PROJECT REFERENCE NO.	SHEET NO.
40247.3.1 (I-4907)	1 of 12

GUILFORD COUNTY

1 2 3 4 5&6

Sedalia

Burlington Rd

Knox Rd

Marley Rd

Mount Hope Church Rd

AT&T Drive

Stewart Mill Rd

Farm Rd

Palmer

Rock Creek Dairy Rd

Franz Warner Pky

Boone Valley Rd

70 40 85 132 135

REVISIONS

8/17/99

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PROJECT NO.	SHEET NO.	TOTAL NO.
40247.3.1 (I-4907)	2	

SUMMARY OF QUANTITIES

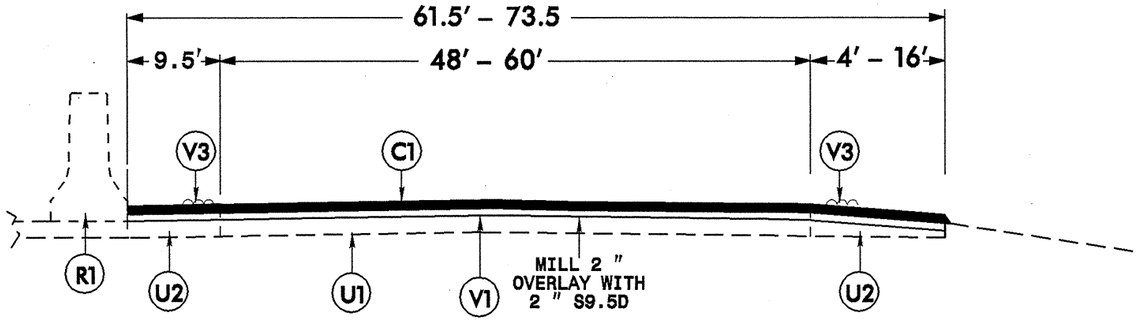
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	1½" MILLING SY	2" MILLING SY	MILLED RUMBLE STRIPS LF	SURFACE COURSE, S9.5D TON	PG 76-22 PLANT MIX TONS	TRENCHING (UNPAVED) (1) (2") LF	JUNCTION BOX (STANDARD) EA	INDUCTIVE LOOP SAW CUT LF	LEAD-IN CABLE (18-2) LF	LEAD-IN CABLE (18-4) LF	PORTABLE LIGHTING LS	Repair Drop Inlets EA	Adjust Grate and/or Frame on DI EA
40247.3.1	Guilford	1	I-40WB/I-85SB	FROM NEW PVMT. JOINT 1785 FT EAST/NORTH OF SR 3056 (ROCK CREEK DAIRY ROAD) TO JOINT EAST/NORTH OF SR 3045 (MT HOPE CHURCH ROAD) RAMP	1	0.338	67.5		13,385	31,016	1,503	83						1	4	3
					1	0.125	67.5-111.5		6,563		736	40								
					1	0.015	67.5-73.5		620		70	4								
					1	0.324	67.5		12,830		1,441	79								
					1	0.043	97.5-73.5		1,766		242	13								
					1	0.169	73.5		6,098		818	45								
					1	0.061	67.5-73.5		2,308		283	16								
					1,2	0.81	67.5-69.5		32,076		3,655	201								
					1,2	0.052	67.5-69.5		2,120		235	13								
					1,2	0.583	67.5-69.5		23,087		2,630	145								
					1	0.42	69.5		17,125		1,923	106								
		2	I-40WB/I-85SB OFF RAMP	OFF RAMP AT SR 3056 (ROCK CREEK DAIRY ROAD)	3	0.156	28	2,563			434	24	50	1	450	50	50			
					3	0.026	28-130	1,205			203	11								
		3	I-40WB/I-85SB ON RAMP	ON RAMP FROM SR 3056 (ROCK CREEK DAIRY ROAD) TO I-40 WB/I-85 SB	3	0.018	63-28	481			81	5								
					3	0.167	28	2,743			465	26								
		4	I-40EB/I-85NB	FROM JOINT EAST/NORTH OF SR 3045 (MT HOPE CHURCH ROAD) RAMP TO JOINT EAST/NORTH OF SR 3056 (ROCK CREEK DAIRY ROAD)	1	0.17	71.5		9,228	28,224	801	44								5
					1	0.005	71.5-67.5		204		23	1								
					1,2	2.003	67.5		79,319		8,906	490								
					1	0.057	67.5-73.5		2,358		265	15								
					1	0.066	73.5		2,846		319	18								
					1	0.043	73.5-113.5		2,359		265	15								
					1	0.146	67.5		5,782		649	36								
					1	0.062	103.5-73.5		3,219		542	30								
					1	0.15	73.5		6,468		726	40								
					1	0.087	73.5-67.5		3,598		404	22								
					1	0.038	67.5		1,505		169	9								
		5	I-40EB/I-85NB OFF RAMP	OFF RAMP FROM I40EB/I85NB TO SR 3056 (ROCK CREEK DAIRY ROAD)	3	0.069	30-24	1,053			179	10	50	1	450	50	50			
					3	0.019	24	245			42	2								
					3	0.016	24-76	460			78	5								
		6	I-40EB/I-85NB ON RAMP	ON RAMP FROM SR 3056 (ROCK CREEK DAIRY ROAD) TO I-40EB/I-85NB	3	0.016	60-23	390			66	4								
					3	0.019	23-24	262			44	3								
					3	0.147	24-28	2,242			380	21								
					3	0.01	28-31	173			29	2								
TOTAL FOR PROJ NO.						**3.603**		**11,817**	**234,864**	**59,240**	**28,606**	**1,578**	**100**	**2**	**900**	**100**	**100**	**1**	**4**	**8**
GRAND TOTAL						**3.603**		**11,817**	**234,864**	**59,240**	**28,606**	**1,578**	**100**	**2**	**900**	**100**	**100**	**1**	**4**	**8**

PROJECT NO.	SHEET NO.	TOTAL NO.
40247.3.1 (I-4907)	3	

TRAFFIC CONTROL, THERMOPLASTIC AND PAINT QUANTITIES

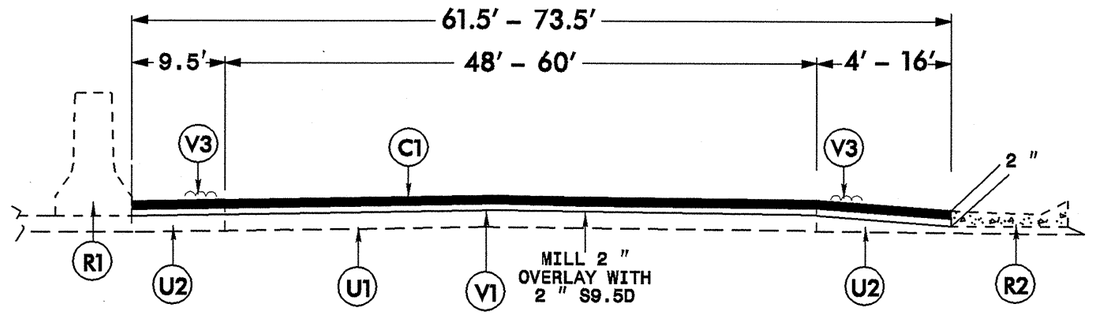
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4400000000-E STATIONARY WORK ZONE SIGN SF	4405000000-E PORTABLE WORK ZONE SIGN SF	4410000000-E BARRICADE MOUNTED WORK ZONE SIGN SF	4445000000-E BARRICADES (TYPE III) LF	4415000000-E FLASHING ARROW PANELS, TYPE C EA	4420000000-N CHANGE-ABLE MESSAGE BOARD EA	4430000000-E DRUMS EA	4480000000-N TRUCK MOUNTED IMPACT ATTENUATOR EA	4688000000-E 6" X 90 M WHITE THERMO LF	4688000000-E 6" X 90 M YELLOW THERMO LF	4690000000-E 6" X 120 M WHITE THERMO LF	4695000000-E 8" X 90 M WHITE THERMO LF	4695000000-E 8" X 90 M RAMP ARROW 90 M LF	4700000000-E 12" X 90 M WHITE THERMO LF	4710000000-E 24" X 120 M WHITE THERMO LF	4725000000-E THERMO RT ARROW 90 M EA	4725000000-E THERMO STR & LT ARROW 90 M EA	4725000000-E THERMO MERGE LEFT ARROW 90 M EA	4815000000-E 6" WHITE PAINT LF	4815000000-E 6" YELLOW PAINT LF	4905000000-N SNOW PLOWABLE MARKERS, CRYSTAL & RED EA
40247.3.1	Guilford	1	I-40 WB/I-85 SB	FROM NEW PVMT. JOINT 1785 FT EAST/NORTH OF SR 3056 (ROCK CREEK DAIRY ROAD) TO JOINT EAST/NORTH OF SR 3045 (MT HOPE CHURCH ROAD) RAMP	1,300	288	20	24	6	3	600	3	15,508	15,508	11,899			1,044					33,110	33,110	588
		2	I-40 WB/I-85 SB OFF RAMP	OFF RAMP AT SR 3056 (ROCK CREEK DAIRY ROAD)									961	961	8	120			28	1	1				8
		3	I-40 WB/I-85 SB ON RAMP	ON RAMP FROM SR 3056 (ROCK CREEK DAIRY ROAD) TO I-40 WB/I-85 SB									977	977								3			
		4	I-40 EB/I-85 WB	FROM JOINT EAST/NORTH OF SR 3045 (MT HOPE CHURCH ROAD) RAMP TO JOINT EAST/NORTH OF SR 3056 (ROCK CREEK DAIRY ROAD)									14,112	14,112	3,876			1,008							591
		5	I-40 EB/I-85 NB OFF RAMP	OFF RAMP TO SR 3056 (ROCK CREEK DAIRY ROAD)									543	543	8	171	40		11	1	1				14
		6	I-40 EB/I-85 NB ON RAMP	ON RAMP FROM SR 3056 (ROCK CREEK DAIRY ROAD) TO I-40 EB/I-85 NB									1,009	1,009											
TOTAL FOR PROJ NO.					**1,300**	**288**	**20**	**24**	**6**	**3**	**600**	**3**	**33,110**	**33,110**	**15,791**	**291**	**40**	**2,052**	**39**	**2**	**2**	**3**	**33,110**	**33,110**	**1,201**
													66,220			**331**					**7**		**66,220**		
GRAND TOTAL					**1,300**	**288**	**20**	**24**	**6**	**3**	**600**	**3**	**33,110**	**33,110**	**15,791**	**291**	**40**	**2,052**	**39**	**2**	**2**	**3**	**33,110**	**33,110**	**1,201**
													66,220			**331**					**7**		**66,220**		

