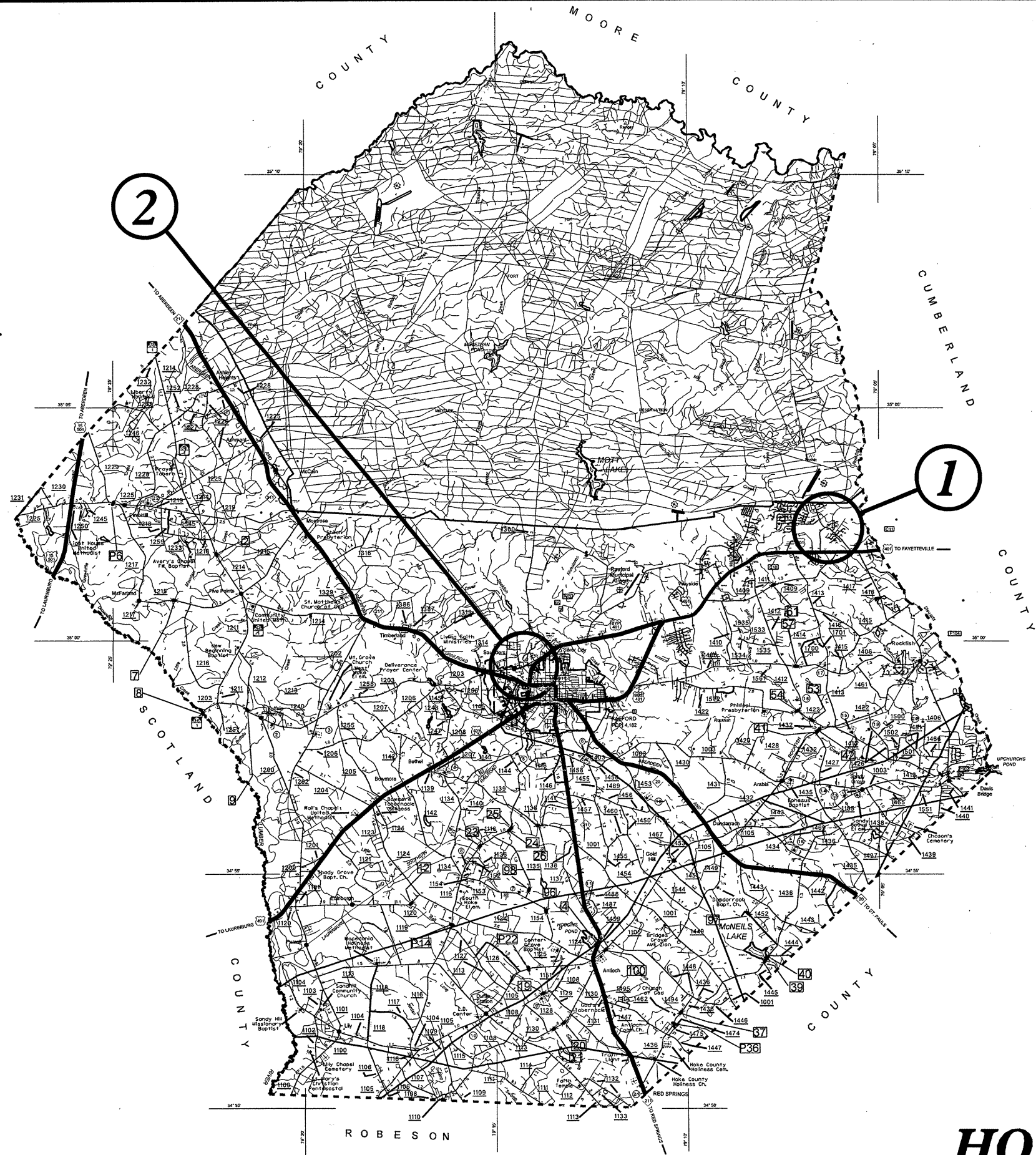
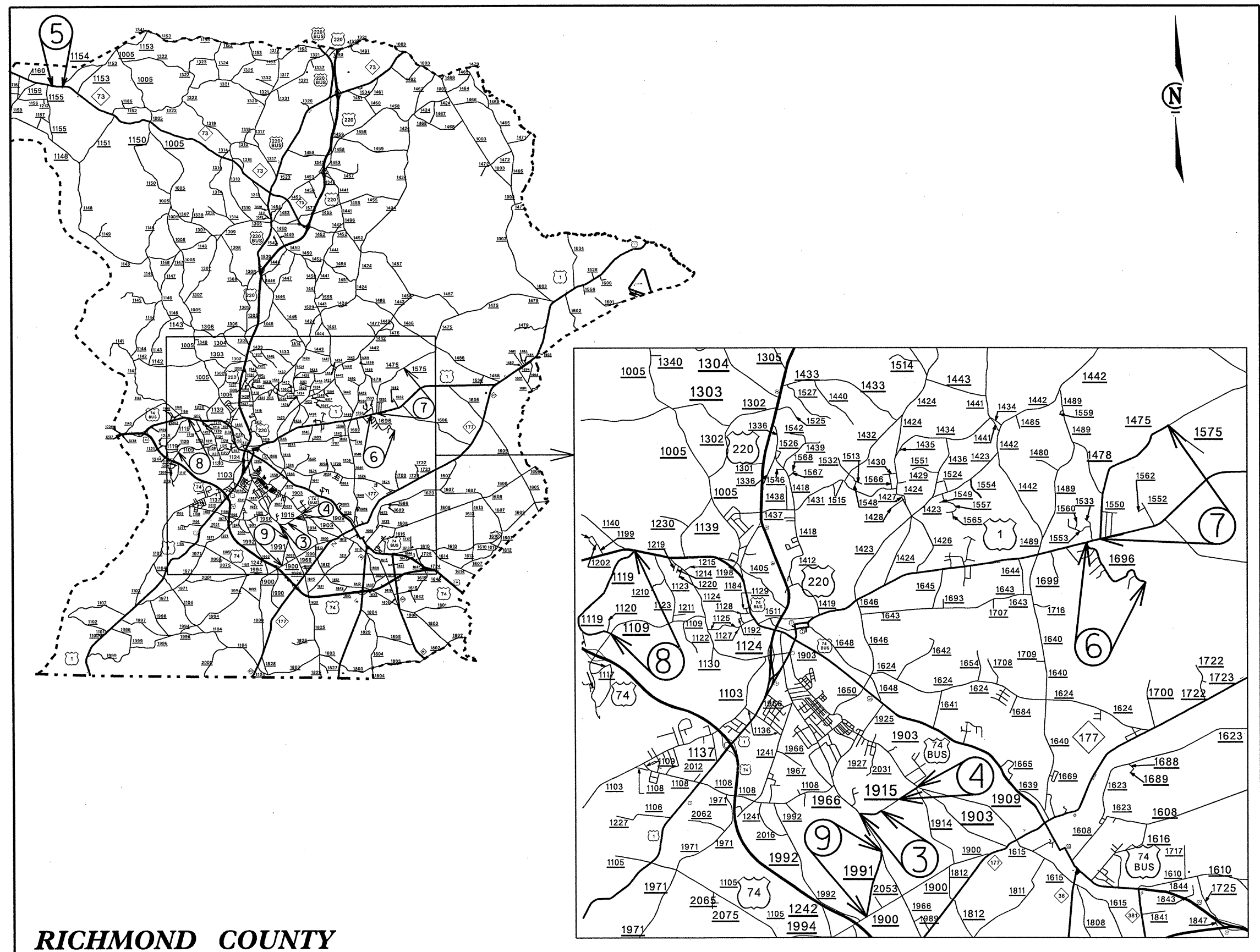
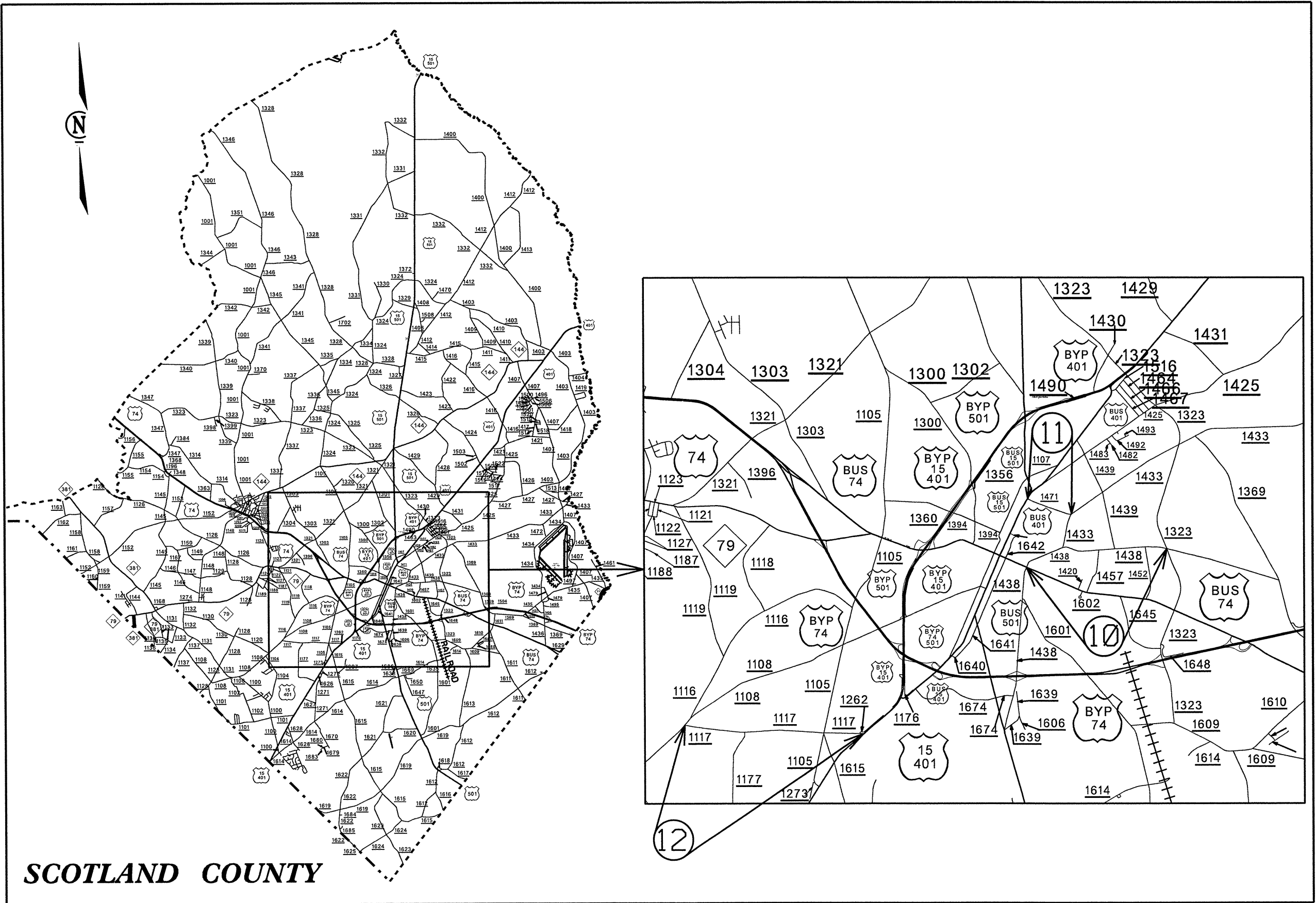


