

MEMORANDUM

December 2024

TO: Nathan Adima, PE
NCDOT Roadway Design

FROM: Austin Bell, PE
AECOM, Technical Services of North Carolina, Inc.

SUBJECT: TIP Project No. A-0010A – Upgrade US-19/US-23 to Interstate standards (Future I-26) from SR 1781 (Broadway St) to NC 213 (Carl Eller Rd) in Buncombe and Madison Counties, North Carolina.

Please find attached the 2024/2045 Traffic Forecast for the above-mentioned project. This forecast was requested by Nathan Adima of NCDOT Roadway Design Unit on March 7, 2024. The final forecast report was approved by the Transportation Planning Division on December 19, 2024.

The project will upgrade twelve miles of the US 19/US 23 Corridor (Future I-26) from just north of I-240 near Asheville to NC 213 (Carl Eller Rd) just north of the Madison County border, thus addressing traffic capacity and congestion issues. The project subject to the forecast analysis is located within the boundary of the French Broad River Metropolitan Planning Organization (FBRMPO) and is part of the 2015 French Broad River Travel Demand Model, Version 2.1 (2015 FBRTDM v2.1) roadway network.

Previous traffic forecast for project A-0010A was developed in June 2018 by AECOM with Base Year 2017 and Future Year 2040. One traffic forecast for project I-2513 adjacent to A-0010A was identified. The I-2513 forecast was completed by Patriot Engineering in October 2022 and its study area's northern section overlaps with the southern end of the current forecast study area. The common roadway segment of US 19/US 23 (Future I-26) is between south of SR 1781 (Broadway St) and north of SR 1684 (Elk Mountain Rd).

The current traffic forecast includes the analyses for four scenarios, one 2024 Base Year and three 2045 Future Year scenarios:

- **2024 Base Year No-Build Scenario** – Existing Conditions
- **2045 Future Year No-Build Scenario** – Existing Conditions
- **Future Year 2045 Build – Alternative 1:**
 - Future I-26 from just north of I-240 to Exit 21 (New Stock Rd) – 8 lanes
 - Future I-26 from Exit 21 (New Stock Rd) to Exit 19 (US 25/70 – Weaver Blvd) – 6 lanes
 - Future I-26 from Exit 19 (US 25/70 – Weaver Blvd) to Exit 13 (Stockton Rd) – 4 lanes
- **Future Year 2045 Build – Alternative 2:**
 - Future I-26 from just north of I-240 to Exit 21 (New Stock Rd) – 6 lanes
 - Future I-26 from Exit 21 (New Stock Rd) to Exit 19 (US 25/70 – Weaver Blvd) – 6 lanes
 - Future I-26 from Exit 19 (US 25/70 – Weaver Blvd) to Exit 13 (Stockton Rd) – 4 lanes

Certain assumptions were made in the development of the forecast:

Fiscal Constraint: The project is located within the boundaries of an MPO; therefore, the travel demand model and traffic forecasts are fiscally-constrained to match the assumptions of the FBRMPO 2045 Metropolitan Transportation Plan (MTP). Nearby projects included in the 2045 MTP document that were considered as projects anticipated to have possible impact on traffic volumes and patterns in the current traffic forecast vicinity are:

- I-2513B – I-240/Future I-26 (Asheville Connector) from I-26 to US 19/US 23/US 70. Multi-lane freeway, part on new location.
- I-2513A – I-240/Future I-26 (Asheville Connector) from north of I-26-40 split to north of SR 3548 (Haywood Road).
- I-4700A – I-26 from NC 280 to I-40 at Asheville. Add Additional Lanes. Section A: NC 146 (Long Shoals Road) to I-40.
- U-5868 – Riverside Drive (Wilma Dykeman Riverway) widening from NC 251/Broadway (SR 1781) to Hill Street
- U-5832 - Widen Riverside Drive (Wilma Dykeman Riverway) from NC 251/Broadway (SR 1781) to Hill Street

If it is determined that any of these assumptions have become inconsistent with the project and surrounding area, please request updated traffic projections at this location.

Travel Demand Model: The 2015 French Broad River Travel Demand Model, Version 2.1, (2015 FBRTDM v2.1), adopted on October 27, 2022, was used as a tool in the development of this forecast.

Development Activity: Based upon information provided by interviewees, some developments are proposed for construction in the study area between the Elk Mountain Rd and Weaver Blvd interchanges. The developments were described in further detail in the report and were considered while developing this forecast.

Forecast Methodology: The 2024 traffic volumes and design factors were developed based upon current counts, historic AADT trend projections and previous forecasts.

The 2015 FBRTDM v2.1 was relied upon in the calculation of the 2024 Base Year and 2045 Future Year traffic volumes. Historic growth rates were analyzed and compared to modeled growth rates. Engineering judgment adjustments were applied as needed in finalizing the volumes in order to develop a balanced forecast.

Interpolation: Hurricane Helene was a Category 4 major hurricane before it made landfall in the Big Bend region of Florida on September 26th. On September 26th the mountains of North Carolina had already received rainfall throughout the day with minor flooding in low areas. This rain in combination of the post-tropical cyclone that traveled northward crossing over the same area on September 27th produced record rainfall, flooding, and wind damage for the area. The FBRMPO is expecting the area to take at least 5 years to recover to normalcy and resume the growth trend observed prior to the Hurricane Helene. Consequently, caution should be advised when interpolating traffic volumes between the forecast years due to the dampening effects of Hurricane Helene on the volume growth.

COVID-19 Pandemic and Traffic Count Considerations: While reviewing historic Annual Average Daily Traffic (AADT) volumes along the study area, year 2020 and 2021 were not factored into the regression analysis to avoid any lingering COVID-19 affects. The freeway historic AADT volumes did not have year 2022 coverage for all of the study area segments, and therefore, were also not considered in the regression analysis. All other remaining ramps and arterial streets had year 2022 historic AADT volumes, and thus, included in the regression analysis.

Traffic counts were taken on May 14th and 16th of 2024 while public schools were in session. However, the UNC Asheville was on summer break during the counting period. Therefore, to account for the UNC Asheville trips, a comparison was made to the recent I-2513 Forecast completed in 2022 that had an overlap with Broadway St. Ratios between the volumes were calculated and modifications to seasonal adjustment factors were made to account for the UNC Asheville trips to be incorporated in the base year volumes.

If you have any questions or if I can be of further assistance, please do not hesitate to call me at (919) 854-7745, or e-mail me at austin.bell@aecom.com.

cc: FILE (Buncombe and Madison Counties, TIP Project A-0010A)

cc: (via e-mail as PDF attachments)

