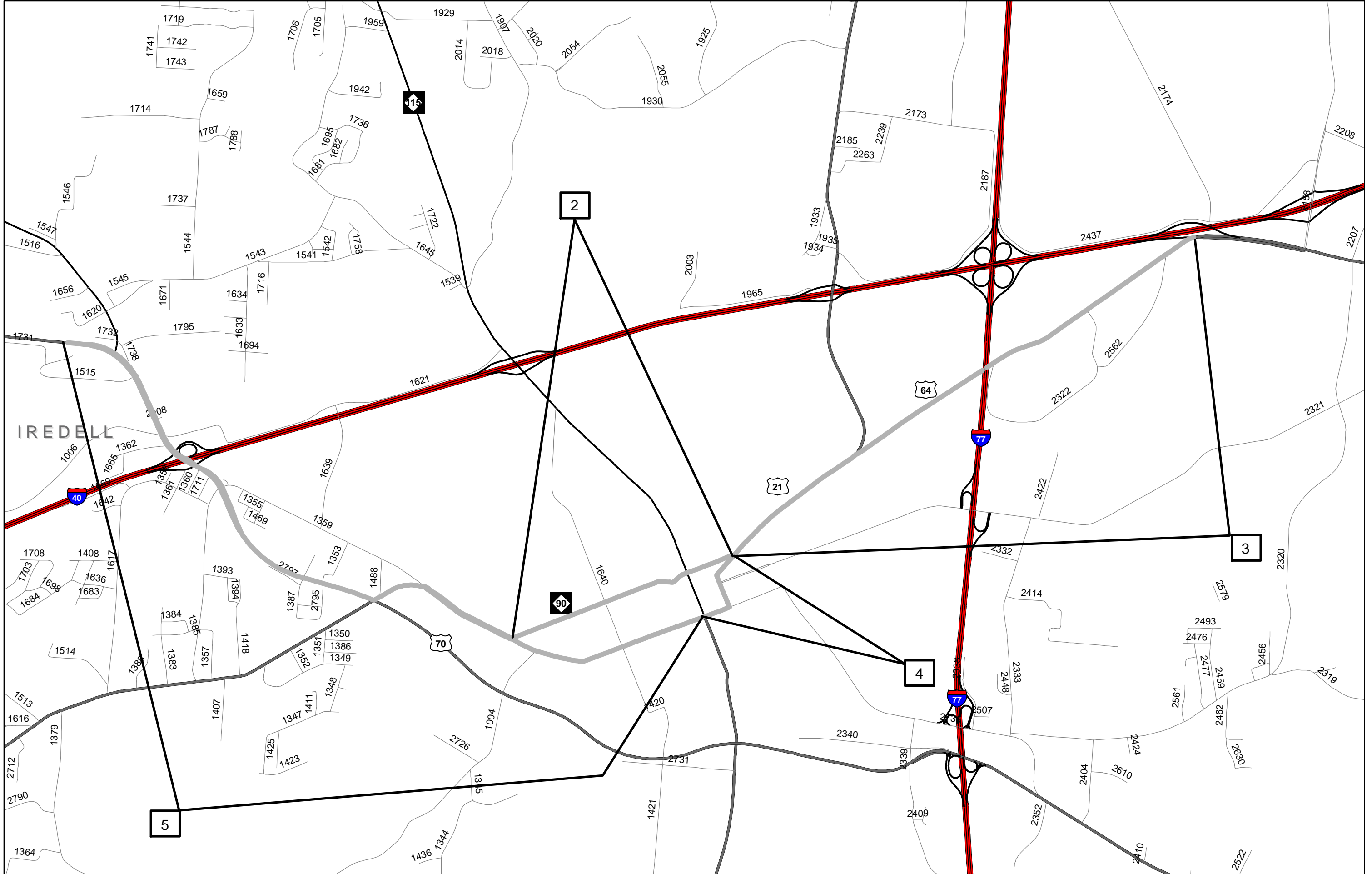


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2

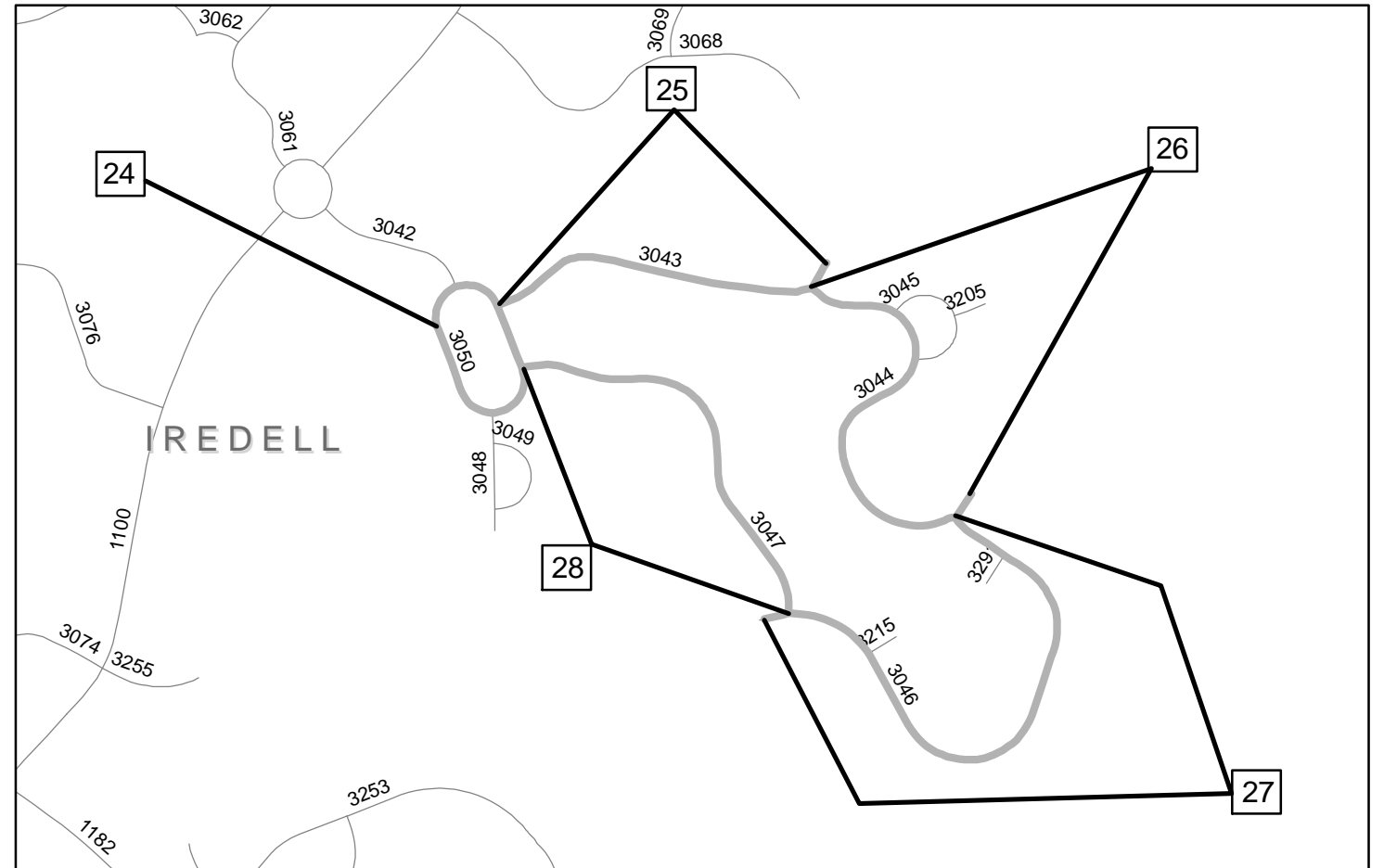
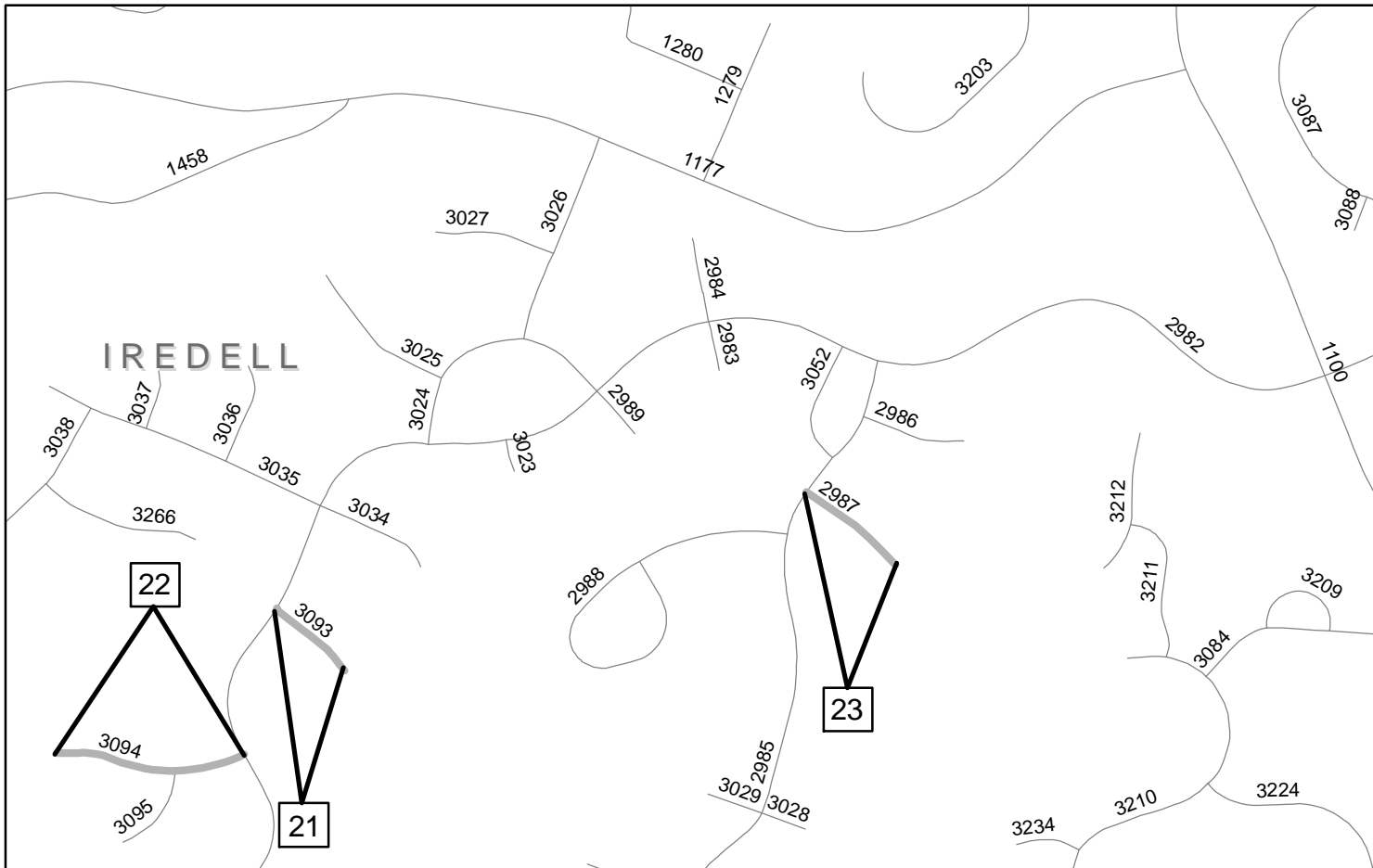
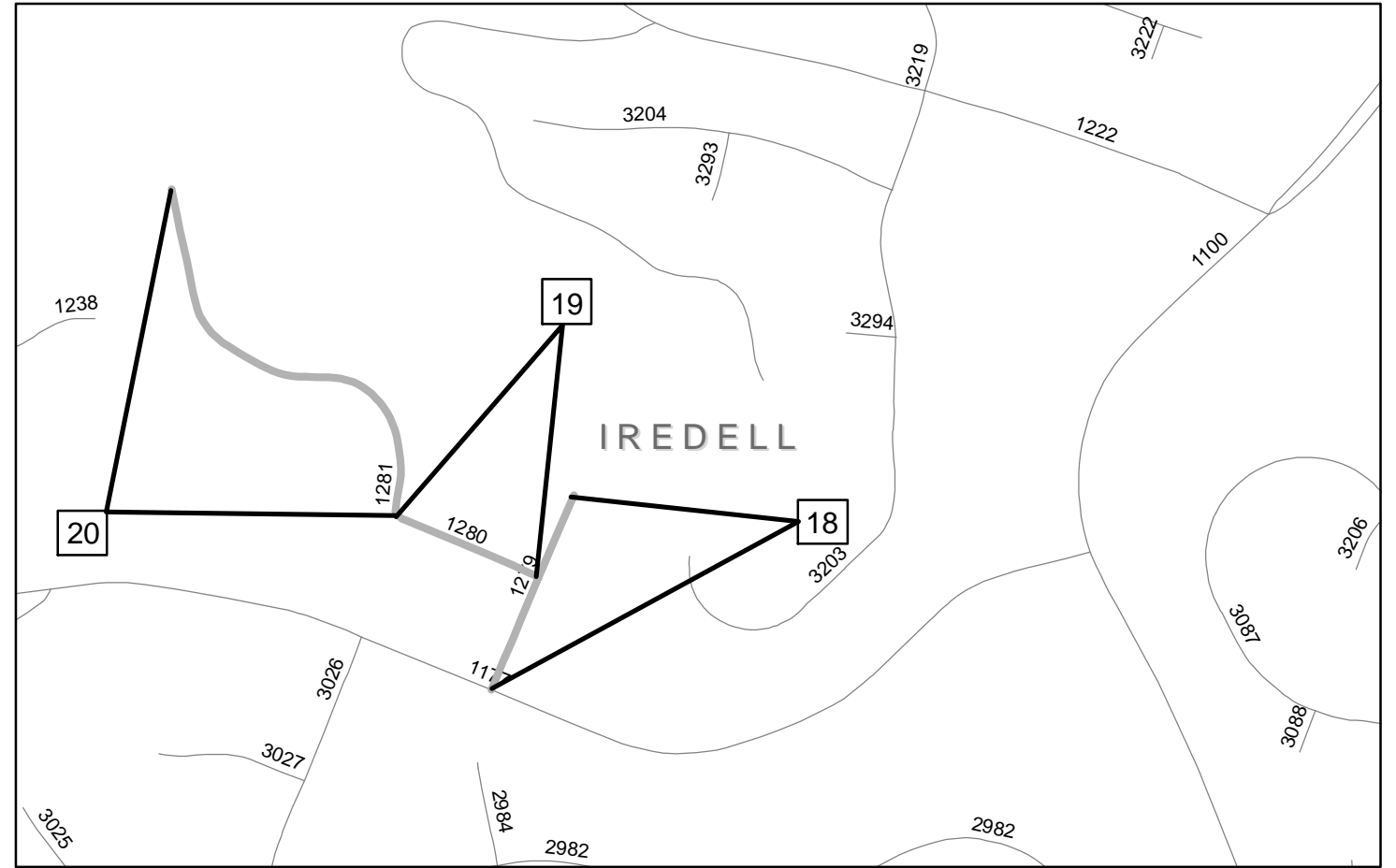
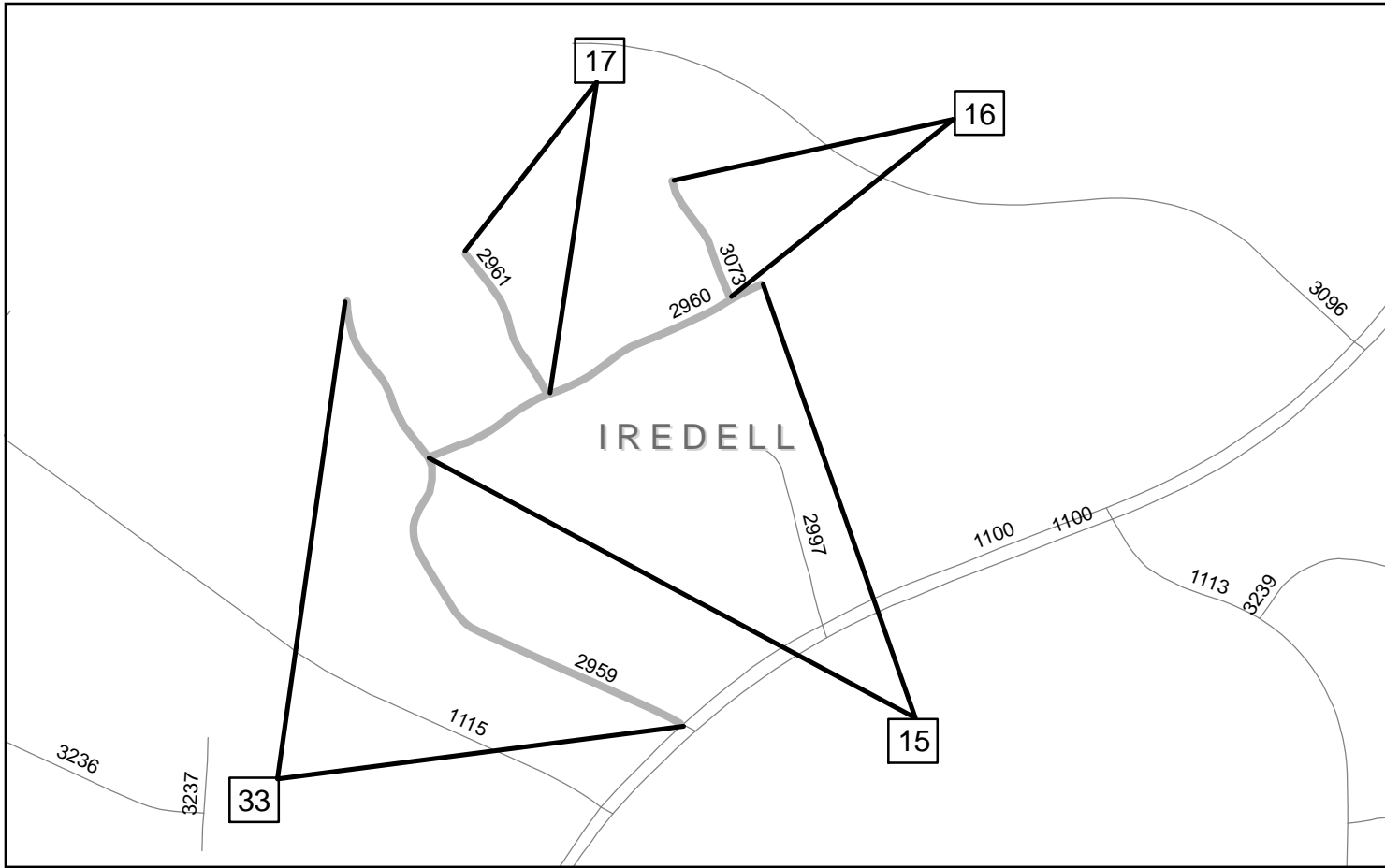
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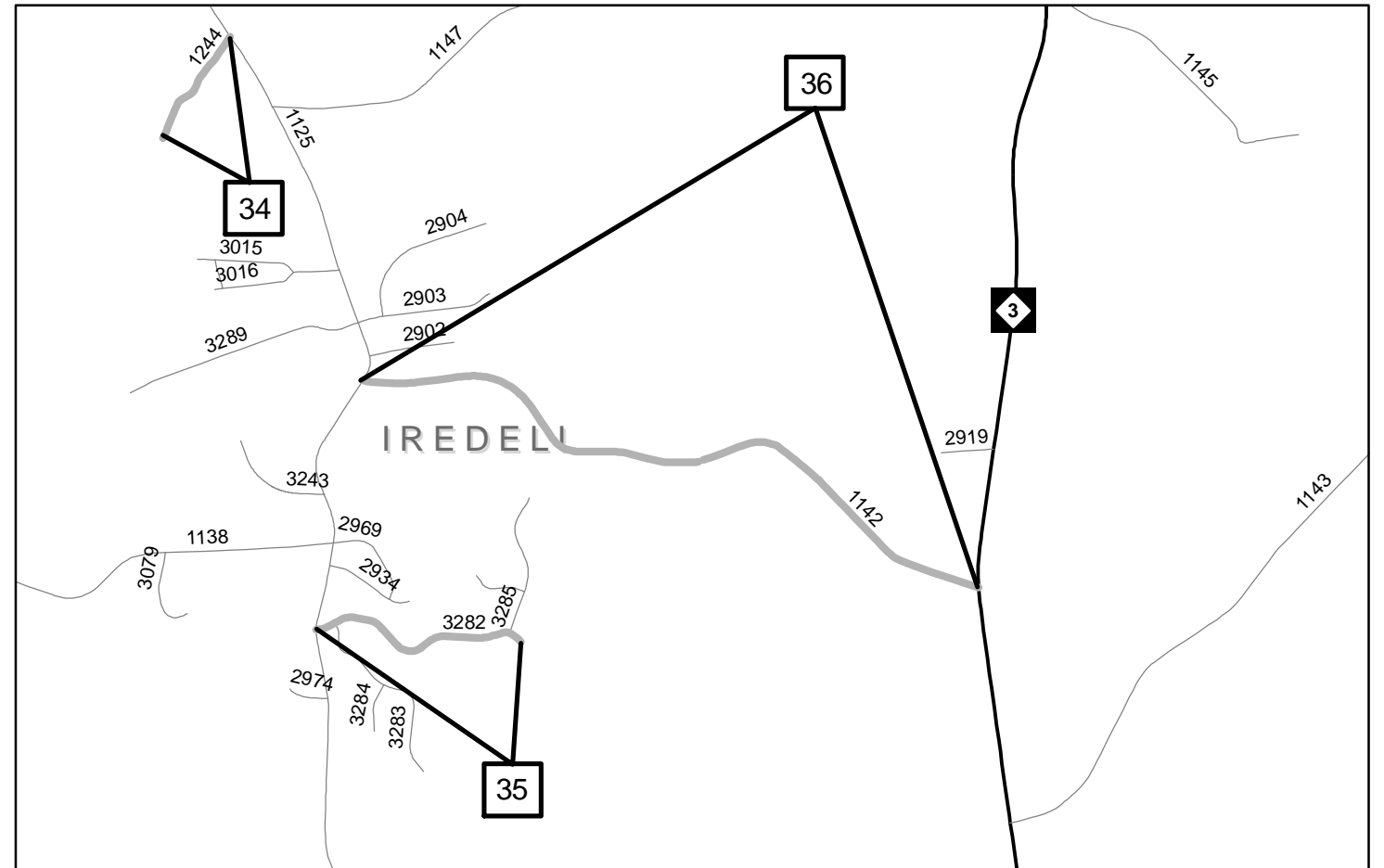