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HOKE COUNTY

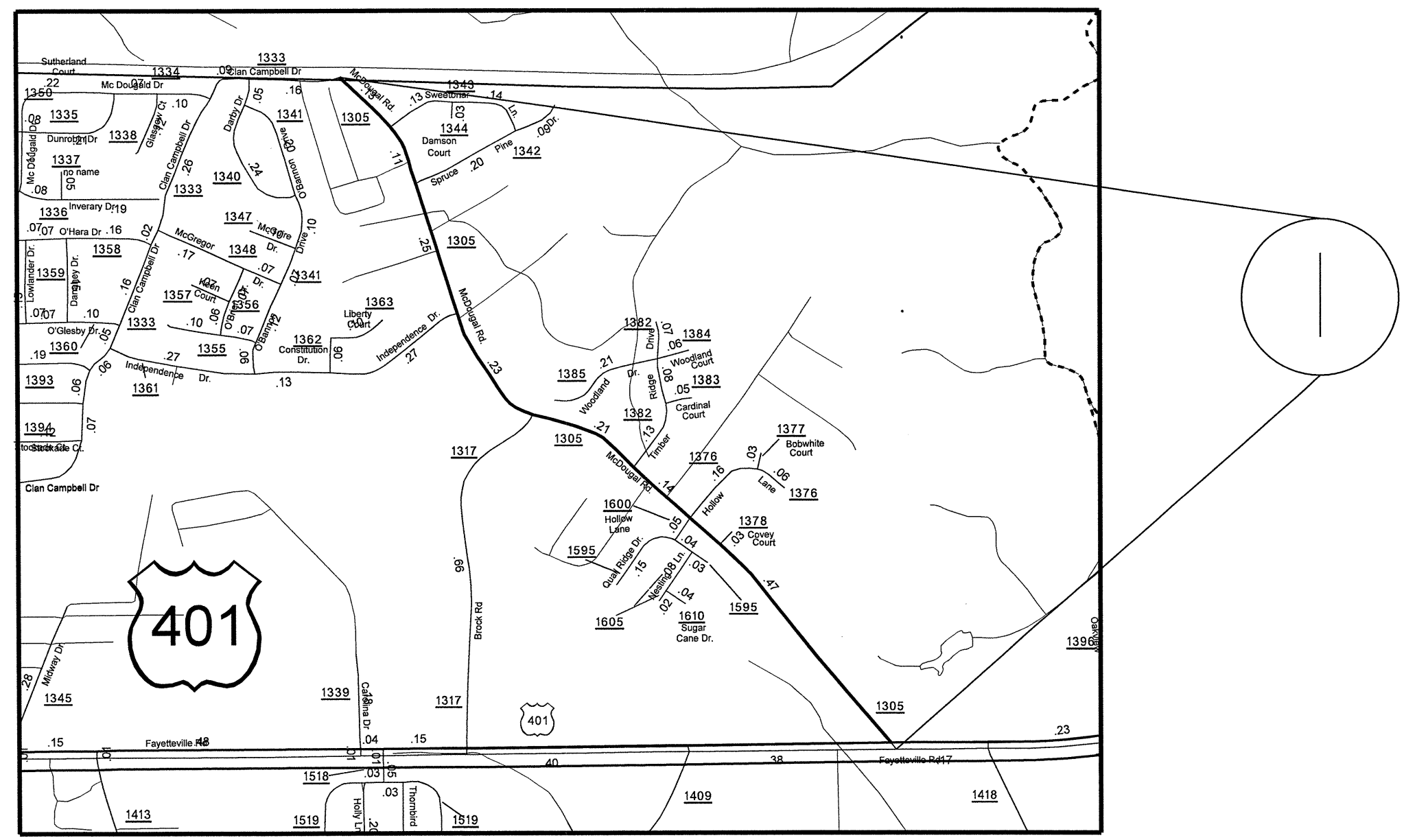




SCOTLAND COUNTY

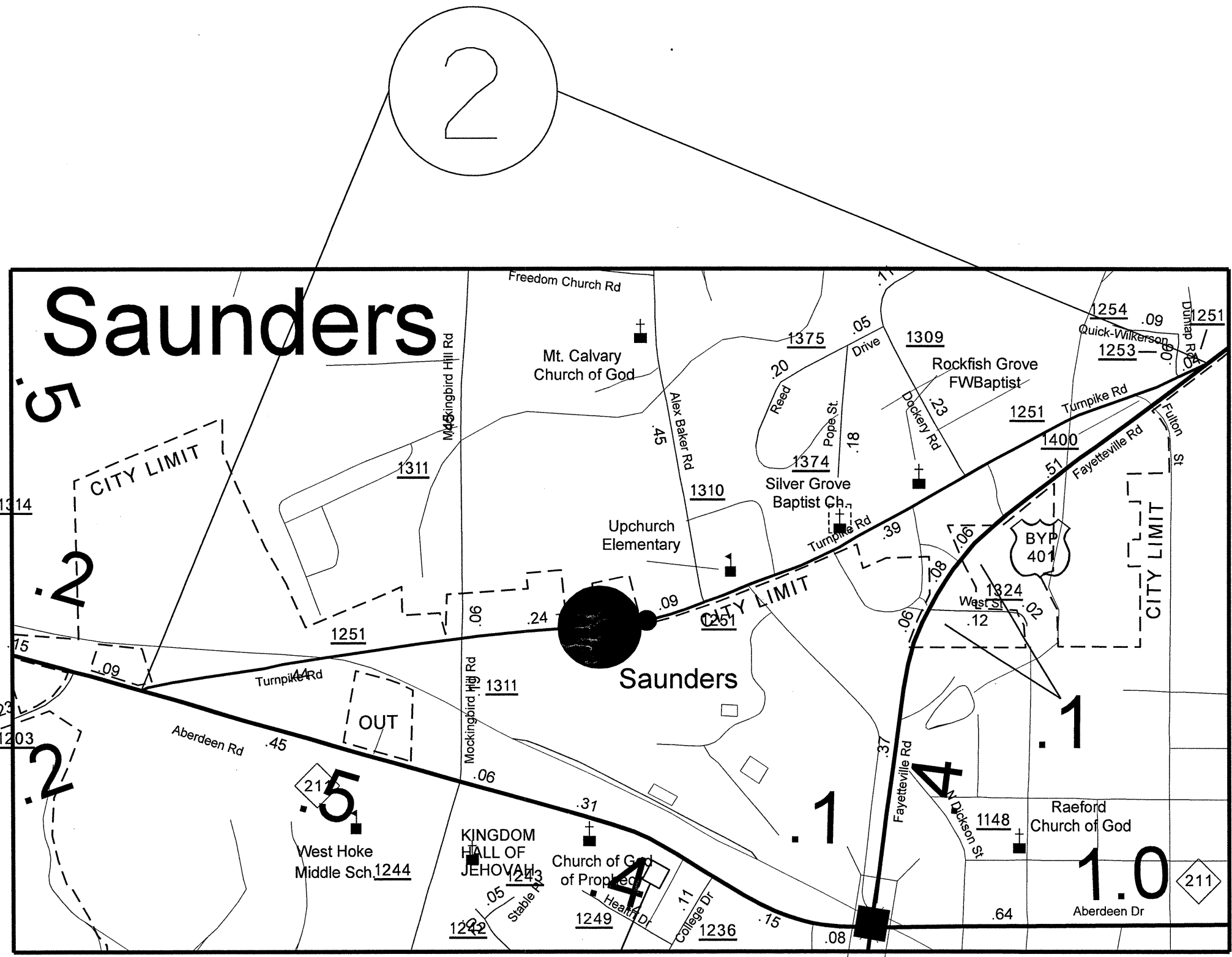
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| | |
|---|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| BCR.20471.18, 8C.077073 8CR.10771.18, 8CR.20771.18 8CR.20831.18 | 4 |



