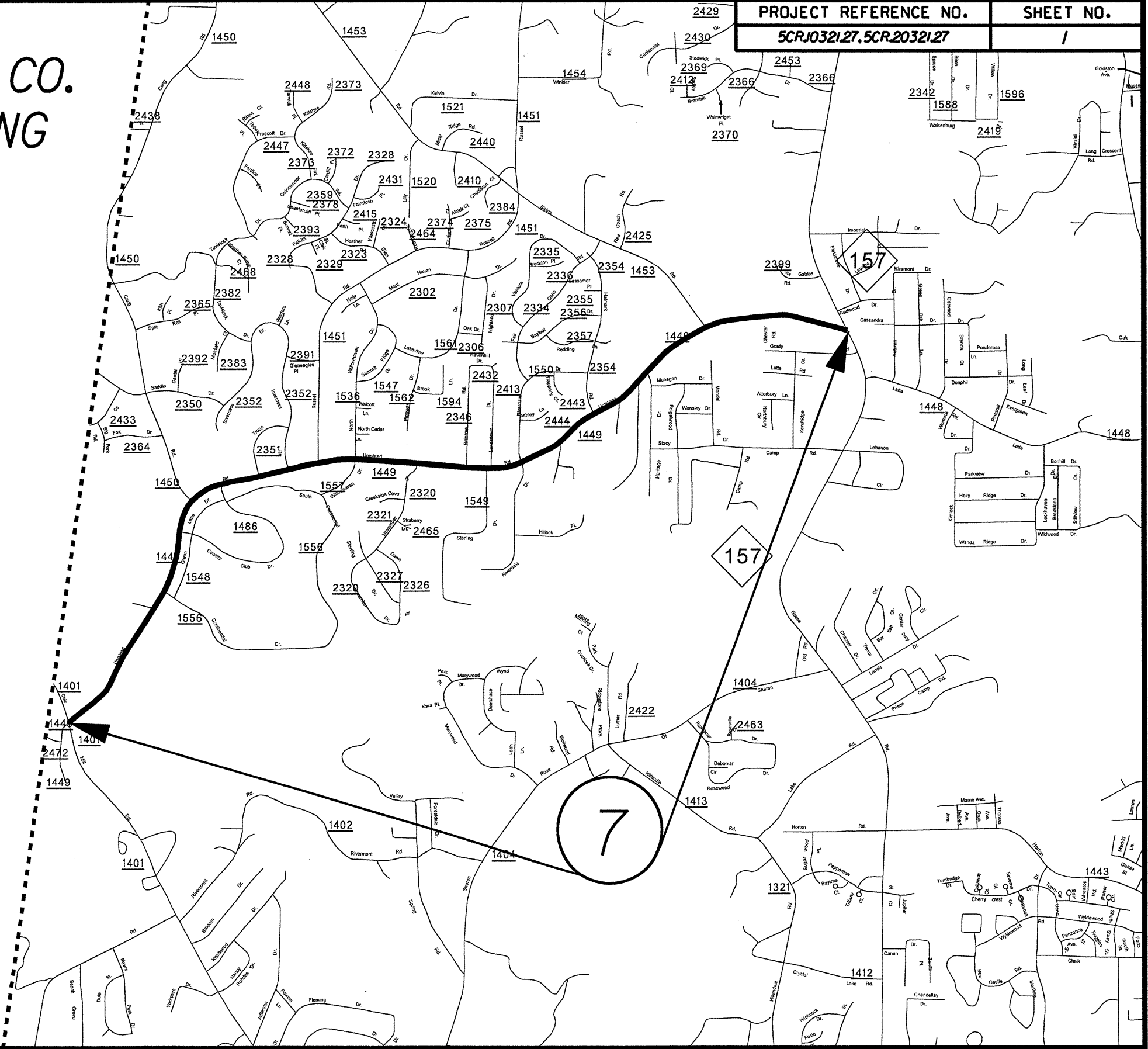
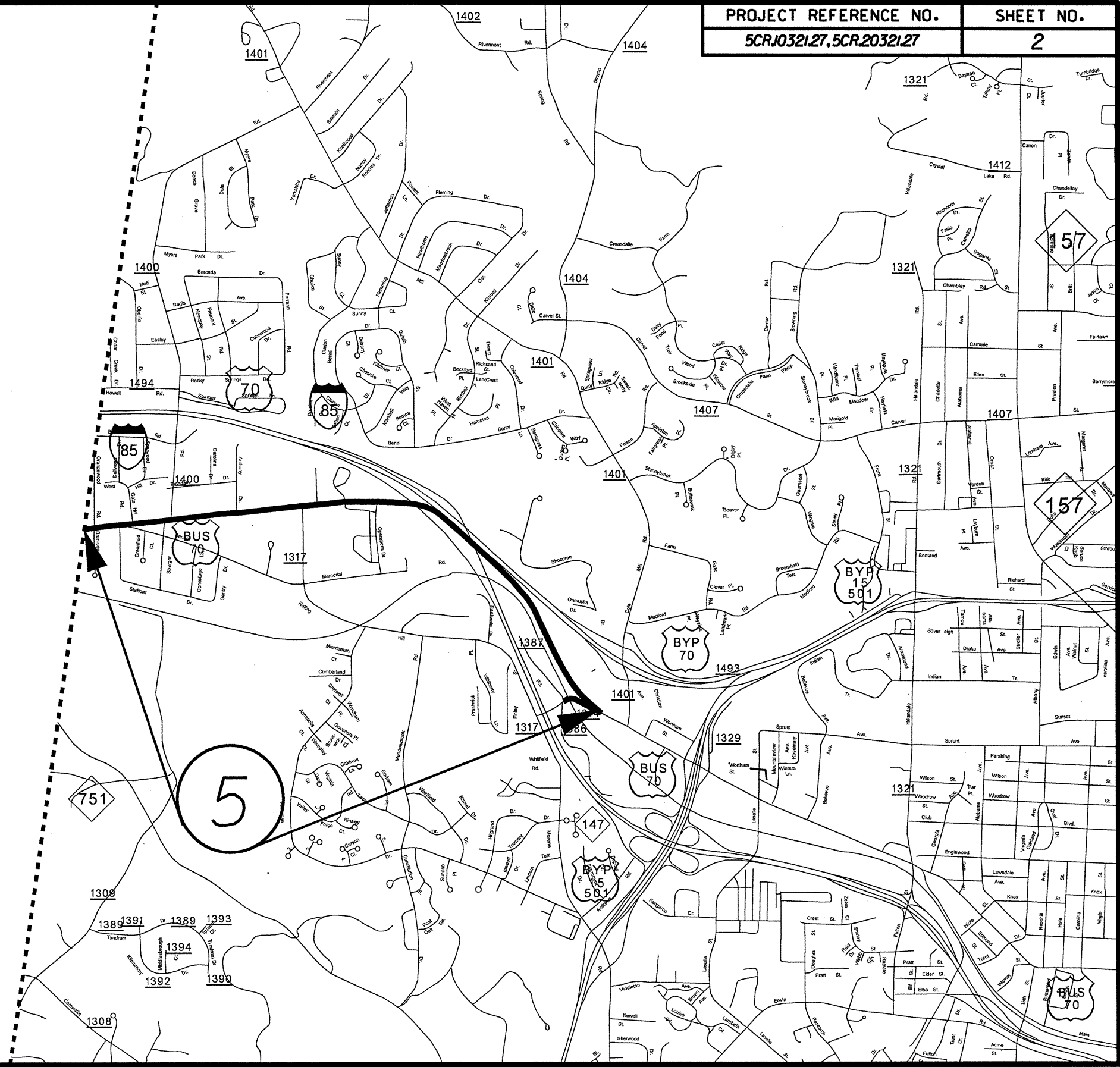


