

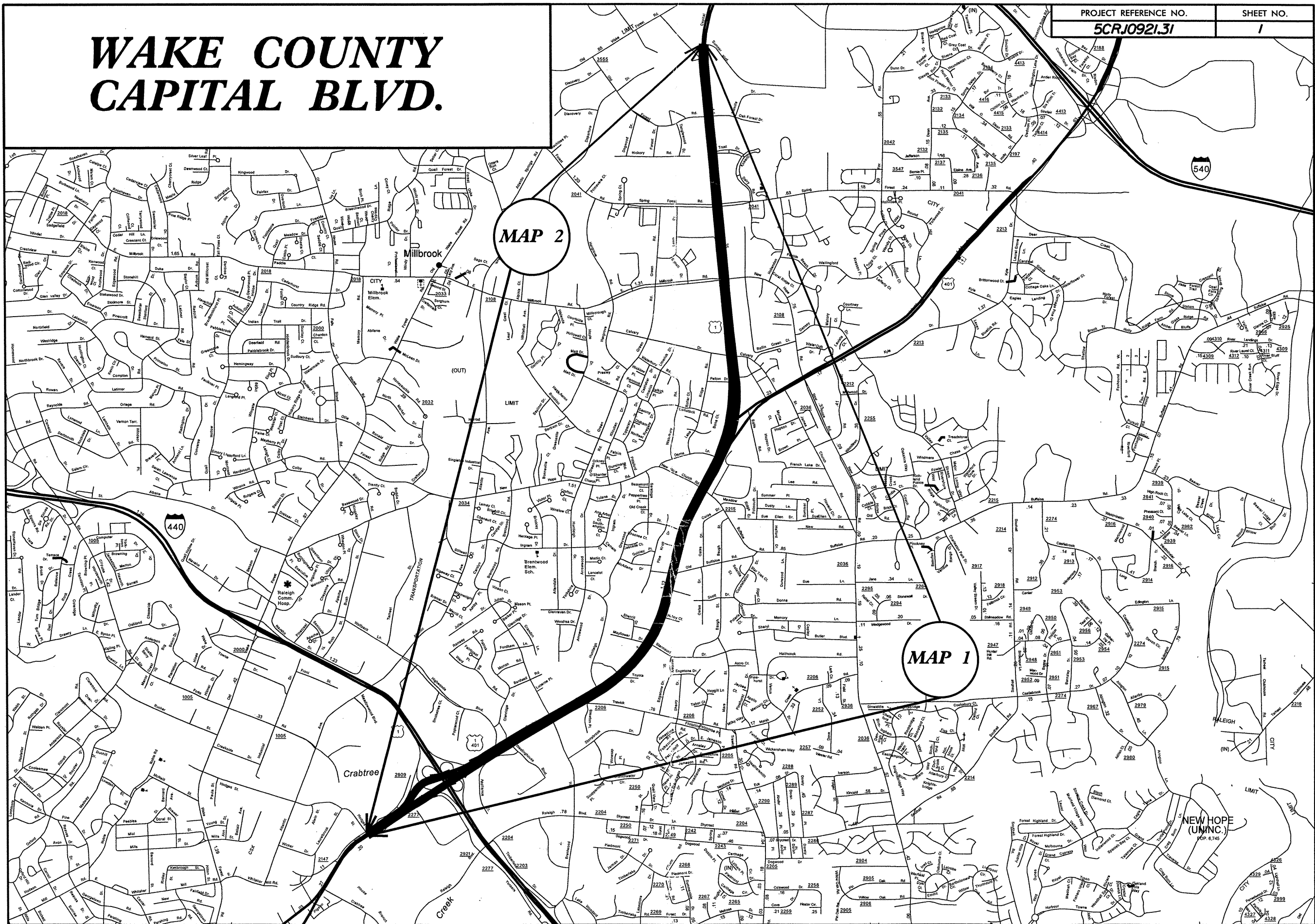
# WAKE COUNTY CAPITAL BLVD.

PROJECT REFERENCE NO.  
**5CRJ0921.31**

SHEET NO.  
**1**

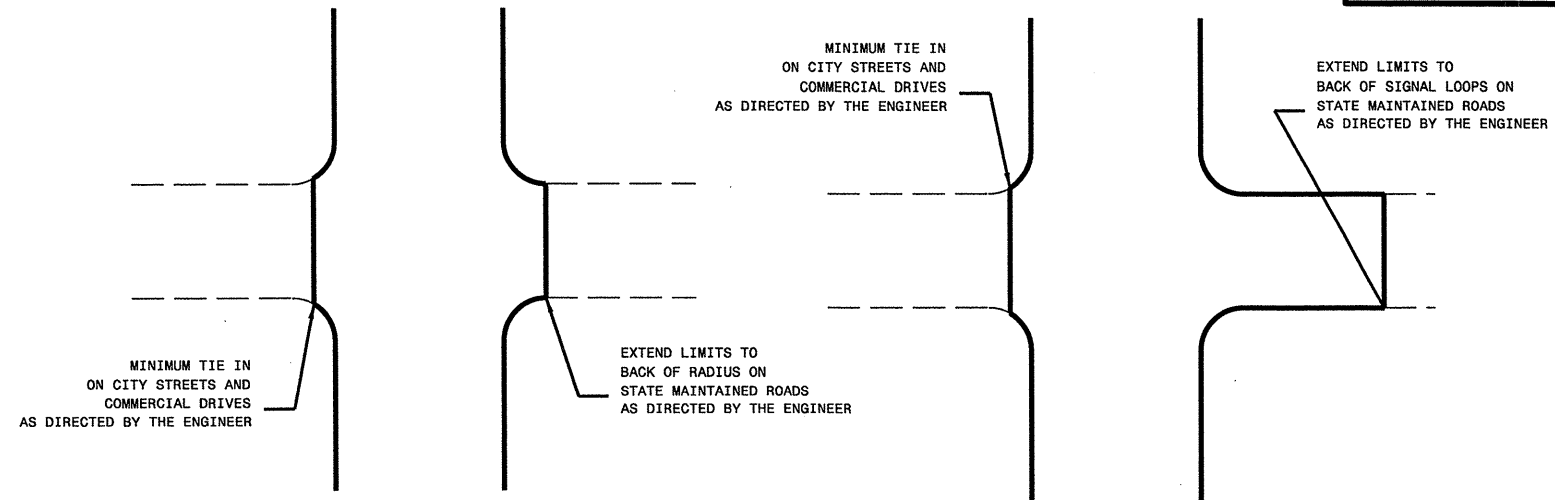
MAP 2

MAP 1



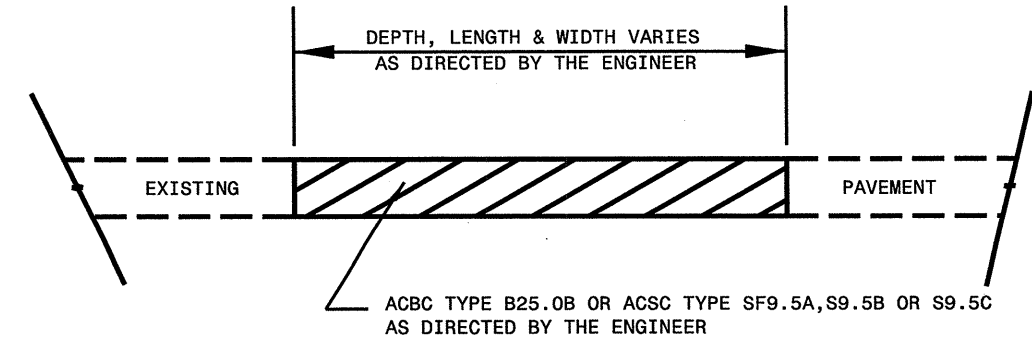
# PAVEMENT SCHEDULE

C1	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
V1	2" MILLING
U	EXISTING PAVEMENT