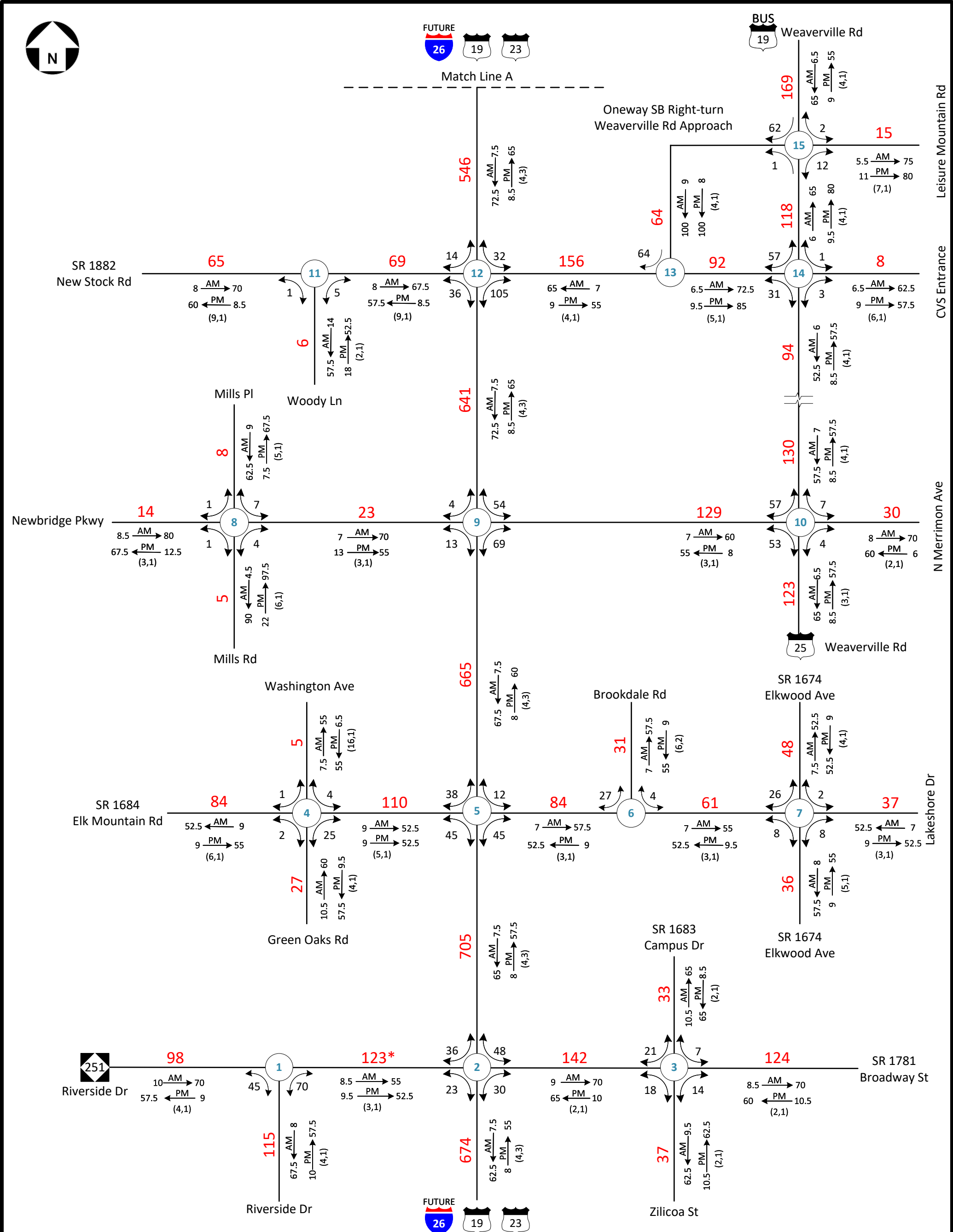
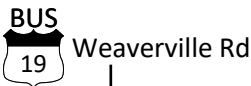
Keith Dixon, State Traffic Forecasting Engineer

Mike Reese, PE, Congestion Management Section

Brendan Merithew, PE, Highway Division 13 Planning Engineer

Tristan Winkler, French Broad River MPO Director

Daniel Sellers, PE, French Broad River MPO and Land of Sky RPO Coordinator



* These volumes do not exist in the actual geometric configuration.
Interstate ramps are broken out separately.



2024

AVERAGE ANNUAL
DAILY TRAFFIC

BY No Build

SHEET 1



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd



Movement Prohibited



AM/PM



Indicates Direction of D



Duals, TT-STs (%)

Design Hour Factor (%)

AM/PM Peak Period

Peak Hour Directional Split (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

DIVISION: 13

DATE: November 2024

PREPARED BY: AECOM & Baseline Mobility Group

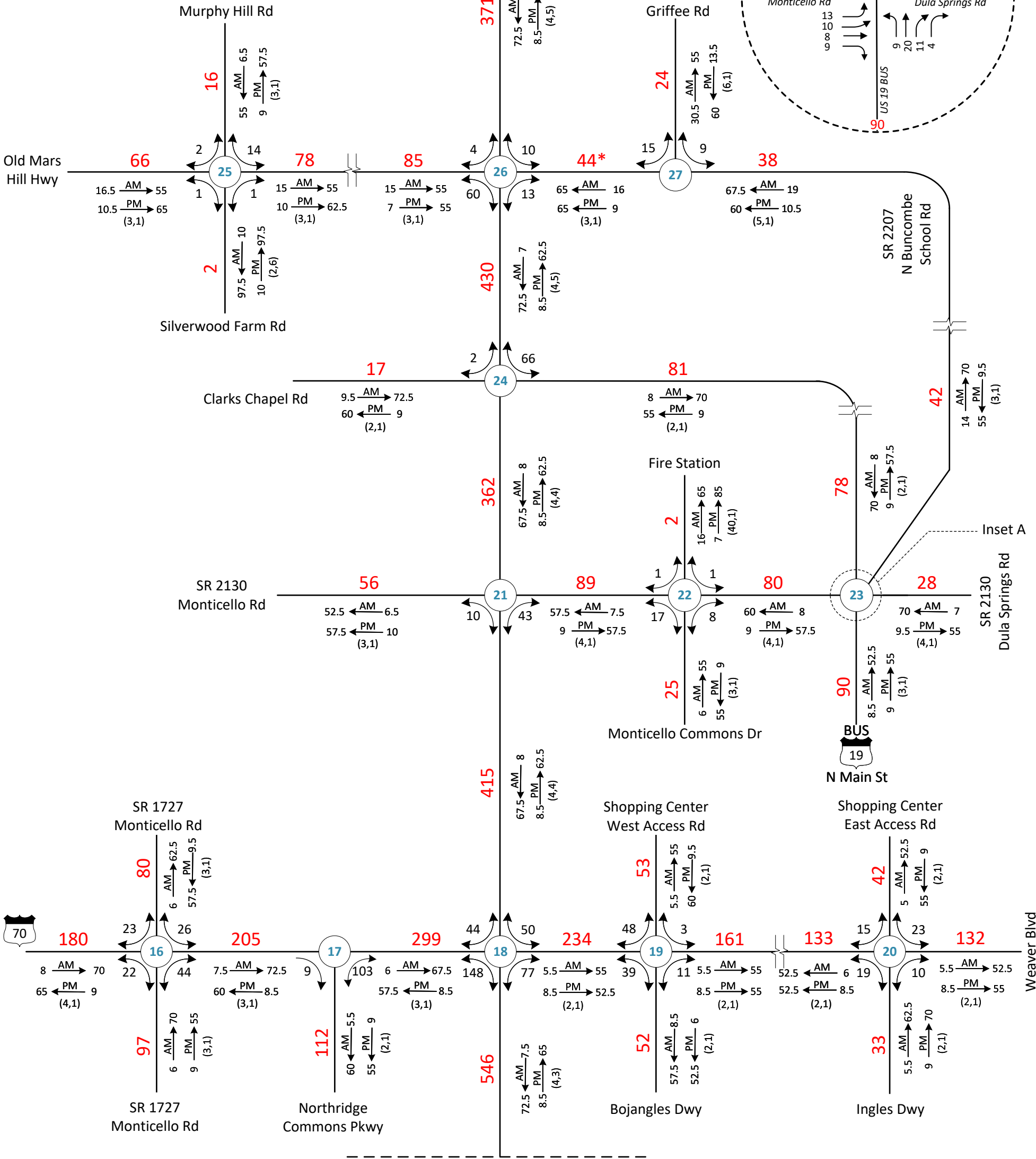
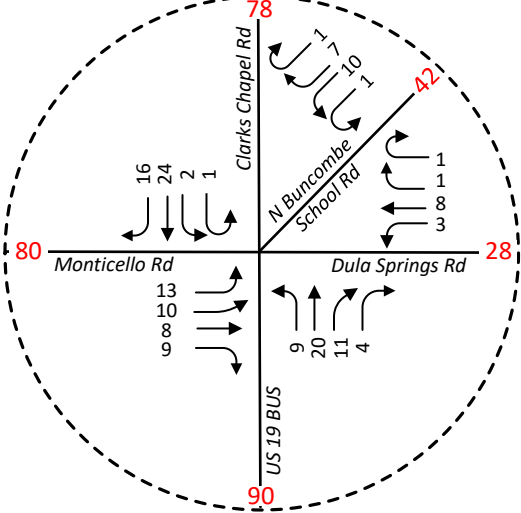
LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213 (Carl Eller Rd)

PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70



Match Line B

Inset A



* These volumes do not exist in the actual geometric configuration. Interstate ramps are broken out separately.



