



Downtown Transportation Improvements Project

Preliminary Design Report

Prepared for:
City of Sylvania
6730 Monroe Street
Sylvania, OH 43560

April 11, 2023

Prepared by:
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EDGE Group

EDGE PLANNING
LANDSCAPE ARCHITECTURE
URBAN DESIGN



Downtown Transportation Improvements Project

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Downtown Transportation Improvements Project

EXECUTIVE SUMMARY

DGL Consulting Engineers (DGL) was selected by the City of Sylvania to develop a plan for the rehabilitation of Main Street in downtown Sylvania. The plan builds on the vision established in the Downtown Sylvania Master Plan to create a streetscape design that addresses public realm, street, utility (water, sewer, electric) and sidewalk improvements. DGL's design team included EDGE, a planning and landscape architecture, urban design firm and JDRM, a mechanical, electrical and technology firm .

The project limits begin at the intersection of Main Street and Monroe Street and continue north approximately 1400' to the intersection of Main Street and Erie Street. The intersection of Main Street and Maplewood Avenue is included within the project scope, as it is located mid project. Maplewood Avenue from Main Street to Summit Street is also included within the study limits.

Existing Conditions

Main Street is a Minor Arterial within the project limits. The ADT for Main Street is 3792 per TIMS. The Peak Volumes and Truck Volumes were collected in the field and summarized on the 2022 Collected Traffic Data Figures in Appendix F. All three intersections along Main Street are currently signalized. Main Street is currently a two-way, one-lane roadway with some dedicated turn lanes at the intersections. The southern block between Monroe Street and Maplewood Avenue includes parallel parking on each side. The northern block between Maplewood Avenue and Erie Street does not include designated on-street parking.

The two blocks along Main Street also have different characteristics beyond street parking. The southern block has the more traditional downtown appearance with continuous storefronts and a 9' to 13' sidewalk width. The existing sidewalk includes patches of brick pavers and tree grates from prior streetscape improvements 40 years ago. Festive string lights also span across Main Street within this block. The northern block from Maplewood Avenue to Erie Street has a residential appearance that includes tree lawns, 4' wide sidewalks and further setbacks to commercial and residential fronts.

Design Process

DGL initiated the Study by performing a field survey and creating a base map of the existing infrastructure, topography and ownership. Traffic data was also collected at key locations to assist with any proposed recommendations.

An **initial stakeholders meeting** was held on August 24th, 2022 at City Council Chambers. The goal of this stakeholder meeting was to gauge the interests of the stakeholders and incorporate as many common interests into the Preliminary Design Plans. A PowerPoint presentation was delivered that included the anticipated schedule, work elements and design concept options for consideration. A comment form was also provided that included rankings for individual elements such as street parking, curbs, trees, pedestrian use and lighting.

The comment forms were collected, reviewed and summarized. Initial stakeholders meeting material, comment forms and summary of comments are included in Appendix A.

After the review of the comments, the DGL team prepared the Preliminary Design Plans that incorporated the majority of the stakeholders' comments. The preliminary plans are found in Appendix B – Preliminary Design Plans. The key elements included parallel parking on both sides, permanent parklets or seating and pedestrian amenities, wider sidewalk widths by reducing

Downtown Transportation Improvements Project

roadway lane widths, increased parking spots and uniformity for both blocks along Main Street, uncurbed roadway, raised mid-block crossings, concrete sidewalk within pedestrian zones, and incorporation of trees.

DGL also reviewed options for the intersection at Main Street and Maplewood Avenue. Based on existing traffic data, the existing signal at Maplewood Avenue is not warranted. DGL reviewed a roundabout and a four way stop option for the intersection. The design team's preferred recommendation is the four way stop and elimination of dedicated turn lanes. This option adds pedestrian space and will help slow traffic, both of which were priorities to the stakeholders.

Options for the Main Street and Erie Street intersection were also reviewed by the design team. Based on existing traffic data, the existing signal at Erie Street is not warranted. A mini roundabout is the preferred recommendation for this location due to its minimal right of way impact, traffic calming features and ease of vehicular U-turns. Raised crosswalks, high-visibility pavement markings and overhead lighting are methods used for improved pedestrian safety at roundabouts. Rectangular rapid-flashing beacons can also be considered at both ends of each crosswalk and at the splitter islands to increase driver awareness of pedestrians.

EDGE prepared renderings and a 3D model video showing soft and hardscape options for the corridor. The renderings and video incorporate brick layouts for the parallel parking, additional seating and gathering areas at key locations, the use of branding for elements such as bike racks and tree box options. The streetscape renderings can be found in Appendix C.

A **second stakeholders meeting** was held at the City Council Chambers of February 1, 2023. This meeting was open house style with a brief recap of comments from the initial stakeholder meeting. The video prepared by EDGE was presented and key features explained during it's running. Time was provided during the meeting for individual Q&A between the design team and stakeholders. A one-page comment form was provided to the stakeholders. Appendix D includes a copy of the comment form and all comment forms received during and/or after the meeting.

The overall reaction to the Preliminary Design Plans is favorable. The additional parking, uncurbed roadway, additional sidewalk width and seating areas, mid-block crossings and tree locations appear to satisfy the stakeholder needs. There are concerns from a few stakeholders regarding the intersections at Maplewood Avenue and Erie Street.

Estimated Construction Costs.

The estimated construction cost is \$6,127,134. This cost includes a 10% contingency for items not quantified. There is also an 11% inflation based on a construction date in 2025. ODOT's Business Plan Inflation Calculator for CY 2023-2027 was used to determine the inflation rate. Appendix E includes the itemized Estimated Construction Cost for the Downtown Transportation Improvements Project. This cost references ODOT's Summary of Contracts Awarded for 2022 and recent City of Sylvania project bid tabs.

Downtown Transportation Improvements Project

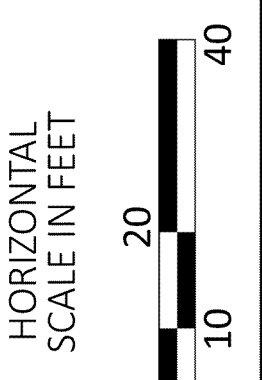
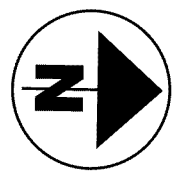
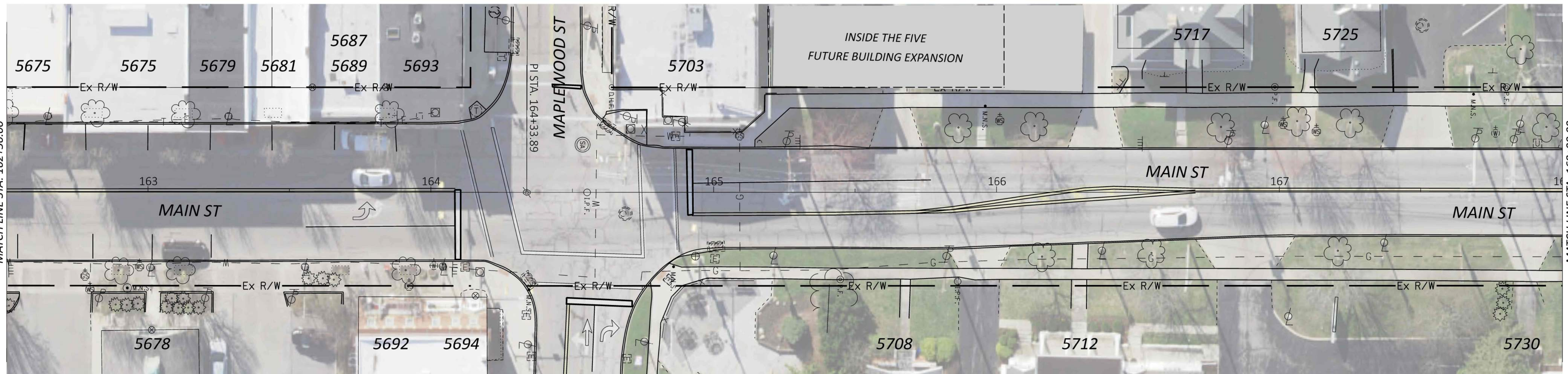
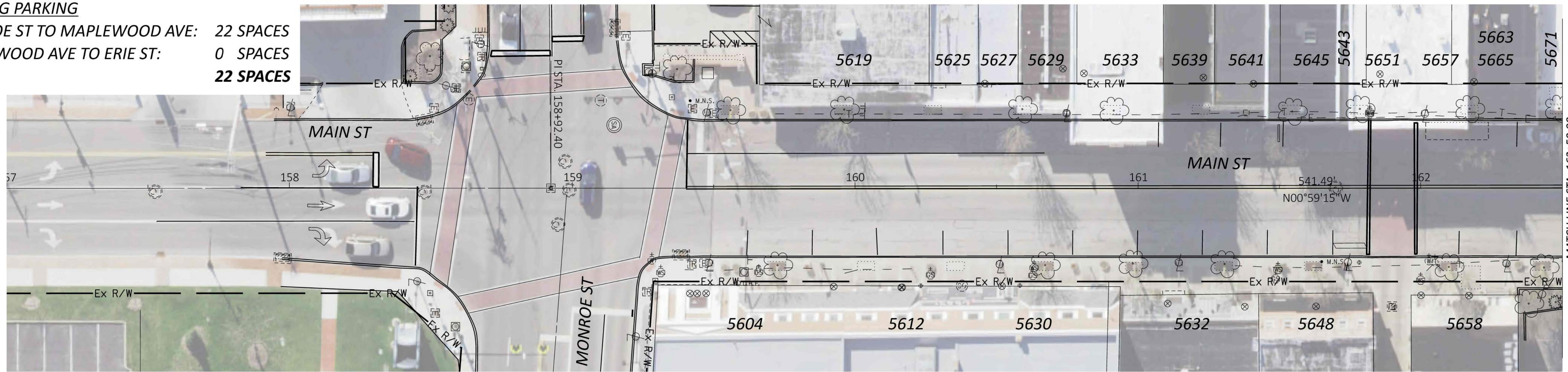
Appendix A

