

**REQUEST FOR EXCEPTIONS TO DESIGN STANDARDS**

**STATE PROJECT NUMBER: 0017-0196**

**FEDERAL-AID PROJECT NUMBER: 0072(017)**

**ROUTE 72 (RIVERSIDE AVENUE) STREETScape IMPROVEMENTS**

**CITY OF BRISTOL**

**PROJECT LOCATION:**

The Riverside Avenue Safety Improvements project is located along a 0.90-mile section of Connecticut State Route 72 (Riverside Avenue) between the intersection with Main Street to the west and Memorial Boulevard to the east in the City of Bristol, Connecticut. The railroad is just north of Route 72 (Riverside Avenue) and Memorial Boulevard and Veterans Memorial Park are to the south.



*Figure 1 – Project Location*

**EXISTING CONDITIONS:**

Route 72 (Riverside Avenue) is classified as an Urban Principal Arterial, running in the west-east direction with all cross streets within the project limits (Main Street, Mellen Street, East Street, and Hooker Court) running in the north-south direction. The 2021 ADT on Route 72 (Riverside Avenue) was reported to be 8,700 vehicles per day and the posted speed limit is 30 mph.

A typical section of existing Route 72 (Riverside Avenue) consists of two travel lanes that are twelve (12) foot wide with four (4) to six (6) foot wide painted shoulders. The total roadway pavement width is between thirty-two (32) and thirty-six (36) feet, except for the westbound approach at Main Street, where there is additional pavement width for turning lanes. There are utility poles present on both sides of the roadway, with no formal street landscaping and minimal lighting along Riverside Avenue.

The location is defined by wide curb cuts at each property’s driveway, a poorly developed and disconnected sidewalk system, stretches with little or no separation between the roadway and parking areas, and no buffer between the sidewalk and roadway.



Figure 2: Route 72 Typical Section (Existing)

**CRASH DATA:**

A safety analysis was performed to calculate the crash rate and frequency for each roadway segment and intersection within the project limits. Crash data from 2017, 2018, 2019, 2022, and 2023 was collected from the Connecticut Crash Data Repository (CTCDR) traffic safety dashboard. Crash data for the years 2020 and 2021 were omitted because of the effect the COVID-19 pandemic had on normal traffic patterns.

During the 5-year period there were 153 crashes within the project limits. No crashes resulted in fatalities but 2 had severe injuries. The tables below provide the most common crash types and time of day for when most crashes occurred. In addition, there were two pedestrian collisions, and no bike collisions observed during the analysis period. The existing roadway elements contribute to the user being unable to discern the roadway, driveways, and parking areas from one another which has led to a high frequency of fixed object type crashes along the corridor. Crash data shows an unusually high concentration of these types of crashes along Route 72 (Riverside Avenue) within the project limits.

Table 1: Most Common Crash Types

<u>Crash Type</u>	<u>Number of Crashes</u>	<u>Percentage</u>
<b><u>Front to Rear</u></b>	<b><u>64</u></b>	<b><u>41.8</u></b>
<b><u>Angle</u></b>	<b><u>42</u></b>	<b><u>27.5</u></b>
<b><u>Fixed Object</u></b>	<b><u>26</u></b>	<b><u>17.0</u></b>

Table 2: Time of Day Most Crashes Occurred

<u>Time of Day</u>	<u>Number of Crashes</u>	<u>Percentage</u>
<b><u>Daylight</u></b>	<b><u>108</u></b>	<b><u>70.6</u></b>
<b><u>Dark-Lighted</u></b>	<b><u>38</u></b>	<b><u>24.8</u></b>

### **PURPOSE AND NEED:**

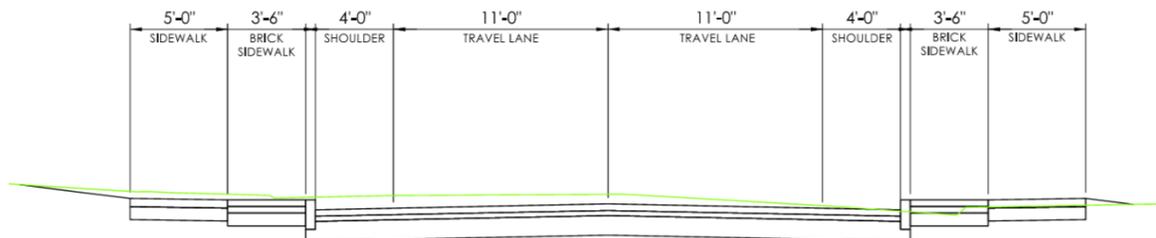
The purpose of this project is to improve safety, access management, pedestrian accommodations and streetscape elements along Route 72 (Riverside Avenue) throughout the corridor.

The project is needed due to the existing poor and deteriorating conditions of pedestrian facilities along Route 72 (Riverside Avenue), the lack of defined driveway entrances to access the businesses on the roadway, as well as the need for a safe separation between the roadway and sidewalk for vulnerable road users.

### **PROPOSED IMPROVEMENTS:**

The proposed improvements include full-depth reconstruction of Route 72 (Riverside Avenue) from Main Street to Memorial Boulevard, approximately 0.90 miles, changes to the roadway geometry, access management and pedestrian facilities. The project will include the addition of sidewalks with a buffer on each side of the street, lighting, curbing and upgrades through distinct curb cuts.