Match Line A



2024 AVERAGE ANNUAL DAILY TRAFFIC BY No Build

SHEET 2



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd



Movement Prohibited



AM/PM



Design Hour Factor (%)



Peak Hour Directional Split (%)



Indicates Direction of D

Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

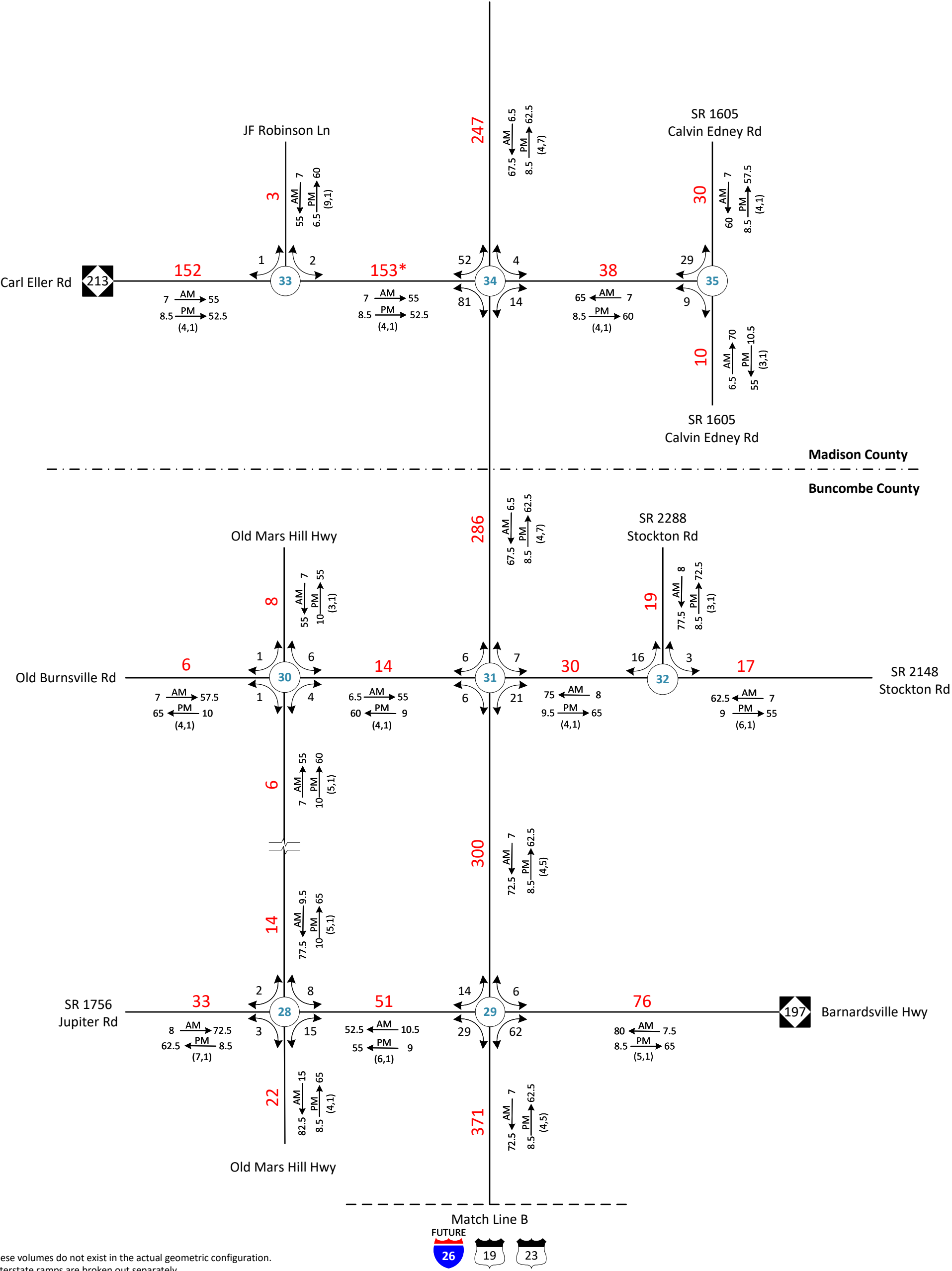
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2024

AVERAGE ANNUAL DAILY TRAFFIC

BY No Build

SHEET 3



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd
Movement Prohibited



Design Hour Factor (%)



AM/PM Peak Period
Peak Hour Directional Split (%)



Indicates Direction of D



Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

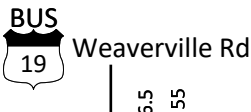
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Match Line A

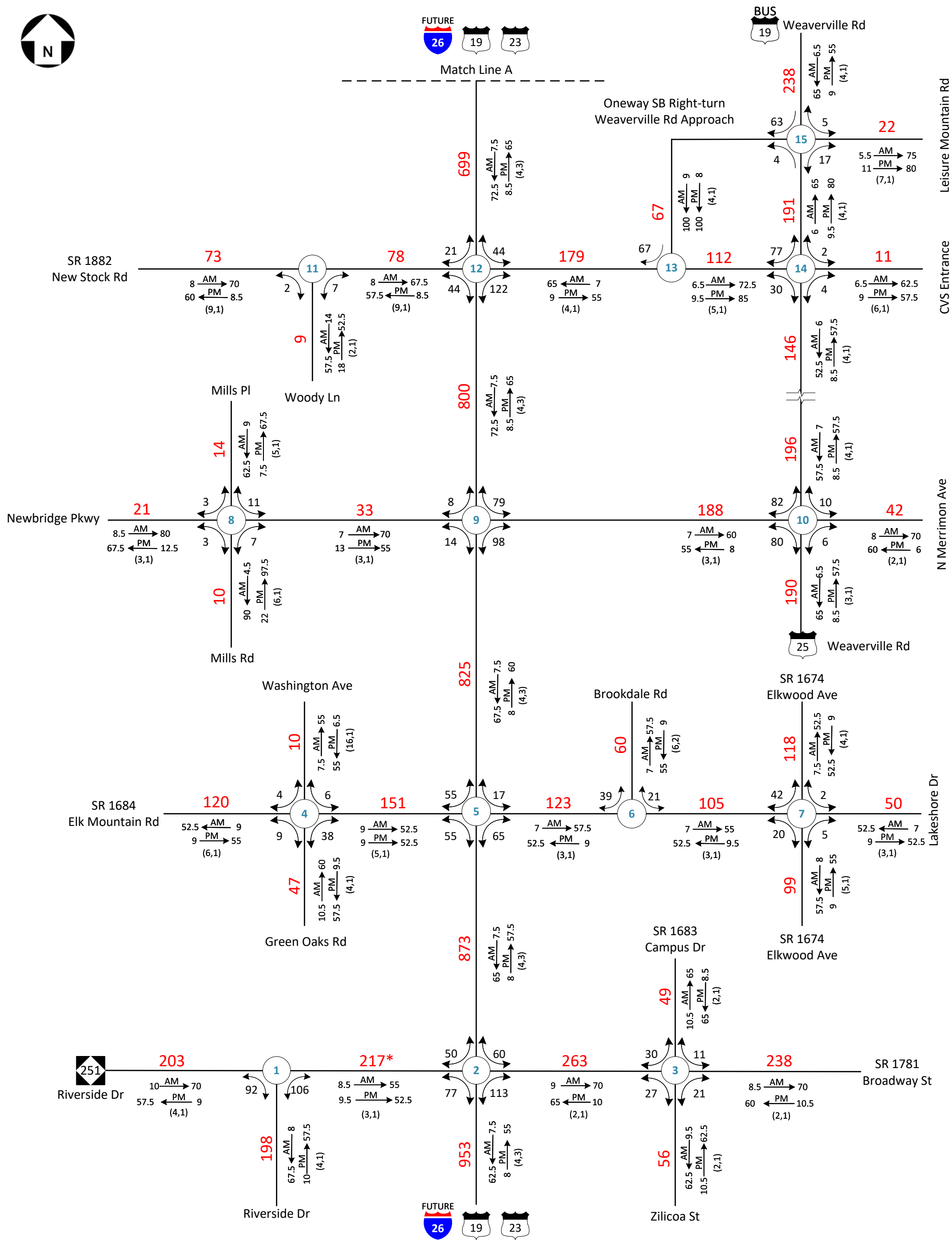
Oneway SB Right-turn
Weaverville Rd Approach

