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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

TRANSYLVANIA & HENDERSON COUNTIES

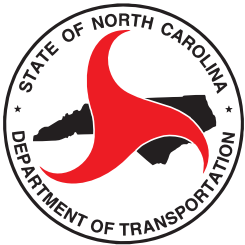
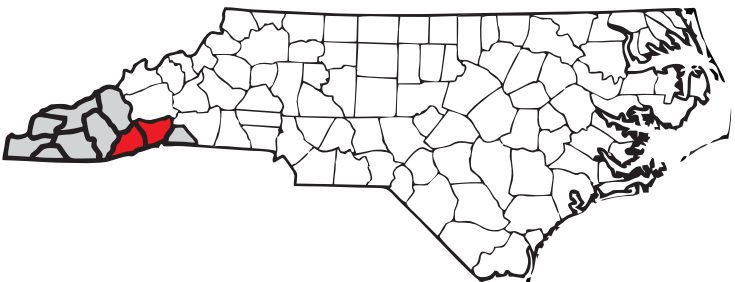
Milled Rumble Strip & Pavement Markings  
on Various Routes in Division 14

INDEX

MAP NO.	ROUTE
1	US 64 Transylvania-Rosman
2	US 64 Transylvania-Brevard
3	US 64 Henderson-Edneyville
4	US 64 Henderson-Laurel Park
5	SR 1123 Little River Henderson
6	SR 1812 W. Blue Ridge Henderson

SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY
Sinusoidal MRS	385,988 LF
6" 90 Mil Thermo.	574,091 LF
12" 90 Mil Thermo.	1,150 LF
24" 90 Mil Thermo.	710 LF
6" Line Removal	52,984 LF
24" Line Removal	515 LF
90 Mil Thermo. Symbols	83 EA
90 Mil Thermo. Characters	68 EA
Symbol/Character Removal	111 EA



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ENGINEERING  
DIVISION 14

2024 Roadway Standard Drawings

STD. NO.	TITLE
<b>DIVISION 11</b>	<b>WORK ZONE TRAFFIC CONTROL</b>
1101.01	WORKZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
<b>DIVISION 12</b>	<b>PAVEMENT MARKING, MARKERS AND DELINEATION</b>
1205.01	LINE TYPES AND OFFSETS
1205.02	TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	INTERSECTIONS
1205.05	TURN LANES
1205.06	LANE DROPS
1205.07	PEDESTRIAN CROSSWALKS
1205.08	SYMBOLS AND WORD MESSAGES
1205.09	PAINTED ISLANDS
1205.10	SCHOOL AREAS
1205.11	RAILROAD CROSSINGS
1205.13	LANE REDUCTIONS

General Notes:

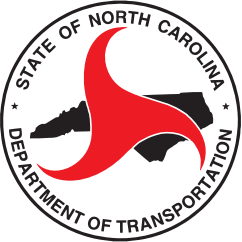
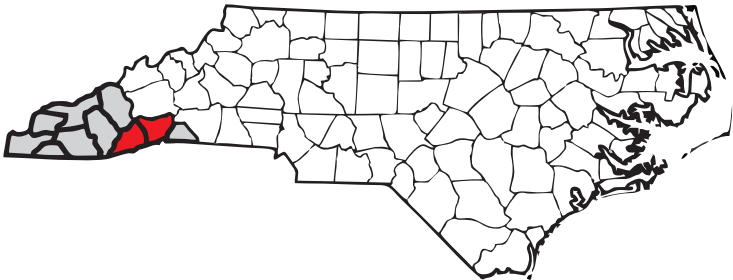
For roadways with nominal paved shoulder widths of at least five (5) feet, gaps in milled patterns, varying between 6 and 12 feet, shall be provided to allow bicyclists to move between the through lane and the right shoulder to avoid vehicles, debris, etc. The pattern should be a minimum of a 5:1 rumble-to-gap ratio. The Engineer should determine design and placement. For roadways with a paved shoulder width of less than five (5) feet, rumble strip/stripe gaps are not required but are encouraged when a useable shoulder width is present *(STANDARD PRACTICE for Milled Rumble Strips/Stripes on Non-Full-Controlled Facilities)*.

No Milled Rumble Strips should be installed along driveways or intersections.

All work will occur within the existing maintained ROW.

No trees will be removed.

The contractor shall halt all work in the vicinity and notify the Engineer if Native American artifacts and/or human remains are located during the ground disturbance phase of the project. The Department will then notify the Catawba Nation and Cherokee Nation.