- **Roadway Geometry:** Route 72 (Riverside Avenue) horizontal alignment will be realigned at the eastern end of the project limits to remove the broken back and deficient curve and replace it with a single horizontal curve that had a radius of 525'. The existing paved roadway will be standardized to a uniform thirty (30) foot wide, with eleven (11) foot wide travel lanes and four (4) foot wide shoulders in each direction. Design includes shifting the edge of road towards the centerline between two and four feet on both sides of the road and setting new granite curb to better delineate the traveled way.



*Figure 3: Route 72 Typical Section (Proposed)*

- **Access Management:** Existing ingress/egress issues will be addressed by altering property frontages to provide more standard widths as follows:
  - Sixteen (16) foot wide for one-way openings
  - Twenty-four (24) foot wide for two-way openings
  - Thirty (30) foot wide for two-way openings with truck access

Proposed curb cuts have been located and sized based on CTDOT Highway Design Manual as well as preliminary discussions with property owners and business operators to provide the best solution possible at each property, maintaining access and flow to minimize impacts to operations. New commercial concrete driveway aprons will be installed to delineate ingress and egress from adjacent properties and existing curbing will be replaced with new granite stone curbing to better define the roadway edge and provide a more cohesive aesthetic.

- **Pedestrian Facilities:** Behind the granite curbing, five (5) foot wide sidewalks are proposed throughout the corridor on both the north and south sides of the street, each with a four (4) foot wide brick buffer between curb and walk to provide separation between the travel way and the pedestrian space. Additionally, pedestrian lighting will be installed along both sides of the roadway and street trees will be installed where feasible along the corridor.



Figure 4: Route 72 Proposed Improvements

**OVERSIGHT DETERMINATION:**

This project has not been designated as a Project of FHWA Division Interest (Federal Oversight) and was designated as State oversight.

**DESIGN STANDARDS:**

- CTDOT: Connecticut Department of Transportation Highway Design Manual, 2003 Edition (Including Revisions to October 2024) (HDM)
- AASHTO: A Policy on Geometric Design of Highways and Streets (2018)  
Highway Safety Manual 2010
- Design Criteria: Chapter Two - Geometric Design of Existing Highways (3R Non-Freeway Projects)

**DESIGN FEATURES:**

- Roadway ID: Route 72 (Riverside Avenue)
- Functional classification: Urban Principal Arterial
- Type of roadside development: Built-up
- Federal Aid System: On-system
- Roadway configuration: 2 lane undivided
- Proposed improvement type: 3R Non-freeway
- Design Traffic Volume: NA
  
- Pavement Type: Full Depth Reconstruction

2" HMA S0.357  
 2" HMA S0.4  
 6" Processed Aggregate  
 8" Subbase

Control of Access: Control by Regulation

Table 3: Design Elements Table

<u>Design Element</u>	<u>Unit</u>	<u>Standard</u>	<u>Existing*</u>	<u>Proposed*</u>
<b>Highway</b>				
Design Speed	mph	35	35	35
Travel Lane Width	ft	10' – 12'	12'	11'
RT Shoulder Width (ft)	ft	4' – 8'	4' – 6'	4'
LT Shoulder Width (ft)	ft	4' – 8'	4' - 6'	4'
Cross Slope Travel Lane	%	1.5% - 2.0%	1.5%	2.0%
Cross Slope Shoulder	%	4.0% - 6.0%	5.0%	4.0%
Minimum Radius (e=6%)	ft	375'	275'	400'
Sag/Crest Vertical Curve (K-Value)		49/19	84/39	62/36
Maximum Grade	%	11.0%	3.98%	4.25%
Stopping Sight Distance – Vertical (level SSD)	ft	250'	406'	320'
Stopping Sight Distance – Horizontal	ft	250'	>250'	>250'
Superelevation Rate (e <sub>max</sub> )	%	4.0%	<4.0%	2.40%
Superelevation Transition Length (NC to e <sub>max</sub> )	ft	Varies	•	90'
Intersection Sight Distance	ft	390'	Varies	Varies <sup>#</sup>
Clear Zone**	ft	To ROW line	8'	9'

\* Based on available information

\*\*New guiderail proposed at various locations where roadside hazards exist within the clear zone.

# Require design exception as explained below

**DESIGN ELEMENTS REQUIRING EXCEPTIONS:**

**Intersections:**

*Table 4: Intersections Requiring ISD Design Exceptions*

<u>Exception ID</u>	<u>Design Element</u>	<u>Location</u>
1	Intersection Sight Distance	Route 72 and Warner Court (Left Turn)
2a	Intersection Sight Distance	Route 72 and Mellen Street Northbound (Left Turn)
2b	Intersection Sight Distance	Route 72 and Mellen Street Northbound (Right Turn)

**Driveways:**

There are fifty (50) driveway locations requiring a design exception for substandard intersection sight distance (ISD) within the project corridor. Refer to *Table 8* on pages 12 – 16 for the driveway ISDs requiring design exceptions.

