



July 27, 2017

MEMORANDUM TO: Steve Williams  
Design Construction Engineer  
Highway Division 14  
NC Department of Transportation

FROM: Taruna Tayal, PMP  
VHB Engineering NC, P.C.

SUBJECT: Traffic Forecast for R-2588B Widening NC 191 (Haywood Road) between SR 1381 (Mountain Road) and NC 280 south of Mills River, Henderson County.

Please find attached the 2017 / 2030/ 2040 Traffic Forecast for the above-mentioned project. NCDOT Division 14 is proposing STIP No. R-2588B, which includes widening NC 191 (Haywood Road) to a 4-lane divided (23' raised median) facility with paved shoulders and sidewalks between SR 1381 (Mountain Road) and NC 280 south of Mills River. The 4.5-mile project is in Henderson County (NCDOT Division 14) within the City of Mills River and the French Broad River Metropolitan Planning Organization FBRMPO).

This forecast has been reviewed and approved by the Transportation Planning Branch on July 26, 2017.

There is no previous traffic forecast for R-2588B. Lyuba Zuyeva, French Broad River MPO Director and Jesse James, Town of Mills River, Planning & Zoning Officer were contacted to get information on anticipated development.

The following scenarios are provided in this forecast:

1. Scenario 1- 2017 Base Year No-Build Scenario
2. Scenario 2 - 2017 Base Year Build Scenario
3. Scenario 3 – 2030 Interim Year No-Build Scenario
4. Scenario 4 – 2030 Interim Year Build Scenario
5. Scenario 5 - 2040 Design Year No-Build Scenario
6. Scenario 6 – 2040 Design Year Build Scenario

**Fiscal Constraint:** Within an MPO, the future year forecasts assume construction of projects as listed within the MPO's Metropolitan Transportation Plan (MTP, previously called LRTP). This forecast is consistent with the French Broad River Metropolitan Planning Organization (FBRMPO) 2040 Metropolitan Transportation Plan (MTP) (adopted 9/23/2015). Projects in the MTP which may affect this facility include:

- a. R-2588A: NC 191 (Haywood Road) widening of existing NC 191 between SR 1381 (Mountain Road) and US 25 Business.
- b. R-5744 – Balfour Parkway – A new location 4-lane expressway facility between NC 191 north of Stony Mountain Road and US 64 north of Nix Road.



- c. I-4700A - I-26 widening the existing I-26 to 6-lanes from NC 146 (Long Shoals Rd) to NC 280.
- d. I-4700B - I-26 widening the existing I-26 to 6-lanes from I-40 to NC 146 (Long Shoals Rd).
- e. I-4400C - I-26 widening the existing I-26 to 6-lanes from US 25 (Asheville Hwy) to Buncombe County Line (NC 280).
- f. I-4400B - I-26 widening the existing I-26 to 6-lanes from US 25 (Asheville Hwy) to US 64.
- g. I-4400A - I-26 widening the existing I-26 to 6-lanes from US 64 to Upward Road.

**Future Conditions and Development Activity:** Only confirmed project in this area is a 65-bed assisted living facility planned at the intersection of Haywood Road (NC 191) and Banner Farm Road. Therefore, based on ITE trip generation rates, 200 trips were added to this leg (Node 2) in 2030 and 2040. No other information was available on the specific planned and approved developments in the area. There is moderate growth and development proposed in the study corridor between 2010 and 2040. Based on the household and employment data from the French Broad River Travel Demand Model, household growth is expected to be between 10% - 65% between these years and employment growth will be greater than 100%.

**Forecast Methodology:** The Base Year No-Build traffic forecasts were developed primarily based upon traffic counts taken for this forecast, as well as historic traffic counts and trends. The interim year and design year 2040 traffic forecasts are developed based upon the modeling results and existing traffic data, as well as the expected traffic pattern change due to the proposed project. The 2015 FBRMPO TDM V2 (adopted in January 2016) was used as a tool in the development of the traffic forecasts.

**Interpolation:** To determine volumes during any intermediate years straight-line interpolation may be used. AADT volumes may be extrapolated for up to two years immediately following 2030 or 2040. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, request should be made for updated projections at this location.