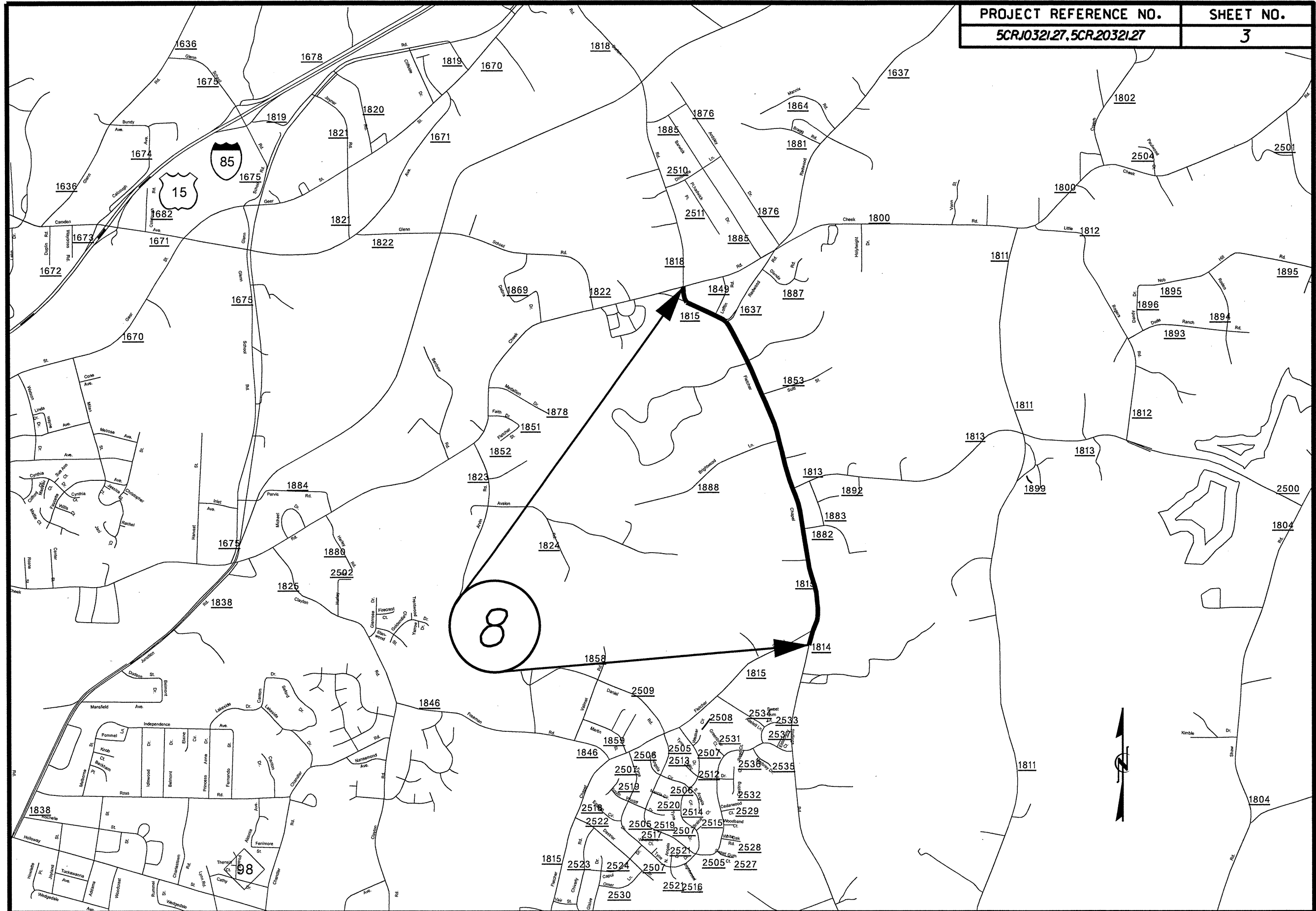
2014 DURHAM CO.
RESURFACING

PROJECT REFERENCE NO.	SHEET NO.
5CRJ032127, 5CR2032127	1



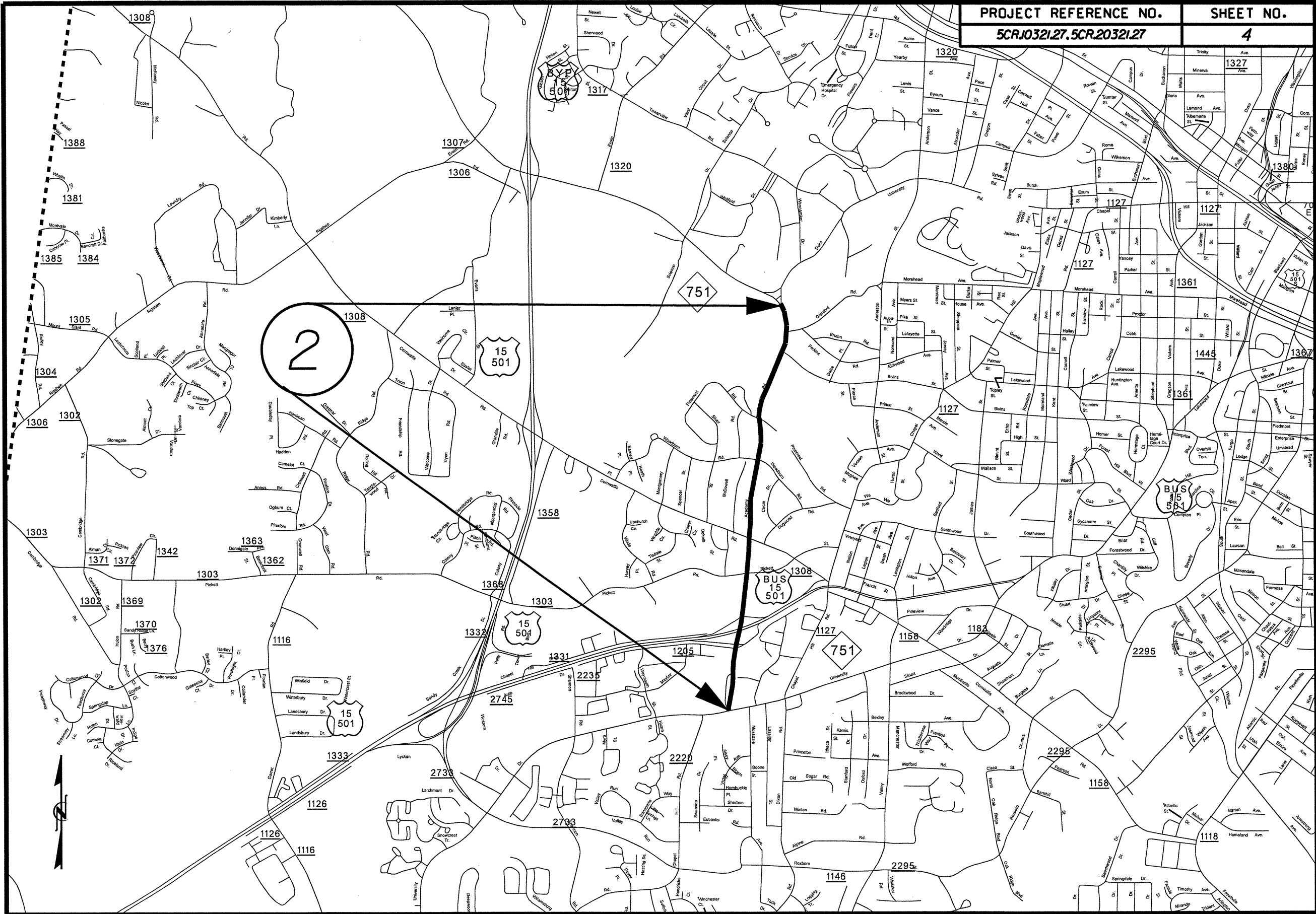


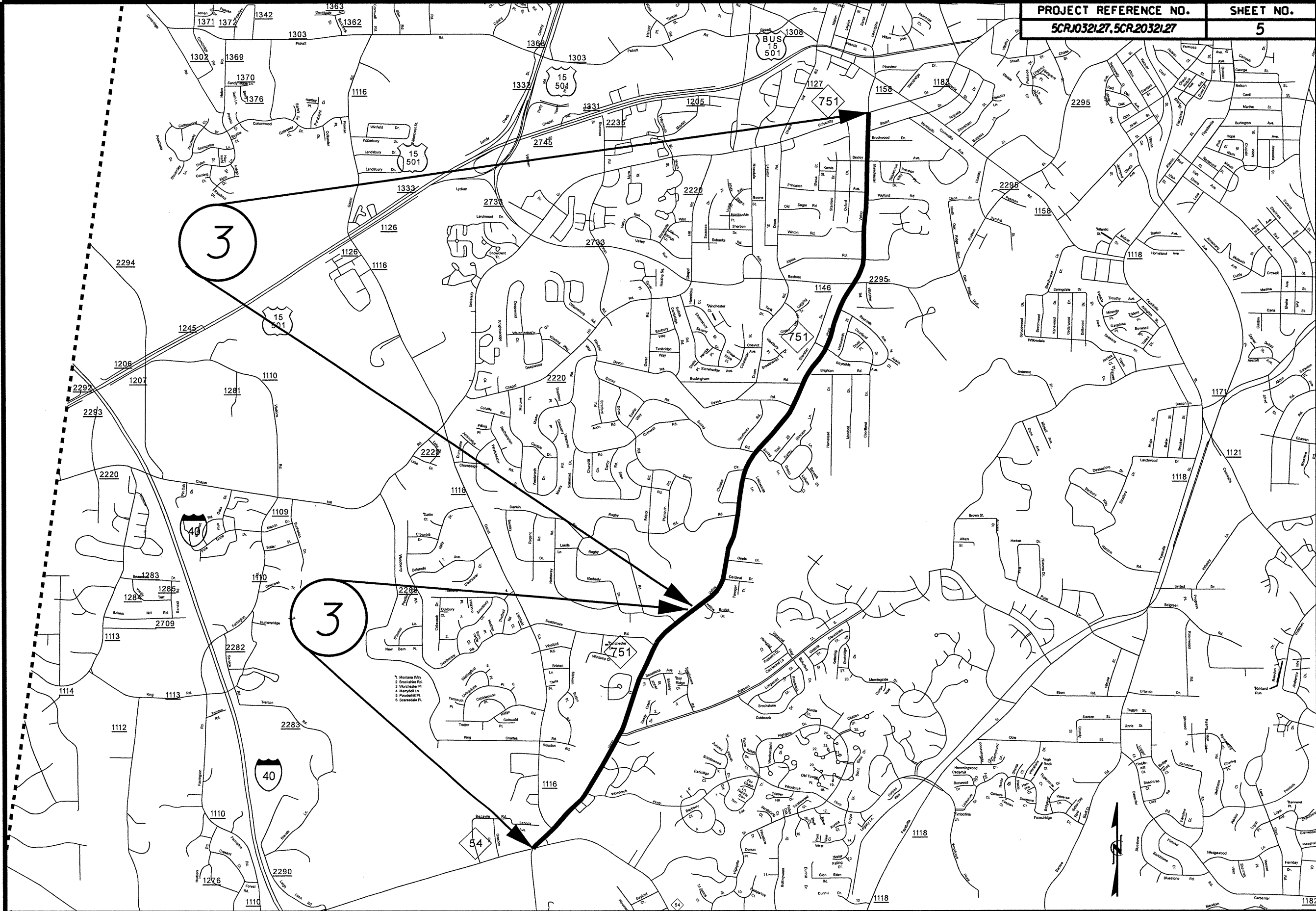
PROJECT REFERENCE NO.	SHEET NO.
5CRJ0321.27, 5CR.20321.27	3

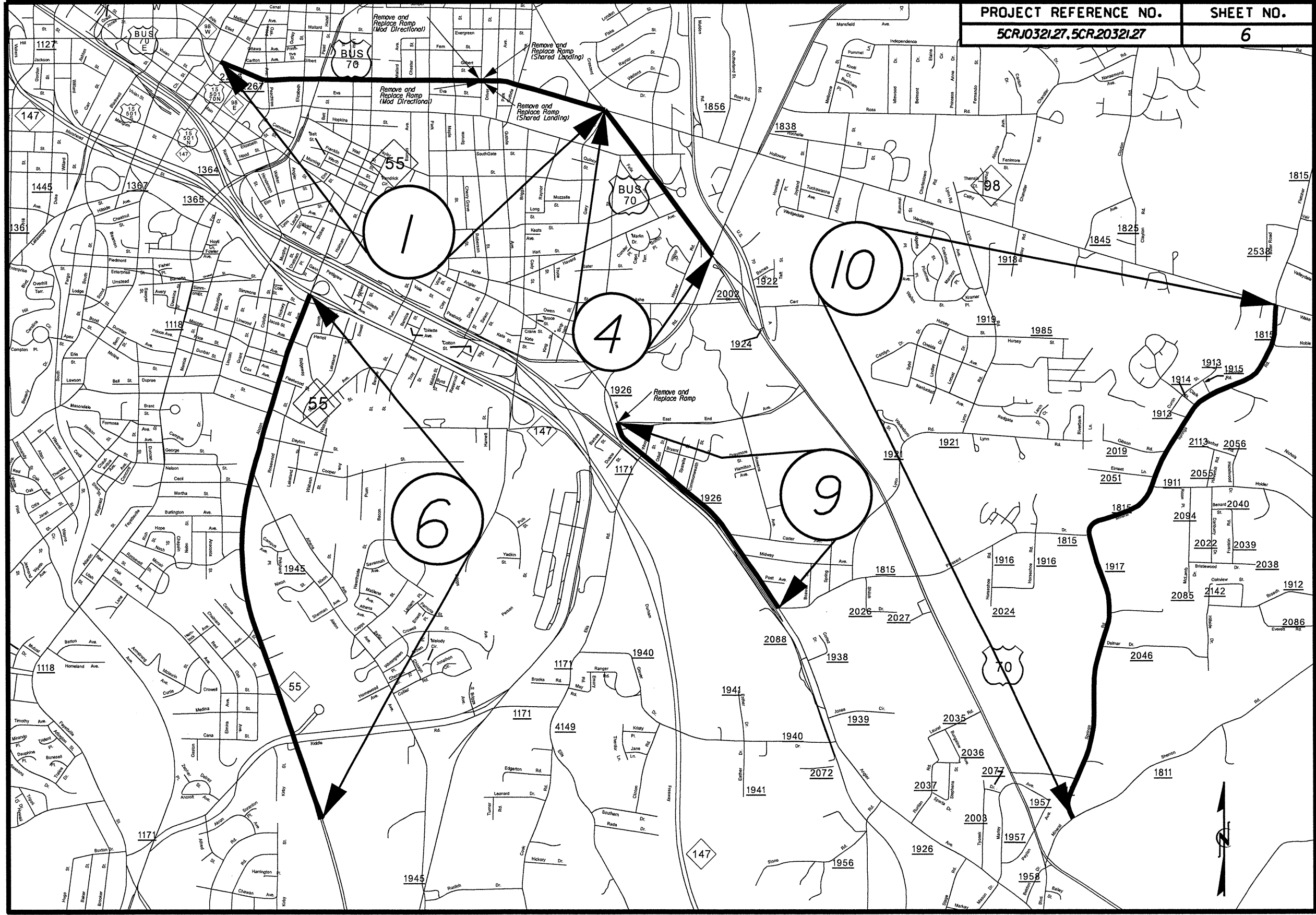


8



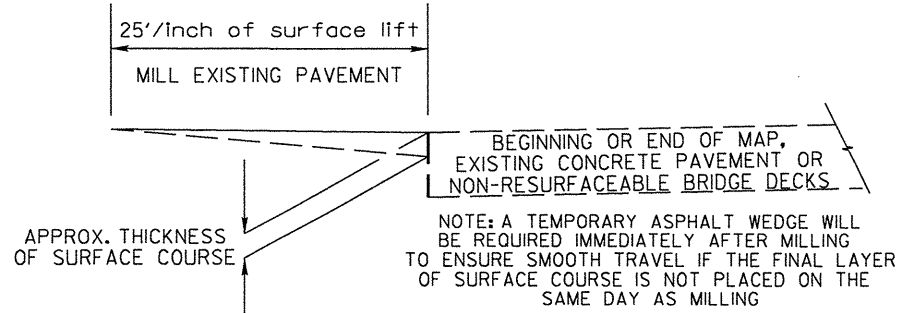






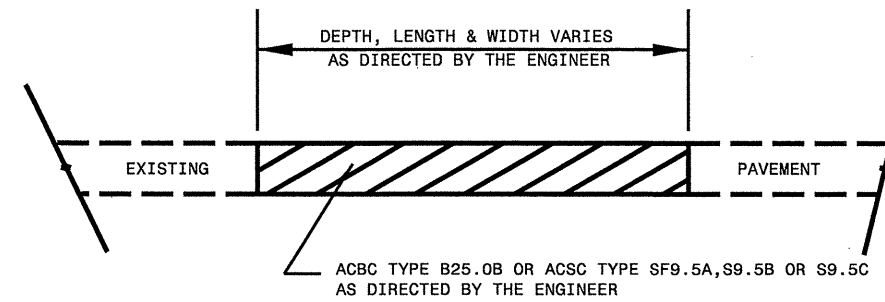
PAVEMENT SCHEDULE

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
S1	PROP. SHOULDER RECONSTRUCTION BY CONTRACTOR
S2	PROP. SHOULDER RECONSTRUCTION BY STATE FORCES
U	EXISTING PAVEMENT
V1	PROP. 1½" MILLING
V2	PROP. 2" MILLING
V3	PROP. 2½" MILLING
V4	PROP. 1½" - 3" MILLING

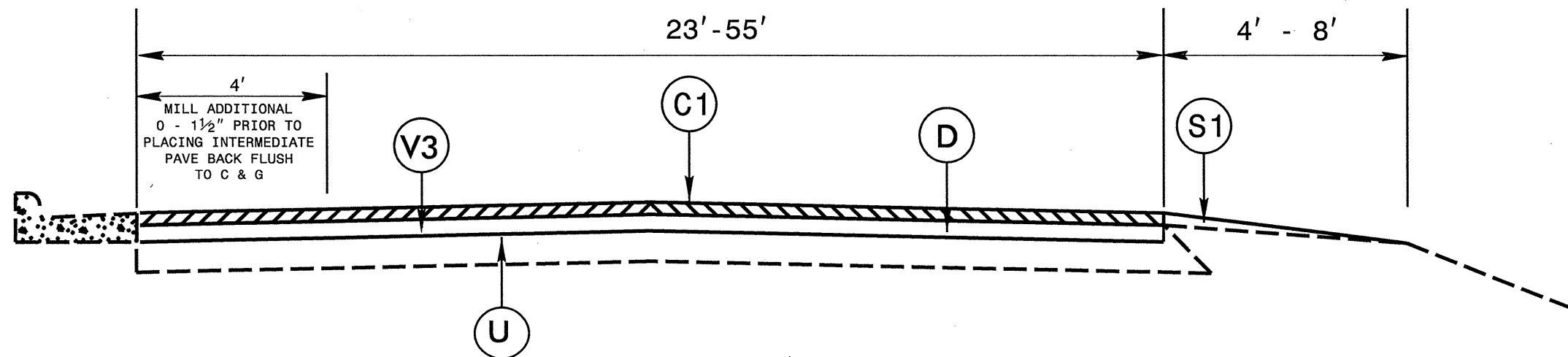


NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT
 ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
 EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.



