

09/08/99

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CONTRACT: WBS ELEMENT: IC.046068, ETC.

CONTRACT:

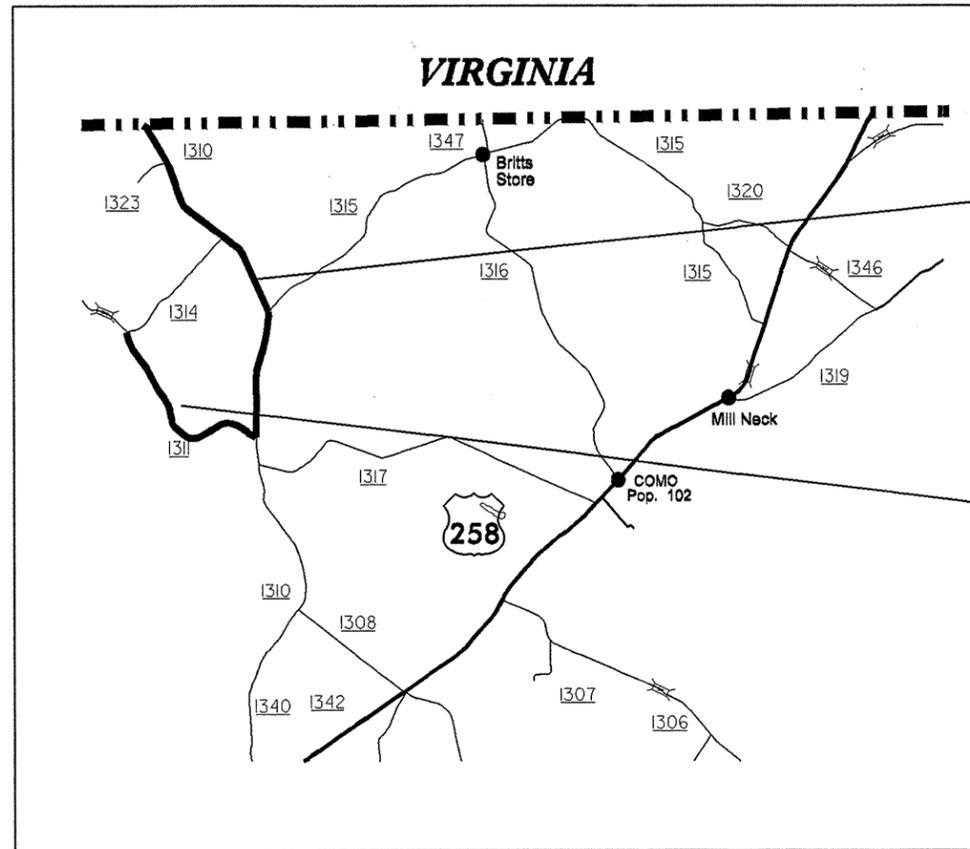
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HERTFORD COUNTY

LOCATION: **HERTFORD COUNTY SR 1310 FROM SR 1311 TO VIRGINIA STATE LINE**
HERTFORD COUNTY SR 1311 FROM SR 1314 TO SR 1310

TYPE OF WORK: **WIDENING, RESURFACING, AND PAINT PAVEMENT MARKINGS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1C.046068, ETC.	1	14
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
1C.046068	1	SR 1310	
1C.046069	2	SR 1174	
1CR.10461.19	3	NC 561	
1CR.20081.58	4	SR 1208	
1CR.20461.46	5	SR 1310	
1CR.20461.47	6	SR 1174	
1CR.20461.48	7	SR 1311	
1CR.20461.49	8	SR 1101	
1CR.20461.50	9	SR 1456	
1CR.20661.72	10	SR 1333	
1CR.20661.73	11	SR 1109	
1CR.20661.74	12	SR 1500	
1CR.20661.75	13	SR 1504	



MAPS 1&5

MAP 7

NOT TO SCALE

PROJECT LENGTH

MAP 1 2.78 MILES

MAP 5 2.78 MILES

MAP 7 1.59 MILES

Prepared in the Office of:
DIVISION ONE, DISTRICT TWO OFFICE
230 NC 42 WEST, AHOSSIE NC, 27910
2012 STANDARD SPECIFICATIONS



WBS ELEMENT: IC.046068, ETC.

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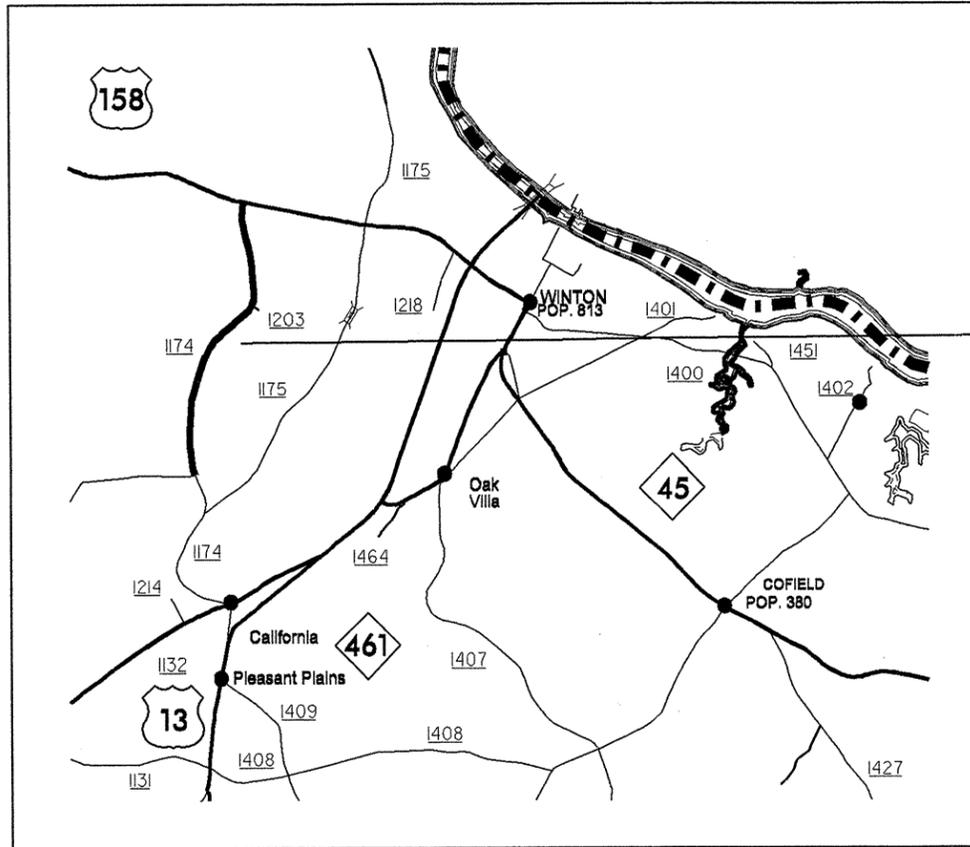
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HERTFORD COUNTY

