



Traffic Forecast Cover Letter

To: Matt Clarke, PE, Division 4, North Carolina Department of Transportation

From: Roberto Miquel, AICP, CDM Smith

Date: May 8, 2018

*Subject: Traffic Forecast for B-5980
Bridge Replacement and Interchange Modification at I-95 and NC 4 / NC 48*

Please find here-in the traffic forecast for STIP Project B-5980 in Nash County. Contained with this letter are the forecasting report detailing the backgrounds, methods, and findings of the traffic forecast along with the traffic forecast diagrams. This forecast was requested by Division 4 as part of a Proactive Traffic Forecasting Meeting held on August 1st, 2017. This forecast was reviewed and approved by the Transportation Planning Division on May 8, 2018.

This forecast was for 4 intersections in Onslow County along I-95 and centered on the interchange of I-95 at NC 4 / NC 48 in Nash County. The following for scenarios were analyzed:

- 2017 No Build
- 2017 Build
- 2040 No Build
- 2040 Build

The proposed build scenario is redirecting SR 1544 (N. Halifax Road) away from NC 48 and toward a new interchange configuration at I-95 and NC 4 / NC 48. The new interchange is proposed to be either a double roundabout interchange or a diverging diamond interchange. Either configuration allows for full four-way movements and their differences were not seen as affecting the forecast.

This forecast considered the following assumptions:

Fiscal Constraint

This project is located within the boundaries of the Rocky Mount Metropolitan Planning Organization (MPO). As such, the Rocky Mount 2040 Metropolitan Transportation Plan (MTP) published in 2013 is the sole determiner of fiscally constrained projects within the study area. The MTP identifies that a widening of NC 48 to four lanes is currently planned. This project,

STIP U-5911, along with other projects in the MTP are accounted for in the forecasts. A companion forecast for U-5911 was conducted concurrently with this forecast for B-5980.

Development Activity

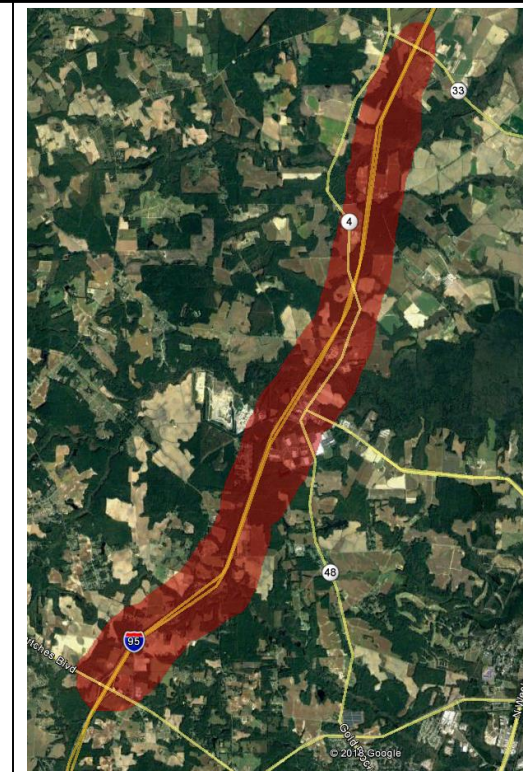
Both the Office of State Budget and Management (OSBM) and the Rocky Mount MPO MTP indicate that growth in the area is light to moderate. This forecast assumes the growth estimates used in the Rocky Mount model are reasonable. Additionally, this forecast assumes that the CSX Intermodal Facility proposed along the US 301 corridor in Rocky Mount will be built. Though the intermodal facility as originally conceived is unlikely to be built, given the character of growth in the area, it is reasonable to assume that some form of industrial development with similar intensification of truck trips is likely to occur prior to the 2040 horizon. Assuming that the intermodal facility is built allows this forecast to account for an intensification of truck traffic in the study area.

Forecast Methodology

This traffic forecast used the Rocky Mount, NC Model to calculate traffic growth rates that were then applied to observed 2017 AADT. Trip diversion rates were also calculated using the model and applied to existing 2017 AADT. The model was reasonably validated and required no additional validation. Some modifications to the model were implemented to improve traffic routing in the study area. These modifications are documented in the forecasting report. The North Carolina Statewide Travel Model (NCSTM) was used for growth along I-95.