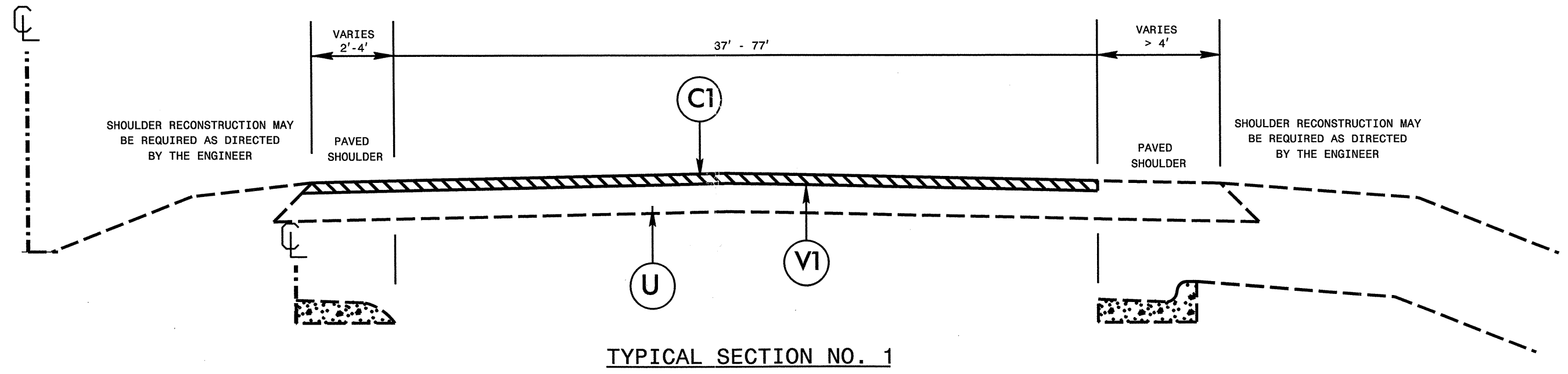


DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES



**PATCHING EXISTING PAVEMENT**  
PATCHING TO BE PERFORMED PRIOR TO MILL AND FILL OPERATION



TYPICAL SECTION NO. 1

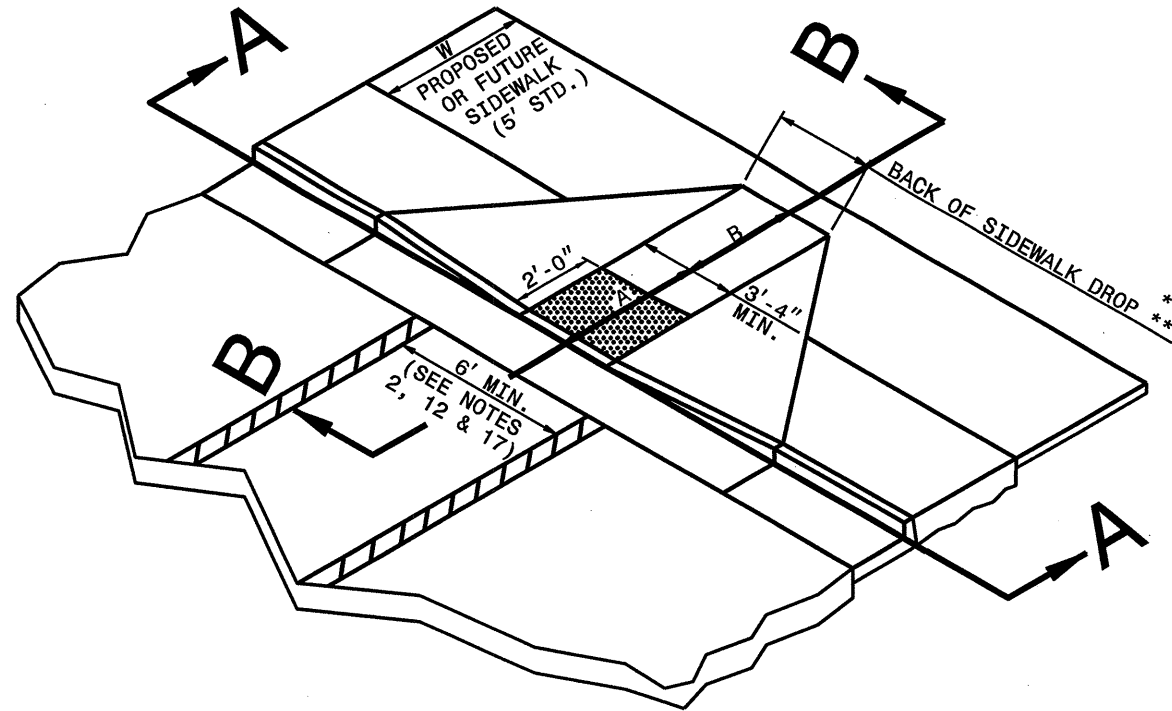
PROJECT NO.	SHEET NO.	TOTAL NO.
5CR.10921.31	3	

### SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT ALLOWED	LENGTH MI	WIDTH FT	REMOVAL OF CONCRETE ISLAND SY	INCIDENTAL STONE BASE TONS	BORROW EXCAVATION CY	SHOULDER RECONSTRUCTION SMI	2" MILLING SY	SURFACE COURSE, S9.5C TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN) SY	4" CONCRETE SIDEWALK SY	REMOVE AND REPLACE 2'-6" CONCRETE CURB & GUTTER LF	CONCRETE WHEEL-CHAIR RAMP EA	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	PORTABLE LIGHTING LS	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF			
5CR.10921.31	Wake	1	CAPITAL BLVD. NB	FROM HODGES ST. TO JOINT NORTH OF SUMNER BLVD.	1	NO	YES	4.71	37	9	101	264	2.70	154,374	17,343	1,041	1,412	65	112	640	18	18	4	*	193	480	1.93	13,206	2,500			
TOTAL FOR MAP NO. 1								4.71		9	101	264	2.70	154,374	17,343	1,041	1,412	65	112	640	18	18	4	1	193	480	1.93	13,206	2,500			
		2	CAPITAL BLVD. SB	FROM JOINT NORTH OF SUMNER BLVD. TO HODGES ST.	1	NO	YES	4.71	37	21	120	228	2.34	159,198	17,883	1,073	1,412	70	72	598	19	3	22	*	170	430	1.70	13,968	2,500			
TOTAL FOR MAP NO. 2								4.71		21	120	228	2.34	159,198	17,883	1,073	1,412	70	72	598	19	72	598	19	3	22	1	170	430	1.70	13,968	2,500
TOTAL FOR PROJ NO. 5CR.10921.31								9.42		30	221	492	5.04	313,572	35,226	2,114	2,824	135	184	1,238	37	21	26	1	363	910	3.63	27,174	5,000			
GRAND TOTAL								9.42		30	221	492	5.04	313,572	35,226	2,114	2,824	135	184	1,238	37	21	26	1	363	910	3.63	27,174	5,000			

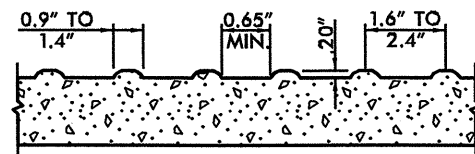
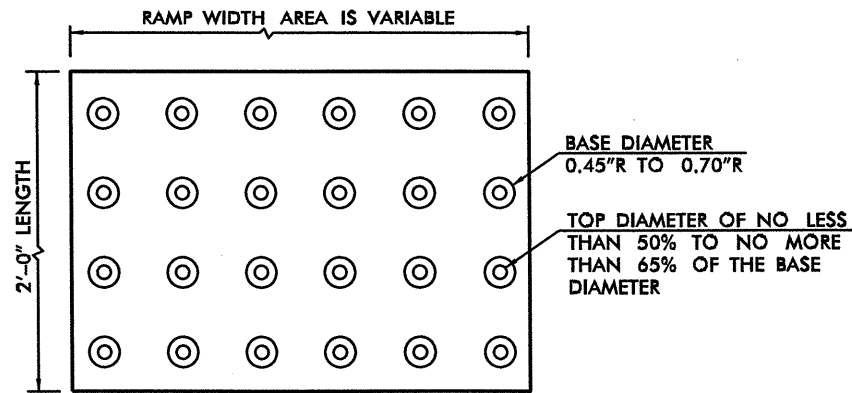
### THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4360000000-N	4510000000-N	4589000000-N	4685000000-E		4686000000-E		4697000000-E	4710000000-E	4721000000-E	4725000000-E			4770000000-E		4850000000-E	4900000000-N	4905000000-N	
					REMOVE AND RESET EXISTING SIGN EA	LAW ENFORCEMENT EA	TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	8" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG ONLY 120 M EA	THERMO STR ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO LT ARROW 90 M EA	4" YELLOW COLD APPLIED PLASTIC, TYPE III LF	4" WHITE COLD APPLIED PLASTIC, TYPE III LF	4" LINE REMOVAL LF	CRYSTAL & RED MARKERS EA	SNOW PLOWABLE MARKERS EA
5CR.10921.31	Wake	1	CAPITAL BLVD. NB	FROM HODGES ST. TO JOINT NORTH OF SUMNER BLVD.	2	50	*	8,411	24,868	21,815	360	4,480	1,352		120	18	23	57	215	323	538	10	1,417
TOTAL FOR MAP NO. 1					2	50	1	8,411	24,868	21,815	360	4,480	1,352		120	18	23	57	215	323	538	10	1,417
		2	CAPITAL BLVD. SB	FROM JOINT NORTH OF SUMNER BLVD. TO HODGES ST.	1	50	*	3,533	24,868	22,162	360	5,578	1,530	12	144	24	26	48					1,315
TOTAL FOR MAP NO. 2					1	50	1	3,533	24,868	22,162	360	5,578	1,530	12	144	24	26	48					1,315
TOTAL FOR PROJ NO. 5CR.10921.31					3	100	1	11,944	49,736	43,977	720	10,058	2,882	12	264	42	49	105	215	323	538	10	2,732
GRAND TOTAL					3	100	1	11,944	49,736	43,977	720	10,058	2,882	12	264	42	49	105	215	323	538	10	2,732



**ISOMETRIC VIEW**

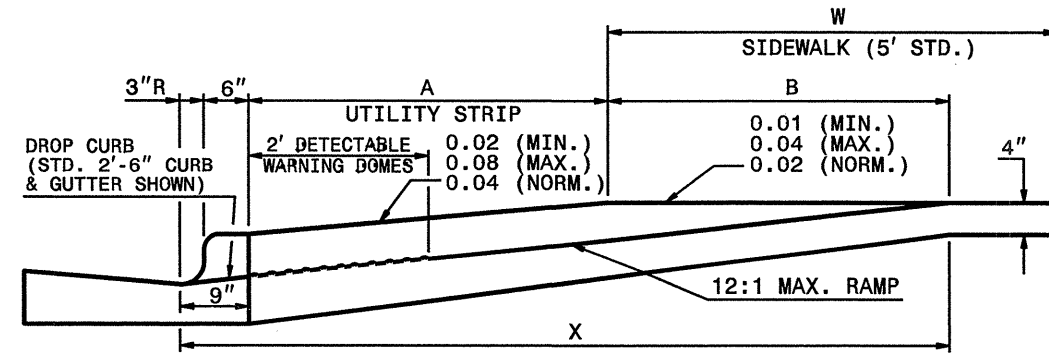
- NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
  2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



