

TRAFFIC FORECAST COVER LETTER

June 29, 2021

MEMORANDUM TO: H. McCray Coates
NCDOT Division 13 Project Manager

FROM: Peter Trencansky, PE, PTOE, AICP
Patriot Transportation Engineering, PLLC

SUBJECT: Traffic Forecast for HE-0001
Buncombe County
I-26, Proposed New Interchange (Exit 35) at NC 191 Connector

This forecast has been reviewed and approved by the NCDOT Transportation Planning Division on June 29, 2021.

Please find attached the 2021 and 2045 traffic forecast for STIP Project HE-0001 in Buncombe County Counties. The proposed project, HE-0001, would provide direct access to I-26 and a connection to the roadway under construction from NC 191 to the future site of the Pratt & Whitney manufacturing facility. This traffic forecast for this project was requested by NCDOT Division 14 in support of project development activities, including environmental documentation and design for the project.

The project is located within the boundaries of the French Broad River Metropolitan Planning Organization (FBRMPO). The following five scenarios are provided in this forecast:

- 2021 Base Year (Existing Conditions)
- 2021 Base Year Build Alternative
- 2045 Future Year No-Build
- 2045 Future Year No-Build (reduced development)
- 2045 Future Year Build Alternative

Fiscal Constraint

The project is located within the FBRMPO boundaries; therefore, the travel demand model and traffic forecast are fiscally constrained to match the assumptions of the corresponding Metropolitan Transportation Plan (MTP).

The study project is currently not included in the *French Broad River MPO Metropolitan Transportation Plan 2045* (adopted on September 24, 2020); however, an amendment of MTP is currently underway.

The 2045 MTP includes the following projects in the area which are anticipated to affect travel patterns on the subject project and are described as follows:

- HS4502 (I-4700) – I-26 Widening from NC 280 to I-40
- HR4514 (I-4400) – I-26 Widening from US 25 to NC 280
- HS4506 (I-2513C) – I-26/I-40/I-240 interchange improvement
- HR4501 (I-2513A) – I-26/I-240 Widening from I-40 to Haywood Rd

- HR4505 (I-2513B) – I-26 Connector from Haywood Rd to Broadway
- HR4507 (U-3403B) – NC 191 Widening from Ledbetter Rd to North of Blue Ridge Parkway
- HR4515 (U-3403A) – NC 191 Widening from NC 146 to NC 280
- HD134510 (U-6047) - NC 112 (Sand Hill/Sardis) Widening from NC 191 to US 19/23
- HR4509 (U-2801A) – US 25A (Sweeten Creek Rd) Widening from Rock Hill Road to US 25 (Hendersonville Rd)
- HD134517 – US 25 (Hendersonville Rd) from I-40 to Blue Ridge Parkway – Access Management
- HR4516 – US 25 (Hendersonville Rd) from Blue Ridge Parkway to NC 146 (Long Shoals Rd) – Access Management
- HR4517 – US 25 (Hendersonville Rd) from NC 146 (Long Shoals Rd) to NC 280 (Airport Rd) – Access Management
- HS4510 (I-6054C) – I-40 Widening from SR 1200 (Wiggins Rd) to SR 1224 Monte Vista Rd

Travel Demand Model

The French Broad River MPO Travel Demand Model (2015/2045 FBRMPO TDM v1.1, issued 4/28/21), developed in TransCAD version 8 Build 22360 (provided by NCDOT), was utilized as a tool in the development of the forecast.

Forecast Methodology

The 2021 Base Year No-Build traffic volumes and design factors were developed based upon current counts, historic counts and historic AADT trend projections. The 2045 future year no-build traffic volumes generally included the development of compound annual growth rates between two model years. The build alternative volumes generally included the development of diversion rates between like model years with different scenarios. The compound annual growth rates or diversion rates were then applied to the AADT volumes from another scenario to develop initial volumes for each scenario. Engineering judgment adjustments were applied as needed in finalizing the volumes in order to develop a balanced forecast.