PROJECT EXPENDITURE NO.	SHEET NO.
I-4907 - 40247.3.1	4 of



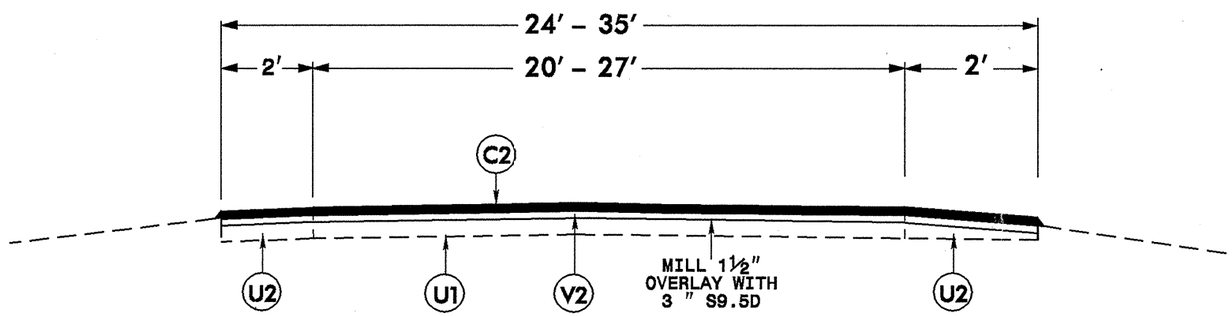
TYPICAL SECTION NO. 1

MAP 1
STA 0+00 to 78+08 WB/SB
STA 85+63 to 96+41 WB/SB
STA 99+41 to 102+13 WB/SB
STA 105+65 to 129+65 WB/SB
STA132+91 to 155+08 WB/SB
MAP 4
STA 0+00 to 30+11 EB/NB
STA 48+11 to 59+39 EB/NB
STA 71+21 to 141+12 EB/NB



TYPICAL SECTION NO. 2

MAP 1
STA 78+08 to 85+63 WB/SB
STA 96+41 to 99+41 WB/SB
STA 102+13 to 105+65 WB/SB
STA 129+65 to 132+91 WB/SB
MAP 4
STA 30+11 to 48+11 EB/NB
STA 59+39 to 71+21 EB/NB



TYPICAL SECTION NO. 3 (RAMPS)

MAPS 2, 3, 5, & 6

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2″ ASPHALT. CONC. SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT. CONC. SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
R1	EXISTING CONCRETE MEDIAN BARRIER WALL
R2	EXISTING SHOULDER BERM GUTTER
U1	EXISTING TRAVELWAY
U2	EXISTING PAVED SHOULDER
	MILLING SCHEDULE
V1	MILLING BITUMINOUS PAVEMENT 2 ″ DEPTH
V2	MILLING BITUMINOUS PAVEMENT 1½ ″ DEPTH
V3	MILLED RUMBLE STRIPS, USE IN CONJUNCTION WITH STANDARD DRAWING NO. 865.01

REVISIONS

SYSTIME$$DATE$$

PROJECT REFERENCE NO.	SHEET NO.
I-4907 (40247.3.1)	5 of 12

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

ENGLISH STANDARD DRAWING FOR

DEEP-CUT INDUCTIVE DETECTION LOOPS

(FOR INSTALLATION PRIOR TO MILLING)

SHEET 1 OF 1

NOTES

-OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.

-PROVIDE 5/8" MINIMUM SLOT FROM EDGE OF LOOP TO EDGE OF PAVEMENT FOR TWISTED LOOP WIRE TAIL SECTIONS.

-MAINTAIN 12" SPACING BETWEEN TWISTED LOOP WIRE TAIL SECTIONS.

-WIRE LOOPS CONNECTED TO THE SAME DETECTOR IN SERIES.

-LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS.

-USE A SERIES OF ONE INCH PIECES OF BACKER ROD SPACED ONE FOOT APART ALONG THE ENTIRE LENGTH OF THE FEEDER SLOT AND LOOP SAW SLOT.

-CONSULT LOOP SEALANT MANUFACTURER TO DETERMINE CURING TIME REQUIRED PRIOR TO MILLING.

SAW SLOT DEPTH CHART

ASSUMING 2" MILLING DEPTH

DEPTH (IN)	NO. OF WIRE LAYERS				
	2	3	4	5	6
SAW SLOT DEPTH	4.0	4.5	5.0	5.0	5.0
MINIMUM TOTAL ASPHALT DEPTH REQUIRED	5.0	5.5	6.0	6.0	6.0

LOOP WIRE TWISTING METHOD

INCORRECT WAY TO TWIST WIRE

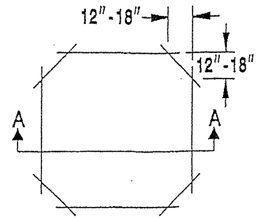
CORRECT WAY TO TWIST WIRE

CONVENTIONAL 4-SIDED LOOP

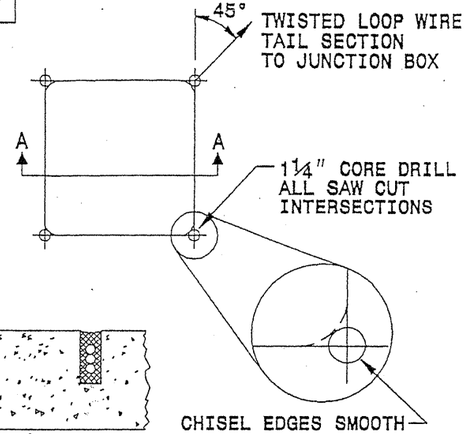
SAW CUT OPTIONS

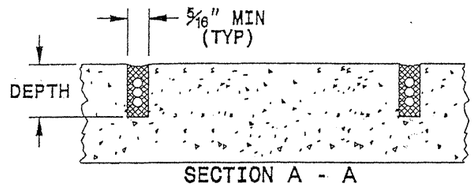
OPTION 1

INSTALL 1" SECTIONS OF BACKER ROD ON 1 FOOT CENTERS



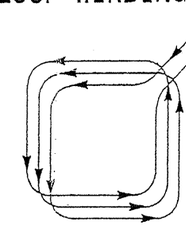
OPTION 2 (POOR PAVEMENT)