PATCHING EXISTING PAVEMENT

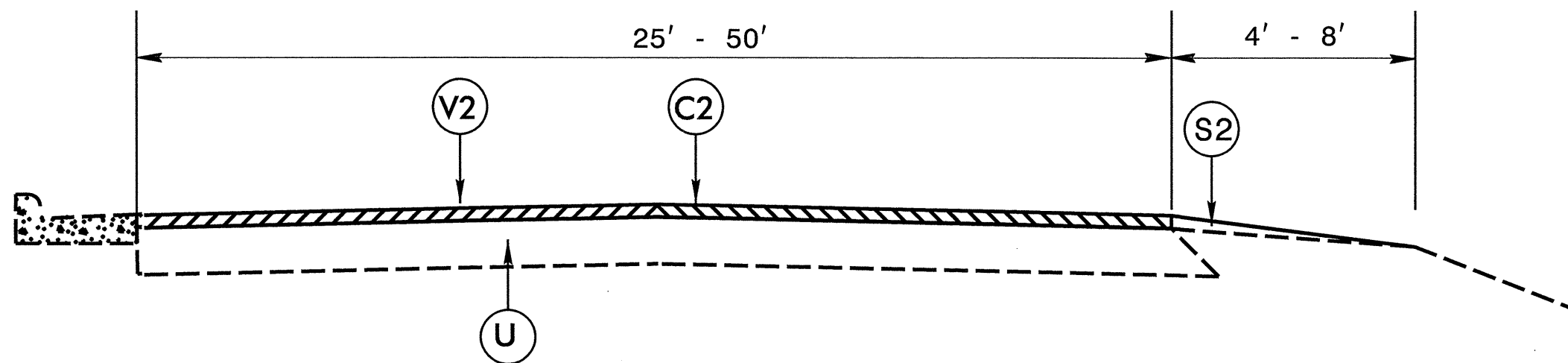


TYPICAL SECTION NO. 1

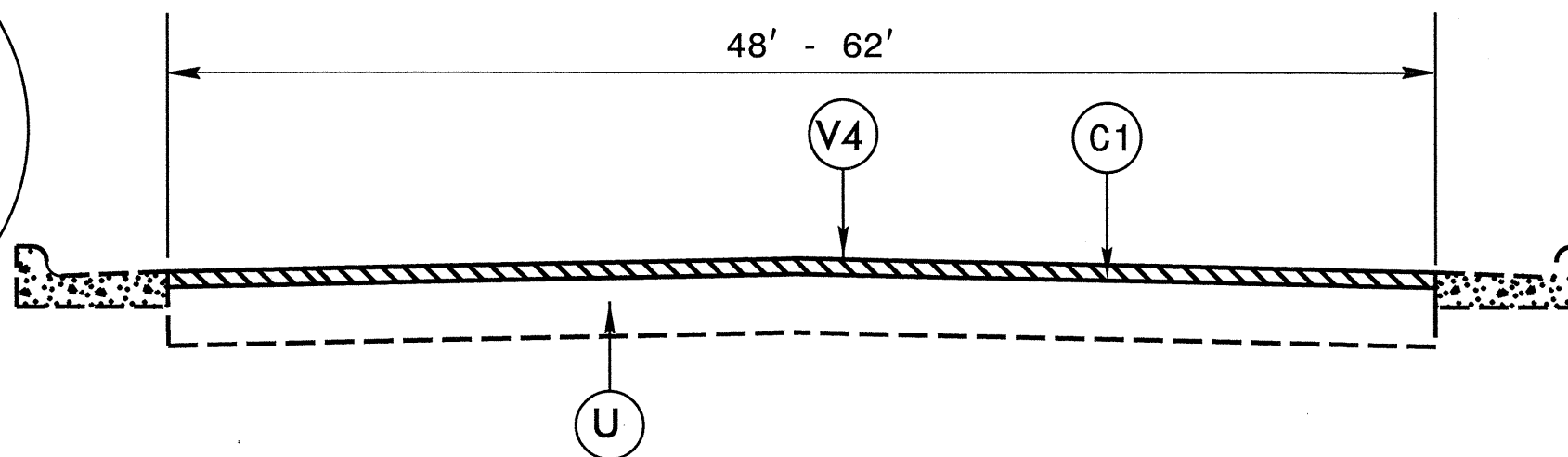
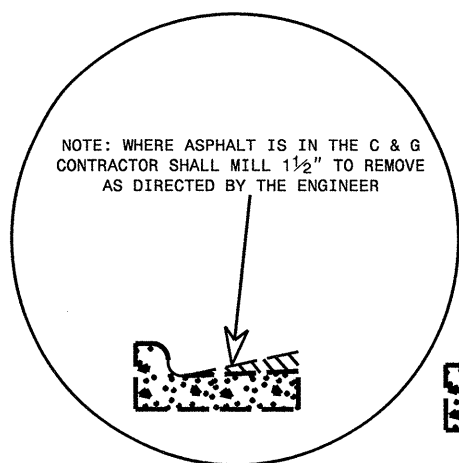
PAVEMENT SCHEDULE

PROJECT REFERENCE NO. 5CR.10321.27, 5CR.20321.27	SHEET NO. 8
--	-----------------------

C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	V1	PROP. 1½" MILLING
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V2	PROP. 2" MILLING
S1	PROP. SHOULDER RECONSTRUCTION BY CONTRACTOR	V3	PROP. 2½" MILLING
S2	PROP. SHOULDER RECONSTRUCTION BY STATE FORCES	V4	PROP. 1½" - 3" MILLING



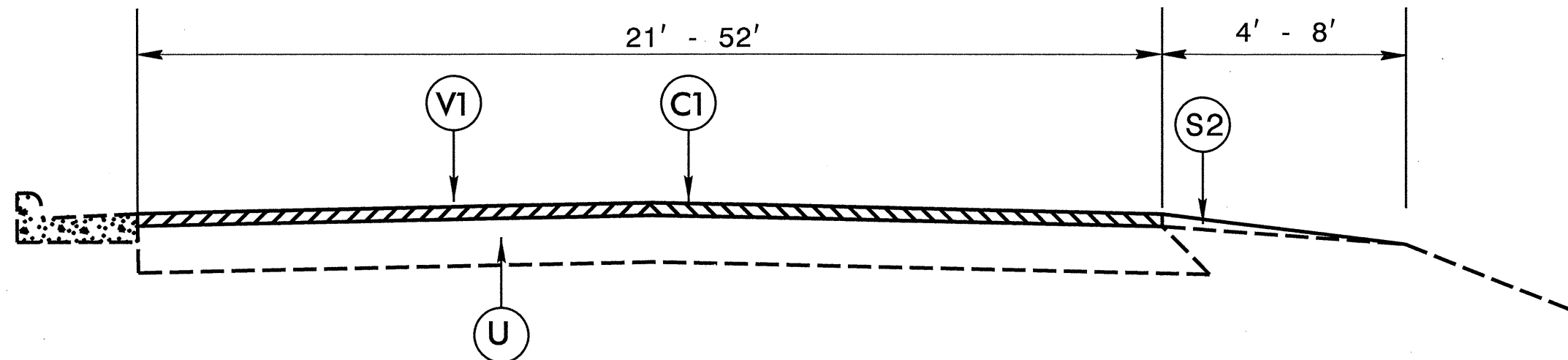
TYPICAL SECTION NO. 2



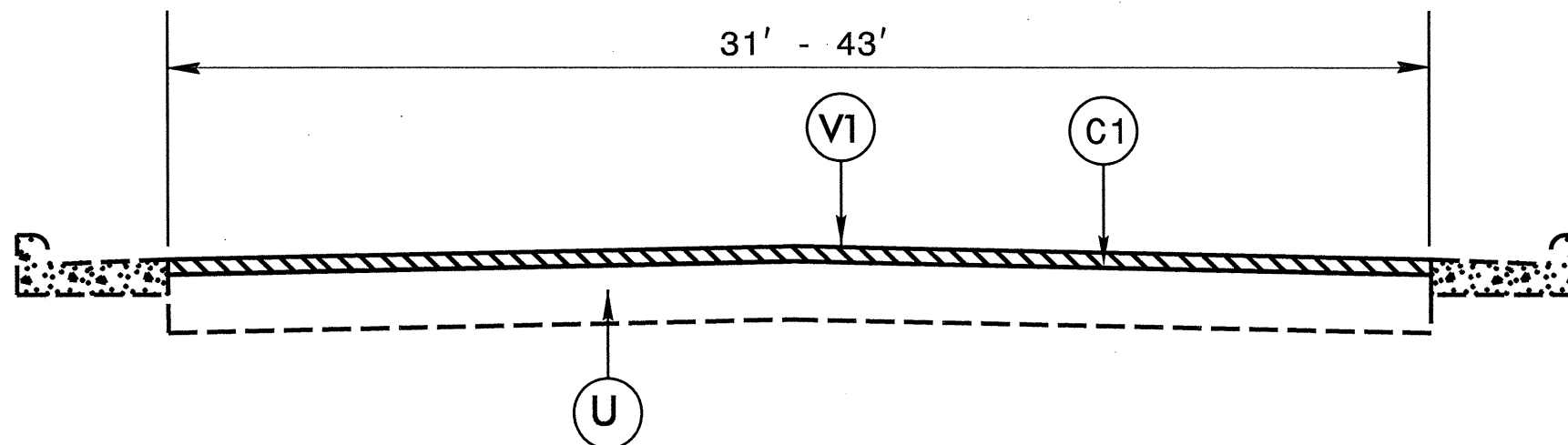
TYPICAL SECTION NO. 3

PAVEMENT SCHEDULE

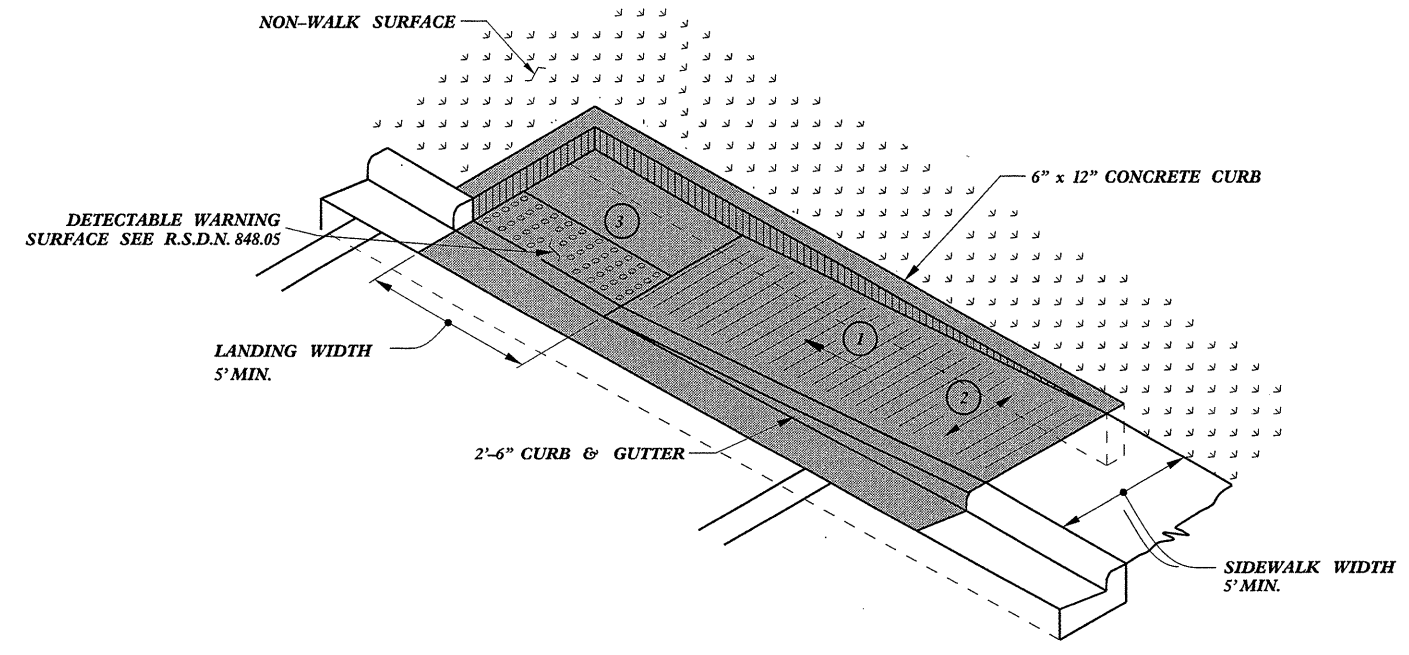
C1	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
C2	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	V1	PROP. 1½" MILLING
D	2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	V2	PROP. 2" MILLING
S1	PROP. SHOULDER RECONSTRUCTION BY CONTRACTOR	V3	PROP. 2½" MILLING
S2	PROP. SHOULDER RECONSTRUCTION BY STATE FORCES	V4	PROP. 1½" - 3" MILLING



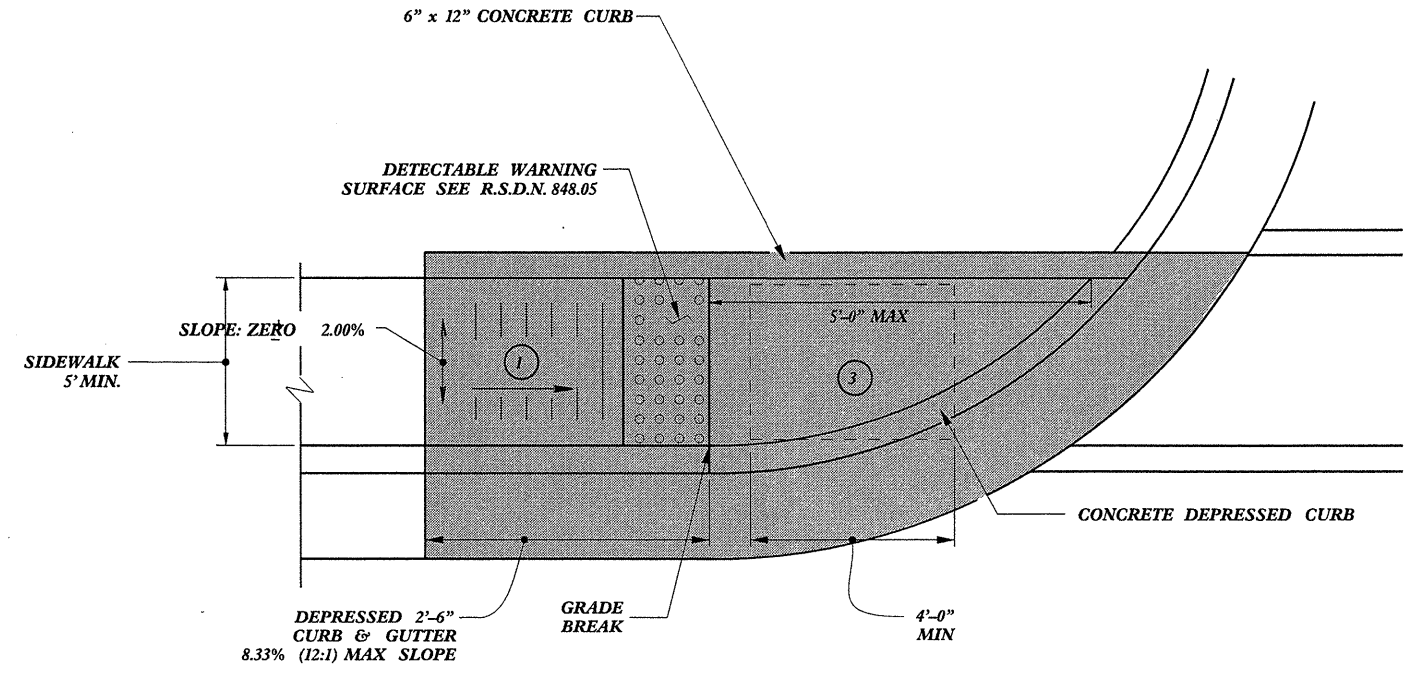
TYPICAL SECTION NO. 4



TYPICAL SECTION NO. 5



TYPE 1A



TYPE 1

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

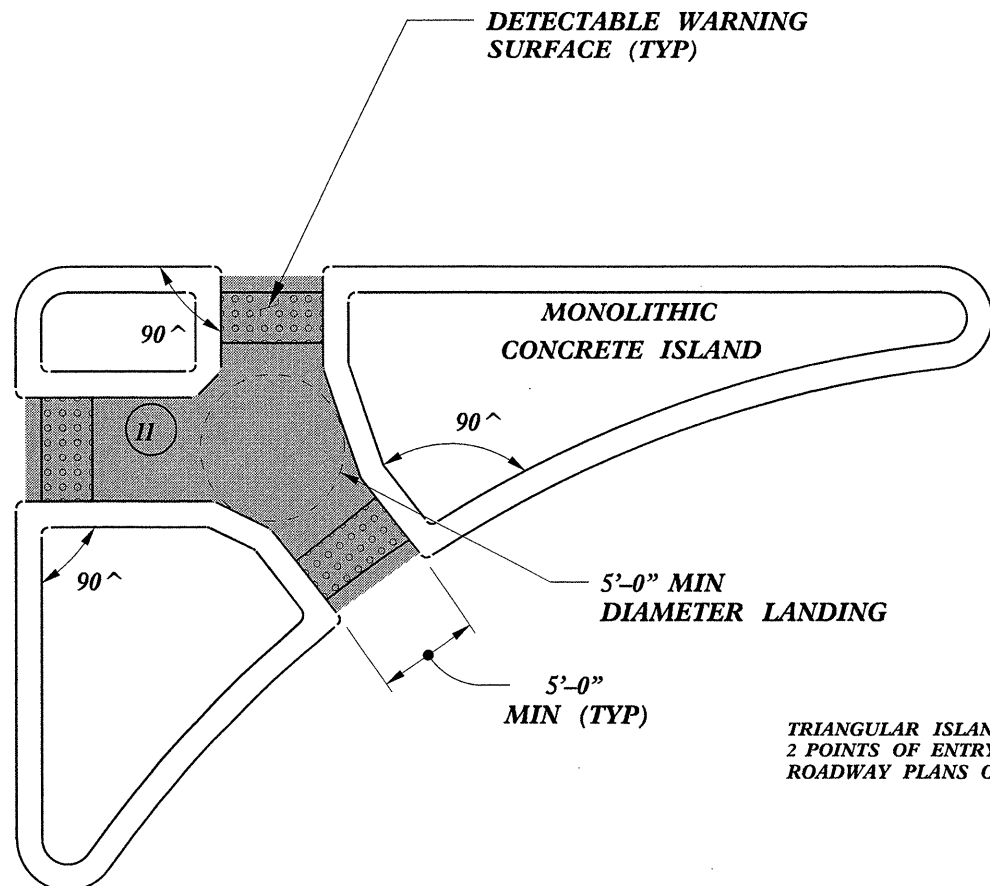
PAY LIMITS FOR CURB RAMP

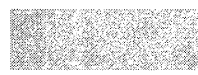
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

