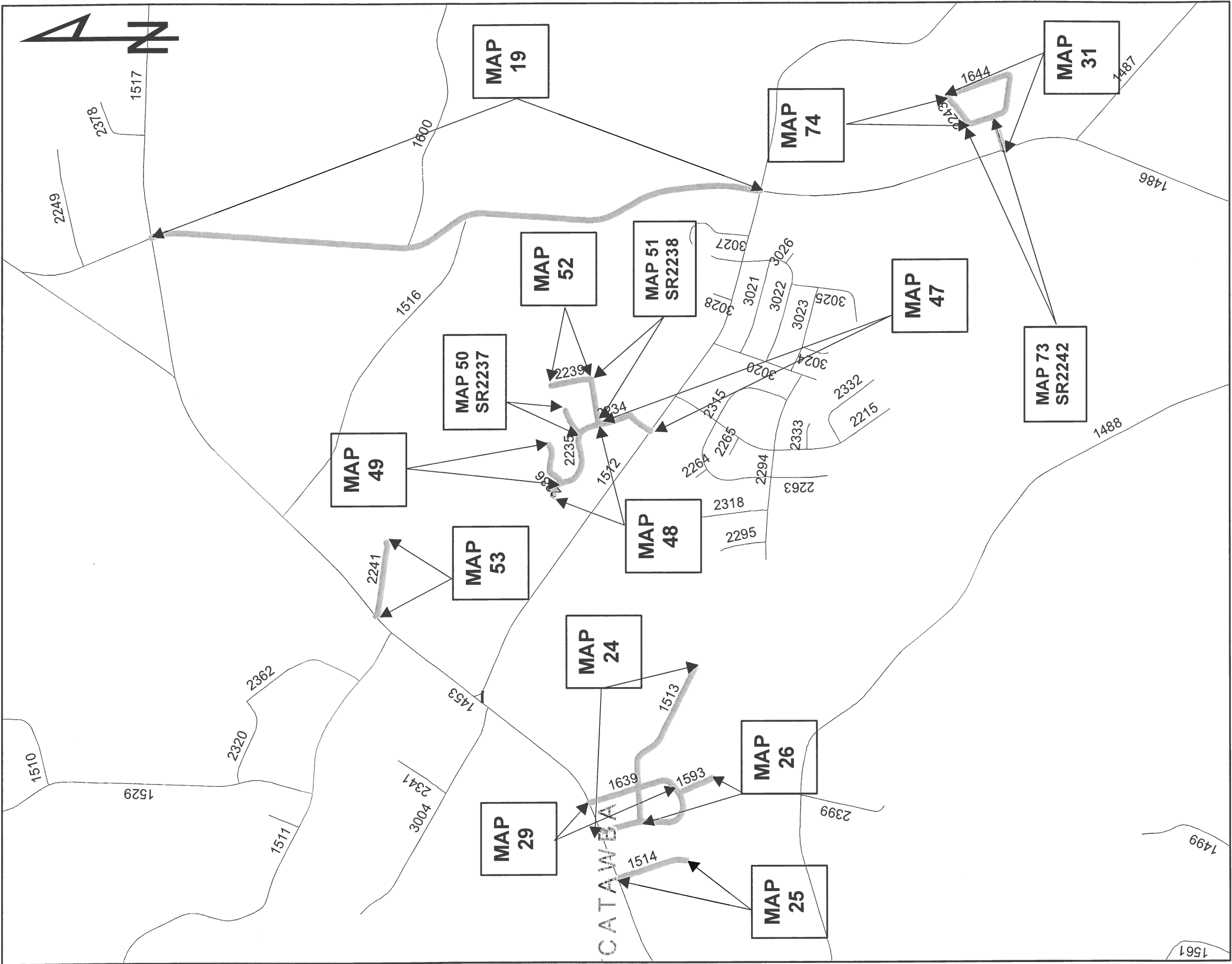
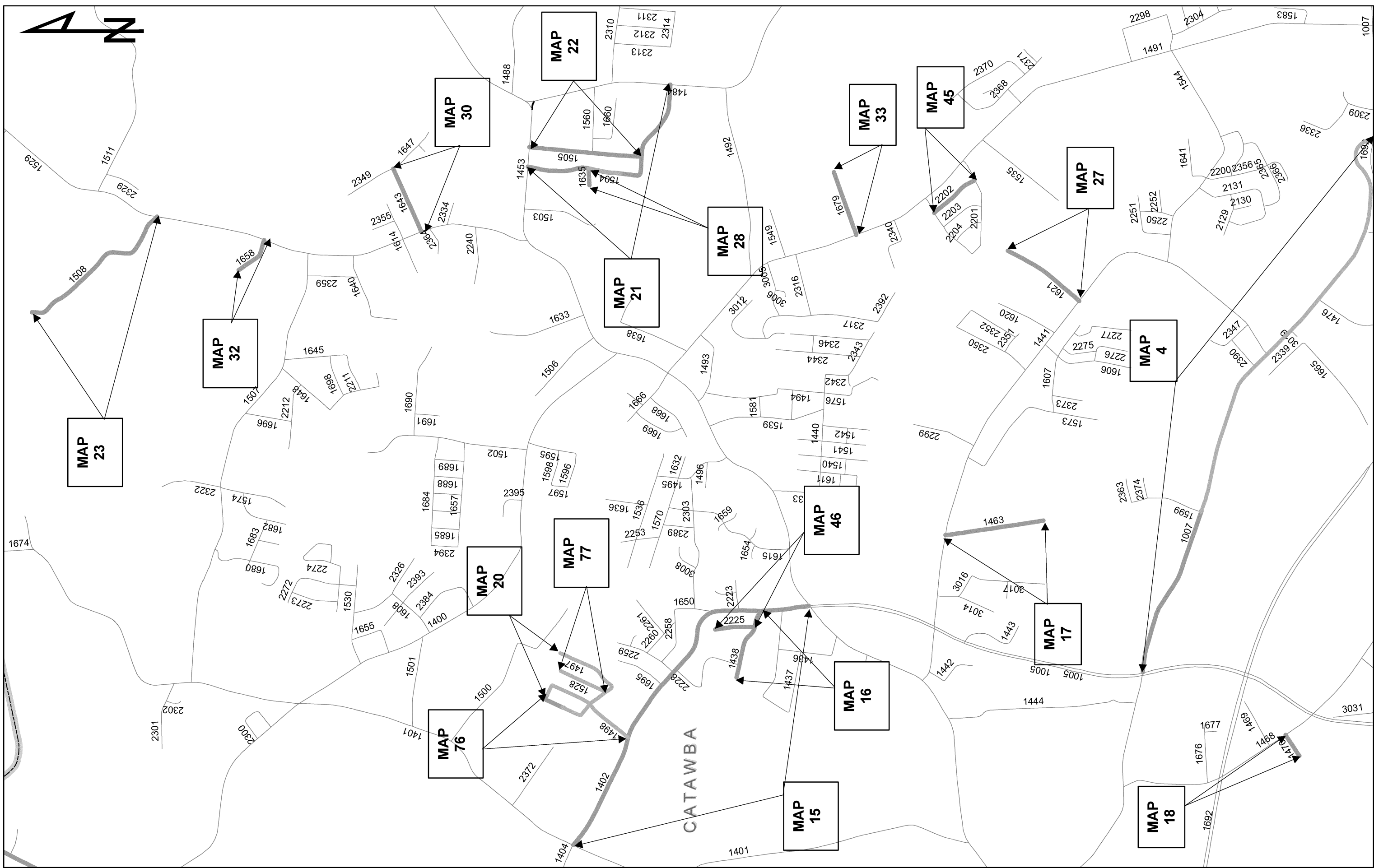


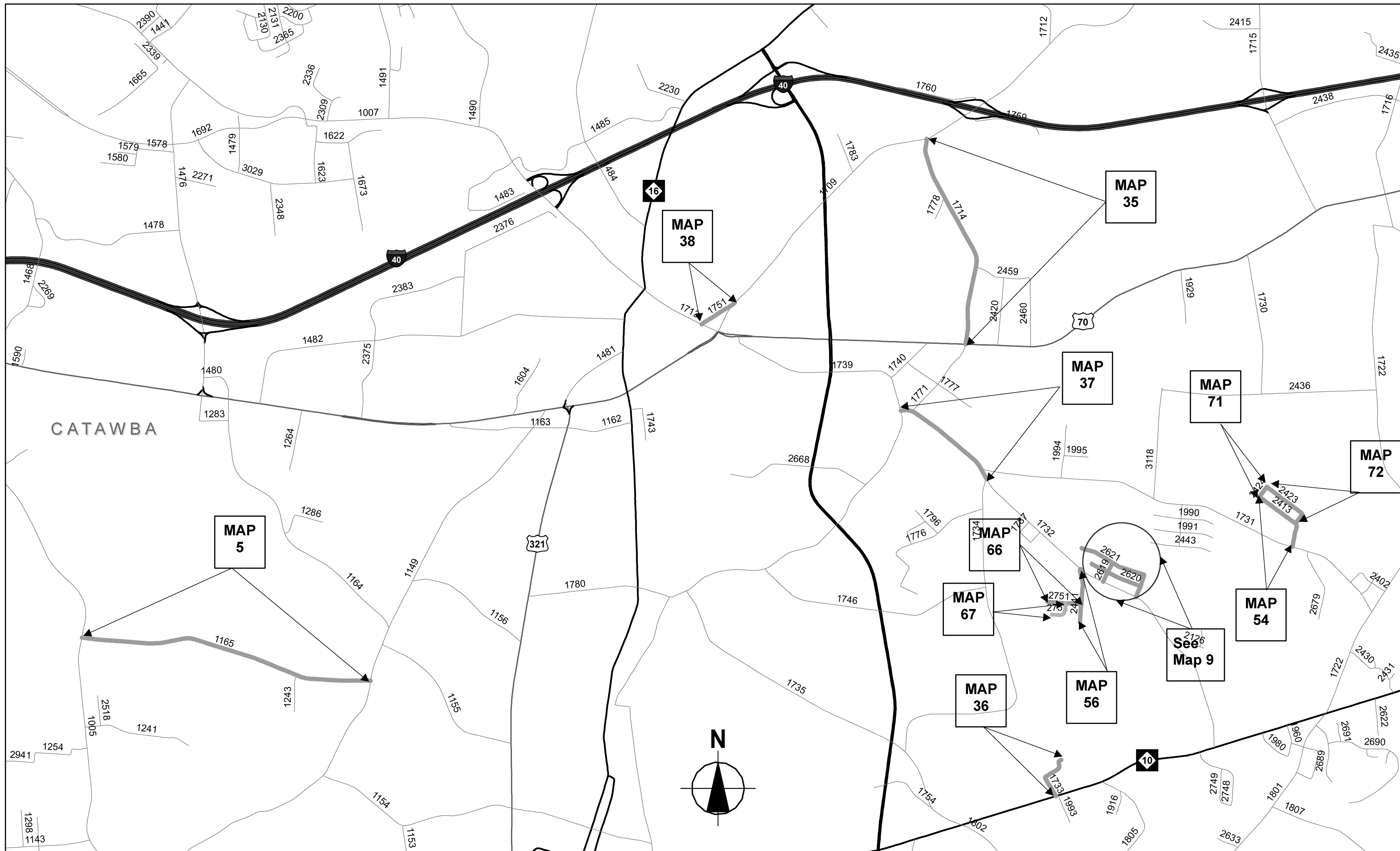
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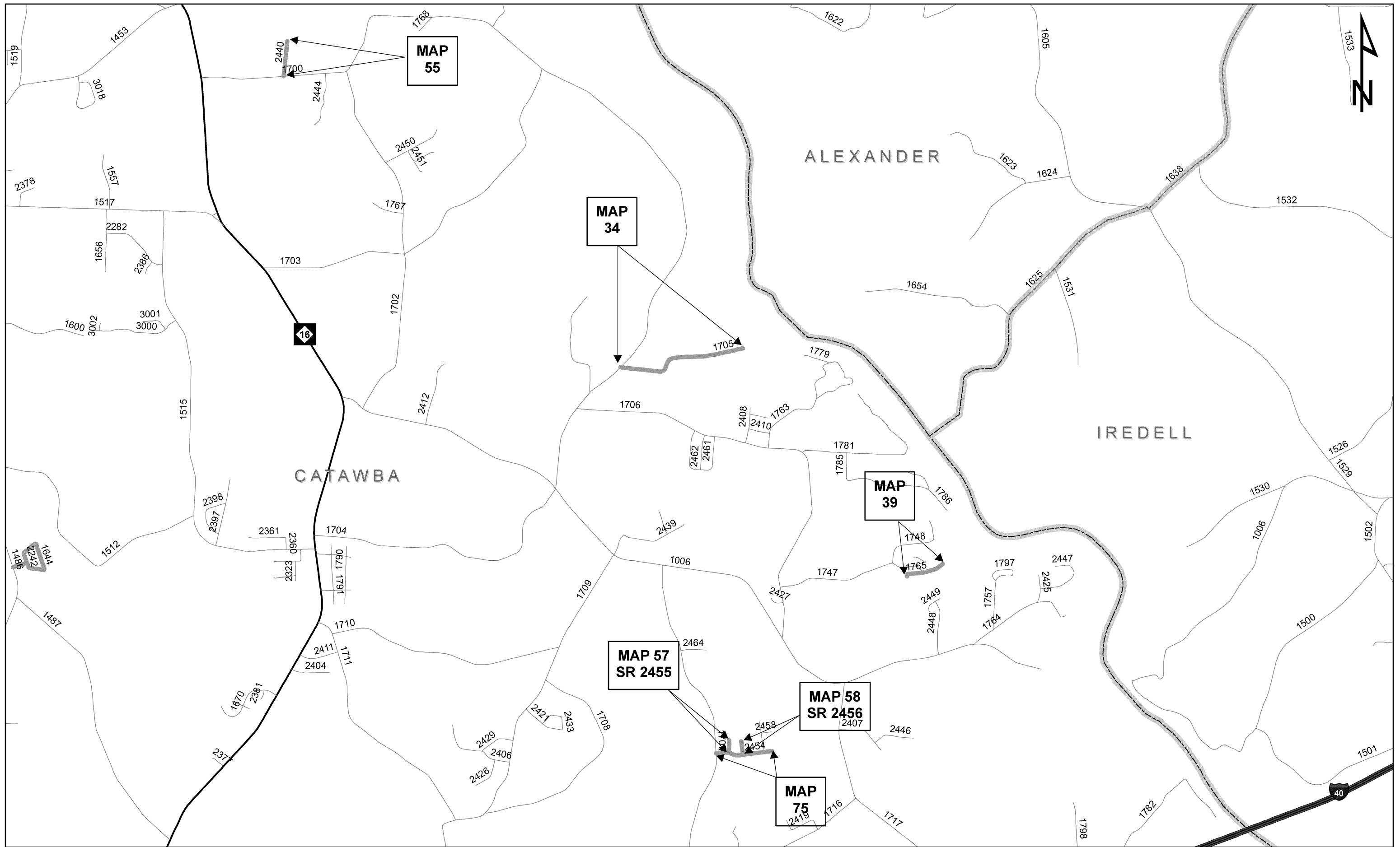


