

Date: October 30, 2019

Technical Memorandum

To: Sarah Beck, Project Manager
Bear Development, LLC

From: Michael May, P.E. PTOE

cc List:

Subject: Frame Park Commons – Driveway Design & Vision Corners
City of Waukesha, Wisconsin

PART A – INTRODUCTION

Frame Park Commons is proposed to be located along both sides of White Rock Avenue to the south of Moreland Boulevard. A preliminary site plan is shown in [Exhibit 1](#). This technical memorandum has been prepared to provide guidance on the location and width of driveways proposed for Frame Park Commons, as well as illustrate and opine on vision corners in the study area.

PART B – STUDY AREA

White Rock Avenue is an undivided north/south two-lane street with a posted speed limit of 25 mph. Sidewalks exist along both sides of the street. The Wisconsin Department of Transportation estimates the Year 2018 average annual daily traffic (AADT) volume on White Rock Avenue was 7,200 vehicles per day (vpd).

Elm Street is an undivided east/west two-lane undivided dead-end street that intersects White Rock Avenue from the west. Sidewalks exist along the north side of the street. AADT volumes are not available on Elm Street, though with one small, low-traffic generating business and few homes the street does not carry substantial traffic.

Niagara Street is an undivided east/west two-lane undivided street with a posted speed limit of 25 mph that intersects White Rock Avenue from the east. Sidewalks exist along the north side of the street. AADT volumes are not available on Niagara Street. The street provides access to a residential neighborhood.

Eales Avenue is an undivided east/west two-lane undivided street with a posted speed limit of 25 mph that terminates as a dead-end immediately north of the proposed Frame Park Commons. AADT volumes are not available on Eales Avenue but are expected to be negligible at the dead end.

A traffic count was collected at Moreland Boulevard and White Rock Avenue in December of 2017. The existing peak hour traffic volumes are shown in [Exhibit 2](#). The full traffic count is included in [Appendix A](#).

PART C – PROPOSED DRIVEWAYS

CI. Driveway Descriptions & Trip Generation

Frame Park Commons is proposed to have four driveways. TADI is labeling the driveways “A” through “D” for reference.

- Driveway A: Driveway to the surface lot located along Elm Street with the centerline of the driveway to be located approximately 95-feet west of the stop line of Elm Street to White Rock Avenue.
- Driveway B: Driveway to the covered lot located along Elm Street with the centerline of the driveway to be located approximately 45-feet west of the stop line of Elm Street to White Rock Avenue.
- Driveway C: Driveway to the surface lot located along Niagara Street with the centerline of the driveway to be located approximately 115-feet east of the stop line of Elm Street to White Rock Avenue.
- Driveway D: One driveway to the surface located along Eales Avenue.

A trip generation for Frame Park Commons was prepared using the Institute of Transportation Engineers *Trip Generation Manual, 10th Edition*. The trip distribution, or where trips are expected to come and go from Frame Park Commons, was estimated based on existing traffic counts at Moreland Boulevard & White Rock Avenue. The trip generation and distributions are shown below. Volumes are rounded to the nearest 5 vehicles. A volume of zero does not mean no traffic – these values mean volumes are expected to be negligible.

Frame Park Commons Trip Generation

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Frame Park Commons	220	72 Units	500 FCE	10 (23%)	25 (77%)	35 FCE	30 (63%)	15 (37%)	45 FCE
Total Development Trips			500	10	25	35	30	15	45
<i>Building A (52 Units):</i>			360	5	20	25	20	10	30
<i>Building B (20 Units):</i>			140	5	5	10	10	5	15

FCE: Fitted Curve Equation

Trip Distribution, Building A

West on Moreland	45%	160	5	10	10	5
East on Moreland	35%	130	0	5	5	5
North on White Rock	0%	0	0	0	0	0
South on White Rock	15%	50	0	5	5	0
East on Niagara	5%	20	0	0	0	0
	100%	360	5	20	20	10

Trip Distribution, Building B

West on Moreland	45%	60	0	0	5	0
East on Moreland	35%	50	5	5	5	0
North on White Rock	0%	0	0	0	0	0
South on White Rock	15%	30	0	0	0	5
East on Niagara	5%	0	0	0	0	0
	100%	140	5	5	10	5

The volumes were assigned to the study area intersections and driveways. As shown in [Exhibit 3](#), the driveways are expected to service low volumes.

C2. Driveway Widths

All four driveways were checked to ensure turning templates for passenger vehicles (P-vehicles) are accommodated. With the exception of Driveway B, turning templates for a 40-foot long single-unit truck (SU-vehicle) were also checked to ensure refuse trucks and long moving vehicles can enter/exit the site. Driveway B was not checked for an SU-vehicle because the covered parking will service P-vehicles only. The turning templates are included in [Appendix B](#). Based on the results of the turning templates, the following driveway widths are recommended.

- Driveway A: 26-feet face-of-curb to face-of-curb
- Driveway B: 24 feet face-of-curb to face-of-curb
- Driveway C: 24 feet face-of-curb to face-of-curb
- Driveway D: 24 feet face-of-curb to face-of-curb

C3. Driveway Placement

Elm Street functions as a short dead-end street with a design speed of 25 mph or less. With a design speed of 25 mph the minimum driveway separation from White Rock Avenue is 75-feet (upstream functional area). Though ideally Driveway B would not exist in order to satisfy this distance, the street segment is short, carries very little other volume, and is very unlikely to be extended to cross over the railroad in the future. Therefore, the driveway spacing along Elm Street as shown in the preliminary site plan is expected to be sufficient for conditions on Elm Street.

Niagara Street functions with a posted speed limit of 25 mph and a design speed of 30 mph. With a design speed of 30 mph the minimum driveway separation from White Rock Avenue is 105-feet or more (upstream functional area). The driveway spacing along Niagara Street as shown in the preliminary site plan is expected meet or exceed this distance and be sufficient.

The driveway location along Eales Avenue is at the dead-end of the street with no other nearby commercial driveways. The driveway spacing along Eales Avenue as shown in the preliminary site plan is expected to be sufficient.

PART D – VISION CORNERS

D1. Railroad Vision Corner

Wisconsin Statutes § 195.29(6) states:

... Every municipality shall keep the public highways within its jurisdiction clear of brush and shall adequately trim all trees within 330 feet of the center of any railroad highway grade crossing. Every person or corporation owning or occupying any land adjacent to any railroad highway grade crossing shall keep all brush cut and adequately trim all trees on the land within the triangles bounded on 2 sides by the railway and the highway, and on the 3rd side by a line connecting points on the center lines of the railway and the highway, 330 feet from the intersection of the center lines. ...

A diagram showing a 330-foot x 330-foot vision corner for the railroad crossing of Moreland Boulevard, west of White Rock Avenue, is shown in [Exhibit 4](#). Note that this statute does not appear to prohibit structures or landscaping within the vision corner. The statute stipulates that brush be cut and trees adequately trimmed within the vision corner.

D2. Street Intersection Vision Corners

The City of Waukesha RMC 22.53(1) stipulates that “In all districts, no structures, fences, or vegetation shall be permitted on a corner lot within twenty (20) feet of the point of intersection of right-of-way lines (the “corner”) which obstructs or interferes with traffic visibility.”

Diagrams of the vision corners for Elm Street, Niagara Street, and Moreland Boulevard & White Rock Avenue are shown in Exhibits 5A and 5B. It is recommended that nothing within the vision corners be allowed to exceed 30-inches in height.

D3. Summary of Vision Corners

It is recommended that the site plan be verified by the civil engineer/designer and that a notation of the vision corners be made on the final site plan.

PART E – CONCLUSION

The proposed Frame Park Commons is expected to be a low traffic generator (fewer than 100 trip ends in each peak hour) and is not expected to create an adverse traffic impact to the study area.

Should any questions or comments arise, please feel free to contact Michael May, P.E. PTOE of TADI at 414-807-1912 or mmay@tadi-us.com.



PROJECT DATA		UNITS		PARKING PROVIDED		RATIOS	
BLDG	STORIES	1BR	2BR	TOTAL	COVERED	SURFACE	TOTALS
A	4	27	22	49	42	58	1.92 / U
B	2	11	9	20	10	29	1.95 / U
TOTAL		38	31	69	52	87	1.93 / U
TOTAL		40%	44%	33%	21%		