22-MAR-2012 15:06 S:\Projects\2012\Standards\Drawings\2012 Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dwg J:\Howerton\A1_C80237501

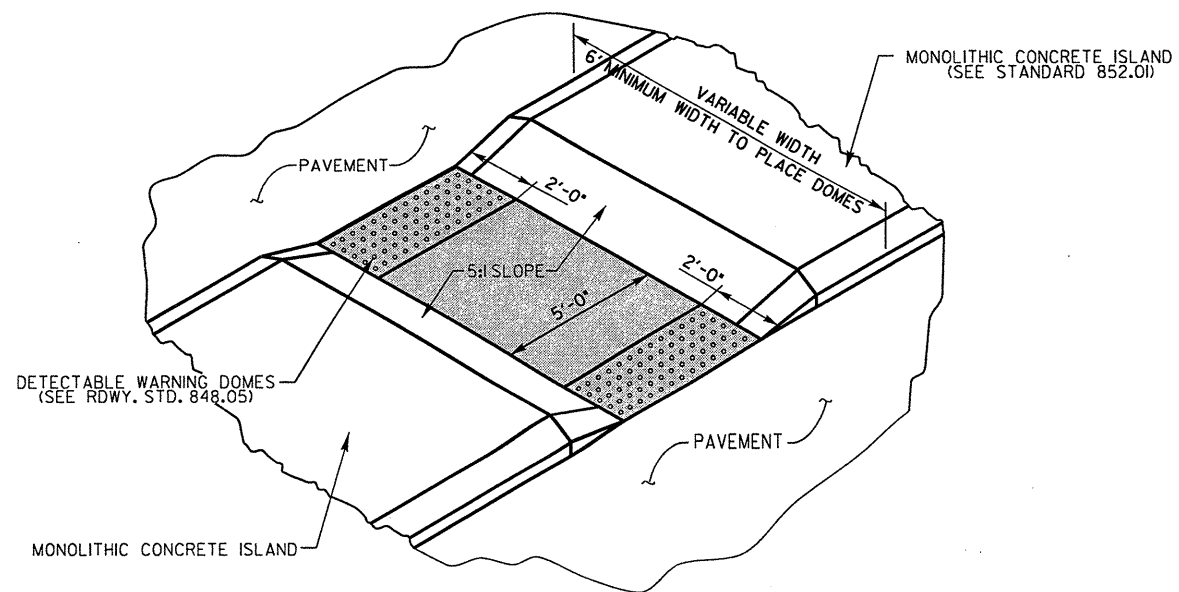
5/14/99



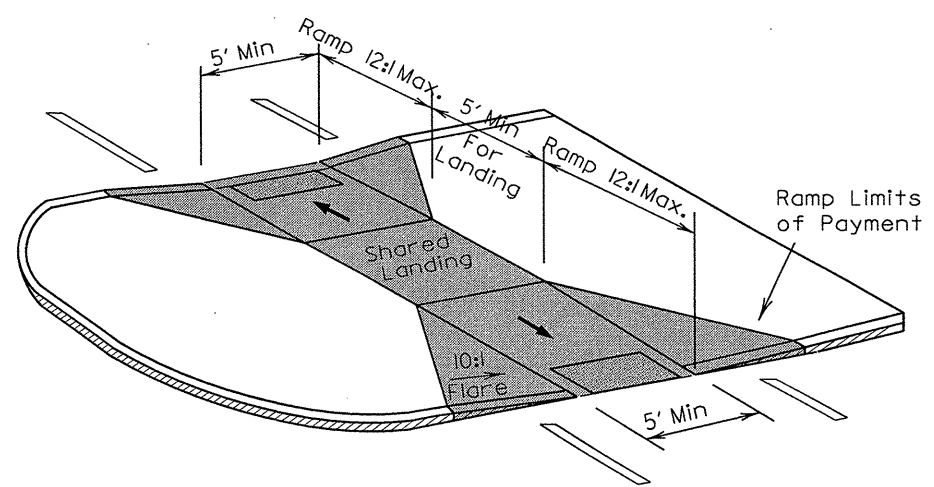
 **PAY LIMITS FOR 1 CURB RAMP**

TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

TRIANGULAR ISLAND WITH CUT THROUGH



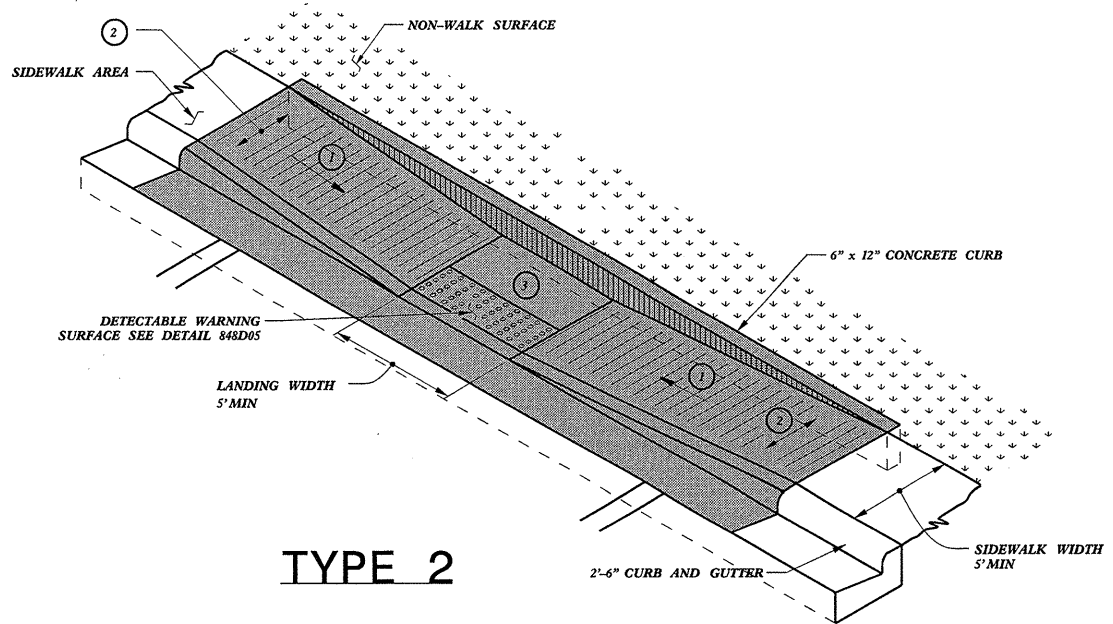
MEDIAN ISLAND WITH CUT THROUGH




MEDIAN ISLAND CURB RAMPS

 SYSTEMS

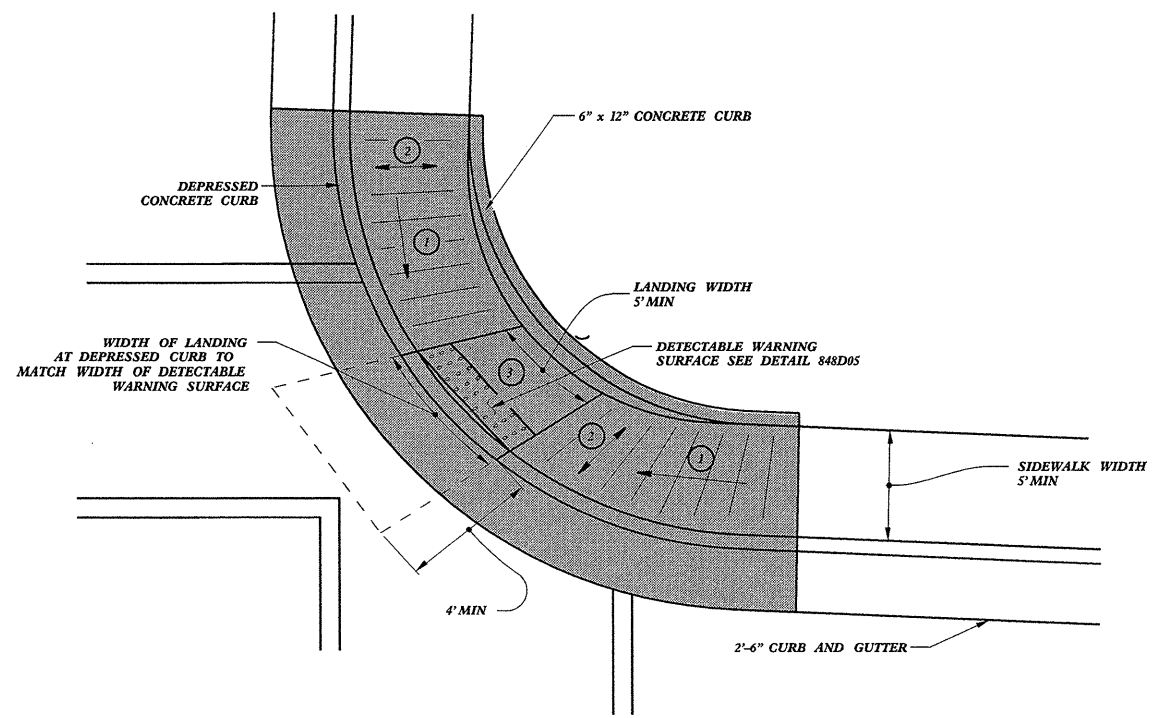
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	



