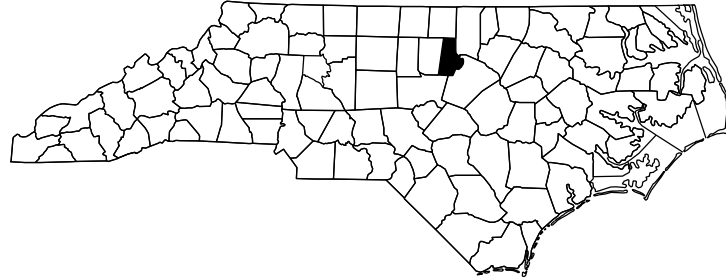
	Typical Loop Locations		
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY: REVIEWED BY:	

PROJECT: I-5729A

CONTRACT NO: DE00195

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

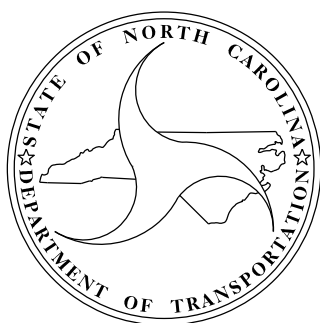
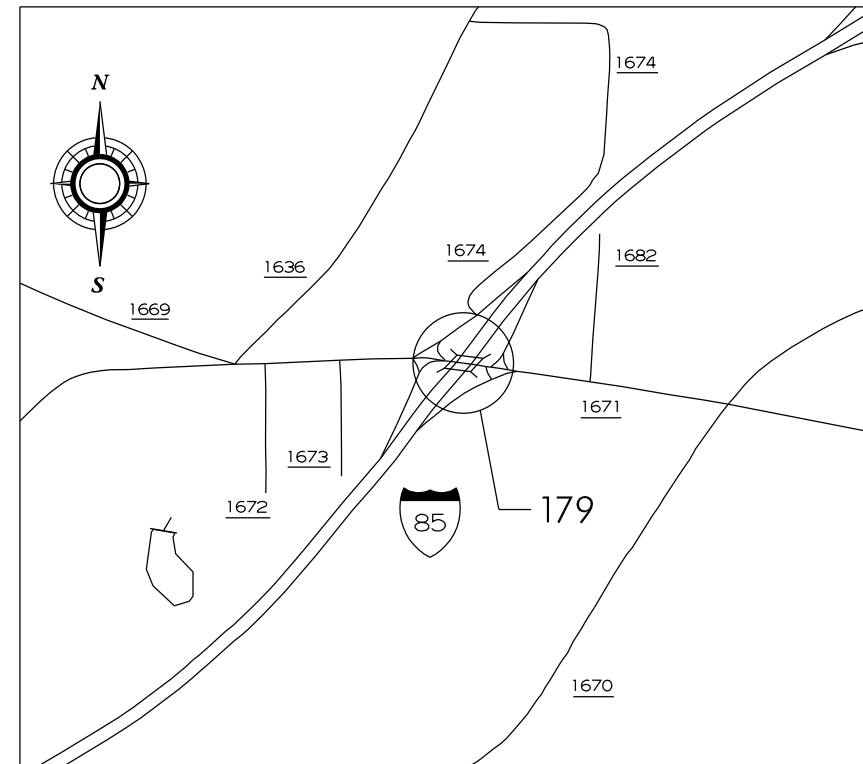
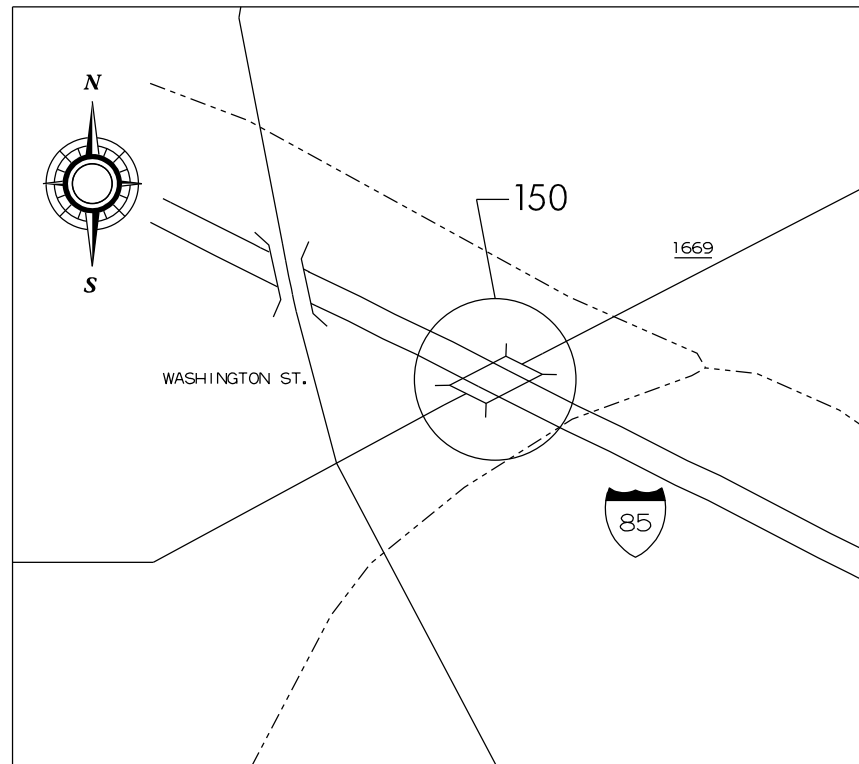
DURHAM COUNTY



**LOCATION: BRIDGE #150 ON I-85 SBL OVER SR 1669 (CLUB BLVD.)
BRIDGE #179 ON I-85 NBL OVER SR 1671 (CAMDEN AVE.)**

**TYPE OF WORK: BRIDGE PRESERVATION - DECK REPAIR, DECK TREATMENT,
AND JOINT DEMOLITION AND REPLACEMENT.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
52007.1.1	NHPP-0085(13)	P.E.	
52007.3.1	NHPP-0085(13)	CONST.	



DESIGN DATA

BRIDGE #150 ADT 2013 = 41,500
BRIDGE #179 ADT 2013 = 83,000

PROJECT LENGTH

BRIDGE #150 - 0.04 MILE
BRIDGE #179 - 0.05 MILE

Prepared in the Office of:
**DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

ERIC B. NELSON, P.E.
PROJECT ENGINEER

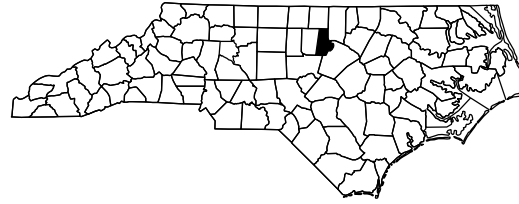
2012 STANDARD SPECIFICATIONS

LETTING DATE: FEBRUARY 2017

DocuSigned by:
Timothy M. Sherrill
AD58B1D97484CC...
SEAL
18565
ENGINEER
TIMOTHY M. SHERRILL
1/20/2017
TIMOTHY M. SHERRILL, P.E.
PROJECT DESIGN ENGINEER

PROJECT: I-5729A

CONTRACT NO: DE00195



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DURHAM COUNTY

**LOCATION: BRIDGE #150 ON I-85 SBL OVER SR 1669 (CLUB BLVD.)
BRIDGE #179 ON I-85 NBL OVER SR 1671 (CAMDEN AVENUE)**

**TYPE OF WORK: BRIDGE PRESERVATION - DECK REPAIR, DECK TREATMENT,
AND JOINT DEMOLITION AND REPLACEMENT.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
52007.1.1	NHPP-0085(13)	P.E.	
52007.3.1	NHPP-0085(13)	CONST.	

INDEX OF SHEETS

SHEET NO.

I
1A
S-1
S-2 THRU S-8
S-9 THRU S-15
SN

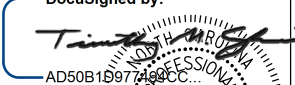
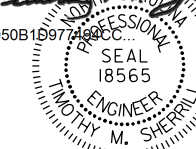
DESCRIPTION

TITLE SHEET
INDEX OF SHEETS
BILL OF MATERIALS
STRUCTURAL PLANS BRIDGE #150
STRUCTURAL PLANS BRIDGE #179
STANDARD NOTES

TOTAL BILL OF MATERIALS

BRIDGE NO.	CLASS II SURFACE PREPARATION	FOAM JOINT SEALS	VOLUMETRIC MIXER	REPLACEMENT OF FOAM JOINT SEALS	SILICONE JOINT SEALANT	CONCRETE FOR DECK REPAIR	ELASTOMERIC CONCRETE	BRIDGE JOINT DEMOLITION	SHOTBLAST BRIDGE DECK	SILANE DECK TREATMENT
	SQ.YDS.	LUMP SUM	LUMP SUM	LN. FT.	LN. FT.	CU. FT.	CU. FT.	SQ. FT.	SQ. YD.	SQ. YD.
150	0.4	LUMP SUM	LUMP SUM	319	438	1.0	111	319.0	4,215	4,215
179	44.0	LUMP SUM	LUMP SUM	—	683	99.0	352	1,381.7	5,397	5,397
TOTAL	44.4	LUMP SUM	LUMP SUM	319	1,121	100.0	463	1,700.7	9,612	9,612

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NOS. 150 & 179

DocuSigned by:

 AD50B15977A88CC


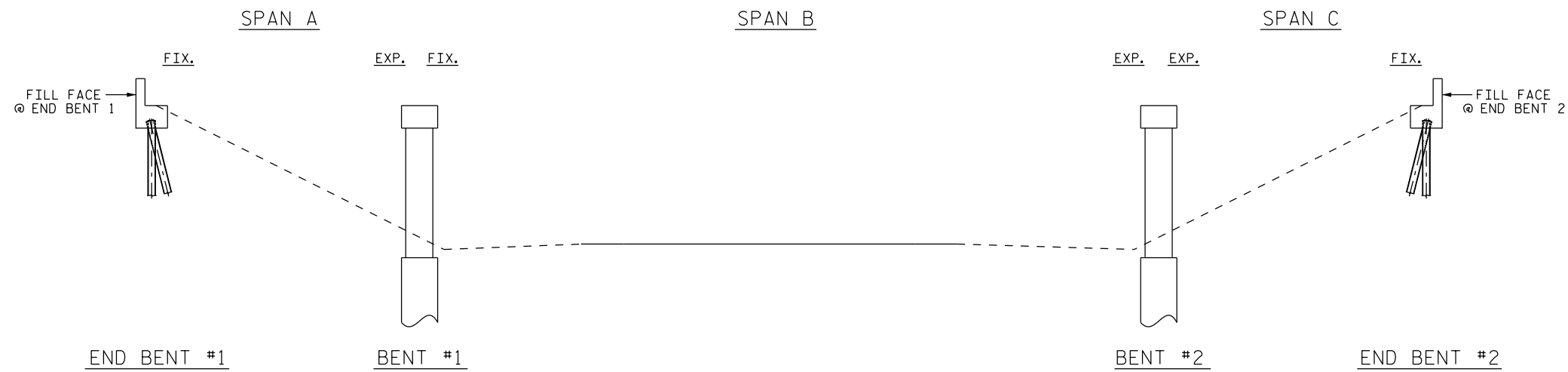
1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
BILL OF MATERIALS
 BRIDGES 150 & 179
 ON I-85 BETWEEN
 GREENSBORO & RALEIGH

