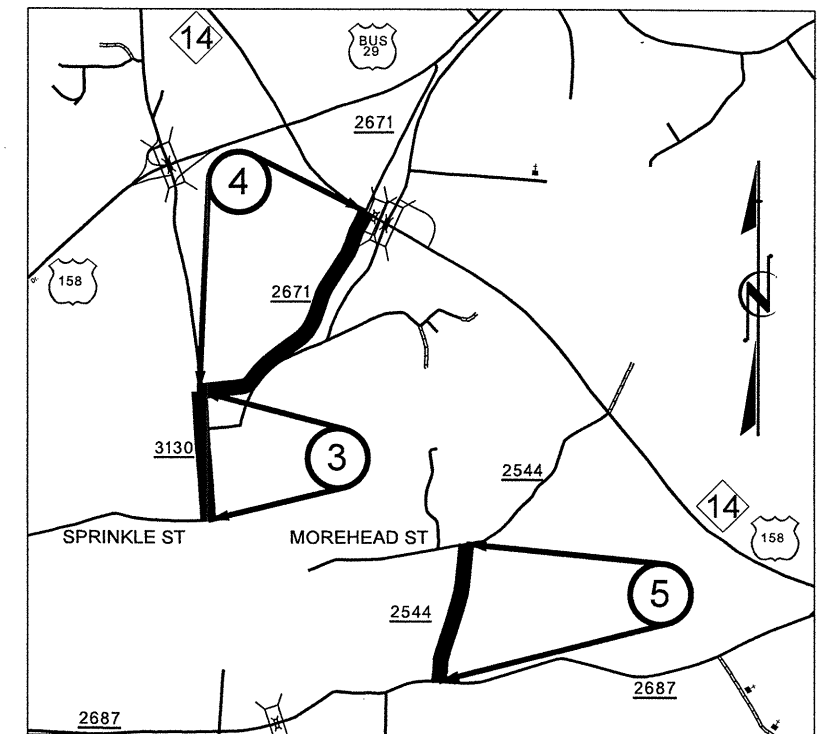
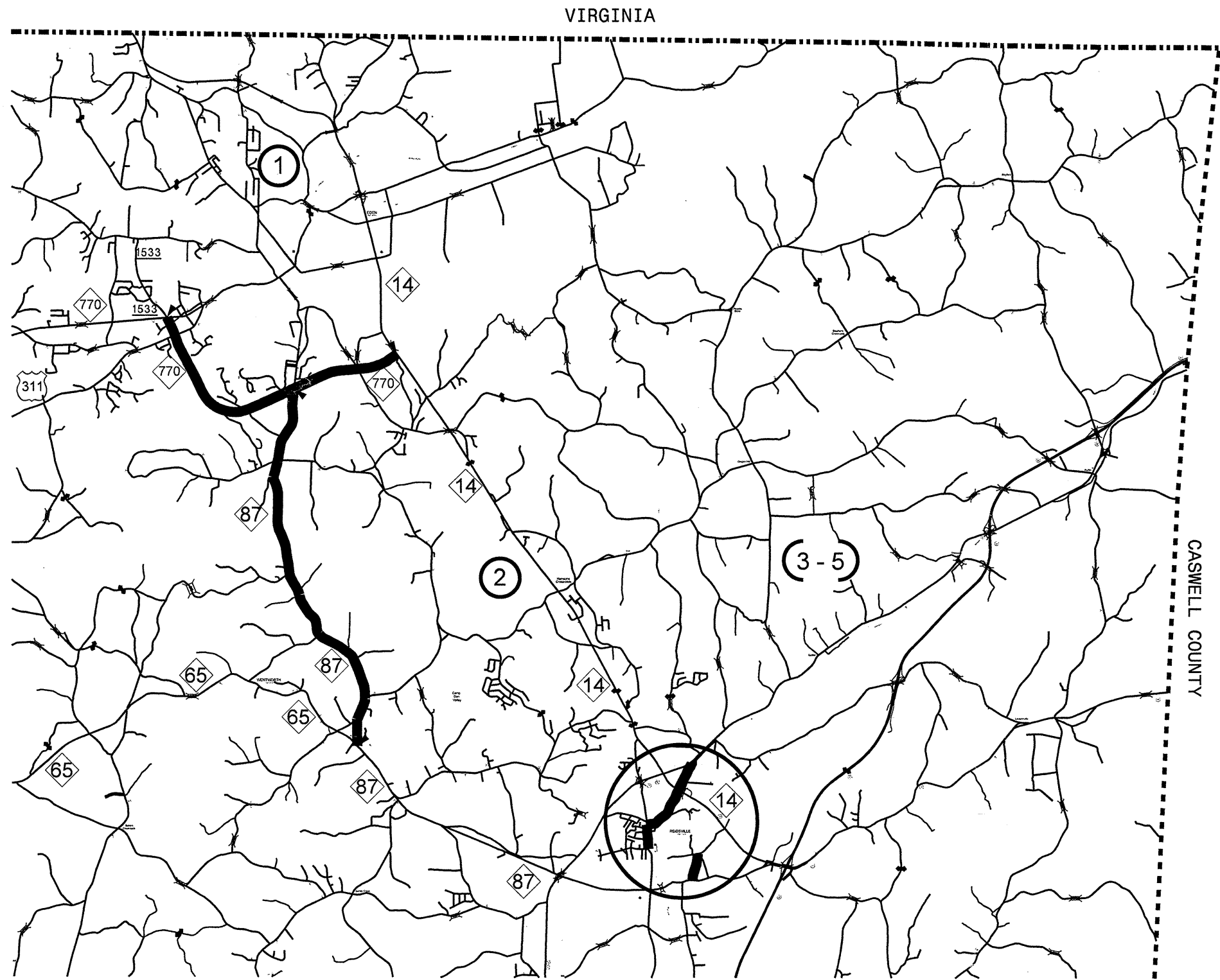
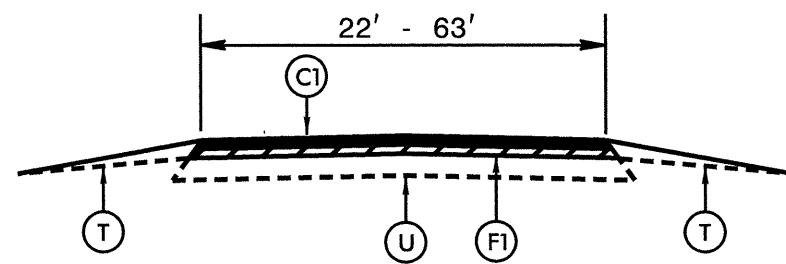


2012 ROCKINGHAM COUNTY

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10791.36, 7CR.20791.36	1	5
F.A. PROJ. NO.			

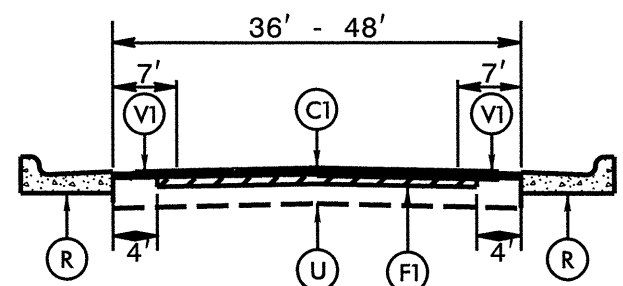


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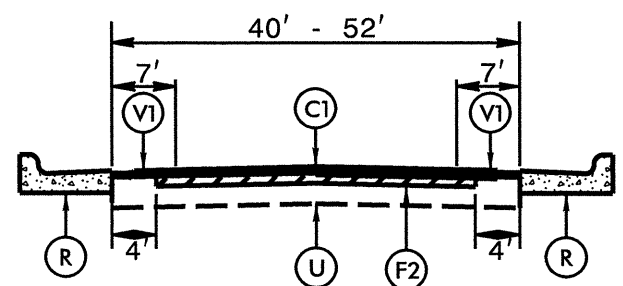


TYPICAL SECTION NO. 1
 TO BE USED ON MAPS 1, 2 AND 4
 MAP 2: STA. 5+10 TO STA. 312+20
 MAP 4: STA. 4+80 TO STA. 37+70

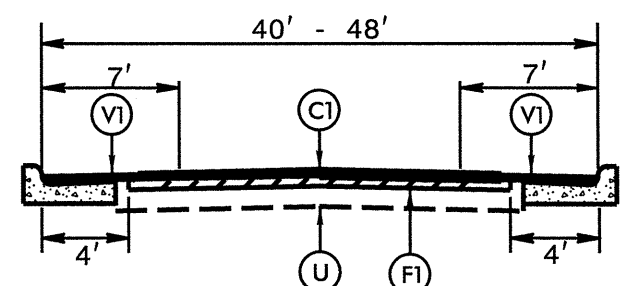
**NOTE: ON MAP 1 NO PAVEMENT ON BRIDGE #271 STA. 40+05 TO STA. 44+85
 **NOTE: ON MAP 1 NO PAVEMENT IN INTERSECTION STA. 12+50 TO STA. 19+00



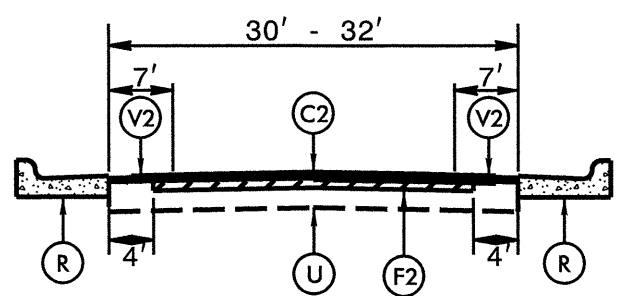
TYPICAL SECTION NO. 2
 TO BE USED ON MAP 2
 MAP 2: STA. 0+00 TO STA. 5+10



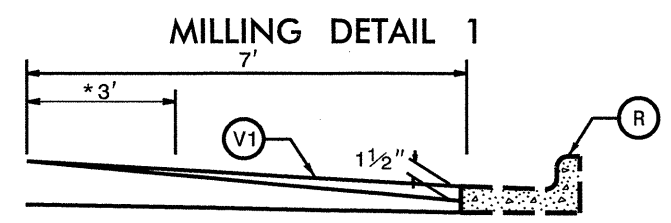
TYPICAL SECTION NO. 3
 TO BE USED ON MAP 3



TYPICAL SECTION NO. 4
 TO BE USED ON MAP 4
 STA. 0+00 TO STA. 4+80

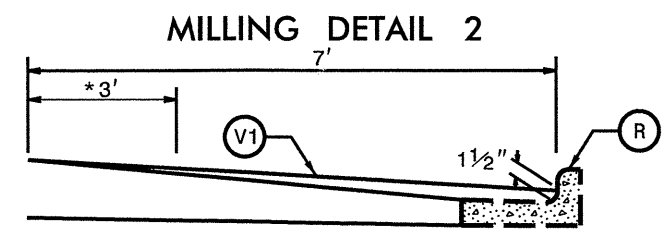


TYPICAL SECTION NO. 5
 TO BE USED ON MAP 5



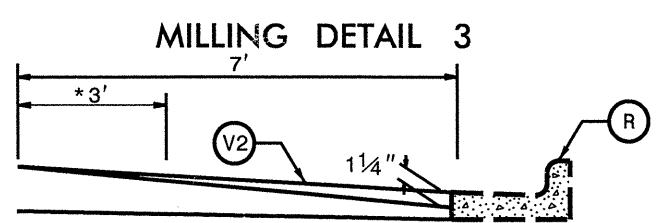
PROFILE MILLING 0 - 1 1/2"
 *IF 78M IS INVOLVED OVERLAP 3'.
 PROFILE MILL EXISTING ASPHALT PAVEMENT 1 1/2" AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE: TO BE USED IN CONJUNCTION WITH:
 TS. NO. 2 ON MAP 2 STA. 0+00 TO STA. 5+10 RT & LT
 TS. NO. 3 ON MAP 3 STA. 0+00 TO STA. 19+70 RT & LT



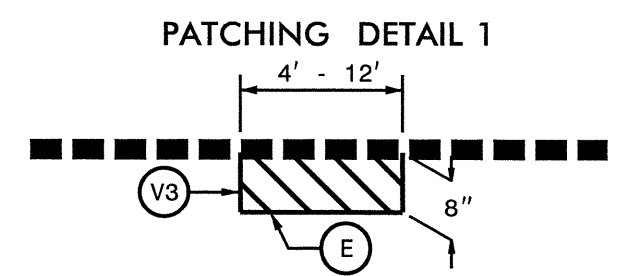
PROFILE MILLING 0 - 1 1/2"
 *IF 78M IS INVOLVED OVERLAP 3'.
 PROFILE MILL EXISTING ASPHALT PAVEMENT 1 1/2" AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE: TO BE USED IN CONJUNCTION WITH:
 TS. NO. 4 ON MAP 4 STA. 0+00 TO STA. 4+80 RT & LT



PROFILE MILLING 0 - 1 1/4"
 *IF 78M IS INVOLVED OVERLAP 3'.
 PROFILE MILL EXISTING ASPHALT PAVEMENT 1 1/4" AT LOCATIONS AS DIRECTED BY THE ENGINEER.