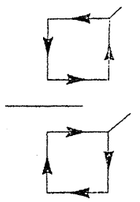




SECTION A - A

LOOP WINDING METHOD



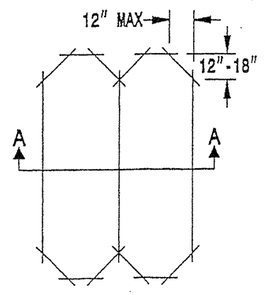


WHEN INSTALLING 2 OR MORE LOOPS IN ADJACENT LANES, WIND LOOPS IN ALTERNATE DIRECTIONS

QUADRUPOLE LOOP

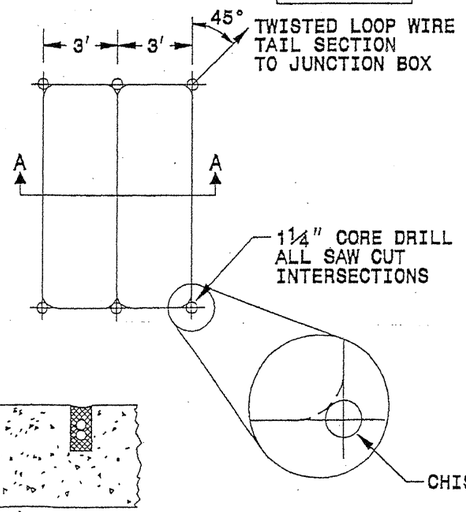
SAW CUT OPTIONS

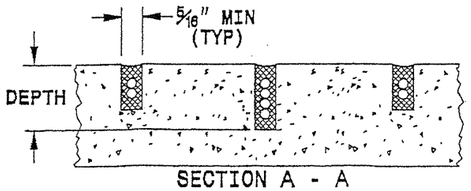
OPTION 1



OPTION 2 (POOR PAVEMENT)

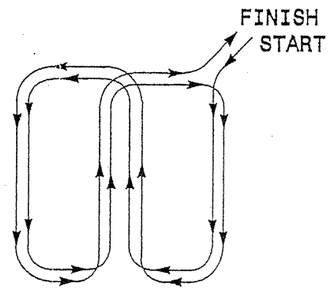
INSTALL 1" SECTIONS OF BACKER ROD ON 1 FOOT CENTERS





SECTION A - A

LOOP WINDING METHOD



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

ENGLISH STANDARD DRAWING FOR

DEEP-CUT INDUCTIVE DETECTION LOOPS

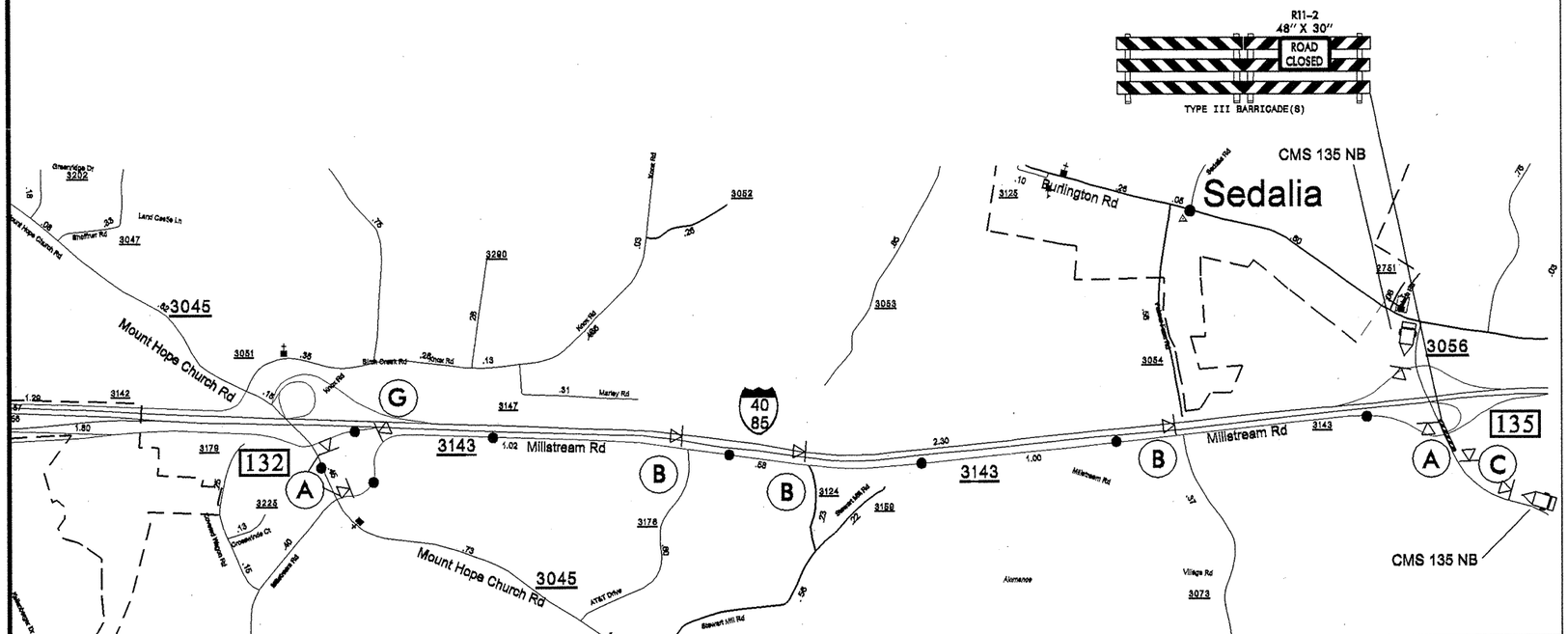
(FOR INSTALLATION PRIOR TO MILLING)

SHEET 1 OF 1

5/14/99

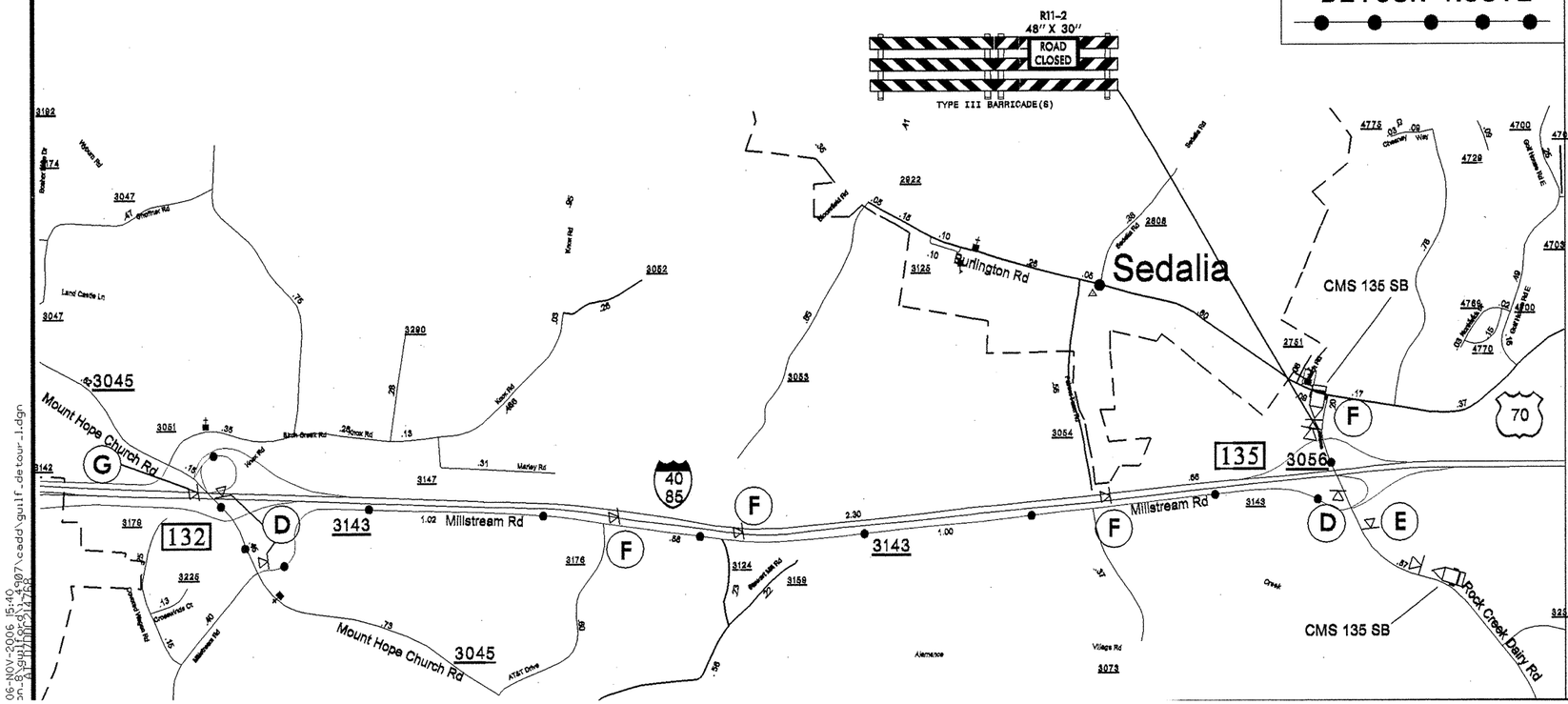
EXIT 135 [I-85 NB ON RAMP AT ROCK CREEK DAIRY ROAD]

