

- 1. SR 1010 Ten-Ten Rd.
- 2. SR 1379 Penny Rd.
- 3. SR 4025 Juaquin Ln.
- 4. SR 4026 New Windsor Pl.
- 5. SR 4027 Reigate Ln.
- 6. SR 1392 Ransdell Rd.

### 2023 S. Wake County Resurfacing

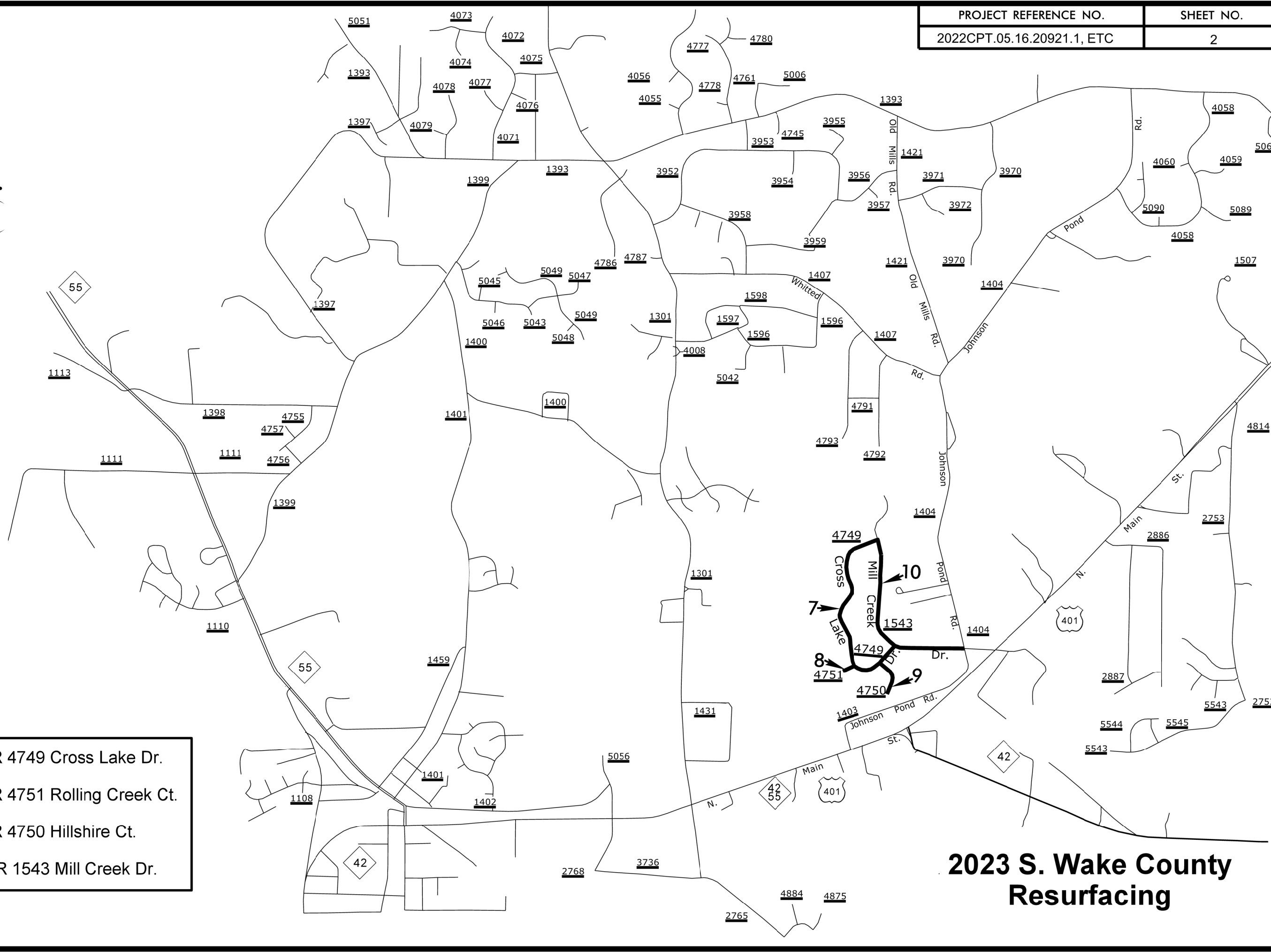
5/14/23  
C:\Users\jgibson\OneDrive\Documents\2023 S. Wake County Resurfacing\2023 S. Wake County Resurfacing.dwg



- 7. SR 4749 Cross Lake Dr.
- 8. SR 4751 Rolling Creek Ct.
- 9. SR 4750 Hillshire Ct.
- 10. SR 1543 Mill Creek Dr.

# 2023 S. Wake County Resurfacing

5/14/23  
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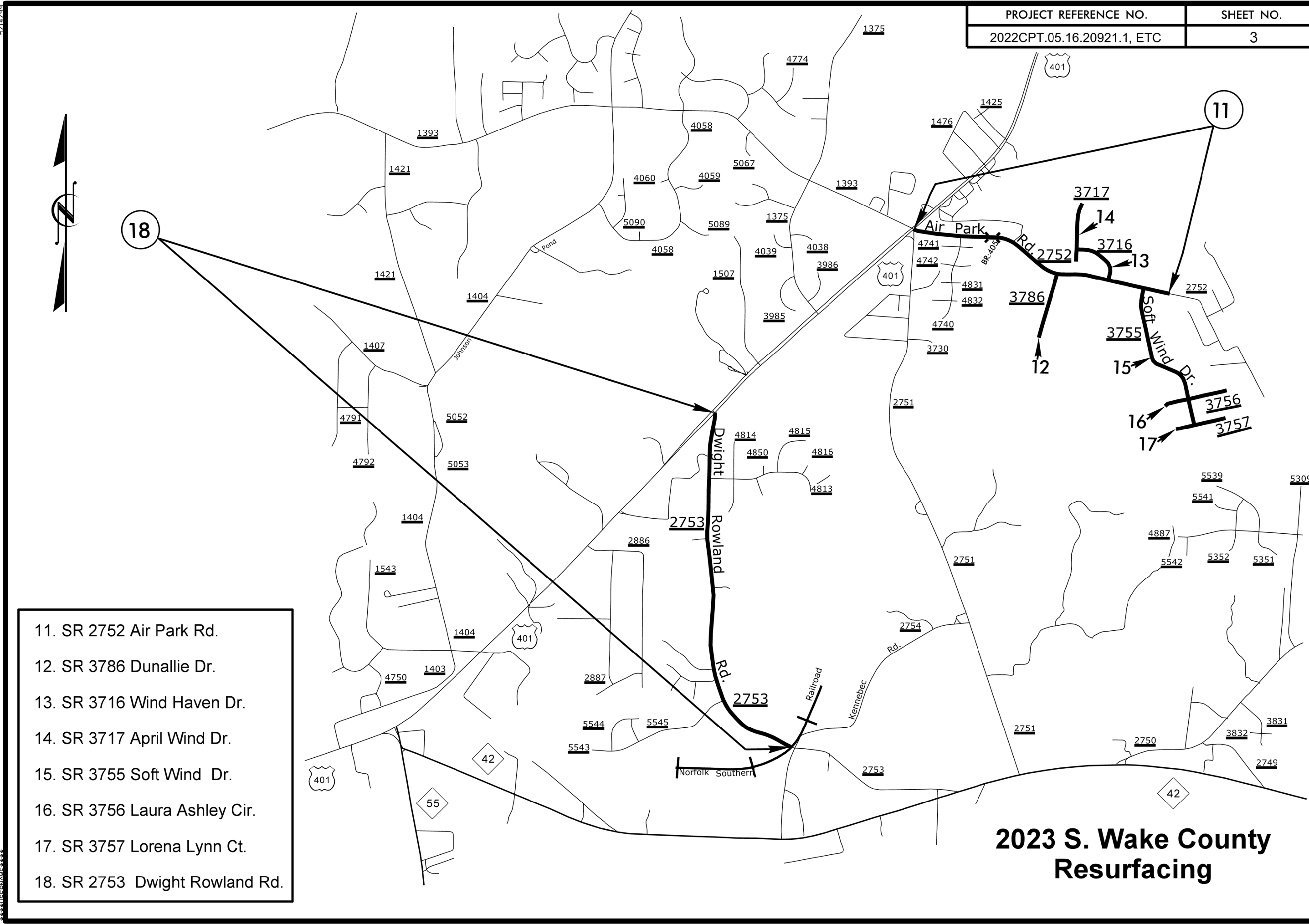
18

11

- 11. SR 2752 Air Park Rd.
- 12. SR 3786 Dunallie Dr.
- 13. SR 3716 Wind Haven Dr.
- 14. SR 3717 April Wind Dr.
- 15. SR 3755 Soft Wind Dr.
- 16. SR 3756 Laura Ashley Cir.
- 17. SR 3757 Lorena Lynn Ct.
- 18. SR 2753 Dwight Rowland Rd.

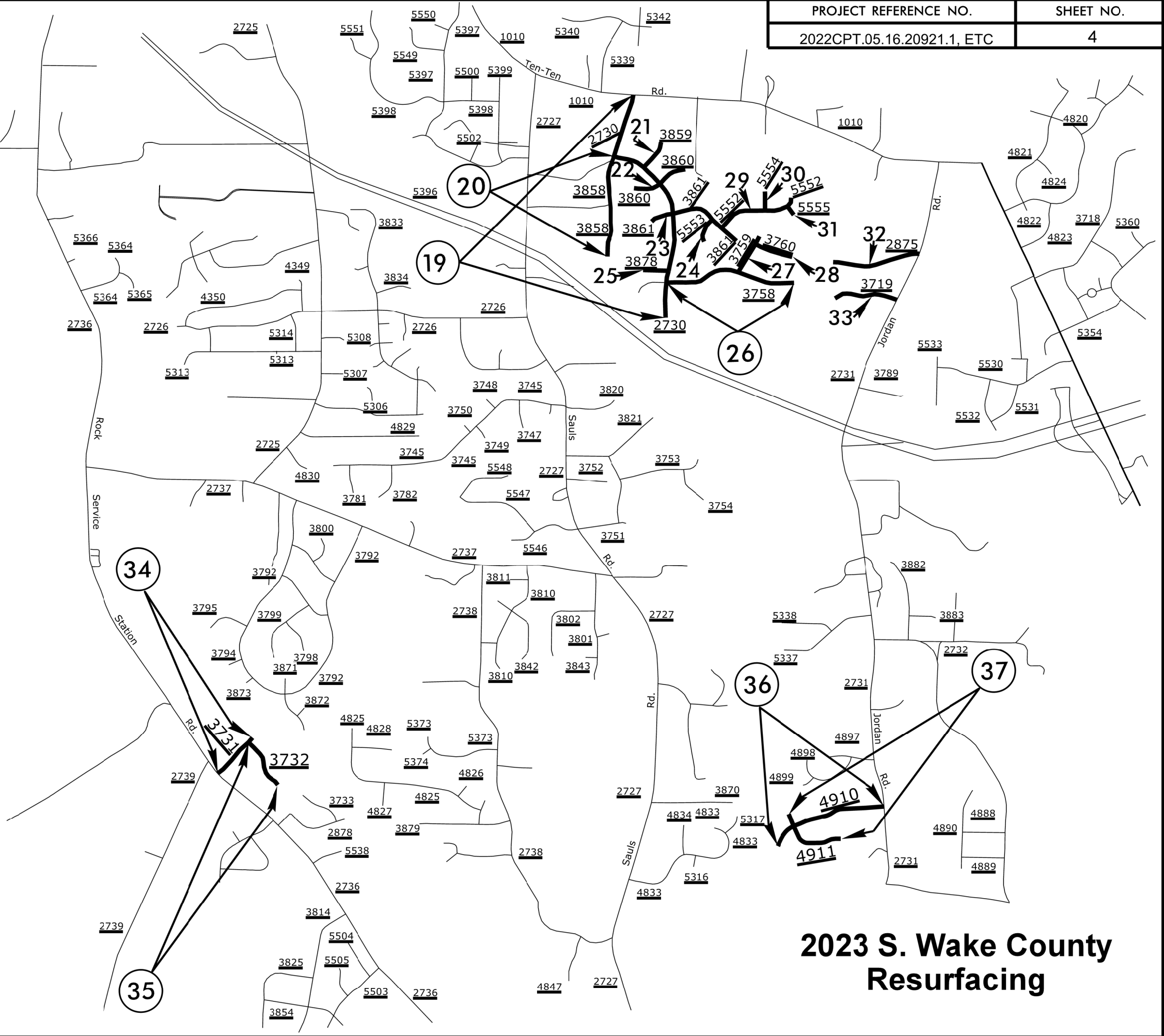
### 2023 S. Wake County Resurfacing

5/14/23  
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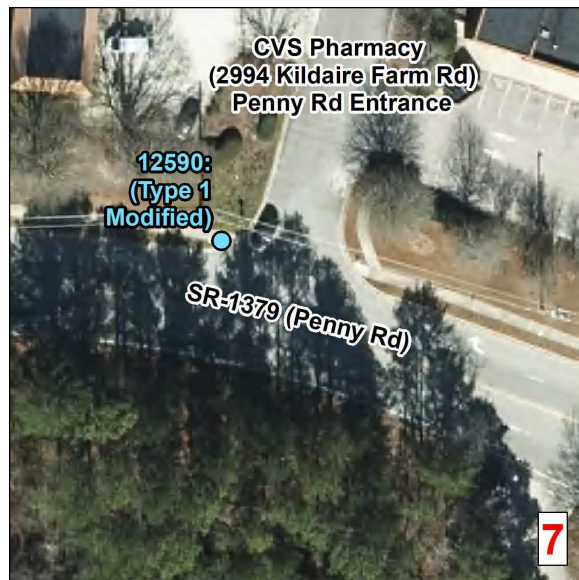
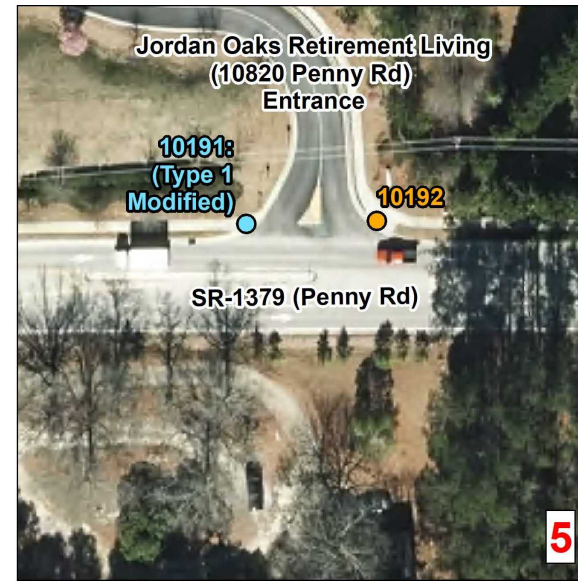
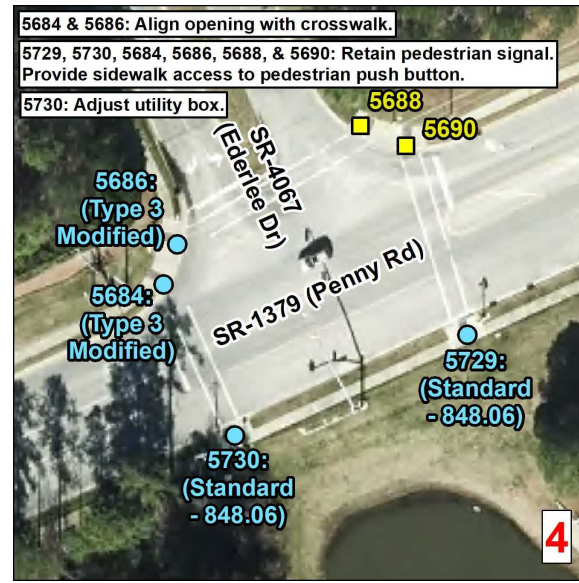
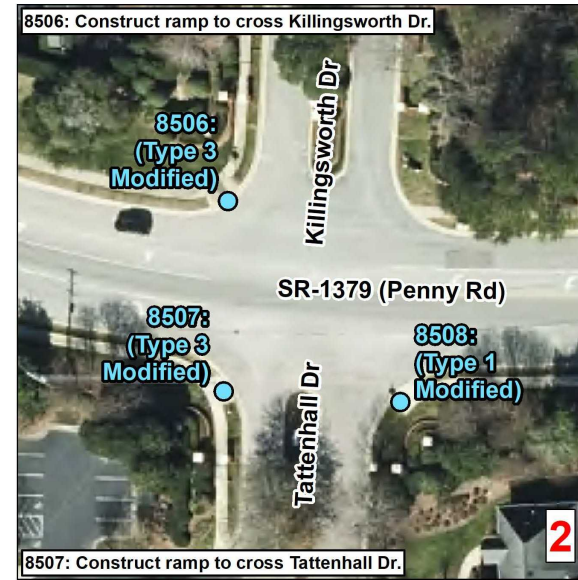
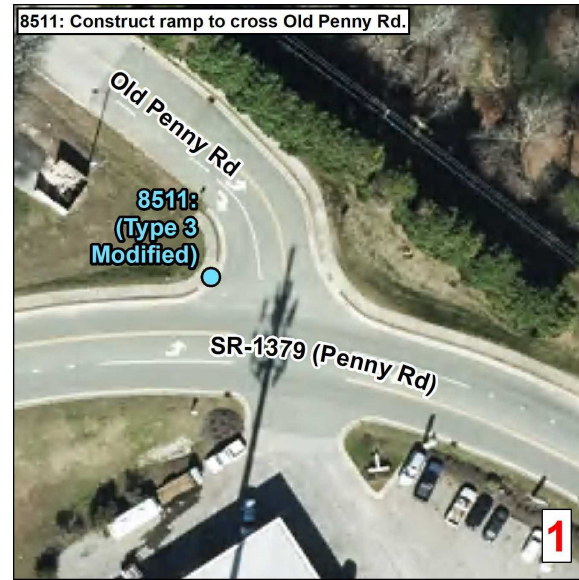
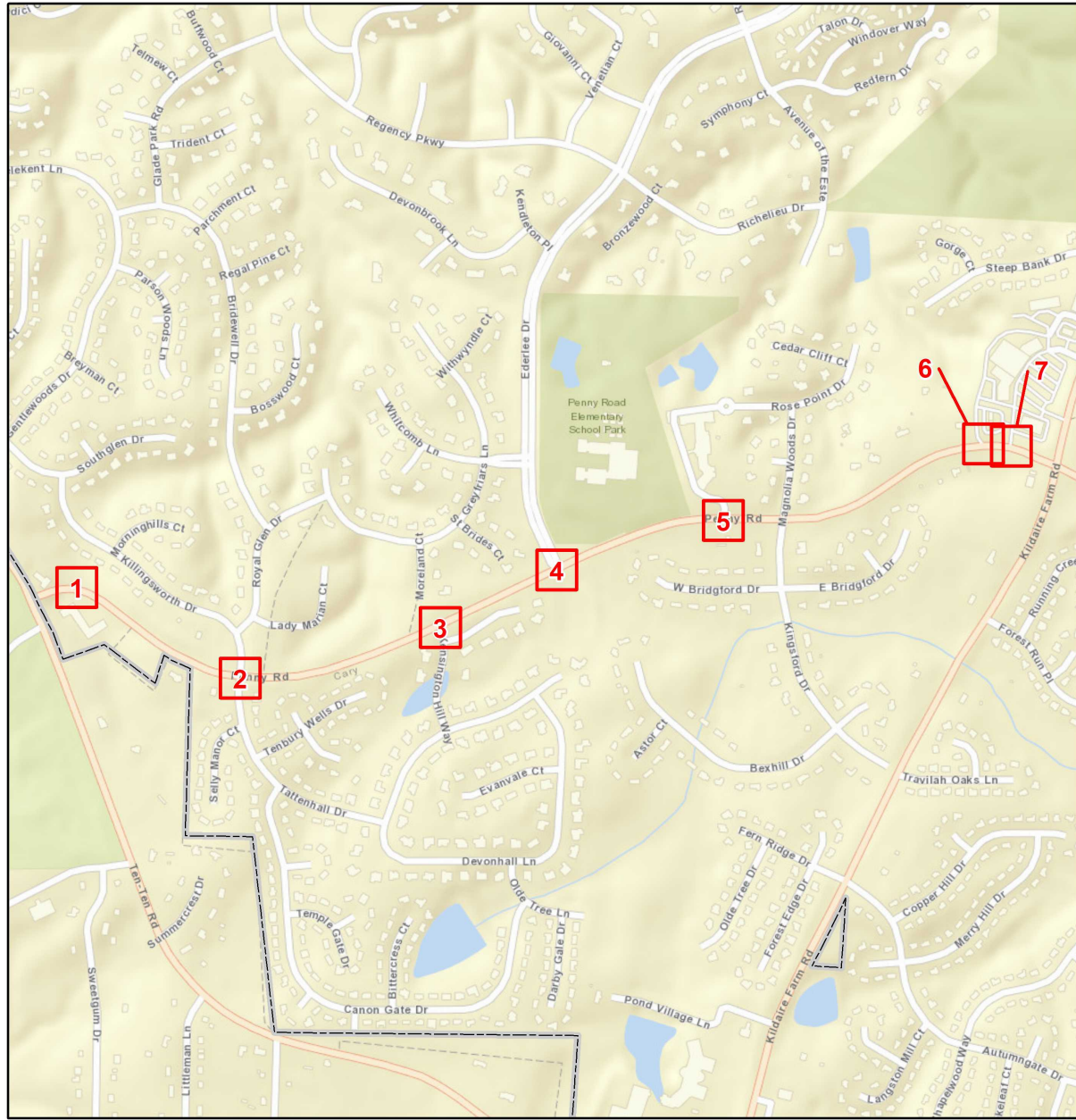
- 19. SR 2730 Joe Leach Rd.
- 20. SR 3858 Huntwyck Dr.
- 21. SR 3859 Final Trail Ct.
- 22. SR 3860 Bowling Farm Ct.
- 23. SR 3861 Hunters Farm Dr.
- 24. SR 5553 Britt Farm Dr.
- 25. SR 3878 Lassiter Farm Rd.
- 26. SR 3758 Shannondale Dr.
- 27. SR 3759 Aqua Ln.
- 28. SR 3760 Markay Cir.
- 29. SR 5552 Blue River Farm Dr.
- 30. SR 5554 Britt Ridge Ct.
- 31. SR 5555 Hunterfox Ct.
- 32. SR 2875 Guffy Dr.
- 33. SR 3719 Roy Averette Dr.
- 34. SR 3731 River Down Dr.
- 35. SR 3732 Ribbon Trough Ct.
- 36. SR 4910 Jordan Ridge Ln.
- 37. SR 4911 Trunecek Cir.



