

Traffic Impact Study Proposed Art Storage Facility

Chicago, Illinois



Prepared For:

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MURRAY
| DESIGN BUILD

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I. Executive Summary

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed art storage facility to be located at 424 North Wood Street in Chicago, Illinois. The objectives of the traffic study are as follows:

- Determine the existing vehicular, pedestrian, bicycle, and public transportation conditions in the study area to establish a base condition.
- Assess the impact that the proposed art storage facility will have on transportation conditions in the area.
- Determine any street, access, bicycle, and pedestrian modifications and/or improvements that will be necessary to effectively accommodate and mitigate future conditions.

Vehicle, pedestrian, and bicycle counts were conducted during the weekday morning and weekday evening peak periods at the intersection of North Wood Street with West Hubbard Street in order to determine the general peak hour of traffic activity during these time periods.

As proposed, the site, which currently provides a tire fitting building and its parking lot, is located in the southwest corner of the intersection of North Wood Street with West Hubbard Street. The existing building will be redeveloped as an art storage facility. It is approximately 20,423 square feet in size with an adjacent parking lot that provides approximately 10 spaces.

Based on the analyses and recommendations within the study, the following conclusions were made:

- The traffic that will be generated by the proposed facility can be accommodated by the street system serving the site.
- The art storage facility will continue to utilize the existing access drive off North Wood Street. The access drive will provide flexible and efficient access to the site.
- The 10-space parking lot will be adequate in accommodating the parking needs of the proposed art storage facility.

1. Introduction

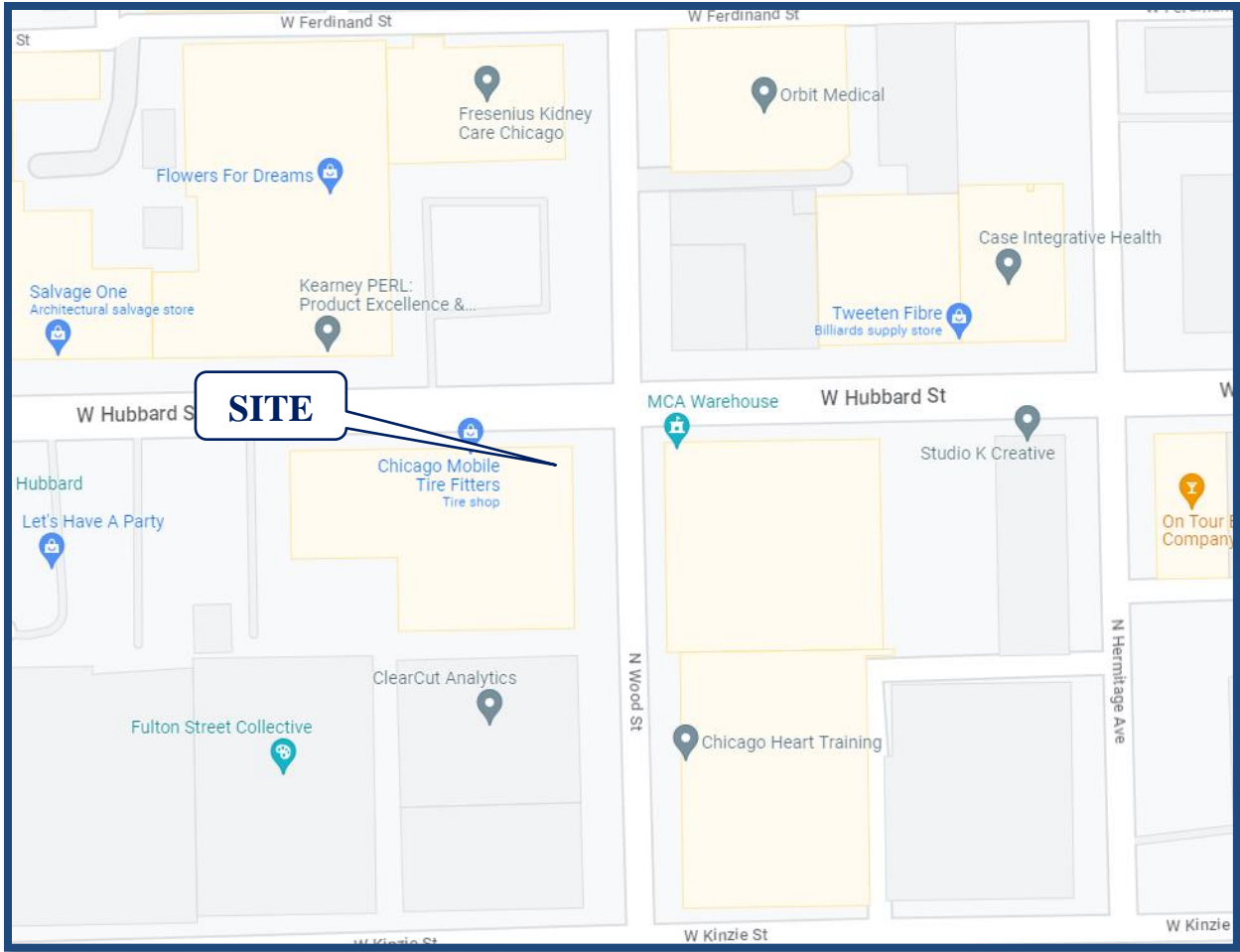
This report summarizes the results of a transportation study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed art storage facility to be located at 424 North Wood Street in Chicago, Illinois. The site, which currently contains a vacant building and a parking lot, is located in the southwest corner of the intersection of North Wood Street with West Hubbard Street. The proposed art storage facility will occupy the existing building which is approximately 20,423 square feet in size. Access to the site will be provided via the existing full-movement access drive off North Wood Street.

The purpose of this transportation study is to examine background traffic conditions, assess the impact that the proposed facility will have on traffic conditions in the area, and determine if any street or access improvements are necessary to accommodate the traffic generated by the proposed facility.

Figure 1 shows the site location. **Figure 2** shows an aerial view of the site.