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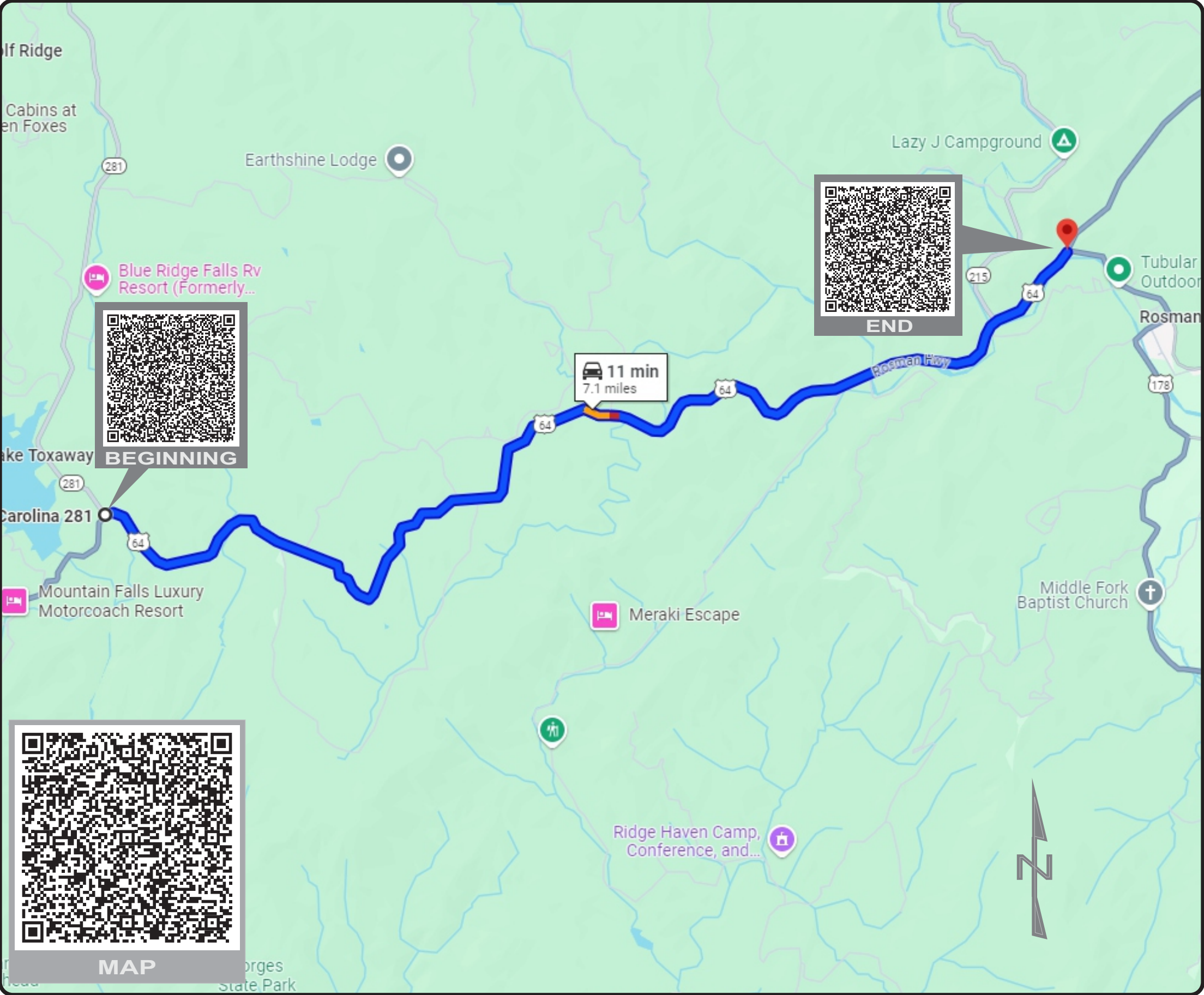


WBS: 50986.3.9

TIP : HS-2414H

CONTRACT : DN01063

MAP: 1



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

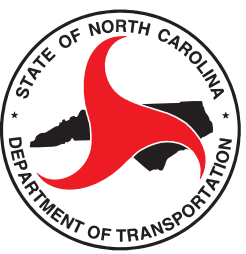
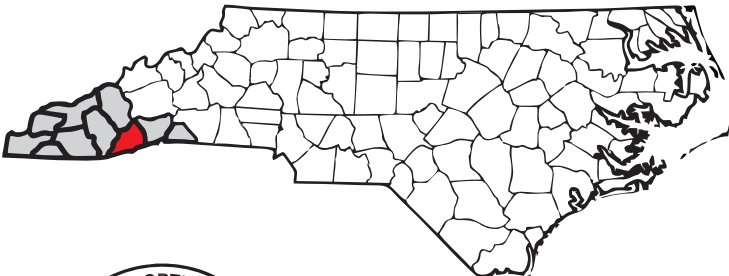
Location:

On: US 64  
From: NC 281  
To: NC 178  
Length: 7.1 miles

Type of Work:

Sinusoidal Milled Rumble Strips Center 18"	39,287 LF
Sinusoidal Milled Rumble Strips Edge Line 8"	78,575 LF
6" 90 Mil Thermoplastic Lines	
12" 90 Mil Thermoplastic Lines	156,288 LF
24" 90 Mil Thermoplastic Lines	270 LF
Removal of 6" Lines	100 LF
Removal of 24" Lines	1,700 LF
90 Mil Thermoplastic Symbols	100 LF
90 Mil Thermoplastic Characters	11 EA
Removal of Symbols / Characters	12 EA
	16 EA

Note: Install edge line next to curb and gutter.



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[https://www.google.com/maps/dir/35.1274955,-82.9276724/35.1489685,-82.8315708/@35.1290219,-82.9091174,13.5z/data=!4m2!4m1!3e0?entry=ttu&g\\_ep=EgoyMDI0MTIwOC4wIklXMDSoASAFQAw%3D%3D](https://www.google.com/maps/dir/35.1274955,-82.9276724/35.1489685,-82.8315708/@35.1290219,-82.9091174,13.5z/data=!4m2!4m1!3e0?entry=ttu&g_ep=EgoyMDI0MTIwOC4wIklXMDSoASAFQAw%3D%3D)