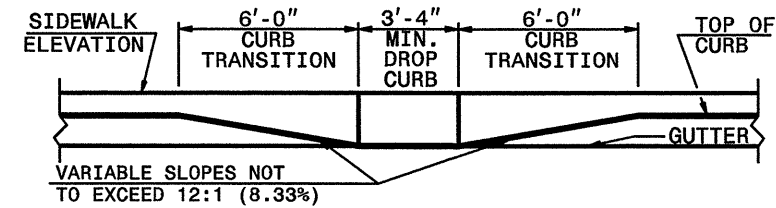
**DETECTABLE WARNING DOMES**

W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'***
7'	0.0'	7.8'	7.3'	6.5'***
8'	0.0'	8.8'	7.3'	6.5'***
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

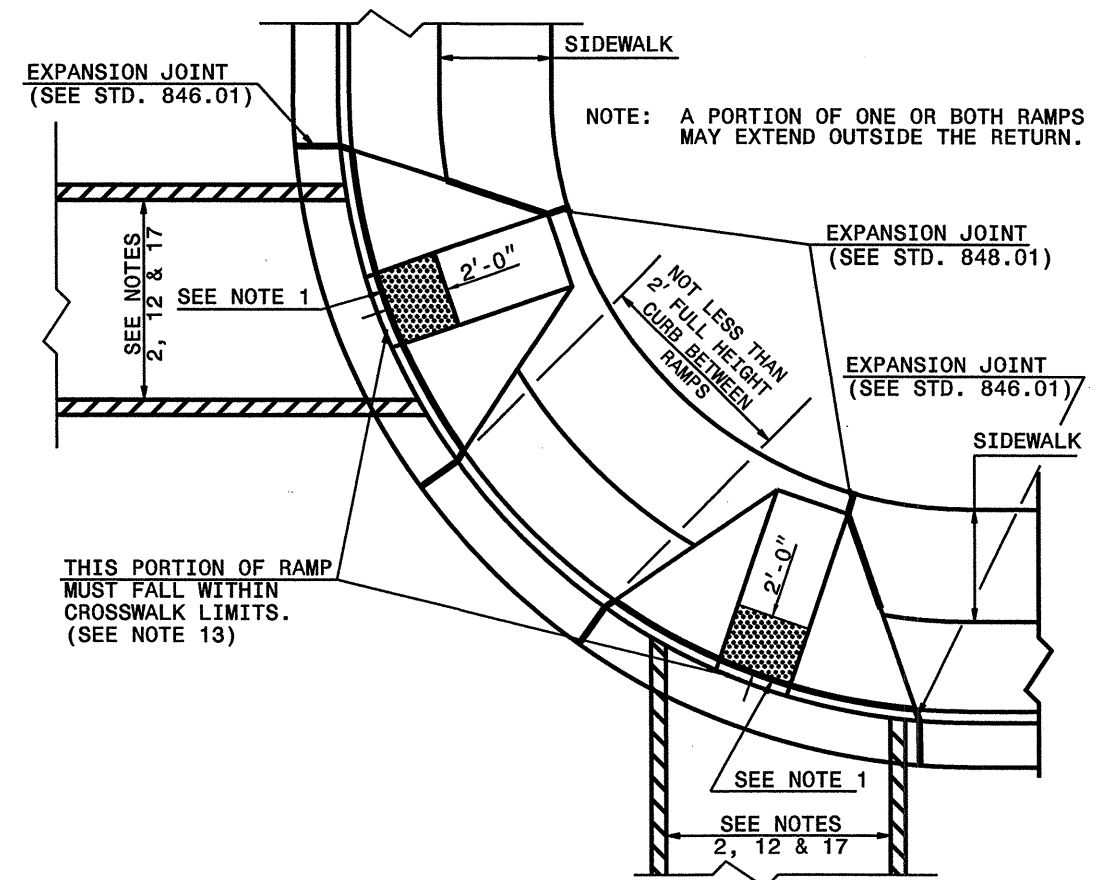
$B = X - (A + 9")$   
 B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.  
 \* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.  
 \*\* BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



**SECTION B-B**

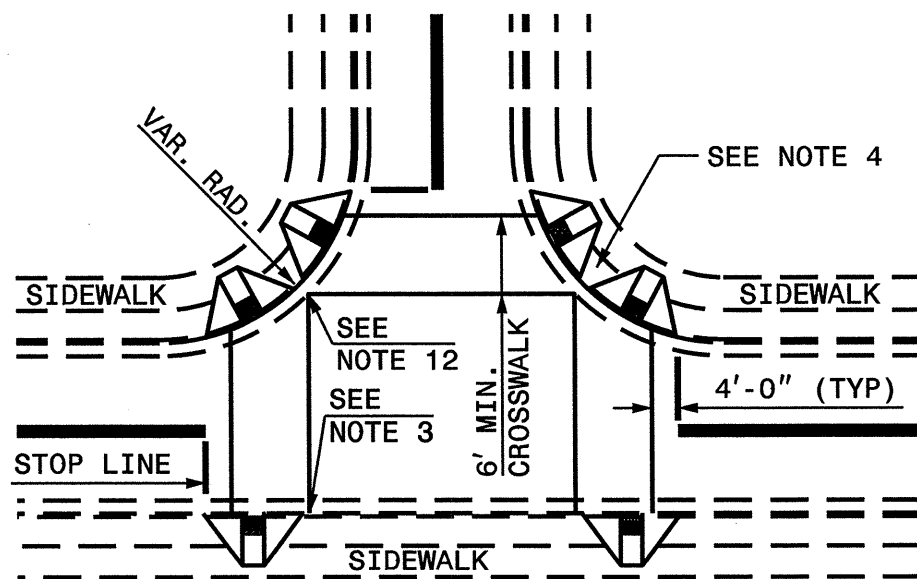


**SECTION A-A**

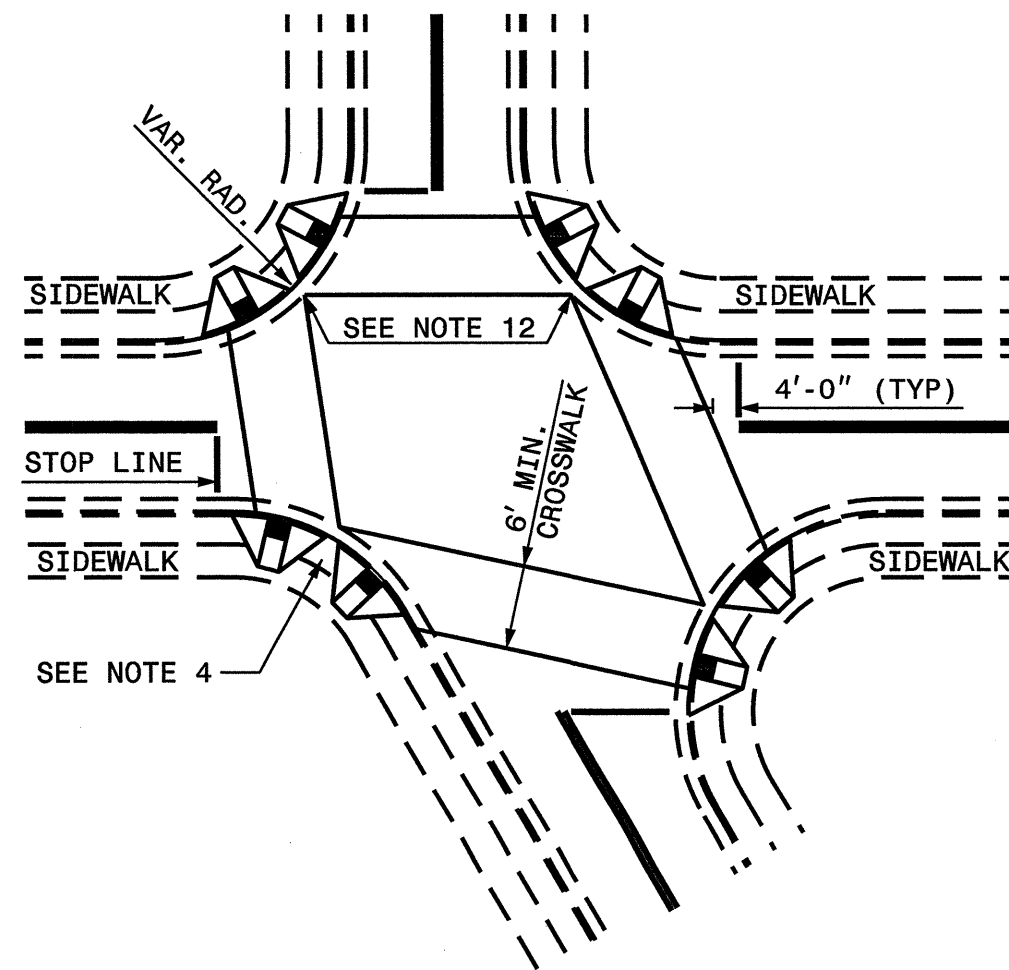


**PLAN VIEW**

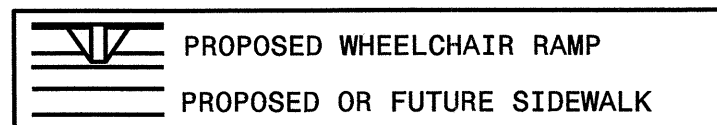
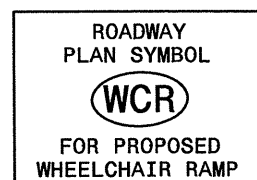
DUAL RAMPS  
ANY RADII  
(40" MIN. FLOOR WIDTH)



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



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



ALLOWABLE LOCATIONS  
DUAL RAMP RADII.....ANY

NOTES:

1. CONSTRUCT THE WALKING SURFACE WITH SLIP RESISTANTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. NORTH CAROLINA GENERAL STATUTE 136-44.14 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY DISABLED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.