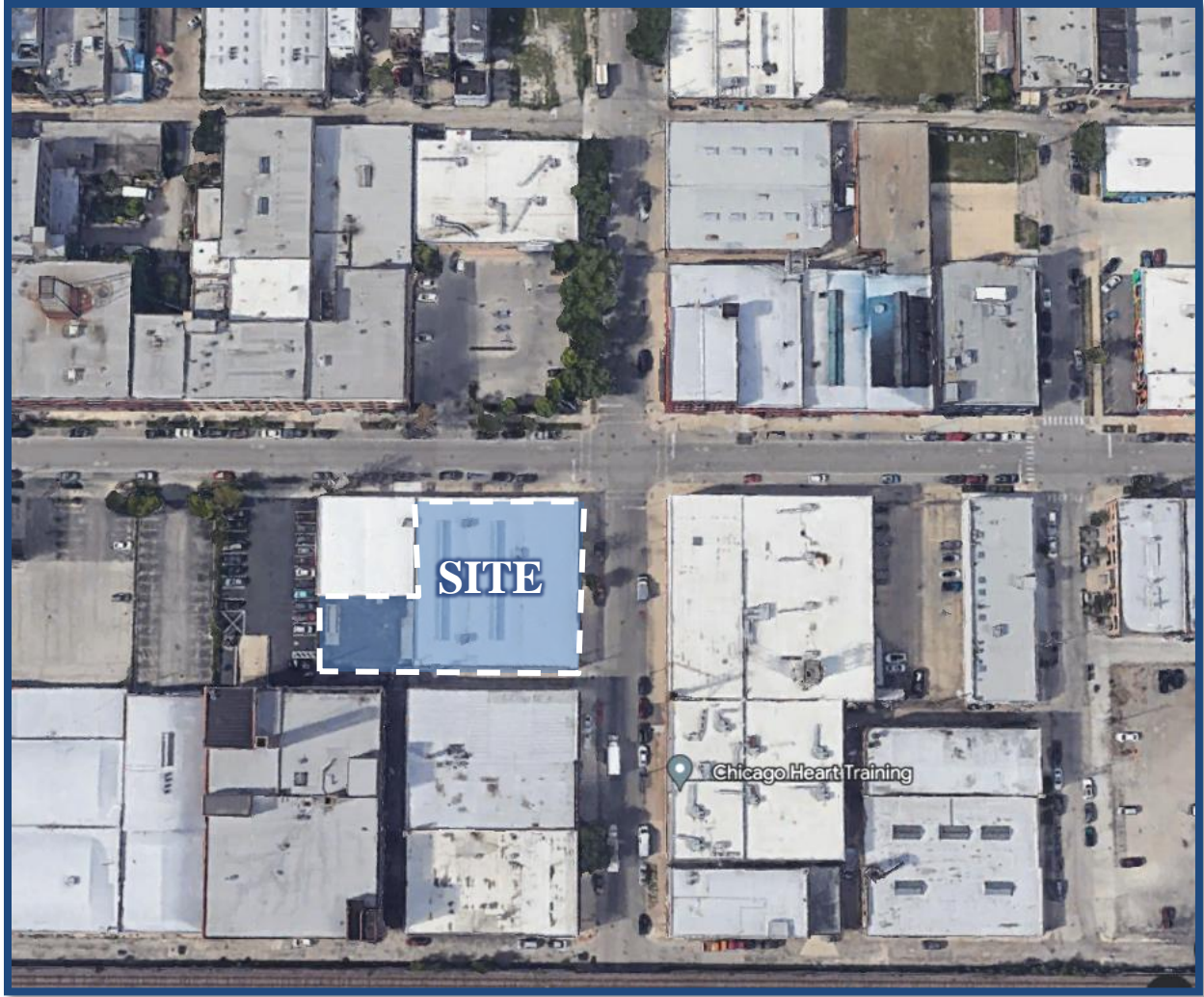
The sections of this report present the following:

- Existing street conditions
- A description of the facility
- Directional distribution of the facility
- Vehicle trip generation of the facility
- Future traffic conditions including access to the facility
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the siter access and adjacent street system



Site Location

Figure 1



Aerial View of Site

Figure 2

2. Existing Conditions

Existing transportation conditions within the study area were documented based on field visits and a review of available information and data. The following provides a summary of the street and public transportation systems serving the area and the alternative modes of transportation and the public parking in the area.

Site Location

The site of the proposed art storage facility is located in the southwest corner of the intersection of North Wood Street with West Hubbard Street. The site currently contains a vacant building and a parking lot. Land uses in the area are primarily industrial and commercial.

Existing Street Characteristics

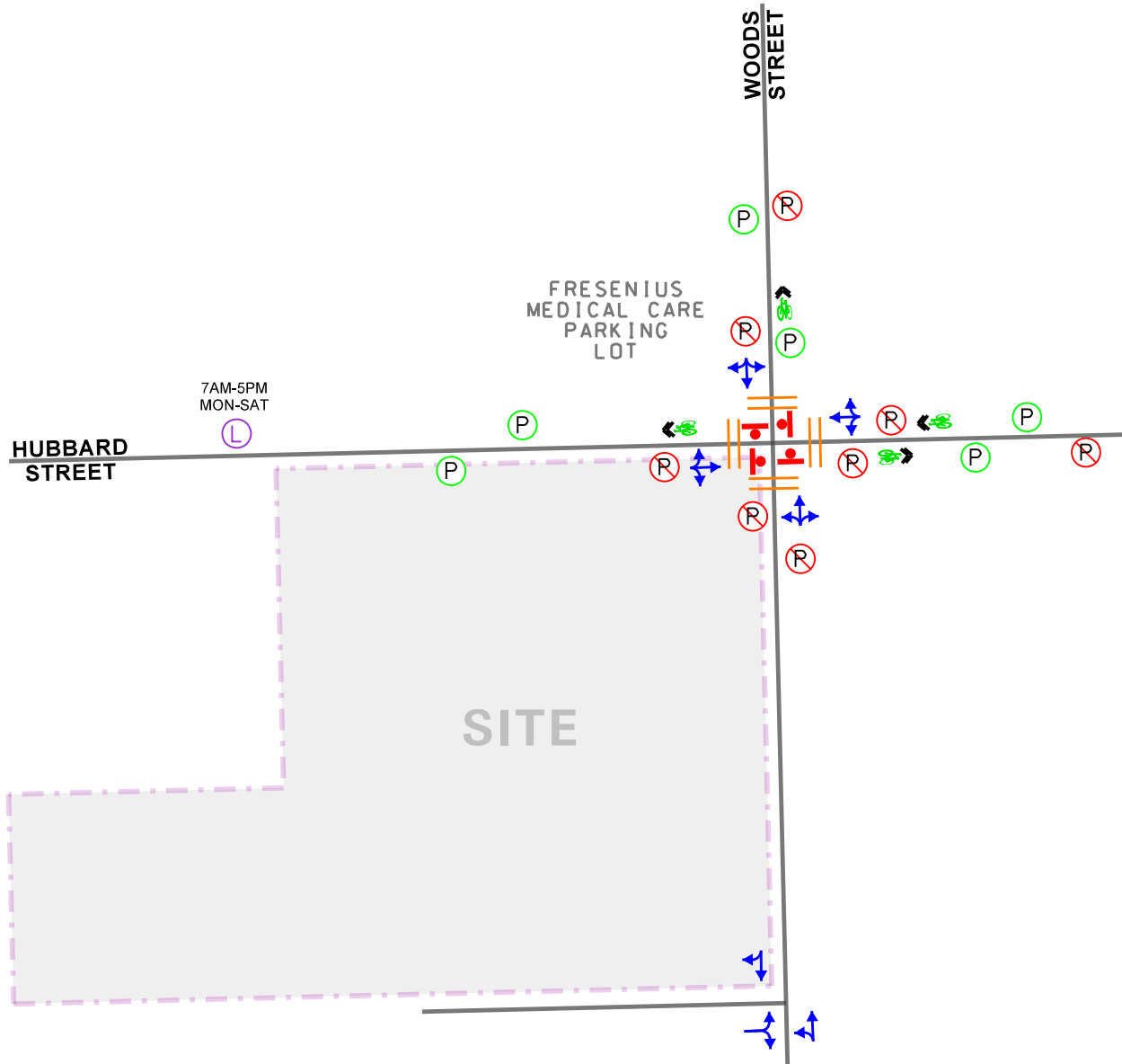
Some of the key characteristics of the existing streets within the study area are described below and illustrated in **Figure 3**. Unless otherwise noted, all streets are under the jurisdiction of the Chicago Department of Transportation (CDOT).

North Wood Street is a north-south local street that provides one lane in each direction. At its all-way stop-sign controlled intersection with West Hubbard Street, North Wood Street provides a shared left-turn/through/right-turn lane and standard style crosswalks on the northbound and southbound approaches. On-street parking is allowed except in the vicinity of the intersection and a posted tow zone to the north of the intersection. On the north leg of the intersection, sharrows are provided.








West Hubbard Street is an east-west local street that provides one lane in each direction. At its all-way stop sign controlled intersection with North Wood Street, West Hubbard Street provides a shared left-turn/through/right-turn lane and standard style crosswalks on the eastbound and westbound approaches. Parking is permitted on both sides of West Hubbard Street except in the vicinity of the intersection. There is a loading zone to the west of the intersection with North Wood Street. Sharrows are provided on both the east and west legs of the intersection. West Hubbard Street has an Annual Average Daily Traffic (AADT) volume of 3,650 vehicles.



NOT TO SCALE



LEGEND

-  - TRAVEL LANE
-  - STOP SIGN
-  - ON-STREET PARKING
-  - NO PARKING
-  - LOADING ZONE
-  - SHARROW
-  - STANDARD CROSSWALK

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Existing Roadway Characteristics



Job No: 23-152 Figure: 3

Public Transportation

The public transportation serving the area is summarized below.