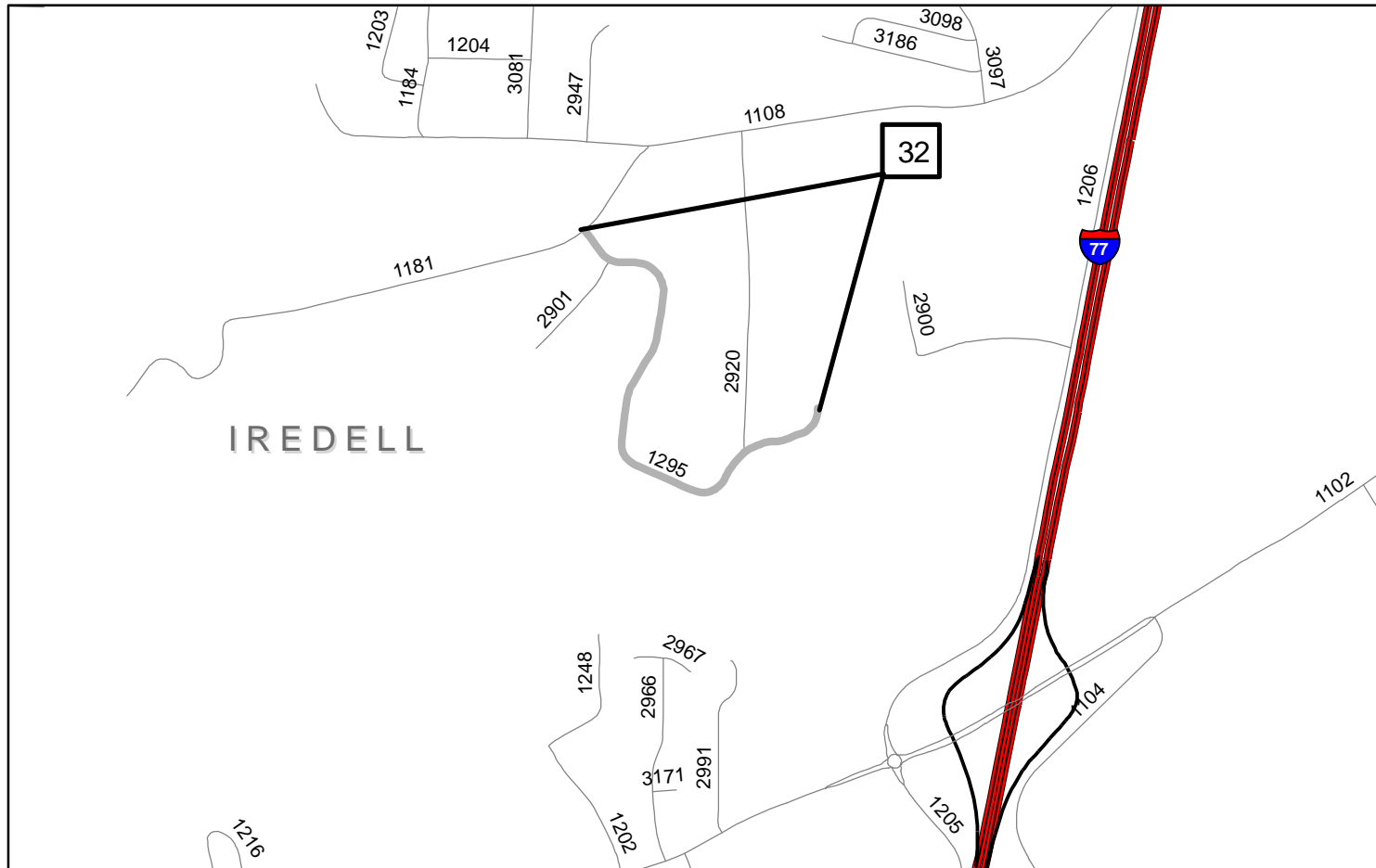
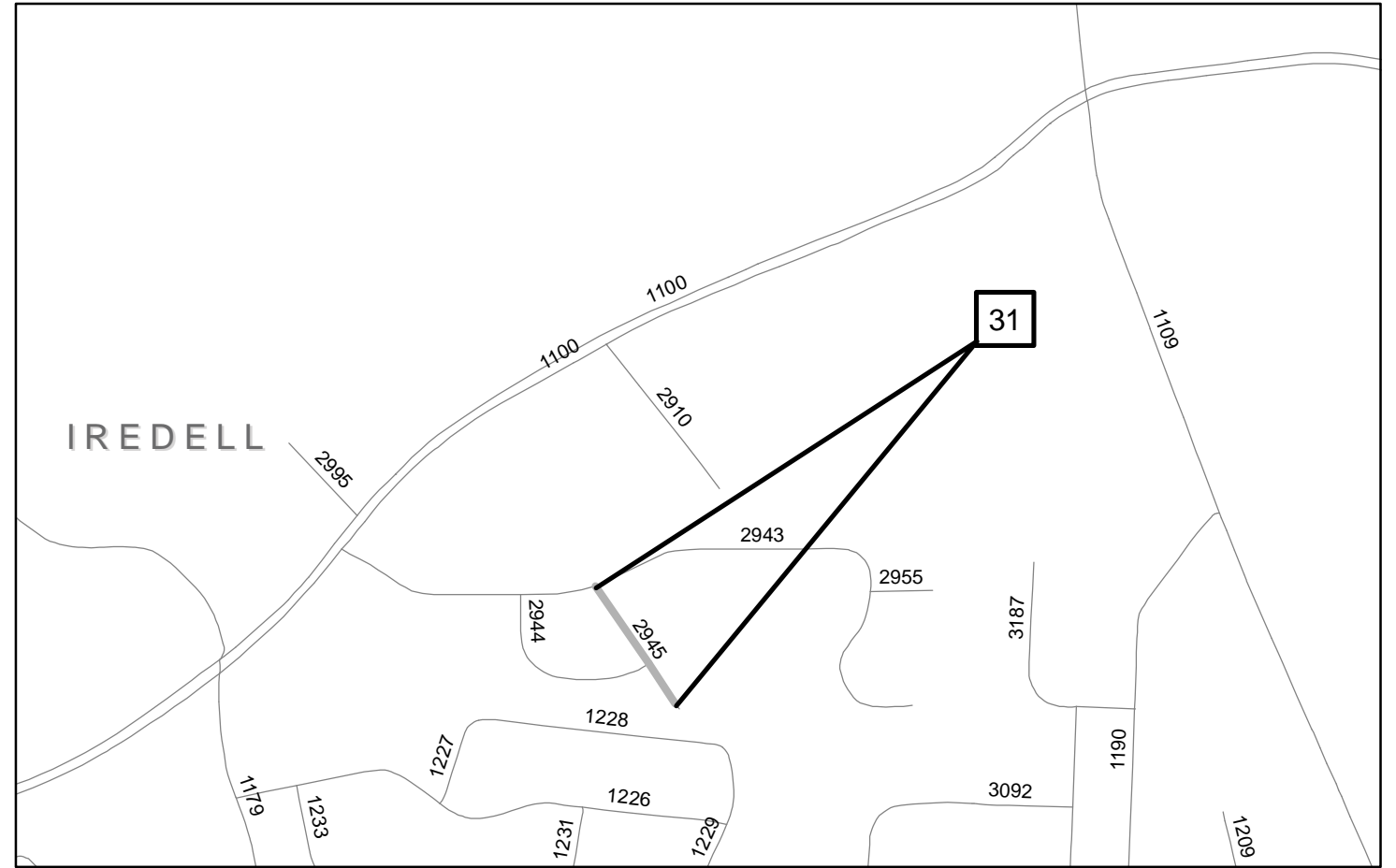
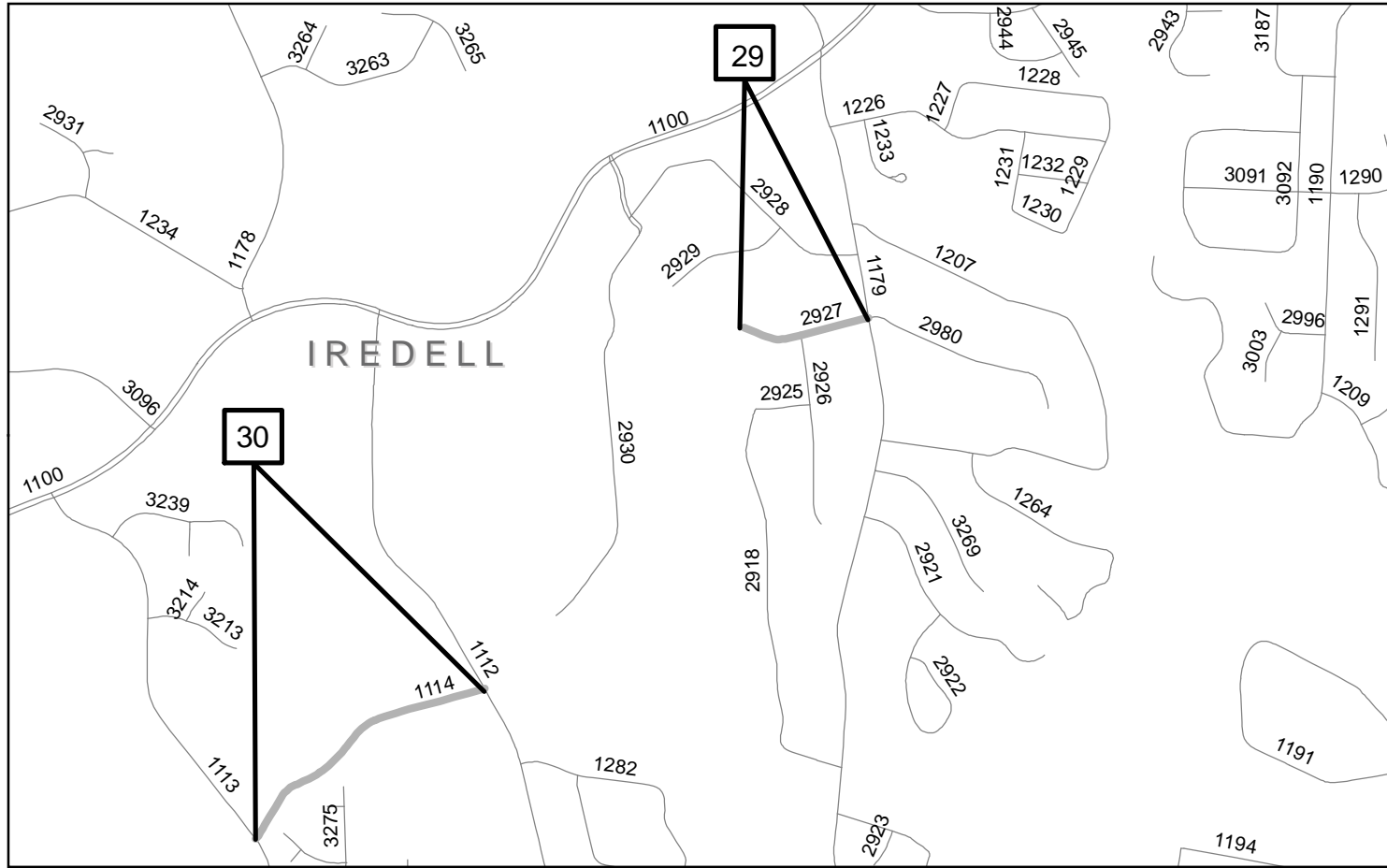
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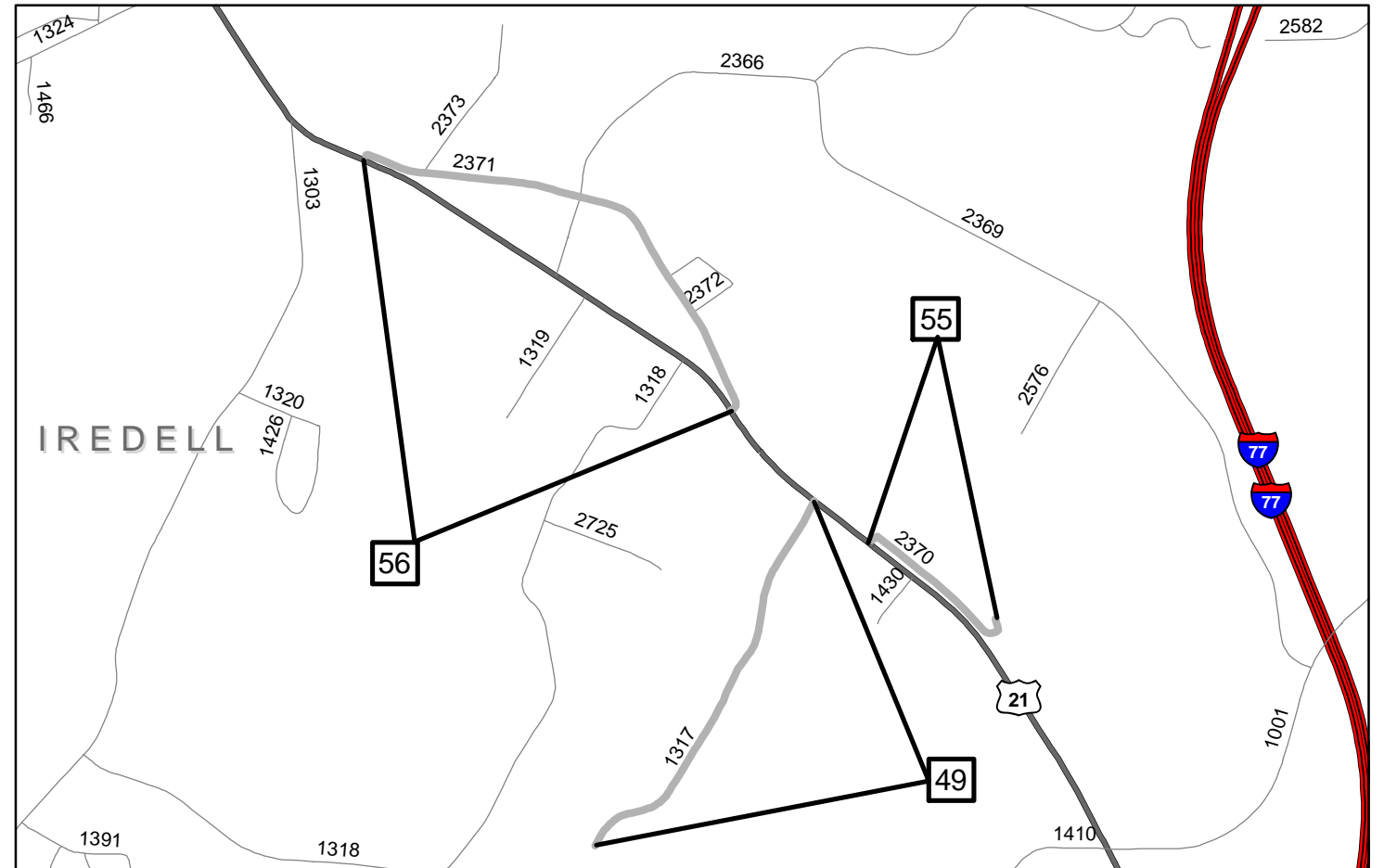
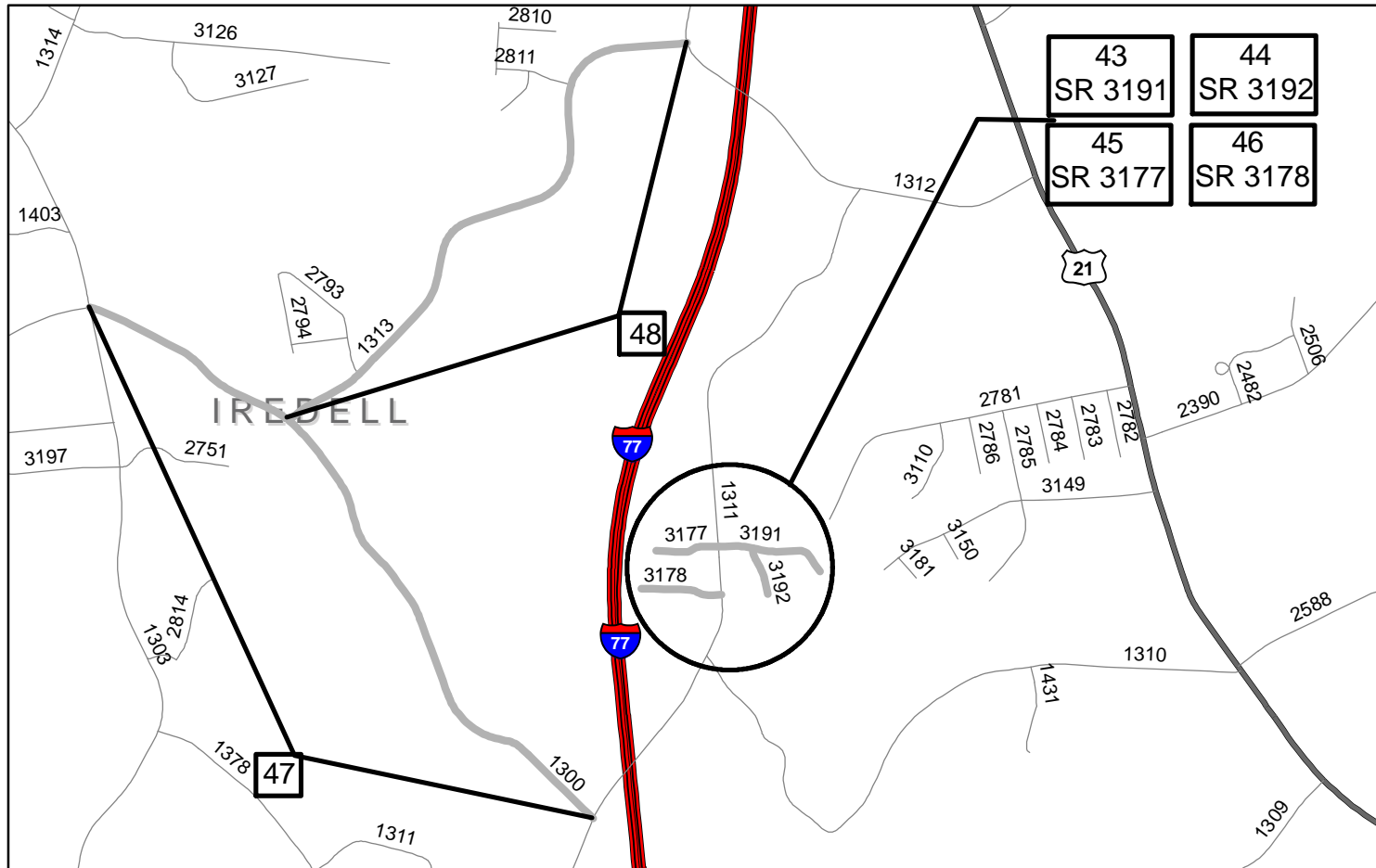
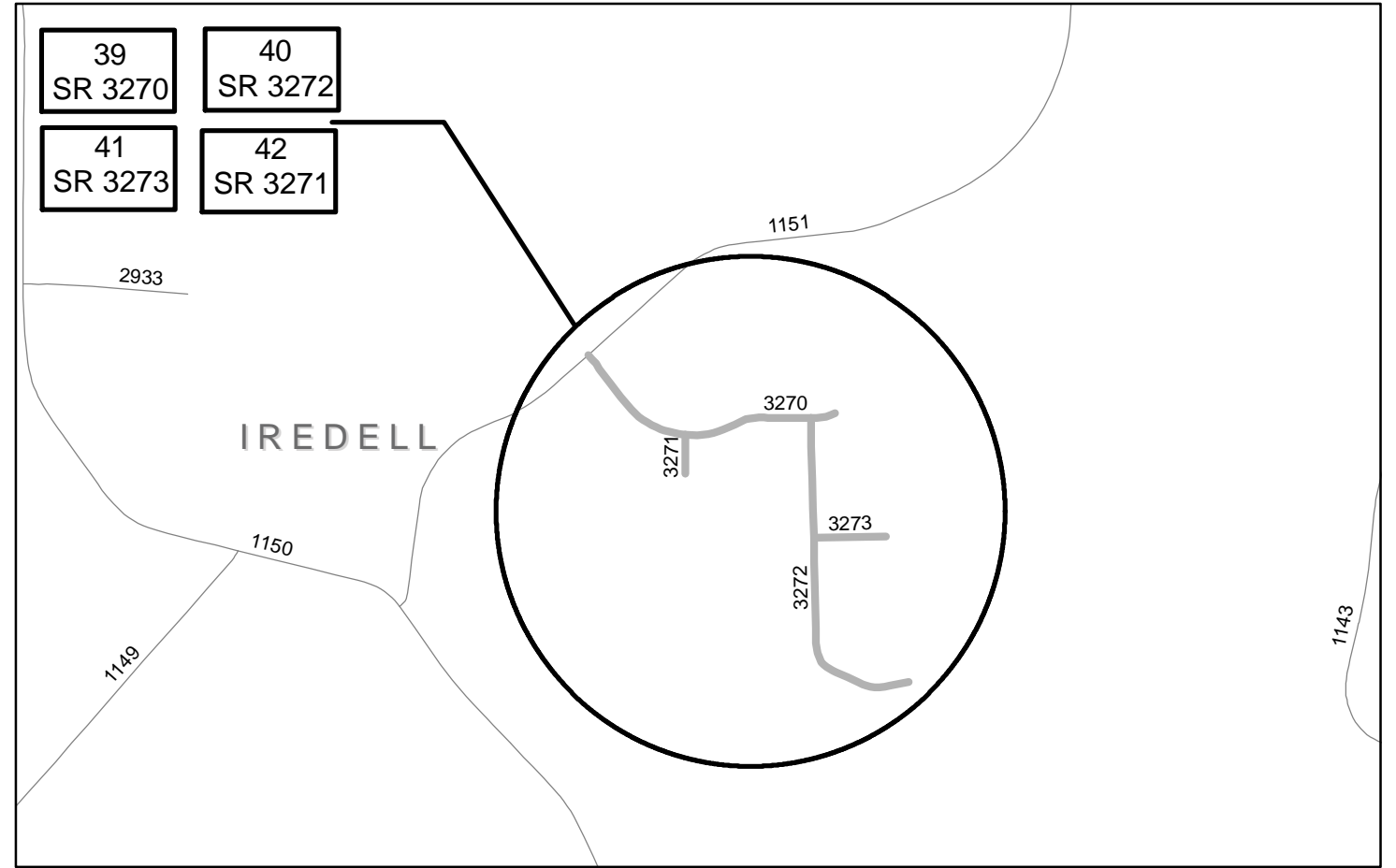
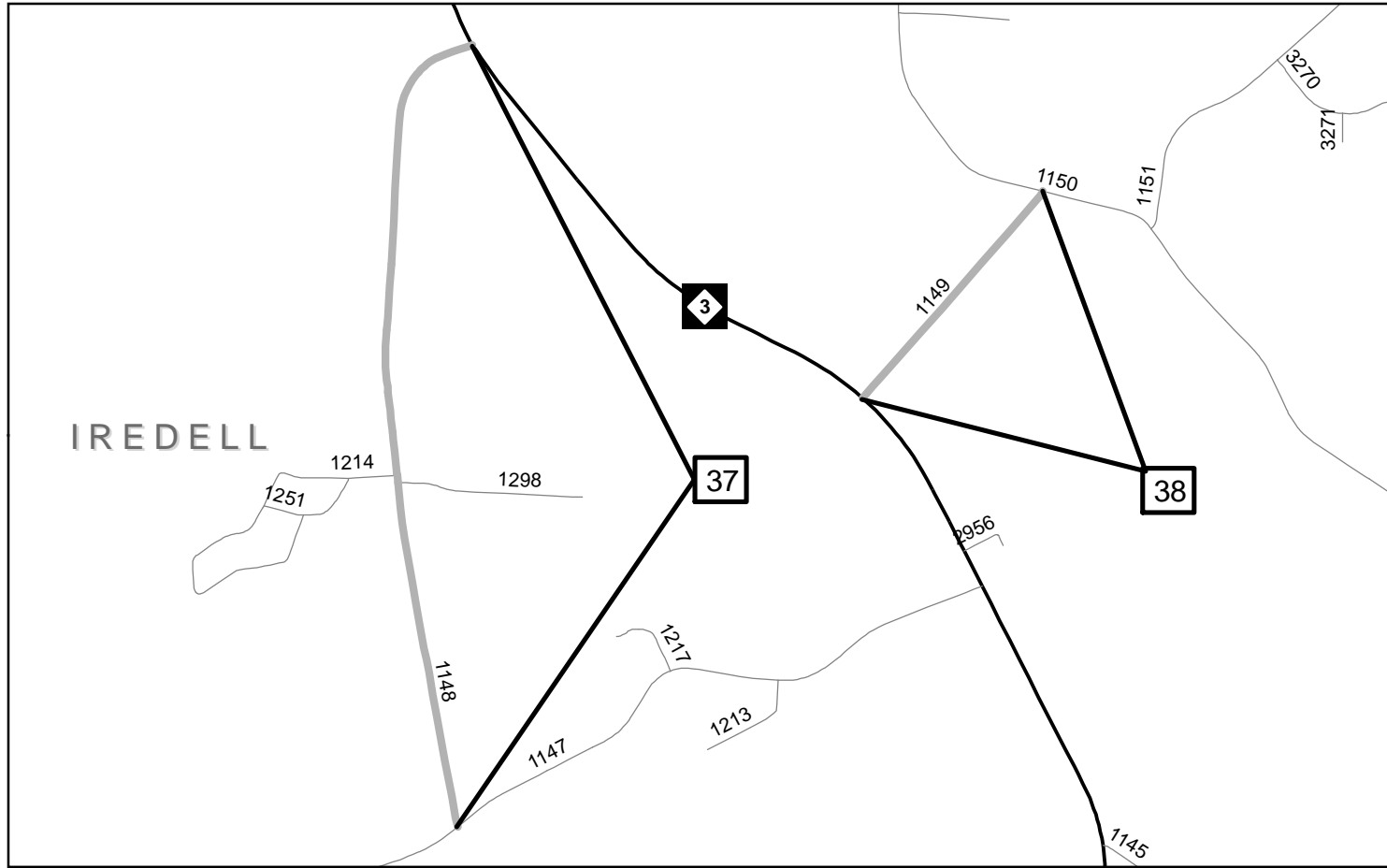


