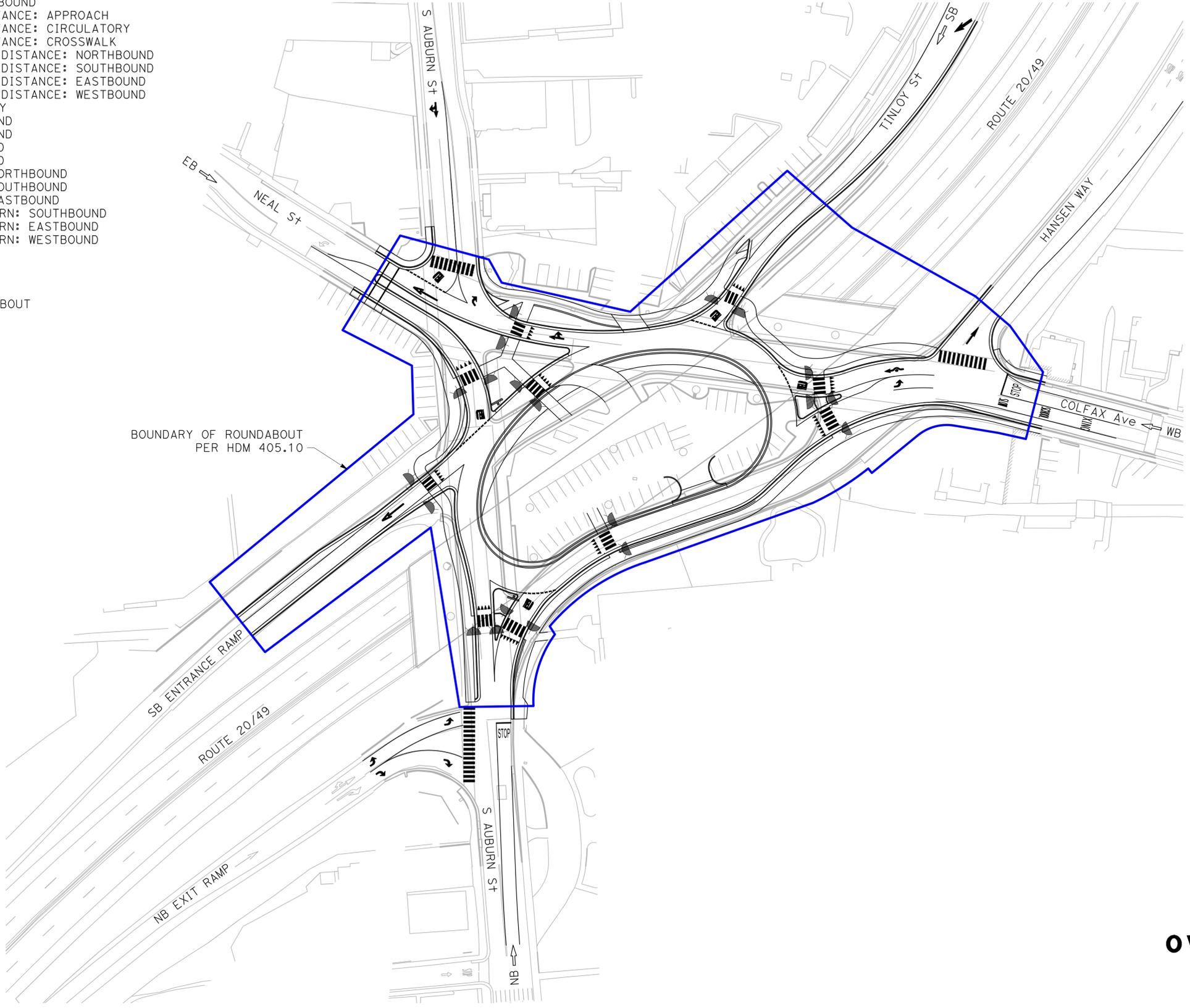


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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**INDEX:**

EXHIBIT No	DESCRIPTION
1	OVERVIEW BOUNDARY OF ROUNDABOUT
2	FASTEST PATH: NORTHBOUND
3	FASTEST PATH: SOUTHBOUND
4	FASTEST PATH: EASTBOUND
5	FASTEST PATH: WESTBOUND
6	STOPPING SIGHT DISTANCE: APPROACH
7	STOPPING SIGHT DISTANCE: CIRCULATORY
8	STOPPING SIGHT DISTANCE: CROSSWALK
9	INTERSECTION SIGHT DISTANCE: NORTHBOUND
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13	ANGLES OF VISIBILITY
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22	CAL LEGAL TRUCK TURN: EASTBOUND
23	CAL LEGAL TRUCK TURN: WESTBOUND

**LEGEND:**  
 ——— BOUNDARY OF ROUNDABOUT



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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**OVERVIEW BOUNDARY ROUNDABOUT**  
 SCALE: 1" = 50'

**EX-1**

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 REVISED BY: MEH  
 DATE REVISED: 12-3-25

- NOTES:**
1. SPEED WAS OBTAINED FROM NCHRP REPORT 672 EQUATION 6-4.
  2. 2% CROSS SLOPE ASSUMED FOR DETERMINING FASTEST PATH.
  3. THE FASTEST PATHS ARE DRAWN WITH OFFSETS OF 5' FROM CURBS AND 3' FROM PAINTED EDGE LINES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

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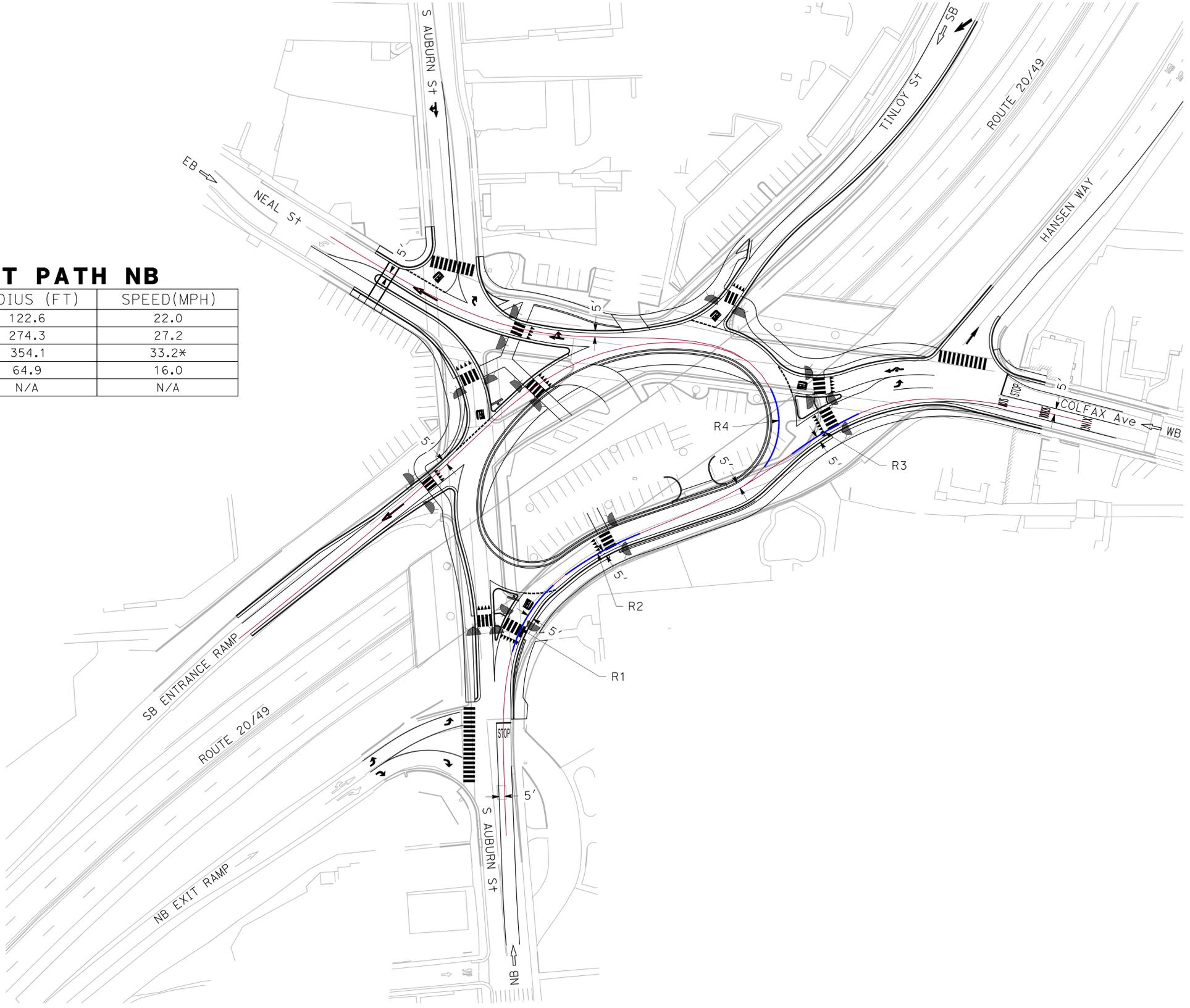
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**FASTEST PATH NB**

MOVEMENT	RADIUS (FT)	SPEED(MPH)
ENTERING (V1)	122.6	22.0
CIRCULATING (V2)	274.3	27.2
EXITING (V3)	354.1	33.2*
LEFT TURN (V4)	64.9	16.0
RIGHT TURN (V5)	N/A	N/A