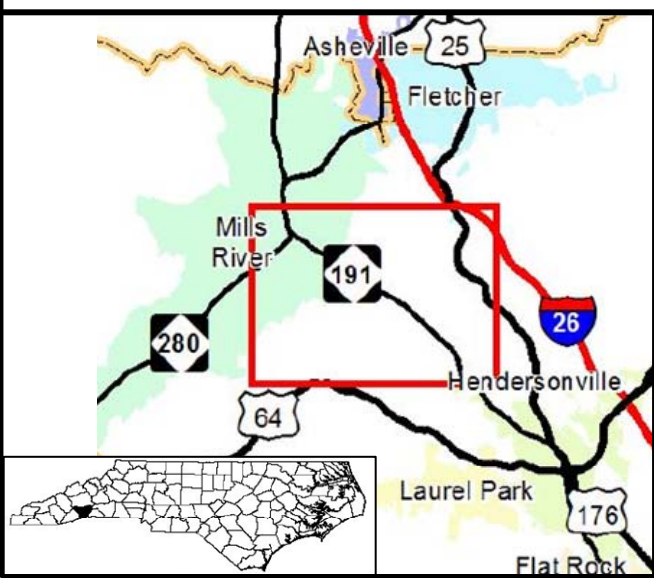
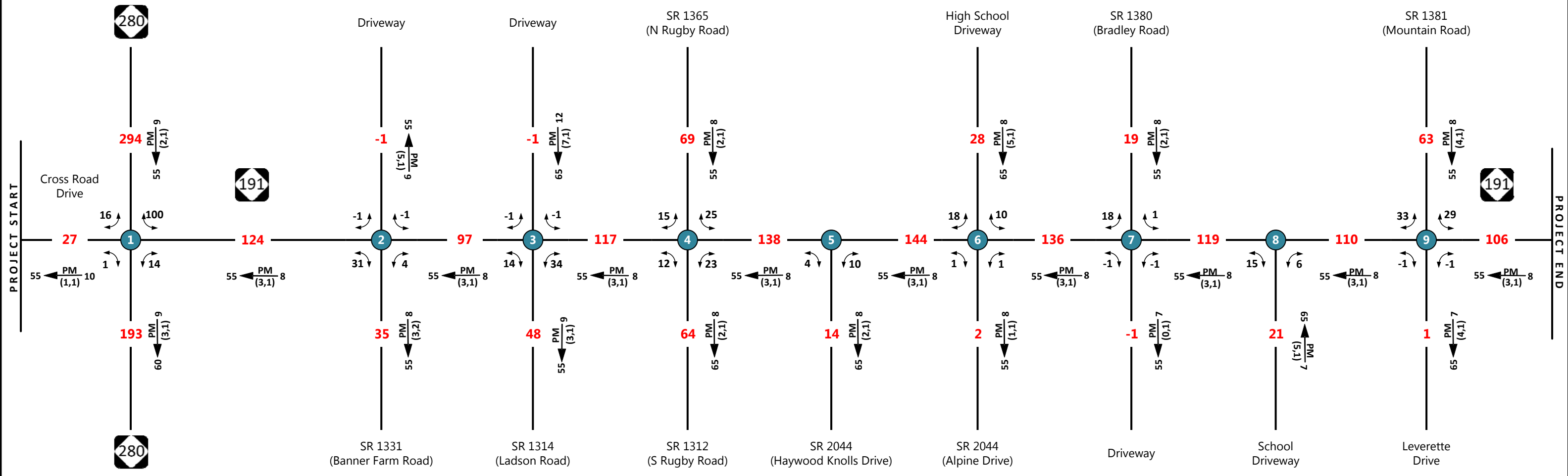
For future reference this forecast will be saved in Project Store in the LongRangePlanning\Traffic Forecasts folder, under project R-2588B.

If you have any questions or I can be of further assistance, please do not hesitate to call me at 919.741.5525, or e-mail me at [ttayal@vhb.com](mailto:ttayal@vhb.com).

cc: (Final distribution for your records via e-mail as PDF attachments):

Jim Dunlop, PE, CPM, Congestion Management  
Glen Mumford, PE, Highway Design Branch  
Clark Morrison, PhD, PE, Pavement Management  
Steve Buchanan, Division 14 Traffic Engineer  
Daniel Sellers, Transportation Planning Branch  
Lyuba Zuyeva, French Broad River MPO Director  
Keith G. Dixon, Transportation Planning Branch