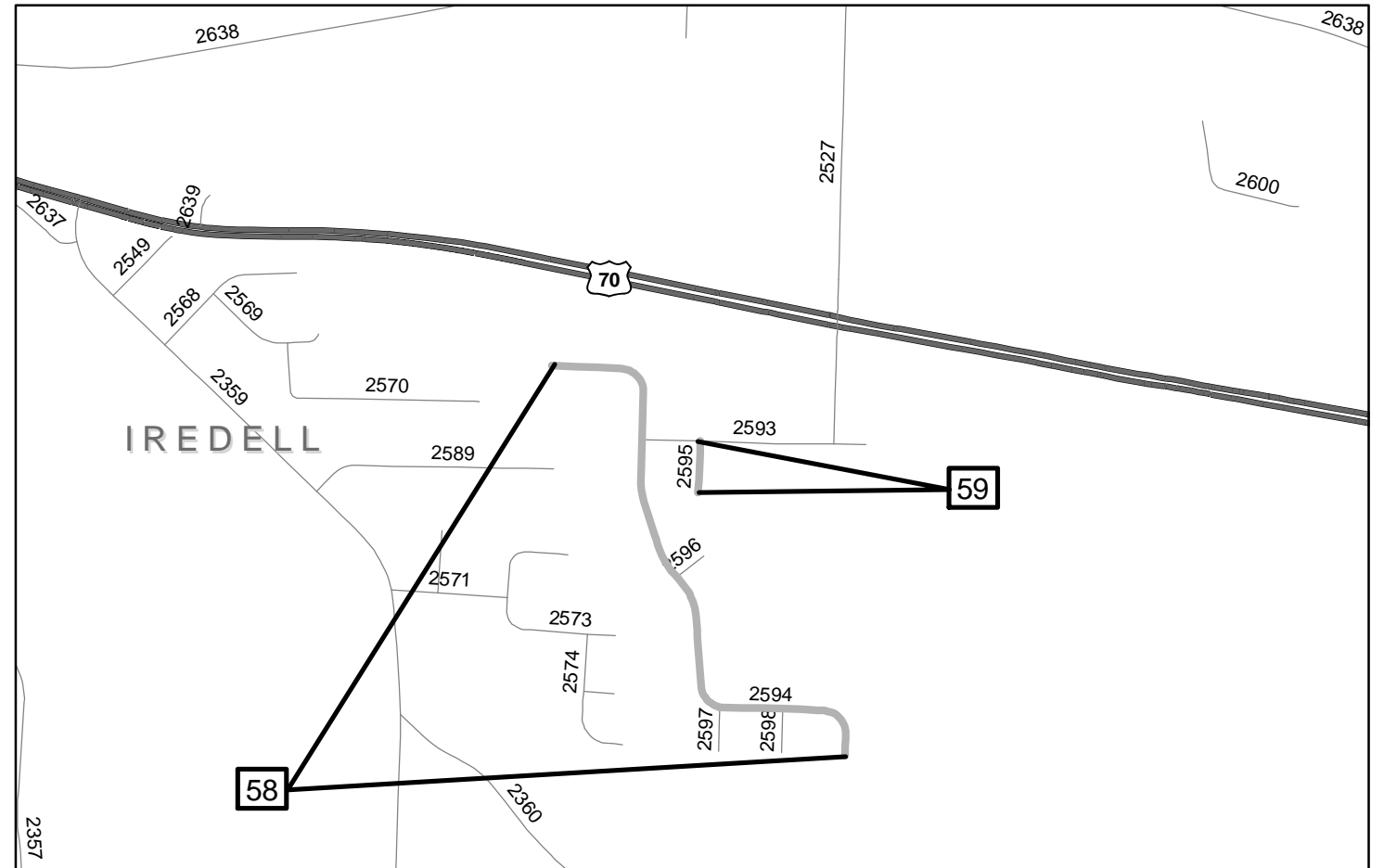
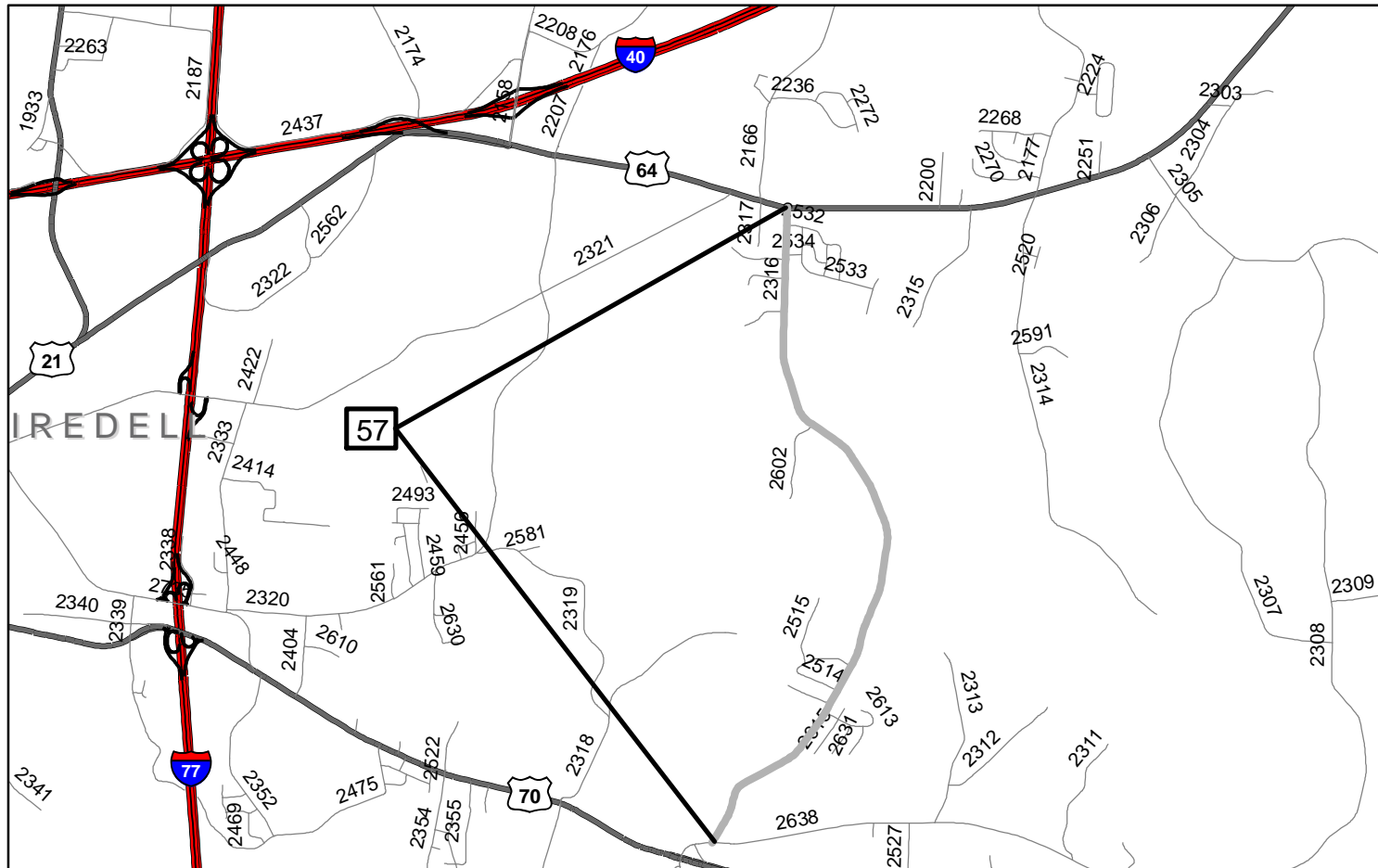
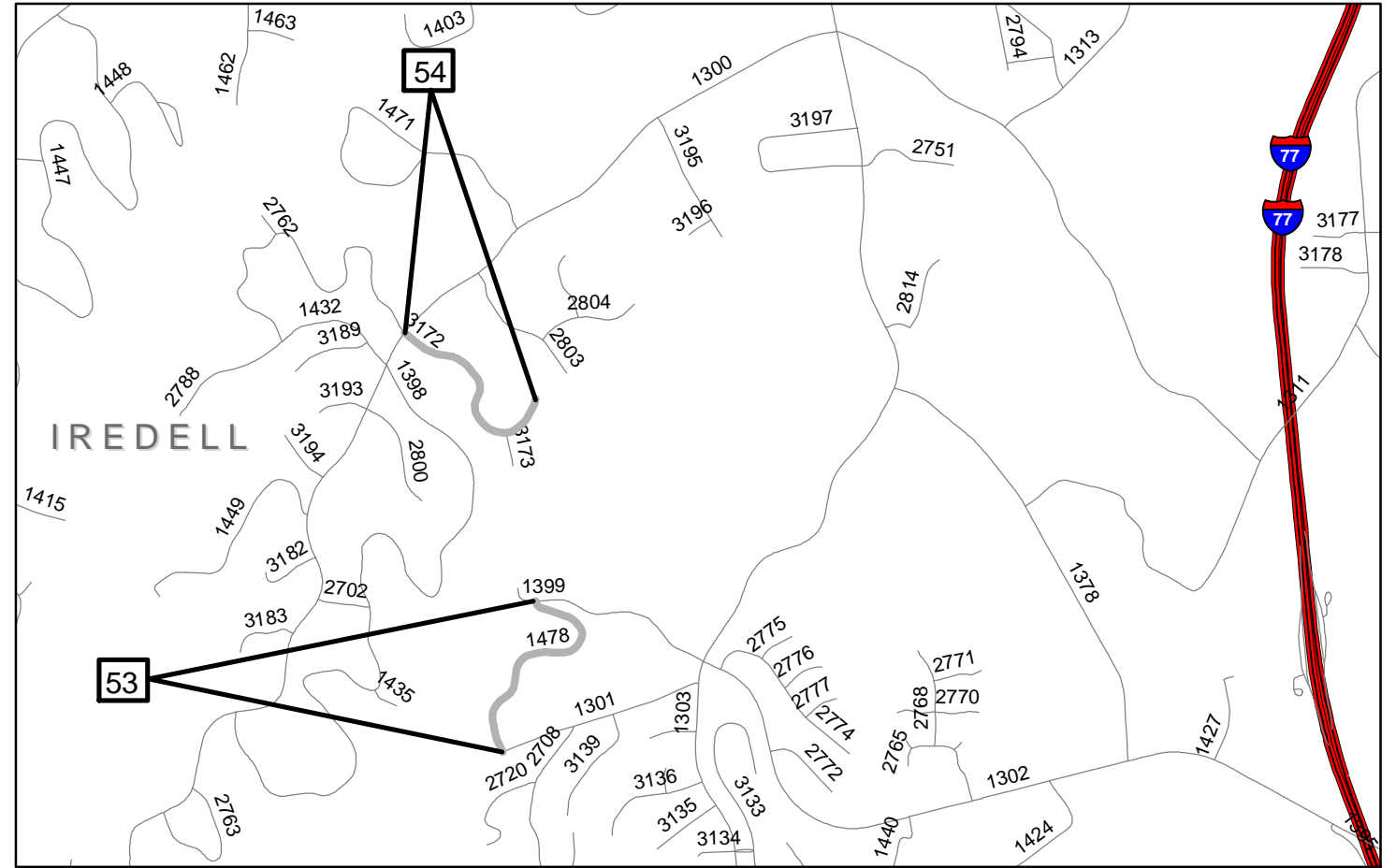
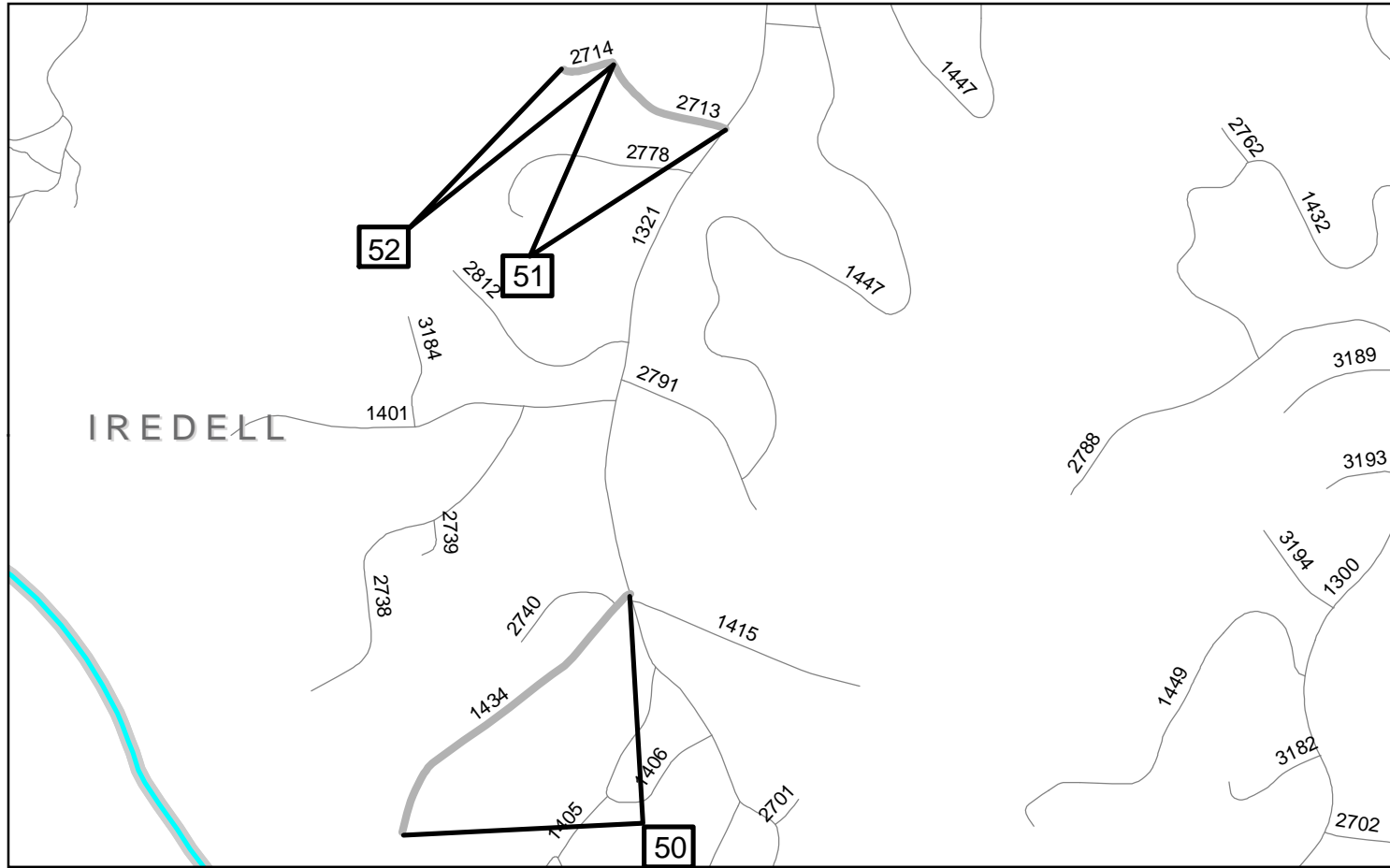


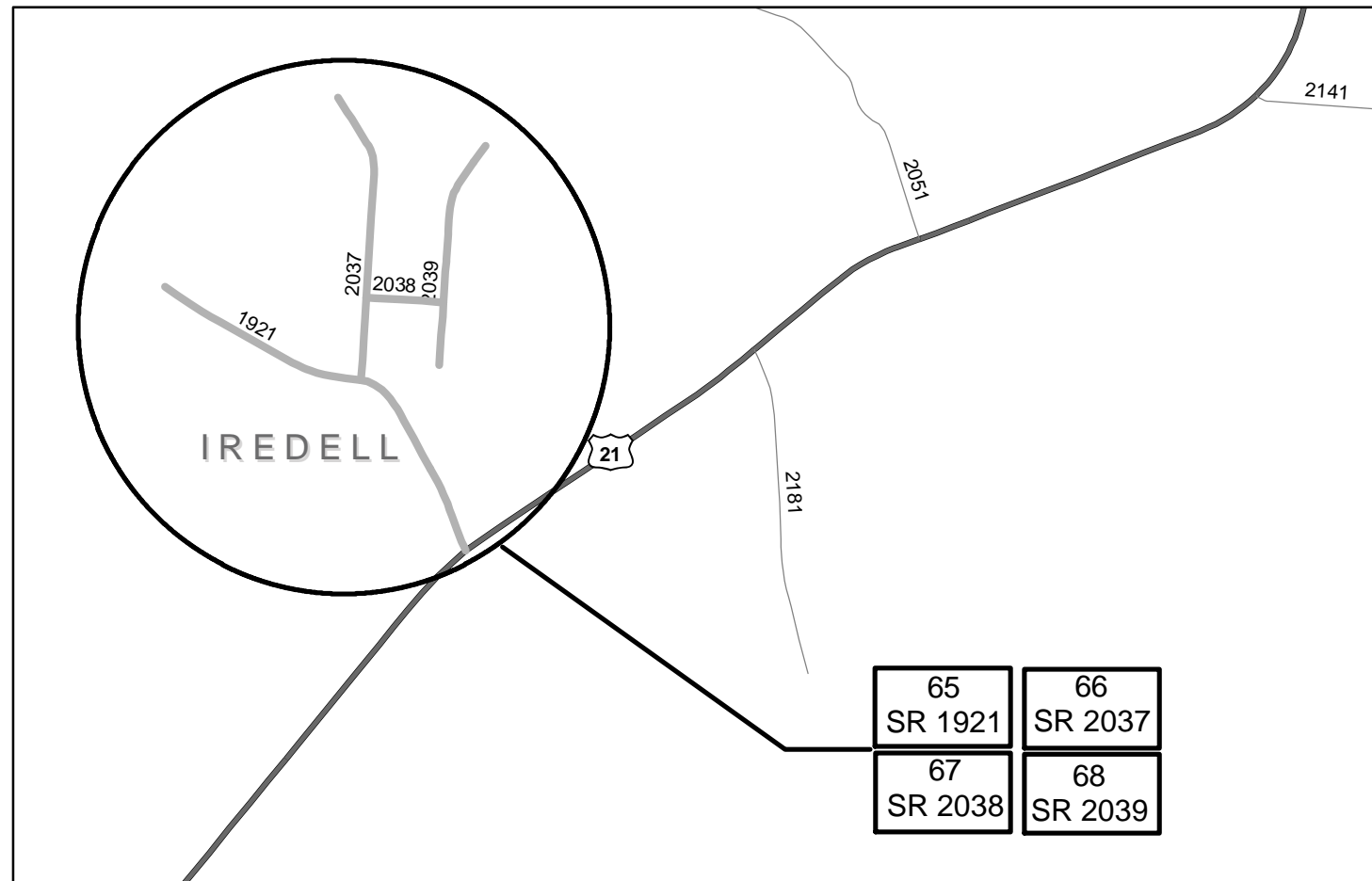
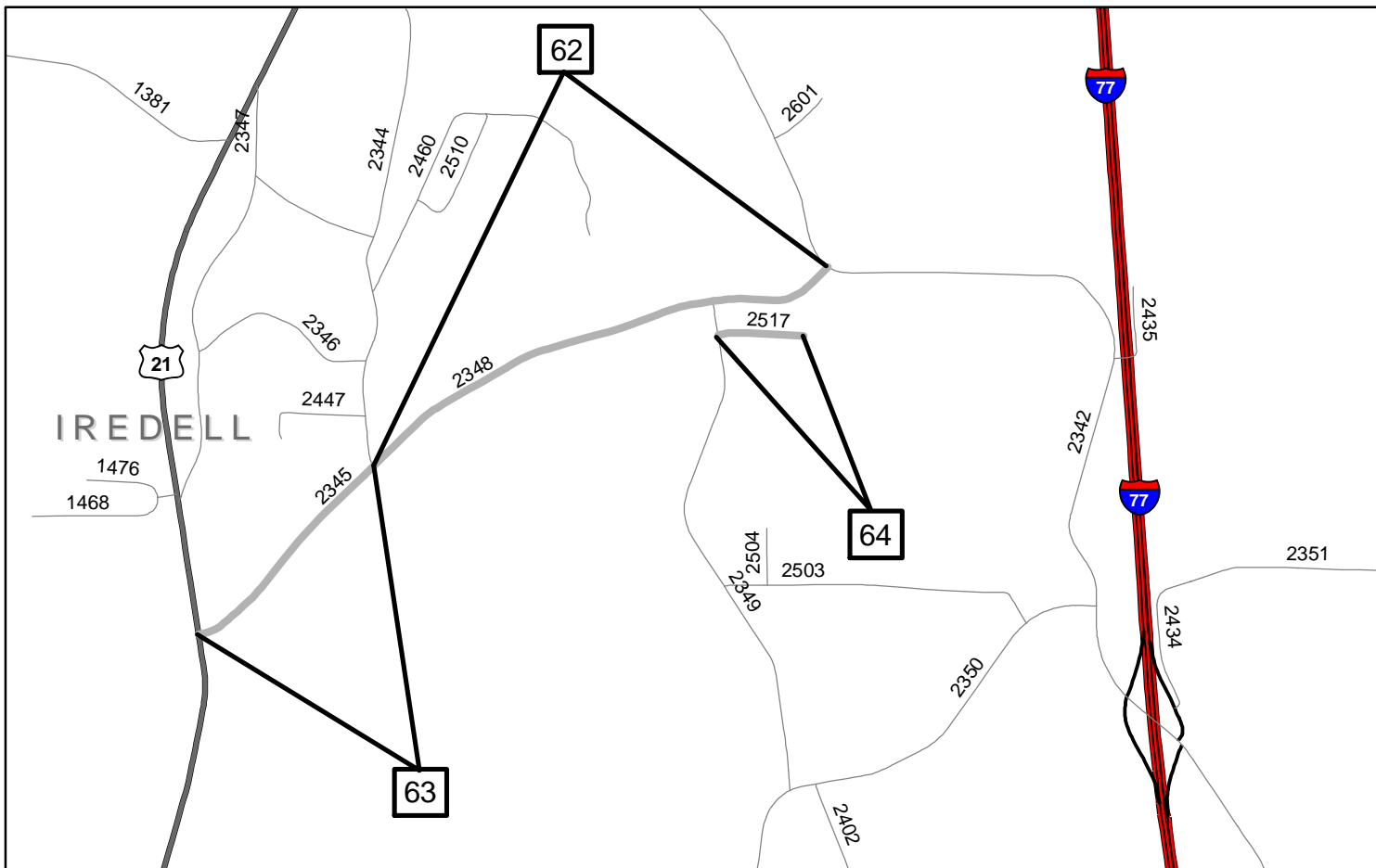
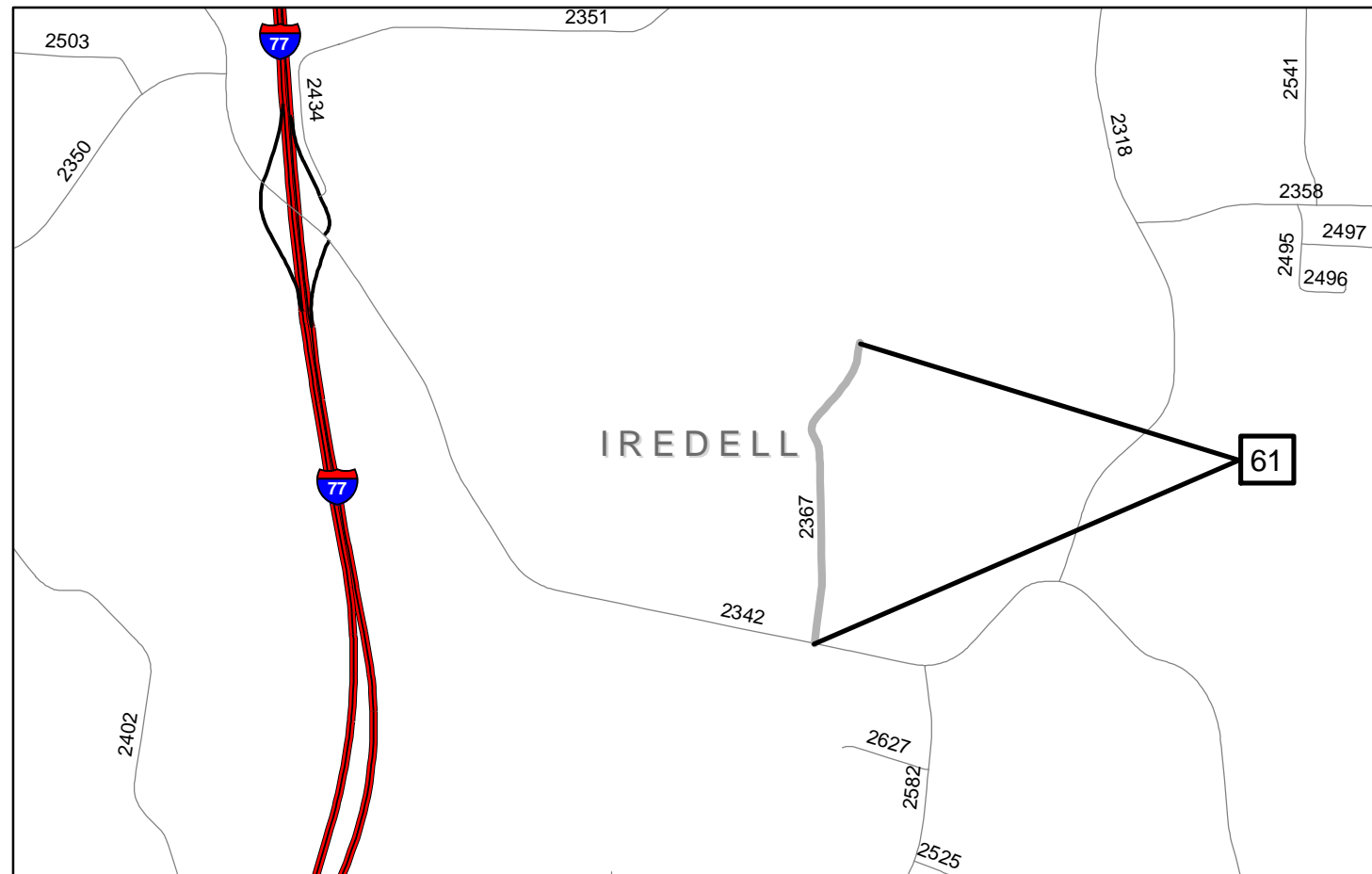
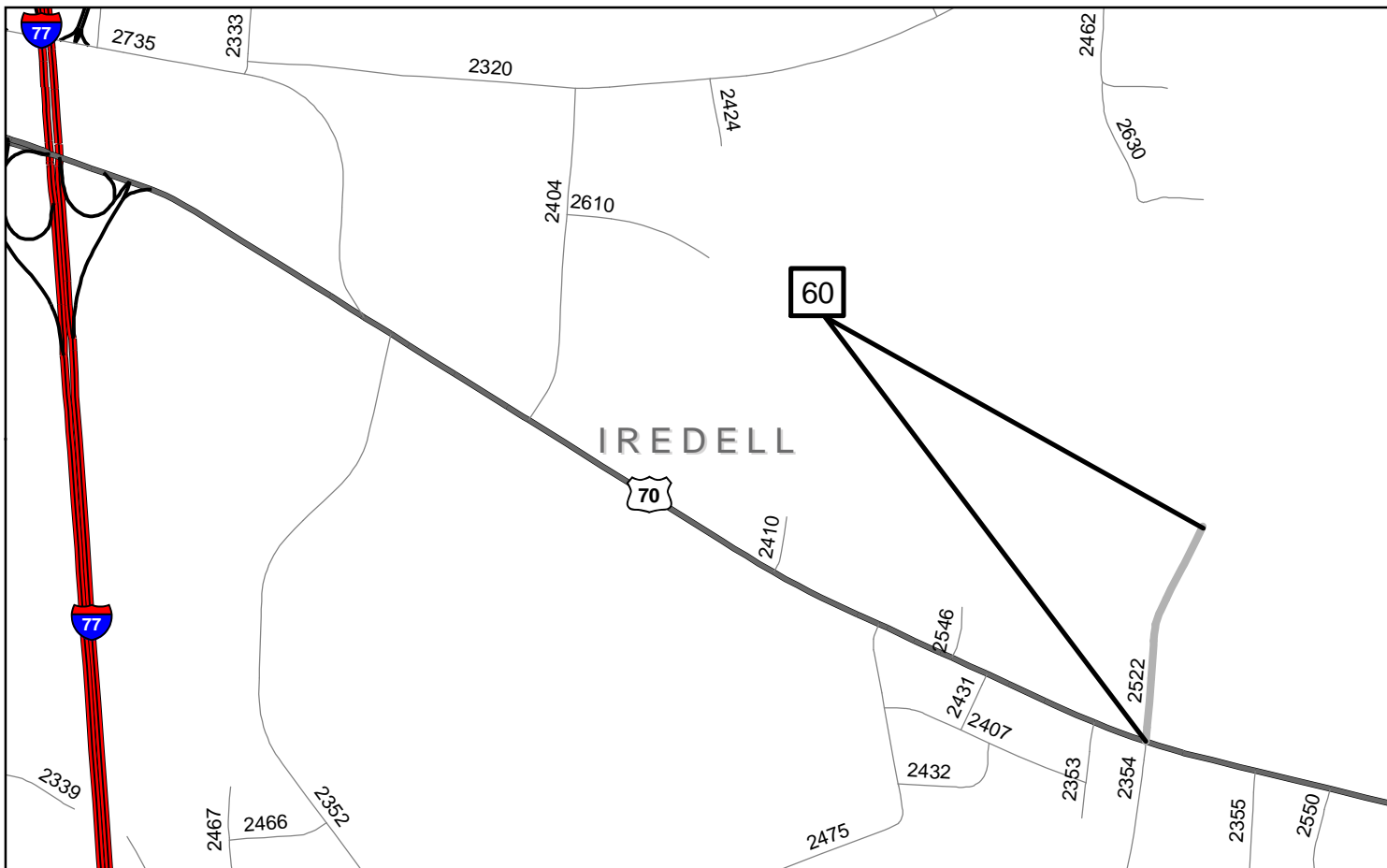