\*SEE NOTE 1



**FASTEST PATH  
 NORTHBOUND**  
 SCALE: 1" = 50'

**EX-2**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

- NOTES:**
1. SPEED WAS OBTAINED FROM NCHRP REPORT 672 EQUATION 6-4.
  2. 2% CROSS SLOPE ASSUMED FOR DETERMINING FASTEST PATH.
  3. THE FASTEST PATHS ARE DRAWN WITH OFFSETS OF 5' FROM CURBS AND 3' FROM PAINTED EDGE LINES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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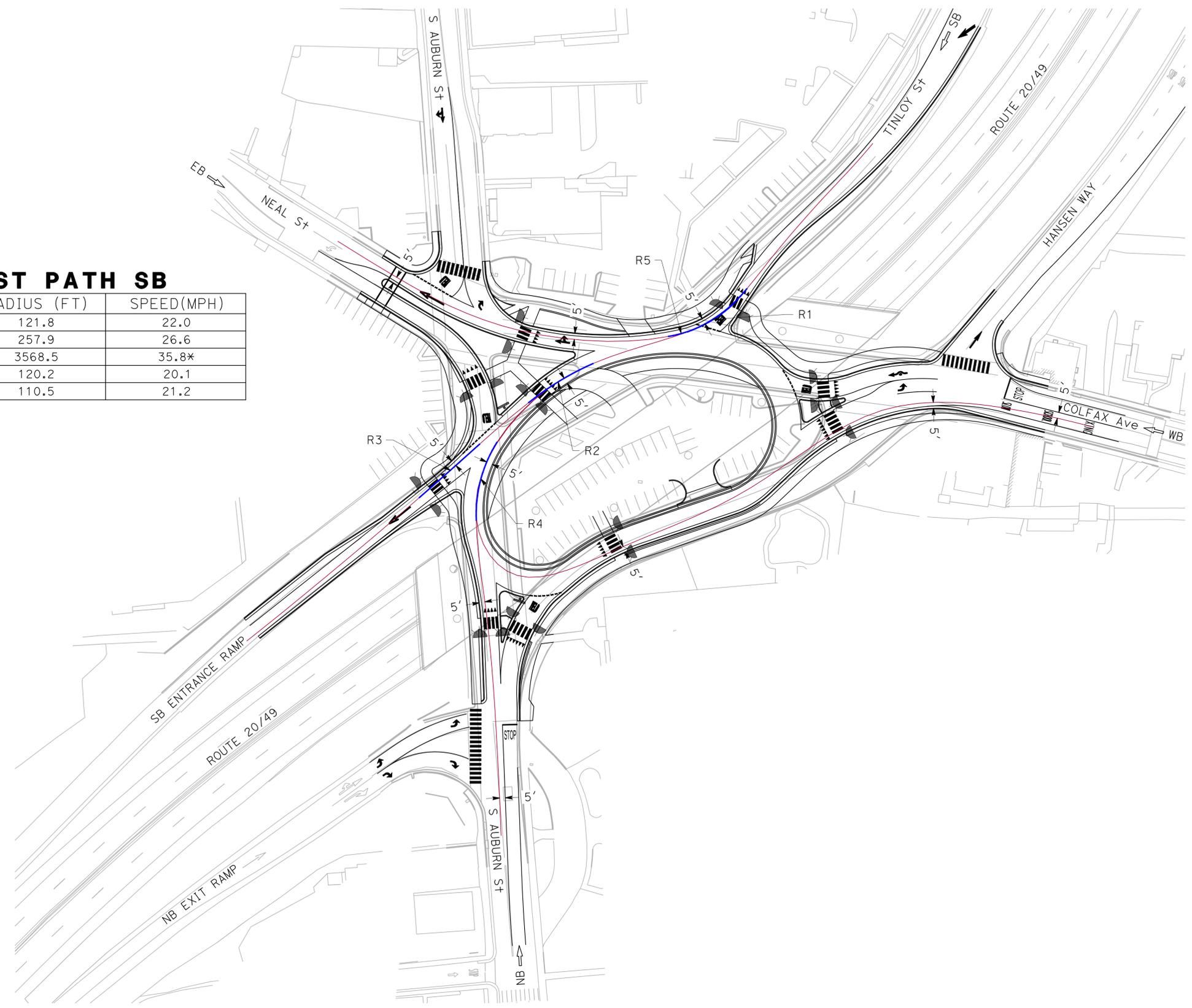


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**FASTEST PATH SB**

MOVEMENT	RADIUS (FT)	SPEED(MPH)
ENTERING (V1)	121.8	22.0
CIRCULATING (V2)	257.9	26.6
EXITING (V3)	3568.5	35.8*
LEFT TURN (V4)	120.2	20.1
RIGHT TURN (V5)	110.5	21.2

\*SEE NOTE 1



**FASTEST PATH  
 SOUTHBOUND**  
 SCALE: 1" = 50'

**EX-3**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

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 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

- NOTES:**
1. EXIT SPEED WAS OBTAINED FROM NCHRP REPORT 672 EQUATION 6-4.
  2. 2% CROSS SLOPE ASSUMED FOR DETERMINING FASTEST PATH.
  3. THE FASTEST PATHS ARE DRAWN WITH OFFSETS OF 5' FROM CURBS AND 3' FROM PAINTED EDGE LINES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

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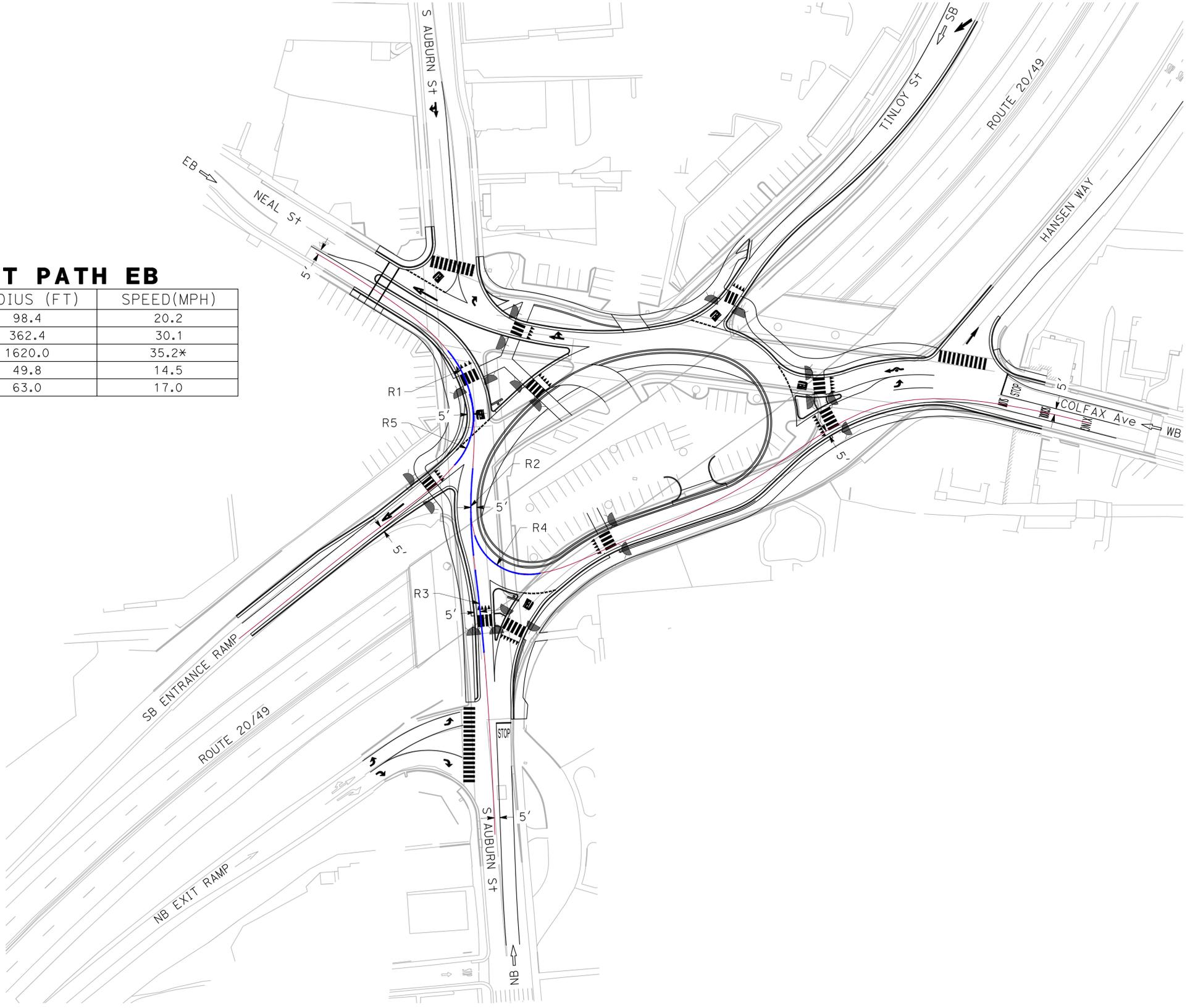
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**FASTEST PATH EB**

MOVEMENT	RADIUS (FT)	SPEED(MPH)
ENTERING (V1)	98.4	20.2
CIRCULATING (V2)	362.4	30.1
EXITING (V3)	1620.0	35.2*
LEFT TURN (V4)	49.8	14.5
RIGHT TURN (V5)	63.0	17.0

\*SEE NOTE 1



**FASTEST PATH  
 EASTBOUND**  
 SCALE: 1" = 50'

**EX-4**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

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 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

- NOTES:**
1. EXIT SPEED WAS OBTAINED FROM NCHRP REPORT 672 EQUATION 6-4.
  2. 2% CROSS SLOPE ASSUMED FOR DETERMINING FASTEST PATH.
  3. THE FASTEST PATHS ARE DRAWN WITH OFFSETS OF 5' FROM CURBS AND 3' FROM PAINTED EDGE LINES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

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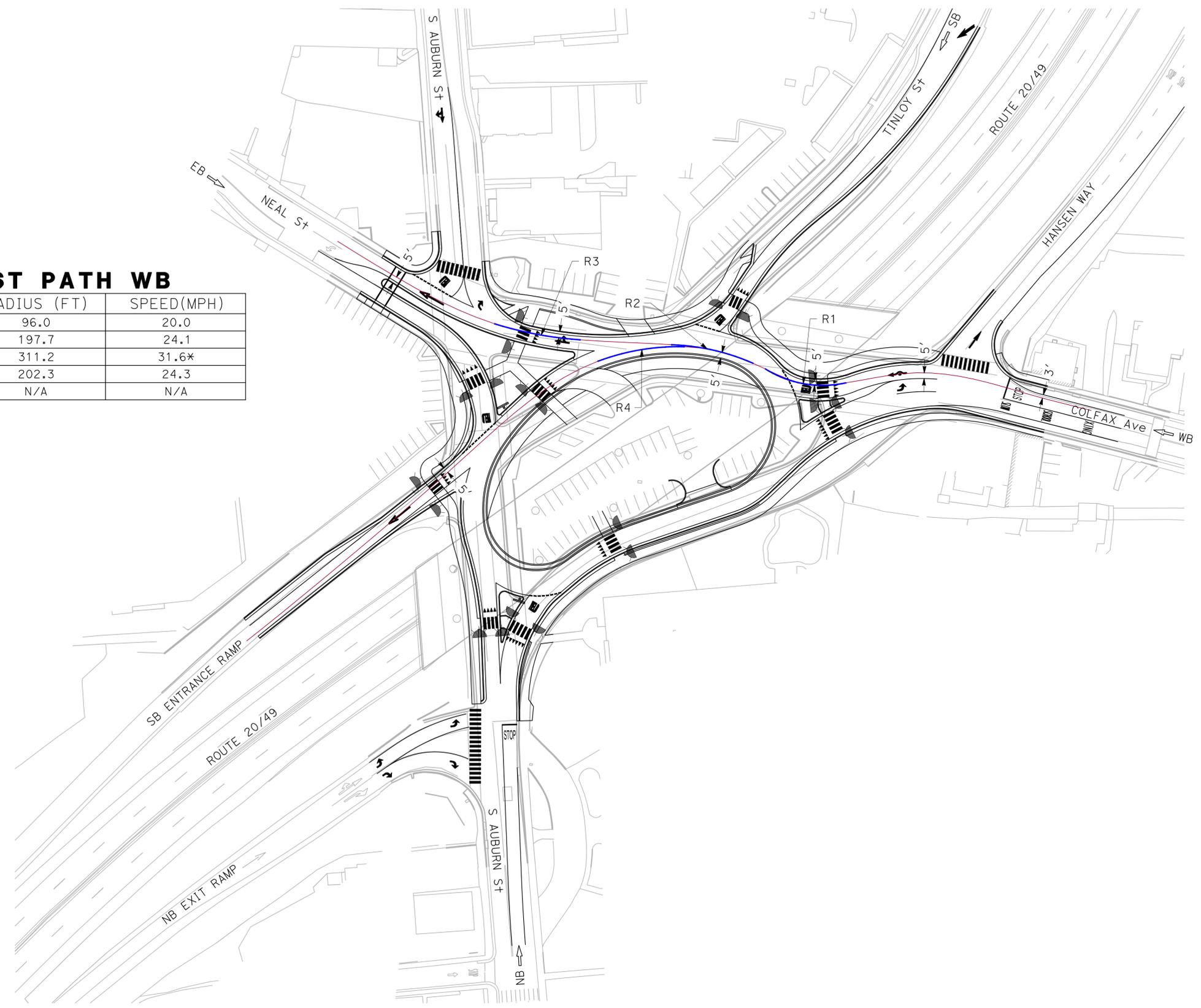
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**FASTEST PATH WB**