File Copy: R-2588B, Henderson



# 2017 Average Annual Daily Traffic

## No-Build Alternative (Scenario 1) Sheet 1 of 1

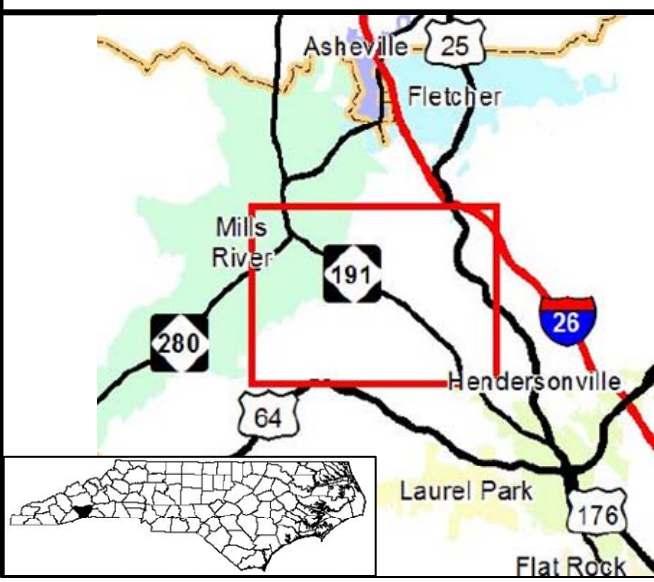
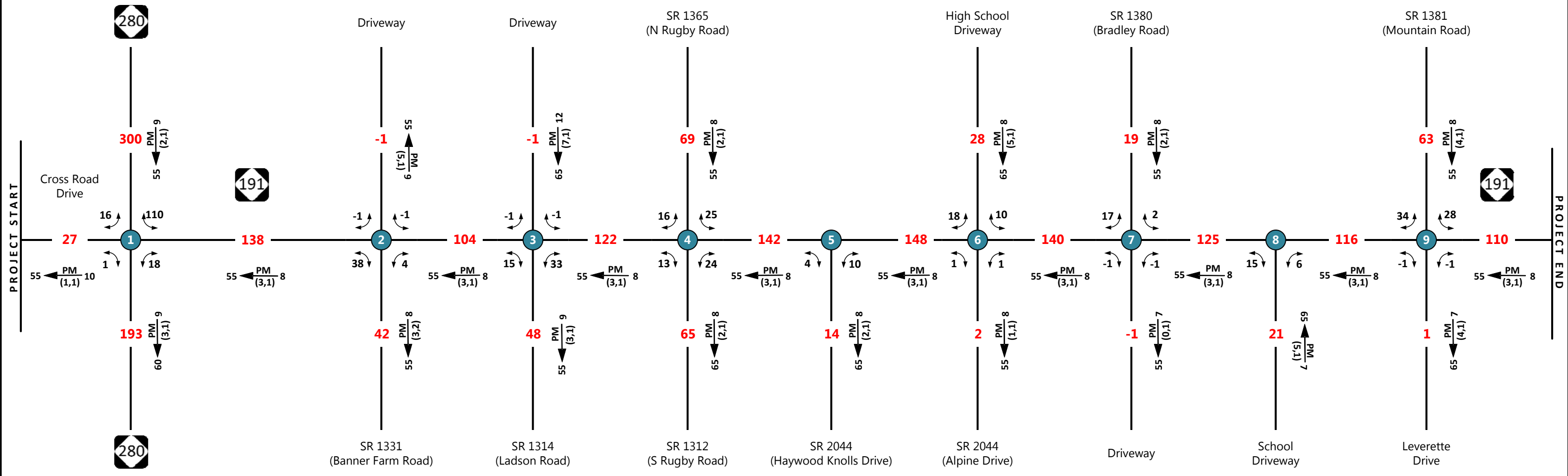
### LEGEND

### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

$D \leftarrow \frac{PM}{(d,t)} K$   
 PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
 K Design Hour Factor (%)  
 X Movement Prohibited  
 -1 Less than 50 VPD

TIP: R-2588B
WBS: 34473.1.3
DIVISION: 14
COUNTY: Henderson
DATE: 07/27/2017
PREPARED BY: VHB Engineering NC, P.C.
LOCATION: NC 191 (Haywood Road) from SR 1381 (Mountain Road) to NC 280 south of Mills River
PROJECT: NC 191 (Haywood Road) Feasibility Study