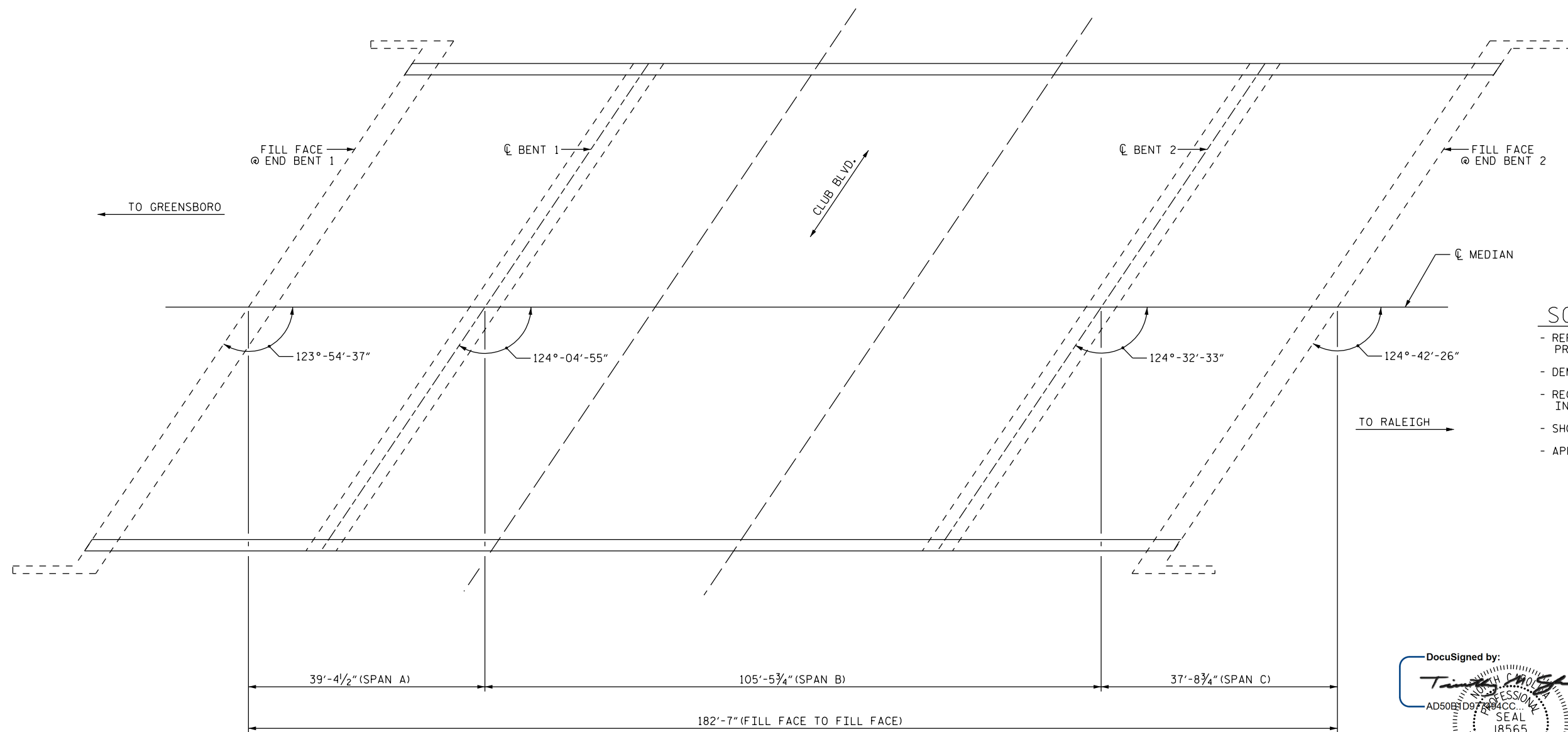
DRAWN BY : R. L. CHESSON DATE : 2016 DEC
 CHECKED BY : T. M. SHERRILL DATE : 12/16

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			15



ELEVATION
SECTION ALONG CL ROADWAY



PLAN

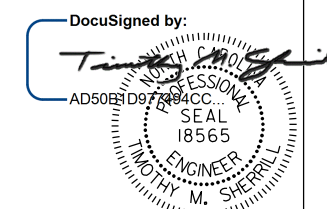
COLUMNS & DRILLED PIERS NOT SHOWN
IN PLAN VIEW FOR CLARITY.

SCOPE OF WORK

- REPAIR DECK SURFACE WITH CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
- DEMOLISH EXISTING BRIDGE DECK JOINT
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW JOINT SEALS
- SHOTBLAST EXISTING CONCRETE DECK
- APPLY SILANE DECK TREATMENT

PROJECT NO. I-5729A
DURHAM COUNTY
BRIDGE NO. 150

SHEET 1 OF 2



1/20/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

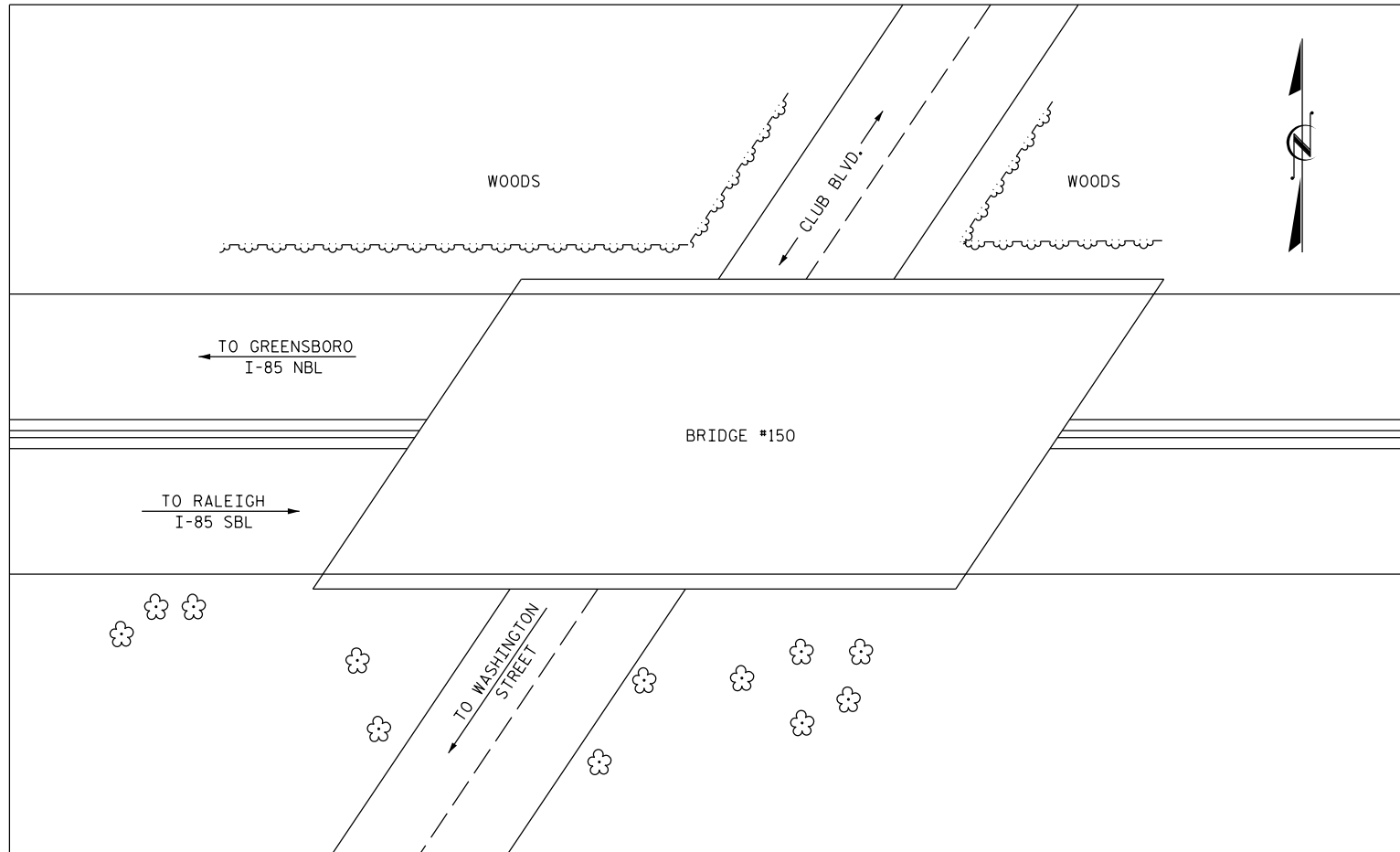
GENERAL DRAWING
BRIDGE 150 OVER CLUB
BLVD. ON I-85 BETWEEN
GREENSBORO & RALEIGH

DRAWN BY : R.L. CHESSON DATE : 2016 DEC
CHECKED BY : T.M. SHERRILL DATE : 12/16

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS 15
2			4			

*****SYSTEM*****
*****DCN*****
*****USERNAME*****



LOCATION SKETCH


INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

GENERAL NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.
- FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.
- FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.
- FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
- FOR CLASS II SURFACE PREPARATION, SEE SPECIAL PROVISIONS.
- FOR REPLACEMENT OF FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 150
 SHEET 2 OF 2

DocuSigned by:

 AD50B8D97489CC...
 PROFESSIONAL SEAL
 18565
 ENGINEER
 TIMOTHY M. SHERRILL
 1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE 150 OVER CLUB
 BLVD. ON I-85 BETWEEN
 GREENSBORO & RALEIGH

I HEREBY CERTIFY THAT THIS STRUCTURE(S) WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED THEREIN.