Catawba County

WBS# 2017CPT.12.17.10181,
etc.

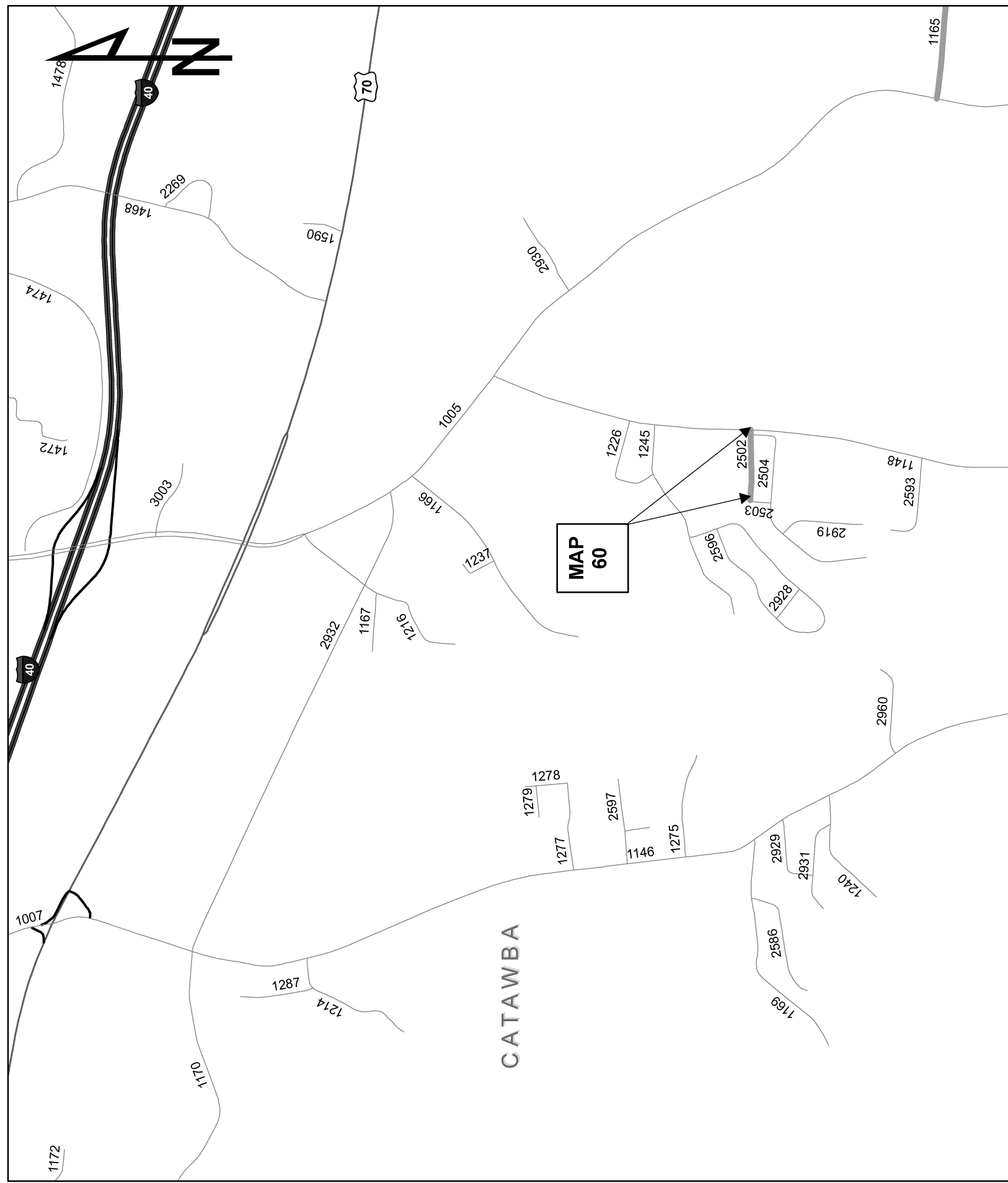
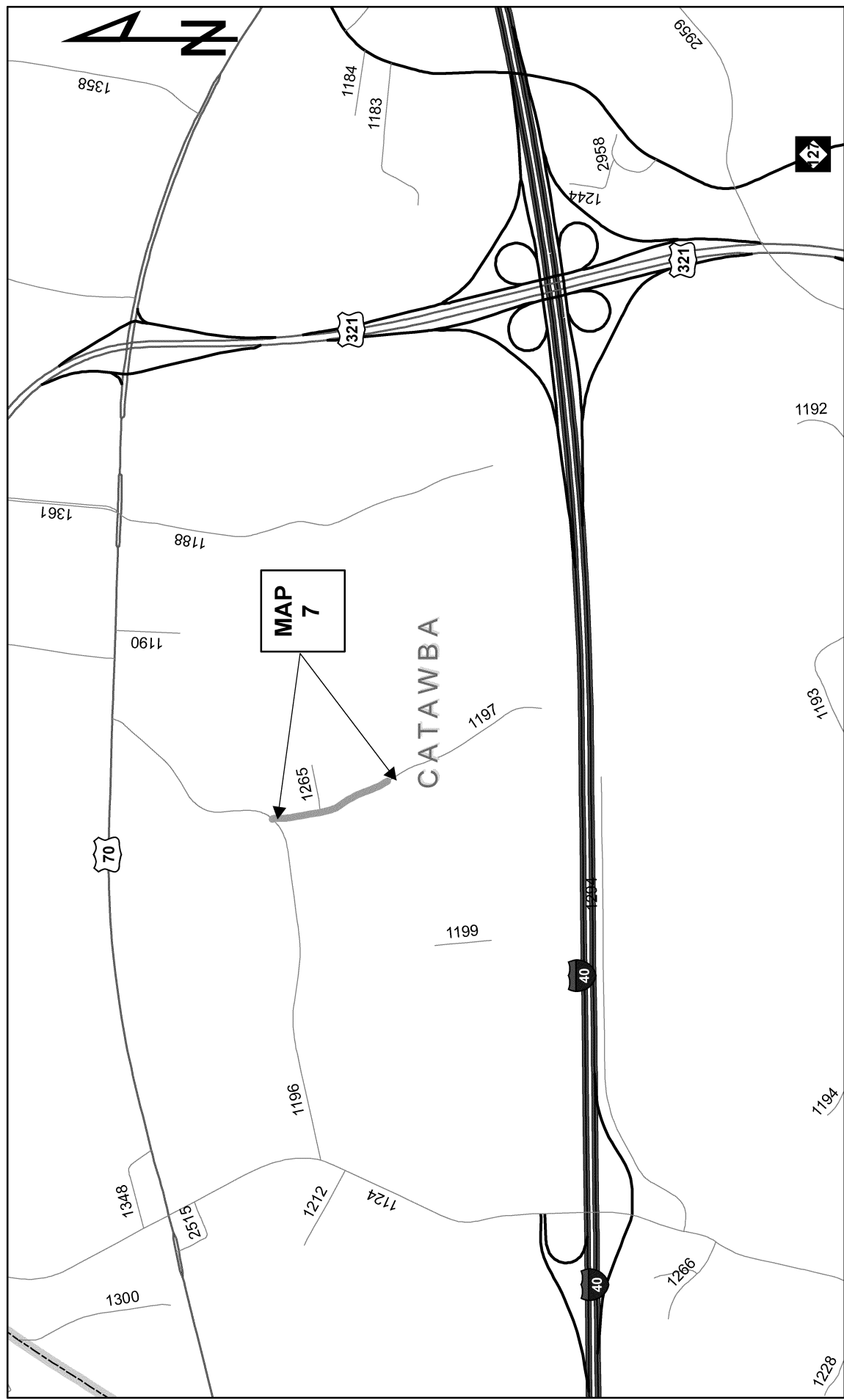