# 2017 Average Annual Daily Traffic

## Build Alternative (Scenario 2) Sheet 1 of 1

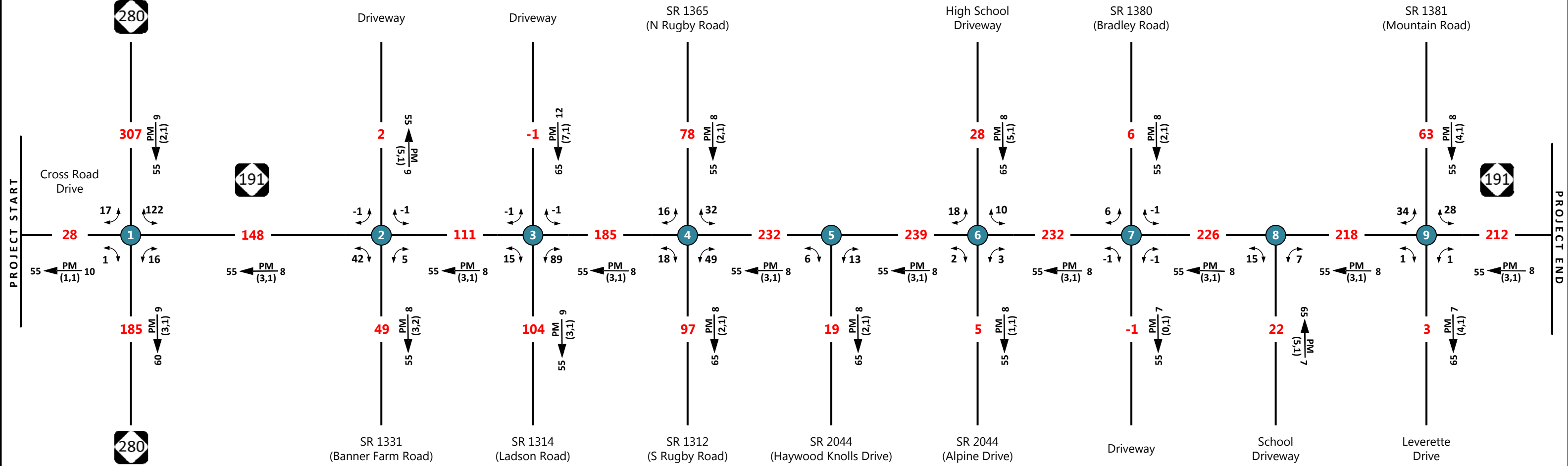
### LEGEND

### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

$D \leftarrow \frac{PM}{(d,t)} K$   
 PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
 K Design Hour Factor (%)  
 X Movement Prohibited  
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TIP: R-2588B
WBS: 34473.1.3
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PROJECT: NC 191 (Haywood Road) Feasibility Study