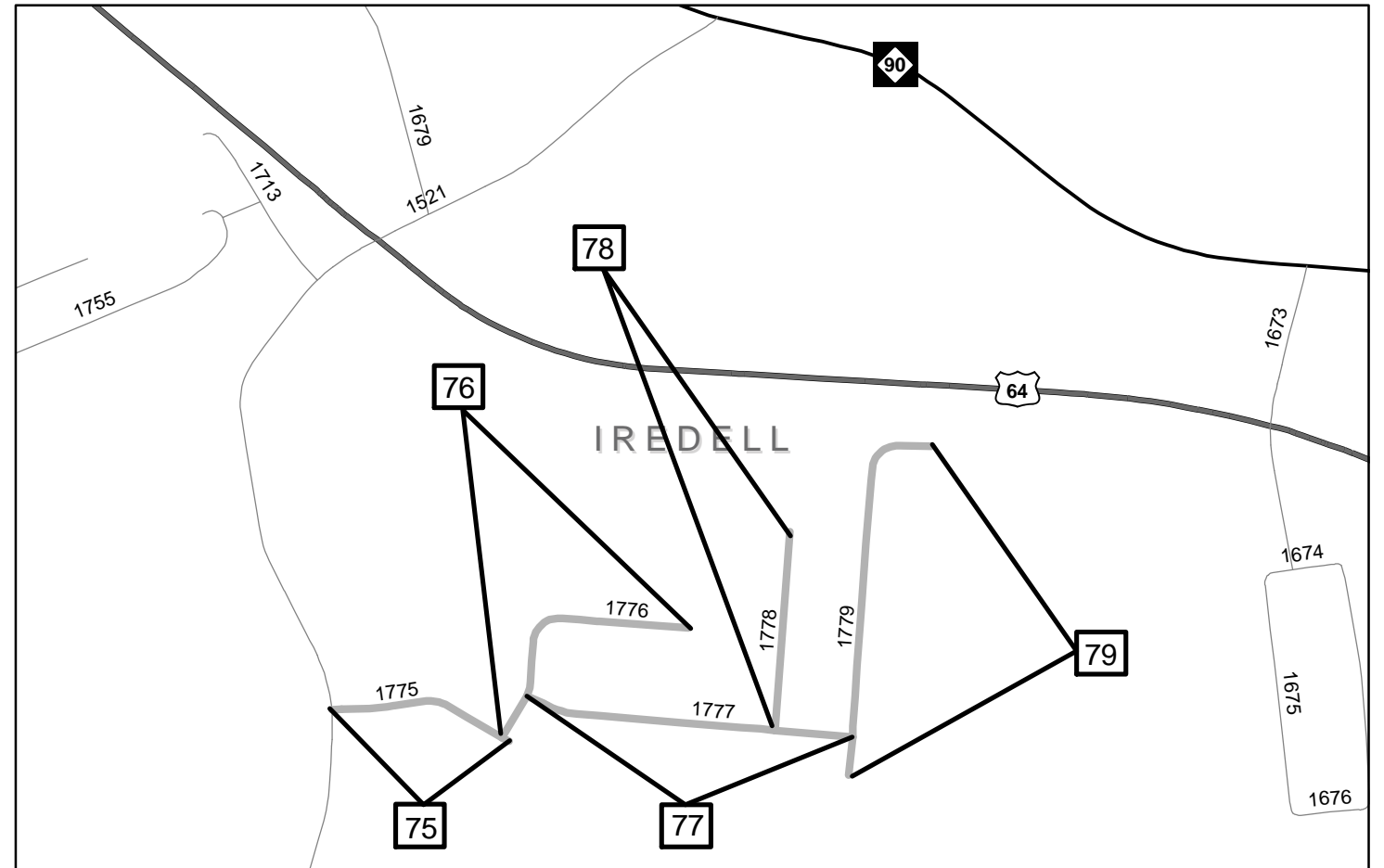
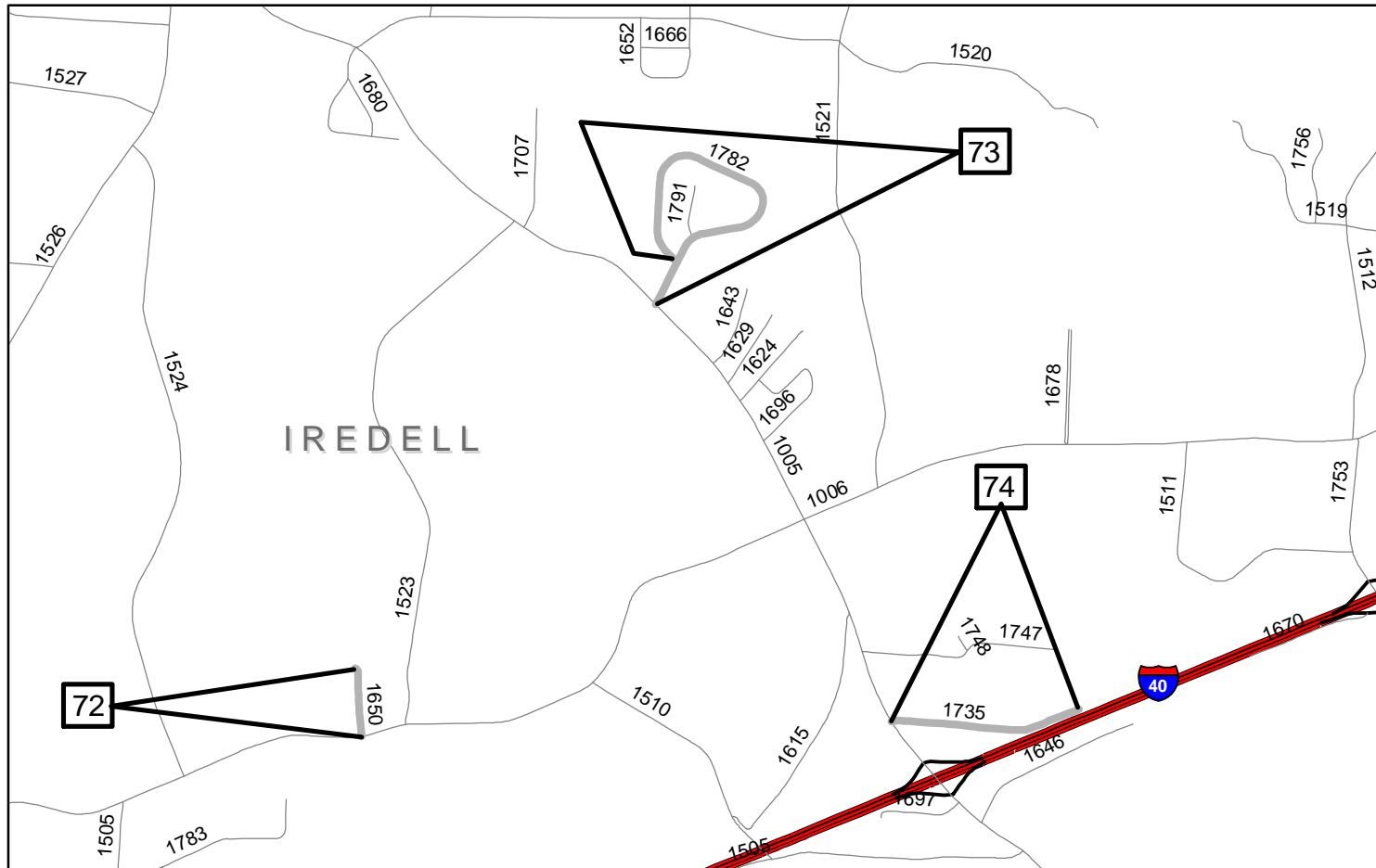
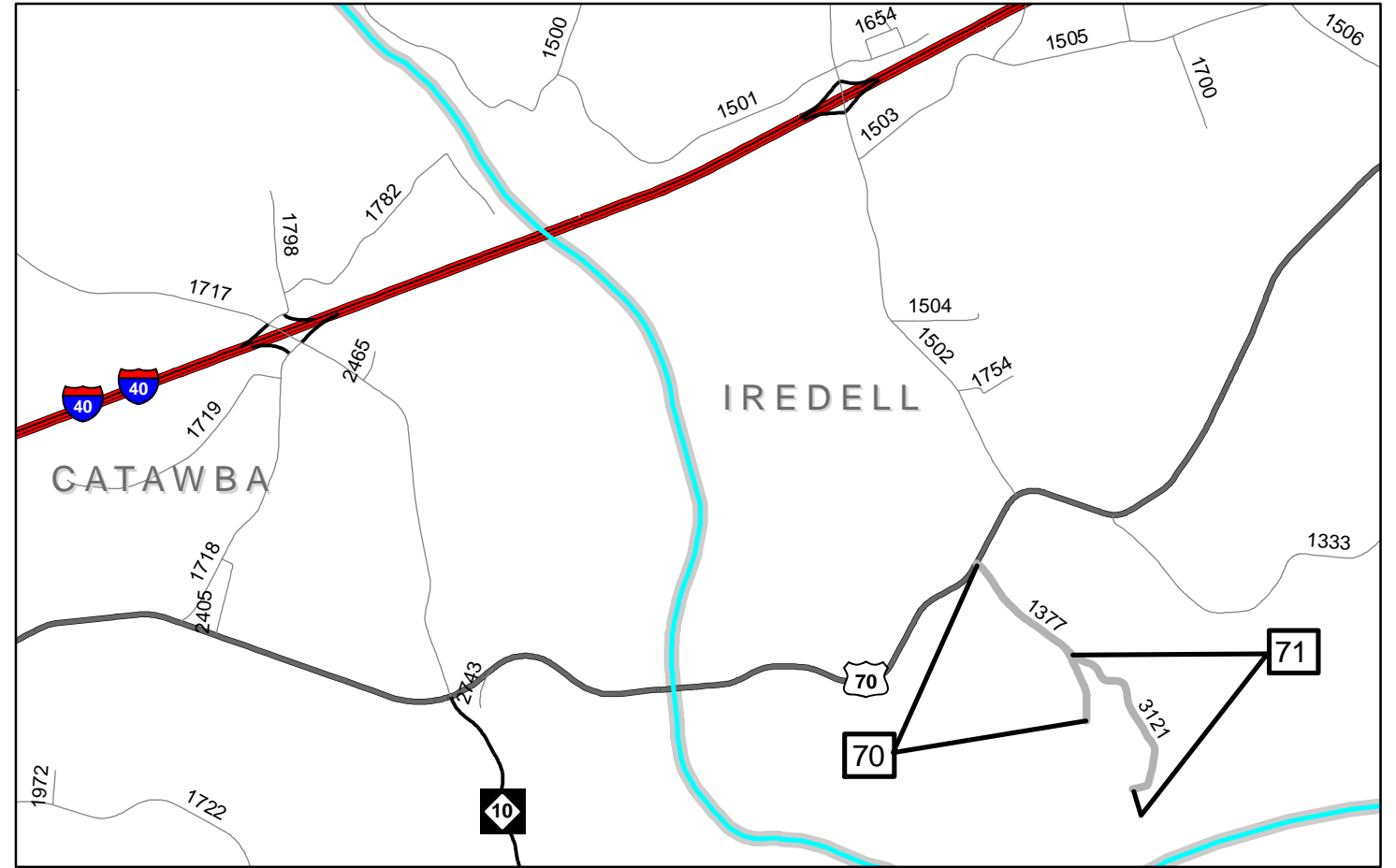
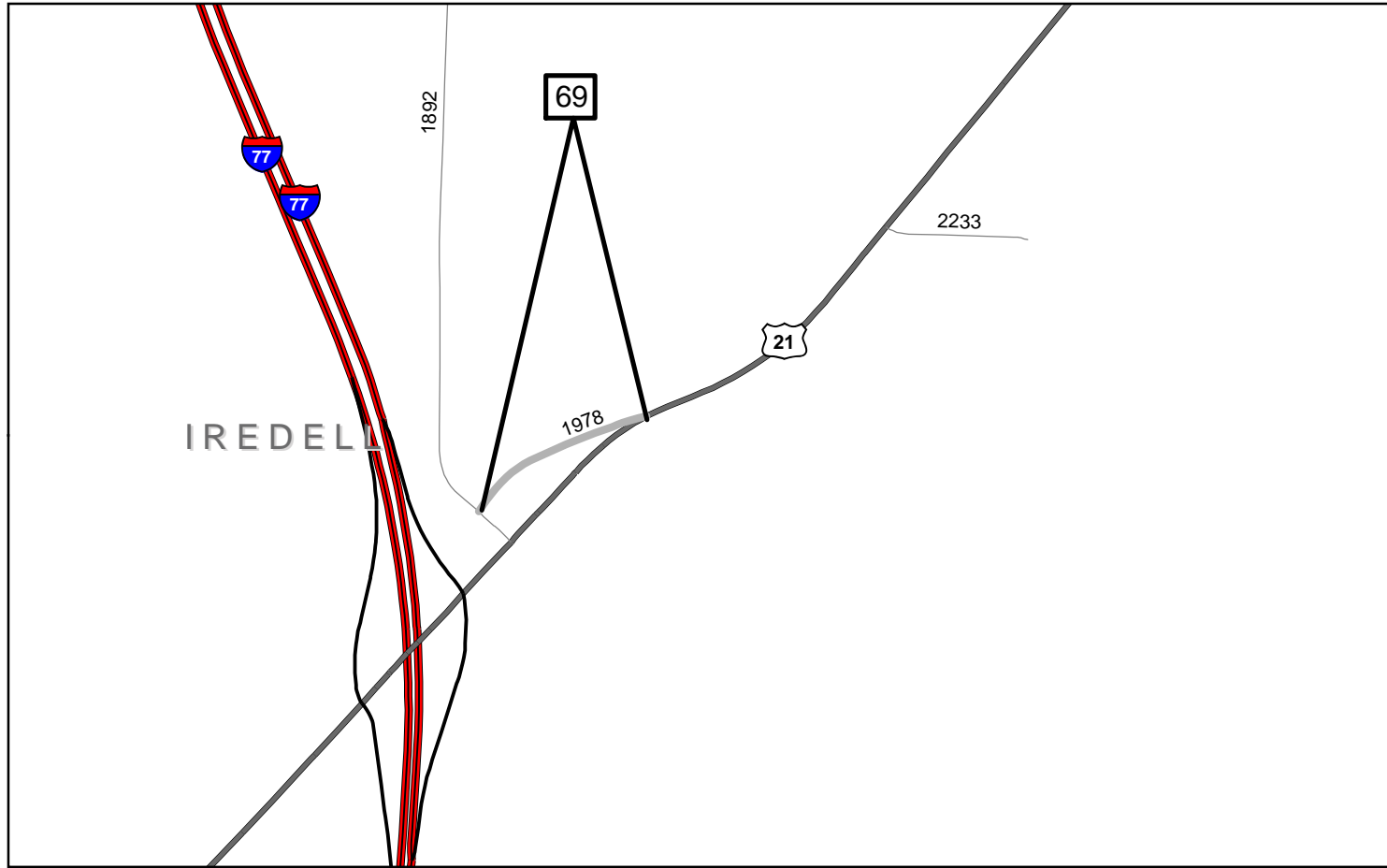


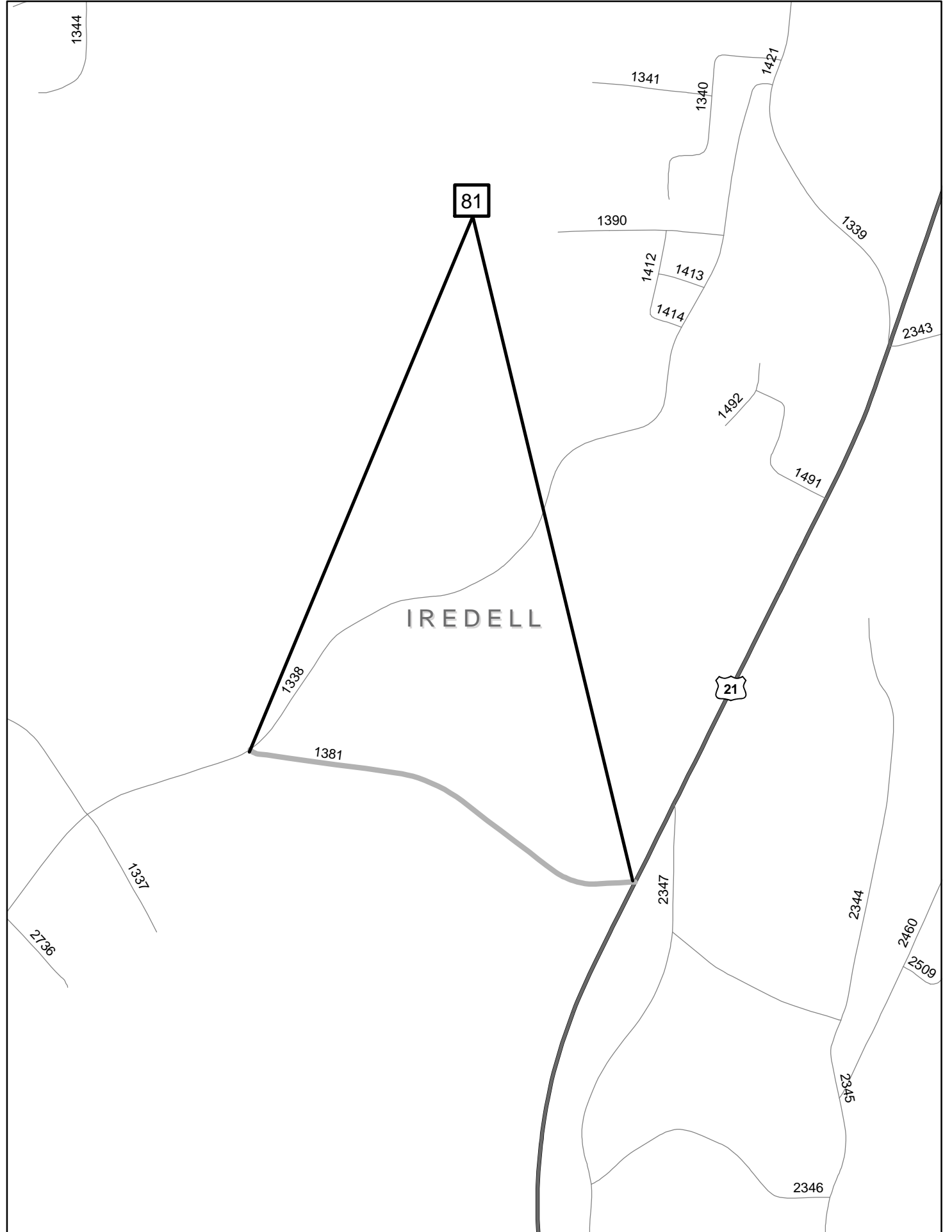
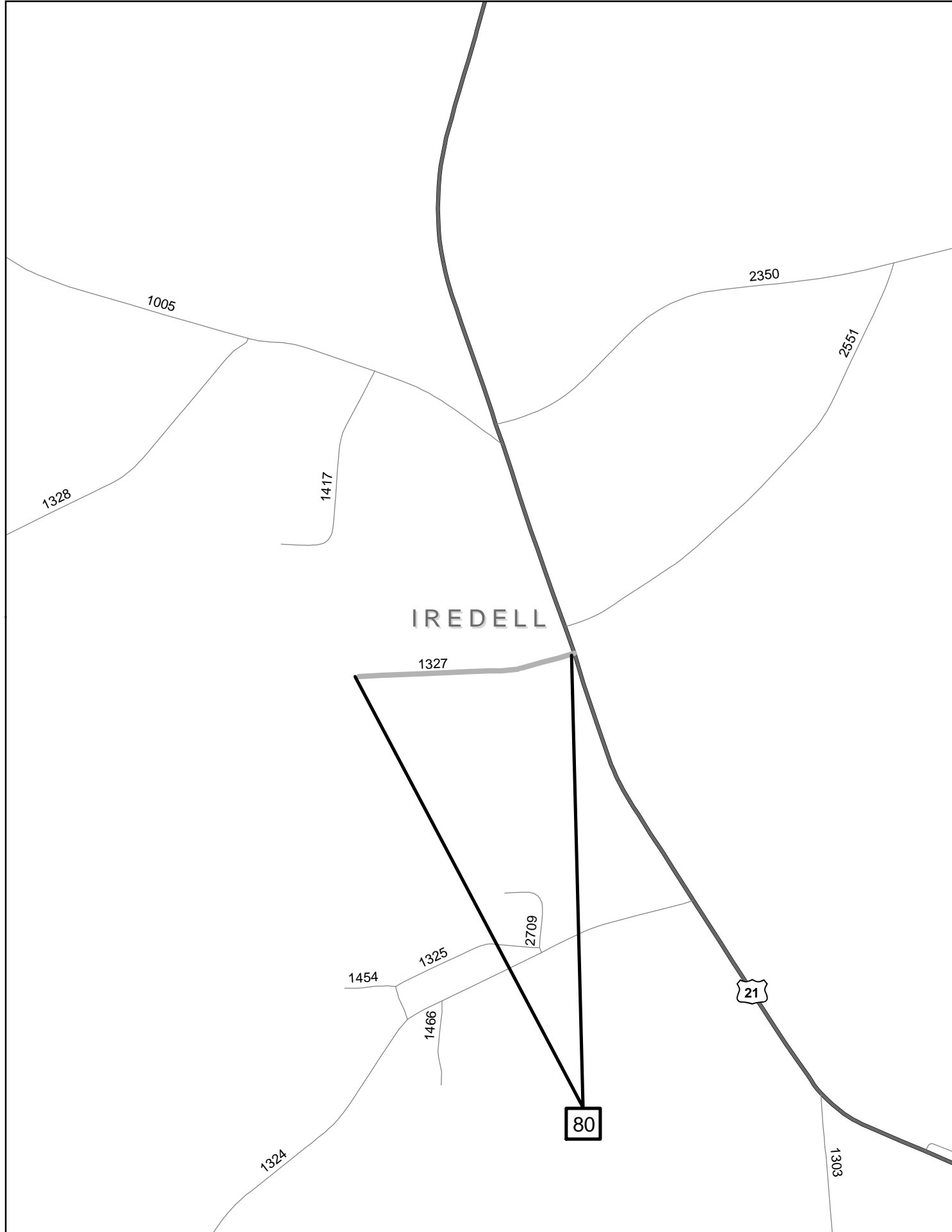




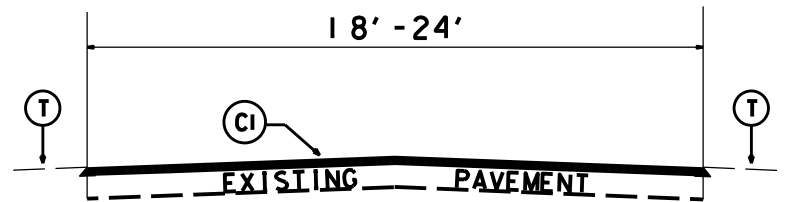




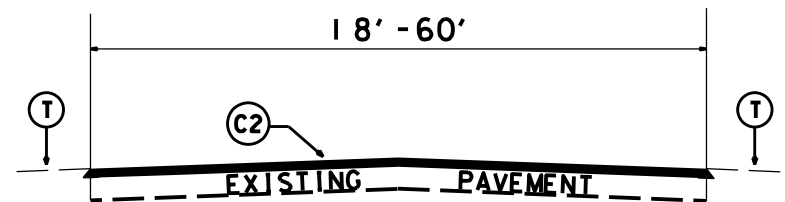




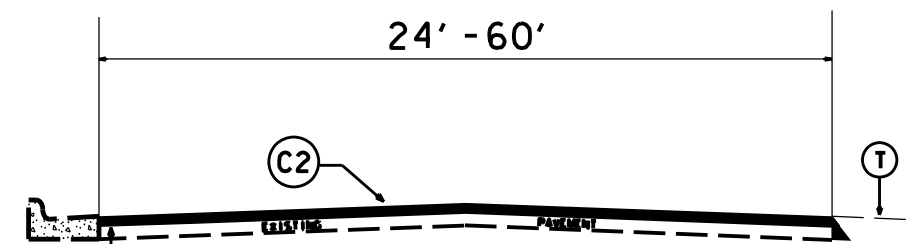
|                     |                |                       |
|---------------------|----------------|-----------------------|
| PROJ. REFERENCE NO. | SHEET NO.      | TOTAL SHEETS          |
| IREDELL COUNTY      | 11             |                       |
| STATE PROJ. NO.     | F.A. PROJ. NO. | DESCRIPTION           |
| 2018CPT.12.18.10491 |                | PRIMARY RESURFACING   |
| 2018CPT.12.18.20491 |                | SECONDARY RESURFACING |



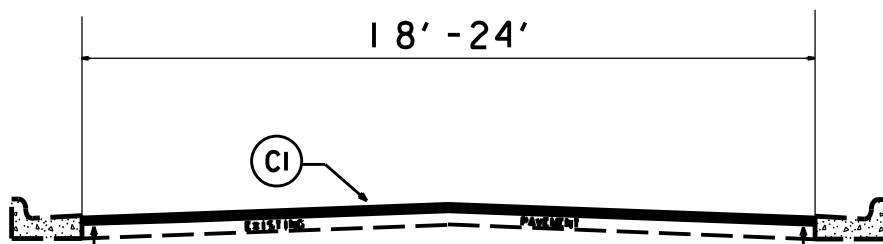
**TYPICAL SECTION NO.1**  
 Maps: 7, 10, 11, 12, 13, 15, 29, 33, 34, 45, 46, 49, 58, 61, 71, 74, 80