LOCATION: HERTFORD COUNTY SR 1174 FROM 0.2 MILES SOUTH OF US 158 TO SR 1108

TYPE OF WORK: WIDENING, RESURFACING, AND PAINT PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1C.046068, ETC.	2	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
1C.046068	1	SR 1310	
1C.046069	2	SR 1174	
1CR.10461.19	3	NC 561	
1CR.20081.58	4	SR 1208	
1CR.20461.46	5	SR 1310	
1CR.20461.47	6	SR 1174	
1CR.20461.48	7	SR 1311	
1CR.20461.49	8	SR 1101	
1CR.20461.50	9	SR 1456	
1CR.20661.72	10	SR 1333	
1CR.20661.73	11	SR 1109	
1CR.20661.74	12	SR 1500	
1CR.20661.75	13	SR 1504	



MAPS 2&6

NOT TO SCALE

PROJECT LENGTH

MAP 2 2.09 MILES
MAP 6 2.09 MILES

Prepared in the Office of:
DIVISION ONE, DISTRICT TWO OFFICE

230 NC 42 WEST, AHOSKIE NC, 27910

2012 STANDARD SPECIFICATIONS



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CONTRACT: **WBS ELEMENT: IC.046068, ETC.**

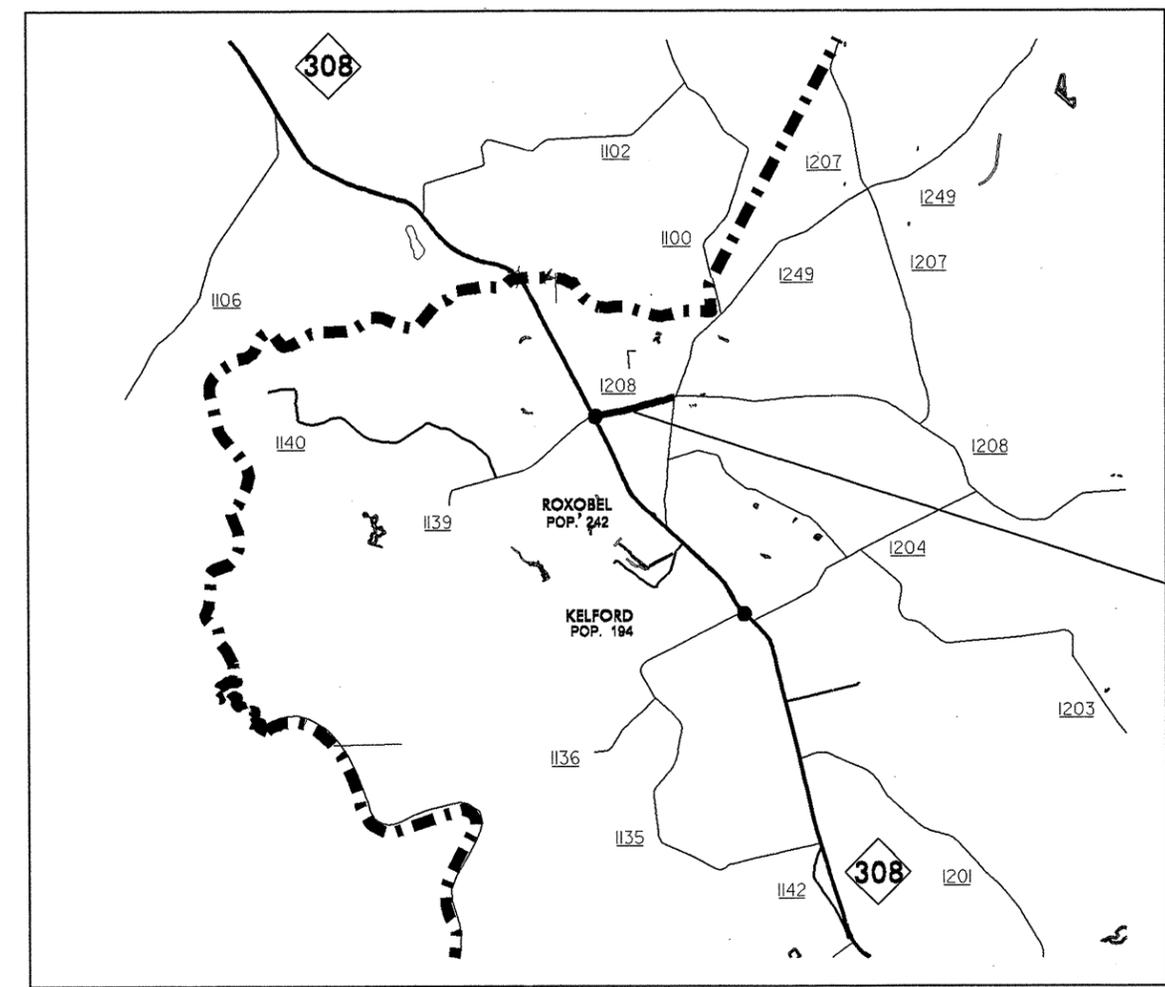
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

BERTIE COUNTY

LOCATION: BERTIE COUNTY SR 1208 FROM NC 308 TO SR 1249

TYPE OF WORK: MILLING, RESURFACING, AND PAINT PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1C.046068, ETC.	4	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
1C.046068	1	SR 1310	
1C.046069	2	SR 1174	
1CR.10461.19	3	NC 561	
1CR.20081.58	4	SR 1208	
1CR.20461.46	5	SR 1310	
1CR.20461.47	6	SR 1174	
1CR.20461.48	7	SR 1311	
1CR.20461.49	8	SR 1101	
1CR.20461.50	9	SR 1456	
1CR.20661.72	10	SR 1333	
1CR.20661.73	11	SR 1109	
1CR.20661.74	12	SR 1500	
1CR.20661.75	13	SR 1504	

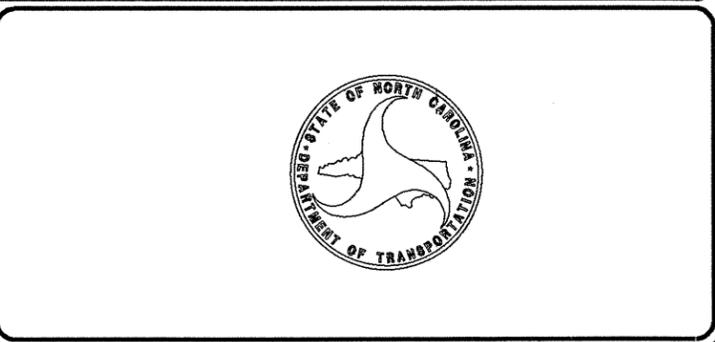


MAP 4

NOT TO SCALE

PROJECT LENGTH
 MAP 4 0.67 MILES

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 2012 STANDARD SPECIFICATIONS