Leisure Mountain Rd

CVS Entrance

N Merrimon Ave

Lakeshore Dr



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Interstate ramps are broken out separately.



2045 AVERAGE ANNUAL DAILY TRAFFIC FY No Build

SHEET 1



Intersection ID



No. of Vehicles Per Day in 100s
Less than 50 vpd
Movement Prohibited



AM/PM
K → D
(d, t)



Design Hour Factor (%)
AM/PM Peak Period
Peak Hour Directional Split (%)
Indicates Direction of D
Duals, TT-STs (%)



(d, t)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

DIVISION: 13

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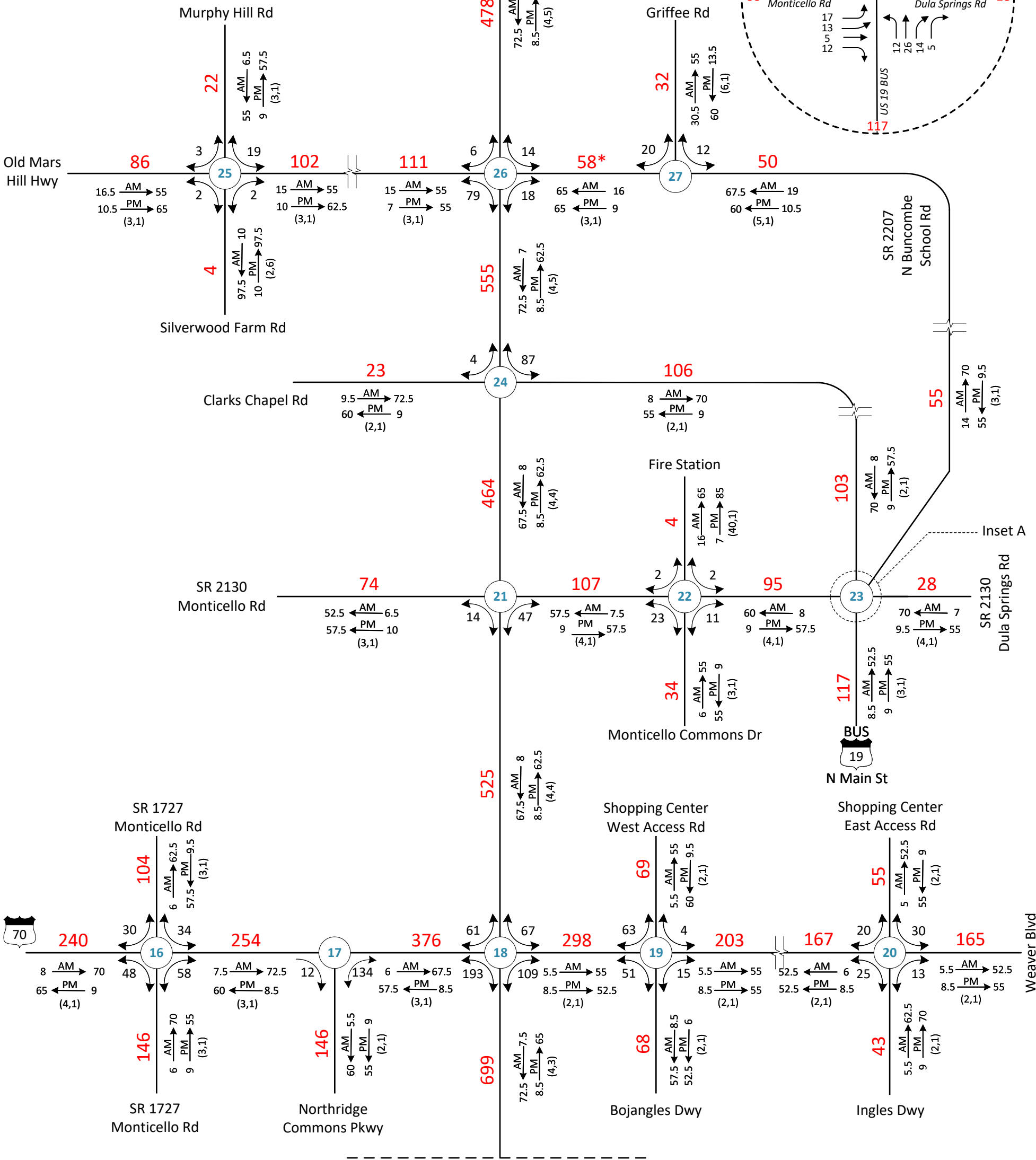
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Match Line B

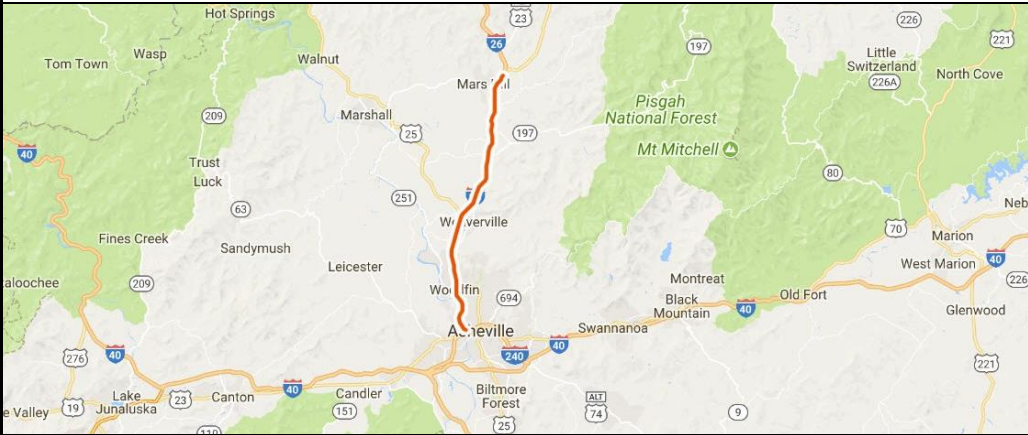
Inset A



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Match Line A



2045 AVERAGE ANNUAL DAILY TRAFFIC FY No Build

SHEET 2



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd



Movement Prohibited



Design Hour Factor (%)