NB ON RAMP DETOUR ROUTE



EXIT 135 [I-85 SB ON RAMP AT ROCK CREEK DAIRY ROAD]

SB ON RAMP DETOUR ROUTE



PROJECT REFERENCE NO.	SHEET NO.
I-4907 (40247.3.1)	DET-1

Note:
1. Close I 85/40 Off/On Ramps at same time on the same side of I 85/40 (Use in conjunction with On Ramp Detour Sheet)
2. Using Roadway Standard Drawings and the Intermediate Time Restrictions
   a) Place the appropriate signs and traffic control devices
   b) Close the I 85/40 Off/On Ramps as agreed upon with the Engineer, and begin work.
3. Complete all work and remove all signs and traffic control devices.

A
DETOUR M4-8 24" X 12"
NORTH M3-1 24" X 12" | EAST M3-2 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M5-1 R 21" X 15"

B
DETOUR M4-8 24" X 12"
NORTH M3-1 24" X 12" | EAST M3-2 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M6-3 21" X 15"

C
DETOUR M4-8 24" X 12"
NORTH M3-1 24" X 12" | EAST M3-2 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M5-1 21" X 15"

D
DETOUR M4-8 24" X 12"
SOUTH M3-3 24" X 12" | WEST M3-4 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M5-1 R 21" X 15"

E
DETOUR M4-8 24" X 12"
SOUTH M3-3 24" X 12" | WEST M3-4 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M5-1 21" X 15"

F
DETOUR M4-8 24" X 12"
SOUTH M3-3 24" X 12" | WEST M3-4 24" X 12"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1
M6-3 21" X 15"

G
END DETOUR M4-8 A 24" X 18"
INTERSTATE 85 M1-1 | INTERSTATE 40 M1-1

Note:
Portable Changeable Message Signs (PCMS) shall be used in combination with portable detour route signs.

Portable Changeable Message Signs
Messages For Closure of Entrance Ramps Exit 135 I-85/40
North and Southbound

	MESSAGE 1	MESSAGE 2	
CMS 135 NB & SB ROAD CLOSURE	I-85 / 40 RAMPS CLOSED	FOLLOW DETOUR	

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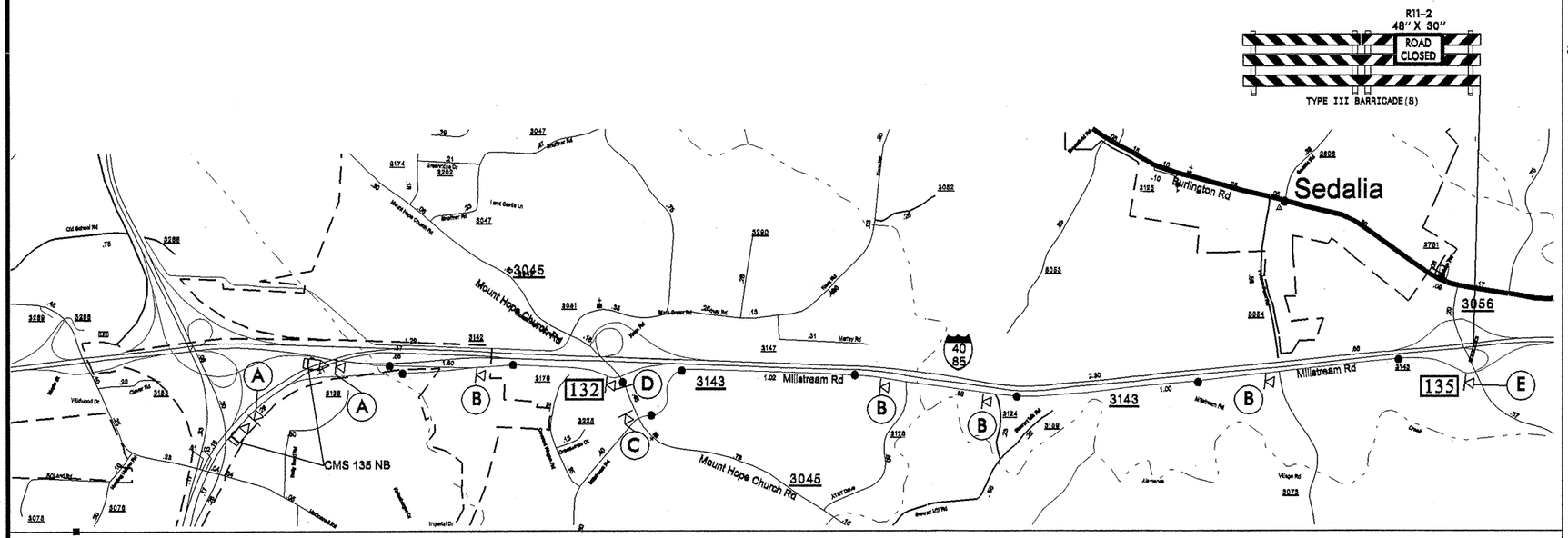
PROJECT REFERENCE NO.	SHEET NO.
I-4907 (40247.31)	DET-2

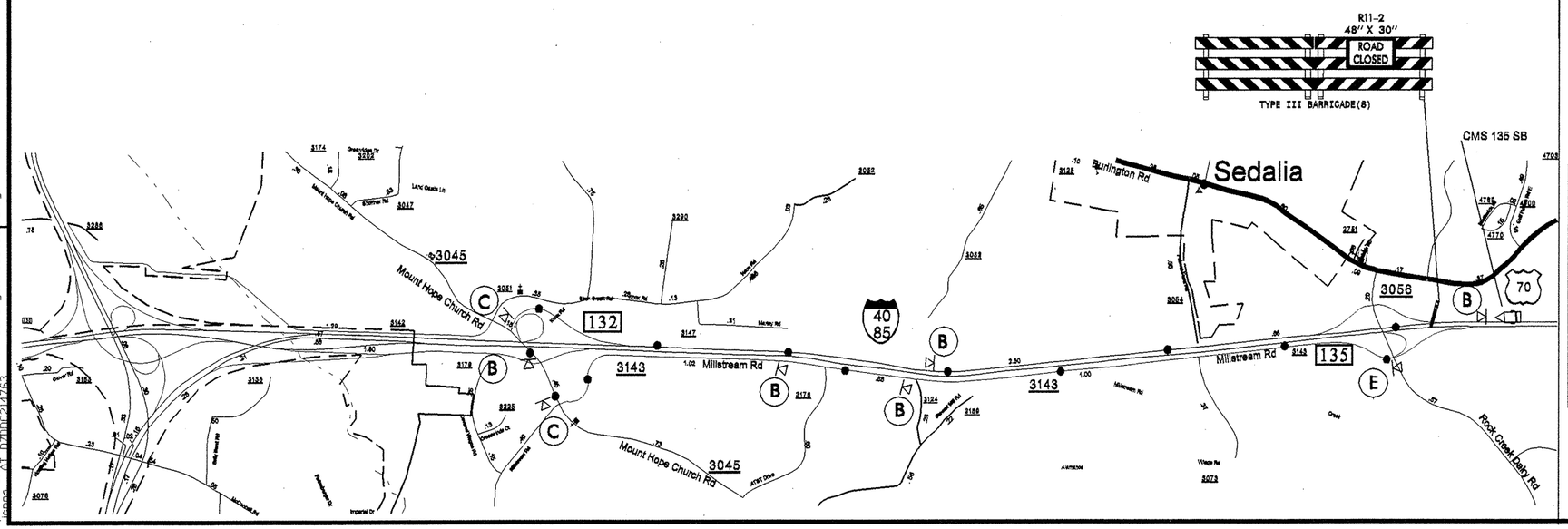
EXIT 135 [I-85 NB OFF RAMP FOR ROCK CREEK DAIRY ROAD]

NB OFF RAMP DETOUR ROUTE



EXIT 135 [I-85 SB OFF RAMP FOR ROCK CREEK DAIRY ROAD]

SB OFF RAMP DETOUR ROUTE



Note:
1. Close I 85/40 Off/On Ramps at same time on the same side of I 85/40 (Use in conjunction with On Ramp Detour Sheet)
2. Using Roadway Standard Drawings and the Intermediate Time Restrictions
   a) Place the appropriate signs and traffic control devices
   b) Close the I 85/40 Off/On Ramps as agreed upon with the Engineer, and begin work.
3. Complete all work and remove all signs and traffic control devices.

