

5CR.20921.32
Blount Street and
Person Street
Mill and Fill

PAVEMENT SCHEDULE

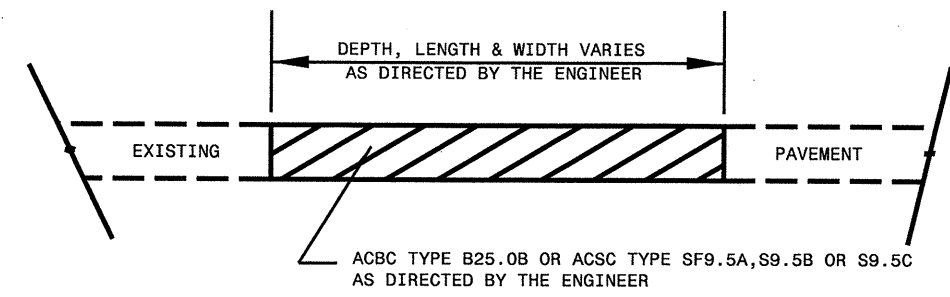
C	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V1	4" MILLING
V2	1 1/2" - 3" VARIABLE DEPTH MILLING, AS DIRECTED BY THE ENGINEER

MINIMUM TIE IN ON CITY STREETS AND COMMERCIAL DRIVES AS DIRECTED BY THE ENGINEER

EXTEND LIMITS TO BACK OF SIGNAL LOOPS ON STATE MAINTAINED ROADS AS DIRECTED BY THE ENGINEER

MINIMUM TIE IN ON CITY STREETS AND COMMERCIAL DRIVES AS DIRECTED BY THE ENGINEER

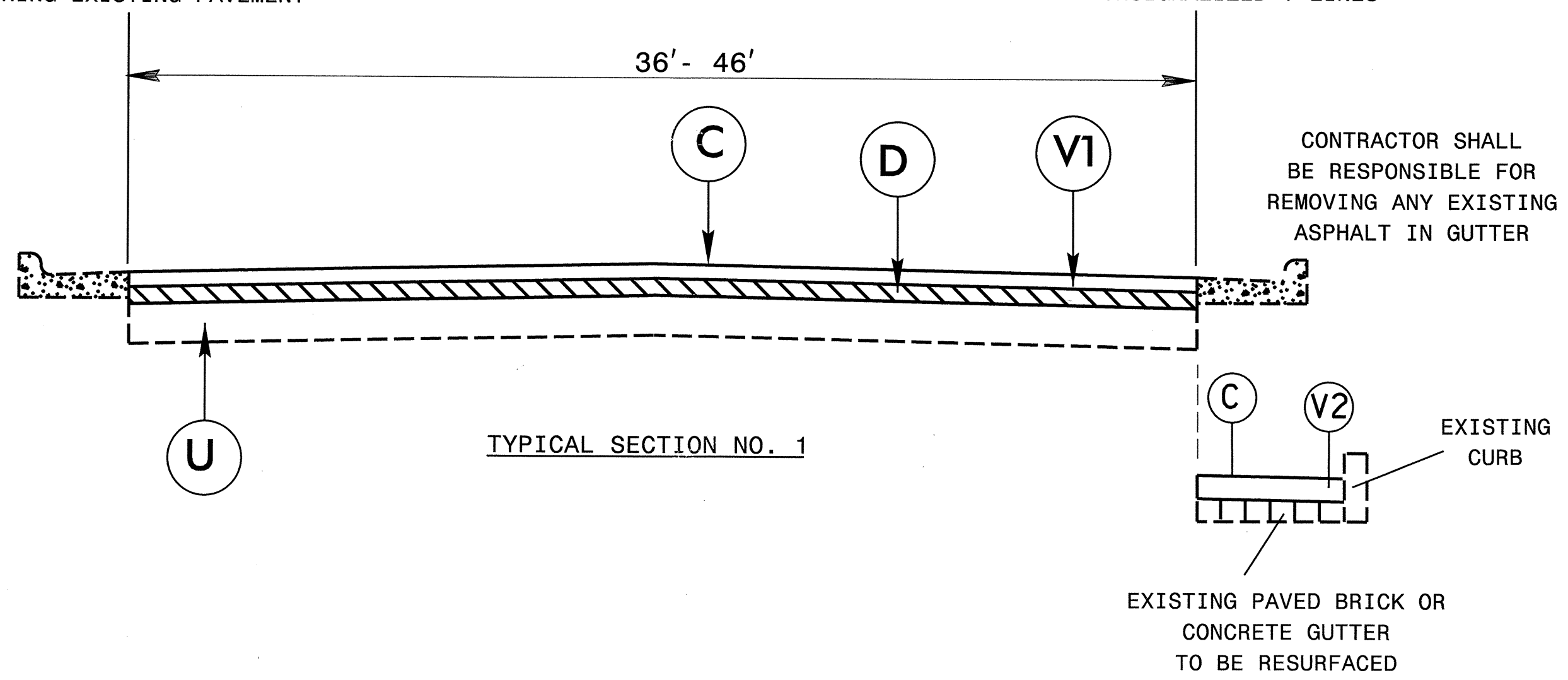
EXTEND LIMITS TO BACK OF RADIUS ON STATE MAINTAINED ROADS AS DIRECTED BY THE ENGINEER



PATCHING EXISTING PAVEMENT

DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES



TYPICAL SECTION NO. 1

EXISTING PAVED BRICK OR CONCRETE GUTTER TO BE RESURFACED

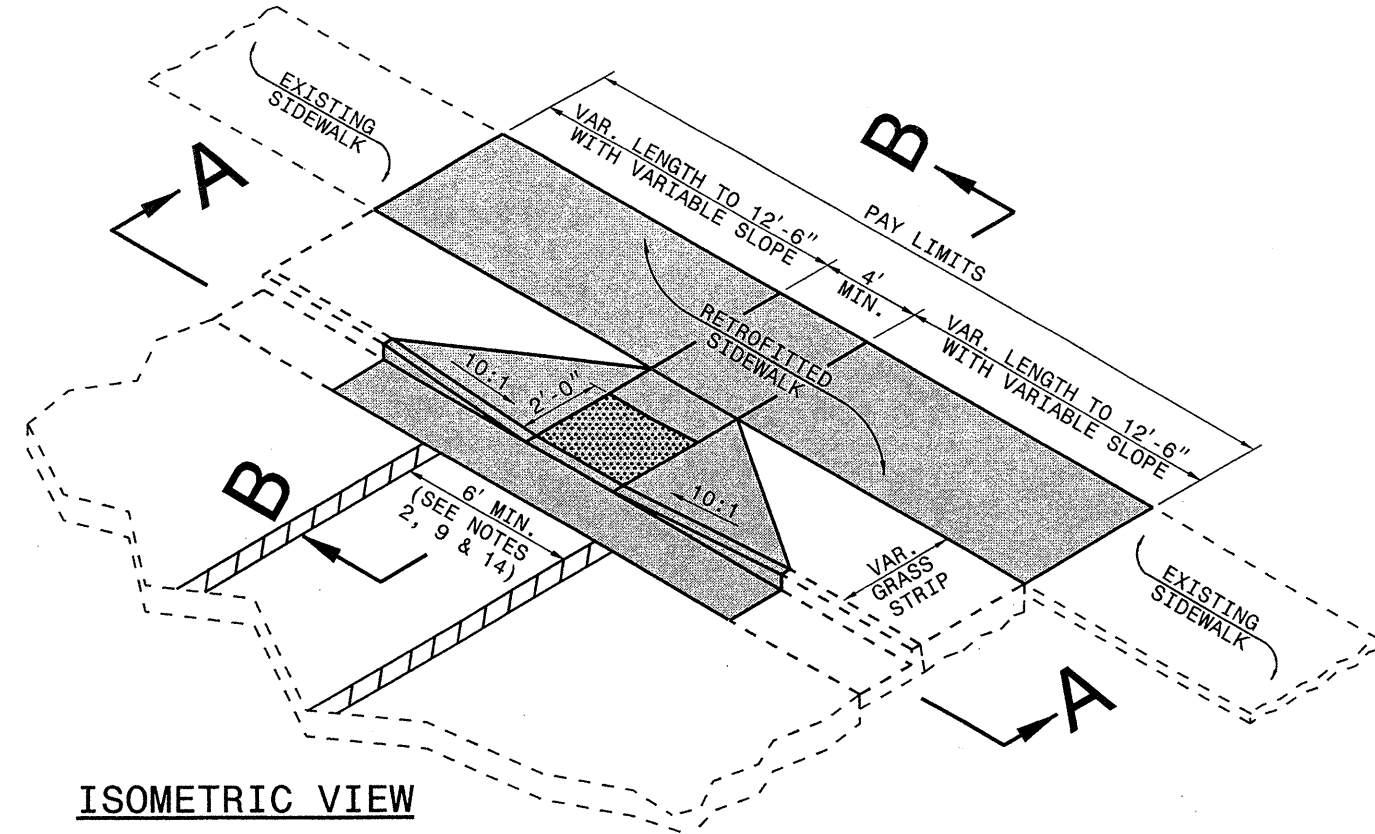
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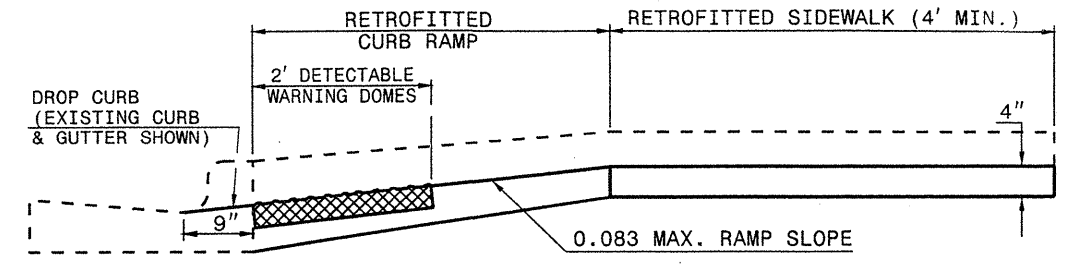
ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