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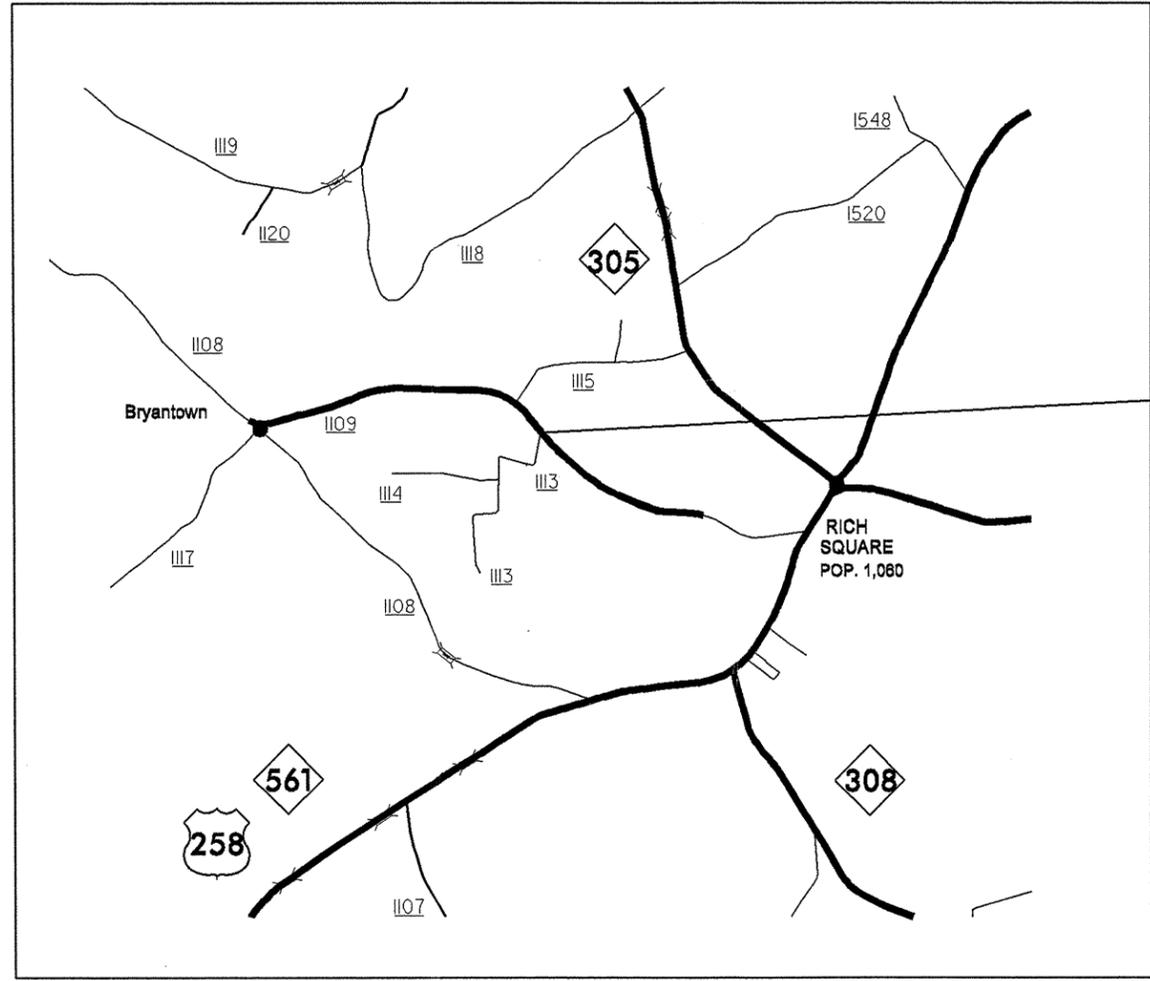
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NORTHAMPTON COUNTY

LOCATION: NORTHAMPTON COUNTY SR 1109 FROM SR 1108 TO RICH SQUARE CITY LIMITS

TYPE OF WORK: RESURFACING AND PAINT PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1C.046068, ETC.	5	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
1C.046068	1	SR 1310	
1C.046069	2	SR 1174	
1CR.10461.19	3	NC 561	
1CR.20081.58	4	SR 1208	
1CR.20461.46	5	SR 1310	
1CR.20461.47	6	SR 1174	
1CR.20461.48	7	SR 1311	
1CR.20461.49	8	SR 1101	
1CR.20461.50	9	SR 1456	
1CR.20661.72	10	SR 1333	
1CR.20661.73	11	SR 1109	
1CR.20661.74	12	SR 1500	
1CR.20661.75	13	SR 1504	

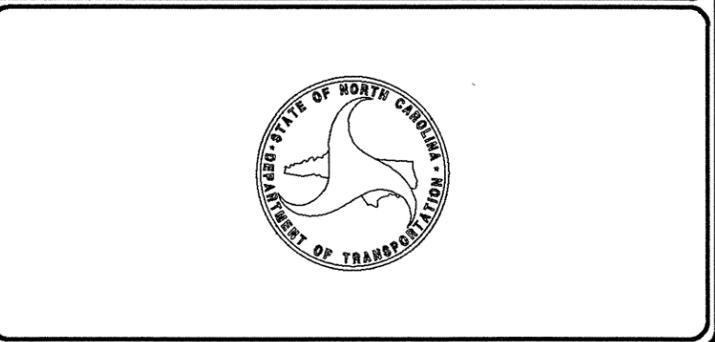


MAP 11

NOT TO SCALE

PROJECT LENGTH
MAP 11 3.64 MILES

Prepared In the Office of:
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230 NC 42 WEST, AHOSKIE NC, 27910
2012 STANDARD SPECIFICATIONS



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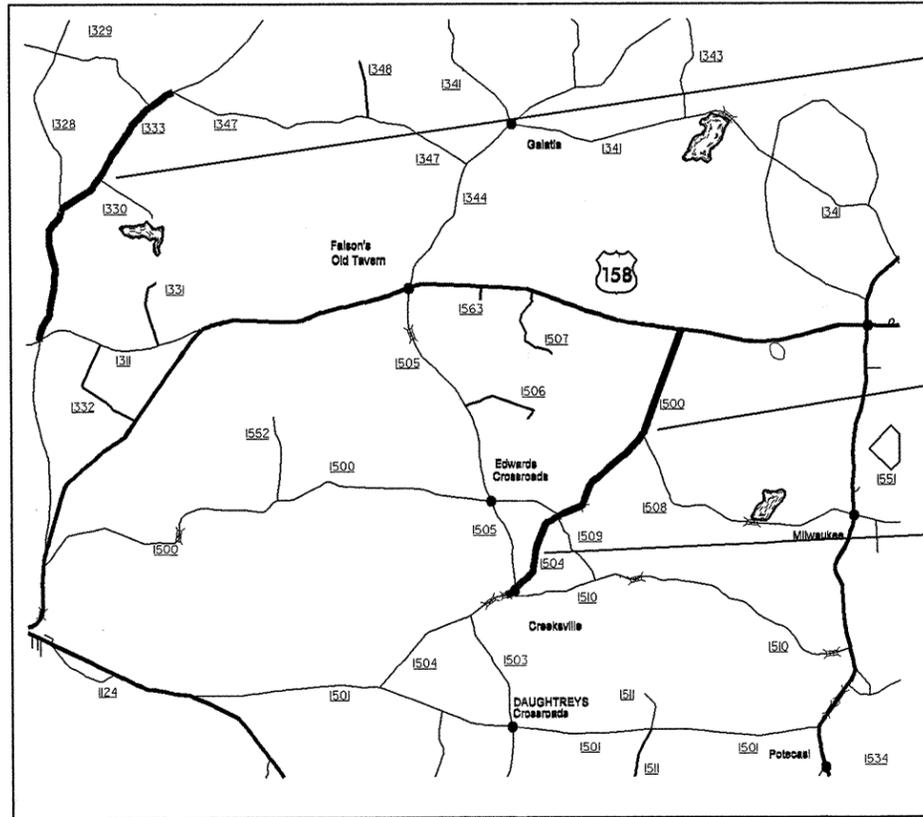
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NORTHAMPTON COUNTY