**CONTRACT : DN01063**

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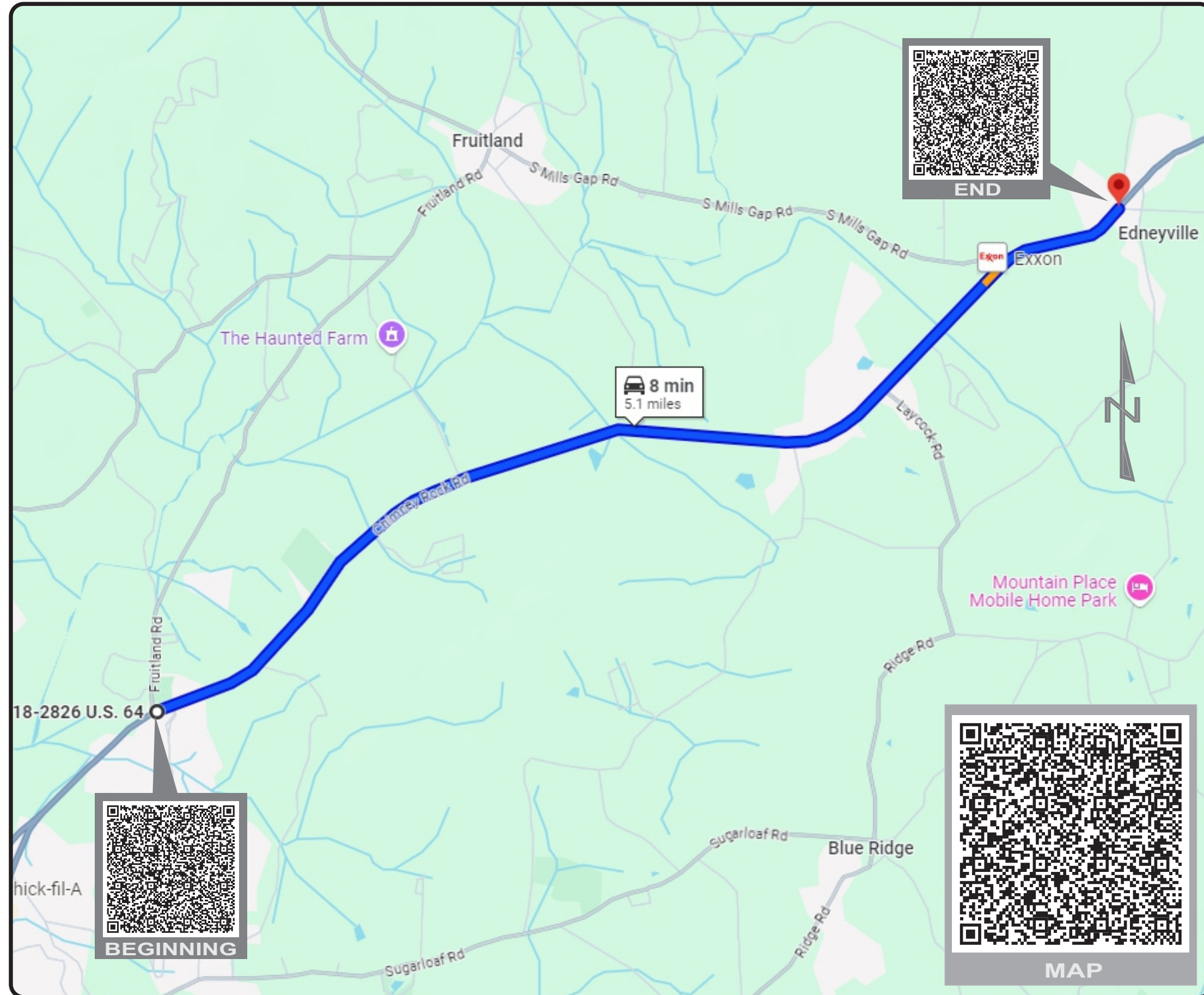


WBS: 49453.3.1

TIP : SS-6014N

CONTRACT : DN01063

## MAP: 3



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## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### HENDERSON COUNTY

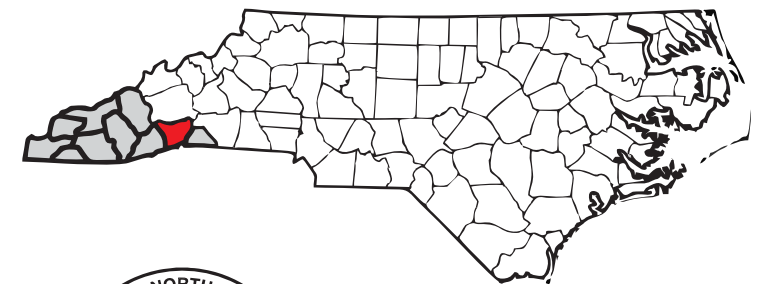
#### Location:

**On:** US 64  
**From:** SR 1574 (Fruitland Rd)  
**To:** SR 1602 (Gilliam Mountain Dr)  
**Length:** 5.1 miles

#### Type of Work:

Sinusoidal Milled Rumble Strips Center 18"	28,782 LF
Sinusoidal Milled Rumble Strips Edge line 8"	57,566 LF
6" 90 Mil Thermoplastic Lines	115,531 LF
12" 90 Mil Thermoplastic Lines	150 LF
24" 90 Mil Thermoplastic Lines	300 LF
Removal of 6" Lines	2,432 LF
Removal of 24" Lines	100 LF
90 Mil Thermoplastic Symbols	27 EA
90 Mil Thermoplastic Characters	44 EA
Removal of Symbols / Characters	52 EA