## 2023 S. Wake County Resurfacing



5/14/2023  
 C:\TIME\2023\20230514\20230514.DWG  
 2023 S. Wake County Resurfacing  
 SHEET 4 OF 4  
 1:1  
 10/10/2023 10:10:10 AM  
 10/10/2023 10:10:10 AM







**Curb Ramps To Be Repaired**

- Retrofit
- Remove and Replace
- New Curb Ramp
- Remove Ramp
- Other

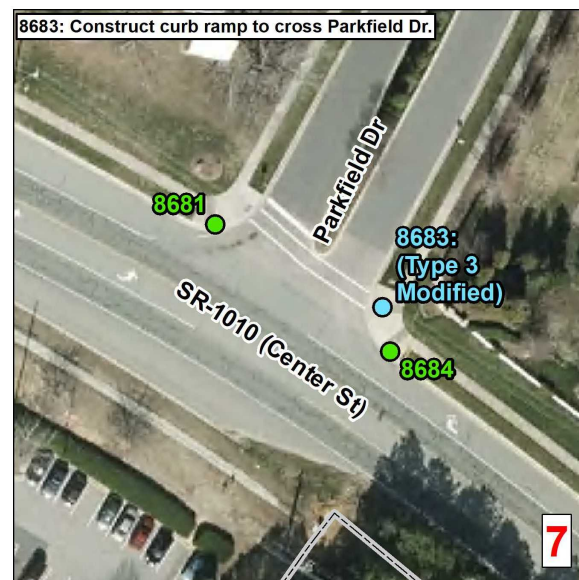
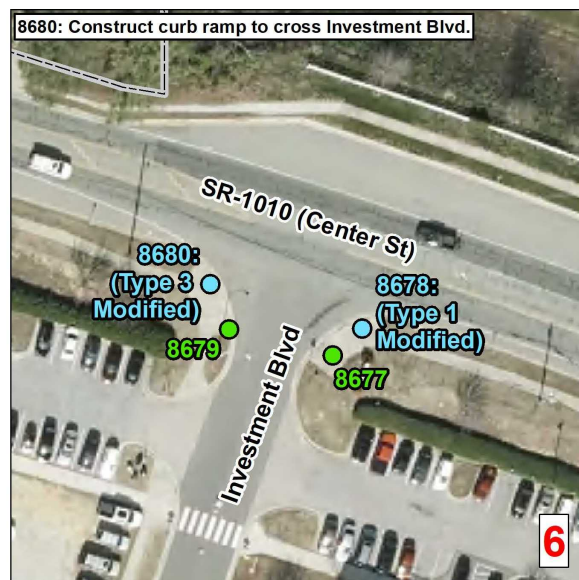
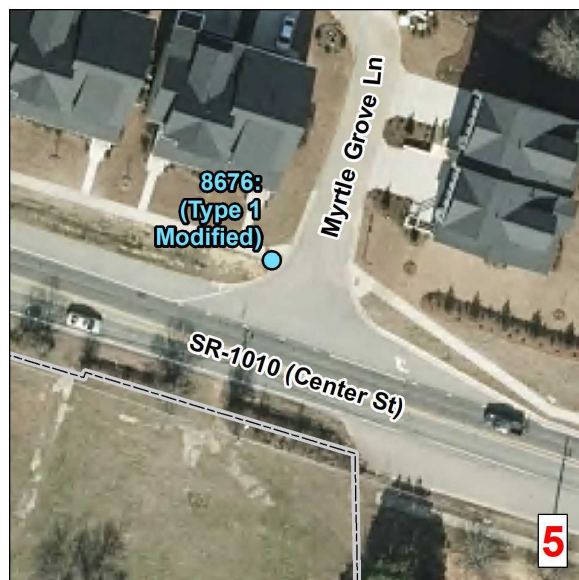
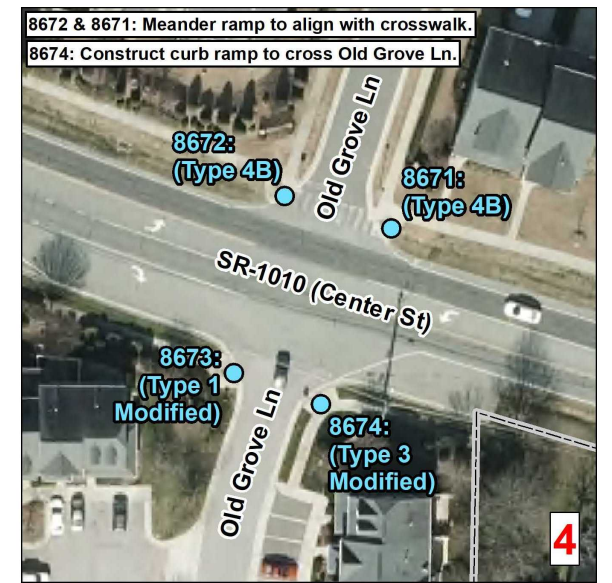
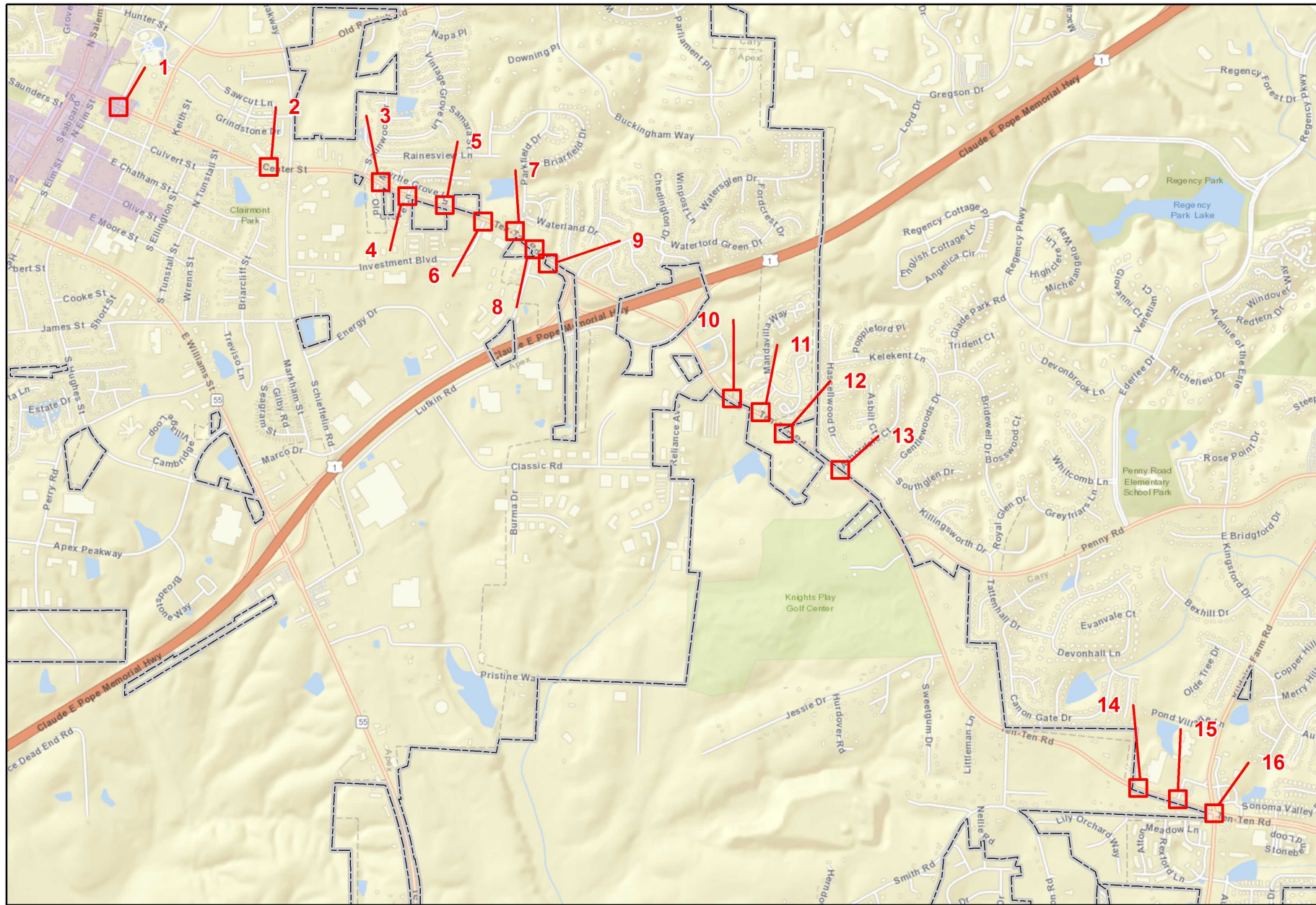
 Municipal Boundary  
 NCHPO Historic Boundary (NR and LHD)



**2023 South**  
**WBS: 2022CPT.05.16.20921.1**  
**Penny Road**  
**from SR 1010 to SR 1300**


 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION 5

Source: NV5 Engineers and Consultants Inc., ESRI, NC OneMap, NCDOT, NCHPO



**Curb Ramps To Be Repaired**

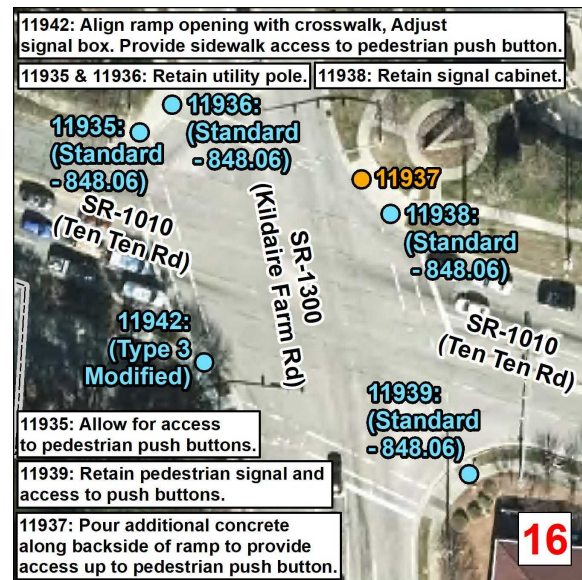
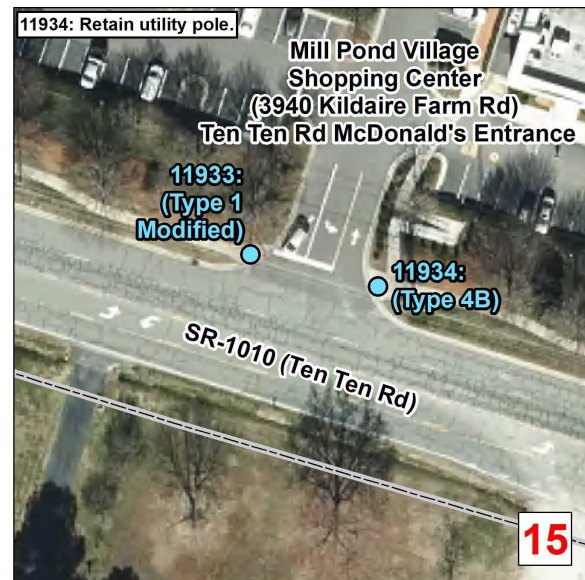
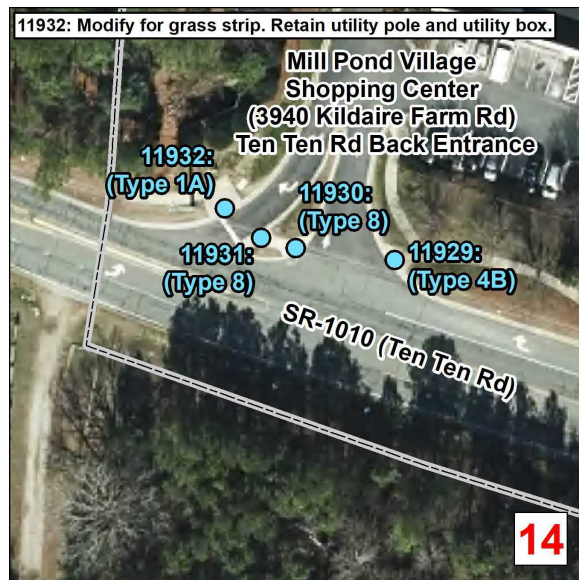
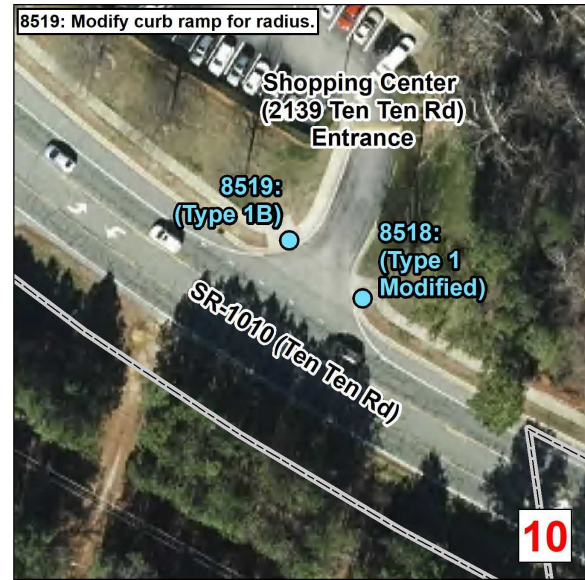
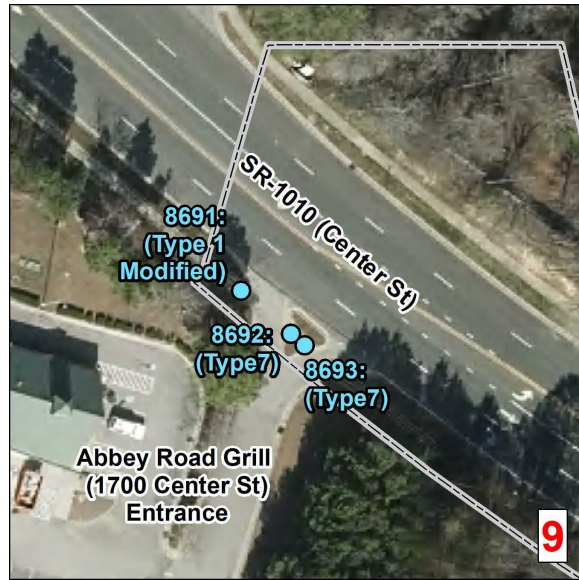
- Retrofit
- Remove and Replace
- New Curb Ramp
- Remove Ramp

Municipal Boundary  
 NCHPO Historic Boundary (NR and LHD)

**2023 South**  
**WBS: 2022CPT.05.16.20921.1**  
**Ten-Ten Rd**  
**from SR 1300 to N. Salem St.**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION 5

Source: NV5 Engineers and Consultants Inc., ESRI, NC OneMap, NCDOT, NCHPO



**Curb Ramps To Be Repaired**

- Retrofit
- Remove and Replace
- New Curb Ramp
- Remove Ramp

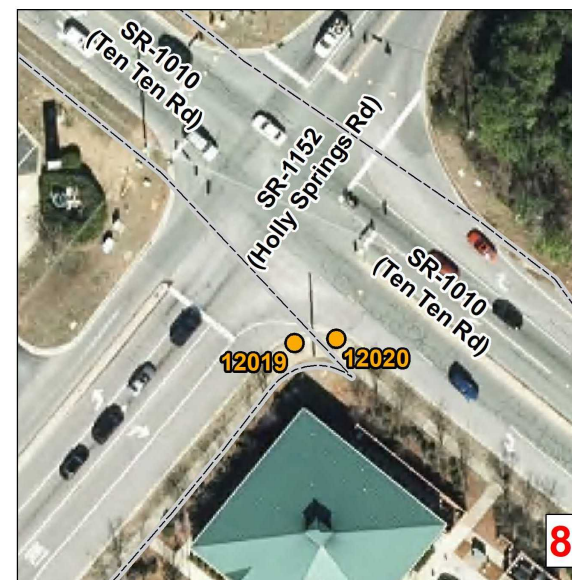
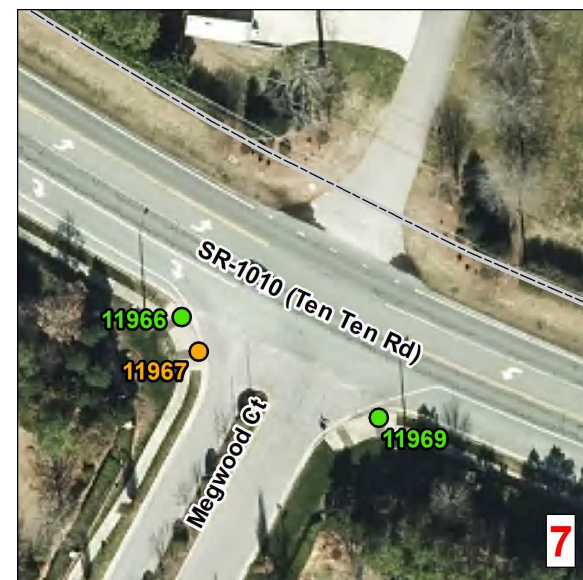
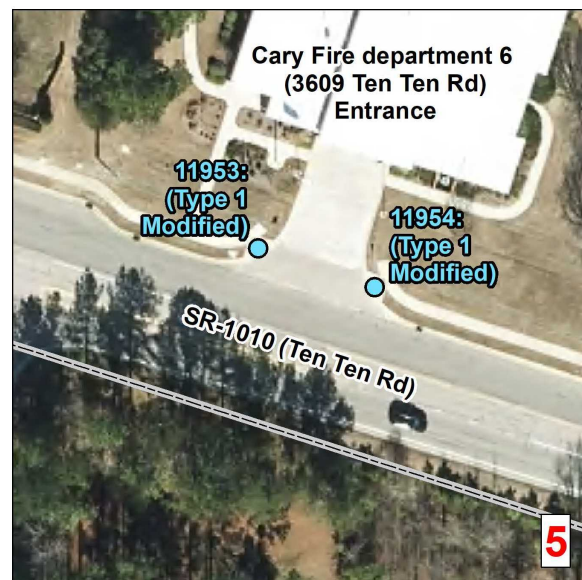
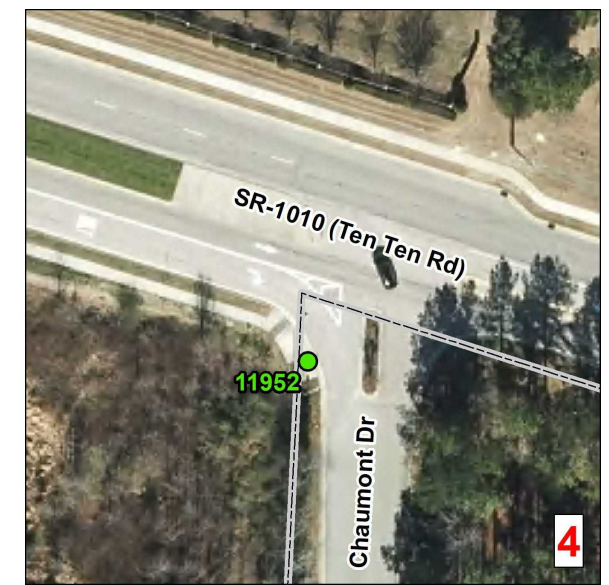
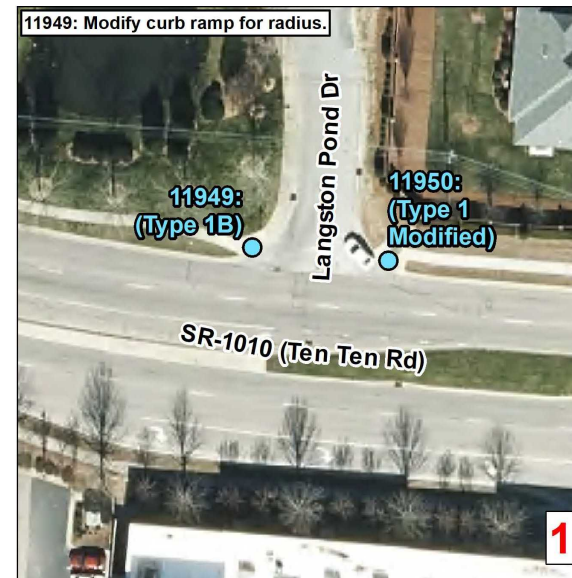
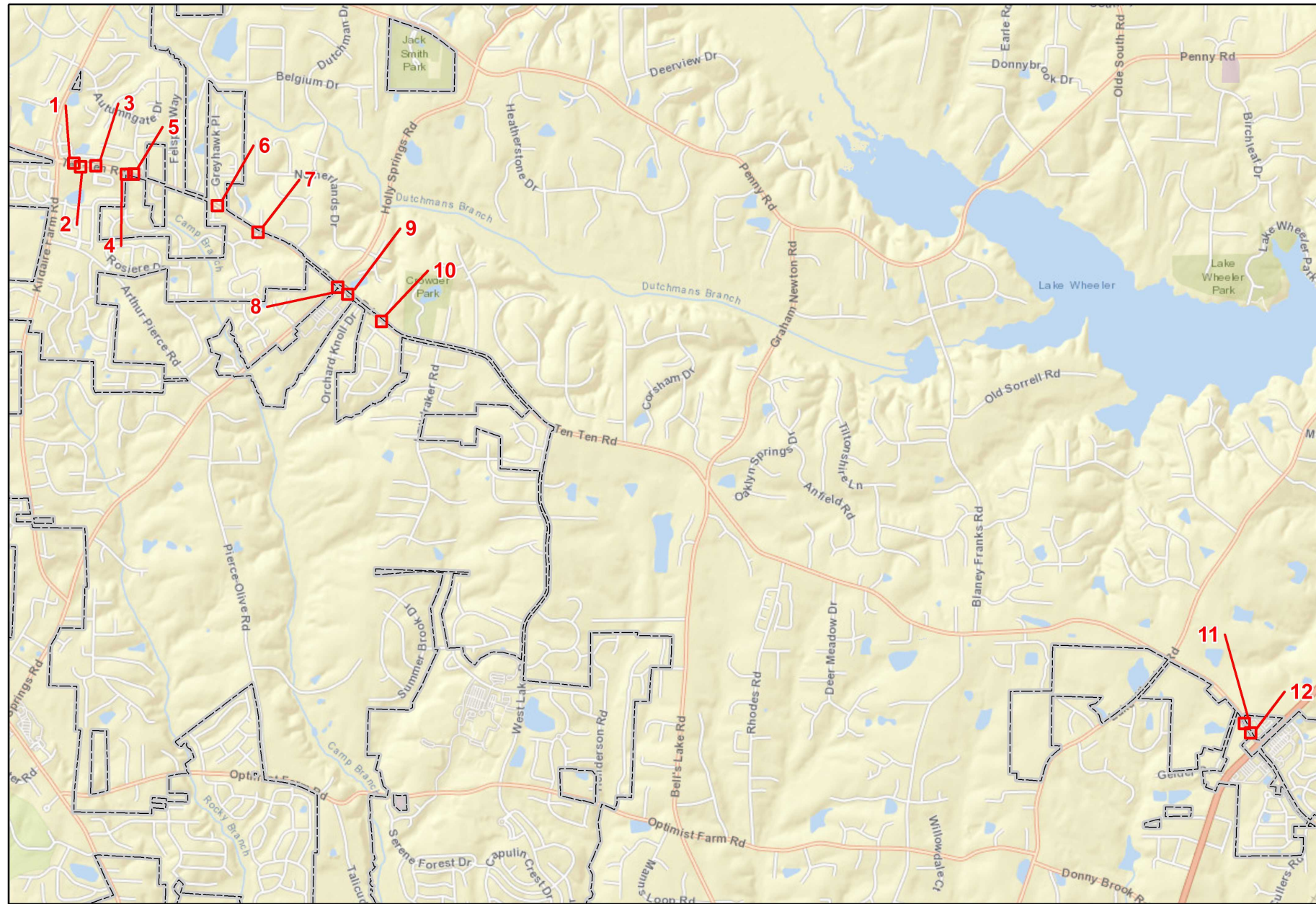
Municipal Boundary  
 NCHPO Historic Boundary (NR and LHD)