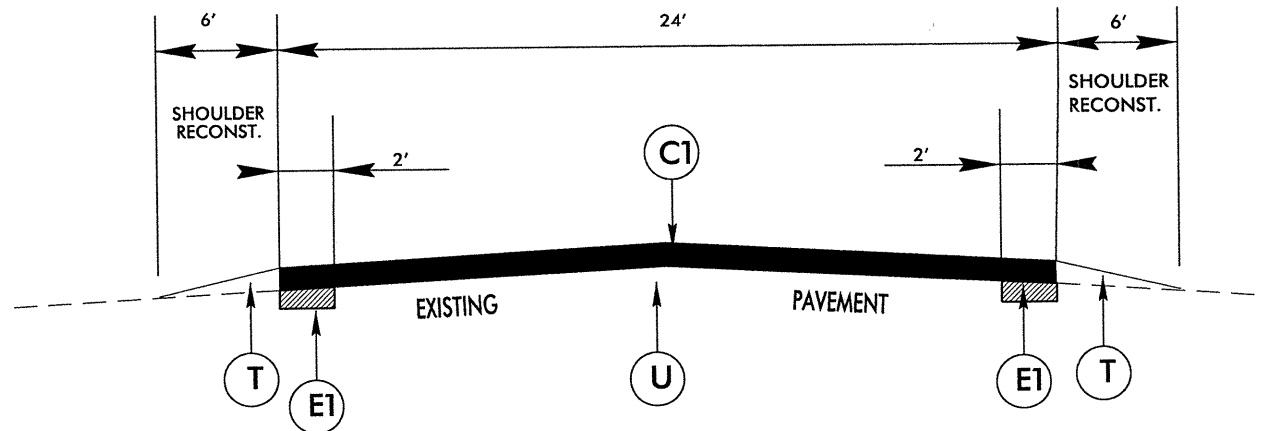
VICINITY MAP

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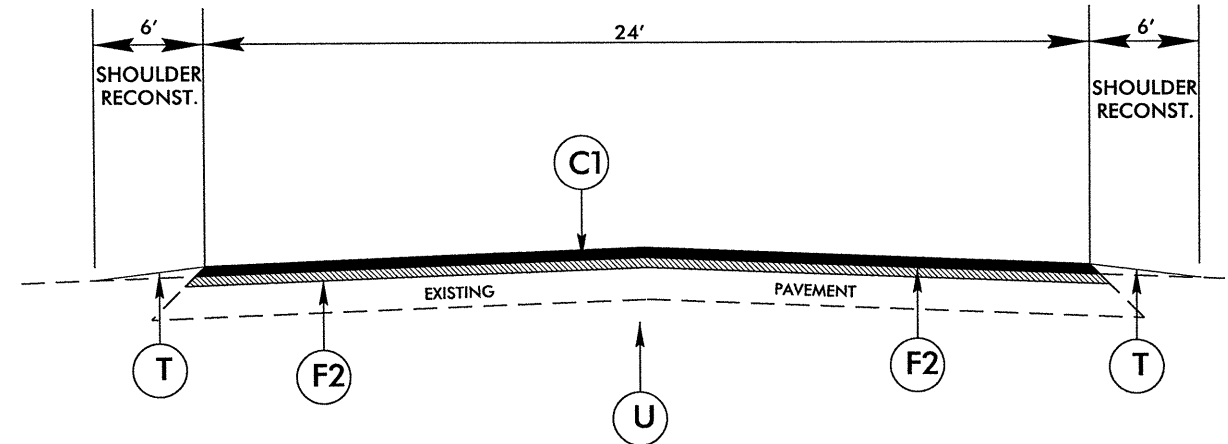


VICINITY MAP

HOKE, RICHMOND & SCOTLAND COUNTY TYPICAL SECTIONS

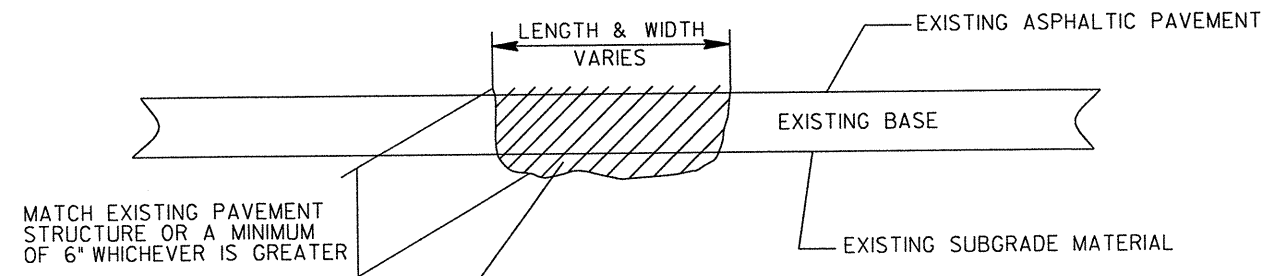


TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2

DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING DETAIL NO. 1



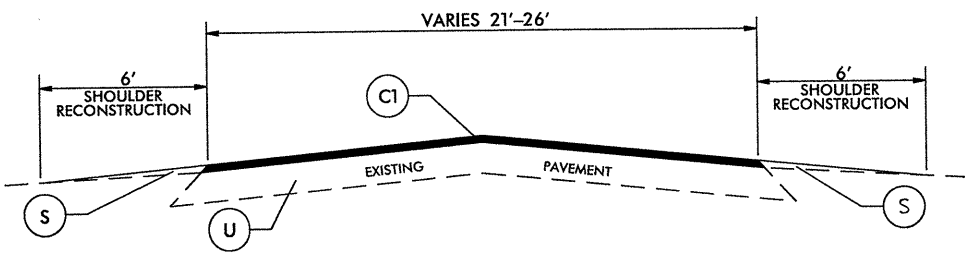
SAW AND REMOVE EXISTING ASPHALT PAVEMENT TO NEAT LINES AND REMOVE EXISTING LOOSE BASE AND/OR SUBGRADE MATERIAL AND REPLACE WITH ASPHALT CONCRETE SURFACE COURSE B-25.0 B OR I-19.0 B, AS DIRECTED BY THE ENGINEER

PAVEMENT SCHEDULE

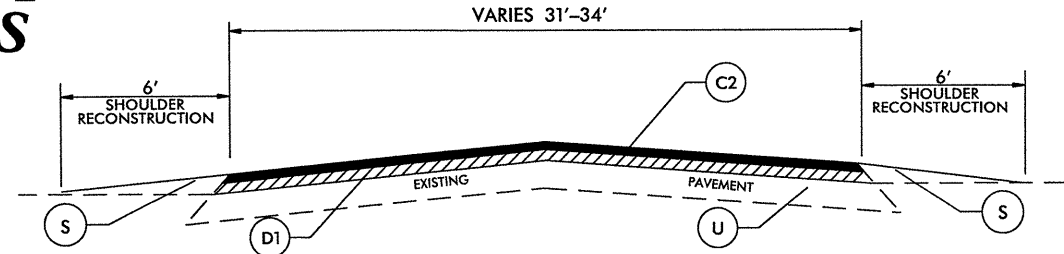
| | |
|----|--|
| C1 | PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| E1 | PROP. APPROX. 5.0" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD. |
| T | EARTH MATERIAL |
| U | EXISTING PAVEMENT |
| F2 | ASPHALT SURFACE TREATMENT, STRAIGHT SEAL (LIGHT WEIGHT AGGREGATE) |

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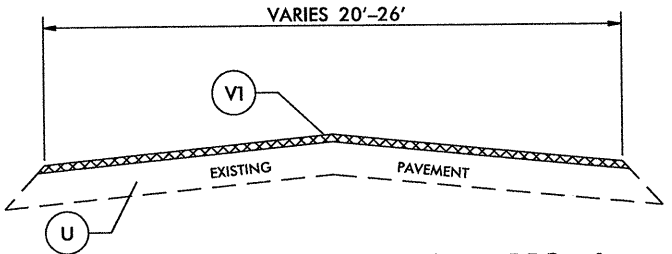
HOKE, SCOTLAND & RICHMOND COUNTY TYPICAL SECTIONS



TYPICAL SECTION NO. 3

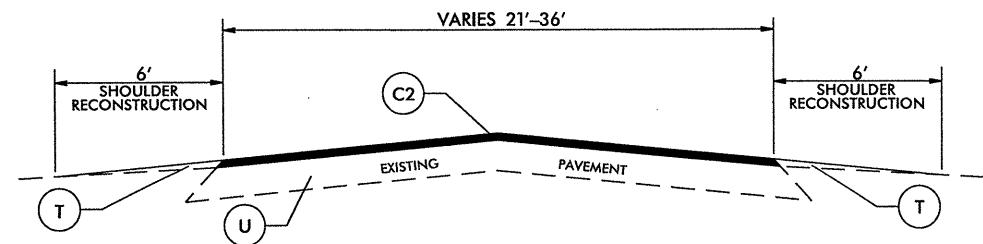


TYPICAL SECTION NO. 8



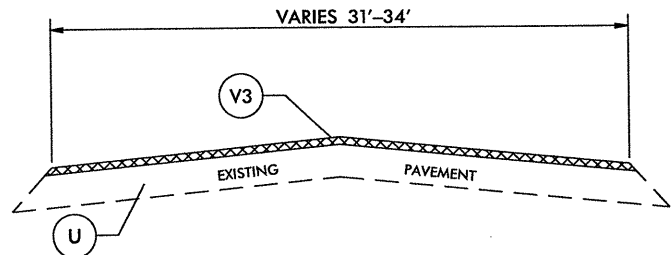
TYPICAL SECTION NO. 4

NOTE: MILLING TO BE AS DIRECTED BY THE ENGINEER.

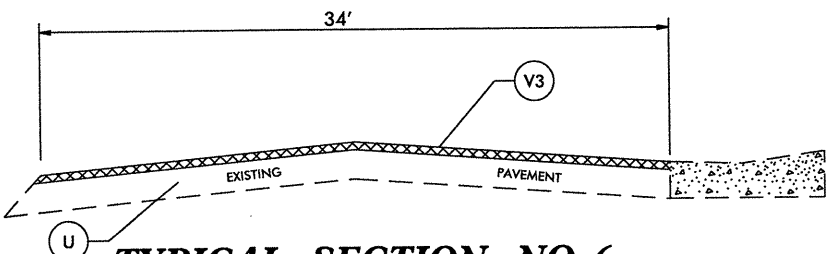


TYPICAL SECTION NO. 9

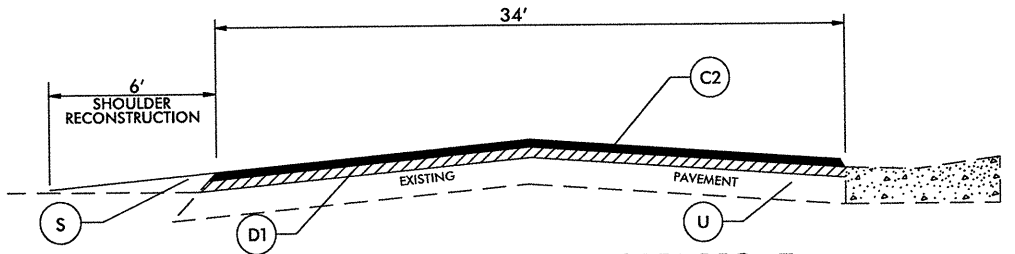
** - IN AREAS WITH MILLING, SHOULDER RECONSTRUCTION WILL NOT BE REQUIRED.