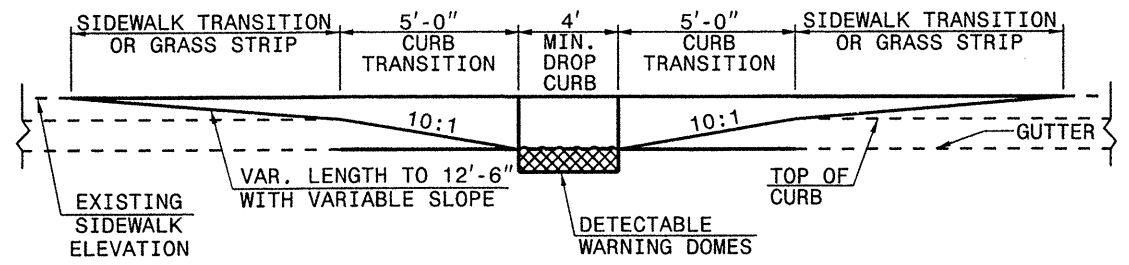
CURB RAMP AND EXISTING SIDEWALK WITH GRASS STRIP



ISOMETRIC VIEW

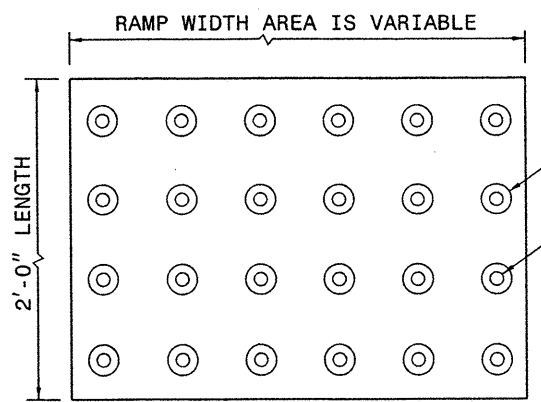


SECTION B-B

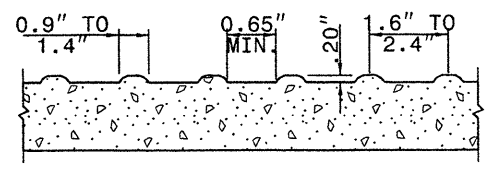


SECTION A-A

PAY LIMITS OF RETROFIT CURB RAMP

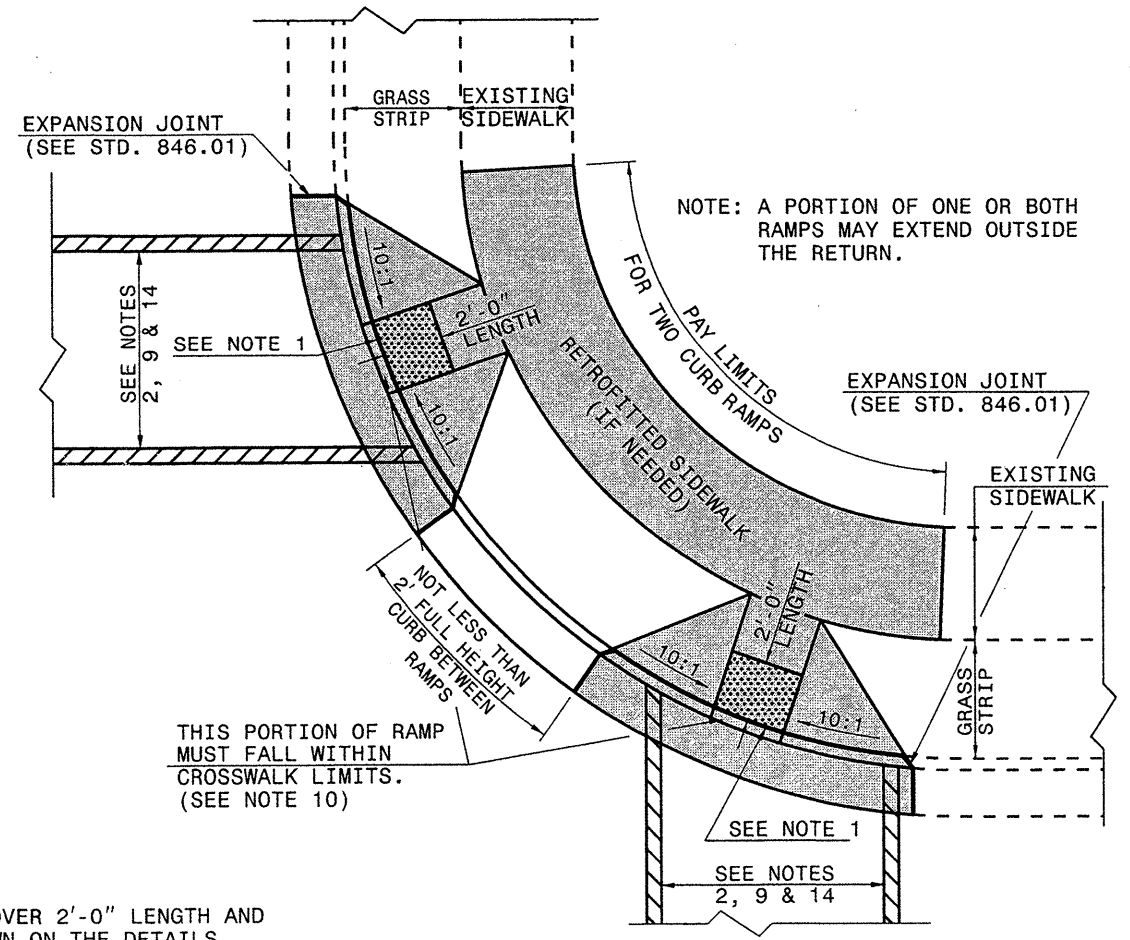


BASE DIAMETER
0.90"R TO 1.40"R
TOP DIAMETER OF NO LESS
THAN 50% TO NO MORE
THAN 65% OF THE BASE
DIAMETER



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.



PLAN VIEW

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

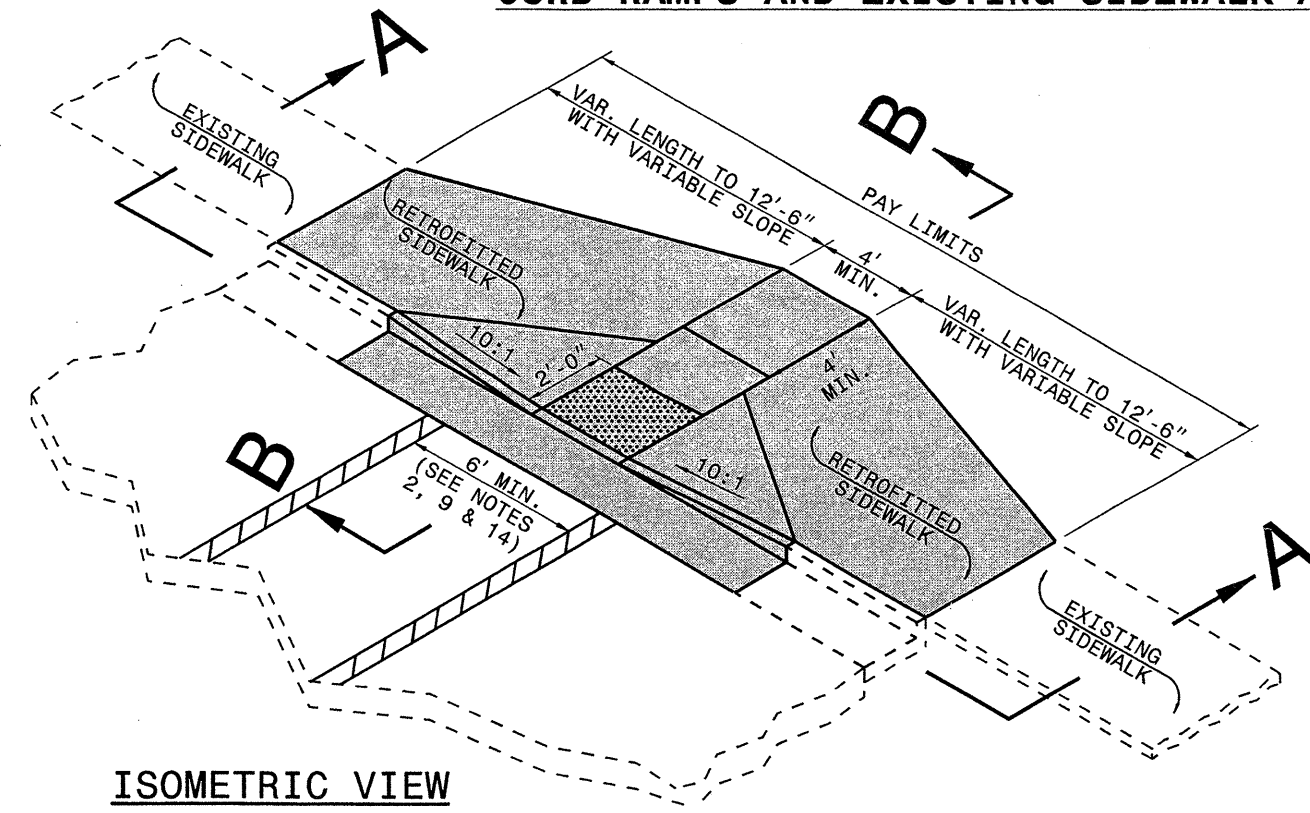
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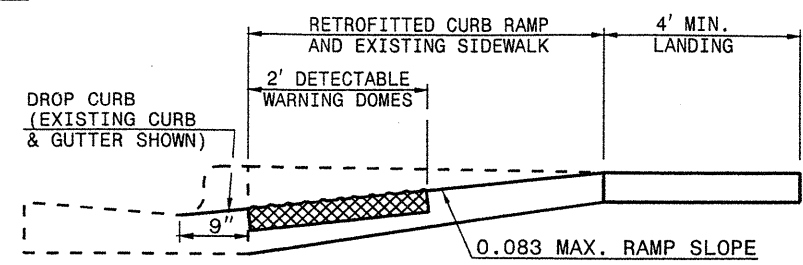
ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