Initial Stakeholder Material

MAIN STREET IMPROVEMENTS

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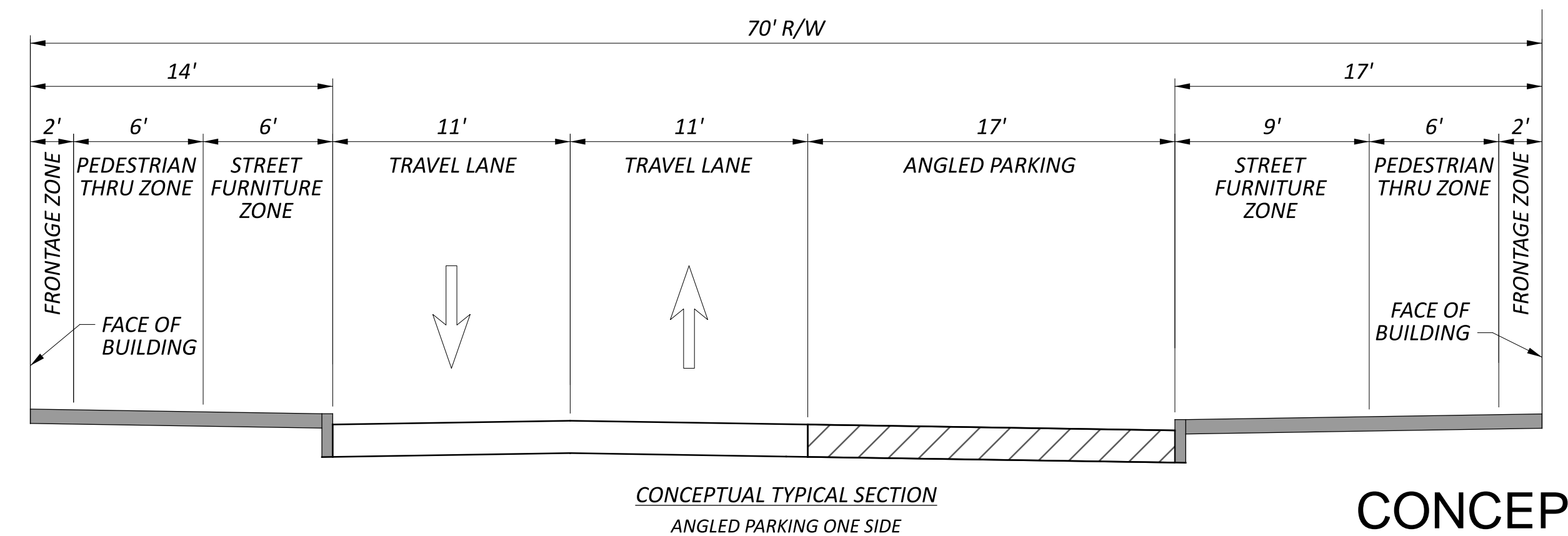
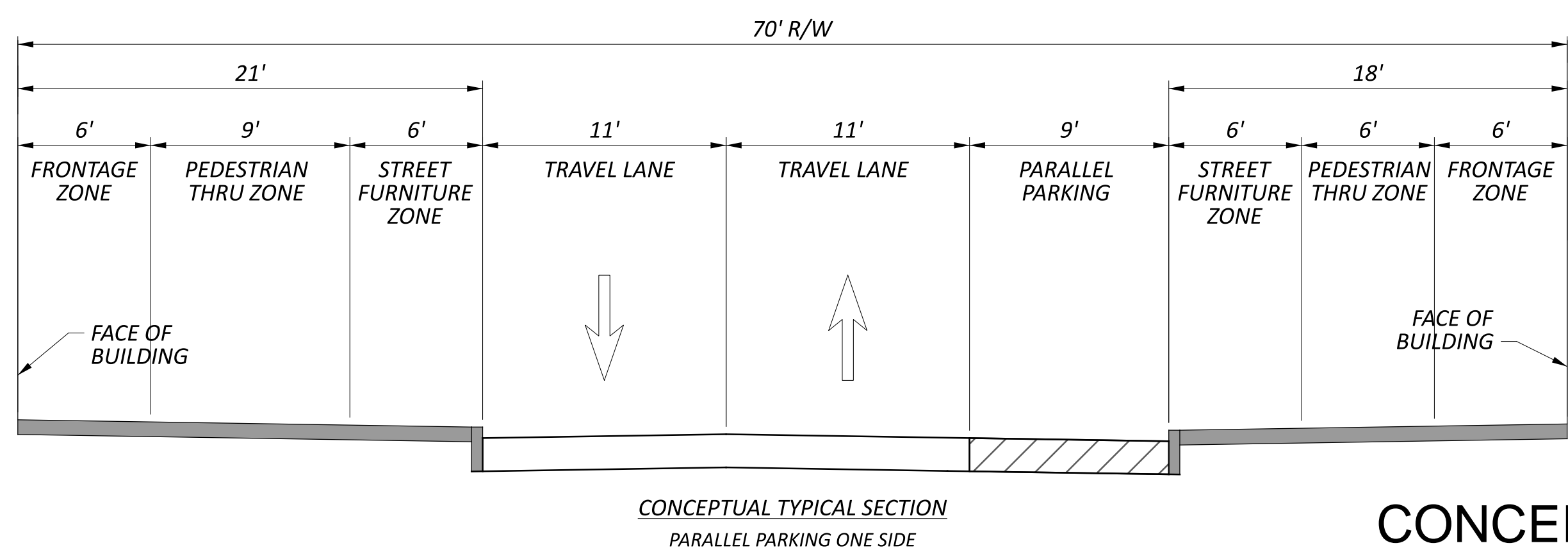
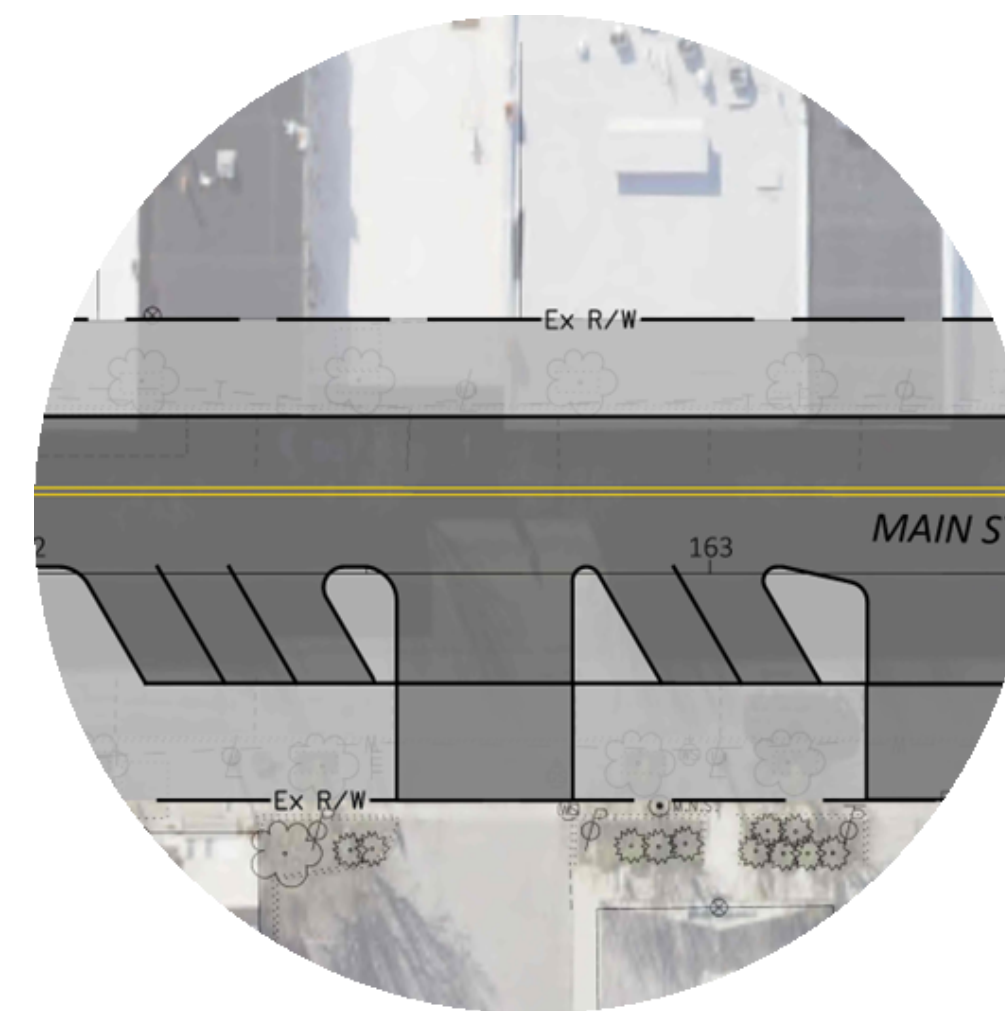
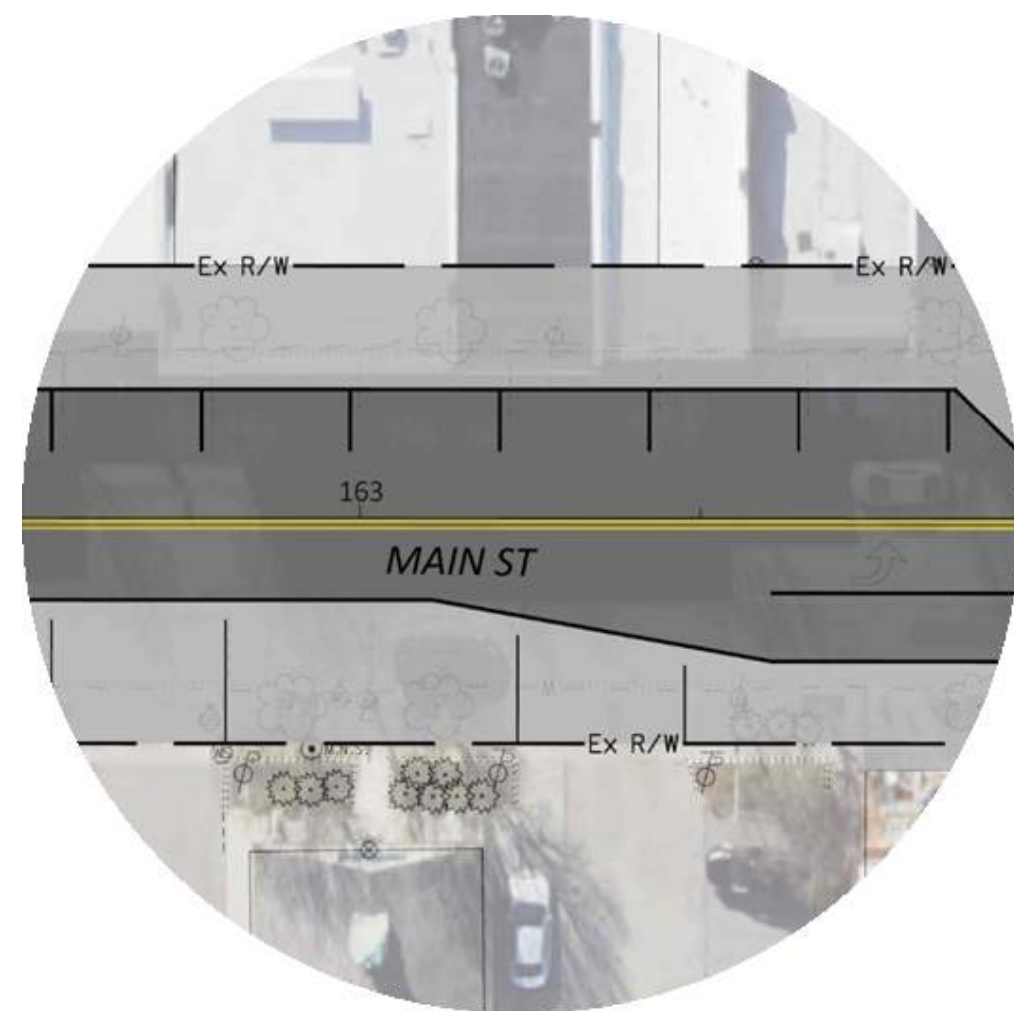
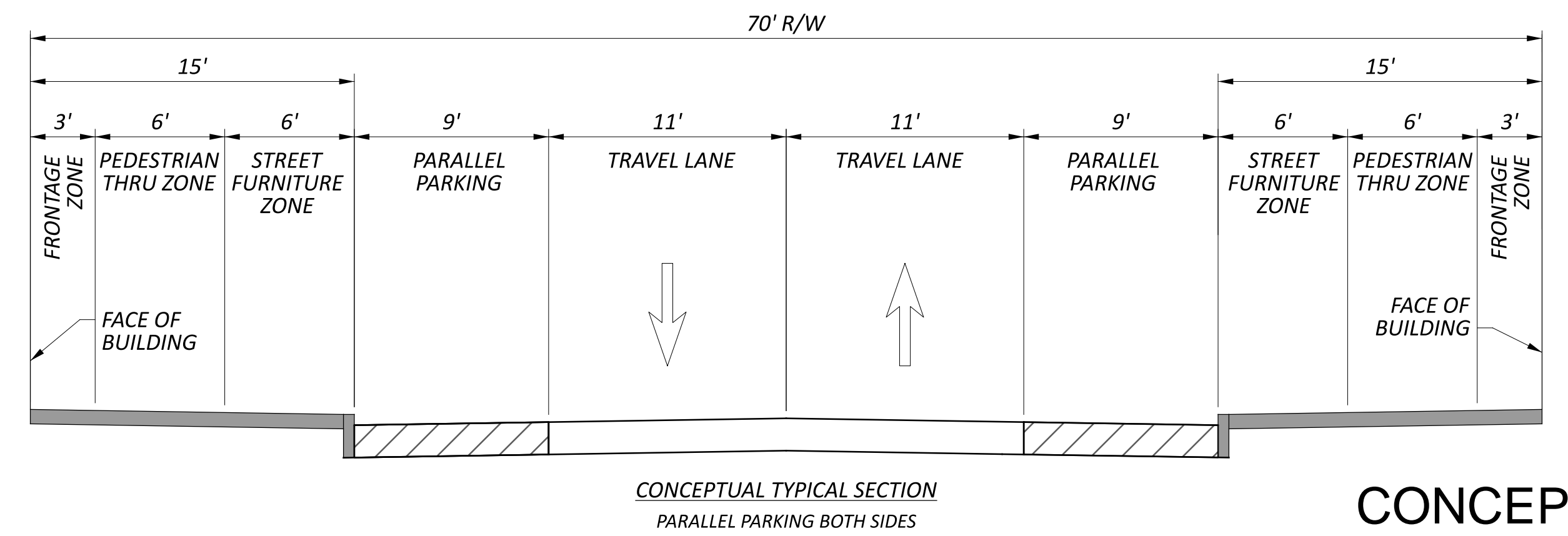
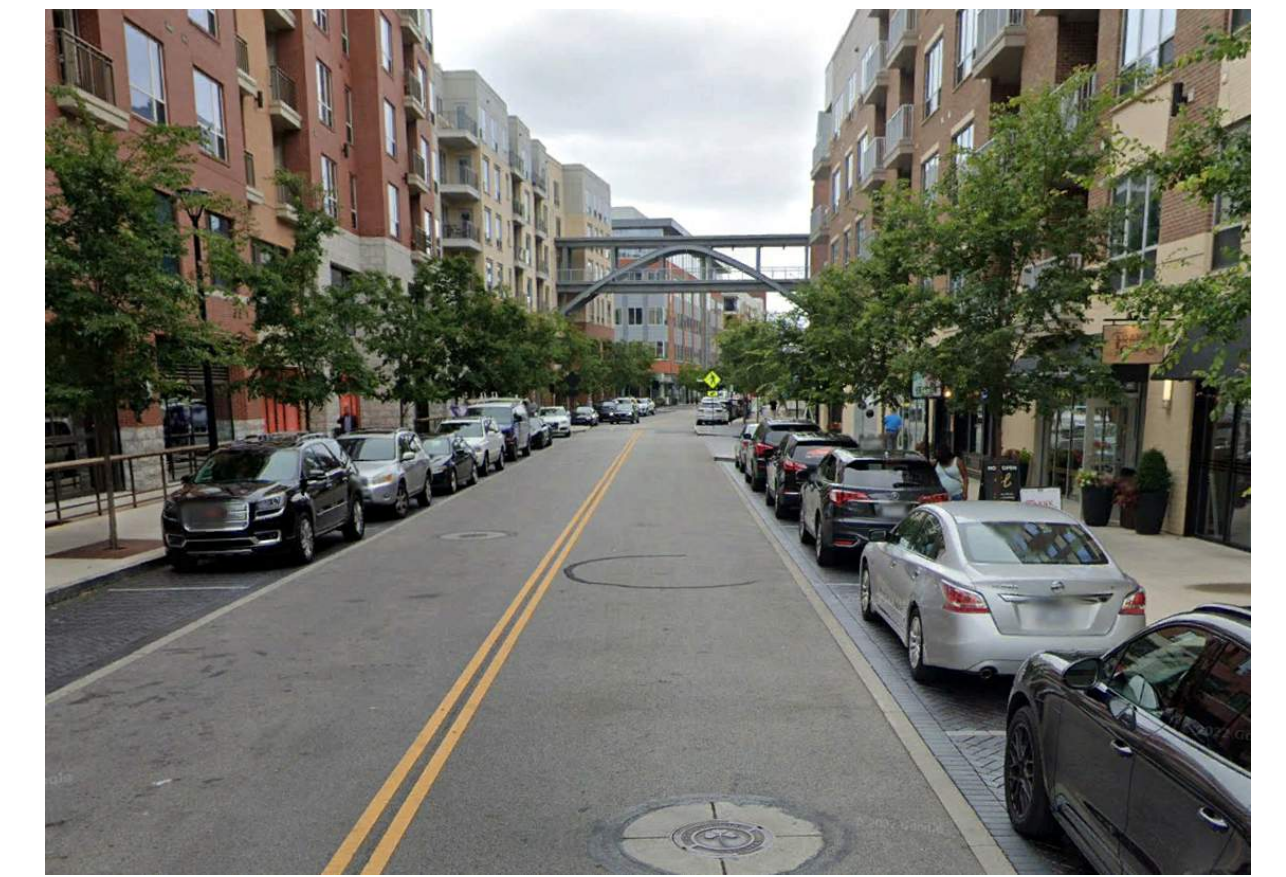
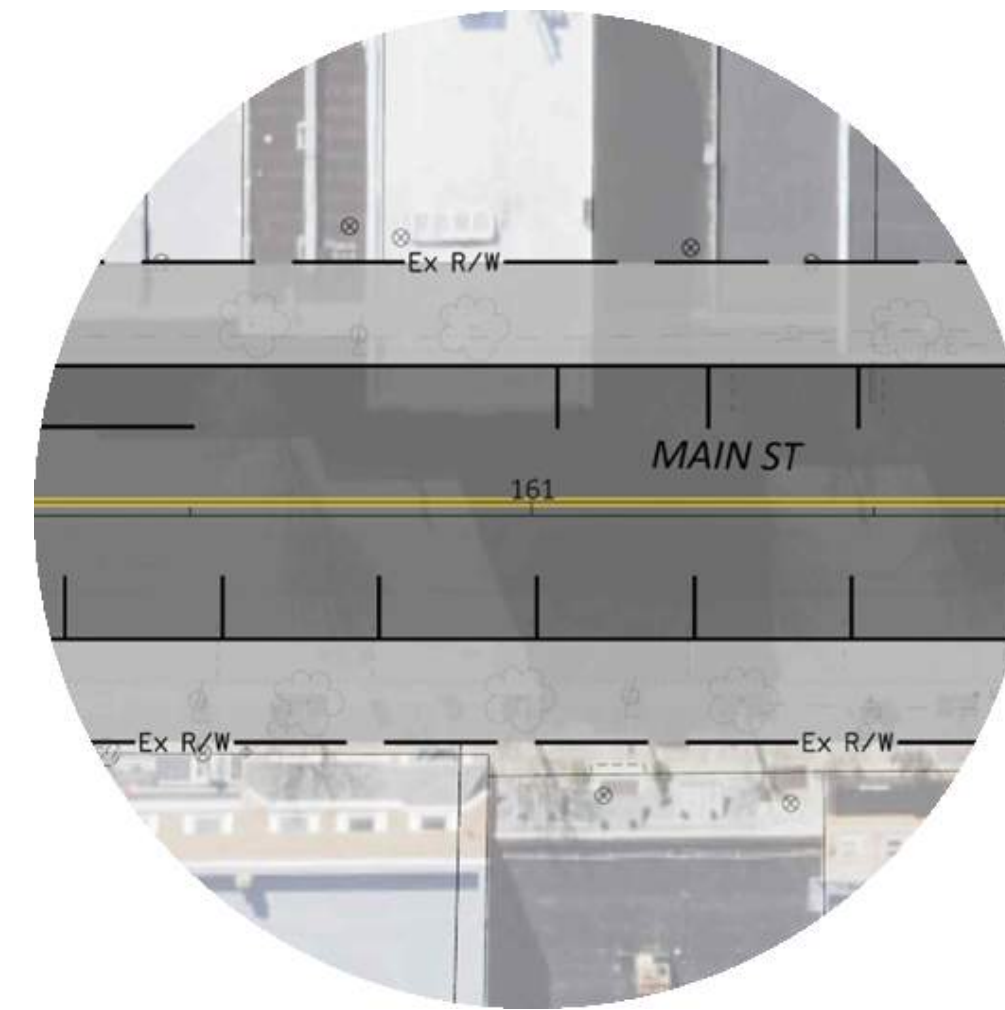
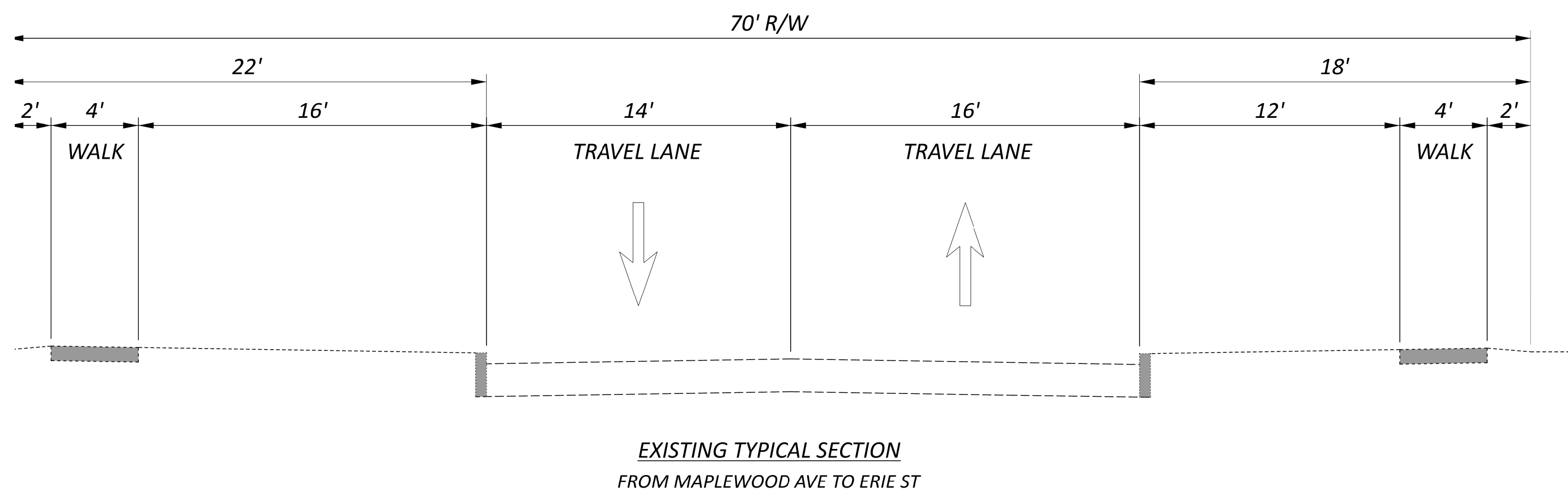
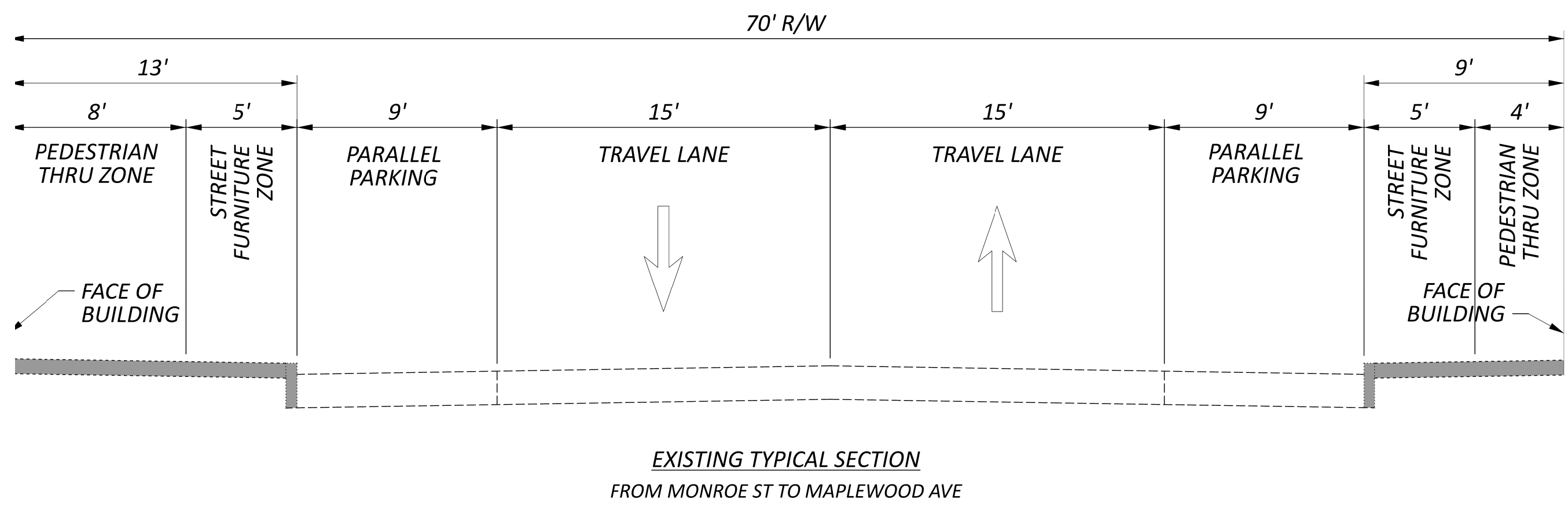
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 MAPLEWOOD AVE TO ERIE ST: 0 SPACES
TOTAL: 22 SPACES