**EFFECTS OF MEETING DESIGN STANDARDS:**

**Intersections:**

Three (3) design exceptions are required for the substandard ISDs at Route 72 (Riverside Ave) intersection with Warner Court and Mellen Street. Refer to *Tables 5 - 7* below for ISDs requiring exceptions.

- 1. Intersection Sight Distance (Route 72 and Warner Court) – Intersections-At-Grade (Pg. 11-2(7))**

*Table 5: Warner Court – Left Turn ISD Design Exception*

<u>Design Vehicle</u>	<u>Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
Warner Court – Left Turn					
Passenger Car		Intersection Sight Distance (ft)	390	350	350
		Equivalent Speed (mph)	35	31	31

The existing and proposed ISD for passenger cars looking right (west) from Warner Court along Route 72 is limited by the City owned building (structure) 119 Riverside Avenue, the horizontal geometry of the roadway, and the available state right-of way. Both the existing and proposed ISD value for a left turn from Warner Court onto Route 72 is three hundred and fifty (350) feet, which is valid for thirty-one (31) miles per hour, four (4) miles per hour below the design speed of Project No. 0017-0196.

Meeting the design standard for the passenger cars would require a sightline easement along the City owned property, 119 Riverside Avenue. This sightline easement would require the most eastern entrance of 119 Riverside Avenue to be closed and the concrete staircase and railing leading to this entrance to be removed. This is outside the scope of the current project and would have an adverse effect on the property. Additionally, the crash data collected does not identify a pattern of crashes related to intersection sight distance at this location. *Figure 5* (below) illustrates both the existing and proposed left-turn ISD from Warner Court onto Route 72.

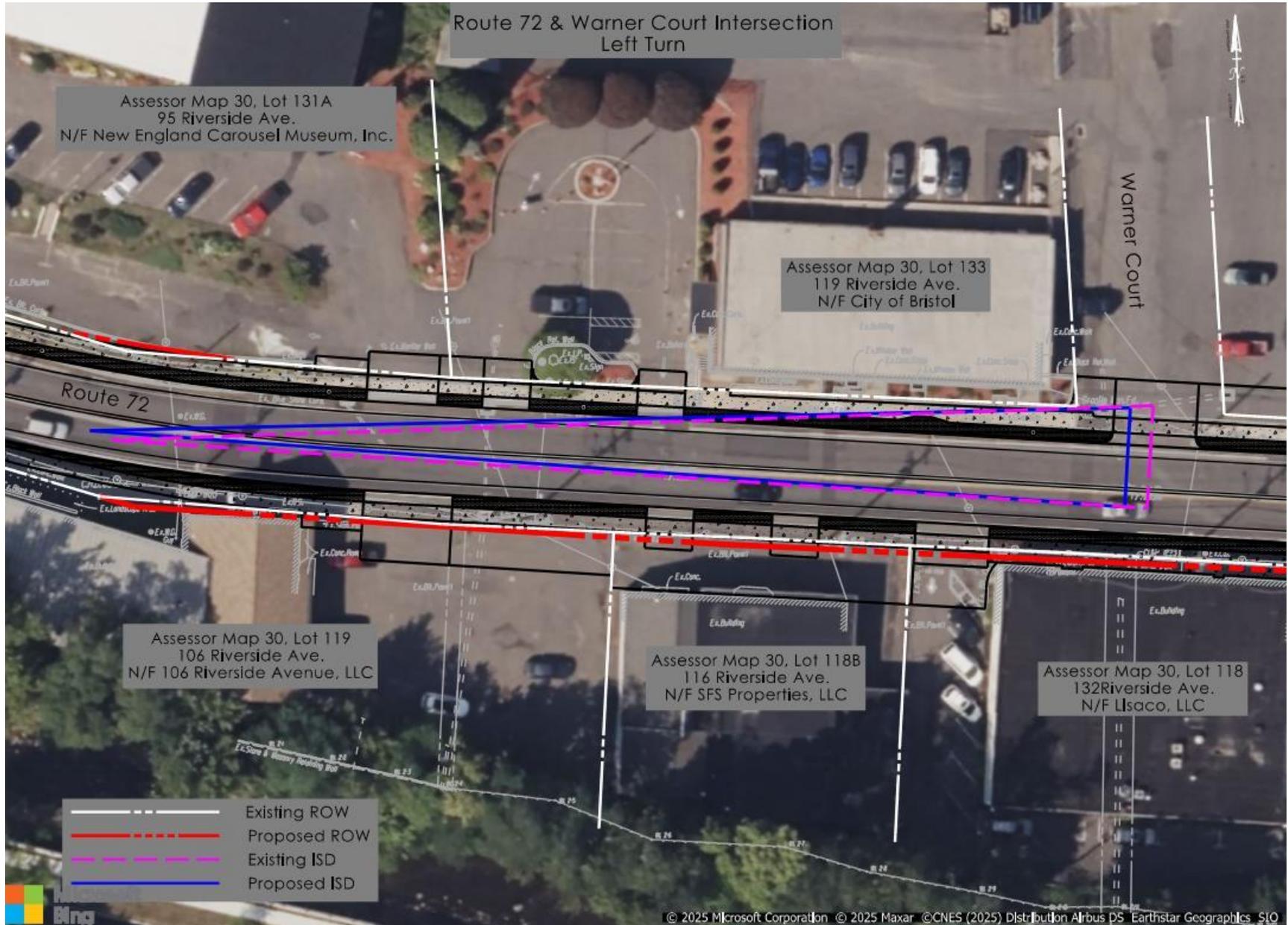


Figure-5: Route 72 & Warner Court Intersection – Left Turn

**2a. Intersection Sight Distance (Mellen Street Northbound – Left Turn) – Intersections-At-Grade (Pg. 11-2(7))**

*Table 6: Mellen Street Northbound – Left Turn ISD Design Exception*

<u>Design Vehicle</u>	<u>Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
Mellen Street Northbound – Left Turn					
Passenger Car		Intersection Sight Distance (ft)	390	56	69
		Equivalent Speed (mph)	35	<20	<20