TYPICAL SECTION NO. 5



TYPICAL SECTION NO. 6



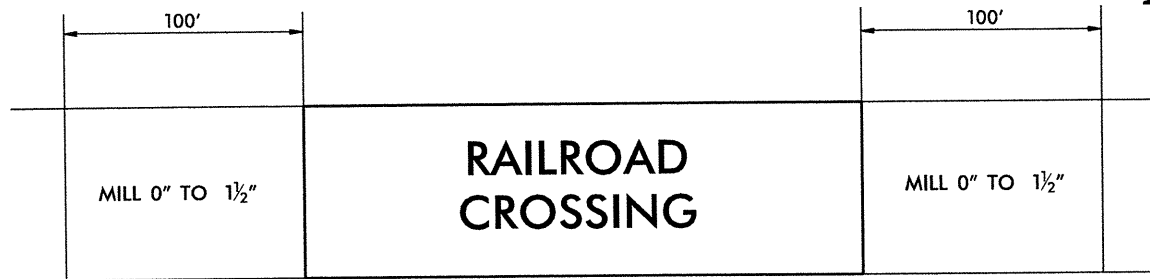
TYPICAL SECTION NO. 7

** - MILLING WILL BE AT LOCATIONS AS DETERMINED BY THE ENGINEER.

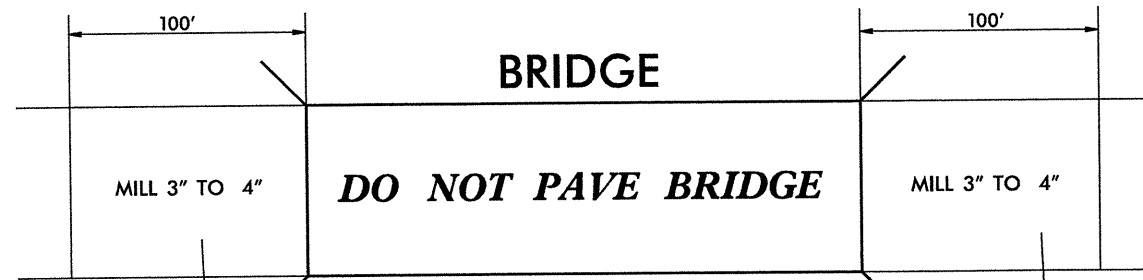
| PAVEMENT SCHEDULE | |
|-------------------|--|
| C1 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. |
| D1 | PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD. |
| S | AGGREGATE SHOULDER BORROW |
| T | EARTH MATERIAL. |
| U | EXISTING PAVEMENT. |
| V1 | MILLING 1 1/2" IN DEPTH. |
| V3 | MILLING 3" IN DEPTH. |
| V3 | MILLING 3" IN DEPTH. |
| V4 | MILLING 3" TO 4" IN DEPTH. |

RICHMOND COUNTY TYPICAL SECTIONS

| | |
|----------------------------|-----------|
| WBS ELEMENT | SHEET NO. |
| 8CR.20471.18, 8C.077073 | 8 |
| 8CR.10771.18, 8CR.20771.18 | |
| 8CR.20831.18 | |



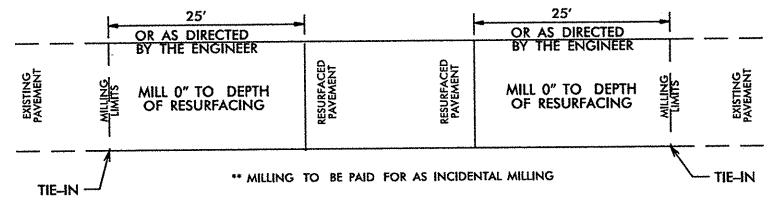
** MILLING TO BE PAID FOR AS INCIDENTAL MILLING



**TYPICAL SECTION NO. 10
NC 73 BRIDGE # 4 & 27**

V4

V4

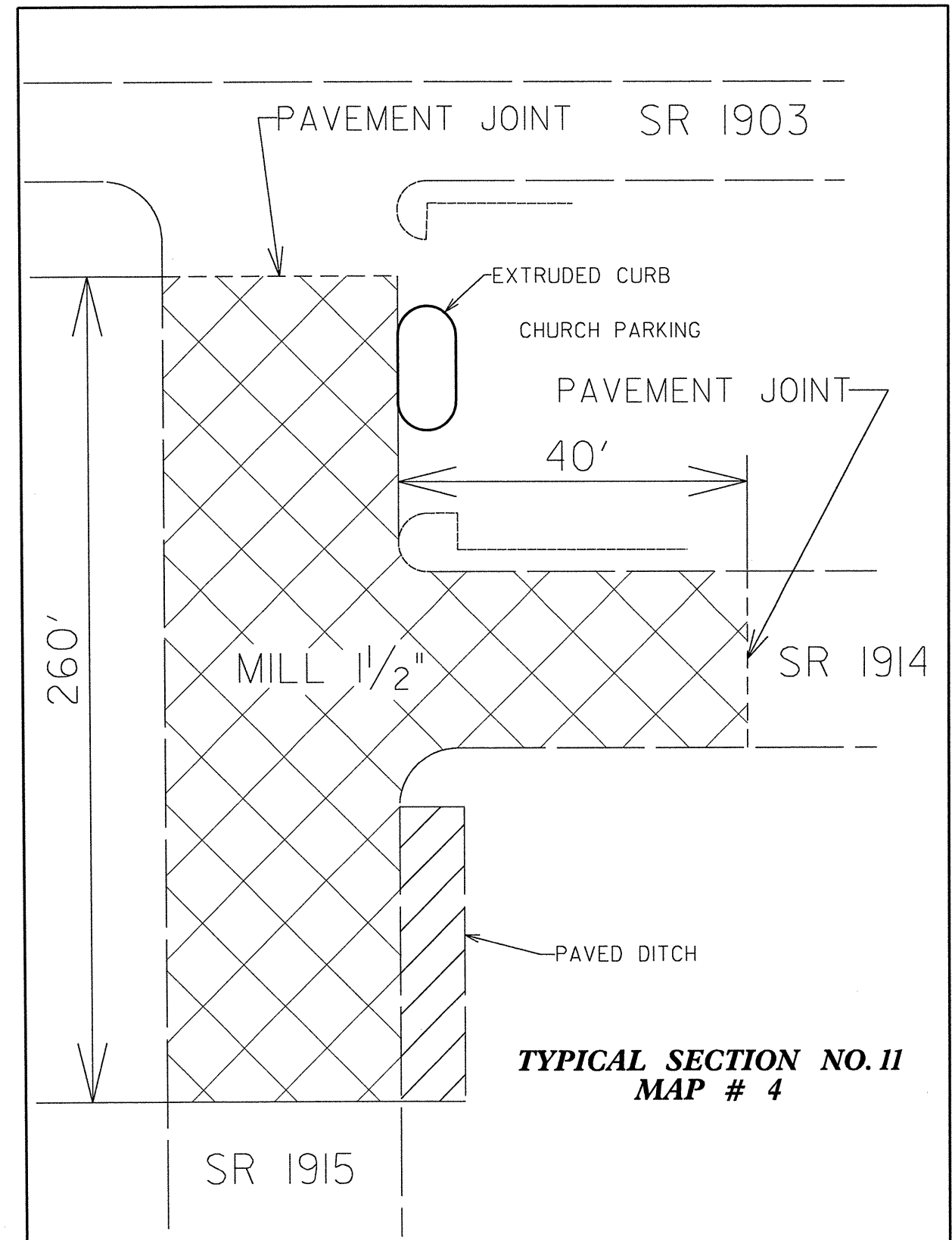


** MILLING TO BE PAID FOR AS INCIDENTAL MILLING

PAVEMENT TIE-IN DETAIL

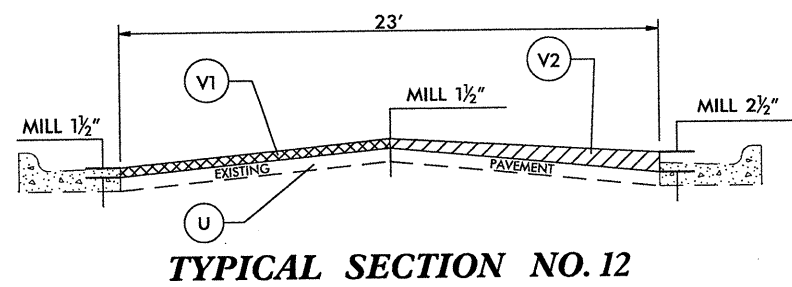
PAVEMENT SCHEDULE

| | |
|-----------|--|
| C1 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. |
| D1 | PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD. |
| T | EARTH MATERIAL. |
| U | EXISTING PAVEMENT. |
| V1 | MILLING 1 1/2" IN DEPTH. |
| V4 | MILLING 3" TO 4" IN DEPTH. |

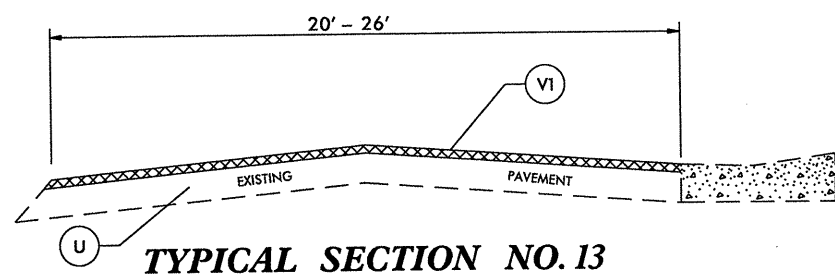


** - IN AREAS WITH MILLING, SHOULDER RECONSTRUCTION WILL NOT BE REQUIRED.
** - MILLING WILL BE AT LOCATIONS AS DETERMINED BY THE ENGINEER.