AM/PM Peak Period



Peak Hour Directional Split (%)

Indicates Direction of D

Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

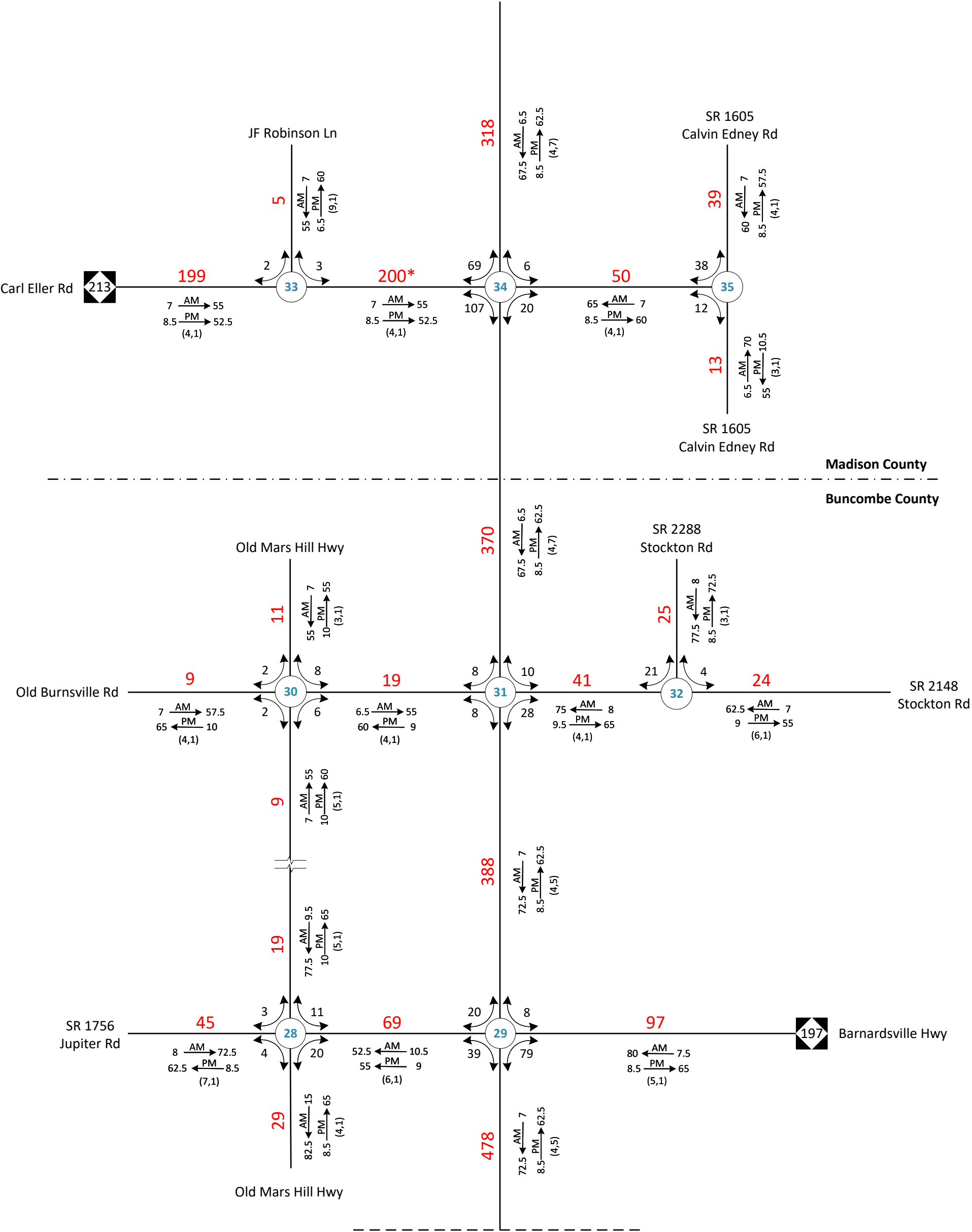
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2045

AVERAGE ANNUAL DAILY TRAFFIC

FY No Build

SHEET 3

1-
X

Intersection ID
No. of Vehicles Per Day in 100s
Less than 50 vpd
Movement Prohibited

AM/PM
K → D
(d, t)

K
AM/PM
D
→
(d, t)

Design Hour Factor (%)
AM/PM Peak Period
Peak Hour Directional Split (%)
Indicates Direction of D
Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

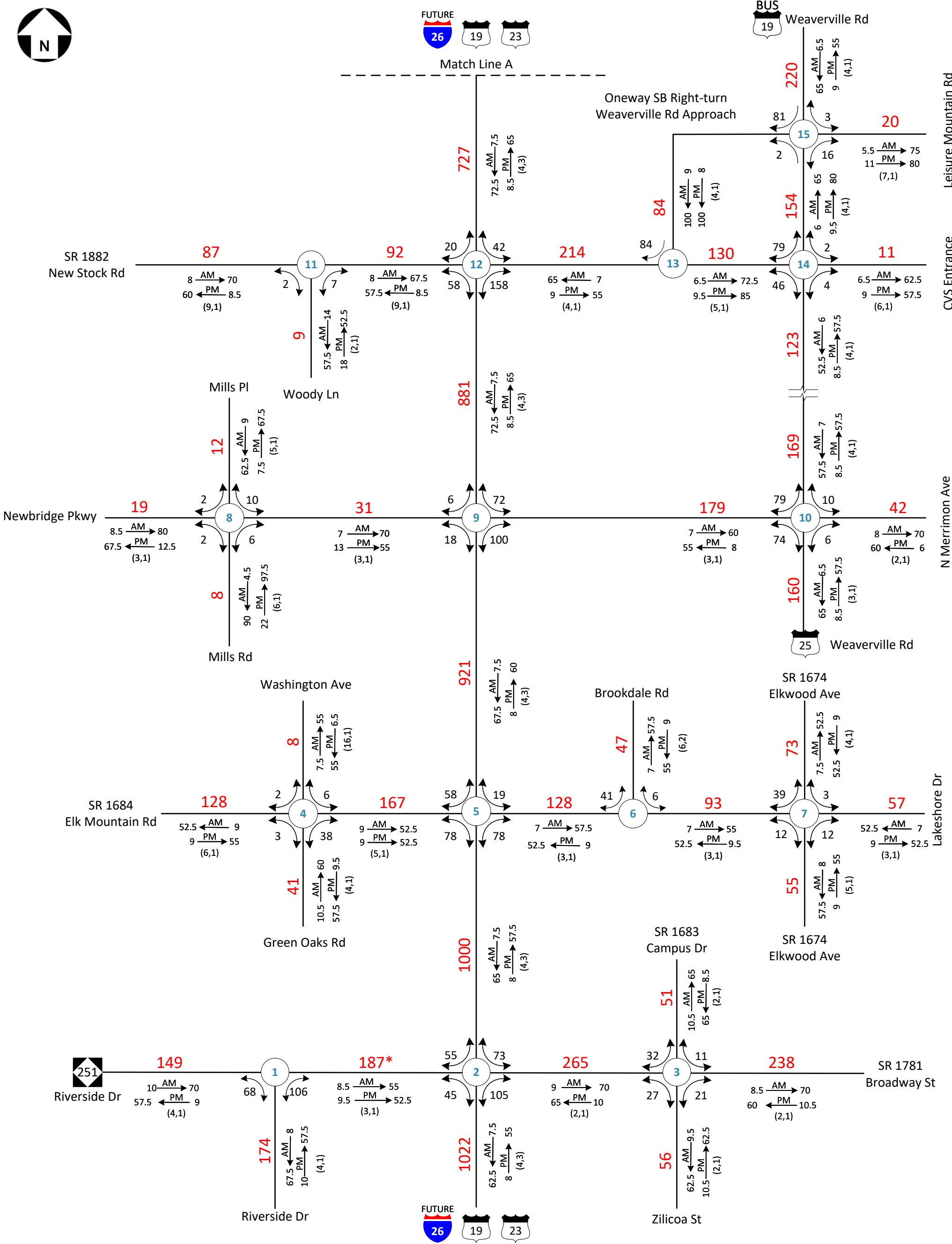
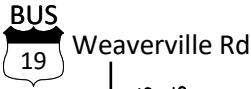
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2045 AVERAGE ANNUAL DAILY TRAFFIC FY Build Alt. 1