MOVEMENT	RADIUS (FT)	SPEED(MPH)
ENTERING (V1)	96.0	20.0
CIRCULATING (V2)	197.7	24.1
EXITING (V3)	311.2	31.6*
LEFT TURN (V4)	202.3	24.3
RIGHT TURN (V5)	N/A	N/A

\*SEE NOTE 1



**FASTEST PATH WESTBOUND**  
 SCALE: 1" = 50'

**EX-5**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

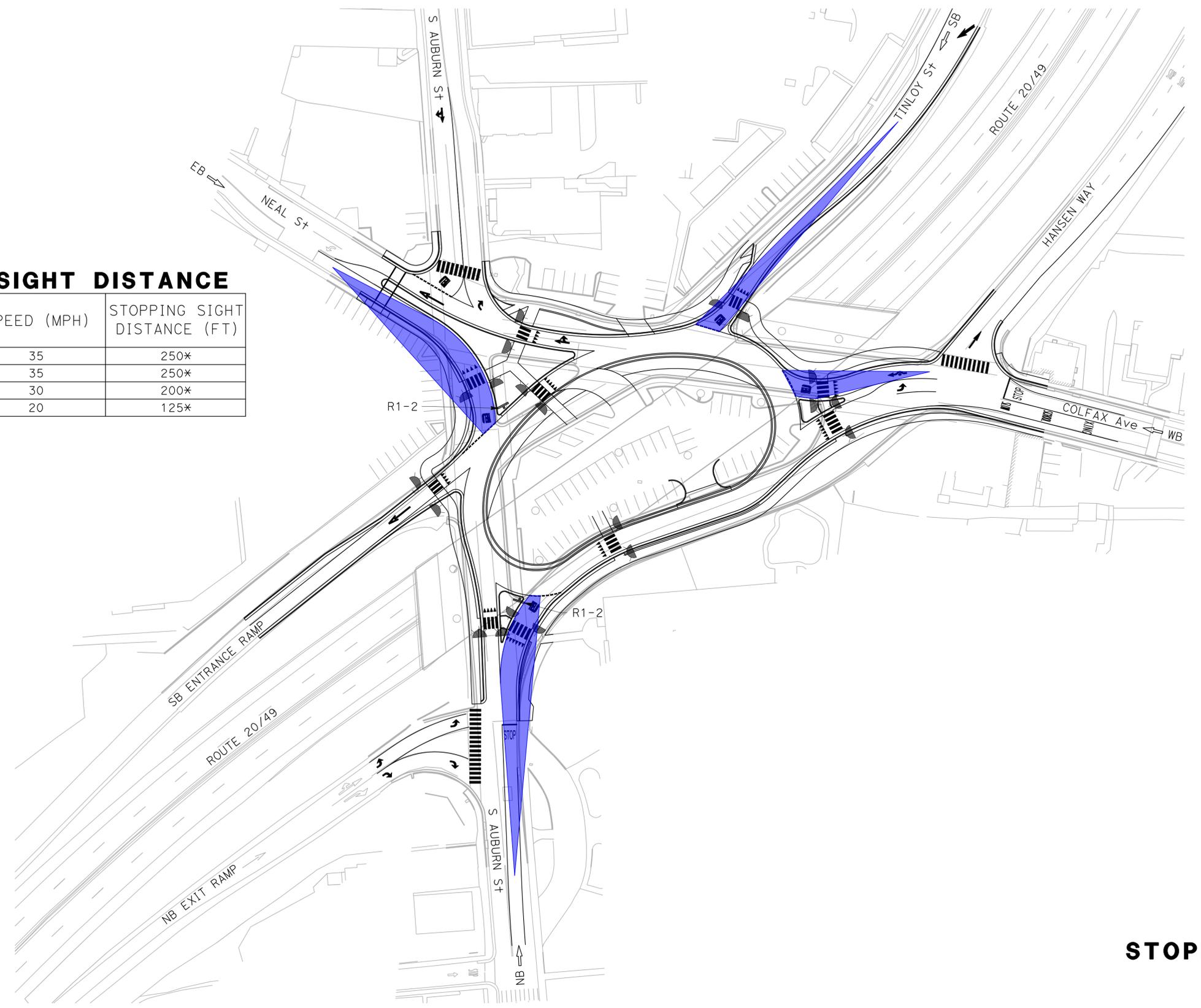
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**Caltrans**  
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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**NOTE:**  
 APPROACH STOPPING SIGHT DISTANCES OBTAINED FROM HDM 201.1.

**LEGEND:**  
 SIGHT TRIANGLE

**STOPPING SIGHT DISTANCE**

APPROACH	SPEED (MPH)	STOPPING SIGHT DISTANCE (FT)
NB	35	250*
SB	35	250*
EB	30	200*
WB	20	125*



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

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**STOPPING SIGHT DISTANCE APPROACHES**  
 SCALE: 1" = 50'

**EX-6**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

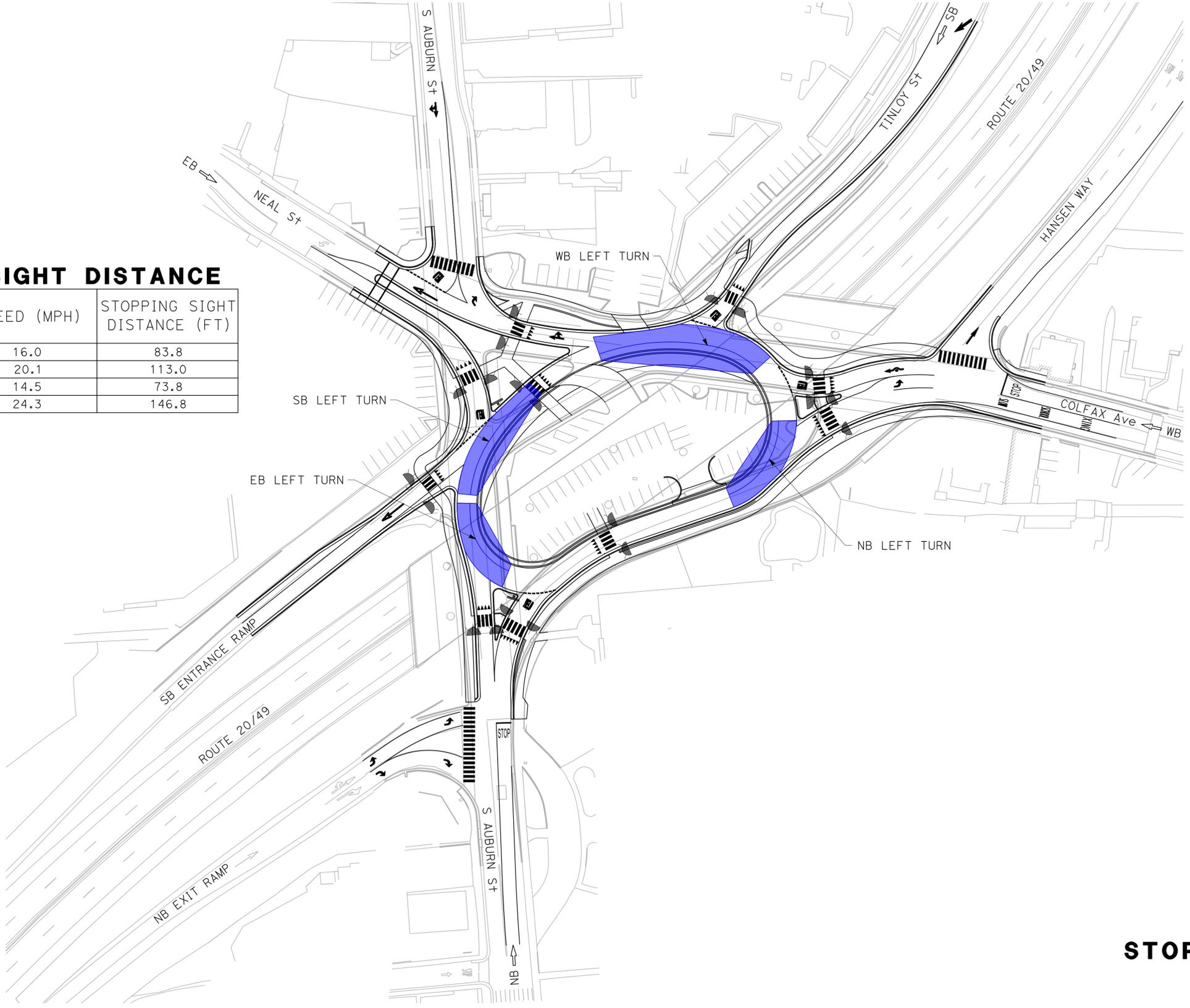
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 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**NOTE:**  
 1. STOPPING SIGHT DISTANCE WAS DETERMINED THROUGH NCHRP REPORT 672 EQUATION 6-5.

**LEGEND:**  
 SIGHT TRIANGLE

**STOPPING SIGHT DISTANCE**

APPROACH	SPEED (MPH)	STOPPING SIGHT DISTANCE (FT)
NB LEFT	16.0	83.8
SB LEFT	20.1	113.0
EB LEFT	14.5	73.8
WB LEFT	24.3	146.8



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

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**STOPPING SIGHT DISTANCE CIRCULATORY**  
 SCALE: 1" = 50'

**EX-7**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

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 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**NOTES:**

1. APPROACH STOPPING SIGHT DISTANCES OBTAINED FROM HDM 201.1.
2. CROSSWALK CIRCULATING SPEED DETERMINED BY AVERAGING THE ENTERING SPEED (V1) AND THE CIRCULATING SPEED (V2) OF THE UPSTREAM ENTRY.

