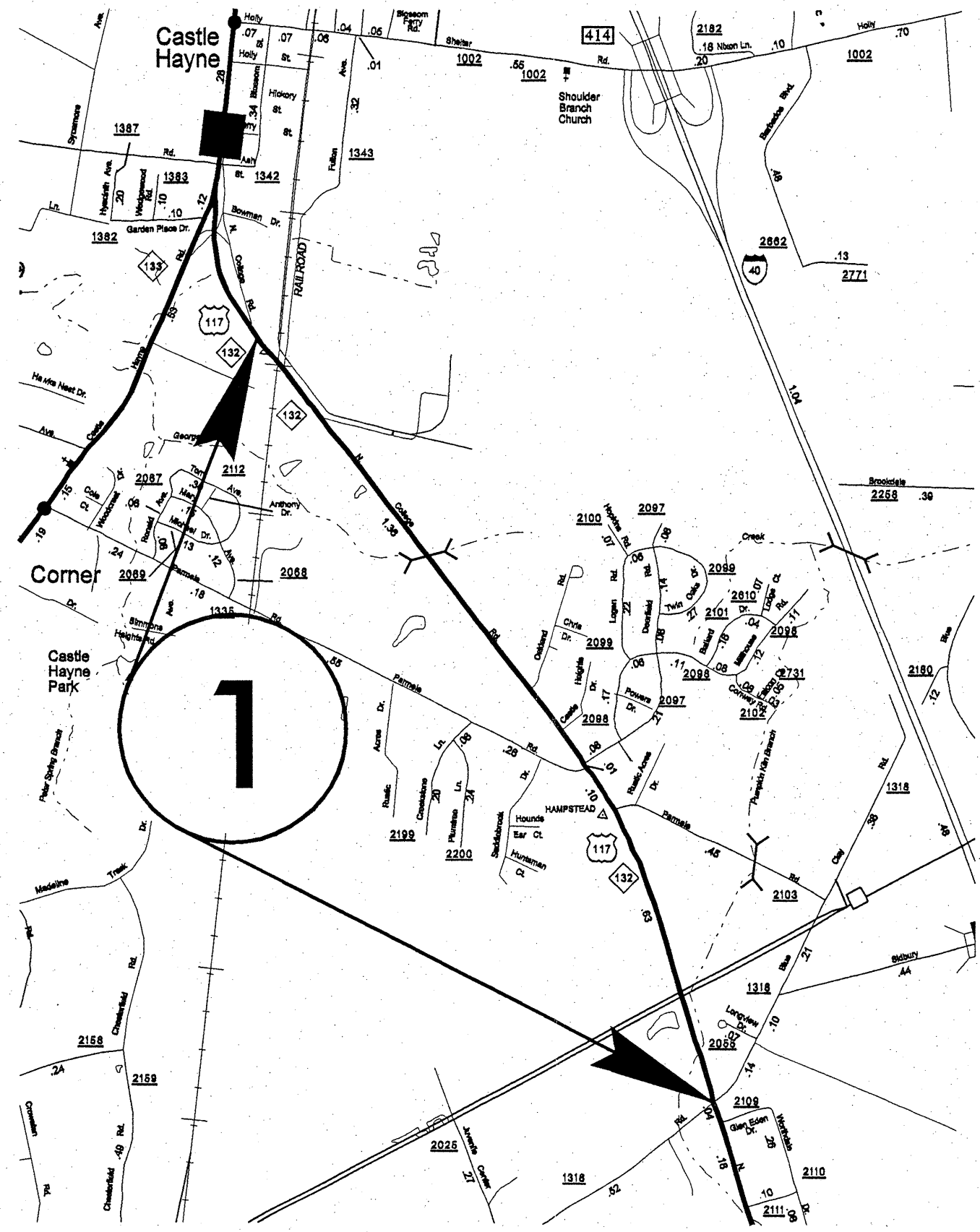


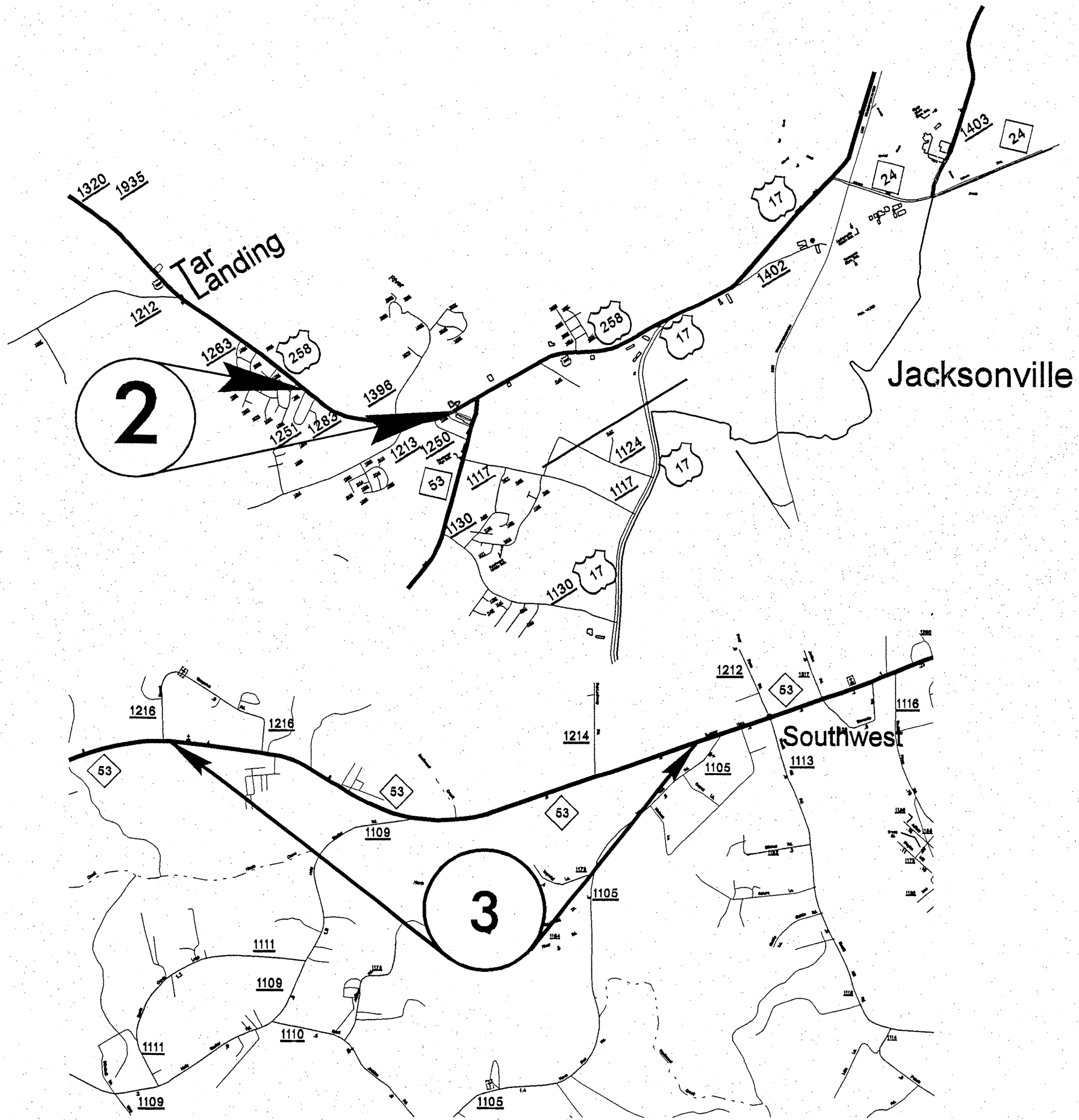
|              |              |
|--------------|--------------|
| WBS ELEMENT  | SHEET 1 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |



# NEW HANOVER COUNTY

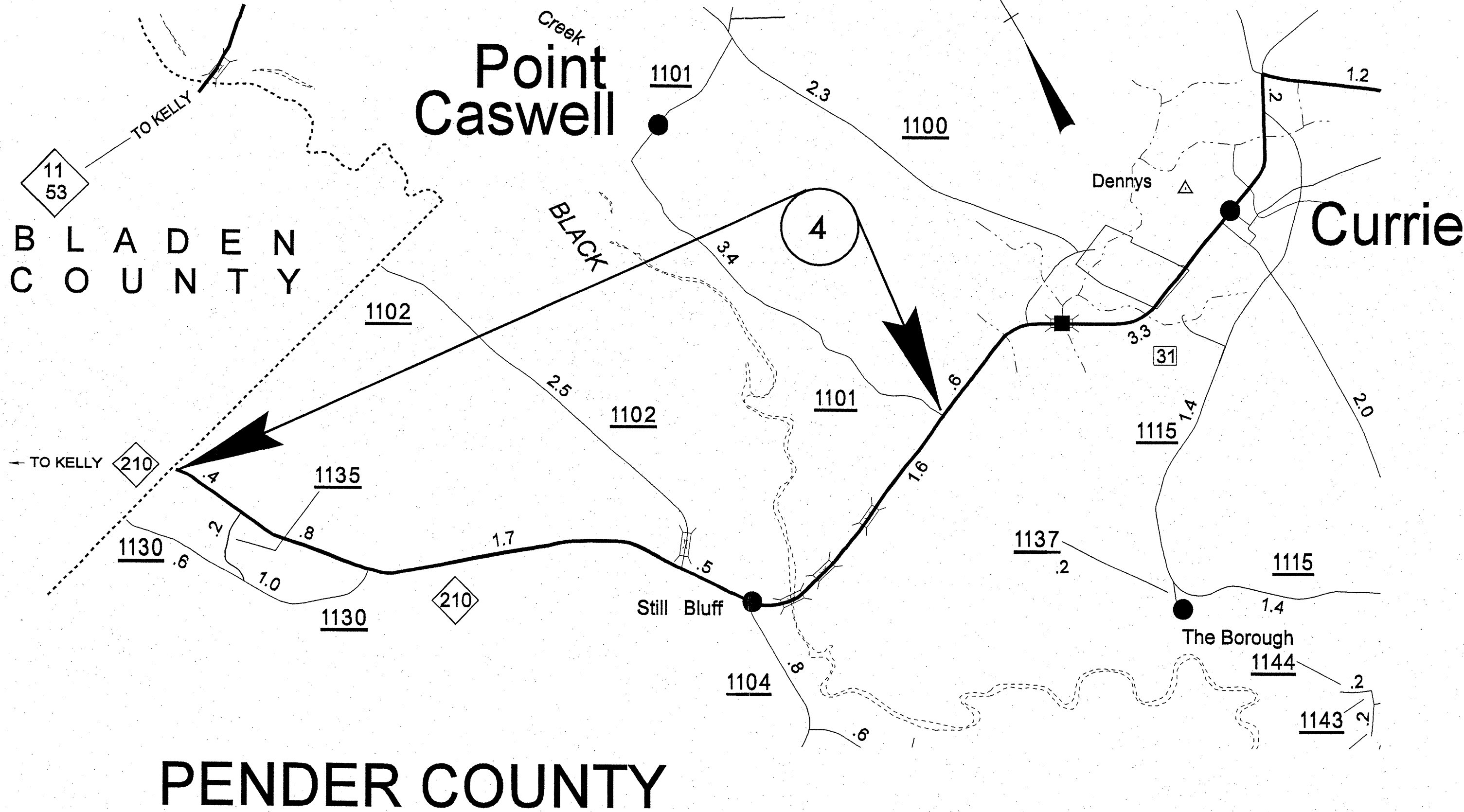
09-MAY-2006 16:17  
 C:\w\p\3007\us117newhan\3m111.on.dgn  
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| WBS ELEMENT  | SHEET 2 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |

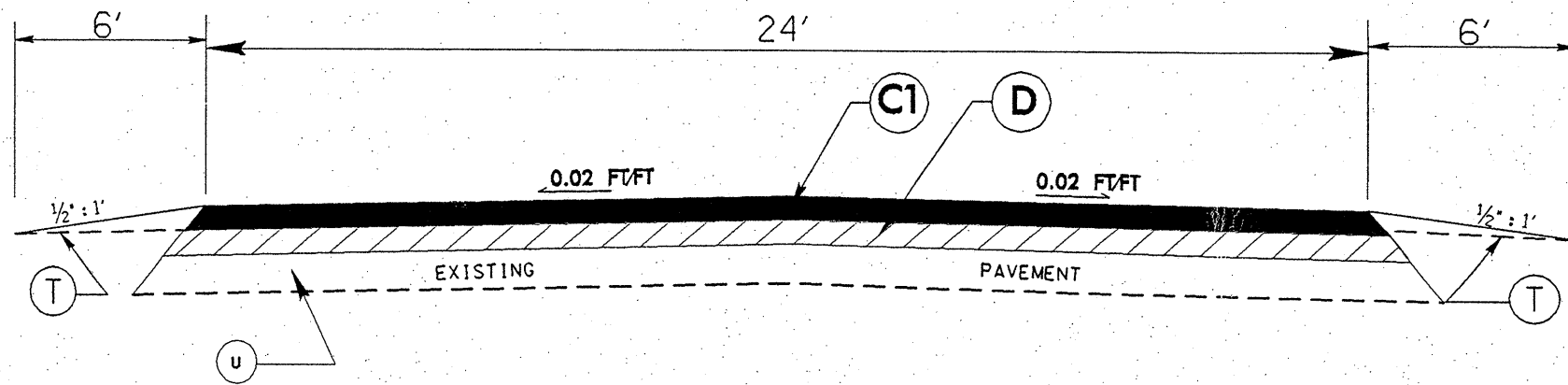
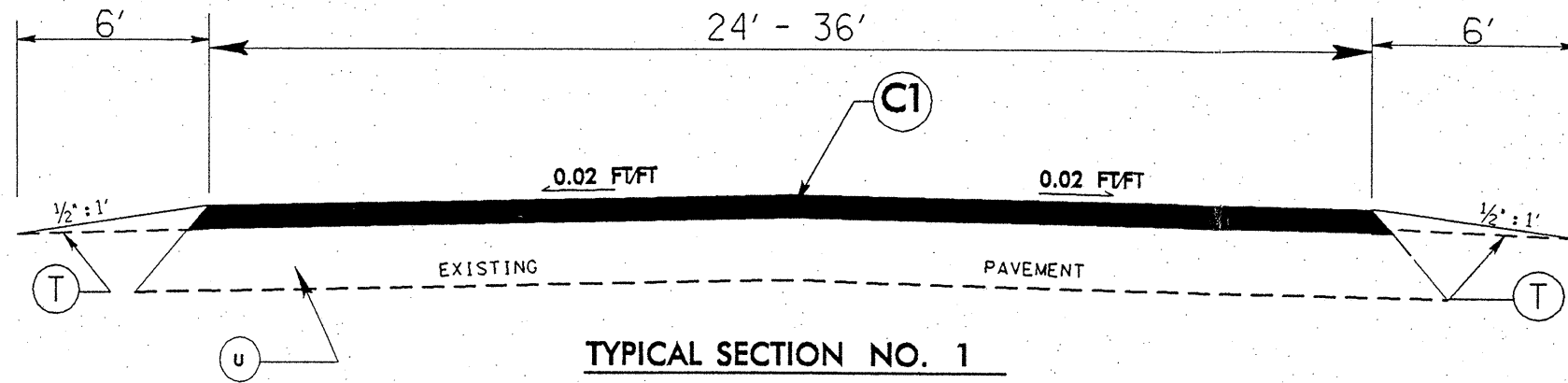


# ONSLOW COUNTY

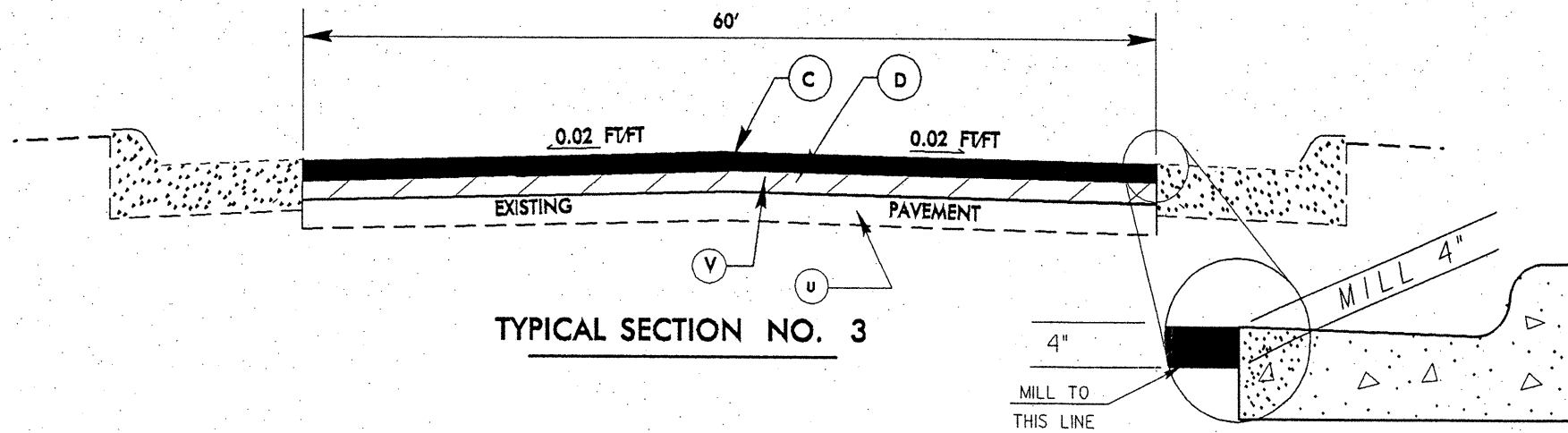
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|--------------|--------------|
| WBS ELEMENT  | SHEET 3 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |



|              |              |
|--------------|--------------|
| WBS ELEMENT  | SHEET 4 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |

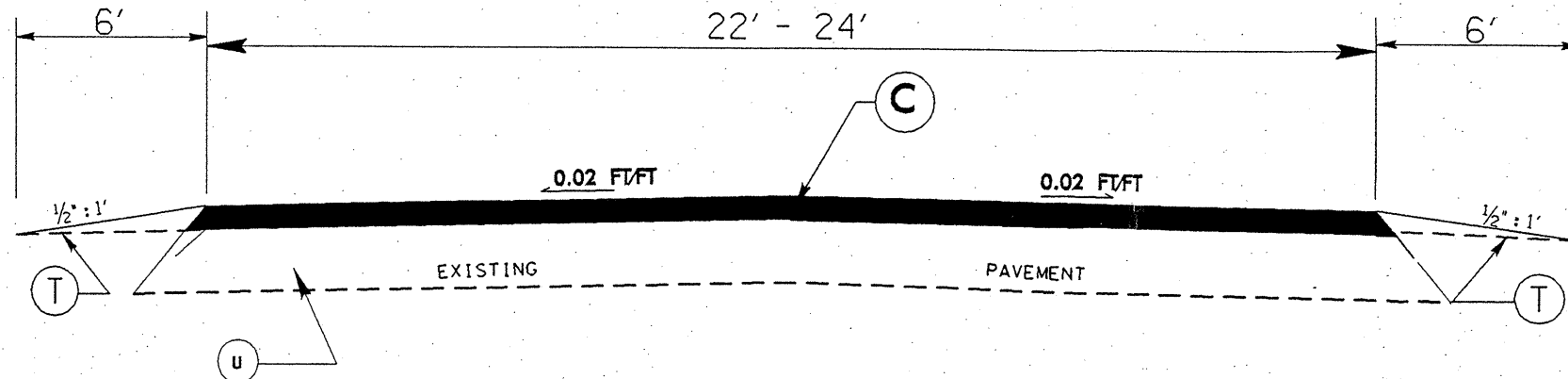


USE TYPICAL No. 2 FROM MP 1.04 TO MP 1.70 (MAP No. 1)

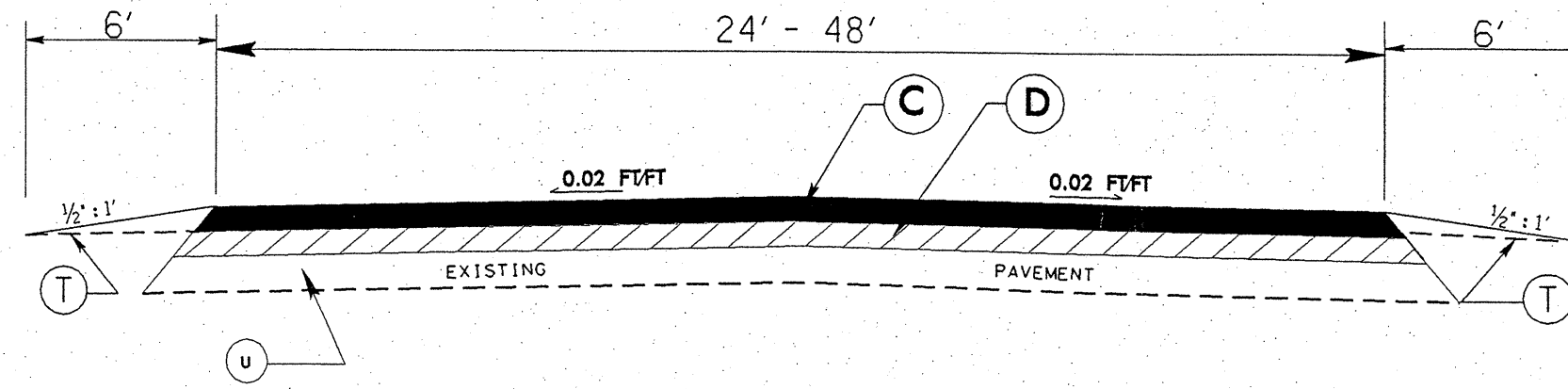


| PAVEMENT SCHEDULE |   |
|-------------------|---|
| C                 | PROP. APPROX. 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.    |
| C 1               | PROP. APPROX. 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S12.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.   |
| D                 | PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD. |
| V                 | MILLING ASPHALT PAVEMENT, 4" DEPTH.   |
| T                 | EARTH MATERIAL  |
| U                 | EXISTING PAVEMENT.  |

|              |              |
|--------------|--------------|
| WBS ELEMENT  | SHEET 5 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |



**TYPICAL SECTION NO. 4**



**TYPICAL SECTION NO. 5**

| PAVEMENT SCHEDULE |   |
|-------------------|---|
| C                 | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C. AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.  |
| C I               | PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S12.5C. AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. |
| D                 | PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C. AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD. |
| V                 | MILLING ASPHALT PAVEMENT, 4" DEPTH.   |
| T                 | EARTH MATERIAL  |
| U                 | EXISTING PAVEMENT.  |

|              |              |
|--------------|--------------|
| WBS ELEMENT  | SHEET 6 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |

**SUMMARY OF QUANTITIES**






| WBS ELEMENT                        | COUNTY      | MAP NO. | ROUTE  | DESCRIPTION  | TYP NO. | LENGTH | WIDTH FT. | ASPHALT BINDER 64-22 TON | ASPHALT BINDER 70-22 TON | PATCH EXISTING PAV'T MILLING TON | PATCH EXISTING PAV'T FULL DEPTH TON | PATCH EXISTING PAV'T 119.0C FULL DEPTH TON | MILLING 0" TO 4" SY | INCIDENTAL MILLING SY | SURFACE COURSE S9.5C TON | SURFACE COURSE S12.5C TON | INTERMEDIATE COURSE 119.0C TON | LEVELING COURSE S12.5C | CURB & GUTTER LF | SHOULDER RECONSTR. SHDR MI. | BORROW EXCAVATION CY | SEEDING & MULCHING AC | INCIDENTAL STONE TON |     |
|------------------------------------|-------------|---------|--------|--|---------|--------|-----------|--------------------------|--------------------------|----------------------------------|-------------------------------------|--|---------------------|-----------------------|--------------------------|---------------------------|--------------------------------|------------------------|------------------|-----------------------------|----------------------|-----------------------|----------------------|-----|
| 3CR.10651.28                       | NEW HANOVER | 1       | US 117 | SR 1318 TO NORTHERLY 1.86 MILES (BEGIN DIVIDED)    | 1       | 1.14   | 24        |                          | 82                       |                                  |                                     |  |                     | 300                   |                          | 1483                      |                                | 20                     |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 2       | 0.66   | 24        | 72                       | 48                       |                                  |                                     |  |                     |                       |                          | 859                       |                                | 1523                   |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 1       | 0.06   | 24-36     |                          | 6                        |                                  |                                     |  |                     |                       |                          | 98                        |                                |                        |                  |                             |                      |                       |                      |     |
| TOTAL FOR WBS ELEMENT 3CR.10651.28 |             |         |        |  |         |        | 1.86      |                          | 72                       | 136                              | 315                                 | 35   |                     | 300                   |                          | 2440                      |                                | 1523                   | 20               |                             | 3.70                 | 1000                  | 2.98                 | 200 |
| 3CR.10671.28                       | ONSLow      | 2       | US 258 | 0.19 MILE WEST OF NC 53 TO WESTERLY END OF SR 1251 | 3       | 0.99   | 80        |                          | 193                      |                                  |                                     |  |                     |                       | 3220                     |                           | 5462                           |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        | 3 NON-SYSTEM INTERSECTIONS @ 34 TONS EACH          |         |        |           |                          | 6                        |                                  |                                     |  |                     |                       | 102                      |                           |                                |                        |                  |                             |                      |                       |                      |     |
| TOTAL FOR MAP No. 2                |             |         |        |  |         |        | 0.99      |                          | 257                      | 199                              |                                     |  | 200                 | 34850                 | 1500                     | 3322                      |                                | 5462                   |                  | 1010                        |                      |                       |                      |     |
| "                                  | "           | 3       | NC 53  | SR 1216 TO 0.07 MILE WEST OF SR 1105               | 5       | 2.34   | 24        |                          | 182                      |                                  |                                     |  |                     | 900                   | 3044                     |                           | 5399                           |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 5       | 0.10   | 48        |                          | 16                       |                                  |                                     |  |                     |                       | 260                      |                           | 461                            |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 5       | 0.11   | 24-48     |                          | 13                       |                                  |                                     |  |                     |                       | 215                      |                           | 381                            |                        |                  |                             |                      |                       |                      |     |
| TOTAL FOR MAP No. 3                |             |         |        |  |         |        | 2.55      |                          | 293                      | 211                              | 200                                 | 30   |                     | 900                   | 3519                     |                           | 6241                           |                        | 40               | 5.10                        | 1495                 | 4.00                  | 100                  |     |
| TOTAL FOR WBS ELEMENT 3CR.10671.28 |             |         |        |  |         |        | 3.54      |                          | 550                      | 410                              | 200                                 | 30   | 200                 | 34850                 | 2400                     | 6841                      |                                | 11703                  |                  | 1050                        | 5.10                 | 1495                  | 4.00                 | 100 |
| 3CR.10711.28                       | PENDER      | 4       | NC 210 | BLADEN COUNTY LINE TO SR 1101                      | 4       | 0.66   | 22        |                          |                          |                                  |                                     |  |                     |                       | 823                      |                           |                                |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 4       | 2.50   | 23        |                          |                          |                                  |                                     |  |                     |                       | 3259                     |                           |                                |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 4       | 1.55   | 24        |                          |                          |                                  |                                     |  |                     |                       | 2108                     |                           |                                |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 4       | 0.05   | 22-23     |                          |                          |                                  |                                     |  |                     |                       | 64                       |                           |                                |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 4       | 0.05   | 22-24     |                          |                          |                                  |                                     |  |                     |                       | 65                       |                           |                                |                        |                  |                             |                      |                       |                      |     |
| "                                  | "           |         |        |  | 4       | 0.25   | 23-24     |                          |                          |                                  |                                     |  |                     |                       | 333                      |                           |                                |                        |                  |                             |                      |                       |                      |     |
| TOTAL FOR WBS ELEMENT 3CR.10711.28 |             |         |        |  |         |        | 5.06      |                          |                          | 400                              | 180                                 | 20   |                     | 800                   | 6652                     |                           |                                |                        |                  | 10.12                       | 1113                 | 8.10                  | 200                  |     |
| GRAND TOTAL                        |             |         |        |  |         |        | 10.46     |                          | 622                      | 946                              | 695                                 | 85   | 200                 | 34850                 | 3500                     | 13493                     | 2440                           | 13226                  | 20               | 1050                        | 18.92                | 3608                  | 15.08                | 500 |