A DETOUR M4-8 24" X 12" ROCK CREEK DAIRY RD M6-2 21" X 15"	B DETOUR M4-8 24" X 12" ROCK CREEK DAIRY RD M6-3 21" X 15"
C DETOUR M4-8 24" X 12" ROCK CREEK DAIRY RD M5-1 21" X 15"	D DETOUR M4-8 24" X 12" ROCK CREEK DAIRY RD M5-1 R 21" X 15"
E END DETOUR M4-8 A 24" X 18" ROCK CREEK DAIRY RD	

Note:
Portable Changeable Message Signs (PCMS) shall be used in combination with portable detour route signs.

Portable Changeable Message Signs
Messages For Closure of Exit 135 Off/On ramps on I-85 Northbound

	MESSAGE 1	MESSAGE 2	
CMS 135 NB ROAD CLOSURE	EXIT 135 RAMPS CLOSED	DETOUR EXIT 132	2 CMS 135 NB Signs are Required
CMS 135 SB ROAD CLOSURE	EXIT 135 RAMPS CLOSED	DETOUR EXIT 132	

REVISIONS

8/17/99

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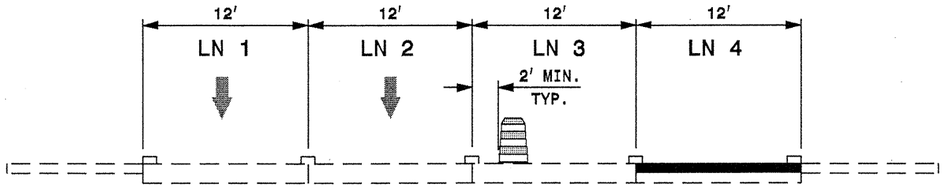
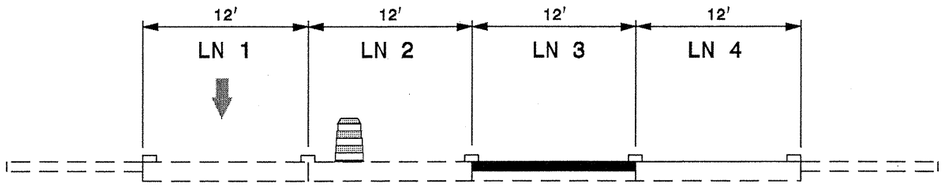
jenns at hill21762

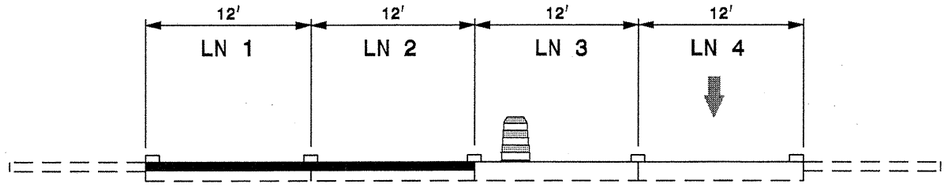
PROJ. REFERENCE NO.	SHEET NO.
I-4907	TCP-1
40247.3.1	



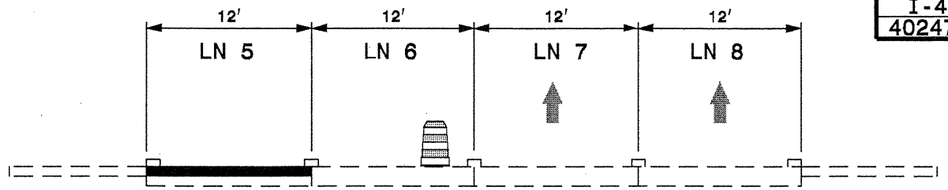
TYPICAL 1 WB



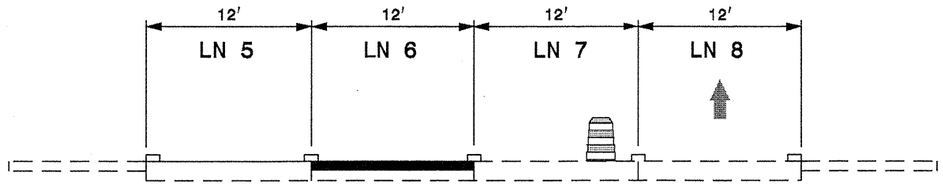
TYPICAL 2 WB



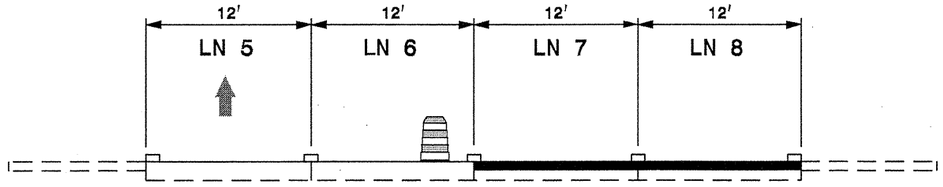
TYPICAL 3 WB



TYPICAL 4 EB



TYPICAL 5 EB



TYPICAL 6 EB

PHASING

INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS ON I-85/40 AND RAMPS PRIOR TO ANY CONSTRUCTION ACTIVITY ON I-85/40 USING SHEETS TCP-2. SIGNS ARE TO BE INSTALLED NO MORE THAN 3 DAYS PRIOR TO THE BEGINNING OF WORK ON MENTIONED ROAD AND RAMPS. WHEN NO WORK IS BEING CONDUCTED ON I-85/40 AND RAMPS FOR A PERIOD LONGER THAN 2 WEEKS, REMOVE OR COVER ALL WORK ZONE WARNING SIGNS AS DIRECTED BY THE ENGINEER AT NO COST TO THE DEPARTMENT. CONTRACTOR MAY USE PORTABLE SIGNS IN LIEU OF STATIONARY SIGNS.

INSTALL '$250 PENALTY' SIGNS FOR PROJECT I-4907 AS SHOWN ON SHEETS TCP-2. REMOVE OR COVER '$250 PENALTY' SIGNS WHEN NO WORK IS BEING CONDUCTED.

THE CONTRACTOR HAS THE OPTION TO CONSTRUCT PROJECT I-4907 IN ANY DESIRED SEQUENCE OR AS DESCRIBED IN PHASE 1 BELOW.

PHASE 1

STEP 1)
-USE ROADWAY STANDARD 1101.02 SHEET 5 OF 9 TO CLOSE LN 4 WB I-85/40. MILL AND RESURFACE LN 4 UP TO EXISTING ELEVATION, PLACE PAINT MARKINGS (TEMPORARY), TIE-IN WITH EXISTING MARKINGS AND OPEN TRAVEL LANES TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORKDAY. SEE TYPICAL 1 WB.

STEP 2)
-USE ROADWAY STANDARD 1101.02 SHEET 5 OF 9 TO CLOSE LANES LN 4, LN 3 AND LN 2 OF WB I-85/40. MILL AND RESURFACE LN 3 UP TO EXISTING ELEVATION, PLACE PAINT MARKINGS (TEMPORARY), TIE-IN WITH EXISTING MARKINGS AND OPEN TRAVEL LANES TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORKDAY. SEE TYPICAL 2 WB.