Interpolation/Extrapolation

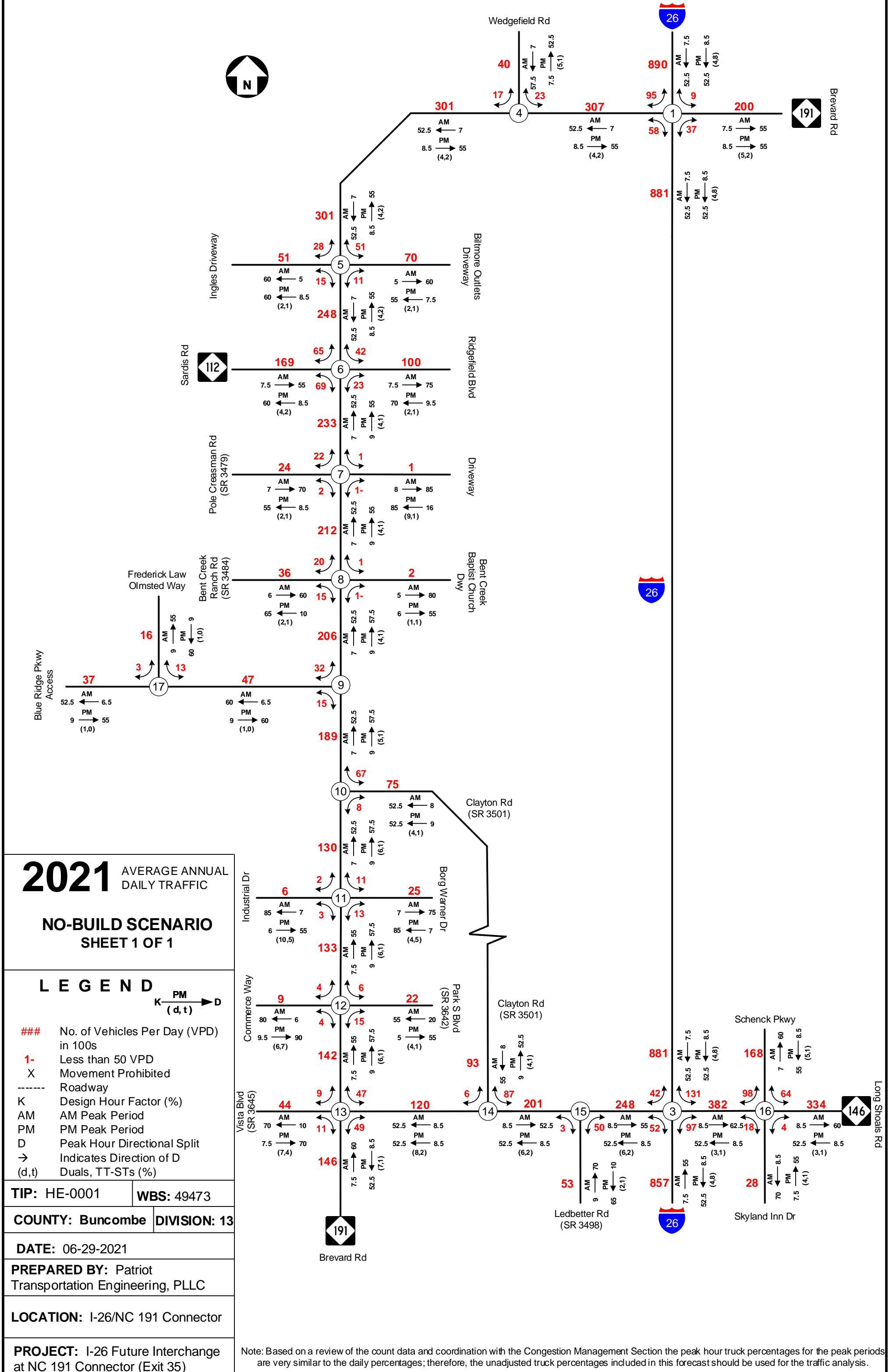
To estimate AADT volumes between 2021 and 2045, straight line interpolation between the 2021 and the 2045 scenarios is acceptable. AADT volumes may be extrapolated for up to two years immediately following 2045. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections at this location.

COVID-19 Pandemic Considerations

Until the effects of COVID-19 on travel patterns and traffic volumes are known, a methodology to project future traffic volumes is needed to allow for the planning and design of projects. At this point the most reasonable approach is to determine the current traffic volumes in the study area and compare them against Pre-COVID data sets. As an additional point of comparison in developing current traffic volumes during the pandemic, the volumes will be normalized to pre-COVID volumes based on a comparison of volume data collected from StreetLight Data, Inc. The normalized volumes provide another measure to compare against when utilizing engineering judgment in the traffic forecasting process. The normalized volumes will essentially equate the current volumes back to pre-pandemic volume based on a comparison of current and pre-COVID traffic volumes.