 RESIDENT ENGINEER DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

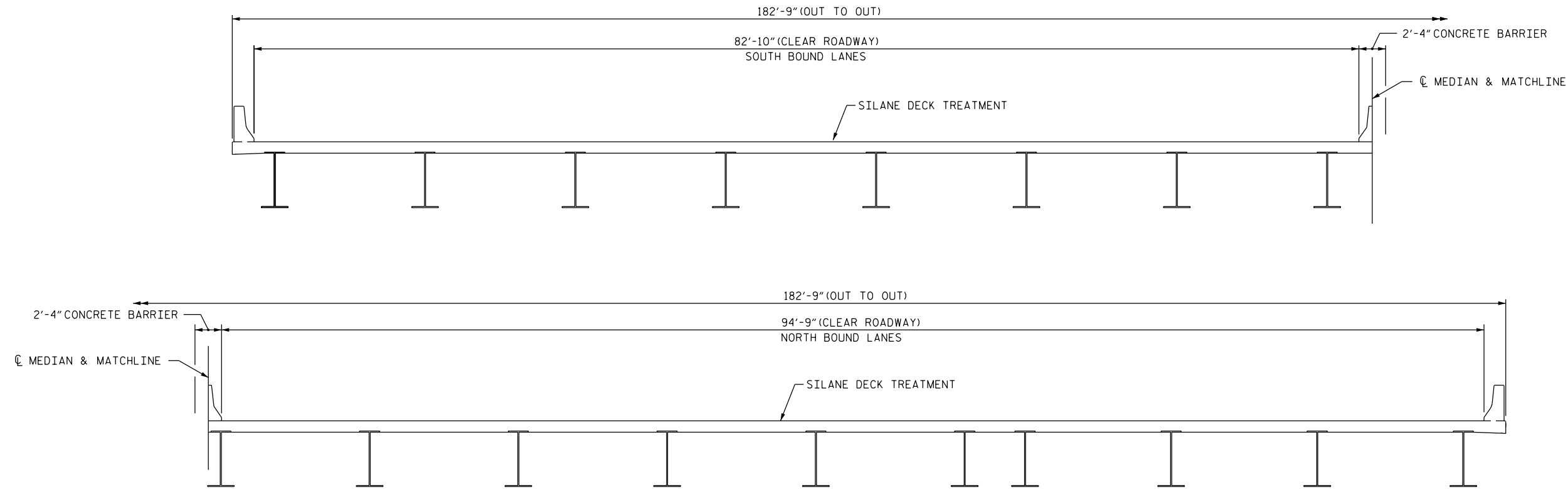
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			15
2			4			

DRAWN BY : R. L. CHESSON DATE : 2016 DEC
 CHECKED BY : T. M. SHERRILL DATE : 12/16

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

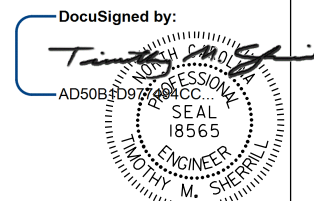
NOTE

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE NCDOT STANDARD DRAWINGS 1101.02, SHEETS 4, 8, 9 AND 10.



TYPICAL SECTION

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 150



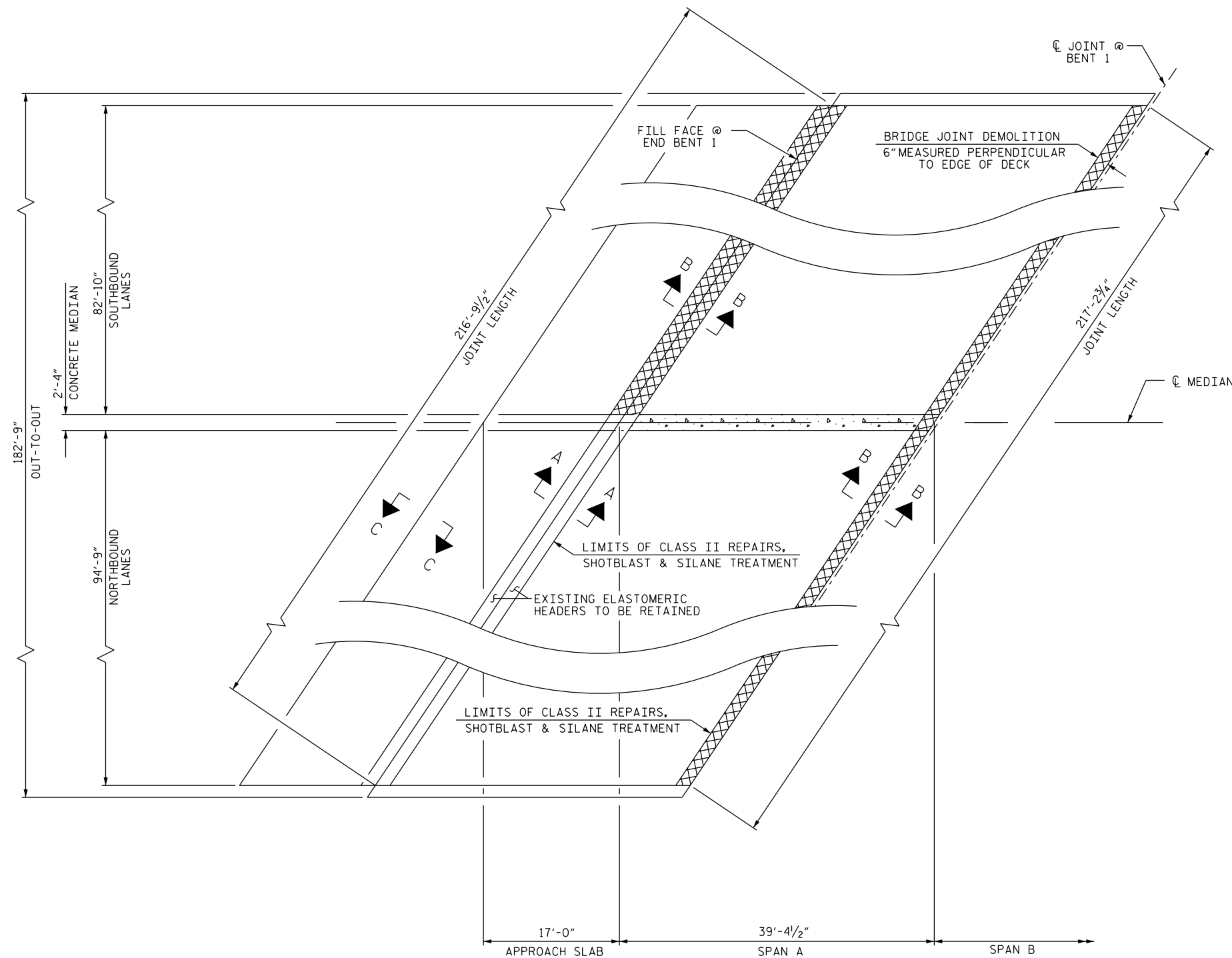
1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 &
 SILANE DECK TREATMENT

DRAWN BY : R. L. CHESSON DATE : 2016 DEC
 CHECKED BY : T. M. SHERRILL DATE : 12/16

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			15






PLAN OF SPAN A

(FOR SECTIONS A-A, B-B AND C-C, SEE "JOINT DETAILS" SHEET S-8)

SOUTH APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
SHOTBLAST APPROACH SLAB	327 SY	
SILANE DECK TREATMENT	327 SY	
SPAN A QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0 SY	
CONCRETE FOR DECK REPAIR	0 SF	
BRIDGE JOINT DEMOLITION	209.8 SF	
SHOTBLAST BRIDGE DECK	758 SY	
SILANE DECK TREATMENT	758 SY	
REPLACEMENT OF FOAM JOINT SEALS	319 LF	


CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE DECK SURFACE FOR POTENTIAL CLASS II REPAIRS.

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 150

SHEET 1 OF 3

DocuSigned by:

 AD50B1D9746ACC...
 SEAL
 18565
 ENGINEER
 TIMOTHY M. SHERRILL

1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
SOUTH APPROACH SLAB & SPAN A

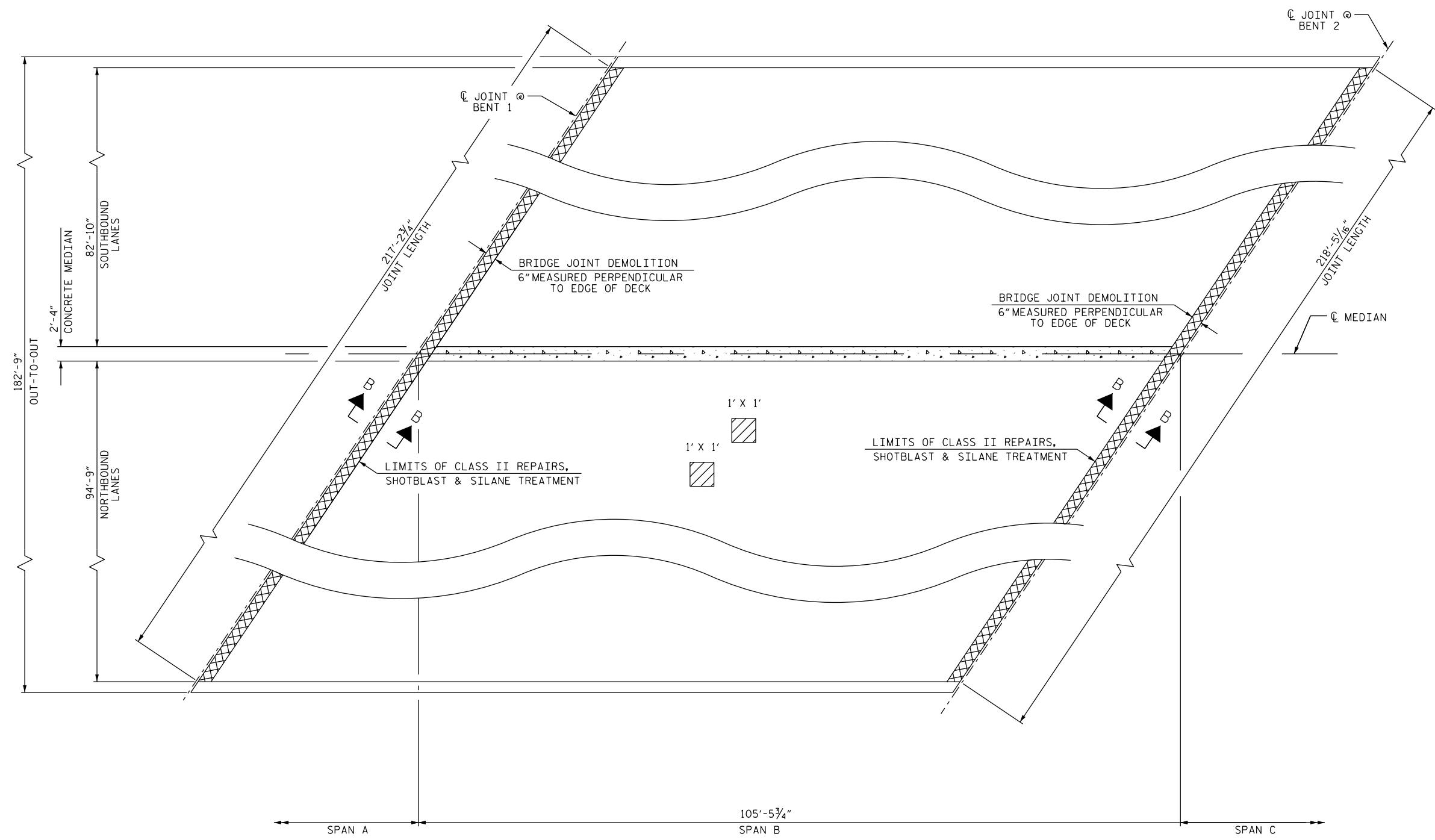
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1			3			TOTAL SHEETS
2			4			15