CTA Bus Routes. The area is served by the following bus routes, which have bus stops in the vicinity of the site:

- *Route 50 (Damen)* generally provides service along Damen Avenue between Foster Avenue and Archer Avenue with the ends of the route near the intersections of Ashland Avenue and Clark Street. This route serves locations such as the Damen Avenue Brown Line station, Amundsen High School, the Illinois Medical District, and the 35th Street/Archer Avenue Orange Line station. Service is generally provided every day from approximately 4:00 A.M. to 11:00 P.M.
- *Route 65 (Grand)* provides service on Grand Avenue between Grand/Nordica and Navy Pier. Notable points of interest along the route include the Streeterville and River North neighborhoods, Grand Red Line station, Grand Blue Line station, Humboldt Park, Grand/Cicero Metra Milwaukee District-West station, ITW Speer Academy, Prosser Career Academy, and Bricktown Square shopping center. Service is provided seven days a week, including holidays, from early morning to late night.

CTA Rapid Transit. The area is served by the CTA Green Line and Pink Lines via the Ashland station, which is located approximately a half-mile to the southeast of the site. A description of the rail lines are as follows:

- The CTA Green Line operates daily along Lake Street between Harlem Avenue in Forest Park and the downtown loop and from the downtown loop to 63rd Street on Chicago's South Side. South of 59th Street, the line branches off to provide service between Cottage Grove Avenue and Ashland Avenue.
- The CTA Pink Line operates daily between 54th Avenue near Cermak Road in Cicero and the downtown Loop.

Alternative Modes of Transportation

The alternate modes of transportation serving the area are summarized below.

Pedestrian Accommodations. Sidewalks are provided on both sides of the streets within the study area. Crosswalks are provided on all legs of the intersection within the study area.

Existing Traffic Volumes

In order to determine current traffic conditions within the study area peak period traffic, pedestrian, and bicycle counts were conducted during the morning (7:00 to 9:00 A.M.) and evening (4:00 to 6:00 P.M.) peak periods, on Wednesday, May 31, 2023 for the intersection of North Wood Street with West Hubbard Street.

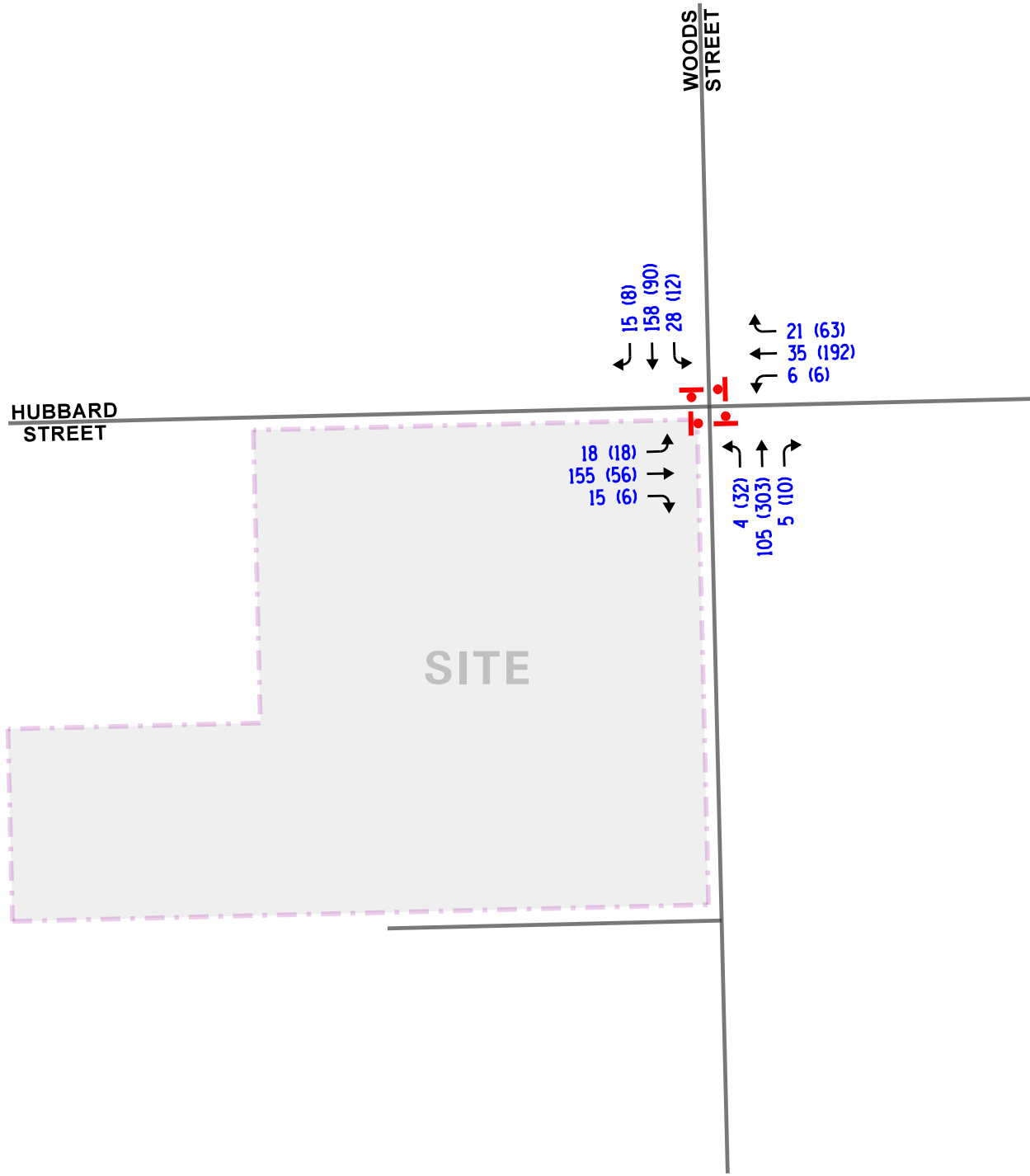
The results of the traffic counts show that the peak hours generally occur between:

- 7:45 A.M. and 8:45 A.M. during the weekday morning peak period
- 4:30 P.M. and 5:30 P.M. during the weekday evening peak period

Figure 4 illustrates the existing peak hour vehicle traffic volumes and **Figure 5** illustrates the existing pedestrian and bicycle volumes. Summaries of the traffic counts are included in the Appendix.