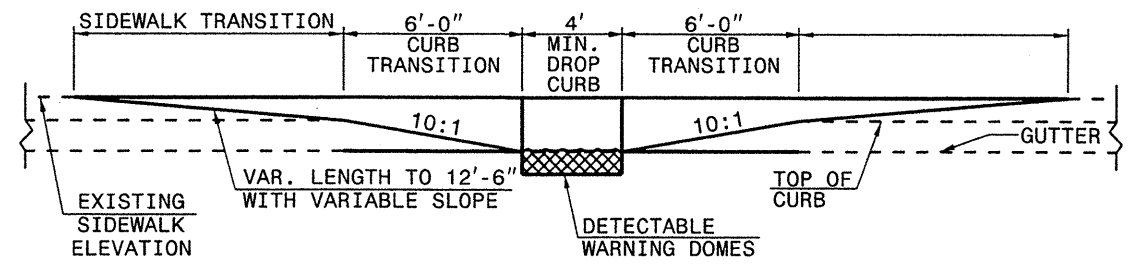
CURB RAMPS AND EXISTING SIDEWALK ADJACENT TO CURB



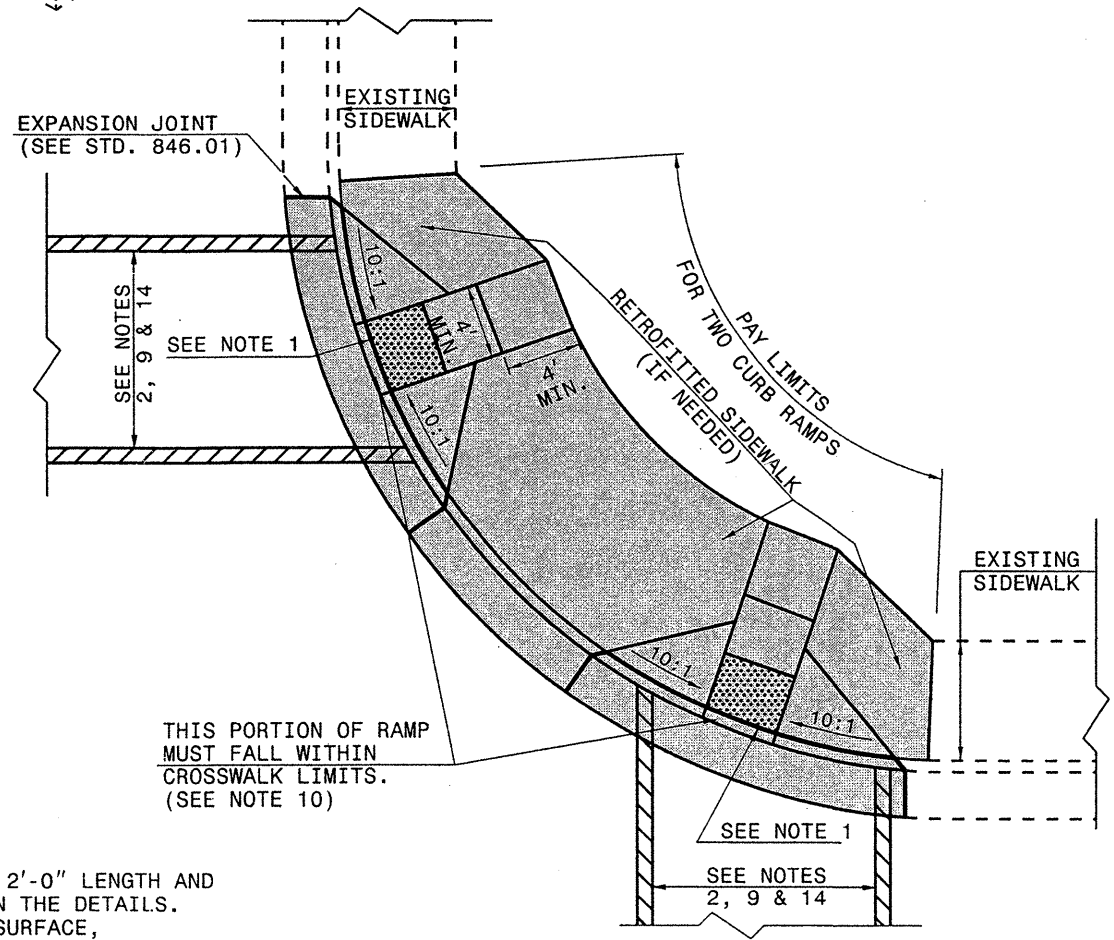
ISOMETRIC VIEW



SECTION B-B



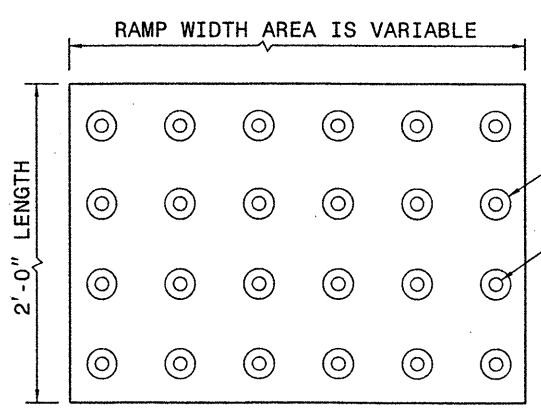
SECTION A-A



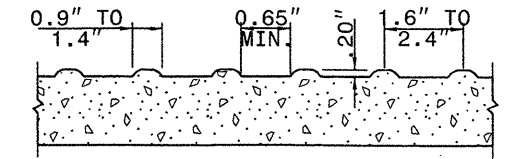
PLAN VIEW

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

PAY LIMITS OF 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



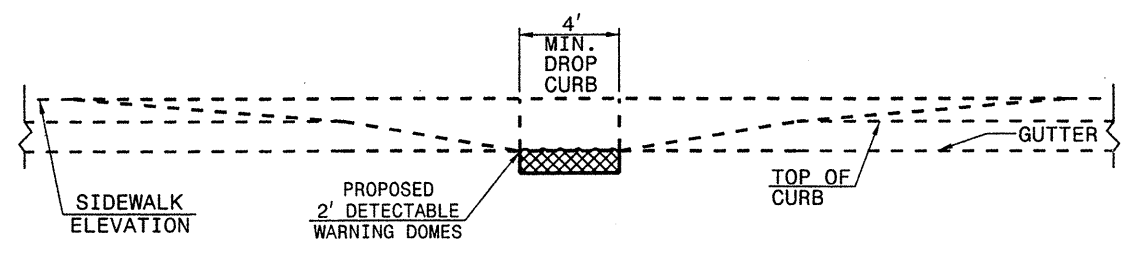
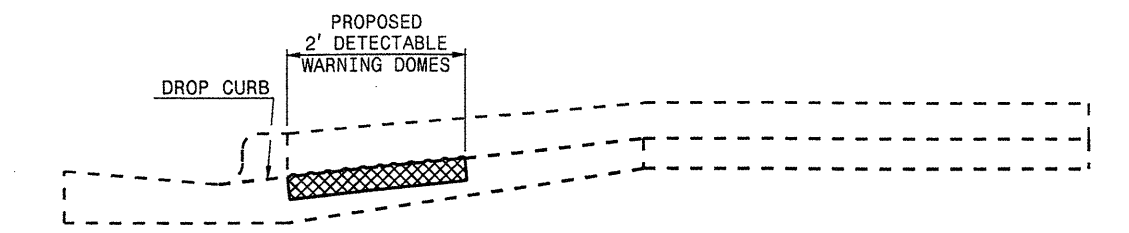
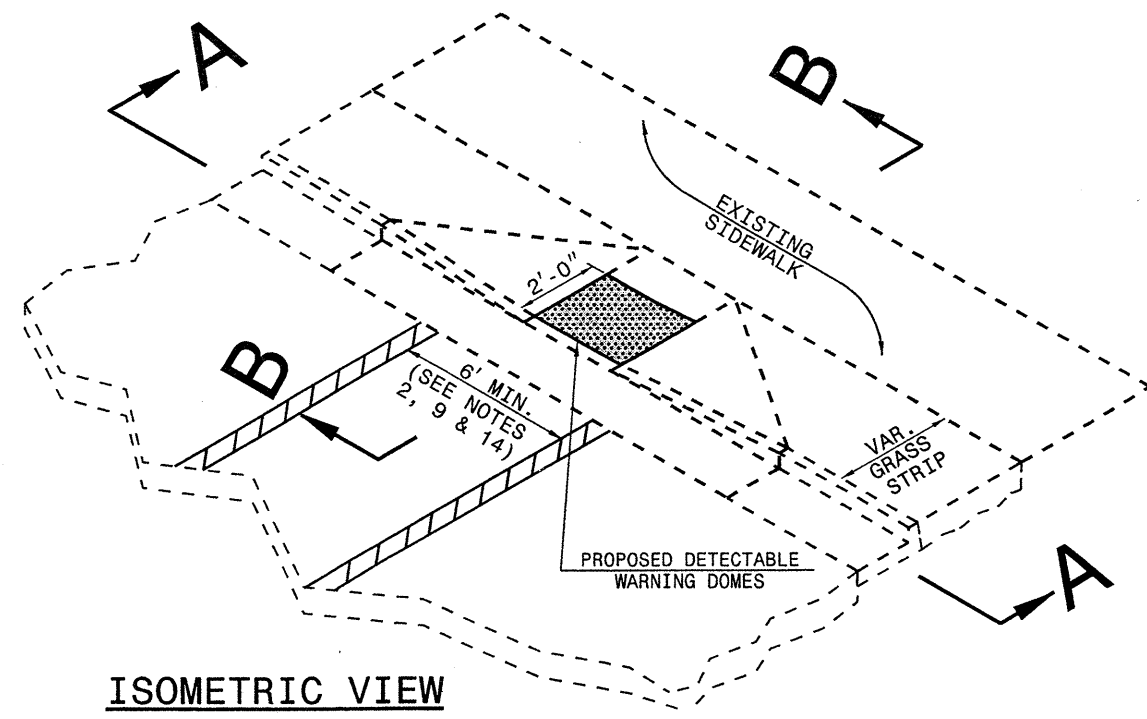
DETECTABLE WARNING DOMES