SHEET 1



Intersection ID



No. of Vehicles Per Day in 100s



Movement Prohibited



Design Hour Factor (%)



AM/PM Peak Period



Peak Hour Directional Split (%)



Indicates Direction of D



Duals, TT-STs (%)

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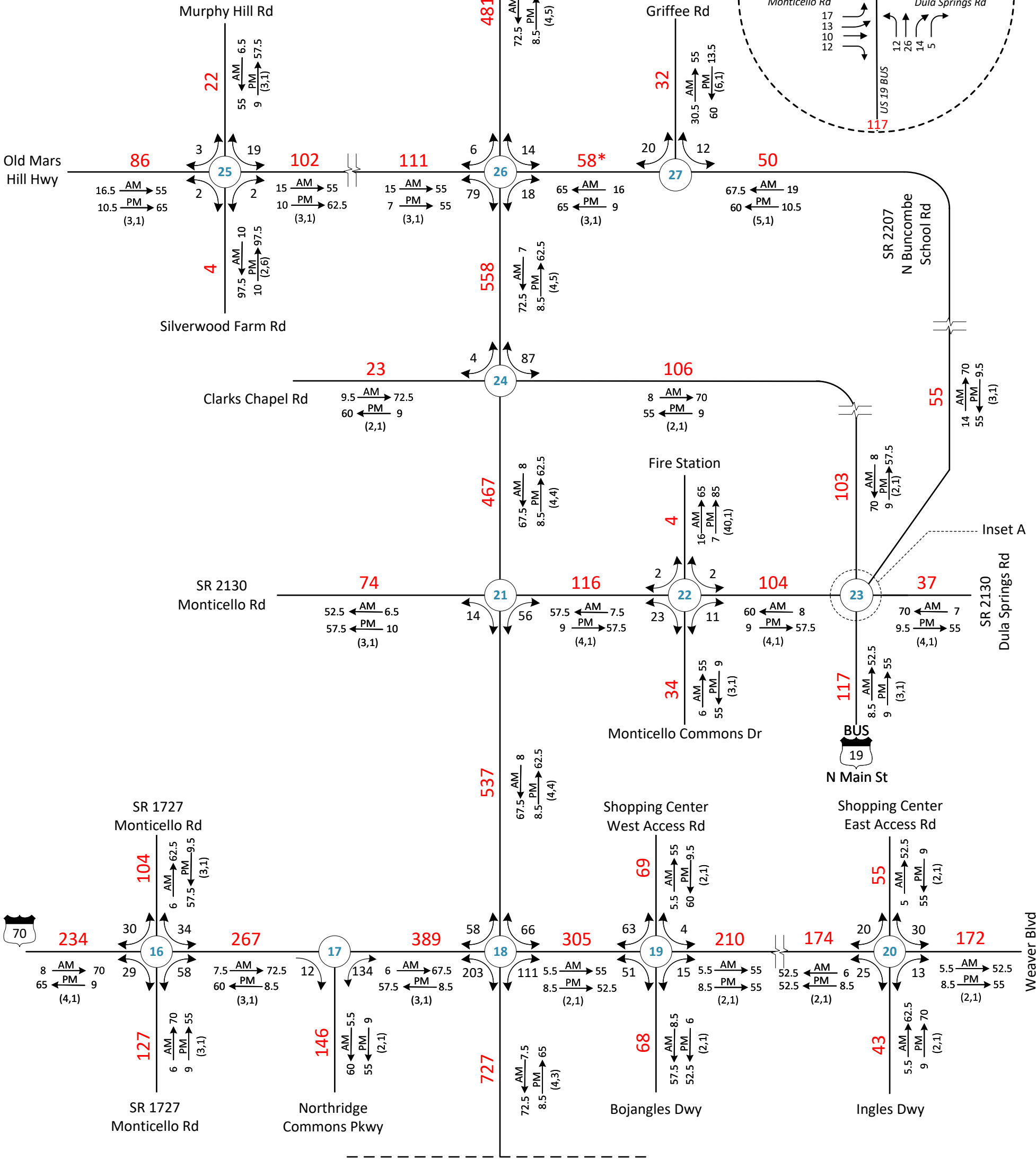
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Match Line B

Inset A



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Match Line A



2045 AVERAGE ANNUAL DAILY TRAFFIC FY Build Alt. 1

SHEET 2



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd
Movement Prohibited



AM/PM



Design Hour Factor (%)



Peak Hour Directional Split (%)



Indicates Direction of D



Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

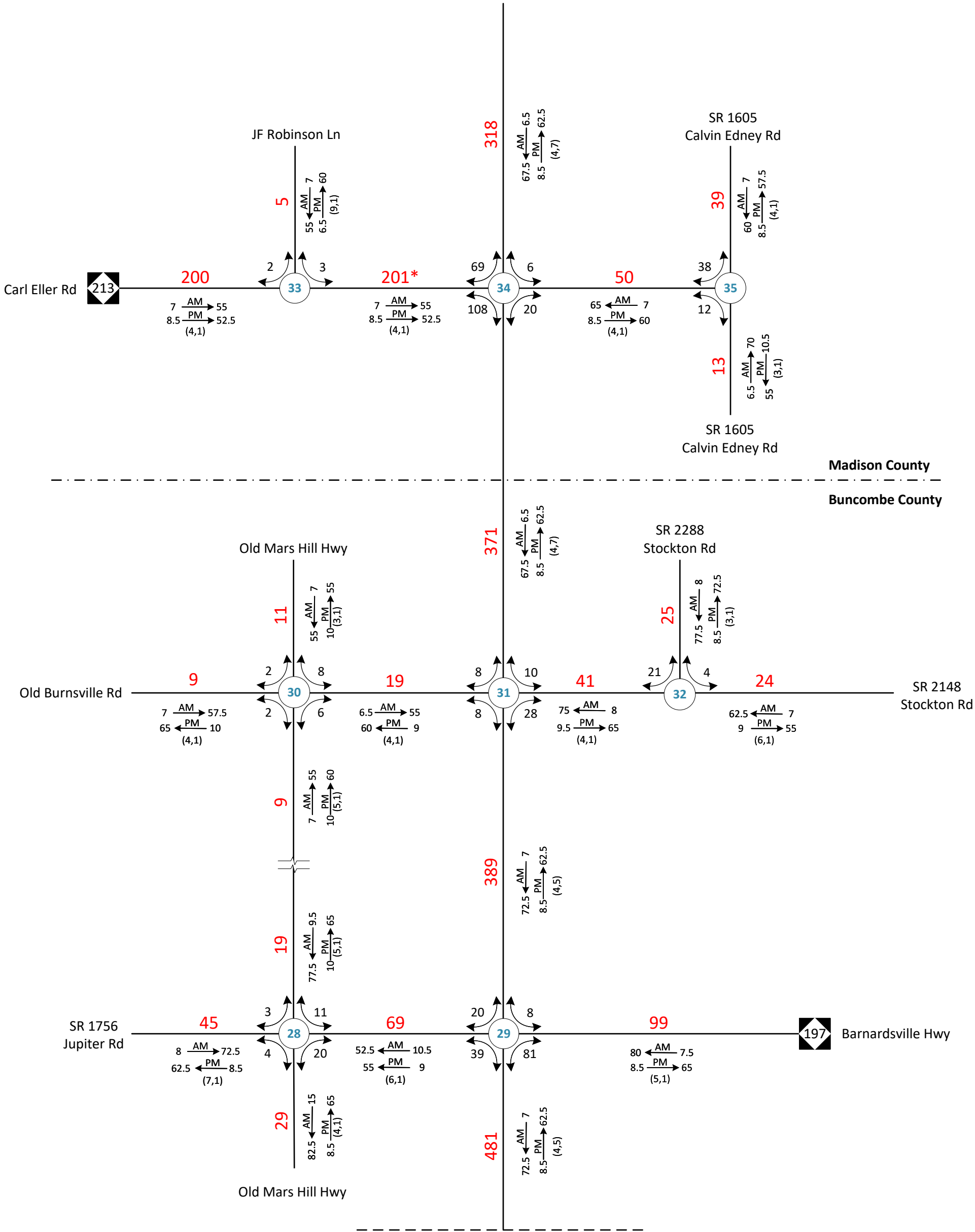
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2045