DRAWN BY : R.L. CHESSON DATE : 2016 DEC
 CHECKED BY : T.M. SHERRILL DATE : 12/16

*****SYSTEM*****
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 *****USERNAME*****

SPAN B QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.2 SY	
CONCRETE FOR DECK REPAIR	0.5 CF	
BRIDGE JOINT DEMOLITION	217.8 SF	
SHOTBLAST BRIDGE DECK	2,079 SY	
SILANE DECK TREATMENT	2,079 SY	



CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

PLAN OF SPAN B
(FOR SECTION B-B, SEE "JOINT DETAILS" SHEET S-8)

PROJECT NO. I-5729A
DURHAM COUNTY
BRIDGE NO. 150
SHEET 2 OF 3

DocuSigned by:
Timothy M. Sherrill
AD50B8D977484CC...
PROFESSIONAL SEAL
18565
ENGINEER
TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SURFACE PREPARATION
SPAN B

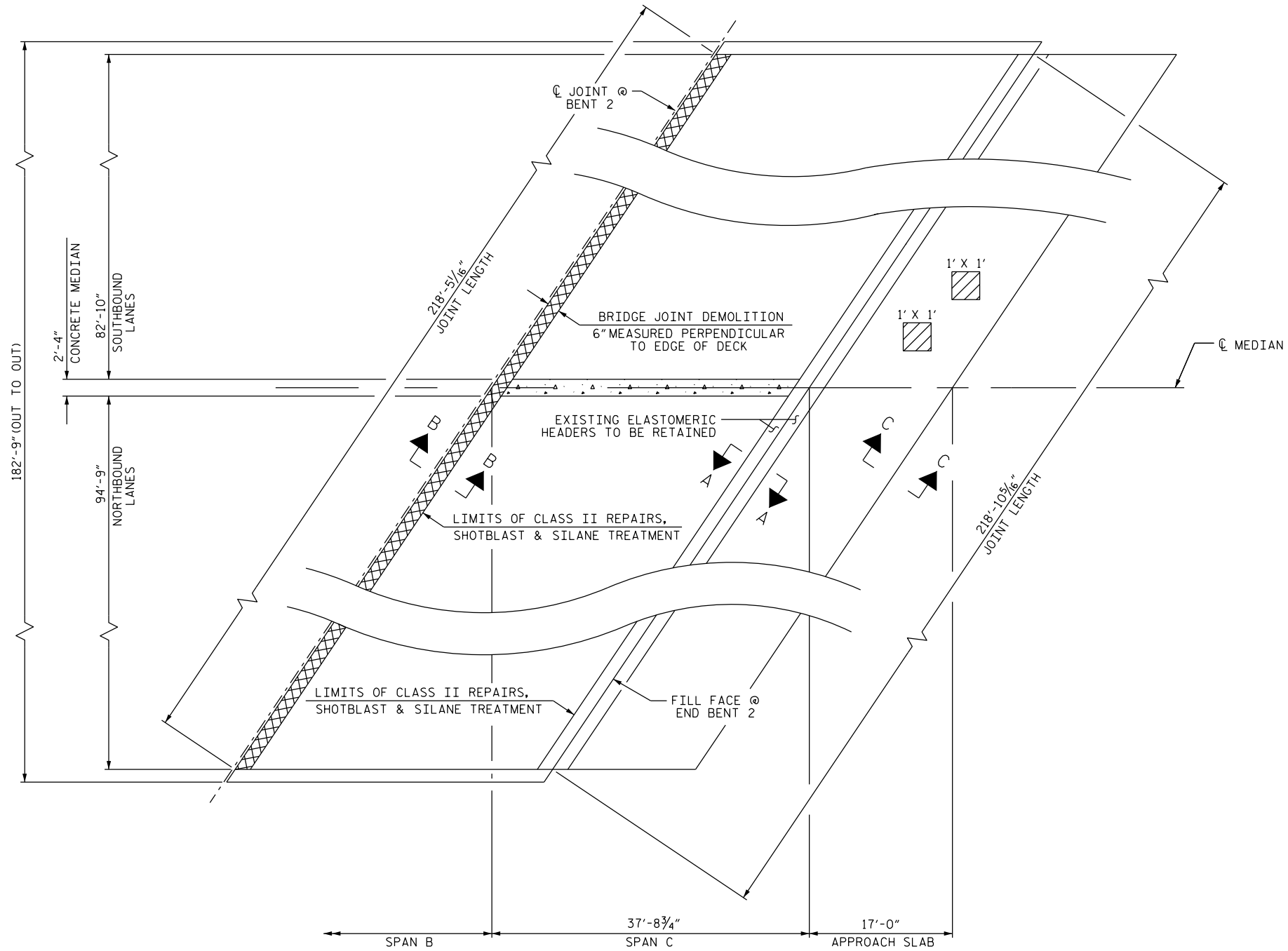
1/20/2017

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2			4			15

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PLAN OF SPAN C

(FOR SECTIONS B-B AND C-C, SEE "JOINT DETAILS" SHEET S-8)

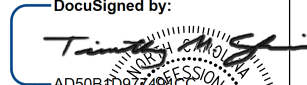
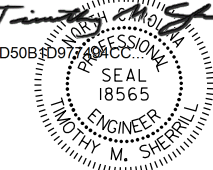
NORTH APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.2 SY	
CONCRETE FOR DECK REPAIR	0.5 CF	
SHOTBLAST APPROACH SLAB	326 SY	
SILANE DECK TREATMENT	326 SY	
SPAN C QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE FOR DECK REPAIR	0.0 CF	
BRIDGE JOINT DEMOLITION	109.2 SF	
SHOTBLAST BRIDGE DECK	725 SY	
SILANE DECK TREATMENT	725 SY	

CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 150

SHEET 3 OF 3

DocuSigned by:

 AD50B3D9740CC

 1/20/2017

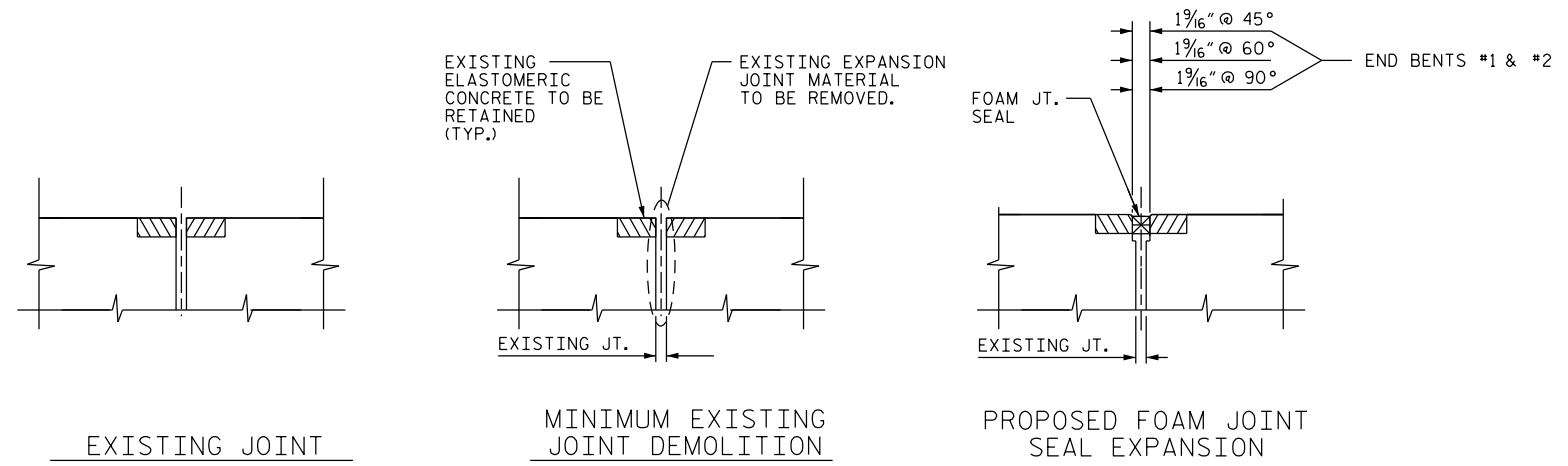
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SURFACE PREPARATION
 SPAN C &
 NORTH APPROACH SLAB