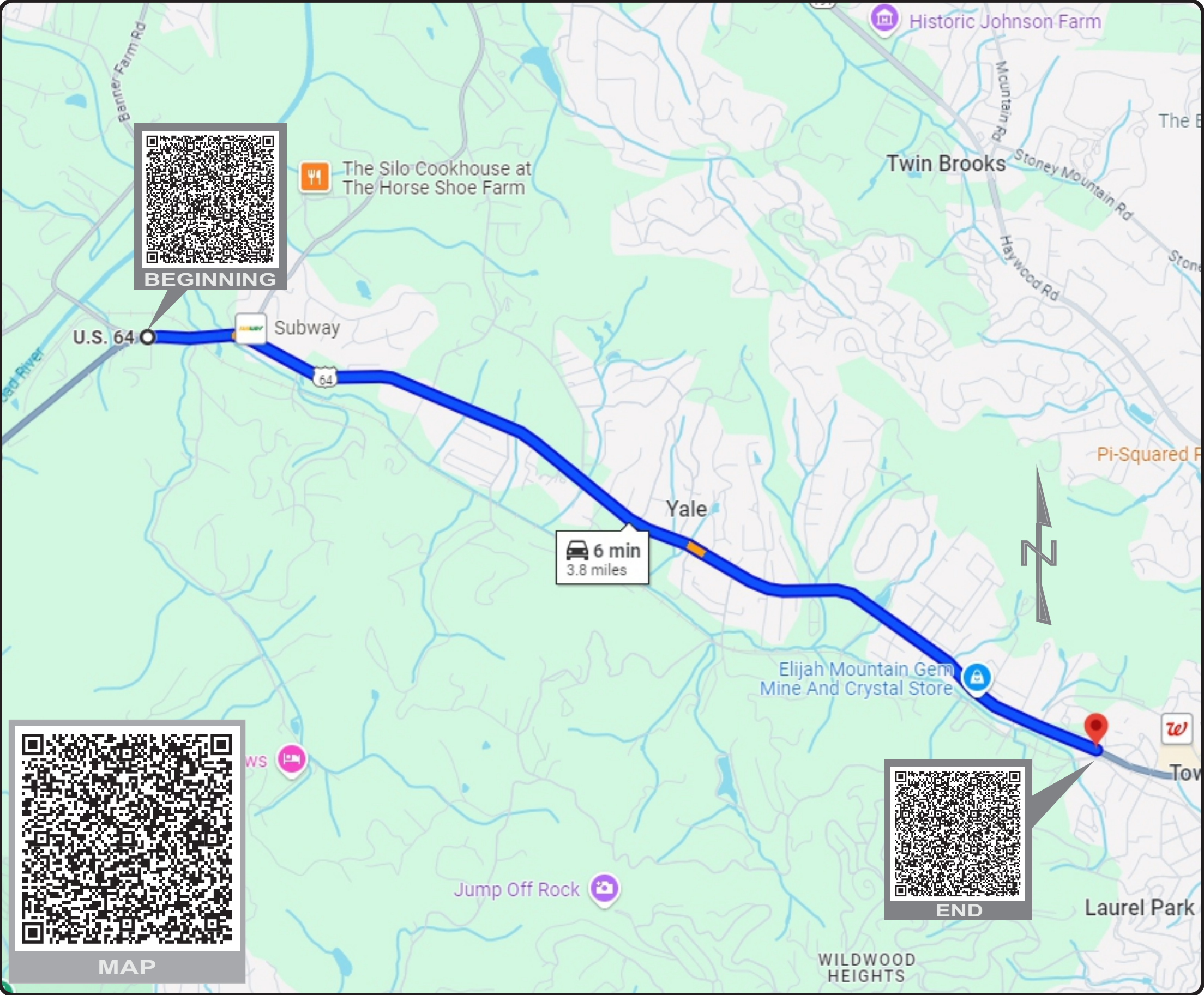
*Note: Install edgeline next to curb and gutter.*



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MAP: 4



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**HENDERSON COUNTY**

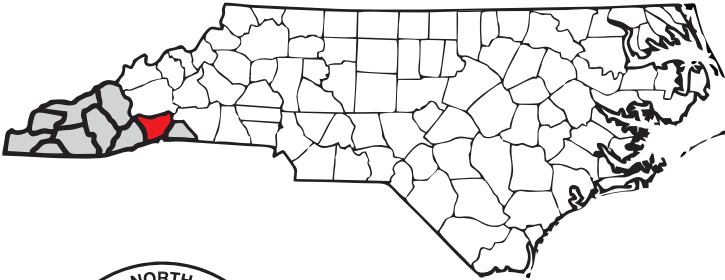
**Location:**

**On:** US 64  
**From:** SR 1218 (Horse Shoe Baptist Church Rd)  
**To:** SR 1172 (White Pine Dr)  
**Length:** 3.8 miles

**Type of Work:**

Sinusoidal Milled Rumble Strips Center 18"	22,264 LF
Sinusoidal Milled Rumble Strips Edge Line 8"	44,528 LF
6" 90 Mil Thermoplastic Lines	89,056 LF
12" 90 Mil Thermoplastic Lines	450 LF
24" 90 Mil Thermoplastic Lines	120 LF
Removal of 6" Lines	3,200 LF
Removal of 24" Lines	100 LF
90 Mil Thermoplastic Symbols	29 EA
Removal of Symbols / Characters	29 EA

*Note: Install edgeline next to curb and gutter.*



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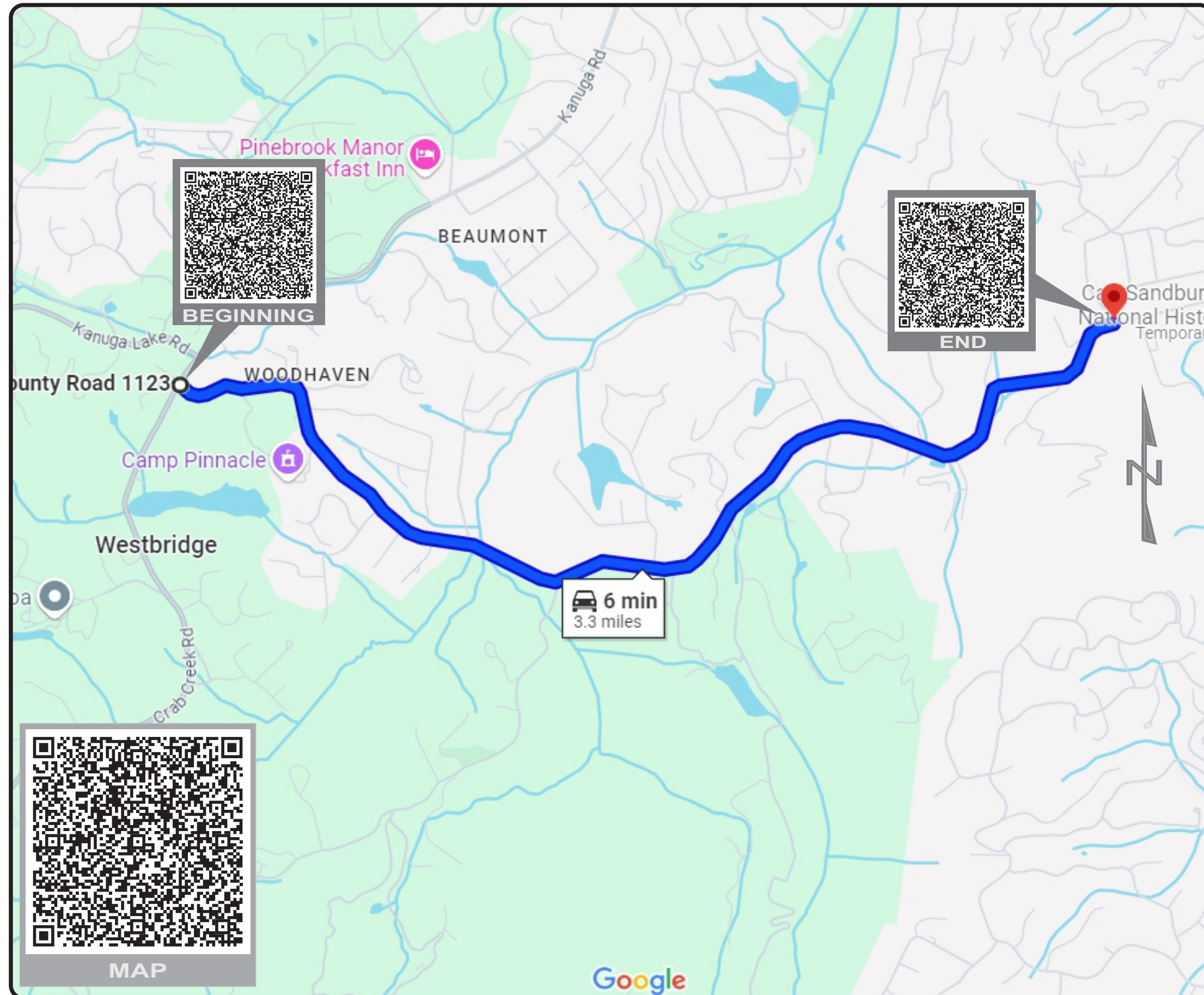