**2023 South**  
**WBS: 2022CPT.05.16.20921.1**  
  
**Ten-Ten Rd**  
**from SR 1300 to N. Salem St.**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION 5

Source: NV5 Engineers and Consultants Inc, ESRI, NC OneMap, NCDOT, NCHPO





**Curb Ramps To Be Repaired**

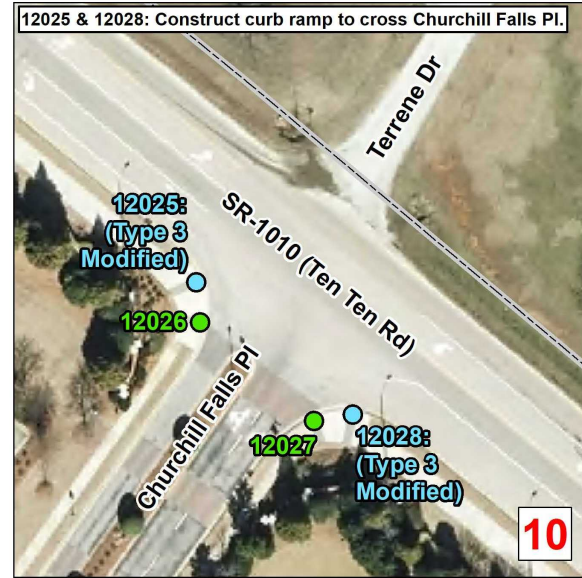
- Retrofit
- Remove and Replace
- New Curb Ramp
- Remove Ramp
- Municipal Boundary
- NCHPO Historic Boundary (NR and LHD)

**2023 South**  
**WBS: 2022CPT.05.16.20921.1**

**Ten-Ten Rd**  
**from US 401 to SR 1300**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION 5


Source: NV5 Engineers and Consultants Inc., ESRI, NC OneMap, NCDOT, NCHPO



**Curb Ramps To Be Repaired**


- Retrofit
- Remove and Replace
- New Curb Ramp
- Remove Ramp

Municipal Boundary  
 NCHPO Historic Boundary (NR and LHD)



**2023 South**  
**WBS: 2022CPT.05.16.20921.1**

**Ten-Ten Rd**  
**from US 401 to SR 1300**



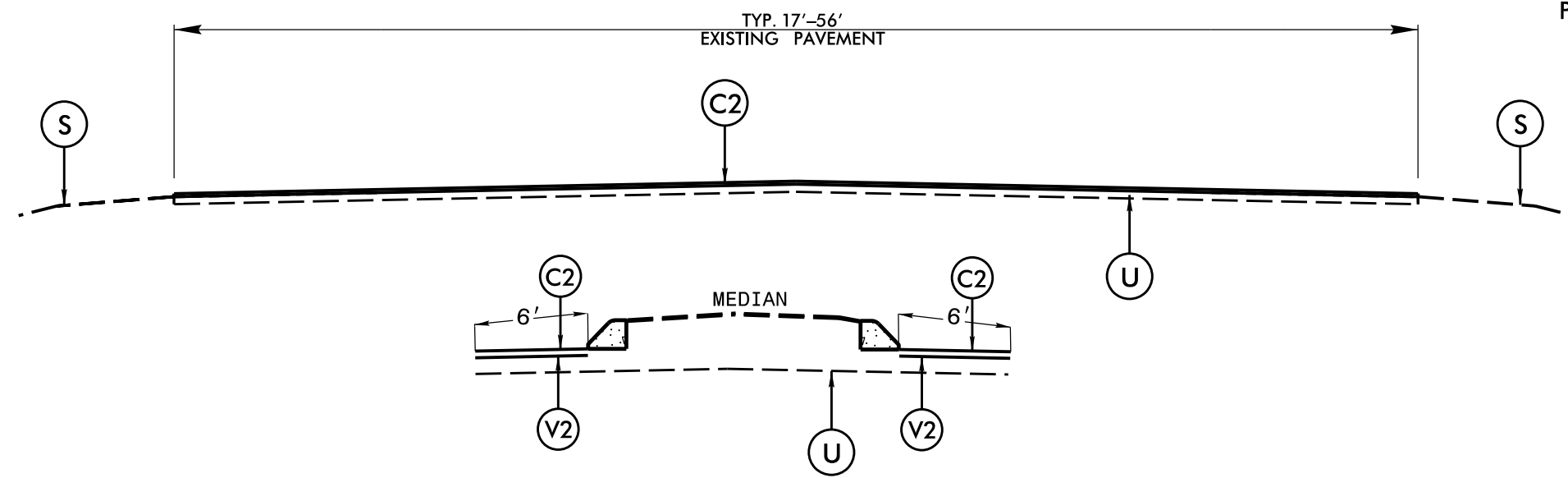
NORTH CAROLINA DEPARTMENT  
OF TRANSPORTATION  
DIVISION 5

Source: NV5 Engineers and Consultants Inc, ESRI, NC OneMap, NCDOT, NCHPO



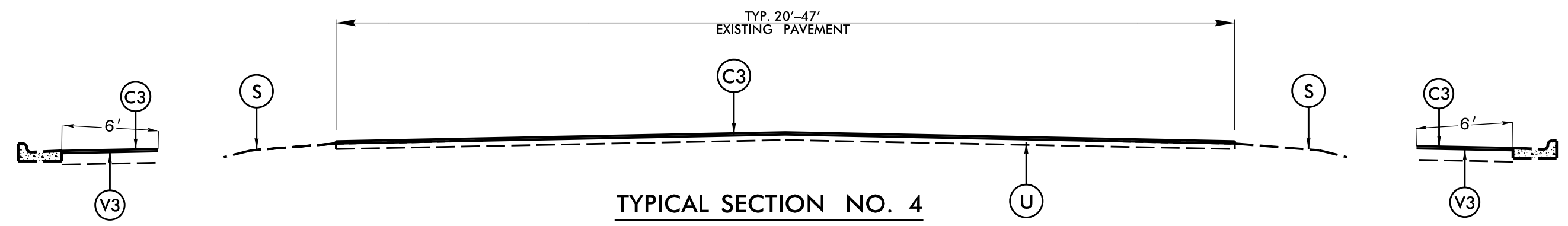
PAVEMENT SCHEDULE	
C1	1" S9.5B
C2	1 1/4" S9.5B
C3	1 1/2" S9.5B
C4	1 1/2" S9.5C
R	EXIST. C&G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	1 1/2" MILLING
V2	0-1 1/4" MILLING
V3	0-1 1/2" MILLING

\* VARIABLE OUTSIDE SHOULDER - PARTIAL C&G, PARTIAL EARTH SHOULDER



**TYPICAL SECTION NO. 3**

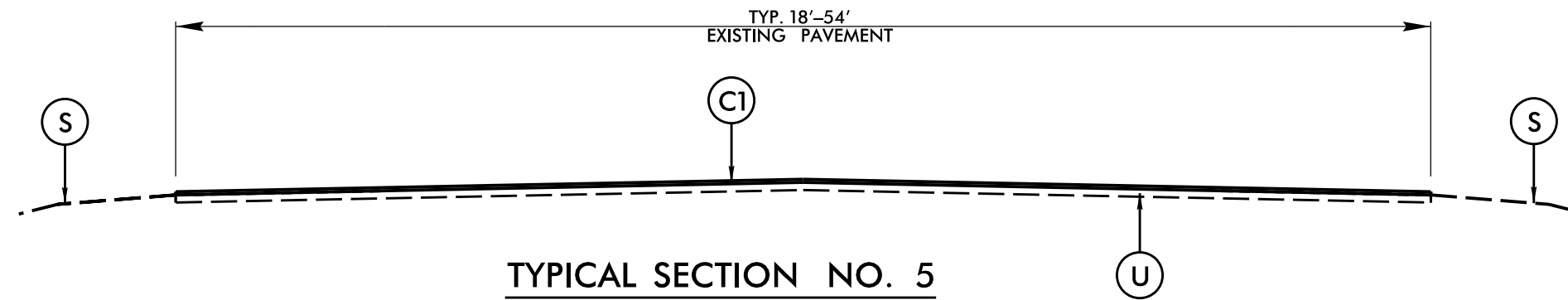
FULL DEPTH PATCHING AND RESURFACE S9.5B  
 MAP NOS. 3-5, 8, 9, 12-17, 19-33  
 MAP 12 SR 3786 (DUNALLIE DR.)  
 0-1 1/4" MILLING AT CONCRETE ISLAND IN MEDIAN  
 AT APPROXIMATELY STA 0+15 TO STA 0+55.



**TYPICAL SECTION NO. 4**

FULL DEPTH PATCHING AND RESURFACE S9.5B  
 MAP NOS. 6, 7, 10, 11, 18  
 MAP 11 SR 2752 (AIR PARK RD.)  
 0-1 1/2" MILLING AT AND CURB & GUTTER  
 AT APPROXIMATELY STA 15+85 TO STA 19+50  
 AND STA 33+45 TO STA 39+40.  
 MAP 18 SR 2753 (DWIGHT ROWLAND RD.)  
 0-1 1/2" MILLING AT AND CURB & GUTTER  
 AT APPROXIMATELY STA 21+00 TO STA 23+50  
 AND STA 65+80 TO STA 70+80.

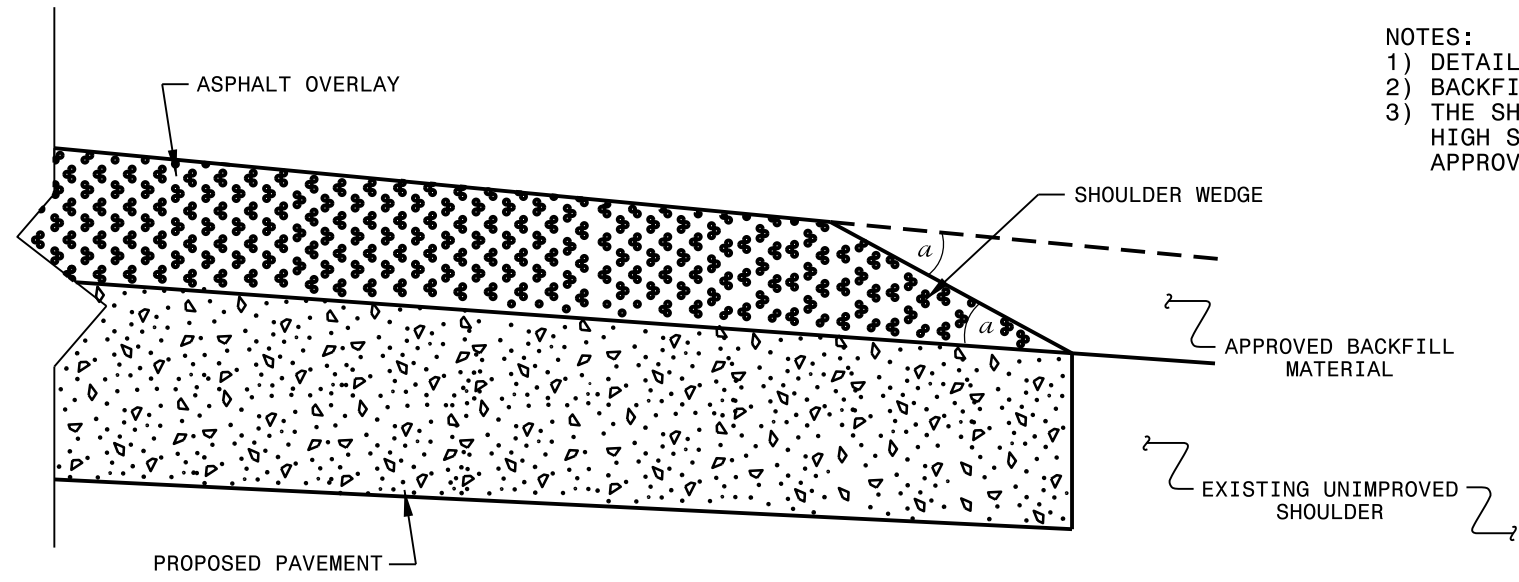
PAVEMENT SCHEDULE	
C1	1" S9.5B
C2	1¼" S9.5B
C3	1½" S9.5B
C4	1½" S9.5C
R	EXIST. C&G
S	SHLD GRADING
U	EXIST. PAVEMENT
V1	1½" MILLING
V2	0-1¼" MILLING
V3	0-1½" MILLING



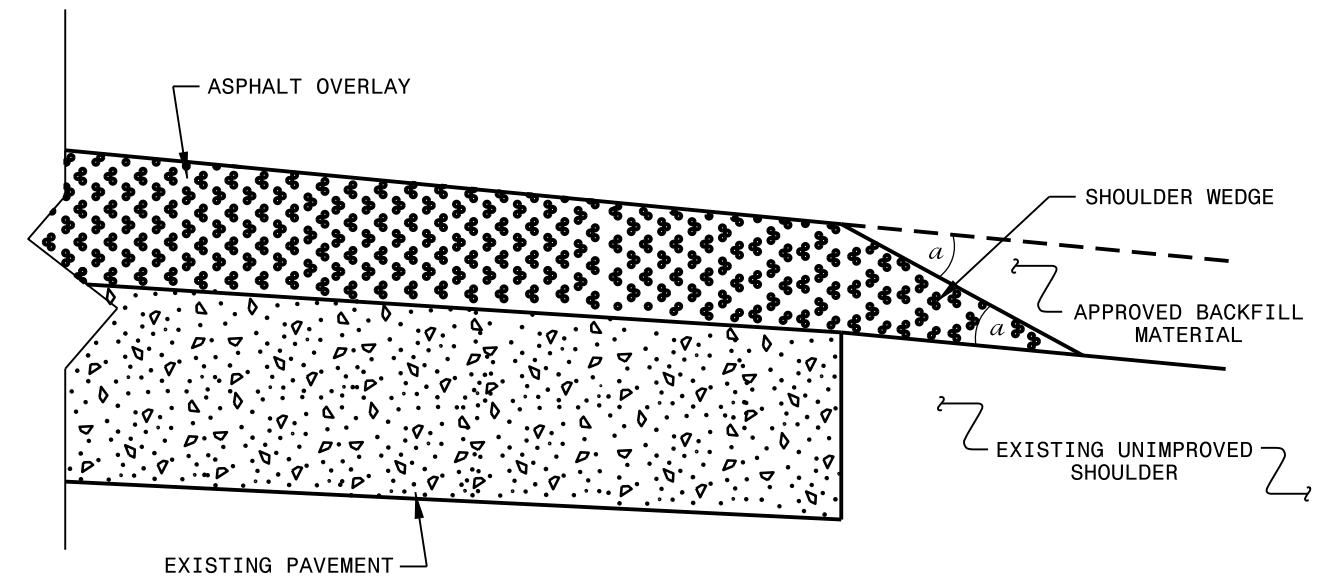
**TYPICAL SECTION NO. 5**  
 FULL DEPTH PATCHING AND RESURFACE S9.5B  
 MAP NOS. 34-44



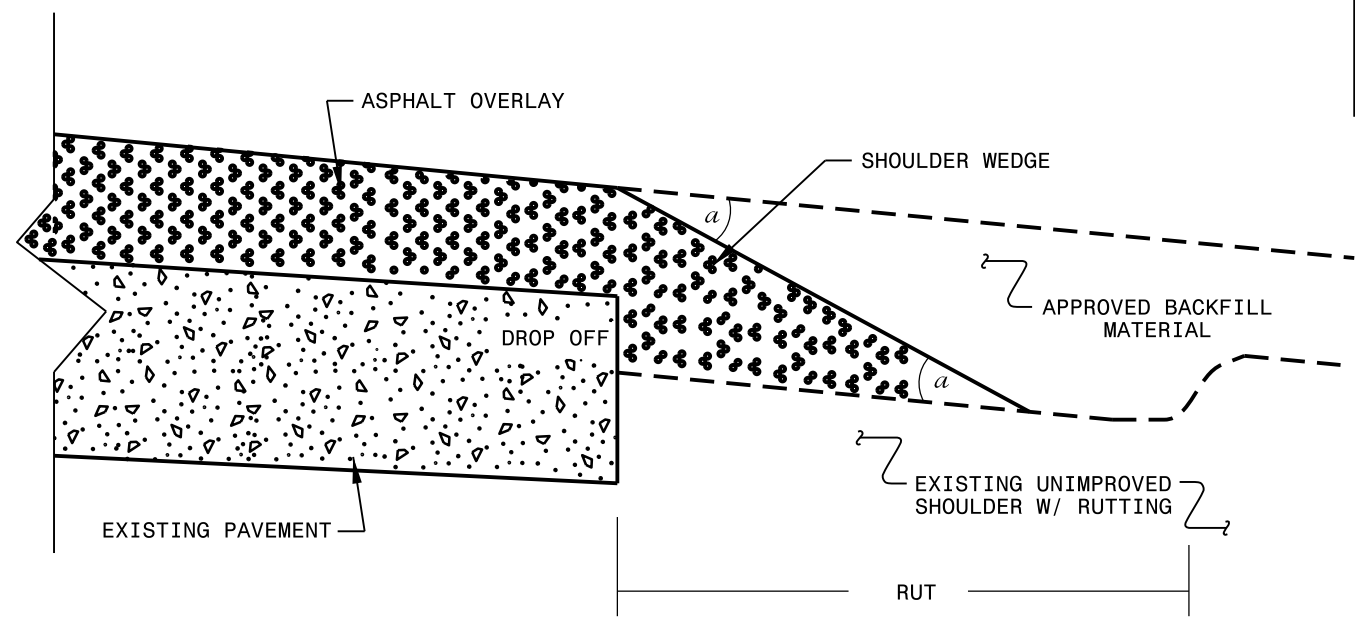
- NOTES:  
 1) DETAIL DOES NOT APPLY TO OGAFB AND ULTRA-THIN BONDED WEARING COURSE.  
 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.  
 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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