LOCATION: NORTHAMPTON COUNTY SR 1333 FROM SR 1347 TO SR 1311
LOCATION: NORTHAMPTON COUNTY SR 1500 FROM US 158 TO SR 1504
LOCATION: NORTHAMPTON COUNTY SR 1504 SR 1500 TO SR 1510

TYPE OF WORK: RESURFACING, AND PAINT PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	1C.046068, ETC.	6	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
1C.046068	1	SR 1310	
1C.046069	2	SR 1174	
1CR.10461.19	3	NC 561	
1CR.20081.58	4	SR 1208	
1CR.20461.46	5	SR 1310	
1CR.20461.47	6	SR 1174	
1CR.20461.48	7	SR 1311	
1CR.20461.49	8	SR 1101	
1CR.20461.50	9	SR 1456	
1CR.20661.72	10	SR 1333	
1CR.20661.73	11	SR 1109	
1CR.20661.74	12	SR 1500	
1CR.20661.75	13	SR 1504	



MAP 10

MAP 12

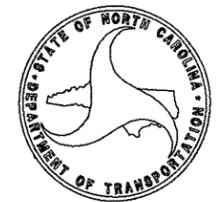
MAP 13

NOT TO SCALE

PROJECT LENGTH

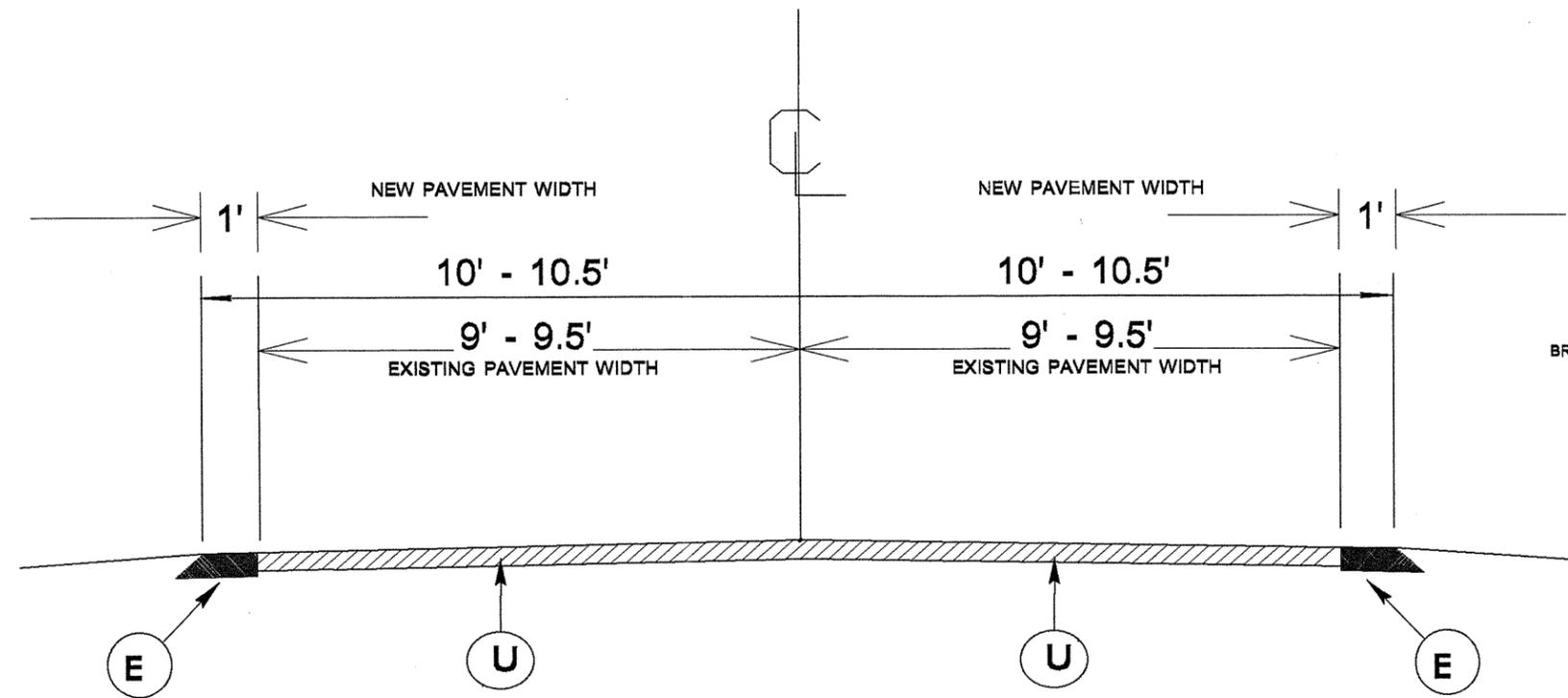
MAP 10 3.50 MILES
MAP 12 2.69 MILES
MAP 13 1.12 MILES

Prepared in the Office of:
DIVISION ONE, DISTRICT TWO OFFICE
230 NC 42 WEST, AHOSKIE NC, 27910
2012 STANDARD SPECIFICATIONS



U	EXISTING PAVEMENT
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 138.0 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
E	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE TYPE B 25.0 B AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
V1	MILLING BITUMINOUS PAVEMENT 1.25" DEPTH
V2	VARIABLE DEPTH MILLING 1.25" - 3"

(U)	EXISTING PAVEMENT
(E)	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B AT AN AVERAGE RATE OF 827 LBS. PER SQ. YD.



NOTES:

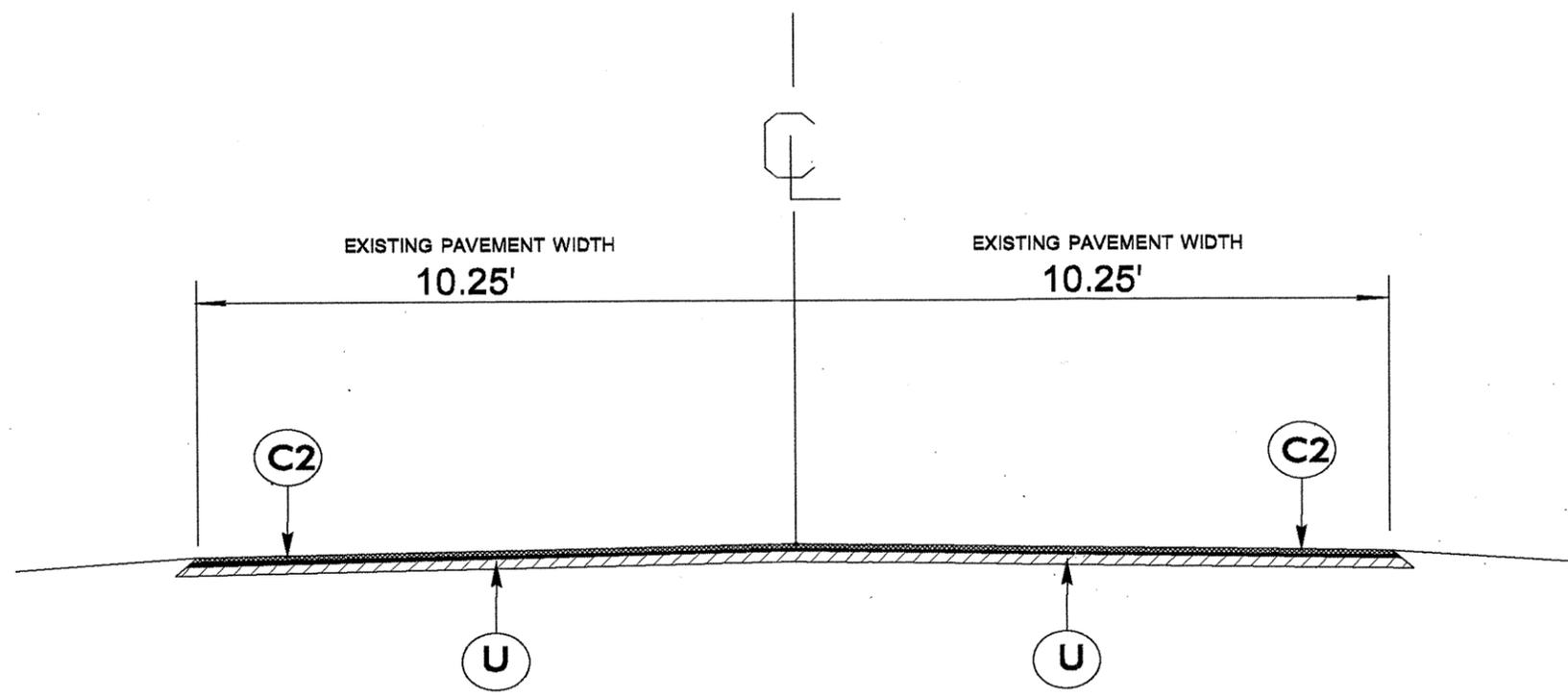
- ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII., OR AS DIRECTED BY THE ENGINEER
- EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES
- BRIDGES TO BE SURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY ENGINEER
- PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
- SHOULDERS ARE TO BE RECONSTRUCTED BY OTHERS

TYPICAL SECTION #1

USE WITH MAP 1 & 2

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C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT



NOTES:

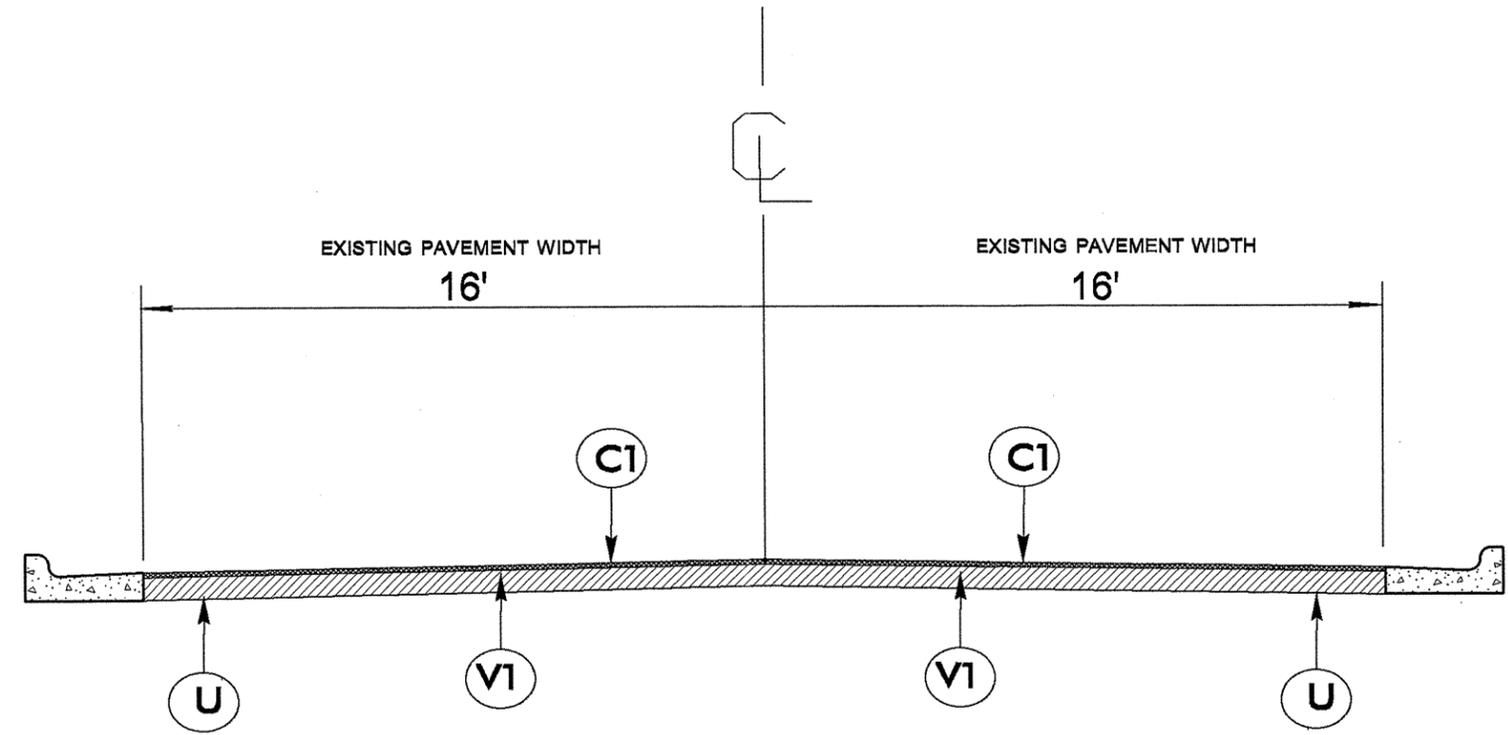
- ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER
- EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES
- BRIDGES TO BE SURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY ENGINEER
- PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
- PROP. APPROX. 1.0" ASPHALT CONCRETE LEVELING COURSE TYPE S9.5B TO BE APPLIED AT AN AVERAGE RATE OF 112.0 LBS. PER SQ. YD. FROM STA 0+00 TO 23+00
- PROP. APPROX. 3/4" ASPHALT CONCRETE LEVELING COURSE TYPE SA-1 TO BE APPLIED AT AN AVERAGE RATE OF 75.0 LBS. PER SQ. YD. FROM STA 23+00 TO 251+25
- SHOULDERS ARE TO BE RECONSTRUCTED BY OTHERS

TYPICAL SECTION #2

USE WITH MAP 3

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C1	PROP. APPROX. 1.25 ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 138.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V1	MILLING BITUMINOUS PAVEMENT 1.25"



NOTES:

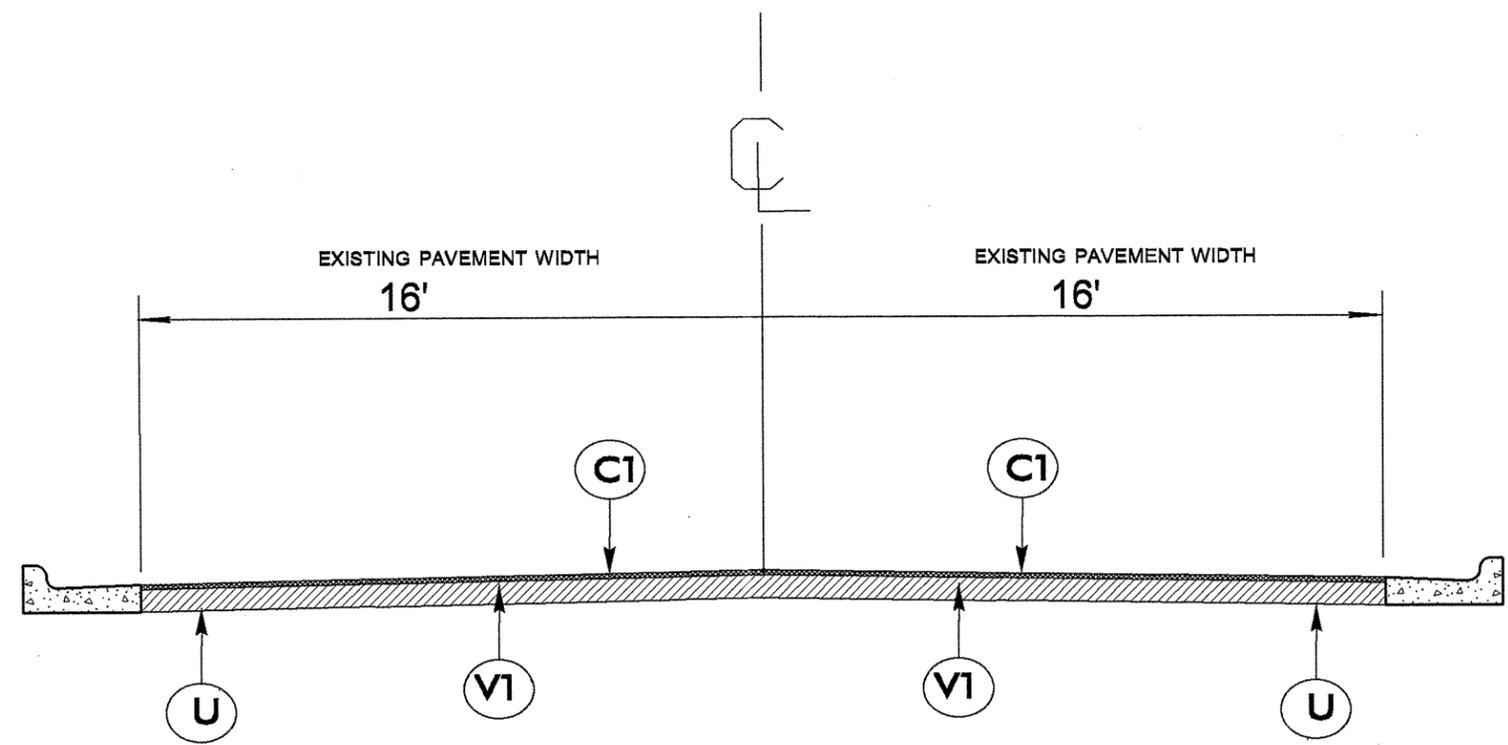
- ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADI., OR AS DIRECTED BY THE ENGINEER
- EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES
- PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
- MILL ASPHALT 1.25" BELOW EDGE OF CURB & GUTTER

TYPICAL SECTION #3

USE WITH MAP 4

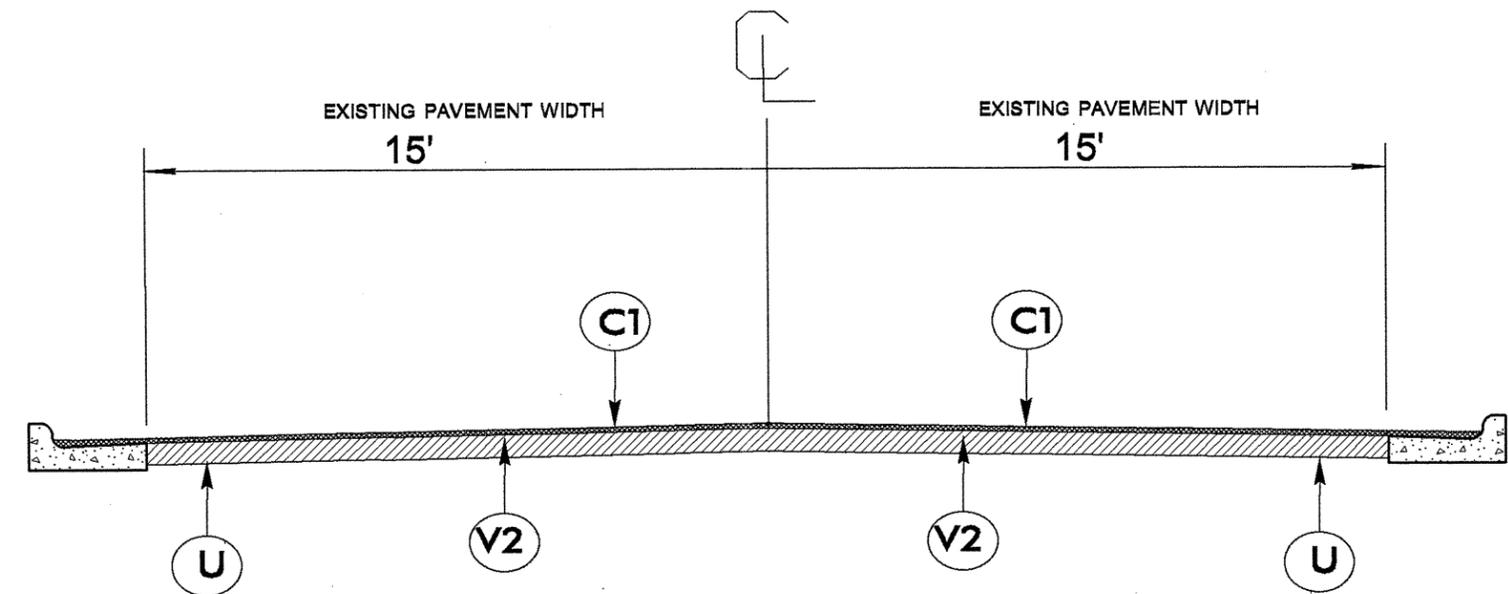
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TYPICAL SECTION #5

USE WITH MAP 8



TYPICAL SECTION #6

USE WITH MAP 9

C1	PROP. APPROX. 1.25 ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 138.0 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V1	MILLING BITUMINOUS PAVEMENT 1.25"
V2	VARIABLE DEPTH MILLING 1.25" - 3"