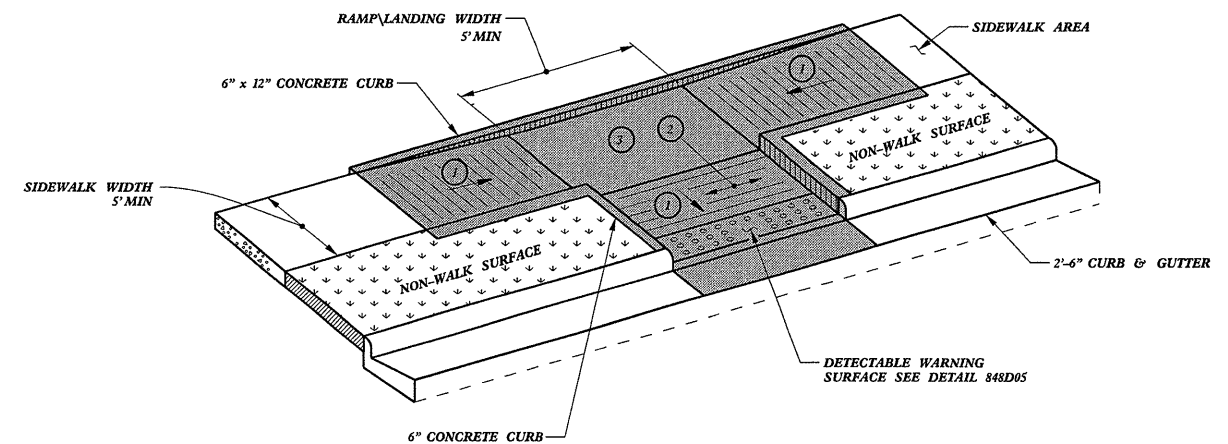
TYPE 2

 PAY LIMITS FOR CURB RAMP

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A

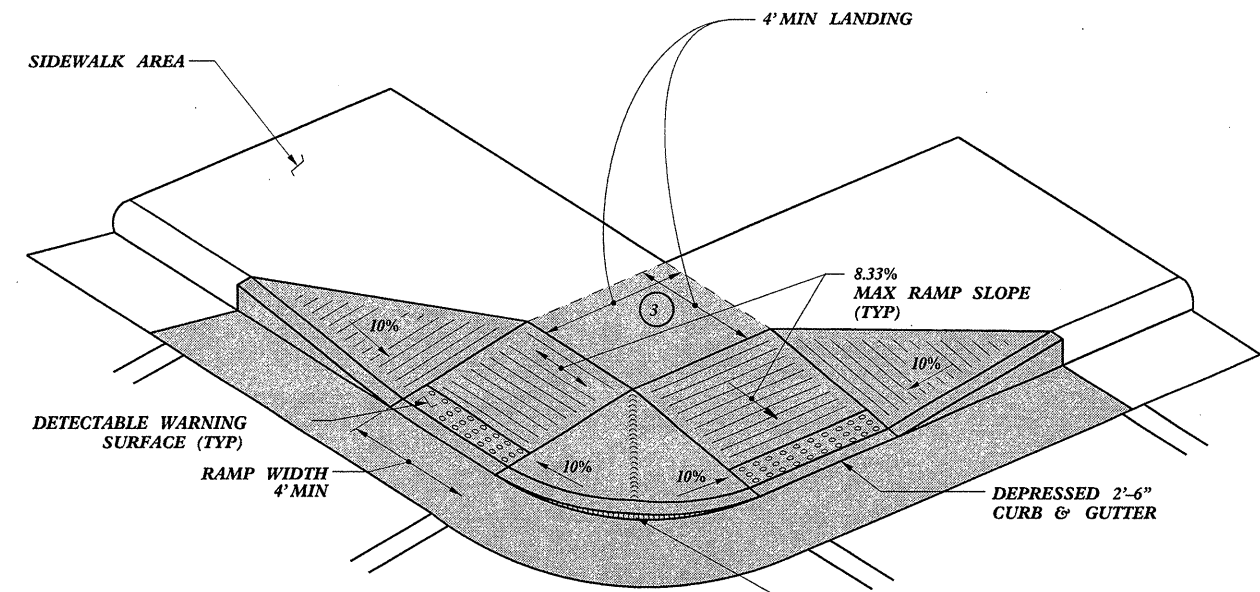


TYPE 3

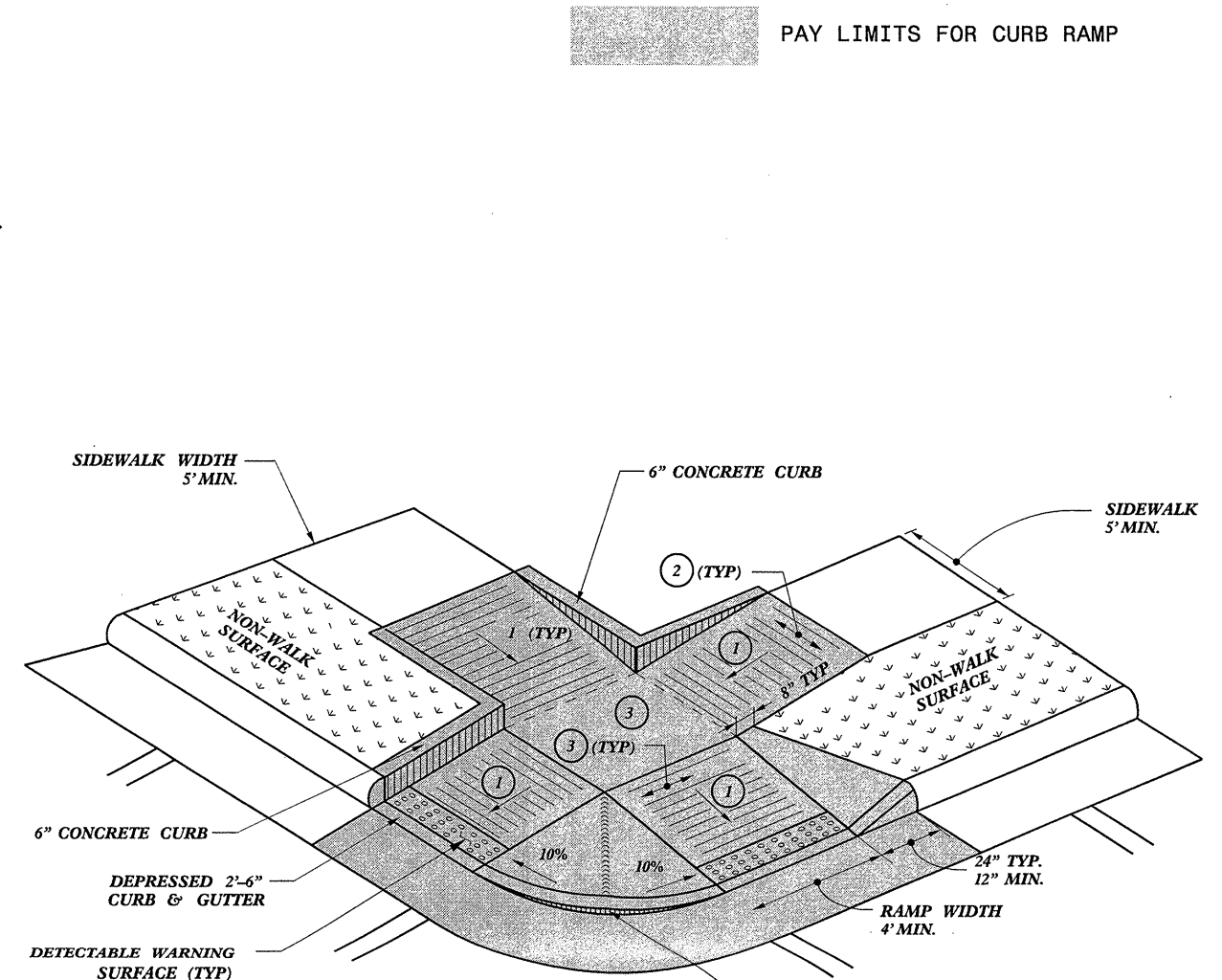
CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

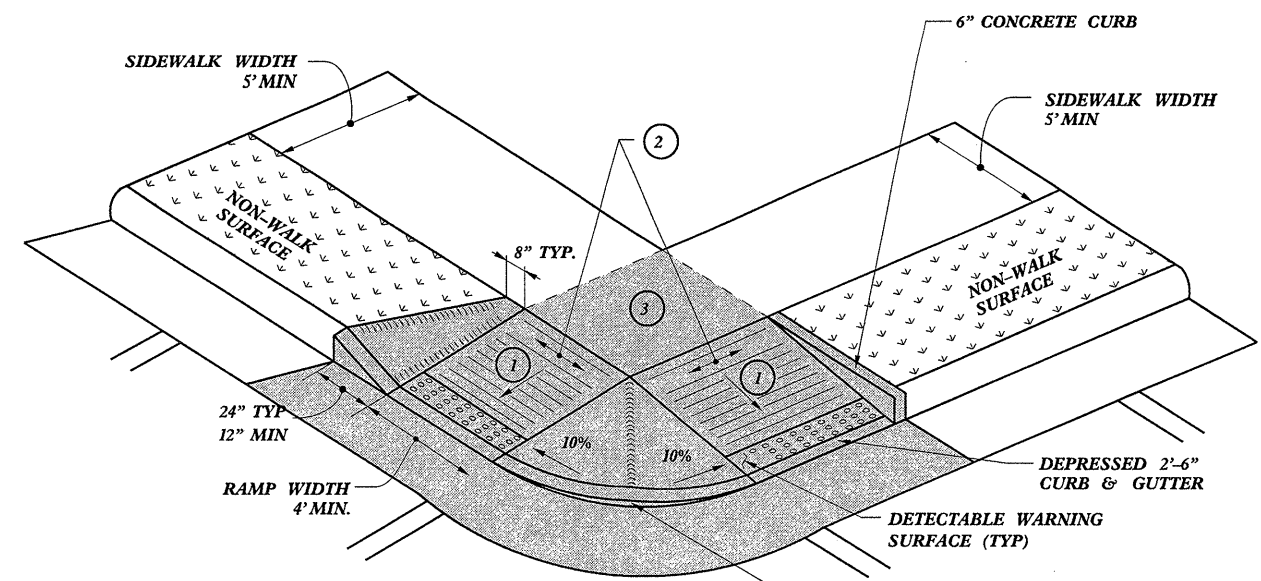
22-MAR-2012 15:07 SA:\Contracts\2012\Standards Drawings\2012 Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dwg 5/14/99 J.Howerton AN 050257301



TYPE 4



TYPE 5



TYPE 4A

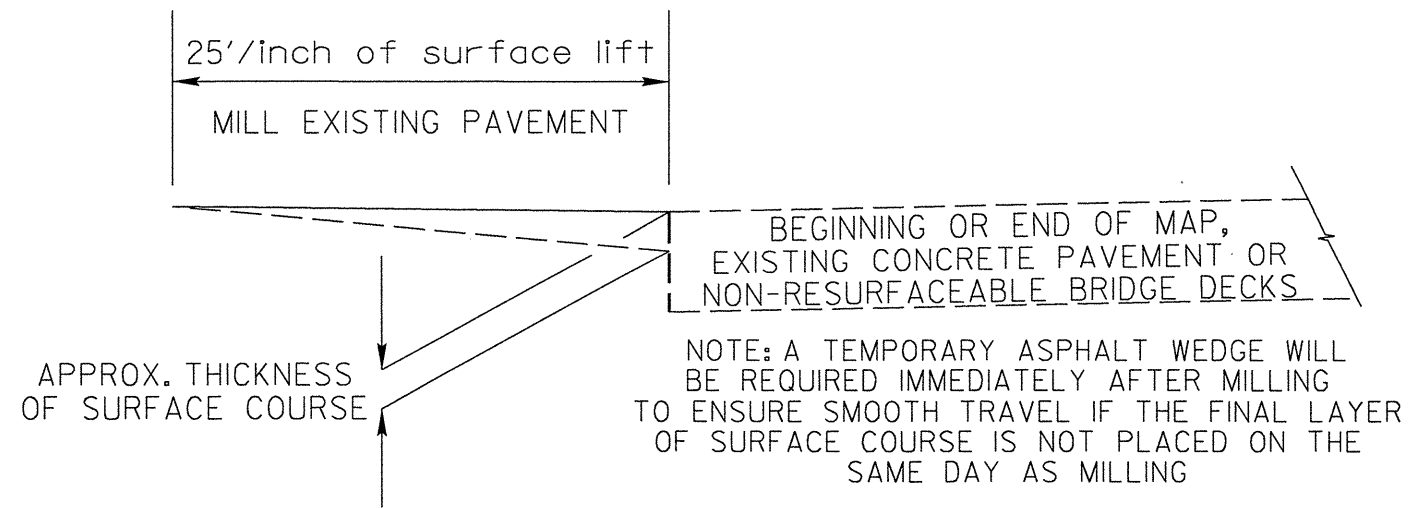
- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR CURB RAMP

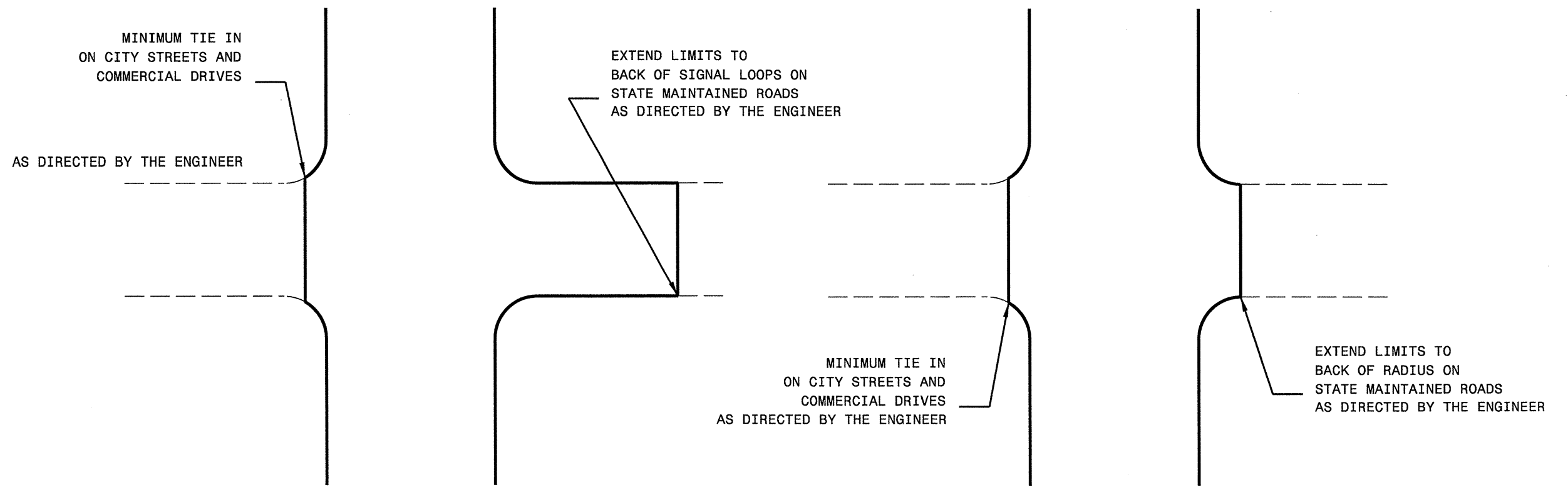
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn	

22-MAR-2012 15:08 S:\Contracts\2012\Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn J.Howerton AT CSD23750