IN ADDITION, SECTION 228 OF THE 1973 FEDERAL AID HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR A FUTURE DATE.

THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES. COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILIAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH THE CURRENT ADA STANDARDS.

4. PROVIDE WHEELCHAIR RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE WHEELCHAIR RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED PLACE NOT LESS THAN 2 FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS NEAR PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE.
5. DO NOT EXCEED 0.08 (12:1) SLOPE ON THE WHEELCHAIR RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS.
7. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
8. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AND AS SHOWN ON STD. DWG. 848.01.
9. PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION BY BISECTING THE INTERSECTION RADII, WITH ALLOWANCE OF A 4' CLEAR ZONE IN THE VEHICULAR TRAVELWAY WHEN ONE RAMP IS INSTALLED. (SEE NOTE 17)
10. COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24" OF FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
11. CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM OF 6 FEET. A CROSSWALK WIDTH OF 10 FEET OR GREATER IS DESIRABLE.
12. USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
13. TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
14. PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

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

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

ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP**  
PROPOSED CURB AND GUTTER

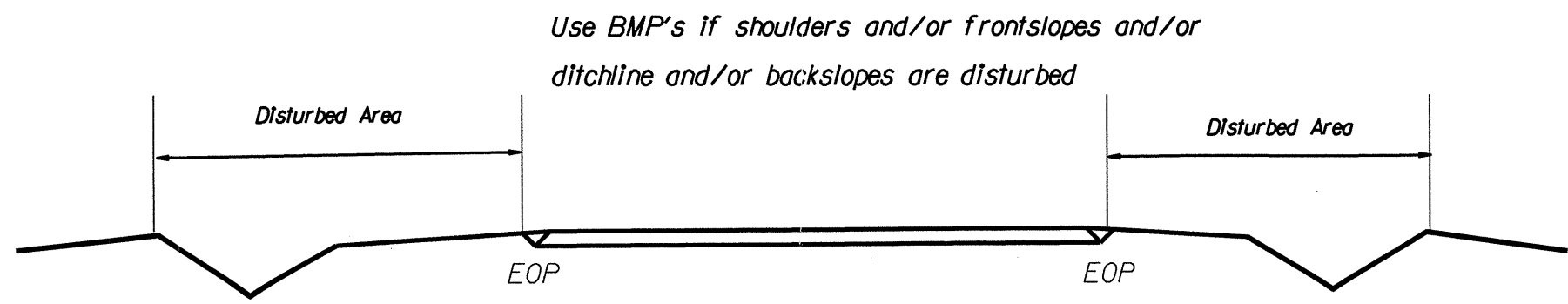
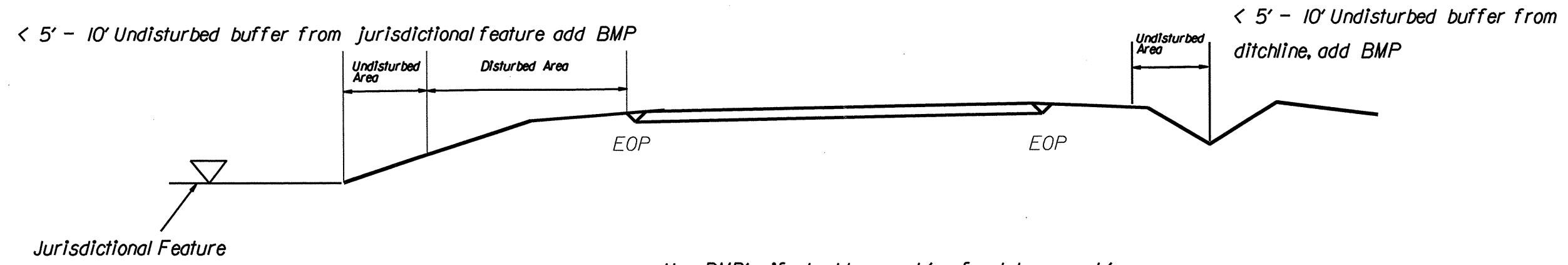
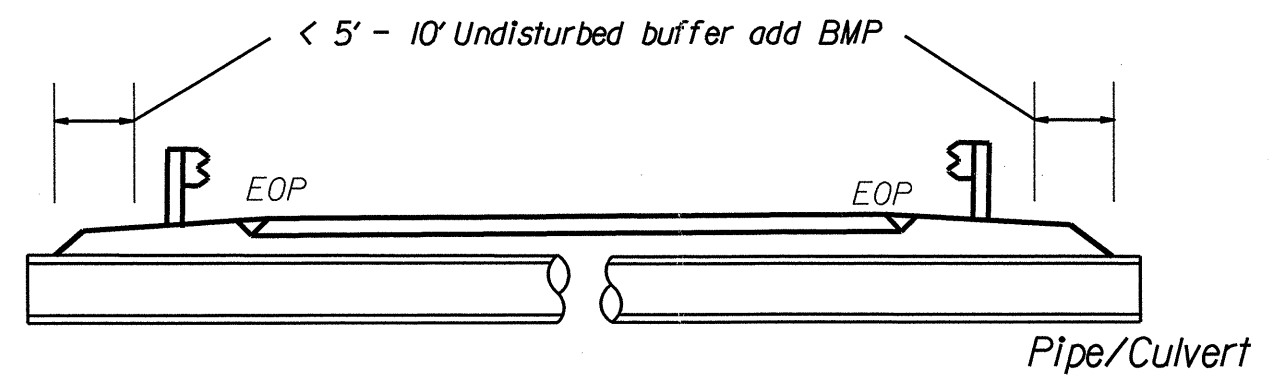
ENGLISH DETAIL DRAWING FOR  
**WHEELCHAIR RAMP**  
PROPOSED CURB AND GUTTER

PROJECT REFERENCE NO.	SHEET NO.
5CR.10921.31	EC-1

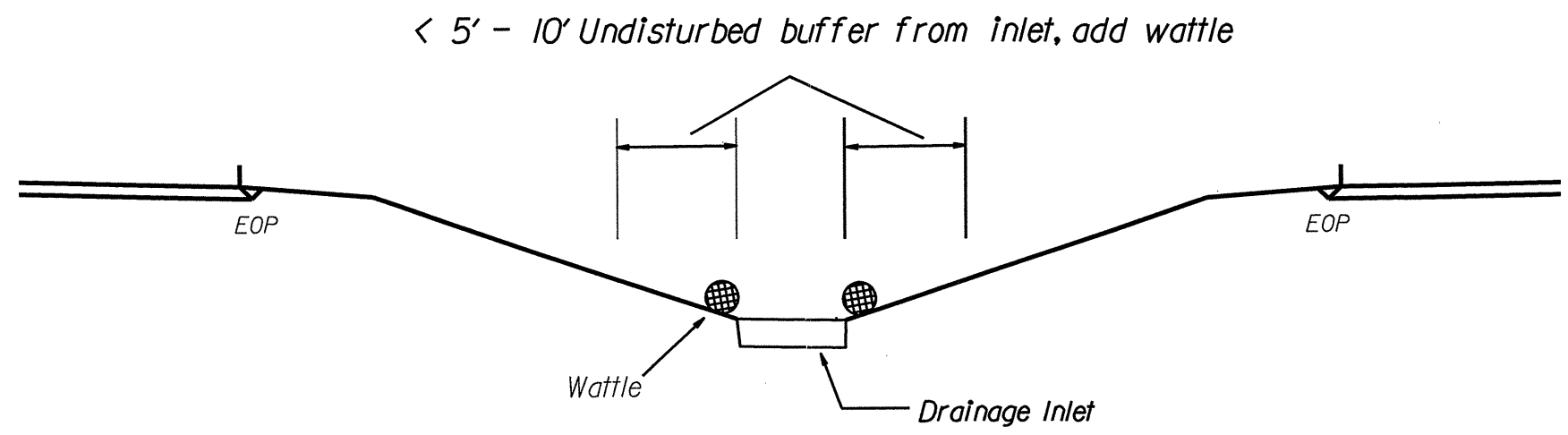
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