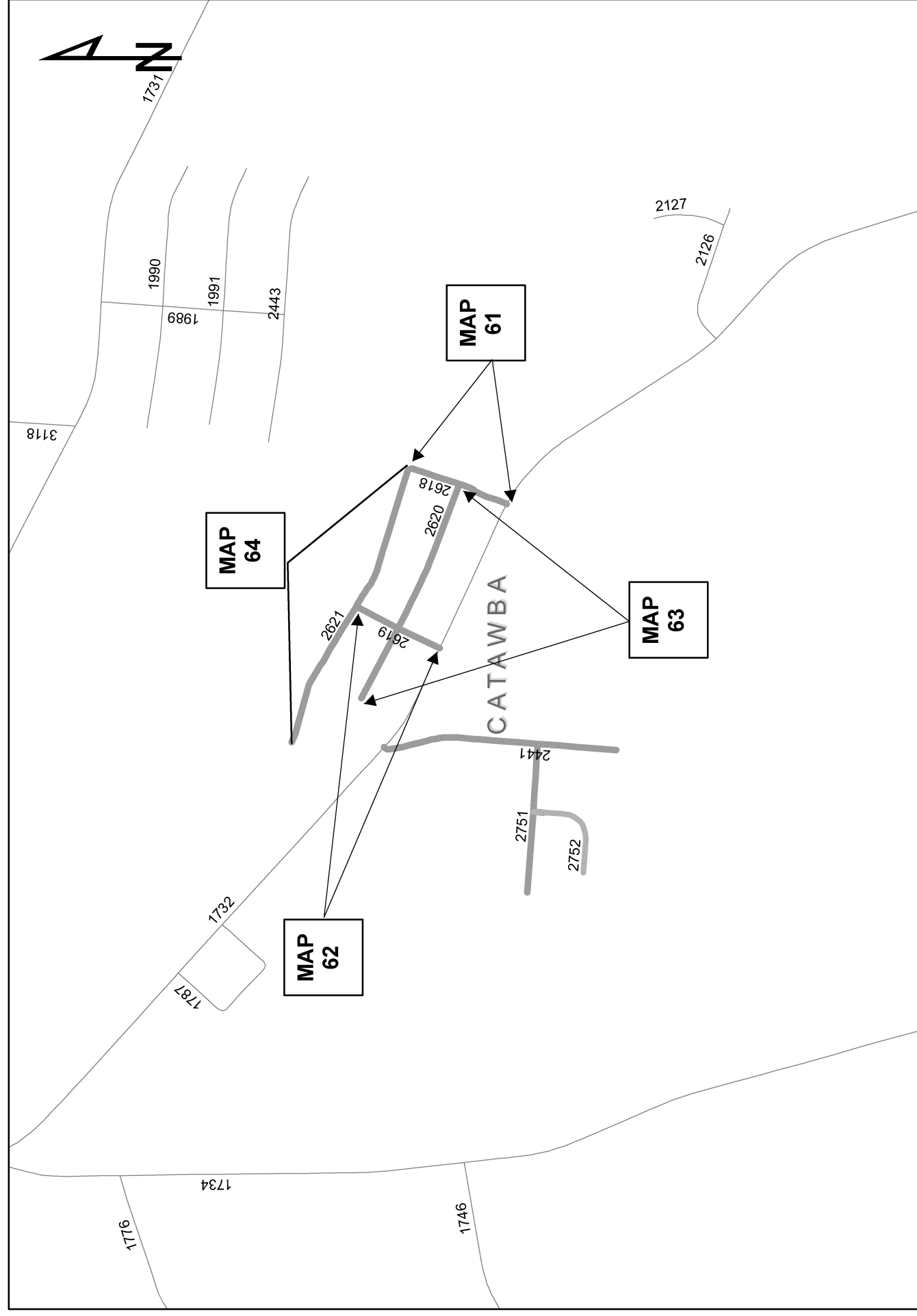
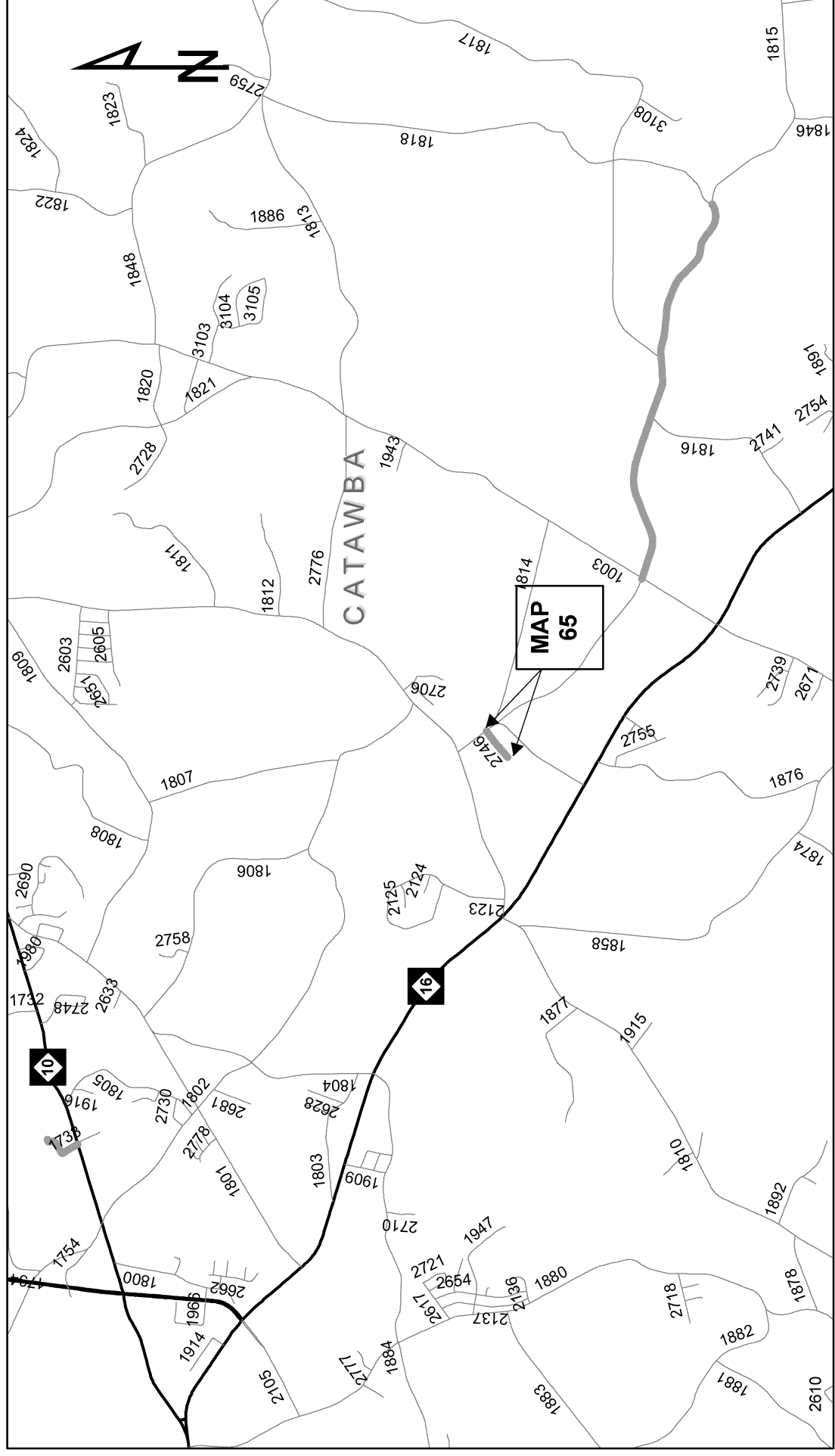


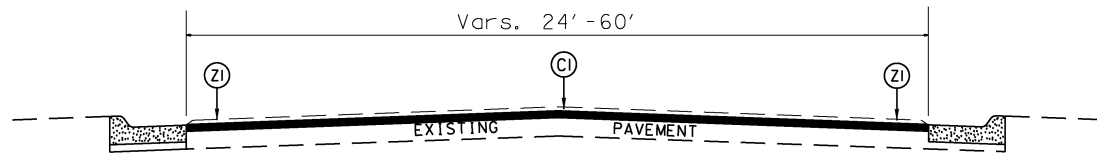


Catawba County

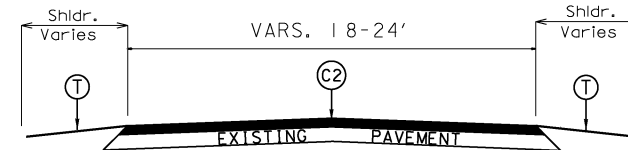
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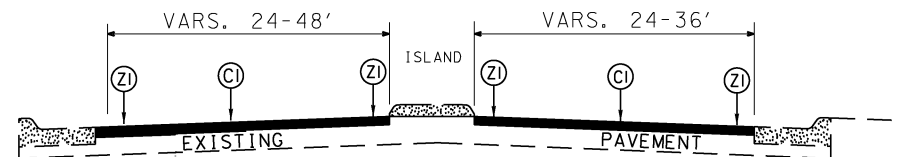


TYPICAL SECTION NO. 1
 MAP # 1 (entire map)
 MAP # 3 - 0+00 TO 58+10
 MAP # 3 - 68+64 TO 73+92
 MAP # 4 - 116+16 TO 132+00

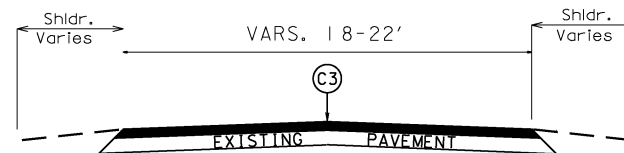


TYPICAL SECTION NO. 4

- | | |
|-------------------------|-------------------------|
| MAP # 6 - (entire map) | MAP # 56 - (entire map) |
| MAP # 8 - (entire map) | MAP # 57 - (entire map) |
| MAP # 9 - (entire map) | MAP # 58 - (entire map) |
| MAP # 10 - (entire map) | MAP # 59 - (entire map) |
| MAP # 11 - (entire map) | MAP # 60 - (entire map) |
| MAP # 16 - (entire map) | MAP # 61 - (entire map) |
| MAP # 18 - (entire map) | MAP # 62 - (entire map) |
| MAP # 21 - (entire map) | MAP # 63 - (entire map) |
| MAP # 22 - (entire map) | MAP # 64 - (entire map) |
| MAP # 24 - (entire map) | MAP # 65 - (entire map) |
| MAP # 25 - (entire map) | MAP # 66 - (entire map) |
| MAP # 26 - (entire map) | MAP # 67 - (entire map) |
| MAP # 28 - (entire map) | MAP # 68 - (entire map) |
| MAP # 29 - (entire map) | MAP # 69 - (entire map) |
| MAP # 33 - (entire map) | MAP # 70 - (entire map) |
| MAP # 42 - (entire map) | MAP # 71 - (entire map) |
| MAP # 43 - (entire map) | MAP # 72 - (entire map) |
| MAP # 44 - (entire map) | MAP # 73 - (entire map) |
| MAP # 45 - (entire map) | MAP # 74 - (entire map) |
| MAP # 46 - (entire map) | MAP # 75 - (entire map) |
| MAP # 53 - (entire map) | MAP # 76 - (entire map) |
| MAP # 54 - (entire map) | MAP # 77 - (entire map) |
| MAP # 55 - (entire map) | |