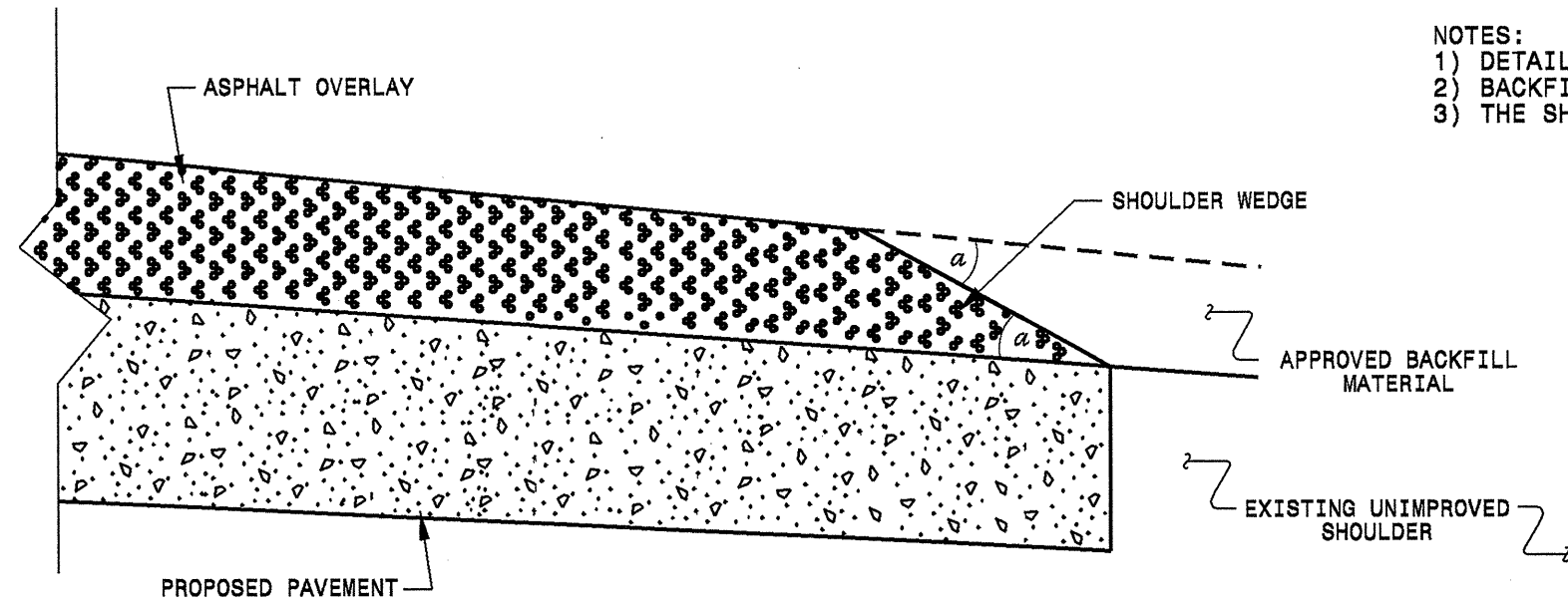
DETAIL OF INCIDENTAL MILLING



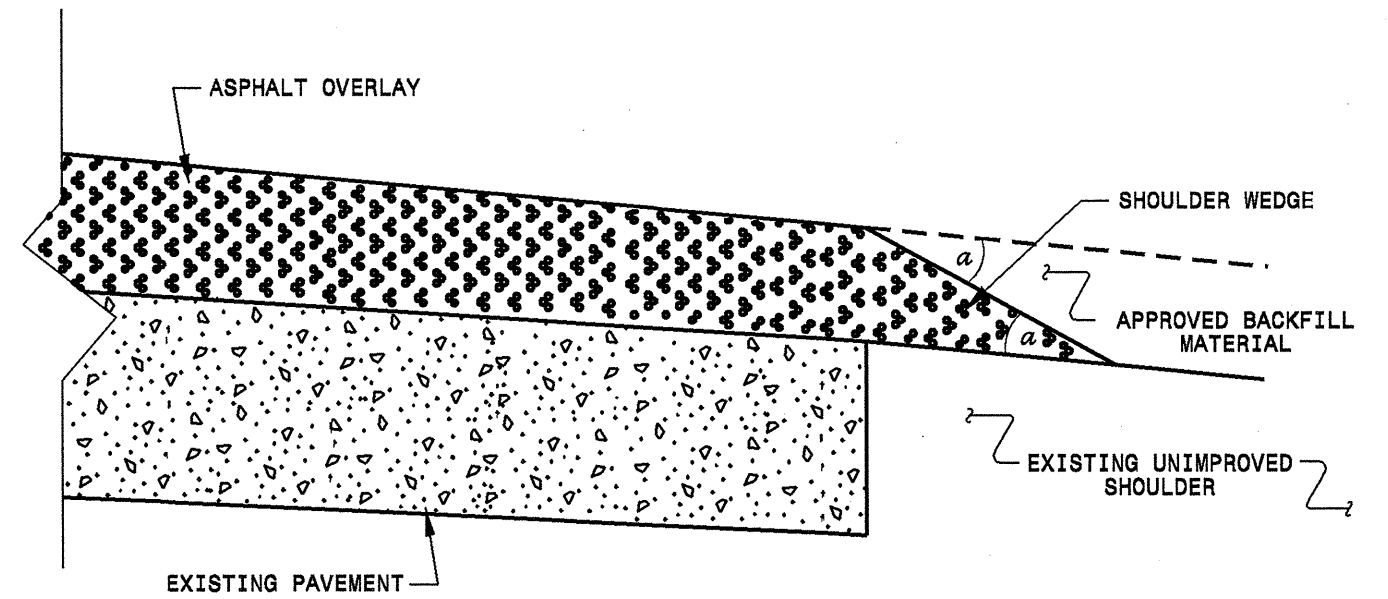
DETAIL OF PROJECT LIMITS AT
SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT
UNSIGNALIZED Y LINES

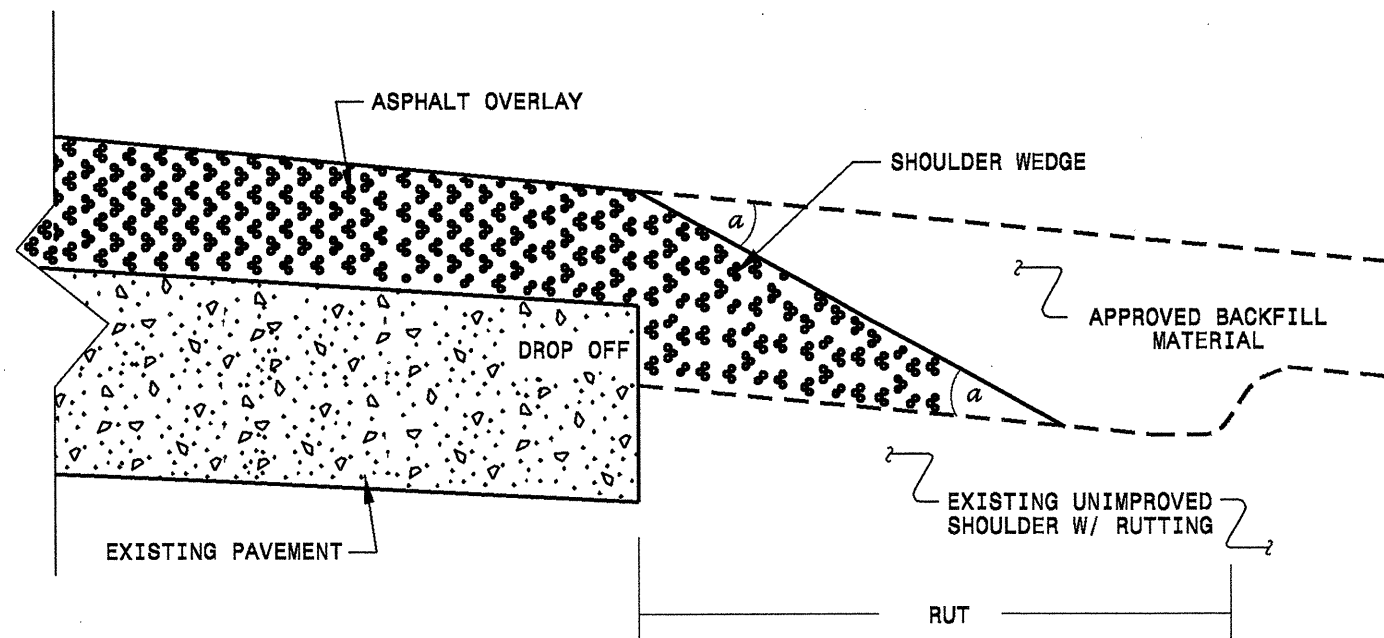
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFS AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ Widening or
 with Existing Paved Shoulder having no dropoffs)



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)



SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

29-OCT-2013 07:28
 C:\Users\jgarcia\Documents\Projects\Resurfacing Projects\Revised Shoulder Wedge Detail.dgn
 \$\$\$USERNAME\$\$\$

CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 819-707-6950		FAX 819-250-4119	
SHOULDER WEDGE DETAILS			
ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/18/12
CHECKED BY:		DATE:	
FILE SPEC:	s:\usr\details\stand\shoulderwedgedetail.dgn		

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

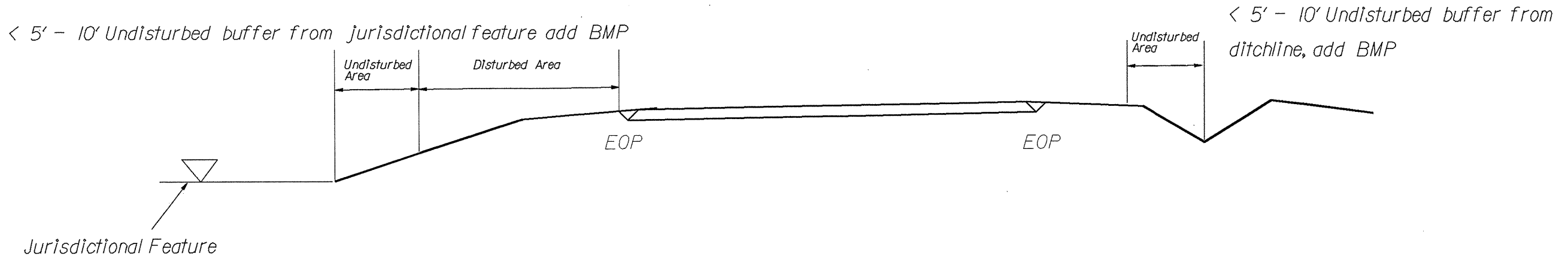
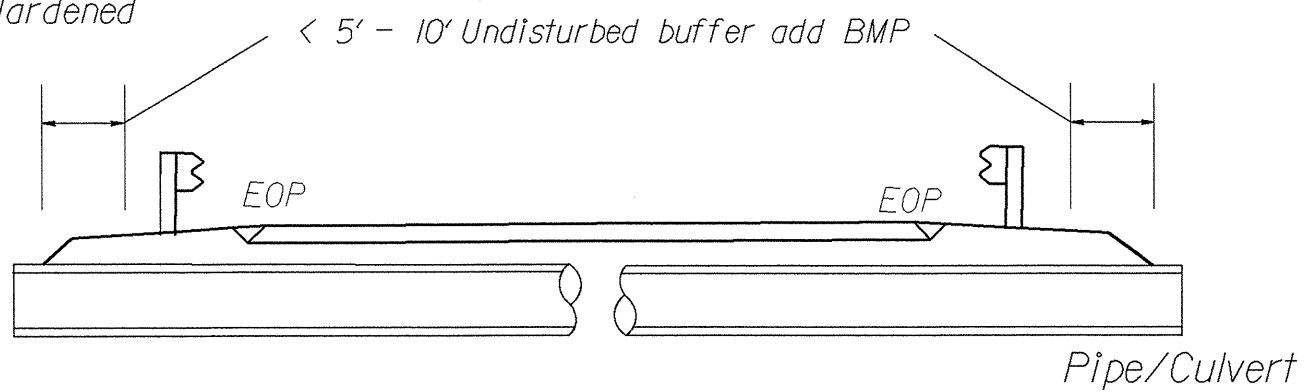
SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

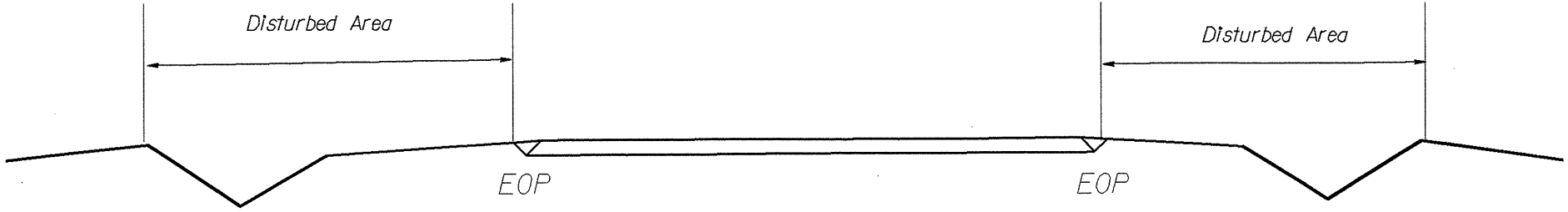
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

EROSION CONTROL DETAIL

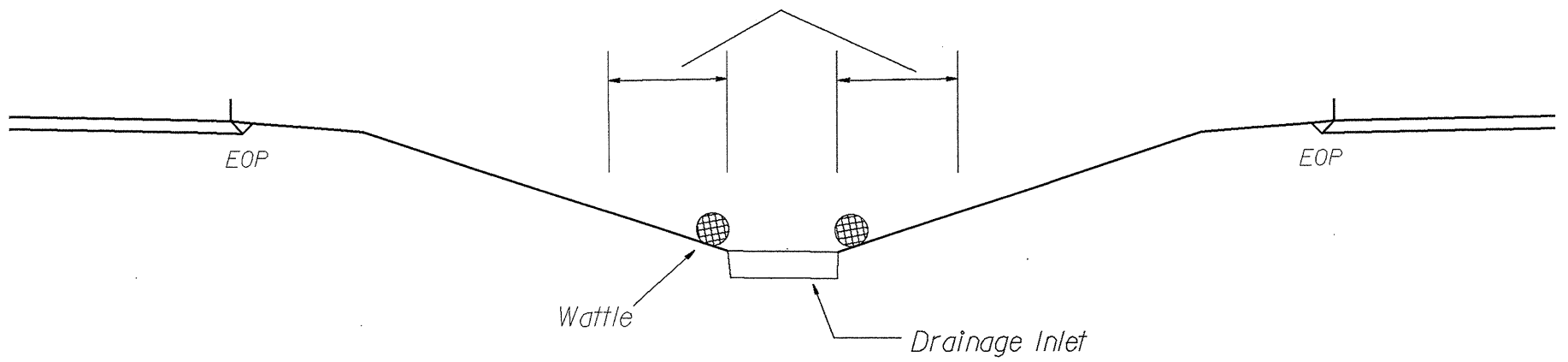
BMP Options: Wattle, Silt Fence or Hardened Aggregate.



