Complete Street Opportunities…
in North Carolina and wherever you are

Reuben E. Moore, PE
reuben.moore@JMTeagueEngineering.com
828-456-8383
Transportation Engineering Specialist
July 23, 2014

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What is “Complete Streets”?

NCDOT Mission Statement

Connecting people and places, safely and efficiently, with accountability and environmental sensitivity, to enhance the economy, health, and well-being of North Carolina.

NCDOT Complete Streets policy definition

Complete Streets is North Carolina’s approach to interdependent, multi-modal transportation networks that safely accommodate access and travel for all users.*

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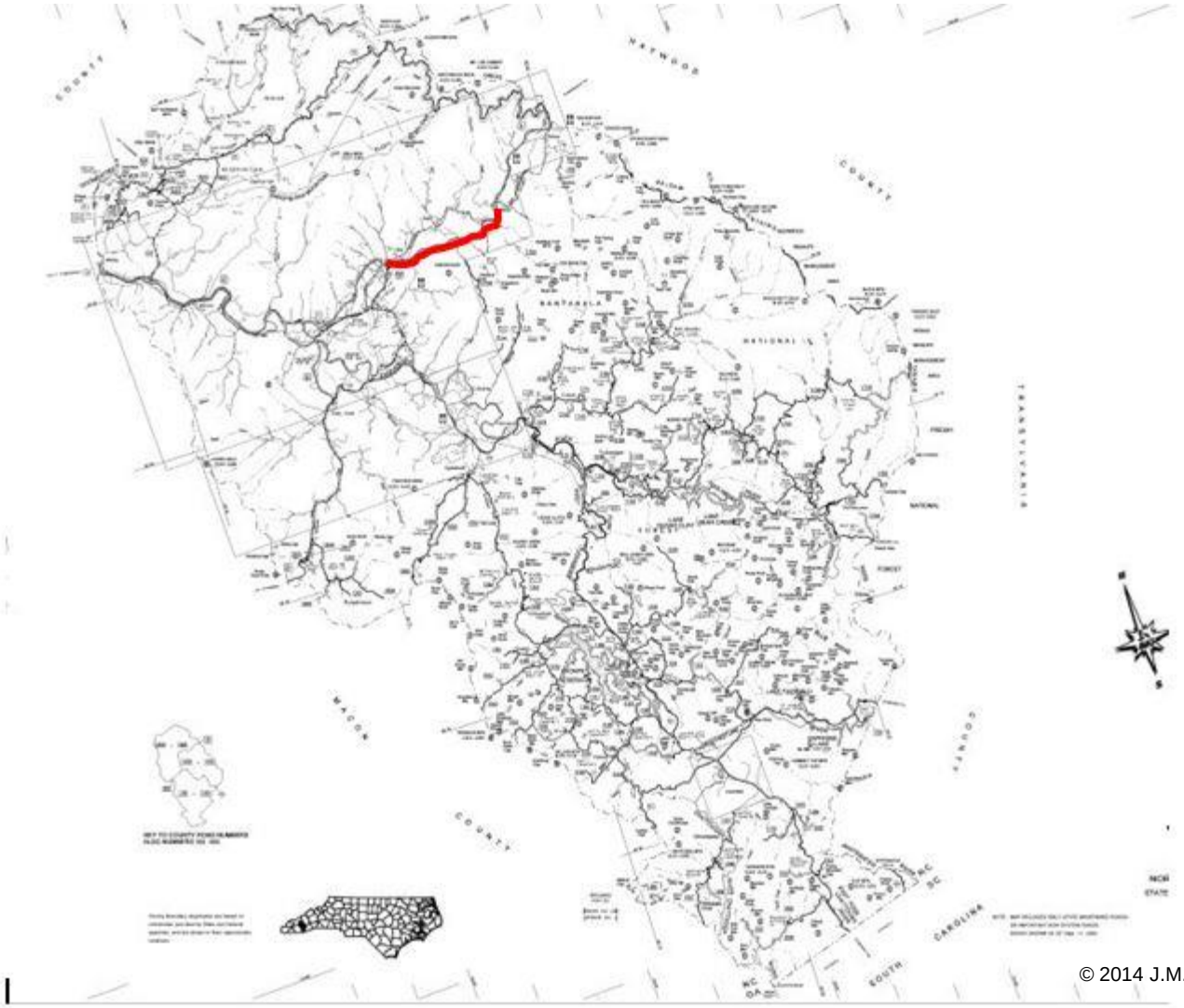

NCDOT
DIVISION 14

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NCDOT DIVISION 14

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TIP Project 5103

This project took place in 2012, removing the pavement you see in this picture. In the background you see the problem with standard rumble strips on a four-foot shoulder: It forces bicycle traffic into the travel lane. In the foreground you see the “Bicycle Accommodation”-style rumble strip. All Division 14 rumble strips on non-freeway roads installed prior to and during most of 2007 were located like these background rumbles. The foreground treatment is called a rumble-stripe since the white line is painted in the rumble.