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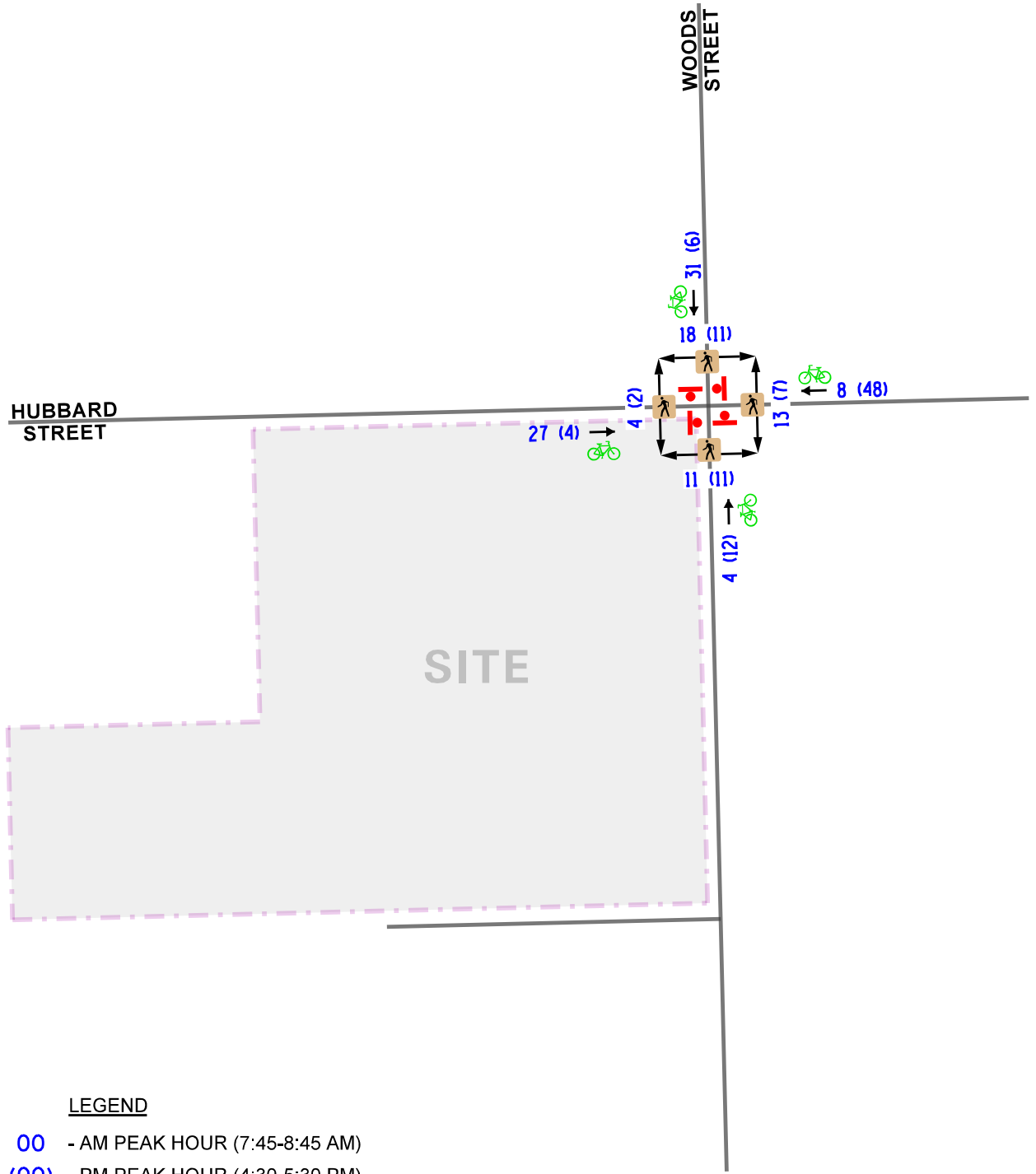


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Existing Traffic Volumes



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LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- 00 (00) - PEDESTRIAN VOLUME
- 00 (00) - BICYCLE VOLUME

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Existing Pedestrian and Bicycle
Traffic Volumes



Job No: 23-152

Figure: 5

3. Traffic Characteristics of the Proposed Facility

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed art storage facility, including the directional distribution and volumes of traffic that it will generate.

Proposed Site Plan

As proposed, the art storage facility is to occupy the site at 424 North Wood Street. The existing building is approximately 20,523 square feet in size. The existing parking lot provides approximately 10 parking spaces. Access will be provided via the existing access drive located on North Wood Street. The access drive will be a full-movement access drive and it is recommended that outbound movements be under stop sign control. Based on the information provided by the operator, the facility will only have 10 employees who will enter and exit the site from this access drive throughout the day. Deliveries and pick-up of art will be done in vans that will park on the street. A copy of the proposed site plan is included in the Appendix.

Directional Distribution

The directions from which employees and patrons of the proposed facility will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 6** illustrates the directional distribution of the facility-generated traffic.

Proposed Art Storage Facility Traffic Generation

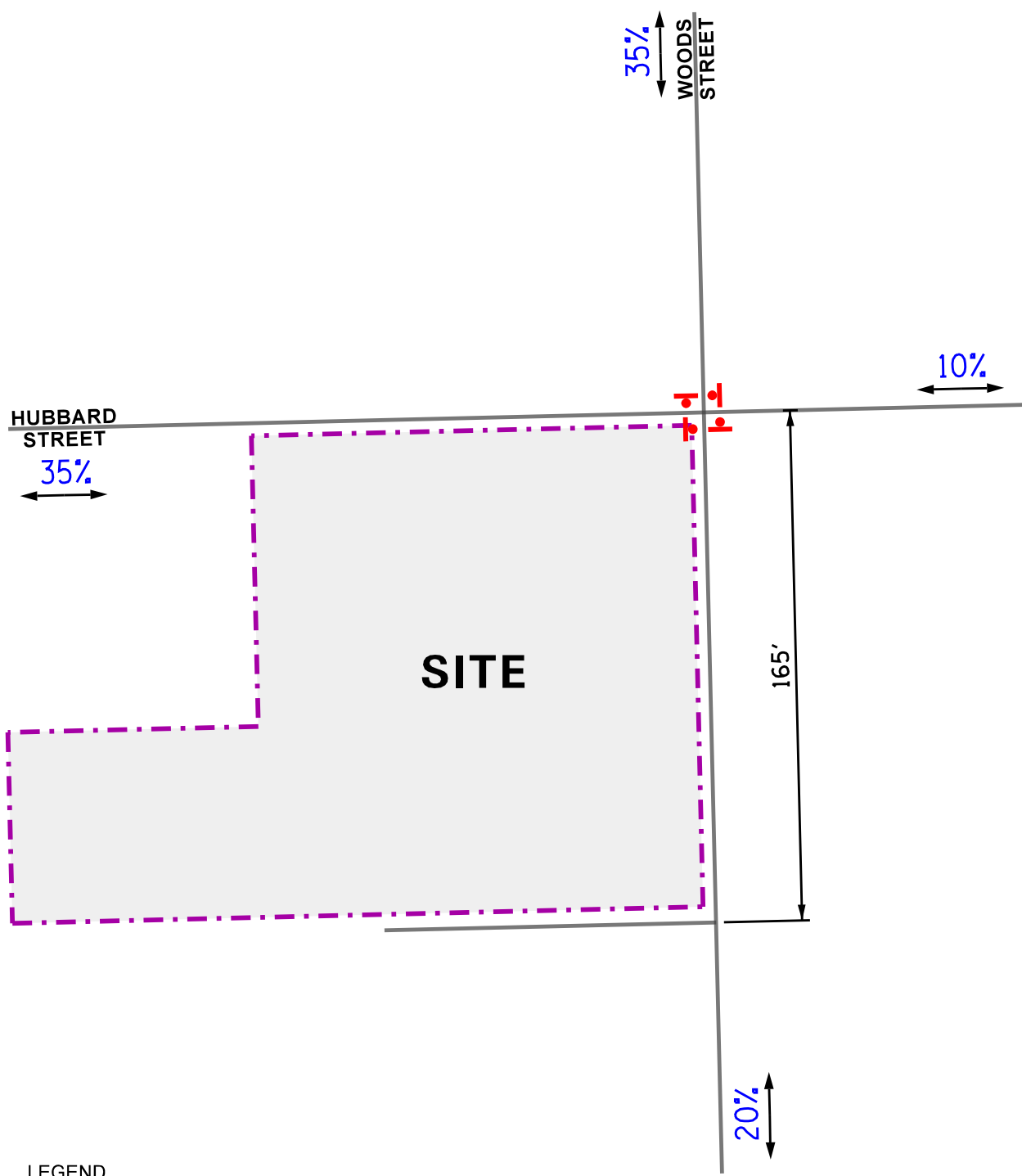
The volume of traffic generated by the proposed art storage facility was estimated based on information provided by the operator. As previously indicated, the facility is projected to have 10 employees. For the purposes of this evaluation, it was assumed that there would be eight inbound employees during the weekday morning peak hour and eight outbound employees during the weekday evening peak hour. This trip generation is summarized in **Table 1**. Furthermore, while some trips are anticipated to be made by alternative modes of transportation such as public transportation, bicycle, or walking, no trip reduction was assumed in order to provide a conservative analysis.

