

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: BR-HIP-114(18): 39S114-F0-002 ROUTE: S.R. 114
COUNTY: CARROLL-HENDERSON CITY: _____
PROJECT PIN NUMBER: 136173.00
PROJECT DESCRIPTION: S.R. 114 BRIDGES OVER I-40 @ L.M. 26.47
[1] I-40 AVERAGE TRAFFIC DATA
[2] S.R. 114 TRAFFIC DATA
[3] EASTBOUND ON RAMP TRAFFIC DATA

DIVISION REQUESTING:

MAINTENANCE ☐	MATERIALS & TEST ☐
PROJECT MANAGEMENT ☐	STRUCTURES ☐
PROG. DEVELOPMENT & ADM. ☐	SURVEY & ROADWAY DESIGN ☐
PUBLIC TRANS. & AERO. ☐	TRAFFIC SIGNAL DESIGN ☐
	OTHER <u>ARCADIS</u> ☒

YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: 2027
PROJECTED LETTING DATE: 2027

TRAFFIC ASSIGNMENT:

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
[1] 32,720	2027	46,250	4,190	9	2047	50-50	31	47	6,129	9,780
[2] 340	2027	530	79	15	2047	60-40	1	2	5	7
[3] 290	2027	460	72	15	2047	60-40	1	2	6	8

REQUESTED BY: NAME ANDY PARR DATE 3/25/26
DIVISION ARCADIS U.S., INC.
ADDRESS 1210 PREMIER DRIVE, SUITE 200
CHATTANOOGA TN 37421

REVIEWED BY: ASHLIE BEVAN Ashlie Bevan DATE 3/25/2026
SENIOR TECHNICAL SPECIALIST
SUITE 1200, TN TOWER, 312 ROSA L. PARKS

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 3/25/2026
TRANSPORTATION MANAGER 2
SUITE 1200, TN TOWER, 312 ROSA L. PARKS

COMMENTS:

FURNISH THE 2027-2047 TRAFFIC DATA AND ADL's FOR A TWO LANE ROADWAY.

THIS TRAFFIC IS BASED ON 2025 CYCLE AND RAMP COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATES FROM THE TN-TIMES LINEAR REGRESSION TOOL. AADT's, DHV's AND ADL's ARE INCLUDED.

DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.

SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

(REV. 12/2/25)

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: BR-HIP-114(18) : 39S114-F0-002 ROUTE NO.: I-40 [1]
 COUNTY: CARROLL-HENDERSON CITY: _____
 PROJECT DESCRIPTION: S.R. 114 BRIDGES OVER I-40 @ L.M. 26.47

Interstate

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		15,872	0.001	16	0.001	16
Pick-up, Panel, Van (3)		5,055	0.004	20	0.005	25
Sing. Unit	Buses (4)	129	0.300	39	0.300	39
	2-axle, 6-tire (5)	1,188	0.170	202	0.170	202
	3-axle or more (6-7)	372	0.700	260	1.000	372
	4-axle (8)	589	0.700	412	0.780	459
Comb.	5-axle or more (9-13)	16,280	1.100	17,908	1.780	28,978
Totals (2037 AADT)		39,485		18,857		30,092

Suggested Percentages of Trucks in Design Lane

	4 Lane	6 Lane	8 Lane
5,000 or less ADT	90%	75%	70%
5,000 - 10,000 ADT	80%	70%	65%
10,000 - 15,000 ADT	75%	65%	60%
15,000 - 20,000 ADT	75%	65%	55%
20,000 - 30,000 ADT	70%	60%	50%
30,000 Plus ADT	65%	60%	50%

No. of Lanes: 4

% Trucks in Design Lane: 65%

ADL in Design Lane:

FLEX:	0.5	X	0.65	X	18857.5	=	6,129
RIGID:	0.5	X	0.65	X	30091.6	=	9,780

ADL Calculations By: TONY ARMSTRONG Date: 3/25/2026
 Reviewed By: Ashlie Bevan Date: 3/25/2026
 [REV. 6/12/24]