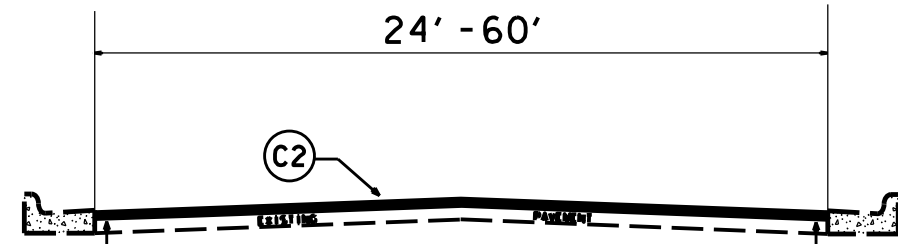
**TYPICAL SECTION NO.5**  
 Maps: 14, 30, 36, 37, 47, 48, 60, 62, 63, 81  
 Map 1: Sta. 0+00 to 475+50  
 Map 1: Sta. 527+30 to 553+87  
 Map 3: Sta. 99+40 to 153+00  
 Map 5: Sta. 0+00 to 47+89  
 Map 6: Sta. 24+75 to 27+98  
 Map 56: Sta. 15+80 to 49+69



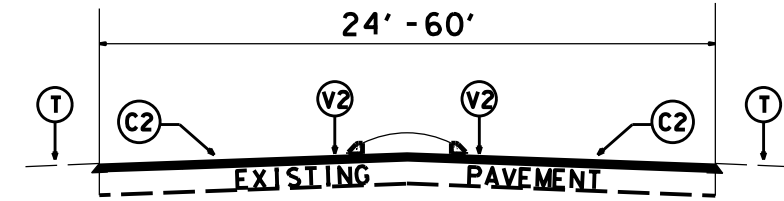
**TYPICAL SECTION NO.10**  
 Map 5: Sta. 47+89 to 57+75  
 Map 6: Sta. 14+50 to 24+75



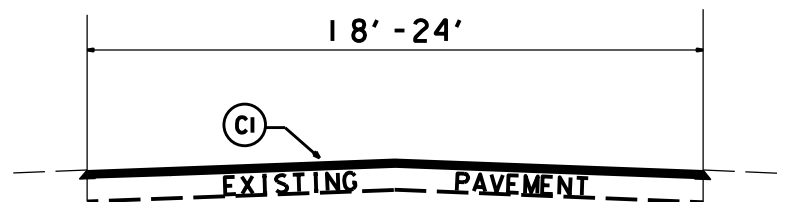
**TYPICAL SECTION NO.2**  
 Maps: 21, 22, 23, 24, 25, 26, 27, 28  
 Map 35: Sta. 0+00 to 2+20



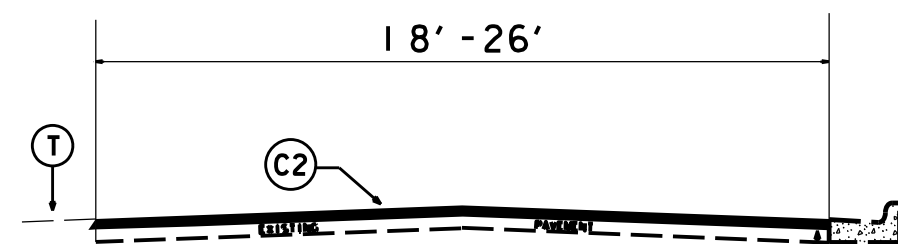
**TYPICAL SECTION NO.6**  
 Maps: 2, 4, 8  
 Map 1: Sta. 475+50 to 527+30  
 Map 3: Sta. 0+00 to 99+40  
 Map 3: Sta. 153+00 to 205+20  
 Map 5: Sta. 84+90 to 101+90  
 Map 6: Sta. 0+00 to 14+50



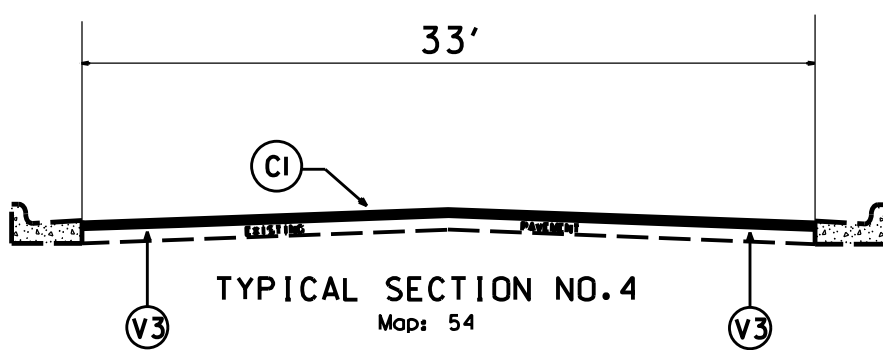
**TYPICAL SECTION NO. 11**  
 Map 3: Sta. 205+20 to 210+20



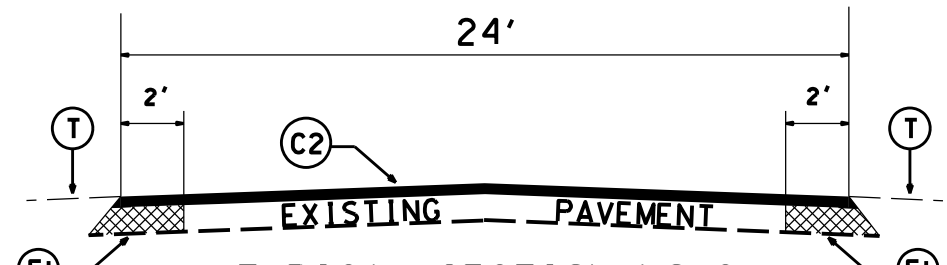
**TYPICAL SECTION NO.3**  
 Maps: 9, 16, 17, 18, 19, 20, 31, 32, 39, 40, 41, 42, 43, 44, 50, 51, 52, 53, 55, 59, 64, 65, 66, 67, 68, 69, 70, 72, 73, 75, 76, 77, 78, 79  
 Map 35: Sta. 2+20 to 29+73



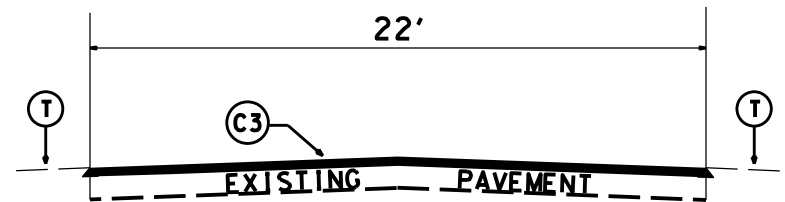
**TYPICAL SECTION NO.7**  
 Map 56: Sta. 0+00 to 15+80



**TYPICAL SECTION NO.4**  
 Map: 54



**TYPICAL SECTION NO.8**  
 Map 38



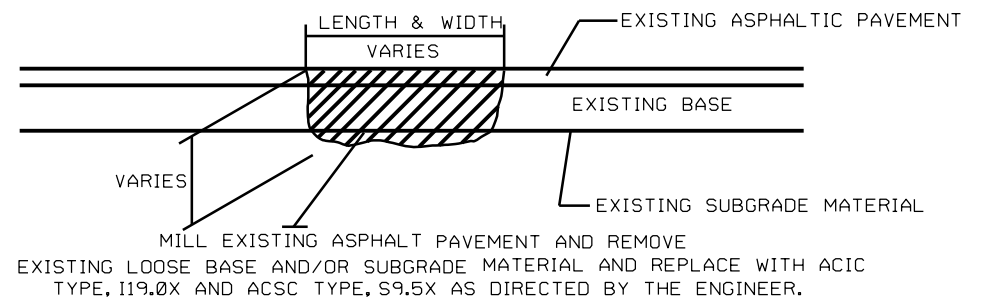
**TYPICAL SECTION NO.9**  
 Map 57

| PAVEMENT SCHEDULE |  |
|-------------------|--|
| C1                | PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.                                   |
| C2                | PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.                                   |
| C3                | PROP. APPROX. 1.5" WARM MIX ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.                          |
| E1                | PROP. APPROX. 9.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, PLACED IN TWO 4.5" LIFTS AT AN AVERAGE RATE OF 513 LBS. PER SQ. YDS. PER LIFT. |
| T                 | AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)  |
| V1                | MILL EXISTING ASPHALT PAVEMENT APPROX. 1.5" IN DEPTH   |
| V2                | MILL EXISTING ASPHALT PAVEMENT APPROX. 0" TO 1.5" IN DEPTH BEGINNING 5' FROM EDGE OF CURB & GUTTER/ISLAND                                    |
| V3                | MILL EXISTING ASPHALT PAVEMENT APPROX. 1" IN DEPTH   |

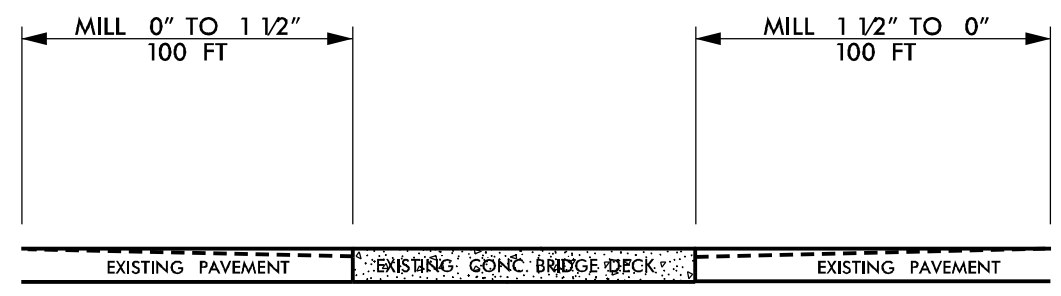
2018 - 2019  
 Resurfacing Program  
 Typical Sections  
 Iredell County

|                     |                |                       |
|---------------------|----------------|-----------------------|
| PROJ. REFERENCE NO. | SHEET NO.      | TOTAL SHEETS          |
| IREDELL COUNTY      | 12             |                       |
| STATE PROJ. NO.     | F.A. PROJ. NO. | DESCRIPTION           |
| 2018CPT.12.10.10491 |                | PRIMARY RESURFACING   |
| 2018CPT.12.10.20491 |                | SECONDARY RESURFACING |

**DETAIL A**  
**PATCHING EXISTING PAVEMENT**

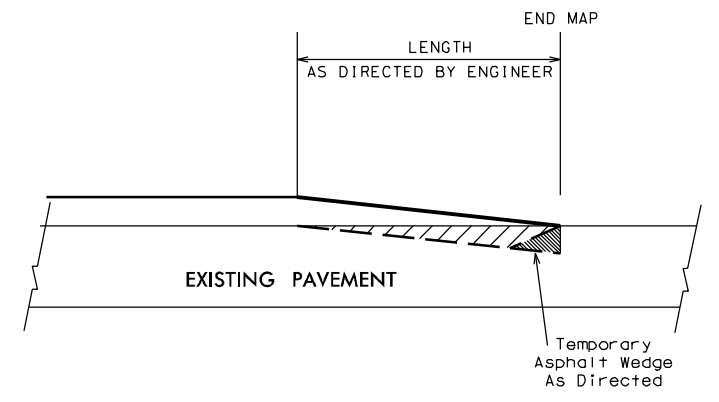
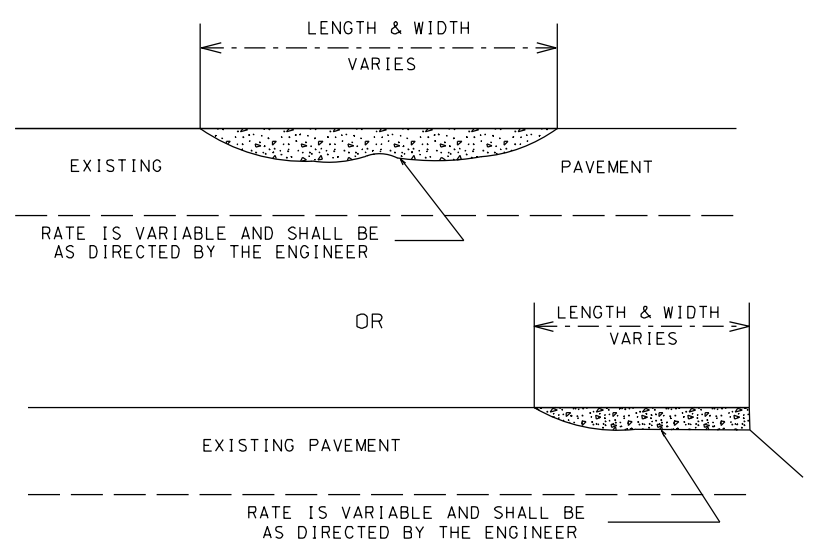


**DETAIL C**  
**MILLING BRIDGE APPROACHES**

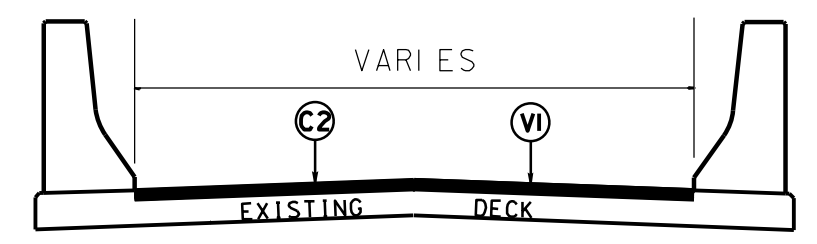


**DETAIL B**

**ASPHALT CONCRETE SURFACE COURSE**  
**TYPE S9.5B & S9.5C (LEVELING COURSE)**



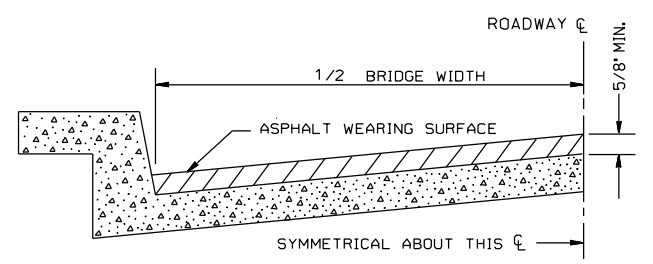
**TIE-IN (INCIDENTAL) MILLING DETAIL**



**ASPHALT BRIDGE SECTION**  
Use for all asphalt bridges

**DETAIL E**

**BRIDGE HALF TYPICAL SECTION**



FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

**NOTES**

ALL UNPAVED S.R. ROADS TO BE SURFACED 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.  
SHOULDERS AND DITCHES ARE TO BE CONSTRUCTED BY OTHERS UNLESS OTHERWISE NOTED.  
BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

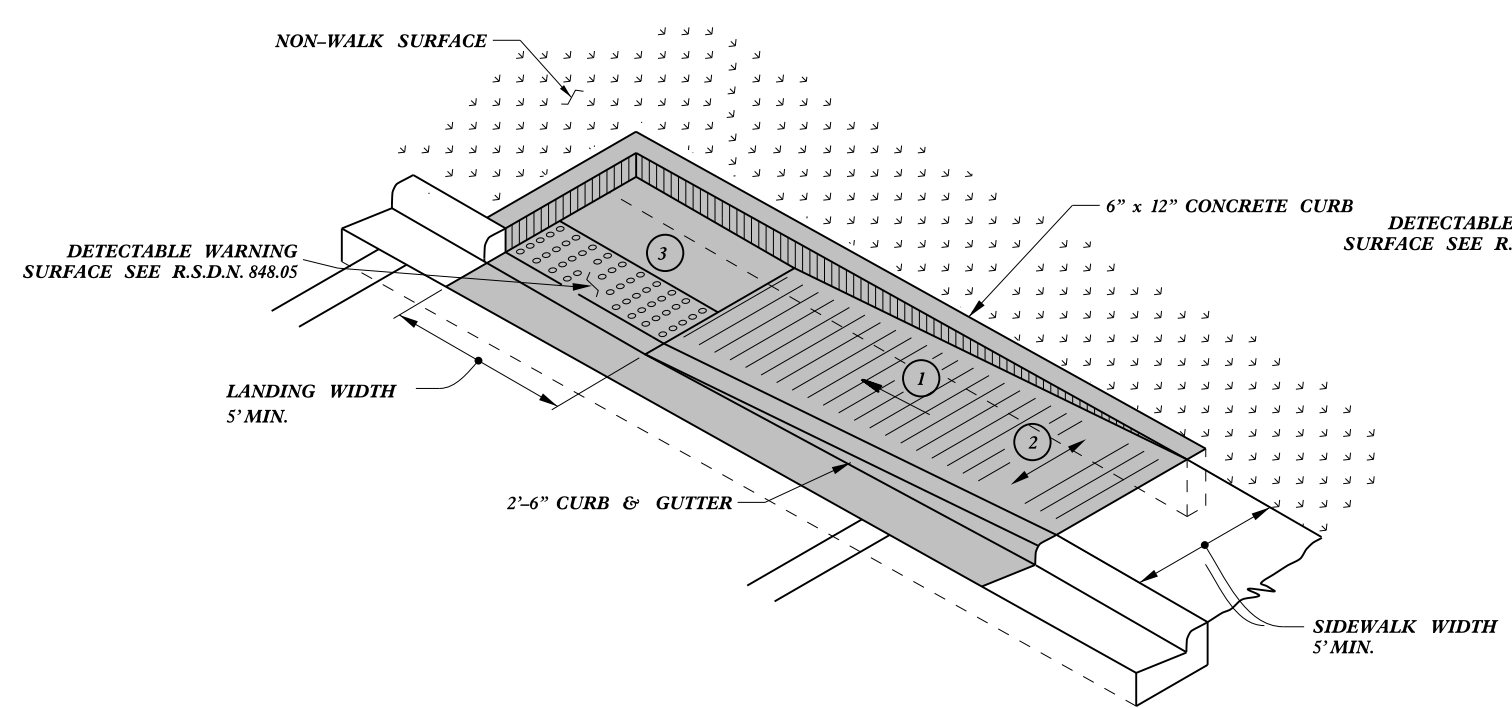
**PAVEMENT SCHEDULE**

|    |  |
|----|--|
| C1 | PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD.                                   |
| C2 | PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.                                   |
| C3 | PROP. APPROX. 1.5" WARM MIX ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.                          |
| E1 | PROP. APPROX. 9.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, PLACED IN TWO 4.5" LIFTS AT AN AVERAGE RATE OF 513 LBS. PER SQ. YDS. PER LIFT. |
| T  | AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION)  |
| V1 | MILL EXISTING ASPHALT PAVEMENT APPROX. 1.5" IN DEPTH   |
| V2 | MILL EXISTING ASPHALT PAVEMENT APPROX. 0" TO 1.5" IN DEPTH BEGINNING 5' FROM EDGE OF CURB & GUTTER/ISLAND                                    |
| V3 | MILL EXISTING ASPHALT PAVEMENT APPROX. 1" IN DEPTH   |

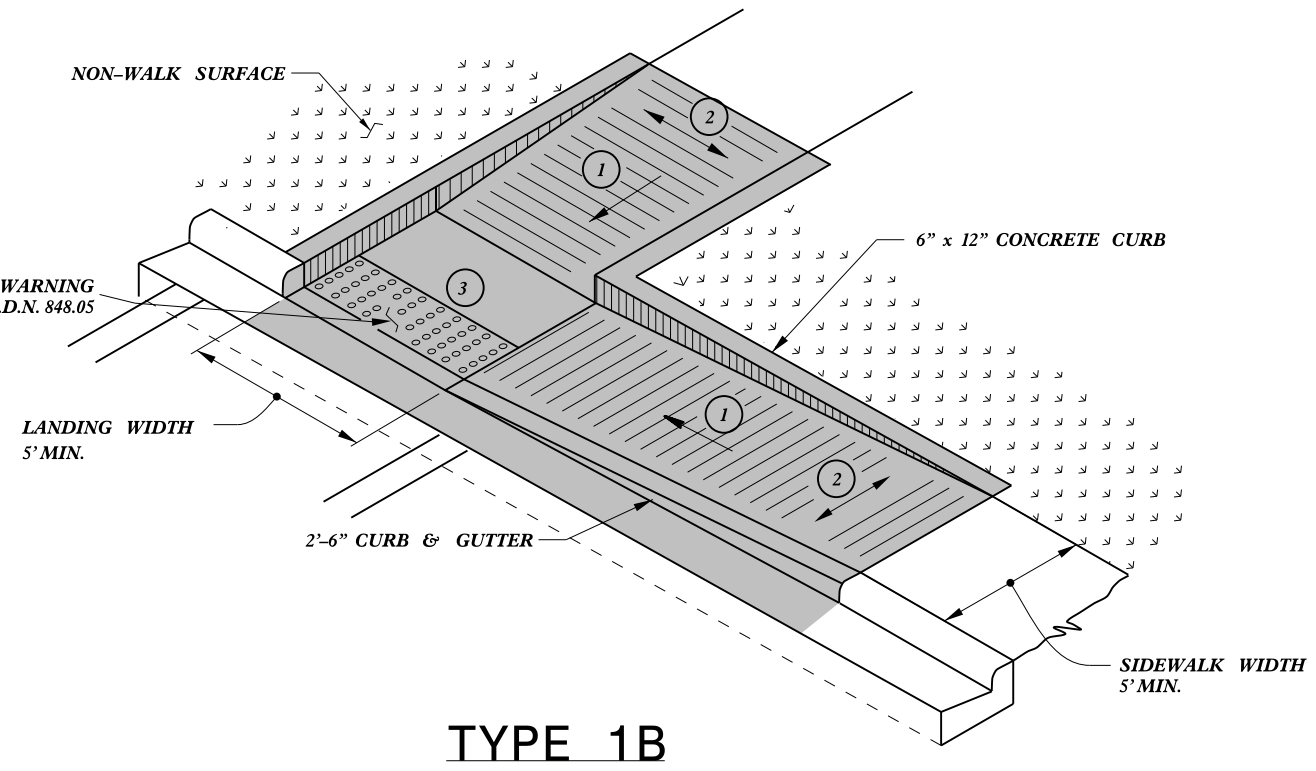
**2018 - 2019**  
**Resurfacing Program**  
**Typical Sections**  
**Iredell County**



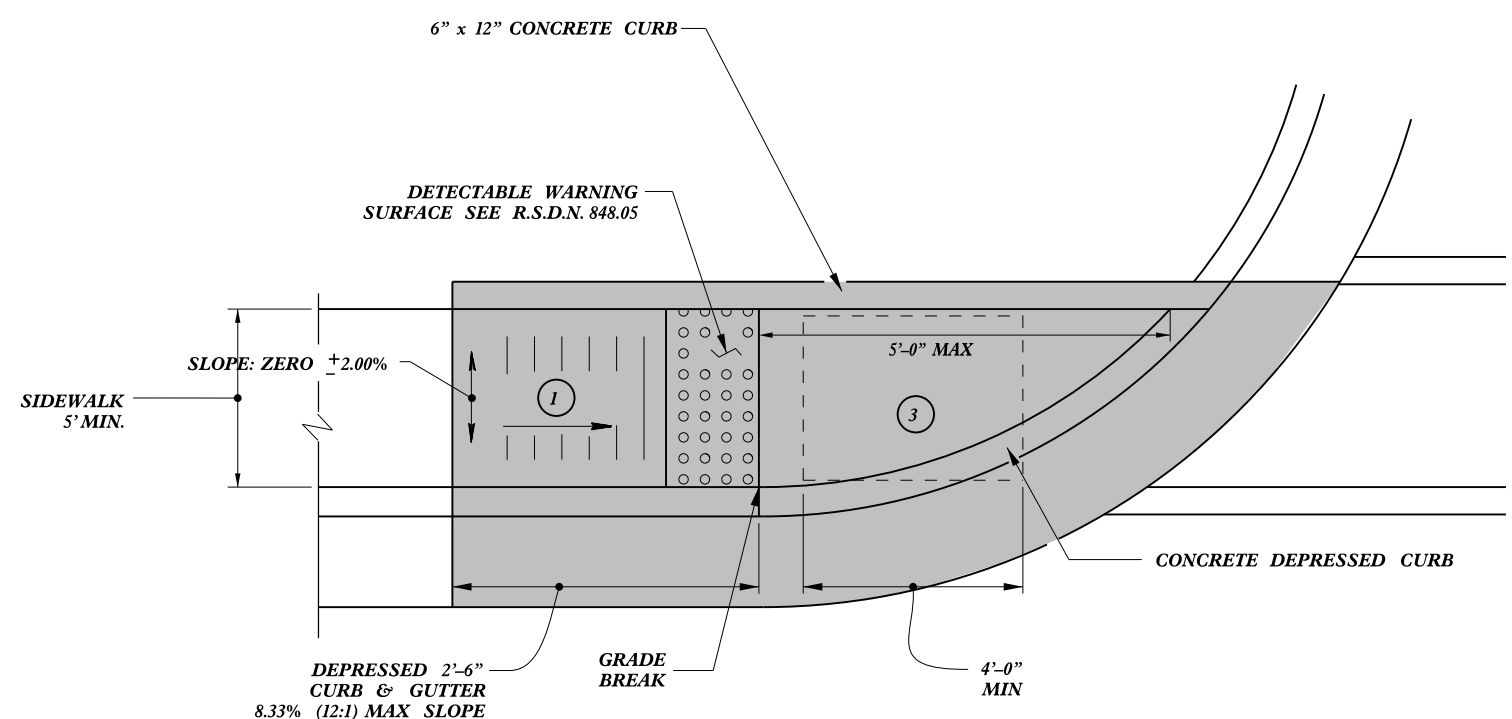




**TYPE 1A**



**TYPE 1B**



**TYPE 1**

PAY LIMITS FOR 1 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.