Table 1
PROJECTED PEAK HOUR SITE-GENERATED TRIPS

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	In	Out	Total	In	Out	Total
Art Storage (10 Employees)	8	0	8	0	8	8



NOT TO SCALE



LEGEND

- 00% - PERCENT DISTRIBUTION
- 00' - DISTANCE IN FEET

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Directional Distribution



Job No: 23-152 Figure: 6

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed art storage facility.

Art Storage Facility Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed facility were assigned to the street system in accordance with the previously described directional distribution (Figure 6). The total new traffic assignment for the proposed facility is illustrated in **Figure 7**.

Ambient Traffic Growth

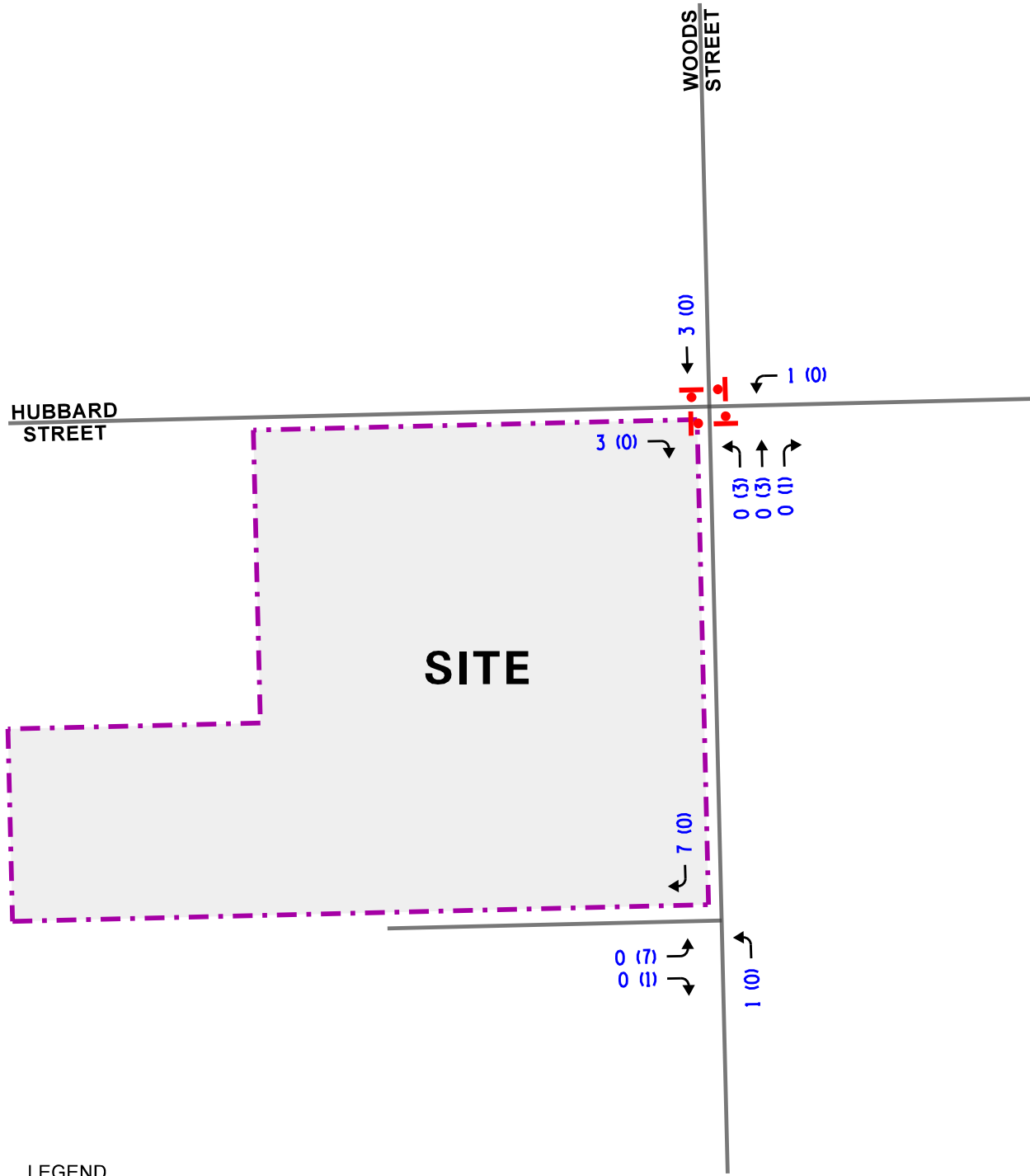
To account for any additional increase in traffic due to other factors or developments not previously discussed, an ambient growth factor of 0.5 percent per year was also applied to the study area over a six-year period to represent Year 2029 conditions. These no-build volumes are illustrated in **Figure 8**.

Total Projected Traffic Volumes

The art storage facility-generated traffic (Figure 7) was added to the existing traffic volumes accounting for background growth (Figure 8) to determine the Year 2029 total projected traffic volumes, as shown in **Figure 9**.



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LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)

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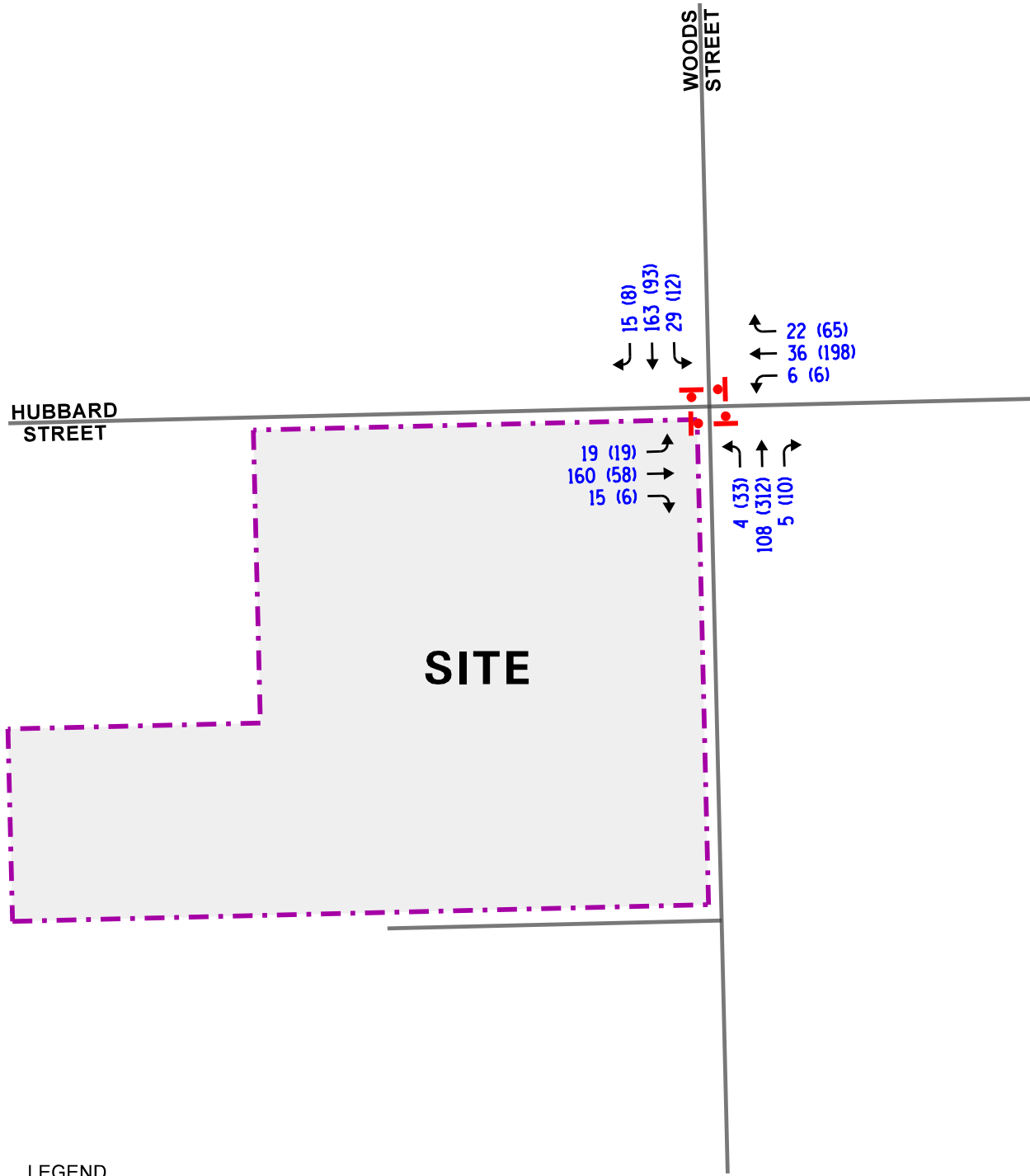
Site-Generated Traffic Volumes