**LEGEND:**

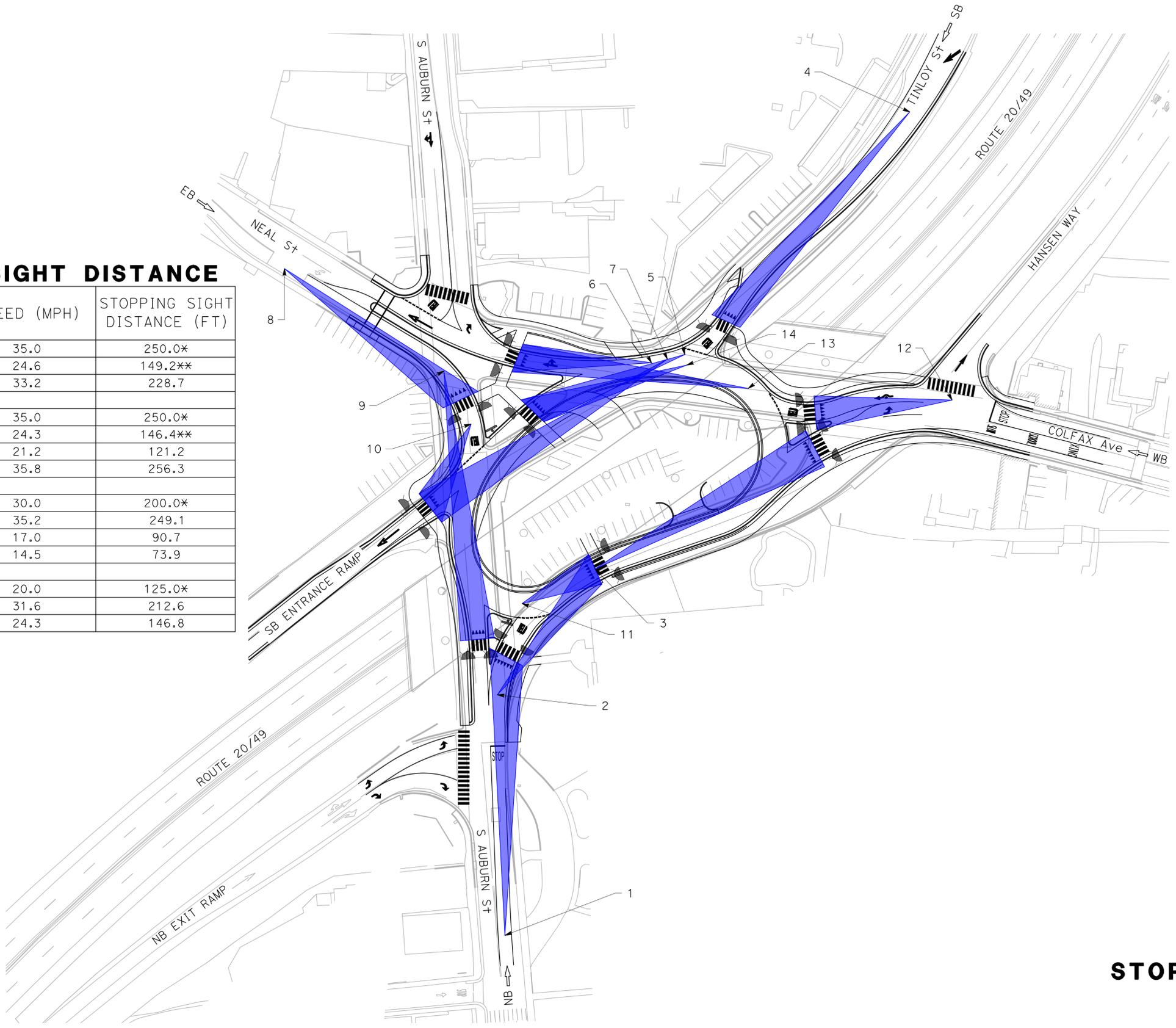
 SIGHT TRIANGLE

**STOPPING SIGHT DISTANCE**

APPROACH	SPEED (MPH)	STOPPING SIGHT DISTANCE (FT)
(1) NB APPROACH	35.0	250.0*
(2) NB CIRCULATING	24.6	149.2**
(3) NB EXITING	33.2	228.7
(4) SB APPROACH	35.0	250.0*
(5) SB CIRCULATING	24.3	146.4**
(6) SB RIGHT	21.2	121.2
(7) SB EXITING	35.8	256.3
(8) EB APPROACH	30.0	200.0*
(9) EB EXITING	35.2	249.1
(10) EB RIGHT	17.0	90.7
(11) EB LEFT	14.5	73.9
(12) WB APPROACH	20.0	125.0*
(13) WB EXITING	31.6	212.6
(14) WB LEFT	24.3	146.8

\*SEE NOTE 1

\*\*SEE NOTE 2



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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**STOPPING SIGHT DISTANCE CROSSWALKS**  
 SCALE: 1" = 50'

**EX-8**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

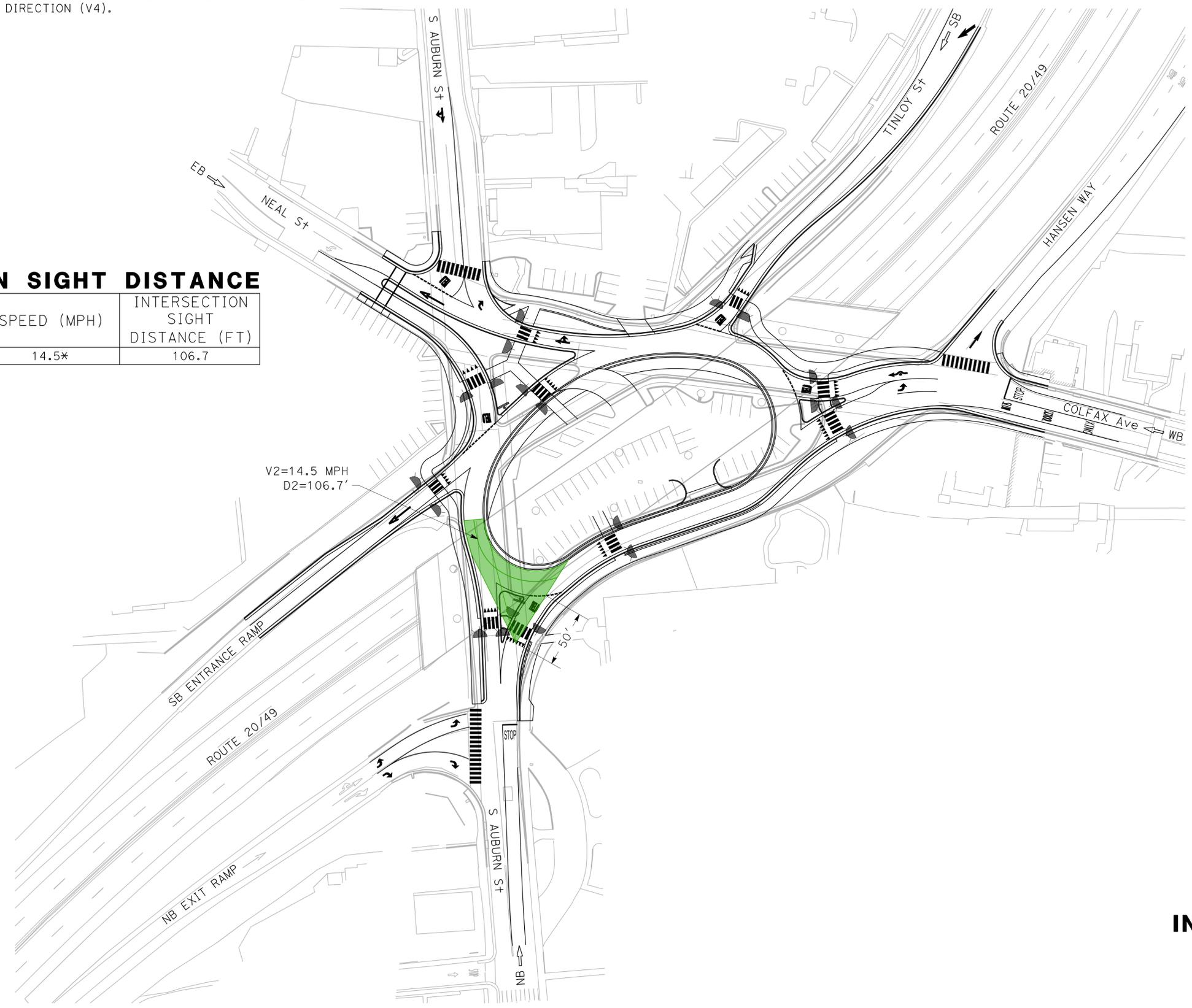
- NOTES:**
- INTERSECTION SIGHT DISTANCE WAS OBTAINED FROM NCHRP REPORT 672 EQUATIONS 6-6 AND 6-7.
  - A TIME GAP OF 5 SECONDS WAS USED TO DETERMINE THE INTERSECTION SIGHT DISTANCE PER NCHRP REPORT 672.
  - CIRCULATING CONFLICT SPEED DETERMINED BY UTILIZING THE LEFT TURN SPEED OF THE OPPOSING DIRECTION (V4).

**LEGEND:**  
 SIGHT TRIANGLE

**INTERSECTION SIGHT DISTANCE**

APPROACH	SPEED (MPH)	INTERSECTION SIGHT DISTANCE (FT)
EB CIRCULATING (D2)	14.5*	106.7

\*SEE NOTE 3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

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**INTERSECTION SIGHT DISTANCE NORTHBOUND**  
 SCALE: 1" = 50'