- 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.

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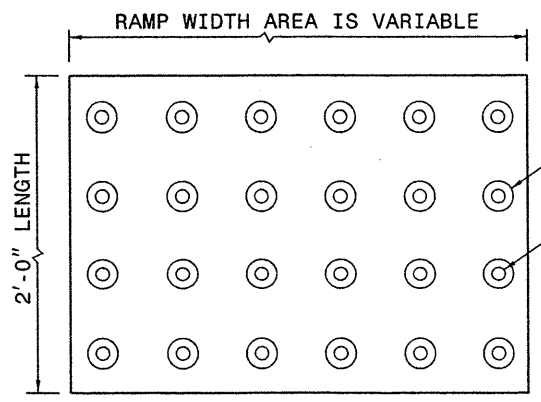
RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING CURB RAMP



ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

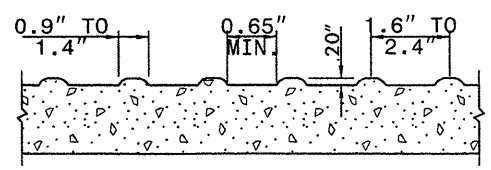
ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

PAY LIMITS OF RETROFIT CURB RAMP

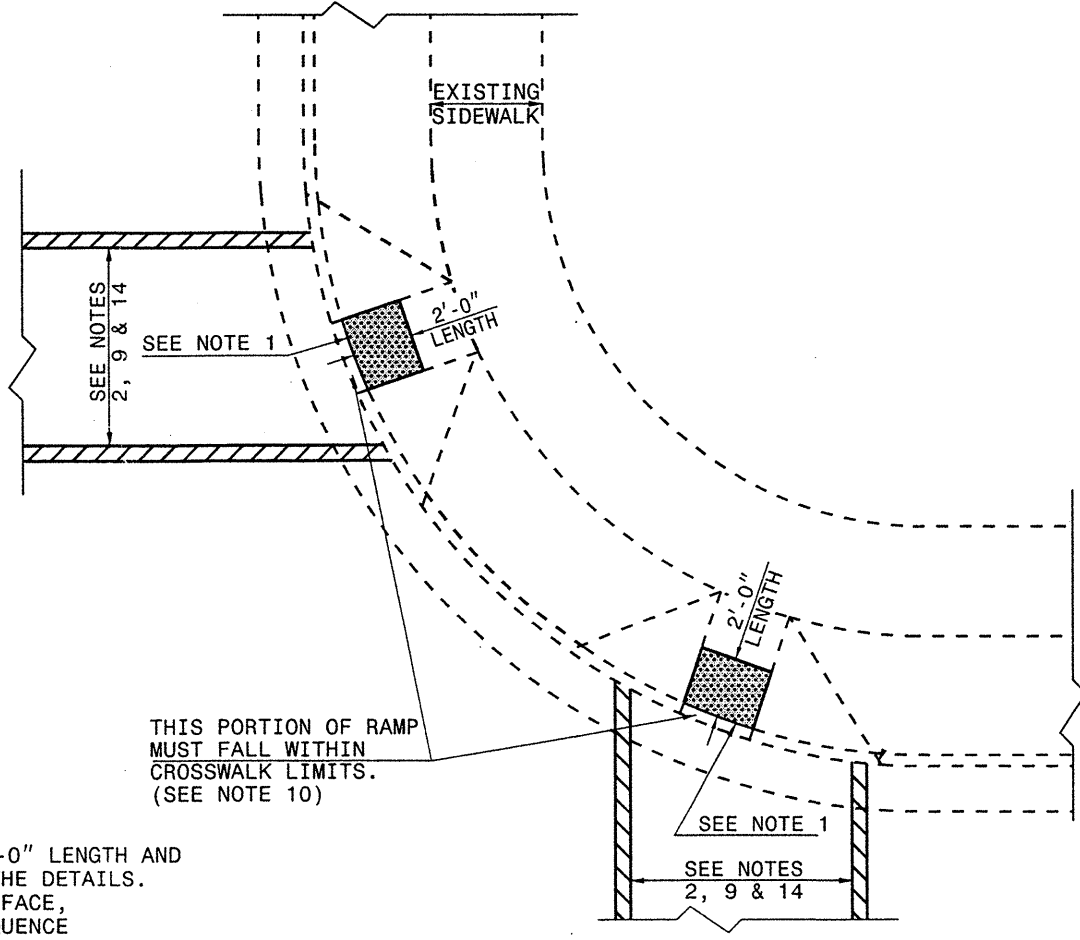


BASE DIAMETER 0.90" R TO 1.40" R

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



- 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.