The effect of this methodology will essentially freeze volumes at their pre-pandemic volume from early-2020 through the end of 2021 (or roughly a 2-year period). The forecast will then project growth based on the currently adopted local plans and travel demand model between 2022 and 2045.

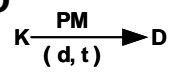
cc: Steve Cannon, Division 13, Division Project Development Engineer (slcannon@ncdot.gov)
NCDOT Traffic Forecast Engineer (trafficforecast@ncdot.gov)
Daniel Sellers, NCDOT Transportation Planning Unit MPO Contact (dcsellers1@ncdot.gov)



2021 AVERAGE ANNUAL DAILY TRAFFIC

NO-BUILD SCENARIO SHEET 1 OF 1

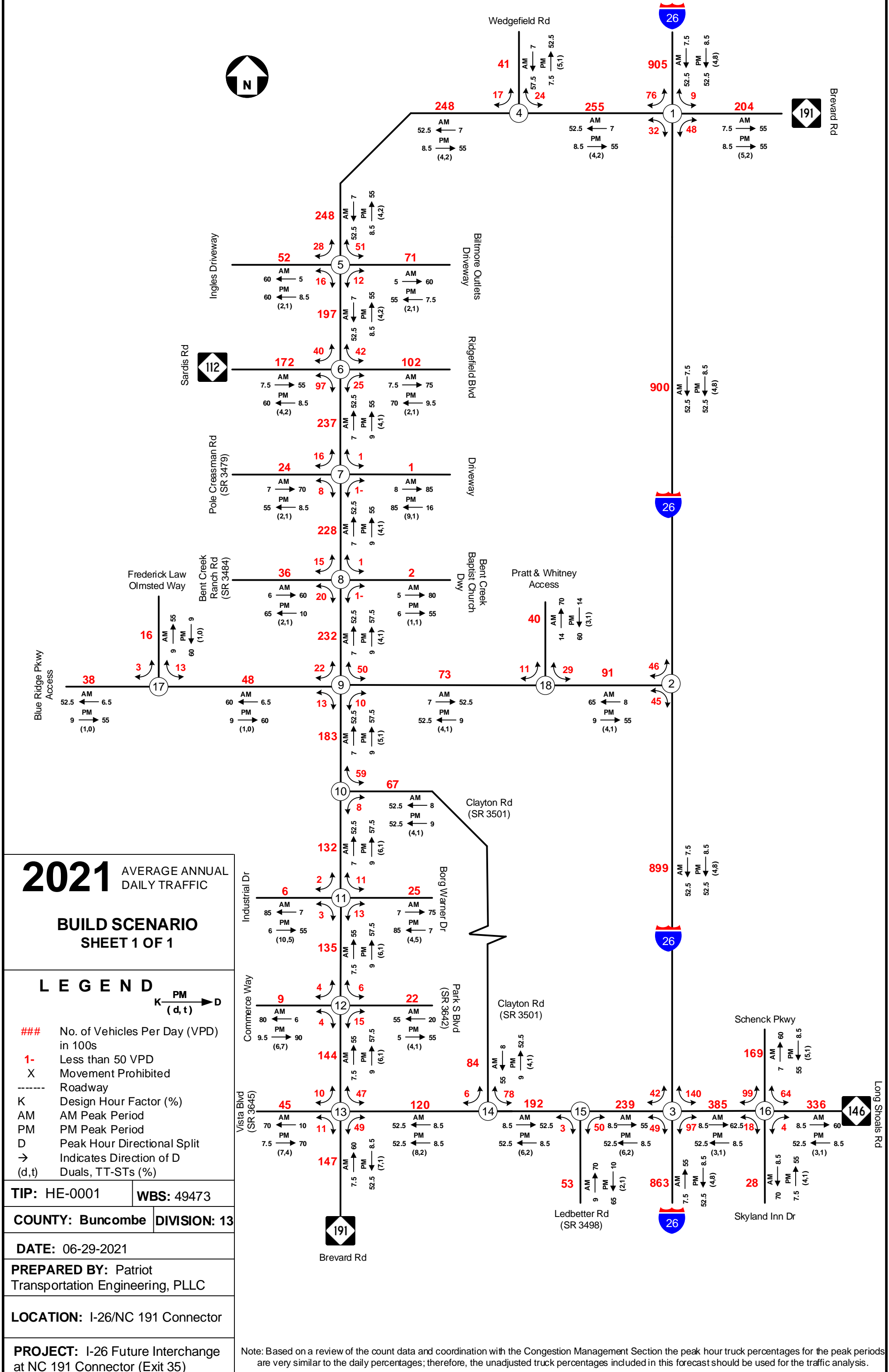
LEGEND



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

TIP: HE-0001	WBS: 49473
COUNTY: Buncombe	DIVISION: 13
DATE: 06-29-2021	
PREPARED BY: Patriot Transportation Engineering, PLLC	
LOCATION: I-26/NC 191 Connector	
PROJECT: I-26 Future Interchange at NC 191 Connector (Exit 35)	