**EX-9**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

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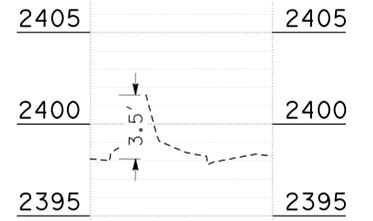
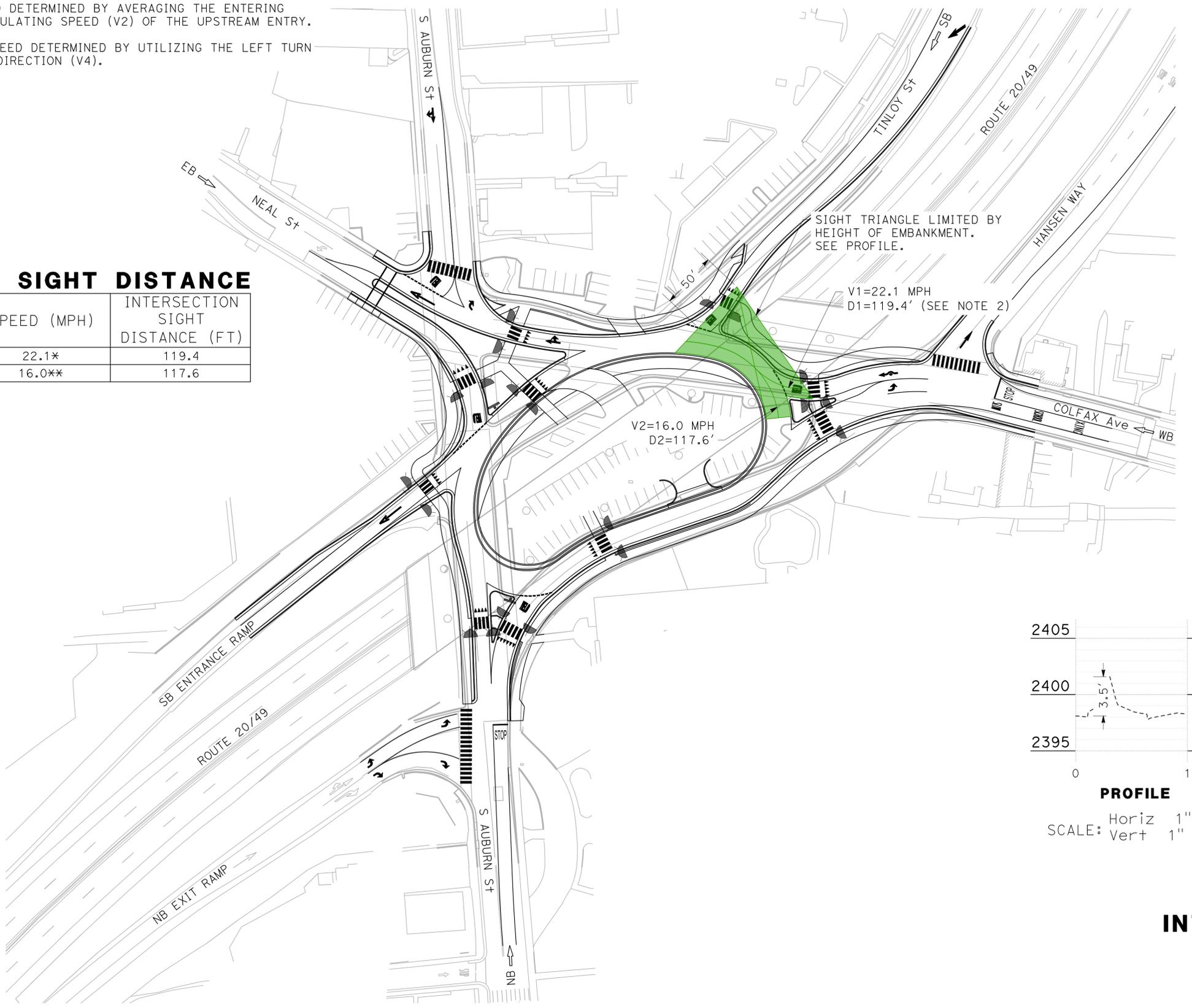
- NOTES:**
- INTERSECTION SIGHT DISTANCE WAS OBTAINED FROM NCHRP REPORT 672 EQUATIONS 6-6 AND 6-7.
  - A TIME GAP OF 5 SECONDS WAS USED TO DETERMINE THE CIRCULATING INTERSECTION SIGHT DISTANCE AND A TIME GAP OF 3.7 SECONDS WAS USED TO DETERMINE THE ENTERING INTERSECTION SIGHT DISTANCE.
  - ENTERING CONFLICT SPEED DETERMINED BY AVERAGING THE ENTERING SPEED (V1) AND THE CIRCULATING SPEED (V2) OF THE UPSTREAM ENTRY.
  - CIRCULATING CONFLICT SPEED DETERMINED BY UTILIZING THE LEFT TURN SPEED OF THE OPPOSING DIRECTION (V4).

**LEGEND:**  
 SIGHT TRIANGLE

**INTERSECTION SIGHT DISTANCE**

APPROACH	SPEED (MPH)	INTERSECTION SIGHT DISTANCE (FT)
WB ENTERING (D1)	22.1*	119.4
NB CIRCULATING (D2)	16.0**	117.6

\*SEE NOTE 3  
 \*\*SEE NOTE 4



**PROFILE**  
 SCALE: Horiz 1" = 50'  
 Vert 1" = 5'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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**INTERSECTION SIGHT DISTANCE SOUTHBOUND**  
 SCALE: 1" = 50'

**EX-10**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**NOTES:**

1. INTERSECTION SIGHT DISTANCE WAS OBTAINED FROM NCHRP REPORT 672 EQUATIONS 6-6 AND 6-7.
2. A TIME GAP OF 5 SECONDS WAS USED TO DETERMINING THE INTERSECTION SIGHT DISTANCE PER NCHRP REPORT 672.
3. ENTERING CONFLICT SPEED DETERMINED BY AVERAGING THE ENTERING SPEED (V1) AND THE CIRCULATING SPEED (V2) OF THE UPSTREAM ENTRY.
4. CIRCULATING CONFLICT SPEED DETERMINED BY UTILIZING THE LEFT TURN SPEED OF THE OPPOSING DIRECTION (V4).

**LEGEND:**

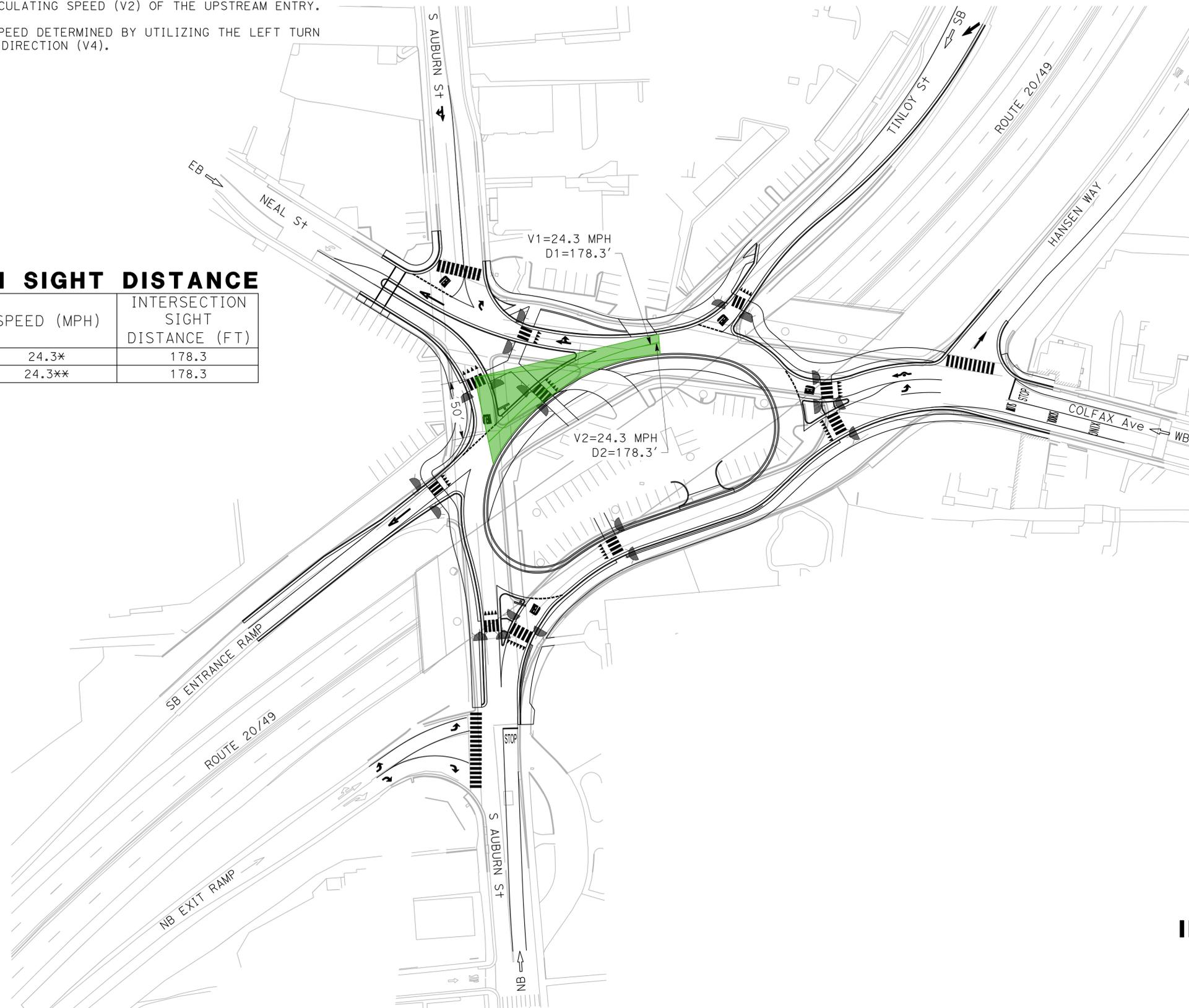
 SIGHT TRIANGLE

**INTERSECTION SIGHT DISTANCE**

APPROACH	SPEED (MPH)	INTERSECTION SIGHT DISTANCE (FT)
SB ENTERING (D1)	24.3*	178.3
WB CIRCULATING (D2)	24.3**	178.3

\*SEE NOTE 3

\*\*SEE NOTE 4



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Neu	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

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**INTERSECTION SIGHT DISTANCE EASTBOUND**  
 SCALE: 1" = 50'

**EX-11**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
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 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**NOTES:**

1. INTERSECTION SIGHT DISTANCE WAS OBTAINED FROM NCHRP REPORT 672 EQUATION 6-7.
2. A TIME GAP OF 5 SECONDS WAS USED TO DETERMINING THE INTERSECTION SIGHT DISTANCE PER NCHRP REPORT 672.
3. CIRCULATING CONFLICT SPEED DETERMINED BY UTILIZING THE LEFT TURN SPEED OF THE OPPOSING DIRECTION (V4).