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
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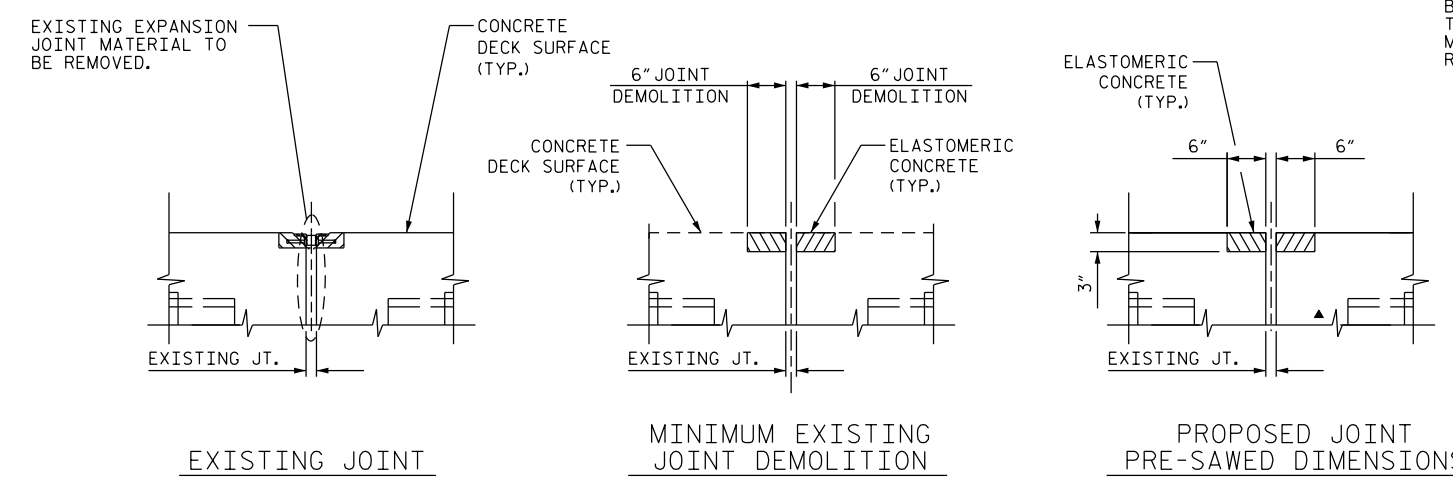
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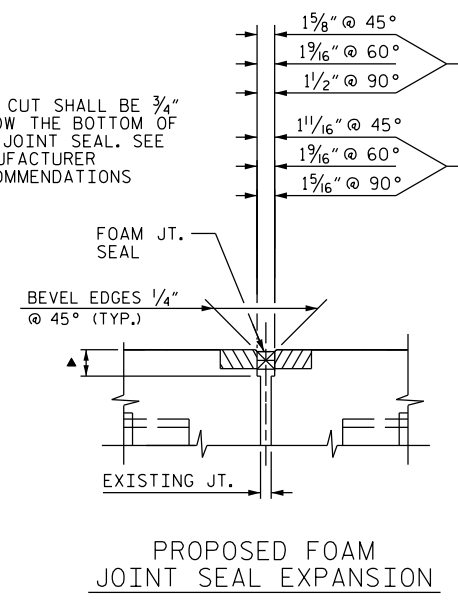
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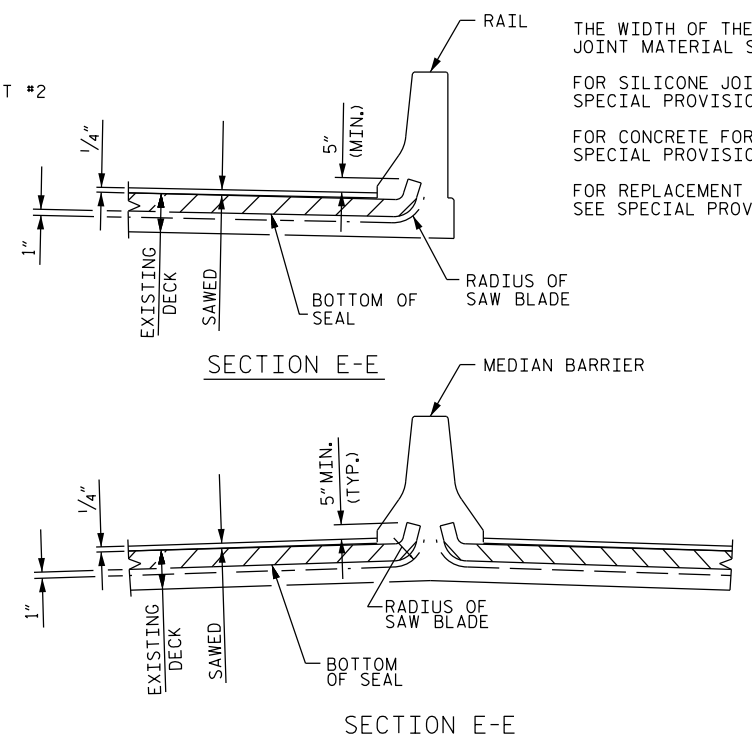
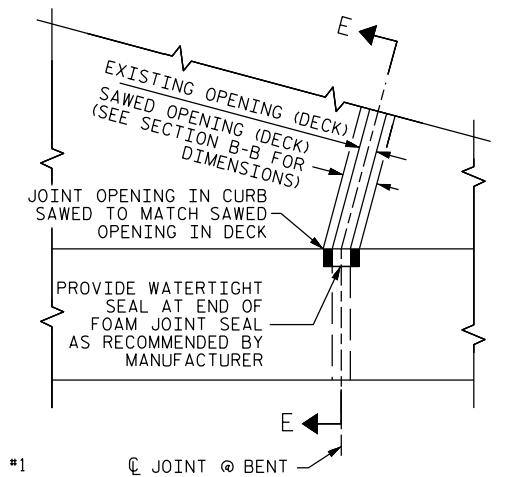
JOINT INSTALLATION SEQUENCE AT END BENTS 1 & 2
SECTION A-A



JOINT INSTALLATION SEQUENCE AT END BENT 1 AND BENTS 1 AND 2
SECTION B-B



PROPOSED JOINT SEAL EXPANSION



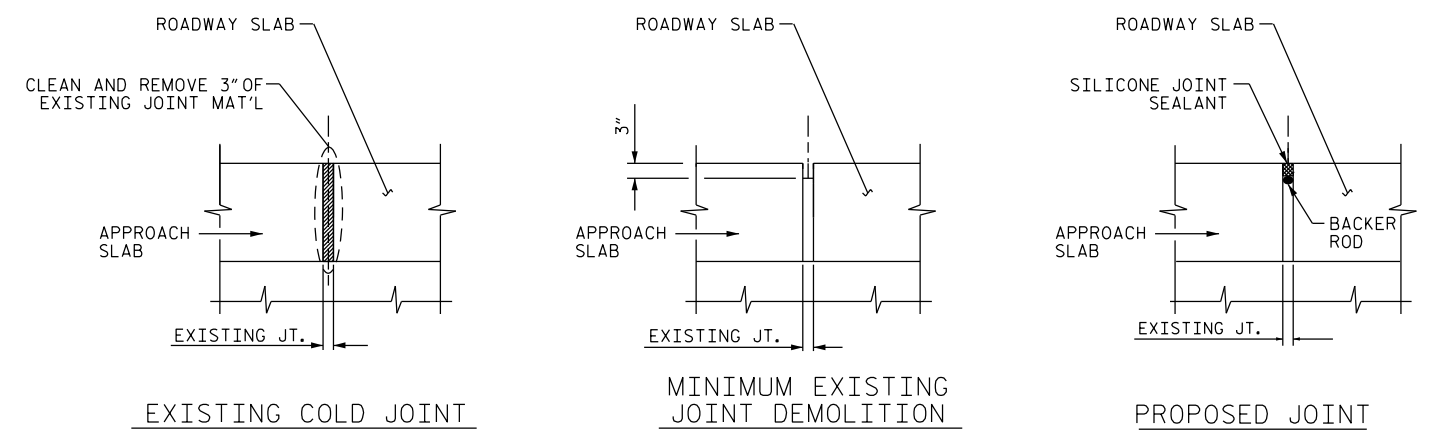
JOINT SEAL DETAILS AT BARRIER

SILICONE JOINT SEALANT	
END BENT 1	217 LN. FT.
END BENT 2	221 LN. FT.

ELASTOMERIC CONCRETE	
BENT 1	* 55.5 CU. FT.
BENT 2	* 55.5 CU. FT.

*BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTES:
 CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
 EXCAVATE EXISTING JOINT TO SOUND CONCRETE. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE. SEE CONCRETE FOR DECK REPAIR SPECIAL PROVISIONS.
 EXCAVATION OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC CONCRETE.
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
 RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
 THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2".
 FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
 FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.
 FOR REPLACEMENT OF FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.



JOINT INSTALLATION SEQUENCE AT APPROACHES
SECTION C-C

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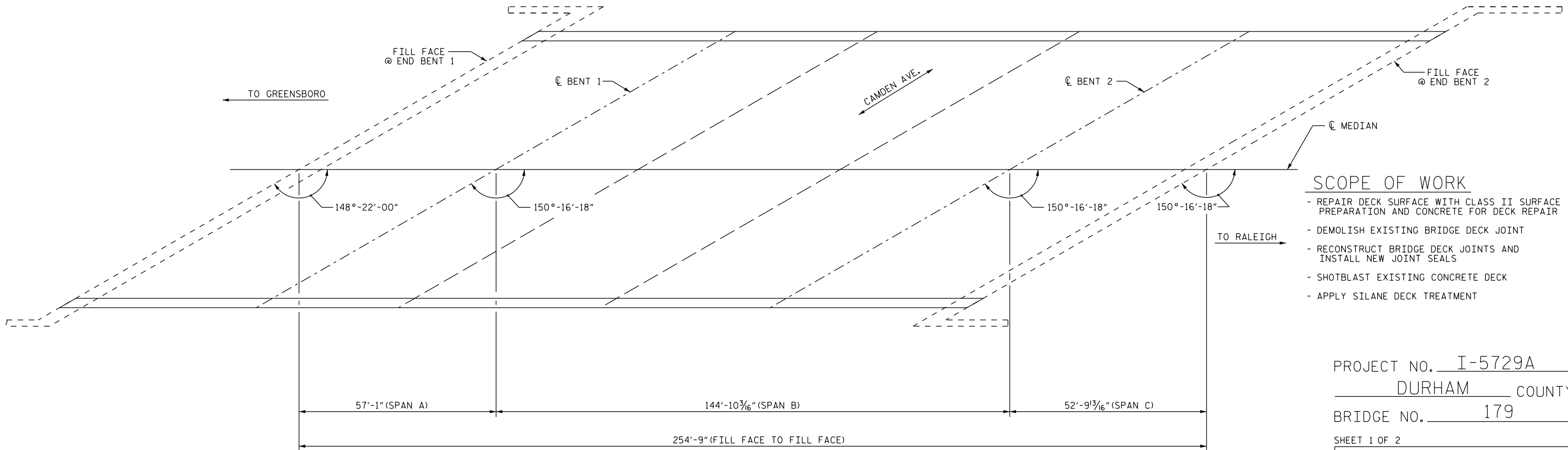
DocuSigned by:
 Timothy M. Sherrill
 AD5081D97749CC...
 SEAL
 18565
 ENGINEER
 TIMOTHY M. SHERRILL