WBS: 51579

TIP : SS-6214AB

CONTRACT : DN01063

## MAP: 5



## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### HENDERSON COUNTY

#### Location:

**On:** SR 1123 (Little River Rd)  
**From:** SR 1127 (Kanuga Rd)  
**To:** SR 1198 (Trenholm Rd)  
**Length:** 3.3 miles

#### Type of Work:

Sinusoidal Milled Rumble Strips Center, 18" 17,424 LF

6" 90 Mil Thermoplastic Lines 69,696 LF

Removal of 6" Lines 34,848 LF

*Note: Centerline installation only on this route*

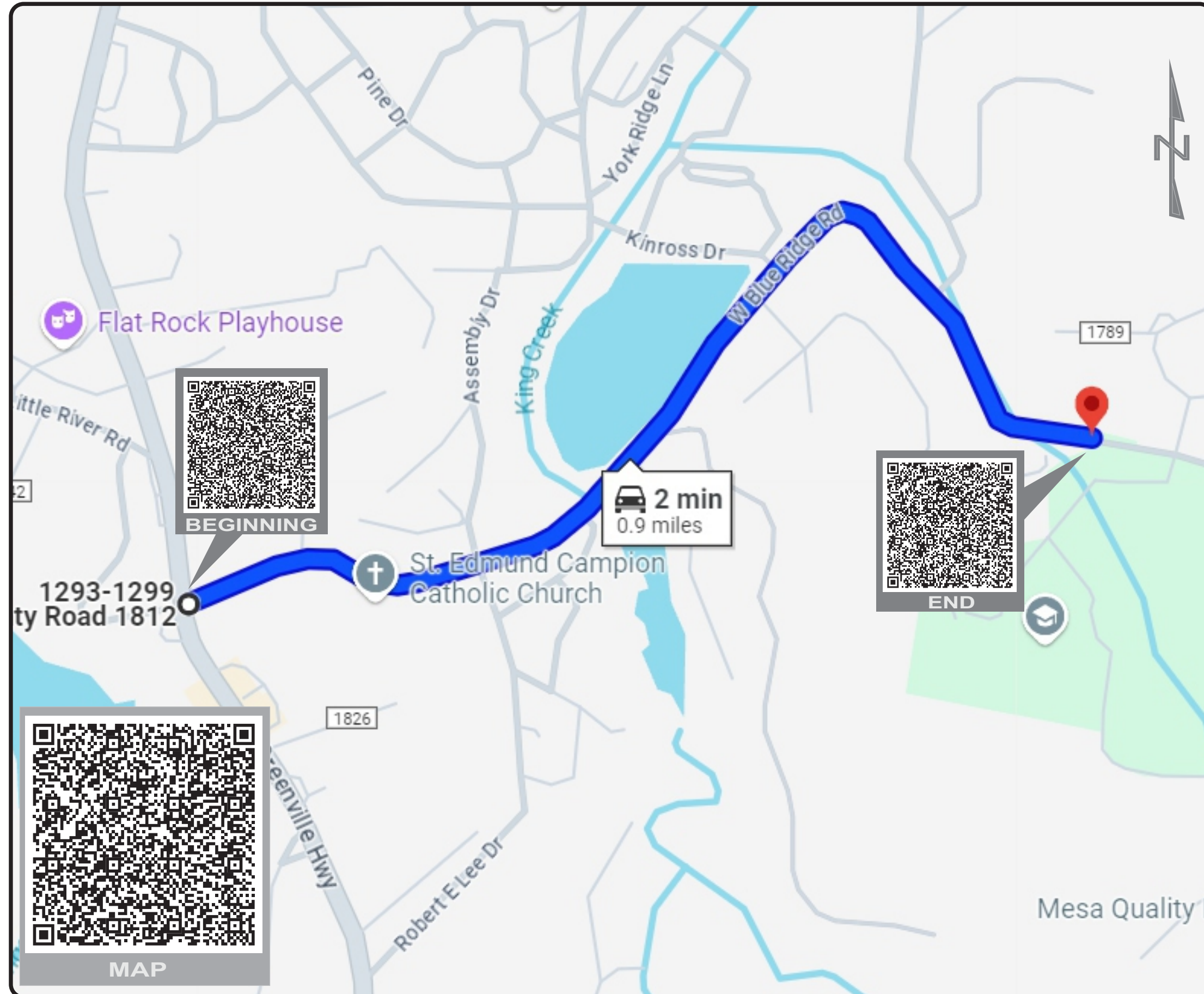


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DIVISION 14**

[https://www.google.com/maps/dir/35.2713428,-82.5009057/35.2737933,-82.4547422/@35.2680181,-82.4959937,14z/data=!4m2!4m1!3e0?entry=ttu&\\_ep=EgoyMDI0MTIxMS4wKXMDSoASAFQAw%3D%3D](https://www.google.com/maps/dir/35.2713428,-82.5009057/35.2737933,-82.4547422/@35.2680181,-82.4959937,14z/data=!4m2!4m1!3e0?entry=ttu&_ep=EgoyMDI0MTIxMS4wKXMDSoASAFQAw%3D%3D)