NOTE: TO BE USED IN CONJUNCTION WITH:
 TS. NO. 5 ON MAP 5 STA. 0+00 TO STA. 20+10 RT & LT



USE FOR PATCHING ON MAPS 1, 2, 3, 4, AND 5
 MILL EXISTING ASPHALT PAVEMENT 8" IN DEPTH
 AND FILL WITH BASE COURSE, TYPE B25.0B AT
 LOCATIONS AS DIRECTED BY THE ENGINEER.

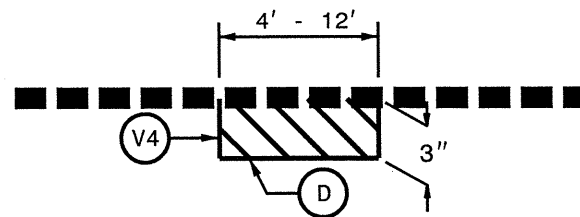
NOTE: EACH MAP MUST BE PATCHED AS DIRECTED BY THE ENGINEER BEFORE PROCEEDING WITH RESURFACING

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.		
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.		
D	PROP. APPROX 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342LBS. PER SQ. YD.		
E	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		
F1	AST MAT COAT #67 STONE		
F2	AST MAT COAT, #78M STONE		
R	EXISTING CURB AND GUTTER		
T	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER.		
U	EXISTING PAVEMENT.		
V1	0 - 1 1/2" MILLING	V2	0 - 1 1/4" MILLING
V3	8" MILLING FOR PATCHING	V4	3" MILLING FOR PATCHING

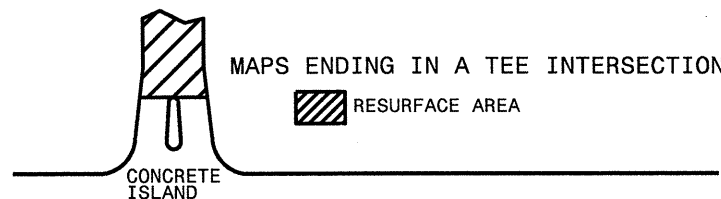
\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DDGN\$\$\$\$\$
 \$\$\$SERNAME\$\$\$\$\$

PATCHING DETAIL 2



USE FOR PATCHING ON MAPS 3, 4, AND 5
MILL EXISTING ASPHALT PAVEMENT 3" IN DEPTH
AND FILL WITH INTERMEDIATE COURSE, TYPE
I19.0B AT LOCATIONS AS DIRECTED BY THE
ENGINEER.

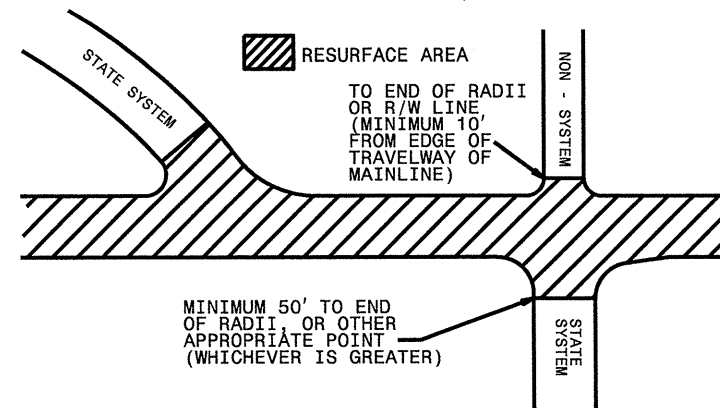
PAVING DETAIL 1 MAIN LINE IS NOT BEING RESURFACED



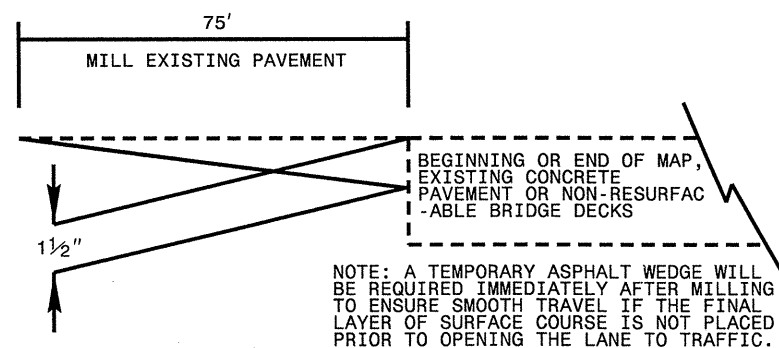
MAPS ENDING IN A TEE INTERSECTION
RESURFACE AREA

PAVING DETAIL 2 MAIN LINE IS BEING RESURFACED

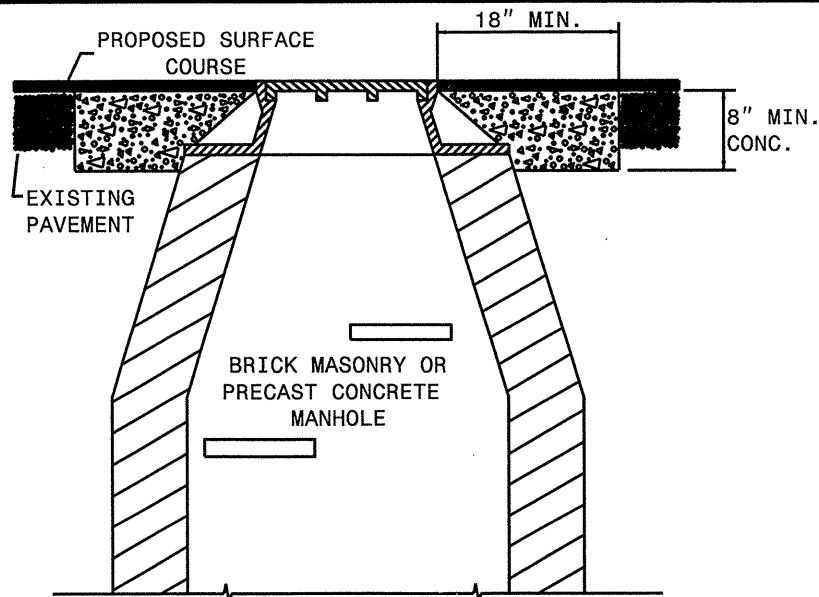
NOTE: NON-SYSTEM (CITY STREET, PRIVATE DRIVE,
SCHOOL BUS DRIVE)



INCIDENTAL MILLING DETAIL



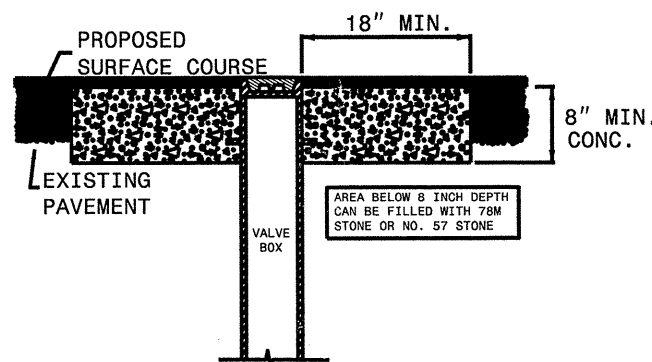
NOTE: A TEMPORARY ASPHALT WEDGE WILL
BE REQUIRED IMMEDIATELY AFTER MILLING
TO ENSURE SMOOTH TRAVEL IF THE FINAL
LAYER OF SURFACE COURSE IS NOT PLACED
PRIOR TO OPENING THE LANE TO TRAFFIC.



NOTES:

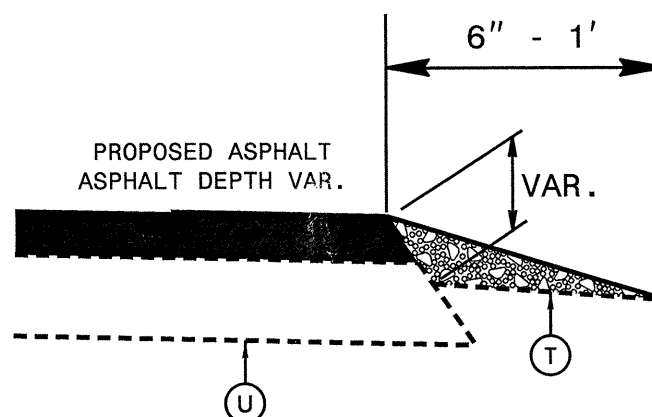
1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. USE RAPID SET GROUT, MORTAR OR CONCRETE AS NOTED IN PROJECT SPECIAL PROVISIONS. CLASS B CONCRETE MAY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

STANDARD CONCRETE ENCASEMENT FOR VALVE CASTINGS IN PAVEMENT



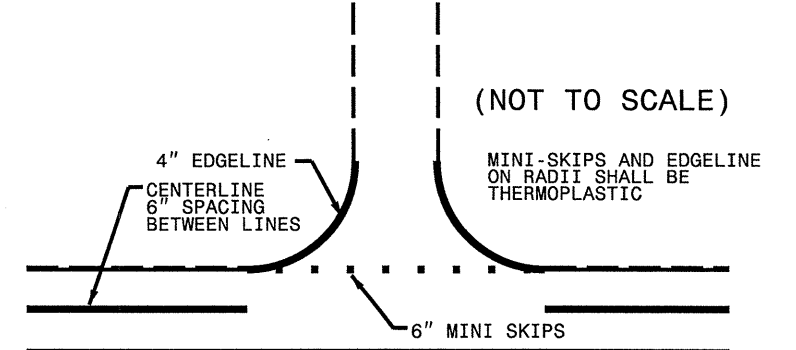
USE RAPID SET GROUT, MORTAR, OR CONCRETE
CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS
ARE NOT IN THE TRAVEL LANE.