**SHOULDER WEDGE DETAIL**  
 (Resurfacing Projects w/ NO Widening)

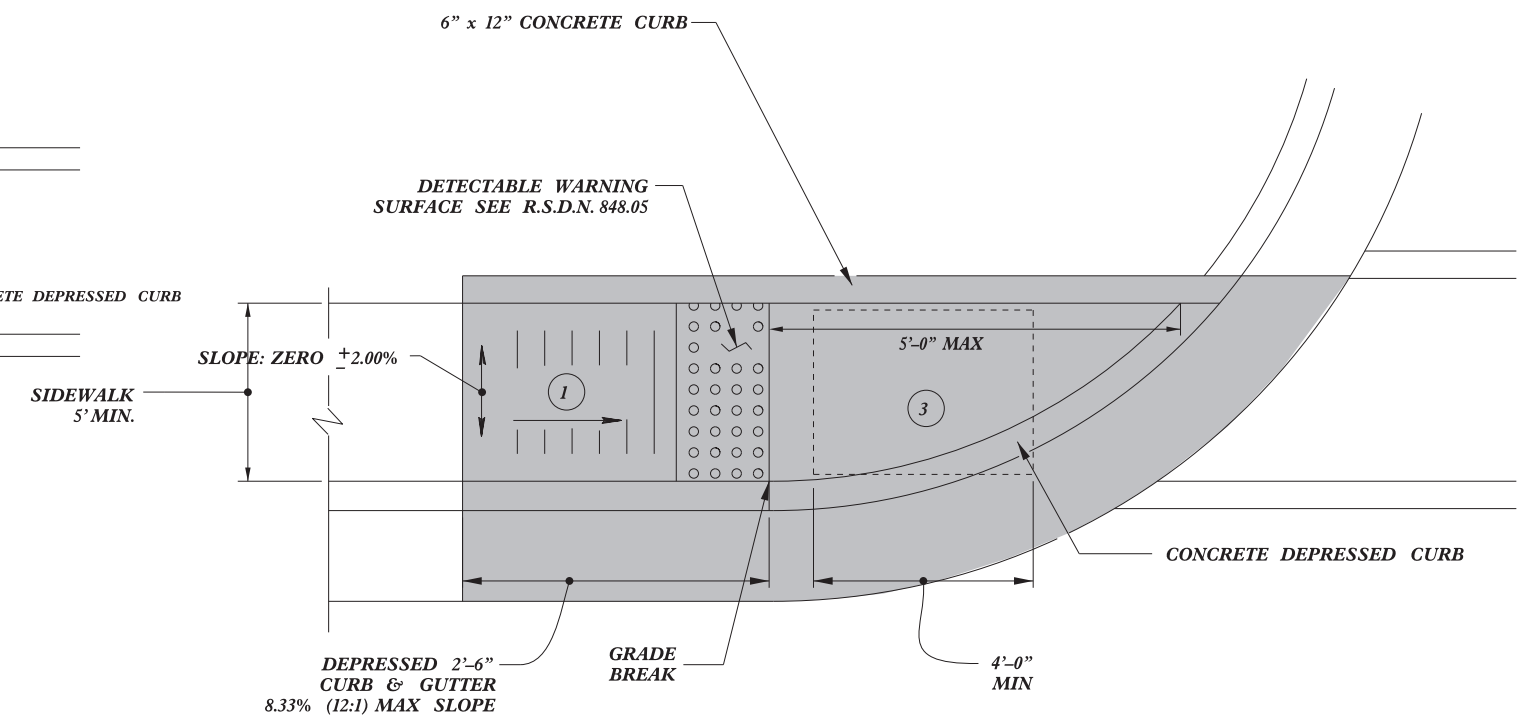
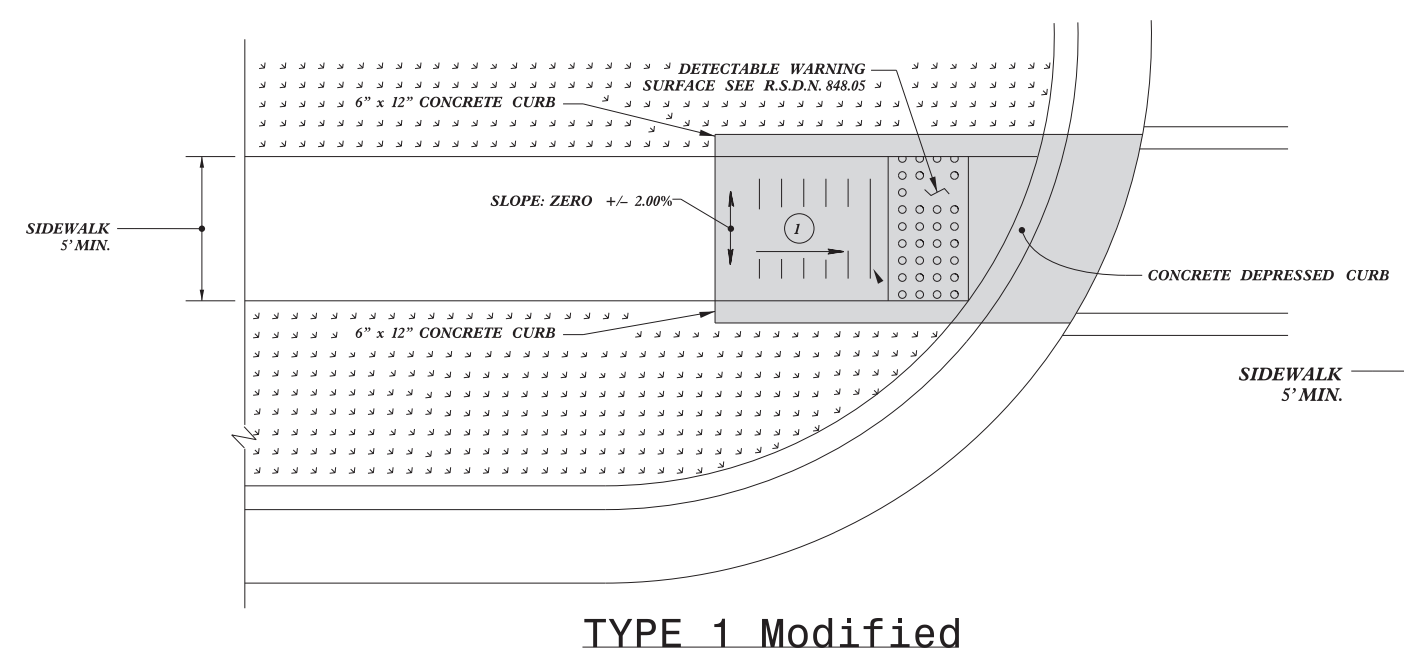
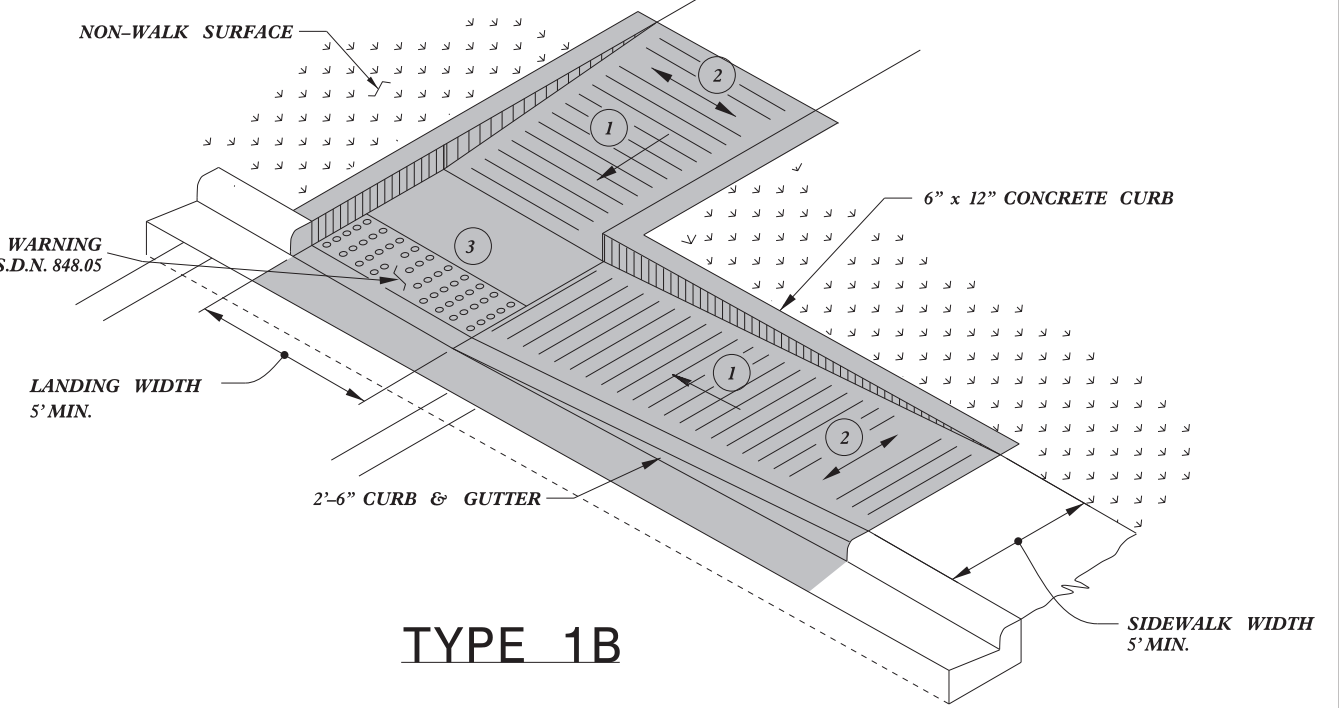
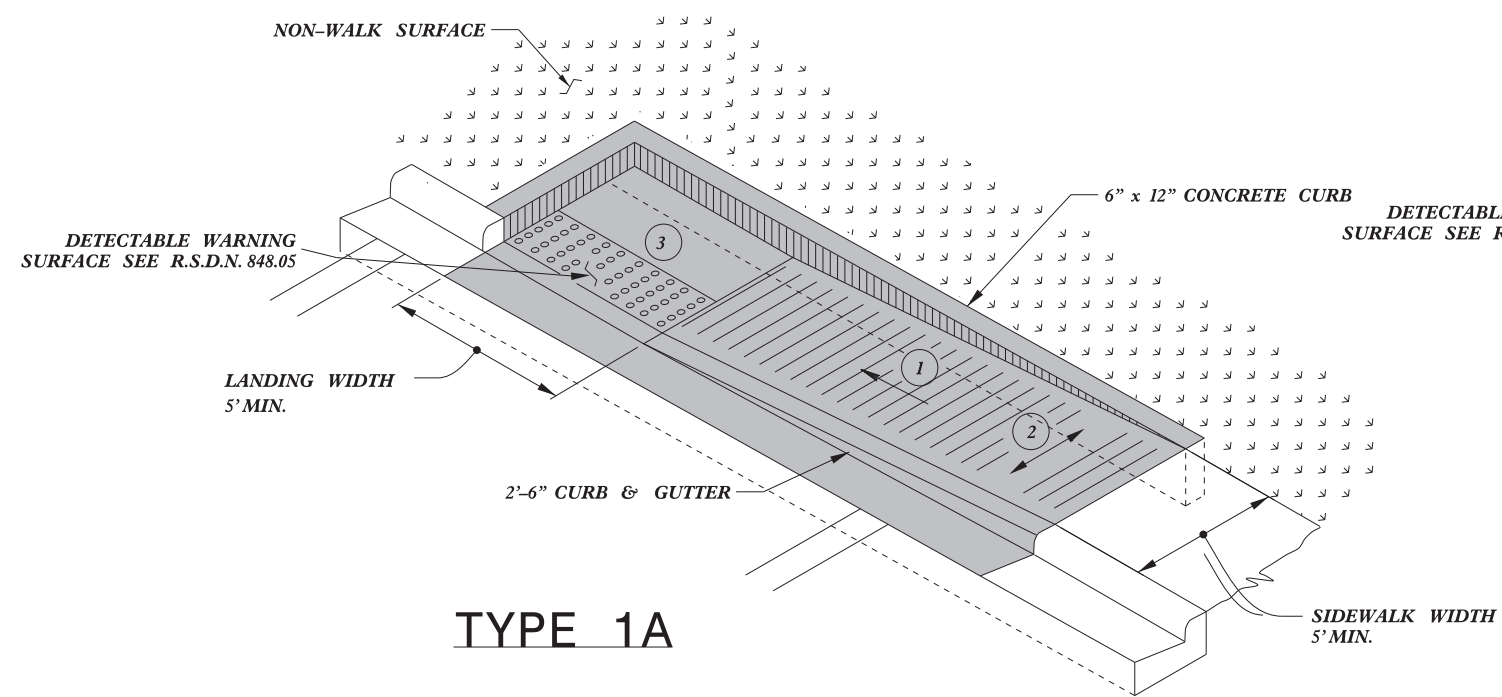


**SHOULDER WEDGE DETAIL**  
 (Resurfacing Adjacent to Rutted Shoulder)

- SHOULDER WEDGE ANGLE = 30°

CONTRACT STANDARDS AND DEVELOPMENT UNIT		
Office 919-707-6950 FAX 919-250-4119		
<b>SHOULDER WEDGE DETAILS</b>		
ORIGINAL BY: T.SPELL	DATE: 7-19-11	
MODIFIED BY:	DATE: 2/2/16	
CHECKED BY:	DATE:	
FILE SPEC.: szusr/details/stand/shoulderwedgedetail.dgn		

22\_JAN-2018\_0944  
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 P:\piper\at\USD-215342



- 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 1 CURB RAMP

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



1/8/2020  
Signed by: J.S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**CURB RAMPS**  
Directional Ramps

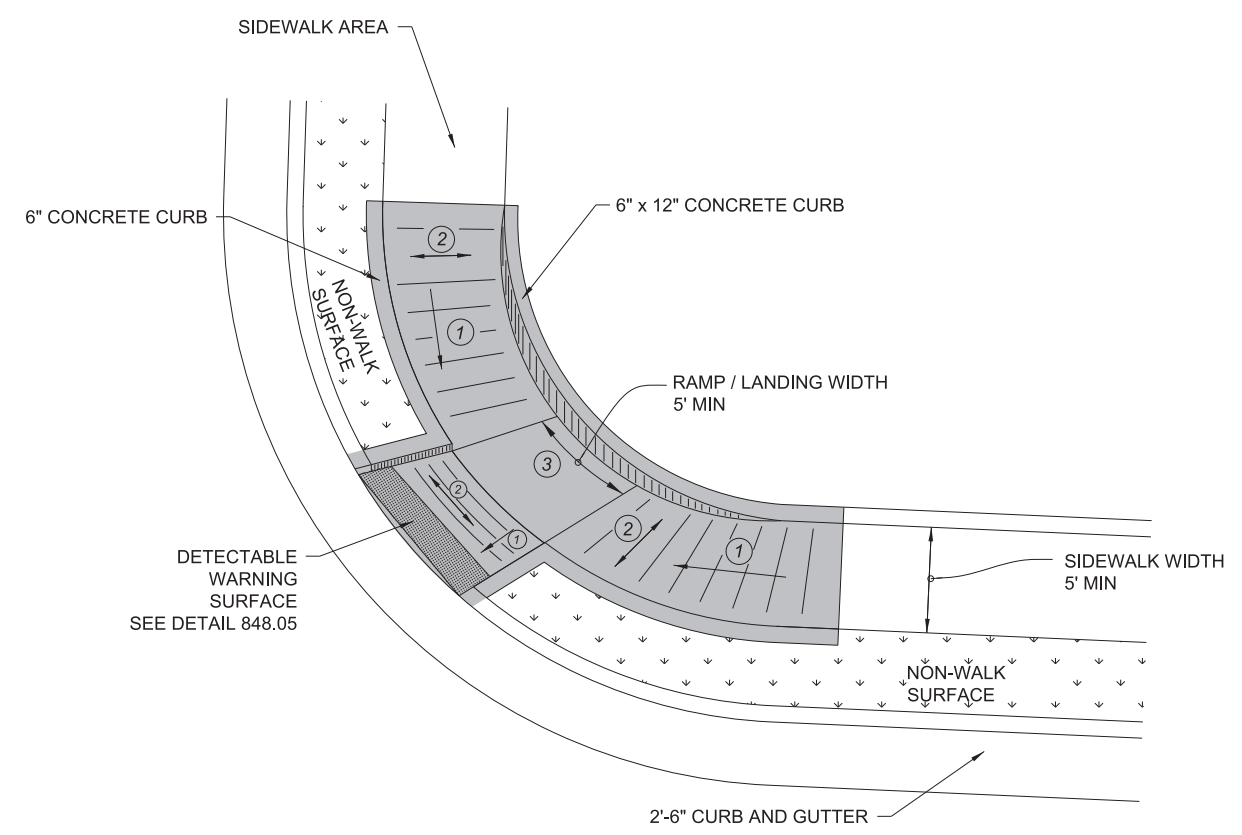
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FILE SPEC: sids/2012CurbRamp/CurbRampDetails.dgn

5/14/99  
SYTIME  
CON  
SERNAME

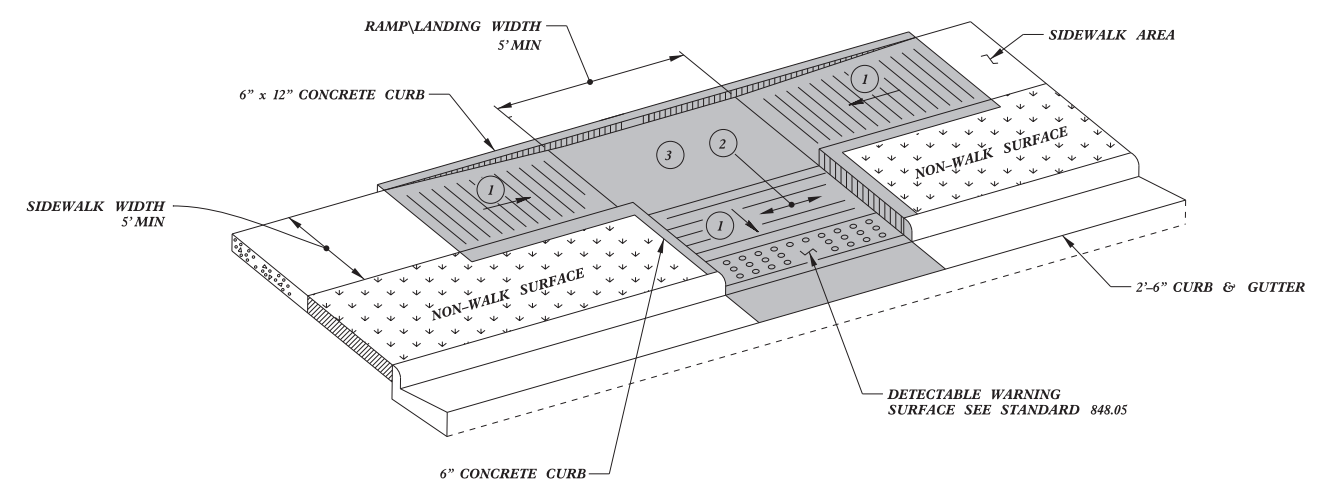




PAY LIMITS FOR 1 CURB RAMP



**TYPE 3 MODIFIED  
INSTALLATION IN A RADIUS**



**TYPE 3**

- 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.

1/8/2020



Designed by:  
*J.S. Howerton*  
873F3D17DCDC45F...

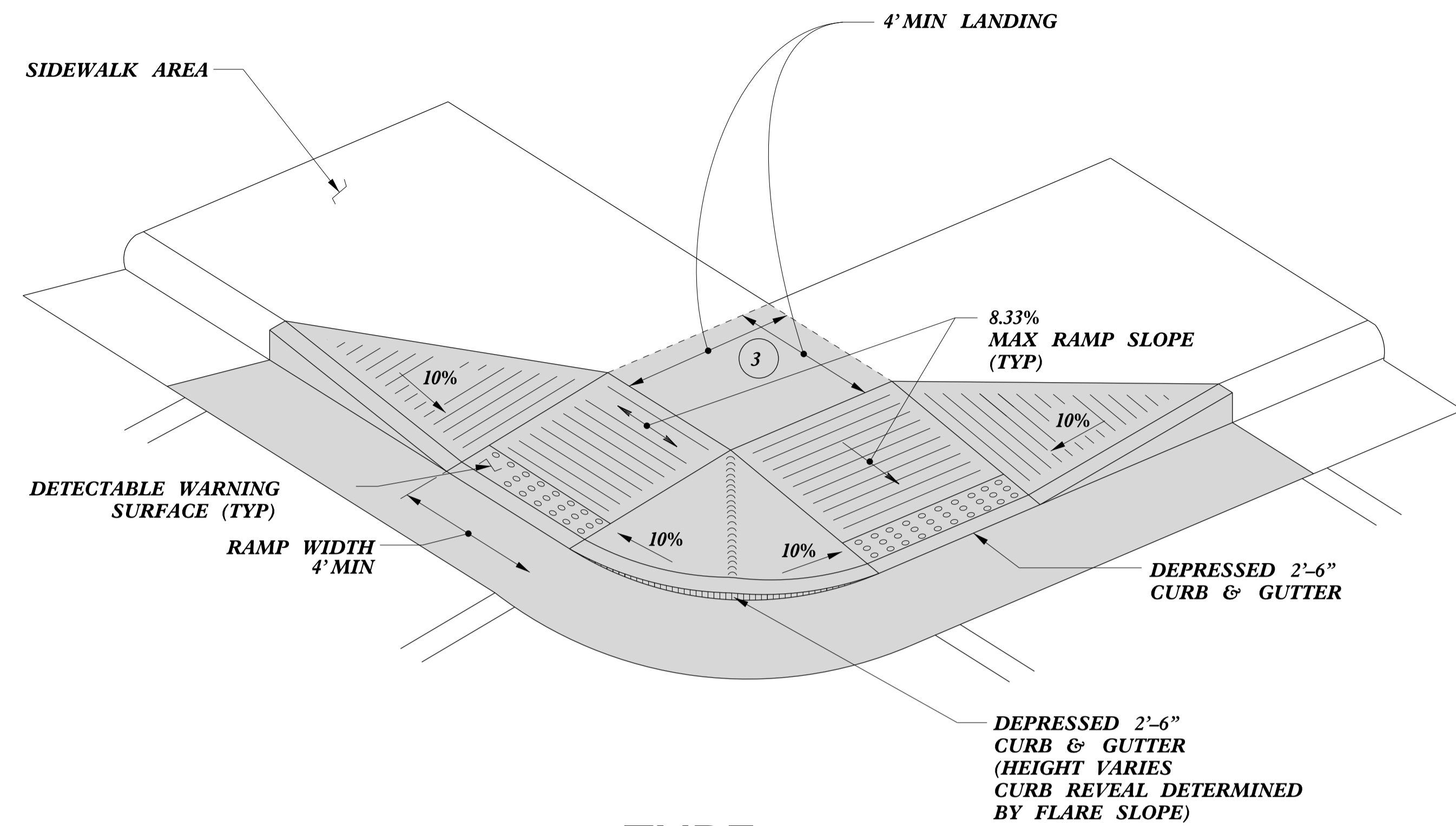
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