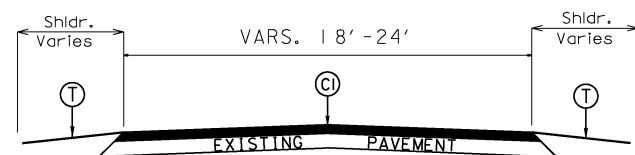


TYPICAL SECTION NO. 2
 MAP # 2 - 0+00 TO 4+00
 MAP # 3 - 58+10 TO 68+64



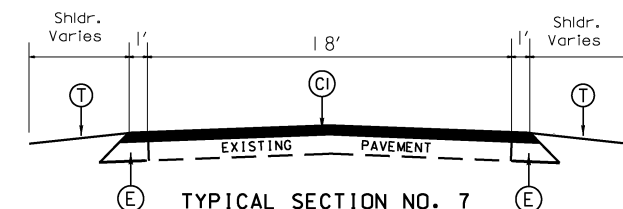
TYPICAL SECTION NO. 5

- | | |
|-------------------------|-------------------------|
| MAP # 7 - (entire map) | MAP # 31 - (entire map) |
| MAP # 12 - (entire map) | MAP # 32 - (entire map) |
| MAP # 13 - (entire map) | MAP # 36 - (entire map) |
| MAP # 14 - (entire map) | MAP # 39 - (entire map) |
| MAP # 17 - (entire map) | MAP # 47 - (entire map) |
| MAP # 20 - (entire map) | MAP # 48 - (entire map) |
| MAP # 23 - (entire map) | MAP # 49 - (entire map) |
| MAP # 27 - (entire map) | MAP # 50 - (entire map) |
| MAP # 34 - (entire map) | MAP # 51 - (entire map) |
| MAP # 30 - (entire map) | MAP # 52 - (entire map) |

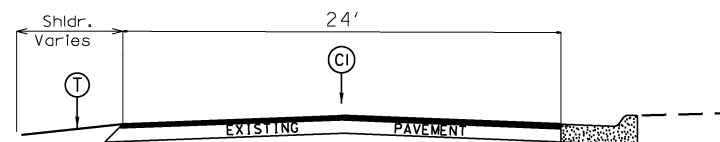


TYPICAL SECTION NO. 3
 MAP # 2 - From Sta. 4+00 to 36+60
 MAP # 4 - 10+56 to 116+16

- MAP # 5 - entire map
 MAP # 15 - entire map
 MAP # 19 - entire map
 MAP # 35 - entire map
 MAP # 37 - entire map
 MAP # 38 - entire map
 MAP # 41 - entire map



TYPICAL SECTION NO. 7
 MAP # 40 - (entire map)



TYPICAL SECTION NO. 6
 MAP # 4 - 0+00 TO 10+56

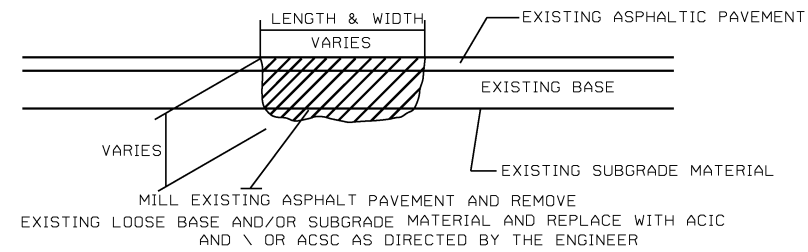
| PAVEMENT SCHEDULE | |
|-------------------|--|
| C1 | PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. |
| C3 | PROP. APPROX. ¾" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A AT AN AVERAGE RATE OF 82.5 LBS. PER SQ. YD. |
| E | PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS. |
| T | AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION, WIDTH VARIES 2'-6') |
| Y1 | INCIDENTAL MILLING |
| Z1 | MILL ASPHALT PAVEMENT APPROXIMATELY 0" TO 1.5" DEPTH, 4' WIDE |

Checked by:

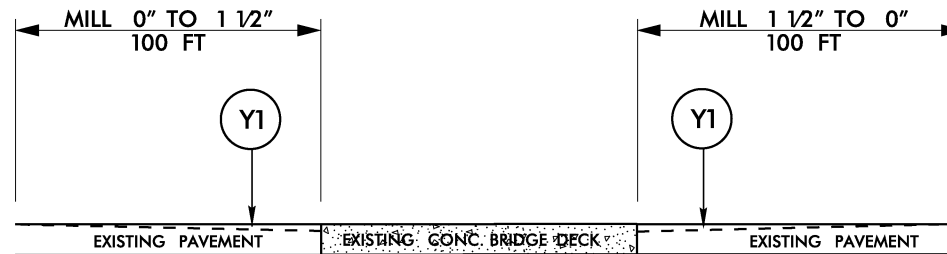
Drawn by: G. Brittain

DETAIL A

PATCHING EXISTING PAVEMENT

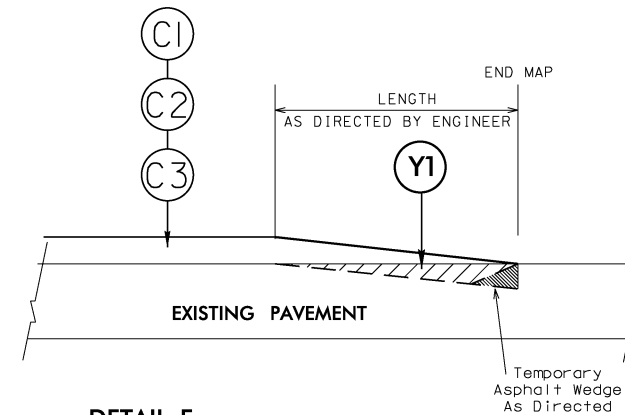
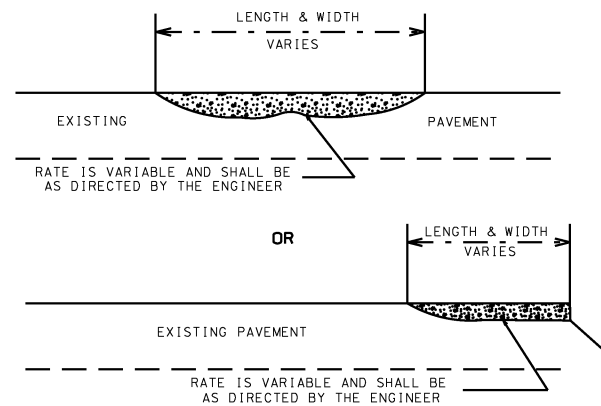


**DETAIL D
MILLING BRIDGE APPROACHES**



DETAIL B

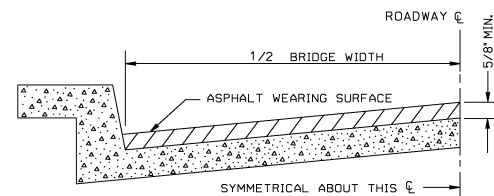
**ASPHALT CONCRETE SURFACE COURSE
TYPE S9.5B OR S9.5A (LEVELING COURSE)**



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

DETAIL C

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 ROAD, 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.

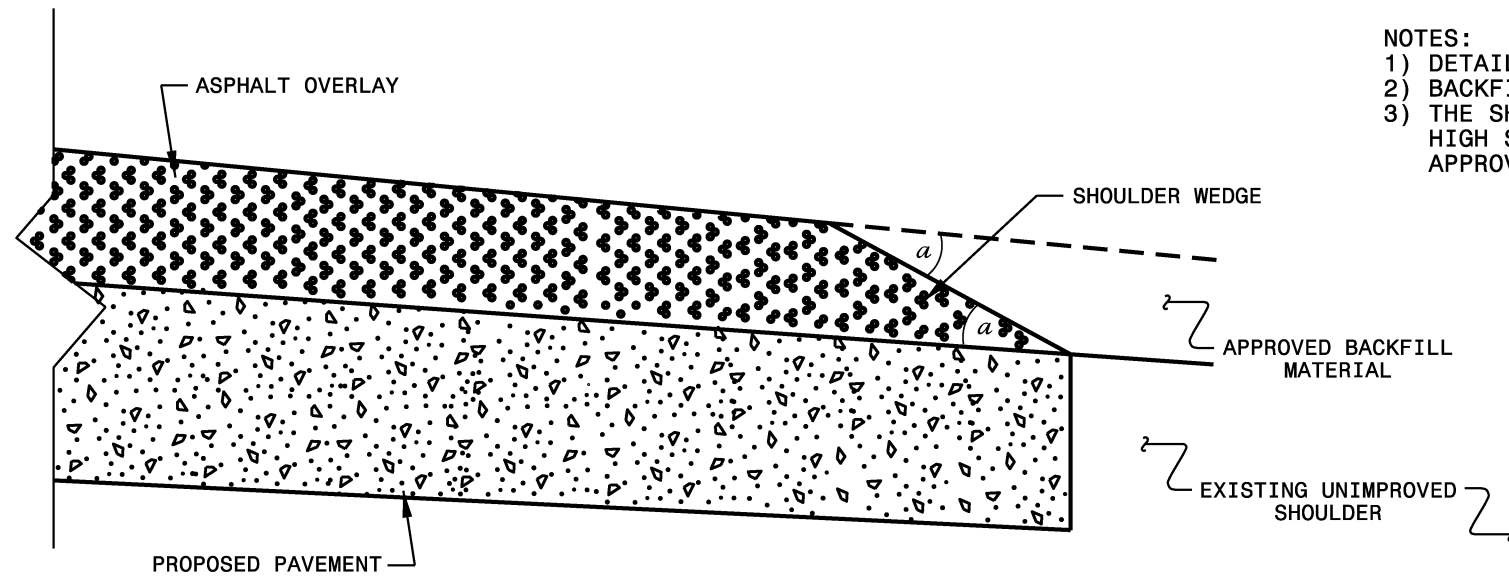
PAVEMENT SCHEDULE

| | |
|----|--|
| C1 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. |
| C3 | PROP. APPROX. 3/4" ASPHALT CONCRETE SURFACE COURSE, TYPE S4.75A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. |
| E | PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LIFTS. |
| T | AGGREGATE SHOULDER BORROW (SHOULDER RECONSTRUCTION) |
| Y1 | INCIDENTAL MILLING |
| Z1 | MILL ASPHALT PAVEMENT APPROXIMATELY 0" TO 1.5" DEPTH, 4' WIDE |

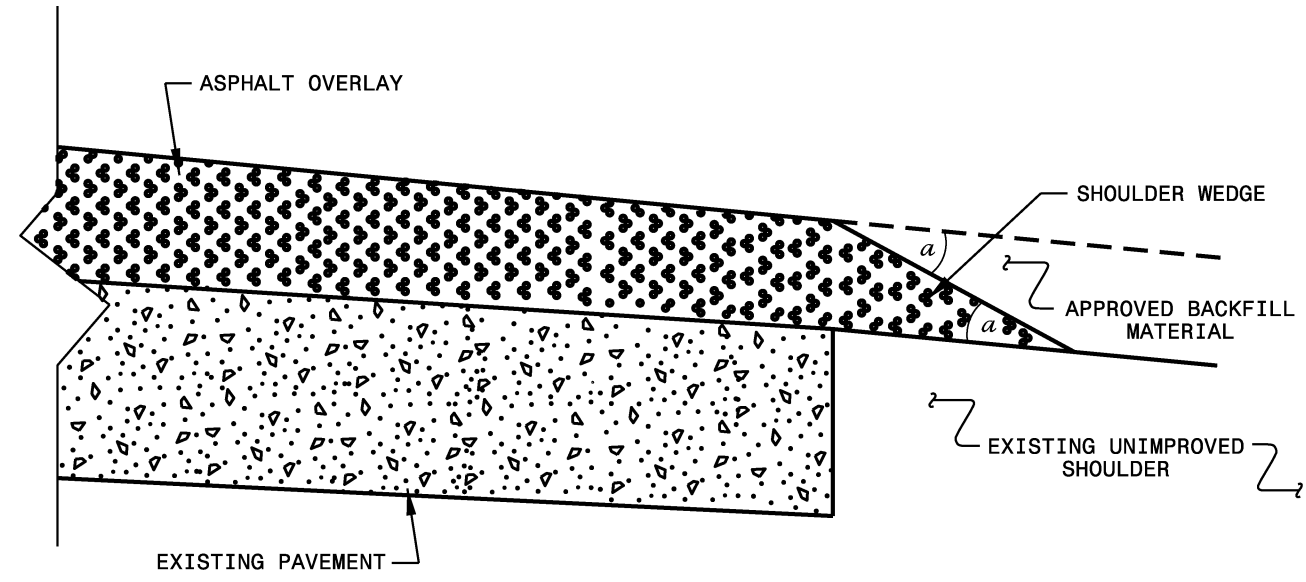
Checked by:

Drawn by: G. Brittain

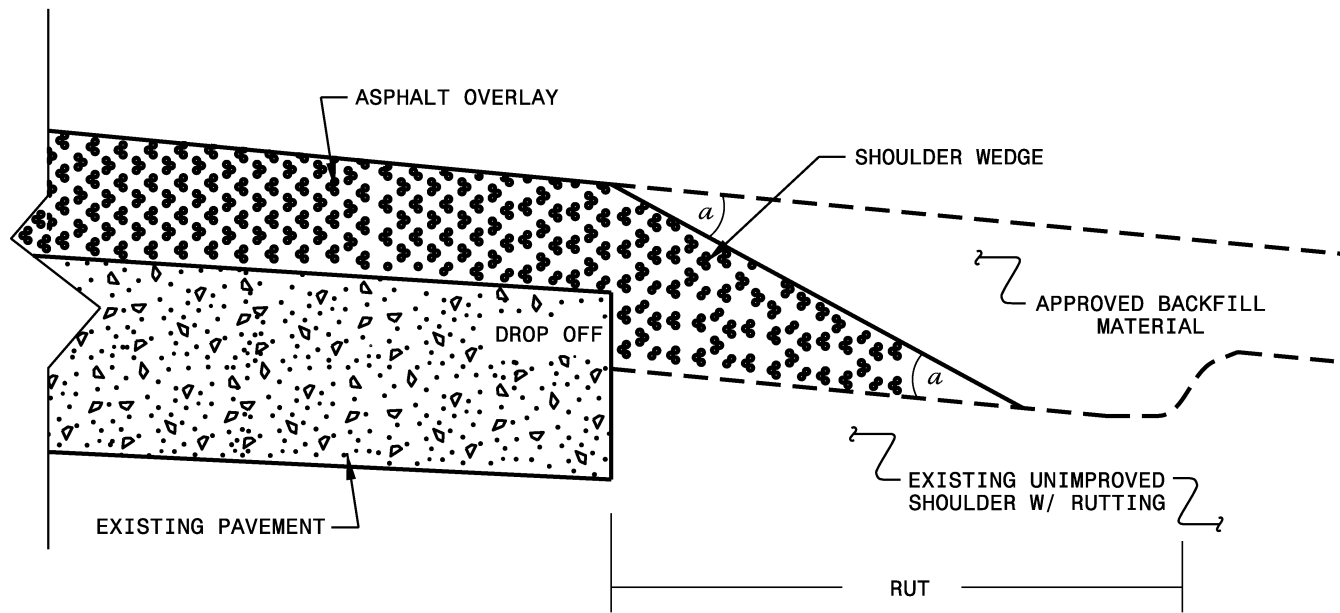
- NOTES:
- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN BONDED WEARING COURSE.
 - 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
 - 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT AS APPROVED BY THE ENGINEER.



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



SHOULDER WEDGE DETAIL
 (Resurfacing Projects w/ NO Widening)

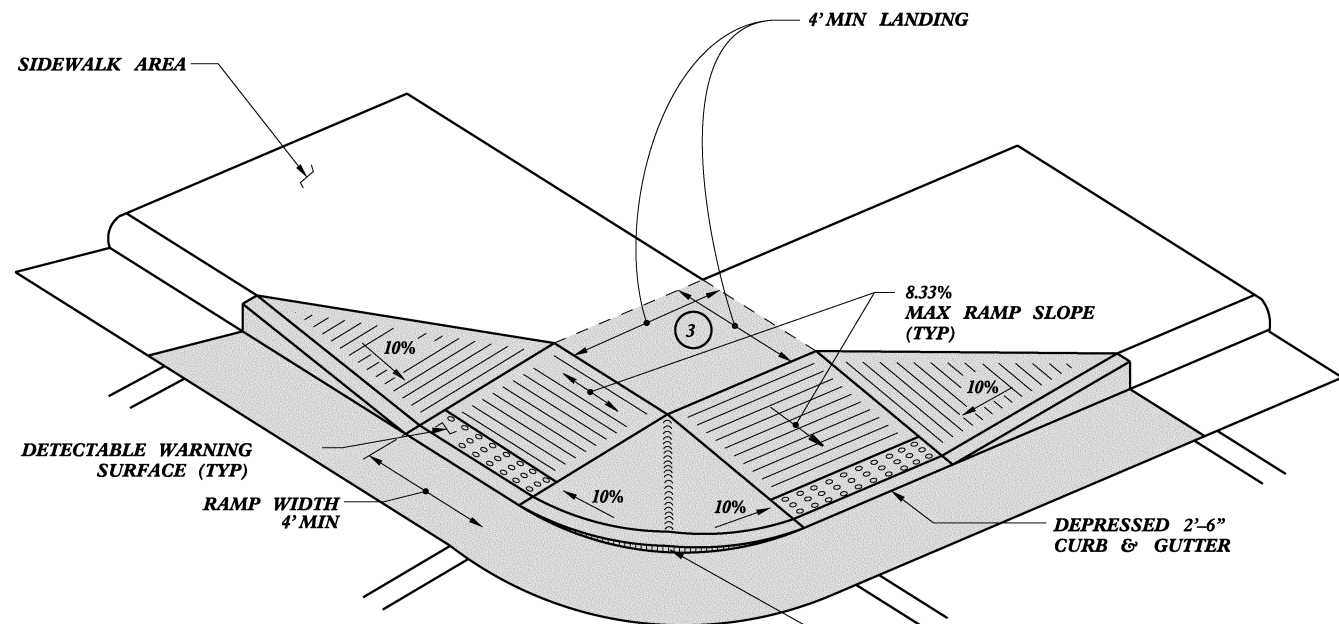


SHOULDER WEDGE DETAIL
 (Resurfacing Adjacent to
 Rutted Shoulder)

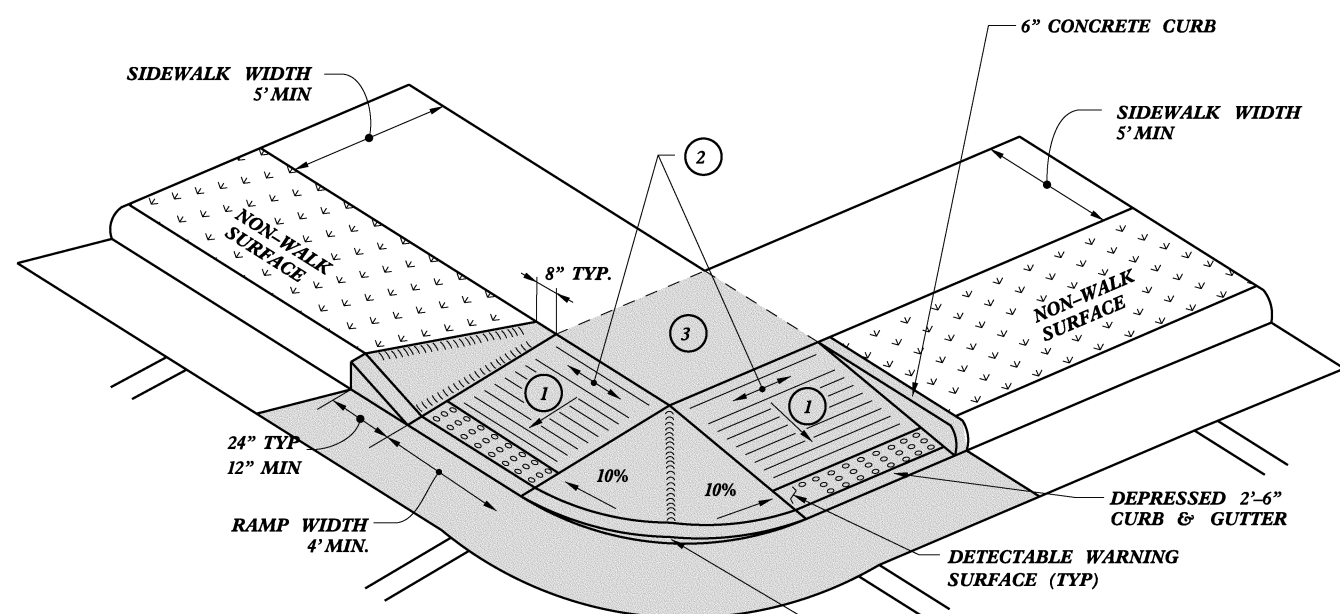
- SHOULDER WEDGE ANGLE = 30°

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

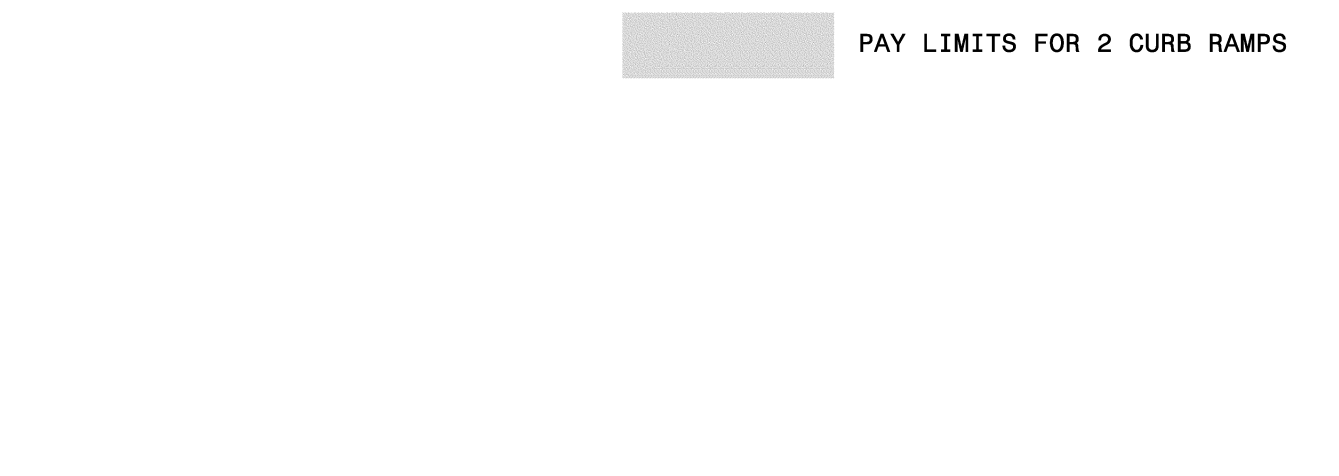
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 C:\Users\pjpporter\Documents\Projects\Division 12\Catawba May 2017\Revised Shoulder Wedge Detail.dgn
 pjpporter
 630-292592



TYPE 4



TYPE 4A



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.

DocuSigned by:
 Joel S Howerton
 449E8E25522144F...