STEP 3)
-USE ROADWAY STANDARD 1101.02 SHEET 5 OF 9 TO CLOSE LANES LN 3, LN 2 AND LN 1 OF WB I-85/40. MILL AND RESURFACE LANES LN 1 AND LN 2 UP TO EXISTING ELEVATION, PLACE PAINT MARKINGS (TEMPORARY), TIE-IN WITH EXISTING MARKINGS AND OPEN TRAVEL LANES TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORKDAY. SEE TYPICAL 3 WB.

USE ROADWAY STANDARD 1101.02 SHEET 6 OF 9 AND 1101.02 SHEET 7 OF 9 FOR ALL EXIT AND ENTRANCE RAMPS. USE THESE STANDARDS DURING ALL RAMP CONSTRUCTION IN CONJUNCTION WITH ROADWAY STANDARD 1101.02 SHEET 5 OF 9.

NOTE:
EASTBOUND I-85/40 MAY BE CONSTRUCTED IN THE SAME SEQUENCE, FROM INSIDE TO OUTSIDE, AS DESCRIBED IN STEPS 1 THRU 3 AND AS SHOWN IN TYPICAL 4 EB, TYPICAL 5 EB AND TYPICAL 6 EB.

EASTBOUND AND WESTBOUND I-85/40 MAY ALSO BE CONSTRUCTED FROM THE OUTSIDE LANES INWARD OR AS DIRECTED BY THE ENGINEER.

STEP 4)
-PLACE FINAL LAYER OF SURFACE COURSE (INCLUDING SHOULDERS), SNOWPLOWABLE MARKERS AND THERMOPLASTIC PAVEMENT MARKINGS USING ROADWAY STANDARD DRAWINGS 1101.02 SHEET 5 OF 9, 6 OF 9 AND 7 OF 9.

STEP 5)
-REMOVE ALL TRAFFIC CONTROL DEVICES.

APPROVED:_____ DATE:_____

SEAL

PHASING & DETAILS

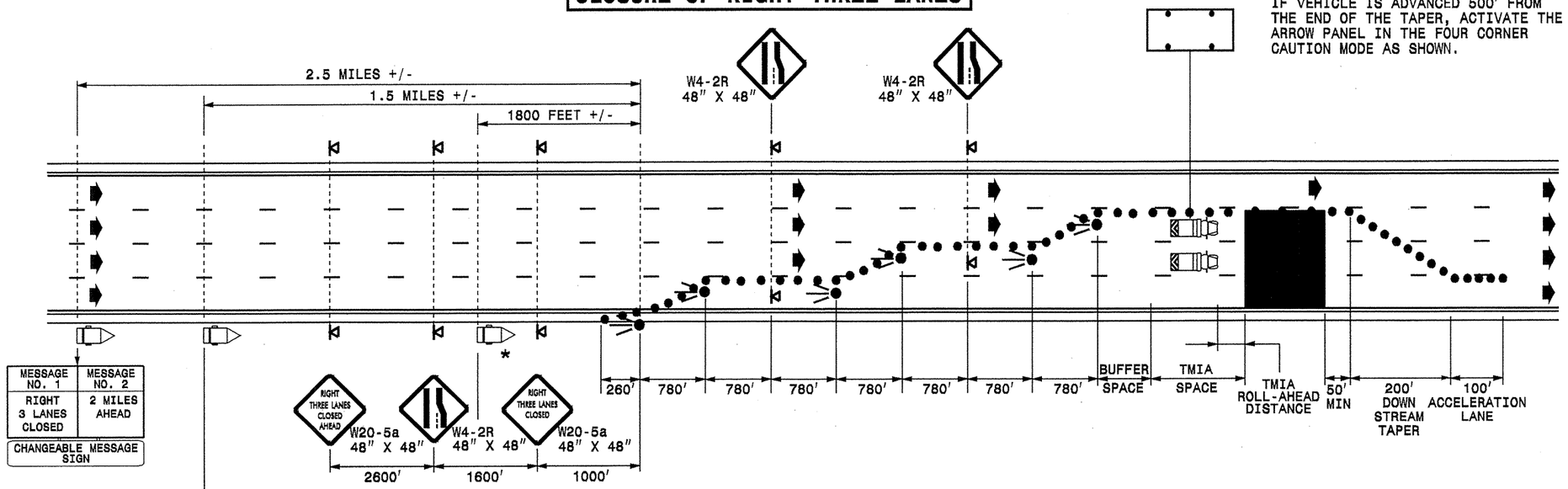
SCALE:	NONE
DATE:	1/2005
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

REVISIONS

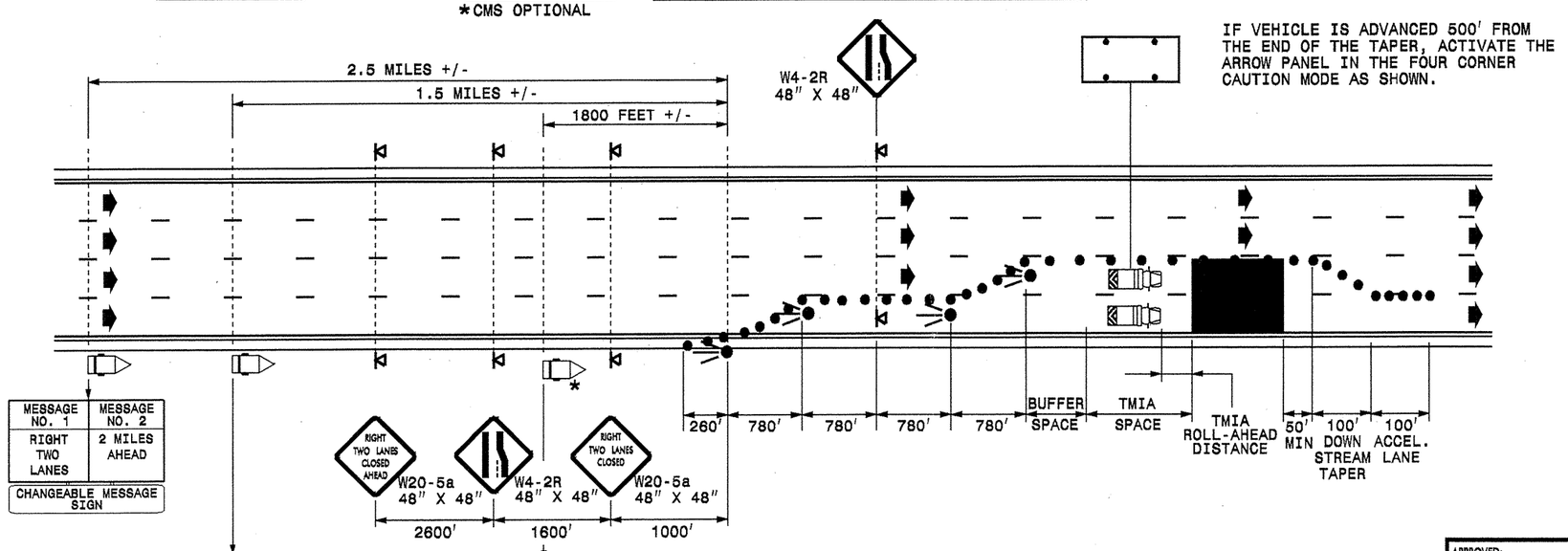
CADD FILE

PROJ. REFERENCE NO.	SHEET NO.
I-4907	TCP-2
40247.3.1	

CLOSURE OF RIGHT THREE LANES



CLOSURE OF RIGHT TWO LANES



GENERAL NOTES

1-Refer to Notes on Rdwy Std 1101.02 Sheet 3 of 9.

2-Coordinate use of overhead DMSs with the Division.

3-Use following configuration for FAP (Flashing Arrow Panel)

4-Symbols shown are for Right Lane Closure, use appropriate signs, messages and arrows for Left Lane Closure. Portable CMSs to remain positioned as shown.