If you have any questions concerning this forecast, please feel free to contact me. I can be reached by phone at (919) 325-3605 or by e-mail at miquelro@cdmsmith.com. I will be glad to answer any questions that may arise.

cc: Keith Dixon, Transportation Planning Division, NCDOT
Clark Morrison, PE, Pavement Management Unit, NCDOT
Brenda Moore, PE, Roadway Design, NCDOT
Brian Wert, PE, Transportation Planning Division, NCDOT
Scott Walston, PE, Transportation Planning Branch, NCDOT
Doumit Ishak, Congestion Management, NCDOT
Lee Ann Moore, CALYX, (NCDOT Division 4 Project Development)
Bob League, Rocky Mount Metropolitan Planning Organization



2017

AVERAGE ANNUAL
DAILY TRAFFIC

NO BUILD
SHEET 1 OF 1

LEGEND

- K $\xrightarrow{\text{PM}}$ D
 (d,t)
- ### No. of Vehicles Per Day (VPD) in 100s
 - 1- Less than 50 VPD
 - X Movement Prohibited
 - Roadway
 - K Design Hour Factor (%)
 - PM PM Peak Period
 - D Peak Hour Directional Split
 - Indicates Direction of D
 - (d,t) Duals, TT-STs (%)

TIP: B-5980 **WBS: 47617.1.1**

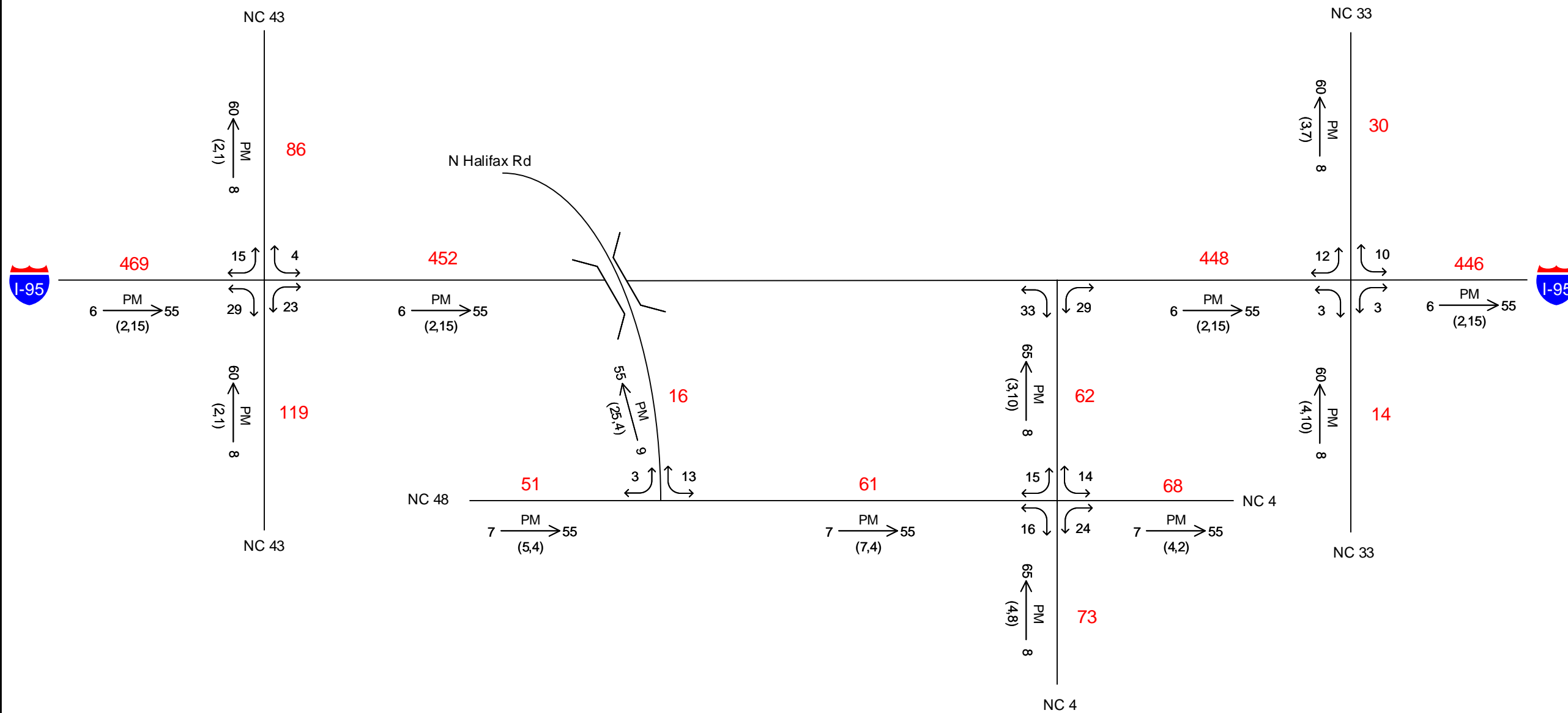
COUNTY: Nash **DIVISION: 4**

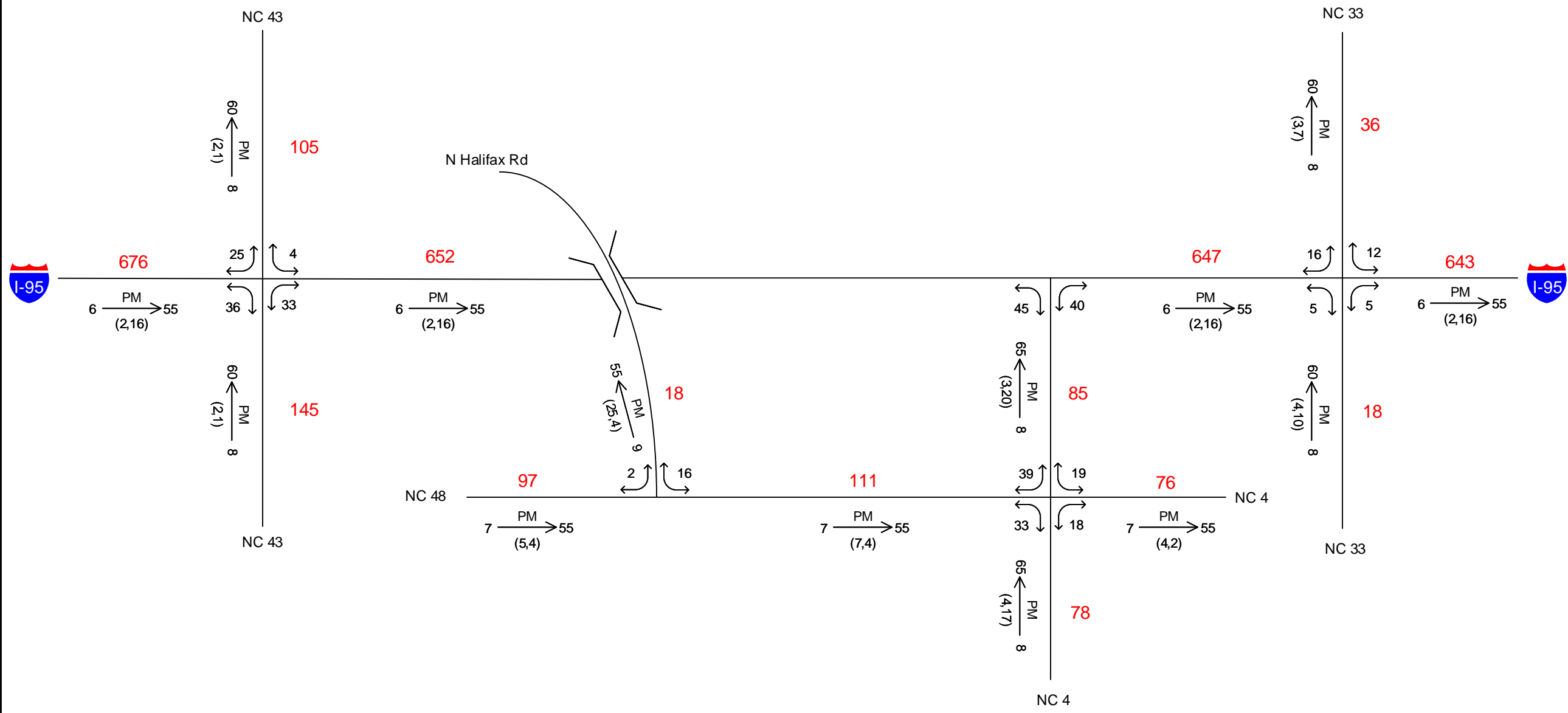
DATE: May 8, 2018

PREPARED BY: CDM Smith

LOCATION: I-95 at NC 4 / NC 48

PROJECT: Interchange modification





2040
 AVERAGE ANNUAL
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NO BUILD
SHEET 1 OF 1