Job No: 23-152 Figure: 7



NOT TO SCALE



LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)

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Chicago, Illinois

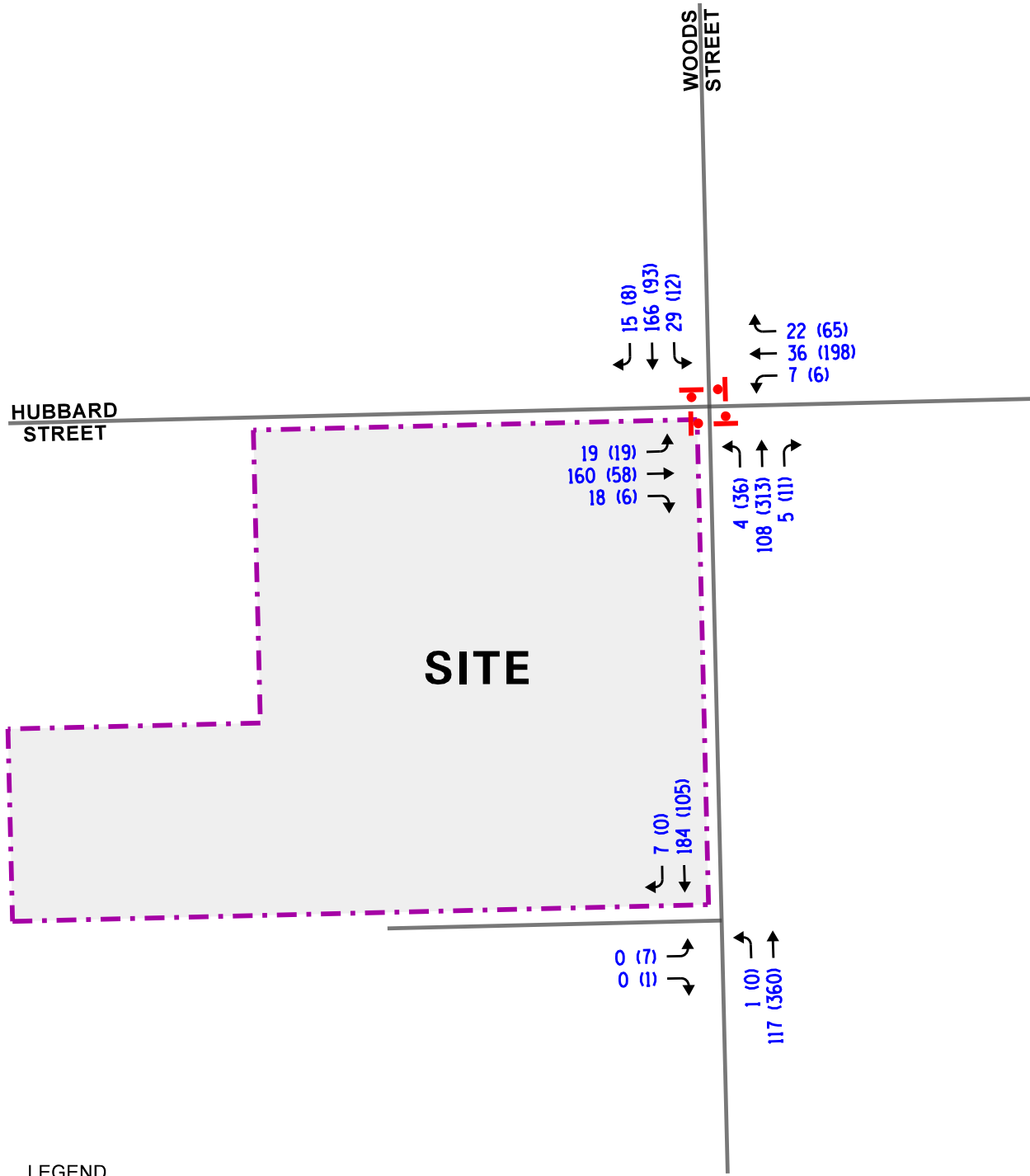
Year 2029 No-Build Traffic Volumes



Job No: 23-152 Figure: 8



NOT TO SCALE



LEGEND

- 00 - AM PEAK HOUR (7:45-8:45 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)

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Year 2029 Total Traffic Volumes



Job No: 23-152 Figure: 9

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the street system and access drives are projected to operate and whether any street improvements or modifications are required.

Traffic Analyses

Intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing, Year 2029 no-build, and Year 2029 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing and Year 2029 total projected conditions are presented in **Tables 2** and **3**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 2

CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Wood Street with Hubbard Street¹				
• Overall	A	9.4	B	12.6
• Eastbound Approach	A	9.7	A	9.8
• Westbound Approach	A	8.4	B	12.2
• Northbound Approach	A	8.9	B	14.3
• Southbound Approach	A	9.7	A	9.9
LOS = Level of Service Delay is measured in seconds.		1 – All-way stop control		

Table 3

CAPACITY ANALYSIS RESULTS – PROJECTED CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Wood Street with Hubbard Street¹				
• Overall	A	9.8	B	13.1
• Eastbound Approach	B	10.1	A	10.0
• Westbound Approach	A	8.6	B	12.6
• Northbound Approach	A	9.1	C	15.2
• Southbound Approach	B	10.2	B	10.1
Wood Street with Site Access Drive²				
• Eastbound Approach	A	0.0	B	11.6
• Northbound Left Turn	A	7.7	A	0.0
LOS = Level of Service Delay is measured in seconds.		1 – All-way stop control 2 – Two-way stop control		

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any street and traffic control improvements necessary to accommodate the art storage facility-generated traffic.

North Wood Street with West Hubbard Street

The results of the capacity analysis indicate that overall, this intersection currently operates at Level of Service (LOS) A during the weekday morning peak hour and LOS B during the weekday evening peak hour. All approaches currently operate at LOS B or better during the peak hours. Under Year 2029 projected conditions, the intersection is projected to continue operating at the same overall LOS with increases in delay of less than one second. The approaches are also projected to continue operating at LOS C or better during the weekday morning and weekday evening peak hours. The traffic estimated to be generated by the proposed facility is only projected to increase the traffic traversing the intersection by less than one percent during the peak hours. As such, no street or traffic control modifications are required at this intersection in conjunction with the proposed facility.

North Wood Street with Site Access Drive

The results of the capacity analysis indicate that outbound movements are projected to operate at LOS B or better during the weekday morning and weekday evening peak hours. The northbound left-turn movement into the site is projected to operate at LOS A during the peak hours. As previously indicated, it is recommended that outbound movements be under stop sign control. No additional street or traffic control modifications are required at this intersection in conjunction with the proposed facility.