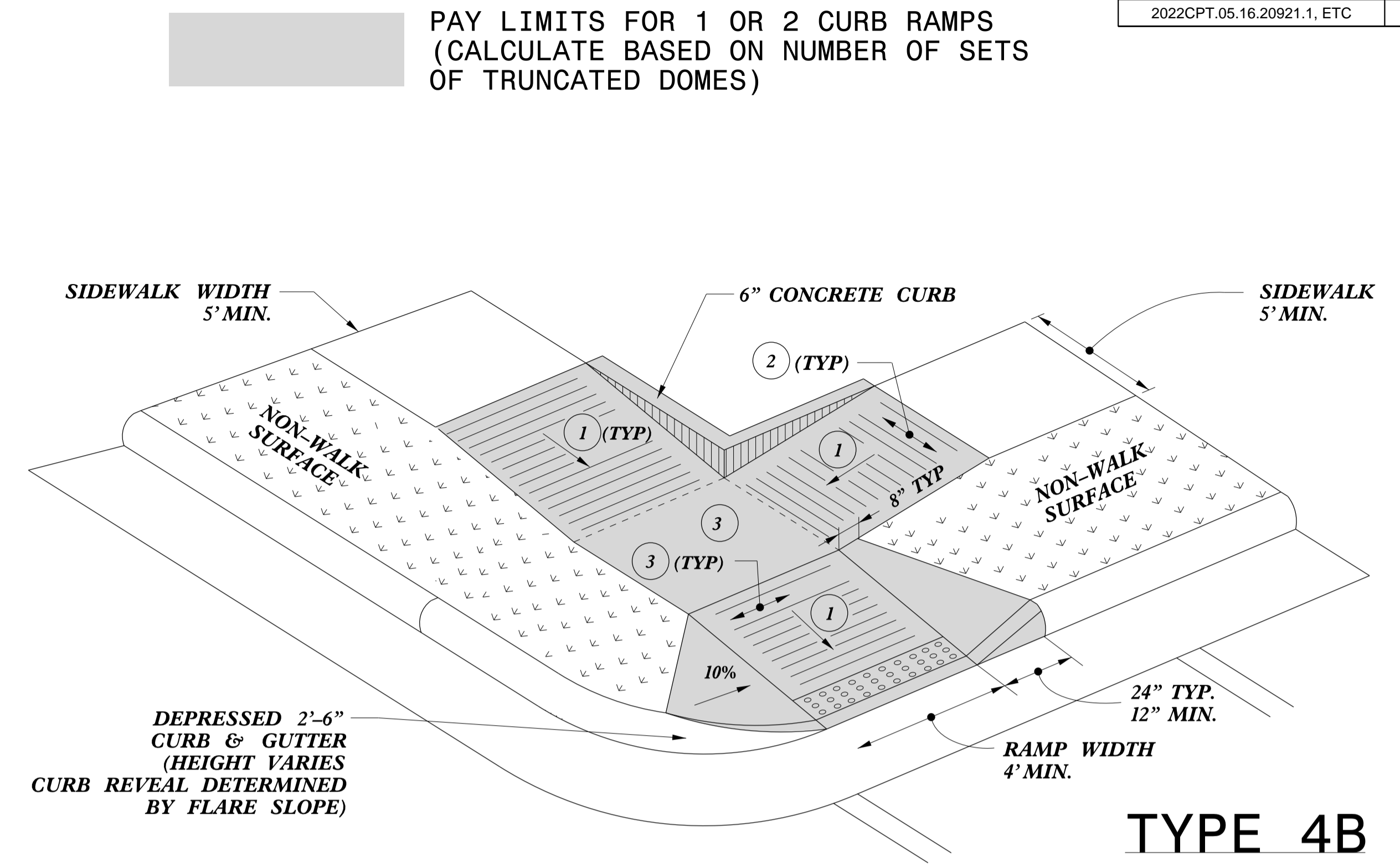
**CURB RAMPS**

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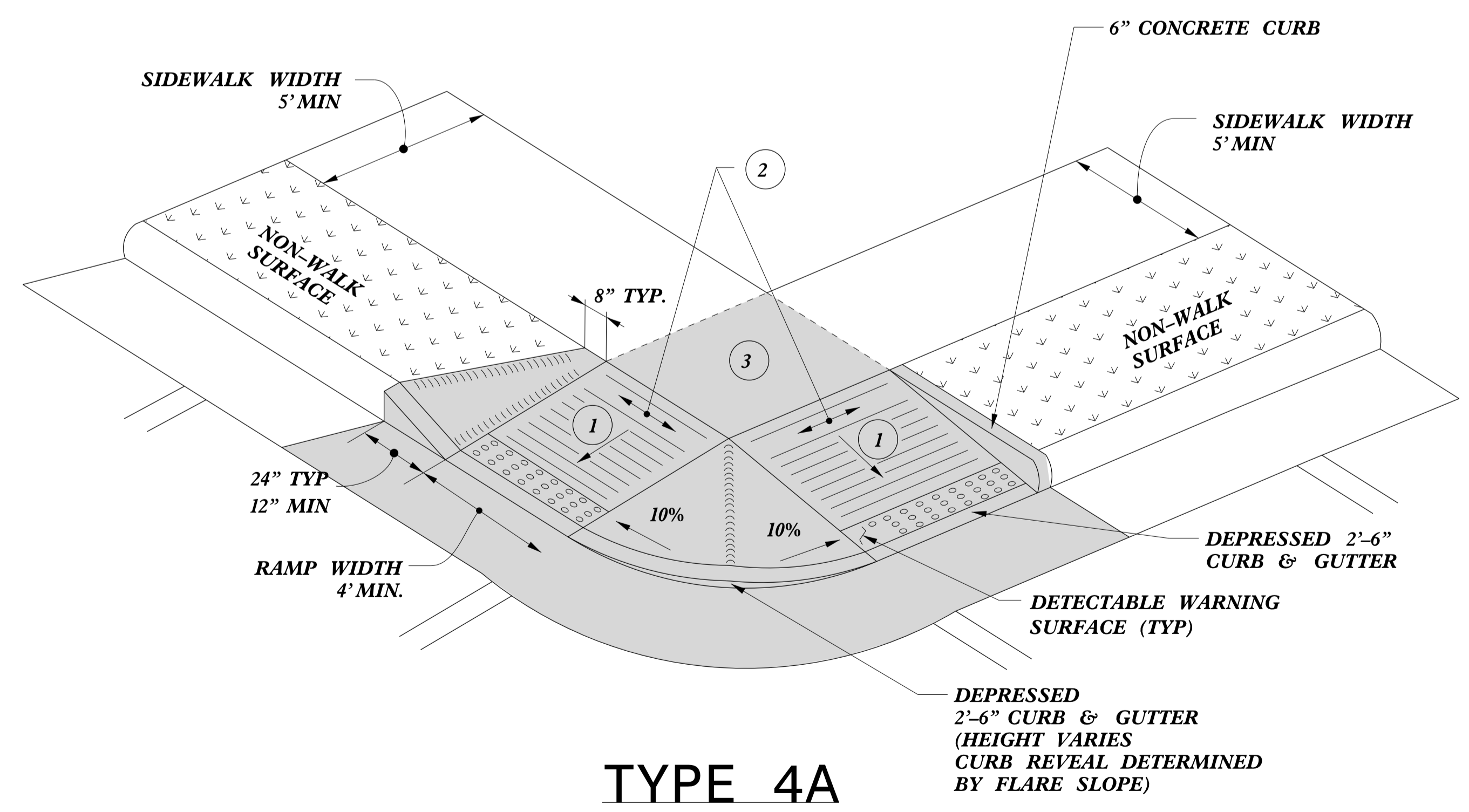
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SY-CURB-RAMP-DETAILS.dwg  
J.S. HOWERTON  
1/8/2020



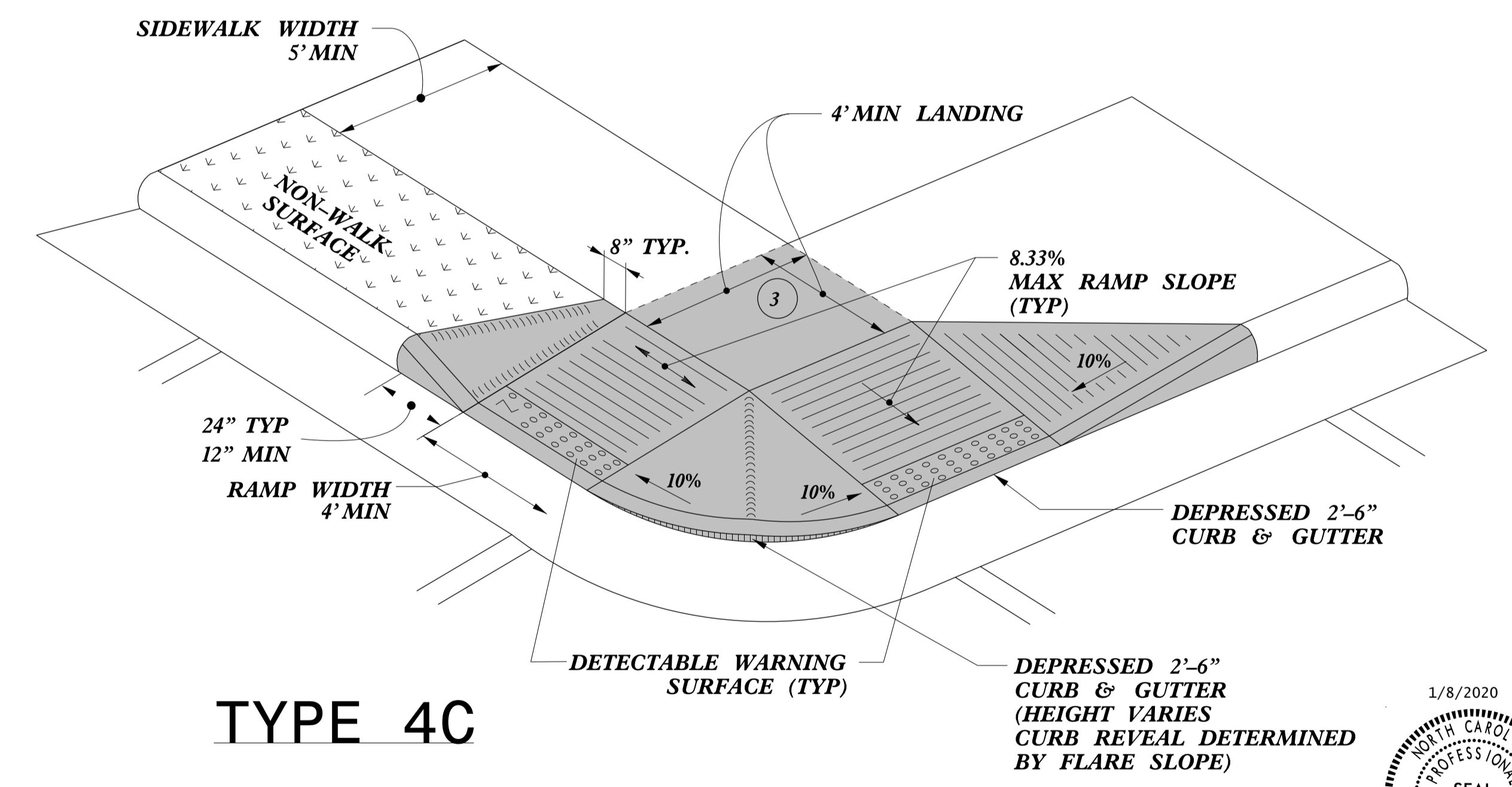
**TYPE 4**



**TYPE 4B**

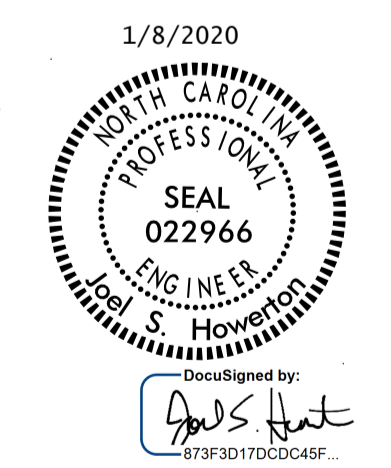


**TYPE 4A**



**TYPE 4C**

- 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.



**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

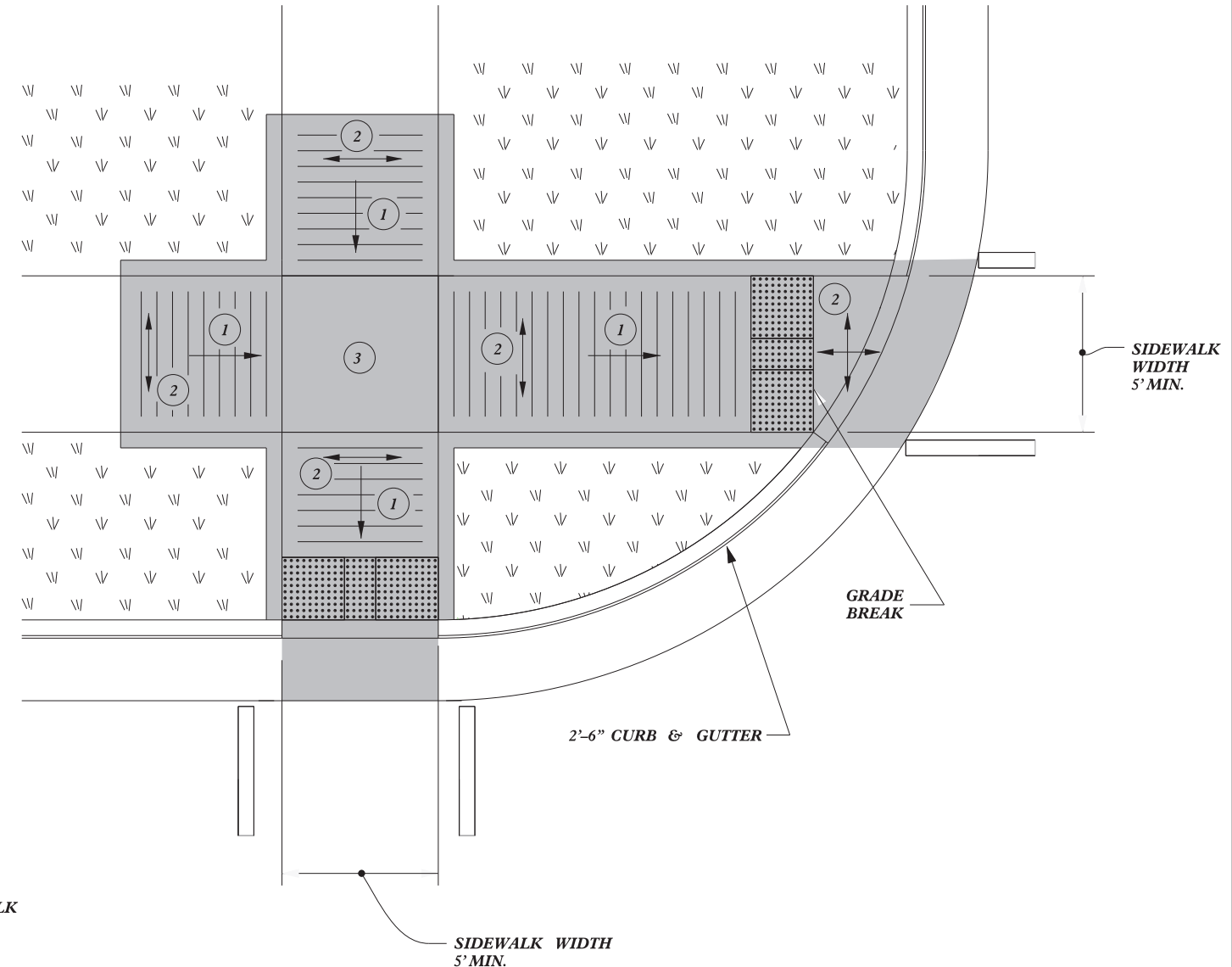
**CURB RAMPS**

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11  
 MODIFIED BY: DATE:  
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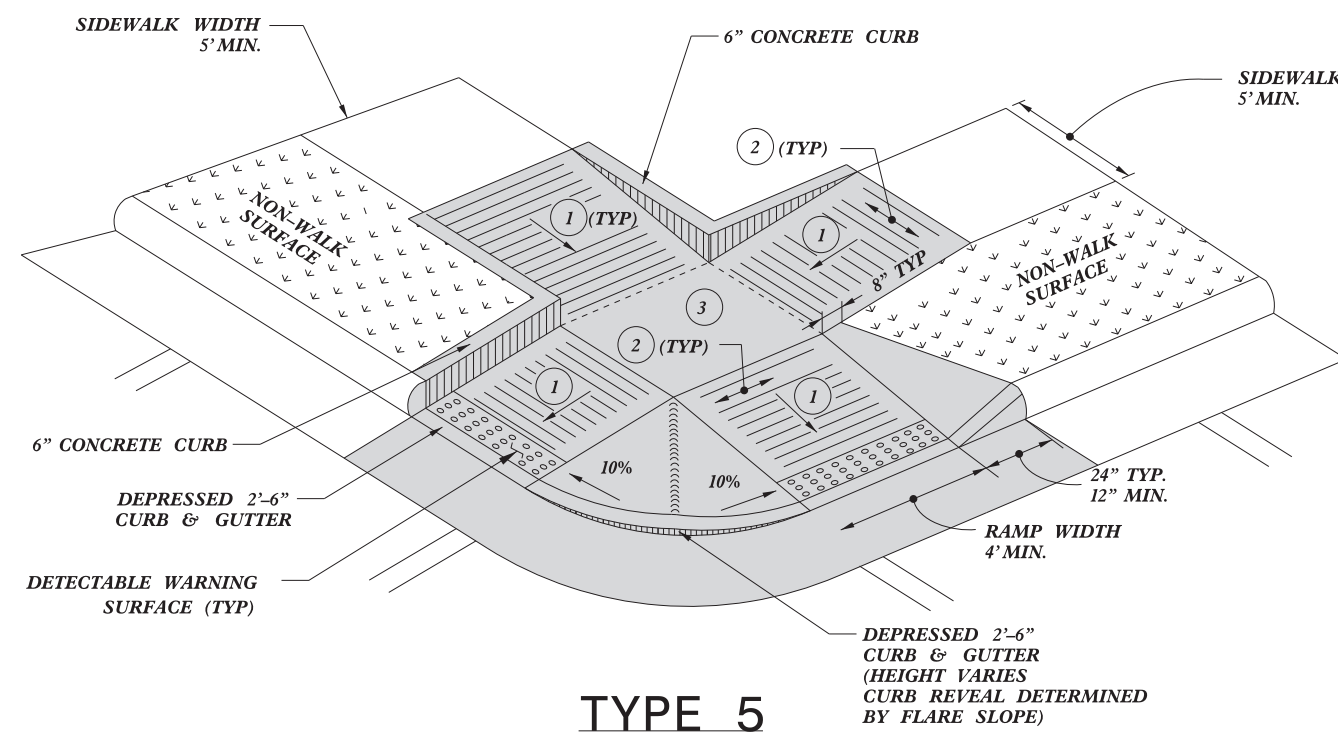
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

5/14/99  
 TIME  
 CURB  
 USER  
 NAME

PAY LIMITS FOR 1 OR 2 CURB RAMPS  
(CALCULATE BASED ON NUMBER OF SETS  
OF TRUNCATED DOMES)



**TYPE 5A**



**TYPE 5**

- 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.

1/8/2020



DocuSigned by:  
*J.S. Howerton*  
873F3D17DCDC45F...

CONTRACT STANDARDS AND DEVELOPMENT UNIT  
Office 919-707-6950 FAX 919-250-4119

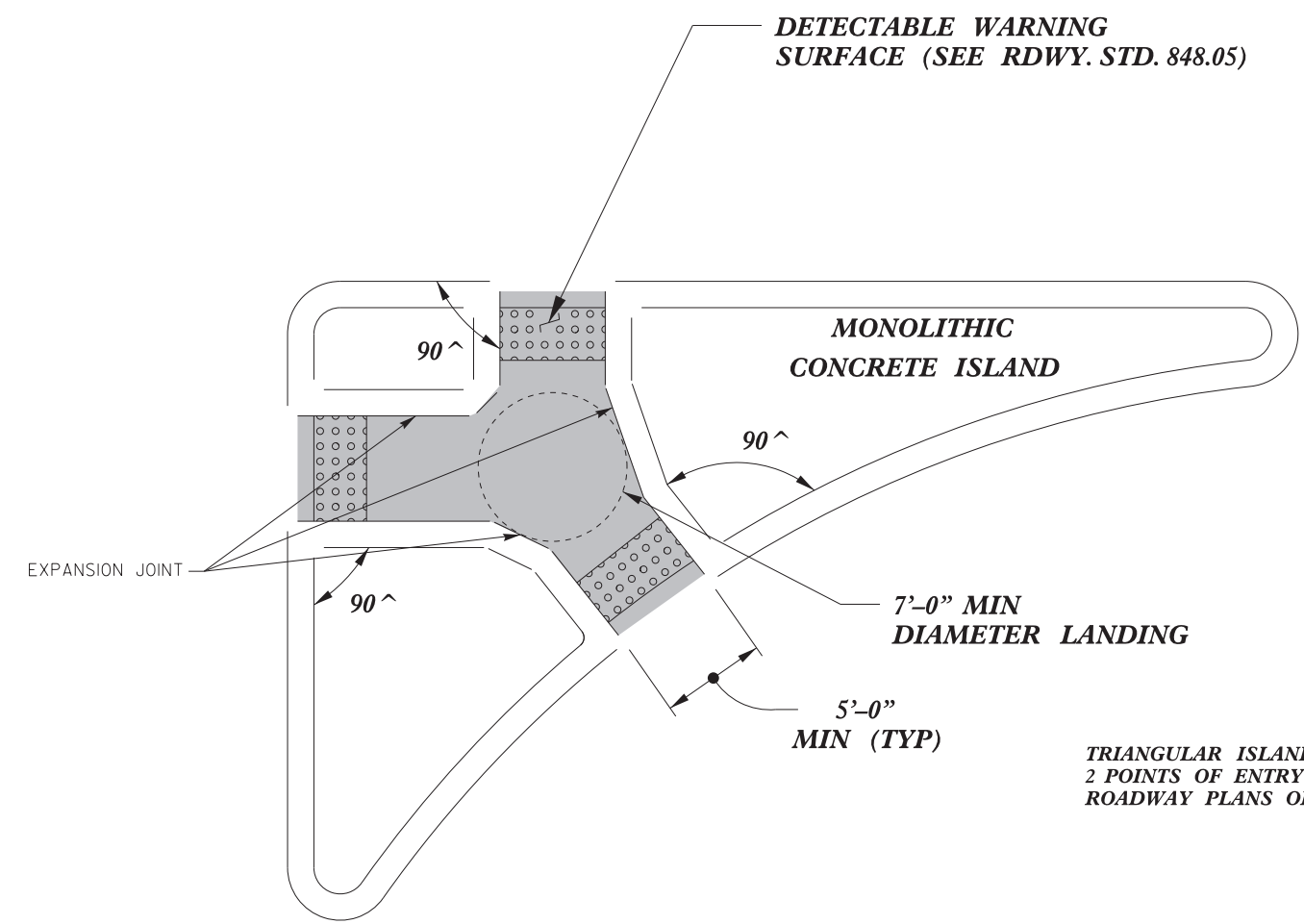
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REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