# EROSION CONTROL DETAIL

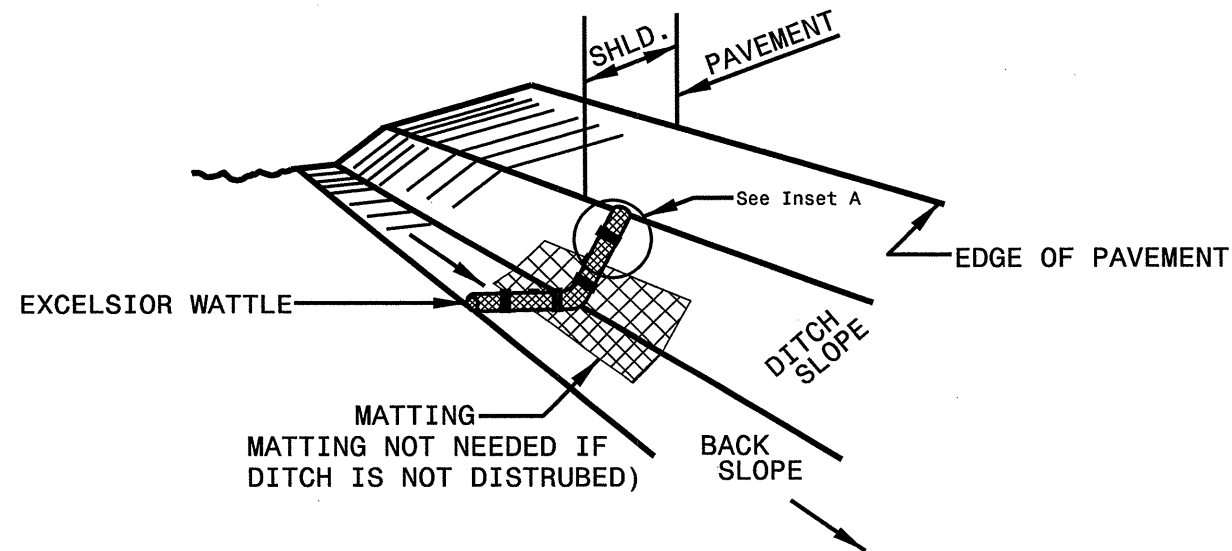


Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed

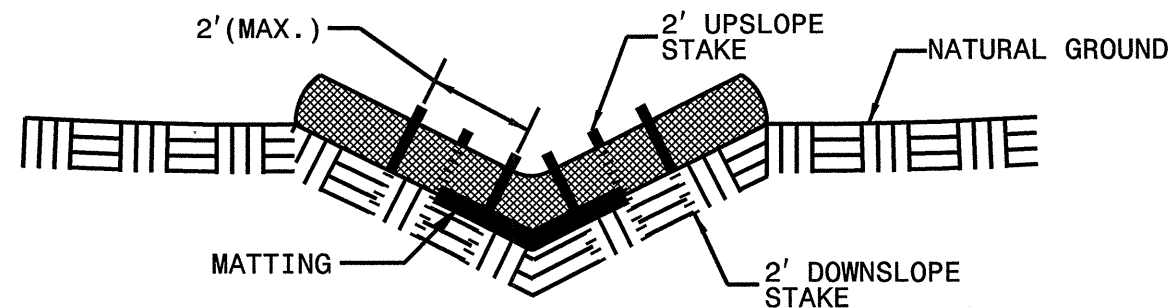


NOT TO SCALE

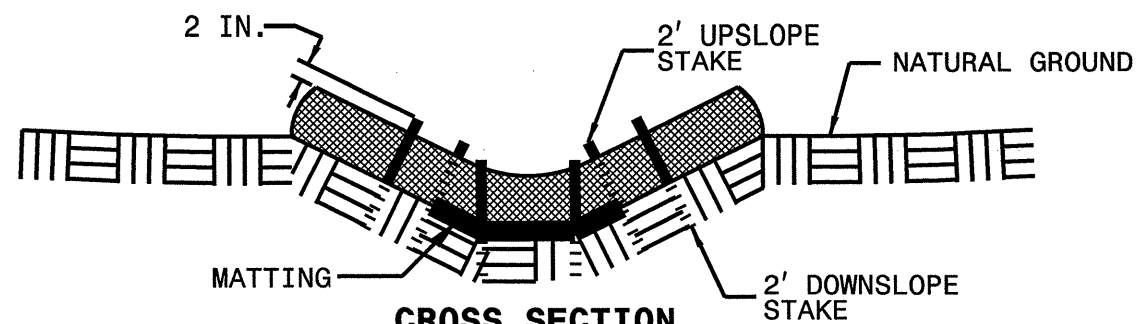
# WATTLE DETAIL



**ISOMETRIC VIEW**



**CROSS SECTION  
VEE DITCH**



**CROSS SECTION  
TRAPEZOIDAL DITCH**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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

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

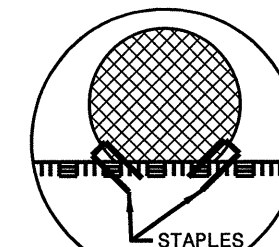
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

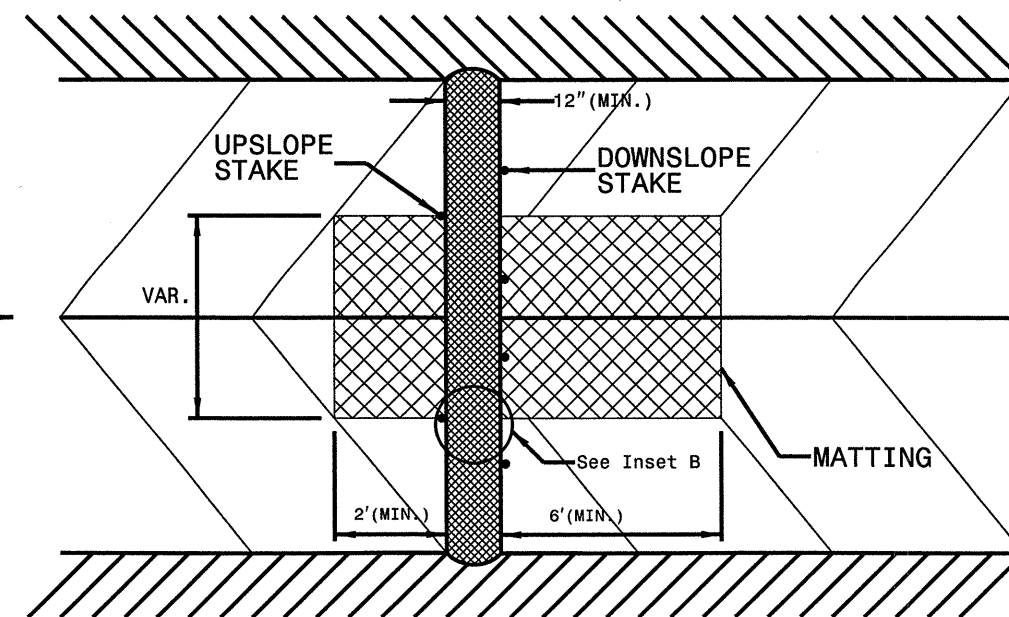
IF DITCH WILL BE DISTURBED, INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