The Route 72 and Mellen Street intersection alignment and configuration are consistent in both the existing and proposed condition. Heading northbound on Mellen Street and taking a left-turn onto Route 72 allows for a fifty-six (56) foot ISD due to the available right of way on the southeast corner of the intersection. The existing right of way does not capture the proposed sidewalk therefore a partial acquisition is required. The proposed right of way encompasses the proposed sidewalks and allows for a sixty-nine (69) foot ISD.

A sightline easement would be required in order to meet design standards for the ISD for a passenger car heading north on Mellen Street and turning left onto Route 72. A sightline easement is not being acquired at this location as it would require the existing sign for the Gas Man Gas Station and cabinet for the Route 72 and Mellen Street signal to be removed and relocated. Additionally, this intersection is signalized and will remain at the completion of the project and the crash data collected does not identify a pattern of crashes related to intersection sight distance at this location. *Figure 6* (below) illustrates both the existing and proposed left-turn ISD from Mellen Street onto Route 72.



**2b. Intersection Sight Distance (Mellen Street Northbound – Right Turn) – Intersections-At-Grade (Pg. 11-2(7))**

*Table 7: Mellen Street Northbound – Right Turn ISD Design Exception*

<u>Design Vehicle</u>	<u>Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
Mellen Street Northbound – Right Turn					
Passenger Car		Intersection Sight Distance (ft)	390	77	136
		Equivalent Speed (mph)	35	<20	<20

Similar to the ISD value for a driver heading northbound on Mellen Street and turning left on Route 72, the ISD value for a right turn from Mellen Street onto Route 72 is restricted by the available right of way and an existing building along (structure) located on the southwest corner of the intersection. The existing right of way available on the southwest corner of the intersection allows for a seventy-seven (77) foot ISD. Under Project No 0017-0196, a partial acquisition of 170 Riverside Ave is being sought in order for the proposed sidewalk to be located within the right of way. The proposed right of way allows for a hundred and thirty-six (136) foot ISD which is fifty-nine (59) feet greater than the existing condition.

Meeting the design standard for the passenger cars would require a sightline easement which is not being acquired at this location as it would require the existing building at 170 Riverside to be demolished. Additionally, this intersection is signalized and will remain at the completion of the project and the crash data collected does not identify a pattern of crashes related to intersection sight distance at this location. *Figure 7* (below) illustrates both the existing and proposed right-turn ISD from Mellen Street onto Route 72.