PLAN VIEW

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

DETECTABLE WARNING DOMES

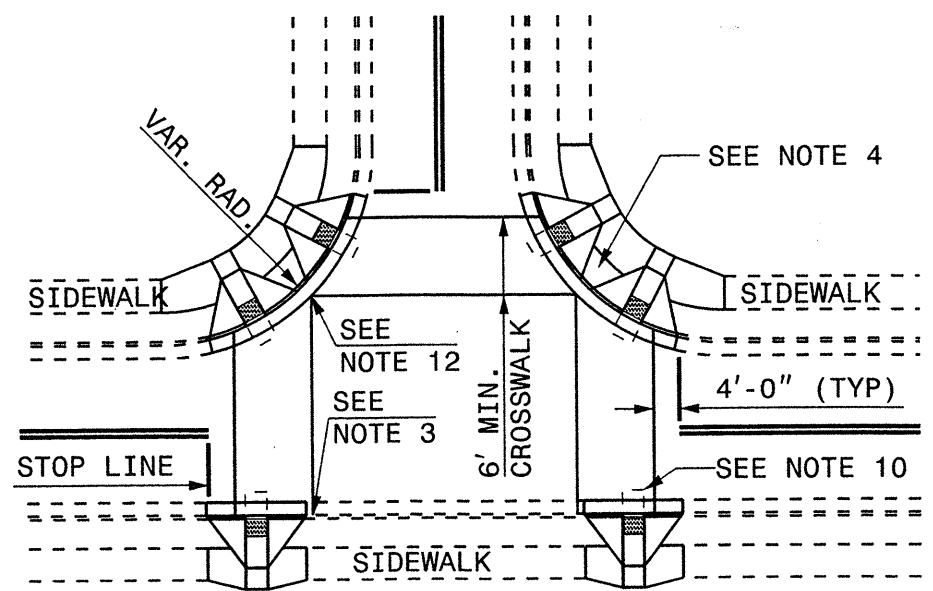
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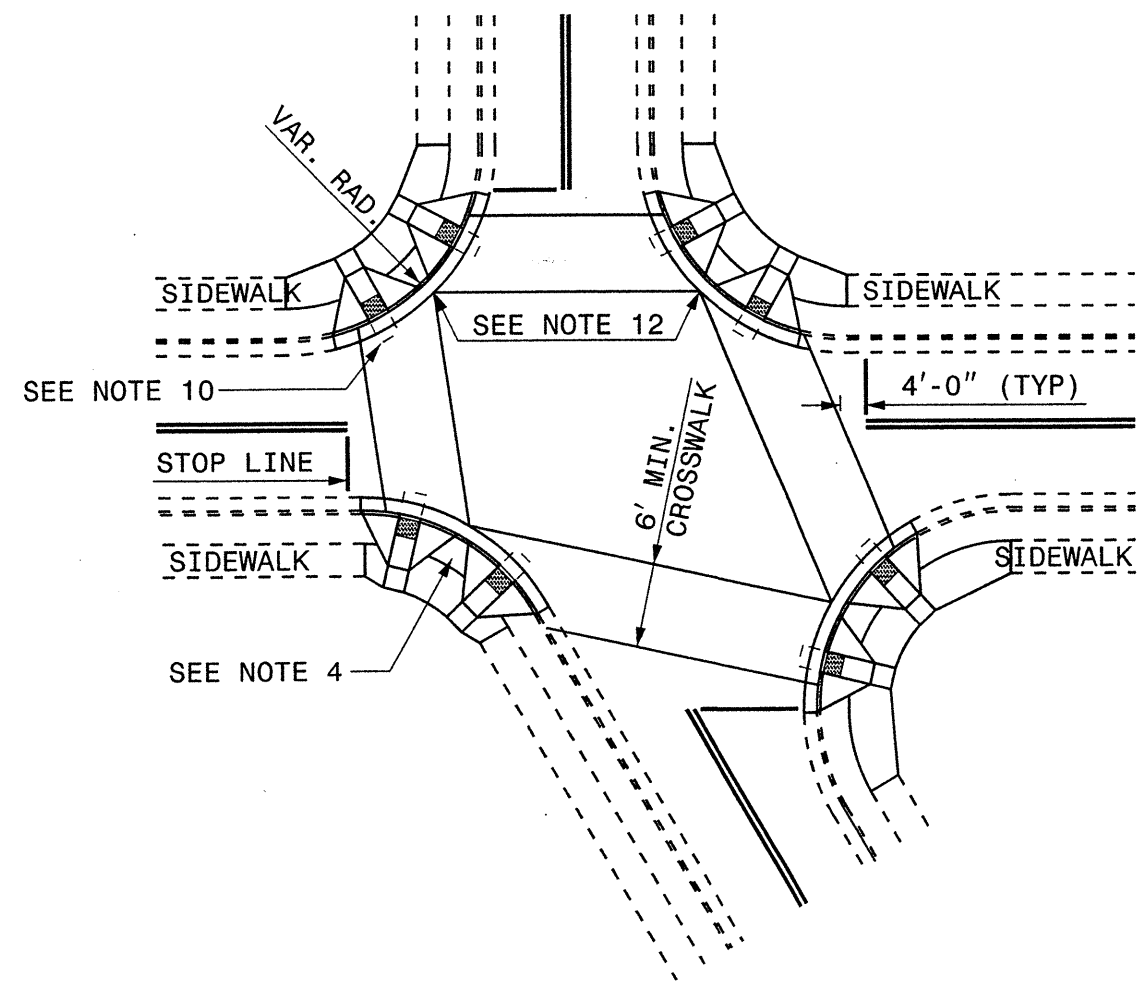
EXISTING CURB AND GUTTER
CURB RAMP
ENGLISH DETAIL DRAWING FOR

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

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

	PROPOSED CURB RAMP W/ LANDING FOR RESURFACING PROJECTS
	EXISTING SIDEWALK

ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

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.

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ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
CURB RAMP
EXISTING CURB AND GUTTER

PROJECT NO.	SHEET NO.	TOTAL NO.
5CR.20921.32	8	

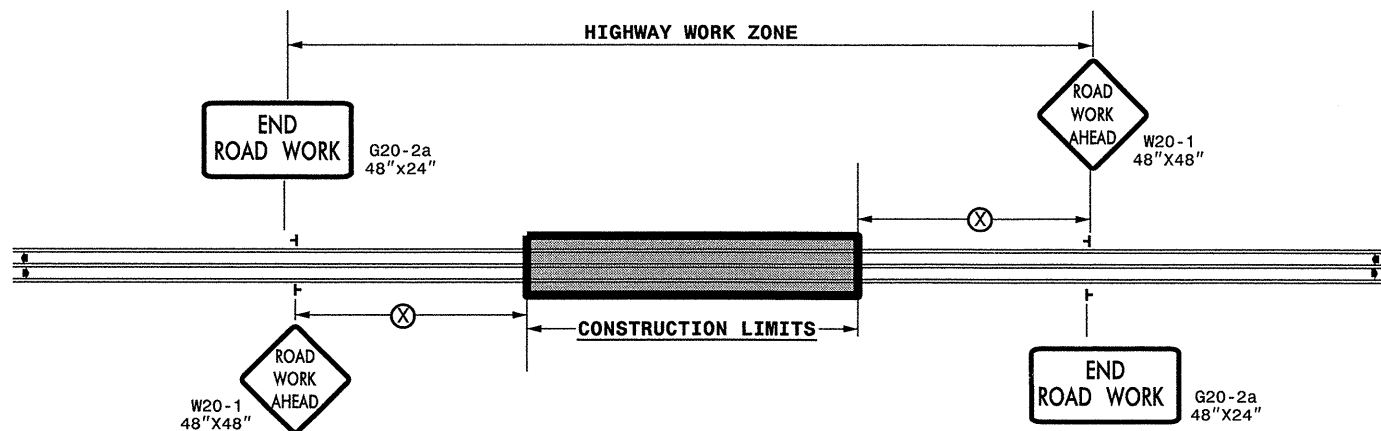
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	4" MILLING SY	1.5" TO 3" MILLING SY	INTER-MEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TONS	2'-6" CURB & GUTTER LF	CURB CUT RAMPS EA	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	INDUCTIVE LOOP LF	PORTABLE LIGHTING LS
5CR.20921.32	Wake	1	SR 3670 - BLOUNT ST	FROM S OF SR 2298 - EDENTON ST. TO N OF CABARRUS ST.	1	NO	0.5	40	12,085	800	1,731	1,038	146	200			27	43		*
		"	"	FROM N OF CABARRUS ST. TO N OF HOKE ST.	1	NO	0.74	36	19,217	380	2,751	1,650	231	200	20	2	36	33	835	*
TOTAL FOR MAP NO. 1							1.24		31,302	1,180	4,482	2,688	377	400	20	2	63	76	835	1
5CR.20921.32	Wake	2	SR 2026 - PERSON ST	FROM N OF HOKE ST. TO N OF CABARRUS ST.	1	NO	0.74	36	18,928	100	2,791	1,673	234	200	40	4	23	24	412	*
		"	"	FROM N OF CABARRUS ST. TO S OF SR 2298 - EDENTON ST.	1	NO	0.5	40	12,085	700	1,731	1,038	145	200			16	18		*
TOTAL FOR MAP NO. 2							1.24		31,013	800	4,522	2,711	379	400	40	4	39	42	412	1
TOTAL FOR PROJ NO. 5CR.20921.32							1.24		62,315	1,980	9,004	5,399	756	800	60	6	102	118	1,247	1
GRAND TOTAL							1.24		62,315	1,980	9,004	5,399	756	800	60	6	102	118	1,247	1

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4510000000-N	4589000000-N	4686000000-E	4697000000-E	4710000000-E	4721000000-E	4725000000-E					4810000000-E	4820000000-E	4835000000-E	4840000000-N	4845000000-N									
							LAW ENFORCEMENT HR	TRAFFIC CONTROL LS	4" X 120 M WHITE THERMO LF	8" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA	THERMO RT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	4" WHITE PAINT LF	8" WHITE PAINT LF	24" WHITE PAINT LF	PAINT MSG ONLY EA	PAINT RT ARROW EA	PAINT STR ARROW EA	PAINT STR & LT ARROW EA	PAINT STR & RT ARROW EA							
5CR.20921.32	Wake	1	SR 3670 - BLOUNT ST	FROM S OF SR 2298 - EDENTON ST. TO N OF CABARRUS ST.	0.5	40	25	*	1,095	930	281		2	9	9	6	1,095	930	281		2	9	9	6							
		"	"	FROM N OF CABARRUS ST. TO N OF HOKE ST.	0.74	36	25	*	1,279	1,385	430	4	5	11	5	2	1,279	1,385	430	4	5	11	5	2							
TOTAL FOR MAP NO. 1							1.24	1	2,374	2,315	711	4	7	20	14	8	2,374	2,315	711	4	7	20	14	8							
5CR.20921.32	Wake	2	SR 2026 - PERSON ST	FROM N OF HOKE ST. TO N OF CABARRUS ST.	0.74	36	25	*	920	1,265	294			4			920	1,265	294			4									
		"	"	FROM N OF CABARRUS ST. TO S OF SR 2298 - EDENTON ST.	0.5	40	25	*	800	760	196			8	4	2	800	760	196			8	4	2							
TOTAL FOR MAP NO. 2							1.24	1	1,720	2,025	490	4	7	32	18	10	4,094	4,340	1,201	4	7	32	18	10							
TOTAL FOR PROJ NO. 5CR.20921.32							1.24	1	4,094	4,340	1,201	4	7	32	18	10	4,094	4,340	1,201	4	7	32	18	10							
GRAND TOTAL							1.24	1	4,094	4,340	1,201	4	7	32	18	10	4,094	4,340	1,201	4	7	32	18	10							