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

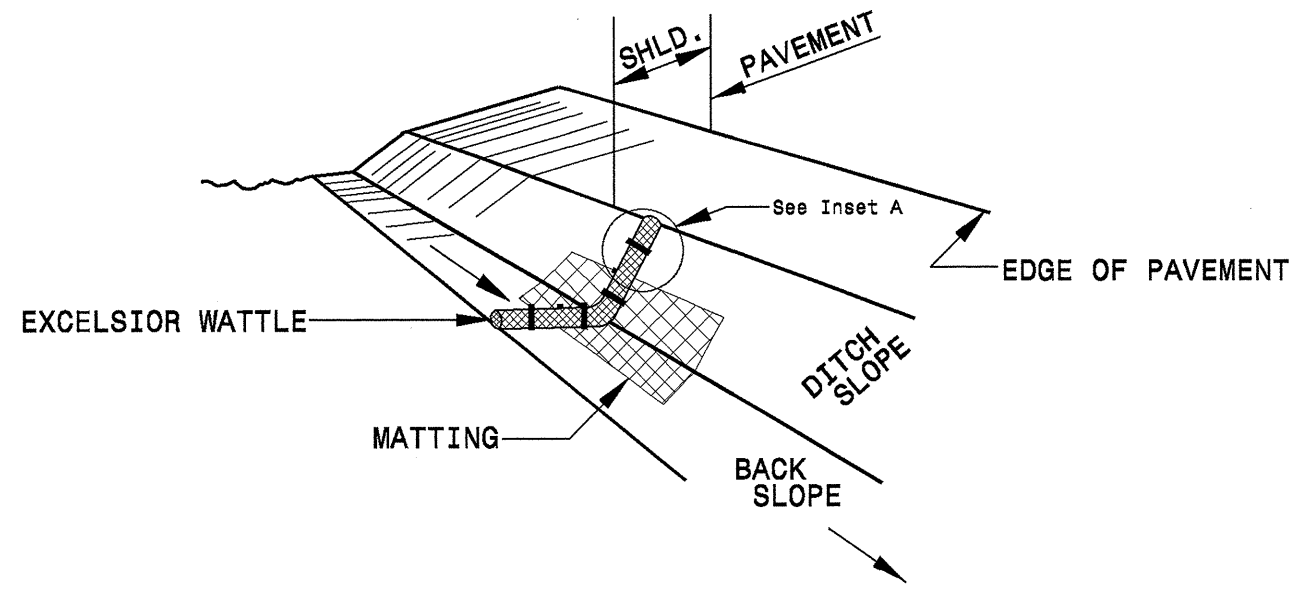


< 5' - 10' Undisturbed buffer from inlet, add wattle

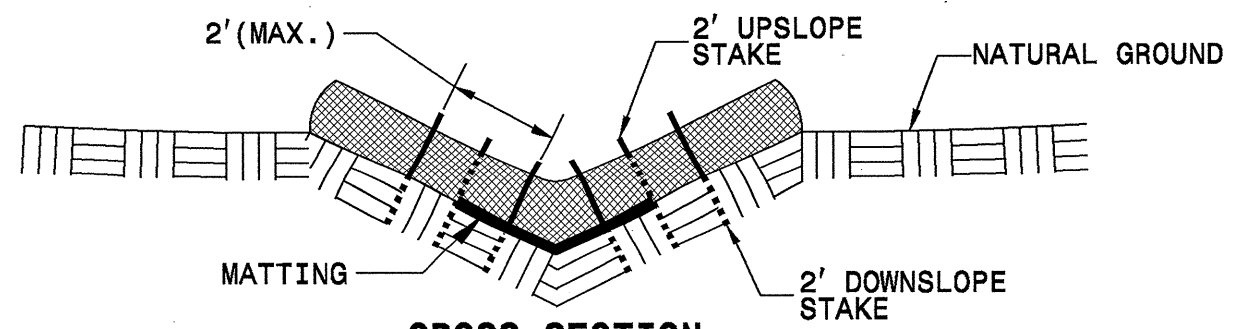


NOT TO SCALE

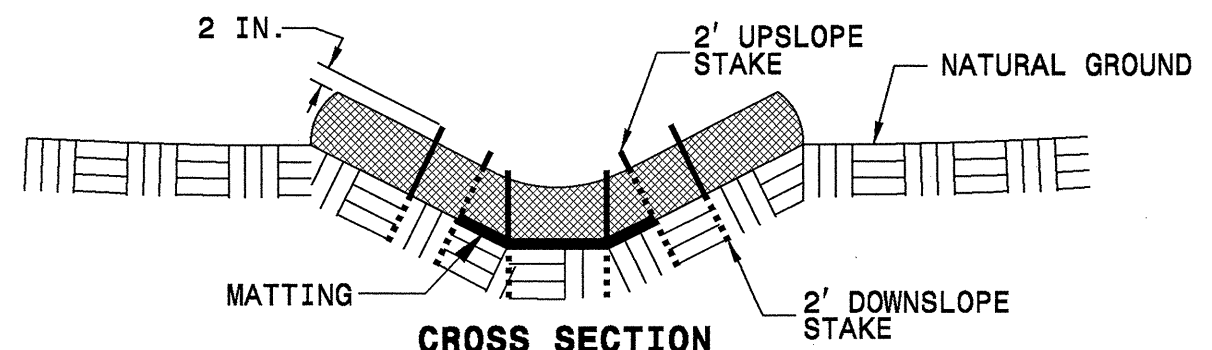
WATTLE DETAIL



ISOMETRIC VIEW



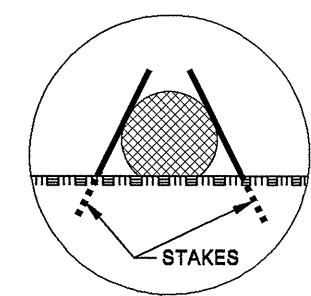
**CROSS SECTION
VEE DITCH**



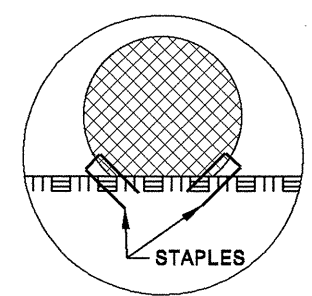
**CROSS SECTION
TRAPEZOIDAL DITCH**

NOTES:

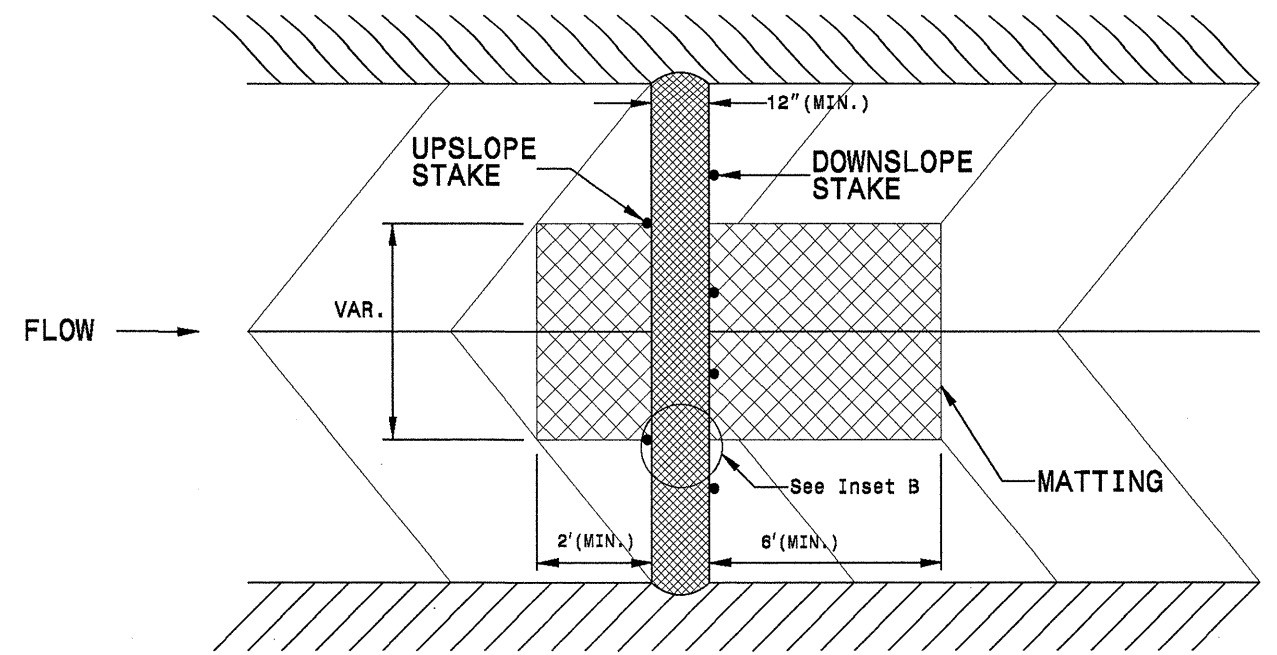
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES 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.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



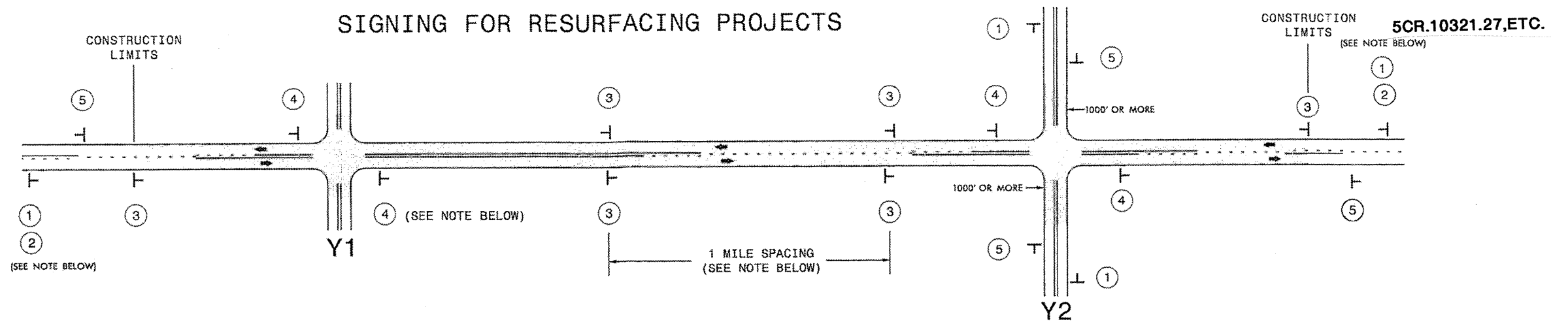
TOP VIEW

PROJECT NO.	SHEET NO.	TOTAL NO.
SCR.10321.27, SCR.20321.27	19	20

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	BORROW CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	1 1/2" MILLING SY	2" MILLING SY	2.5" MILLING SY	1.5" TO 3" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	INTER-MEDIATE COURSE, I19.0B TONS	SURFACE COURSE, S9.5B TONS	ASPHALT BINDER FOR PLANT MIX TON	PATCHING EXISTING PAVEMENT TONS	REMOVE AND REPLACE CURB RAMPS EA	ADJUST MANHOLES EA	ADJUST METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP LF				
5CR.10321.27	Durham	1	NC 98/ US 70 BUS (HOLLOWAY ST)	FROM SR 1959 (MIAMI BLVD) TO US 15-501 BUS N (N ROXBORO)	5	NO	NO	1.58	31-37				29,735						2,633	158	150	4	10	2					400				
TOTAL FOR MAP NO. 1								1.58					29,735							2,633	158	150	4	10	2					400			
5CR.10321.27	Durham	2	NC 751 (ACADEMY RD)	CAMERON BLVD TO SR 1183 (UNIV DR)	4	NO	NO	1.67	24-44				29,340						2,599	156	120		2						400				
TOTAL FOR MAP NO. 2								1.67					29,340								2,599	156	120		2						400		
5CR.10321.27	Durham	3	NC 751 (HOPE VALLEY RD)	FROM SR 1183 (UNIV DR) TO BRIDGE FROM BRIDGE TO NC 54	2	NO	NO	2.68	25-50				40,717						4,819	289	150		3	1					420				
		"	"	"	2	NO	NO	1.31	26-50		25		31,724						3,740	224	175		3	1					720				
TOTAL FOR MAP NO. 3								3.99			25		72,441								8,559	513	325		6	2					1,140		
5CR.10321.27	Durham	4	US 70 BUS (MIAMI)	FROM THE RR BRIDGE OVER US 70B TO NC 98/US 70 BUS (HOLLOWAY ST)	4	NO	NO	0.76	21-33				16,521						1,460	88	75		4						420				
TOTAL FOR MAP NO. 4								0.76					16,521								1,460	88	75		4						420		
5CR.10321.27	Durham	5	US 70 (HILLSBOROUGH RD)	JOINT AT NEAL ROAD TO ORANGE COUNTY LINE	4	NO	NO	2.06	24-40				38,994						3,449	207	150		3	3					320				
TOTAL FOR MAP NO. 5								2.06					38,994									3,449	207	150		3	3					320	
5CR.10321.27	Durham	6	NC 55 (ALSTON AVE)	NC 147 TO JOINT AT CONCRETE MEDIAN SOUTH OF SR 1171 (RIDDLE RD)	3	NO	NO	2.22	48-62							75,951			6,723	403	225		75	9					1,040				
TOTAL FOR MAP NO. 6								2.22							75,951							6,723	403	225		75	9					1,040	
TOTAL FOR PROJ NO. 5CR.10321.27								12.28			25		114,590		72,441			75,951				25,423	1,525	1,045		4	100	16				3,720	
5CR.20321.27	Durham	7	SR 1449 - UMSTEAD ROAD	SR 1401 (COLE MILL ROAD) TO NC 157	1	NO	NO	3.39	23-55	620	310	6.20			51,910		500	130	7,823	4,597	651	340		12	7	720	720	4.50	460				
TOTAL FOR MAP NO. 7								3.39		620	310	6.20			51,910		500	130	7,823	4,597	651	340					12	7	720	720	4.50	460	
5CR.20321.27	Durham	8	SR 1815 - FLETCHER'S CHAPEL ROAD	SR 1800 (CHEEK RD) TO SR 1814 (STALLINGS RD)	4	NO	NO	1.56	22-34		156		22,934						2,033	122	150		2	1									
TOTAL FOR MAP NO. 8								1.56			156		22,934										2,033	122	150		2	1					
5CR.20321.27	Durham	9	SR 1926 - ANGIER AVENUE	JOINT S OF SR 1815 (PLEASANT DR) TO EAST END AVENUE	1	NO	NO	0.97	23-34	180	97	1.80			14,989			80	2,260	1,328	188	100	1	22	1	250	100	1.30	270				
TOTAL FOR MAP NO. 9								0.97		180	97	1.80			14,989			80	2,260	1,328	188	100		1	22	1	250	100	1.30	270			
5CR.20321.27	Durham	10	SR 1917 - SOUTH MINERAL SPRINGS ROAD	NC 98 TO SR 1811 (SHERRON RD)	1	NO	NO	2.24	22-33	420	224	4.48			30,331			100	4,965	2,917	413	150	5	2	250	100	3.00	360					
TOTAL FOR MAP NO. 10								2.24		420	224	4.48			30,331			100	4,965	2,917	413	150		5	2	250	100	3.00	360				
TOTAL FOR PROJ NO. 5CR.20321.27								8.16		1,220	787	12.48		22,934		97,230		500	310	15,048	10,875	1,374	740		1	41	11	1,220	920	8.80	1,090		
GRAND TOTAL								20.44		1,220	812	12.48		137,524		72,441		97,230	75,951	500	310	15,048	36,298	2,899	1,785		5	141	27	1,220	920	8.80	4,810