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: BR-HI[P-114(18) : 39S114-F0-002 ROUTE NO.: S.R. 114 [2]
COUNTY: CARROLL-HENDERSON CITY:
PROJECT DESCRIPTION: S.R. 114 BRIDGES OVER I-40 @ L.M. 26.47

FAP Rural

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		315	0.001	0	0.001	0
Pick-up, Panel, Van (3)		110	0.005	1	0.004	0
Sing. Unit	Buses (4)	0	0.300	0	0.300	0
	2-axle, 6-tire (5)	4	0.240	1	0.310	1
	3-axle or more (6-7)	2	1.700	3	2.300	5
	4-axle (8)	2	1.110	2	1.500	3
Comb.	5-axle or more (9-13)	2	1.320	3	2.200	4
Totals (2037 AADT)		435		10		14

Suggested Percentages of Trucks in Design Lane

5,000 or less ADT	95%
5,000 - 10,000 ADT	90%
10,000 - 15,000 ADT	85%
15,000 - 20,000 ADT	80%
20,000 - 30,000 ADT	75%
30,000 - 40,000 ADT	70%
40,000 Plus	60%

No. of Lanes:	2					
% Trucks in Design Lane:	100%					
ADL in Design Lane:						
FLEX:	0.5	X	1.00	X	10.1	= 5
RIGID:	0.5	X	1.00	X	14.0	= 7

ADL Calculations By: **TONY ARMSTRONG** Date: **3/25/2026**
Reviewed By: *Ashlie Bevan* Date: **3/25/2026**
[REV. 6/12/24]

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: BR-HIP-114(18) : 39S114-F0-002 ROUTE NO.: I-40 E.B. ON RAMP[3]
 COUNTY: CARROLL-HENDERSON CITY: _____
 PROJECT DESCRIPTION: S.R. 114 BRIDGES OVER I-40 @ L.M. 26.47
 [HIGHEST INTERCHANGE RAMP]

Interstate

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		273	0.001	0	0.001	0
Pick-up, Panel, Van (3)		94	0.004	0	0.005	0
Sing. Unit	Buses (4)	0	0.300	0	0.300	0
	2-axle, 6-tire (5)	2	0.170	0	0.170	0
	3-axle or more (6-7)	2	0.700	1	1.000	2
	4-axle (8)	2	0.700	1	0.780	2
Comb.	5-axle or more (9-13)	2	1.100	2	1.780	4
Totals (2037 AADT)		375		6		8

Suggested Percentages of Trucks in Design Lane

	4 Lane	6 Lane	8 Lane
5,000 or less ADT	90%	75%	70%
5,000 - 10,000 ADT	80%	70%	65%
10,000 - 15,000 ADT	75%	65%	60%
15,000 - 20,000 ADT	75%	65%	55%
20,000 - 30,000 ADT	70%	60%	50%
30,000 Plus ADT	65%	60%	50%

No. of Lanes: 1 ONE-WAY

% Trucks in Design Lane: 100%

ADL in Design Lane:

FLEX:	X	1.00	X	6.0	=	6
RIGID:	X	1.00	X	8.2	=	8

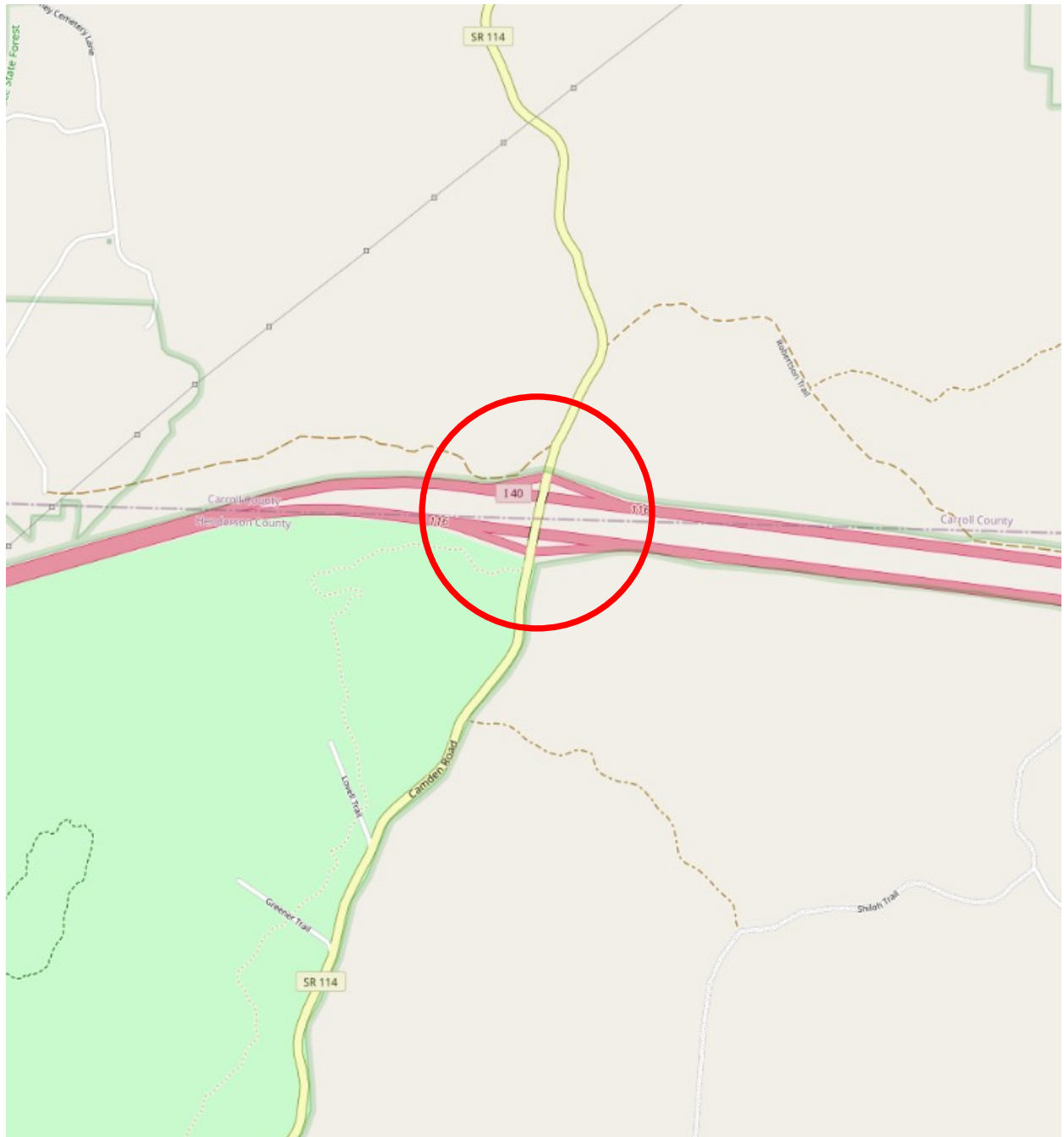
ADL Calculations By: TONY ARMSTRONG

Date: 3/25/2026

Reviewed By: Ashlie Bevan

Date: 3/25/2026

[REV. 6/12/24]