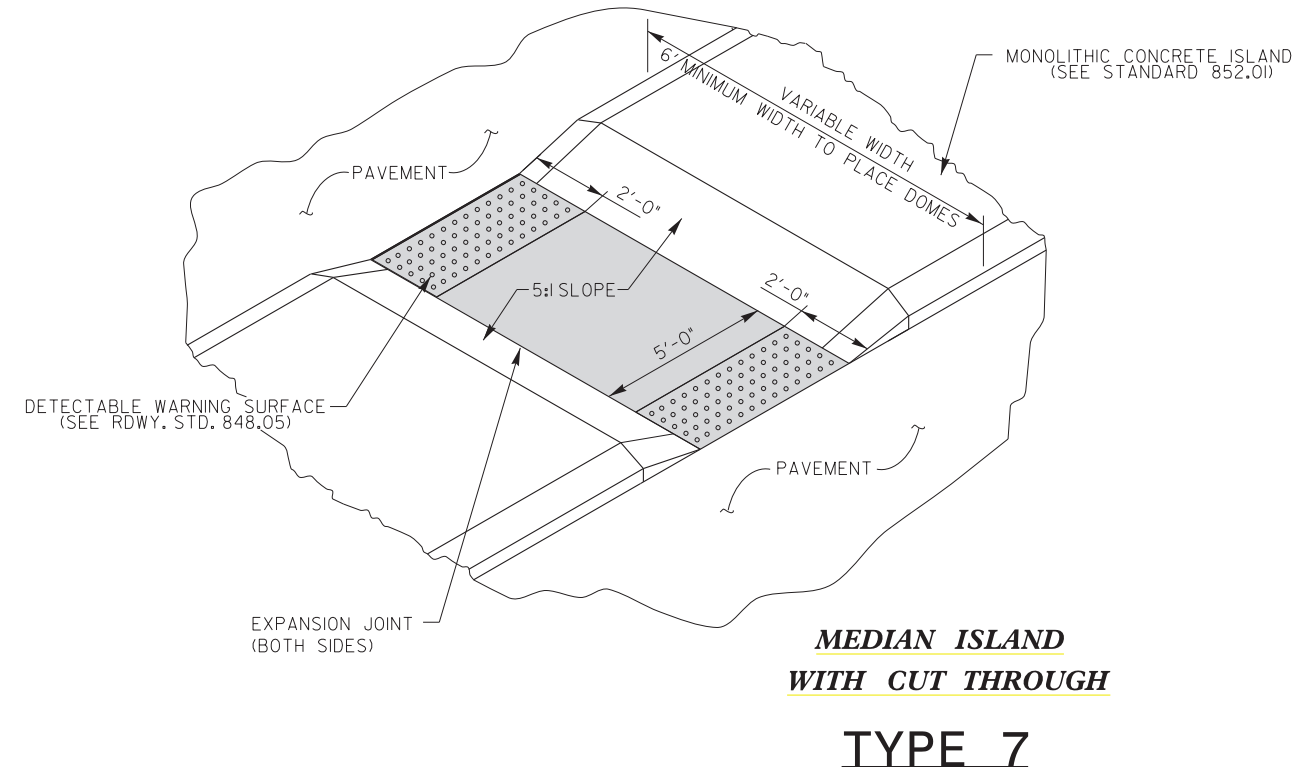
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PAY LIMITS FOR 2 OR 3 CURB RAMPS  
 (CALCULATE BASED ON NUMBER OF  
 SETS OF TRUNCATED DOMES)

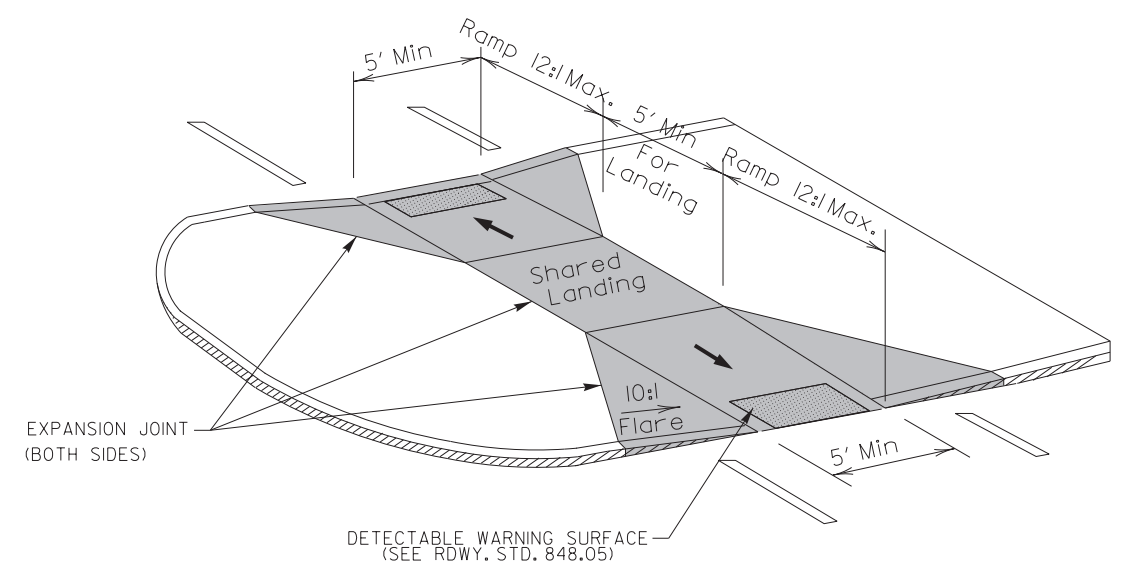


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY  
 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE  
 ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

**TRIANGULAR ISLAND  
 WITH CUT THROUGH  
 TYPE 6**



**MEDIAN ISLAND  
 WITH CUT THROUGH  
 TYPE 7**



**MEDIAN ISLAND  
 CURB RAMPS  
 TYPE 8  
 1/8/2020**

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

**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.dgn

SEAL  
 022966  
 ENGINEER  
 J. S. HOWERTON  
 873F3D17DCDC45F...

5/14/99  
 \$\$\$\$SYTIME\$\$\$\$  
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SUMMARY OF QUANTITIES - TEN-TEN RD FROM SR 1300 TO N. SALEM ST.

Municipality:	Cary
Project Number:	Apex 2023 South
WBS Number:	2022CPT.05.16.20921.1
County:	Wake

Ramp ID	Inset Map Number	Route 1	Route 2	2549000000-E	2591000000-E	2738000000-E	2845000000-N	4695000000-E	4860000000-E	2600000000-N	2613000000-N	2605000000-N	2759000000-N	Improvement Type
				2'-6" Concrete Curb & Gutter LF	4" Concrete Sidewalk SY	Remove Sidewalk SY	Adjustment of Meter Boxes or Valve Boxes EA	8" X 90 MIL White Thermo LF	8" Line Removal LF	Retrofit Existing Curb Ramps EA	Remove and Replace Curb Ramps EA	Concrete Curb Ramps EA	Remove Curb Ramps EA	
24465	1	SR-1010 (Center St)	N Hughes St									1		Type1Modified
8663	2	SR-1010 (Center St)	Center Street Plaza (733 Center St) Entrance								1			Type3Modified
8664	2	SR-1010 (Center St)	Center Street Plaza (733 Center St) Entrance								1			Type1Modified
8669	3	SR-1010 (Center St)	Myrtle Grove Ln								1			Type3Modified
8670	3	SR-1010 (Center St)	Myrtle Grove Ln	5	6						1			Type1Modified
8673	4	SR-1010 (Center St)	Old Grove Ln								1			Type1Modified
8671	4	SR-1010 (Center St)	Old Grove Ln		6						1			Type4B
8672	4	SR-1010 (Center St)	Old Grove Ln		6						1			Type4B
8674	4	SR-1010 (Center St)	Old Grove Ln								1			Type3Modified
8676	5	SR-1010 (Center St)	Myrtle Grove Ln								1			Type1Modified
8677	6	SR-1010 (Center St)	Investment Blvd	16		2							1	Remove Ramp
8678	6	SR-1010 (Center St)	Investment Blvd								1			Type1Modified
8679	6	SR-1010 (Center St)	Investment Blvd	16	9	2							1	Remove Ramp
8680	6	SR-1010 (Center St)	Investment Blvd								1			Type3Modified
8684	7	SR-1010 (Center St)	Parkfield Dr	18	9	2							1	Remove Ramp
8681	7	SR-1010 (Center St)	Parkfield Dr	18	9	2							1	Remove Ramp
8683	7	SR-1010 (Center St)	Parkfield Dr								1			Type3Modified
8685	8	SR-1010 (Center St)	Building Entrance (1701 Center St)								1			Type1Modified
8694	8	SR-1010 (Center St)	SR-1306 (Schieffelin Rd)								1			Standard - 848.06
8691	9	SR-1010 (Center St)	Abbey Road Grill (1700 Center St) Entrance								1			Type1Modified
8692	9	SR-1010 (Center St)	Abbey Road Grill (1700 Center St) Entrance								1			Type7
8693	9	SR-1010 (Center St)	Abbey Road Grill (1700 Center St) Entrance								1			Type7
8518	10	SR-1010 (Ten Ten Rd)	Shopping Center (2139 Ten Ten Rd) Entrance								1			Type1Modified
8519	10	SR-1010 (Ten Ten Rd)	Shopping Center (2139 Ten Ten Rd) Entrance								1			Type1B
8516	11	SR-1010 (Ten Ten Rd)	Kiftsgate Ln							1				RetrofitWarnings
8517	11	SR-1010 (Ten Ten Rd)	Kiftsgate Ln								1			Type1Modified
8514	12	SR-1010 (Ten Ten Rd)	A Cleaner World (2290 Ten-Ten Rd) Entrance								1			Type1Modified
8515	12	SR-1010 (Ten Ten Rd)	A Cleaner World (2290 Ten-Ten Rd) Entrance								1			Type1Modified
8512	13	SR-1010 (Ten Ten Rd)	Arbordale Ct								1			Type1Modified
8513	13	SR-1010 (Ten Ten Rd)	Arbordale Ct								1			Type3Modified
11929	14	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd Back Entrance								1			Type4B
11930	14	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd Back Entrance								1			Type8
11931	14	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd Back Entrance								1			Type8
11932	14	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd Back Entrance								1			Type1A
11933	15	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd McDonald's Entrance								1			Type1Modified
11934	15	SR-1010 (Ten Ten Rd)	Mill Pond Village Shopping Center (3940 Kildaire Farm Rd) Ten Ten Rd McDonald's Entrance								1			Type4B
11935	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)								1			Standard - 848.06
11936	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)								1			Standard - 848.06
11937	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)		7					1				RetrofitWarnings
11939	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)								1			Standard - 848.06
11938	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)								1			Standard - 848.06
11942	16	SR-1010 (Ten Ten Rd)	SR-1300 (Kildaire Farm Rd)		3		1				1			Type3Modified
<b>Sub-Total for Ten-Ten Rd From SR 1300 To N. Salem St.</b>				<b>73</b>	<b>55</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>35</b>	<b>1</b>	<b>4</b>	

SUMMARY OF QUANTITIES - TEN-TEN RD FROM US 401 TO SR 1300

Municipality:	Fuquay-Varina Cary
Project Number:	2023 South
WBS Number:	2022CPT.05.16.20921.1
County:	Wake

Ramp ID	Inset Map Number	Route 1	Route 2	2549000000-E	2591000000-E	2738000000-E	2845000000-N	4695000000-E	4860000000-E	2600000000-N	2613000000-N	2605000000-N	2759000000-N	Improvement Type
				2'-6" Concrete Curb & Gutter LF	4" Concrete Sidewalk SY	Remove Sidewalk SY	Adjustment of Meter Boxes or Valve Boxes EA	8" X 90 MIL White Thermo LF	8" Line Removal LF	Retrofit Existing Curb Ramps EA	Remove and Replace Curb Ramps EA	Concrete Curb Ramps EA	Remove Curb Ramps EA	
11949	1	SR-1010 (Ten Ten Rd)	Langston Pond Dr								1			Type1B
11950	1	SR-1010 (Ten Ten Rd)	Langston Pond Dr								1			Type1Modified
11943	2	SR-1010 (Ten Ten Rd)	Harris Teeter (3430 Ten Ten Rd) Entrance		5						1			Type1Modified
11944	2	SR-1010 (Ten Ten Rd)	Harris Teeter (3430 Ten Ten Rd) Entrance								1			Type3Modified
11947	3	SR-1010 (Ten Ten Rd)	Montclair Ridge Dr								1			Type3Modified
11952	4	SR-1010 (Ten Ten Rd)	Chaumont dr	17		1							1	Remove Ramp
11953	5	SR-1010 (Ten Ten Rd)	Cary Fire department 6 (3609 Ten Ten Rd) Entrance								1			Type1Modified
11954	5	SR-1010 (Ten Ten Rd)	Cary Fire department 6 (3609 Ten Ten Rd) Entrance								1			Type1Modified
11958	6	SR-1010 (Ten Ten Rd)	Greyhawk Pl	16	9	1							1	Remove Ramp
11961	6	SR-1010 (Ten Ten Rd)	Greyhawk Pl	16	9	1							1	Remove Ramp
11962	6	SR-1010 (Ten Ten Rd)	Greyhawk Pl	18	9	1							1	Remove Ramp
11959	6	SR-1010 (Ten Ten Rd)	Greyhawk Pl								1			Type3Modified
11964	6	SR-1010 (Ten Ten Rd)	Greyhawk Pl	16		1							1	Remove Ramp
11966	7	SR-1010 (Ten Ten Rd)	Megwood Ct	18	9	1							1	Remove Ramp
11967	7	SR-1010 (Ten Ten Rd)	Megwood Ct							1				RetrofitWarnings
11969	7	SR-1010 (Ten Ten Rd)	Megwood Ct	18	9	1							1	Remove Ramp
12019	8	SR-1010 (Ten Ten Rd)	SR-1152 (Holly Springs Rd)							1				RetrofitWarnings
12020	8	SR-1010 (Ten Ten Rd)	SR-1152 (Holly Springs Rd)							1				RetrofitWarnings
12023	9	SR-1010 (Ten Ten Rd)	Circle K (4402 Ten Ten Rd) Entrance							1				RetrofitWarnings
12024	9	SR-1010 (Ten Ten Rd)	Circle K (4402 Ten Ten Rd) Entrance							1				RetrofitWarnings
12021	9	SR-1010 (Ten Ten Rd)	Circle K (4402 Ten Ten Rd) Entrance								1			Type4B
12025	10	SR-1010 (Ten Ten Rd)	Churchill Falls Pl								1			Type3Modified
12026	10	SR-1010 (Ten Ten Rd)	Churchill Falls Pl	18	9	1							1	Remove Ramp
12027	10	SR-1010 (Ten Ten Rd)	Churchill Falls Pl	18	9	1							1	Remove Ramp
12028	10	SR-1010 (Ten Ten Rd)	Churchill Falls Pl								1			Type3Modified
10199	11	SR-1010 (Ten Ten Rd)	Calvary Raleigh Church (7900 Ten Ten Rd) West Entrance	20	7	1							1	Remove Ramp
10202	11	SR-1010 (Ten Ten Rd)	Calvary Raleigh Church (7900 Ten Ten Rd) West Entrance	20	7	1							1	Remove Ramp
10203	12	SR-1010 (Ten Ten Rd)	Calvary Raleigh Church (7900 Ten Ten Rd) East Entrance	18	7	1							1	Remove Ramp
10205	12	SR-1010 (Ten Ten Rd)	Calvary Raleigh Church (7900 Ten Ten Rd) East Entrance	16	4	1							1	Remove Ramp
10206	12	SR-1010 (Ten Ten Rd)	Calvary Raleigh Church (7900 Ten Ten Rd) East Entrance								1			Type1Modified
<b>Sub-Total for Ten-Ten Rd From US 401 To SR 1300</b>				<b>229</b>	<b>93</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>12</b>	<b>0</b>	<b>13</b>	

SUMMARY OF QUANTITIES - PENNY RD FROM SR 1010 TO SR 1300

Municipality:	Cary
Project Number:	2023 South
WBS Number:	2022CPT.05.16.20921.1
County:	Wake

Ramp ID	Inset Map Number	Route 1	Route 2	2549000000-E	2591000000-E	2738000000-E	2845000000-N	4695000000-E	4860000000-E	2600000000-N	2613000000-N	2605000000-N	2759000000-N	Improvement Type
				2'-6" Concrete Curb & Gutter LF	4" Concrete Sidewalk SY	Remove Sidewalk SY	Adjustment of Meter Boxes or Valve Boxes EA	8" X 90 MIL White Thermo LF	8" Line Removal LF	Retrofit Existing Curb Ramps EA	Remove and Replace Curb Ramps EA	Concrete Curb Ramps EA	Remove Curb Ramps EA	
8511	1	SR-1379 (Penny Rd)	Dead end									1		Type3Modified
8506	2	SR-1379 (Penny Rd)	Killingsworth Dr									1		Type3Modified
8507	2	SR-1379 (Penny Rd)	Tattenhall Dr									1		Type3Modified
8508	2	SR-1379 (Penny Rd)	Tattenhall Dr									1		Type1Modified
8502	3	SR-1379 (Penny Rd)	Kensington Hill Way					180	152			1		Type3Modified
8503	3	SR-1379 (Penny Rd)	Kensington Hill Way	16	8	2							1	Remove Ramp
8504	3	SR-1379 (Penny Rd)	Kensington Hill Way	16		2							1	Remove Ramp
8505	3	SR-1379 (Penny Rd)	Kensington Hill Way									1		Type1Modified
5684	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3							1		Type3Modified
5686	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3							1		Type3Modified
5729	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3							1		Standard - 848.06
5730	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3		1					1		Standard - 848.06
5688	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3									Other
5690	4	SR 1379 (Penny Road)	SR-4067 (Ederlee Dr)		3									Other
10191	5	SR-1379 (Penny Rd)	Jordan Oaks Retirement Living (10820 Penny Rd) Entrance									1		Type1Modified
10192	5	SR-1379 (Penny Rd)	Jordan Oaks Retirement Living (10820 Penny Rd) Entrance							1				RetrofitWarnings
12589	6	SR-1379 (Penny Rd)	Fast Lube Plus (2992 Kildaire Farm Rd) Penny Rd Entrance									1		Type1Modified
12590	7	SR-1379 (Penny Rd)	CVS Pharmacy (2994 Kildaire Farm Rd) Penny Rd Entrance									1		Type1Modified
<b>Sub-Total for Penny Rd From SR 1010 To SR 1300</b>				<b>32</b>	<b>26</b>	<b>4</b>	<b>1</b>	<b>180</b>	<b>152</b>	<b>1</b>	<b>13</b>	<b>0</b>	<b>2</b>	



SUMMARY OF QUANTITIES

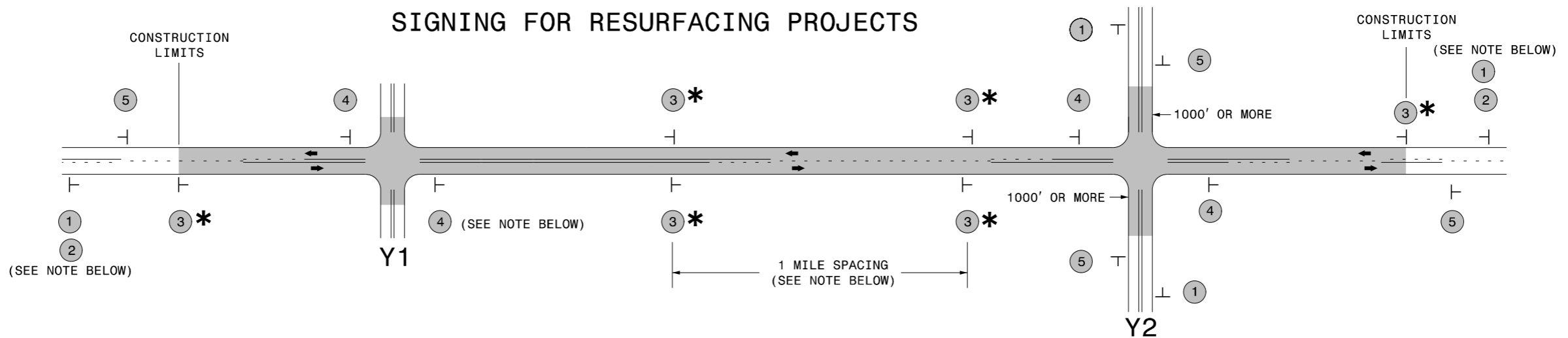
Project Number:	2023 South
WBS Number:	2022CPT.05.16.20921.1
County:	Wake

Project Number	County	Municipality	Resurfacing Route	4447000000-E	4600000000-N	4600000000-N	2549000000-E	2591000000-E	2738000000-E	2845000000-N	4695000000-E	4860000000-E	2600000000-N	2613000000-N	2605000000-N	2759000000-N
				Pedestrian Channelizing Devices LF	Generic Traffic Control Item - Pedestrian Transport Service EA	Generic Traffic Control Item - Audible Warning Device EA	2'-6" Concrete Curb & Gutter LF	4" Concrete Sidewalk SY	Remove Sidewalk SY	Adjustment of Meter Boxes or Valve Boxes EA	8" X 90 MIL White Thermo LF	8" Line Removal LF	Retrofit Existing Curb Ramps EA	Remove and Replace Curb Ramps EA	Concrete Curb Ramps EA	Remove Curb Ramps EA
2023 South	Wake	Cary	Penny Rd From SR 1010 To SR 1300				32	26	4	1	180	152	1	13	0	2
2023 South	Wake	Cary Apex	Ten-Ten Rd From SR 1300 To N. Salem St				73	55	8	1	0	0	2	35	1	4
2023 South	Wake	Fuquay-Varina Cary	Ten-Ten Rd From US 401 To SR 1300				229	93	13	0	0	0	5	12	0	13
-	-	-	-	120	20	10	-	-	-	-	-	-	-	-	-	-
<b>GRAND TOTAL</b>				<b>120</b>	<b>20</b>	<b>10</b>	<b>334</b>	<b>174</b>	<b>25</b>	<b>2</b>	<b>180</b>	<b>152</b>	<b>8</b>	<b>60</b>	<b>1</b>	<b>19</b>





## SIGNING FOR RESURFACING PROJECTS



**LEGEND**  
 | STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

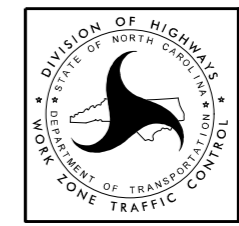
### MAINLINE (-L-) SIGNING

### -Y- LINE SIGNING

<b>SIGNING NOTES AND PLACEMENT PER DIRECTION</b>	1	 <small>W20-1 48" X 48"</small>	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p style="text-align: center;"><b>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</b></p> <ol style="list-style-type: none"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <p style="text-align: center; font-size: small;">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.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;">   <small>W20-7 A 48" X 48"</small> </div> </div> <p style="text-align: center; font-size: small;">PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p>
	2	 <small>W7-3aP 24" X 18"</small>	#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)	
	3 *	 <small>SP 13107 48" X 48"</small>	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.	
	4	 <small>SP 13106 48" X 48"</small>	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.	
5	 <small>G20-2 A 48" X 24"</small>	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		

### \* SIGNING FOR ASPHALT SURFACE TREATMENTS (ONLY)

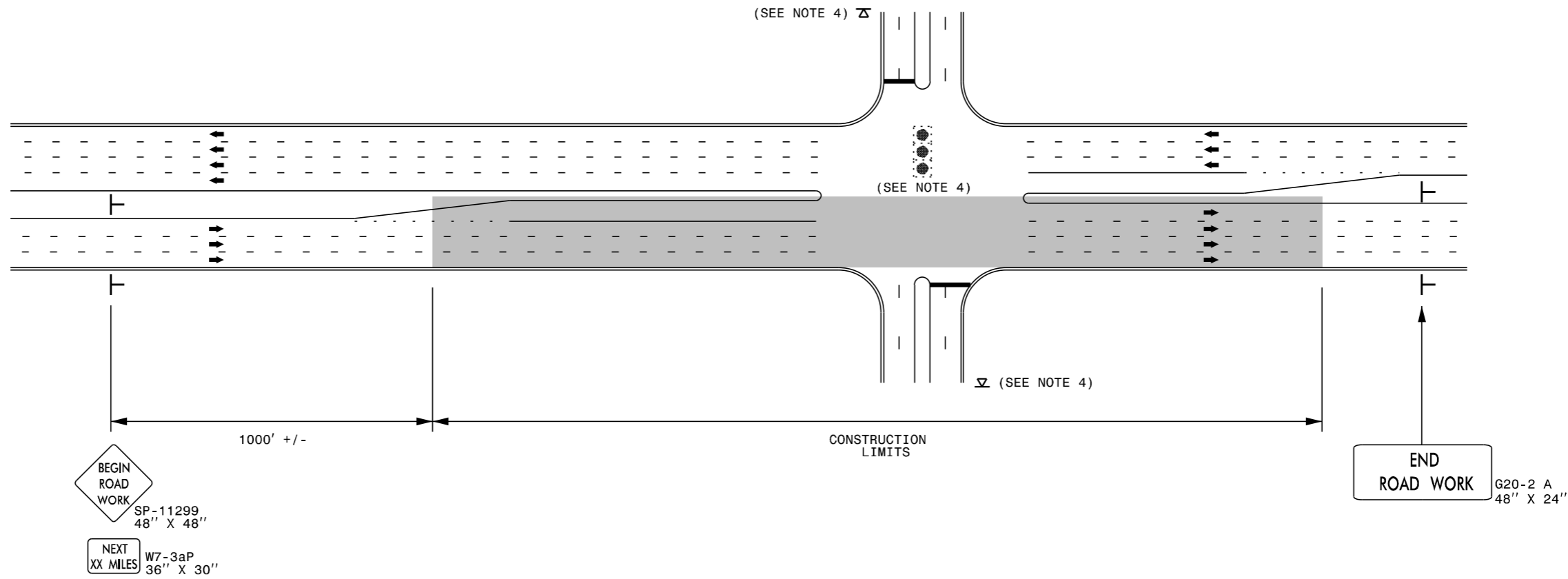
SUBSTITUTE LOW/SOFT SHOULDER SIGNS BY ALTERNATING THE FOLLOWING TWO SIGNS: STARTING WITH "UNMARKED PAVEMENT AHEAD" (SP 06026) FOLLOWED BY "LOOSE GRAVEL" (W8-7).