11/18/2015

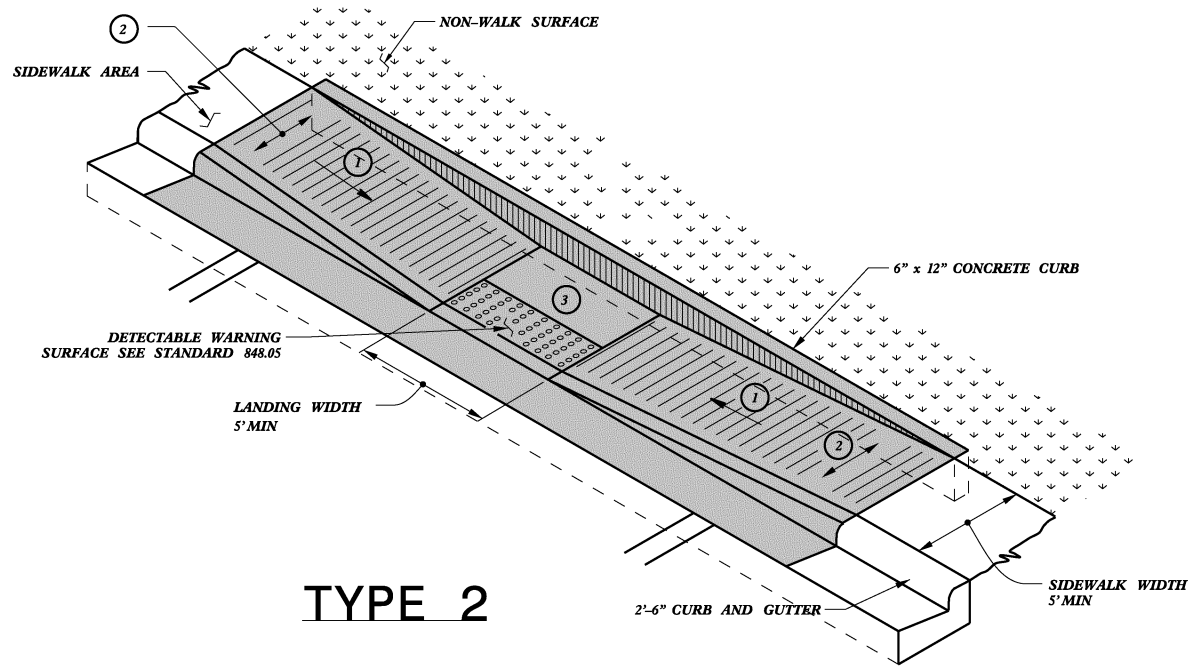
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| | |
|---|------------------|
| 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: |
| 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

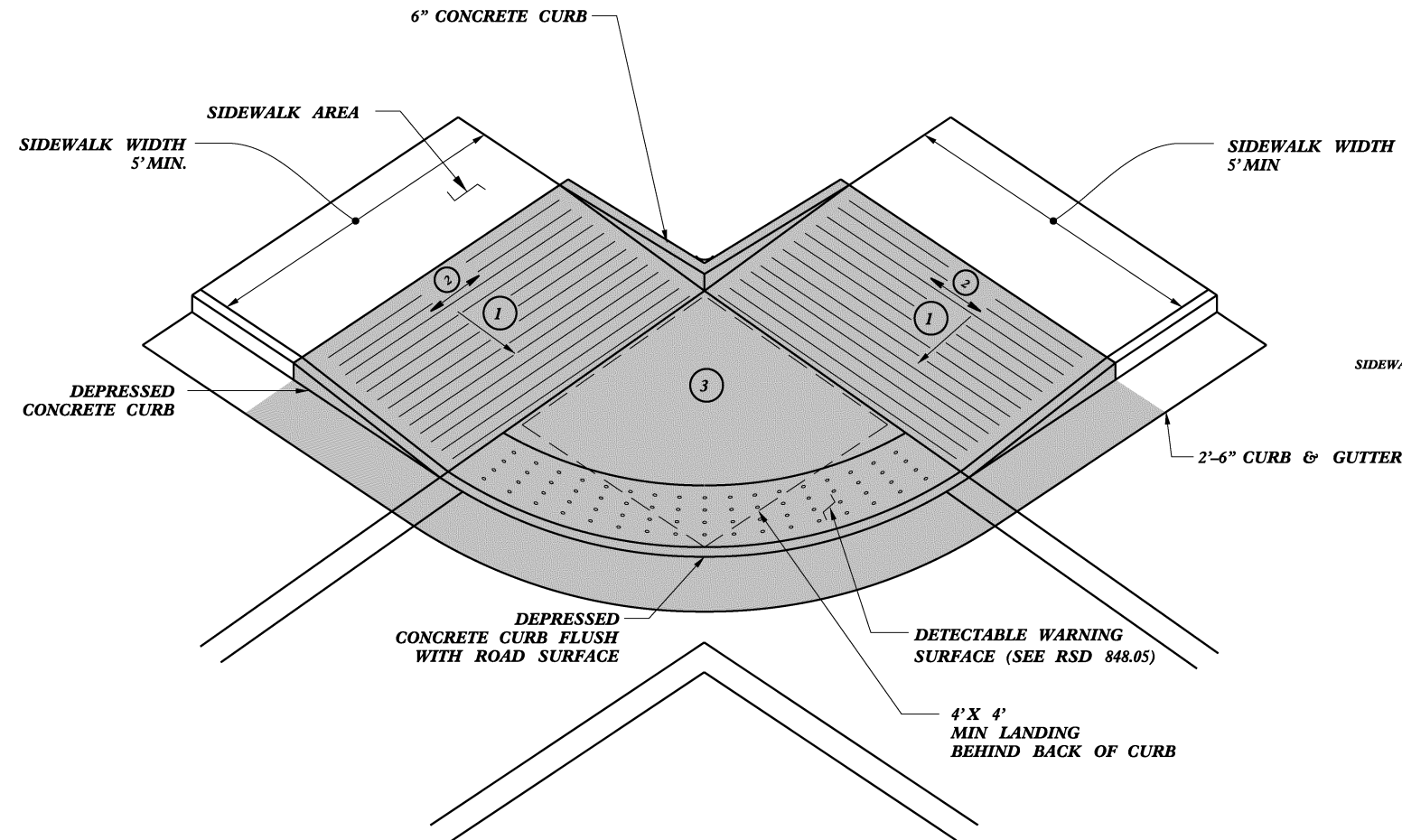
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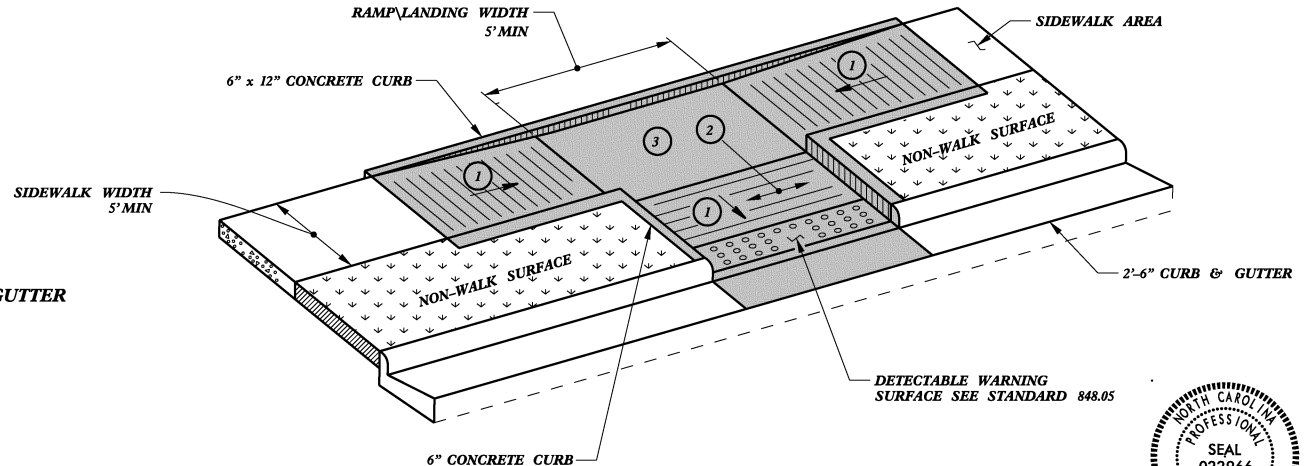
TYPE 2

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



DocuSign
 Joel S. Howerton
 11/18/2015
 449825522144E

11/18/2015

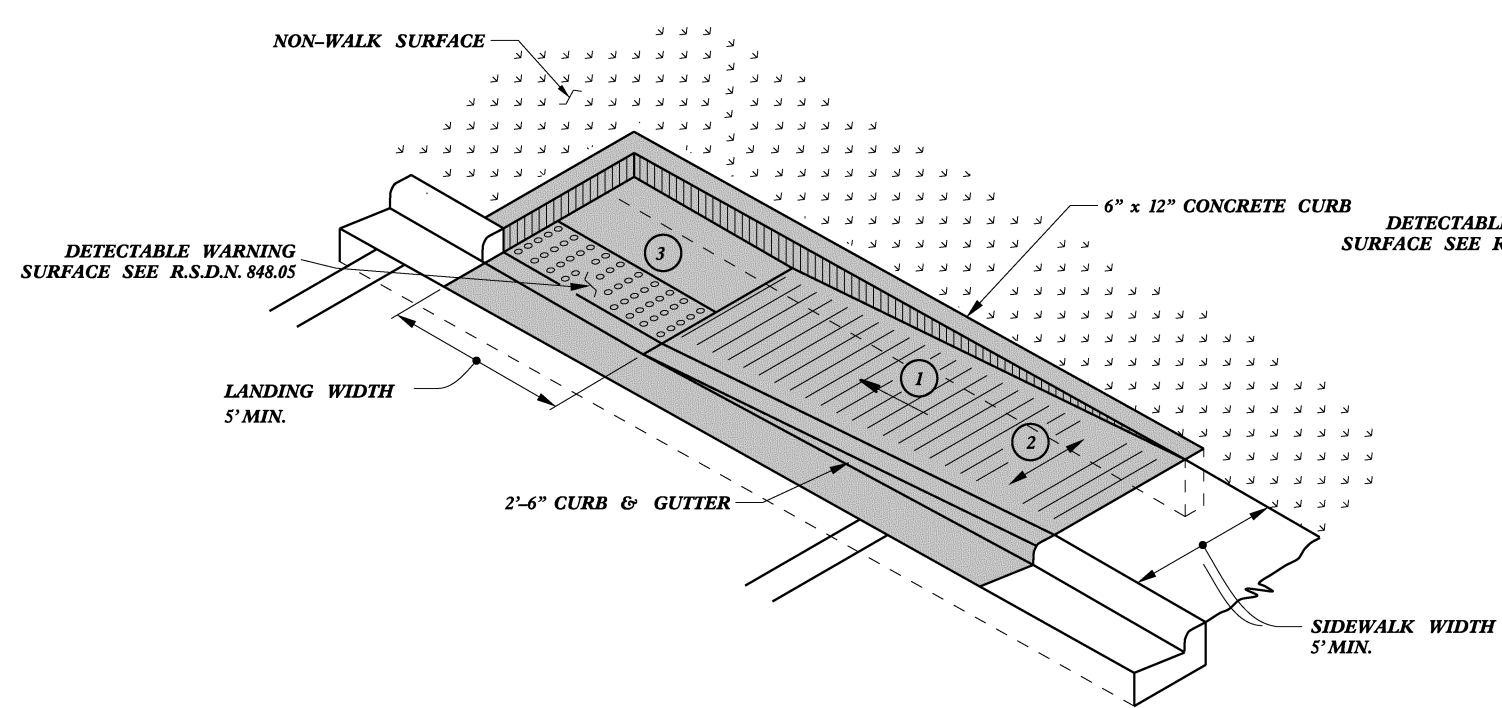
CONTRACT STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