6. Conclusion

Based on the proceeding analyses and recommendations, the following conclusions have been made:

- The traffic that will be generated by the proposed facility can be accommodated by the street system serving the site.
- The study area intersection has sufficient reserve capacity to accommodate the facility-generated traffic.
- The existing access drive to the off-street parking area will be adequate in accommodating the future traffic volumes.
- The existing 10-space parking lot will accommodate the parking needs of the proposed art storage facility.

Appendix

Traffic Count Summary Sheets
Site Plan
Level of Service Table
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - by Mvmt

Int# 4 wood/hubbard

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	4	25	6	3	6	1	1	8	2	3	17	1	77
715	3	21	4	3	6	1	1	12	1	3	37	1	93
730	1	36	6	3	6	1	2	30	2	9	20	5	121
745	1	41	13	8	6	1	1	33	0	5	41	5	155
800	4	54	3	6	10	3	2	28	1	5	41	2	159
815	5	34	10	4	6	2	0	22	1	3	31	7	125
830	5	29	2	3	13	0	2	22	2	2	42	4	126
845	4	25	5	5	8	0	0	13	0	2	25	3	90
1600	6	22	10	21	47	2	1	56	5	1	32	5	208
1615	2	27	8	19	50	3	2	62	4	2	16	3	198
1630	2	22	4	10	38	2	1	85	7	1	11	7	190
1645	2	22	2	9	57	2	2	60	8	2	18	1	185
1700	2	28	5	22	44	2	3	78	6	2	17	9	218
1715	2	18	1	22	53	0	4	80	11	1	10	1	203
1730	6	13	2	11	44	2	1	71	7	3	22	3	185
1745	2	17	2	11	51	1	2	67	5	1	14	1	174
Total	51	434	83	160	445	23	25	727	62	45	394	58	2507

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - Totals

Int# 4 wood/hubbard

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	35	10	11	21	12	24	29	12	77
715	28	10	14	41	16	42	25	10	93
730	43	10	34	34	38	28	46	9	121
745	55	15	34	51	46	55	47	7	155
800	61	19	31	48	36	46	62	15	159
815	49	12	23	41	33	41	39	12	125
830	36	16	26	48	29	46	31	20	126
845	34	13	13	30	21	30	27	12	90
1600	38	70	62	38	82	43	25	58	208
1615	37	72	68	21	84	26	32	56	198
1630	28	50	93	19	102	16	25	47	190
1645	26	68	70	21	70	22	26	67	185
1700	35	68	87	28	109	25	32	52	218
1715	21	75	95	12	103	15	19	66	203
1730	21	57	79	28	85	25	18	57	185
1745	21	63	74	16	79	18	19	58	174
Total	568	628	814	497	945	502	502	558	2507

TEAPAC[Ver 9.50.02] - 15-Minute Flow Rates: by Movement

Int# 4 wood/hubbard

Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	16	100	24	12	24	4	4	32	8	12	68	4	308
715	12	84	16	12	24	4	4	48	4	12	148	4	372
730	4	144	24	12	24	4	8	120	8	36	80	20	484
745	4	164	52	32	24	4	4	132	0	20	164	20	620
800	16	216	12	24	40	12	8	112	4	20	164	8	636
815	20	136	40	16	24	8	0	88	4	12	124	28	500
830	20	116	8	12	52	0	8	88	8	8	168	16	504
845	16	100	20	20	32	0	0	52	0	8	100	12	360
1600	24	88	40	84	188	8	4	224	20	4	128	20	832
1615	8	108	32	76	200	12	8	248	16	8	64	12	792
1630	8	88	16	40	152	8	4	340	28	4	44	28	760
1645	8	88	8	36	228	8	8	240	32	8	72	4	740
1700	8	112	20	88	176	8	12	312	24	8	68	36	872
1715	8	72	4	88	212	0	16	320	44	4	40	4	812
1730	24	52	8	44	176	8	4	284	28	12	88	12	740
1745	8	68	8	44	204	4	8	268	20	4	56	4	696

TEAPAC[Ver 9.50.02] - 15-Minute Flow Rates: Appr/Exit Totals

Int# 4 wood/hubbard

Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	140	40	44	84	48	96	116	48	308
715	112	40	56	164	64	168	100	40	372
730	172	40	136	136	152	112	184	36	484
745	220	60	136	204	184	220	188	28	620
800	244	76	124	192	144	184	248	60	636
815	196	48	92	164	132	164	156	48	500
830	144	64	104	192	116	184	124	80	504
845	136	52	52	120	84	120	108	48	360
1600	152	280	248	152	328	172	100	232	832
1615	148	288	272	84	336	104	128	224	792
1630	112	200	372	76	408	64	100	188	760
1645	104	272	280	84	280	88	104	268	740
1700	140	272	348	112	436	100	128	208	872
1715	84	300	380	48	412	60	76	264	812
1730	84	228	316	112	340	100	72	228	740
1745	84	252	296	64	316	72	76	232	696

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: by Movement

Int# 4 wood/hubbard

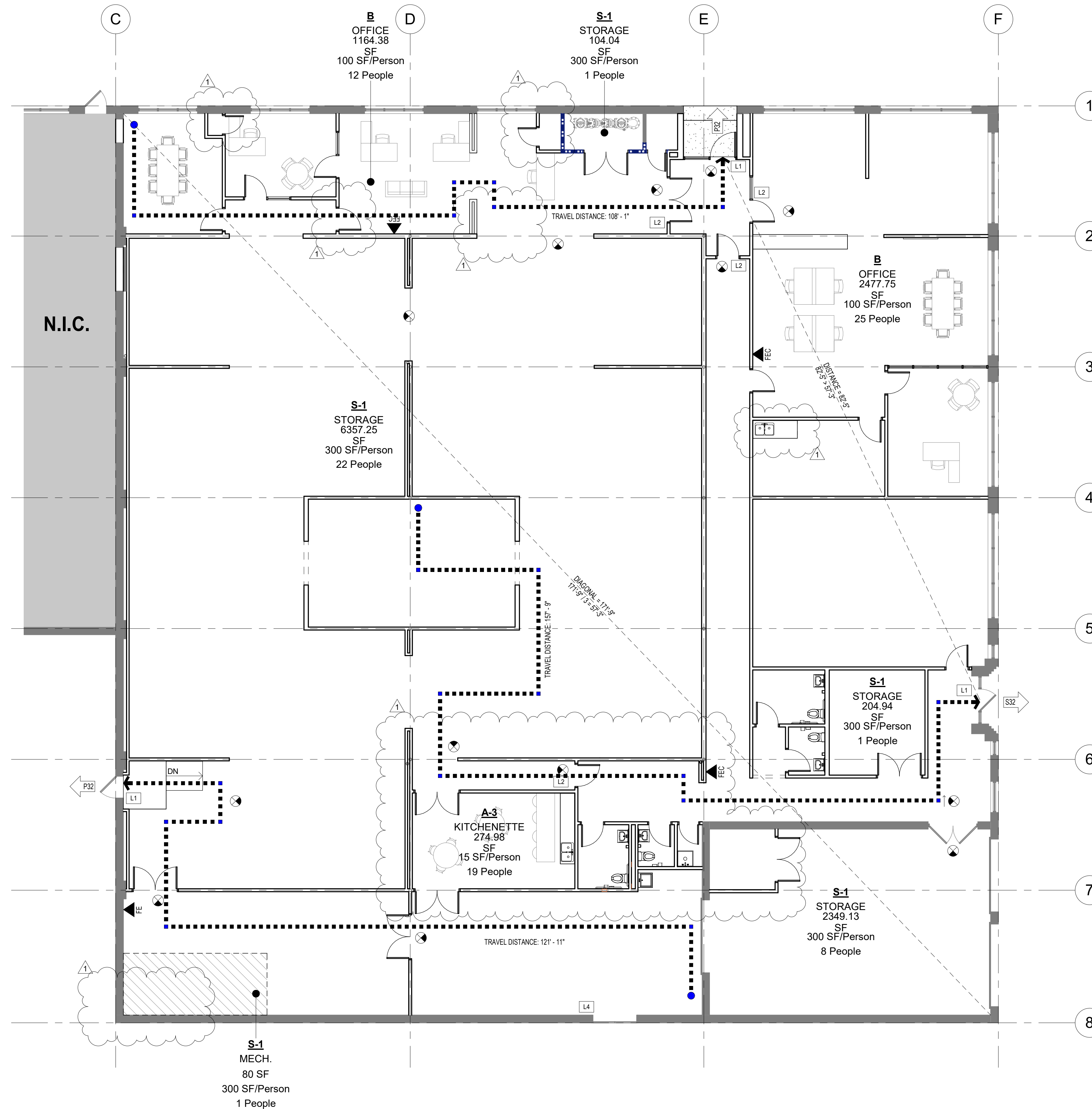
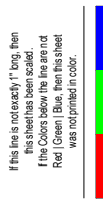
Begin Time	N-Approach			E-Approach			S-Approach			W-Approach			Int Total
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
700	9	123	29	17	24	4	5	83	5	20	115	12	446
715	9	152	26	20	28	6	6	103	4	22	139	13	528
730	11	165	32	21	28	7	5	113	4	22	133	19	560
745	15	158	28	21	35	6	5	105	4	15	155	18	565
800	18	142	20	18	37	5	4	85	4	12	139	16	500
815	14	88	17	12	27	2	2	57	3	7	98	14	341*
830	9	54	7	8	21	0	2	35	2	4	67	7	216*
845	4	25	5	5	8	0	0	13	0	2	25	3	90*
1600	12	93	24	59	192	9	6	263	24	6	77	16	781
1615	8	99	19	60	189	9	8	285	25	7	62	20	791
1630	8	90	12	63	192	6	10	303	32	6	56	18	796
1645	12	81	10	64	198	6	10	289	32	8	67	14	791
1700	12	76	10	66	192	5	10	296	29	7	63	14	780
1715	10	48	5	44	148	3	7	218	23	5	46	5	562*
1730	8	30	4	22	95	3	3	138	12	4	36	4	359*
1745	2	17	2	11	51	1	2	67	5	1	14	1	174*