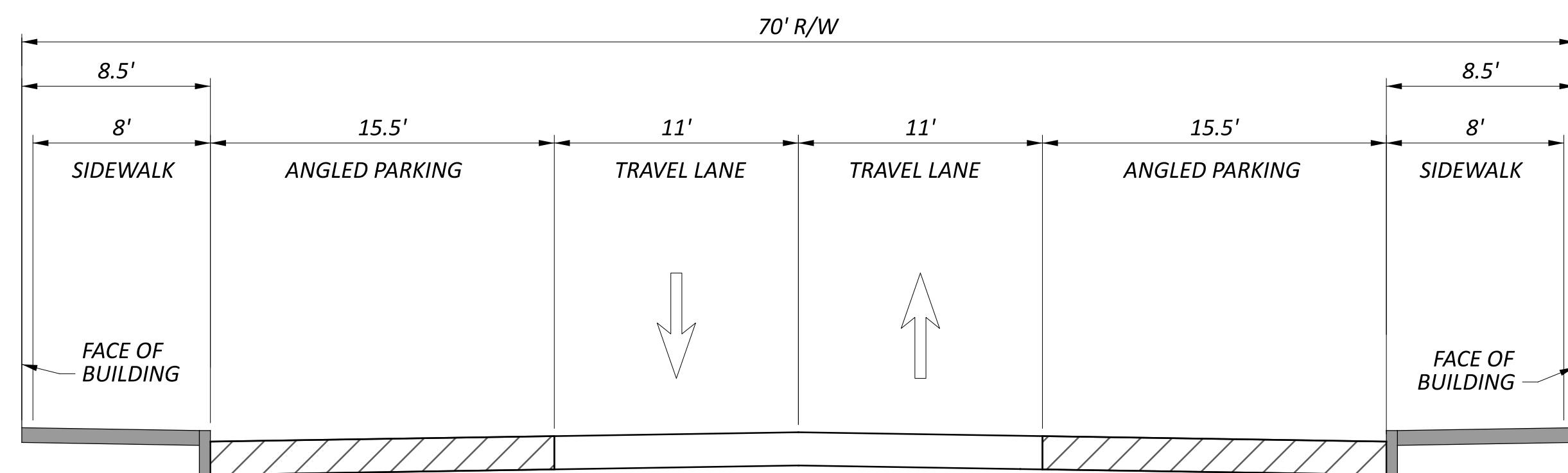
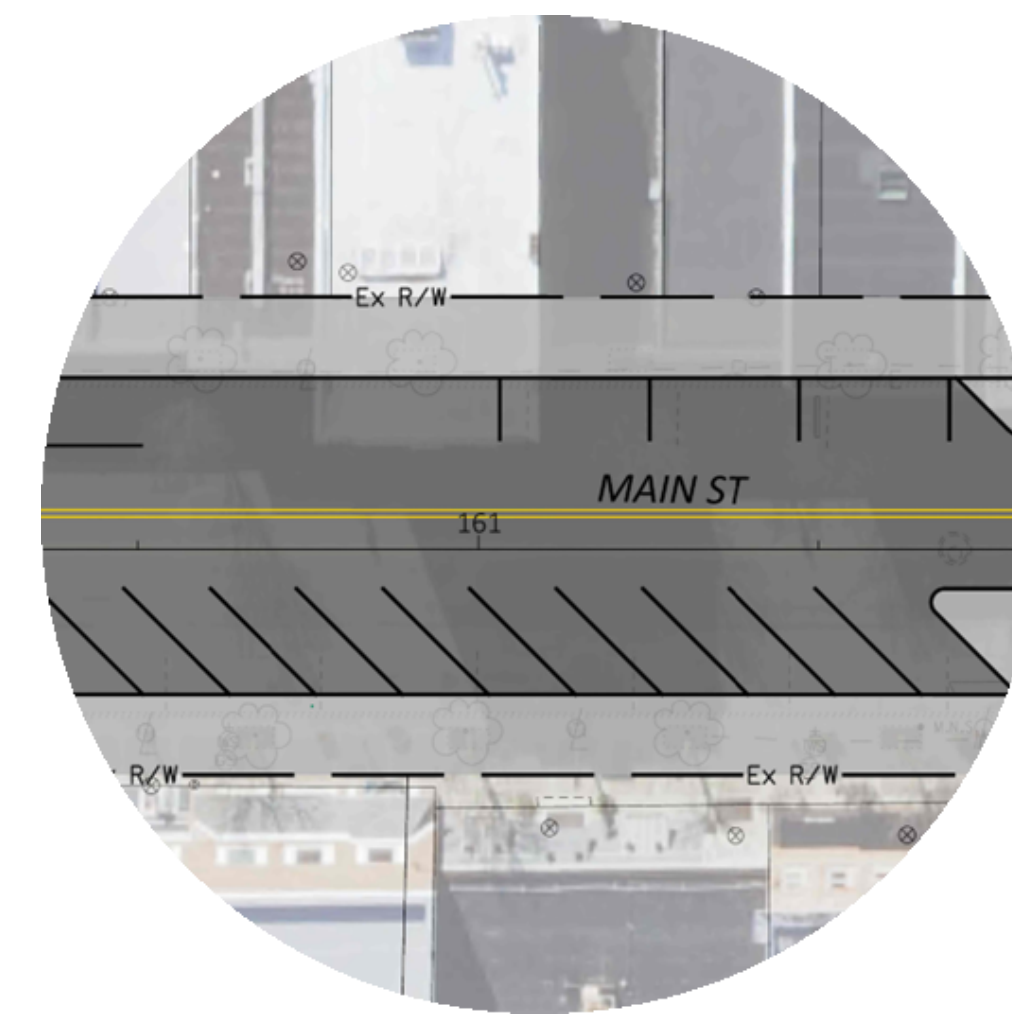
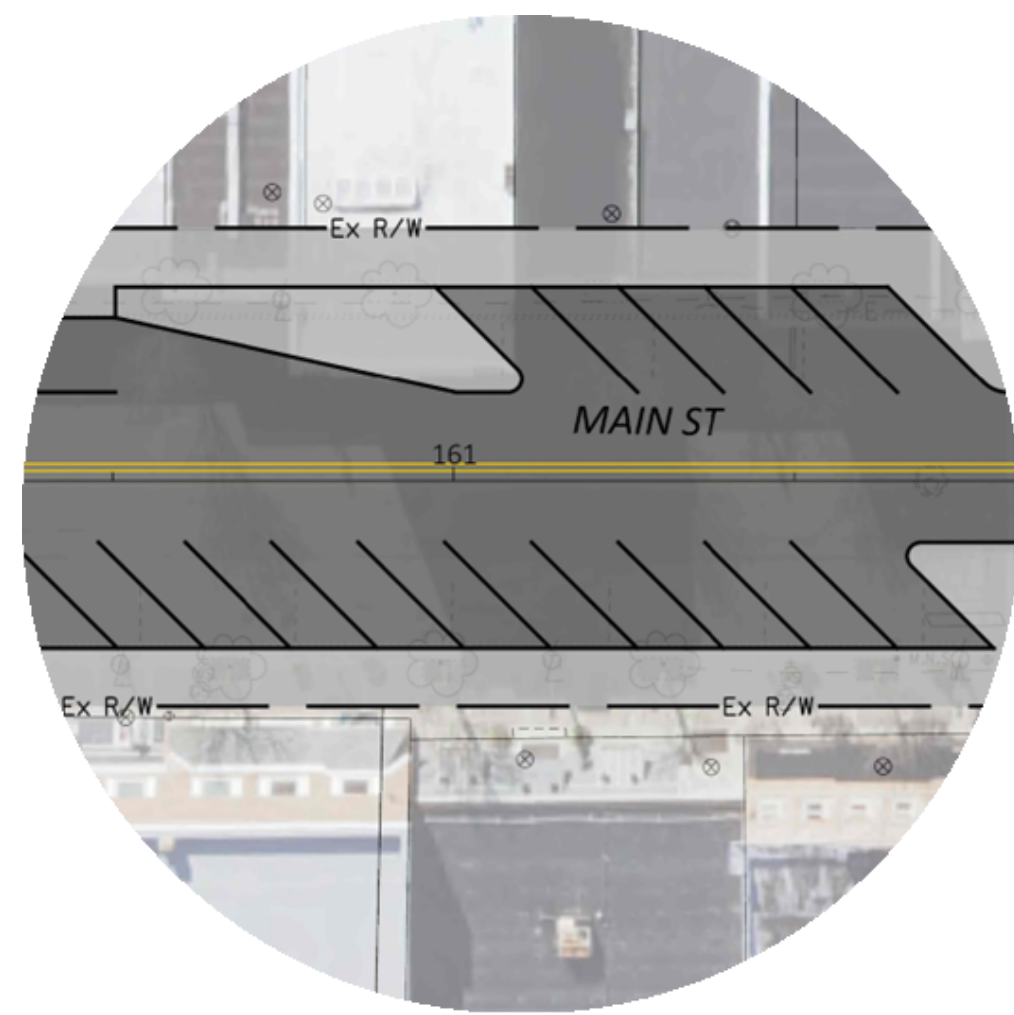