INCIDENTAL STONE SHOULDER DETAIL



NOTE: ASB OR ABC STONE SHOULD BE PLACE AT THE
DESGRESSION OF THE ENGINEER

TO BE USED AT ALL
NON-SIGNALIZED INTERSECTIONS



NOTE: MINI SKIPS SHALL BE PLACED ON A 10' CYCLE, CONTAINING
AN 8' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

**NOTE: EACH MAP MUST BE PATCHED AS
DIRECTED BY THE ENGINEER BEFORE PROCEEDING
WITH RESURFACING**

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.		
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.		
D	PROP. APPROX 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342LBS. PER SQ. YD.		
E	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		
F1	AST MAT COAT #67 STONE		
F2	AST MAT COAT, #78M STONE		
R	EXISTING CURB AND GUTTER		
T	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER.		
U	EXISTING PAVEMENT.		
V1	0 - 1 1/2" MILLING	V2	0 - 1 1/4" MILLING
V3	8" MILLING FOR PATCHING	V4	3" MILLING FOR PATCHING

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\$\$\$\$\$Z\$\$\$\$\$

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10791.36, 7CR.20791.36	4	5

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	GENERIC PAVING ITEM - [8" PATCHING OF EXISTING PAVEMENT]	GENERIC PAVING ITEM - [3" PATCHING OF EXISTING PAVEMENT]	INCIDENTAL STONE BASE TONS	MILLING ASPHALT PAVEMENT, 0" TO 1 1/2" DEPTH SY	MILLING ASPHALT PAVEMENT, 0 - 1 1/4" DEPTH SY	INCIDENTAL MILLING SY	ASPHALT CONC SURFACE COURSE, TYPE S9.5B TONS	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	ASPHALT SURFACE TREATMENT, MAT COAT, #78M STONE SY	GENERIC PAVING ITEM - ASPHALT SURFACE TREATMENT, MAT COAT, #67 STONE SY	RETROFITTING EXISTING CURB RAMPS EA	ADJ. OF MANHOLES EA	ADJUSTMENT OF METER BOXES OR VALVE BOXES EA	TRENCHING (UNPAVED) (1)(2") LF	JUNCTION BOX (STANDARD SIZE) EA	2" RISER W/ WEATHERHEAD EA	INDUCTIVE LOOP SAW CUT LF	LEAD-IN CABLE (14-2) LF									
7CR.10791.36	Rockingham	1	NC 770/87	FROM NC 14 TO SR 1533 (SHADY GROVE ROAD)	1	NO	0.032	25-33	3,210.00		320				46	3		544																		
					1	NO	0.053	28-31					79	5				189	11		1,764															
					1	NO	0.097	31											90	5		1,065														
					1	NO	0.055	31-34																												
					SKIP				1	NO	0.123	32-34																								
					BRIDGE #271				1	NO	0.399	32						267	632		38		7,491													
					BRIDGE #271				1	NO	0.091	44																								
					BRIDGE #271				1	NO	1.826	32						267	3,131		188		34,280													
					BRIDGE #271				1	NO	0.061	32-41								112	7		1,324													
					BRIDGE #271				1	NO	0.034	41-45								72	4		858													
					BRIDGE #271				1	NO	0.031	45-51								74	4		873													
					BRIDGE #271				1	NO	0.028	51-63								79	5		936													
					BRIDGE #271				1	NO	0.029	56-63								146	9		1,021													
					BRIDGE #271				1	NO	0.044	41-56								107	6		1,265													
					BRIDGE #271				1	NO	0.056	32-41								102	6		1,216													
					BRIDGE #271				1	NO	1.481	32								2,645	159		27,803													
					BRIDGE #271				1	NO	0.013	32-44								24	1		290													
					TOTAL FOR MAP NO. 1						4.453			3,210.00		320			534	7,528		451		81,663												
				7CR.10791.36	Rockingham	2	NC 87	FROM NC 65 TO NC 770 (HARRINGTON HIGHWAY)	2	NO	0.009	36-40	1,562.00		725	74			17	1		201			1		25	1	1	200	25					
									2	NO	0.032	36					57	3		263			3		676											
									2	NO	0.031	36-48					64	4		255			4		764											
									2	NO	0.025	48					59	4		205			4		704											
									1	NO	0.027	48					124	7					7		760			1								
									1	NO	0.055	30					82	5					5		968											
									1	NO	0.041	23-30					55	3					3		649											
1	NO	0.138	23-27										171	10					10		2,024															
1	NO	0.028	27										97	6					6		444															
1	NO	0.065	24-27										84	5					5		992															
1	NO	0.134	24										179	11					11		1,887															
1	NO	0.04	24-36										59	4					4		704															
1	NO	0.074	36										132	8					8		1,563															
1	NO	0.056	50										198	12					12		1,643															
1	NO	0.041	32-50										83	5					5		986															
1	NO	0.045	24-32										62	4					4		739															
1	NO	5.072	24										6,410	385					6,410	385		71,414			1						200	25				
TOTAL FOR MAP NO. 2											5.913			1,562.00		725	797			7,933		477		87,118				25	1	1	200	25				
TOTAL FOR PROJ NO. 7CR.10791.36											10.366			4,772.00		1,045	797			534	15,461		928		168,781				25	1	1	200	25			
7CR.20791.36	Rockingham	3	SR 3130 (SCALES STREET)						FROM NON-SYSTEM (SPRINKLE STREET) TO SR 2671 (MADISON STREET)	3	NO	0.251	46	62.00			2,062			571		34	5,594			5	12	8								
				3	NO	0.013	46-52						107					31		319			4	1	1											
				3	NO	0.093	52						764					239		14	2,396				1											
				3	NO	0.016	40-52						131					76		5	359			3	2	1										
				TOTAL FOR MAP NO. 3							0.373			62.00			3,064			917		55	8,668			12	16	10								
		4	SR 2671 (MADISON STREET)	FROM SR 3130 (SCALES STREET) TO NC 14	4	NO	0.006	40-48	62.00	20.00	168			49			13		1	128			2													
					4	NO	0.085	42					698					216		13	1,692			2	1	3										
					1	NO	0.009	22-29										12		1	137															
					1	NO	0.011	22										12		1	142															
					1	NO	0.017	22-35										24		1	289															
					1	NO	0.021	23-35										30		2	357															
					1	NO	0.102	23										136		8	1,376							3								
					1	NO	0.071	28-36										112		7	1,333															
					1	NO	0.019	34-36										53		3	390															
					1	NO	0.033	24-34										47		3	561															
					1	NO	0.16	24										190		11	2,253															
					1	NO	0.078	30-44										143		9	1,693															
					1	NO	0.049	44										147		9	1,265															
					1	NO	0.052	44-54										126		8	1,495															
					TOTAL FOR MAP NO. 4						0.713			62.00	20.00	168	747			1,261		77	13,111			4	3	6								
5	SR 2544 (HUBBARD STREET)	FROM SR 2687 (LAWSONVILLE AVENUE) TO NON-SYSTEM (MOREHEAD STREET)	5	NO	0.102	30	214.00	20.00					838		134		9	1,320																		
			5	NO	0.011	30-32										24		2	153																	
			5	NO	0.267	32								2,193				24	3,760																	
TOTAL FOR MAP NO. 5						0.38			214.00	20.00			838		514		35	5,233																		
TOTAL FOR PROJ NO. 7CR.20791.36						1.466			338.00	40.00	168	3,811	3,121		2,178	514	167	13,901			16	24	21													
GRAND TOTAL							11.832		5,110.00	40.00	1,213	4,608	3,121	534	17,639	514	1,095	13,901	181,892	16	27	21	25	1	1	200	25									

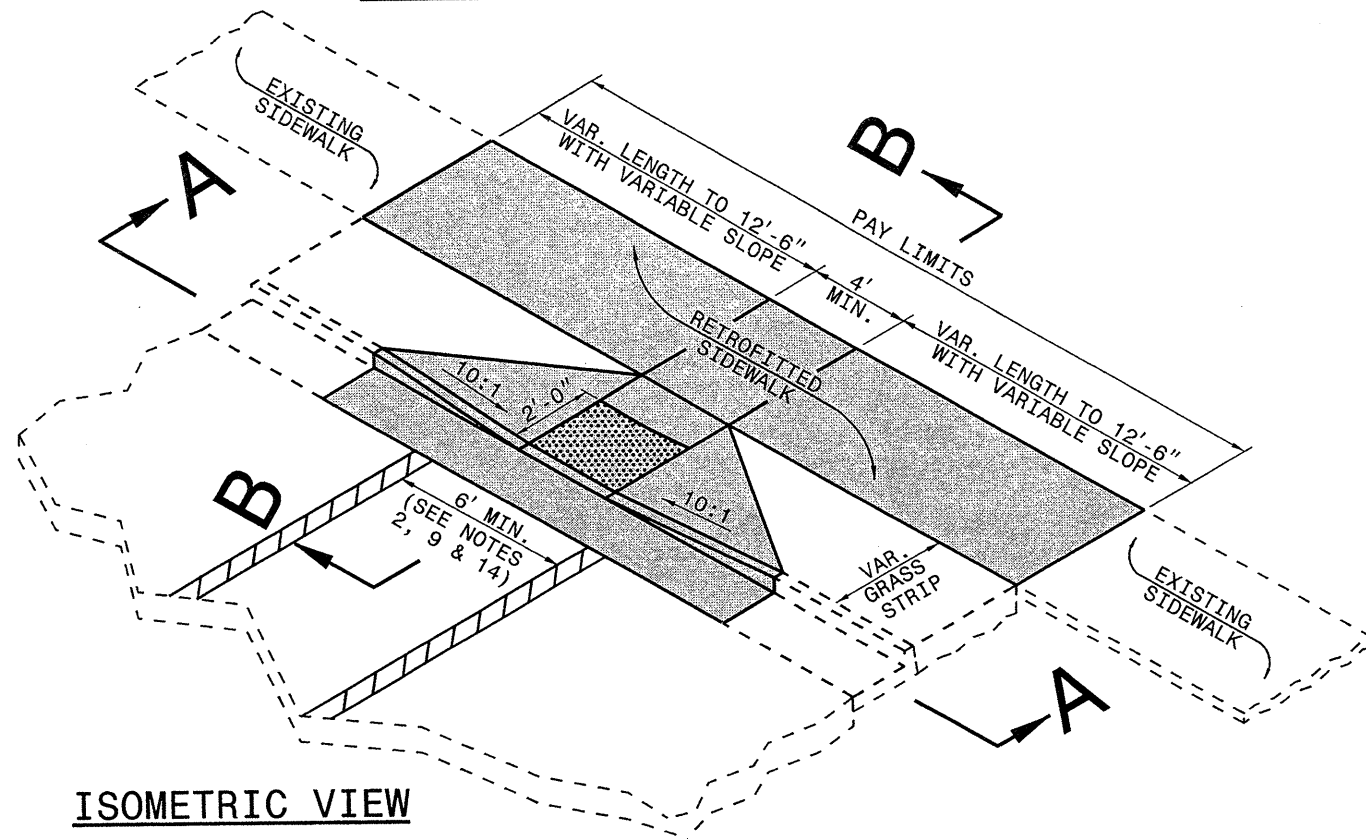
PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10791.36, 7CR.20791.36	5	5

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4685000000-E		4686000000-E		4688000000-E	4690000000-E	4695000000-E		4697000000-E	4702000000-E	4710000000-E	
							4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M WHITE THERMO	4" X 120 M YELLOW THERMO	6" X 90 M WHITE THERMO	6" X 120 M WHITE THERMO	8" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	8" X 120 M WHITE THERMO	12" X 120 M WHITE THERMO	24" X 120 M WHITE THERMO	
							LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
7CR.10791.36	Rockingham	1	NC 770/87	FROM NC 14 TO SR 1533 (SHADY GROVE ROAD)	4.453	29	47,290		551	39,931		152	601		185		177	
TOTAL FOR MAP NO. 1					4.453		47,290		551	39,931		152	601		185		177	
7CR.10791.36	Rockingham	2	NC 87	FROM NC 65 TO NC 770 (HARRINGTON HIGHWAY)	5.913	38	61,460	180	1,134	57,011		174	351	85			318	
TOTAL FOR MAP NO. 2					5.913		61,460	180	1,134	57,011		174	351	85			318	
TOTAL FOR PROJ NO. 7CR.10791.36					10.366		108,750	180	1,685	96,942		326	952	85	185		495	
							108,930		98,627									
7CR.20791.36	Rockingham	3	SR 3130 (SCALES STREET)	FROM NON-SYSTEM (SPRINKLE STREET) TO SR 2671 (MADISON STREET)	0.373	46			384	4,403				550		372	24	
TOTAL FOR MAP NO. 3					0.373				384	4,403				550		372	24	
7CR.20791.36	Rockingham	4	SR 2671 (MADISON STREET)	FROM SR 3130 (SCALES STREET) TO NC 14	0.713	44	300				64							
TOTAL FOR MAP NO. 4					0.713		300				64							
7CR.20791.36	Rockingham	5	SR 2544 (HUBBARD STREET)	FROM SR 2687 (LAWSONVILLE AVENUE) TO NON-SYSTEM (MOREHEAD STREET)	0.38	30												
TOTAL FOR MAP NO. 5					0.38													
TOTAL FOR PROJ NO. 7CR.20791.36					1.466		300		384	4,403	64			550		372	24	
							300		4,787									
GRAND TOTAL					11.832		109,050	180	2,069	101,345	64	326	952	85	735		372	519
							109,230		103,414									