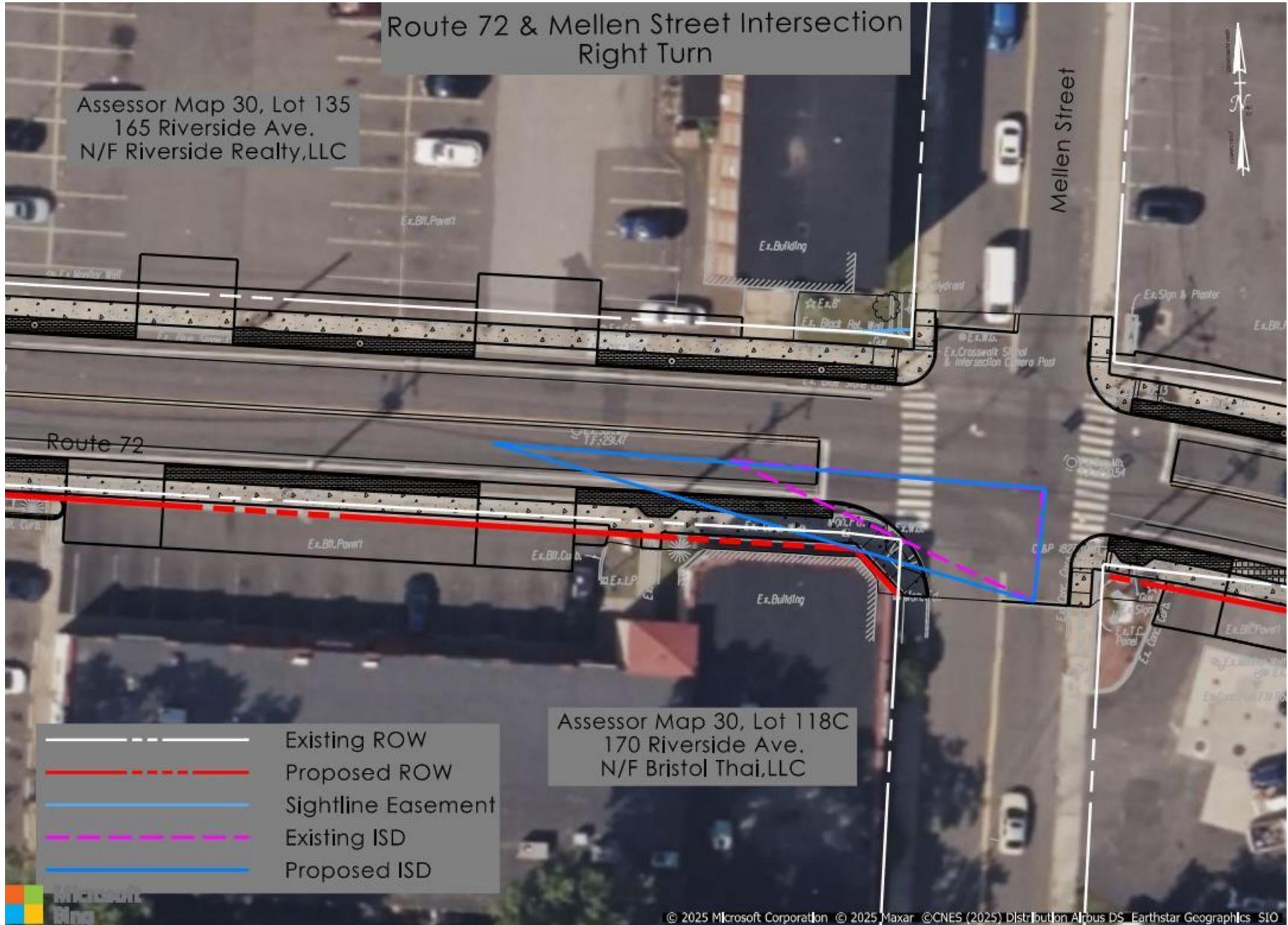


Figure-7: Route 72 & Mellen Street Intersection – Right Turn

**Driveways:**

*Table 8: Driveways Requiring ISD Design Exceptions*

<u>ID</u>	<u>Location</u>	<u>Turn Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
3	150 Main St	Left	Intersection Sight Distance (ft)	390	260	260
			Equivalent Speed (mph)	35	23	23
		Right	Intersection Sight Distance (ft)	390	234	234
			Equivalent Speed (mph)	35	21	21
4	95 Riverside Ave	Right	Intersection Sight Distance (ft)	390	256	275
			Equivalent Speed (mph)	35	23	25
5	106 Riverside Ave	Right	Intersection Sight Distance (ft)	390	205	209
			Equivalent Speed (mph)	35	< 20	< 20
6	119 Riverside Ave	Left	Intersection Sight Distance (ft)	390	298	298
			Equivalent Speed (mph)	35	27	27
		Right	Intersection Sight Distance (ft)	390	277	293
			Equivalent Speed (mph)	35	25	26
7	116 Riverside Ave (1)	Right	Intersection Sight Distance (ft)	390	320	320
			Equivalent Speed (mph)	35	29	29
8	132 Riverside Ave	Left	Intersection Sight Distance (ft)	390	120	230
			Equivalent Speed (mph)	35	< 20	20
9	145 Riverside Ave	Left	Intersection Sight Distance (ft)	390	363	363
			Equivalent Speed (mph)	35	33	33
		Right	Intersection Sight Distance (ft)	390	366	366
			Equivalent Speed (mph)	35	33	33
10	170 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	376	376
			Equivalent Speed (mph)	35	34	34
11	170 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	335	335
			Equivalent Speed (mph)	35	30	30
12	170 Riverside Ave (3)	Left	Intersection Sight Distance (ft)	390	300	317
			Equivalent Speed (mph)	35	27	28
13	165 Riverside Ave (1)	Right	Intersection Sight Distance	390	318	318
			Equivalent Speed	35	28	28

Table 8: Driveways Requiring ISD Design Exceptions (continued)

<u>ID</u>	<u>Location</u>	<u>Turn Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
14	165 Riverside Ave (2)	Right	Intersection Sight Distance (ft)	390	250	250
			Equivalent Speed (mph)	35	22	22
15	180 Riverside Ave	Right	Intersection Sight Distance (ft)	390	235	235
			Equivalent Speed (mph)	35	21	21
16	191 Riverside Ave	Right	Intersection Sight Distance (ft)	390	93	205
			Equivalent Speed (mph)	35	< 20	< 20
17	199 Riverside Ave	Right	Intersection Sight Distance (ft)	390	217	301
			Equivalent Speed (mph)	35	< 20	27
18	200 Riverside Ave	Right	Intersection Sight Distance (ft)	390	246	297
			Equivalent Speed (mph)	35	22	27
19	220 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	355	370
			Equivalent Speed (mph)	35	32	33
		Right	Intersection Sight Distance (ft)	390	296	337
			Equivalent Speed (mph)	35	26	30
20	220 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	350	340
			Equivalent Speed (mph)	35	31	30
21	209 Riverside Ave	Right	Intersection Sight Distance (ft)	390	312	312
			Equivalent Speed (mph)	35	28	28
22	234 Riverside Ave	Left	Intersection Sight Distance (ft)	390	277	281
			Equivalent Speed (mph)	35	25	25
23	233 Riverside Ave (1)	Right	Intersection Sight Distance (ft)	390	241	250
			Equivalent Speed (mph)	35	21	22
24	233 Riverside Ave (2)	Right	Intersection Sight Distance (ft)	390	180	189
			Equivalent Speed (mph)	35	< 20	< 20
25	258 Riverside Ave	Right	Intersection Sight Distance (ft)	390	292	294
			Equivalent Speed (mph)	35	26	26
26	264 Riverside Ave	Right	Intersection Sight Distance (ft)	390	304	304
			Equivalent Speed (mph)	35	27	27
27	269 Riverside Ave	Left	Intersection Sight Distance (ft)	390	188	195
			Equivalent Speed (mph)	35	< 20	< 20
		Right	Intersection Sight Distance	390	211	302
			Equivalent Speed (mph)	35	< 20	27
28	270 Riverside Ave	Right	Intersection Sight Distance	390	325	325
			Equivalent Speed (mph)	35	29	29