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In this pre-project picture, you see the twelve–foot long gaps that were placed to allow bikes to move between the travel lane and the shoulder. You also see that some of the shoulder already was wider than six feet. This occurred at locations with guardrail for drainage reasons. Much of this highway is on a grade of up to seven percent, so curbing is used under the guardrail to prevent erosion around the guardrail posts.

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I don’t have pictures of the shoulder-widening work, but the earth shoulder adjacent to the existing paved shoulder was channeled out in a two-foot width and paved with base. Then when the surfacing of the top happened, the overlay gave a six-foot wide paved shoulder. Then a Bicycle-accommodating rumble strip was placed six inches outside the edgeline. This picture was taken the day the rumble strips were being installed.

The fully extended measuring wheel is about three and one-half feet long, so you are looking at just over four feet of clear shoulder available for bicycles. The rumble zone also acts as about an 18-inch buffer between bikes and motor traffic.

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Unfortunately the actual width of paved shoulders changes over time due to restriping and natural traffic patterns. Here you see a clear path of slightly more than four feet.

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This shoulder portion was also widened two feet, but is still barely four feet wide. Where a clear path of four feet could not be provided, rumble strips were not installed. Rumble strips were also not installed at intersecting roads and driveways and outside of turn lanes.

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Where does support and design guidance come from to add bikable shoulders?

From some pretty radical organizations, such as:

From Federal Highway Administration (FHWA)
Website: FHWA Bicycle and Pedestrian Design Guidance
http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/

American Association of State Highway & Transportation Officials (AASHTO)
Guide for the Development of Bicycle Facilities (2012) 4th Edition

National Association of City Transportation Officials (NACTO)
Urban Bikeway Design Guide (2010)

Institute of Transportation Engineers (ITE)
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach (2010)

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U.S. Department of Transportation
Federal Highway Administration

Memorandum

SENT BY ELECTRONIC MAIL

Subject: **GUIDANCE:** Bicycle and Pedestrian Facility Design Flexibility Date: August 20, 2013

From: Gloria M. Shepherd
Associate Administrator for Planning, Environment and Realty

In Reply Refer To:
HEPH-10

Walter C. (Butch) Waidelich, Jr.
Associate Administrator for Infrastructure

Jeffrey A. Lindley
Associate Administrator for Operations

Tony T. Furst
Associate Administrator for Safety

To: Division Administrators
cc: Directors of Field Services

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Paved Shoulders

In many rural areas, four foot wide paved shoulders are the typical treatment for accommodating bicyclists. Four foot wide paved shoulders allow bicyclists to travel on a paved surface adjacent to through traffic, if desired. Where speeds are 55 mph and above, five foot wide paved shoulders should be considered. In the image, both sides of the street have paved shoulders to accommodate pedestrians and cyclists. To maintain a high quality of service, it is extremely important that shoulders are kept free from debris, and any drainage structures have bicycle safe grates. If rumble strips are necessary, they should be designed to allow passage of bicycles.

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So how is the project working out?

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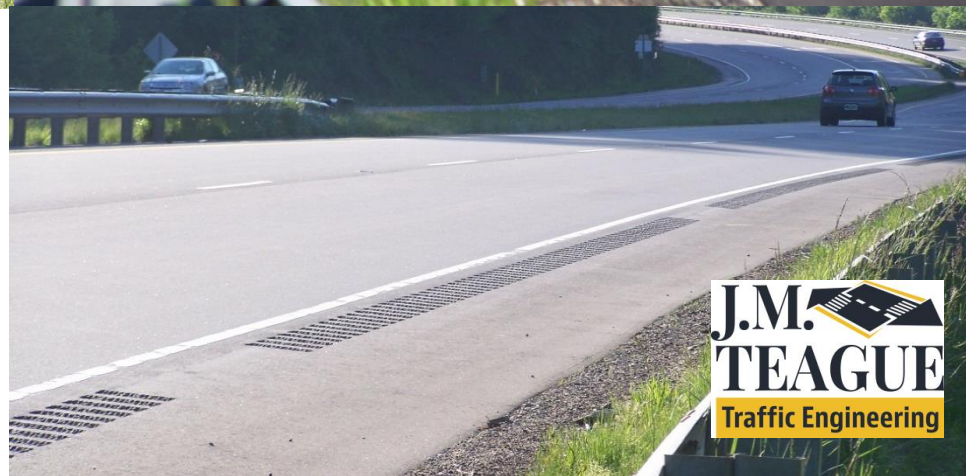
We didn't take any official count or survey, but we see that there's room for bicyclists, even a three-wheel recumbent, on the bikable shoulder.