CURB RAMPS
 Parallel Ramps

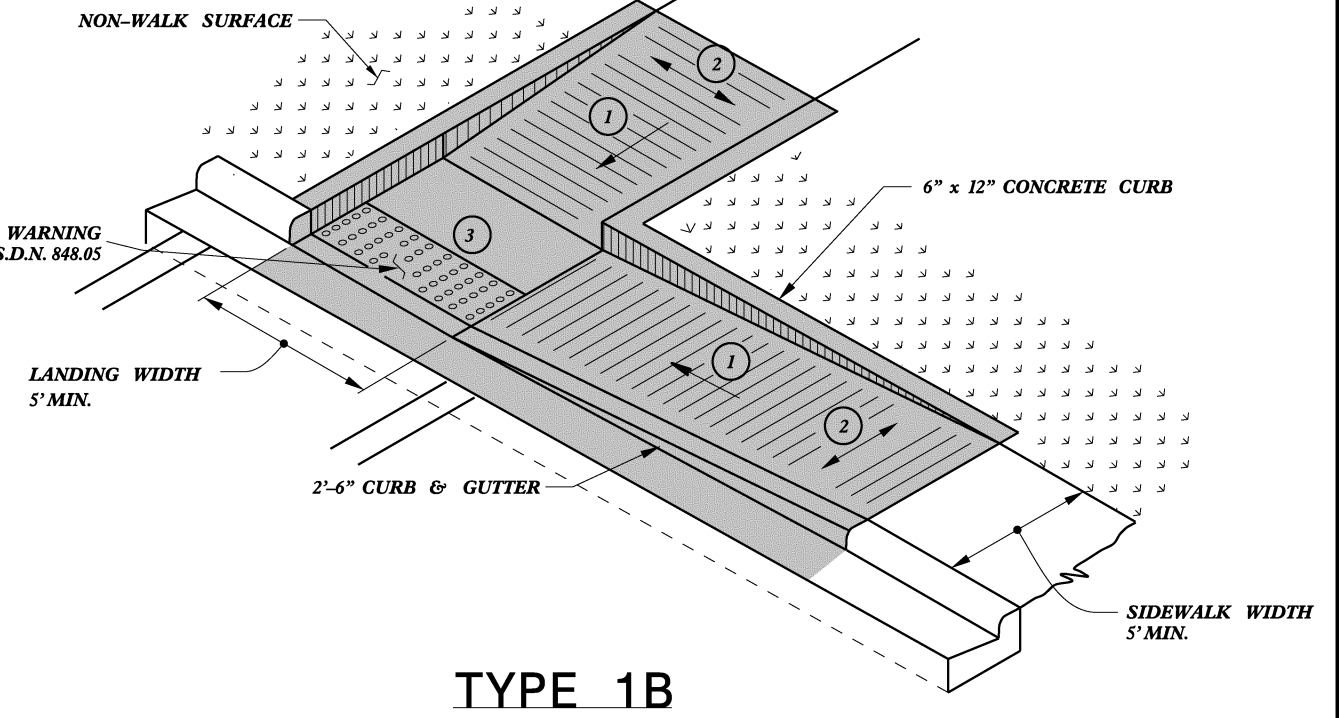
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REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

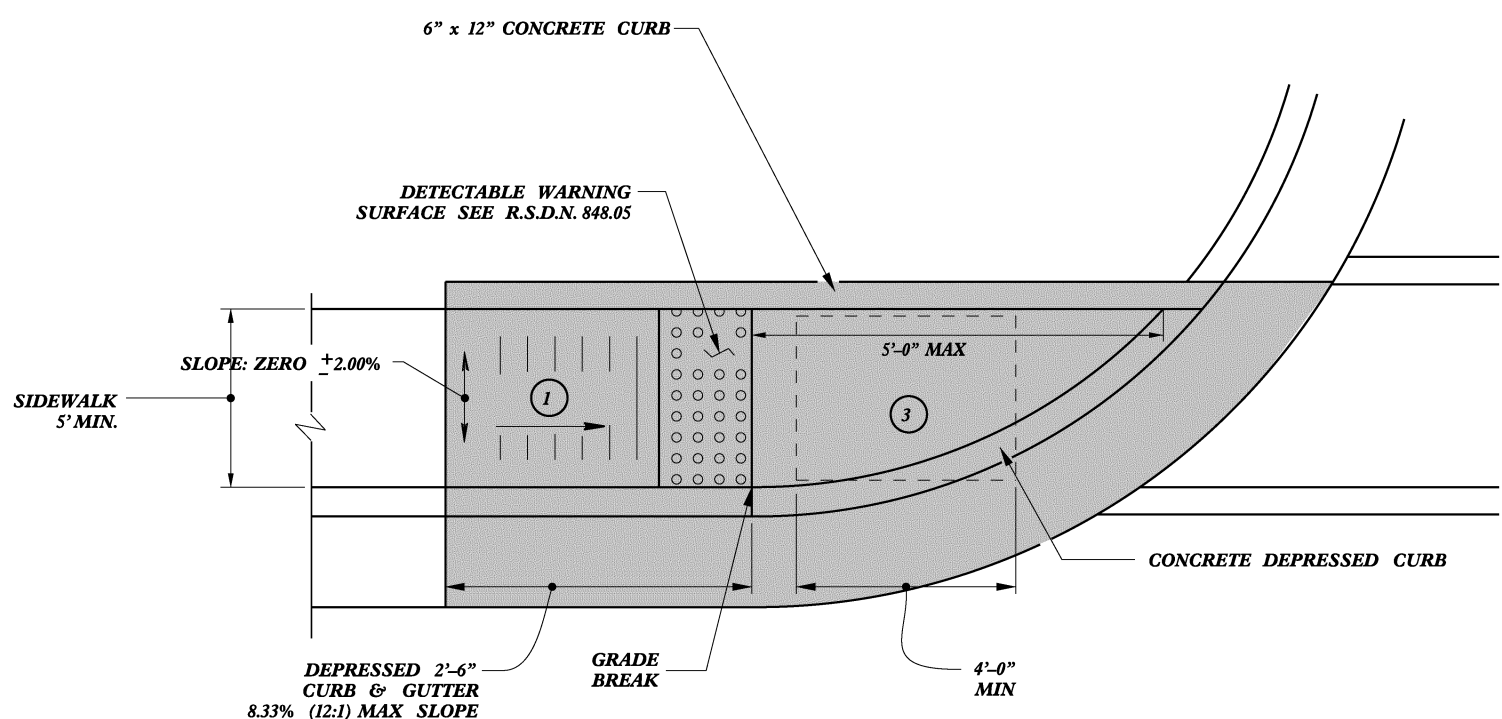
5/14/99



TYPE 1A



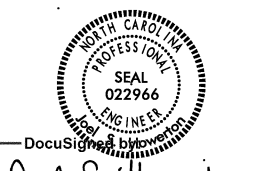
TYPE 1B



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.



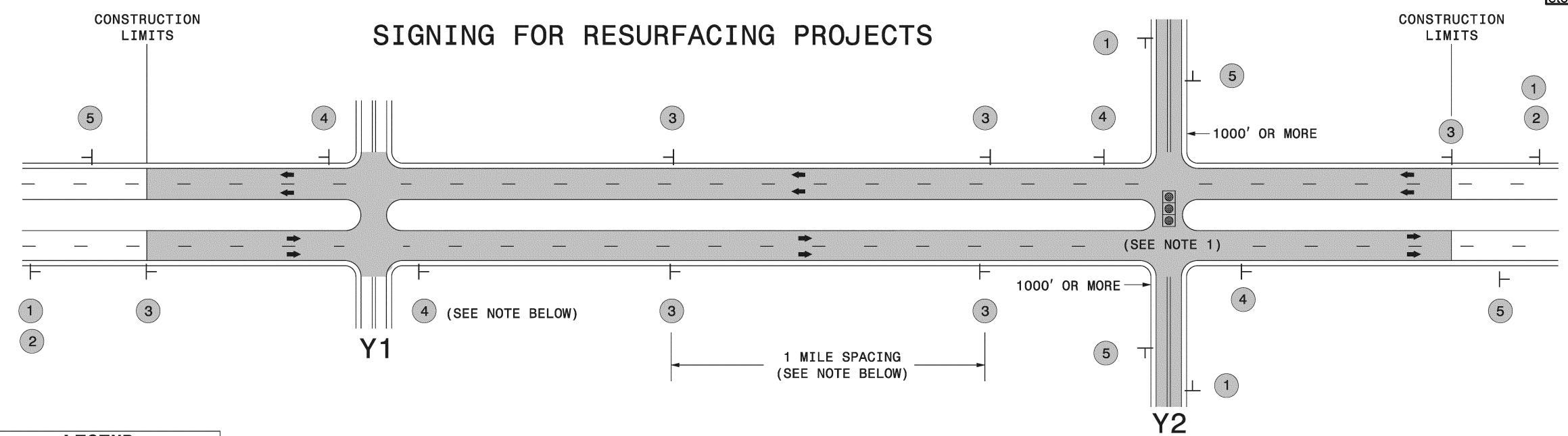
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Joel S. Howerton
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 11/18/2015

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| | |
|--|------------------|
| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 | FAX 919-250-4119 |
| CURB RAMPS | |
| Directional 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



LEGEND
 | STATIONARY SIGN
 ← DIRECTION OF TRAFFIC FLOW

MAINLINE (-L-) SIGNING

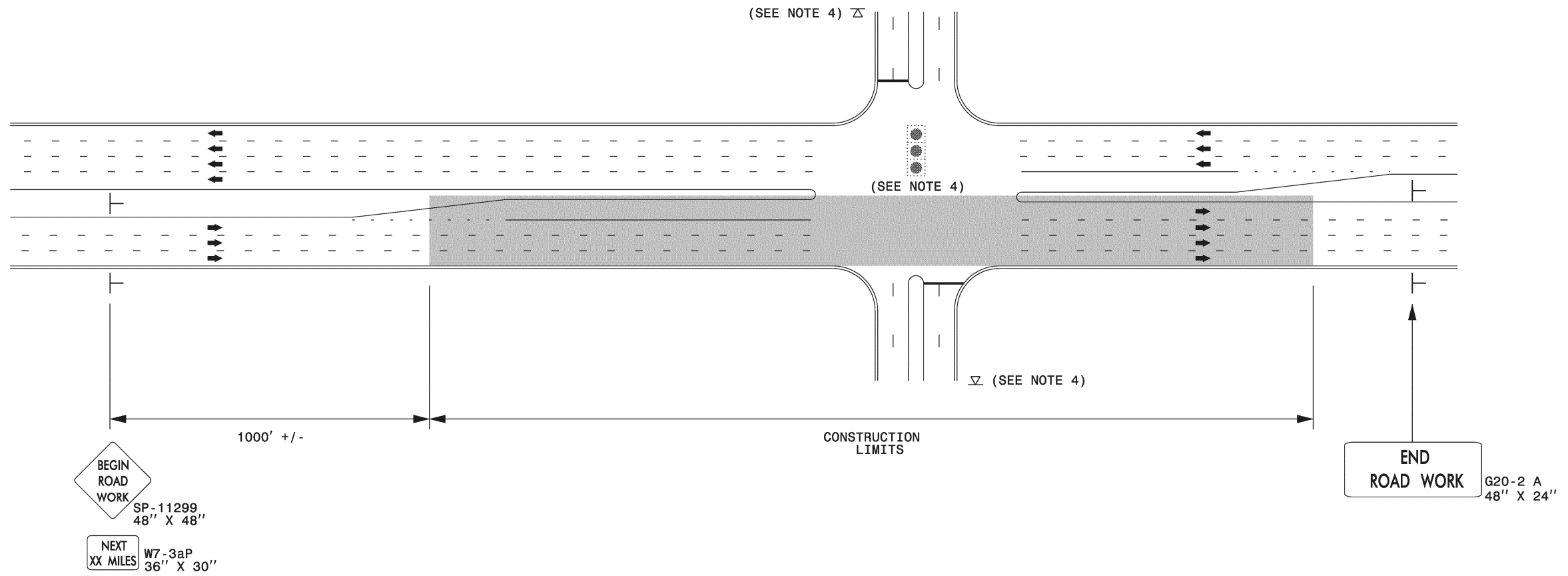
-Y- LINE SIGNING

| | | | |
|---|------|--|---|
| 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>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <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;"> <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;"> <small>W20-7 A 48" X 48"</small> </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> <p>NOTES:</p> <ol style="list-style-type: none"> 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. |
| | | <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> | |

3/23/2015 C:\Users\rmgarrrett\Downloads\Resurfacing_AdvWarn_LrSu_Shldr.dgn User:rmgarrrett

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

URBAN / SUBURBAN WORKZONES

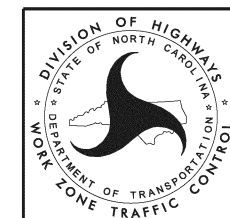


NOTES:

- 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.