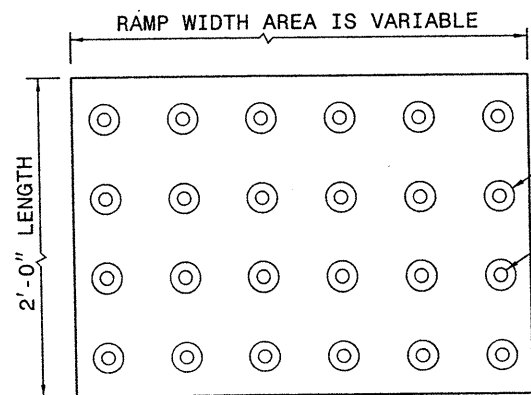
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4721000000-E		4725000000-E				4810000000-E		4835000000-E	4900000000-N	4905000000-N		
							THERMO MSG SCHOOL 120 M	THERMO MSG ONLY 120 M	THERMO STR ARROW 90 M	THERMO LT ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR & LT ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	24" WHITE PAINT	CRYSTAL & RED MARKERS	SNOWPLOWABLE PAVEMENT MARKERS YELLOW/YELLOW	SNOWPLOWABLE PAVEMENT MARKERS CRYSTAL/RED
							EA	EA	EA	EA	EA	EA	EA	LF	LF	LF	EA	EA	EA
7CR.10791.36	Rockingham	1	NC 770/87	FROM NC 14 TO SR 1533 (SHADY GROVE ROAD)	5.272	29			2	4	1	2		1,922	1,922		50	400	
TOTAL FOR MAP NO. 1					5.272				2	4	1	2		1,922	1,922		50	400	
7CR.10791.36	Rockingham	2	NC 87	FROM NC 65 TO NC 770 (HARRINGTON HIGHWAY)	5.913	38	24	4	5	10	9	3					450	50	
TOTAL FOR MAP NO. 2					5.913		24	4	5	10	9	3					450	50	
TOTAL FOR PROJ NO. 7CR.10791.36					11.185		24	4	7	14	10	5		1,922	1,922		50	850	
							28		37				3,844						
7CR.20791.36	Rockingham	3	SR 3130 (SCALES STREET)	FROM NON-SYSTEM (SPRINKLE STREET) TO SR 2671 (MADISON STREET)	0.373	46		12	2	13	7	5							
TOTAL FOR MAP NO. 3					0.373			12	2	13	7	5							
7CR.20791.36	Rockingham	4	SR 2671 (MADISON STREET)	FROM SR 3130 (SCALES STREET) TO NC 14	0.713	44				4	2		12,728	15,920	44				
TOTAL FOR MAP NO. 4					0.713					4	2		12,728	15,920	44				
7CR.20791.36	Rockingham	5	SR 2544 (HUBBARD STREET)	FROM SR 2687 (LAWSONVILLE AVENUE) TO NON-SYSTEM (MOREHEAD STREET)	0.38	30													
TOTAL FOR MAP NO. 5					0.38														
TOTAL FOR PROJ NO. 7CR.20791.36					1.466			12	2	17	9	5		12,728	15,920	44			
							12		33				28,648						
GRAND TOTAL					12.651		24	16	9	31	19	10	1	14,650	17,842	44	50	850	50
							40		70				32,492		900				

CURB RAMP AND EXISTING SIDEWALK WITH GRASS STRIP

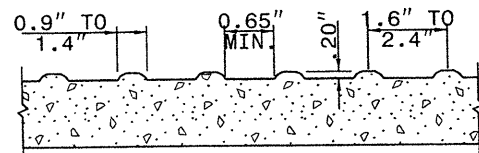


ISOMETRIC VIEW

PAY LIMITS OF RETROFIT CURB RAMP

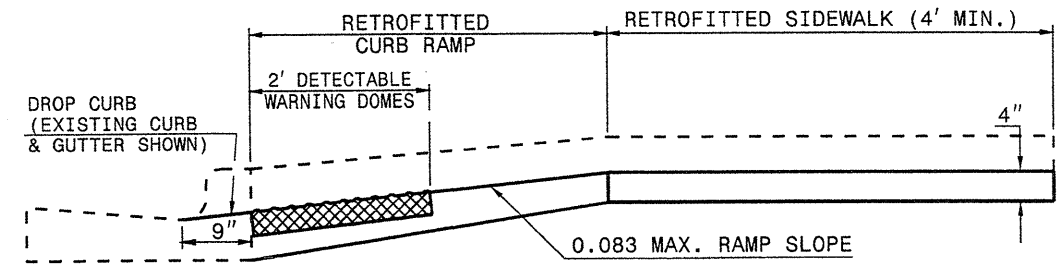


BASE DIAMETER
0.90"R TO 1.40"R
TOP DIAMETER OF NO LESS
THAN 50% TO NO MORE
THAN 65% OF THE BASE
DIAMETER

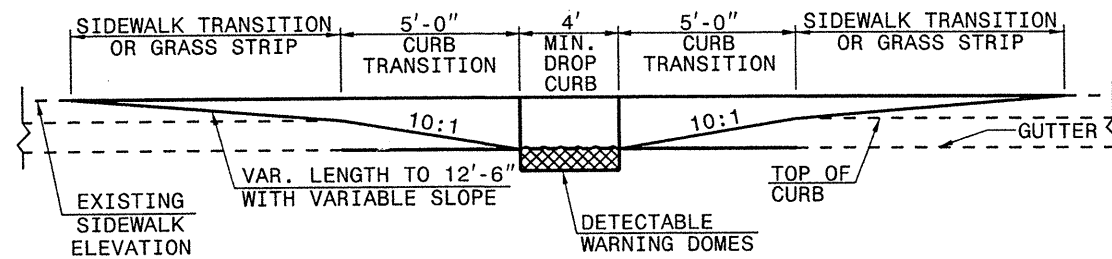


DETECTABLE WARNING DOMES

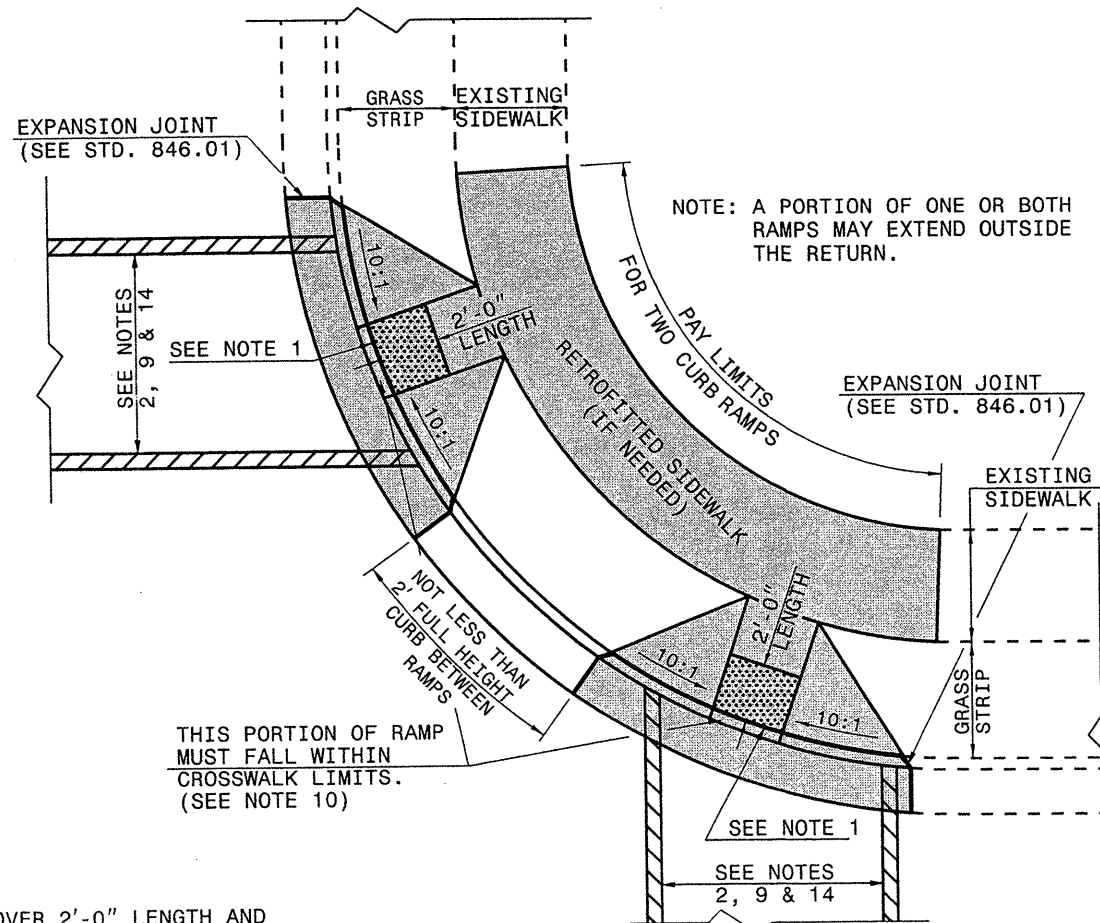
- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



SECTION B-B



SECTION A-A

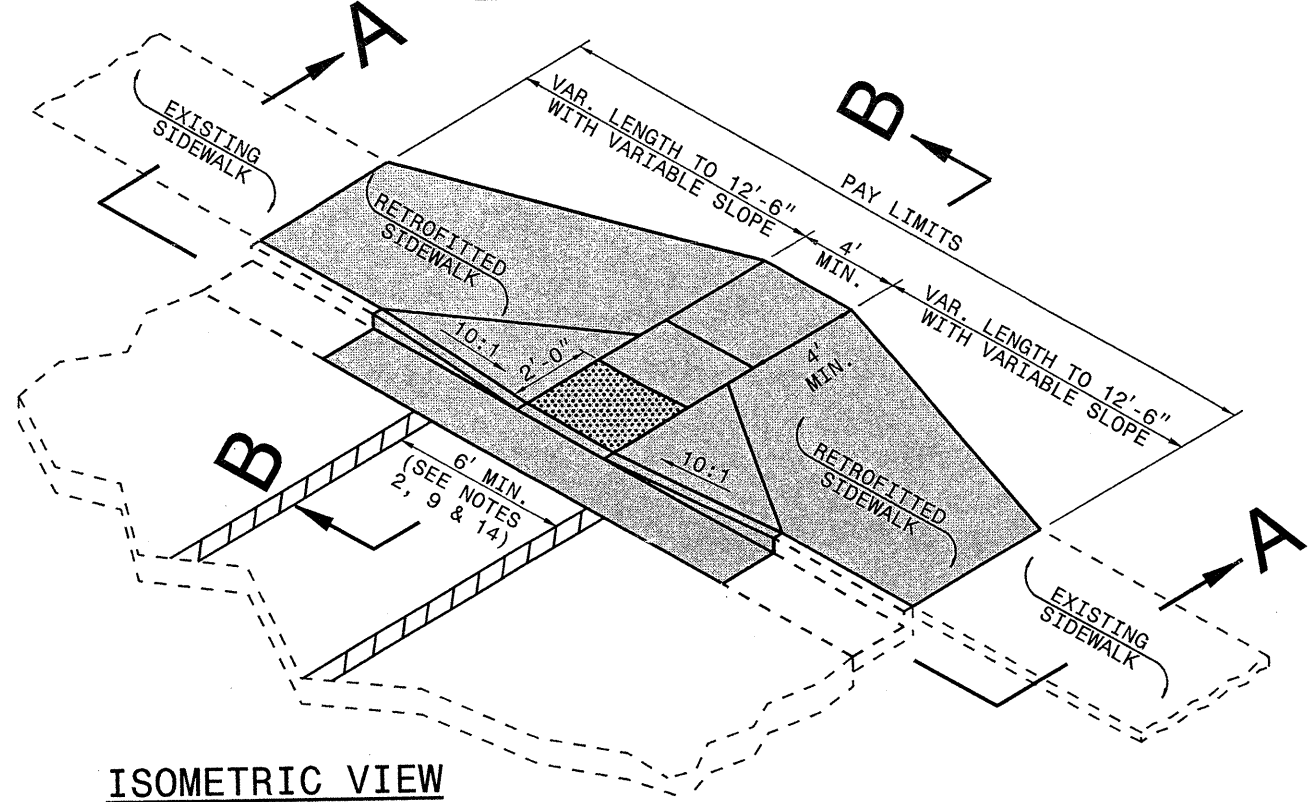


PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

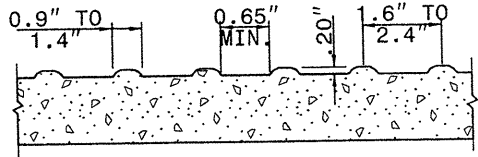
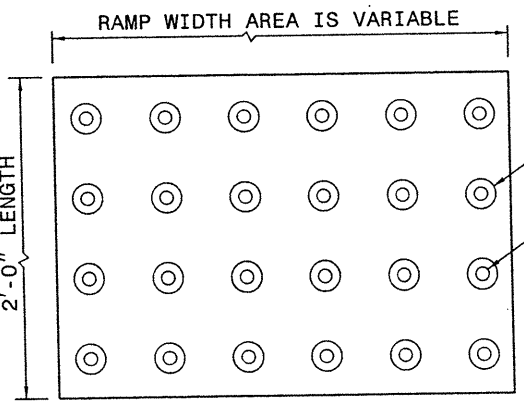
7CR.10791.34, etc.