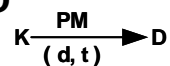
Note: Based on a review of the count data and coordination with the Congestion Management Section the peak hour truck percentages for the peak periods are very similar to the daily percentages; therefore, the unadjusted truck percentages included in this forecast should be used for the traffic analysis.



2021 AVERAGE ANNUAL DAILY TRAFFIC

BUILD SCENARIO SHEET 1 OF 1

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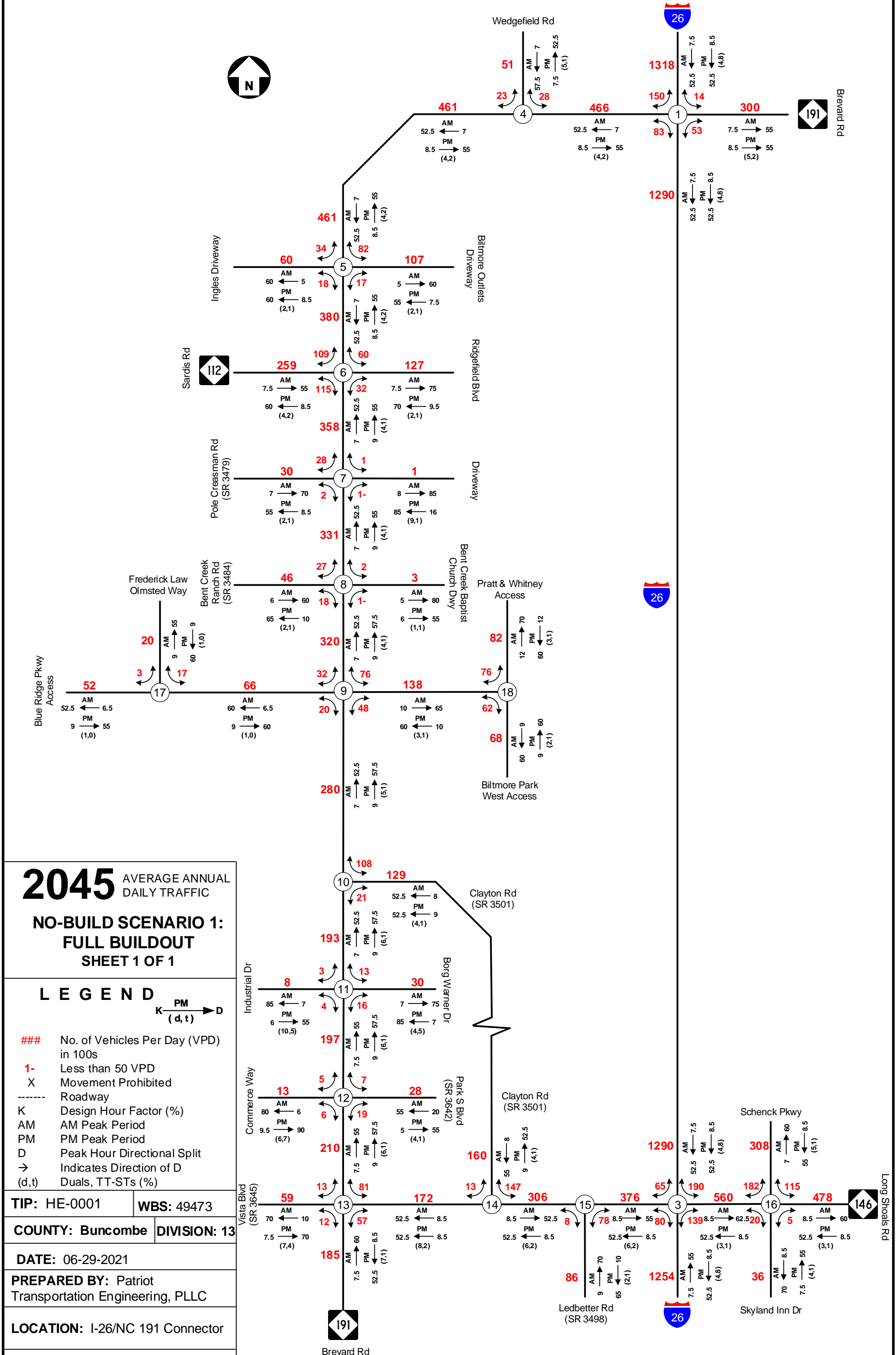
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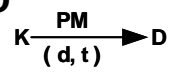
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2045 AVERAGE ANNUAL DAILY TRAFFIC
NO-BUILD SCENARIO 1: FULL BUILDOUT
 SHEET 1 OF 1