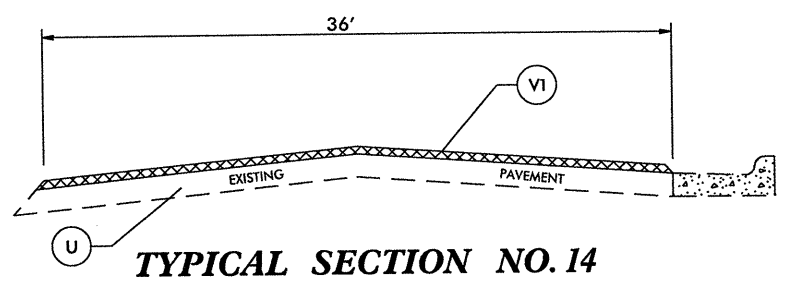
HOKE, RICHMOND & SCOTLAND COUNTY TYPICAL SECTIONS



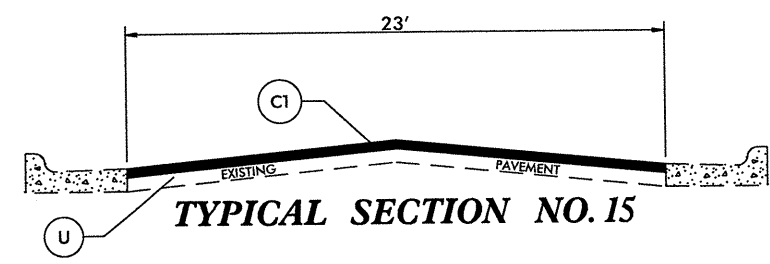
TYPICAL SECTION NO. 12



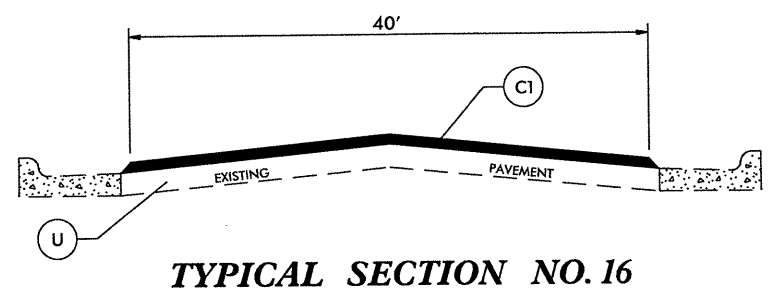
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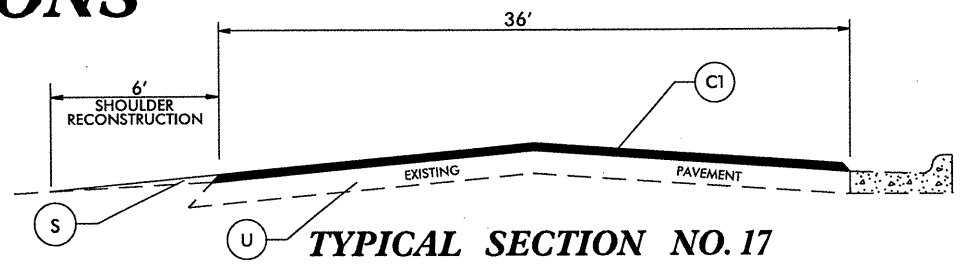
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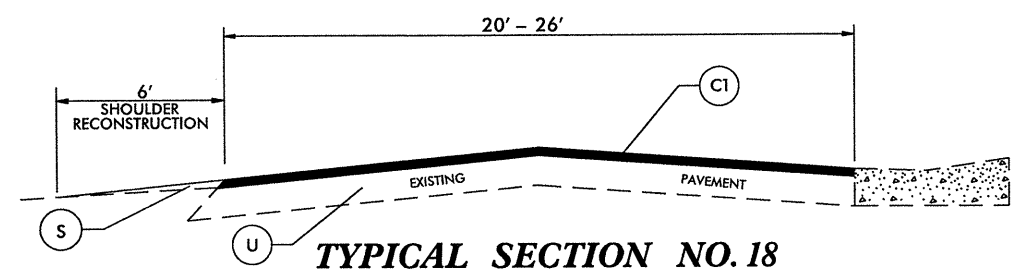
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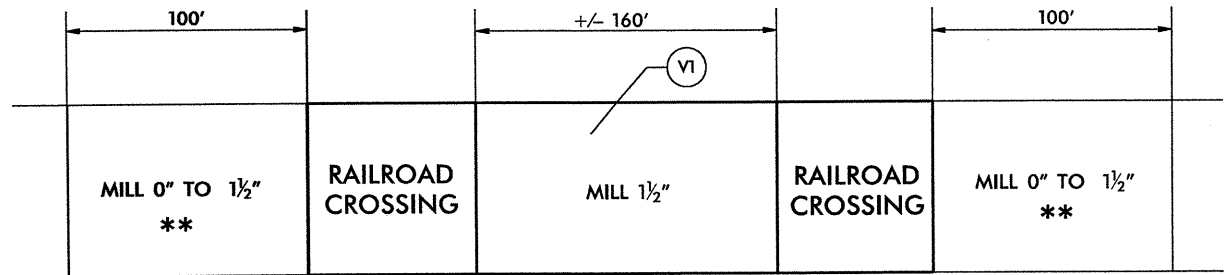
TYPICAL SECTION NO. 16



TYPICAL SECTION NO. 17



TYPICAL SECTION NO. 18



TYPICAL SECTION NO. 19

** MILLING TO BE PAID FOR AS INCIDENTAL MILLING

| PAVEMENT SCHEDULE | |
|-------------------|---|
| C1 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. |
| S | AGGREGATE SHOULDER BORROW |
| U | EXISTING PAVEMENT. |
| V1 | MILLING 1 1/2" IN DEPTH. |
| V2 | MILLING 1 1/2" TO 2 1/2" IN DEPTH. |

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| | | |
|-------------------------|----|--|
| 8CR.20471.18, 8C.077073 | 11 | |
| 8CR.10771.18, ETC. | | |

SUMMARY OF QUANTITIES

| PROJECT NO | COUNTY | MAP NO | ROUTE | DESCRIPTION | TYP NO | FINAL SURFACE TESTING REQUIRED | LENGTH MI | WIDTH FT | BORROW EXCAVATION CY | GENERIC GRADING ITEM - AGGREGATE SHOULDER BORROW TON | INCIDENTAL STONE BASE TONS | SHOULDER RECONSTRUCTION SMI | 1.5" MILLING SY | 3" MILLING SY | 3" TO 4" MILLING SY | 1.5" TO 2.5" MILLING SY | INCIDENTAL MILLING SY | BASE COURSE, B25.0B TONS | INTERMEDIATE COURSE, I19.0B TONS | SURFACE COURSE, S9.5B TONS |
|--|----------|--------|---------|--|------------------|--------------------------------|---------------|----------|----------------------|--|----------------------------|-----------------------------|-----------------|---------------|---------------------|-------------------------|-----------------------|--------------------------|----------------------------------|----------------------------|
| 8CR.20471.18 | Hoke | 1 | SR 1305 | FROM US 401 TO FT BRAGG BOUNDARY | 1 | NO | 1.477 | 24 | 60 | | 85 | 2.95 | | | | | 150 | 2,130 | | |
| | | 2 | SR 1251 | FROM NC 211 TO US 401 | 2 | NO | 1.402 | 24 | 60 | | 50 | 2.80 | | | | | 110 | | | |
| TOTAL FOR PROJ NO. 8CR.20471.18 | | | | | | | 2.879 | | 120 | | 135 | 5.75 | | | | | 260 | 2,130 | | |
| 8C.077073 | Richmond | 3 | SR 1915 | FROM SR 1966 TO PAVEMENT JOINT | 3 | NO | 0.11 | 22 | | 31 | | 0.22 | | | | | 500 | | | |
| | | 4 | SR 1915 | FROM PAVEMENT JOINT TO SR 1903 | 3,4,11 | NO | 0.62 | 22 | | 172 | | 1.24 | 750 | | | | 285 | | | |
| TOTAL FOR PROJ NO. 8C.077073 | | | | | | | 0.73 | | | 203 | | 1.46 | 750 | | | | 785 | | | |
| 8CR.10771.18 | Richmond | 5 | NC 73 | FROM SR 1154 INCLUDING INTERSECTION TO PAVEMENT JOINT 2850' WEST | 5-8, 10 | NO | 0.54 | 32 | | 150 | | 1.08 | | 14,150 | 1,512 | | 490 | | 1,530 | 900 |
| TOTAL FOR PROJ NO. 8CR.10771.18 | | | | | | | 0.54 | | | 150 | | 1.08 | | 14,150 | 1,512 | | 490 | | 1,530 | 900 |
| 8CR.20771.18 | Richmond | 6 | SR 1696 | FROM US 1 TO END MAINT. | 9 | NO | 1.546 | 21 | 94 | | 136 | 3.09 | | | | | 50 | | | |
| | | 7 | SR 1475 | FROM SR 1575 TO US 1 | 9 | NO | 0.93 | 23 | 56 | | 95 | 1.86 | | | | | 130 | | | |
| | | 8 | SR 1119 | FROM US 74 BUS. TO SR 1109 | 3 | NO | 2.22 | 24 | | 615 | | 4.44 | | | | | 135 | | | |
| | | 9 | SR 1991 | FROM SR 1966 TO SR 1900 | 3,4 | NO | 1.09 | 23 | | | | | 15,000 | | | | | | | |
| TOTAL FOR PROJ NO. 8CR.20771.18 | | | | | | | 5.786 | | 150 | 615 | 231 | 9.39 | 15,000 | | | | 315 | | | |
| 8CR.20831.18 | Scotland | 10 | SR 1438 | FROM US 74 BUS. TO SR 1323 | 3,12,14,15,17,19 | NO | 1.65 | 23 | | 421 | | 3.04 | 900 | | | 900 | 1,000 | | | |
| | | 11 | SR 1471 | FROM US 401 BUS. TO SR 1433 | 16 | NO | 0.53 | 40 | | | | | | | | | 225 | | | |
| | | 12 | SR 1117 | FROM US 401 TO SR 1108 | 9,13,18,20 | NO | 2.03 | 24 | | 563 | | 4.06 | 1,850 | | | | | | | |
| TOTAL FOR PROJ NO. 8CR.20831.18 | | | | | | | 4.21 | | | 984 | | 7.10 | 2,750 | | | 900 | 1,225 | | | |
| GRAND TOTAL | | | | | | | 14.145 | | 270 | 1,952 | 366 | 24.78 | 18,500 | 14,150 | 1,512 | 900 | 3,075 | 2,130 | 1,530 | 900 |