CURB RAMPS AND EXISTING SIDEWALK ADJACENT TO CURB



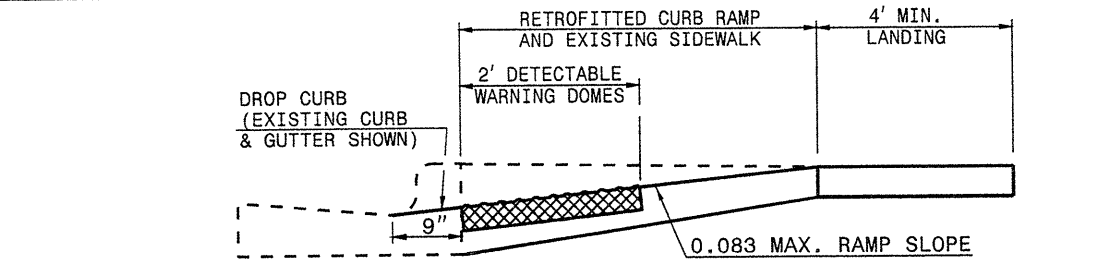
ISOMETRIC VIEW

PAY LIMITS OF CURB RAMP

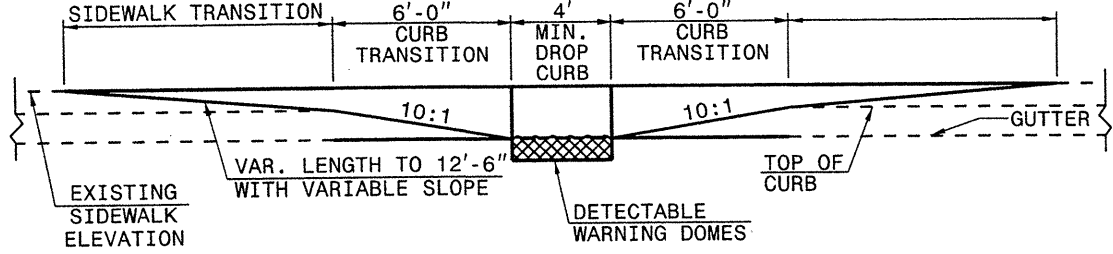


DETECTABLE WARNING DOMES

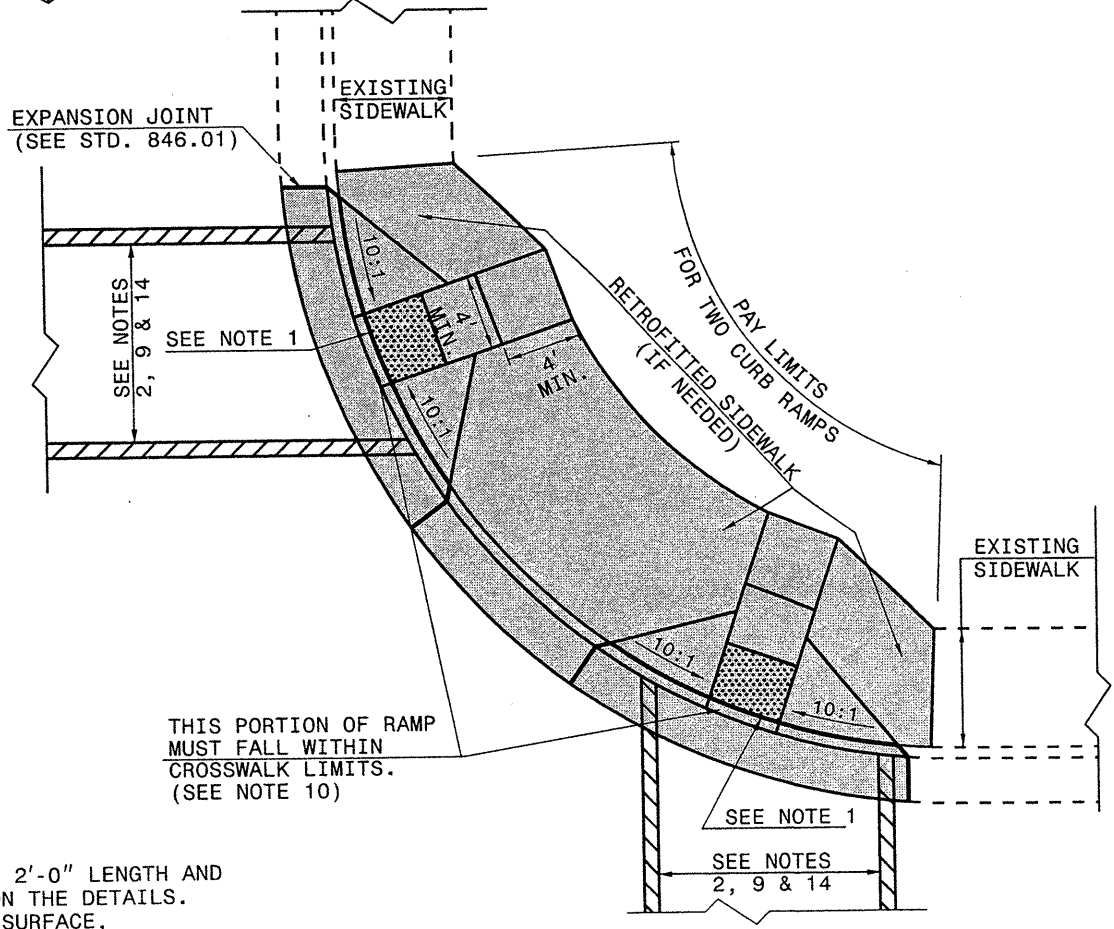
- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