## MAP: 6



## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### HENDERSON COUNTY

#### Location:

**On:** SR1812 (W. Blue Ridge Rd)  
**From:** NC 225  
**To:** End of 2 lane west of SR 1198  
(Smyhe Rd)

**Length:** 0.9 miles

#### Type of Work:

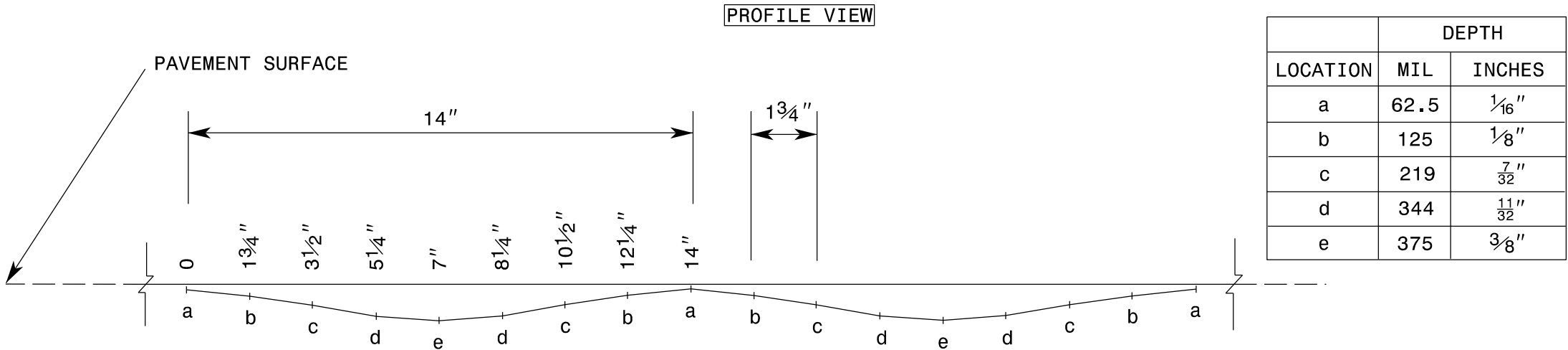
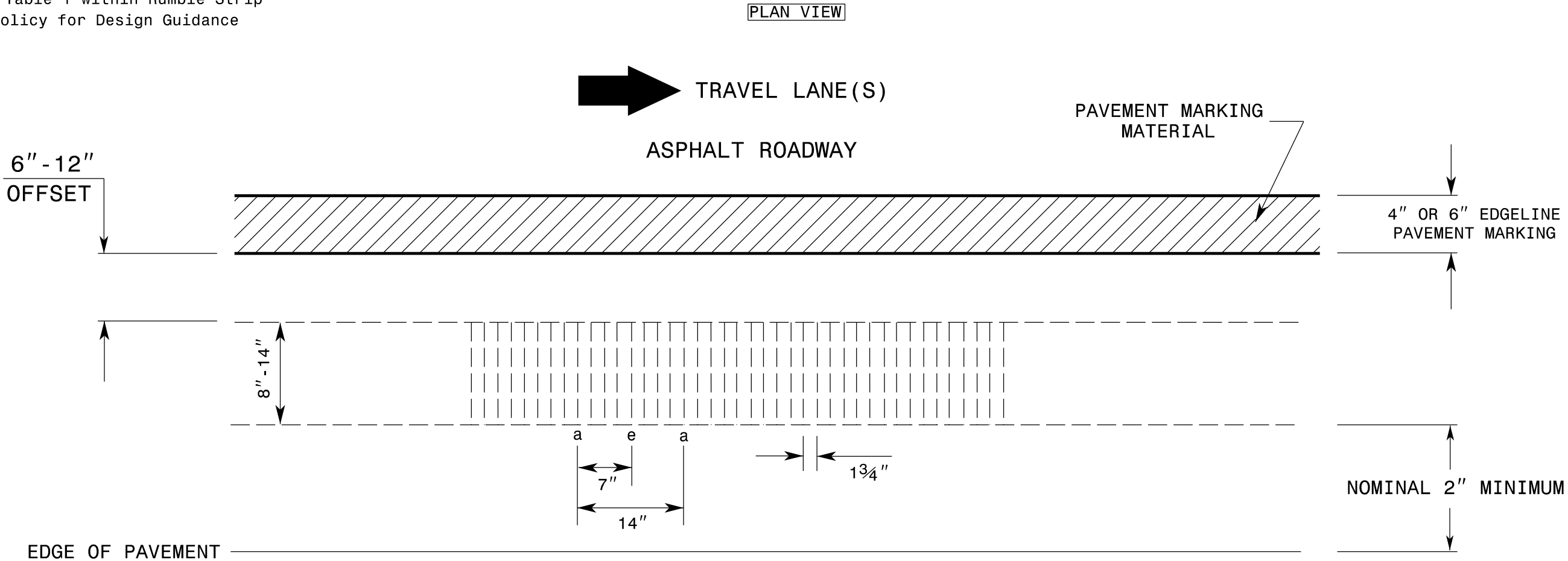
Sinusoidal Milled Rumble Strips Center, 18"	4,752 LF
6" 90 Mil Thermoplastic Lines	18,376 LF
24" 90 Mil Thermoplastic Lines	15 LF
Removal of 6" Lines	9,504 LF
Removal of 24" Lines	15 LF

*Note: Centerline installation only on this route.*



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DIVISION 14**

See Table 1 within Rumble Strip  
Policy for Design Guidance



LOCATION	DEPTH	
	MIL	INCHES
a	62.5	1/16"
b	125	1/8"
c	219	7/32"
d	344	11/32"
e	375	3/8"