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



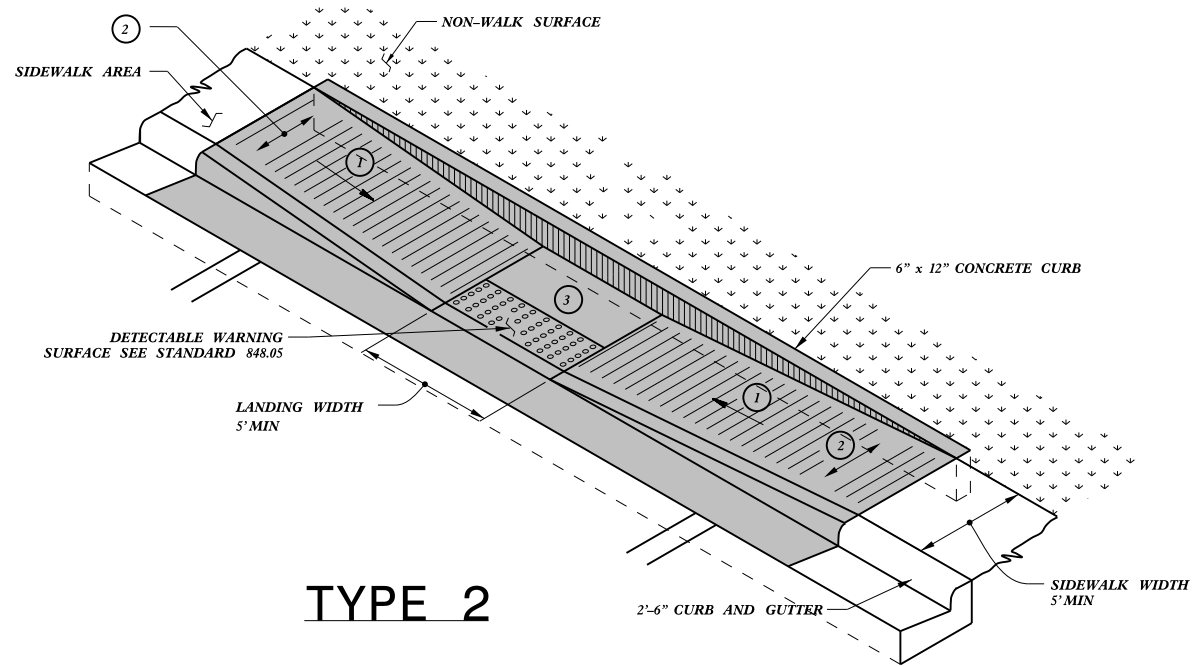
DocuSign by  
Joel S. Howerton

449E8E25522144F...  
11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

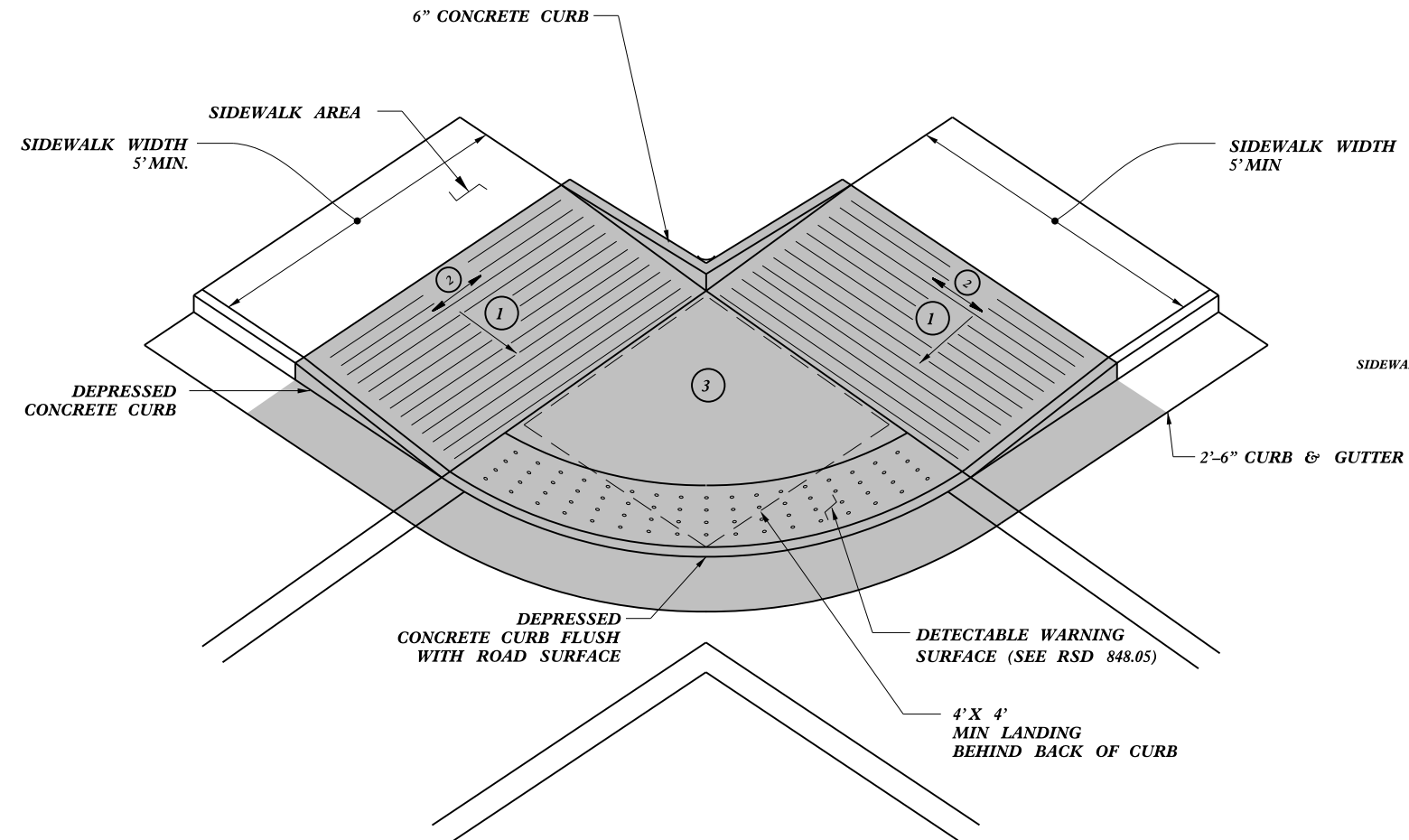
5/14/99  
CONSTRUCTION USER NAME  
DATE



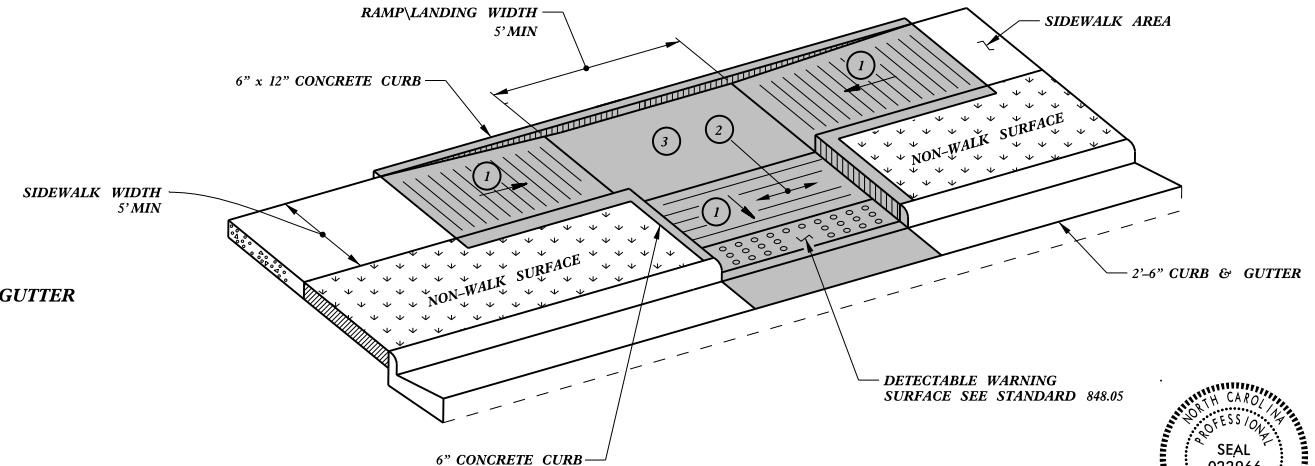
**TYPE 2**

PAY LIMITS FOR 1 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**



11/18/2015

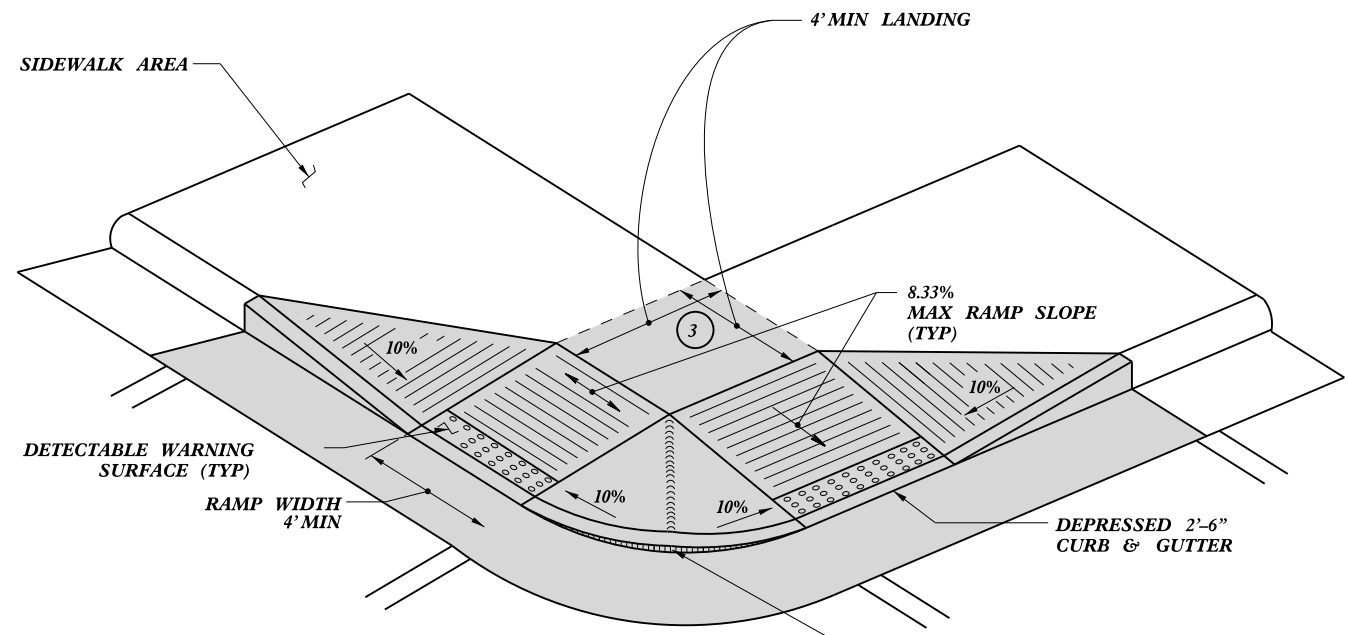
CONTRACT STANDARDS AND DEVELOPMENT UNIT  
Office 919-707-6950 FAX 919-250-4119

**CURB RAMPS**  
Parallel Ramps

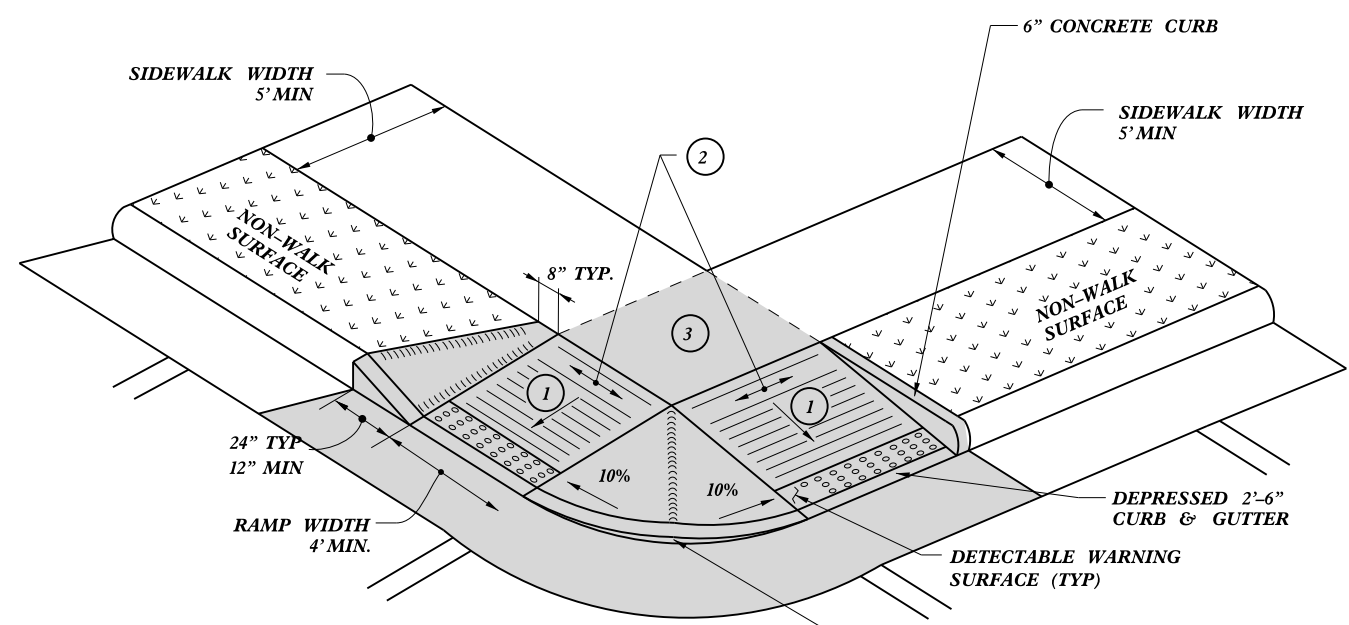
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11  
MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dwg

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

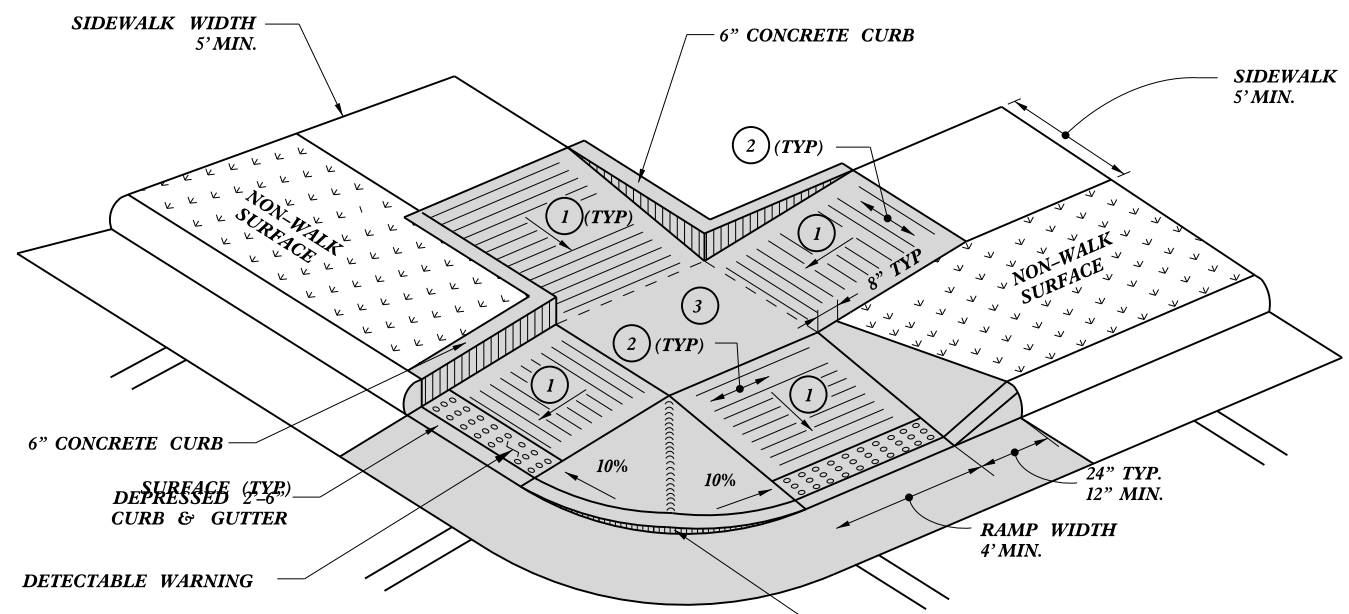
5/14/99  
SYNOPSIS OF CONSTRUCTION PERMITS  
TIME TO CONSTRUCTION PERMITS



**TYPE 4**



**TYPE 4A**



**TYPE 5**

PAY LIMITS FOR 2 CURB RAMPS

- 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.

DocuSigned by:  
*Joel S Howerton*  
449E8E25522144F...



11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

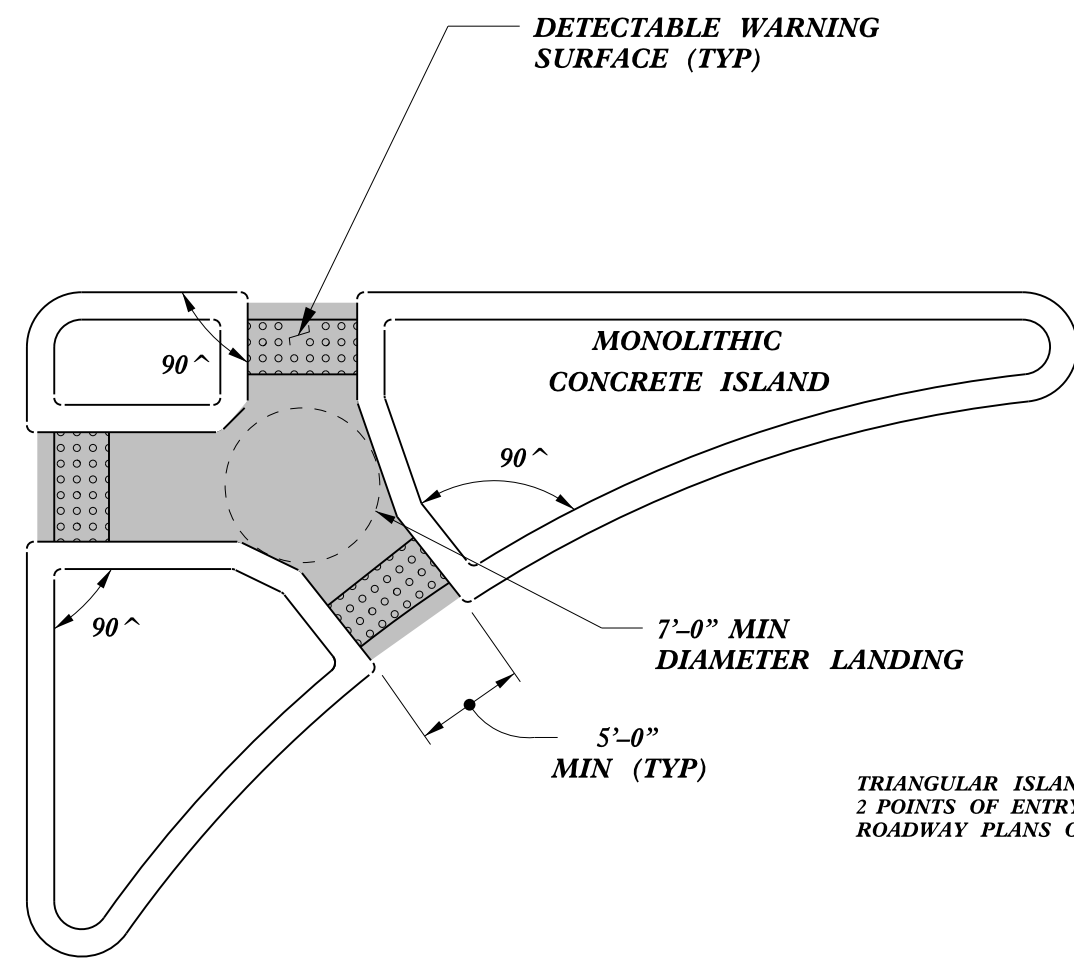
**CURB RAMPS**  
Shared Landing

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

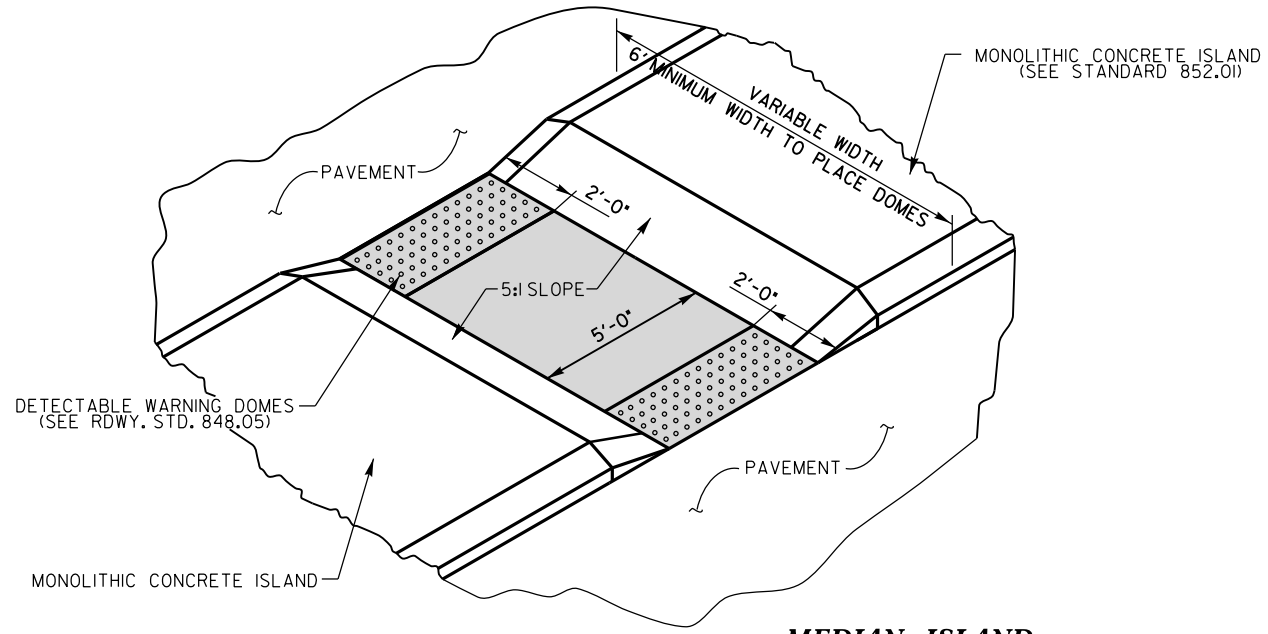
5/14/1999  
SYTIMECONSUNUSRNAME

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

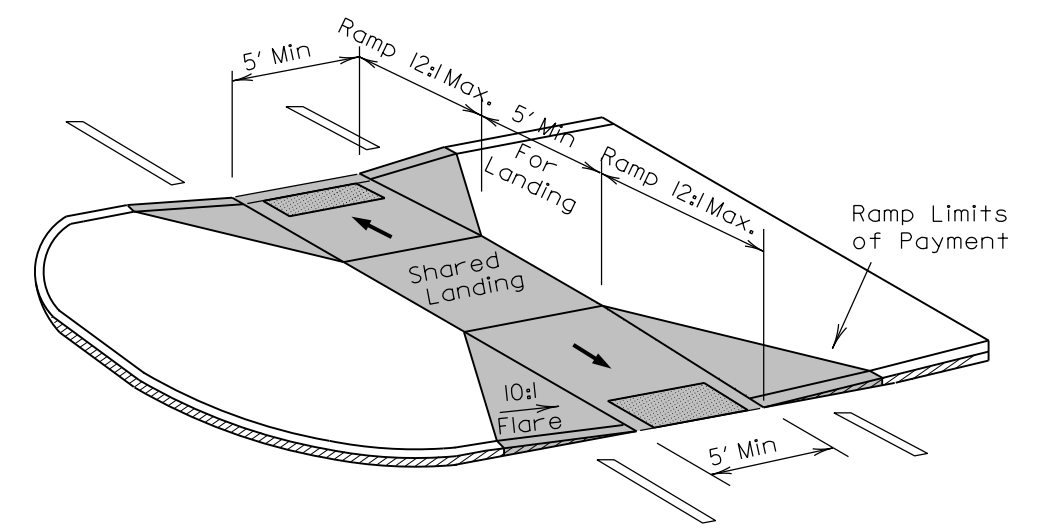


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY  
2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE  
ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

**TRIANGULAR ISLAND  
WITH CUT THROUGH**



**MEDIAN ISLAND  
WITH CUT THROUGH**



**MEDIAN ISLAND  
CURB RAMPS**

5/14/99  
SYTIME  
SERIAL  
DATE  
C:\P\2018\2018CPT.12.10.10491\2018CPT.12.10.10491.DWG  
J.S.HOWERTON  
449E8E25522144F...