SECTION B-B



SECTION A-A

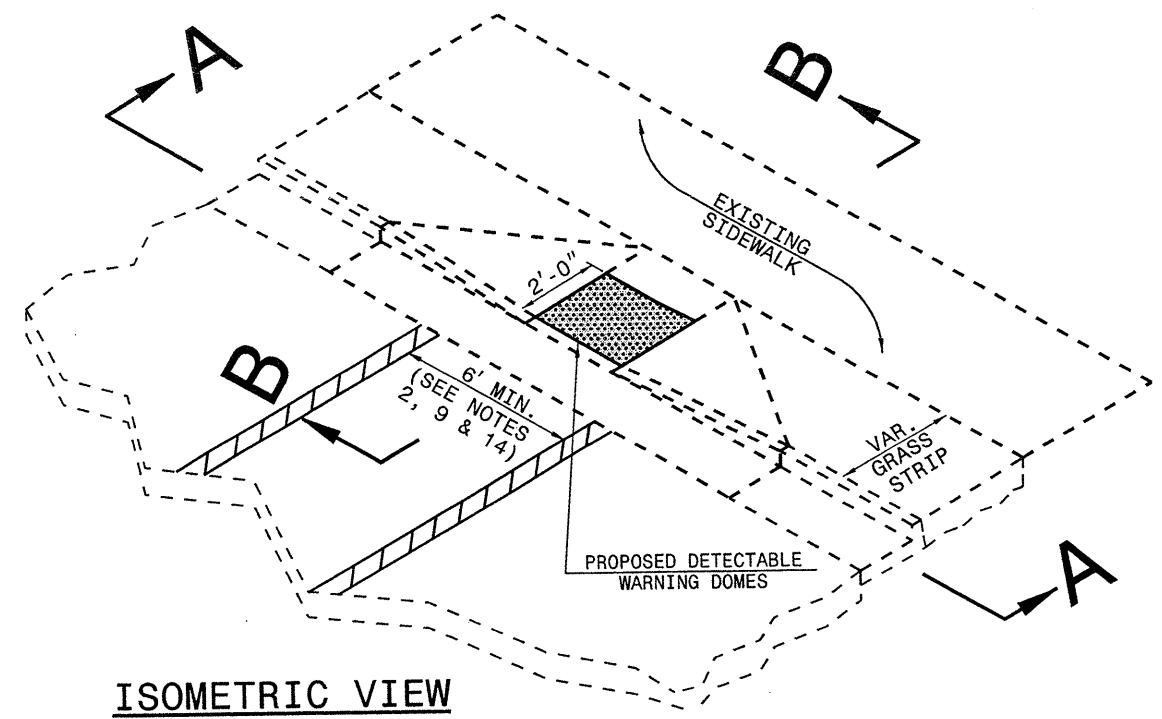


PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

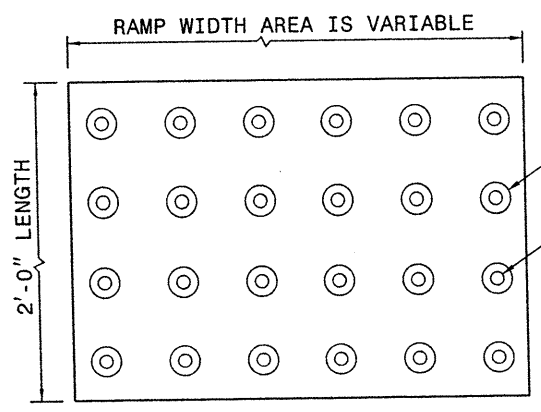
7CR.107911.36.27

RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING CURB RAMP



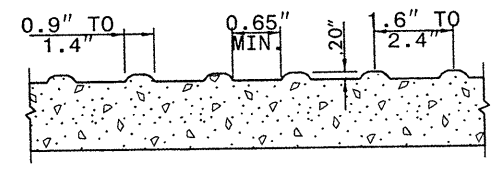
ISOMETRIC VIEW

PAY LIMITS OF RETROFIT CURB RAMP



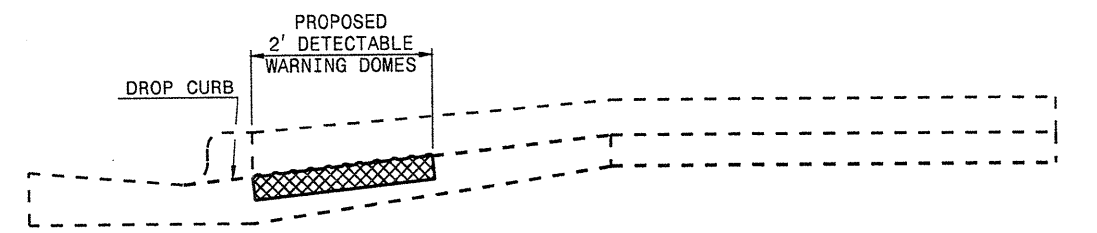
BASE DIAMETER
0.90"R TO 1.40"R

TOP DIAMETER OF NO LESS
THAN 50% TO NO MORE
THAN 65% OF THE BASE
DIAMETER

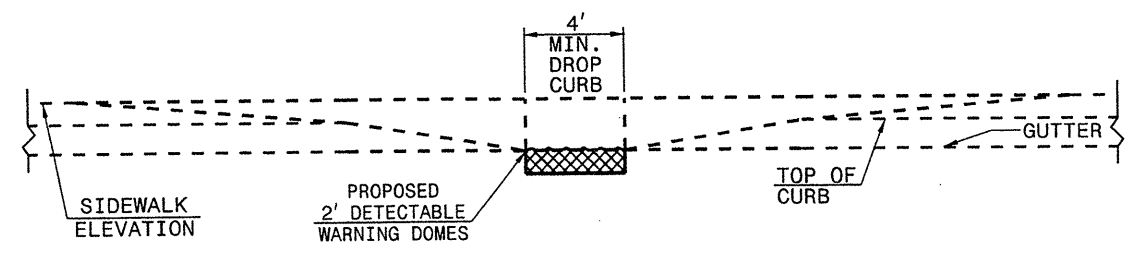


DETECTABLE WARNING DOMES

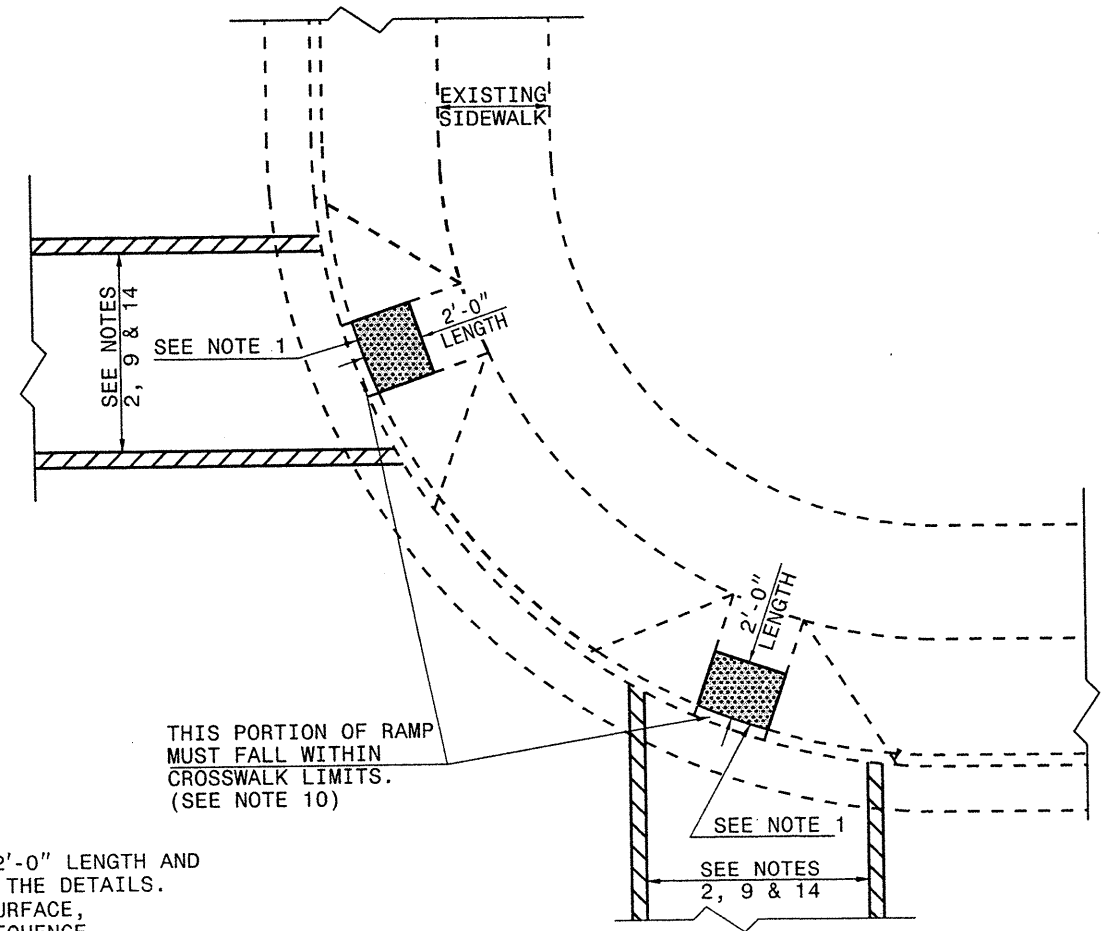
- NOTES:
1. PLACE DETECTABLE WARNING DOMES TO COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN VISIBLE CONTRAST WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



SECTION B-B



SECTION A-A

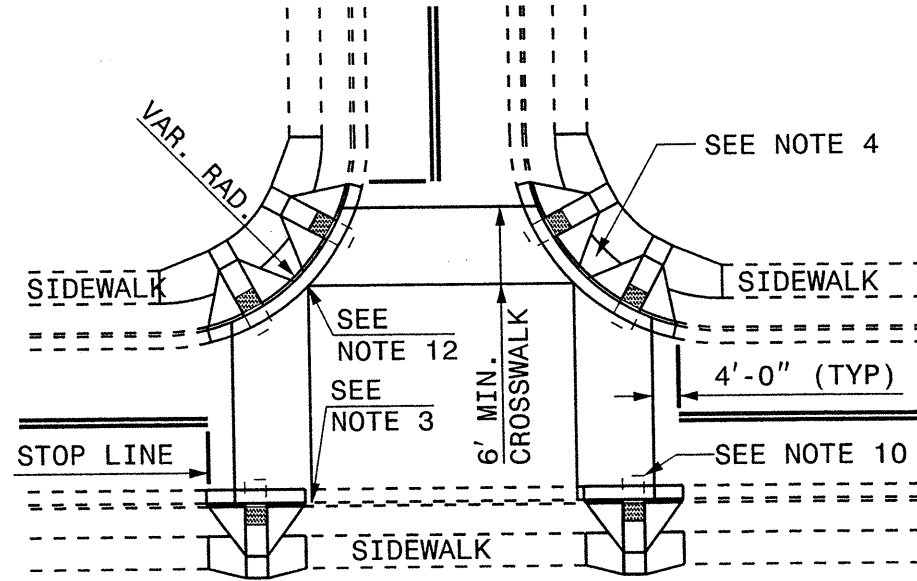


PLAN VIEW

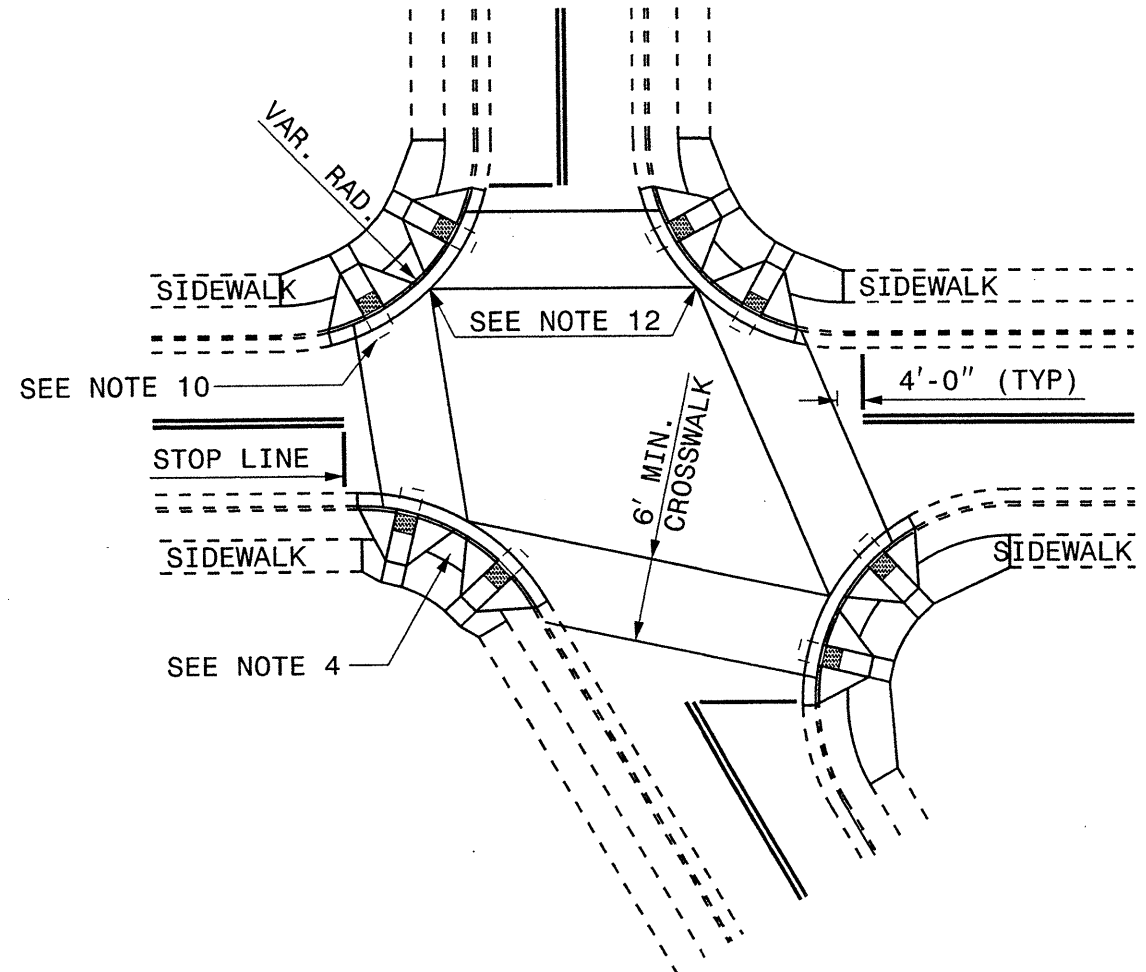
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

7CR.10791.36, etc.

CURB RAMPS AND EXISTING SIDEWALK

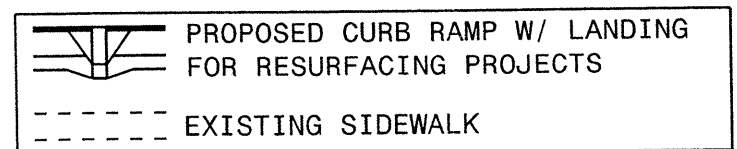


DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

RESURFACING PROJECTS



ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

702.10791.36, etc.

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

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

CURB RAMP AND EXISTING SIDEWALK

NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGH THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'x5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

TCL 10791.36, etc.

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

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

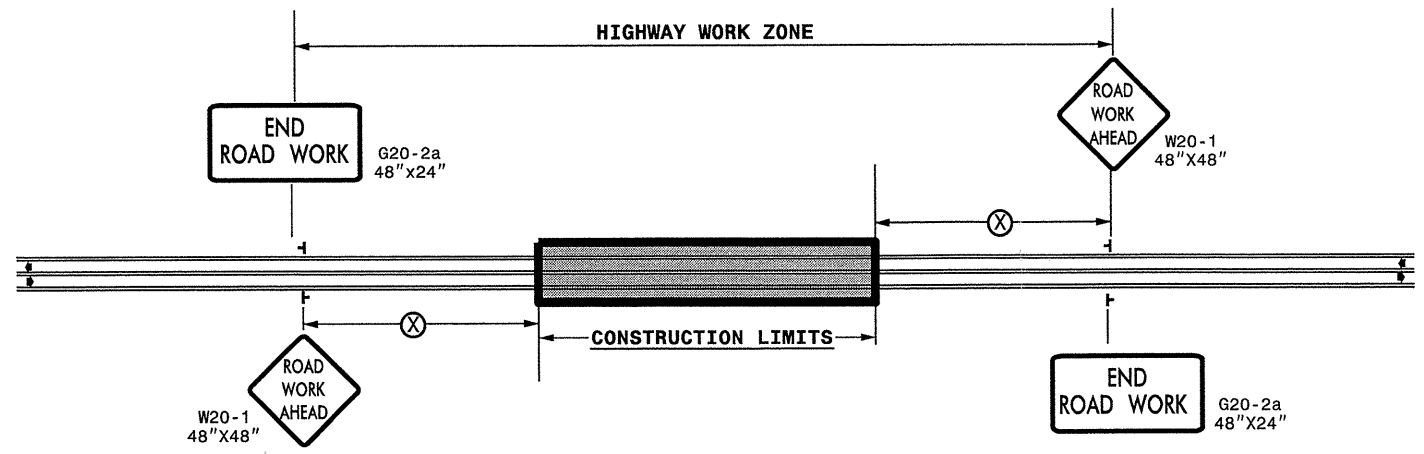
SHEET 5 OF 5

848D06

SHEET 5 OF 5

848D06

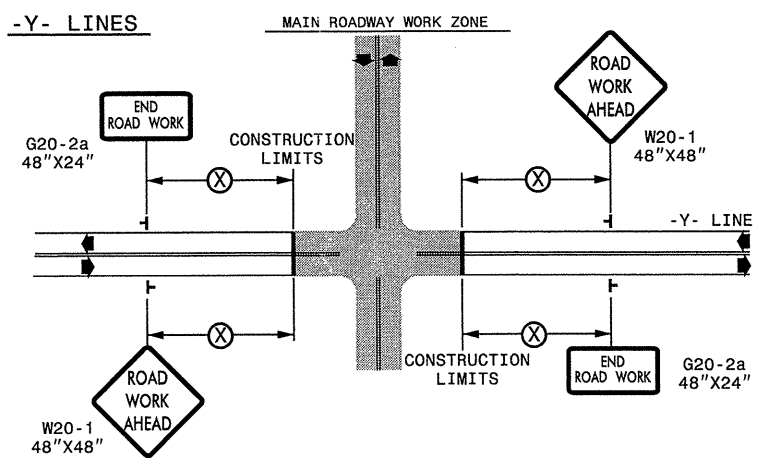
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