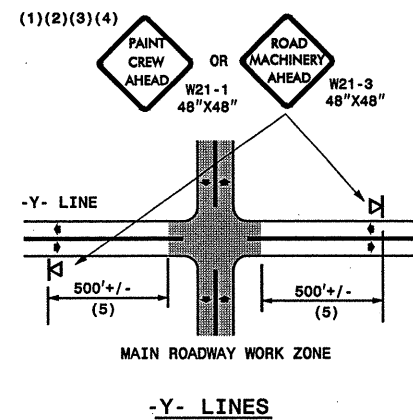
| THERMO PLASTIC PAVEMENT MARKINGS |             |         |                                   |                                       |                                     |  |  |                                      |   |                                       |                                   | PAINT MARKINGS                     |                            |                             |                |                           |                        | PAVEMENT MARKERS       |                           |                           |
|----------------------------------|-------------|---------|-----------------------------------|---------------------------------------|-------------------------------------|--|--|--------------------------------------|---|---------------------------------------|-----------------------------------|------------------------------------|----------------------------|-----------------------------|----------------|---------------------------|------------------------|------------------------|---------------------------|---------------------------|
| WBS ELEMENT                      | COUNTY      | MAP NO. | 4"WHITE<br>90 MILS<br>(E/L)<br>LF | 4"WHITE<br>120 MILS<br>(S & MS)<br>LF | 4"YELLOW<br>120 MILS<br>(C/L)<br>LF | 16"WHITE<br>120 MILS<br>(ST. BARS)<br>LF | 24"WHITE<br>120 MILS<br>(ST. BARS)<br>LF | 8"YELLOW<br>120 MILS<br>(DIAG)<br>LF | RAILROAD<br>CHARACTER<br>120 MILS<br>EA | SCHOOL<br>CHARACTER<br>120 MILS<br>EA | LT TURN<br>ARROW<br>90 MILS<br>EA | STRAIGHT<br>ARROW<br>90 MILS<br>EA | PAINT<br>4"<br>WHITE<br>LF | PAINT<br>4"<br>YELLOW<br>LF | 24"WHITE<br>LF | SCHOOL<br>CHARACTER<br>EA | LT TURN<br>ARROW<br>EA | LT TURN<br>ARROW<br>EA | S/P RAISED<br>(Y/Y)<br>EA | S/P RAISED<br>(C/R)<br>EA |
| 3CR.10651.28                     | NEW HANOVER | 1       | 19650                             |                                       | 8650                                | 88                                       | 96                                       | 90                                   | 4                                       |                                       |                                   |                                    | 19650                      | 8650                        |                |                           |                        |                        | 123                       |                           |
| 3CR.10671.28                     | ONSLow      | 2       |                                   | 2620                                  | 13230                               |  |  |                                      |   |                                       | 34                                |                                    | 2620                       | 13230                       |                |                           |                        | 34                     | 132                       | 132                       |
|                                  | "           | 3       | 26950                             | 250                                   | 10800                               |  | 96                                       | 150                                  |   | 12                                    | 6                                 | 6                                  | 27200                      | 10800                       | 96             | 12                        | 6                      | 6                      | 430                       | 10                        |
| TOTAL FOR 3CR.1067.28            |             |         | 26950                             | 2870                                  | 24030                               |  | 96                                       | 150                                  |   | 12                                    | 40                                | 6                                  | 29820                      | 24030                       | 96             | 12                        | 6                      | 40                     | 562                       | 142                       |
| 3CR.10711.28                     | PENDER      | 4       | 53450                             |                                       | 20050                               |  |  |                                      |   |                                       |                                   |                                    |                            |                             |                |                           |                        |                        | 334                       |                           |
| GRAND TOTAL                      |             |         | 100050                            | 2870                                  | 52730                               | 88                                       | 192                                      | 240                                  | 4                                       | 12                                    | 40                                | 6                                  | 49470                      | 32680                       | 96             | 12                        | 6                      | 40                     | 1019                      | 142                       |
|                                  |             |         | 55600                             |                                       |                                     |  |  |                                      | 16                                      |                                       | 46                                |                                    | 82150                      |                             |                | 46                        |                        |                        | 1161                      |                           |

### GENERAL NOTES

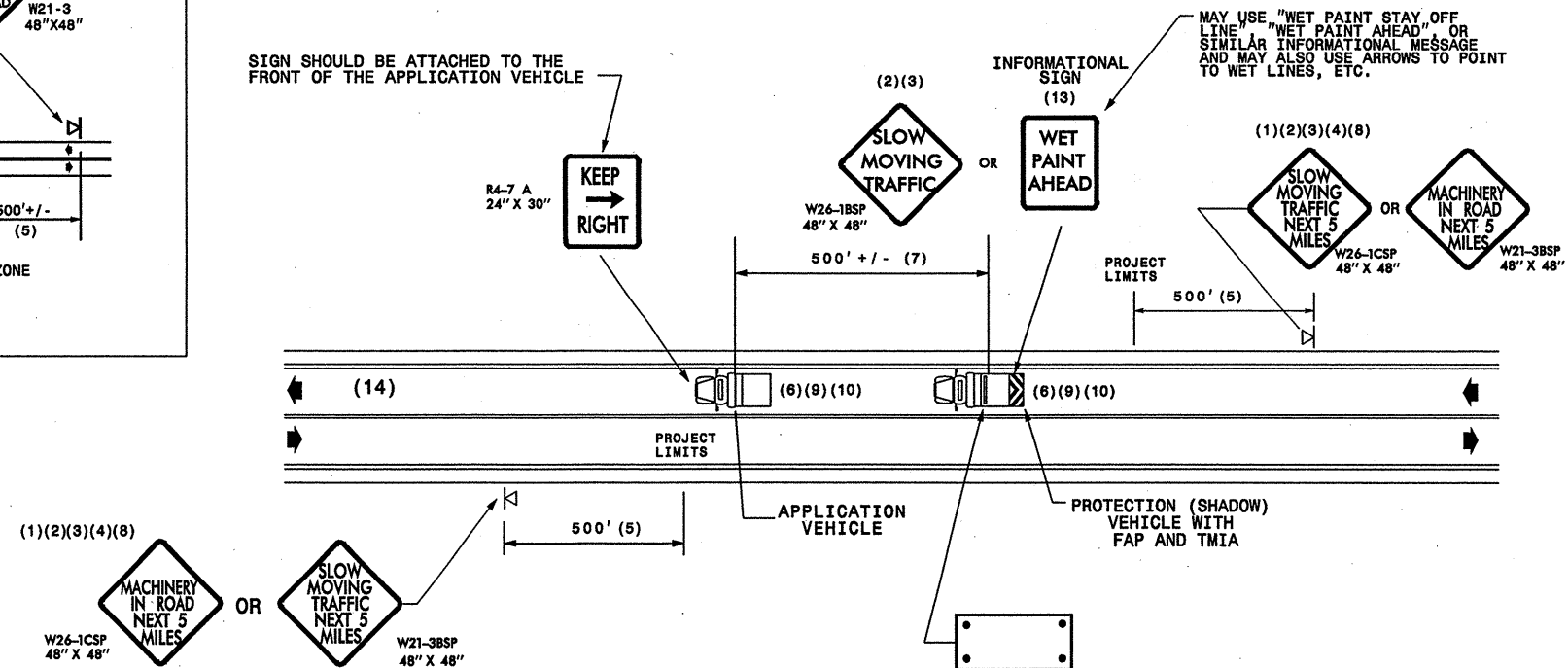
- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED SIGNS
  - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
  - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, I.E. "PAINT CREW IN ROAD". SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

### LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1185.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (80+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"