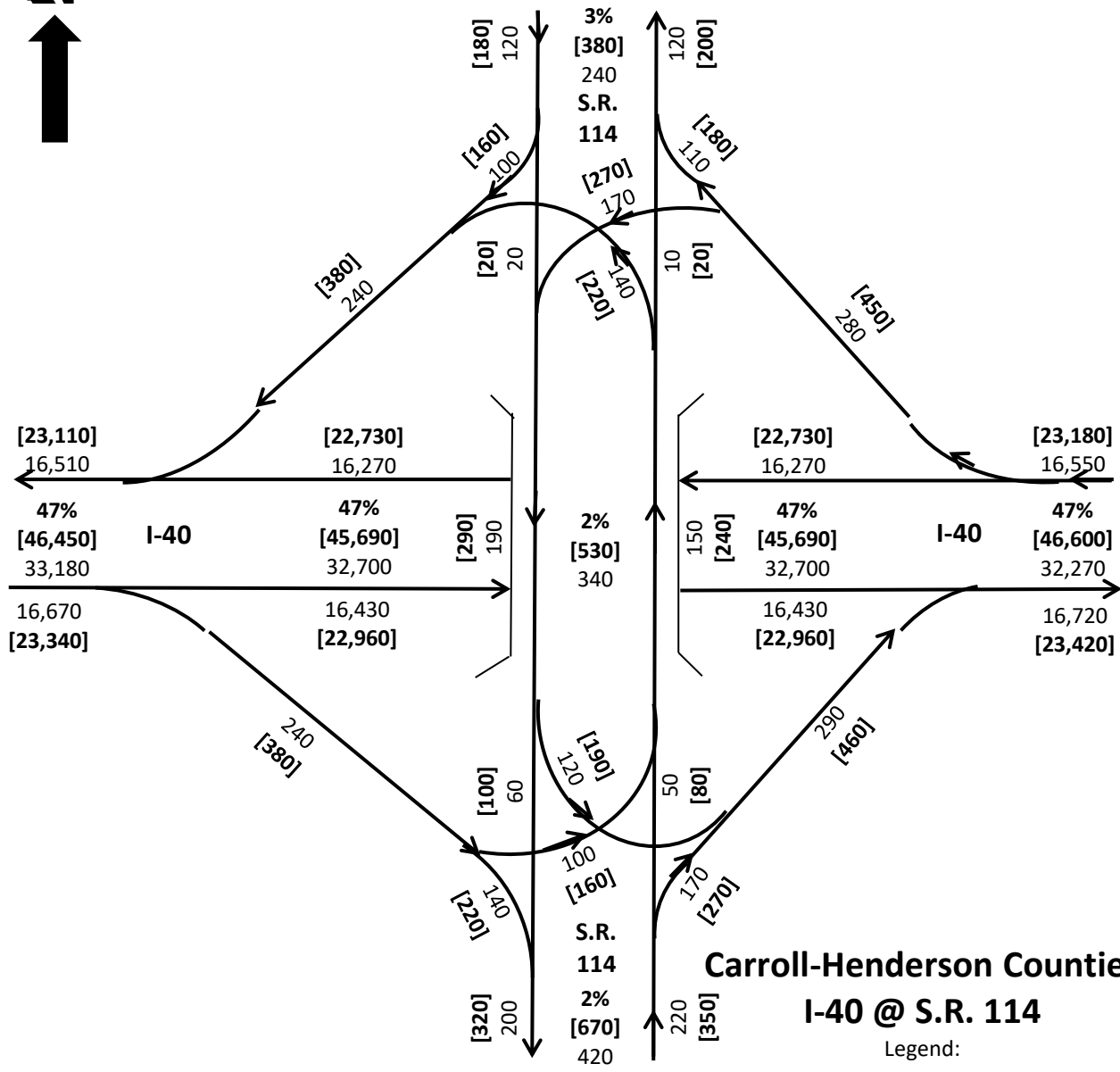


Carroll-Henderson Counties

S.R. 114 Bridges over I-40 @ L.M. 26.47



AADT



Carroll-Henderson Counties

I-40 @ S.R. 114

Legend:

2027 AADT - 000

2047 AADT - [000]

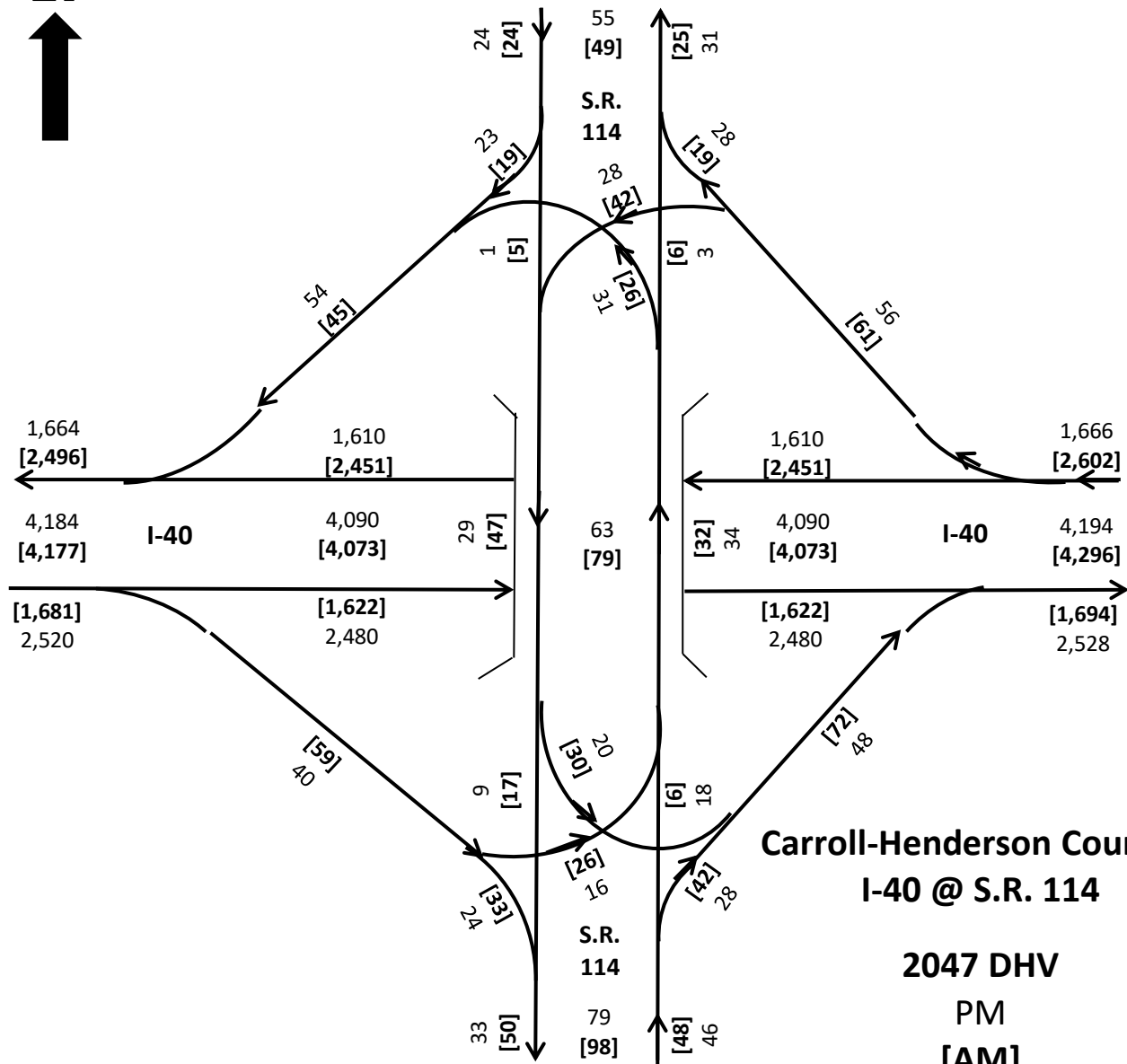
AADT Truck % - 0%

Date: March 25, 2026

TA



2047 DHV



Carroll-Henderson Counties
I-40 @ S.R. 114

2047 DHV
PM
[AM]

Date: March 25, 2026
TA