FRAME PARK COMMONS
CONCEPTUAL MASTERPLAN

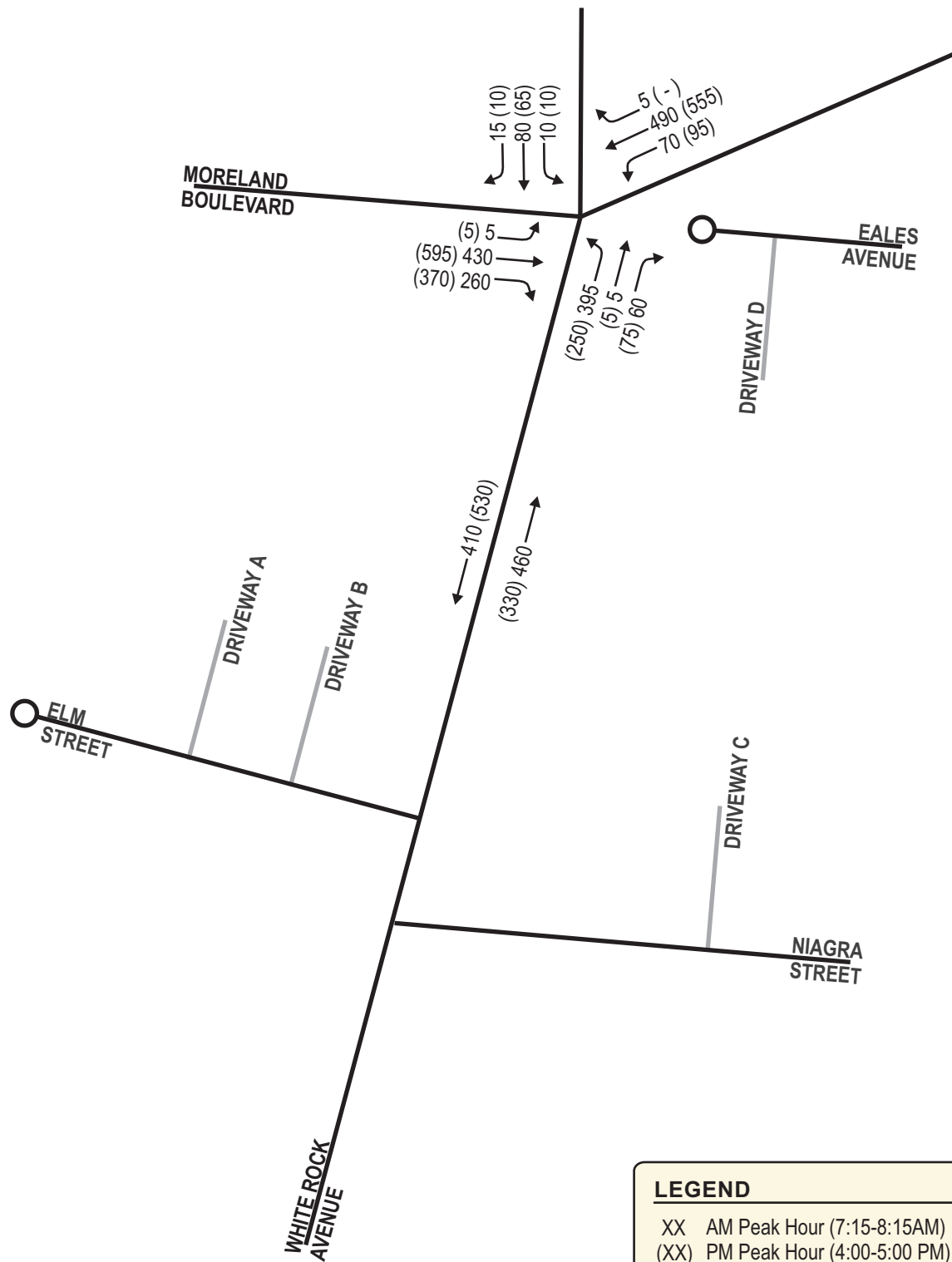
SEPT 17, 2019
1"=60' @ 11x17



NOT TO SCALE

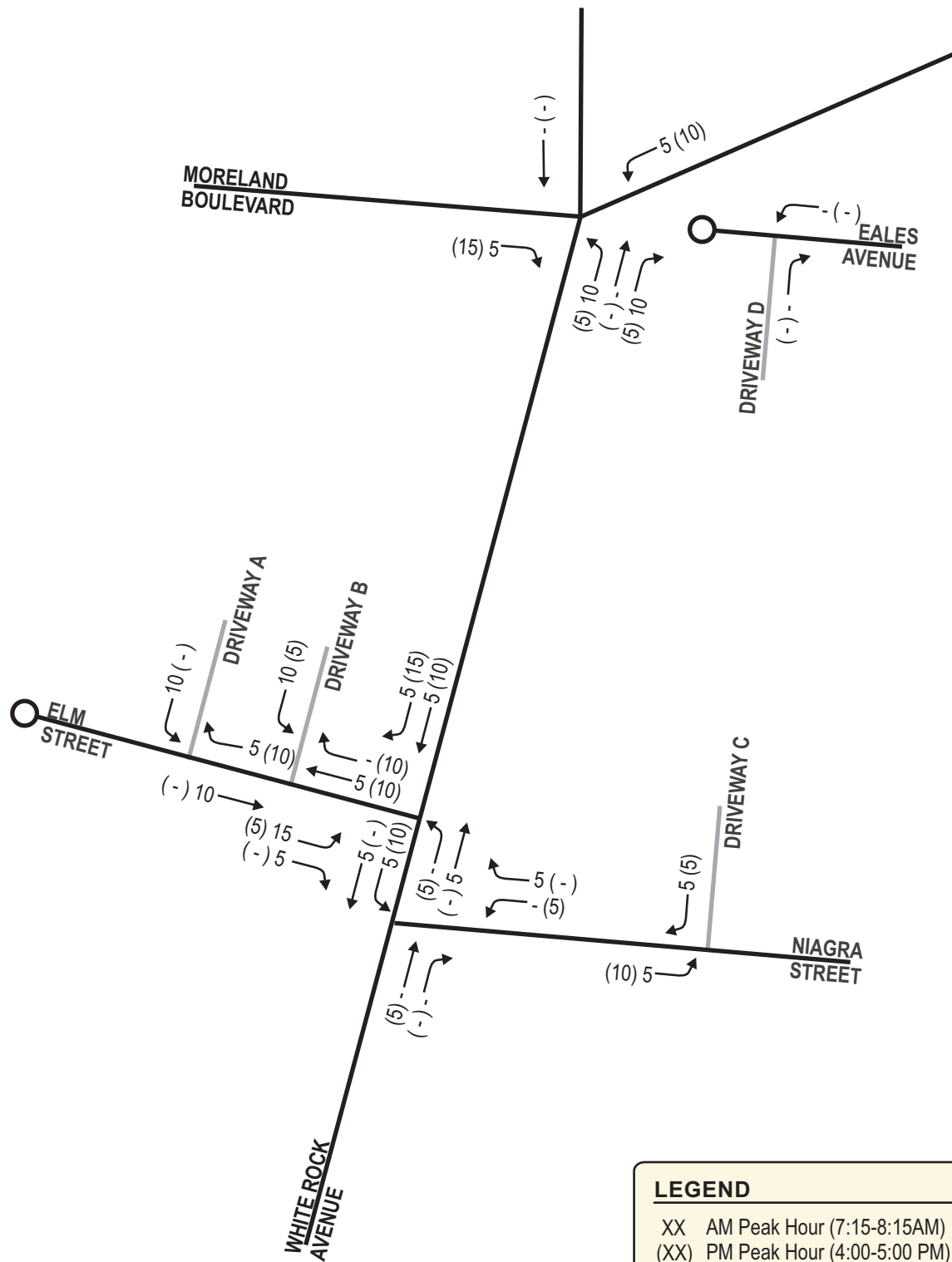
EXHIBIT 1
PRELIMINARY SITE PLAN

WAUKESHA, WISCONSIN



LEGEND

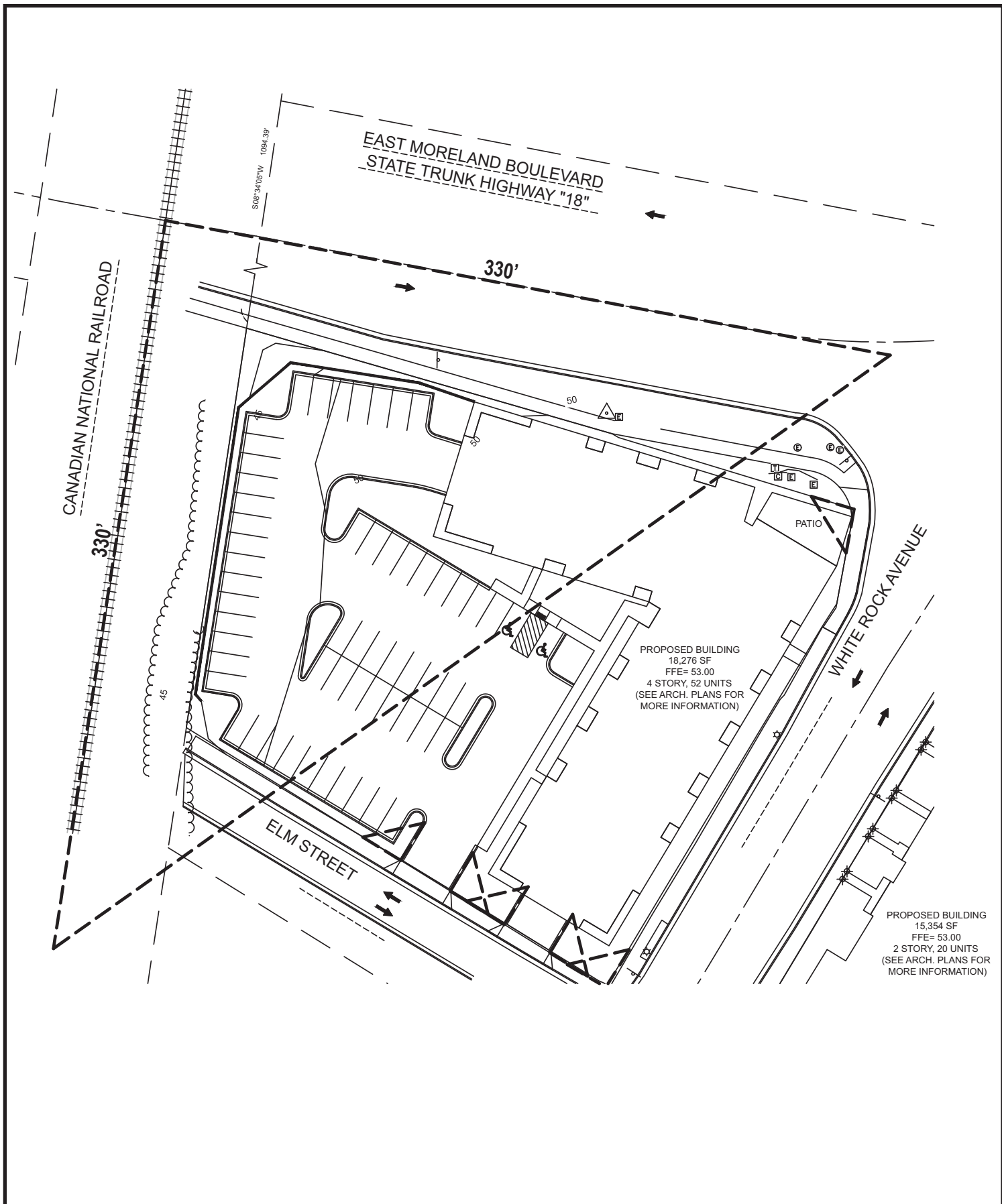
- XX AM Peak Hour (7:15-8:15AM)
- (XX) PM Peak Hour (4:00-5:00 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)