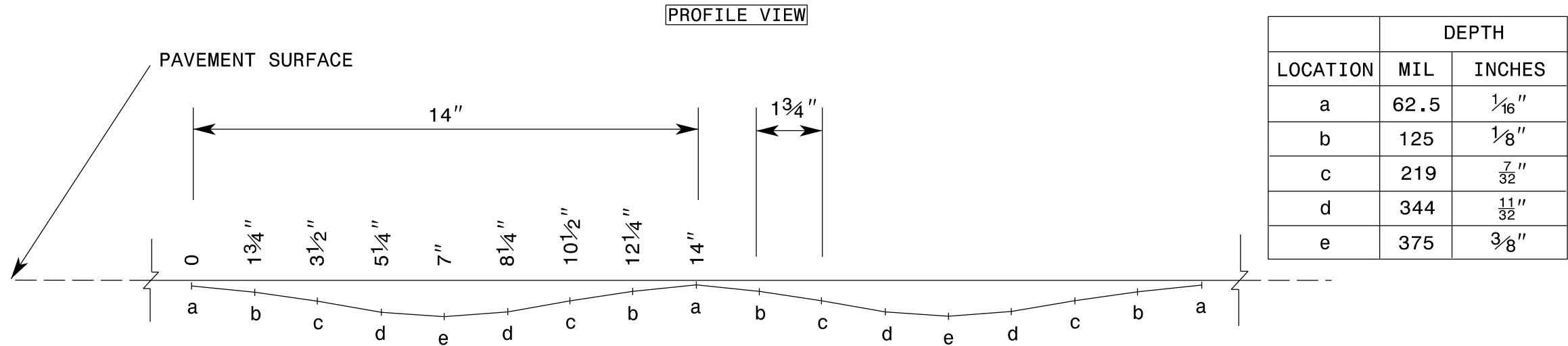
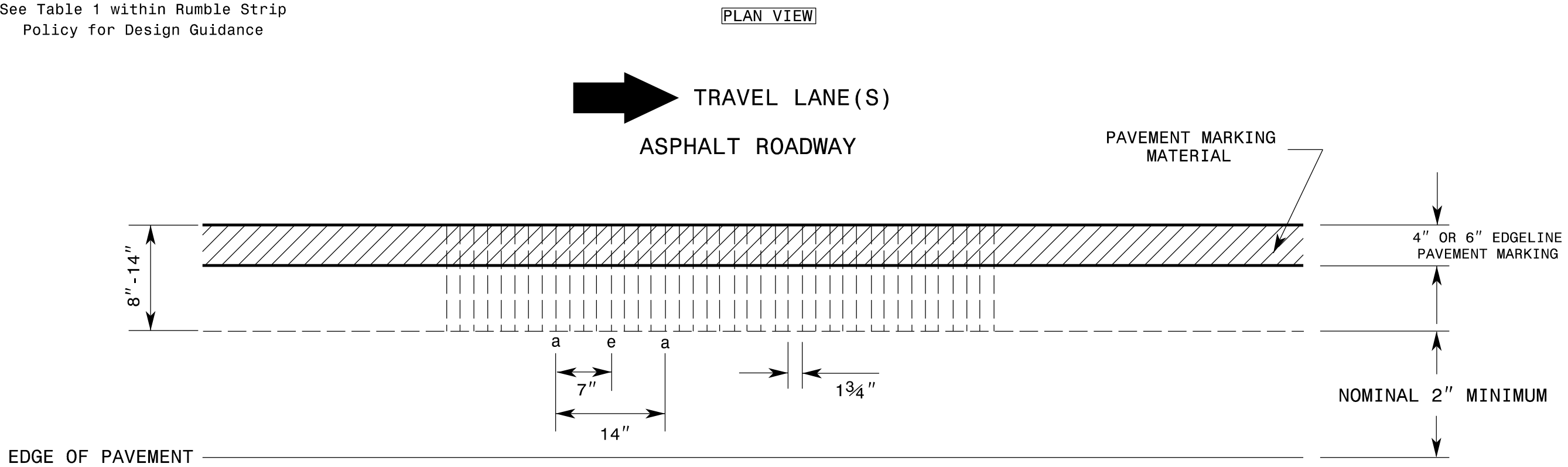
REFERENCE DRAWING ID: Sin.Strip

NOTES:

1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al, June 2016*



See Table 1 within Rumble Strip  
Policy for Design Guidance



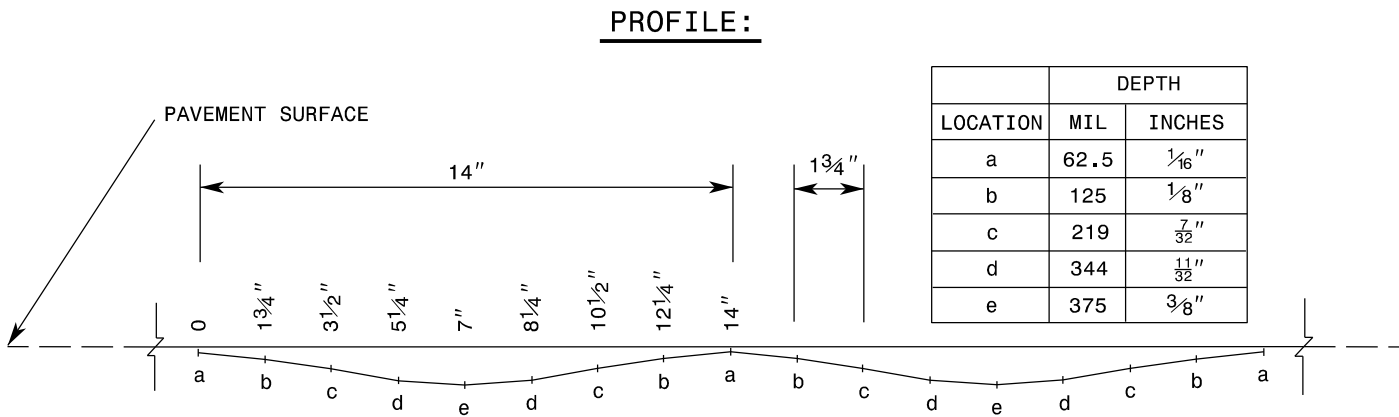
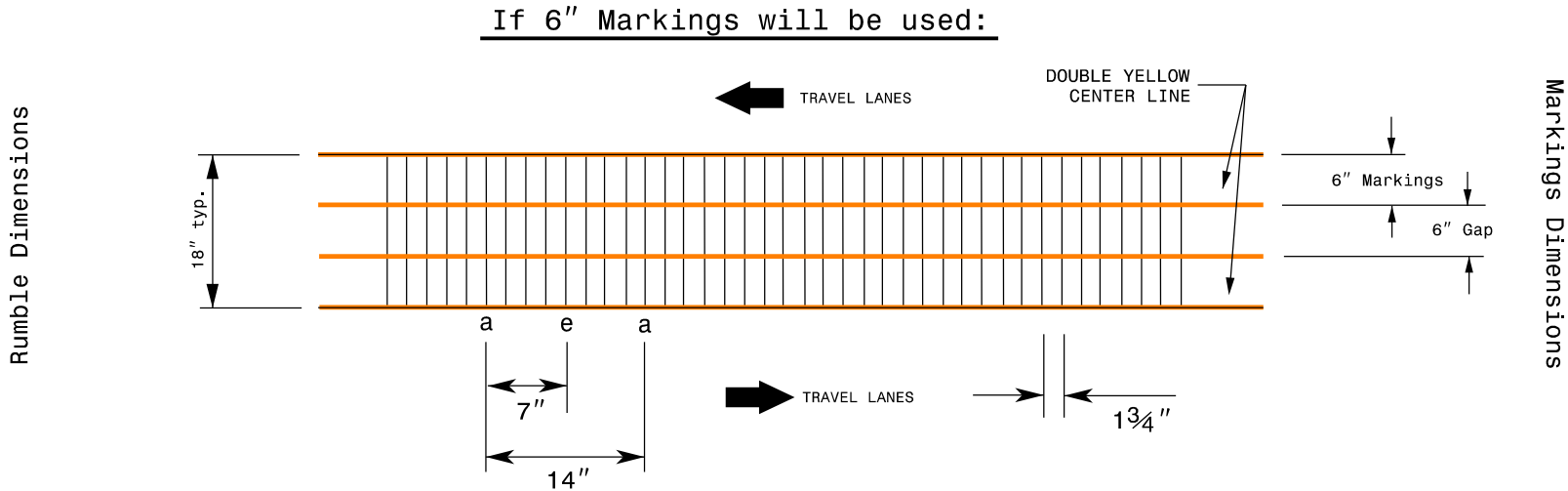
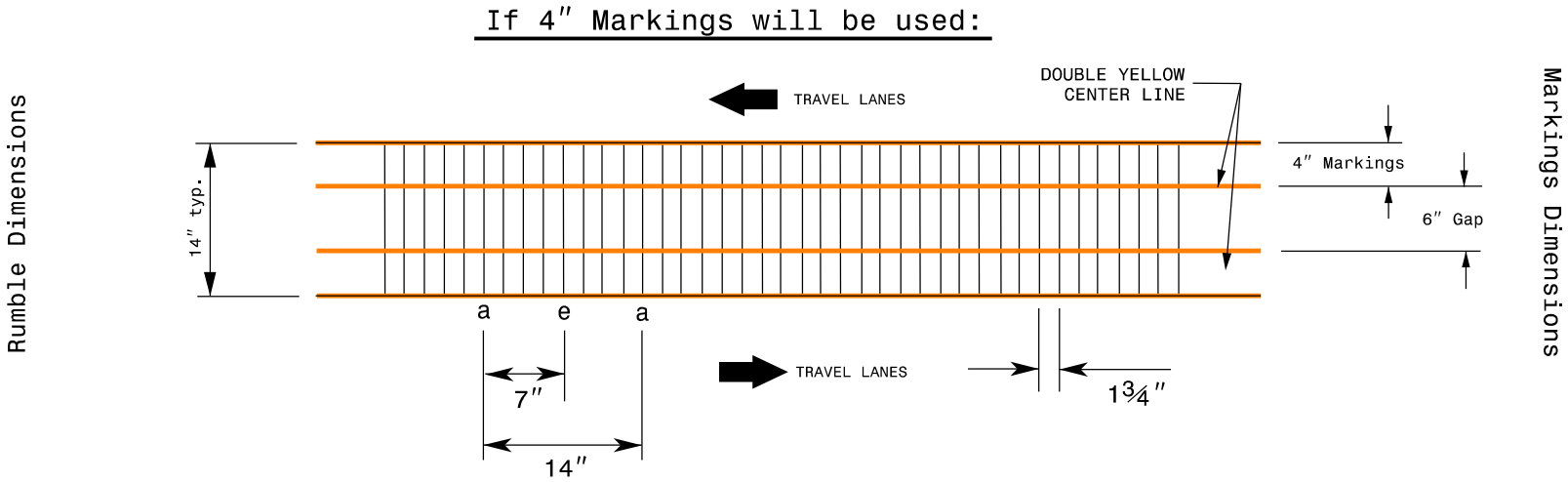
LOCATION	DEPTH	
	MIL	INCHES
a	62.5	1/16"
b	125	1/8"
c	219	7/32"
d	344	11/32"
e	375	3/8"

REFERENCE DRAWING ID: Sin.Stripe

NOTES:

- 1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al, June 2016*
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.

See Table 2 within Rumble Strip  
Policy for Design Guidance



REFERENCE DRAWING ID: Sin.CL

NOTES:

- 1) Specification in table taken from MNDOT Research Project Final Report 2016-23: *Sinusoidal Rumble Strip Design Optimization Study By: Terhaar et. al. June 2016*
- 2) USING A VACUUM, REMOVE ALL DEBRIS FROM THE MILLINGS JUST PRIOR TO PLACING ANY PAVEMENT MARKINGS.
- 3) ENSURE GLASS BEADS ARE SPREAD UNIFORMLY OVER THE ENTIRE SURFACE OF THE PAVEMENT MARKING MATERIAL.