Table 8: Driveways Requiring ISD Design Exceptions (continued)

<u>ID</u>	<u>Location</u>	<u>Turn Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
29	278 Riverside Ave	Left	Intersection Sight Distance (ft)	390	358	358
			Equivalent Speed (mph)	358	32	32
		Right	Intersection Sight Distance (ft)	390	379	381
			Equivalent Speed (mph)	379	34	34
30	292 Riverside Ave	Left	Intersection Sight Distance (ft)	390	362	378
			Equivalent Speed (mph)	35	32	34
31	273 Riverside Ave	Right	Intersection Sight Distance (ft)	390	326	326
			Equivalent Speed (mph)	35	29	29
32	300 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	335	355
			Equivalent Speed (mph)	35	30	32
33	300 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	303	303
			Equivalent Speed (mph)	35	27	27
34	331 Riverside Ave	Left	Intersection Sight Distance (ft)	390	220	256
			Equivalent Speed (mph)	35	< 20	23
		Right	Intersection Sight Distance (ft)	390	335	343
			Equivalent Speed (mph)	35	30	31
35	337 Riverside Ave	Left	Intersection Sight Distance (ft)	390	211	211
			Equivalent Speed (mph)	35	< 20	< 20
36	350 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	239	255
			Equivalent Speed (mph)	35	21	23
		Right	Intersection Sight Distance (ft)	390	335	335
			Equivalent Speed (mph)	35	30	30
37	350 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	187	240
			Equivalent Speed (mph)	35	< 20	21
		Right	Intersection Sight Distance (ft)	390	335	335
			Equivalent Speed (mph)	35	30	30
38	347 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	263	263
			Equivalent Speed (mph)	35	23	23
39	347 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	311	311
			Equivalent Speed (mph)	35	28	28
		Right	Intersection Sight Distance (ft)	390	373	373
			Equivalent Speed (mph)	35	33	33
40	347 Riverside Ave (3)	Left	Intersection Sight Distance (ft)	390	266	332
			Equivalent Speed (mph)	35	24	30
		Right	Intersection Sight Distance (ft)	390	306	306
			Equivalent Speed (mph)	35	27	27

Table 8: Driveways Requiring ISD Design Exceptions (continued)

<u>ID</u>	<u>Location</u>	<u>Turn Direction</u>	<u>Design Element</u>	<u>Design Standard</u>	<u>Existing</u>	<u>Proposed</u>
41	360 Riverside Ave	Left	Intersection Sight Distance (ft)	390	349	380
			Equivalent Speed (mph)	35	31	34
		Right	Intersection Sight Distance (ft)	390	152	156
			Equivalent Speed (mph)	35	< 20	< 20
42	370 Riverside Ave	Left	Intersection Sight Distance (ft)	390	272	275
			Equivalent Speed (mph)	35	24	25
		Right	Intersection Sight Distance (ft)	390	207	207
			Equivalent Speed (mph)	35	< 20	< 20
43	373 Riverside Ave (1)*	Left	Intersection Sight Distance (ft)	390	258	258
			Equivalent Speed (mph)	35	23	23
		Right	Intersection Sight Distance (ft)	390	318	318
			Equivalent Speed (mph)	35	28	28
44	373 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	290	290
			Equivalent Speed (mph)	35	26	26
		Right	Intersection Sight Distance (ft)	390	79	295
			Equivalent Speed (mph)	35	< 20	26
45	380 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	246	246
			Equivalent Speed (mph)	35	22	22
		Right	Intersection Sight Distance (ft)	390	275	275
			Equivalent Speed (mph)	35	25	25
46	380 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	170	194
			Equivalent Speed (mph)	35	< 20	< 20
		Right	Intersection Sight Distance (ft)	390	315	315
			Equivalent Speed (mph)	35	28	28
47	381 Riverside Ave	Left	Intersection Sight Distance (ft)	390	293	304
			Equivalent Speed (mph)	35	26	27
		Right	Intersection Sight Distance (ft)	390	223	267
			Equivalent Speed (mph)	35	< 20	24
48	394 Riverside Ave*	Left	Intersection Sight Distance (ft)	390	171	197
			Equivalent Speed (mph)	35	< 20	< 20
		Right	Intersection Sight Distance (ft)	390	262	376
			Equivalent Speed (mph)	35	23	34
49	398 Riverside Ave (2)*	Left	Intersection Sight Distance (ft)	390	0	176
			Equivalent Speed (mph)	35	< 20	< 20
		Right	Intersection Sight Distance (ft)	390	207	207
			Equivalent Speed (mph)	35	< 20	< 20