**RESURFACING  
ADVANCE WARNING SIGNS  
FOR  
RURAL AND SUBURBAN  
2 LANE ROADWAYS**

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## 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) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. 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.

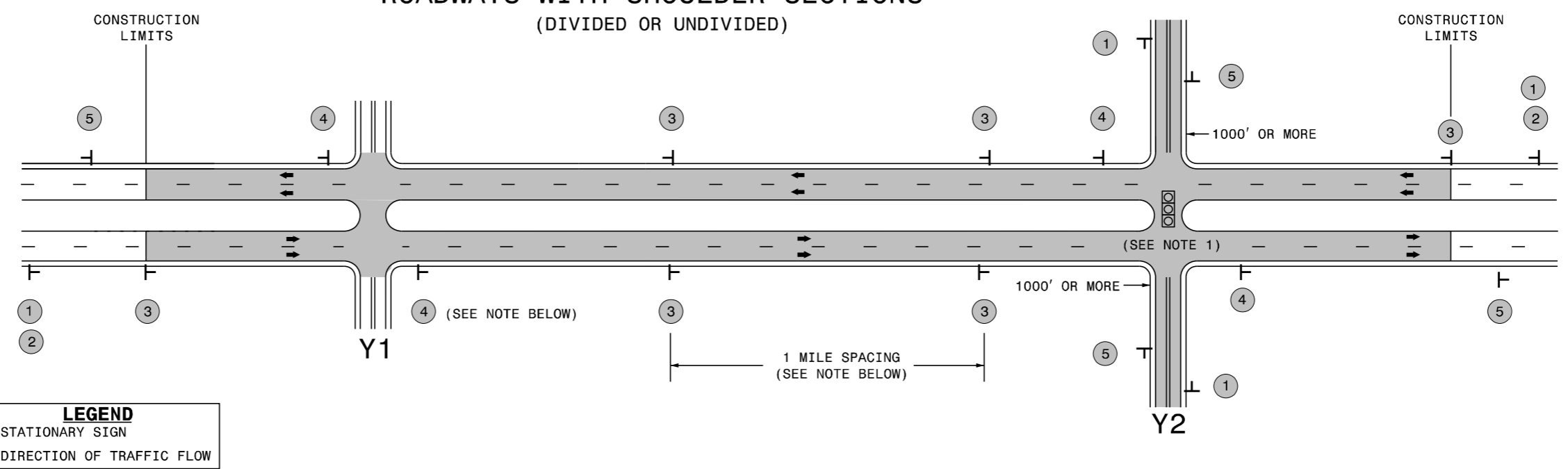
### LEGEND

- └ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



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

## SIGNING FOR RURAL AND SUBURBAN MULTI-LANE ROADWAYS WITH SHOULDER SECTIONS (DIVIDED OR UNDIVIDED)



**LEGEND**  
 T STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

### MAINLINE (-L-) SIGNING

### -Y- LINE SIGNING

<b>SIGNING NOTES AND PLACEMENT PER DIRECTION</b>	1	 W20-1 48" X 48"	PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.	<p><b>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</b></p> <ol style="list-style-type: none"> <li>1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE</li> <li>2) SUBDIVISION ROADS</li> <li>3) DEAD END ROADS</li> </ol> <p>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.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">                   W20-1                  48" X 48"             </div> <div style="text-align: center;">                   W20-7 A                  48" X 48"             </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1) MAY USE LAW ENFORCEMENT TO CONTROL TRAFFIC AT SIGNALIZED INTERSECTIONS AS DIRECTED BY THE ENGINEER. PROVIDE PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS 500' IN ADVANCE ALONG BOTH APPROACHES FROM THE SIDE STREETS WHEN PAVING PROCEEDS THROUGH THE INTERSECTION.</li> </ol>
	2	 W7-3aP 24" X 18"	#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)	
	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.	
	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.	
5	 G20-2 A 48" X 24"	PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.		

**RESURFACING  
ADVANCE WARNING SIGNS  
FOR RURAL AND SUBURBAN  
MULTI-LANE ROADWAYS  
W/ SHOULDER SECTIONS**

2/24/2014 10:47:13 AM W:\TTC\Resurfacing\2013\Documents\New\_Procedures\05\_09\_2013\Resurfacing\_AdvWarn\_LrSu\_Shldr.dgn User:mgarratt

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

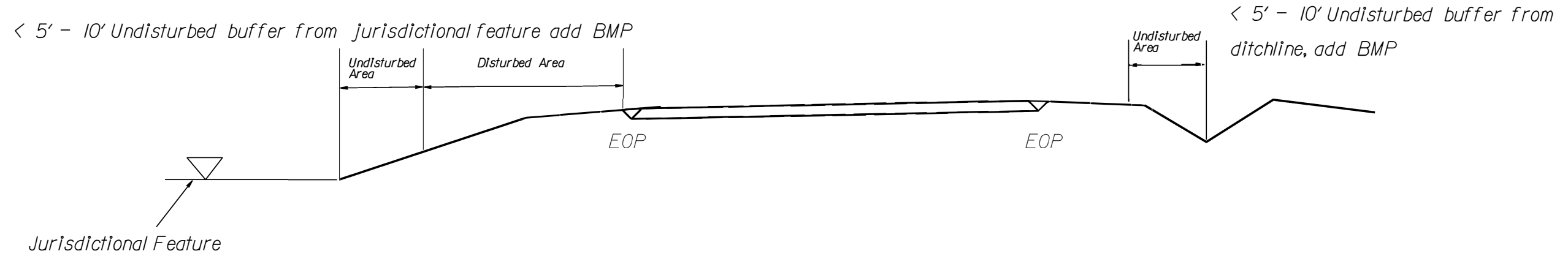
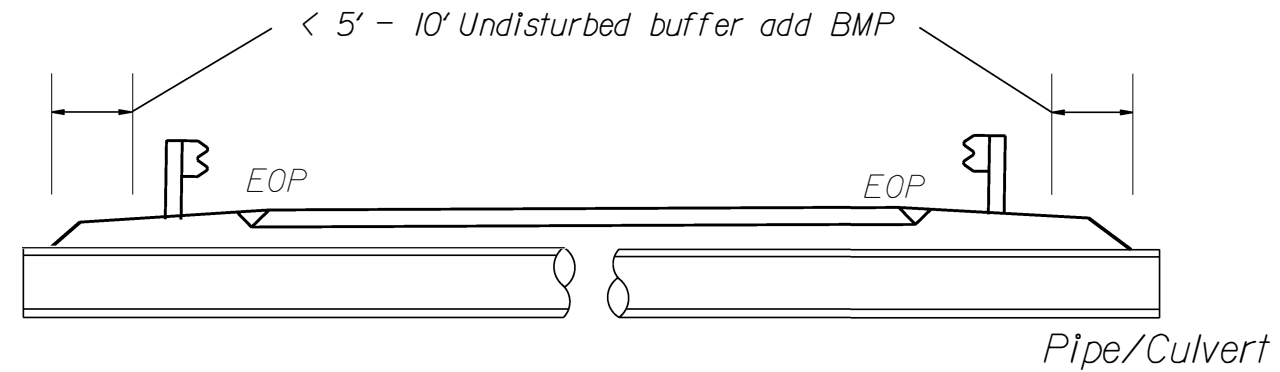
***SOIL STABILIZATION TIMEFRAMES***

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

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

BMP Options: Wattle, Silt Fence or Hardened Aggregate.

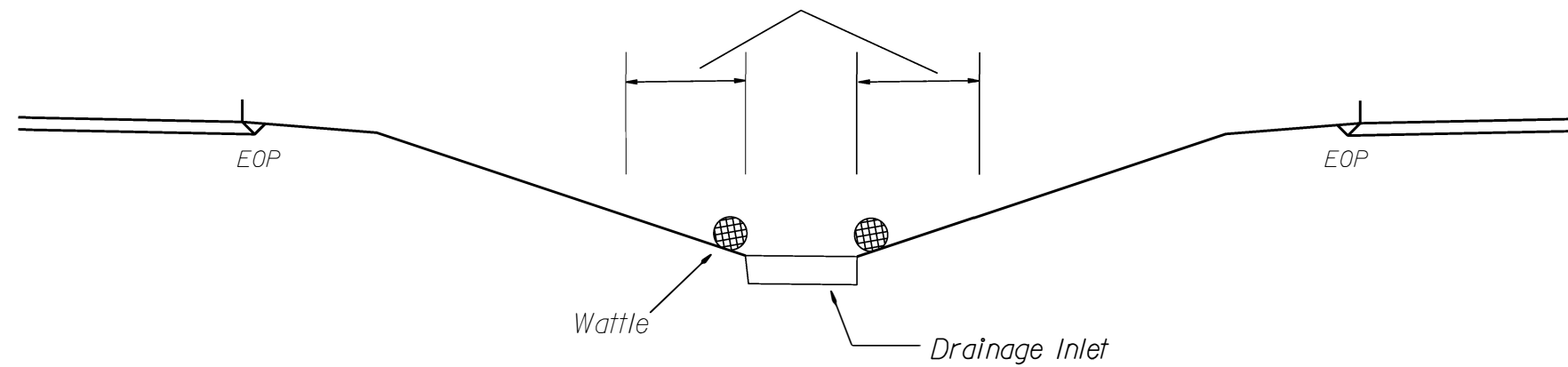
# EROSION CONTROL DETAIL



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



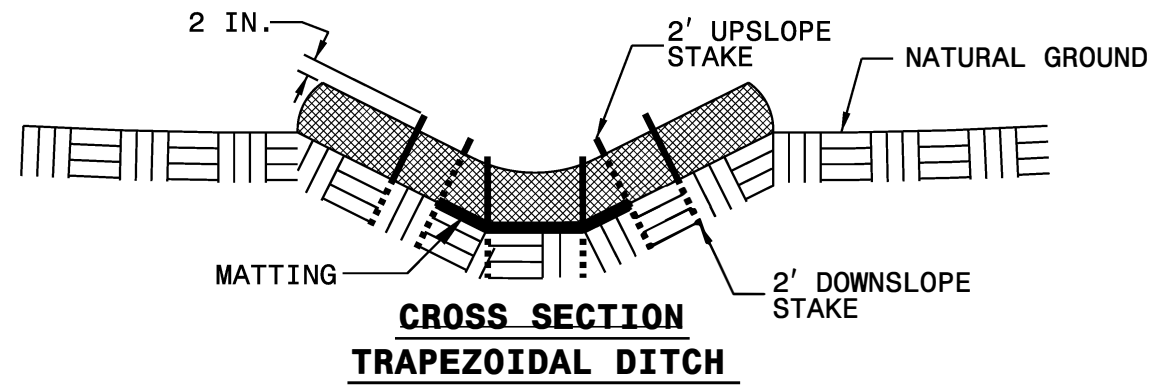
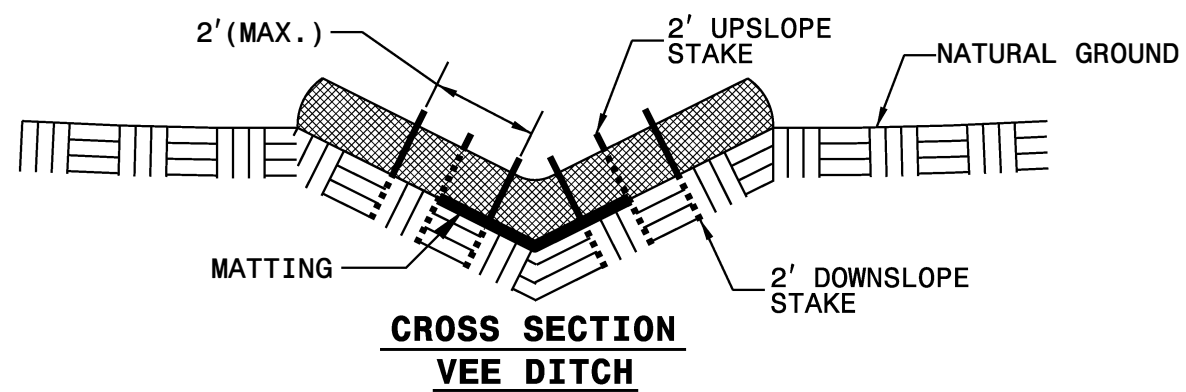
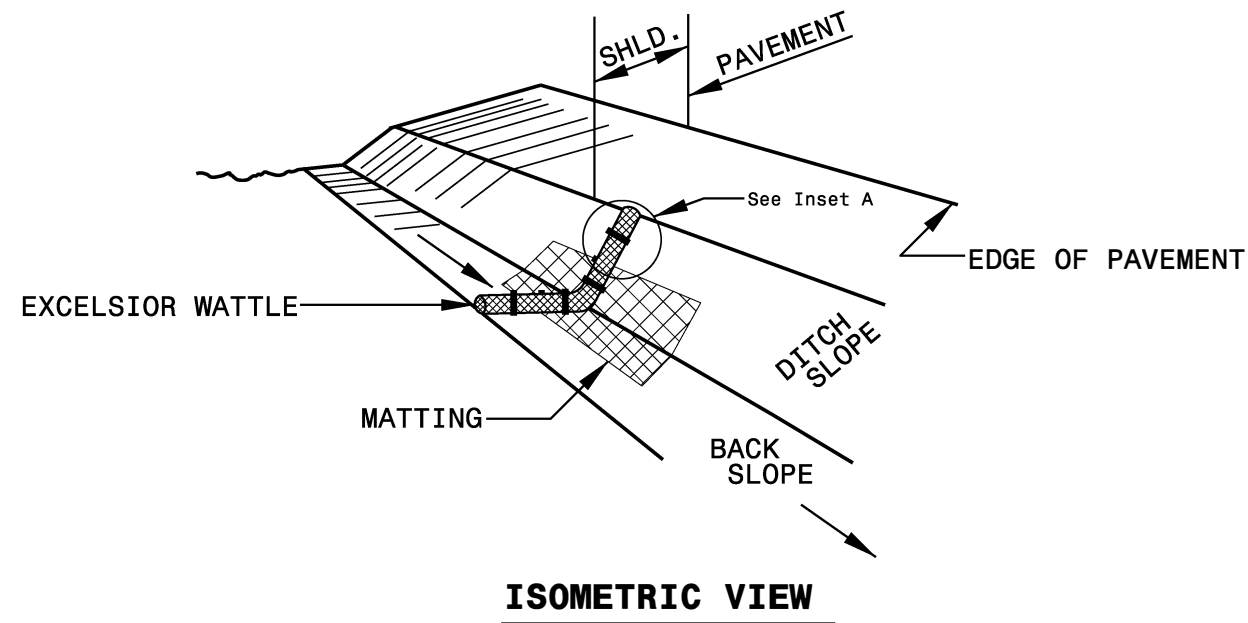
< 5' - 10' Undisturbed buffer from inlet, add wattle



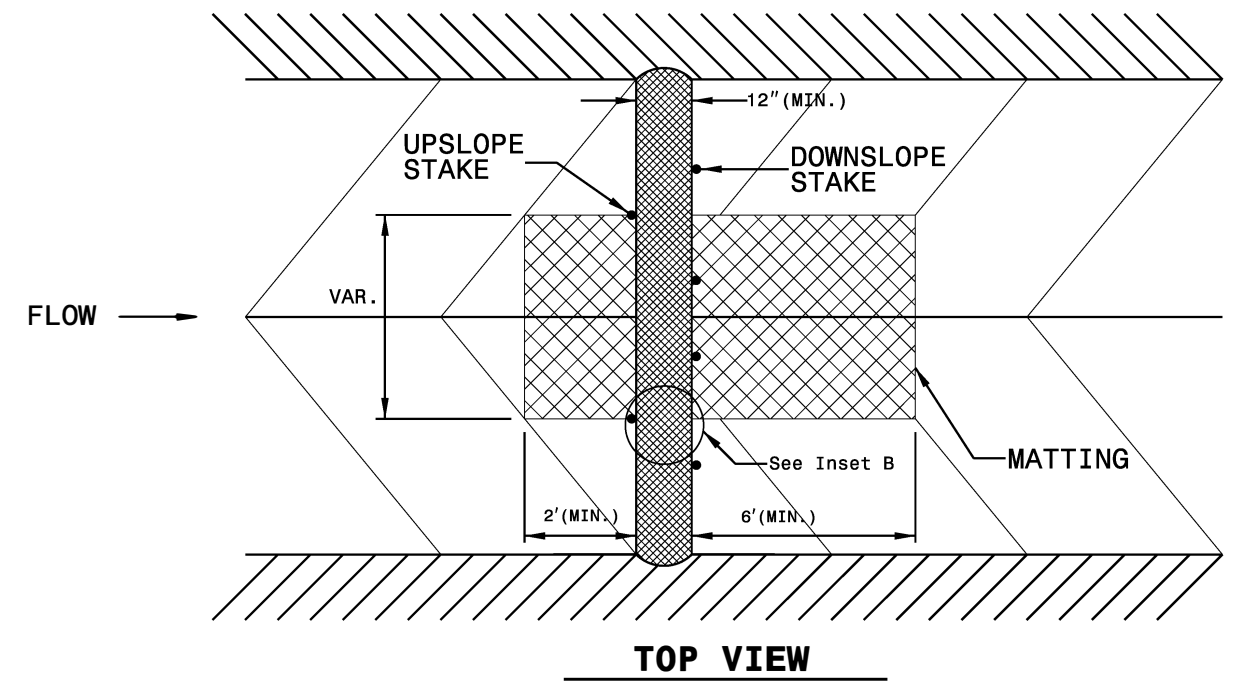
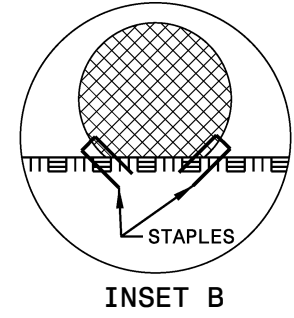
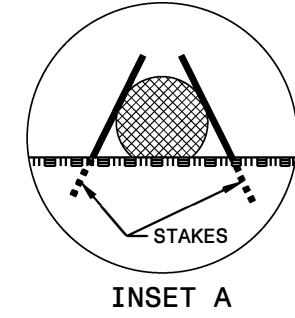
NOT TO SCALE



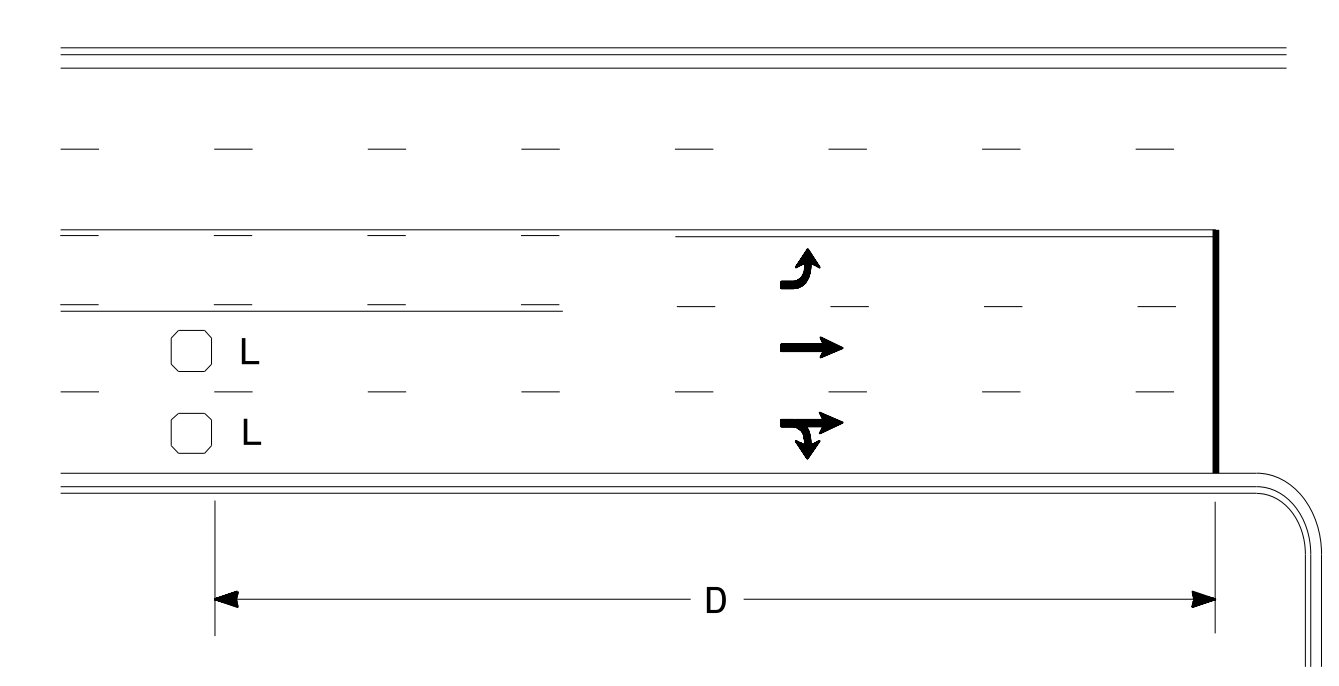
# WATTLE DETAIL



- 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.