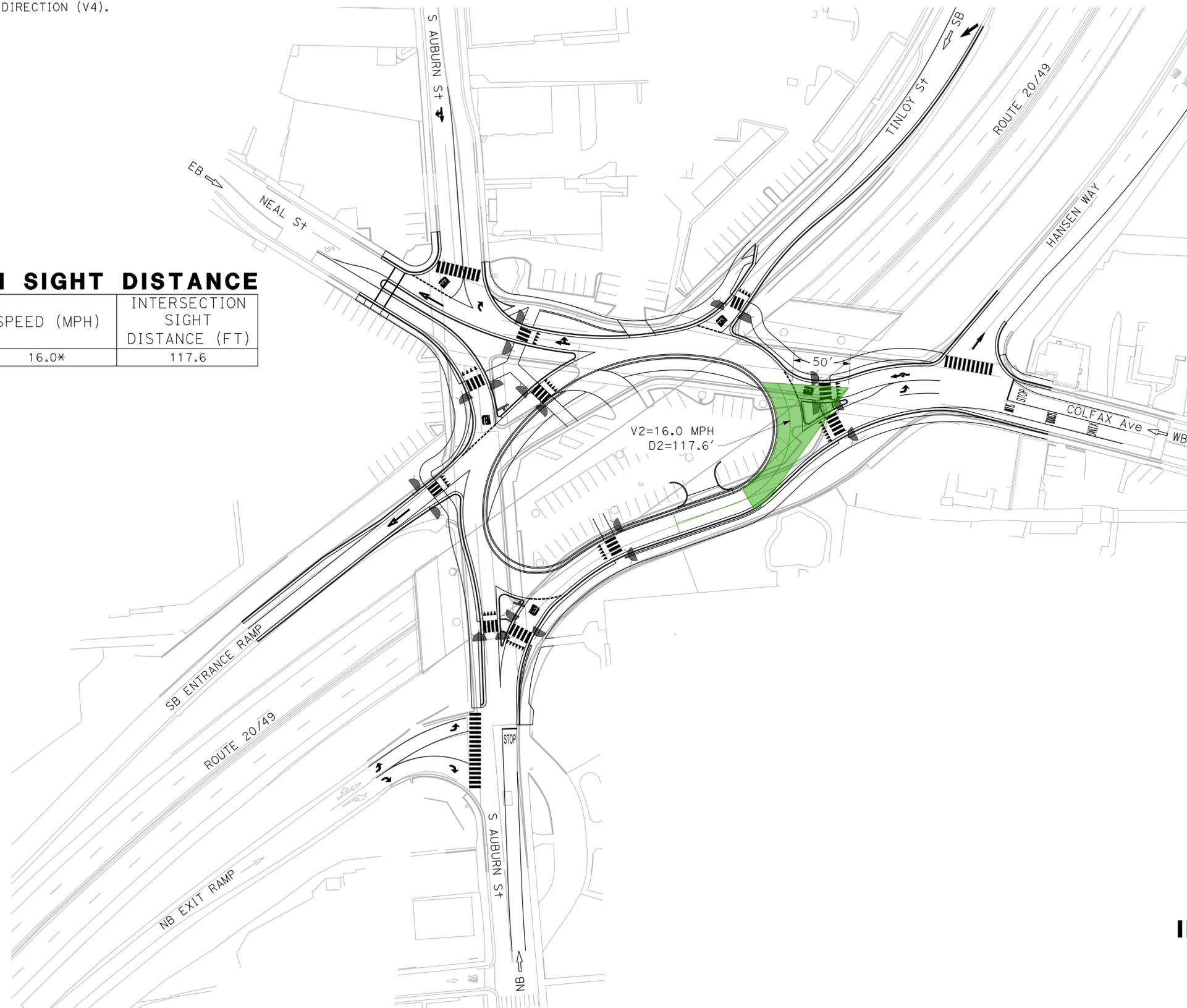
**LEGEND:**

 SIGHT TRIANGLE

**INTERSECTION SIGHT DISTANCE**

APPROACH	SPEED (MPH)	INTERSECTION SIGHT DISTANCE (FT)
NB CIRCULATING (D2)	16.0*	117.6

\*SEE NOTE 3



**INTERSECTION SIGHT DISTANCE WESTBOUND**

SCALE: 1" = 50'

**EX-12**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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GHD Inc.  
201 CREEKSIDE RIDGE Ct #100  
ROSEVILLE, CA 95678

CITY OF GRASS VALLEY  
125 E MAIN STREET  
GRASS VALLEY, CA 95945

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

- NOTES:**
- INTERSECTION VIEW ANGLE SHOULD BE EQUAL TO OR GREATER THEN 75° FROM NCHRP 672.
  - VIEW ANGLES MEASURED 15' BEHIND ENTRANCE LINE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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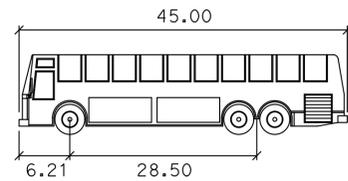
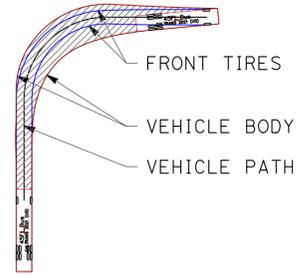


**ANGLES OF VISIBILITY**  
 SCALE: 1" = 50'

**EX-13**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



45Ft Bus

- Width : 8.50 feet
- Track : 8.50
- Lock to Lock Time : 6.0
- Steering Angle : 44.3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

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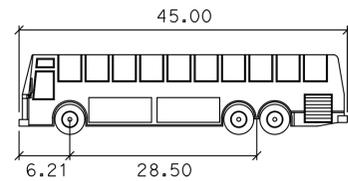
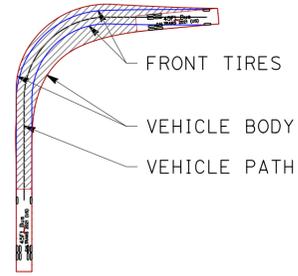
CITY OF GRASS VALLEY  
 125 E MAIN STREET  
 GRASS VALLEY, CA 95945

**BUS TURN  
 NORTHBOUND**  
 SCALE: 1" = 50'

**EX-14**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



45Ft Bus

- Width : 8.50 feet
- Track : 8.50
- Lock to Lock Time : 6.0
- Steering Angle : 44.3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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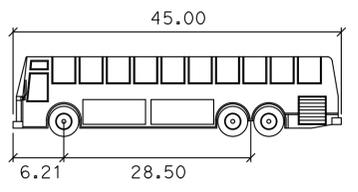
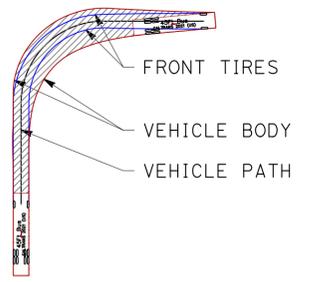
CITY OF GRASS VALLEY  
 125 E MAIN STREET  
 GRASS VALLEY, CA 95945

**BUS TURN SOUTHBOUND**  
 SCALE: 1" = 50'

**EX-15**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
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 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISOR: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



45Ft Bus  
 Width : 8.50 feet  
 Track : 8.50  
 Lock to Lock Time : 6.0  
 Steering Angle : 44.3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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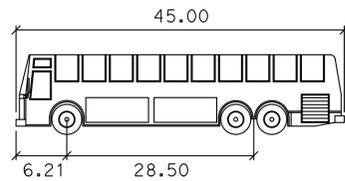
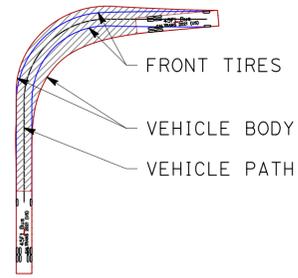


**BUS TURN EASTBOUND**  
 SCALE: 1" = 50'

**EX-16**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



45Ft Bus

- Width : 8.50 feet
- Track : 8.50
- Lock to Lock Time : 6.0
- Steering Angle : 44.3



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_

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CITY OF GRASS VALLEY  
 125 E MAIN STREET  
 GRASS VALLEY, CA 95945



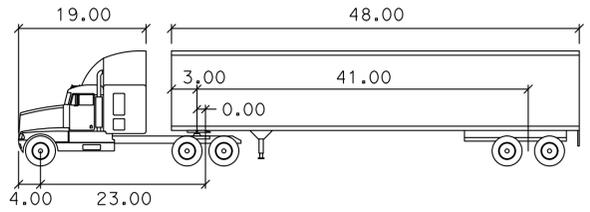
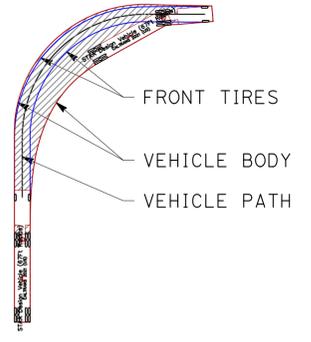
**BUS TURN WESTBOUND**  
 SCALE: 1" = 50'

**EX-17**

LAST REVISION | DATE PLOTTED = 12/12/2025  
 06-30-23 TIME PLOTTED = 3:38 PM

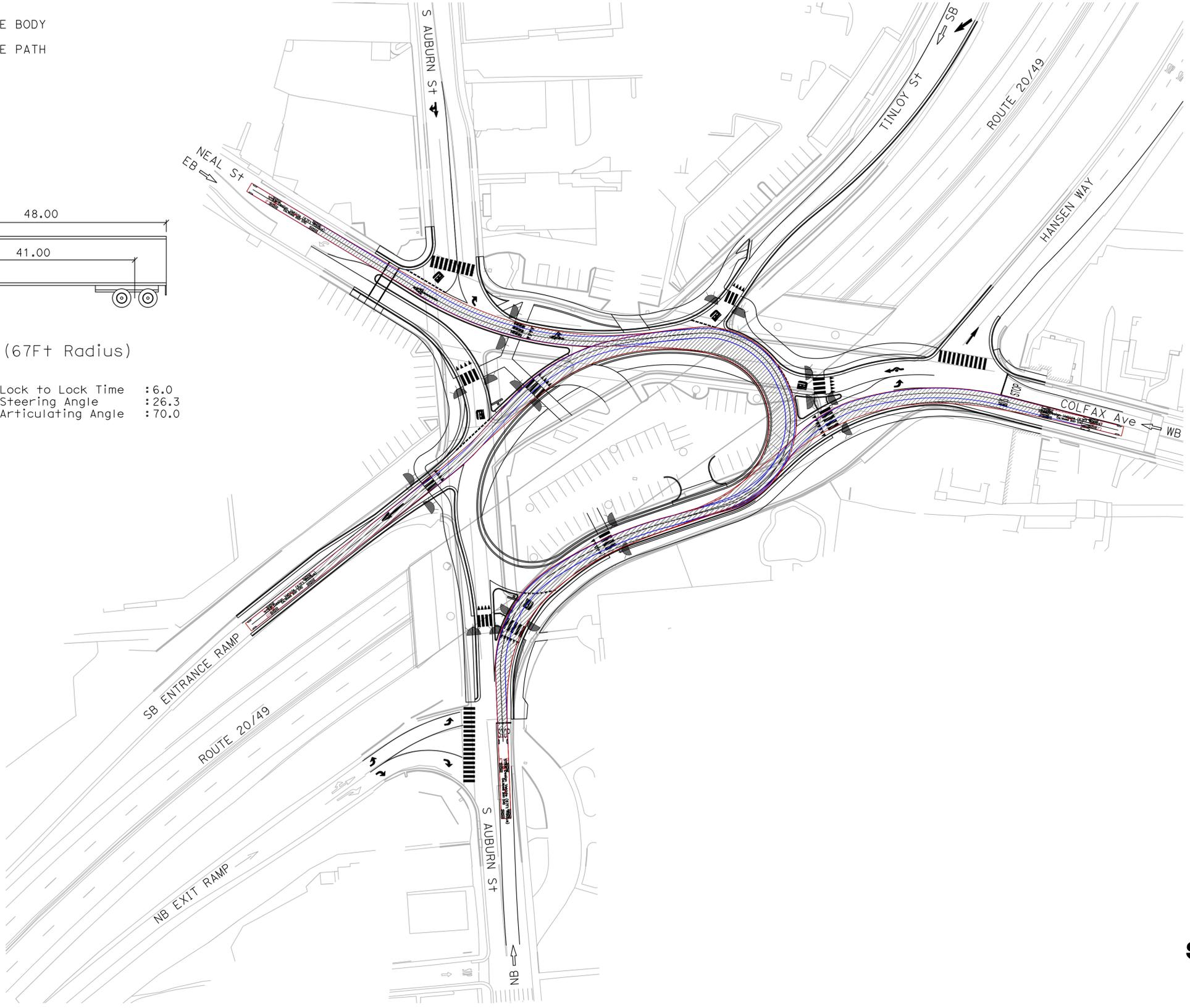
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