\*Existing ISD Value impacted by PAM AM Southern Property Limits

Table 8: Driveways Requiring ISD Design Exceptions (continued)

ID	Location	Turn Direction	Design Element	Design Standard	Existing	Proposed
50	398 Riverside Ave (3)*	Left	Intersection Sight Distance (ft)	390	0	337
			Equivalent Speed (mph)	35	< 20	30
		Right	Intersection Sight Distance (ft)	390	192	192
			Equivalent Speed (mph)	35	< 20	< 20
51	450 Riverside Ave (1)	Left	Intersection Sight Distance (ft)	390	337	340
			Equivalent Speed (mph)	35	30	30
		Right	Intersection Sight Distance (ft)	390	220	244
			Equivalent Speed (mph)	35	< 20	22
52	450 Riverside Ave (2)	Left	Intersection Sight Distance (ft)	390	211	211
			Equivalent Speed (mph)	35	< 20	< 20
		Right	Intersection Sight Distance (ft)	390	224	265
			Equivalent Speed (mph)	35	< 20	24

\*Existing ISD Value impacted by PAM AM Southern Property Limits

There are a total of fifty-six (56) proposed driveways within the project limits resulting in one hundred and twelve (112) individual driveway ISDs. Of the fifty-six (56) proposed driveways fifty (50) require a design exception for at least one of the proposed ISD values from that location. In total there are seventy-three (73) individual substandard driveway ISD values throughout the project corridor.

The proposed roadway improvements include realigning Route 72 to remove the substandard horizontal geometry as well as standardizing the roadway width and driveway configurations. These proposed improvements as well as the additional right of way that will be acquired under Project No. 0017-0196 results in the proposed ISDs being improved for thirty-eight (38) out of the seventy-three (73) substandard driveway ISD values. Thirty-four (34) of the proposed driveway ISD values equal the existing condition ISD values. These proposed ISD values are not improved from the existing condition as right of way does not need to be acquired for the proposed sidewalk at each property, it is not proposed to remove or demolish existing structures, and for some areas along the project corridor the driveway configuration and/or the roadway geometry is the same in the existing and proposed condition. Additionally, no sightline easements are being acquired in order for driveway ISDs to meet the standard value to adhere to HDM. As stated in section 11-2(4), “The clear sight triangle shown for any private driveway shall fall within the respective property and/or within the public ROW. Property shall not be acquired to provide the required ISD for private driveways.”

There is one (1) driveway location where the proposed ISD value decreased compared to the existing condition (Design Exception ID #20). 220 Riverside Avenue is located between Sta. 21+58 -22+78 on the south side of Route 72. The existing driveway configuration consists of two (2) driveways that are thirty-three (33) and thirty-four (34) feet wide with sixteen (16) feet of curbing separating them. The proposed design alters the driveway configuration to maintain business operations as well as meet standards in the HDM. Both driveway entrances were reduced to a twenty (20) foot width located eighteen (18) feet from the property line with forty-four (44) feet separating the proposed driveways. Standardizing the driveway configuration causes the center of the second driveway to shift fourteen (14) feet to the east, closer to the horizontal curve at the Route 72 and East Street intersection. This results in the existing and proposed ISD values to be evaluated at different locations. The proposed ISD value decreased ten (10) feet and has an equivalent speed one (1) mph less than the existing condition due to the proposed driveway shift and Route 72 horizontal curve. See Figure 8 (below) for both the existing and proposed driveway locations as well as the existing and proposed left-turn ISD at 220 Riverside Avenue.