LEGEND

- FLASHING ARROW PANEL (TYPE C)
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- DRUM
- PORTABLE SIGN
- CHANGEABLE MESSAGE SIGN (CMS)
- DIRECTION OF TRAFFIC FLOW

APPROVED:_____ DATE:_____

SEAL

INTERSTATE DUAL/TRIPLE LANE CLOSURE

SCALE:	NONE
DATE:	03-09-06
DWG. BY:	PS
DESIGN BY:	JPG
REVIEWED BY:	SK

REVISIONS

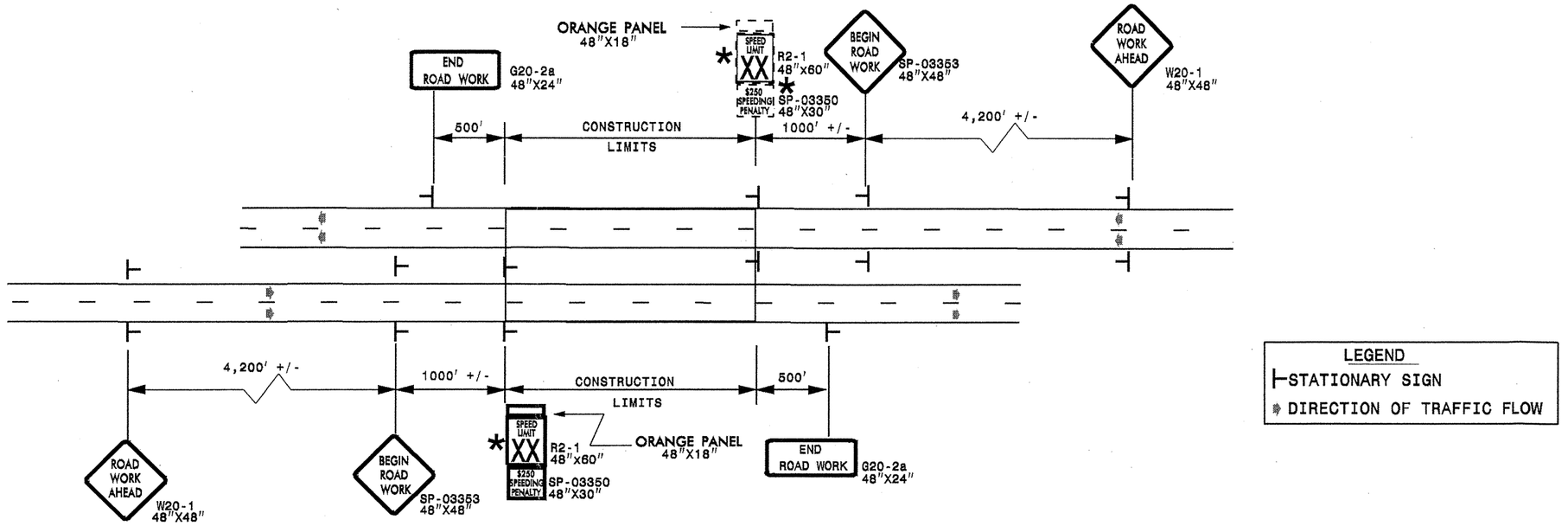
CADD FILE

19-OCT-2006 11:31
J:\Version 8\Guilford\I-4907\CADD\dual_closure.dgn
Smith, Al 67000214768

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

PROJ. REFERENCE NO.	SHEET NO.
I-4907	TCP-3
40247.3.1	

DETAIL A

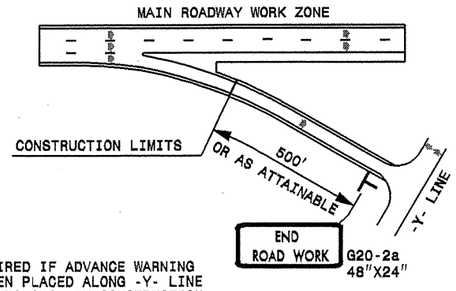


LEGEND
- ⊢ STATIONARY SIGN
- ➧ DIRECTION OF TRAFFIC FLOW

* 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

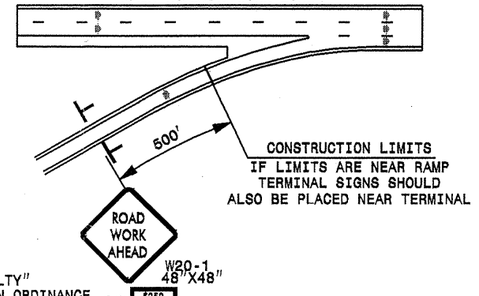
EXIT RAMPS



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

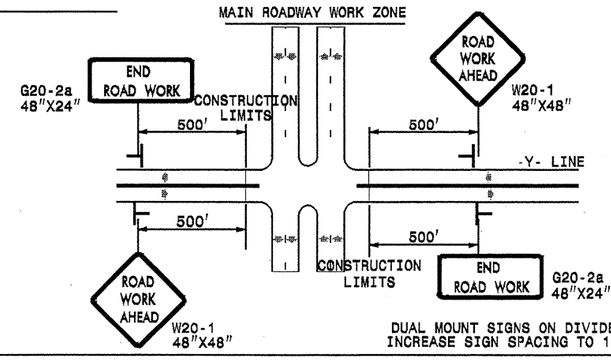
ENTRANCE RAMPS



** USE THE "$250 SPEEDING PENALTY" SUPPLEMENTAL SIGN ONLY IF AN ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER. ** $250 SPEEDING PENALTY SP-03350 48"X30"

DETAIL D

-Y- LINES



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:_____

SEAL

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

SCALE:	NONE
DATE:	8/03
DWG. BY:	JT
DESIGN BY:	JT
REVIEWED BY:	

REVISIONS	
03/04	

CADD FILE

19-OCT-2006 11:31
D:\Version 8\guilford\I-4907\cadd\freeways_4lanes_or_greater.dgn
c1th AT D10DC24768

PROJ. REFERENCE NO.	SHEET NO.
I-4907	TCP-4
40247.3.1	

SP 03353

SIGN NUMBER: SP-03353
TYPE: A
QUANTITY: 1
SIGN WIDTH: 4'-0"
HEIGHT: 4'-0"
TOTAL AREA: 16.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0.50"
WIDTH: 0.75"
RADII: 1.38"
NO. Z BARS: N/A
LENGTH: N/A

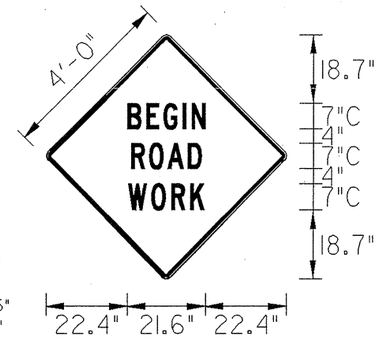
BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L:

DESIGN BY: CL DOWNEY
PROJECT ID: ALL PROJECTS
CHECKED BY: CHECKED
DIV: DIV
STD #: W20-1
DATE: Aug 20,2003

USE NOTES: 2, 4
1. Legend and border shall be direct applied Type VII reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Shields shall be Type VII reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
4. Background shall be Type VII reflective sheeting.
5. Background shall be Type I reflective sheeting.
6. Center arrow(s) vertically on sign.
7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:



LETTER POSITIONS

Letter spacings are to start of next letter — Series/Size Text Length

															Series/Size Text Length
		B	E	G	I	N									C7
	22.4	5.3	4.6	5.4	2.5	3.8	22.4								21.6
		R	O	A	D										C7
	23.4	5	5.2	5.6	3.8	23.4									19.6
		W	O	R	K										C7
	22.6	6.4	5.6	5.2	4	22.6									21.2

Spacing Factor is 1 unless specified otherwise

FILENAME: SPW03N4K

NORTH CAROLINA D.O.T. SIGN DETAIL

SP 03350

SIGN NUMBER: SP-03350
TYPE: D
QUANTITY: 1
SIGN WIDTH: 4'-0"
HEIGHT: 2'-6"
TOTAL AREA: 10.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0.4"
WIDTH: 0.5"
RADII: 1.5"
NO. Z BARS: N/A
LENGTH: N/A

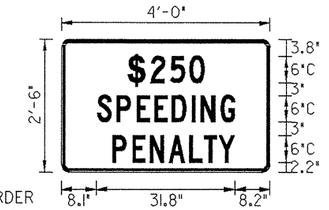
BACKG COLOR: White
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L:

DESIGN BY: CL DOWNEY
PROJECT ID:
CHECKED BY:
DIV: DIV
STD #: REGULATORY
DATE: Aug 18,2003

USE NOTES: 2,4
1. Legend and border shall be direct applied Type III reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
4. Background shall be Type III reflective sheeting.
5. Background shall be Type I reflective sheeting.
6. Center arrow(s) vertically on sign.
7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:



LETTER POSITIONS

Letter spacings are to start of next letter — Series/Size Text Length

															Series/Size Text Length
		$	2	5	0										C6
	15.1	5.3	4.6	4.2	3.5	15.4									17.6
		S	P	E	E	D	I	N	G						C6
	8.1	4.8	4.5	4	4	4.6	2.1	4.4	3.4	8.2					31.8
		P	E	N	A	L	T	Y							C6
	11.9	4.6	4	4.3	4.7	3.4	3.3	3.7	8.2						28

Spacing Factor is 1 unless specified otherwise

FILENAME: S250

NORTH CAROLINA D.O.T. SIGN DETAIL

GENERAL NOTES FOR THE "BEGIN ROAD WORK" SIGN

-SIGN SP-03353 "BEGIN ROAD WORK" ONLY APPLIES TO FULL CONTROL AND PARTIAL CONTROL OF ACCESS ROADWAYS
-WHEN USED, INSTALL SIGN SP-03353 "BEGIN ROAD WORK" ACCORDING TO DETAIL A ON SHEET TCP-3.