AVERAGE ANNUAL DAILY TRAFFIC

FY Build Alt. 1

SHEET 3



Intersection ID



No. of Vehicles Per Day in 100s



Less than 50 vpd



Movement Prohibited



Design Hour Factor (%)



AM/PM Peak Period



Indicates Direction of D



Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

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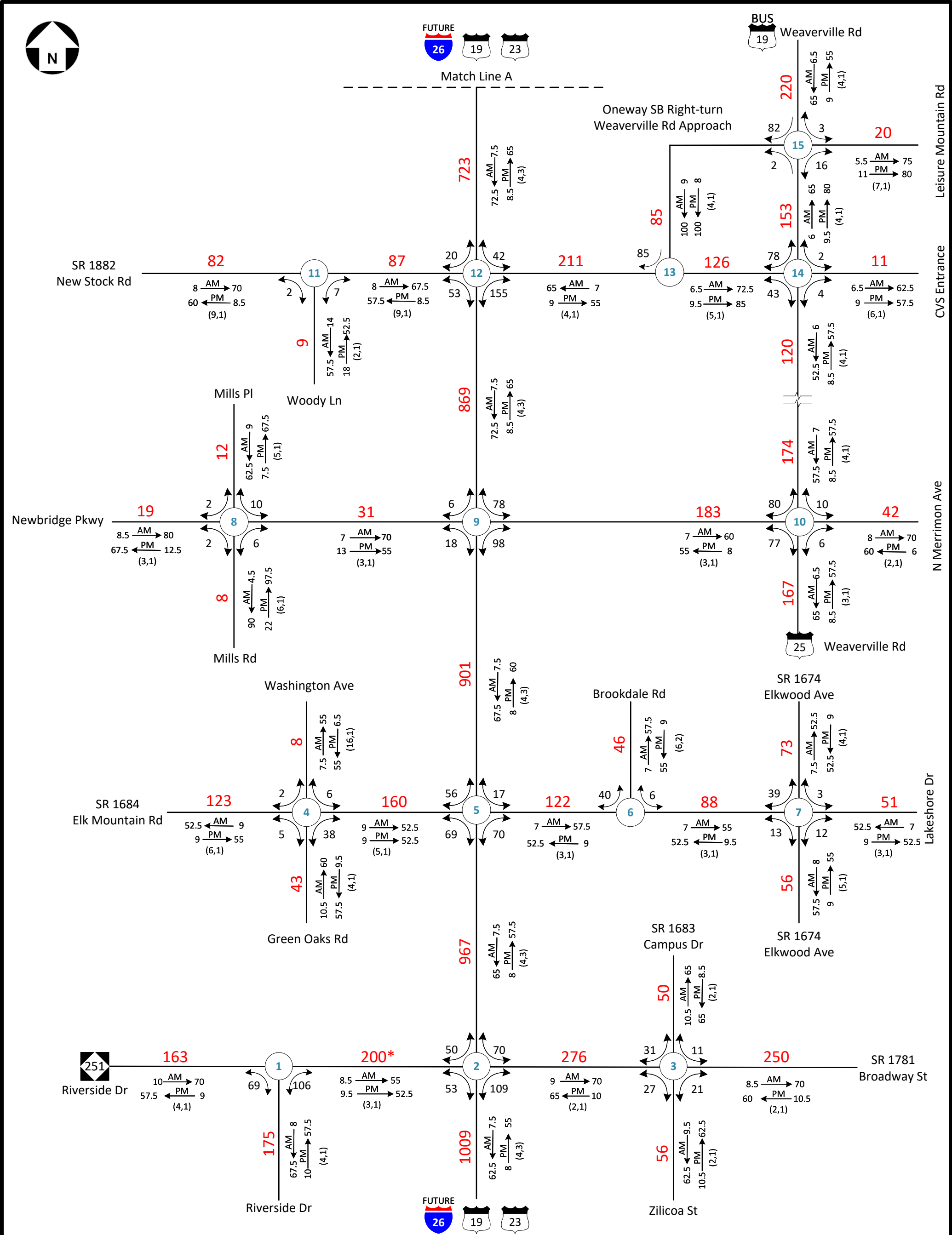
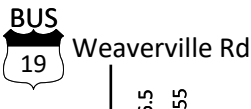
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##

###

1-

X

Intersection ID

No. of Vehicles Per Day in 100s

Less than 50 vpd

Movement Prohibited

AM/PM

K → D

(d, t)

Design Hour Factor (%)

AM/PM Peak Period

Peak Hour Directional Split (%)

Indicates Direction of D

Duals, TT-STs (%)

K

AM/PM

D

→

(d, t)