1/20/2017

PROJECT NO. I-5729A
 DURHAM COUNTY
 BRIDGE NO. 150

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 JOINT DETAILS

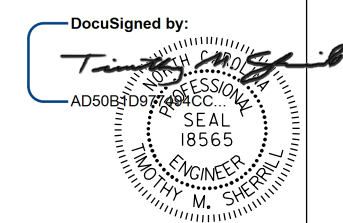
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	1			3			
	2			4			



- SCOPE OF WORK**
- REPAIR DECK SURFACE WITH CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
 - DEMOLISH EXISTING BRIDGE DECK JOINT
 - RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW JOINT SEALS
 - SHOTBLAST EXISTING CONCRETE DECK
 - APPLY SILANE DECK TREATMENT

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 179

SHEET 1 OF 2



1/20/2017

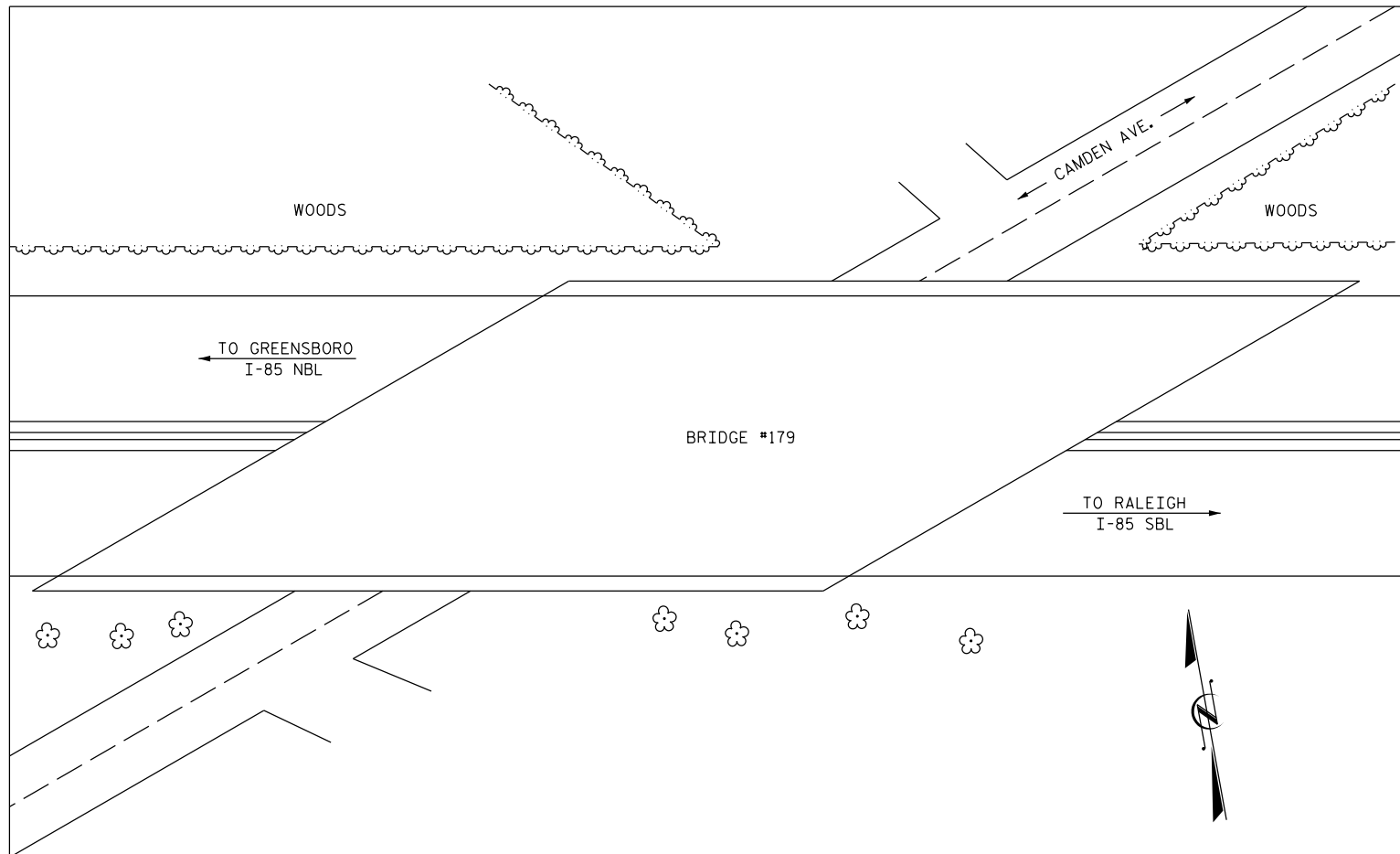
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE 179 OVER CAMDEN
 AVE. ON I-85 BETWEEN
 GREENSBORO & RALEIGH

DRAWN BY : R.L. CHESSON DATE : 2016 DEC
 CHECKED BY : T.M. SHERRILL DATE : 12/16

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LOCATION SKETCH

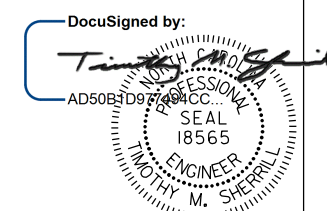
INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

GENERAL NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.
- FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.
- FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.
- FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.
- FOR CLASS II SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 179
 SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE 179 OVER CAMDEN
 AVE. ON I-85 BETWEEN
 GREENSBORO & RALEIGH

I HEREBY CERTIFY THAT THIS STRUCTURE(S) WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED THEREIN.

 RESIDENT ENGINEER DATE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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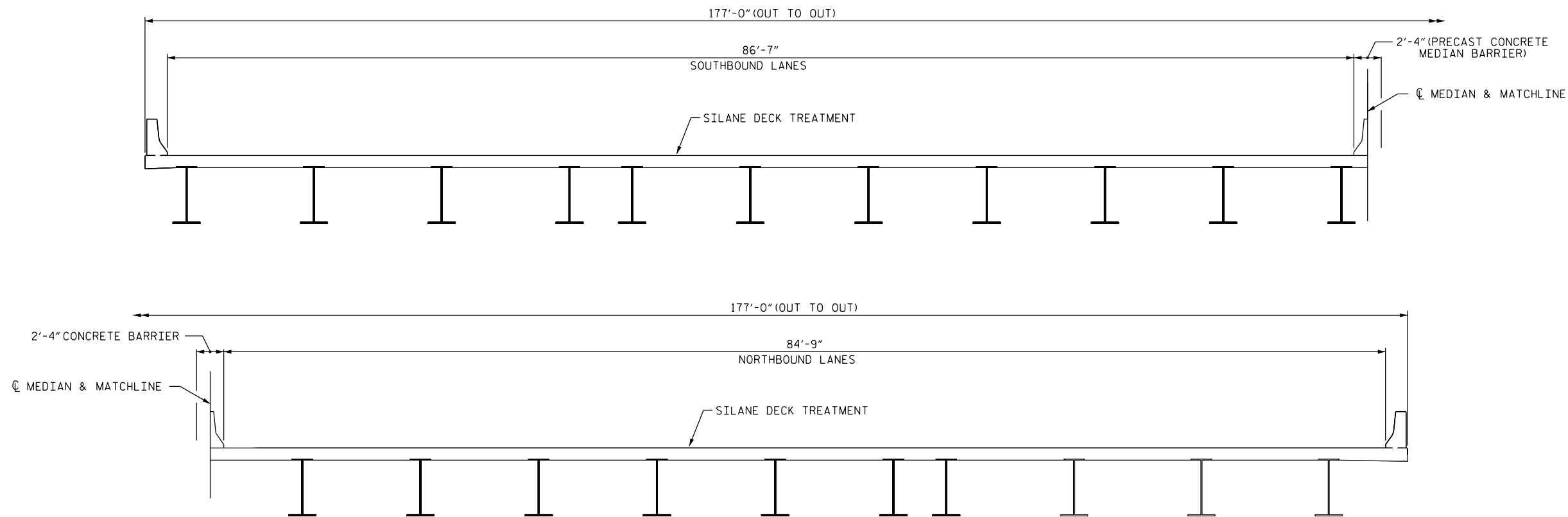
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NOTE

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE NCDOT STANDARD DRAWINGS 1101.02, SHEETS 4, 8, 9 AND 10.