| PROJECT NO | COUNTY | MAP NO | ROUTE | DESCRIPTION | TYP NO | FINAL SURFACE TESTING REQUIRED | LENGTH MI | WIDTH FT | SURFACE COURSE, SF9.5A TON | ASPHALT BINDER FOR PLANT MIX TONS | PATCHING EXISTING PAVEMENT TONS | ASPHALT SURFACE TREATMENT, STRAIGHT SEAL (LIGHT WEIGHT) SY | ADJUST MANHOLES EA | ADJUST METER OR VALVE BOX EA | TEMPORARY SILT FENCE LF | WATTLE LF | SEED & MULCHING AC | INDUCTIVE LOOP SAWCUT LF | LEAD-IN CABLE (14-2 PAIR) LF |
|--|----------|--------|---------|--|------------------|--------------------------------|---------------|----------|----------------------------|-----------------------------------|---------------------------------|--|--------------------|------------------------------|-------------------------|--------------|--------------------|--------------------------|------------------------------|
| 8CR.20471.18 | Hoke | 1 | SR 1305 | FROM US 401 TO FT BRAGG BOUNDARY | 1 | NO | 1.477 | 24 | 2,170 | 239 | 170 | | | 3 | 215 | 540 | 2.15 | | |
| | | 2 | SR 1251 | FROM NC 211 TO US 401 | 2 | NO | 1.402 | 24 | 2,295 | 154 | 30 | 25,150 | | 2 | 210 | 530 | 2.04 | | |
| TOTAL FOR PROJ NO. 8CR.20471.18 | | | | | | | 2.879 | | 4,465 | 393 | 200 | 25,150 | | 5 | 425 | 1,070 | 4.19 | | |
| 8C.077073 | Richmond | 3 | SR 1915 | FROM SR 1966 TO PAVEMENT JOINT | 3 | NO | 0.11 | 22 | 125 | 8 | | | | | | | | | |
| | | 4 | SR 1915 | FROM PAVEMENT JOINT TO SR 1903 | 3,4,11 | NO | 0.62 | 22 | 715 | 48 | | | | | | | | | |
| TOTAL FOR PROJ NO. 8C.077073 | | | | | | | 0.73 | | 840 | 56 | | | | | | | | | |
| 8CR.10771.18 | Richmond | 5 | NC 73 | FROM SR 1154 INCLUDING INTERSECTION TO PAVEMENT JOINT 2850' WEST | 5-8, 10 | NO | 0.54 | 32 | | 127 | | | | | | | | | |
| TOTAL FOR PROJ NO. 8CR.10771.18 | | | | | | | 0.54 | | | 127 | | | | | | | | | |
| 8CR.20771.18 | Richmond | 6 | SR 1696 | FROM US 1 TO END MAINT. | 9 | NO | 1.546 | 21 | 1,705 | 114 | 10 | | | | 310 | 780 | 3.10 | | |
| | | 7 | SR 1475 | FROM SR 1575 TO US 1 | 9 | NO | 0.93 | 23 | 1,160 | 78 | 5 | | | | 190 | 480 | 1.90 | | |
| | | 8 | SR 1119 | FROM US 74 BUS. TO SR 1109 | 3 | NO | 2.22 | 24 | 2,785 | 187 | 10 | | | | | | | | |
| | | 9 | SR 1991 | FROM SR 1966 TO SR 1900 | 3,4 | NO | 1.09 | 23 | 1,285 | 86 | | | | | | | | | |
| TOTAL FOR PROJ NO. 8CR.20771.18 | | | | | | | 5.786 | | 6,935 | 465 | 25 | | | | 500 | 1,260 | 5.00 | | |
| 8CR.20831.18 | Scotland | 10 | SR 1438 | FROM US 74 BUS. TO SR 1323 | 3,12,14,15,17,19 | NO | 1.65 | 23 | 2,005 | 134 | | | 2 | 10 | | | | 400 | 25 |
| | | 11 | SR 1471 | FROM US 401 BUS. TO SR 1433 | 16 | NO | 0.53 | 40 | 1,080 | 72 | | | 14 | 7 | | | | 400 | 25 |
| | | 12 | SR 1117 | FROM US 401 TO SR 1108 | 9,13,18,20 | NO | 2.03 | 24 | 2,740 | 184 | | | 1 | 3 | | | | 2,000 | 175 |
| TOTAL FOR PROJ NO. 8CR.20831.18 | | | | | | | 4.21 | | 5,825 | 390 | | | 17 | 20 | | | | 2,800 | 225 |
| GRAND TOTAL | | | | | | | 14.145 | | 18,065 | 1,431 | 225 | 25,150 | 17 | 25 | 925 | 2,330 | 9.19 | 2,800 | 225 |

| | | |
|---|-----------|-----------|
| PROJECT NO. | SHEET NO. | TOTAL NO. |
| 8CR.20471.18, 8C.077073 8CR.10771.18, ETC. | 12 | |

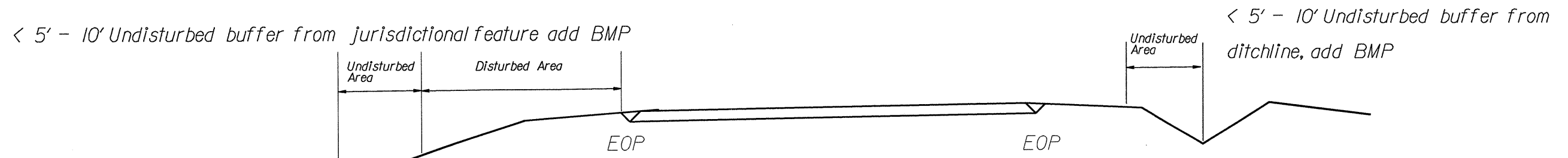
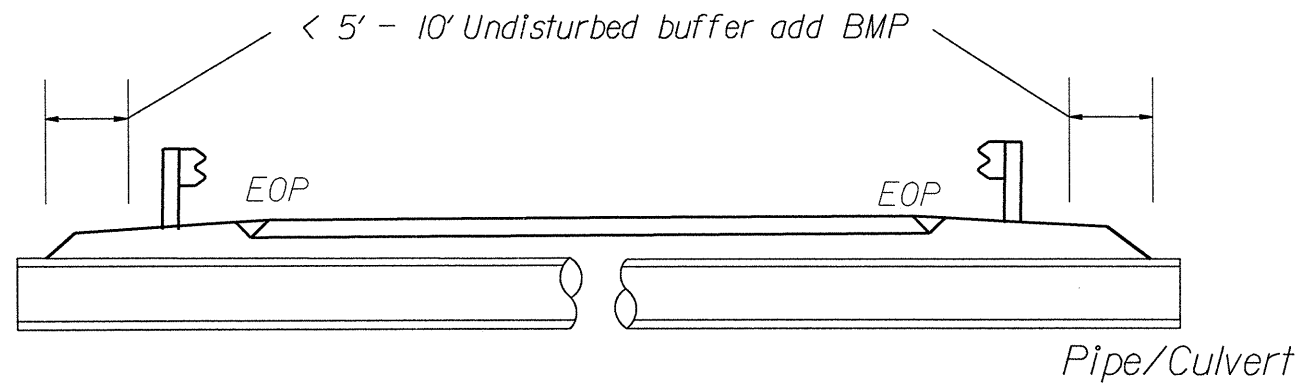
THERMOPLASTIC AND PAINT QUANTITIES

| PROJECT NO | COUNTY | MAP NO | ROUTE | DESCRIPTION | LENGTH | WIDTH | 439900000-N | 468500000-E | 468600000-E | | 469500000-E | | 469700000-E | 470500000-E | 471000000-E | 472100000-E | | 472500000-E | | | 481000000-E | | 482000000-E | 484500000-N | | 490000000-N | | | | |
|--------------------|----------|--------|---------------------------------|--|--------------------------------|-------|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|------------------------|-------------------------|--------------------------|--------------------------|-------------------------|------------------|----------------------|----------------------|----------------------------|-----------------------------|----------------|-----------------|-----------------|----------------|----------------|-------------------------|-----------------------|-----|-----|
| | | | | | | | TEMPORARY TRAFFIC CONTROL | 4" X 90 M WHITE THERMO | 4" X 120 M YELLOW THERMO | 4" X 120 M WHITE THERMO | 8" X 90 M YELLOW THERMO | 8" X 90 M WHITE THERMO | 8" X 120 M WHITE THERMO | 16" X 120 M WHITE THERMO | 24" X 120 M WHITE THERMO | THERMO MSG SCHOOL 120 M | THERMO RXR 120 M | THERMO LT ARROW 90 M | THERMO RT ARROW 90 M | THERMO STR & RT ARROW 90 M | THERMO LT STR RT ARROW 90 M | 4" WHITE PAINT | 4" YELLOW PAINT | 8" YELLOW PAINT | PAINT LT ARROW | PAINT RT ARROW | YELLOW & YELLOW MARKERS | CRYSTAL & RED MARKERS | | |
| 8CR.20471.18 | Hoke | 1 | SR 1305 | FROM US 401 TO FT BRAGG BOUNDARY | 1.477 | 24 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 2 | SR 1251 | FROM NC 211 TO US 401 | 1.402 | 24 | * | 15,600 | 16,600 | 150 | | | | | | | | | | | | | | | | | | | |
| | | | TOTAL FOR PROJ NO. 8CR.20471.18 | | | | 2.879 | | * | 30,900 | 31,100 | 600 | 750 | 100 | 100 | 100 | 260 | 12 | 4 | 6 | 1 | 4 | | | | | | | | 122 |
| | | | | | | | | 31,700 | | 850 | | | | | 16 | | 12 | | | | | | | | | | 122 | | | |
| 8C.077073 | Richmond | 3 | SR 1915 | FROM SR 1966 TO PAVEMENT JOINT | 0.11 | 22 | | | | | | | | 50 | 100 | 6 | 2 | | | | | 2,367 | 2,624 | | | | | | | |
| | | | 4 | SR 1915 | FROM PAVEMENT JOINT TO SR 1903 | 0.62 | 22 | * | | | | | | | | 50 | 100 | 6 | 2 | | | | | 13,500 | 13,000 | | | | | |
| | | | TOTAL FOR PROJ NO. 8C.077073 | | | | 0.73 | | * | | | | | | | 50 | 100 | 6 | 2 | | | | | 15,867 | 15,624 | | | | | |
| | | | | | | | | | | | | | | | 8 | | | | | | | | | | | | 31,491 | | | |
| 8CR.10771.18 | Richmond | 5 | NC 73 | FROM SR 1154 INCLUDING INTERSECTION TO PAVEMENT JOINT 2850' WEST | 0.54 | 32 | * | 5,900 | 5,900 | | | | | | 30 | | | | | | | 5,700 | 5,700 | | | | | 37 | | |
| | | | | | 0.54 | | * | 5,900 | 5,900 | | | | | | 30 | | | | | | | | 5,700 | 5,700 | | | | | 37 | |
| | | | TOTAL FOR PROJ NO. 8CR.10771.18 | | | | 0.54 | | * | 5,900 | 5,900 | | | | | | 30 | | | | | | | 11,400 | 11,400 | | | | | 37 |
| | | | | | | | | 5,900 | | | | | | | | | | | | | | | | | | | | 37 | | |
| 8CR.20771.18 | Richmond | 6 | SR 1696 | FROM US 1 TO END MAINT. | 1.546 | 21 | | | | | | | | | | | | | | | | 35,500 | 34,500 | | | | | | | |
| | | | 7 | SR 1475 | FROM SR 1575 TO US 1 | 0.93 | 23 | | | | | | | | | | | | | | | | | 21,600 | 21,500 | | | | | |
| | | | 8 | SR 1119 | FROM US 74 BUS. TO SR 1109 | 2.22 | 24 | | | | | | | | | | | | | | | | | | 48,200 | 48,000 | | | | |
| | | | 9 | SR 1991 | FROM SR 1966 TO SR 1900 | 1.09 | 23 | * | | | | | | | | | | | | | | | | | 35,500 | 27,000 | | | | |
| | | | TOTAL FOR PROJ NO. 8CR.20771.18 | | | | 5.786 | | * | | | | | | | | | | | | | | | | 140,800 | 131,000 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | 271,800 | | |
| 8CR.20831.18 | Scotland | 10 | SR 1438 | FROM US 74 BUS. TO SR 1323 | 1.65 | 23 | | | | | | | | 105 | 100 | | 4 | 1 | 1 | | | 32,102 | 32,000 | 30 | 1 | 1 | 140 | 4 | | |
| | | | 11 | SR 1471 | FROM US 401 BUS. TO SR 1433 | 0.53 | 40 | | 100 | | | | | | | | 135 | 6 | 4 | 1 | 1 | | | 11,600 | 9,200 | 20 | | | | |
| | | | 12 | SR 1117 | FROM US 401 TO SR 1108 | 2.03 | 24 | * | 22,800 | 17,000 | 583 | | 80 | | | | 253 | | | 7 | | | 3 | | | | | | | |
| | | | TOTAL FOR PROJ NO. 8CR.20831.18 | | | | 4.21 | | * | 22,900 | 17,000 | 583 | | 80 | | | 105 | 488 | 6 | 8 | 9 | 2 | 3 | 43,702 | 41,200 | 50 | 1 | 1 | 140 | 4 |
| | | | | | | | | 17,583 | | 80 | | | | | 14 | | | | 14 | | | 84,902 | | 2 | | | 144 | | | |
| GRAND TOTAL | | | | | 14.145 | | 1 | 59,700 | 54,000 | 1,183 | 750 | 180 | 100 | 255 | 878 | 24 | 14 | 16 | 3 | 4 | 3 | 206,069 | 193,524 | 50 | 1 | 1 | 299 | 4 | | |
| | | | | | | | | 55,183 | | 930 | | | | | 38 | | 26 | | | | 399,593 | | 2 | | | 303 | | | | |