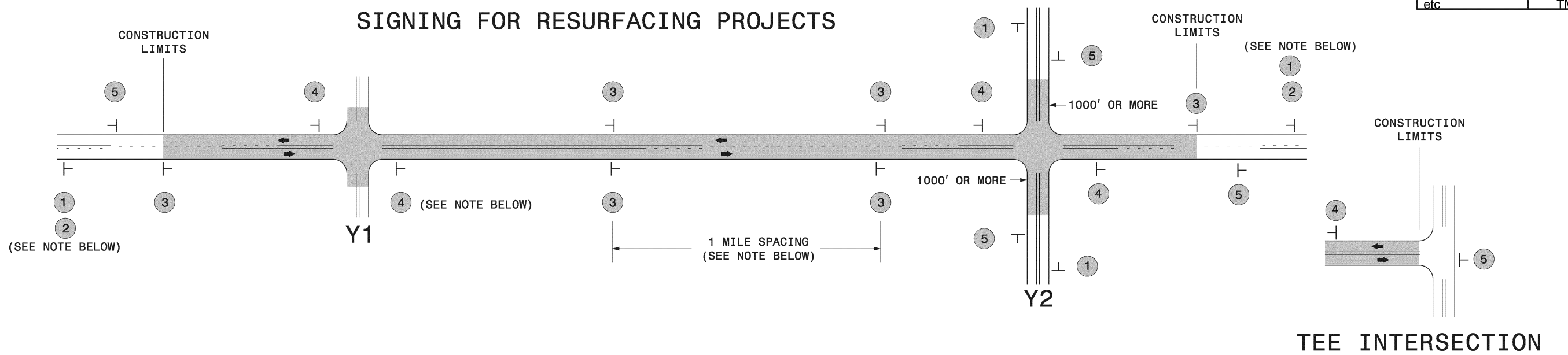
LEGEND

- ┆ STATIONARY SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



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

SIGNING FOR RESURFACING PROJECTS



| LEGEND | |
|--------|---------------------------|
| ┆ | STATIONARY SIGN |
| ← | DIRECTION OF TRAFFIC FLOW |

MAINLINE (-L-) SIGNING

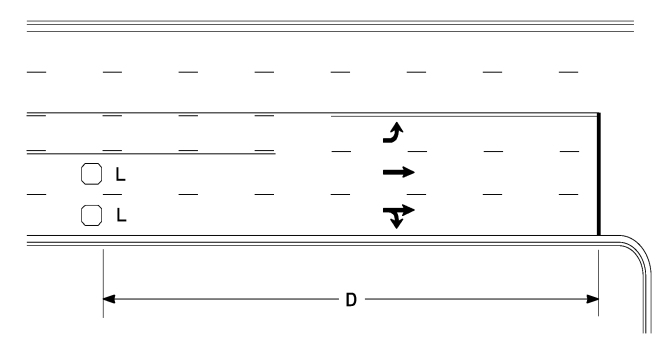
-Y- LINE SIGNING

| | | | | |
|---|---|---|---|--|
| SIGNING NOTES AND PLACEMENT PER DIRECTION | 1 | <small>W20-1 48" X 48"</small> | <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>NO REQUIRED STATIONARY SIGNING FOR THE FOLLOWING -Y- LINE CONDITIONS:</p> <ol style="list-style-type: none"> 1) LESS THAN 1000' OF RESURFACING ALONG -Y- LINE 2) SUBDIVISION ROADS 3) DEAD END ROADS <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;"> <small>W20-1 48" X 48"</small> </div> <div style="text-align: center;"> <small>W20-7 A 48" X 48"</small> </div> </div> <p>PLACED 500' IN ADVANCE OF FLAGGER. PLACED 250' IN ADVANCE OF FLAGGER.</p> |
| | 2 | <small>W7-3aP 24" X 18"</small> | | |
| | 3 | <small>SP 13106 48" X 48"</small> | <p>- PLACE INITIALLY AT THE CONSTRUCTION LIMITS AND SPACE 1 MILE APART THEREAFTER.</p> <p>- AT TEE INTERSECTIONS INSTALL INITIALLY 0.5 MILE FROM INTERSECTION AND SPACE 1 MILE APART THEREAFTER.</p> | |
| | 4 | <small>SP 13106 48" X 48"</small> | <p>- THESE ARE FOR -Y- LINES THAT ARE "THROUGH" ROADWAYS. DEAD END AND SUBDIVISION ROADS ARE NOT "THROUGH" ROADWAYS.</p> <p>- INSTALL 500' +/- FROM EACH -Y- LINE APPROACH AS SHOWN ABOVE.</p> <p>- 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.</p> <p>- 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>- FOR TEE INTERSECTIONS, INSTALL WITHIN 500' +/- OF THE INTERSECTION ALONG -L- LINE.</p> | |
| | 5 | <small>G20-2 A 48" X 24"</small> | <p>PLACE 500' FOLLOWING THE END OF CONSTRUCTION LIMITS OR AS SHOWN WHEN WORK ENDS AT A 3-WAY TEE INTERSECTION.</p> | |

4/20/2016 C:\Users\rmgarrrett\Desktop\Resurfacing_AdvWarn_2Ln.dgn User:rmgarrrett

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

High Speed Detection (≥40 mph)

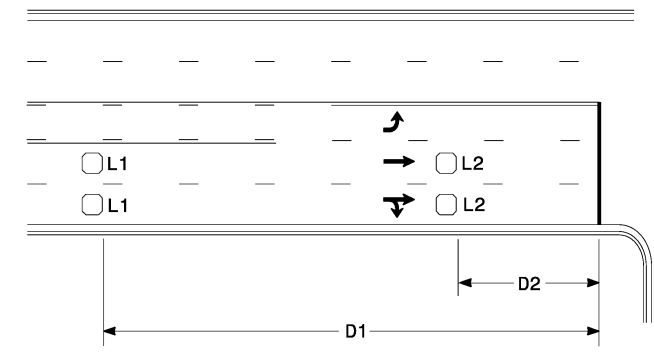


| Speed Limit mph | D ft |
|--------------------|---------|
| 40 | 250 |
| 45 | 300 |
| 50 | 355 |
| 55 | 420 |

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

Volume Density Operation

OR

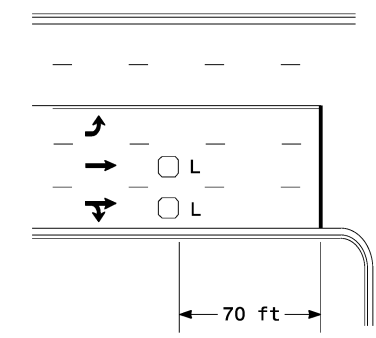


| Speed Limit mph | D1 ft | D2 ft |
|--------------------|----------|----------|
| 40 | 250 | 80 |
| 45 | 300 | 90 |
| 50 | 355 | 100 |
| 55 | 420 | 110 |

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

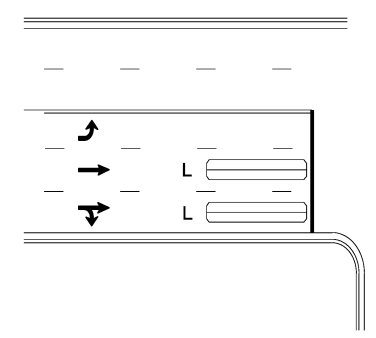
"Stretch" Operation

Low Speed Detection (≤35 mph)



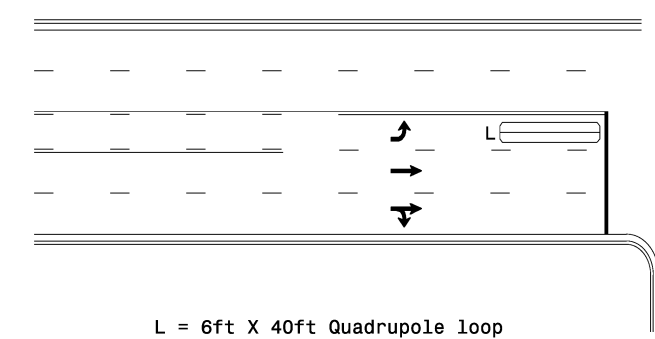
L = 6ft X 6ft
Wired in series

OR



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

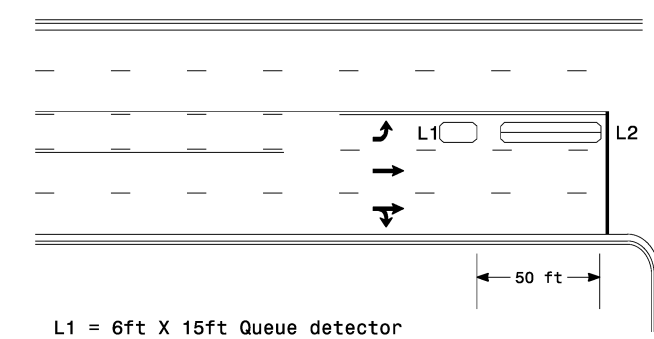
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

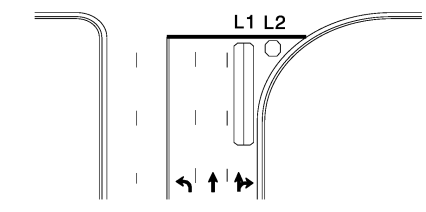
OR



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

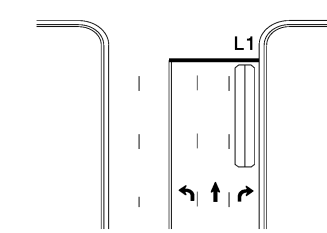
Queue Loop Detection

Right Turn Lane Detection

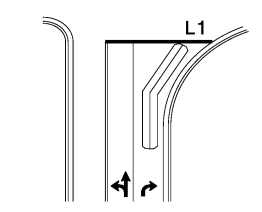


Shared Lane/
Wide Radius Turn

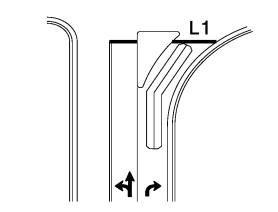
L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately



Standard Turn

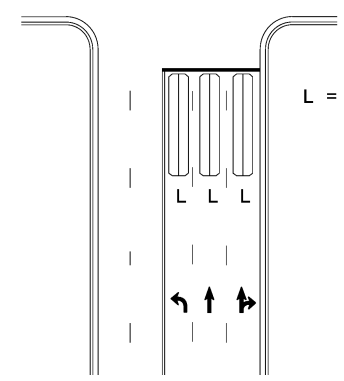


Wide Radius Turn



Channelized Turn

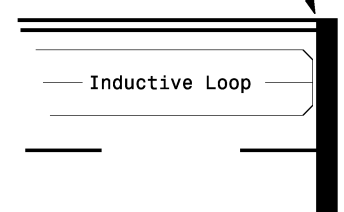
Side Street Detection



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

| | | | |
|--|---|----------------------------------|-----------------------|
| | Typical Signal Loop Locations | | |
| | PLAN DATE: January 2015 PREPARED BY: PLA | REVIEWED BY: JPG REVIEWED BY: | |
| 750 N. Greenfield Pkwy, Garner, NC 27529 | | INIT. DATE DATE | SEAL INVENTORY NO. |