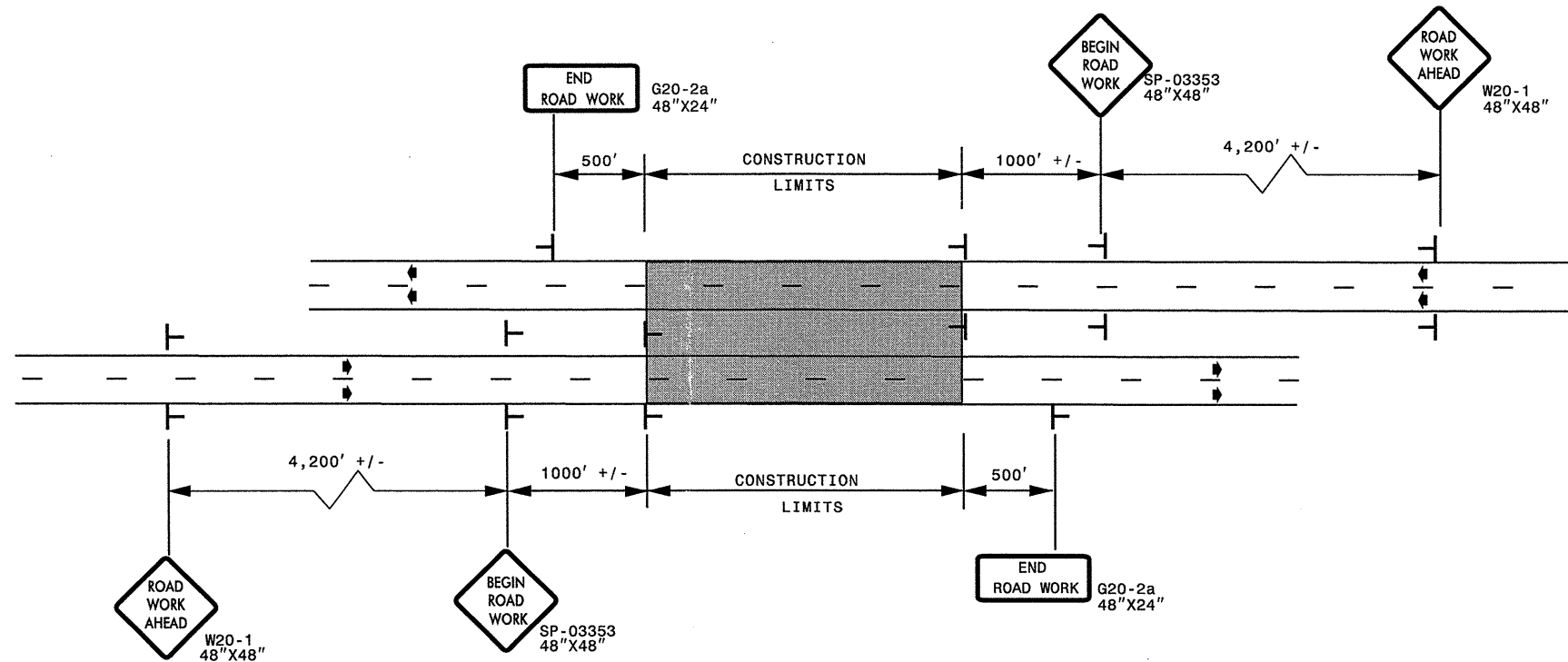
**TOP VIEW**



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

PROJ. REFERENCE NO. 5CR.10921.31	SHEET NO. TCP-2
-------------------------------------	--------------------

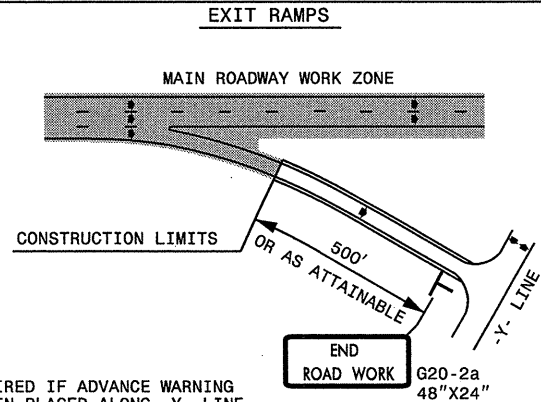
## DETAIL A



LEGEND	
	STATIONARY SIGN
◆	DIRECTION OF TRAFFIC FLOW

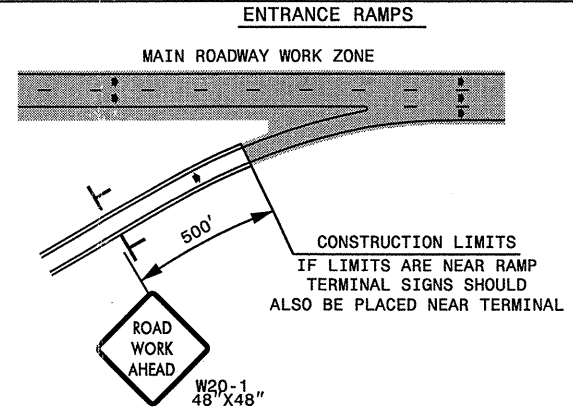
\* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

## DETAIL B

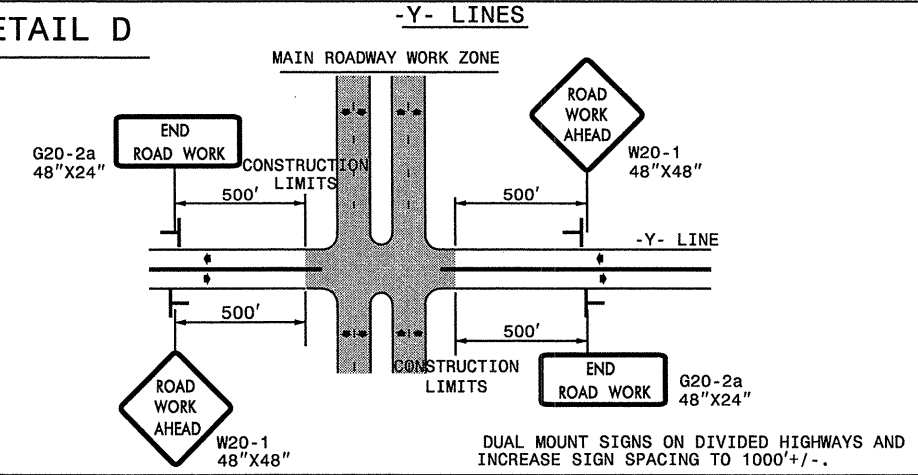


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

## DETAIL C



## DETAIL D



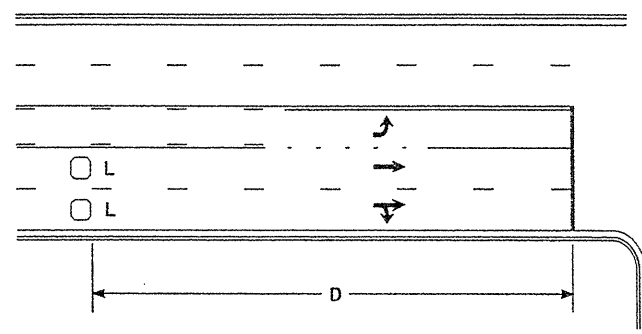
## GENERAL NOTES

- 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)	
<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 8px;">SEAL</span> </div>	SCALE: NONE		REVISIONS
	DATE: 8/03		03/04
	DWG. BY: JI		
	DESIGN BY: JI		
REVIEWED BY: _____		CADD	

03-MAR-2011 08:23 C:\WORK\PROJECTS\5CR10921\31-Wake-Capital\_AF\11M7-C202763-5CR10921\31-Wake-Capital\_freeways\_4lanes\_or\_greater\_stationary.dgn

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

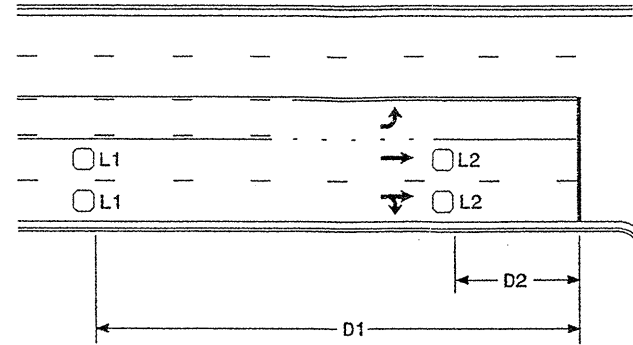


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

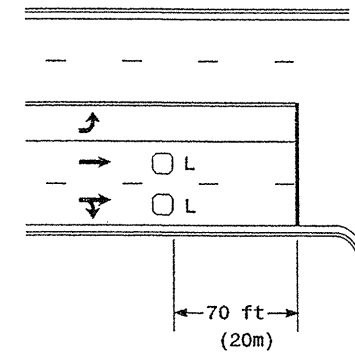


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

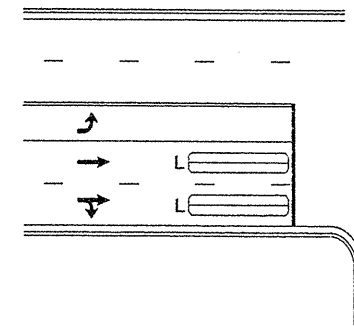
"Stretch" Operation

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



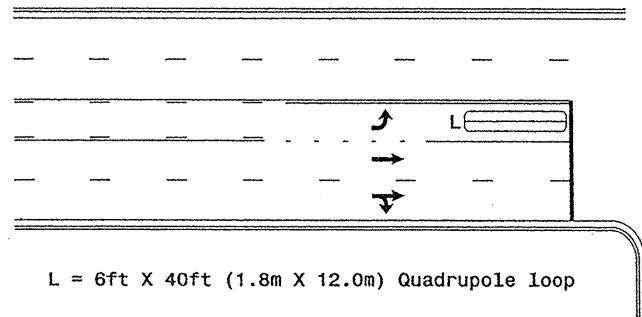
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