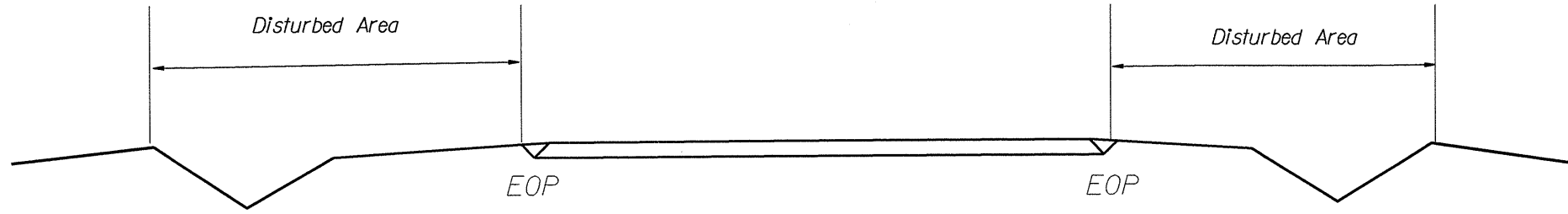
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

EROSION CONTROL DETAIL

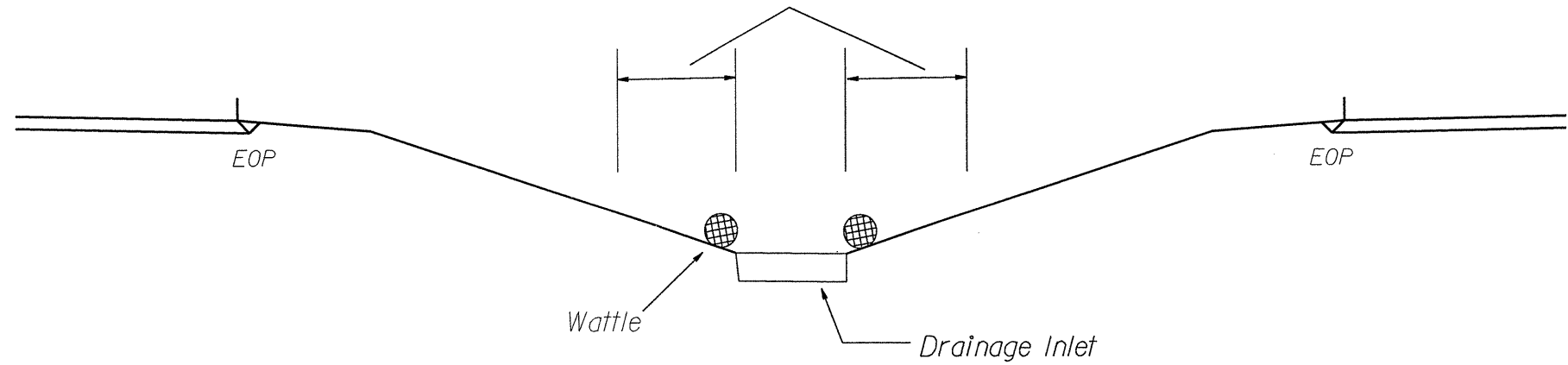
BMP Options: Wattle or Silt Fence



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

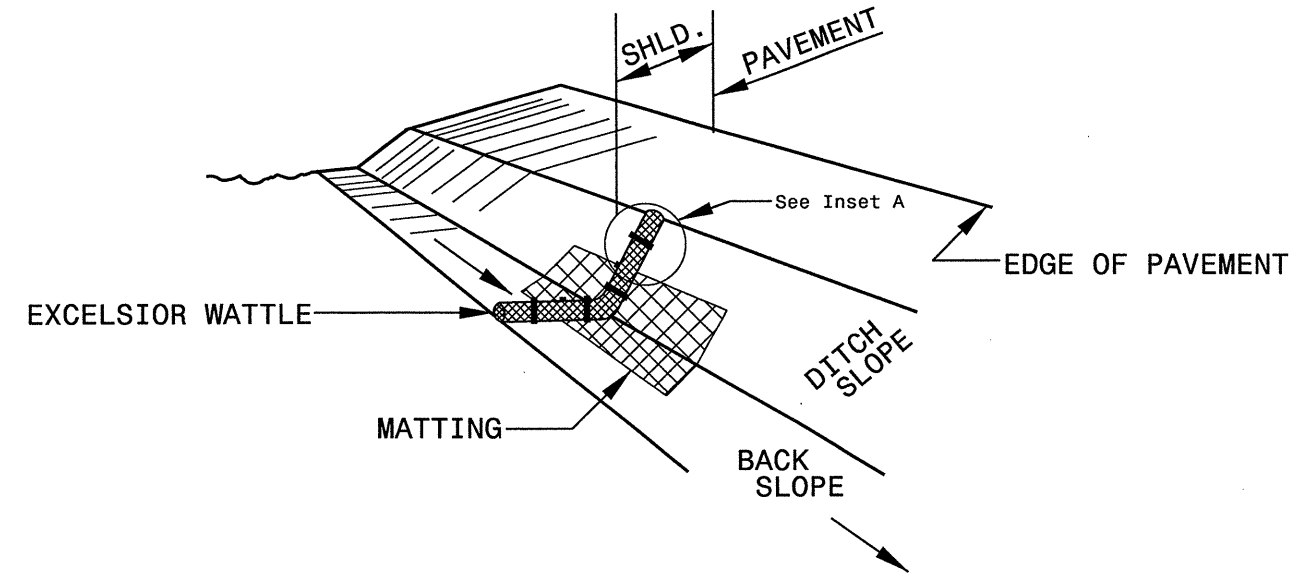


< 5' - 10' Undisturbed buffer from inlet, add wattle

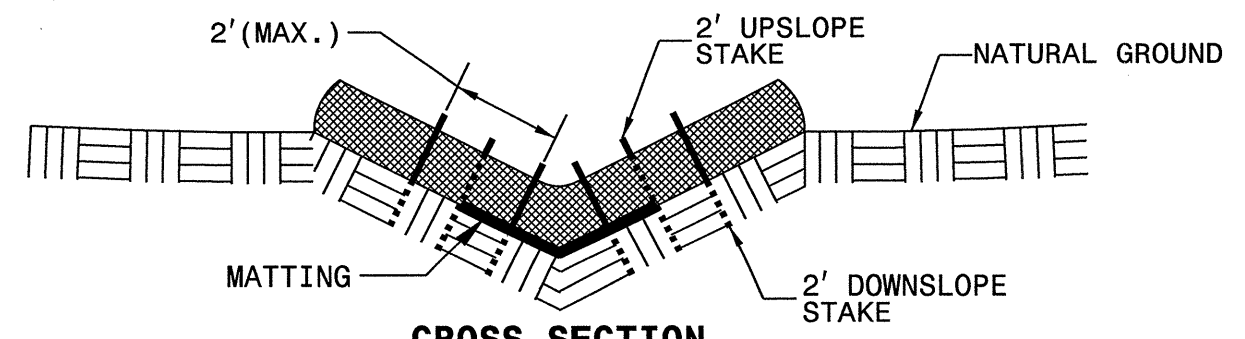


NOT TO SCALE

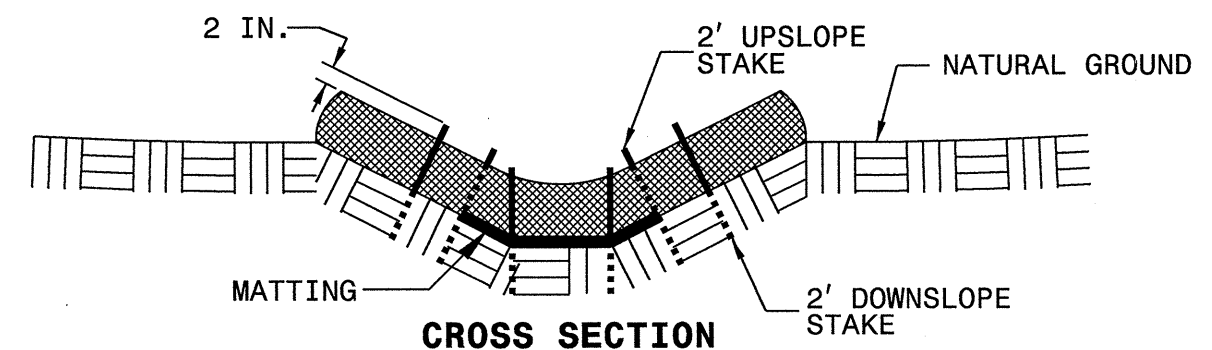
WATTLE DETAIL



ISOMETRIC VIEW

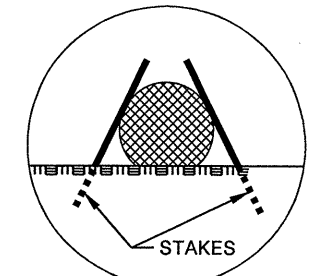


CROSS SECTION VEE DITCH

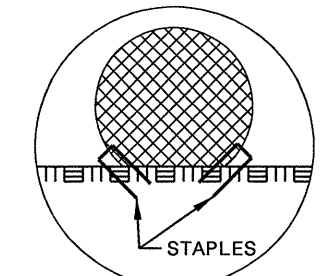


CROSS SECTION TRAPEZOIDAL DITCH

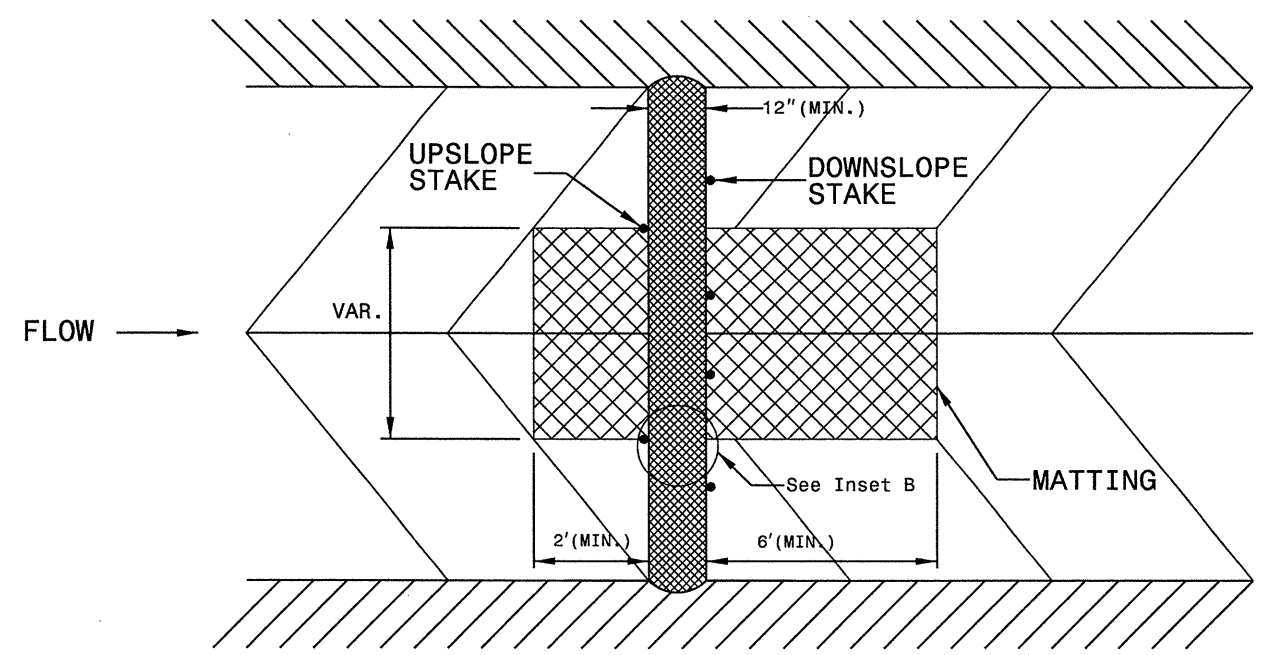
- NOTES:
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
 - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
 - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A

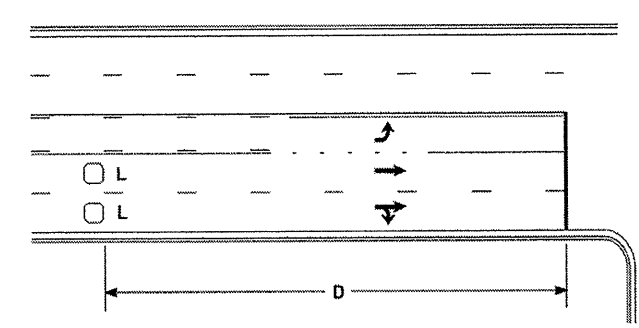


INSET B



TOP VIEW

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

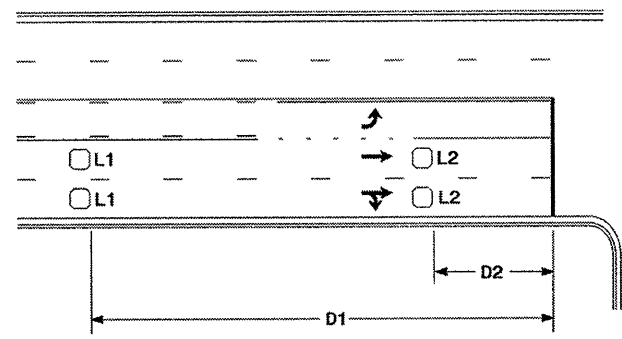


| Speed Limit mph (km/hr) | D ft (m) |
|----------------------------|-------------|
| 40 (64) | 250 (75) |
| 45 (72) | 300 (90) |
| 50 (80) | 355 (110) |
| 55 (88) | 420 (130) |

L = 6ft X 6ft (1.8m X 1.8m)
 Wired in series for TS1
 Controllers
 Wired separately for TS2,
 170, and 2070L Controllers

Volume Density Operation

OR

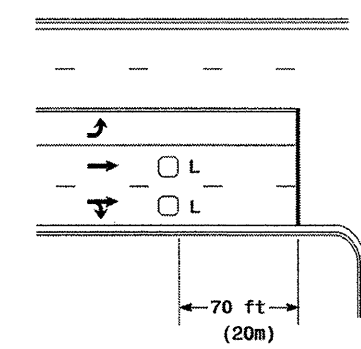


| Speed Limit mph (km/hr) | D1 ft (m) | D2 ft (m) |
|----------------------------|--------------|--------------|
| 40 (64) | 250 (75) | 80 (25) |
| 45 (72) | 300 (90) | 90 (27) |
| 50 (80) | 355 (110) | 100 (30) |
| 55 (88) | 420 (130) | 110 (35) |

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

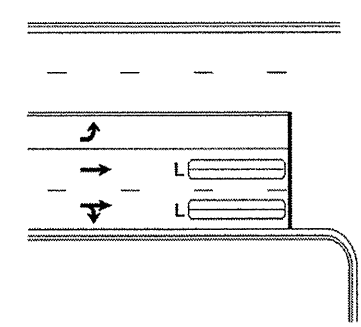
"Stretch" Operation