11/18/2015

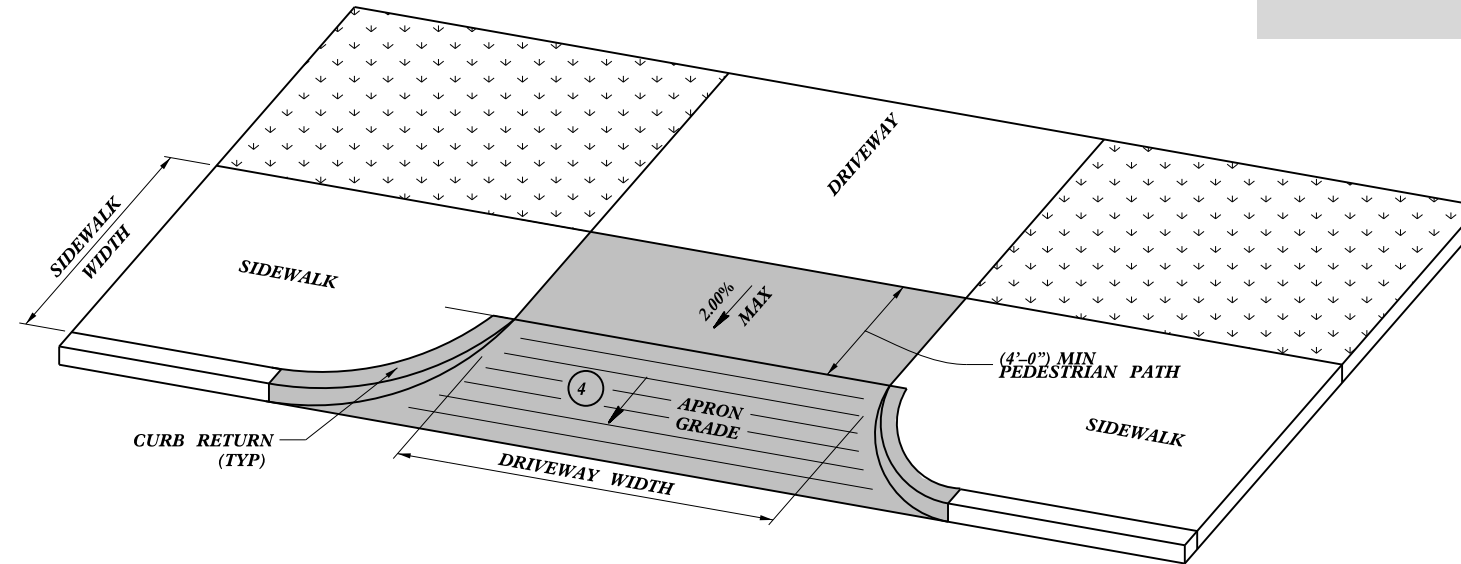
DocuSign  
Seal  
NORTH CAROLINA  
PROFESSIONAL  
ENGINEER  
SEAL  
022966  
Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

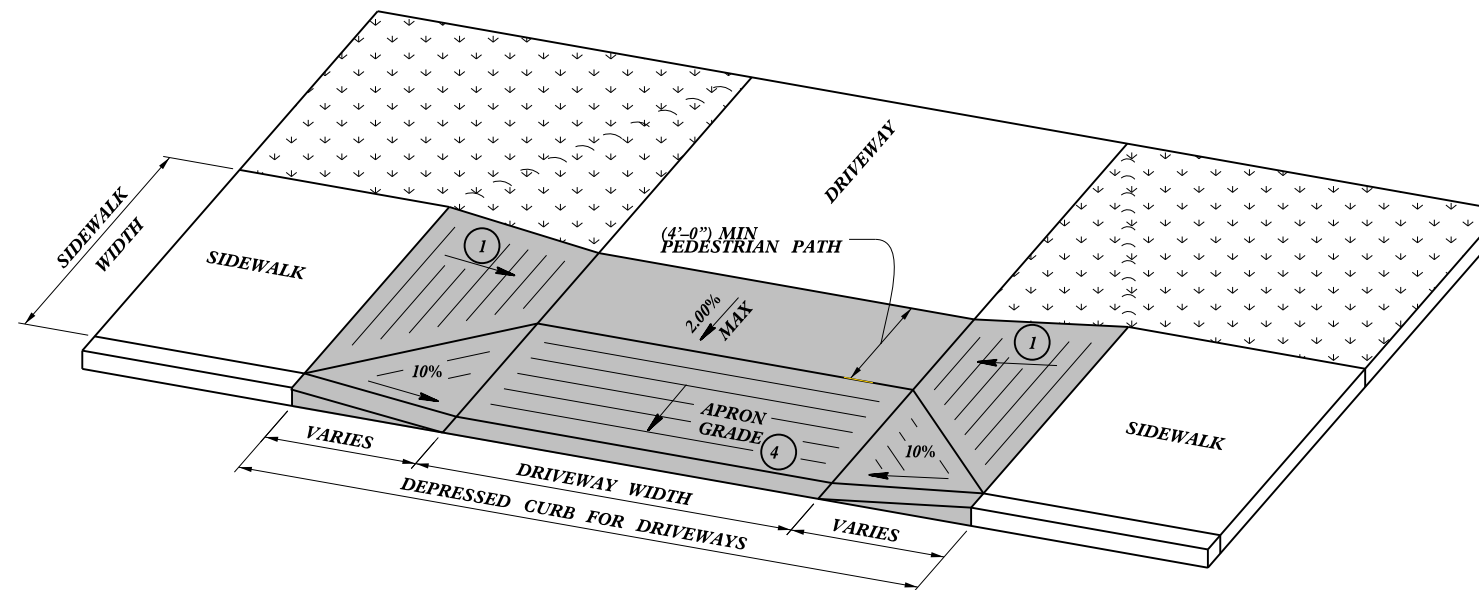
|  |                  |
|--|------------------|
| <b>CONTRACT STANDARDS<br/>AND DEVELOPMENT UNIT</b> |                  |
| Office 919-707-6950                                | FAX 919-250-4119 |
| <b>CURB RAMPS</b>                                  |                  |
| Median or Turn Lane Islands 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

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 4 8.00% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY

 PAY LIMITS FOR 1 CURB RAMP



**DRIVEWAY APRON**  
**OPTION 1**



**DRIVEWAY APRON**  
**OPTION 2**

-SEE ROADWAY DETAIL DRAWING 848.05 FOR DETECTABLE WARNING SURFACE AND FOR RAMP NOTES.

-SEE ROADWAY STANDARD DRAWING 848.02 FOR CONCRETE DRIVEWAYS.

|   |                  |
|---|------------------|
| <b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>    |                  |
| Office 919-707-6950                               | FAX 919-250-4119 |
| <b>CURB RAMPS</b>                                 |                  |
| @ DRIVEWAY OPENINGS                               |                  |
| ORIGINAL BY: J.S. HOWERTON                        | DATE: 7/7/11     |
| MODIFIED BY:                                      | DATE:            |
| CHECKED BY:                                       | DATE:            |
| FILE SPEC: sstds/2012CurbRamp/CurbRampDetails.dwg |                  |

5/14/99  
C:\TIME\SS\CON\SS\US\FR\NAME\SS







|   |                 |           |
|---|-----------------|-----------|
| PROJECT NO.<br>2018CPT.12.10.10491<br>2018CPT.12.10.20491 | SHEET NO.<br>21 | TOTAL NO. |
|---|-----------------|-----------|

**SUMMARY OF QUANTITIES**

| PROJECT NO                  | COUNTY  | MAP NO | ROUTE                      | DESCRIPTION   | TYP NO | LANES | LANE TYPE | FINAL SURFACE TESTING REQUIRED | WARM MIX ASPHALT REQUIRED | LENGTH | WIDTH | 025500000-E               | 122000000-E           | 124500000-E              | 129700000-E    | 130800000-E | 133000000-E        | 149100000-E        | 151900000-E         | 152000000-E           | 152300000-E            | 152400000-E           | 157500000-E            | 170400000-E                  | 260000000-N                | 260500000-N                 | 283000000-N        | 284500000-N      | 525500000-N                | 744400000-E       | 745600000-E           |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
|-----------------------------|---------|--------|----------------------------|---|--------|-------|-----------|--------------------------------|---------------------------|--------|-------|---------------------------|-----------------------|--------------------------|----------------|-------------|--------------------|--------------------|---------------------|-----------------------|------------------------|-----------------------|------------------------|------------------------------|----------------------------|-----------------------------|--------------------|------------------|----------------------------|-------------------|-----------------------|----------------------|---|--|--|-----|-----|--|--|--|--|--|--|--|--|--|
|                             |         |        |                            |   |        |       |           |                                |                           |        |       | AGGREGATE SHOULDER BORROW | INCIDENTAL STONE BASE | SHOULDER RECONSTRUCTI ON | 1 1/2" MILLING | 1" MILLING  | 0" TO 1.5" MILLING | INCIDENTAL MILLING | BASE COURSE, B25.DC | SURFACE COURSE, S9.5B | LEVELING COURSE, S9.5B | SURFACE COURSE, S9.5C | LEVELING COURSE, S9.5C | ASPHALT BINDER FOR PLANT MIX | PATCHING EXISTING PAVEMENT | RETROFIT EXISTING CURB RAMP | CONCRETE CURB RAMP | ADJ. OF MANHOLES | ADJ. OF METER OR VALVE BOX | PORTABLE LIGHTING | INDUCTIVE LOOP SAWCUT | LEAD-IN CABLE (14-2) |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
|                             |         |        |                            |   |        |       |           |                                |                           |        |       | TONS                      | TONS                  | SMI                      | SY             | SY          | SY                 | SY                 | TONS                | TONS                  | TONS                   | TONS                  | TONS                   | TONS                         | TONS                       | EA                          | EA                 | EA               | EA                         | LS                | LF                    | LF                   |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 56     | SR 2371 (S. EASTWAY DR.)   | FROM US 21 TO US 21                                       | 5      | 7     |           | NO                             | NO                        | 0.941  | 22    | 140                       | 50                    | 1.58                     |                |             |                    |                    |                     |                       | 1,200                  | 100                   | 78                     | 175                          |                            |                             |                    |                  |                            |                   | 8                     | 4                    |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 56</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.941                     | 140                   | 50                       | 1.58           |             |                    |                    |                     |                       | 1,200                  | 100                   | 78                     | 175                          |                            |                             |                    |                  |                            |                   |                       | 8                    | 4 |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 57     | SR 2316 (BELL FARM RD.)    | FROM SR 2638 (SALISBURY HWY.) TO US 64                    | 9      | 2     |           | NO                             | YES                       | 3.979  | 22    | 650                       | 225                   | 7.96                     | 800            |             |                    |                    |                     |                       | 5,000                  | 150                   | 309                    | 200                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 57</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 3.979                     | 650                   | 225                      | 7.96           | 800         |                    |                    |                     |                       | 5,000                  | 150                   | 309                    | 200                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 58     | SR 2594 (BIG FOREST DR.)   | FROM DEAD END TO DEAD END                                 | 1      | 2     |           | NO                             | NO                        | 0.742  | 19    | 130                       | 50                    | 1.48                     |                |             |                    |                    |                     |                       | 500                    | 250                   |                        | 50                           | 150                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 58</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.742                     | 130                   | 50                       | 1.48           |             |                    |                    |                     |                       | 500                    | 250                   |                        | 50                           | 150                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 59     | SR 2595 (APRICOT LN.)      | FROM SR 2593 (OLD WELL HOUSE RD.) TO DEAD END             | 3      | 2     |           | NO                             | NO                        | 0.064  | 18    |                           | 10                    |                          |                |             |                    |                    |                     |                       |                        |                       |                        | 3                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 59</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.064                     |                       | 10                       |                |             |                    |                    |                     |                       |                        |                       |                        | 3                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 60     | SR 2522 (INTERCRAFT DR.)   | FROM US 70 TO END MAINT.                                  | 5      | 2     |           | NO                             | NO                        | 0.3    | 23    | 50                        | 20                    | 0.60                     |                |             |                    |                    |                     |                       | 400                    | 50                    | 27                     | 150                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  | 300 | 200 |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 60</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.3                       | 50                    | 20                       | 0.60           |             |                    |                    |                     |                       | 400                    | 50                    | 27                     | 150                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 61     | SR 2367 (TUCKER RD.)       | FROM SR 2342 (AMITY HILL RD.) TO DEAD END                 | 1      | 2     |           | NO                             | NO                        | 0.66   | 18    | 120                       | 40                    | 1.32                     |                |             |                    |                    |                     |                       | 450                    | 220                   |                        | 45                           | 125                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 61</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.66                      | 120                   | 40                       | 1.32           |             |                    |                    |                     |                       | 450                    | 220                   |                        | 45                           | 125                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 62     | SR 2348 (MOOSE CLUB RD.)   | FROM SR 2345 (MOOSE CLUB RD.) TO SR 2342 (AMITY HILL RD.) | 5      | 2     |           | NO                             | NO                        | 1.154  | 20    | 200                       | 60                    | 2.31                     |                |             |                    |                    |                     |                       | 1,300                  | 750                   | 123                    | 175                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 62</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 1.154                     | 200                   | 60                       | 2.31           |             |                    |                    |                     |                       | 1,300                  | 750                   | 123                    | 175                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 63     | SR 2345 (MOOSE CLUB RD.)   | FROM US 21 TO SR 2348 (MOOSE CLUB RD.)                    | 5      | 2     |           | NO                             | NO                        | 0.56   | 20    | 100                       | 30                    | 1.12                     |                |             |                    |                    |                     |                       | 620                    | 370                   | 59                     | 100                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 63</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.56                      | 100                   | 30                       | 1.12           |             |                    |                    |                     |                       | 620                    | 370                   | 59                     | 100                          |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 64     | SR 2517 (WINTERGREEN CIR.) | FROM SR 2349 (DUCK CREEK RD.) TO DEAD END                 | 3      | 2     |           | NO                             | NO                        | 0.193  | 18    |                           | 10                    |                          |                |             |                    |                    |                     | 130                   | 10                     |                       | 9                      | 50                           |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 64</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.193                     |                       | 10                       |                |             |                    |                    |                     |                       | 130                    | 10                    |                        | 9                            | 50                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 65     | SR 1921 (BETHANY RD.)      | FROM US 21 TO END MAINT.                                  | 3      | 2     |           | NO                             | NO                        | 0.464  | 18    |                           | 25                    |                          |                |             |                    |                    |                     |                       | 300                    |                       | 20                     | 75                           |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 65</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.464                     |                       | 25                       |                |             |                    |                    |                     |                       | 300                    |                       | 20                     | 75                           |                            |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 66     | SR 2037 (GILEAD LN.)       | FROM SR 1921 (BETHANY RD.) TO DEAD END                    | 3      | 2     |           | NO                             | NO                        | 0.32   | 18    |                           | 20                    |                          |                |             |                    |                    |                     |                       | 210                    | 15                    |                        | 15                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 66</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.32                      |                       | 20                       |                |             |                    |                    |                     |                       | 210                    | 15                    |                        | 15                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 67     | SR 2038 (BEREA LN.)        | FROM SR 2037 (GILEAD LN.) TO SR 2039 (MT. ZION DR.)       | 3      | 2     |           | NO                             | NO                        | 0.084  | 18    |                           | 10                    |                          |                |             |                    |                    |                     |                       | 50                     |                       |                        | 3                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 67</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.084                     |                       | 10                       |                |             |                    |                    |                     |                       | 50                     |                       |                        | 3                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 68     | SR 2039 (MT. ZION DR.)     | FROM CUL-DE-SAC TO DEAD END                               | 3      | 2     |           | NO                             | NO                        | 0.251  | 18    |                           | 20                    |                          |                |             |                    |                    |                     |                       | 170                    | 50                    |                        | 15                           | 75                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 68</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.251                     |                       | 20                       |                |             |                    |                    |                     |                       | 170                    | 50                    |                        | 15                           | 75                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 69     | SR 1978 (EBENEZER RD.)     | FROM US 21 TO SR 1892 (JENNINGS RD.)                      | 3      | 2     |           | NO                             | NO                        | 0.218  | 22    |                           | 20                    |                          |                |             |                    |                    |                     |                       | 170                    | 10                    |                        | 12                           | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 69</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.218                     |                       | 20                       |                |             |                    |                    |                     |                       | 170                    | 10                    |                        | 12                           | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 70     | SR 1377 (BRICK YARD RD.)   | FROM US 70 TO END MAINT.                                  | 3      | 2     |           | NO                             | NO                        | 0.87   | 20    |                           | 50                    |                          |                |             |                    |                    |                     |                       | 630                    | 50                    |                        | 46                           | 350                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 70</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.87                      |                       | 50                       |                |             |                    |                    |                     |                       | 630                    | 50                    |                        | 46                           | 350                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 71     | SR 3121 (MARILYN DR.)      | FROM SR 1377 (BRICK YARD RD.) TO DEAD END                 | 1      | 2     |           | NO                             | NO                        | 0.47   | 18    | 80                        | 30                    | 0.94                     |                |             |                    |                    |                     |                       | 300                    | 150                   |                        | 30                           | 60                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 71</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.47                      | 80                    | 30                       | 0.94           |             |                    |                    |                     |                       | 300                    | 150                   |                        | 30                           | 60                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 72     | SR 1650 (WILHELM LN.)      | FROM SR 1006 (ISLAND FORD RD.) TO DEAD END                | 3      | 2     |           | NO                             | NO                        | 0.206  | 18    |                           | 10                    |                          |                |             |                    |                    |                     |                       | 140                    |                       |                        | 9                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 72</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.206                     |                       | 10                       |                |             |                    |                    |                     |                       | 140                    |                       |                        | 9                            | 10                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 73     | SR 1782 (ALPINE CIR.)      | FROM SR 1005 (OLD MTN. RD.) TO SR 1782 (ALPINE CIR.)      | 3      | 2     |           | NO                             | NO                        | 1.13   | 20    |                           | 75                    |                          |                |             |                    |                    |                     |                       | 810                    | 15                    |                        | 55                           | 50                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 73</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 1.13                      |                       | 75                       |                |             |                    |                    |                     |                       | 810                    | 15                    |                        | 55                           | 50                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 74     | SR 1735 (LA RUE CIR.)      | FROM SR 1005 (OLD MTN. RD.) TO END PVM.T.                 | 1      | 2     |           | NO                             | NO                        | 0.54   | 18    | 100                       | 30                    | 1.08                     |                |             |                    |                    |                     |                       | 350                    | 175                   |                        | 35                           | 100                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 74</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.54                      | 100                   | 30                       | 1.08           |             |                    |                    |                     |                       | 350                    | 175                   |                        | 35                           | 100                        |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 75     | SR 1775 (STONES EDGE RD.)  | FROM SR 1521 (LIPPARD FARM RD.) TO DEAD END               | 3      | 2     |           | NO                             | NO                        | 0.209  | 20    |                           | 10                    |                          |                |             |                    |                    |                     |                       | 150                    | 15                    |                        | 11                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 75</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.209                     |                       | 10                       |                |             |                    |                    |                     |                       | 150                    | 15                    |                        | 11                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 76     | SR 1776 (GEMSTONE DR.)     | FROM SR 1775 (STONES EDGE RD.) TO DEAD END                | 3      | 2     |           | NO                             | NO                        | 0.302  | 20    |                           | 20                    |                          |                |             |                    |                    |                     |                       | 220                    | 20                    |                        | 16                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 76</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.302                     |                       | 20                       |                |             |                    |                    |                     |                       | 220                    | 20                    |                        | 16                           | 40                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| 2018CPT.12.10.20491         | Iredell | 77     | SR 1777 (ZIRCON DR.)       | FROM SR 1776 (GEMSTONE DR.) TO SR 1779 (TITANIUM DR.)     | 3      | 2     |           | NO                             | NO                        | 0.365  | 20    |                           | 20                    |                          |                |             |                    |                    |                     |                       | 275                    |                       |                        | 18                           | 75                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |
| <b>TOTAL FOR MAP NO. 77</b> |         |        |                            |   |        |       |           |                                |                           |        |       | 0.365                     |                       | 20                       |                |             |                    |                    |                     |                       | 275                    |                       |                        | 18                           | 75                         |                             |                    |                  |                            |                   |                       |                      |   |  |  |     |     |  |  |  |  |  |  |  |  |  |



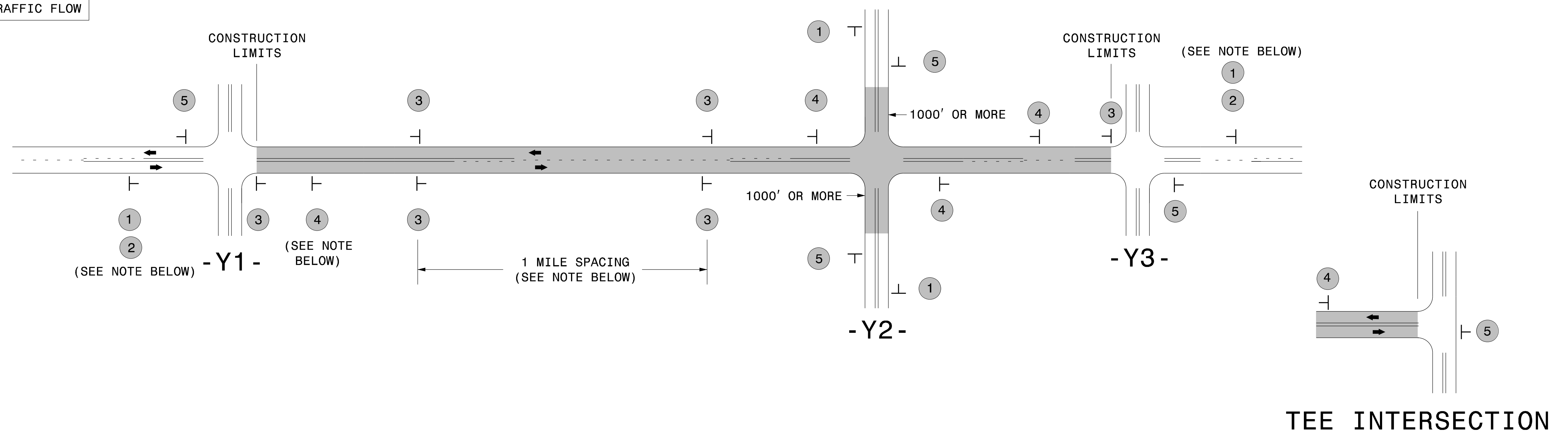






# SIGNING FOR RESURFACING PROJECTS

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



## MAINLINE (-L-) SIGNING

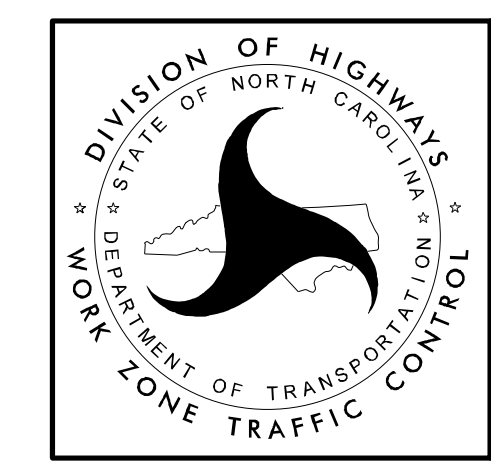
## -Y- LINE SIGNING

|   |   |  |   |   |
|---|---|--|---|---|
| SIGNING NOTES AND PLACEMENT PER DIRECTION | 1 |  | PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.  | <p>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</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, PORTABLE ADVANCE WARNING 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;"> <div style="text-align: center;"> <br/>           PLACED 500' IN ADVANCE OF FLAGGER.         </div> <div style="text-align: center;"> <br/>           PLACED 250' IN ADVANCE OF FLAGGER.         </div> </div> |
|   | 2 |  | #2 SIGN ONLY USED WHEN CONSTRUCTION LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)   |   |
|   | 3 |  | - PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER.<br>- AT TEE INTERSECTIONS INSTALL INITIALLY 1/2 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.   |   |
|   | 4 |  | - THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS.<br>- DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS.<br>- INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE.<br>- 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.<br>- A MAXIMUM OF 2 SIGN SETS PER MILE. DO NOT INSTALL WHEN -Y- LINES ARE WITHIN 0.5 MILES FROM "END ROAD WORK" SIGN.<br>- FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE. |   |
|   | 5 |  | PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.   |   |

THE ABOVE SIGNS ARE ALL THAT ARE REQUIRED FOR A CONTRACTOR TO BEGIN A RESURFACING CONTRACT. ANY ADDITIONAL SIGNS REQUESTED BY NCDOT DIVISIONS SHALL BE INSTALLED WITHIN 7 BUSINESS DAYS OF THE START OF CONTRACT WORK.

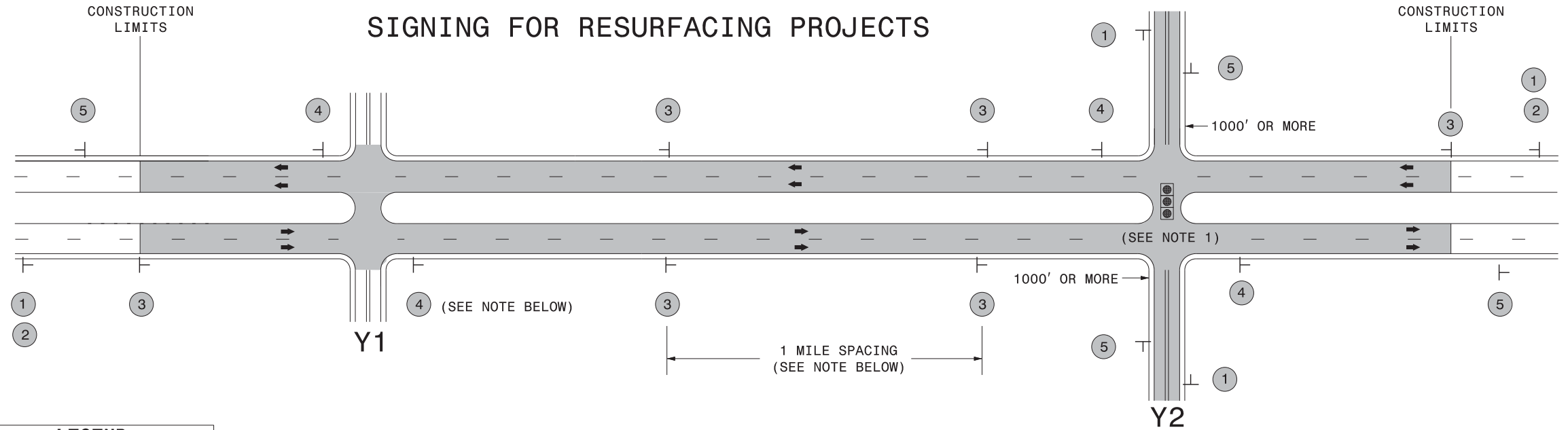
**MAPS LESS THAN 2 MILES**

FOR RESURFACING MAPS WITH CONSTRUCTION LIMITS LESS THAN 2 MILES IN LENGTH, NO STATIONARY SIGNS ARE REQUIRED. USE PORTABLE "ROAD UNDER CONSTRUCTION" OR "ROAD WORK AHEAD" SIGNS IN LIEU OF STATIONARY ADVANCE WARNINGS SIGNS.