SIGN SHOULD BE ATTACHED TO THE FRONT OF THE APPLICATION VEHICLE



## MOVING OPERATION CARAVAN

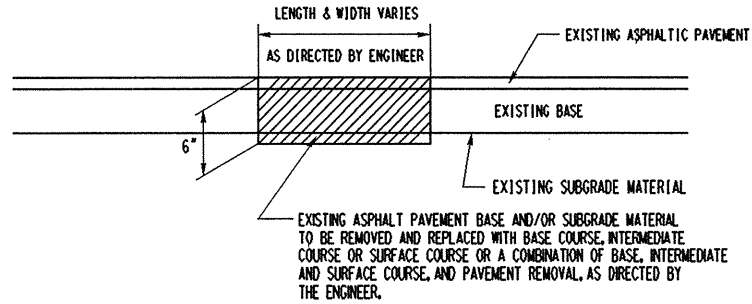
(OPERATIONS TRAVELING 3 MPH OR FASTER)  
PLACING PAVEMENT MARKING OR MARKERS  
ON TWO-LANE TWO-WAY ROADWAYS

**DRAWING NUMBER 6**  
IMPLEMENTATION DATE: 07/01/97  
REVISED: 11/03/04

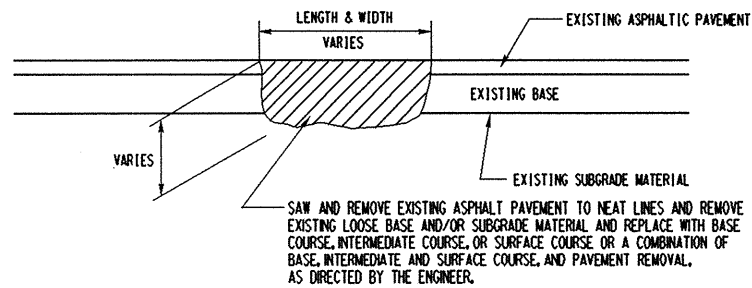


|              |              |
|--------------|--------------|
| WBS ELEMENT  | SHEET 8 OF 8 |
| 3CR.10651.28 | 3CR.10711.28 |
| 3CR.10671.28 |              |

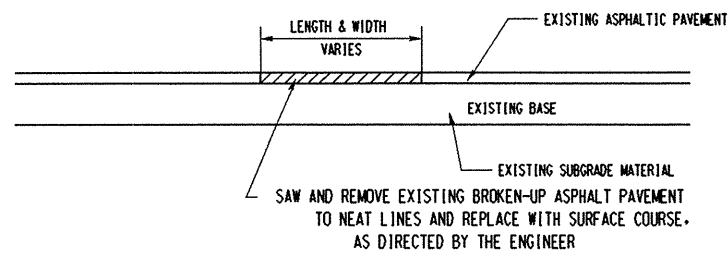
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



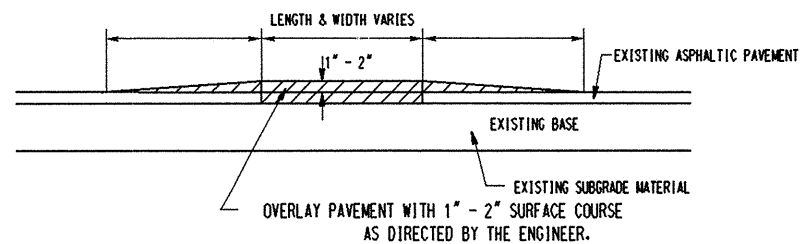
DETAIL NO. 1



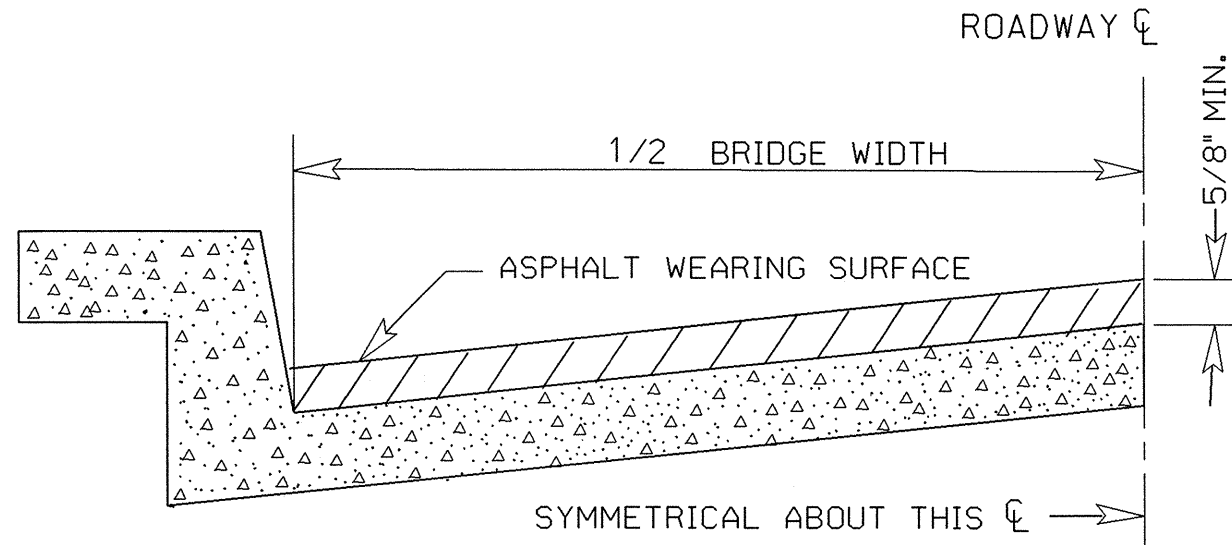
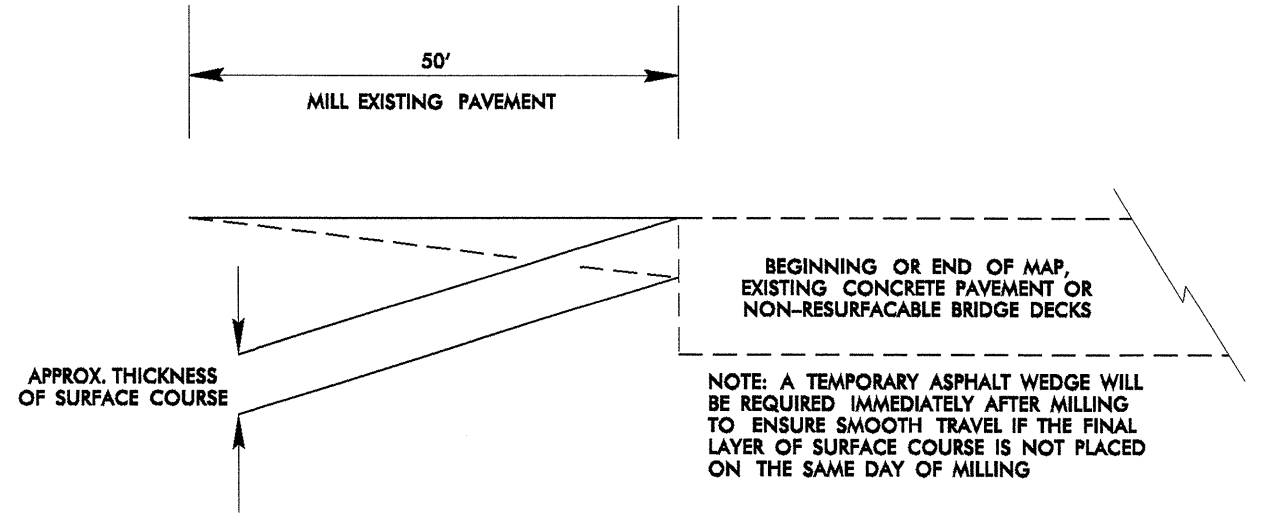
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4