## 2030 Average Annual Daily Traffic

## No-Build Alternative

(Scenario 3) Sheet 1 of 1

### LEGEND

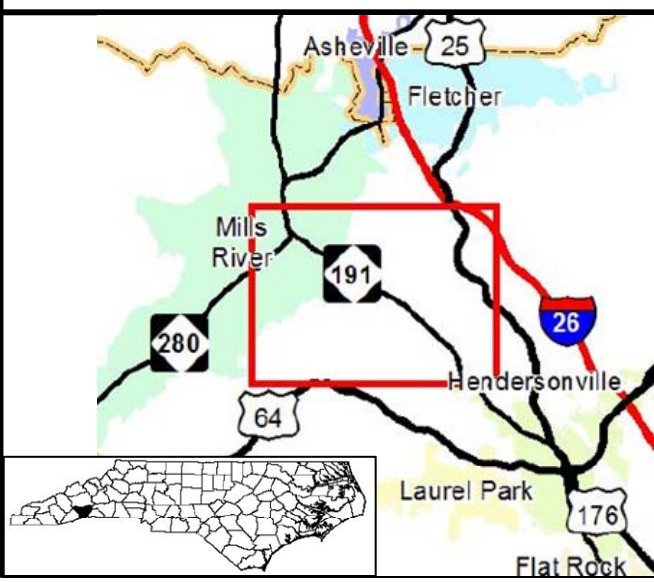
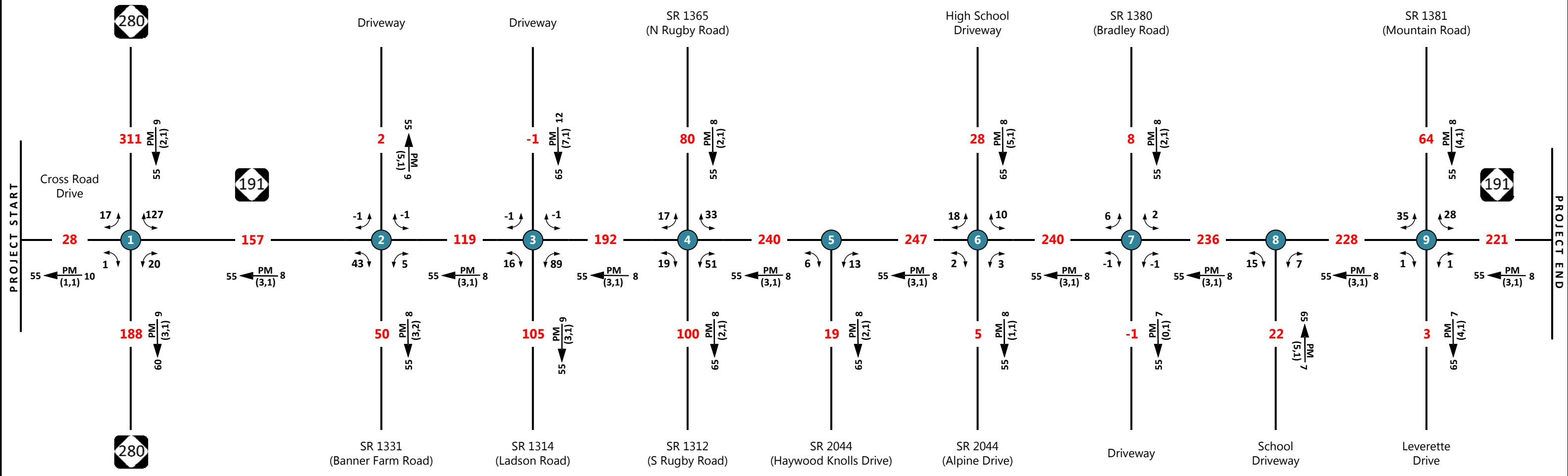
### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
 K Design Hour Factor (%)  
 X Movement Prohibited  
 -1 Less than 50 VPD

D  $\frac{PM}{(d,t)}$  K

TIP: R-2588B
WBS: 34473.1.3
DIVISION: 14
COUNTY: Henderson
DATE: 07/27/2017
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LOCATION: NC 191 (Haywood Road) from SR 1381 (Mountain Road) to NC 280 south of Mills River
PROJECT: NC 191 (Haywood Road) Feasibility Study



# 2030 Average Annual Daily Traffic

## Build Alternative (Scenario 4) Sheet 1 of 1

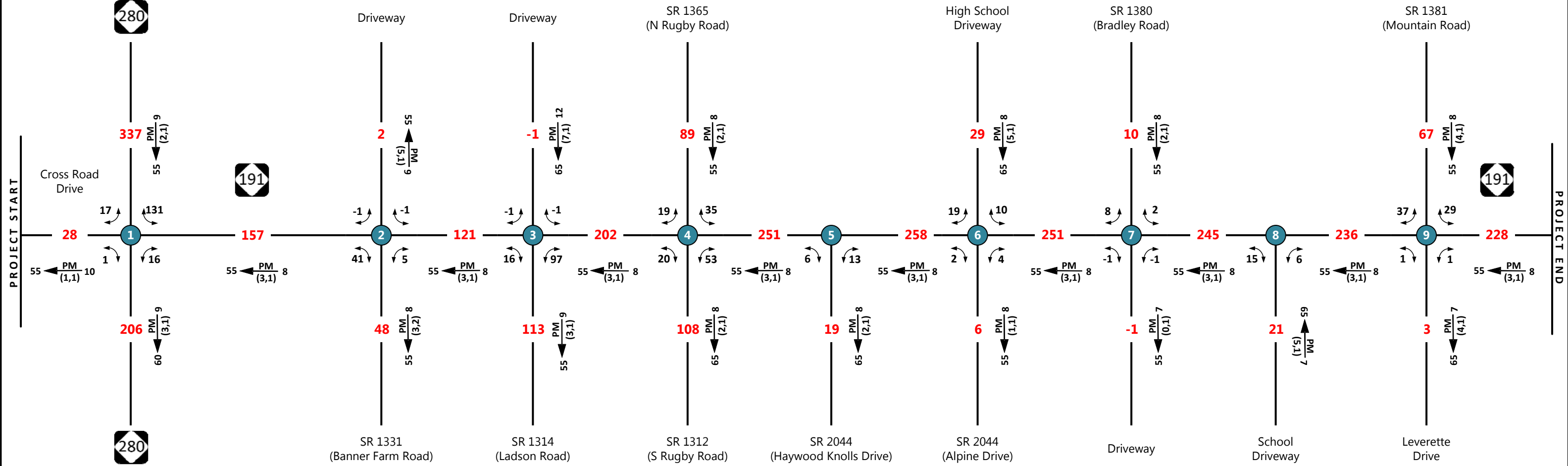
### LEGEND

### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

$D \leftarrow \frac{PM}{(d,t)} K$   
 PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
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 X Movement Prohibited  
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# 2040 Average Annual Daily Traffic