**CITY OF SYLVANIA - MAIN STREET IMPROVEMENTS
 EXISTING CONDITION**



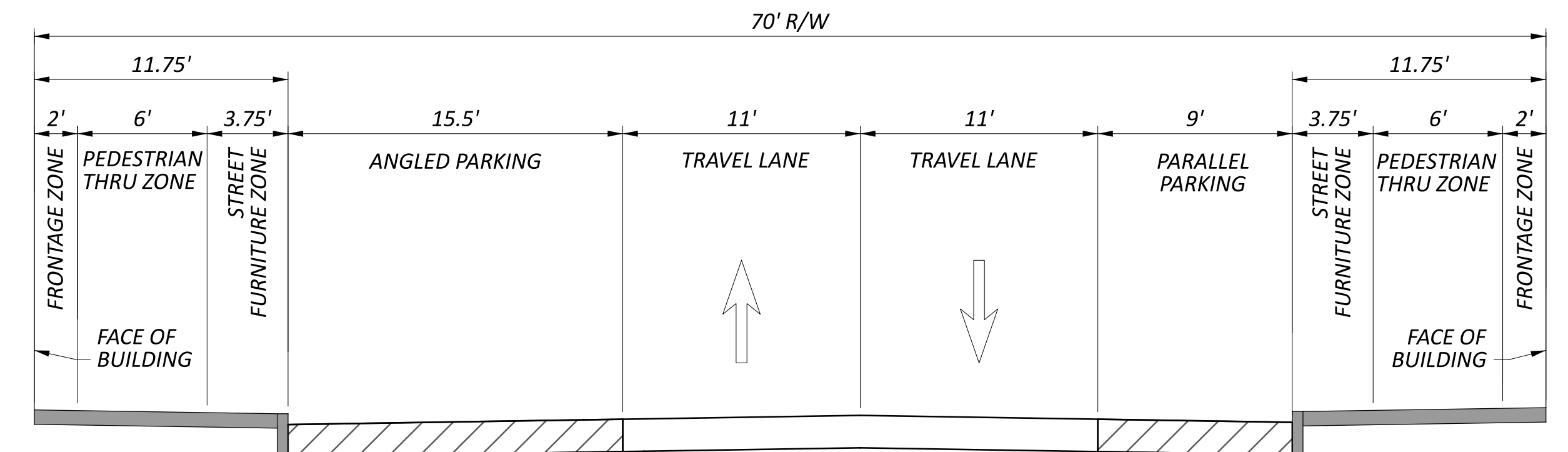
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DESIGNER	AMD
REVIEWER	SRC
PROJECT ID	08-10-22
SHEET	22114
TOTAL	1





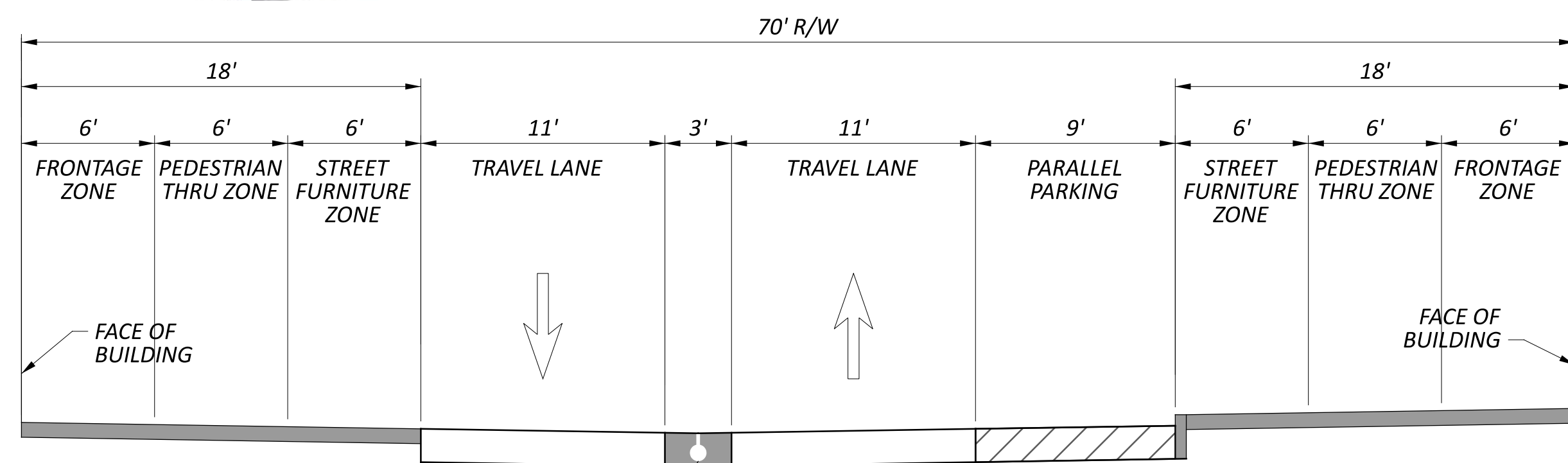
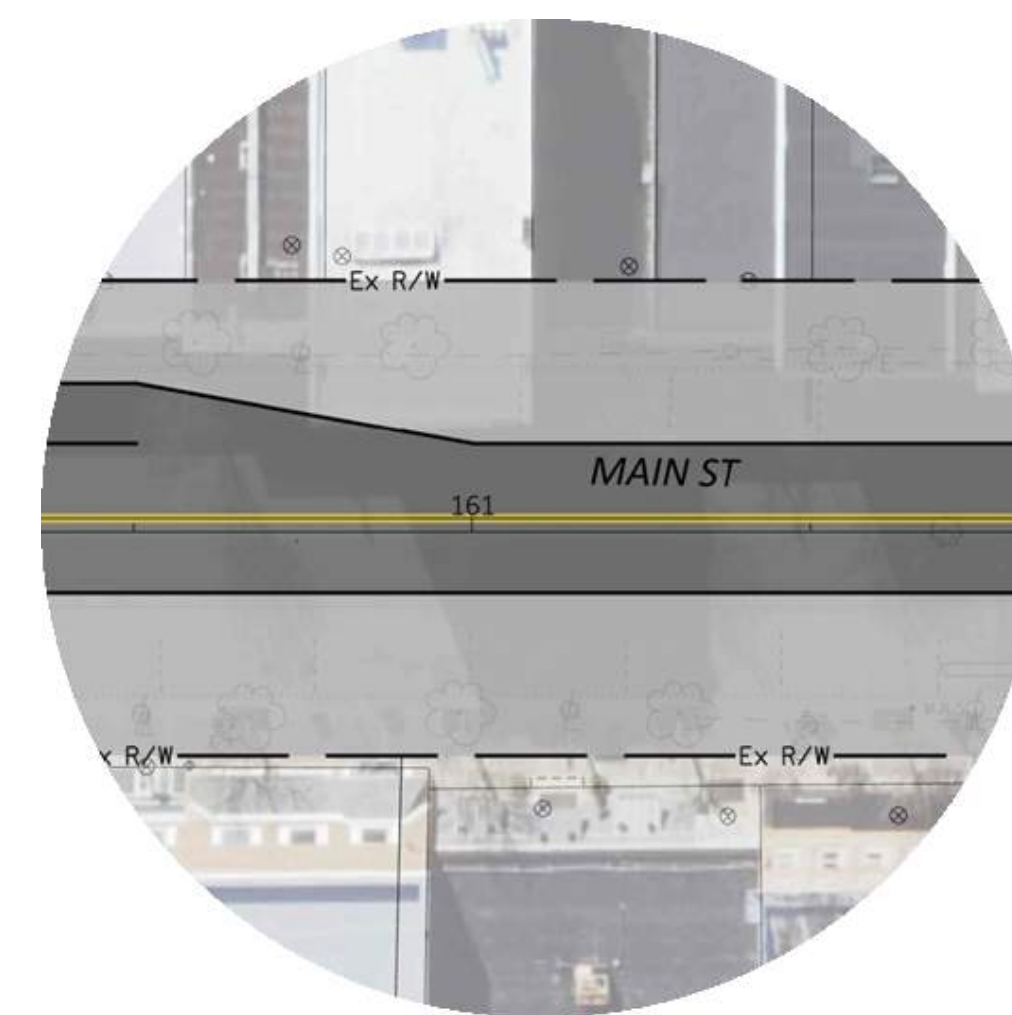
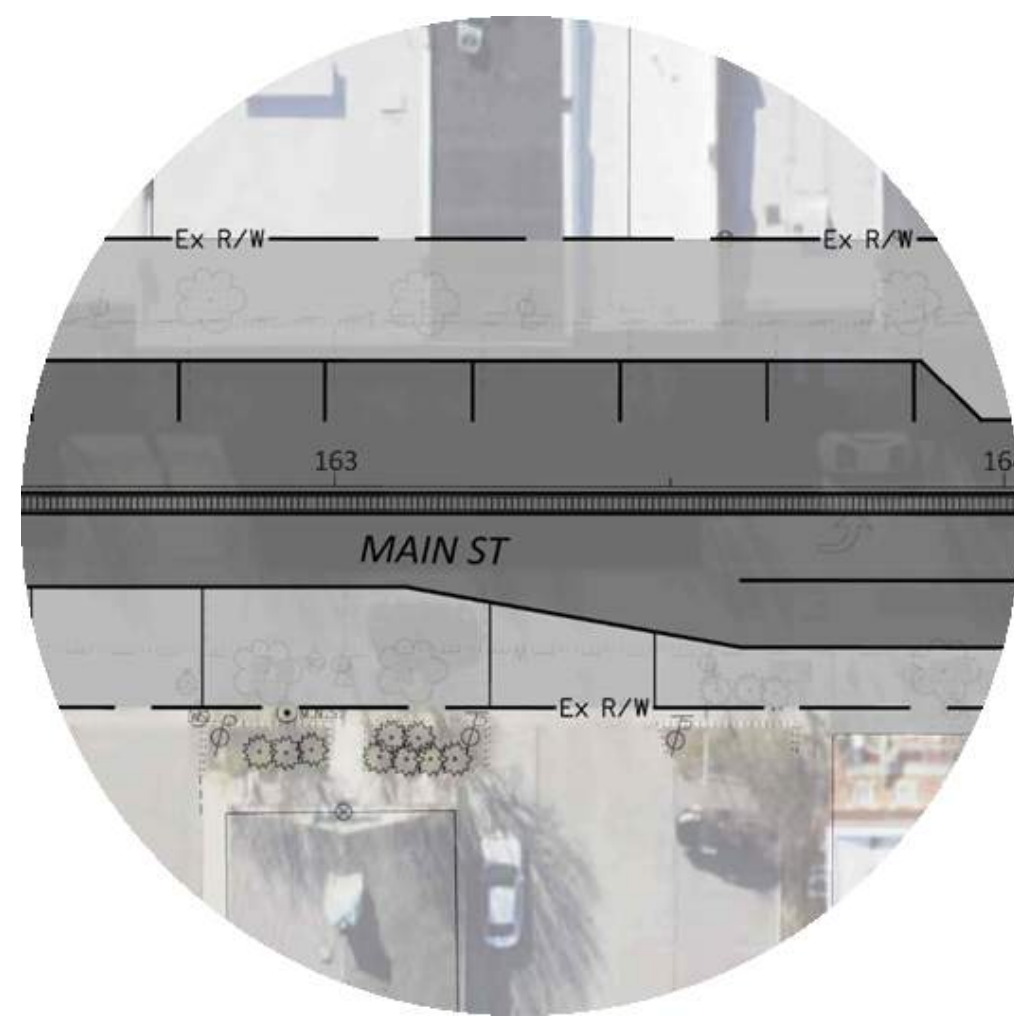
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ANGLED PARKING BOTH SIDES

CONCEPT D



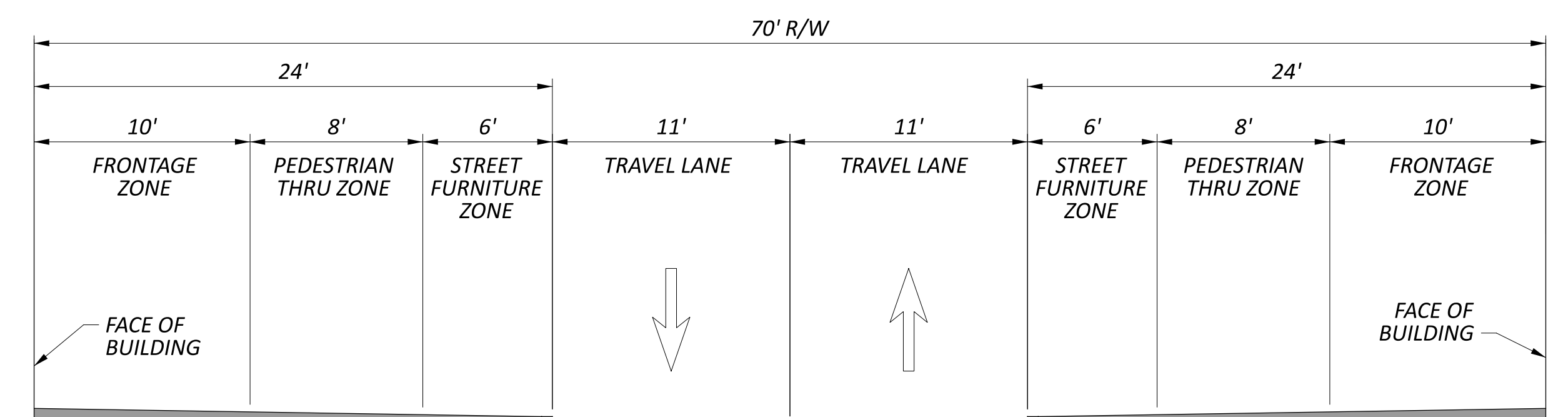
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PARALLEL AND ANGLED PARKING

CONCEPT E



CONCEPTUAL TYPICAL SECTION
NO CURB WITH MEDIAN SLOTTED DRAIN

CONCEPT F



CONCEPTUAL TYPICAL SECTION
NO PARKING

CONCEPT G

Sylvania Downtown Improvements – Main Street

Date September 13, 2022
Subject Initial Stakeholder Meeting – Summary of Comments
Project Number 22114

Initial Stakeholder Meeting Public Attendees: 42
Comment Forms Received: 15
Concept Feedback Forms Received: 8

This document contains a summary of comments and survey results received from the public comment forms. Forms were distributed at the initial stakeholder meeting and posted online for the above referenced project.