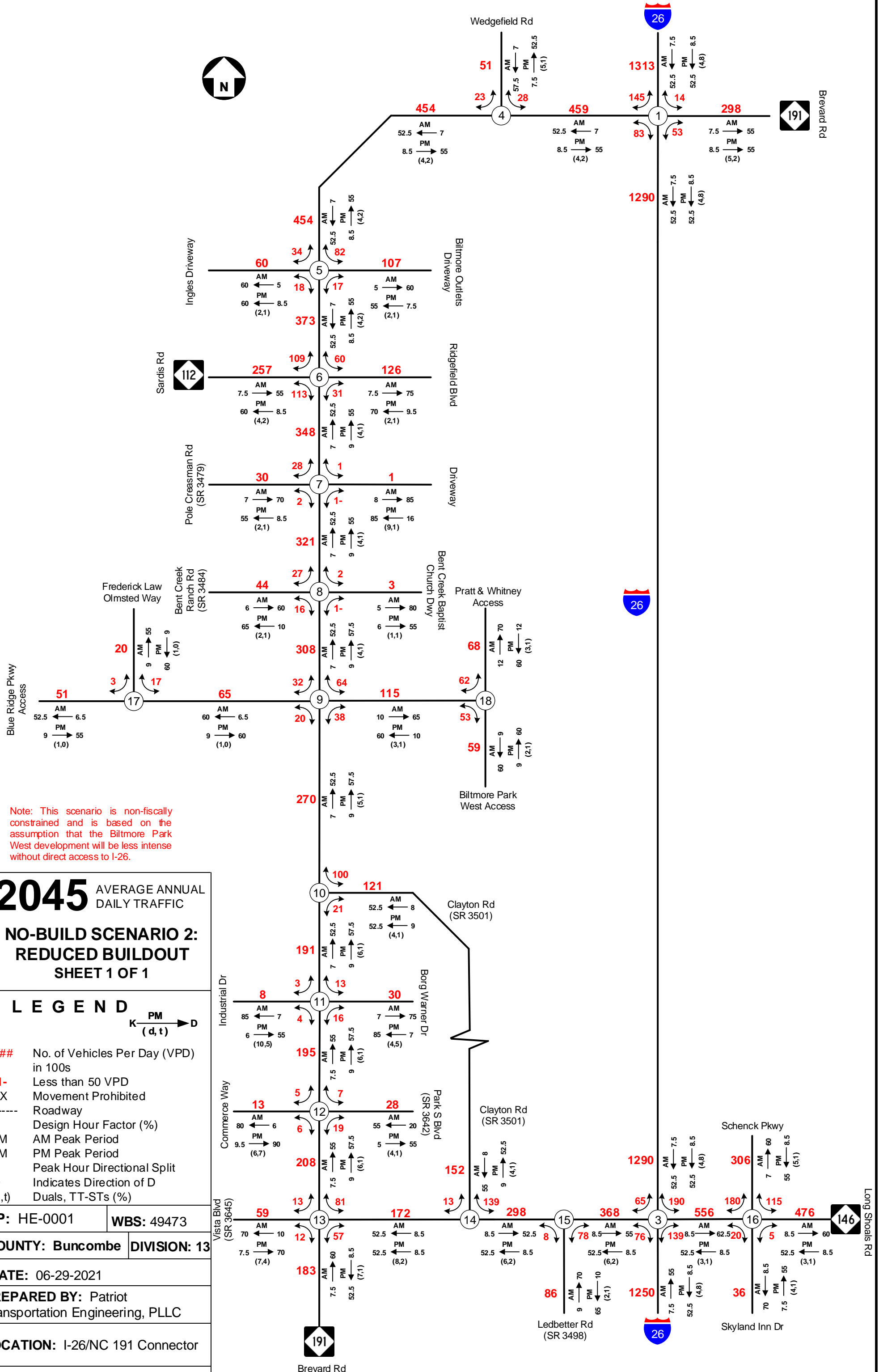
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Note: This scenario is non-fiscally constrained and is based on the assumption that the Biltmore Park West development will be less intense without direct access to I-26.