## No-Build Alternative (Scenario 5) Sheet 1 of 1

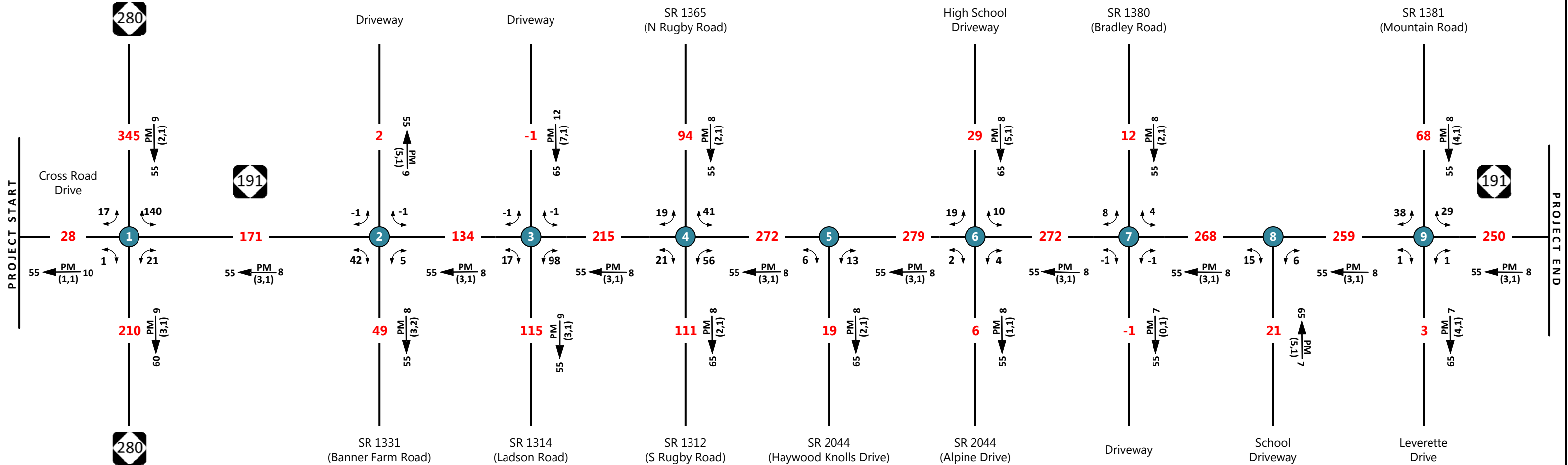
### LEGEND

### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

$D \leftarrow \frac{PM}{(d,t)} K$   
 PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
 K Design Hour Factor (%)  
 X Movement Prohibited  
 -1 Less than 50 VPD

TIP: R-2588B
WBS: 34473.1.3
DIVISION: 14
COUNTY: Henderson
DATE: 07/27/2017
PREPARED BY: VHB Engineering NC, P.C.
LOCATION: NC 191 (Haywood Road) from SR 1381 (Mountain Road) to NC 280 south of Mills River
PROJECT: NC 191 (Haywood Road) Feasibility Study



## 2040 Average Annual Daily Traffic

## Build Alternative (Scenario 6) Sheet 1 of 1

### LEGEND

### No. of Vehicles per Day (VPD) in 100s

— Existing Roadway

PM PM Peak Hour  
 D Peak Hour Directional Split (%)  
 Indicates Direction of D  
 (d,t) Duals, TTSTs (%)  
 K Design Hour Factor (%)  
 X Movement Prohibited  
 -1 Less than 50 VPD

D  $\frac{PM}{(d,t)}$  K

TIP: R-2588B

WBS: 34473.1.3

DIVISION: 14

COUNTY: Henderson

DATE: 07/27/2017

PREPARED BY: VHB Engineering NC, P.C.

LOCATION: NC 191 (Haywood Road) from SR 1381 (Mountain Road) to NC 280 south of Mills River

PROJECT: NC 191 (Haywood Road) Feasibility Study