TYPICAL SECTION

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 179

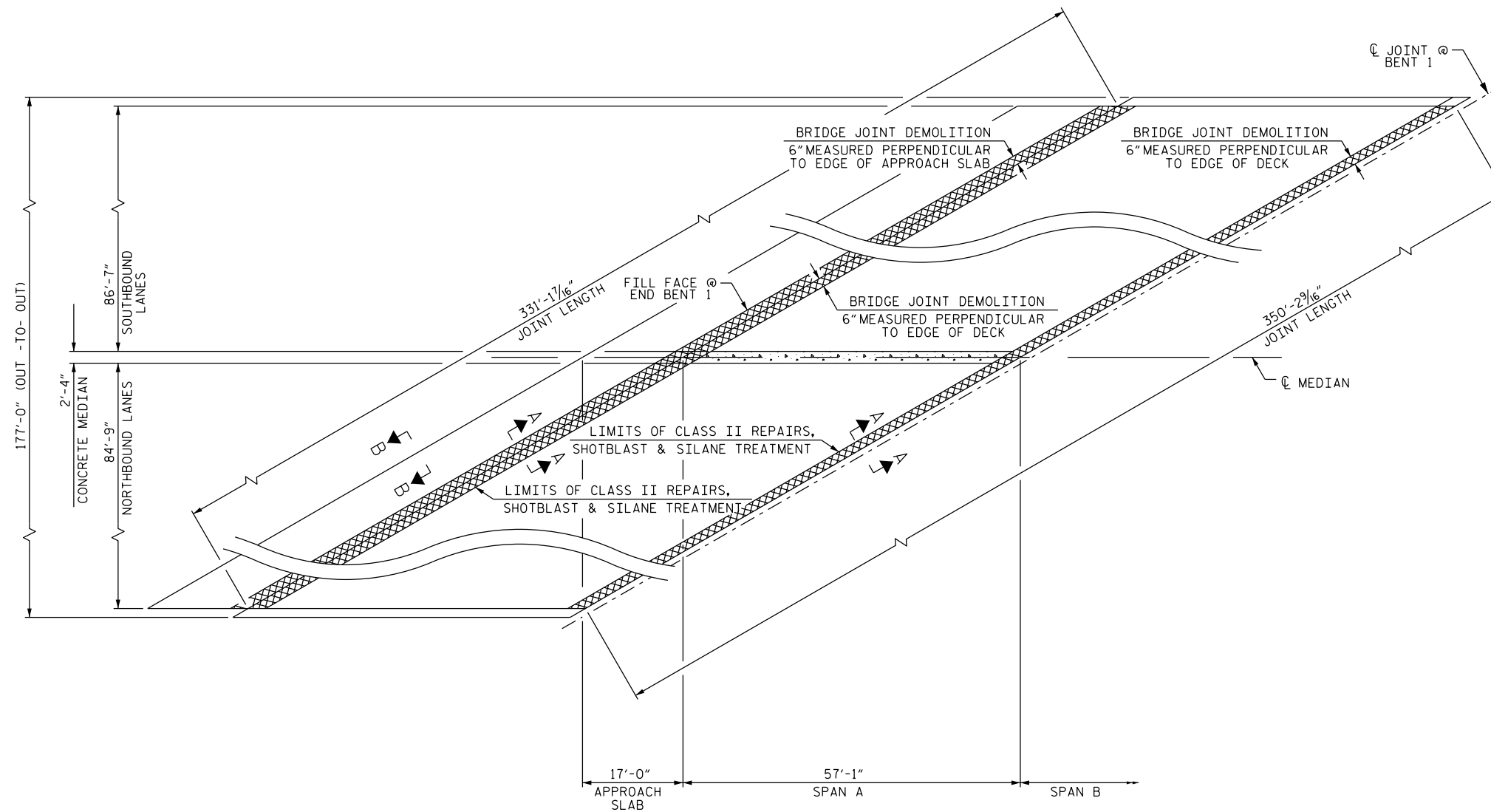
DocuSigned by:

 AD50B1D977494CC...
 PROFESSIONAL
 SEAL
 18565
 ENGINEER
 TIMOTHY M. SHERRILL
 1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION
 &
 SILANE DECK TREATMENT

DRAWN BY : R. L. CHESSON DATE : 2016 DEC
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




PLAN OF SPAN A

(FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET S-15)

SOUTH APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
SHOTBLAST APPROACH SLAB	307 SY	
SILANE DECK TREATMENT	307 SY	
SPAN A QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE FOR DECK REPAIR	0.0 CF	
BRIDGE JOINT DEMOLITION	506.2 SF	
SHOTBLAST BRIDGE DECK	1,054 SY	
SILANE DECK TREATMENT	1,054 SY	


CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE DECK SURFACE FOR POTENTIAL CLASS II REPAIRS.

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 179

SHEET 1 OF 3

DocuSigned by:

 AD50B ED977 45CC
 PROFESSIONAL SEAL 18565
 ENGINEER
 TIMOTHY M. SHERRILL

1/20/2017

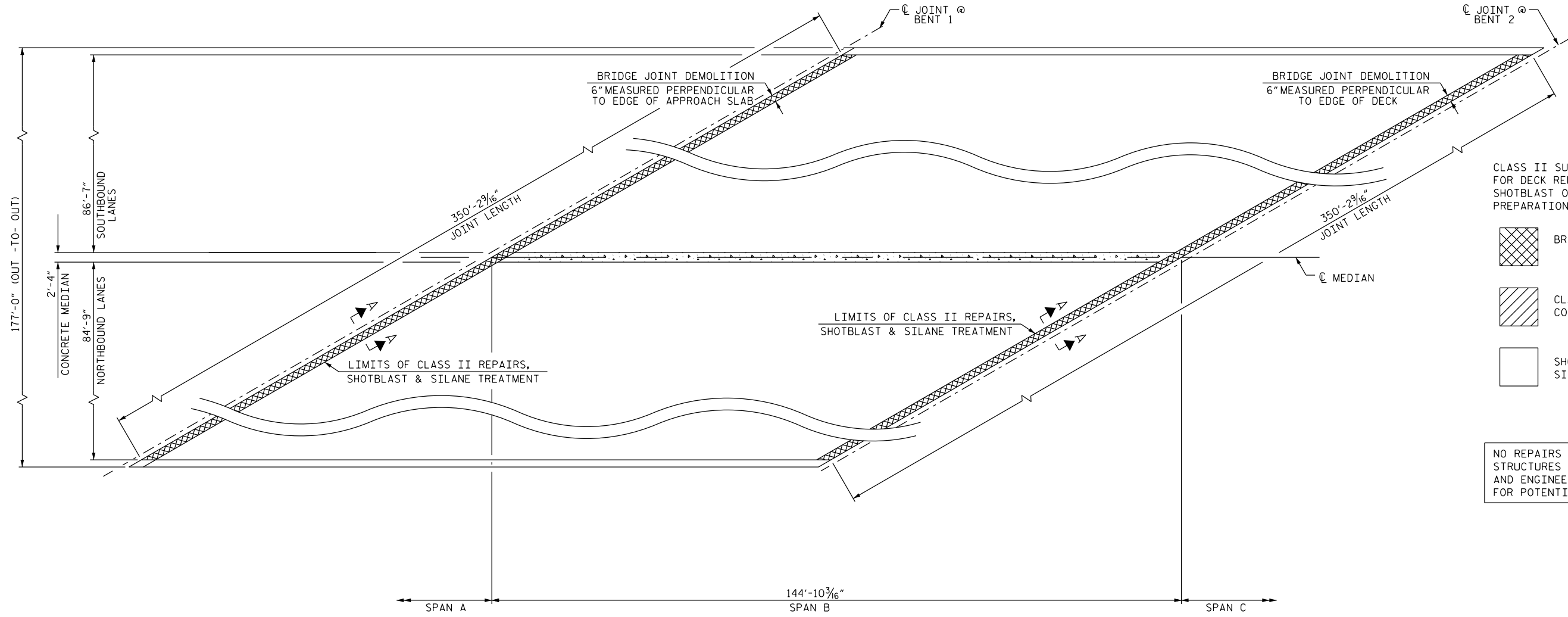
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 SOUTH APPROACH SLAB
 & SPAN A**

DRAWN BY : R. L. CHESSON DATE : 2017 JAN
 CHECKED BY : T. M. SHERRILL DATE : 12/16




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SPAN B QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE FOR DECK REPAIR	0.0 CF	
BRIDGE JOINT DEMOLITION	350.2 SF	
SHOTBLAST BRIDGE DECK	2,743 SY	
SILANE DECK TREATMENT	2,743 SY	




CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE DECK SURFACE FOR POTENTIAL CLASS II REPAIRS.

PLAN OF SPAN B
 (FOR SECTION A-A,
 SEE "JOINT DETAILS" SHEET S-15)

PROJECT NO. I-5729A
DURHAM COUNTY
 BRIDGE NO. 179
 SHEET 2 OF 3

DocuSigned by:

 AD50B3D97E94CC...
 PROFESSIONAL SEAL
 18565
 ENGINEER
 TIMOTHY M. SHERRILL
 1/20/2017

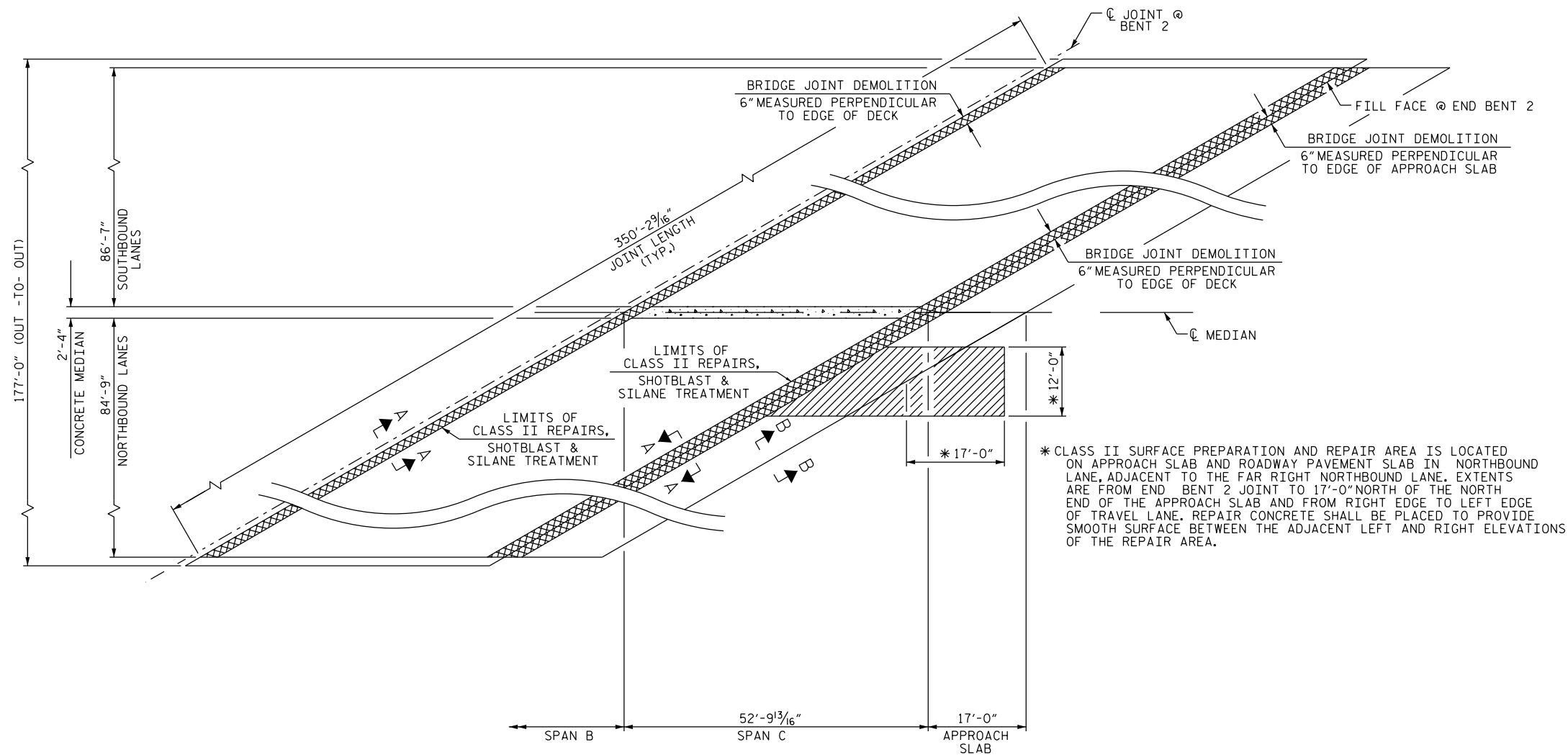
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN B**

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS 15
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


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PLAN OF SPAN C
(FOR SECTIONS A-A, AND B-B,
SEE "JOINT DETAILS" SHEET S-15)

NORTH APPROACH SLAB QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	44.0 SY	
CONCRETE FOR DECK REPAIR	99.0 CF	
SHOTBLAST APPROACH SLAB	325 SY	
SILANE DECK TREATMENT	325 SY	
SPAN C QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE FOR DECK REPAIR	0.0 CF	
BRIDGE JOINT DEMOLITION	525.3 SF	
SHOTBLAST BRIDGE DECK	968 SY	
SILANE DECK TREATMENT	968 SY	

CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR SHALL BE COMPLETE PRIOR TO SHOTBLAST OF ENTIRE BRIDGE DECK SURFACE FOR PREPARATION FOR SILANE DECK TREATMENT.