Category Ranking Results

The following public opinions are summarized from the rankings provided under Question 2 on the Comment form:

- Preference of parking over no parking.
 - Slight preference of angled parking over parallel parking.
 - Slight preference of string lights over streetlamps.
 - Slight preference of tables/seats over green space.
- Preference for corridor to be optimized for pedestrian use, with parking as second priority.
- High preference for the roadway to be uncurbed instead of having a standard 6" curb.
- Preference of the same number of trees. Very low preference for more trees.

Concept Feedback

These public opinions are summarized from the feedback provided on the Concept Feedback forms:

- Concept A (parallel both sides) had no strong positive and no negative feedback.
 - Concept B (parallel one side) would be favorable if sidewalk widths are equal on both sides. Some concern for which side of the street parking would be located.
 - Concept C (angled one side) is favorable to maximize parking. Some concern for which side of the street parking would be located. Some concern for angled parking.
- Concept D (angled parking both sides) is unfavorable since it reduces sidewalk widths.
 - Concept E (angled and parallel parking) is unfavorable since people find it confusing.
- Concept F (uncurbed) is favorable since it has an uncurbed roadway.
 - Concept G (no parking) is favorable if it were to provide a parking garage as well.

Comments

The following comments were provided on the Comment forms and Concept Feedback forms. The number of times it was mentioned by separate individuals is listed in parentheses.

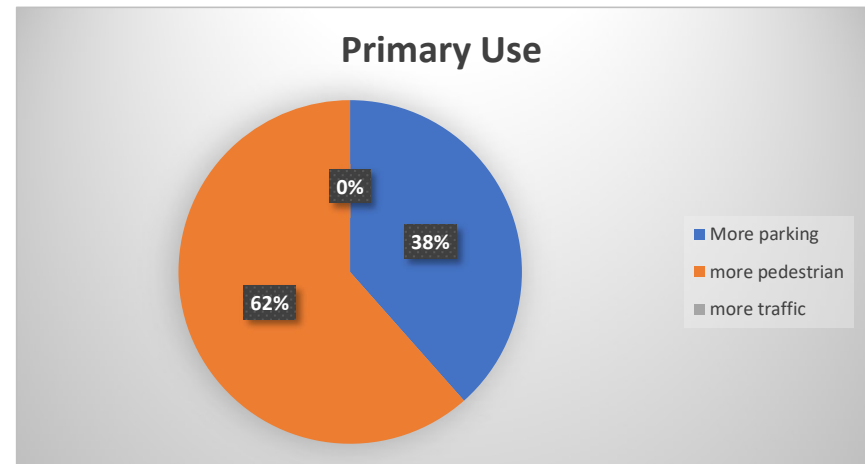
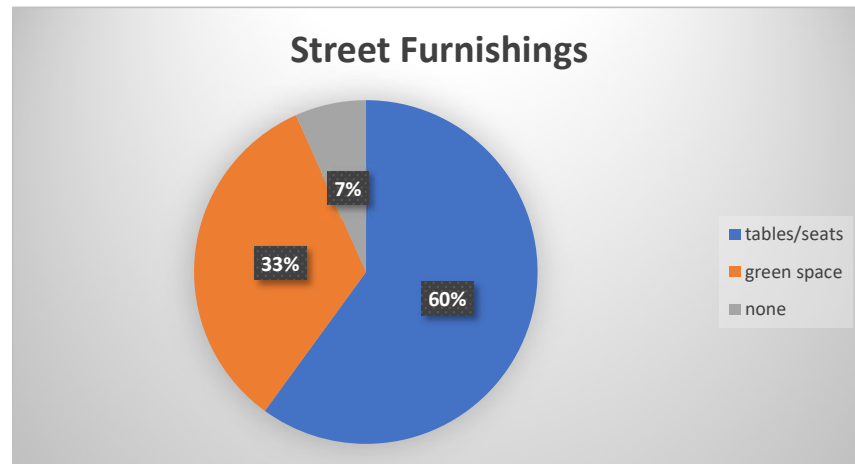
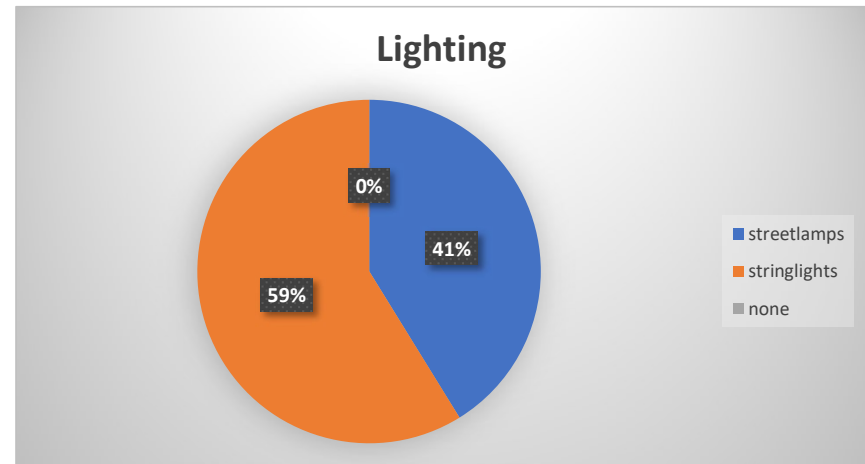
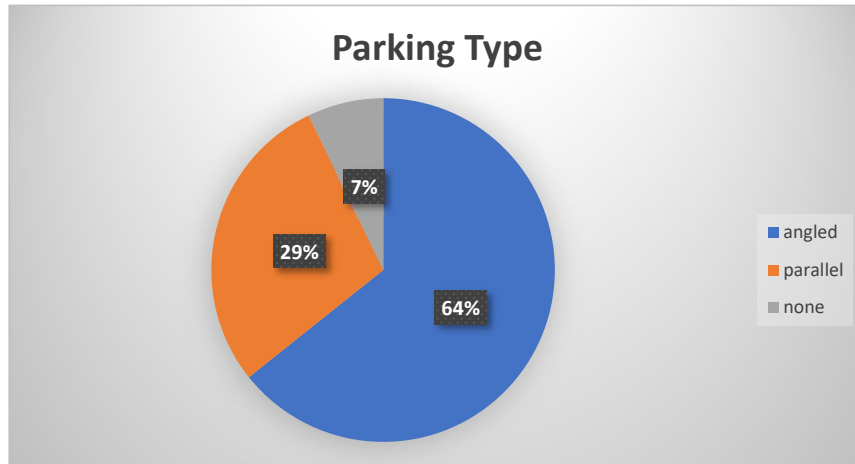
- Main Street from Monroe to Erie should be uniform (4)
- Corridor should be pedestrian-focused with larger sidewalks (4)
 - Parking garage (3)
 - Easy-to-view storefronts (3)
 - One-way traffic on Main Street (2)
- Slow down traffic (2)
- Raised mid-block crosswalk
 - Outlets should be provided for events
 - Prefer hanging baskets over large planters
 - Recycle bins should be provided
- No stamped concrete on sidewalks
- More seating and gathering space for DORA users
- Need equal sidewalk space on each side of street
- Utilize Maplewood between Main & Summit for downtown events

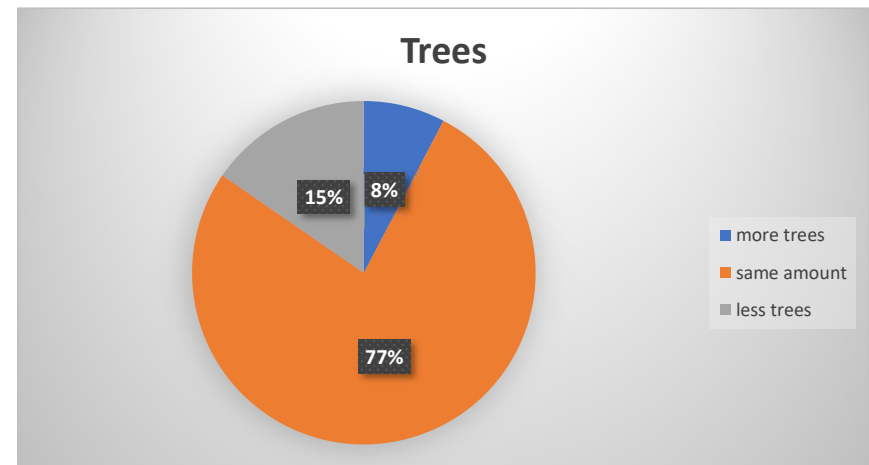
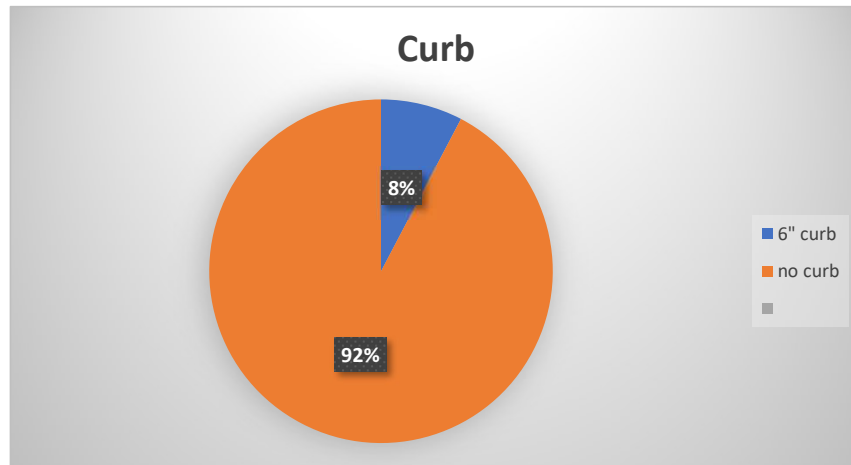
Conclusions

The following items are recommended to be implemented with the Main Street Improvements Project:

- Roadway with parallel parking on both sides but utilizing curb bump outs and permanent parklets to provide seating and pedestrian amenities. These features will encourage traffic calming and create a pedestrian-focused corridor.
- Wider sidewalks provided by reducing lane widths.
- Parking spaces on both blocks (from Monroe to Erie) to create uniformity and provide more parking.
- Roadway with no curbs or minimal height curbs.
- Raised mid-block crosswalk at or near the existing crosswalk location. Consider an additional location between Maplewood and Erie.
- Concrete sidewalks. Decorative concrete/pavers may be used outside of the pedestrian thru zone.
- More views for existing architecture and storefronts. Consider tree reduction and/or changing tree types.
- String lights and streetlamps along entire corridor.
- Tables and seats to accommodate DORA customers and people at downtown events.

END OF MEMO

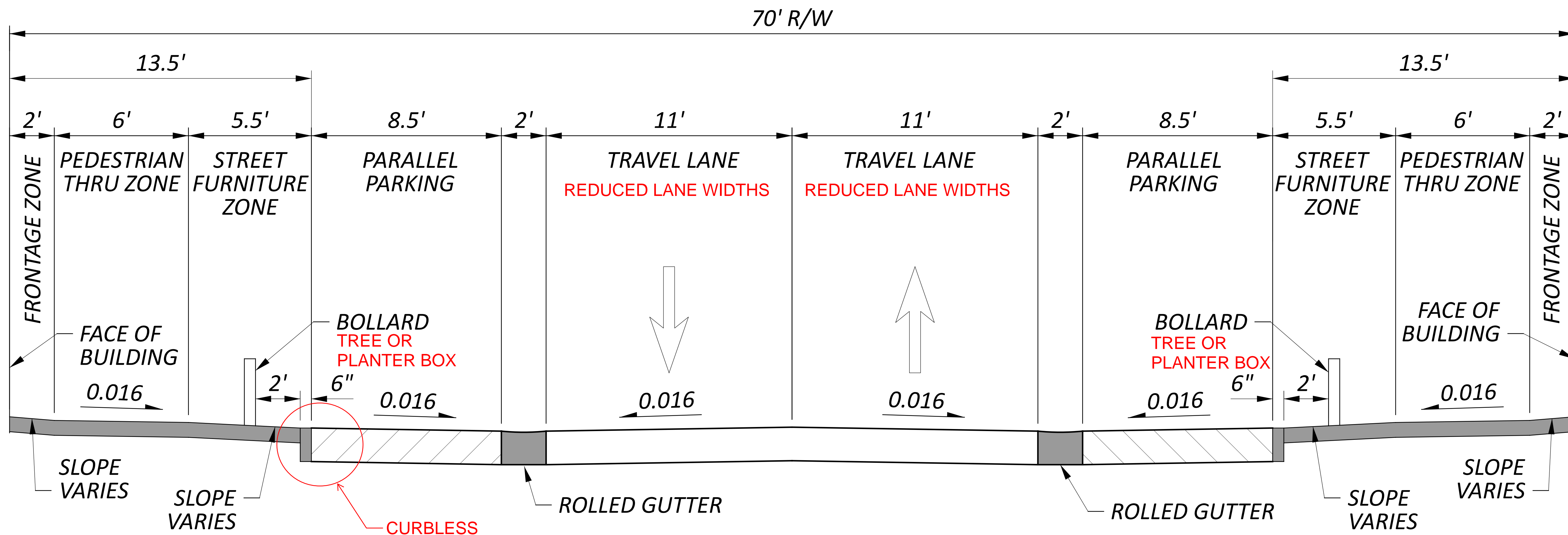




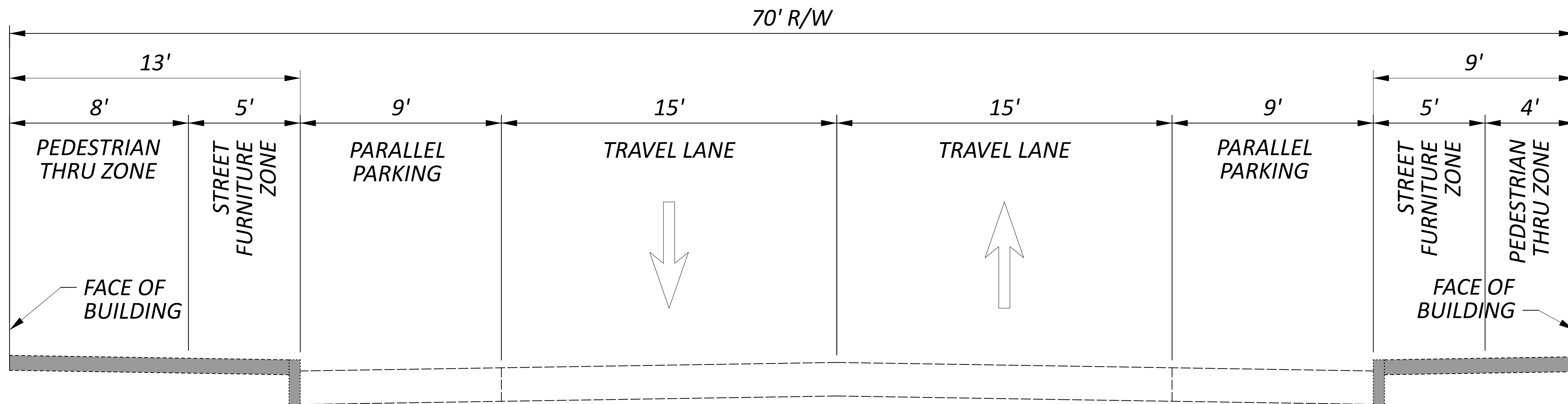
Downtown Transportation Improvements Project