STAA Design Vehicle (67F+ Radius)

	feet		
Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_



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CITY OF GRASS VALLEY  
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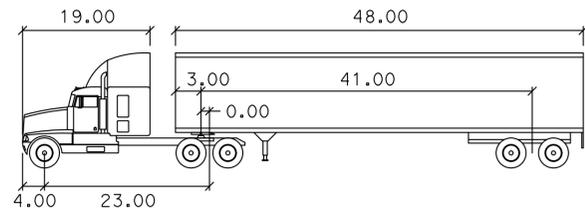
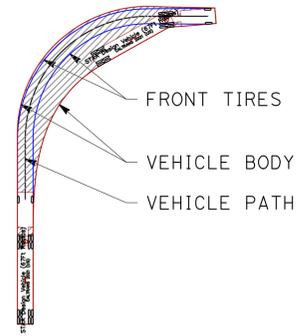


**STAA TRUCK TURN  
 NORTHBOUND**  
 SCALE: 1" = 50'

**EX-18**

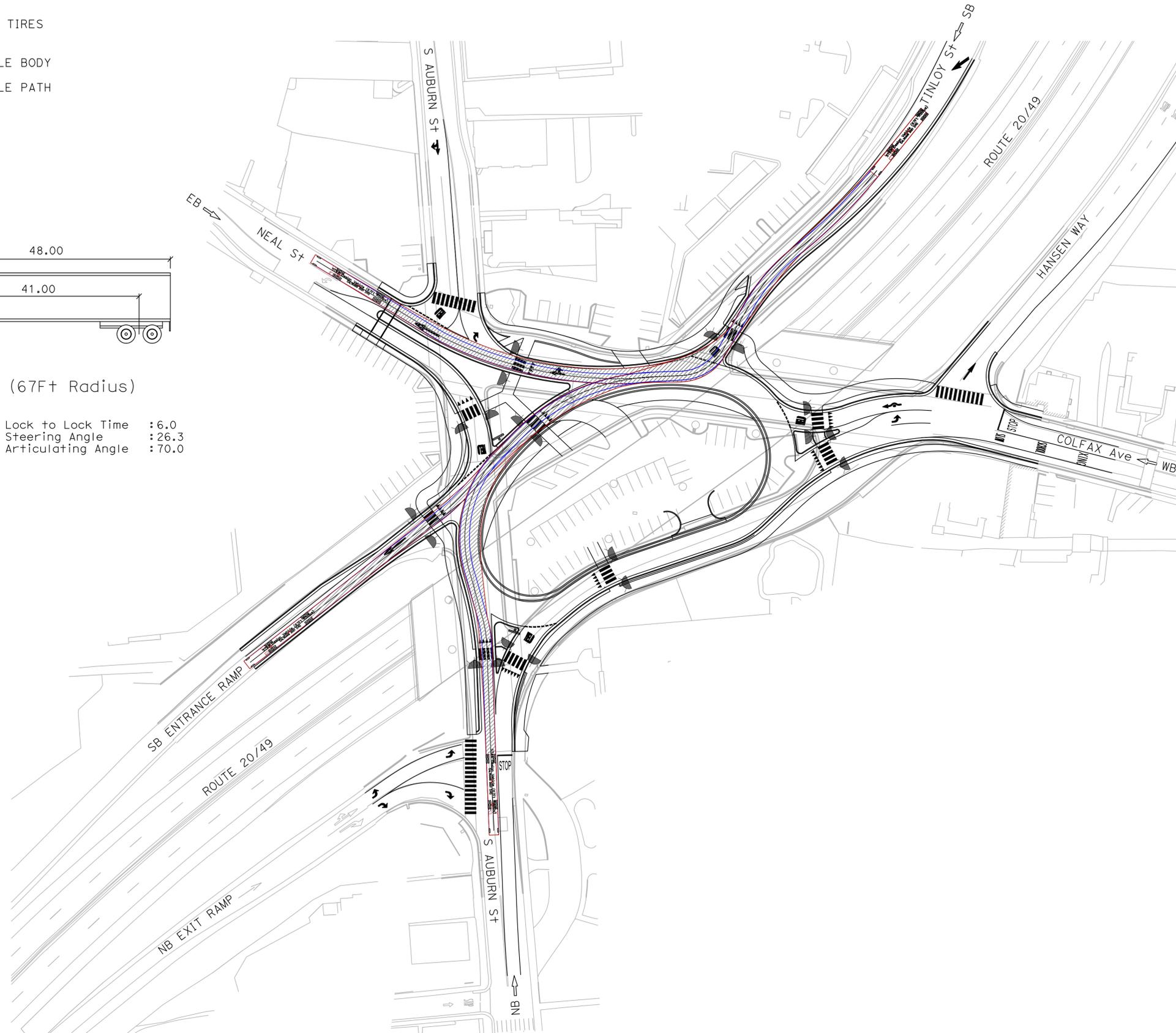
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



**STAA Design Vehicle (67F+ Radius)**

	feet	
Tractor Width	: 8.50	Lock to Lock Time : 6.0
Trailer Width	: 8.50	Steering Angle : 26.3
Tractor Track	: 8.50	Articulating Angle : 70.0
Trailer Track	: 8.50	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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CITY OF GRASS VALLEY  
125 E MAIN STREET  
GRASS VALLEY, CA 95945



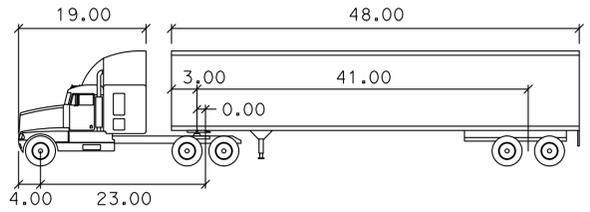
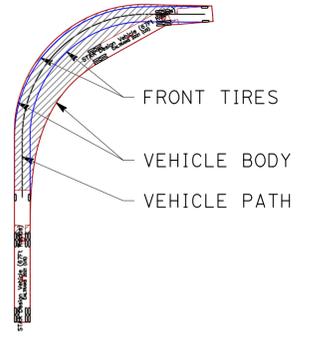
**STAA TRUCK TURN**  
**SOUTHBOUND**  
 SCALE: 1" = 50'

**EX-19**

LAST REVISION DATE PLOTTED = 12/12/2025 06-30-23 TIME PLOTTED = 3:38 PM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



STAA Design Vehicle (67F+ Radius)

	feet		
Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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CITY OF GRASS VALLEY  
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 GRASS VALLEY, CA 95945

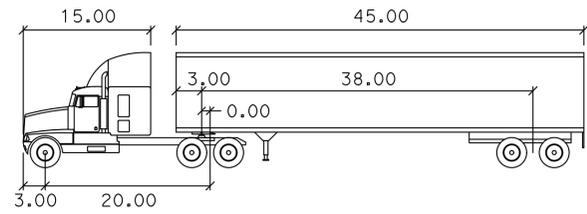
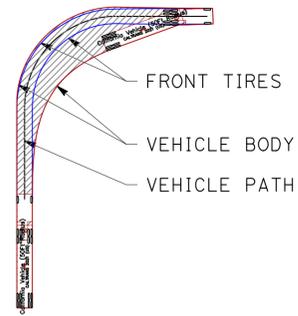


**STAA TRUCK TURN  
 EASTBOUND**  
 SCALE: 1" = 50'

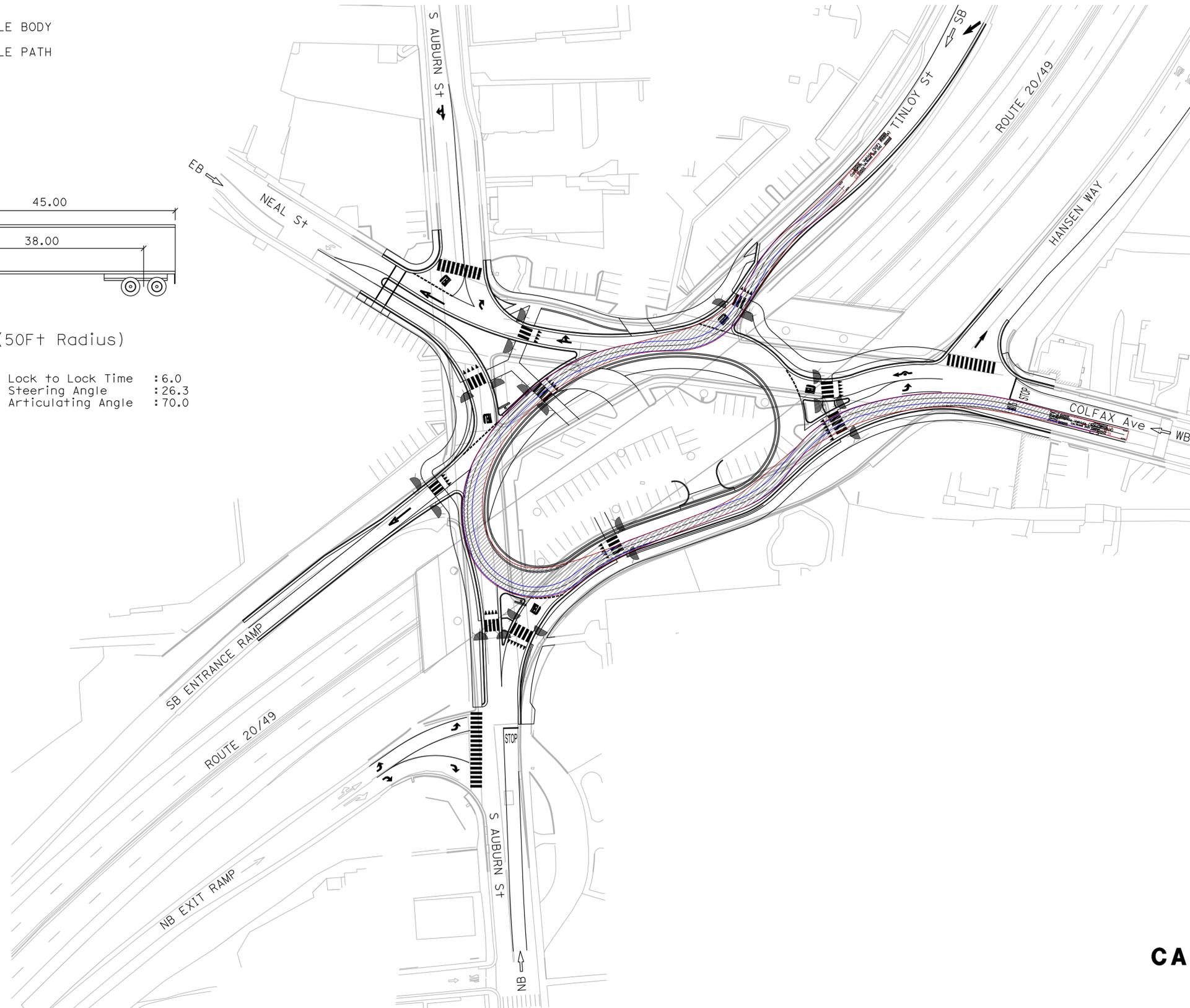
**EX-20**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CHECKED BY: MICHAEL PITCOCK  
 DESIGNED BY: CHRISTOPHER DOUD  
 REVISIONS: MEH 12-3-25