-  BRIDGE JOINT DEMOLITION
-  CLASS II SURFACE PREPARATION AND CONCRETE FOR DECK REPAIR
-  SHOTBLAST BRIDGE DECK AND SILANE DECK TREATMENT

PROJECT NO. I-5729A
DURHAM COUNTY
BRIDGE NO. 179

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION
SPAN C &
NORTH APPROACH SLAB

DocuSigned by:
Timothy M. Sherrill
AD50B3D97404CC
PROFESSIONAL ENGINEER
SEAL 18565
TIMOTHY M. SHERRILL

1/20/2017

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NOTES:
 CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.

EXCAVATE EXISTING JOINT TO SOUND CONCRETE. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE. SEE CONCRETE FOR DECK REPAIR SPECIAL PROVISIONS.

EXCAVATION OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC CONCRETE.

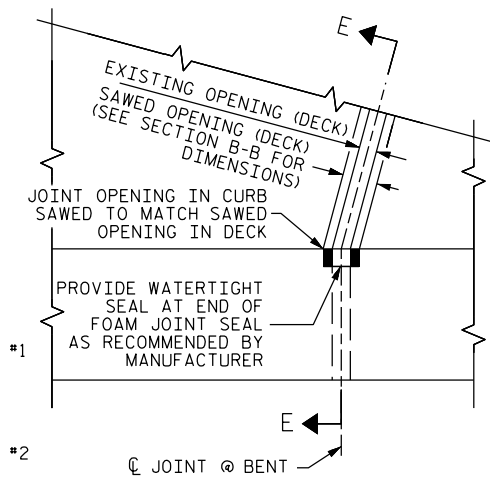
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

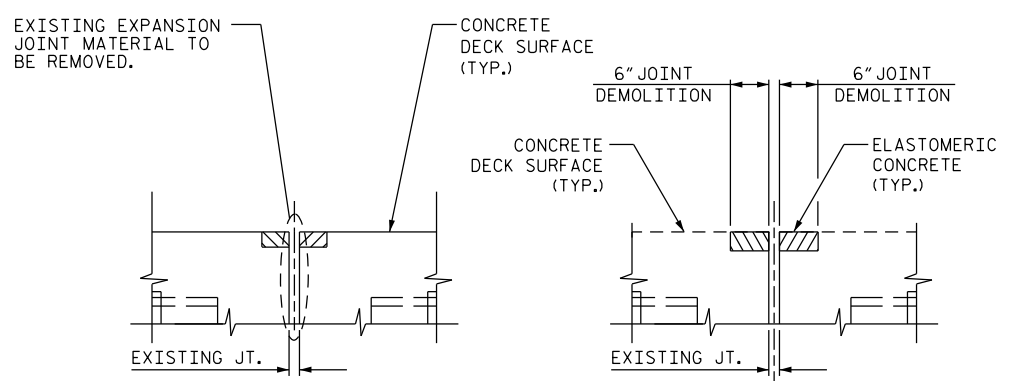
THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2".

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.



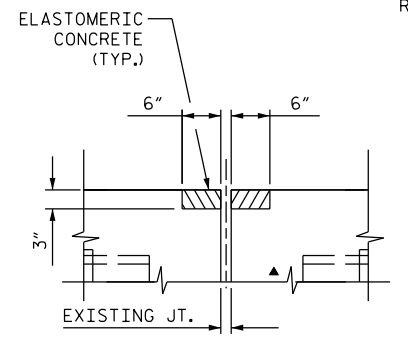
- 1 5/8" @ 45°
 - 1 7/8" @ 60°
 - 1 1/2" @ 90°
 - 1 1/16" @ 45°
 - 1 7/8" @ 60°
 - 1 5/8" @ 90°
 - 1 7/8" @ 45°
 - 1 7/8" @ 60°
 - 1 7/8" @ 90°
- BENT #1
 BENT #2
 END BENTS #1 & #2

▲ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL. SEE MANUFACTURER RECOMMENDATIONS

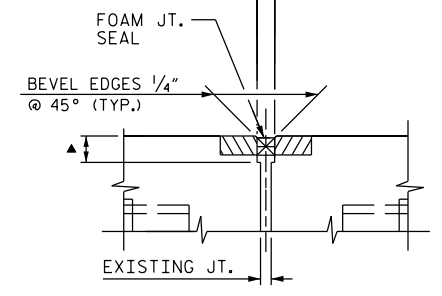


EXISTING JOINT

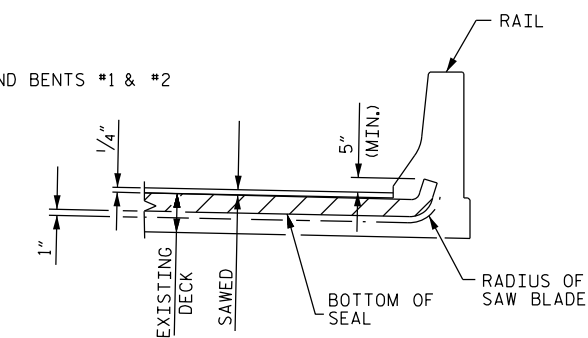
MINIMUM EXISTING JOINT DEMOLITION



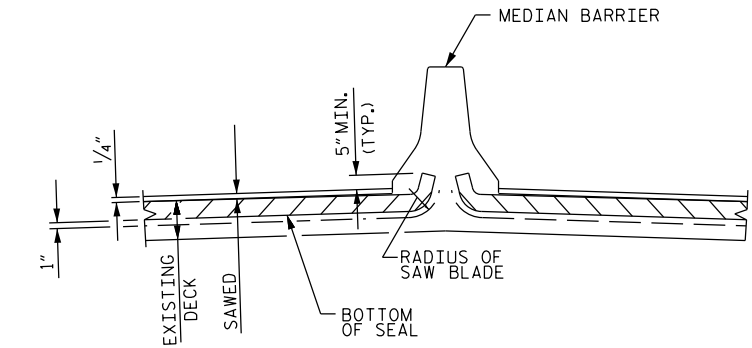
PROPOSED JOINT PRE-SAWED DIMENSIONS



PROPOSED FOAM JOINT SEAL EXPANSION



SECTION E-E



SECTION E-E

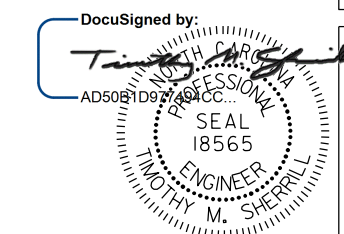
JOINT SEAL DETAILS AT BARRIER

PROJECT NO. I-5729A
 DURHAM COUNTY
 BRIDGE NO. 179

SILICONE JOINT SEALANT	
END BENT 1	332 LN. FT.
END BENT 2	351 LN. FT.

ELASTOMERIC CONCRETE	
END BENT 1	* 85.0 CU. FT.
BENT 1	* 89.0 CU. FT.
BENT 2	* 89.0 CU. FT.
END BENT 2	* 89.0 CU. FT.

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

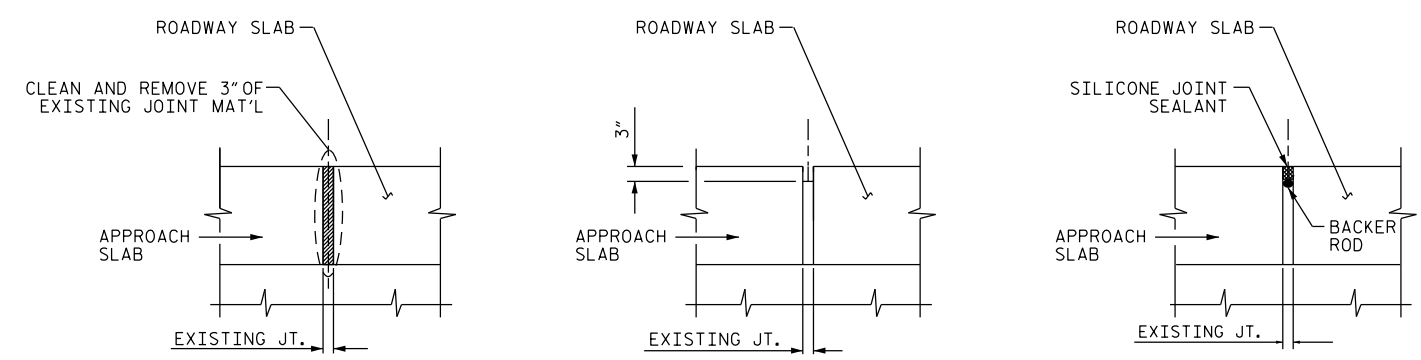


1/20/2017

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 JOINT DETAILS

JOINT INSTALLATION SEQUENCE AT END BENTS AND AT BENTS
 SECTION A-A



EXISTING COLD JOINT

MINIMUM EXISTING JOINT DEMOLITION

PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT APPROACHES
 SECTION B-B

DRAWN BY : R. L. CHESSON DATE : 2016 DEC
 CHECKED BY : T. M. SHERRILL DATE : 12/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			15

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
<u>STRESS IN EXTREME FIBER OF</u>		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
<u>REINFORCING STEEL IN TENSION</u>		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
<u>STRUCTURAL TIMBER - TREATED OR</u>		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
<u>COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER</u>		
	----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990