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

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

┆ STATIONARY SIGN

◀ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS






APPROVED: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
SEAL	SCALE: NONE	REVISIONS	
	DATE: _____	7-98	10/01
	DWG. BY: _____	10-98	03/04
	DESIGN BY: _____	01/01	11/04
REVIEWED BY: _____			

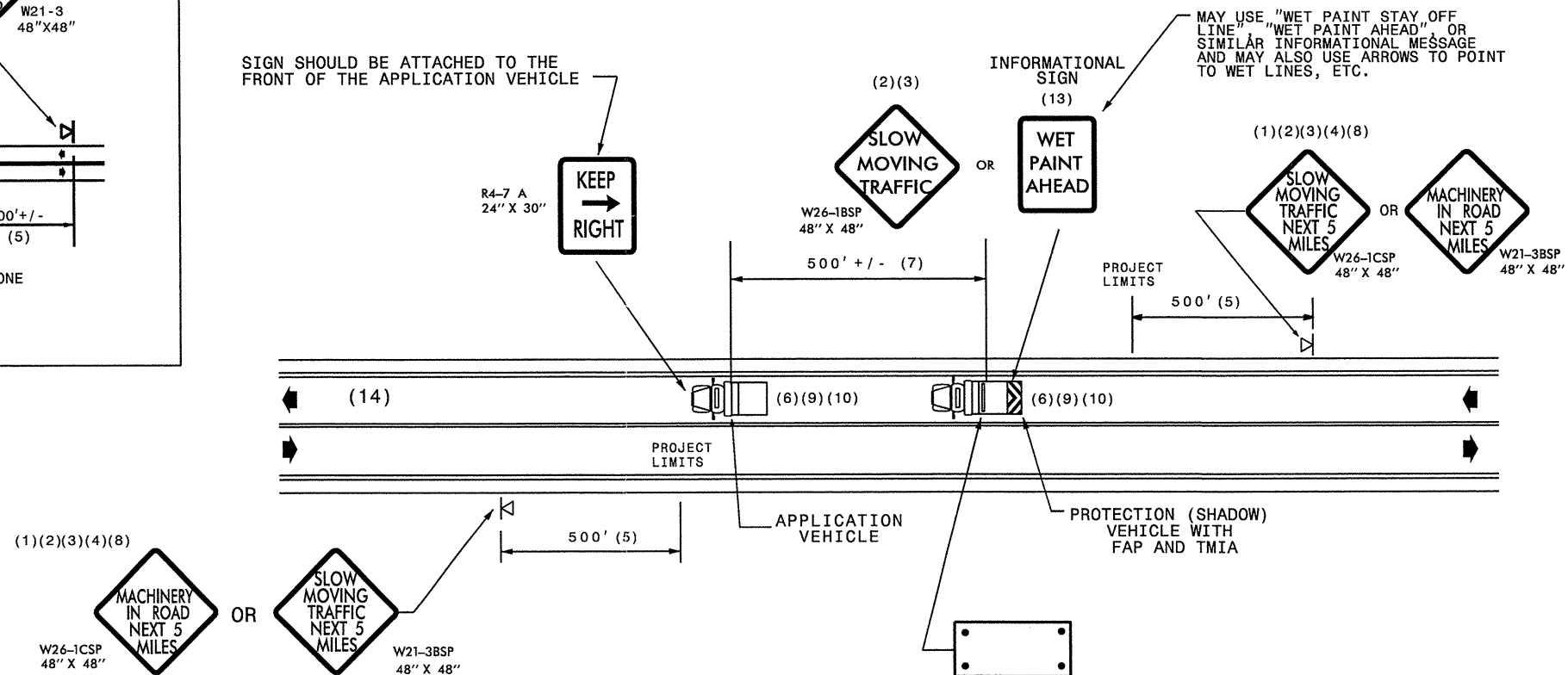
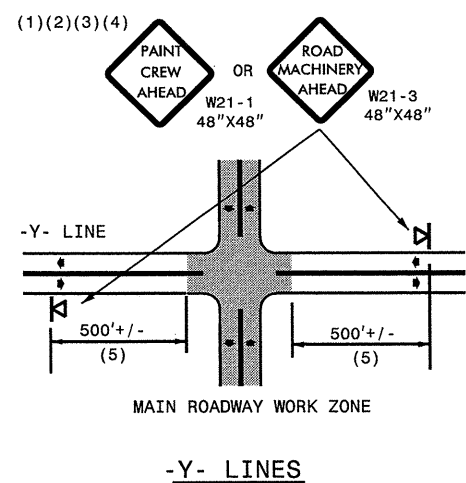
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 \\D01\DF\SHOOTING\GROUPS-WZTCCC\TMU\WZTC\Resurfacing\2011\Centra\2011.DIV\07\2022\36x2-7CR.10791.36x2-Rockingham.NC87.AF\1117-C202\36x2-7CR.10791.36x2-Rockingham.NC87.AF\Urban-Frwys-st01

GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
 - A. TRUCK MOUNTED SIGNS
 - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
 - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, i.e. "PAINT CREW IN ROAD". SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"

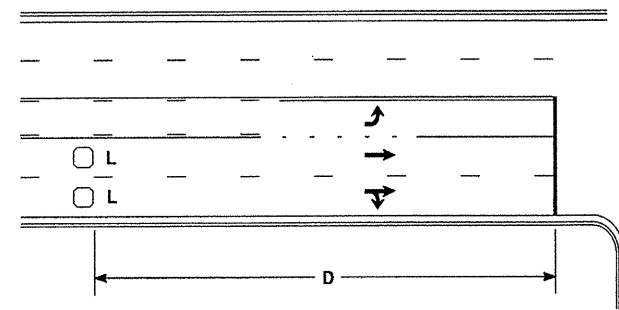


MOVING OPERATION CARAVAN

(OPERATIONS TRAVELING 3 MPH OR FASTER)
PLACING PAVEMENT MARKING OR MARKERS
ON TWO-LANE TWO-WAY ROADWAYS

DRAWING NUMBER 6
IMPLEMENTATION DATE: 07/01/97
REVISED: 11/03/04

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

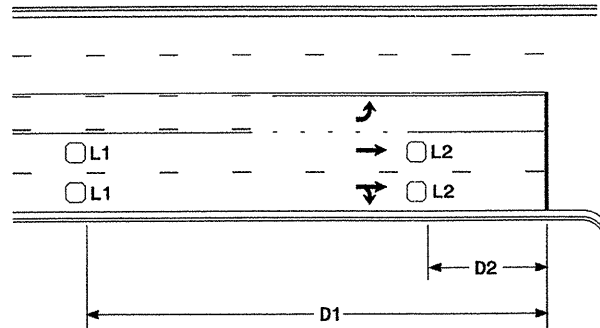


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

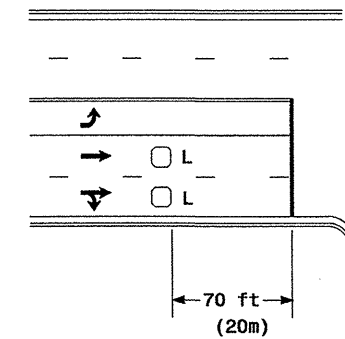


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

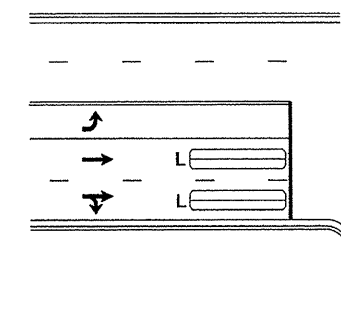
"Stretch" Operation

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



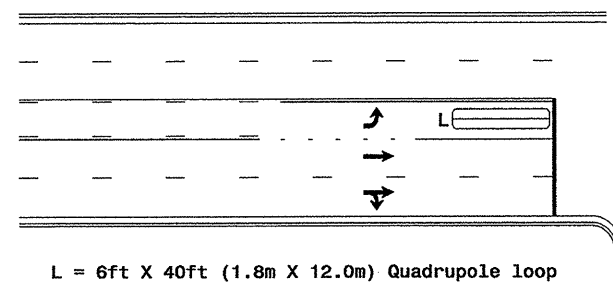
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

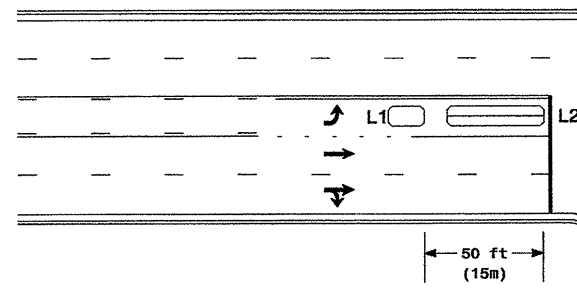
Left Turn Lane Detection



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

Presence Loop Detection

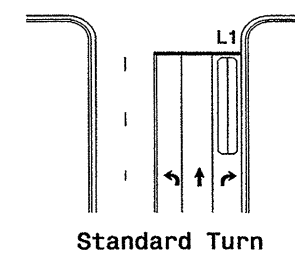
OR



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

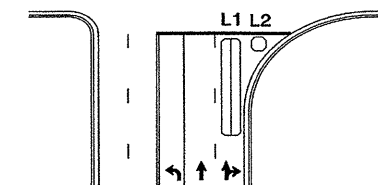
Queue Loop Detection

Right Turn Lane Detection

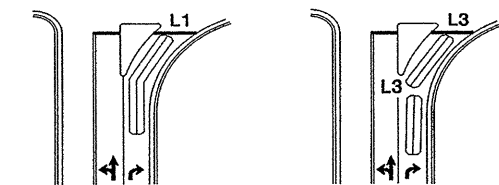


Standard Turn

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

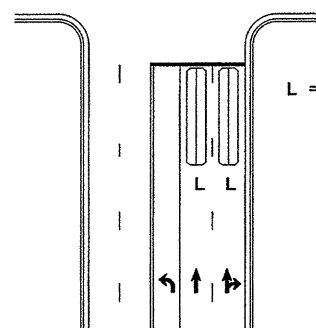


Wide Radius Turn



Channelized Turn

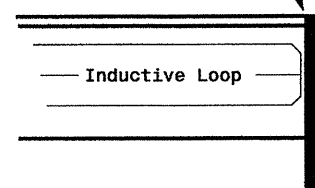
Side Street Detection



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

Prepared in the Office of P. L. Alexander 122 N. McDowell St., Raleigh, NC 27603	Typical Loop Locations		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER P. L. ALEXANDER 23488 6/6/06
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY: REVIEWED BY:	
SCALE N/A	SIGNATURE DATE	INTL. DATE 12/1/06	SIGNATURE DATE 6/6/06

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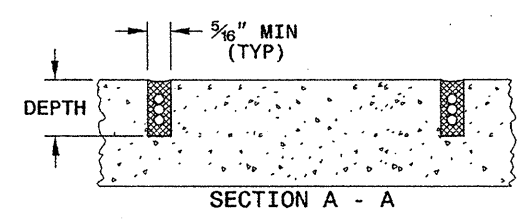
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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