Appendix B

Preliminary Design Plans



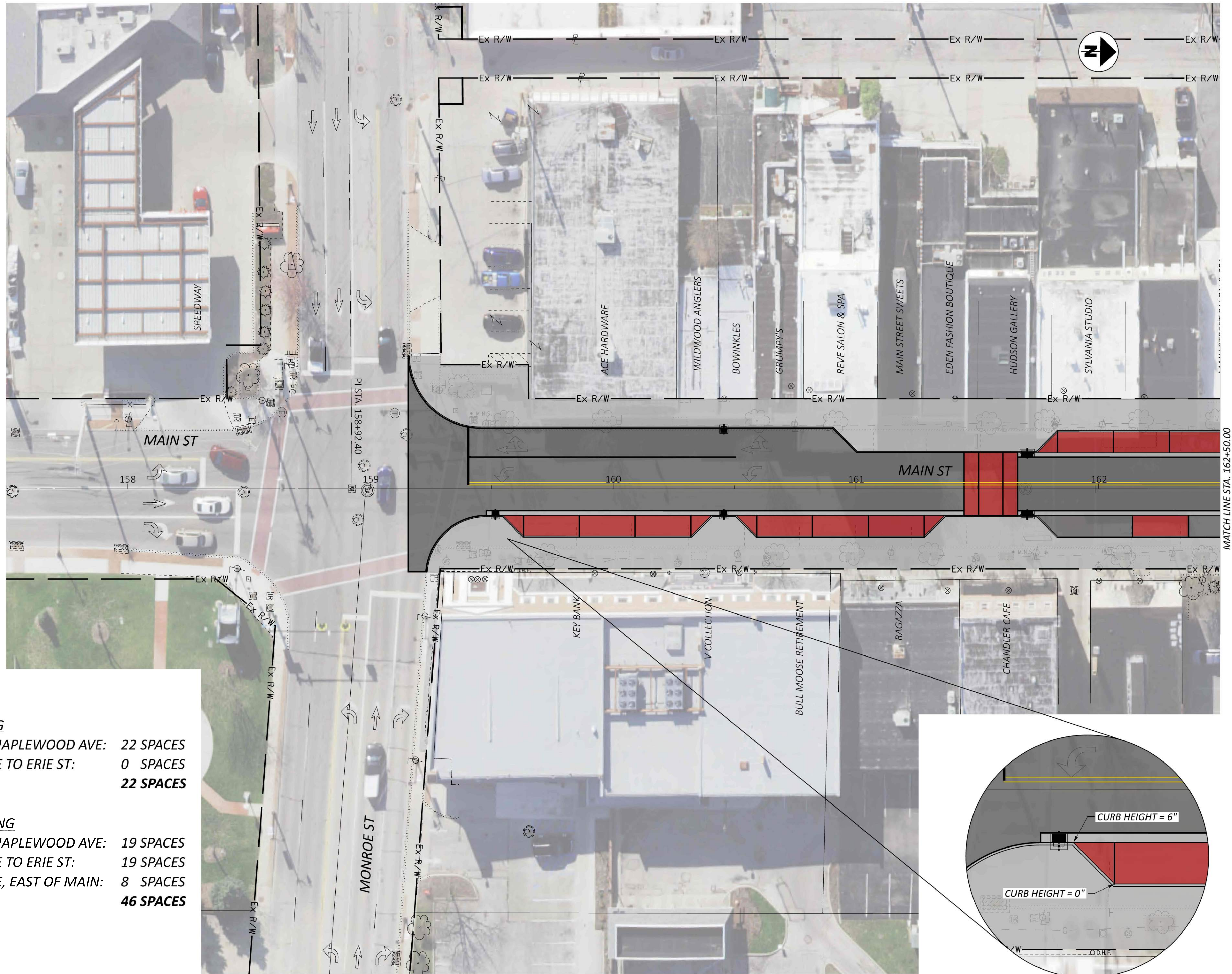
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 PARALLEL PARKING



EXISTING TYPICAL SECTION

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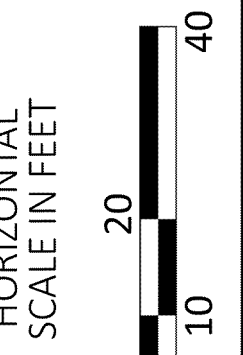
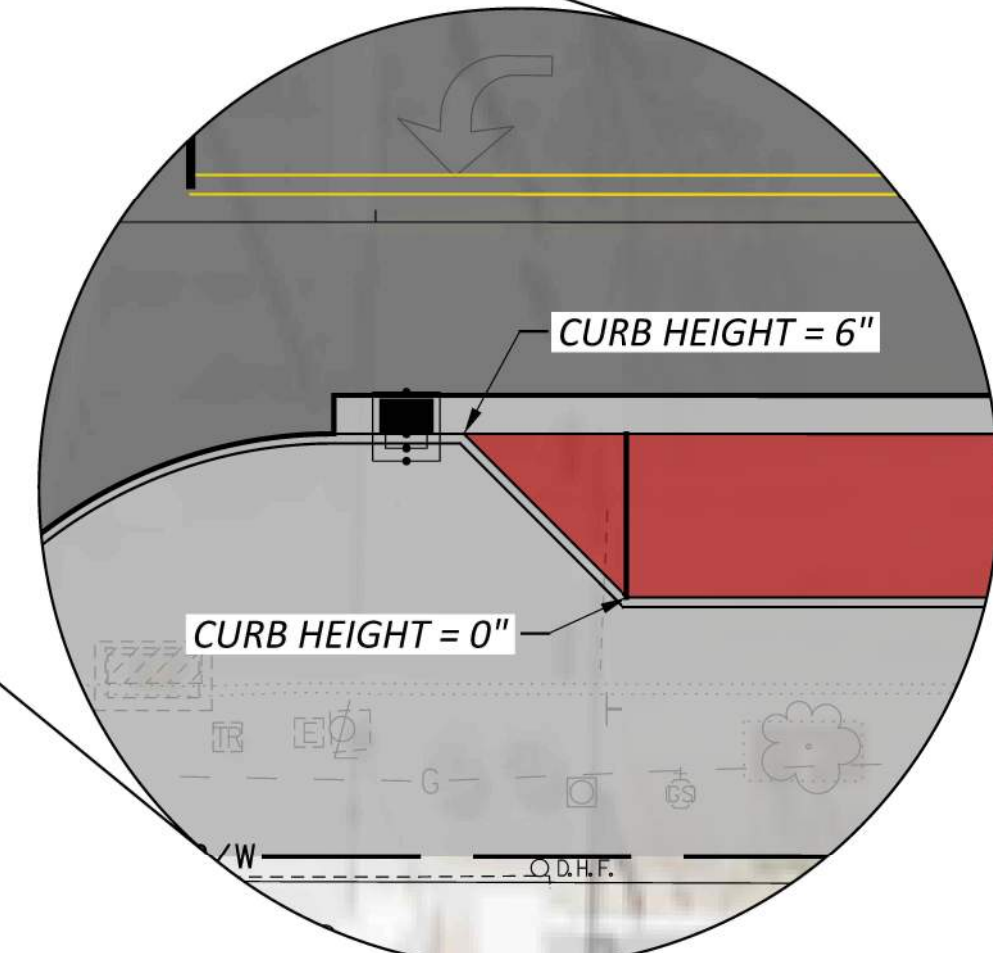


EXISTING PARKING

MONROE ST TO MAPLEWOOD AVE: 22 SPACES
 MAPLEWOOD AVE TO ERIE ST: 0 SPACES
TOTAL: 22 SPACES

PROPOSED PARKING

MONROE ST TO MAPLEWOOD AVE: 19 SPACES
 MAPLEWOOD AVE TO ERIE ST: 19 SPACES
 MAPLEWOOD AVE, EAST OF MAIN: 8 SPACES
TOTAL: 46 SPACES



CITY OF SYLVANIA - MAIN STREET IMPROVEMENTS PARKING CONCEPT A - PARALLEL PARKING

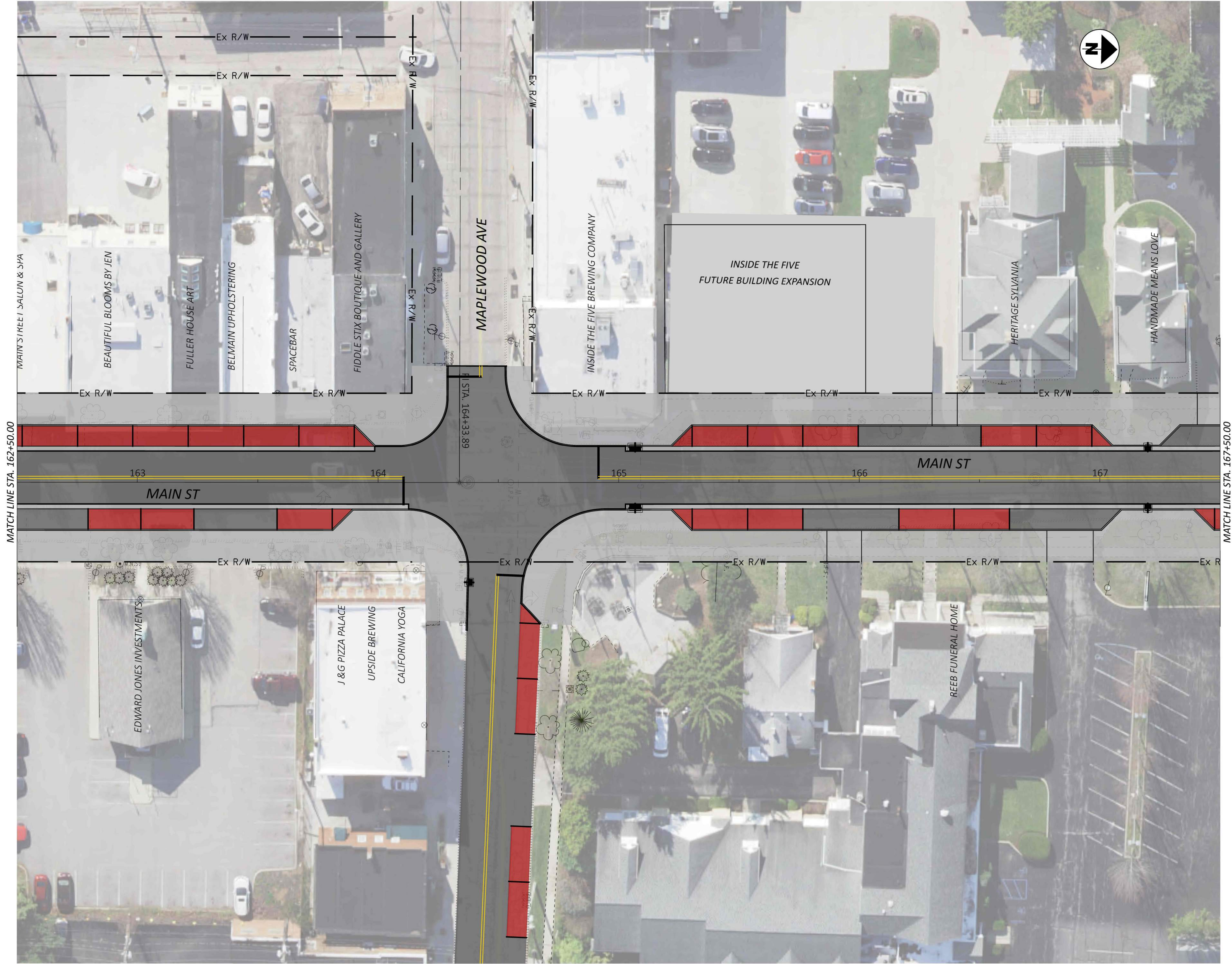
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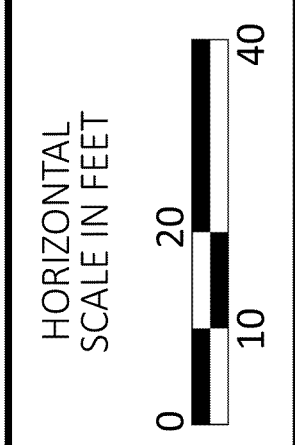
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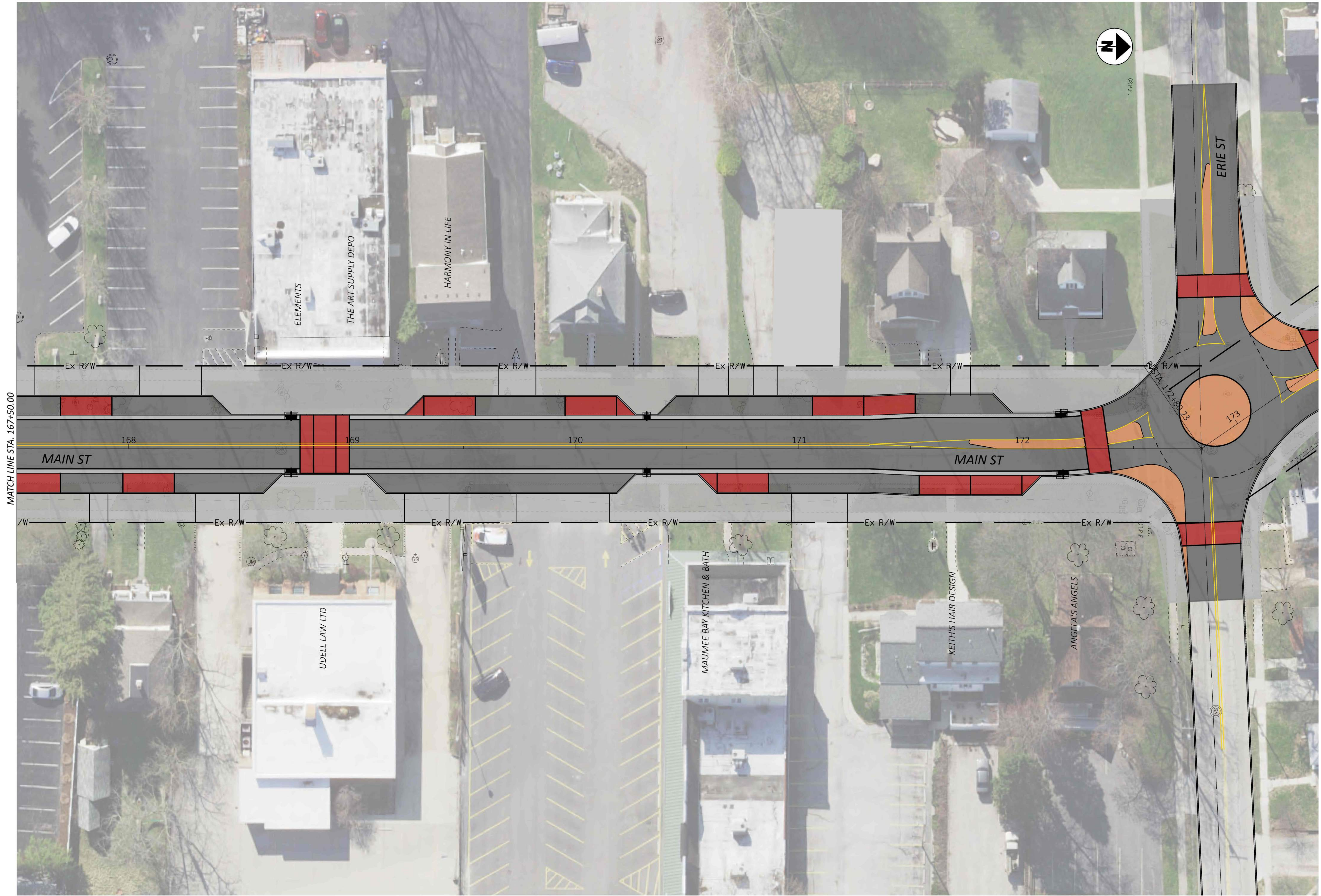
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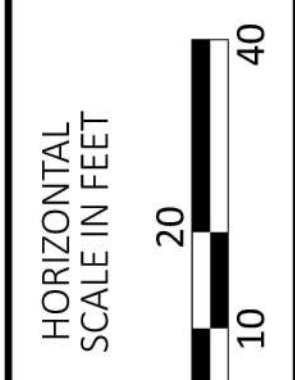
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MAIN STREET IMPROVEMENTS