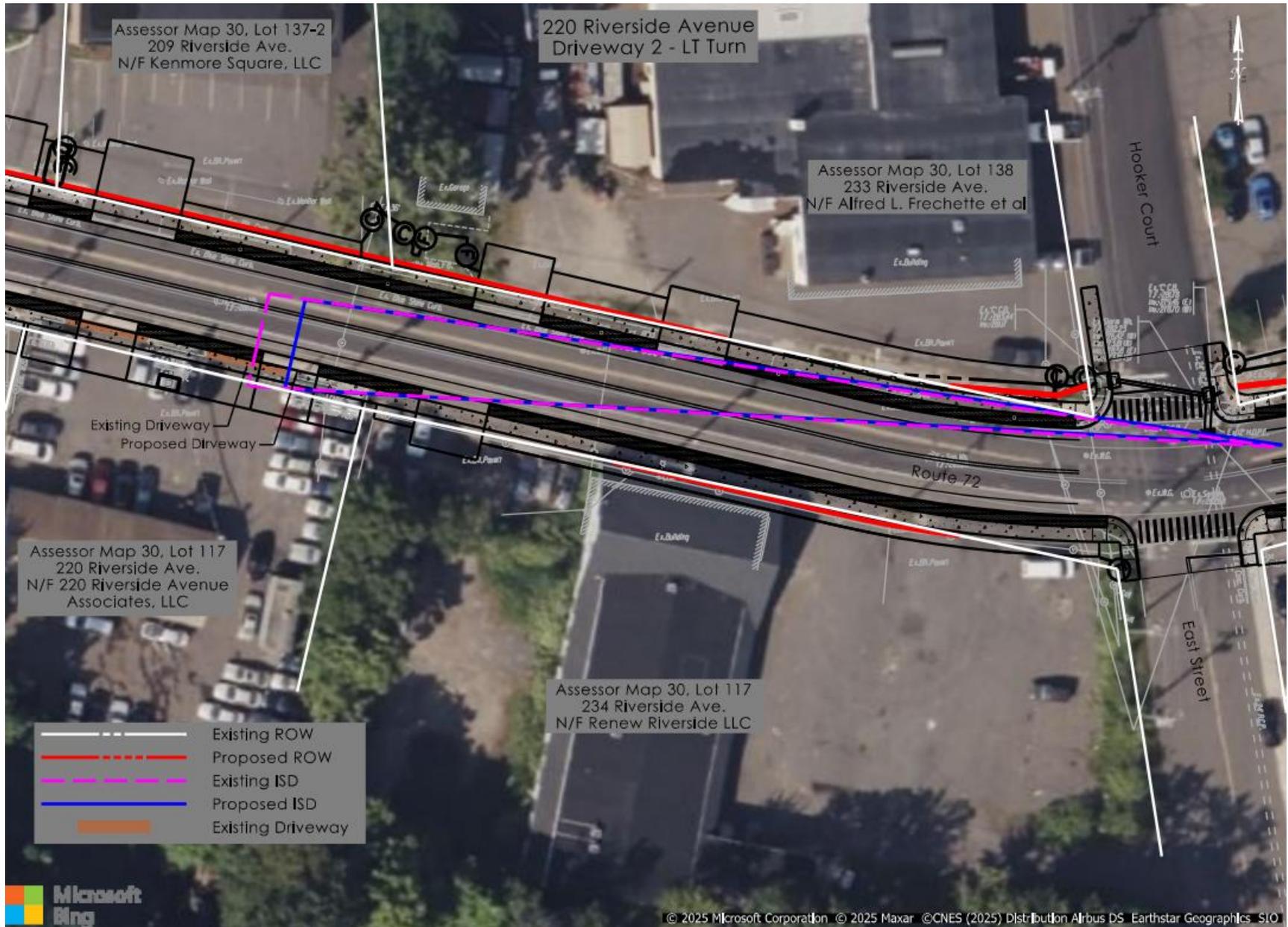


Figure-8: 220 Riverside Avenue – Left Turn

**FUNDING:**

This project is to be funded with eighty percent (80%) Federal Program funds and twenty percent (20%) State funds for ROW and CN phases. The PE phase is one hundred percent (100%) City funds.

The project is being funded as a result of the CTDOT partnering with the City of Bristol to provide safety and operational improvements to Route 72 (Riverside Avenue) that will serve to benefit both the State facility and the municipality. The CTDOT has agreed to share the cost of the proposed project through funding participating construction-phase and Rights of Way costs with the City preparing and funding 100% of the design.

**PROJECT CONSTRUCTION COST:**           \$12,600,000

The cost noted above includes incidentals, contingencies, and utilities.

**CURRENT PROJECT SCHEDULE:**

FDP: September 23, 2026

DCD: October 21, 2026

ADV: December 2, 2026

Anticipated Construction Start Date: Summer 2027

**RECOMMENDATIONS:**

It is recommended that the requested design exceptions for the substandard Intersection Sight Distance (ISD) locations under Project No. 0017-0196 be **GRANTED**. This recommendation is consistent with the City's planning documents, consistent with the purpose and need of the project and promotes safety and will create overall improved conditions for intersection sight distance throughout the project corridor.

**Consistent with Planning Documentation:** The recommendations are aligned with a study conducted by the City of Bristol in 2021 ("Streetscape Study and Design Concepts, Riverside Avenue and Divinity Street/Park Street") which outlined concept-level improvements that would provide an improved pedestrian environment, streetscape improvements, and roadway safety benefits. The aim was to explore potential design strategies that would achieve safety and aesthetic improvements for the important gateways along CT Route 72.

**Consistent with Purpose and Promotes Safety:** The design exception is recommended in order to adhere to the project's overall purpose, need and scope. The design exceptions will allow for the project to create improvements to roadway geometry, access management to minimize impacts to the access and parking for businesses along the Route 72 (Riverside Avenue) corridor and create sidewalks with curbing, a buffer and lighting to allow for increased safety and comfort for pedestrians.

**Improved Conditions Overall:** While seventy-three (73) of the proposed driveway ISDs require a design exception, thirty-eight (38) [over half (52.1%)] of them offer improved sight distances compared to the existing condition. The remaining driveway ISDs, with the exception of 220 Riverside Avenue, maintain the existing sight distance and do not make the current condition worse. The proposed design, along with the partial property acquisitions required for sidewalks, allows for ISD values throughout the project limits to be improved overall.

Granting these design exceptions will allow the goals of the project to be achieved while maintaining existing, and in some locations improving, intersection sight distances within the project limits.

Prepared By:

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