2045 AVERAGE ANNUAL DAILY TRAFFIC

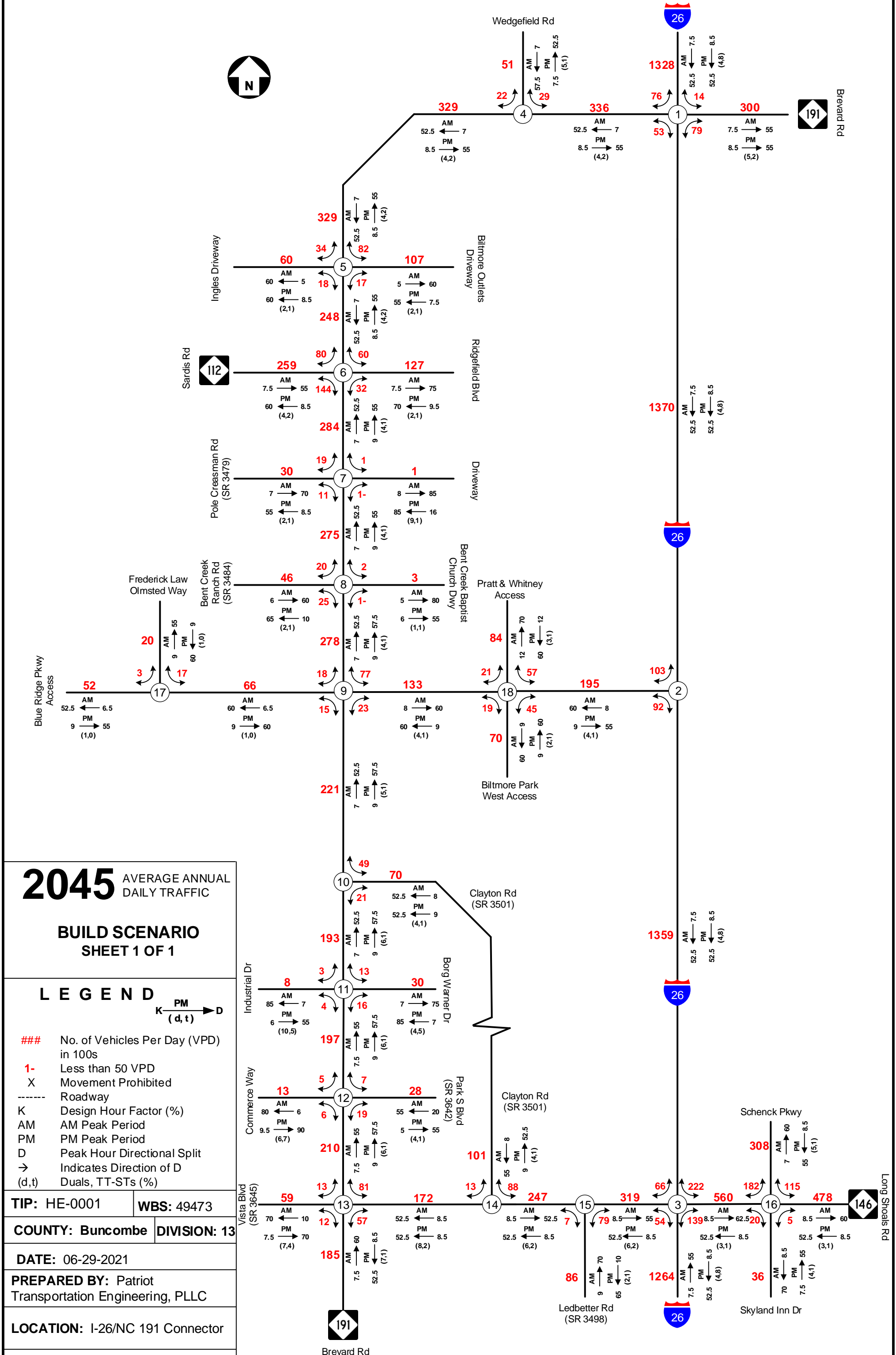
NO-BUILD SCENARIO 2: REDUCED BUILDOUT

SHEET 1 OF 1

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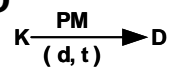
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