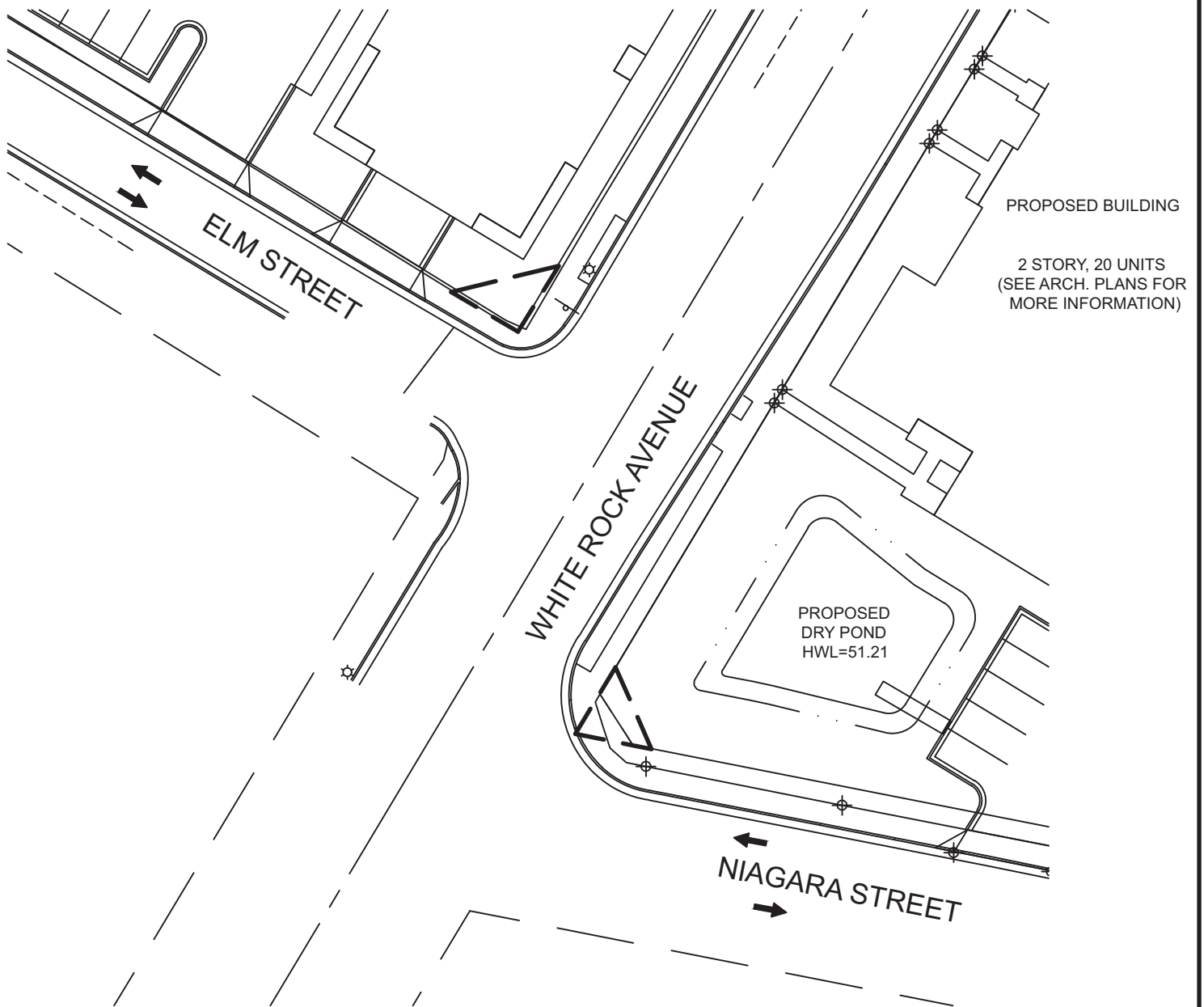


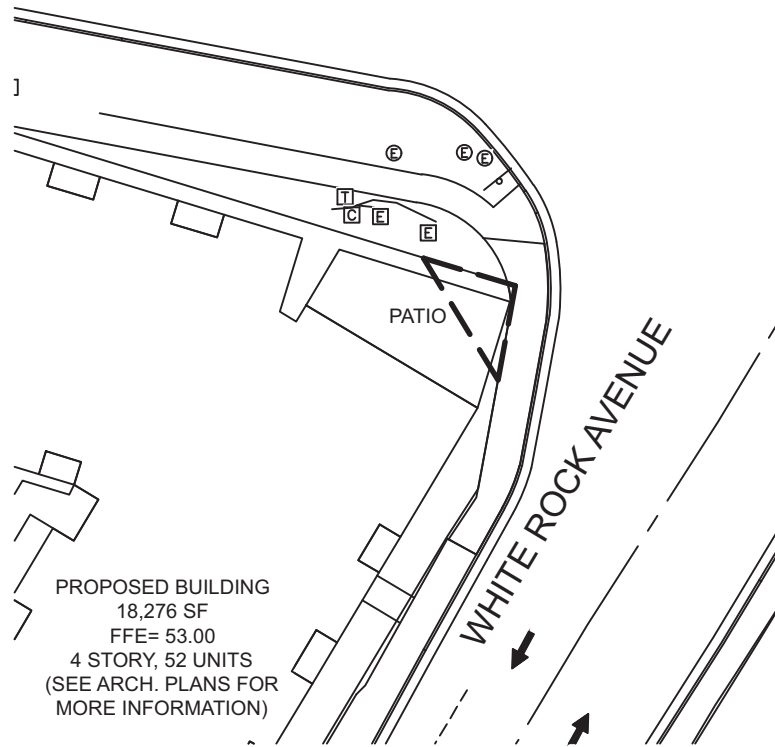
LEGEND

- XX AM Peak Hour (7:15-8:15AM)
- (XX) PM Peak Hour (4:00-5:00 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)









APPENDIX

Turning Movement Traffic Count

Intersection Traffic Volume Report



Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Whiterock Avenue and Moreland Blvd**

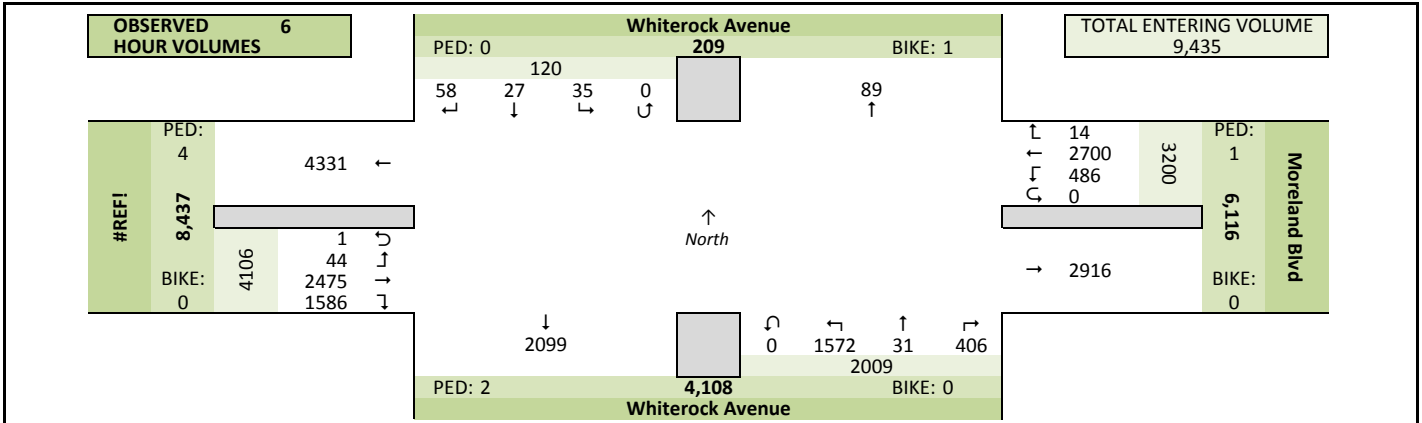
Site Information

Municipality	City of Waukesha		
County	Waukesha	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	Whiterock Avenue		
East Leg	Moreland Blvd		
South Leg	Whiterock Avenue		
West Leg	Moreland Blvd		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

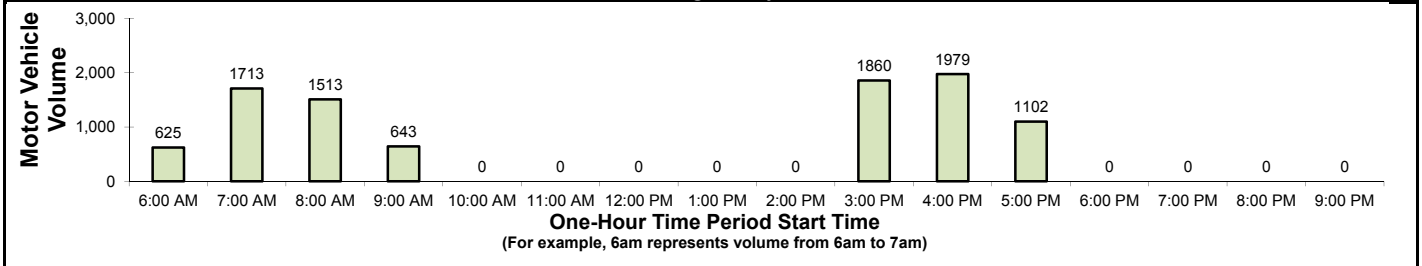
Count Information

Hrs Counted:	6:30 AM-9:30 AM and 3:00 PM-6:00 PM		
1st Day of Count	Monday, December 18, 2017	Weather	
AM Peak Period	Tuesday, December 19, 2017	Clear & Dry	
Midday Peak Period	Tuesday, December 19, 2017	Clear & Dry	
PM Peak Period	Monday, December 18, 2017	Clear & Dry	
Calculated Peak Hours			
	AM 7:15-8:15am	MD	PM 4:00-5:00pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD	PM 4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.004	Count Expansion Factor	2.354
Company Name	TADI Inc	Manual Adj.	1.000
Observers	AM Peak Period	Ben Garbe	
	Midday Peak Period	None	
	PM Peak Period	Ben Garbe	
Comments	2016 DOT Seasonal Factors		

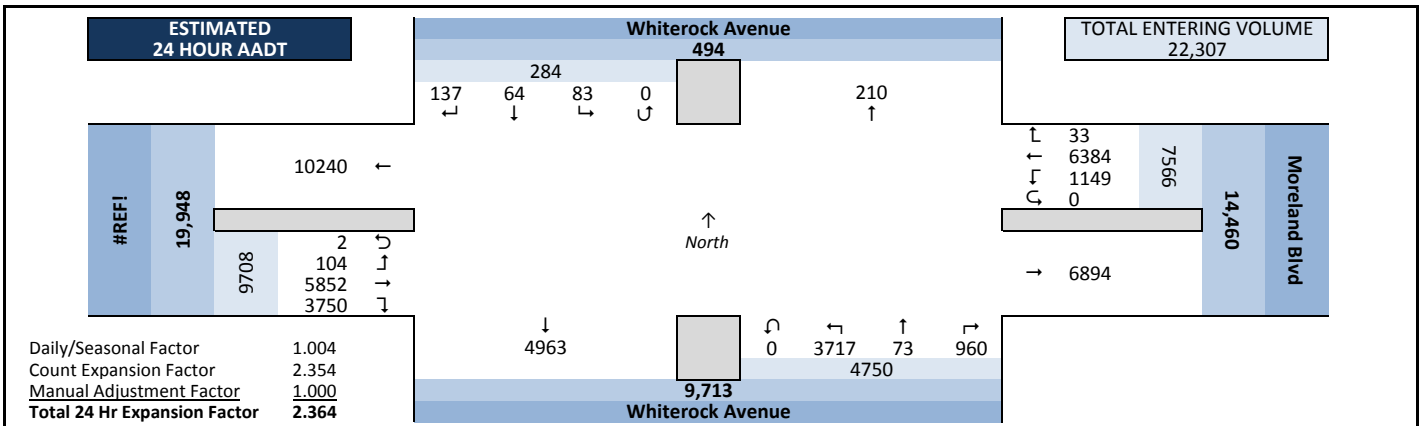
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