GENERAL NOTES FOR THE "$250 SPEEDING PENALTY" SIGN

-SIGN SP-03350 "$250 SPEEDING PENALTY" IS USED ONLY WHEN ORDINANCED BY THE TRAFFIC ENGINEERING AND SAFETY SYSTEMS BRANCH.
-SIGN SP-03350 "$250 SPEEDING PENALTY" ONLY APPLIES TO FULL CONTROL AND PARTIAL CONTROL OF ACCESS ROADWAYS
-WHEN USED, MOUNT SIGN SP-03350 "$250 SPEEDING PENALTY" BELOW SIGN R2-1 "SPEED LIMIT XX" (SEE DETAIL A ON SHEET TCP-3) AND SIGN W21-4 "ROAD WORK AHEAD" (SEE DETAIL C ON SHEET TCP-3).

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

DETAIL DRAWING FOR
WORK ZONE SIGNS
$250 PENALTY SIGN

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

DETAIL DRAWING FOR
ADVANCED WORK ZONE WARNING
SIGN DESIGNS

SCALE:	NONE
DATE:	08/03
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

REVISIONS	
0404	
CADD M.S.	

19-OCT-2006 11:31
User: Glen Gullford\I_4907\cadd\sign_designs.dgn
Cfn: AT 0700224768

PROJ. REFERENCE NO.	SHEET NO.
I-4907 40247.3.1	TCP-5

SIGN NUMBER: 2
TYPE: B
QUANTITY: 13

SIGN WIDTH: 5'-0"
HEIGHT: 2'-6"
TOTAL AREA: 13.00 Sq.Ft.

BORDER TYPE: RECESSED
RECESS: 0.50"
WIDTH: 0.75"
RADII: 1.88"

NO. Z BARS: 2
LENGTH: 70"

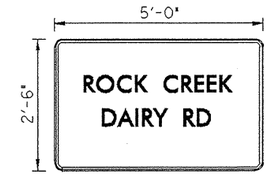
BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L:

USE NOTES: 2,4
1. Legend and border shall be direct applied Type III reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
4. Background shall be Type III reflective sheeting.
5. Background shall be Type I reflective sheeting.
6. Center arrow(s) vertically on sign.
7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

DESIGN BY:
PROJECT ID:
CHECKED BY:
DIV: DIV
DATE: Oct. 18,2006



BORDER
R=1.5"
TH=0.5"
IN=0.4"

LETTER POSITIONS

Letter spacings are to start of next letter

		R	O	C	K		C	R	E	E	K						
	6.95	4.88	5.06	4.88	4.12	4.10	4.88	5.08	4.50	4.50	4.12						
		D	A	I	R	Y		R	D								
	12.06	4.88	5.87	1.99	4.88	5.06	4.10	5.08	4.03								

Spacing Factor is 1 unless specified otherwise

FILENAME: S5C

NORTH CAROLINA D.O.T. SIGN DETAIL

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

DETAIL DRAWING FOR
WORK ZONE SIGNS
ROCK CREEK DAIRY RD
DETOUR

SHEET 1 OF 1

APPROVED:_____ DATE:_____

SEAL

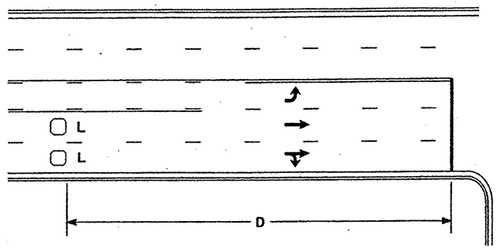
DETAIL DRAWING FOR
ADVANCED WORK ZONE WARNING
SIGN DESIGNS

SCALE:	NONE
DATE:	08/03
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

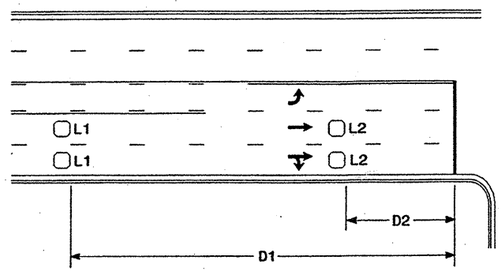
REVISIONS	
0404	
CADD MGR	

PROJECT REFERENCE NO.	SHEET NO.
	SIG 1

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



OR



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

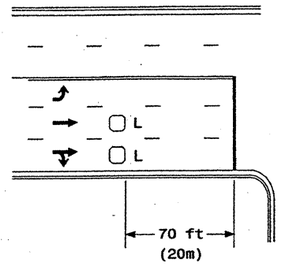
Speed Limit mph (km/hr)		D1 ft	(m)	D2 ft	(m)
40	(64)	250	(75)	80	(25)
45	(72)	300	(90)	90	(27)
50	(80)	355	(110)	100	(30)
55	(88)	420	(130)	110	(35)

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

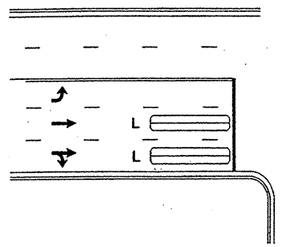
L2 = 6ft X 6ft (1.8m X 1.8m) Wired in series

"Stretch" Operation

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



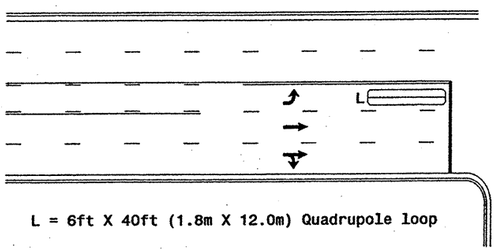
OR



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

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

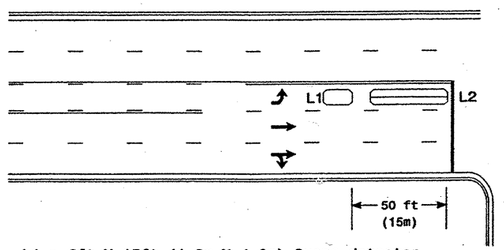
Left Turn Lane Detection



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

Presence Loop Detection

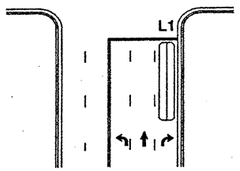
OR



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

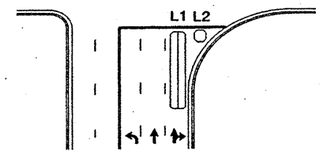
Queue Loop Detection

Right Turn Lane Detection

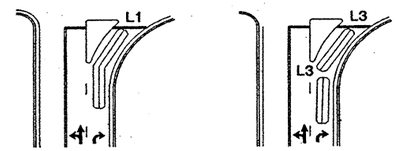


Standard Turn

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

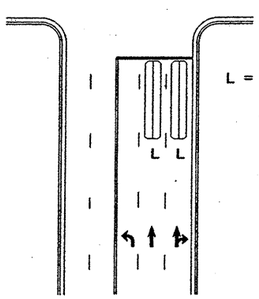


Wide Radius Turn



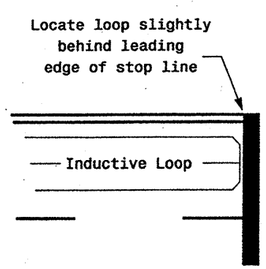
Channelized Turn

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



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 Offices of:
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Typical Loop Locations

PLAN DATE:	June 2006	REVIEWED BY:	
PREPARED BY:	P L Alexander	REVIEWED BY:	

REVISIONS	INIT.	DATE

SCALE: N/A

SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
23489
ENGINEER
PAUL L. ALEXANDER

SIGNATURE
DATE
SIG. INVENTORY NO.

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