**LEGEND:**



California Vehicle (50F+ Radius)  
 feet  
 Tractor Width : 8.50 Lock to Lock Time : 6.0  
 Trailer Width : 8.50 Steering Angle : 26.3  
 Tractor Track : 8.50 Articulating Angle : 70.0  
 Trailer Track : 8.50



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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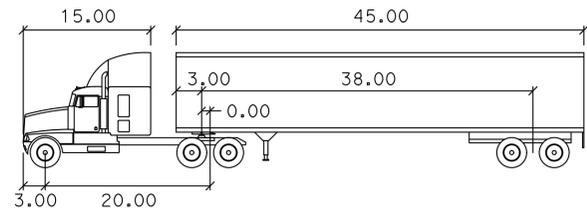
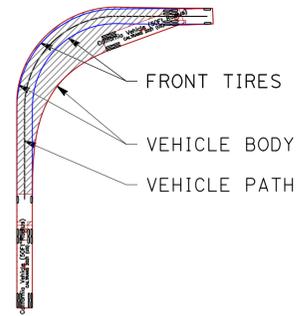


**CAL LEGAL TRUCK TURN SOUTHBOUND**  
 SCALE: 1" = 50'

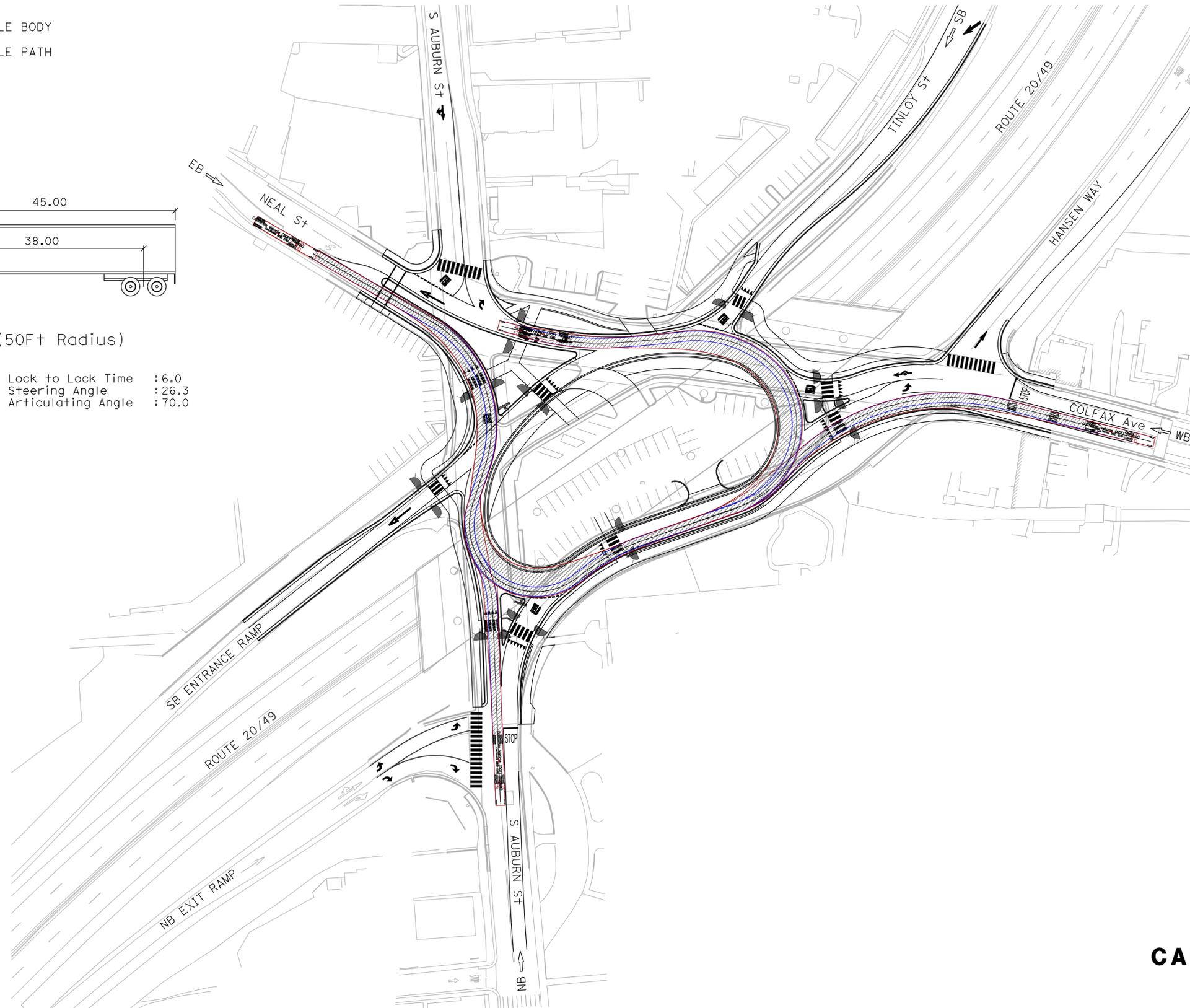
**EX-21**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



California Vehicle (50F+ Radius)  
 feet  
 Tractor Width : 8.50 Lock to Lock Time : 6.0  
 Trailer Width : 8.50 Steering Angle : 26.3  
 Tractor Track : 8.50 Articulating Angle : 70.0  
 Trailer Track : 8.50



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
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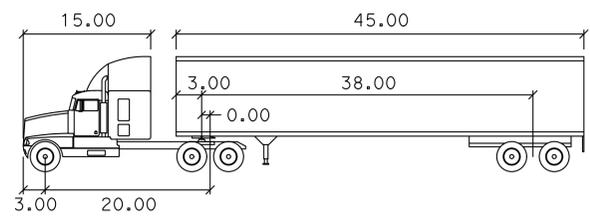
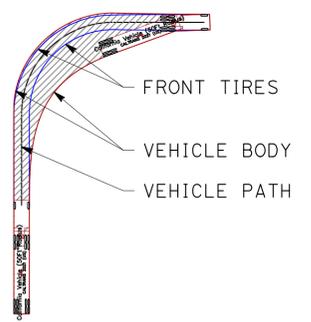


**CAL LEGAL TRUCK TURN EASTBOUND**  
 SCALE: 1" = 50'

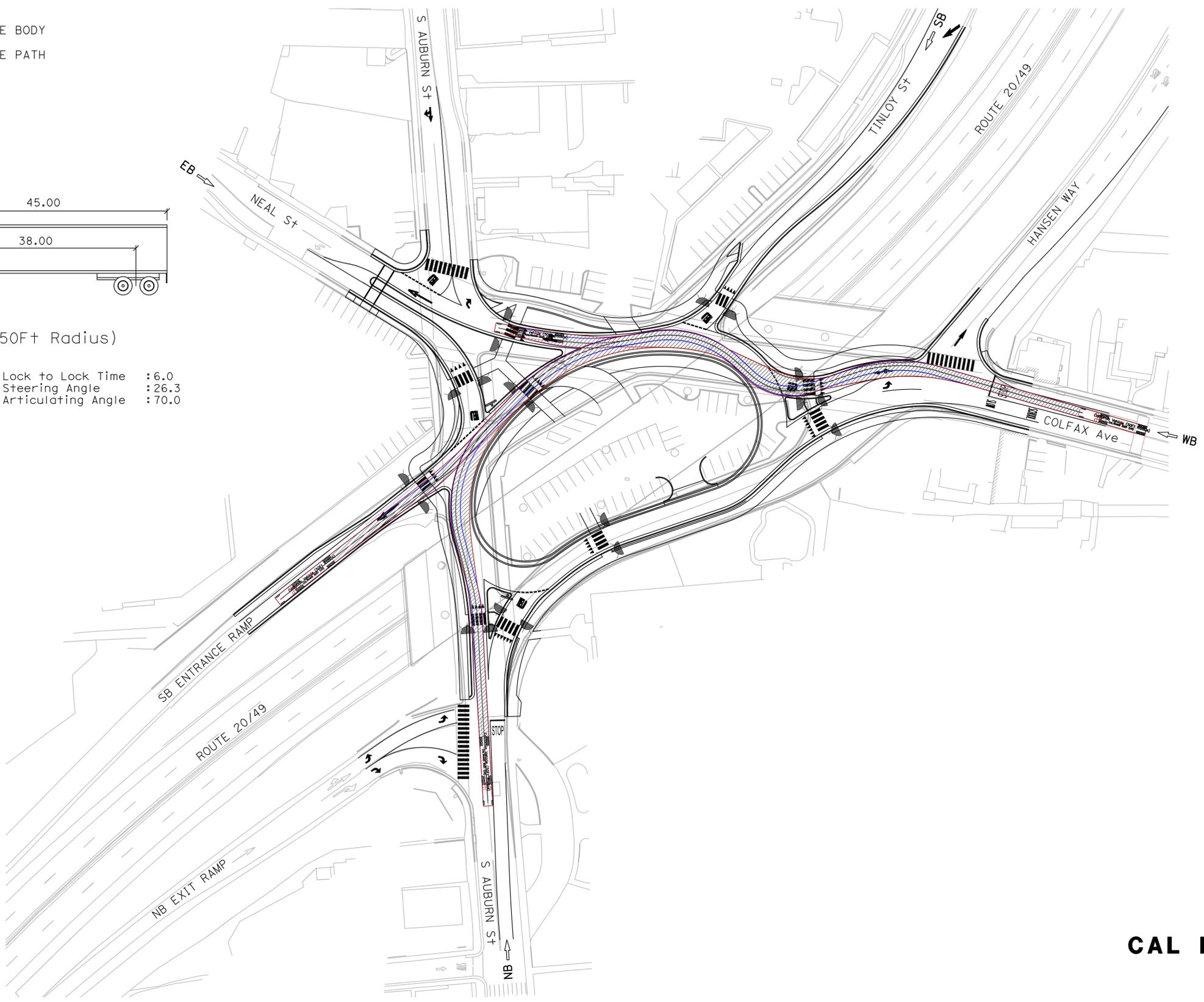
**EX-22**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT FUNCTIONAL SUPERVISOR: KAMESH VEDULA  
 CALCULATED-DESIGNED BY: CHRISTOPHER DOUD  
 CHECKED BY: MICHAEL PITCOCK  
 REVISED BY: MEH  
 DATE REVISED: 12-3-25

**LEGEND:**



California Vehicle (50F+ Radius)  
 feet  
 Tractor Width : 8.50 Lock to Lock Time : 6.0  
 Trailer Width : 8.50 Steering Angle : 26.3  
 Tractor Track : 8.50 Articulating Angle : 70.0  
 Trailer Track : 8.50



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	20/49, 174	R12.7/R13.0, R10.1/R10.2	###	--

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_  
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**CAL LEGAL TRUCK TURN WESTBOUND**  
 SCALE: 1" = 50'

**EX-23**