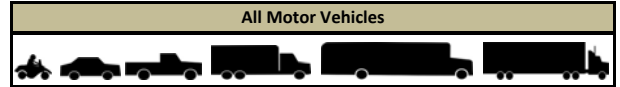


Intersection Traffic Volume Report

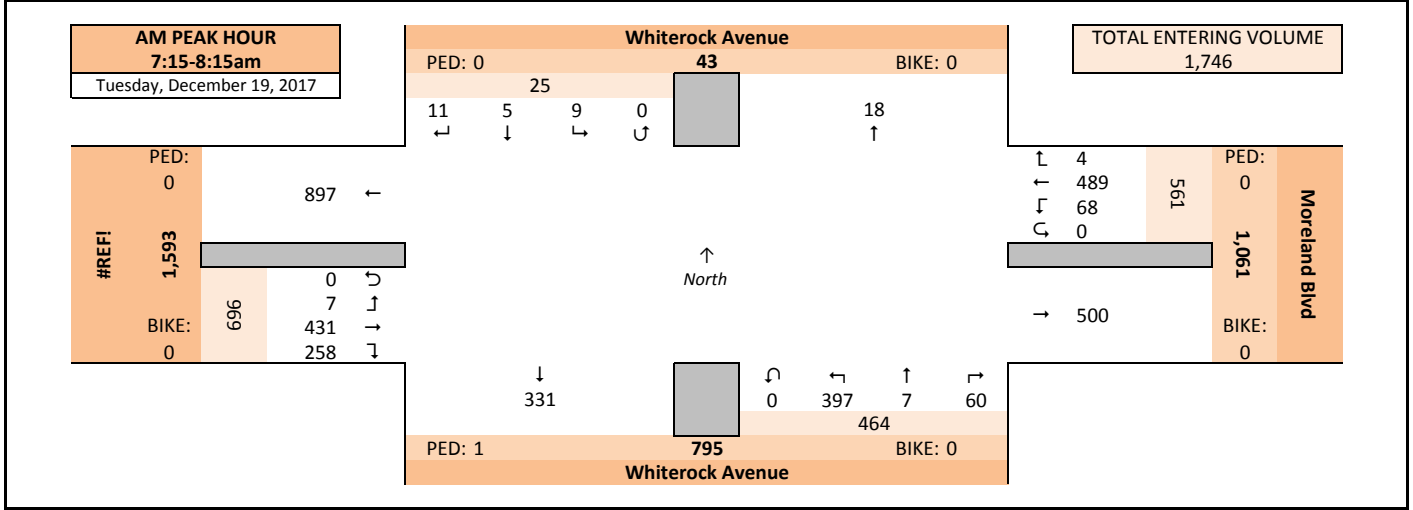
Count Basics		<i>Page 2 of 11</i>	
Start Date:	Monday, December 18, 2017	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

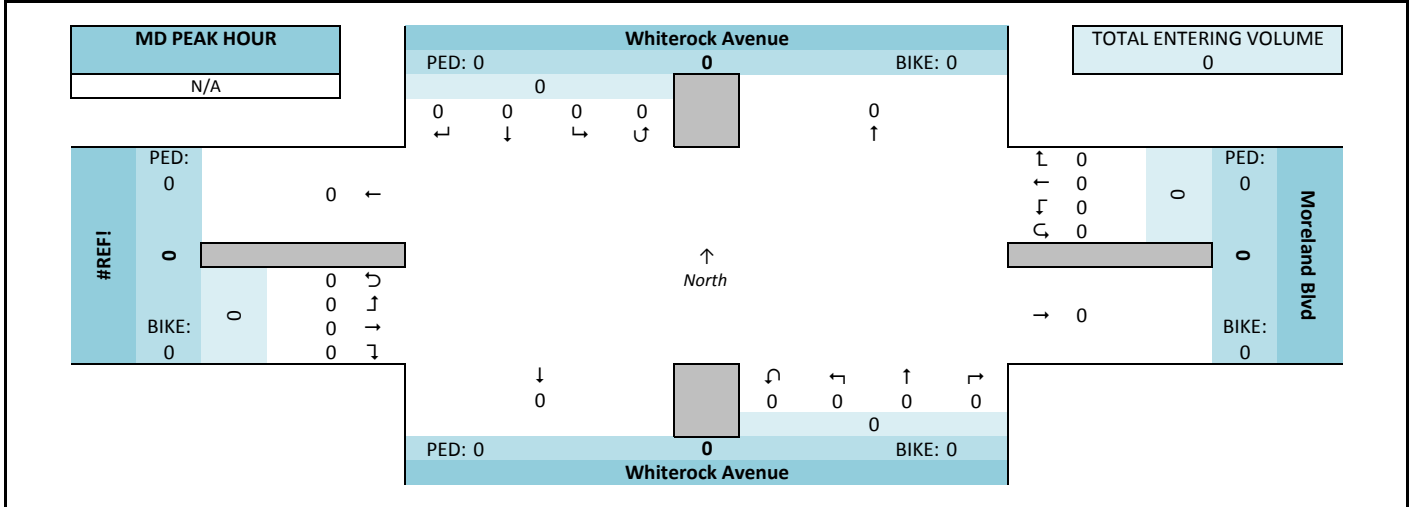
Whiterock Avenue and Moreland Blvd



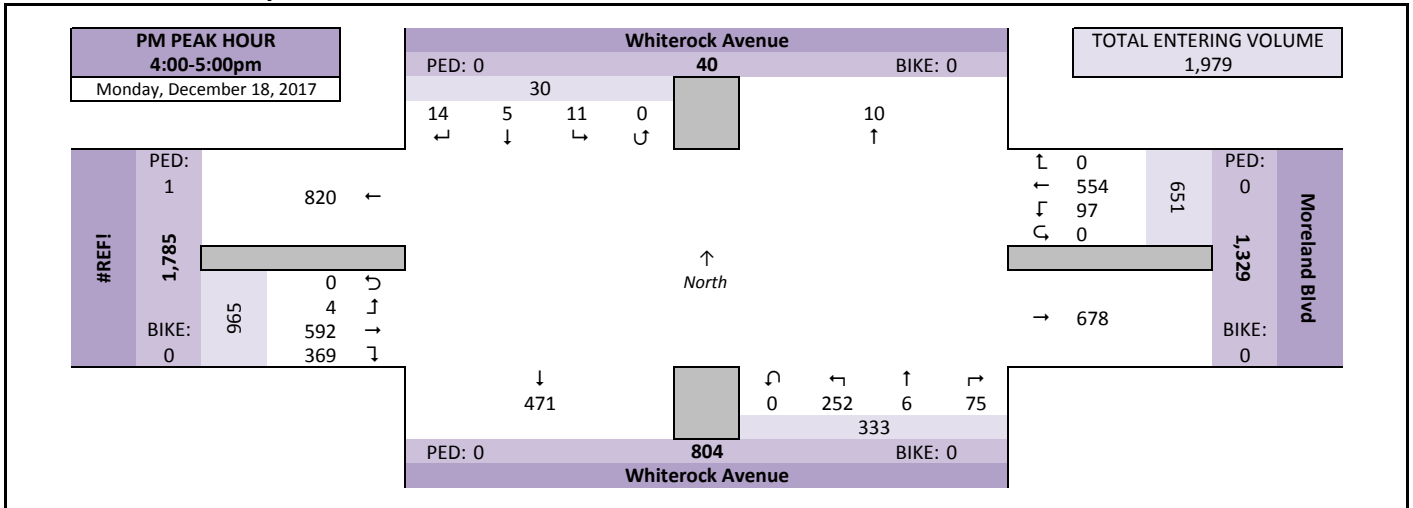
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



Intersection Traffic Volume Report

Count Basics		Page 3 of 11	
Start Date:	Monday, December 18, 2017	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Peak Hour Volume Summary

Whiterock Avenue and Moreland Blvd



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, December 19, 2017		↓ From North					← From East					↑ From South					→ From West					Totals
		Whiterock Avenue					Moreland Blvd					Whiterock Avenue					#REF!					
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	7:15 AM	2	1	4	0	7	2	102	16	0	120	21	0	104	0	125	67	95	1	0	163	415
	7:30 AM	3	1	0	0	4	1	136	14	0	151	12	3	111	0	126	83	115	2	0	200	481
	7:45 AM	3	1	2	0	6	1	152	20	0	173	13	2	107	0	122	63	112	1	0	176	477
	8:00 AM	3	2	3	0	8	0	99	18	0	117	14	2	75	0	91	45	109	3	0	157	373
	Peak Hour Volume	11	5	9	0	25	4	489	68	0	561	60	7	397	0	464	258	431	7	0	696	1746
	Rounded Hourly Volume	10	5	10	0	25	5	490	70	0	565	60	5	395	0	460	260	430	5	0	695	1745
	% Single Unit Trucks	9.1	20.0	0.0	0.0	8.0	0.0	2.7	5.9	0.0	3.0	3.3	0.0	1.5	0.0	1.7	0.8	2.3	0.0	0.0	1.7	2.2
	% Heavy Trucks	18.2	0.0	11.1	0.0	12.0	25.0	3.1	1.5	0.0	3.0	1.7	0.0	1.5	0.0	1.5	0.8	2.6	0.0	0.0	1.9	2.3
	% Trucks (Total)	27.3	20.0	11.1	0.0	20.0	25.0	5.7	7.4	0.0	6.1	5.0	0.0	3.0	0.0	3.2	1.6	4.9	0.0	0.0	3.6	4.5
	Peak Hour Factor (PHF)	0.92	0.62	0.56	0.00	0.78	0.50	0.80	0.85	0.00	0.81	0.71	0.58	0.89	0.00	0.92	0.78	0.94	0.58	0.00	0.87	0.91