SIGNING FOR RESURFACING PROJECTS

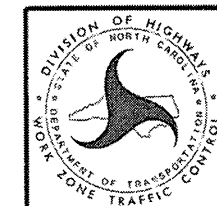


LEGEND	
T	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

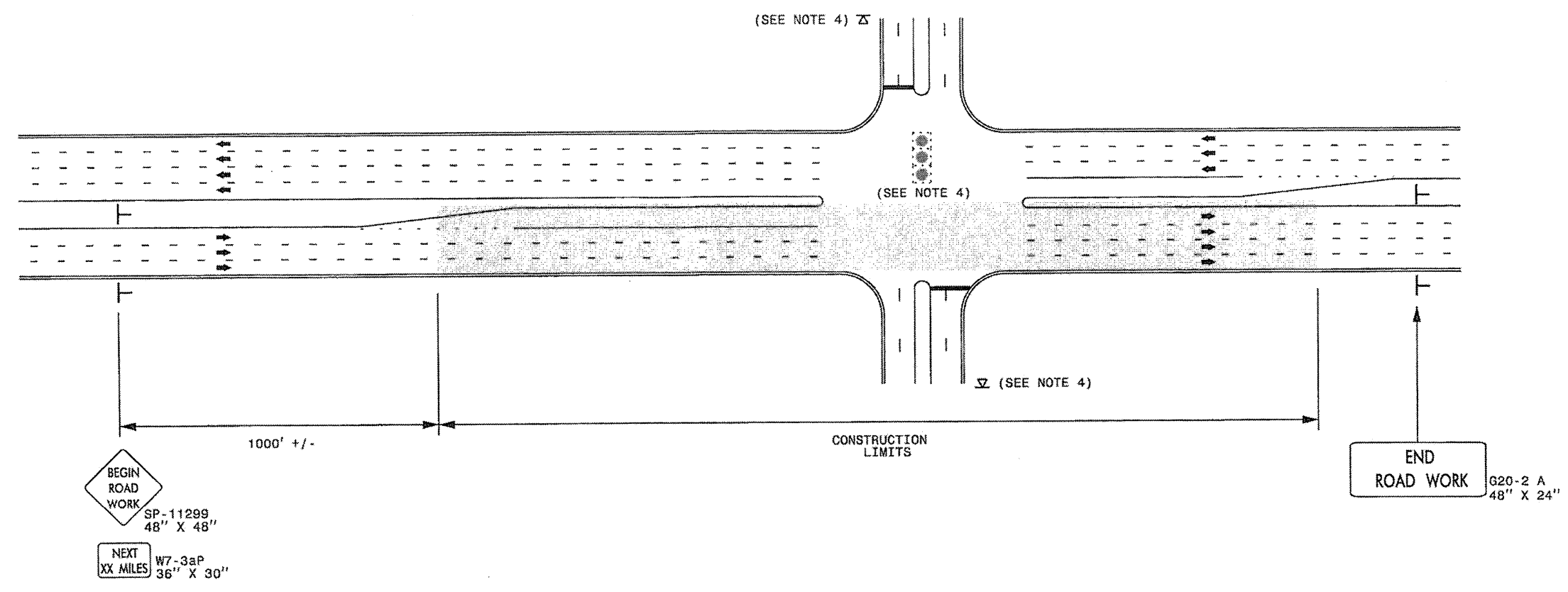
-Y- LINE SIGNING

SIGNING NOTES AND PLACEMENT PER DIRECTION	MAINLINE (-L-) SIGNING		-Y- LINE SIGNING	
	① ②	 W20-1 48" X 48" W7-30P 24" X 18"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE. #2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)	NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS: 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS
	③	 SP 13107 48" X 48"	PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACED 1 MILE APART THEREAFTER. IF NO -Y- LINES EXIST, PLACE 2ND SET 1/2 MILE FROM THE CONSTRUCTION LIMITS AND THEN SPACE 1 MILE THEREAFTER.	WHEN PAVING/CONSTRUCTION ACTIVITIES PROCEED ACROSS AN UNSIGNED -Y- LINE, ADVANCE WARNING PORTABLE SIGNS SHALL BE USED ALONG THE -Y- LINE AS SHOWN BELOW. REMOVE UPON COMPLETION OF WORK.
	④	 SP 13106 48" X 48"	THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS. INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE. FOR MULTIPLE -Y- LINES THAT ARE SEPARATED BY 0.25 MILES OR LESS, TREAT AS A SINGLE UNIT AND INSTALL WITHIN 500' OF EACH APPROACH. A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.	 W20-1 48" X 48" W20-7 A 48" X 48"
⑤	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.	PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.	



RESURFACING
ADVANCE WARNING SIGNS
FOR
RURAL AND SUBURBAN
2 LANE ROADWAYS

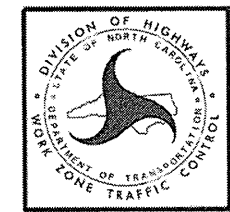
URBAN / SUBURBAN WORKZONES



NOTES:

- 1) 48" x 48" SIZED SIGNS (SP- 11299) MAY BE REDUCED TO 36" X 36" ON ROADWAYS WITH SPEED LIMITS OF 40 MPH OR LESS.
- 2) MOUNT SIGNS THAT ARE LARGER THAN 10 SQUARE FEET IN AREA ON TWO OR MORE WOOD OR U-CHANNEL SUPPORTS. PERFORATED SQUARE TUBING SUPPORT SYSTEMS MAY SUPPORT LARGER AREAS ON A SINGLE SUPPORT. FOLLOW MANUFACTURER'S RECOMMENDATIONS. THESE SYSTEMS SHALL BE NCHRP 350 COMPLIANT AND NCDOT APPROVED.
- 3) ADVANCE WARNING SIGNS NOT REQUIRED ON NON-SIGNALIZED SIDE STREETS.
- 4) USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AND PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.
- 5) LATERAL CLEARANCE AT ALL SIGN LOCATIONS SHALL BE 2' AS MEASURED FROM THE EDGE OF PAVEMENT OR THE FACE OF THE CURB. WHEN UNABLE TO OBTAIN THE LATERAL CLEARANCE WITHIN THE MEDIAN AREA USE SHOULDER MOUNTS ONLY.
- 6) SIGN MOUNT LOCATIONS SHALL NOT BLOCK SIDEWALKS OR DRIVEWAYS.
- 7) IF STATIONARY GENERAL WARNING SIGNS ARE USED, THEY WILL BE PAID FOR PER SECTION 104 OF THE NCDOT STANDARD SPECIFICATIONS AS EXTRA WORK.
- 8) IF MILLED AREAS ARE NOT PAVED BACK BY THE END OF THE WORK DAY, PORTABLE SIGNS SHALL BE USED TO WARN DRIVERS OF THE PRESENT CONDITIONS. THESE ARE TO INCLUDE, BUT NOT LIMITED TO "ROUGH ROAD" W8-8, "UNEVEN LANES" W8-11, "GROOVED PAVEMENT" W8-15 w/MOTORCYCLE PLAQUE MOUNTED BELOW. THESE ARE TO BE DOUBLE INDICATED ON MULTI-LANE ROADWAYS WITH SPEED LIMITS 45 MPH AND GREATER WHERE LATERAL CLEARANCE CAN BE OBTAINED WITHIN THE MEDIAN AREAS. THESE PORTABLE SIGNS ARE INCIDENTAL TO THE OTHER ITEMS OF WORK INCLUDED IN THE TEMPORARY TRAFFIC CONTROL (LUMP SUM) PAY ITEM.

LEGEND	
T	STATIONARY SIGN
↔	DIRECTION OF TRAFFIC FLOW

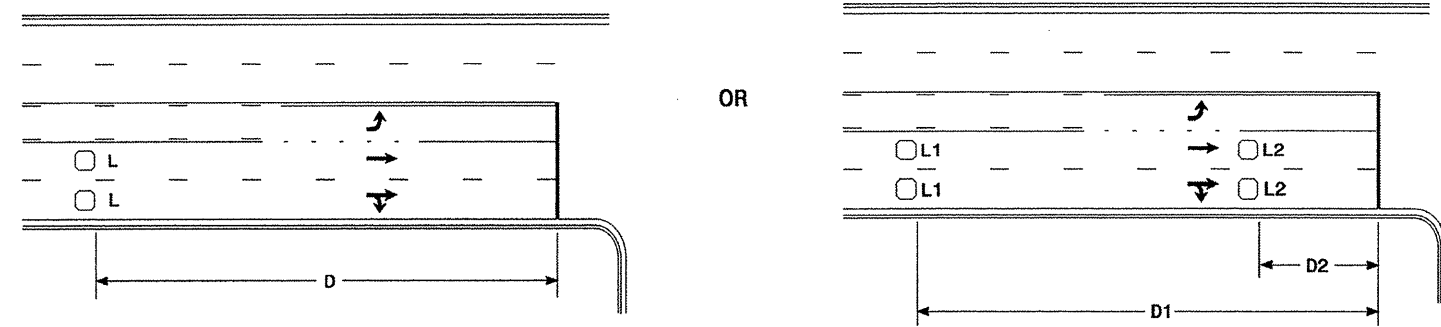


**RESURFACING ADVANCE
WARNING SIGNS FOR
URBAN / SUBURBAN
FACILITIES**

I:\2013\2013\Resurfacing\2013\Documents\New_Procedures\05_09_2013\Resurfacing_AdvWarn_UrSub.dgn
 User: jpmaze

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

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)

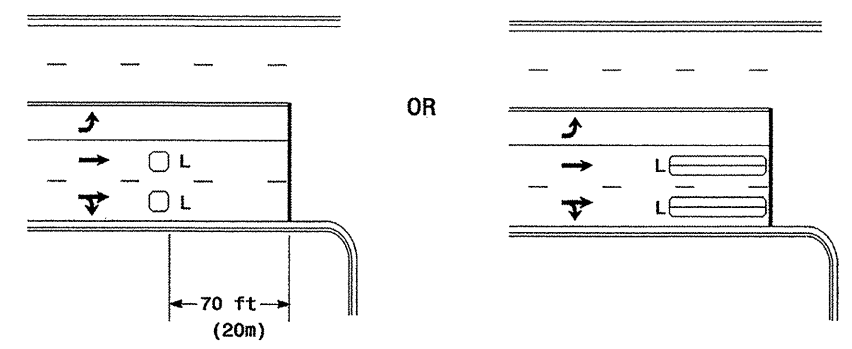
L1 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series
L2 = 6ft X 6ft
(1.8m X 1.8m)
Wired in series

Volume Density Operation

"Stretch" Operation

Low Speed Detection

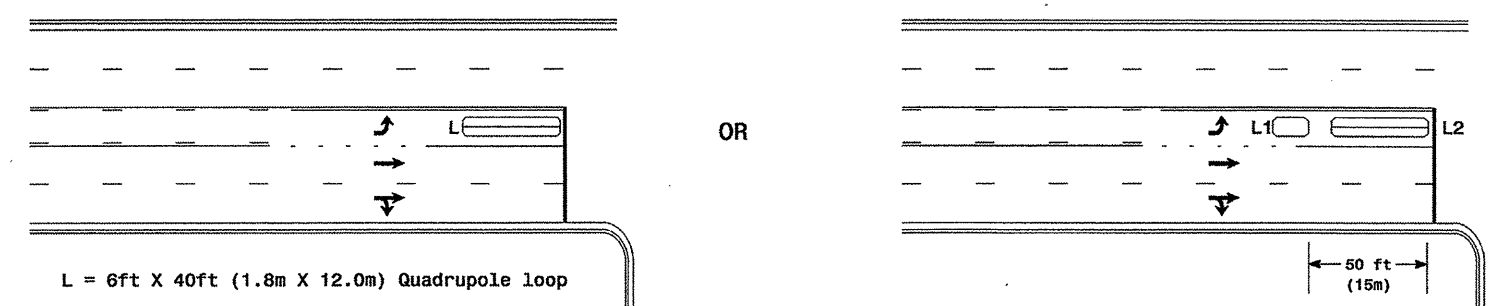
[≤35 mph (56 km/hr)]



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



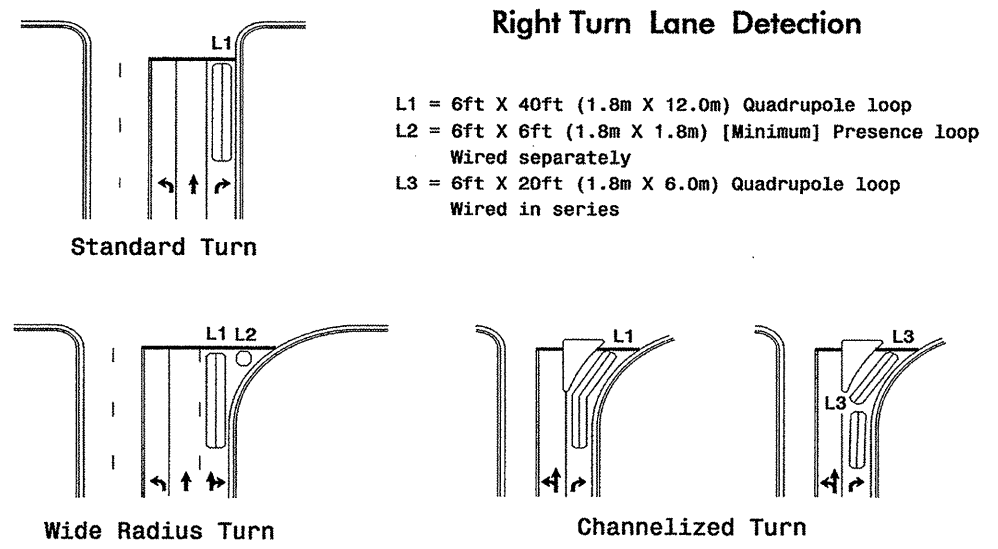
L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

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

Presence Loop Detection

Queue Loop Detection

Right Turn Lane Detection



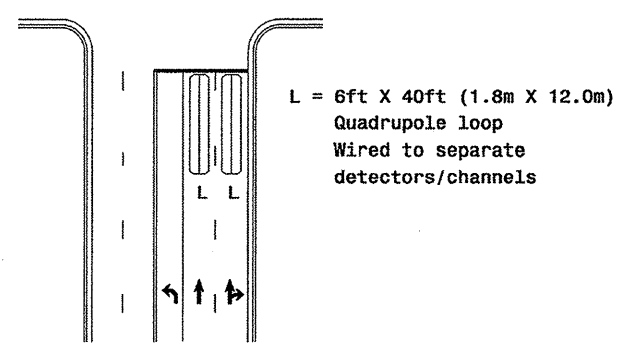
L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
Wired in series

Standard Turn

Wide Radius Turn

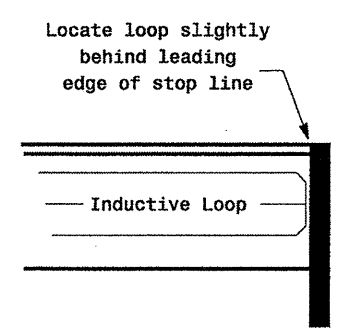
Channelized Turn

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

Inductive Loop

Note:
Loop may be located in advance
of stop line when stop line is
greater than 15' (4.5m) from edge
of intersecting roadway; or, when
loop detects a permissive or
protected/permissive left turn.

Recommended Number of Turns

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

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

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

	Typical Loop Locations		
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY: REVIEWED BY:	
SCALE N/A	REVISIONS 1. Revise pavement markings	SIGNATURE 	DATE 12/10/06

19-DEC-2005 14:29
s:\kts\sign\alt\turn_in\m\lsc\loop\typ\cal\2006.dgn
P. Alexander