TIP: A-0010A

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COUNTY: Buncombe & Madison

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2045

AVERAGE ANNUAL DAILY TRAFFIC

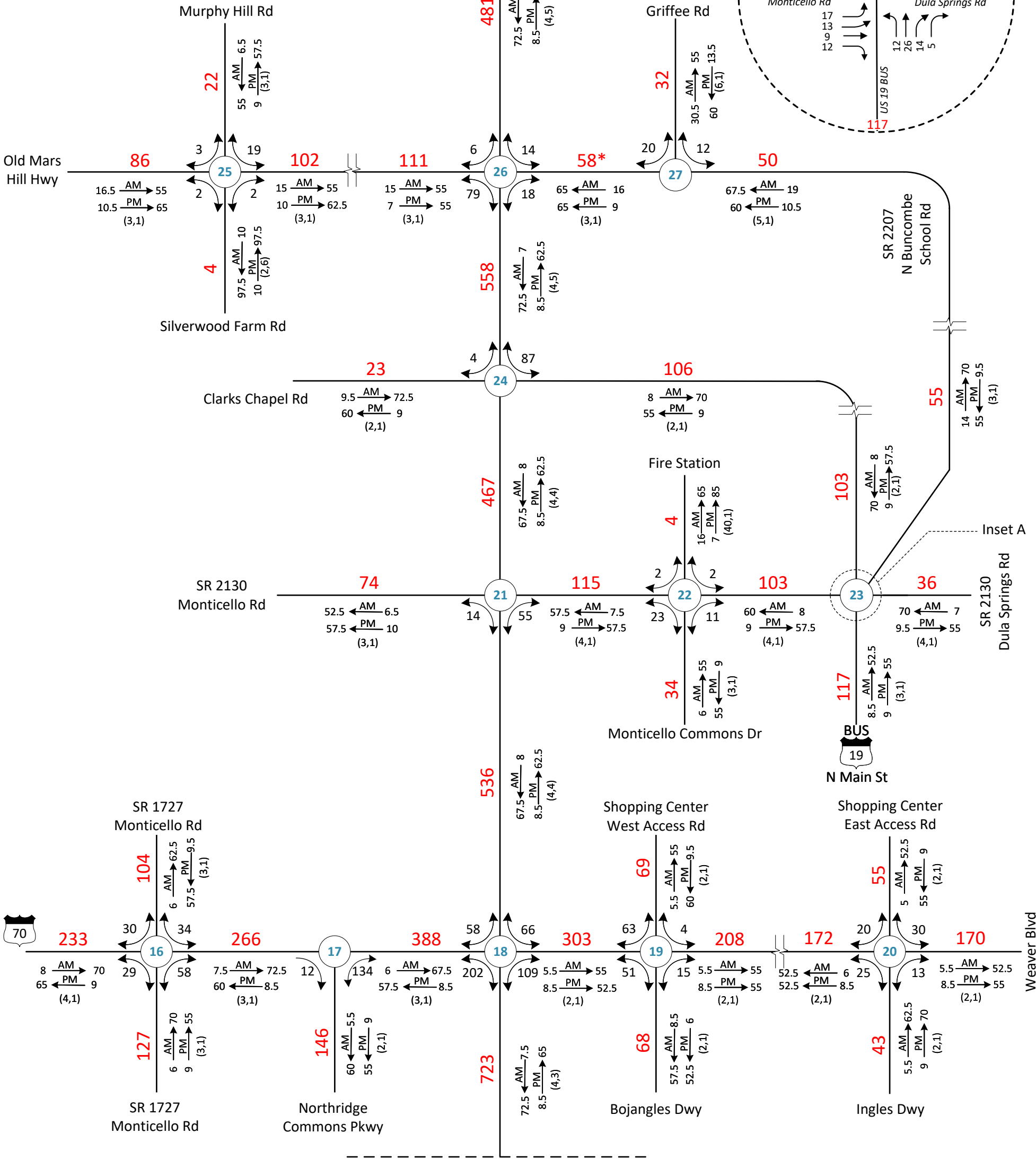
FY Build Alt. 2

SHEET 1



Match Line B

Inset A



Match Line A



* These volumes do not exist in the actual geometric configuration. Interstate ramps are broken out separately.



2045 AVERAGE ANNUAL DAILY TRAFFIC FY Build Alt. 2

SHEET 2



Intersection ID



No. of Vehicles Per Day in 100s



Movement Prohibited



AM/PM
K → D
(d, t)



Design Hour Factor (%)
AM/PM Peak Period
Peak Hour Directional Split (%)



Indicates Direction of D
Duals, TT-STs (%)

TIP: A-0010A

WBS: 32573.1.9

COUNTY: Buncombe & Madison

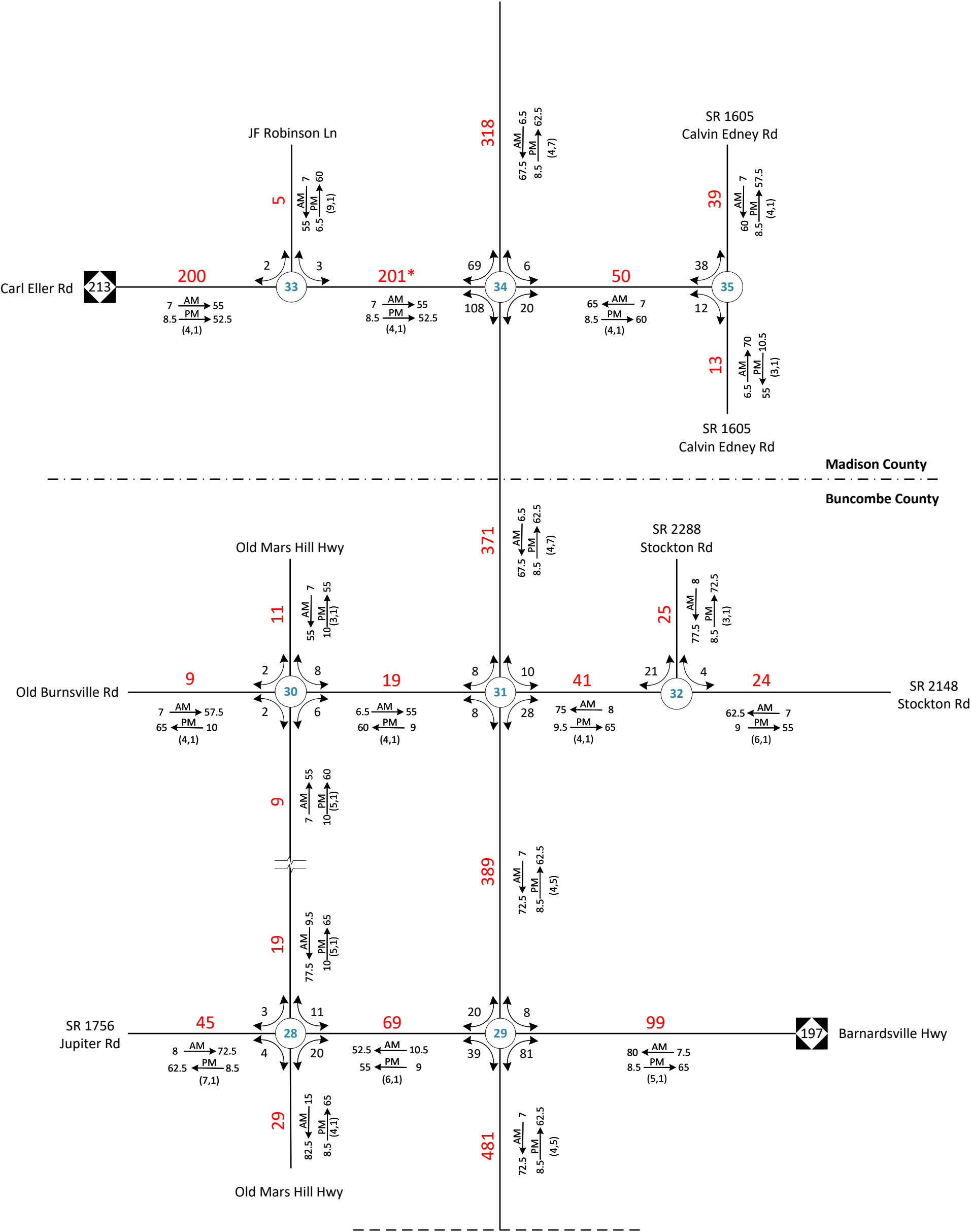
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2045 AVERAGE ANNUAL DAILY TRAFFIC		FY Build Alt. 2		SHEET 3
## ### 1- X K AM/PM D → (d , t)	Intersection ID	TIP: A-0010A	WBS: 32573.1.9	
	No. of Vehicles Per Day in 100s	COUNTY: Buncombe & Madison	DIVISION: 13	
	Less than 50 vpd	DATE: November 2024		
	Movement Prohibited	PREPARED BY: AECOM & Baseline Mobility Group		
	K AM/PM → (d , t)	LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213 (Carl Eller Rd)		
	Design Hour Factor (%)	PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70		
AM/PM Peak Period				
Peak Hour Directional Split (%)				
Indicates Direction of D				
Duals, TT-STs (%)				