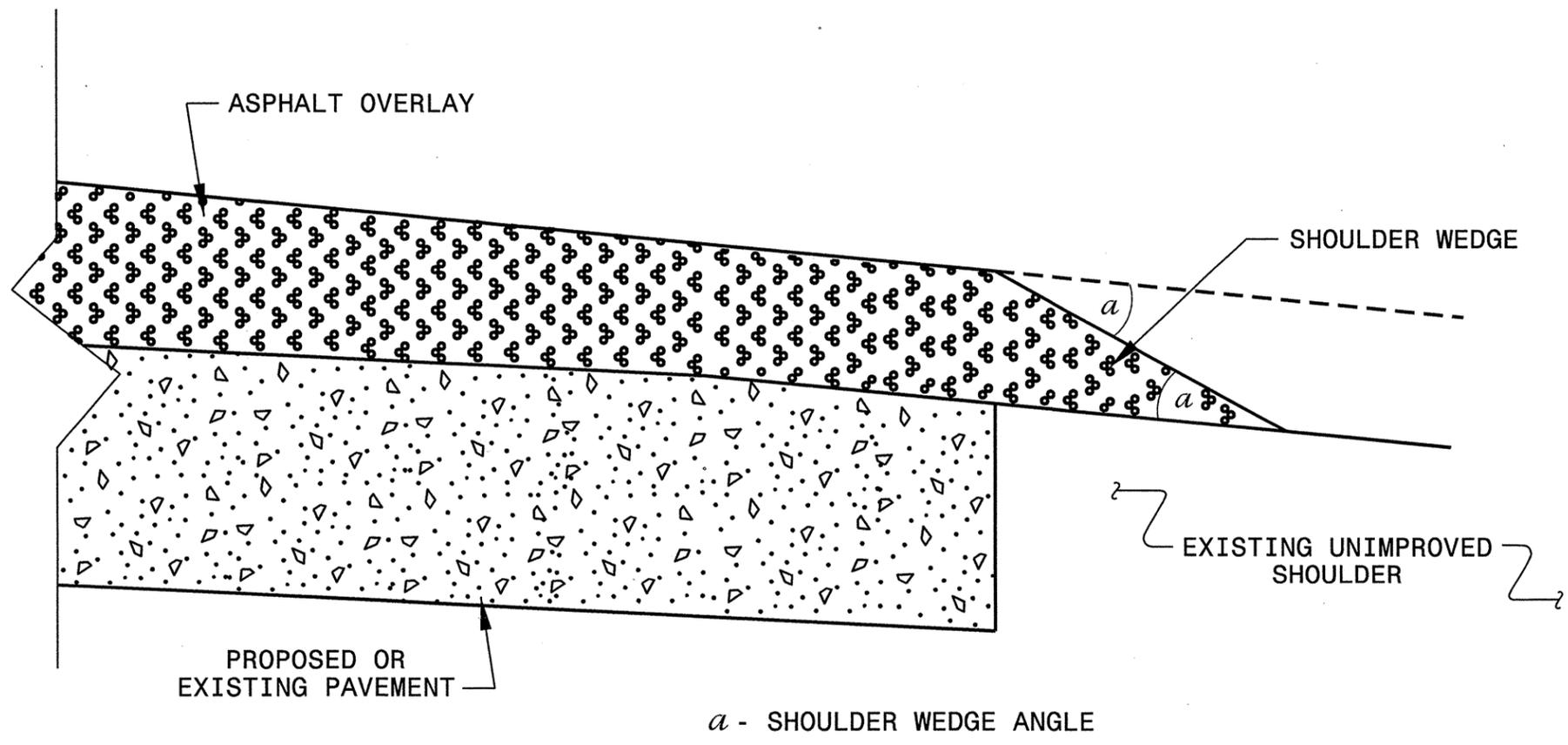
NOTES:

ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADI.,
OR AS DIRECTED BY THE ENGINEER

EDGES, PAVEMENT WIDENING, INTERSECTIONS, AND BRIDGE FLARES ARE
INCLUDED IN THE TABLE OF QUANTITIES

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

ALL ASPHALT IS TO BE REMOVED FROM EXISTING CURB AND GUTTER. ON MAPS WHERE ASPHALT
IS PRESENT IN THE GUTTER, MILL 1.25" BELOW EDGE OF EXISTING CURB AND GUTTER



SHOULDER WEDGE DETAIL

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CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119			
SHOULDER WEDGE DETAIL			
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MODIFIED BY:		DATE:	
CHECKED BY:		DATE:	
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PROJECT NO.	SHEET NO.	TOTAL NO.
1C.046068, ETC.	14	14

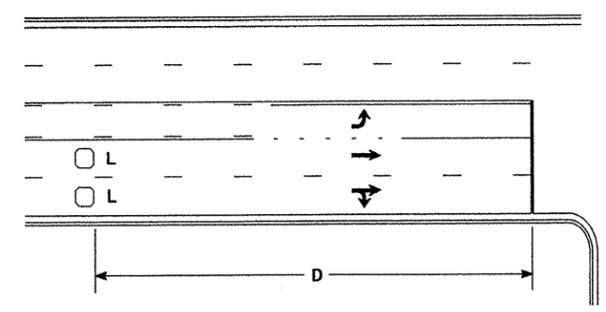
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYPICAL NO	LENGTH MI	WIDTH FT	NEW WIDTH FT	FINAL SURFACE TESTING REQUIRED	MOBILIZATION LS	1.25" MILLING SY	1.25" TO 3" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	LEVELING COURSE, TYPE SA-1 TON	RETROFIT EXISTING CURB RAMPS EA	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	INDUCTIVE LOOP LF	LEAD-IN CABLE (14-2) LF
1C.046068	Hertford	1	SR 1310 - STATESVILLE ROAD	FROM SR 1311 TO VA. LINE	1	2.78	18.5	20.5	NO	1				1,280				58						
1C.046069	Hertford	2	SR 1174 - MT. MORIAH ROAD	FROM 0.2 MILES SOUTH OF US 158 TO SR 1108	1	2.09	18	20	NO	*				980				45						
1CR.10461.19	Hertford	3	NC 561	FROM US 13 TO SR 1427	2	4.95	20.5		NO	*			850	5,385	300		476	1,925						
1CR.20081.58	Bertie	4	SR 1208 - CHURCH STREET	FROM NC 308 TO SR 1249	3,4	0.67	32		NO	*	6,332						835	57			7			
1CR.20461.46	Hertford	5	SR 1310 - STATESVILLE ROAD	FROM SR 1311 TO VA. LINE	4	2.78	20.5		NO	*							2,535	173						
1CR.20461.47	Hertford	6	SR 1174 - MT. MORIAH ROAD	FROM 0.2 MILES SOUTH OF US 158 TO SR 1108	4	2.09	20		NO	*							1,950	133						
1CR.20461.48	Hertford	7	SR 1311 - BOONE'S BRIDGE ROAD	FROM SR 1314 TO SR 1310	4	1.59	20		NO	*							1,390	95						
1CR.20461.49	Hertford	8	SR 1101 - CATHERINE CREEK ROAD	FROM US 13 TO SR 1456	5	0.42	32		NO	*	7,800						750	51	16	7	7	750	50	
1CR.20461.50	Hertford	9	SR 1456 - CATHERINE CREEK ROAD	FROM SR 1101 TO SR 1409	6	0.34	30		NO	*		6,000					550	38		9	4			
1CR.20661.72	Northampton	10	SR 1333 - MT. CARMEL CHURCH ROAD	FROM SR 1347 TO SR 1311	4	3.5	20		NO	*							3,110	212						
1CR.20661.73	Northampton	11	SR 1109 - BRYANTOWN ROAD	FROM SR 1108 TO RICH SQUARE CL	4	3.64	19.5		NO	*							3,180	217						
1CR.20661.74	Northampton	12	SR 1500 - ZION CHURCH ROAD	FROM US 158 TO SR 1504	4	2.69	18.5		NO	*							2,187	149						
1CR.20661.75	Northampton	13	SR 1504 - CREEKSVILLE ROAD	FROM SR 1500 TO SR 1510	4	1.12	18.5		NO	*							983	67						
GRAND TOTAL						28.66			NO	1	14,132	6,000	850	2,260	5,385	300	17,470	1,771	1,925	16	16	18	750	50