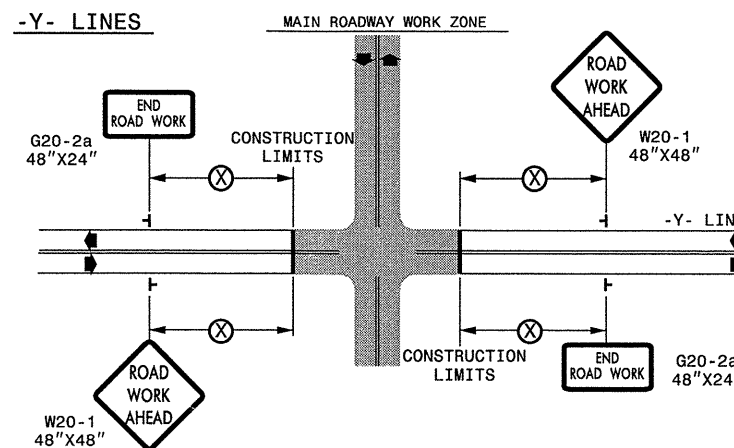
TWO-WAY UNDIVIDED ** (L-LINES)



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

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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

SHEET 1 OF 1

DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

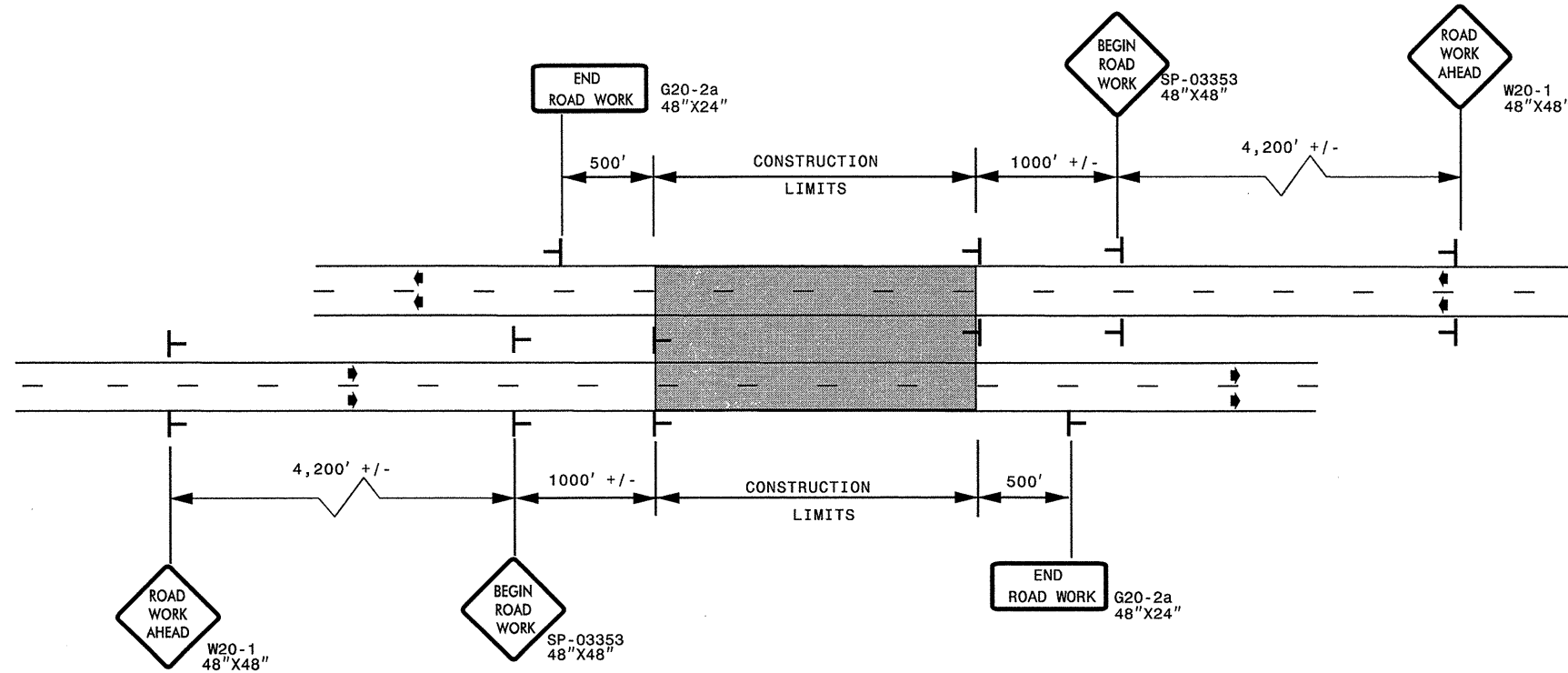
APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS									
SEAL	SCALE: NONE	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td>7-98</td> <td>10/01</td> </tr> <tr> <td>10-98</td> <td>03/04</td> </tr> <tr> <td>01/01</td> <td>11/04</td> </tr> </tbody> </table>	REVISIONS		7-98	10/01	10-98	03/04	01/01	11/04
	REVISIONS									
	7-98		10/01							
	10-98		03/04							
01/01	11/04									
DATE: _____										
DWG. BY: _____										
DESIGN BY: _____										
REVIEWED BY: _____	<table border="1"> <tr> <td>CADD FILE</td> </tr> </table>	CADD FILE								
CADD FILE										

01-JUL-2011 14:50 \\DOT\DFSR00\TOL\GROUPS-WZTC\CC-TMU\WZTC\Resurfacing\2011Central\2011Div05\C202827-5CR.20921.32_Wake_Blount_Person.jww\lxl17-C202827-5CR.20921.32_2way_Undiv.&Urban_Frways_stationary.dgn

ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

PROJ. REFERENCE NO. 5CR.20921.32	SHEET NO. TCP-2
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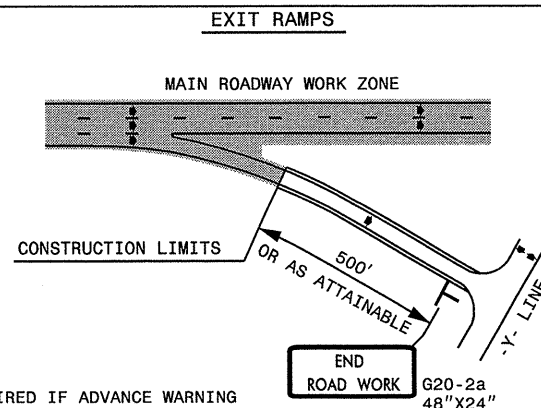
DETAIL A



LEGEND	
	STATIONARY SIGN
▶	DIRECTION OF TRAFFIC FLOW

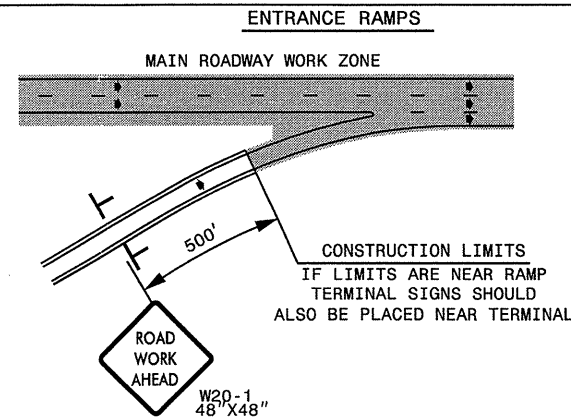
* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

DETAIL B



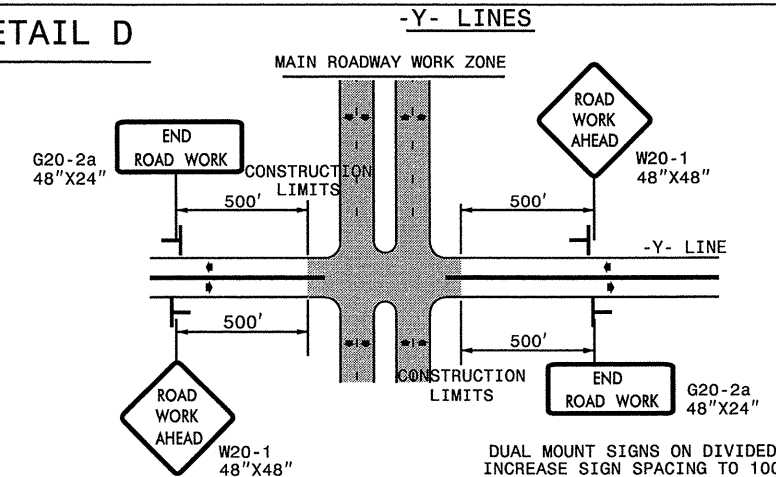
NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

DETAIL C



CONSTRUCTION LIMITS IF LIMITS ARE NEAR RAMP TERMINAL SIGNS SHOULD ALSO BE PLACED NEAR TERMINAL

DETAIL D



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 1000'+/-.

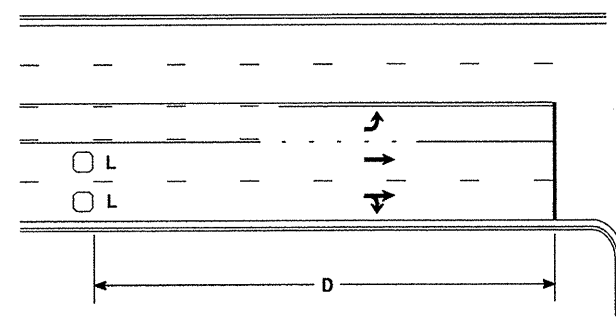
GENERAL NOTES

- 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.