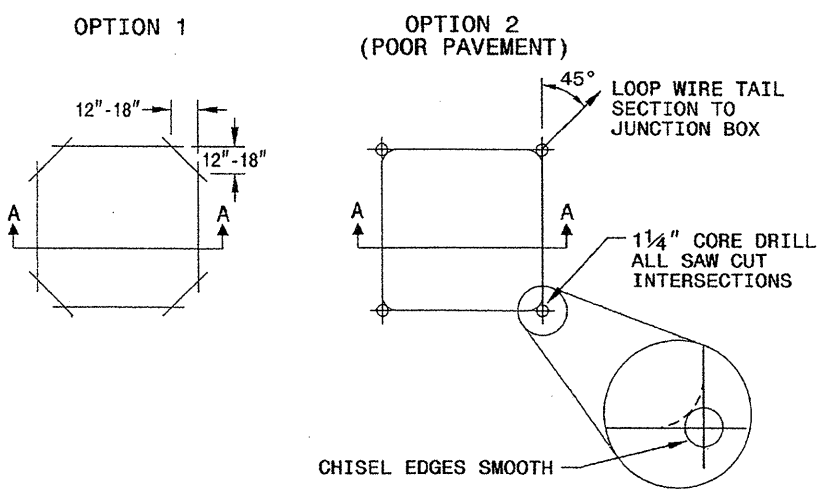
SAW SLOT DEPTH CHART

DEPTH (IN)	NO. OF WIRE TURNS					
	2	3	4	5	6	
CONCRETE	2.0	2.0	2.5	2.5	3.0	
ASPHALT	2.0	2.5	3.0	3.0	3.0	

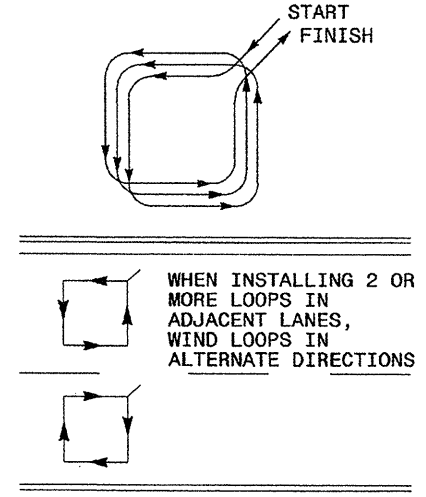


CONVENTIONAL 4-SIDED LOOP

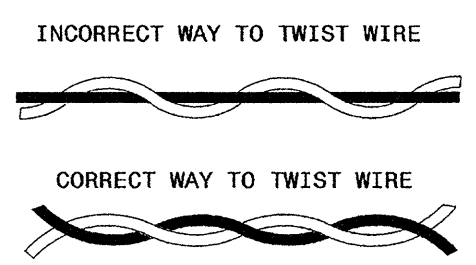
SAW CUT OPTIONS



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

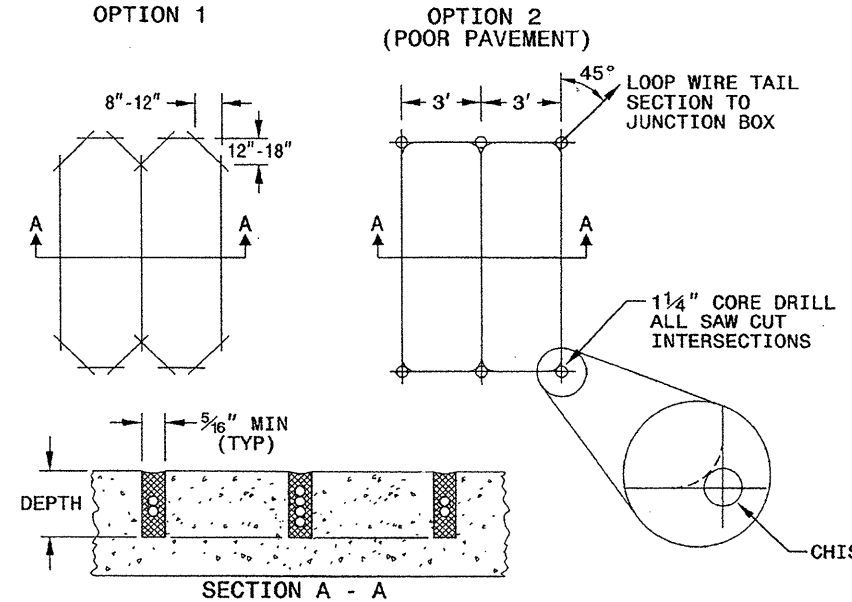


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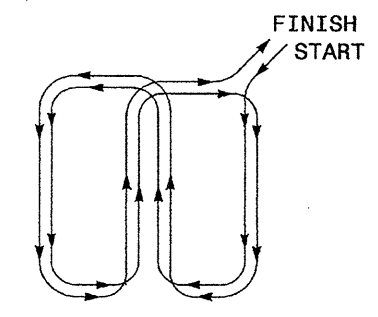
- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

QUADRUPOLE LOOP

SAW CUT OPTIONS



LOOP WINDING METHOD



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

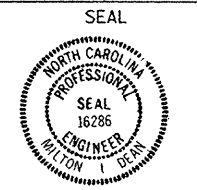
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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title



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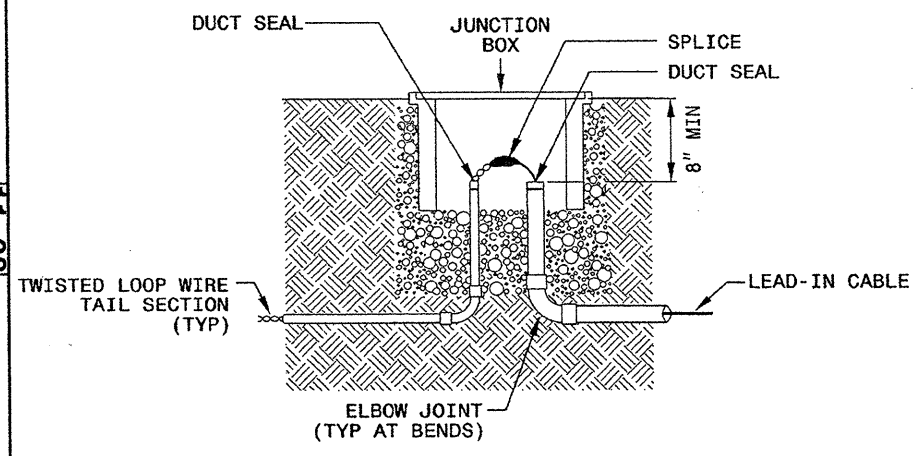
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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

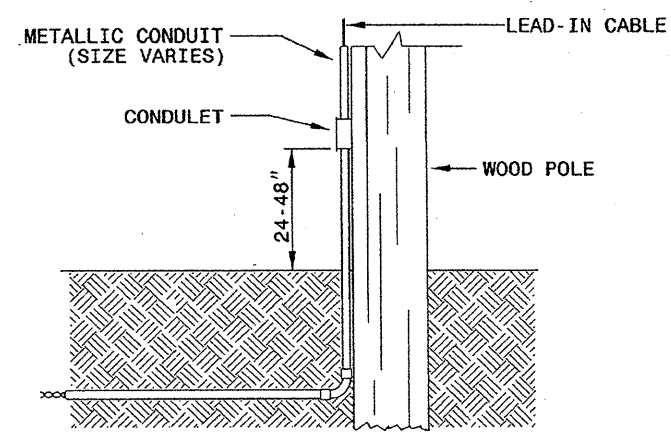
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

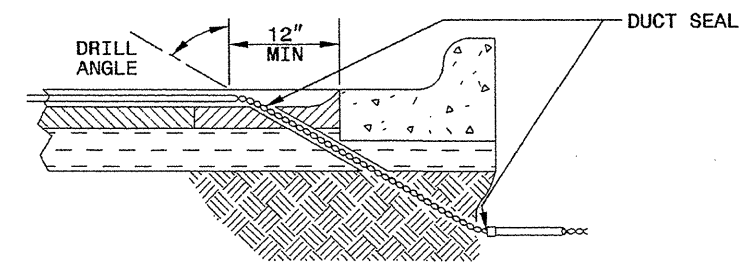


NOTE

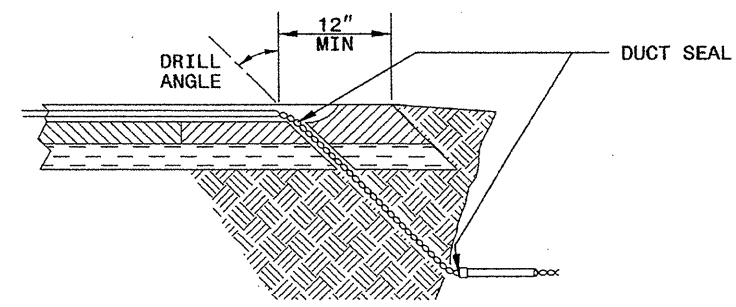
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

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Prepared in the Offices of:

750 N. Greenfield Parkway
 Garner, NC 27529

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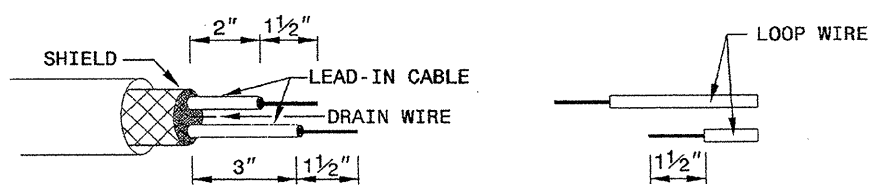
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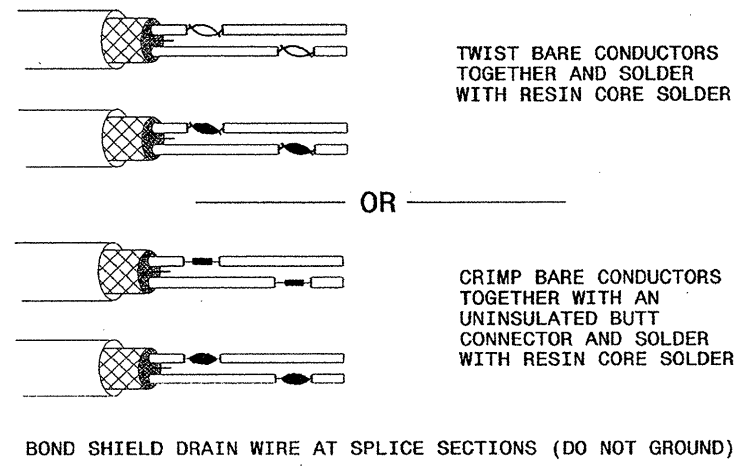
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

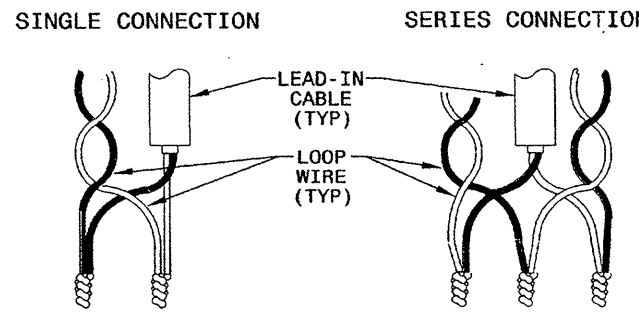
STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE



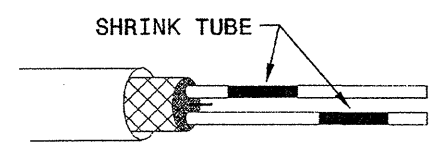
STEP 2. CONNECT AND SOLDER



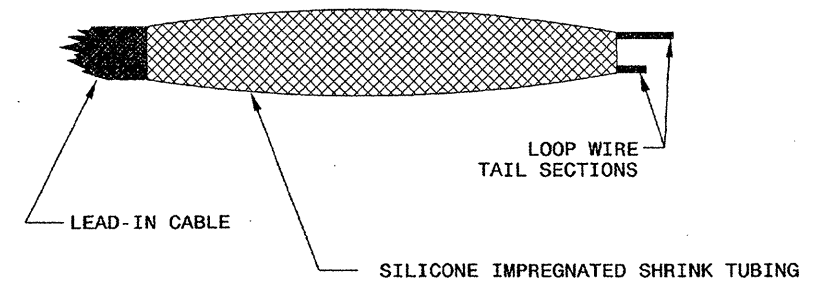
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
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