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



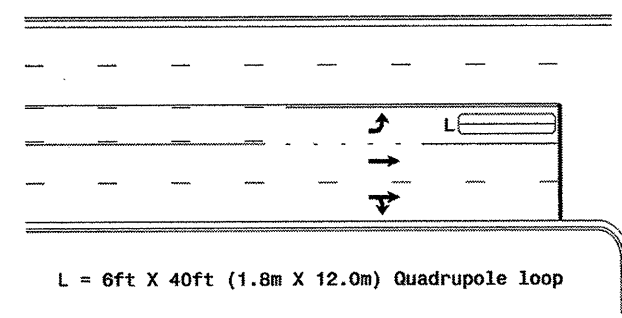
L = 6ft X 6ft (1.8m X 1.8m)
 Wired in series

OR



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

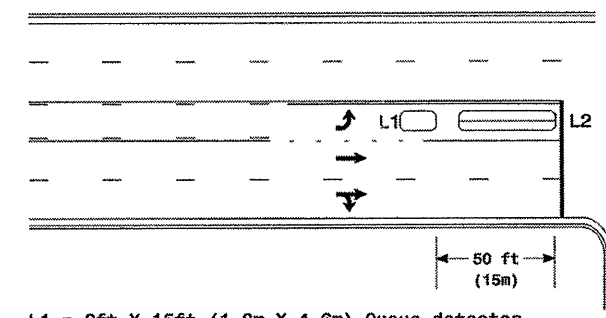
Left Turn Lane Detection



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

Presence Loop Detection

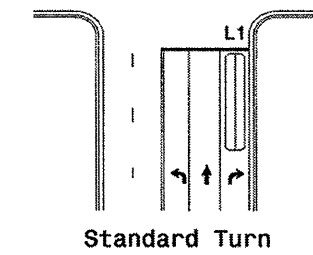
OR



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

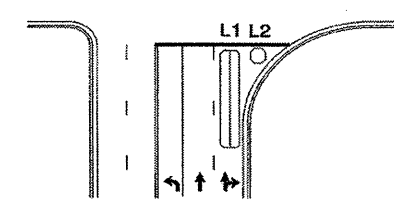
Queue Loop Detection

Right Turn Lane Detection

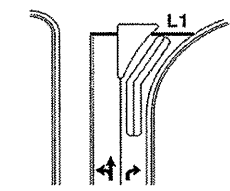


Standard Turn

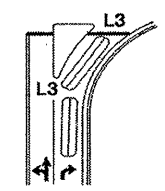
L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop
 L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
 Wired separately
 L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop
 Wired in series



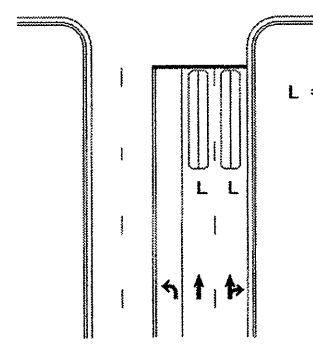
Wide Radius Turn



Channelized Turn



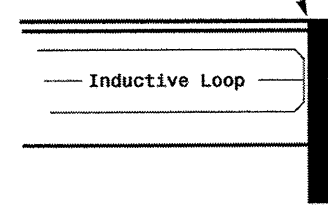
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
 Quadrupole loop
 Wired to separate
 detectors/channels

Presence Loop Placement at Stop Lines

Locate loop slightly
 behind leading
 edge of stop line



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


Recommended Number of Turns

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

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

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

Typical Loop Locations

Prepared in the Office of:

 122 N. McDowell St., Raleigh, NC 27603

PLAN DATE: June 2006 REVIEWED BY:
 PREPARED BY: P. L. Alexander REVIEWED BY:
 REVISIONS
 1/ Revise pavement markings
 SCALE: N/A
 INIT. DATE: JLA/PLA
 SIGNATURE: [Signature]
 SEAL: [Seal]
 516. INVENTORY NO.