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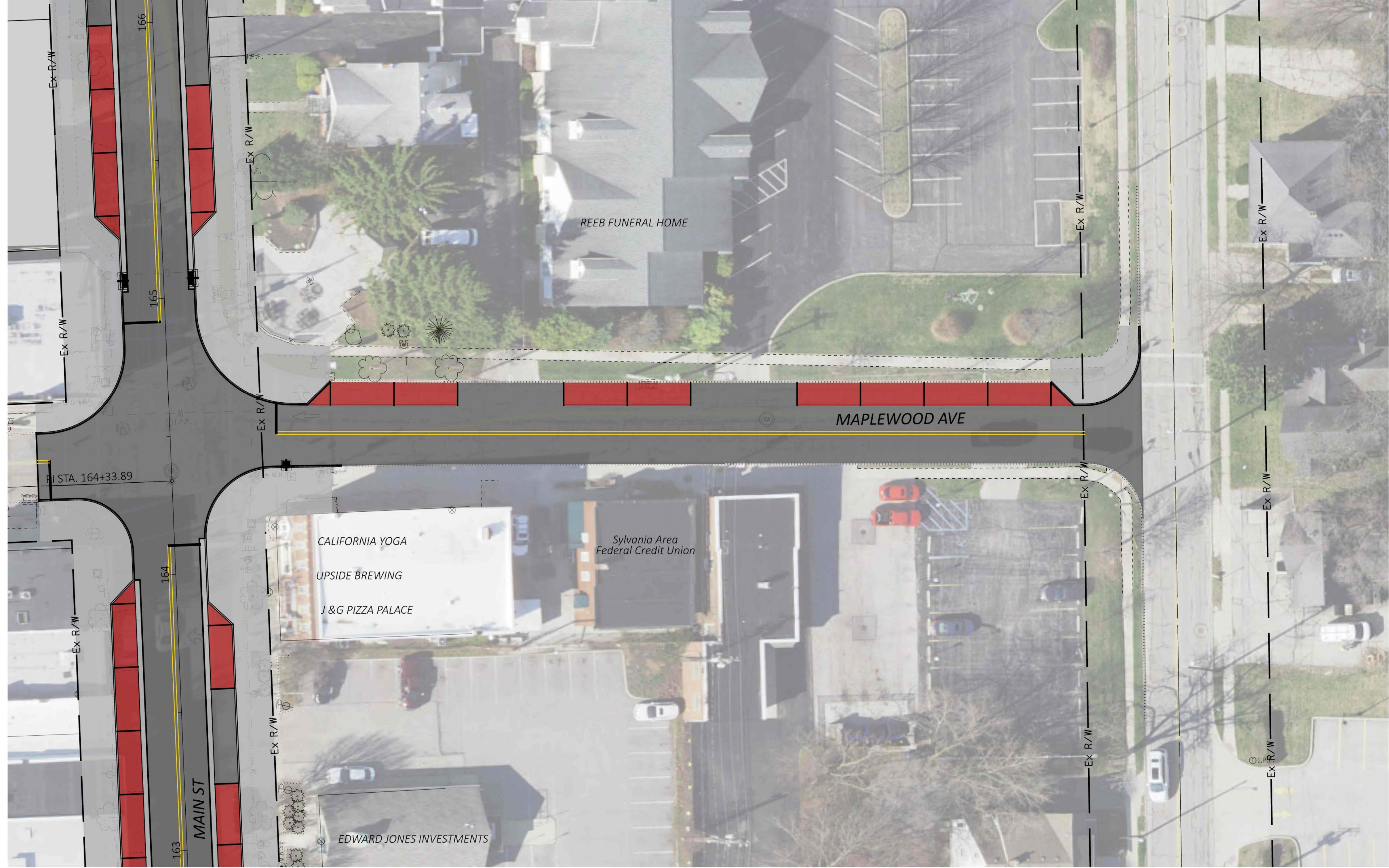
CITY OF SYLVANIA - MAIN STREET IMPROVEMENTS PARKING CONCEPT A - PARALLEL PARKING



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SHEET	TOTAL
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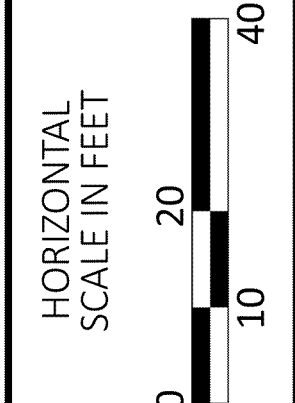
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SHEET	22114
P.5	TOTAL 5

CITY OF SYLVANIA - MAIN STREET IMPROVEMENTS MAPLEWOOD AVE PARKING



Downtown Transportation Improvements Project

Appendix C

Streetscape Renderings













City of Sylvania
Downtown Transportation Improvements Project

Appendix D
Estimated Construction Cost

Estimate 22114

Estimated Cost:\$5,519,940.23

Contingency: 11.00%

Estimated Total: \$6,127,133.66

Preliminary Cost Estimate for Sylvania Downtown Transportation Improvements

Base Date: 02/28/23

Spec Year: 19

Unit System: E

Work Type: ASPHALT

Highway Type:

Urban/Rural Type: URBAN CLASS

Season:

County: LUCAS

Latitude of Midpoint: 0

Longitude of Midpoint: 0

District:

Federal/State Project Number:

Prepared by DGL CONSULTING ENGINEERS on 02/13/23

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					
Group 0001: ROADWAY					
0001	201E11000 CLEARING AND GRUBBING	1.000	LS	\$5,000.00000	\$5,000.00
0002	201E20010 SPECIAL - TREE REMOVED, 4"-12"	28.000	EACH	\$280.00000	\$7,840.00
0003	201E21800 TREE REMOVED, 18"	6.000	EACH	\$406.91346	\$2,441.48
0004	202E23000 PAVEMENT REMOVED	6,922.960	SY	\$20.00000	\$138,459.20
0005	202E30000 WALK REMOVED	28,363.750	SF	\$1.48280	\$42,057.77
0006	202E32000 CURB REMOVED	2,807.280	FT	\$5.00000	\$14,036.40
0007	202E35100 PIPE REMOVED, 24" AND UNDER	824.000	FT	\$40.00000	\$32,960.00
0008	202E35100 PIPE REMOVED, 24" AND UNDER SANITARY	1,440.000	FT	\$40.00000	\$57,600.00
0009	202E35200 PIPE REMOVED, OVER 24"	1,000.000	FT	\$19.66399	\$19,663.99
0010	202E58000 MANHOLE REMOVED	2.000	EACH	\$683.28748	\$1,366.57
0011	202E58000 MANHOLE REMOVED SANITARY	5.000	EACH	\$700.00000	\$3,500.00
0012	202E58100 CATCH BASIN REMOVED	8.000	EACH	\$700.00000	\$5,600.00
0013	203E10000 EXCAVATION	1,200.000	CY	\$20.00000	\$24,000.00
0014	204E10000 SUBGRADE COMPACTION	7,762.780	SY	\$1.50000	\$11,644.17
0015	204E13000 EXCAVATION OF SUBGRADE	1,293.800	CY	\$20.00000	\$25,876.00
0016	608E10000 4" CONCRETE WALK	25,178.760	SF	\$8.50000	\$214,019.46

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
0017	608E15000 8" CONCRETE WALK AT ROUNDABOUT	5,779.450	SF	\$12.50000	\$72,243.13
0018	608E15000 8" CONCRETE WALK FOR DRIVES	4,679.990	SF	\$12.50000	\$58,499.88
0019	609E12000 COMBINATION CURB AND GUTTER, TYPE 2 CONCRETE GUTTER ONLY, ESTIMATED 75% COST OF CURB AND GUTTER	2,081.660	FT	\$21.95000	\$45,692.44
0020	609E26000 CURB, TYPE 6	1,708.000	FT	\$18.68839	\$31,919.77
0021	609E26000 CURB, TYPE 6 CONCRETE RIBBON, ESTIMATED 50% COST OF TYPE 6 CURB	1,567.670	FT	\$9.40000	\$14,736.10
0022	609E57000 8" CONCRETE TRAFFIC ISLAND	670.000	SY	\$125.00000	\$83,750.00

Total for Group 0001:\$912,906.36

Group 0002: DRAINAGE

0023	605E11100 6" SHALLOW PIPE UNDERDRAINS	2,650.000	FT	\$12.00000	\$31,800.00
0024	611E04400 12" CONDUIT, TYPE B	397.800	FT	\$125.00000	\$49,725.00
0025	611E05900 15" CONDUIT, TYPE B	186.400	FT	\$150.00000	\$27,960.00
0026	611E07400 18" CONDUIT, TYPE B	158.900	FT	\$175.00000	\$27,807.50
0027	611E08900 21" CONDUIT, TYPE B	152.920	FT	\$210.00000	\$32,113.20
0028	611E10400 24" CONDUIT, TYPE B	305.600	FT	\$250.00000	\$76,400.00
0029	611E13400 30" CONDUIT, TYPE B	243.770	FT	\$300.00000	\$73,131.00
0030	611E16400 36" CONDUIT, TYPE B	218.580	FT	\$325.00000	\$71,038.50

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
0031	611E98150 CATCH BASIN, NO. 3	8.000	EACH	\$3,761.95420	\$30,095.63
0032	611E98180 CATCH BASIN, NO. 3A	8.000	EACH	\$3,326.65621	\$26,613.25
0033	611E99574 MANHOLE, NO. 3	9.000	EACH	\$4,121.43464	\$37,092.91

Total for Group 0002:\$483,776.99

Group 0003: PAVEMENT

0034	254E01000 PAVEMENT PLANING, ASPHALT CONCRETE	776.360	SY	\$8.01141	\$6,219.74
0035	301E56000 ASPHALT CONCRETE BASE, PG64-22, (449)	840.000	CY	\$171.96614	\$144,451.56
0036	304E20000 AGGREGATE BASE	1,177.000	CY	\$65.00000	\$76,505.00
0037	407E10000 TACK COAT	698.260	GAL	\$2.25143	\$1,572.08
0038	441E70000 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	242.000	CY	\$278.46418	\$67,388.33
0039	441E70300 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	245.000	CY	\$213.96110	\$52,420.47
0040	690E98200 SPECIAL - BRICK PAVERS	20,003.240	SF	\$40.00000	\$800,129.60

Total for Group 0003:\$1,148,686.78

Group 0004: UTILITIES

0041	611E04400 12" CONDUIT, TYPE B SANITARY	1,440.000	FT	\$74.38312	\$107,111.69
<p>Note, trunk lines were lined in 2016. Laterals may be a candidate for cleanout and lining, thus reducing the Sanitary Cost.</p>					
0042	611E99574 MANHOLE, NO. 3 SANITARY	5.000	EACH	\$4,121.43464	\$20,607.17
0043	638E01204 8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 53, PUSH-ON JOINT S AND FITTINGS	1,545.250	FT	\$120.00000	\$185,430.00

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					
0044	638E05100 2" COPPER SERVICE BRANCH	1,520.000	FT	\$85.00000	\$129,200.00
0045	638E07490 8" GATE VALVE	3.000	EACH	\$4,000.00000	\$12,000.00
0046	638E10200 6" FIRE HYDRANT	5.000	EACH	\$11,000.00000	\$55,000.00
0047	638E10480 FIRE HYDRANT REMOVED	3.000	EACH	\$859.05976	\$2,577.18
Total for Group 0004:\$511,926.04					