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TEMP TRAFFIC CONTROL ITEM LS	4" WHITE PAINT LF	4" YELLOW PAINT LF	16" WHITE PAINT LF	24" WHITE PAINT LF	PAINT PAVEMENT MARKING CHARACTER EA
1C.046068	Hertford	1	SR 1310 - STATESVILLE ROAD	FROM SR 1311 TO VA. LINE	1					
1C.046069	Hertford	2	SR 1174 - MT. MORIAH ROAD	FROM 0.2 MILES SOUTH OF US 158 TO SR 1108	*					
1CR.10461.19	Hertford	3	NC 561	FROM US 13 TO SR 1427	*	53,262	65,340			
1CR.20081.58	Bertie	4	SR 1208 - CHURCH STREET	FROM NC 308 TO SR 1249	*	3,400	8,844	80	60	4
1CR.20461.46	Hertford	5	SR 1310 - STATESVILLE ROAD	FROM SR 1311 TO VA. LINE	*	29,913	18,348			
1CR.20461.47	Hertford	6	SR 1174 - MT. MORIAH ROAD	FROM 0.2 MILES SOUTH OF US 158 TO SR 1108	*	22,488	13,794			
1CR.20461.48	Hertford	7	SR 1311 - BOONE'S BRIDGE ROAD	FROM SR 1314 TO SR 1310	*	17,108	10,494			
1CR.20461.49	Hertford	8	SR 1101 - CATHERINE CREEK ROAD	FROM US 13 TO SR 1456	*	1,200	5,504		80	
1CR.20461.50	Hertford	9	SR 1456 - CATHERINE CREEK ROAD	FROM SR 1101 TO SR 1409	*		4,488			
1CR.20661.72	Northampton	10	SR 1333 - MT. CARMEL CHURCH ROAD	FROM SR 1347 TO SR 1311	*	37,660	23,100			
1CR.20661.73	Northampton	11	SR 1109 - BRYANTOWN ROAD	FROM SR 1108 TO RICH SQUARE CL	*	39,166	24,024			
1CR.20661.74	Northampton	12	SR 1500 - ZION CHURCH ROAD	FROM US 158 TO SR 1504	*	28,944	17,754			
1CR.20661.75	Northampton	13	SR 1504 - CREEKSVILLE ROAD	FROM SR 1500 TO SR 1510	*	12,051	7,392			
GRAND TOTAL					1	245,192	199,082	80	140	4
						444,274				

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

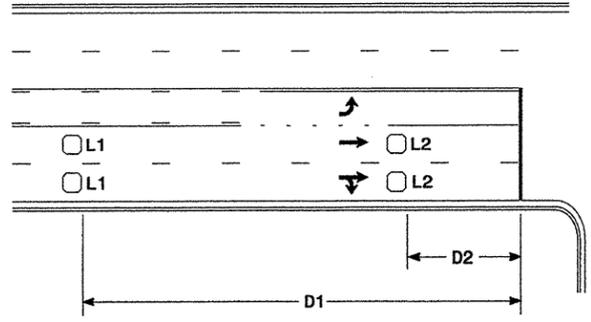


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

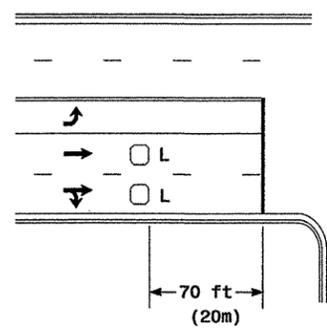


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

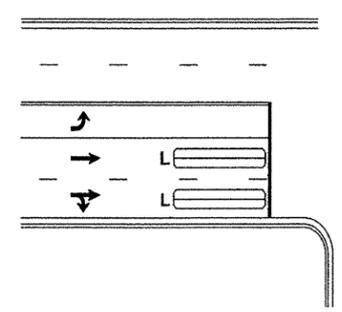
"Stretch" Operation

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



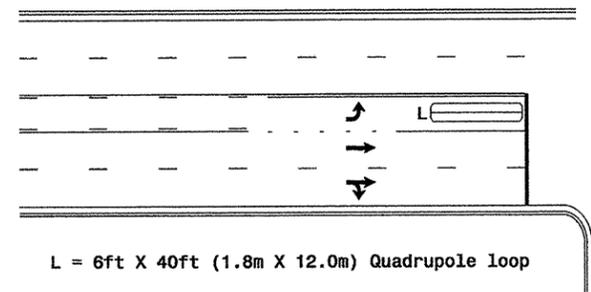
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

OR



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

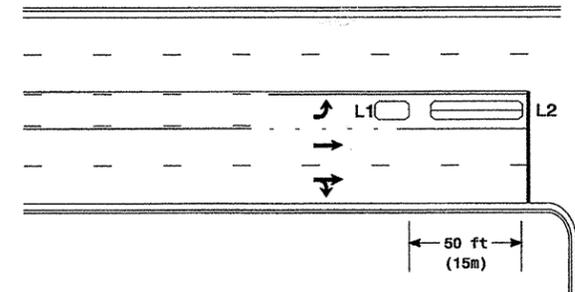
Left Turn Lane Detection



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

Presence Loop Detection

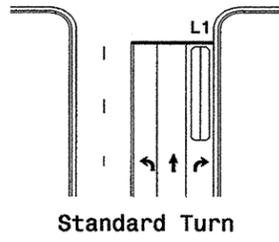
OR



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

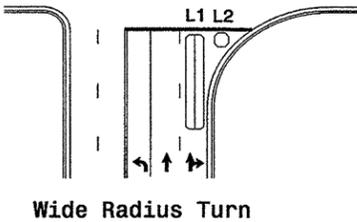
Queue Loop Detection

Right Turn Lane Detection

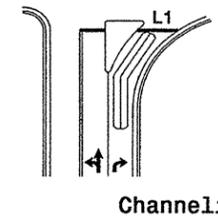


Standard Turn

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

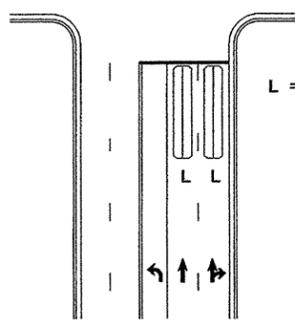


Wide Radius Turn



Channelized Turn

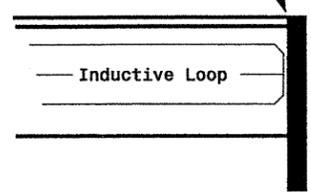
Side Street Detection



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

	<p>Typical Loop Locations</p>		
	<p>SCALE N/A</p>	<p>PLANNED BY: P. L. Alexander REVIEWED BY: [Signature]</p>	