N/A		↓ From North					← From East					↑ From South					→ From West					Totals
		Whiterock Avenue					Moreland Blvd					Whiterock Avenue					#REF!					
MD Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monday, December 18, 2017		↓ From North					← From East					↑ From South					→ From West					Totals
		Whiterock Avenue					Moreland Blvd					Whiterock Avenue					#REF!					
PM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	4:00 PM	3	3	2	0	8	0	137	19	0	156	15	3	63	0	81	85	163	0	0	248	493
	4:15 PM	1	1	3	0	5	0	139	26	0	165	17	3	75	0	95	68	108	1	0	177	442
	4:30 PM	6	1	5	0	12	0	133	29	0	162	23	0	61	0	84	116	165	1	0	282	540
	4:45 PM	4	0	1	0	5	0	145	23	0	168	20	0	53	0	73	100	156	2	0	258	504
	Peak Hour Volume	14	5	11	0	30	0	554	97	0	651	75	6	252	0	333	369	592	4	0	965	1979
	Rounded Hourly Volume	15	5	10	0	30	0	555	95	0	650	75	5	250	0	330	370	590	5	0	965	1975
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.1	0.0	1.2	6.7	0.0	2.0	0.0	3.0	0.8	0.8	0.0	0.0	0.8	1.3
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	2.7	0.0	0.8	0.0	1.2	0.0	1.2	0.0	0.0	0.7	0.7
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	1.4	3.1	0.0	1.7	9.3	0.0	2.8	0.0	4.2	0.8	2.0	0.0	0.0	1.6	2.0
	Peak Hour Factor (PHF)	0.58	0.42	0.55	0.00	0.62	0.00	0.96	0.84	0.00	0.97	0.82	0.50	0.84	0.00	0.88	0.80	0.90	0.50	0.00	0.86	0.92

Peak Hour Pedestrian and Bicyclist Volumes

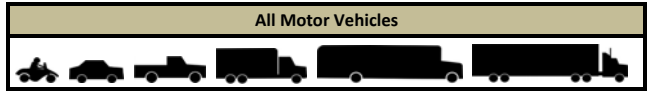
Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Whiterock Avenue			Moreland Blvd			Whiterock Avenue			#REF!			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	1	0	1	0	0	1	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	1	1	0	0	1	
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	1	0	1	

Intersection Traffic Volume Report

Count Basics			Page 4 of 11
Start Date:	Monday, December 18, 2017	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

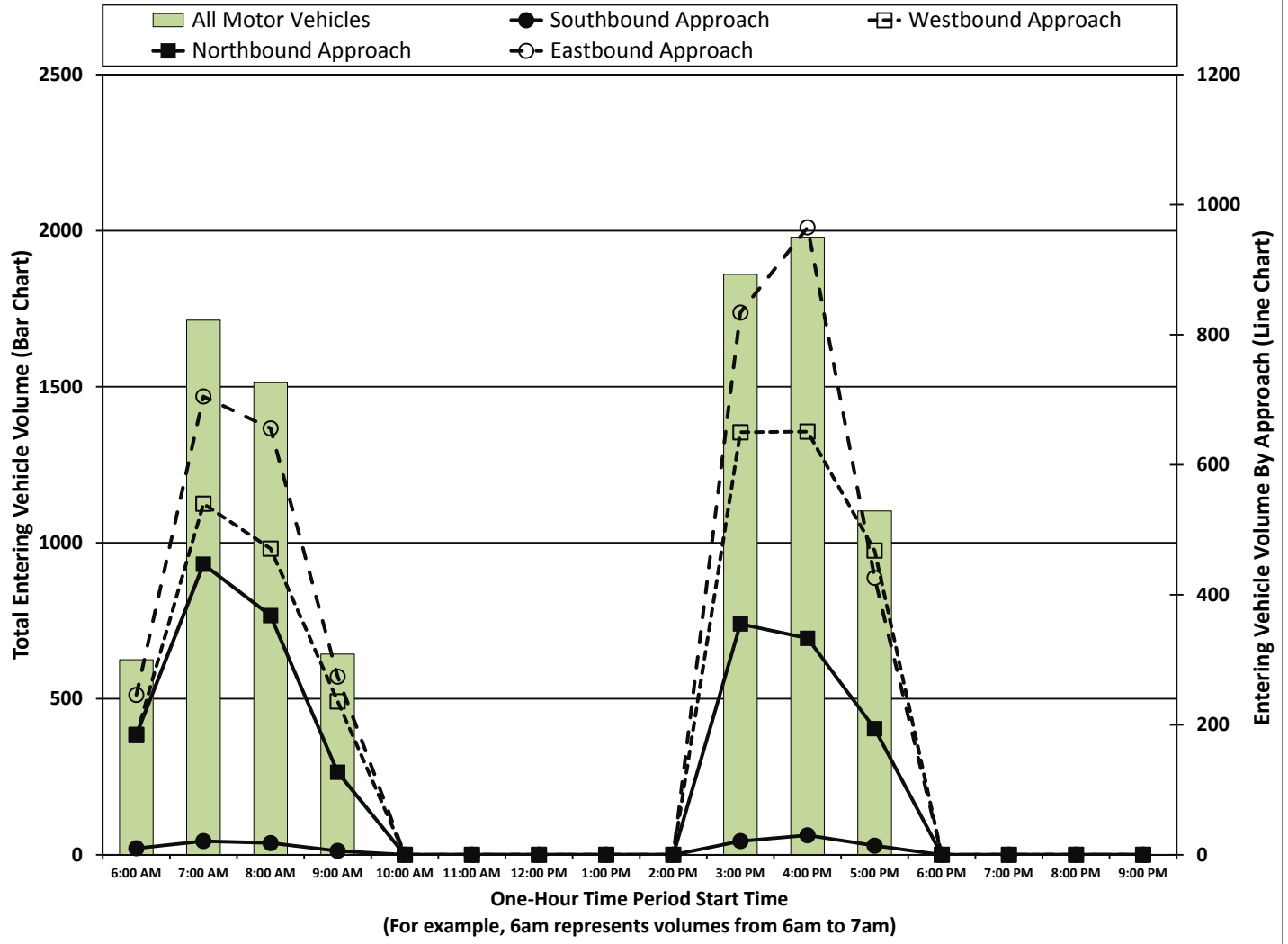
Whiterock Avenue and Moreland Blvd



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Whiterock Avenue					From East Moreland Blvd					From South Whiterock Avenue					From West #REF!					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
	Start Time																							
AM	6:00 AM	6	3	1	0	10	1	160	23	0	184	9	2	174	0	185	115	124	7	0	246	625	430	195
	7:00 AM	9	3	9	0	21	5	473	62	0	540	53	5	389	0	447	293	405	7	0	705	1713	1245	468
	8:00 AM	10	5	3	0	18	2	381	88	0	471	72	5	291	0	368	218	429	9	0	656	1513	1127	386
	9:00 AM	1	1	4	0	6	2	201	33	0	236	24	2	101	0	127	116	157	1	0	274	643	510	133
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	11	5	5	0	21	3	536	111	0	650	82	8	265	0	355	311	512	11	0	834	1860	1484	376
	4:00 PM	14	5	11	0	30	0	554	97	0	651	75	6	252	0	333	369	592	4	0	965	1979	1616	363
	5:00 PM	7	5	2	0	14	1	395	72	0	468	91	3	100	0	194	164	256	5	1	426	1102	894	208
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	58	27	35	0	120	14	2700	486	0	3200	406	31	1572	0	2009	1586	2475	44	1	4106	9435	7306	2129

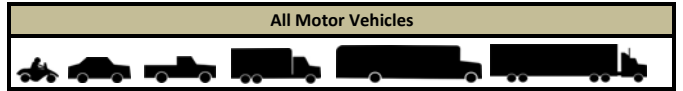
Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Whiterock Avenue and Moreland Blvd



15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	↓ From North Whiterock Avenue					← From East Moreland Blvd					↑ From South Whiterock Avenue					→ From West #REF!					15-Min Totals	Hourly Sum	PHF				
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total							
	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0	0	0
Totals	58	27	35	0	120	14	2700	486	0	3200	406	31	1572	0	2009	1586	2475	44	1	4106	9435						

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	↓ From North Whiterock Avenue					← From East Moreland Blvd					↑ From South Whiterock Avenue					→ From West #REF!					Total Hourly Volume	PHF
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:15 AM	11	5	9	0	25	4	489	68	0	561	60	7	397	0	464	258	431	7	0	696	1746	0.91
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
PM 4:00 PM	14	5	11	0	30	0	554	97	0	651	75	6	252	0	333	369	592	4	0	965	1979	0.92