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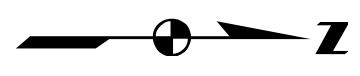
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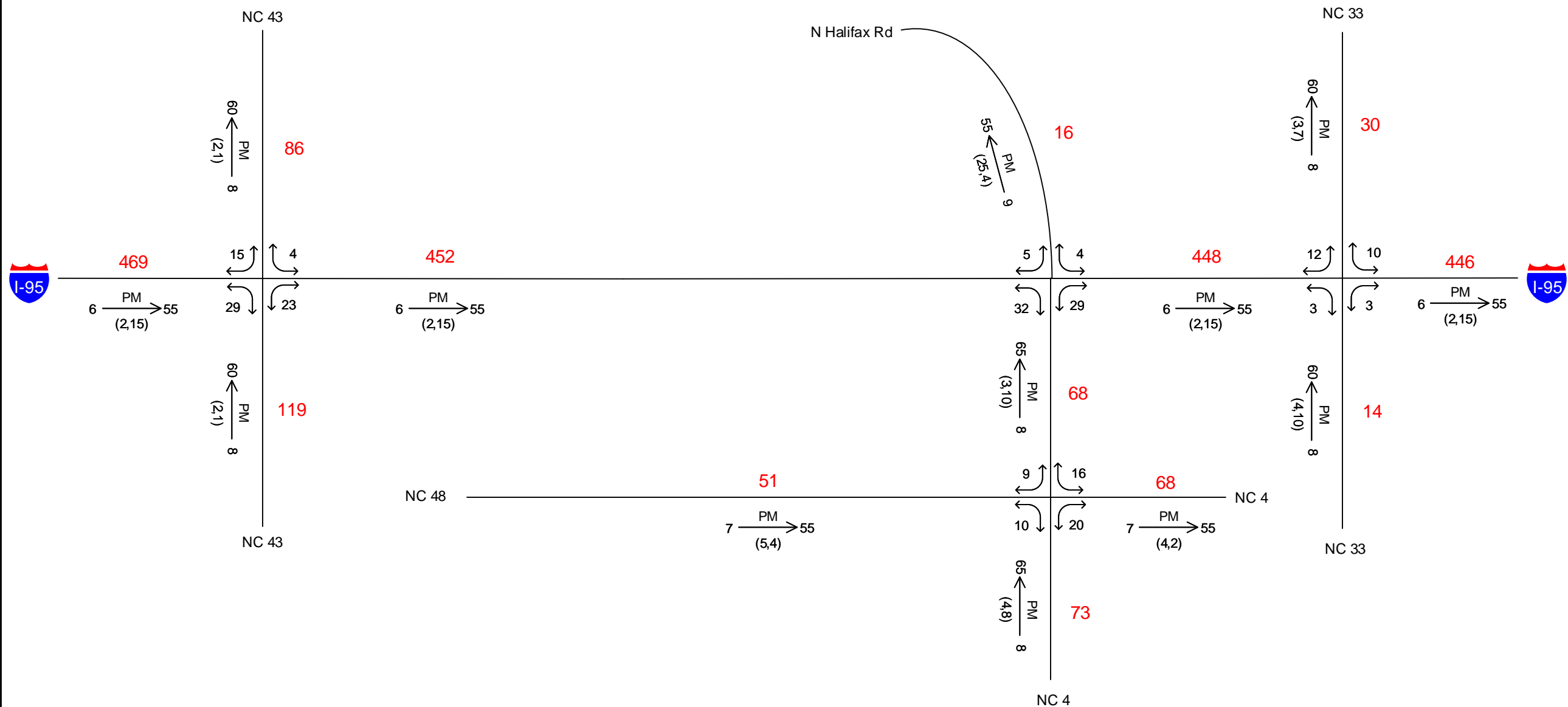
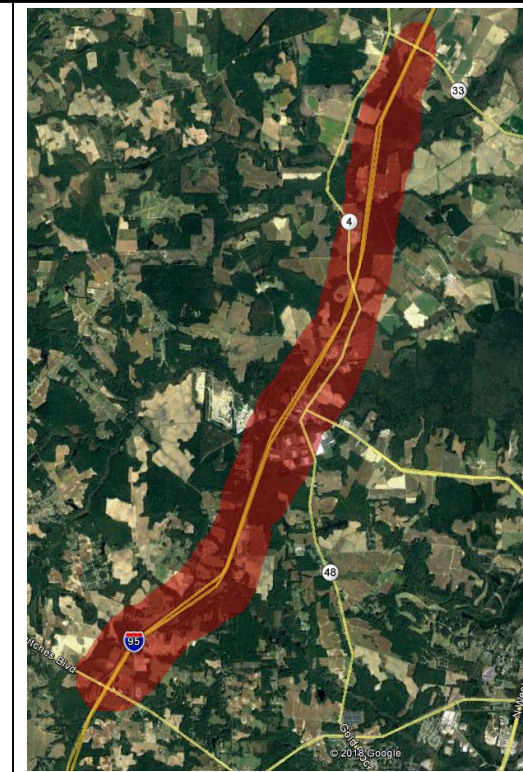
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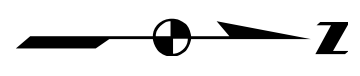
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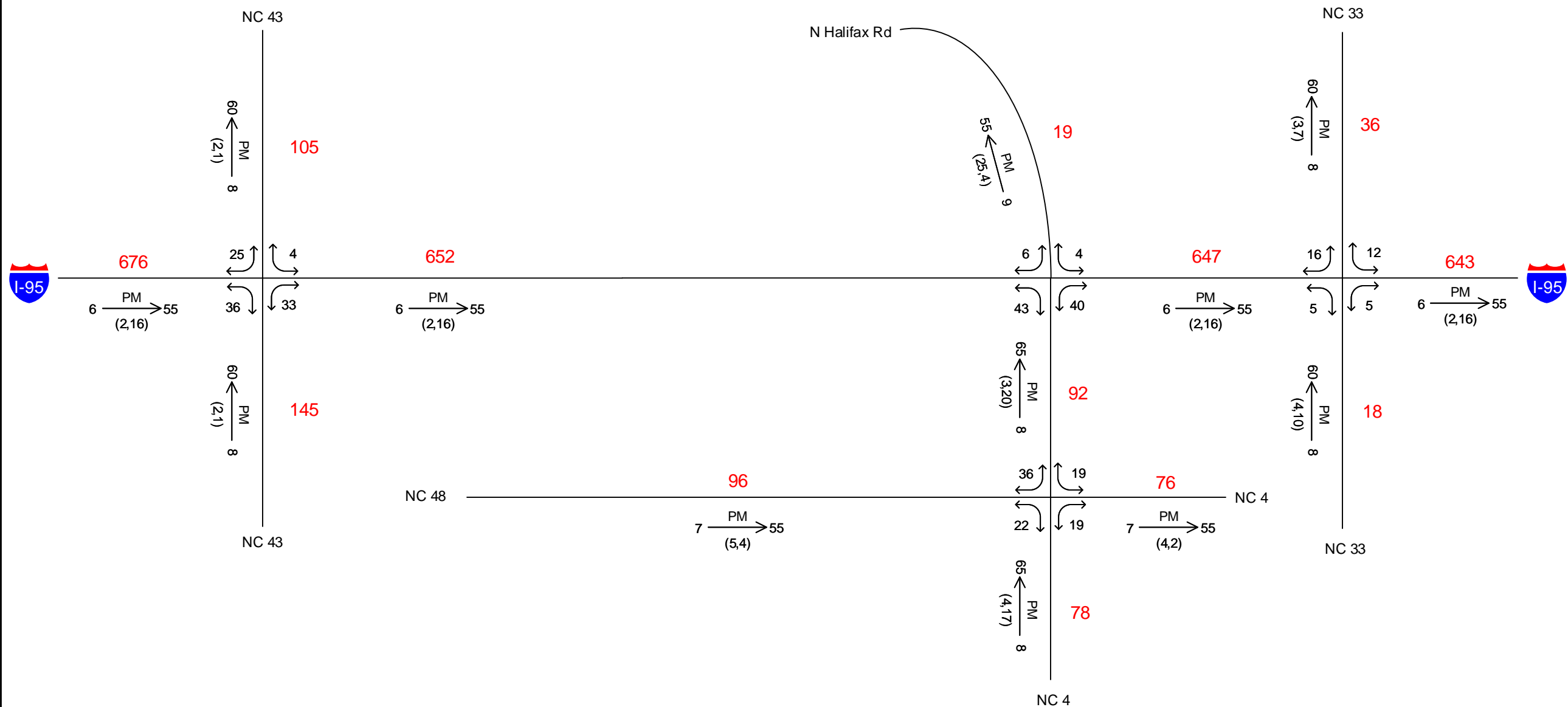
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