**ADVANCE WARNING SIGNS FOR RURAL AND SUBURBAN 2-LANE ROADWAY RESURFACING**

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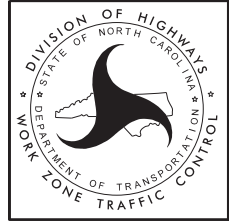
**LEGEND**  
 ┆ STATIONARY SIGN  
 ← DIRECTION OF TRAFFIC FLOW

**MAINLINE (-L-) SIGNING**

**-Y- LINE SIGNING**

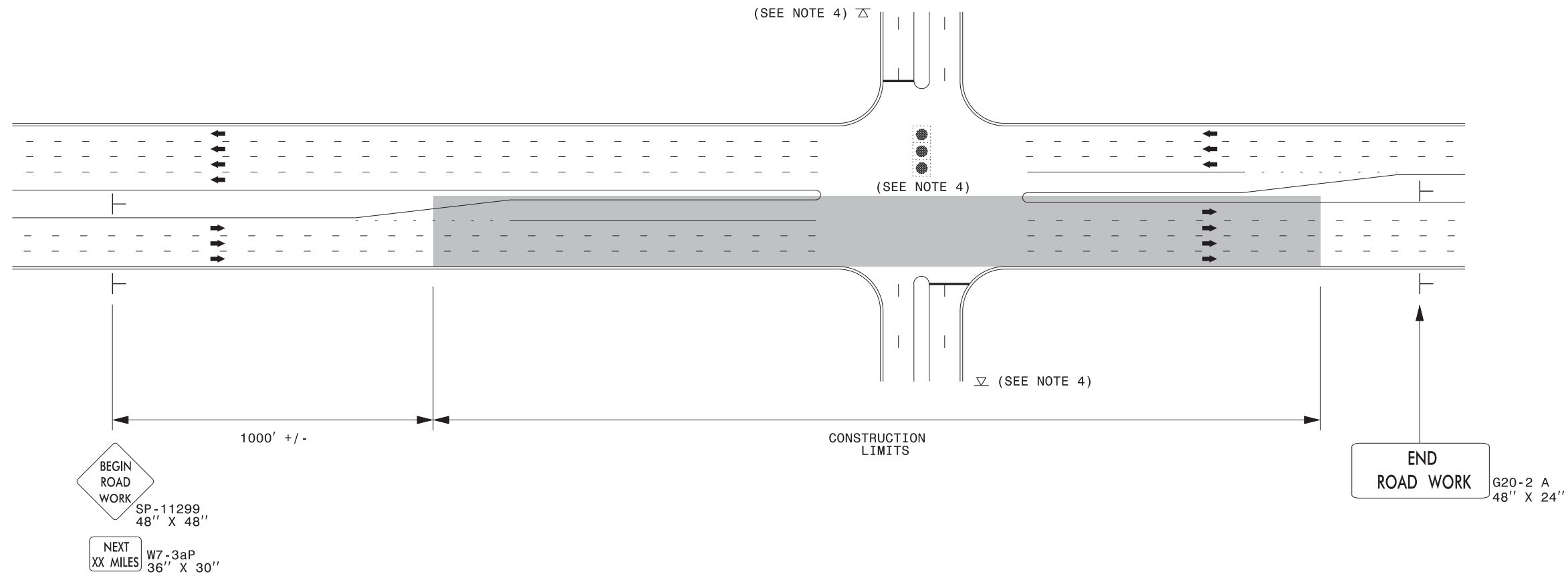
|   |  |  |   |
|---|--|--|---|
| SIGNING NOTES AND PLACEMENT PER DIRECTION |  | <p>PLACE 1000' PRIOR TO BEGINNING OF CONSTRUCTION LIMITS. ONLY USED ON -Y- LINES IF RESURFACING LIMITS EXTEND 1000' ALONG -Y- LINE.</p> <p>#2 SIGN ONLY USED WHEN RESURFACING LIMITS ARE 2 OR MORE MILES IN LENGTH. ROUND UP TO NEXT WHOLE NUMBER. (NO FRACTIONAL OR DECIMAL NUMBERS)</p>  | <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;"> <div style="text-align: center;"> <p>W20-1<br/>48" X 48"</p> </div> <div style="text-align: center;"> <p>W20-7 A<br/>48" X 48"</p> </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> |
|   |  | <p>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.</p>   |   |
|   |  | <p>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.</p> |   |
|   |  | <p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS.</p>  |   |

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

## 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.

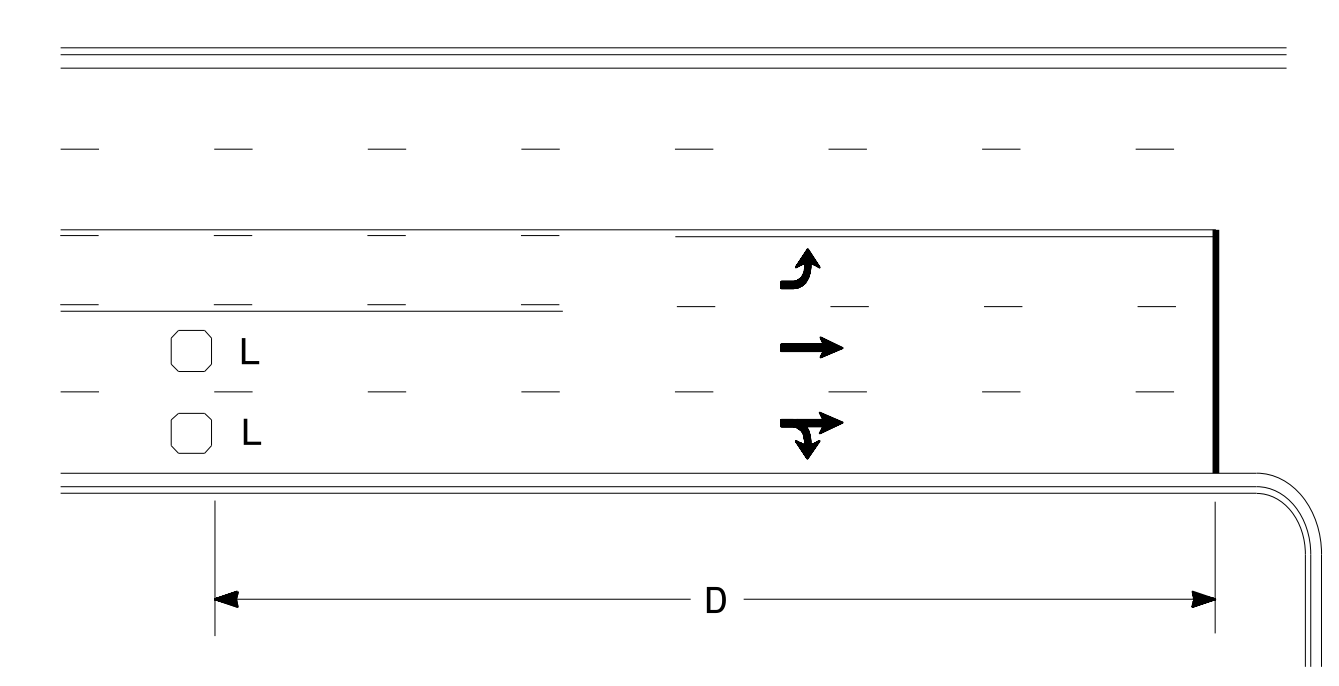
### LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



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

### High Speed Detection (≥40 mph)

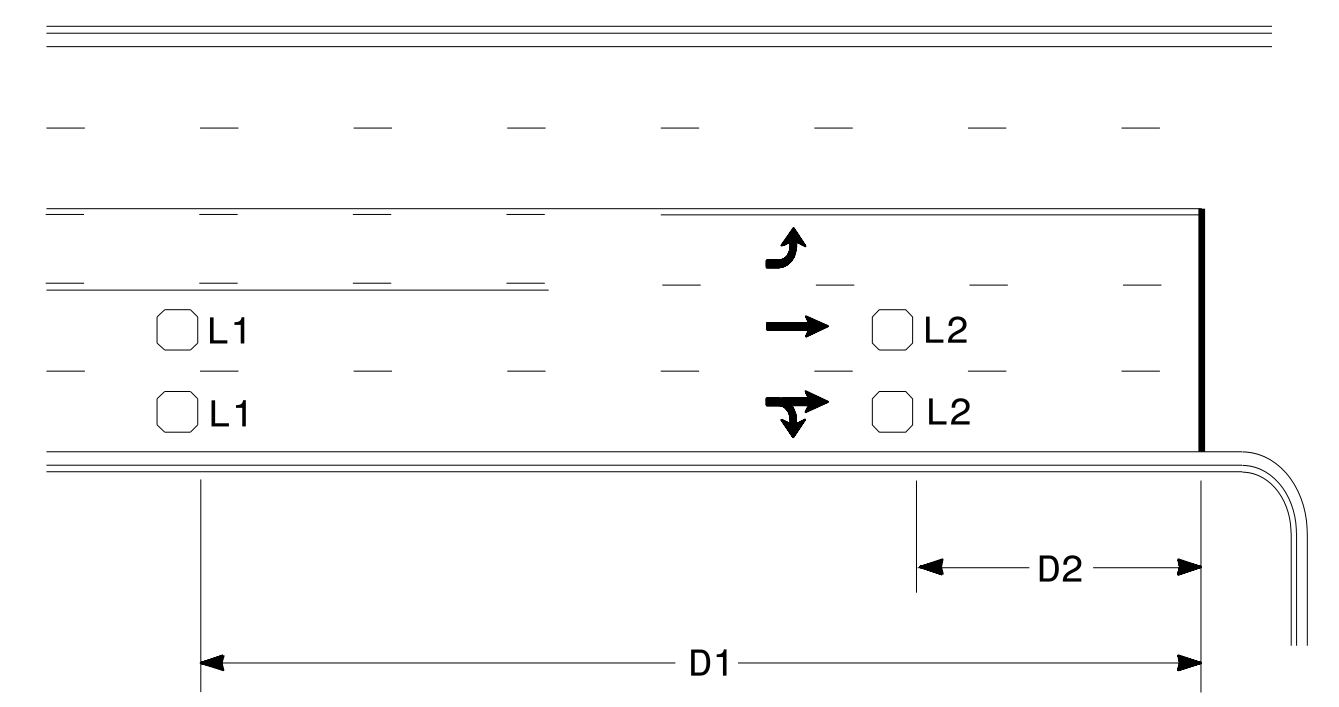


| Speed Limit<br>mph | D<br>ft |
|--------------------|---------|
| 40                 | 250     |
| 45                 | 300     |
| 50                 | 355     |
| 55                 | 420     |

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

Volume Density Operation

OR

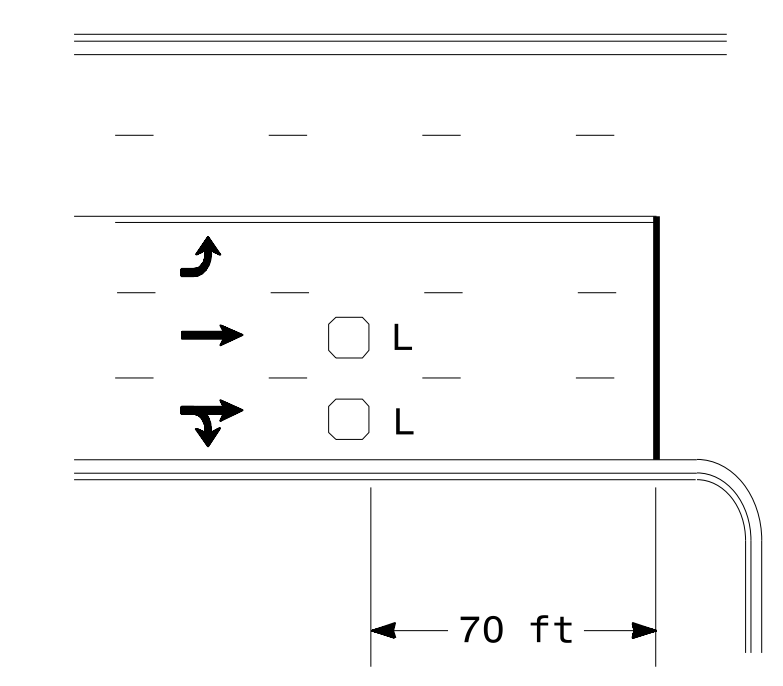


| Speed Limit<br>mph | D1<br>ft | D2<br>ft |
|--------------------|----------|----------|
| 40                 | 250      | 80       |
| 45                 | 300      | 90       |
| 50                 | 355      | 100      |
| 55                 | 420      | 110      |

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

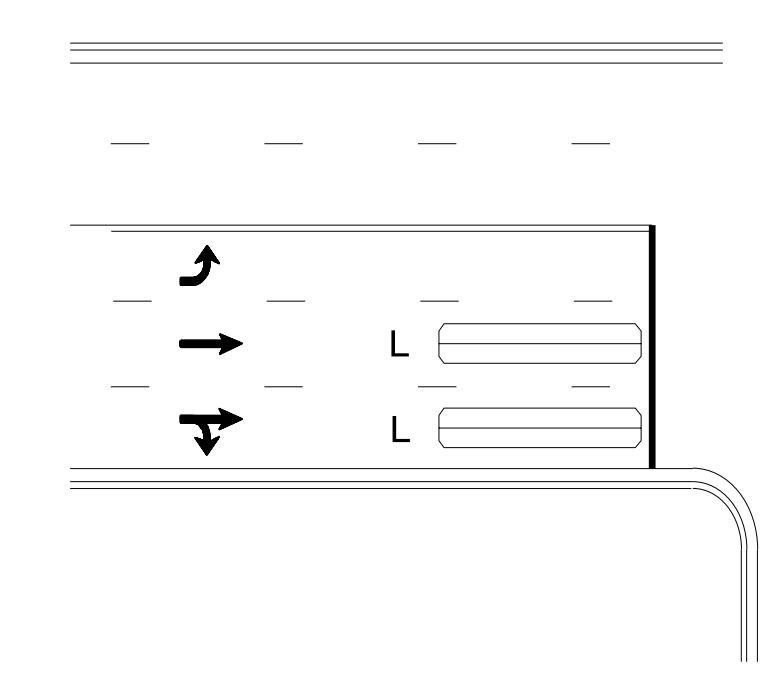
"Stretch" Operation

### Low Speed Detection (≤35 mph)



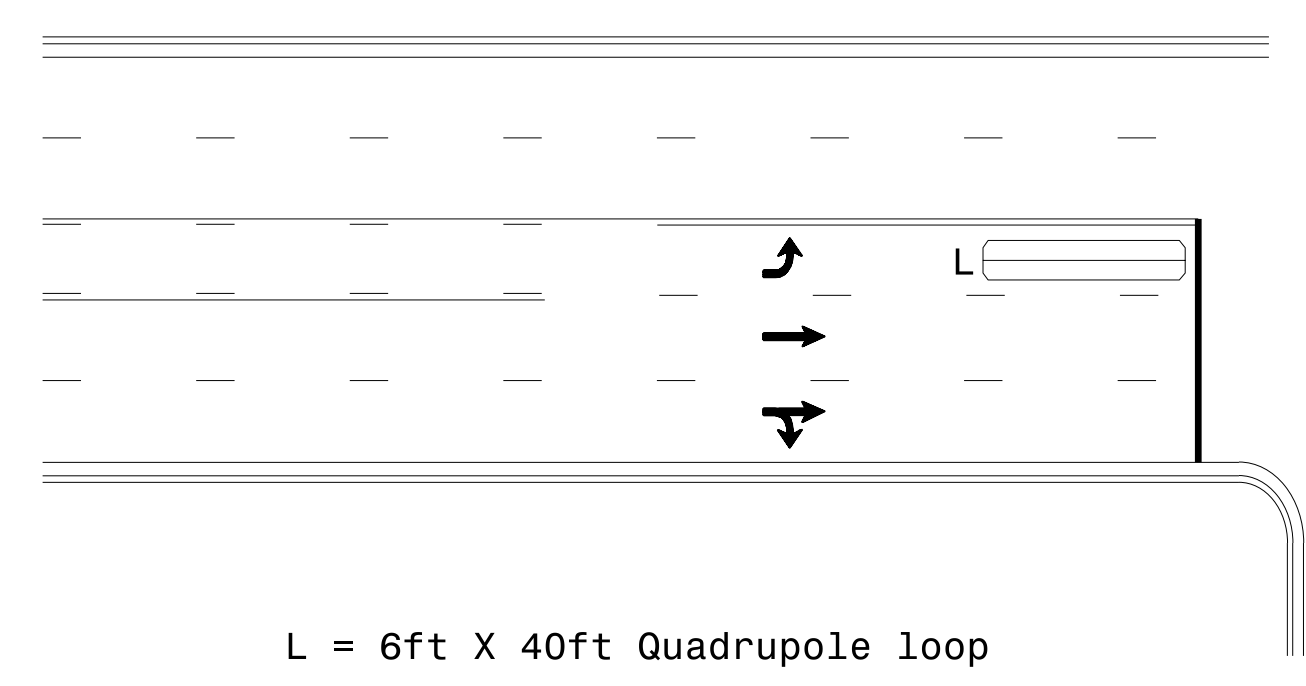
L = 6ft X 6ft  
Wired in series

OR



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

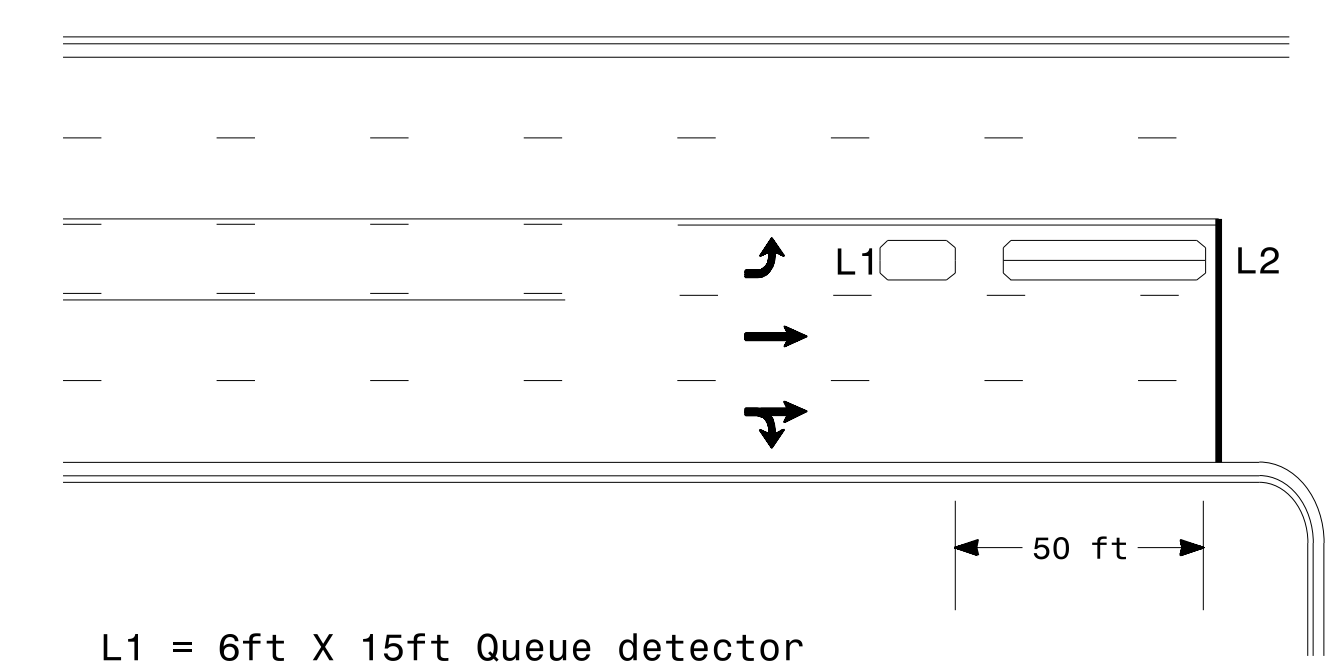
### Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

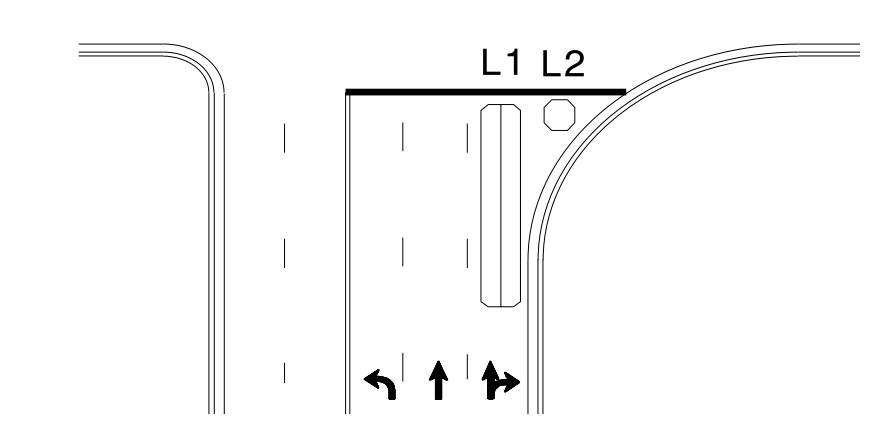
OR



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

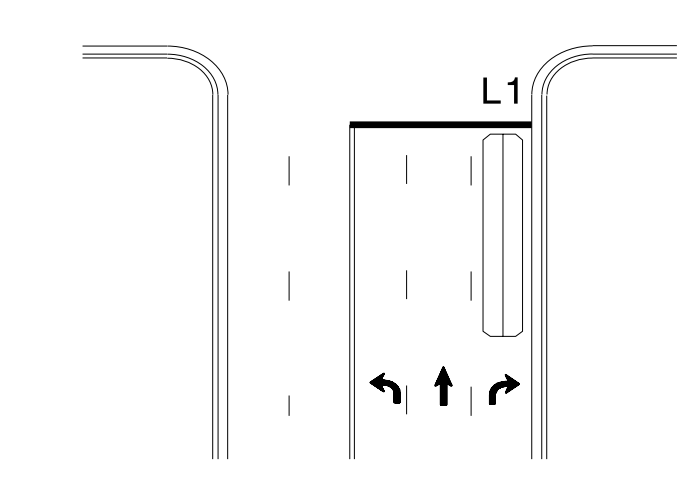
Queue Loop Detection

### Right Turn Lane Detection

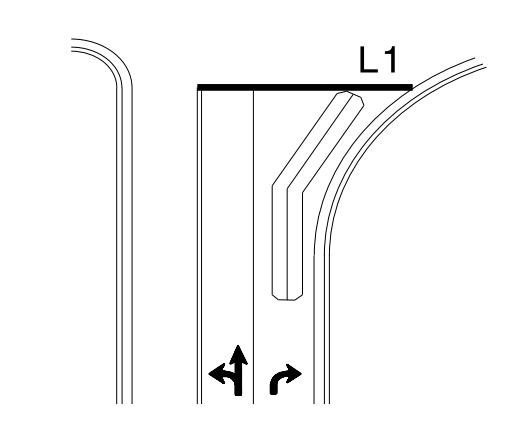


Shared Lane/  
Wide Radius Turn

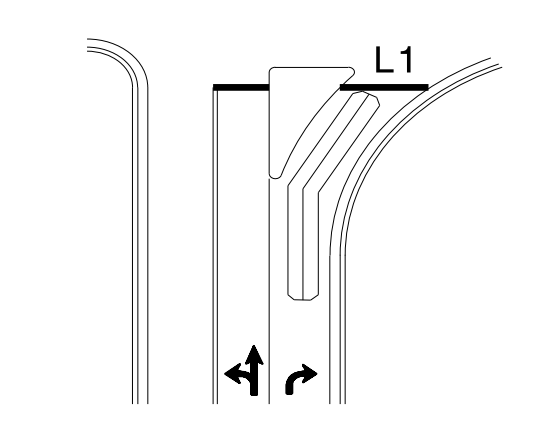
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

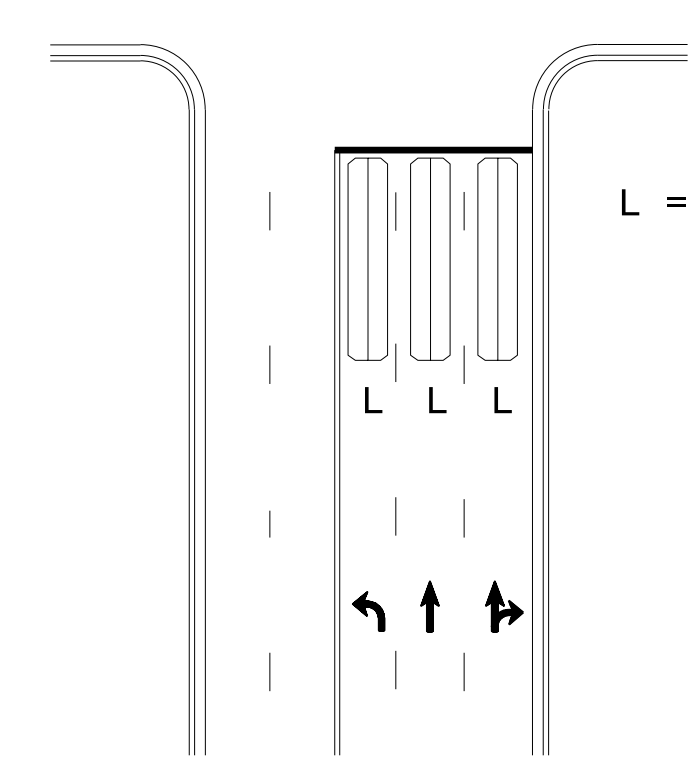


Wide Radius Turn



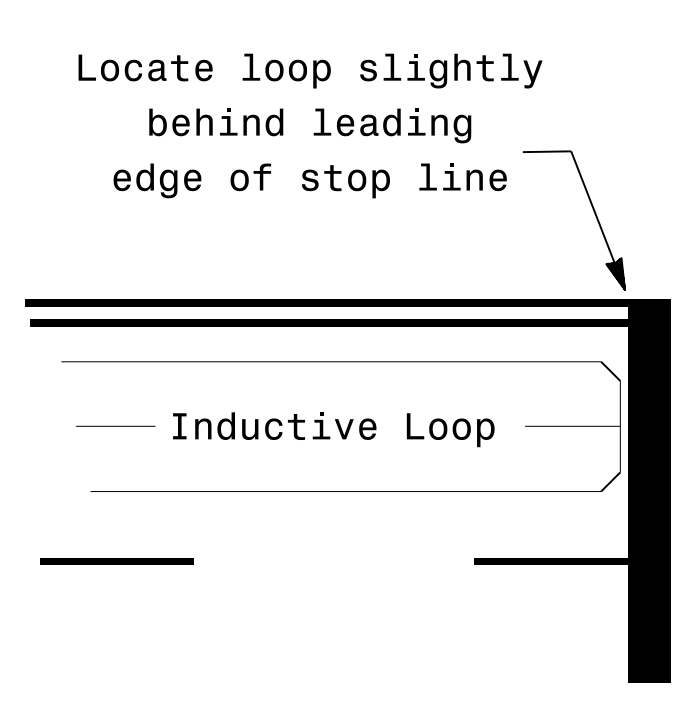
Channelized Turn

### 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<br>Lead-in<br>ft | Number<br>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

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