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

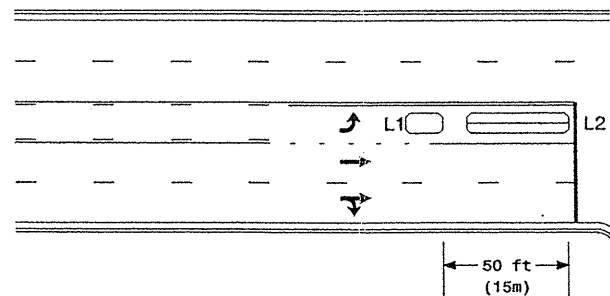
### Left Turn Lane Detection



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

Presence Loop Detection

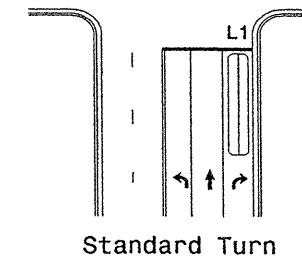
OR



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

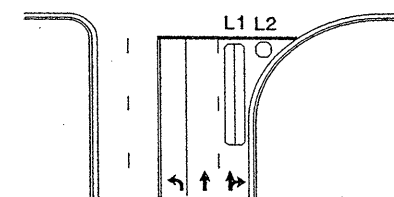
Queue Loop Detection

### Right Turn Lane Detection

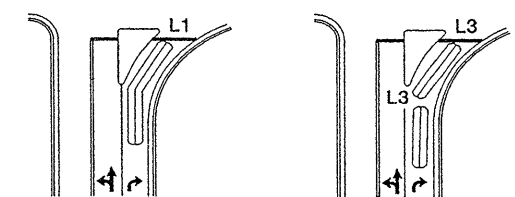


Standard Turn

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

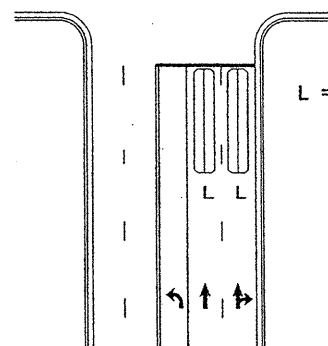


Wide Radius Turn



Channelized Turn

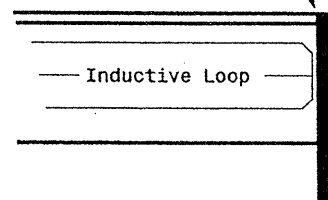
### Side Street Detection



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

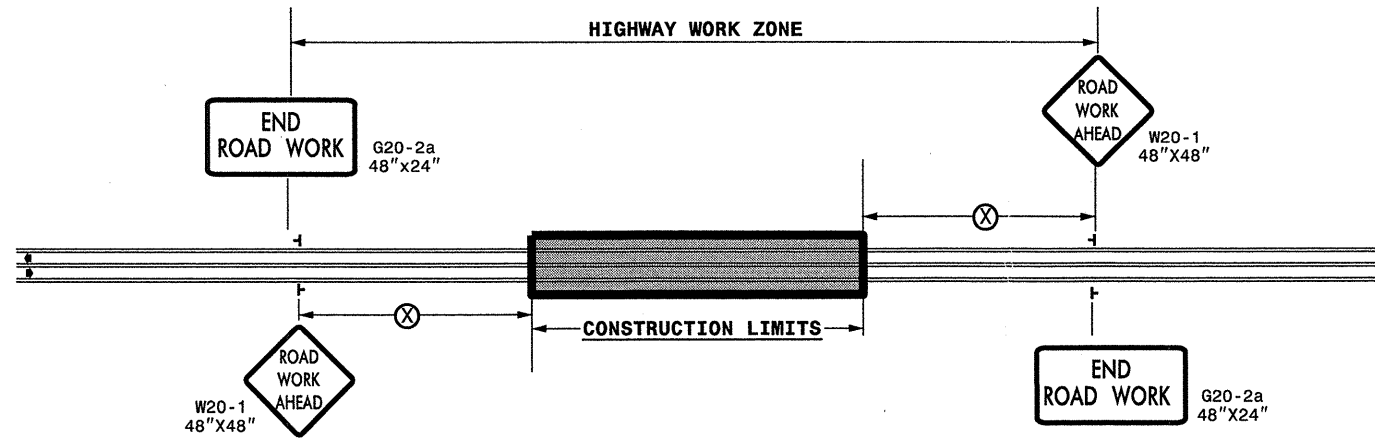
Single 6' X 6' (1.8m X 1.8m)  
loop (wired separately):

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

	<p>Typical Loop Locations</p>		
	<p>PLAN DATE: June 2006</p>	<p>REVIEWED BY:</p>	
<p>SCALE N/A</p>	<p>REVISIONS</p> <p>✓ Revise pavement markings</p>	<p>INIT. DATE</p> <p>ae 12/1/06</p>	<p>SIGNATURE DATE</p> <p>ae 12/1/06</p>

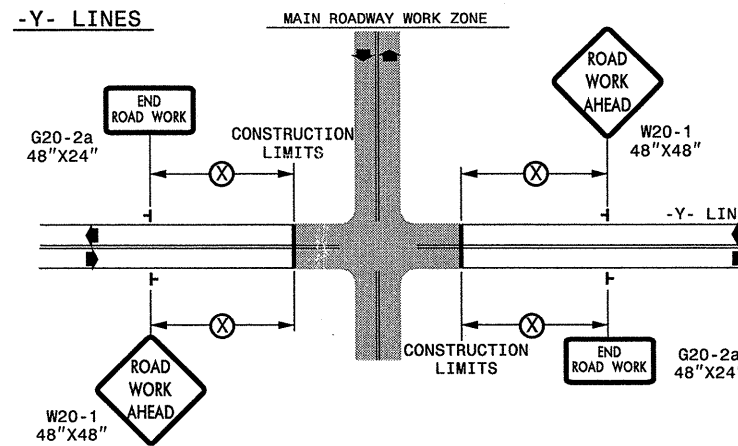
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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**

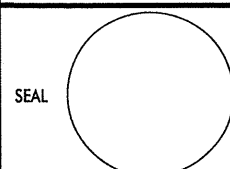

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, 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

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	SCALE: NONE							
SEAL 		DATE: _____ DWG. BY: _____ DESIGN BY: _____ REVIEWED BY: _____	REVISIONS <table border="1"> <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> </table>		7-98	10/01	10-98	03/04	01/01
	7-98	10/01							
	10-98	03/04							
01/01	11/04								
		CADD FILE							

03-MAR-2011 14:20 \\DOT-DRSROOT\GROUPS-W\TCCC\TMU\WZTC\Resurfacing\2011Resurfacing\2011Centr\2011Div05\C202763.5CR.10921.31.Wzke.Capitol.AF\1117-C202763.5CR.10921.31.Wzke.Capitol.2way\_Undiv.&Urban.Fr.wys\_stationary.dgn

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

11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**

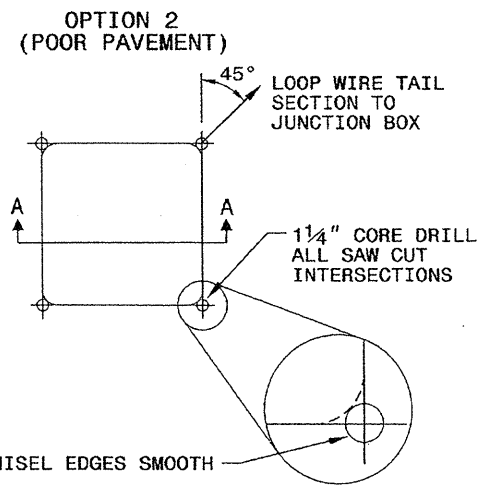
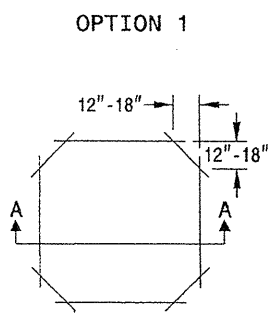
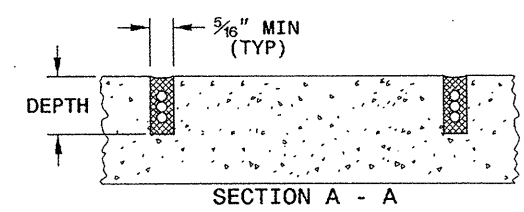
SHEET 1 OF 3  
**1725D01**

**CONVENTIONAL 4-SIDED LOOP**

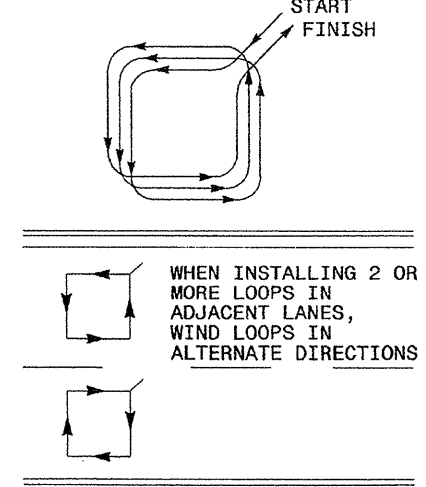
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

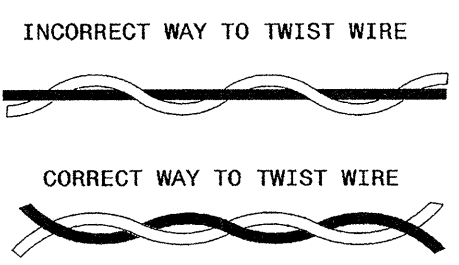
DEPTH (IN)	NO. OF WIRE TURNS					
	2	3	4	5	6	
CONCRETE	2.0	2.0	2.5	2.5	3.0	
ASPHALT	2.0	2.5	3.0	3.0	3.0	



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

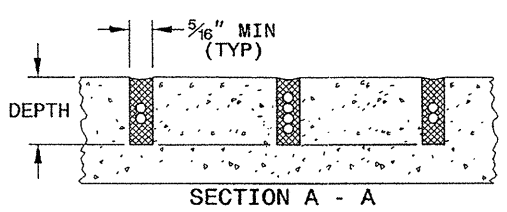
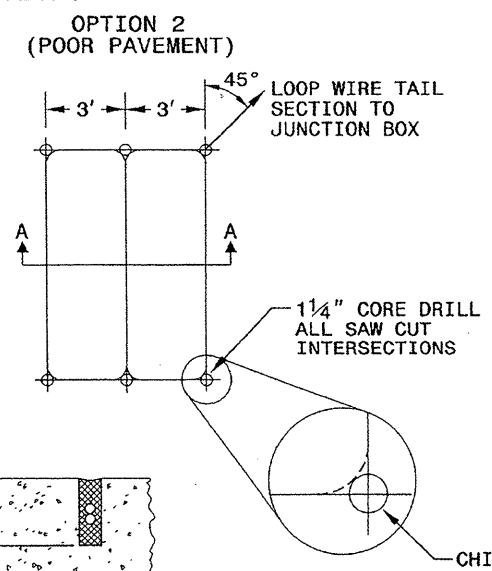
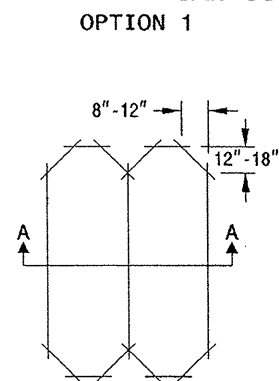


NOTES

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.