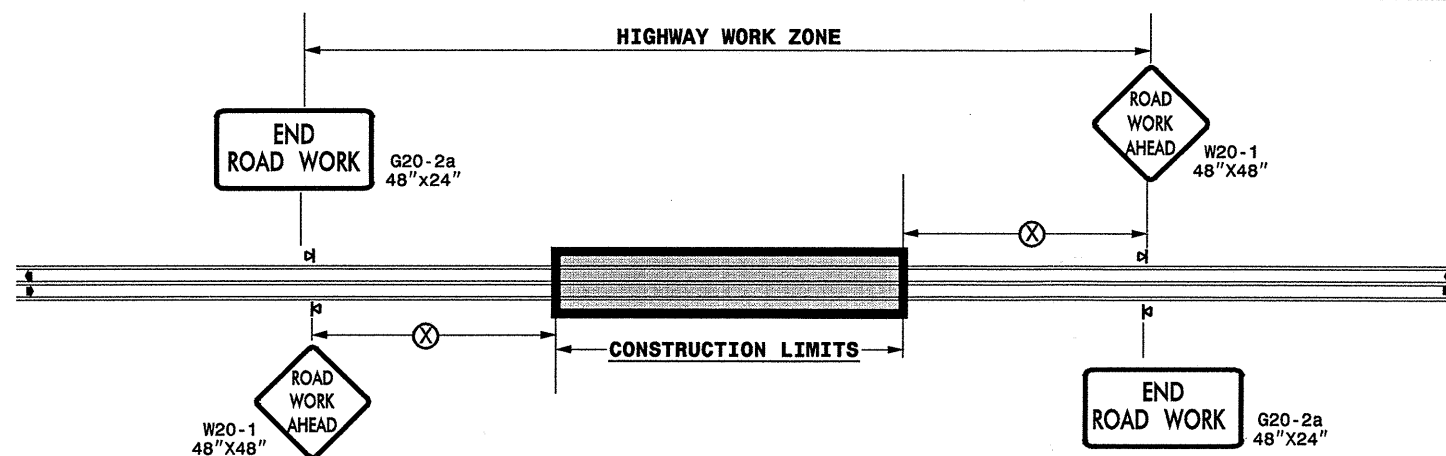


BRIDGE HALF TYPICAL SECTION

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.

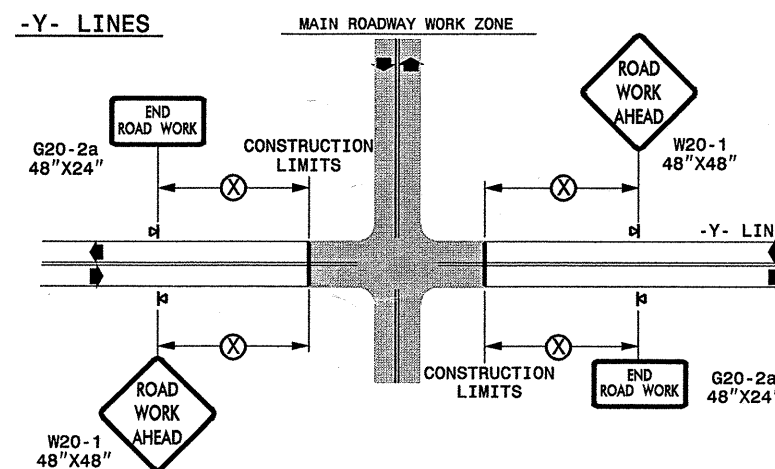
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



| POSTED SPEED LIMIT (M.P.H.) | RECOMMENDED MINIMUM SIGN SPACING |
|-----------------------------|----------------------------------|
| ≤ 50                        | 500'                             |
| ≥ 55                        | 1000'                            |

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

**ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)**



DETAIL DRAWING  
FOR TWO-WAY UNDIVIDED  
WORK ZONE WARNING SIGNS

**GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH PORTABLE WORK ZONE SIGN STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER. PORTABLE WORK ZONE SIGNS MAY BE ROLL UP OR APPROVED COMPOSITE.
- PROVIDE PORTABLE WORK ZONE SIGN STANDS, PORTABLE SIGNS AND SIGN SHEETING WHICH ARE LISTED ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCT LIST OR ACCEPTED AS TRAFFIC QUALIFIED BY THE TRAFFIC CONTROL UNIT.
- \*\* TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

**LEGEND**

- ◀ PORTABLE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL

DETAIL DRAWING  
FOR TWO-WAY UNDIVIDED  
ADVANCED WORK ZONE WARNING SIGNS

|              |      |
|--------------|------|
| SCALE:       | NONE |
| DATE:        |      |
| DWG. BY:     |      |
| DESIGN BY:   |      |
| REVIEWED BY: |      |



| REVISIONS |       |
|-----------|-------|
| 7-98      | 10/01 |
| 10-98     | 03/04 |
| 01/01     | 11/04 |

06-JUN-2006 12:04  
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psey@more AT WZTC206427