APPROVED: _____ DATE: _____	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)	
SEAL	SCALE: NONE	
	DATE: _____	
	DESIGN BY: _____	
	REVIEWED BY: _____	
		REVISIONS
		03/04
		CADD

01-JUL-2011 11:51 \\DOT\DOT\SR00\DOT\GROUPS-WZTCC\TMUN\WZTC\Resur\fac\2011\Central\2011_Div05\C202827.5CR.20921.32.Wake.Blount_Person_Iww\1117-C202827.5CR.20921.32_freeways_4lanes_or_greater_stationary.dgn

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

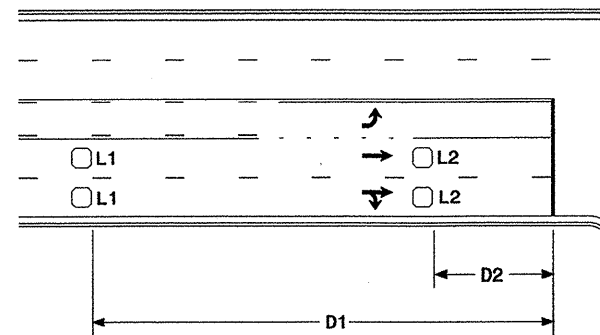


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

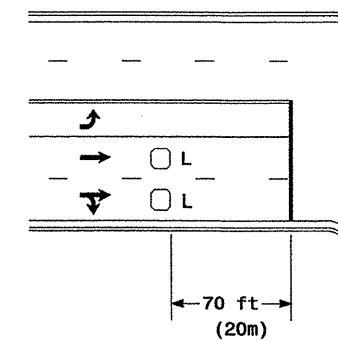


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

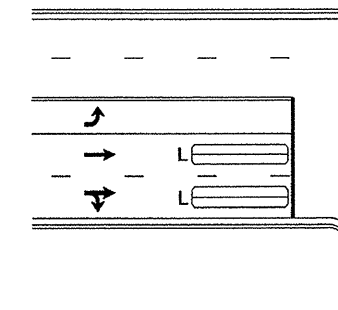
"Stretch" Operation

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



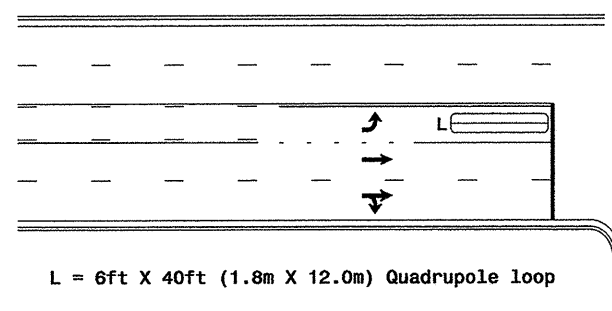
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

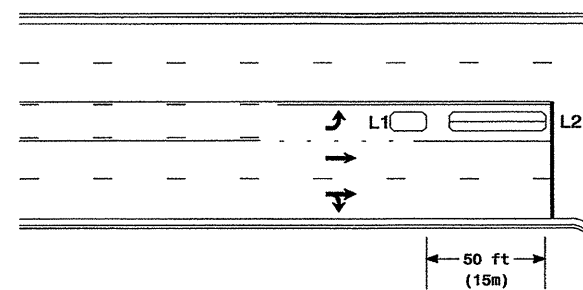
Left Turn Lane Detection



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

Presence Loop Detection

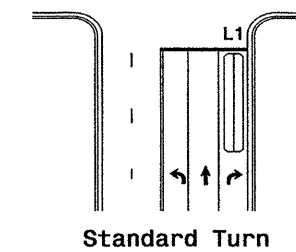
OR



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

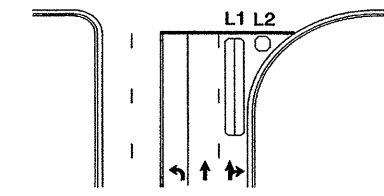
Queue Loop Detection

Right Turn Lane Detection

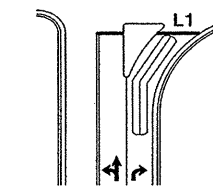


Standard Turn

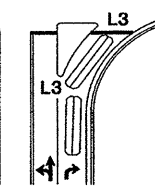
L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series



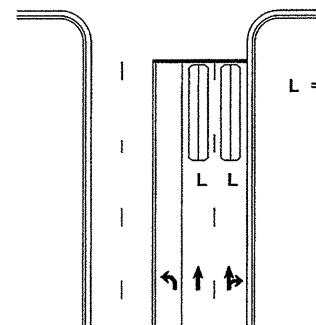
Wide Radius Turn



Channelized Turn



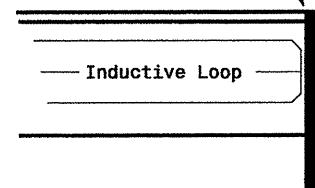
Side Street Detection



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

19-DEC-2006 14:23 as:file:signal\lib\turn_inhisscaloop\typical\2006.dgn

	Typical Loop Locations		
	PLAN DATE: June 2006 PREPARED BY: P. I. Alexander	REVIEWED BY:	
SCALE: N/A	REVISIONS:	INIT. DATE:	SIG. INVENTORY NO.:

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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

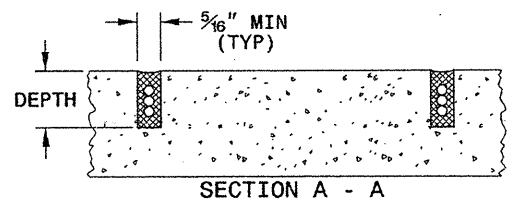
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

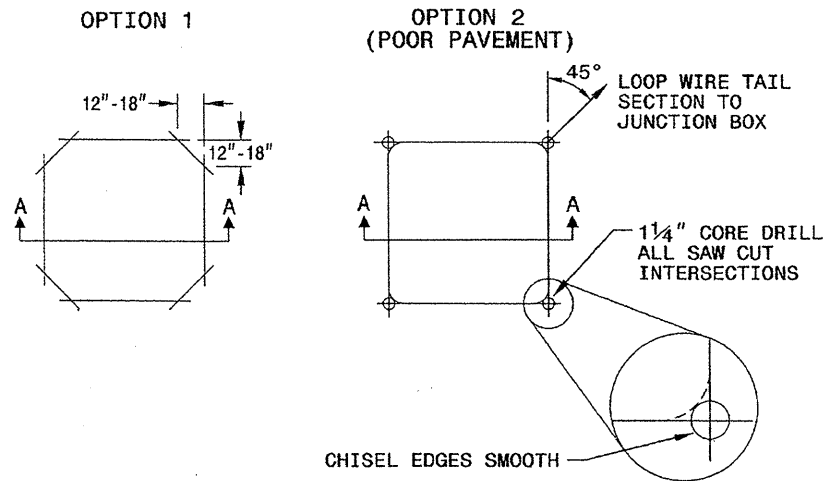
SAW SLOT DEPTH CHART

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

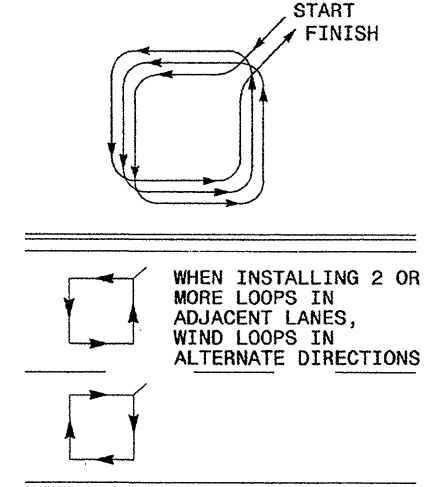


CONVENTIONAL 4-SIDED LOOP

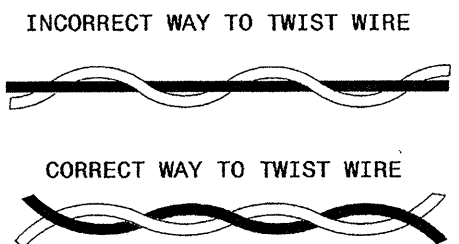
SAW CUT OPTIONS



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

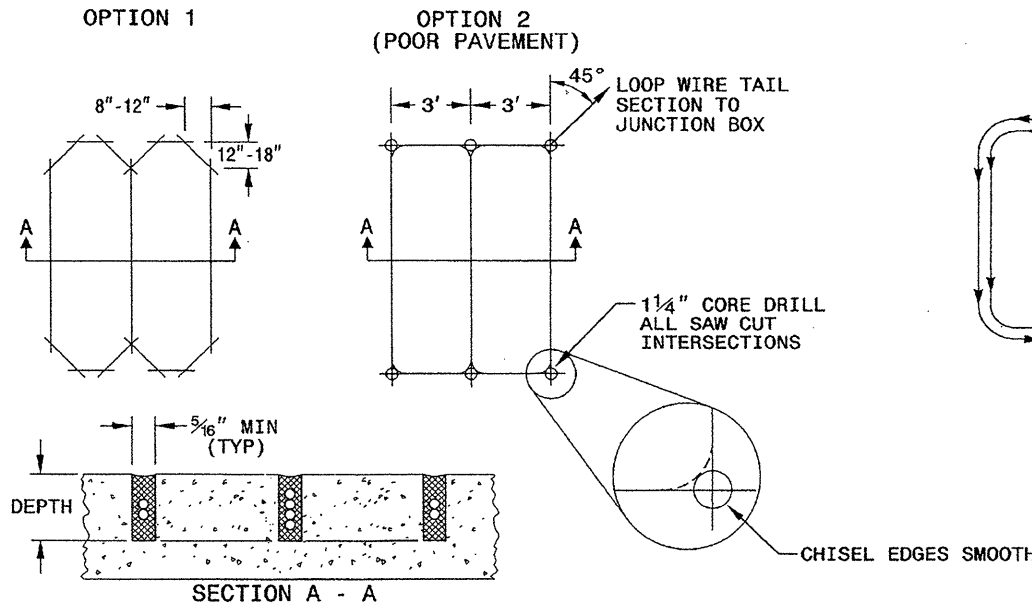


NOTES

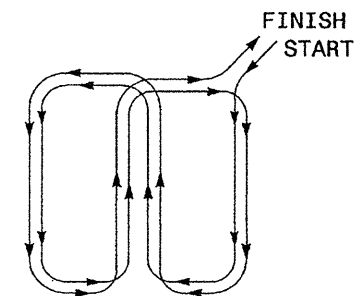
1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