Intersection Traffic Volume Report

15-Minute Pedestrian and Bicyclist Data

Whiterock Avenue and Moreland Blvd



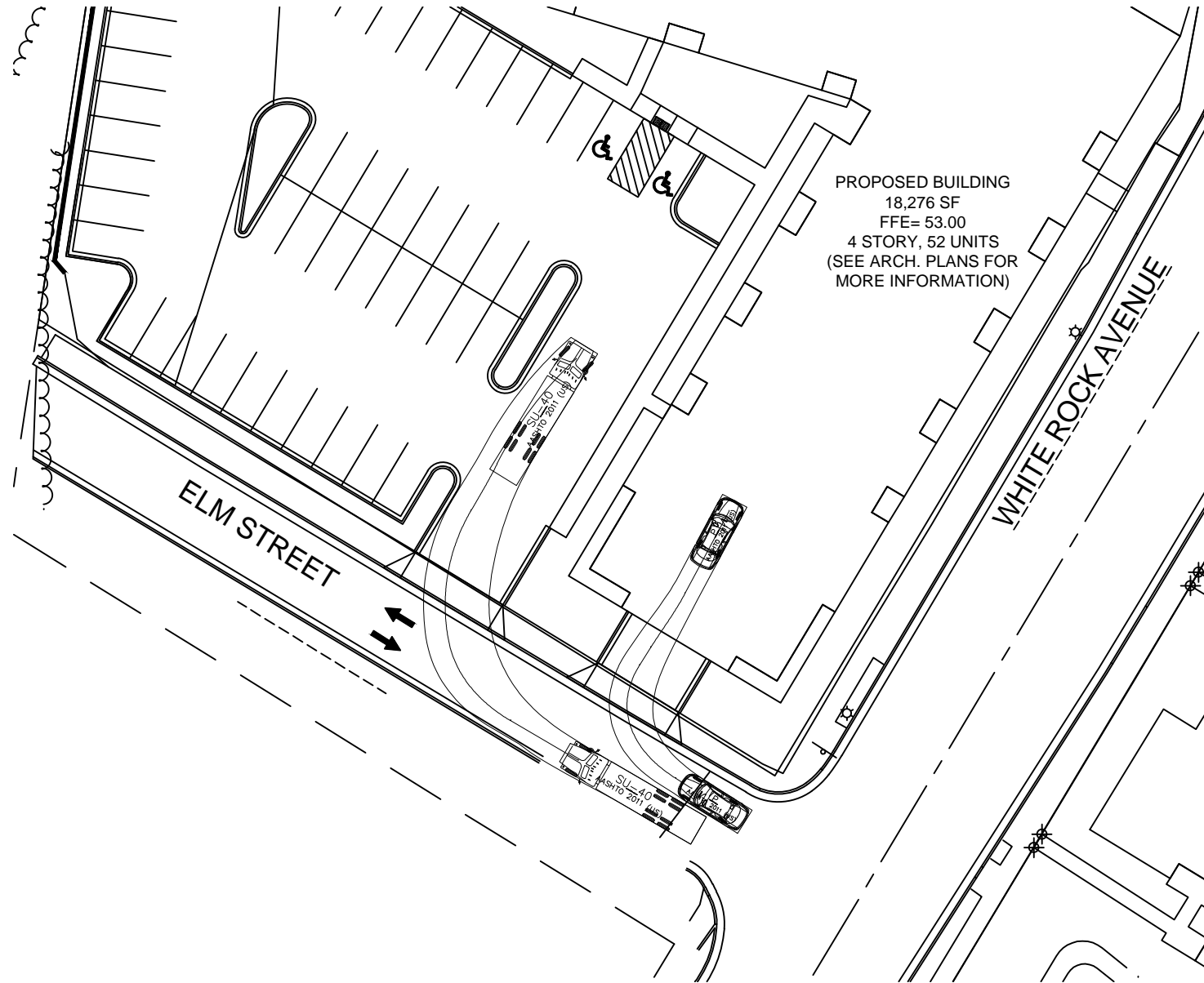
15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Whiterock Avenue			Moreland Blvd			Whiterock Avenue			#REF!				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	4
3:15 PM	0	0	0	0	0	0	1	0	1	1	0	1	2	3
3:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	1	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	1	1	1	0	1	2	0	2	4	0	4	8	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Turning Templates

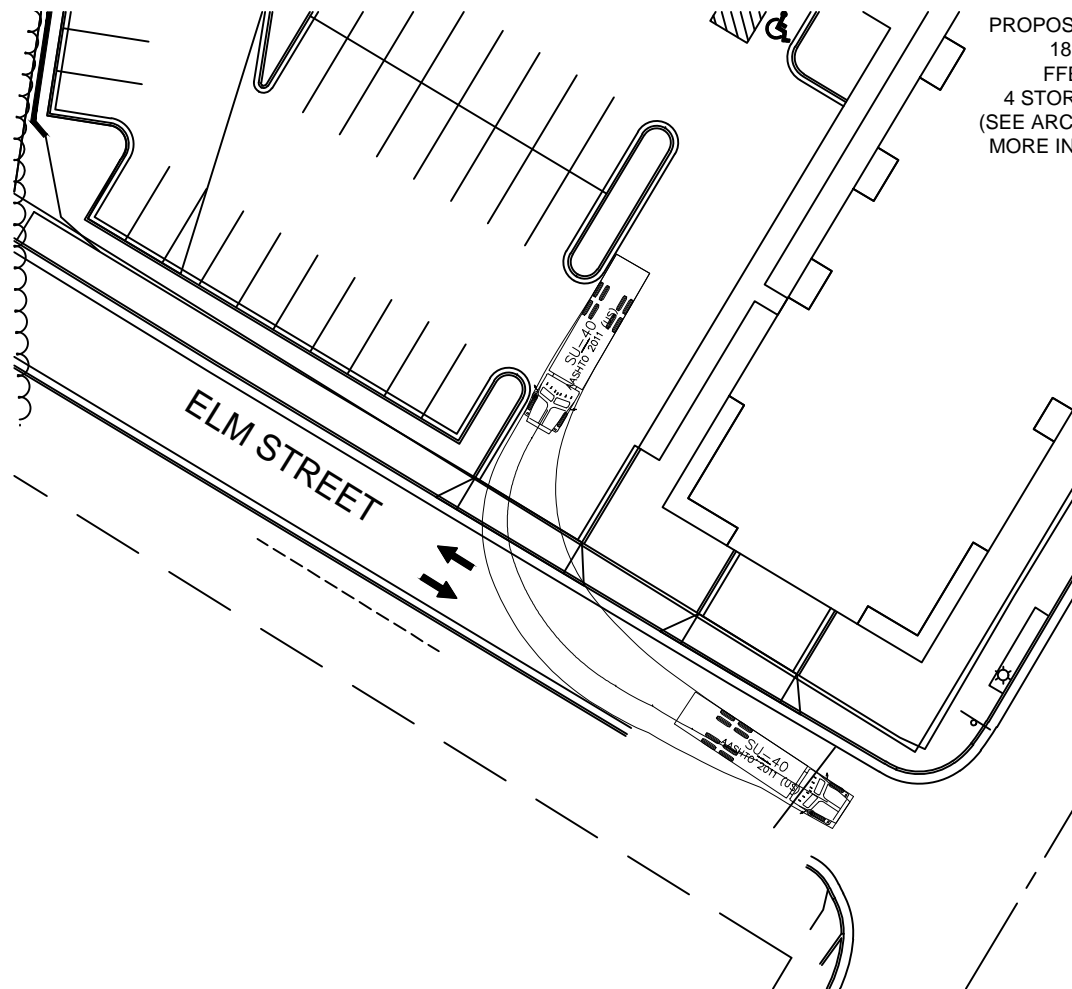


PROPOSED BUILDING
18,276 SF
FFE= 53.00
4 STORY, 52 UNITS
(SEE ARCH. PLANS FOR
MORE INFORMATION)