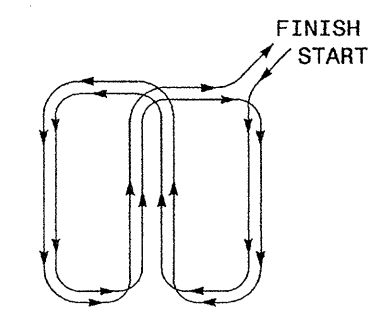
**QUADRUPOLE LOOP**

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



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

11-08

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* 11/24/08  
SIGNATURE DATE

24-nov-2008 09:28 11630-standrd plate sheets\1725D01\_m02307.dgn 201111c

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

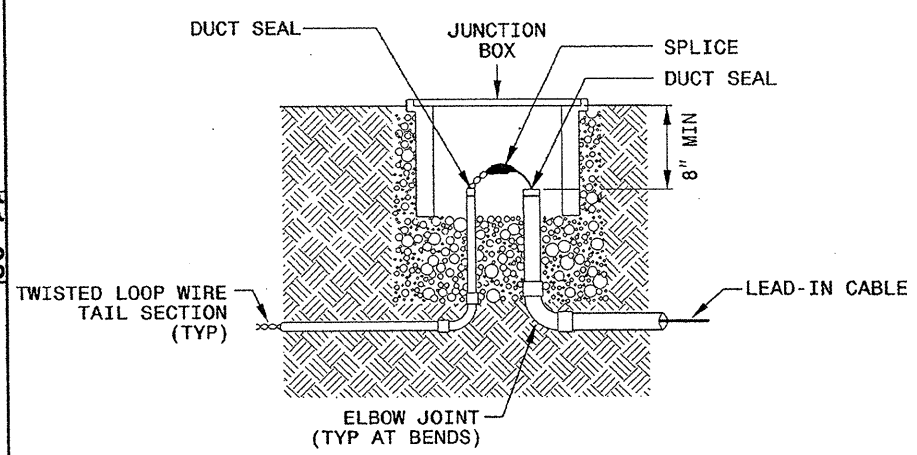
11-08

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
 LOOP WIRE DETAILS

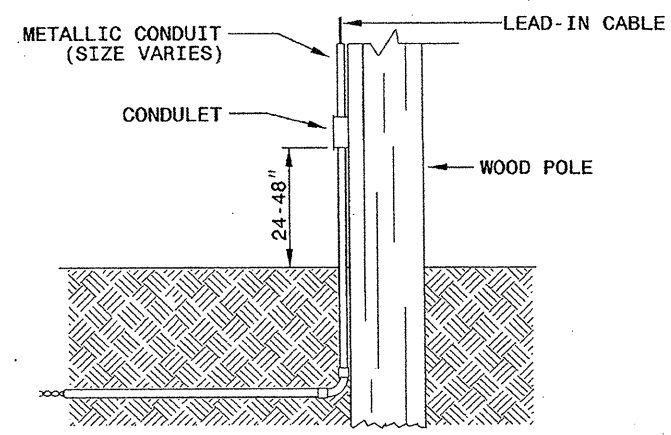
SHEET 2 OF 3  
**1725D01**

**LOOP WIRE SPLICE POINT DETAILS**

**LOOP WIRE AT JUNCTION BOX**



**LOOP WIRE AT POLE**

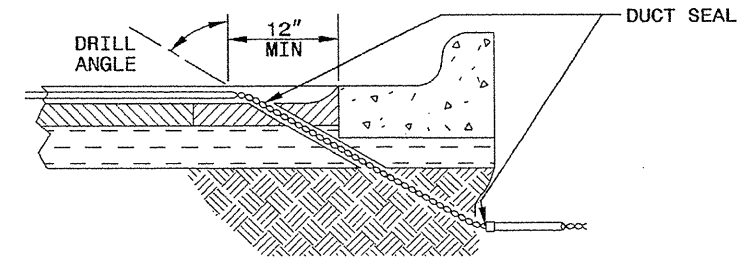


**NOTE**

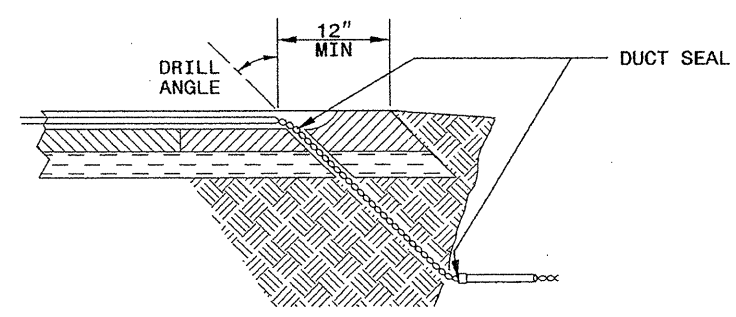
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

**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.

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

11-08

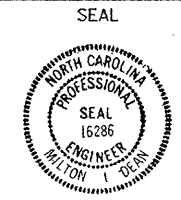
ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
 LOOP WIRE DETAILS

SHEET 2 OF 3  
**1725D01**

See Plate for Title



750 N. Greenfield Parkway  
 Garner, NC 27529



Milton I. Dean 11/24/08  
 SIGNATURE DATE

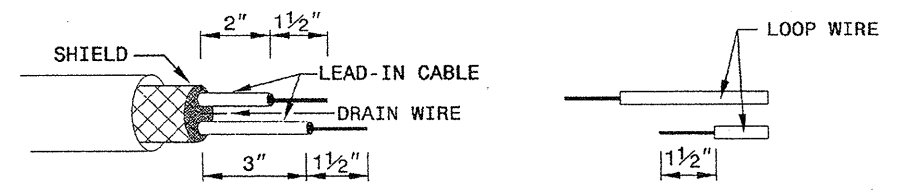
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

11-08

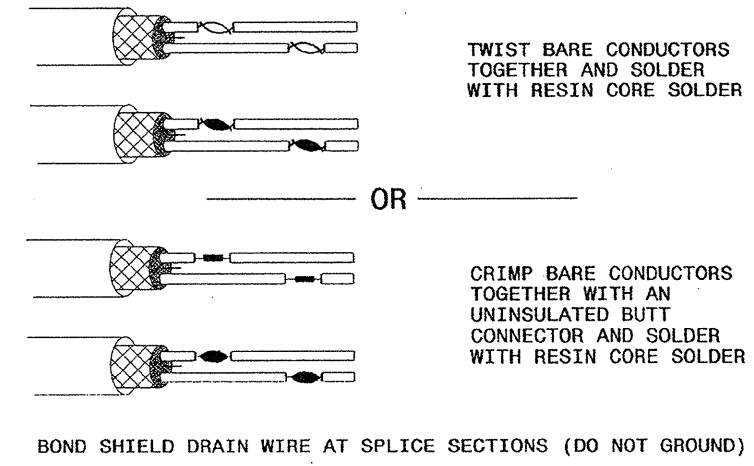
ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
SPLICING FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3  
**1725D01**

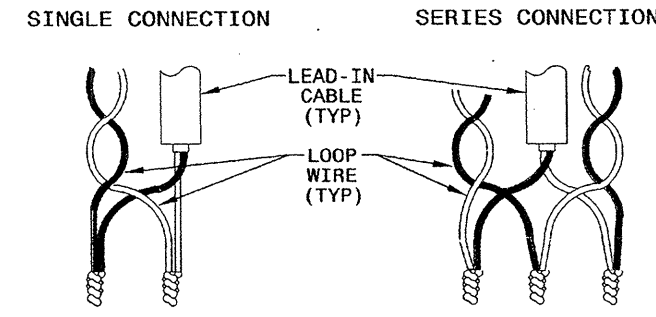
**STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE**



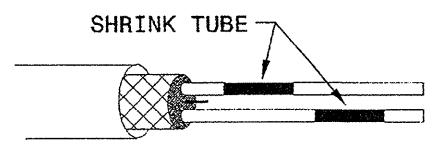
**STEP 2. CONNECT AND SOLDER**



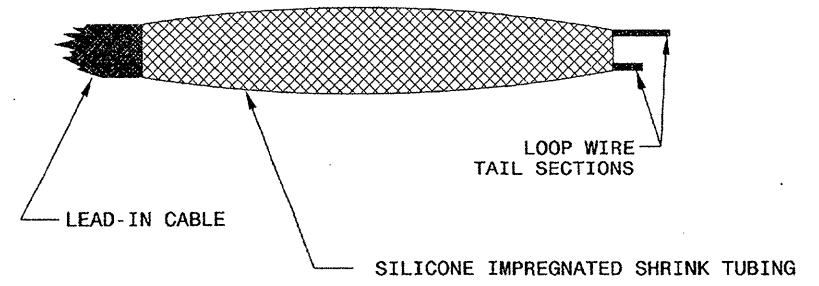
**LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS**



**STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY**



**STEP 4. ENVIRONMENTALLY PROTECT SPLICE**



STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
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**

See Plate for Title

Prepared in the Offices of:  
**Intelligent Transportation Systems & Signals Unit**  
DEPARTMENT OF TRANSPORTATION  
STATE OF NORTH CAROLINA  
750 N. Greenfield Parkway  
Garner, NC 27529

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 16286  
MILTON I. DEAN  
*Milton I. Dean* 11/24/08  
SIGNATURE DATE

24-Nov-2008 09:16  
d:\work\files\1725D01\1725D01-std\std\1725D01-std\1725D01-std.dgn  
zml\11118