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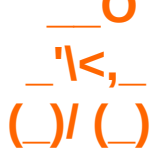
Reuben E. Moore, PE
Traffic Engineering Specialist
J.M. Teague Engineering, PLLC



525 North Main Street
Waynesville, NC 28786
828-456-8383
reuben.moore@JMTeagueEngineering.com

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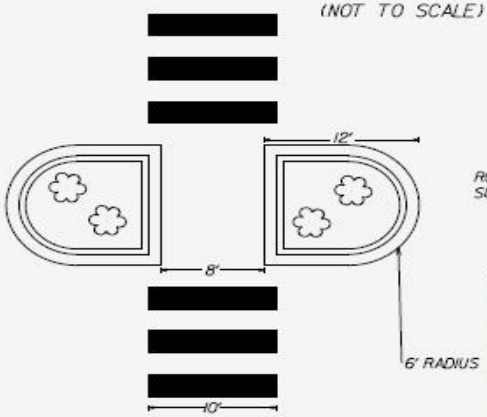
GRAHAM COUNTY
TOWN OF ROBBINSVILLE
US-129 / NC-143
(RODNEY ORR BYPASS)
PROPOSED PEDESTRIAN REFUGE ISLANDS

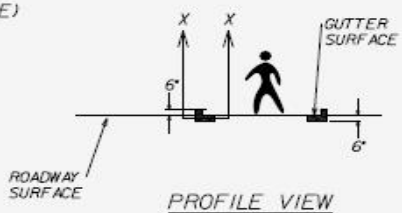
VICINITY MAP

TYPICAL PROPOSED PEDESTRIAN REFUGE ISLANDS

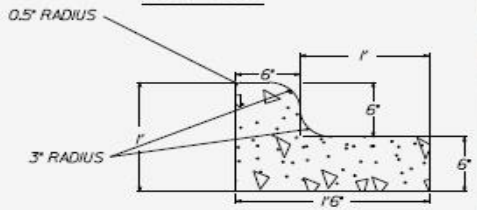
(NOT TO SCALE)



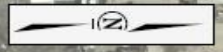
PLAN VIEW



PROFILE VIEW



SECTION X



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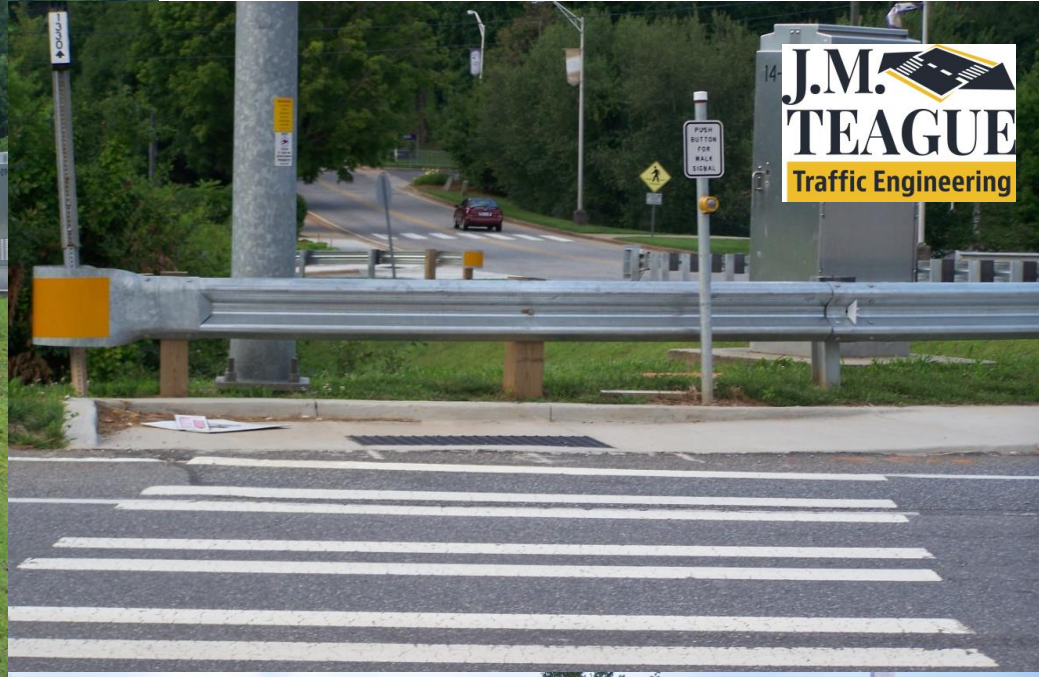

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