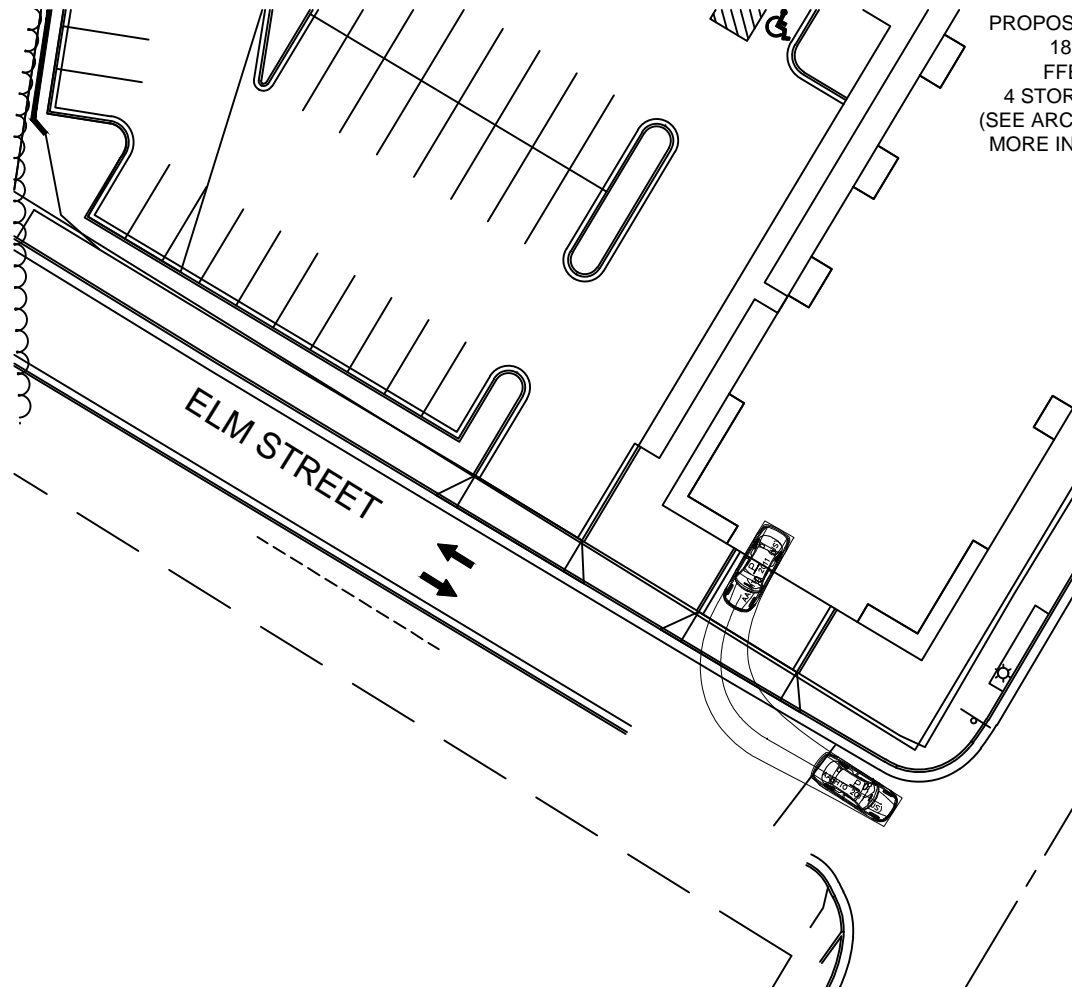
ELM STREET

WHITE ROCK AVENUE

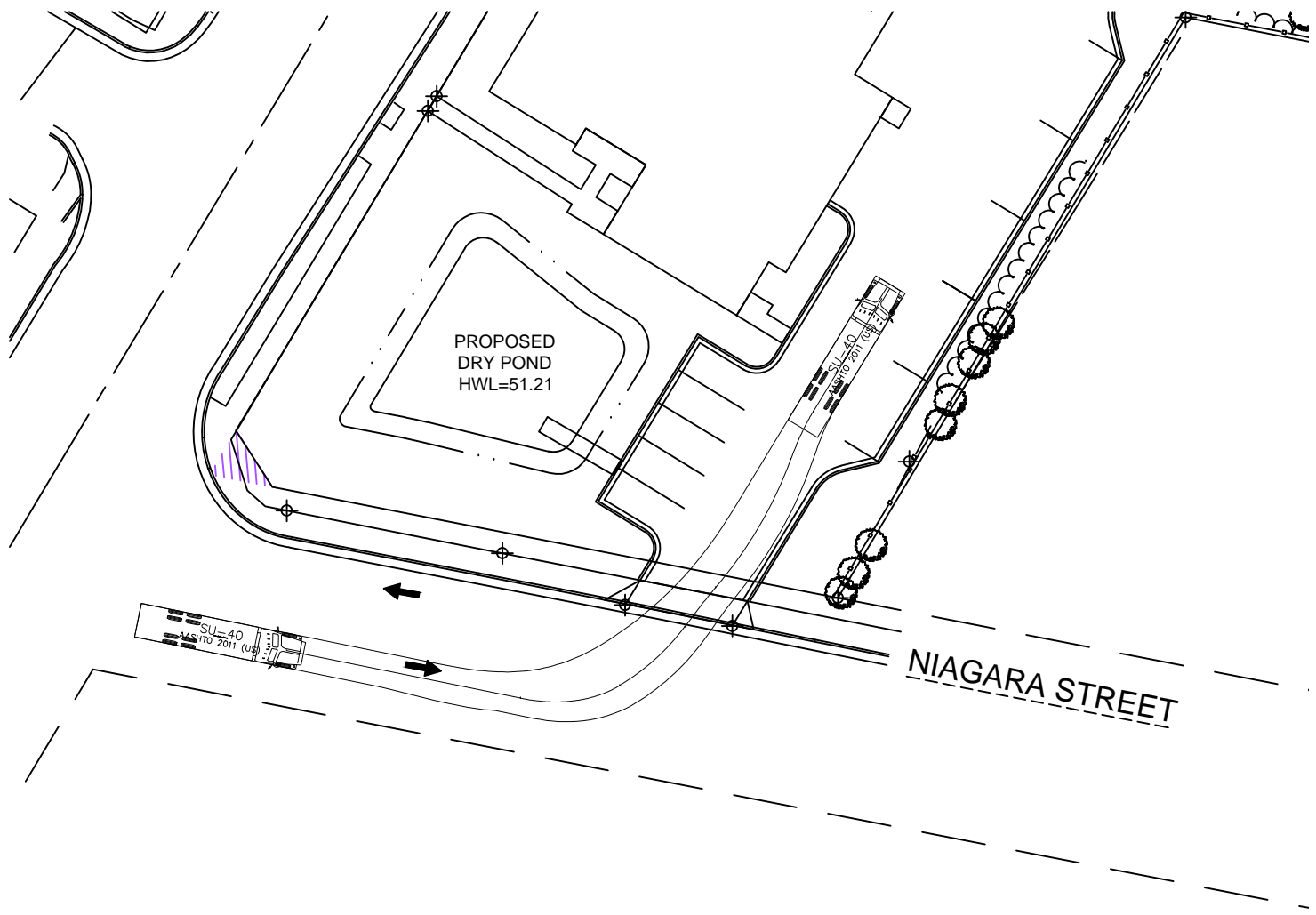
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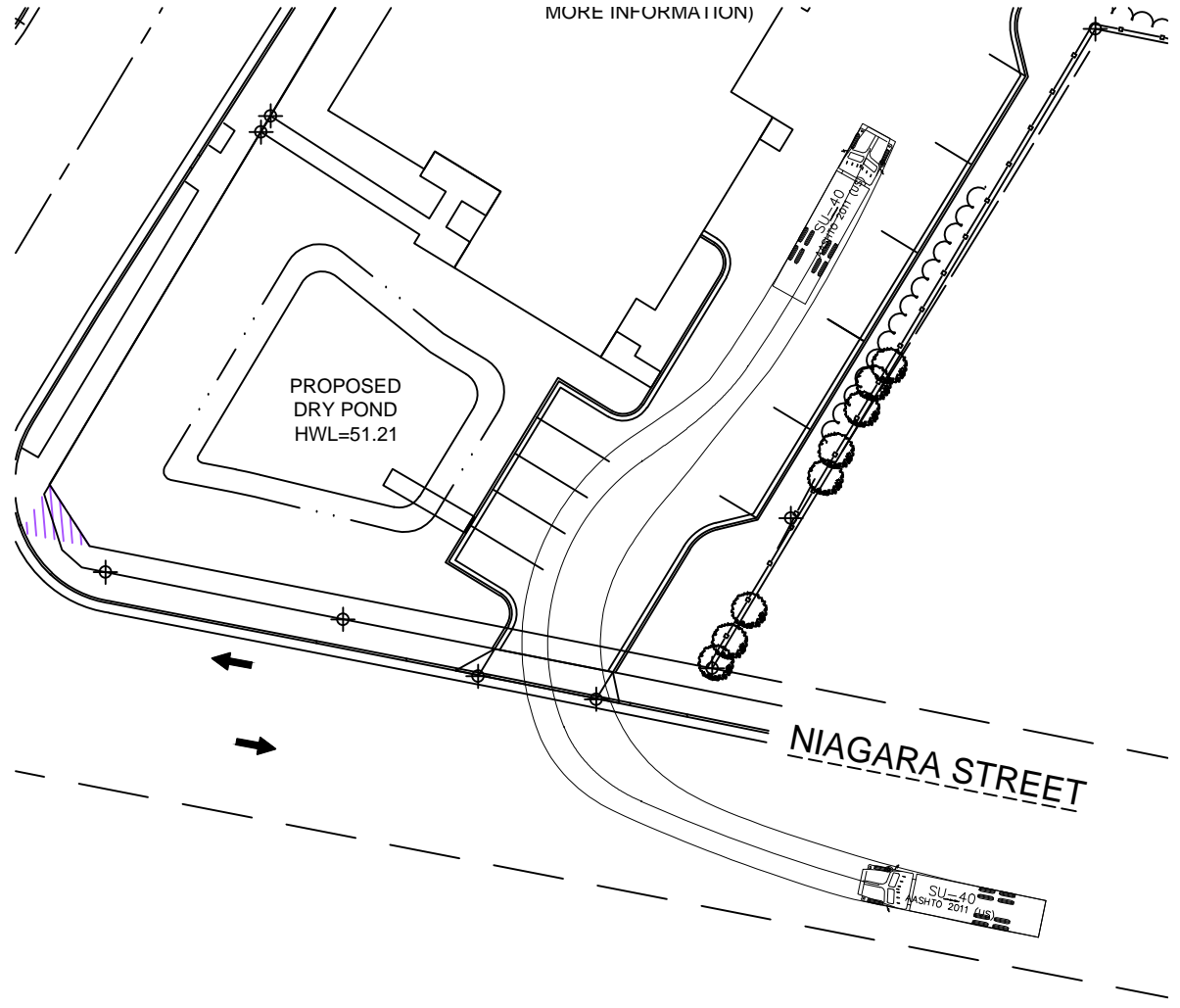


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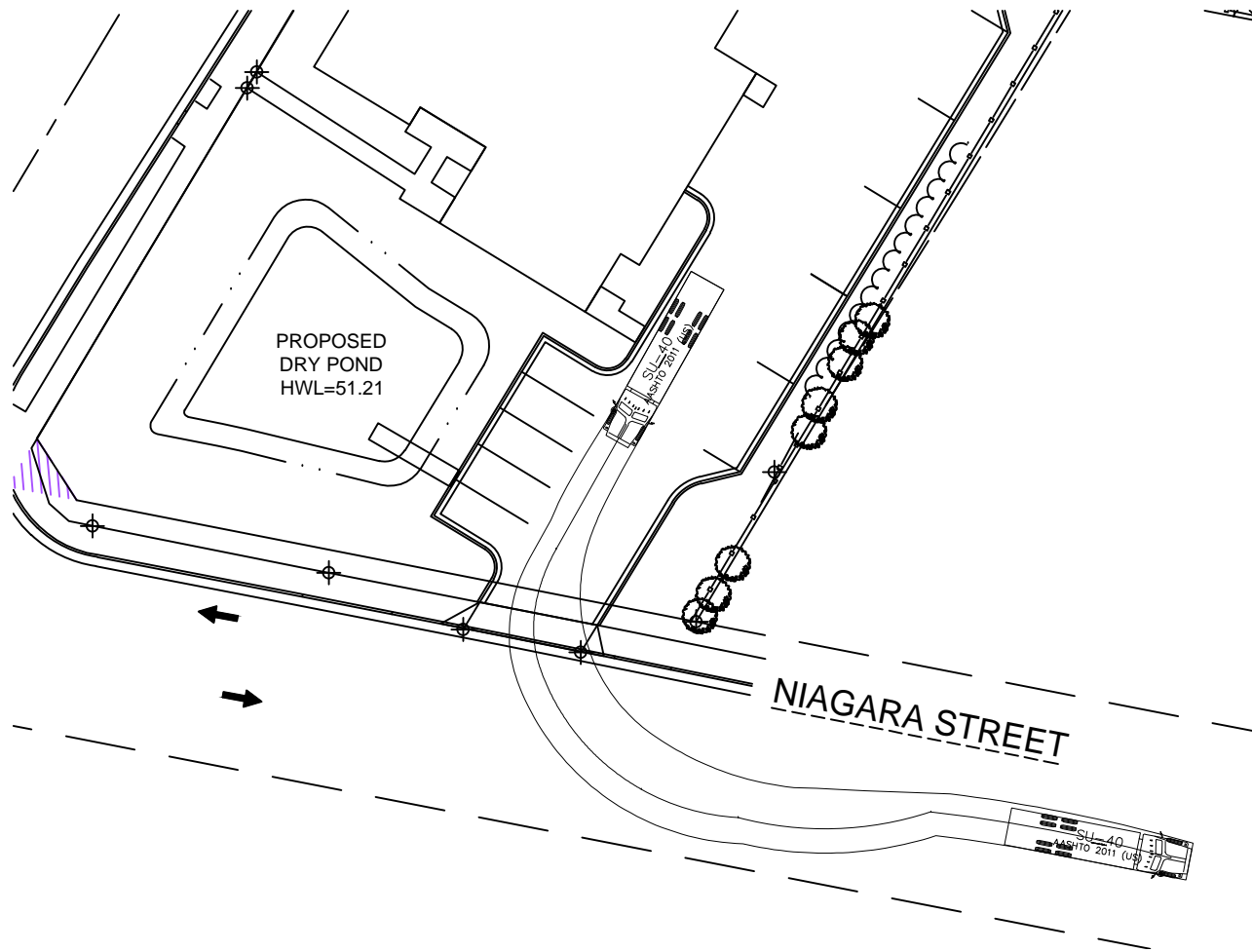