### High Speed Detection (≥40 mph)

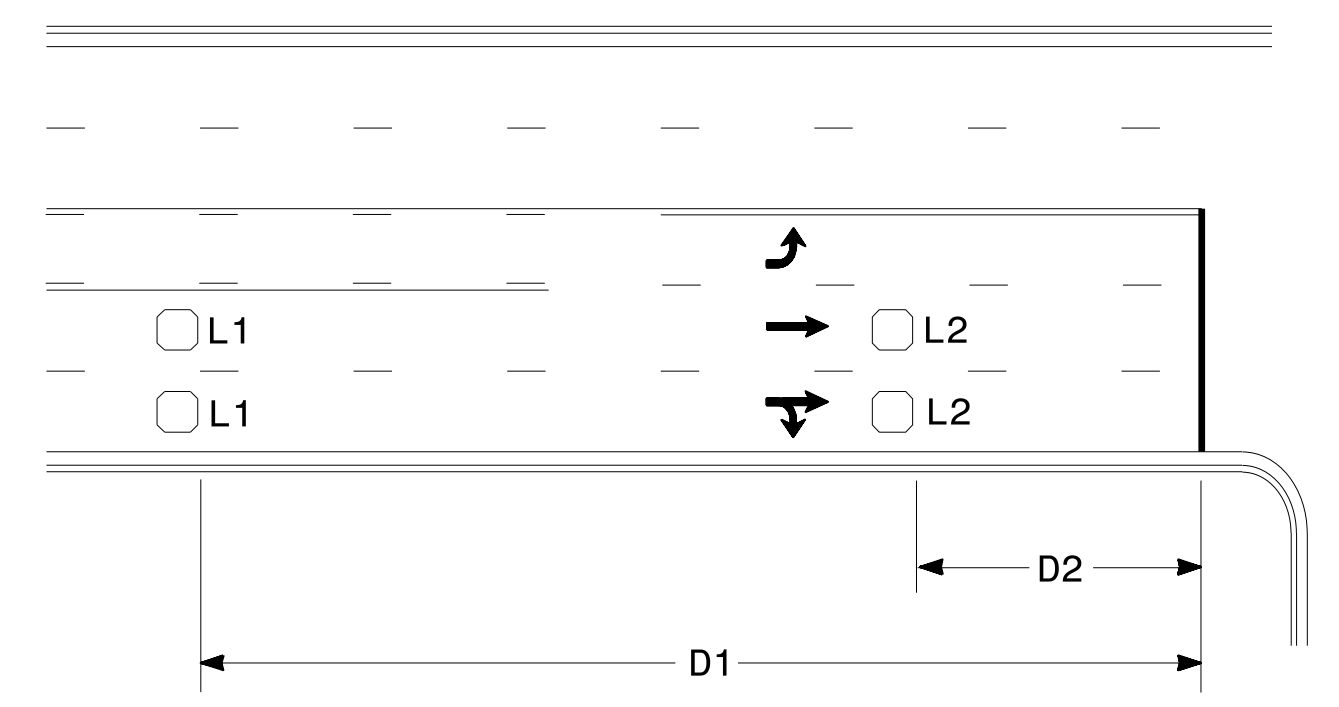


Speed Limit mph	D ft
40	250
45	300
50	355
55	420

L = 6ft X 6ft  
Wired in series for TS1  
Controllers  
Wired separately for TS2,  
170, and 2070L Controllers

Volume Density Operation

OR

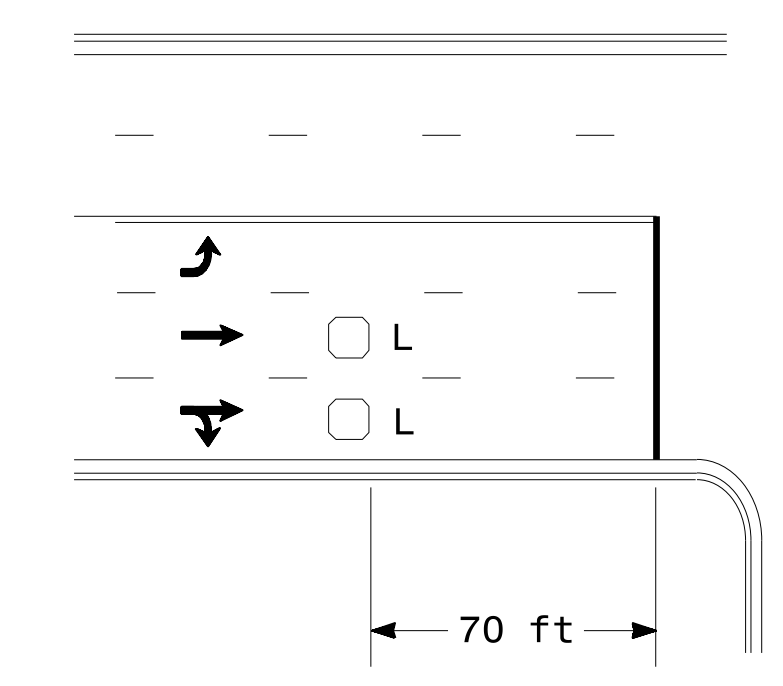


Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft  
Wired in series  
L2 = 6ft X 6ft  
Wired in series

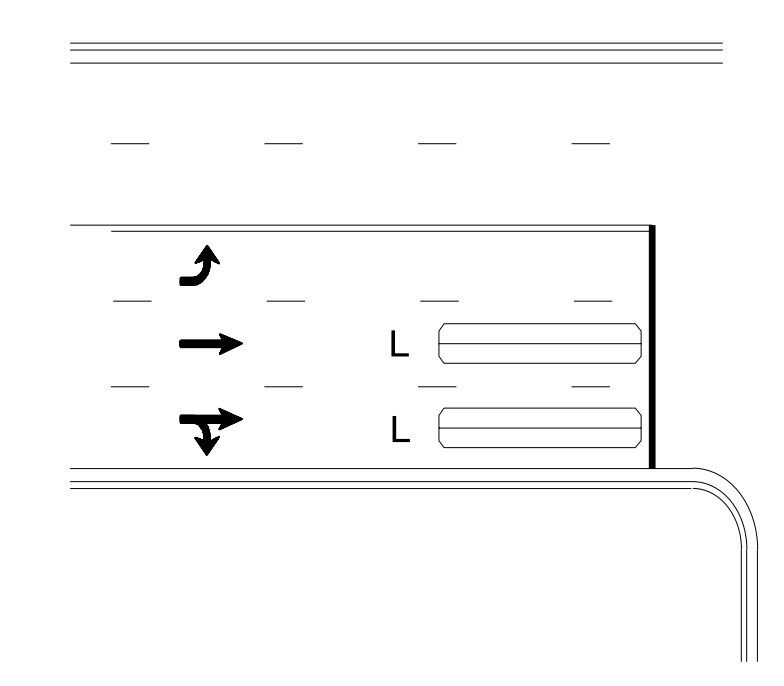
"Stretch" Operation

### Low Speed Detection (≤35 mph)



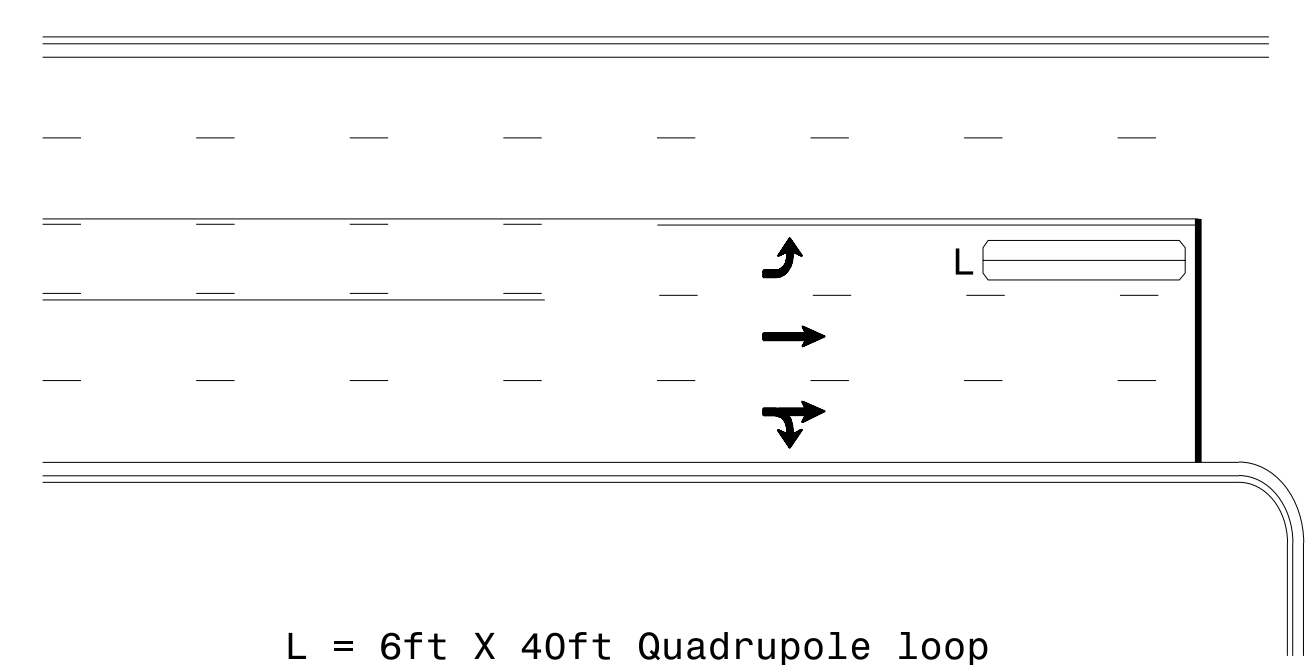
L = 6ft X 6ft  
Wired in series

OR



L = 6ft X 40ft  
Quadrupole loop, wired separately

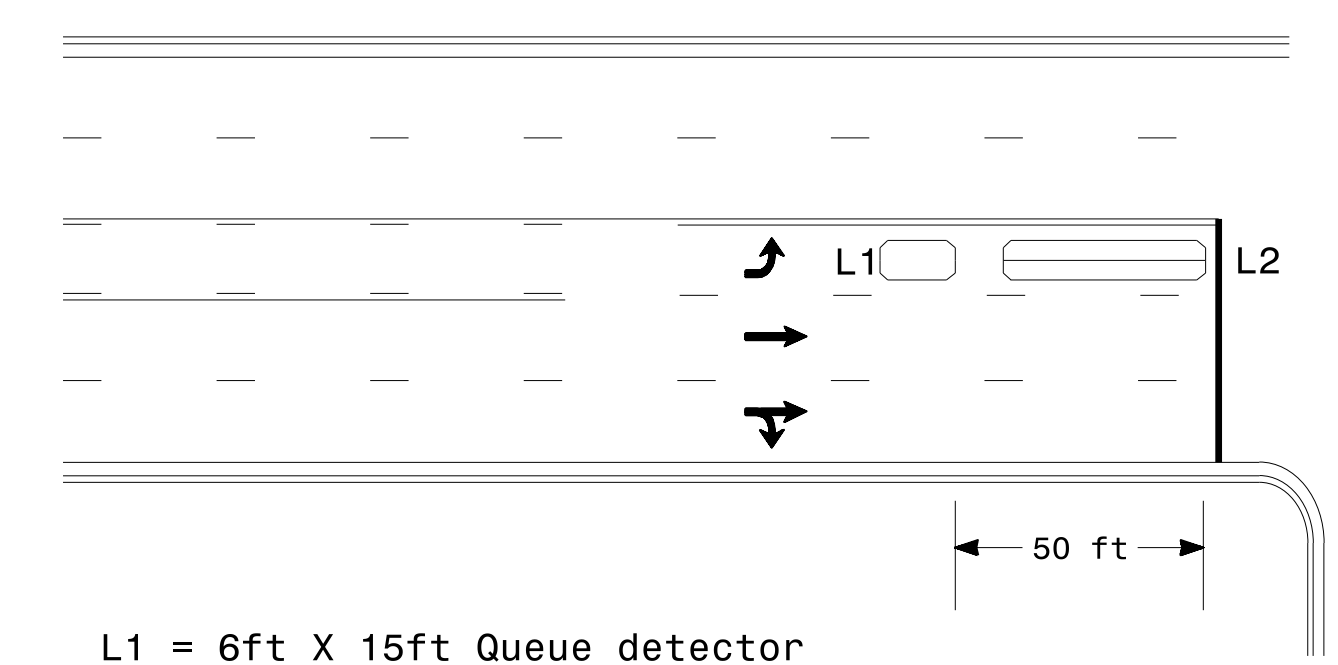
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

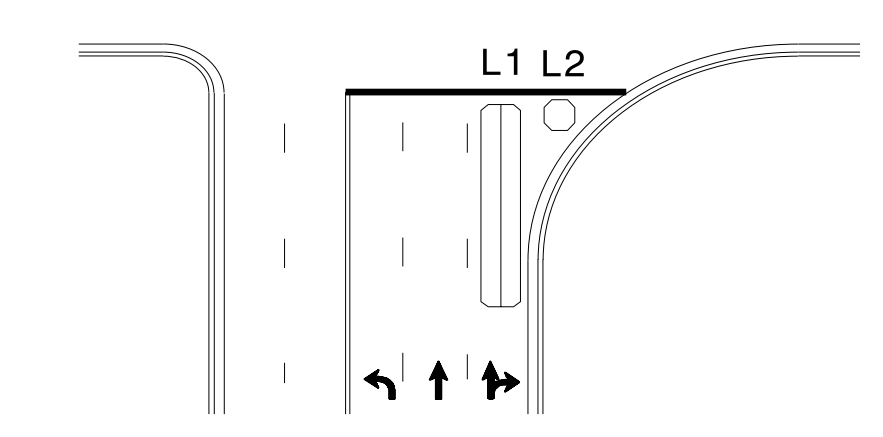
OR



L1 = 6ft X 15ft Queue detector  
L2 = 6ft X 40ft Quadrupole loop

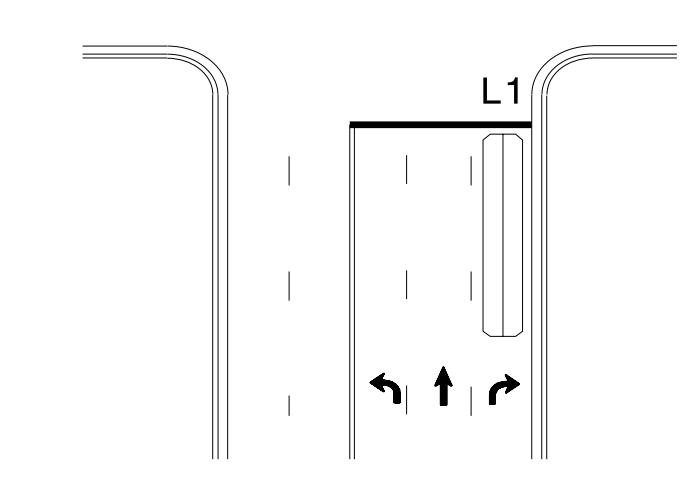
Queue Loop Detection

### Right Turn Lane Detection

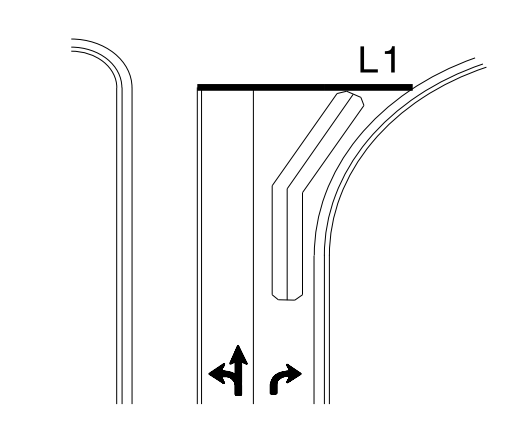


Shared Lane/  
Wide Radius Turn

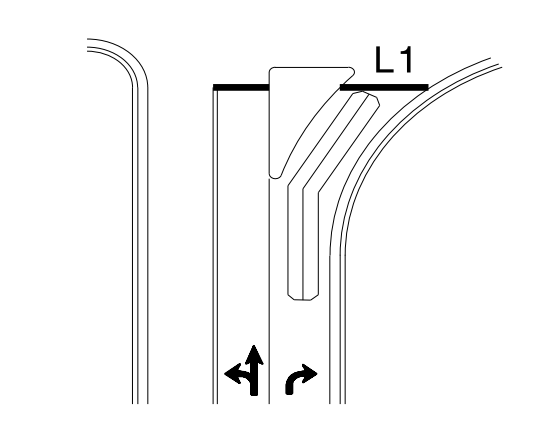
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

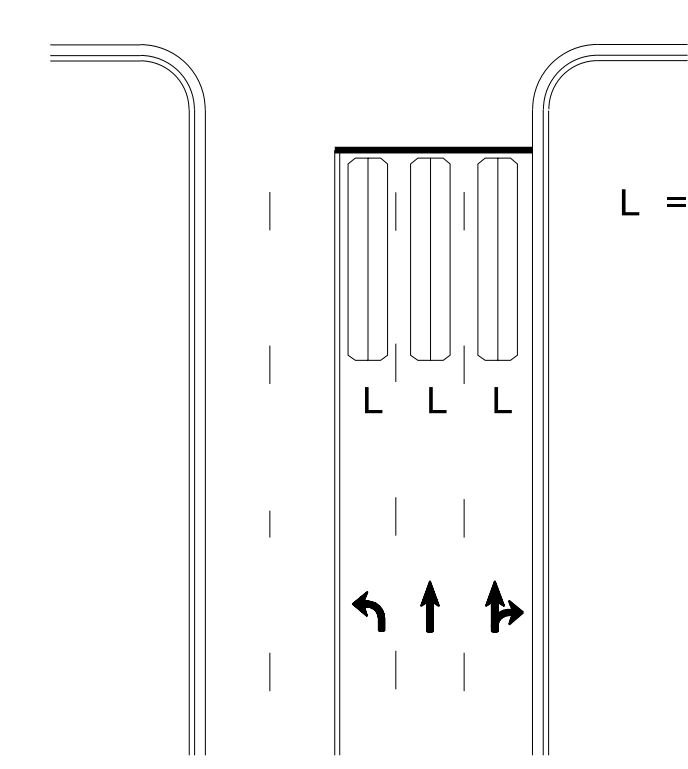


Wide Radius Turn



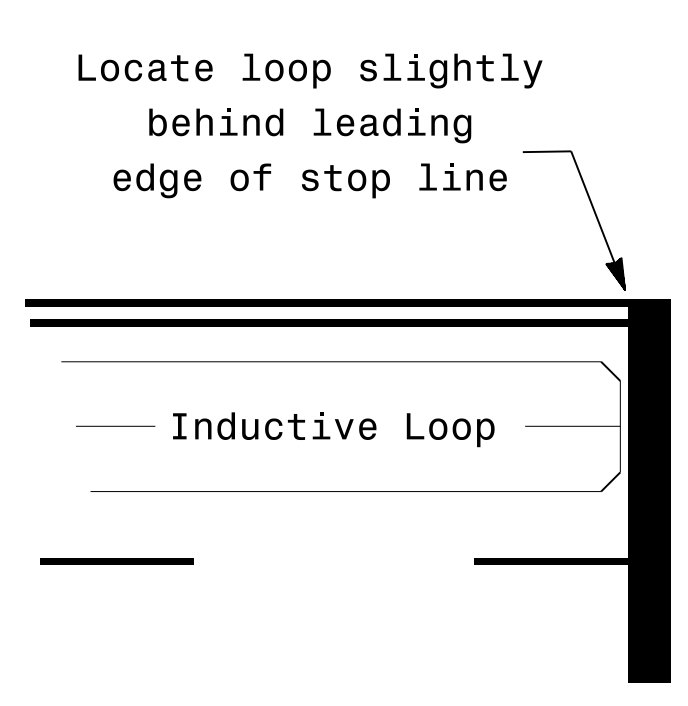
Channelized Turn

### Side Street Detection



L = 6ft X 40ft  
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 under any of the  
following conditions:  
1) stop line is greater than 15'  
from edge of intersecting  
roadway  
2) loop detects a permissive or  
protected/permissive left turn  
3) for an exclusive right turn  
lane

### Recommended Number of Turns

Single 6' X 6' loop  
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns  
6' X 15' Loops:  
Lead-in < 150', use 2 turns  
Lead-in > 150', use 3 turns

750 N. Greenfield Pkwy, Garner, NC 27529

#### Typical Signal Loop Locations

PLAN DATE: January 2015	REVIEWED BY: JPG
PREPARED BY: PLA	REVIEWED BY:
REVISIONS	INIT. DATE

SEAL  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
PAMELA L. ALEXANDER  
23489

1/30/2015

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 paalexander