Group 0005: TRAFFIC CONTROL

0048	630E99000 SPECIAL - SIGNS AND SUPPORTS	1.000	LS	\$12,000.00000	\$12,000.00
0049	632E90100 REMOVAL OF TRAFFIC SIGNAL INSTALLATION	2.000	EACH	\$2,957.73763	\$5,915.48
0050	642E00300 CENTER LINE, TYPE 1	0.710	MILE	\$2,312.85059	\$1,642.12
0051	642E00400 CHANNELIZING LINE, 8", TYPE 1	110.000	FT	\$1.34031	\$147.43
0052	642E00500 STOP LINE, TYPE 1	48.500	FT	\$4.57154	\$221.72
0053	642E00620 CROSSWALK LINE, 12", TYPE 1	648.400	FT	\$3.18765	\$2,066.87
Total for Group 0005:\$21,993.62					

Group 0006: LIGHTING

0054	625E10480 LIGHT POLE, DECORATIVE	33.000	EACH	\$10,000.00000	\$330,000.00
0055	625E75400 LIGHT POLE REMOVED	33.000	EACH	\$298.98486	\$9,866.50
0056	625E75500 LIGHT POLE FOUNDATION REMOVED	33.000	EACH	\$364.09675	\$12,015.19

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					

Total for Group 0006:\$351,881.69

Group 0007: INCIDENTALS

0057	614E11000	1.000	LS	\$100,000.00000	\$100,000.00
MAINTAINING TRAFFIC					
0058	623E10000	1.000	LS	\$30,000.00000	\$30,000.00
CONSTRUCTION LAYOUT STAKES AND SURVEYING					
0059	624E10000	1.000	LS	\$200,000.00000	\$200,000.00
MOBILIZATION					

Total for Group 0007:\$330,000.00

Group 0009: LANDSCAPE

0061	661E99000	1,256,956.000	LS	\$1.00000	\$1,256,956.00
SPECIAL - LANDSCAPING					

Total for Group 0009:\$1,256,956.00

Group 0010: CONTINGENCY

0060		1.000		\$501,812.74800	\$501,812.75
10% Contingency					

Total for Group 0010:\$501,812.75

Sylvania Downtown Streetscape

Date 2/16/2023
 Item Quantity Unit Unit Cost Total Cost

IMPROVEMENTS

Planter curb	3265	LF	\$25.00	\$81,625.00	
Brick pavers	Included in Roadway estimate	18,352.20	SF	\$30.00	\$0.00
Planter Pots	19	EA	\$500.00	\$9,500.00	
Benches	13	EA	\$2,500.00	\$32,500.00	
Tables and seating (public)	12	EA	\$6,000.00	\$72,000.00	
Litter Receptacles	12	EA	\$1,500.00	\$18,000.00	
Fence	65	LF	\$85.00	\$5,525.00	
Bike Rack (1 set is 3)	8	set	\$1,000.00	\$8,000.00	
Bollards	10	EA	\$250.00	\$2,500.00	
Masonry seat wall (18" hgt)	228	LF	\$1,000.00	\$228,000.00	
Underdrains	2463	LF	\$12.00	\$29,556.00	
Lighting	see Electrical Engineer			\$0.00	
Subtotal				\$487,206.00	

LANDSCAPE

Shade trees	77	EA	\$700.00	\$53,900.00
Plants	6,180	SF	\$20.00	\$123,600.00
Planting soil media	6,180	CY	\$90.00	\$556,200.00
Mulch	515	CY	\$70.00	\$36,050.00
Subtotal				\$769,750.00

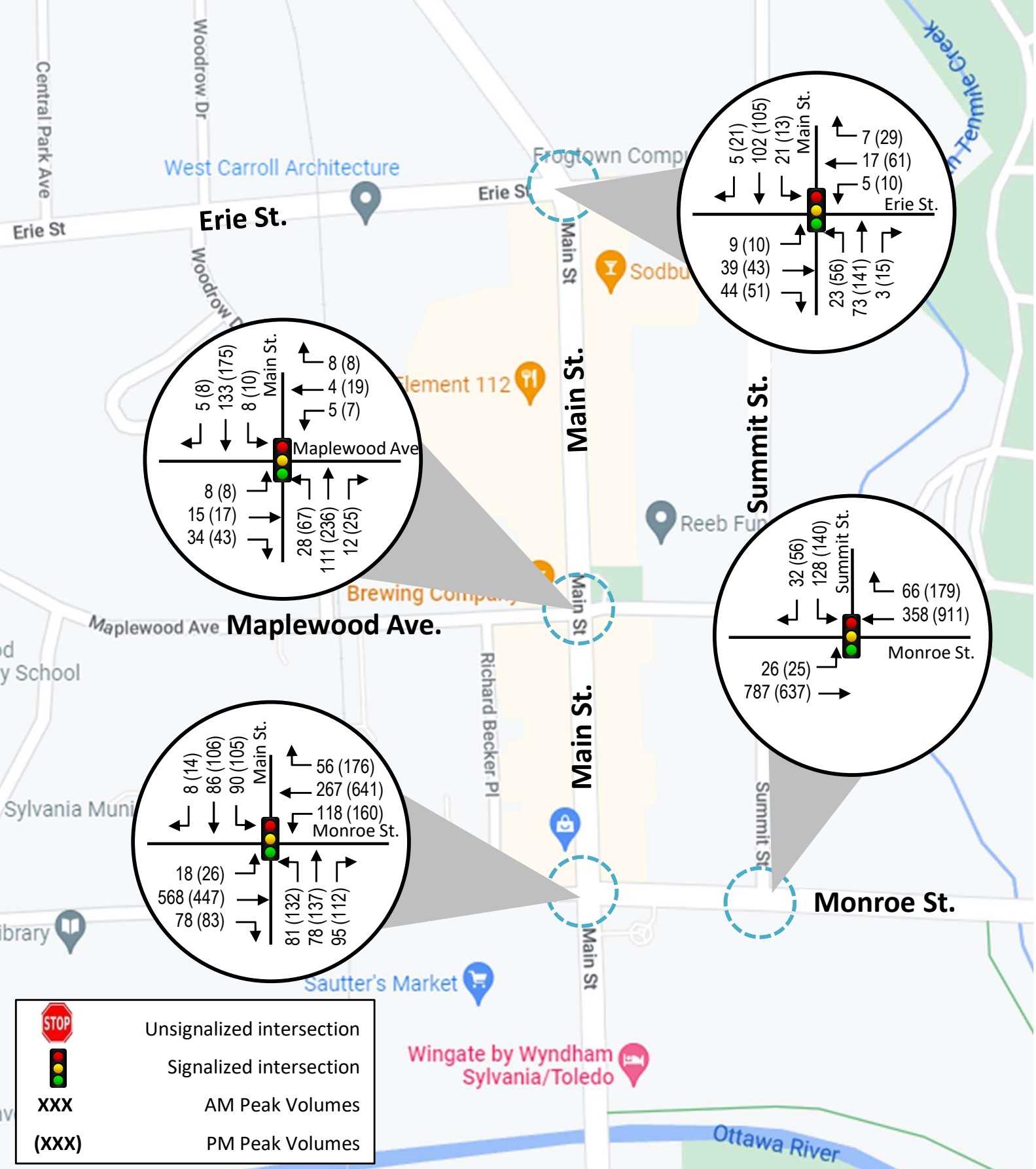
ESTIMATED SUBTOTAL	\$1,256,956.00
25% Contingency reduced to 10%	\$314,239.00
TOTAL CONSTRUCTION COST	\$1,571,195.00
11% INFLATED CONSTRUCTION COST	\$1,744,026.45

This estimated was calculated by EDGE and inserted into the overall estimate. See Group 9 - Landscape.

Downtown Transportation Improvements Project

Appendix E

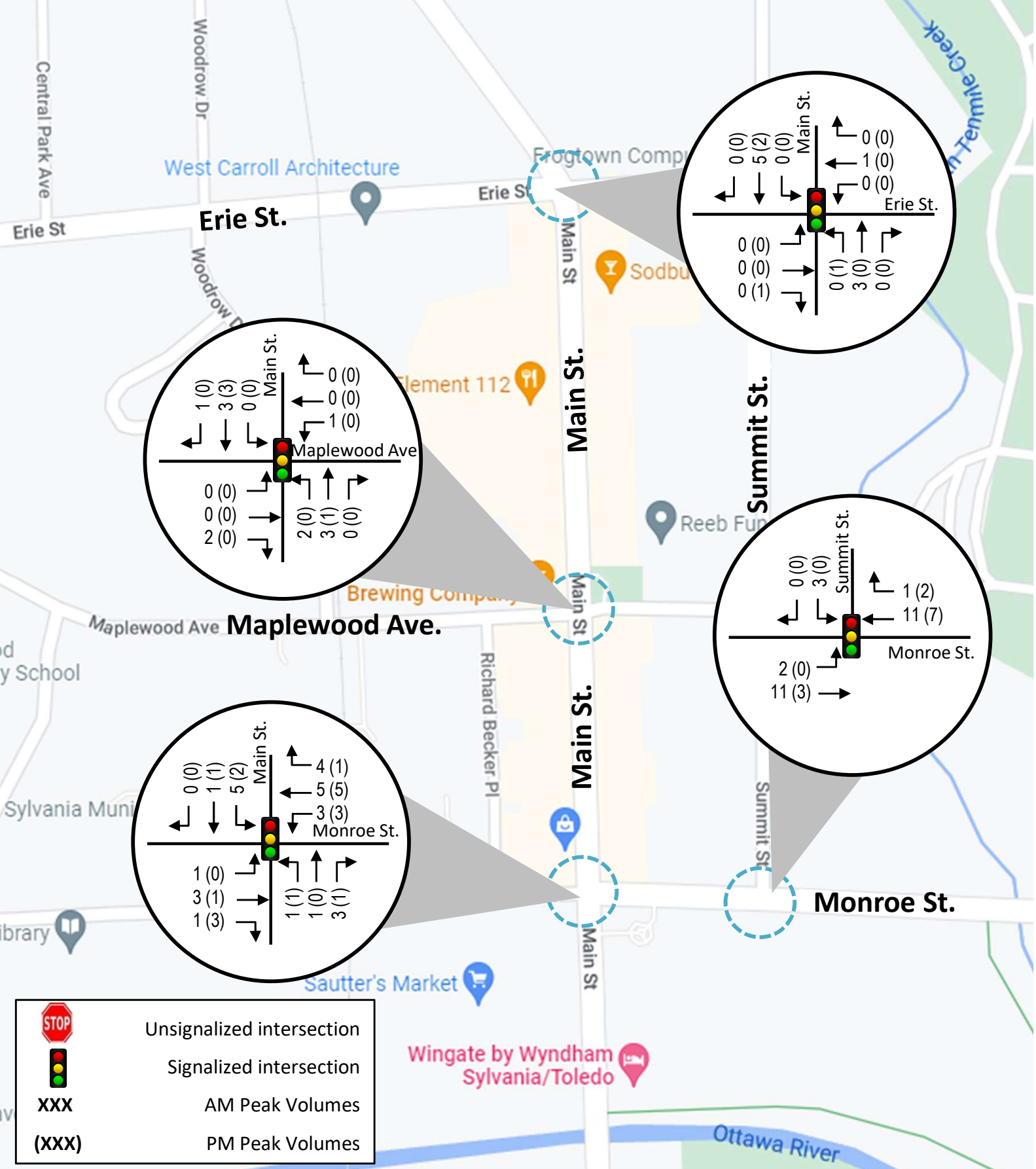
2022 Collected Traffic Data



**DOWNTOWN IMPROVEMENTS
CITY OF SYLVANIA**

2022 COLLECTED
TRAFFIC DATA





	Unsignalized intersection
	Signalized intersection
XXX	AM Peak Volumes
(XXX)	PM Peak Volumes



**DOWNTOWN IMPROVEMENTS
CITY OF SYLVANIA**

2022 COLLECTED TRUCK
TRAFFIC DATA



STUDY AND ANALYSIS INFORMATION

Municipality:	Sylvania	Traffic Volumes Obtained By:	DGL Consulting Engineers
County:	Lucas	Analysis Date:	12/21/2022
ODOT Engineering District:	2	Agency/ Company Name Performing Warrant Analysis:	DGL Consulting Engineers

Analysis Information

Data Collection Date: 7/20/2022
Day of the Week: Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: Yes

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: Main Street

Major Street Approach Direction: N-Bound
S-Bound

Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

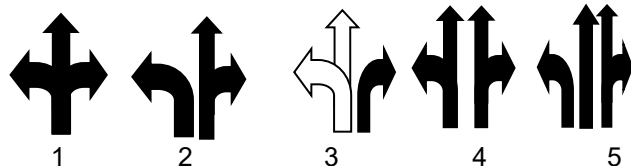
Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
 *Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Erie Street

Minor Street Approach Configuration:

1	E-Bound
1	W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: No

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant		Notes and Comments:			
	Applicable?	Satisfied?				
Warrant 1, Eight-Hour Vehicular Volume	Yes	No				
Warrant 2, Four-Hour Vehicular Volume	Yes	No				
Warrant 3, Peak Hour	Yes	No	Signals installed under Warrant 3 should be traffic actuated. <table border="1" style="float: right; margin-top: 10px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">4:15 PM</td></tr> <tr><td style="text-align: center;">5:15 PM</td></tr> </table>	Peak Hour	4:15 PM	5:15 PM
Peak Hour						
4:15 PM						
5:15 PM						
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)						
Warrant 4, Pedestrian Volume	Yes	No	If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. <table border="1" style="float: right; margin-top: 10px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">4:00 PM</td></tr> <tr><td style="text-align: center;">5:00 PM</td></tr> </table>	Peak Hour	4:00 PM	5:00 PM
Peak Hour						
4:00 PM						
5:00 PM						
Warrant 5, School Crossing	No		N/A			
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.			
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9			
Multi-Way Stop Warrant	Yes	No	May be used as an interim measure if traffic signal warrants are satisfied.			

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

- If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
 2. According to TEM 402-2, if the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
 3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Retain Existing Traffic Signal

Notes:

STUDY AND ANALYSIS INFORMATION

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Major Street Approach Direction: N-Bound
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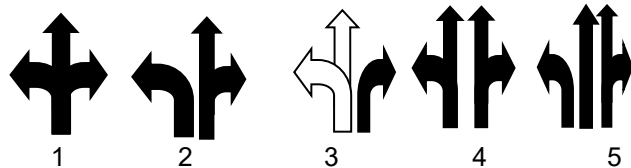
Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
 *Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Maplewood Ave

Minor Street Approach Configuration:

1	E-Bound
1	W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: No

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

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