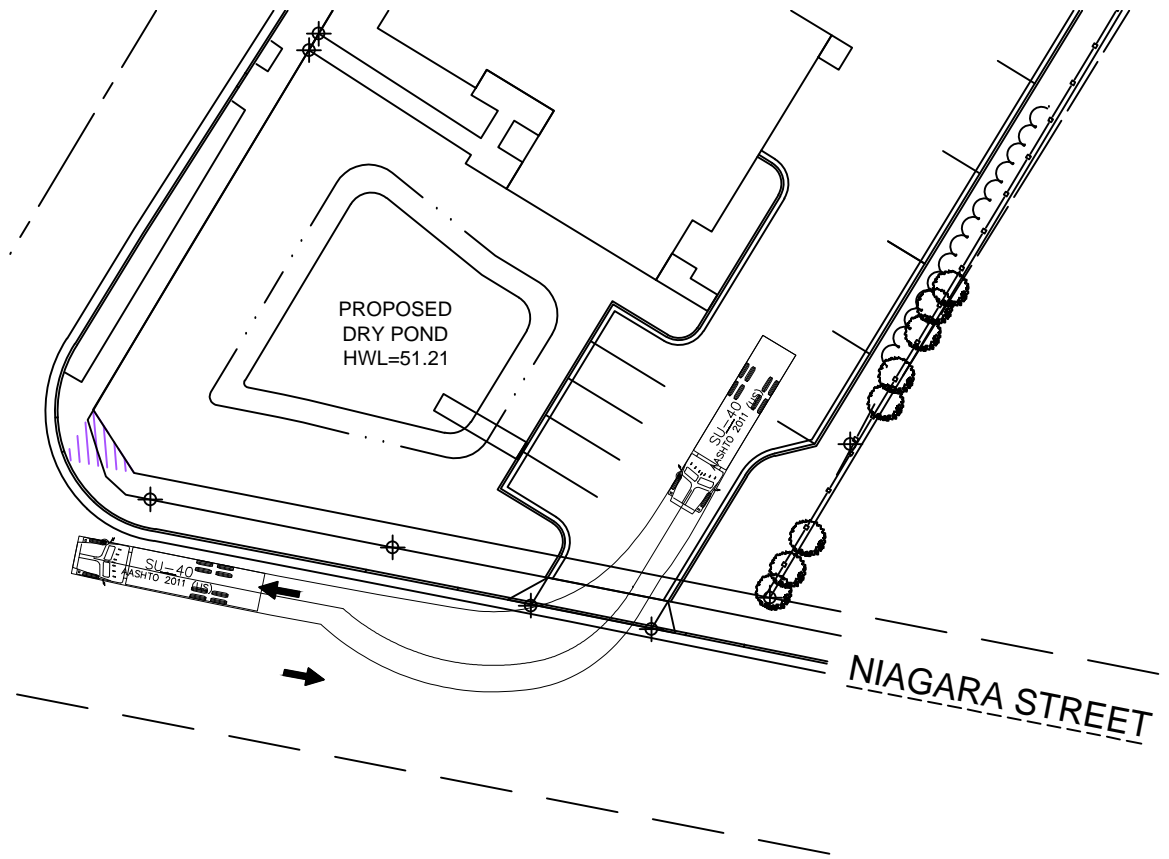
(MORE INFORMATION)

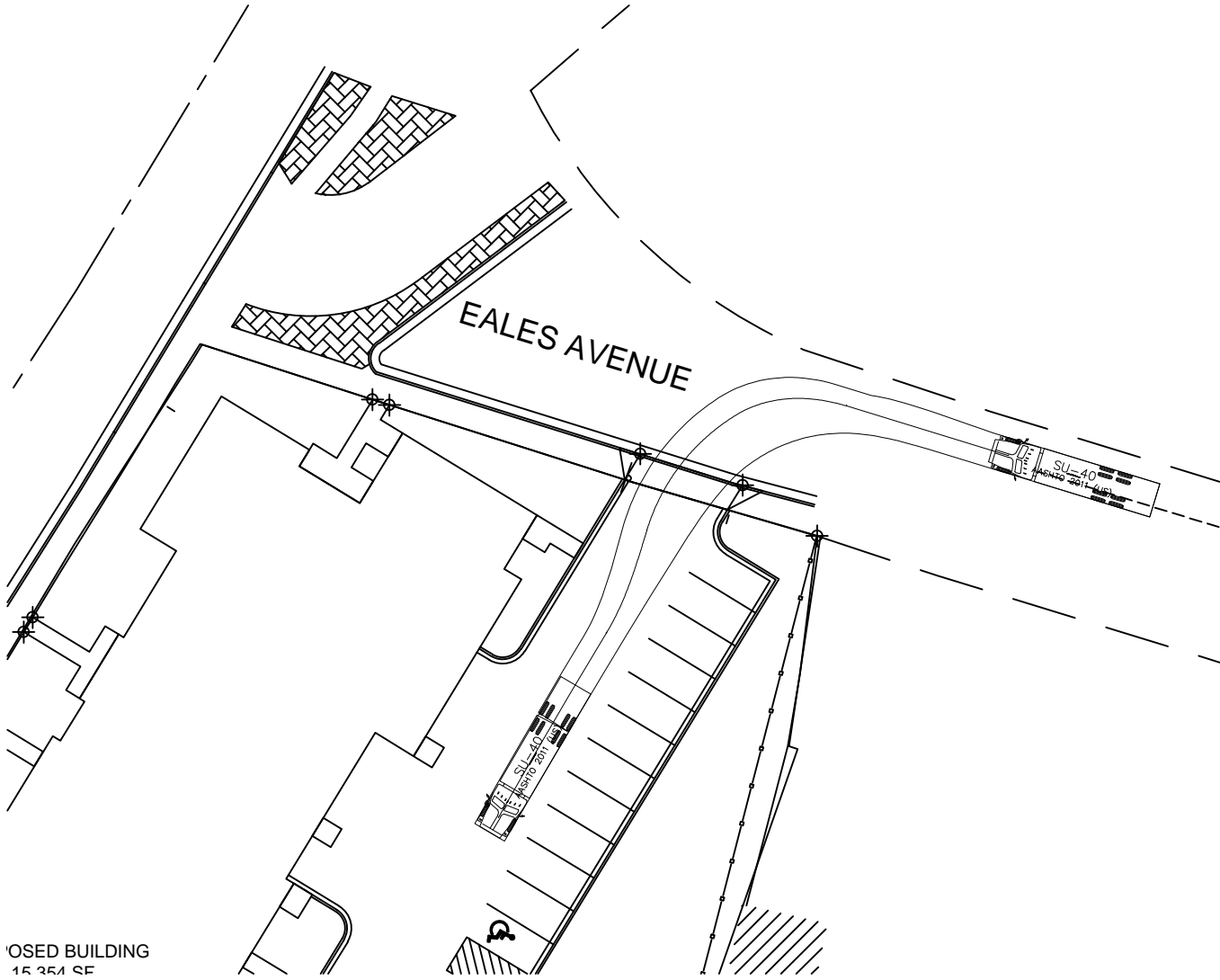
PROPOSED
DRY POND
HWL=51.21

NIAGARA STREET

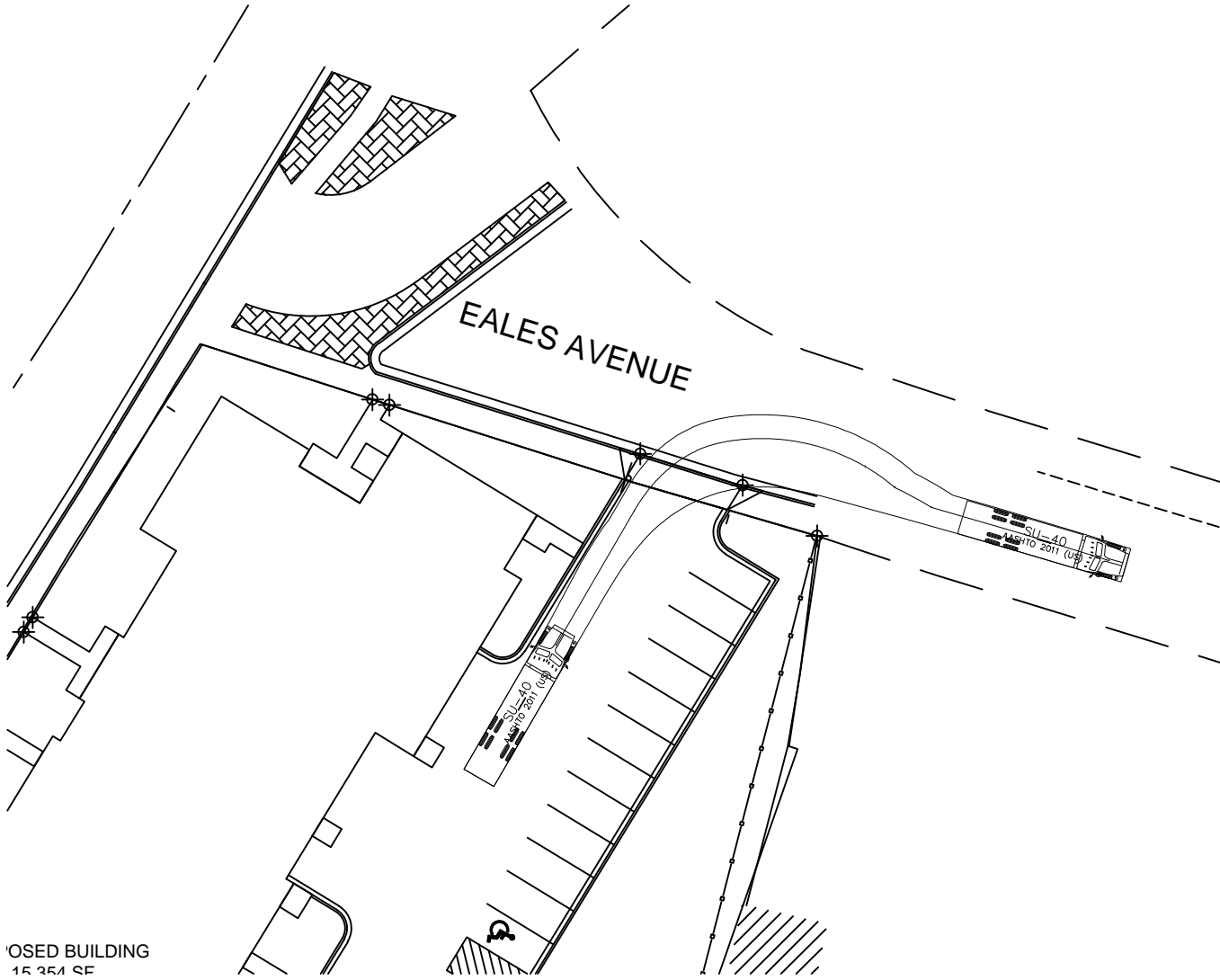
SLU-40
ASHTO 2011







USED BUILDING
15 351 SE



OSED BUILDING
15 354 SE