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

Prepared in the Offices of:

750 N. Greenfield Parkway
 Garner, NC 27529

SEAL

Milton Dean 4/24/08
 SIGNATURE DATE

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 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

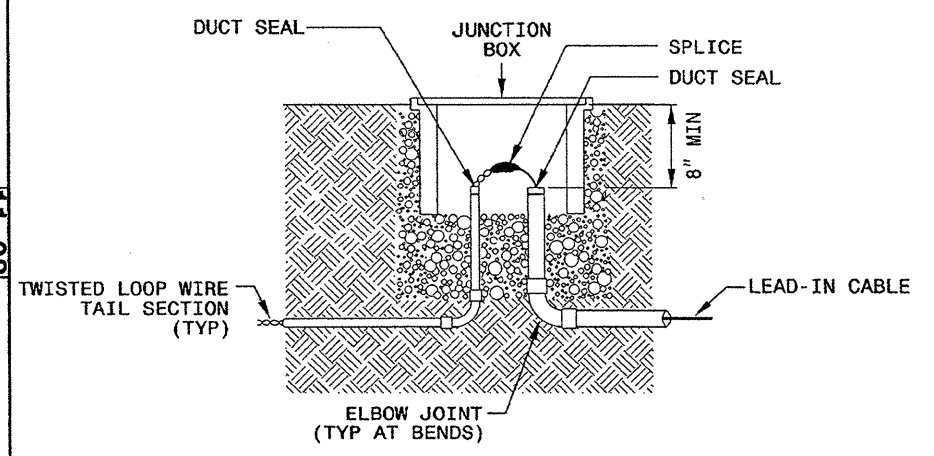
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

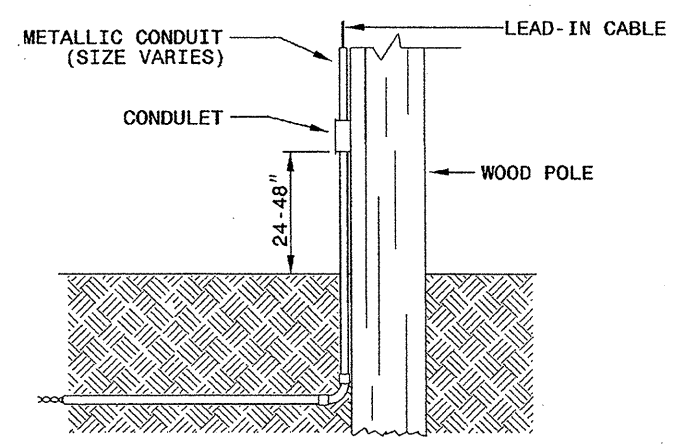
SHEET 2 OF 3
1725D01

LOOP WIRE SPlice POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

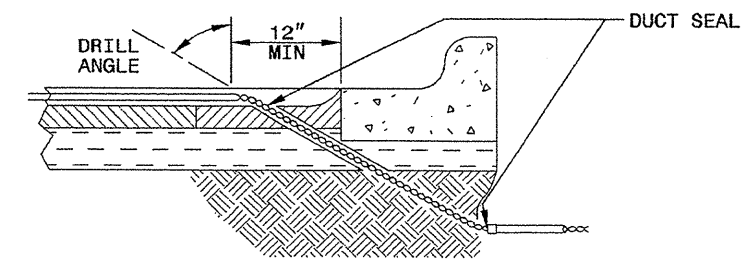


NOTE

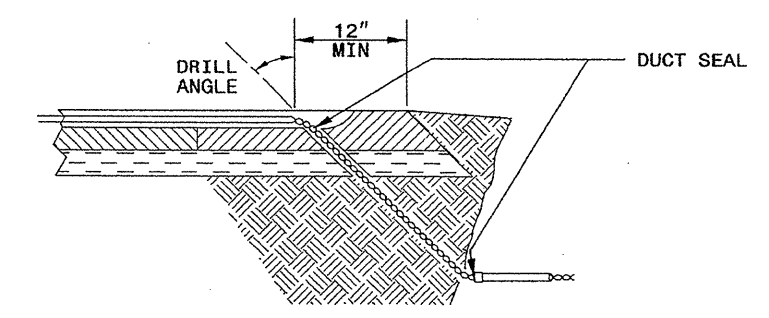
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

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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Milton I. Dean 11/24/08
 SIGNATURE DATE

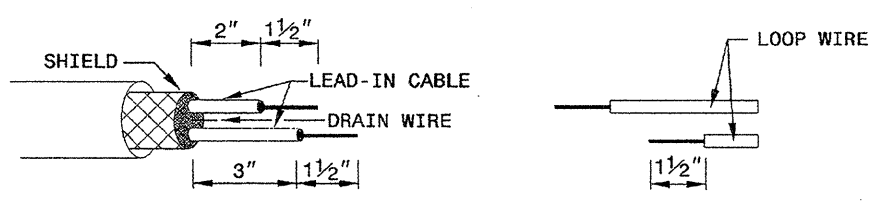
STATE OF NORTH CAROLINA
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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

11-08

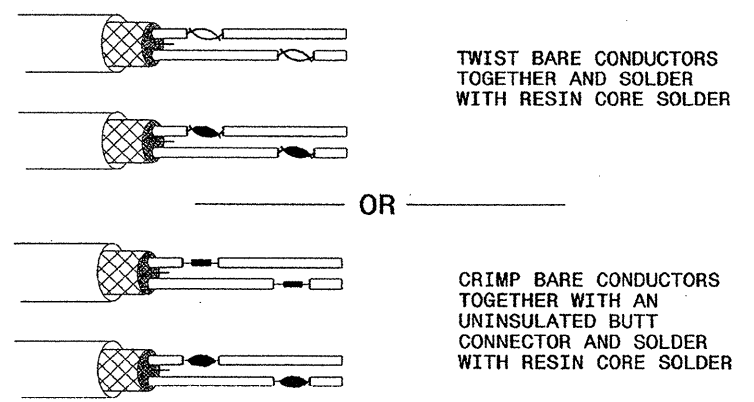
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
 1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

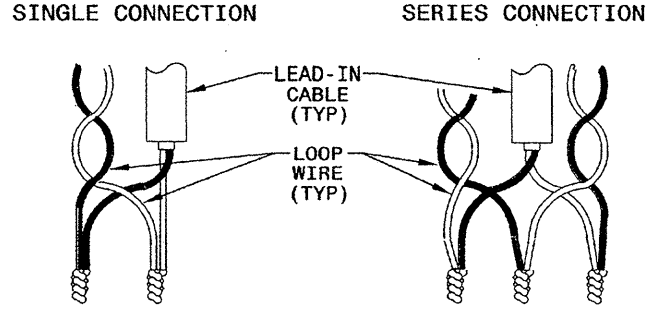


STEP 2. CONNECT AND SOLDER

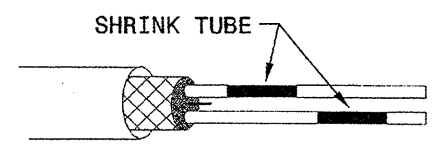


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

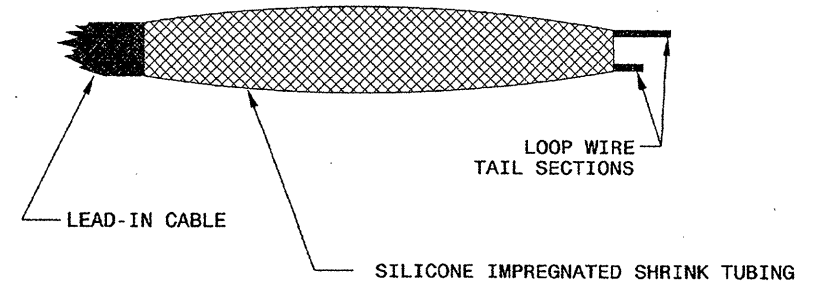
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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11-08

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

SHEET 3 OF 3
 1725D01

See Plate for Title

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Milton I. Dean 11/24/08
 SIGNATURE DATE

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