TEAPAC[Ver 9.50.02] - 60-Minute Volumes: Appr/Exit Totals

Int# 4 wood/hubbard

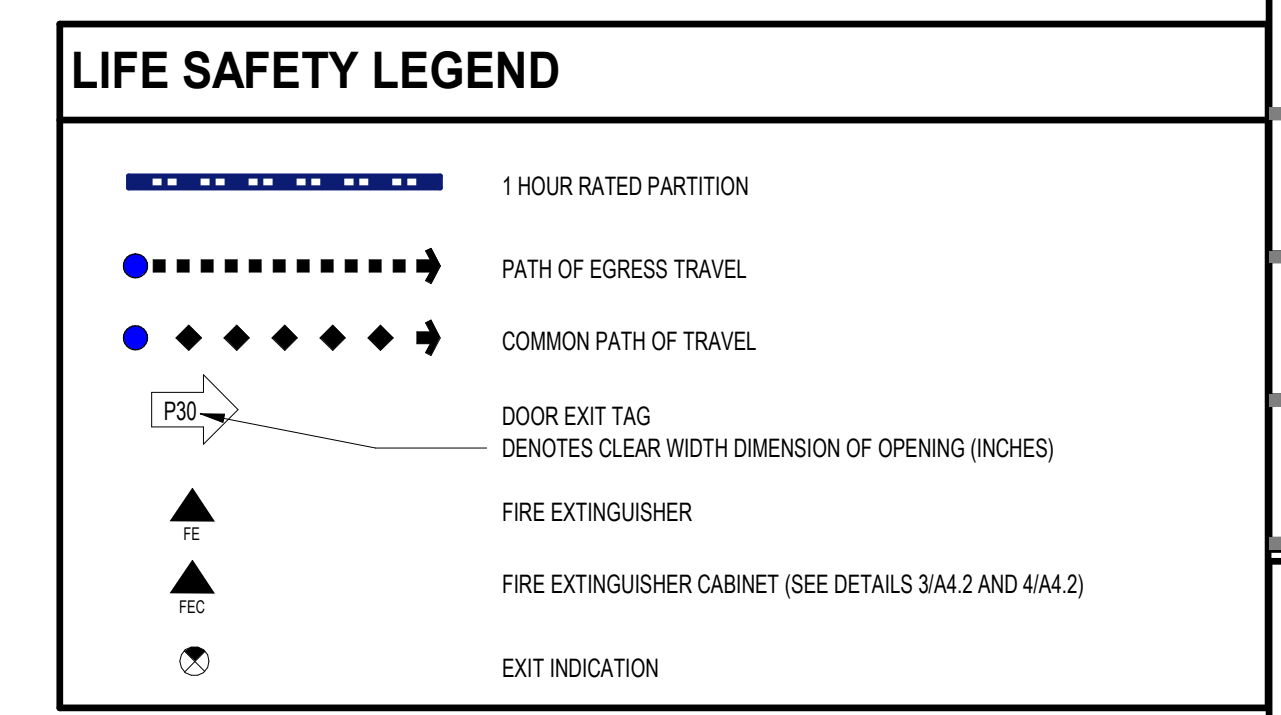
Begin Time	Approach Totals				Exit Totals				Int Total
	N	E	S	W	N	E	S	W	
700	161	45	93	147	112	149	147	38	446
715	187	54	113	174	136	171	180	41	528
730	208	56	122	174	153	170	194	43	560
745	201	62	114	188	144	188	179	54	565
800	180	60	93	167	119	163	159	59	500
815	119	41	62	119	83	117	97	44	341*
830	70	29	39	78	50	76	58	32	216*
845	34	13	13	30	21	30	27	12	90*
1600	129	260	293	99	338	107	108	228	781
1615	126	258	318	89	365	89	115	222	791
1630	110	261	345	80	384	78	102	232	796
1645	103	268	331	89	367	87	95	242	791
1700	98	263	335	84	376	83	88	233	780
1715	63	195	248	56	267	58	56	181	562*
1730	42	120	153	44	164	43	37	115	359*
1745	21	63	74	16	79	18	19	58	174*

Site Plan



LIFE SAFETY PLAN - LEVEL 1
 1/8" = 1'-0"

- ### LIFE SAFETY GENERAL NOTES
- FINAL LAYOUT OF WAREHOUSE EXIT SIGNS & FIRE EXTINGUISHERS TO BE COORDINATED W/ LOCAL FIRE MARSHALL. FIRE EXTINGUISHERS IN COOLER & FREEZER TO BE RATED FOR SET POINT TEMPERATURE.
 - ALL EGRESS ILLUMINATION SHALL COMPLY WITH CBC 2019 SECTION 1008. THE MEANS OF EGRESS ILLUMINATION LEVEL SHALL NOT BE LESS THAN 1 FOOT-CANDLE AT THE WALKING SURFACE LEVEL. SEE ELEC. DWGS. FOR EGRESS ILLUMINATION COMPLIANCE.
 - PROVIDE TACTILE EXIT SIGNS IN COMPLIANCE W/ CBC 2019 SECTION 1013.
 - EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OF EFFORT.
 - ADDITIONAL EXIT SIGNS AND/OR EMERGENCY LIGHTING MAY BE REQUIRED, SUBJECT TO FIELD INSPECTION & DETERMINATION OF THE AUTHORITY HAVING JURISDICTION.
 - TYPICAL FIRE EXTINGUISHERS IN OFFICE AREAS TO BE 5# ABC, IN CABINET - G.C. TO CONFIRM.
 - TYPICAL FIRE EXTINGUISHERS IN WAREHOUSE AREAS TO BE 10# ABC, MOUNTED ON WALL OR COLUMN - G.C. TO CONFIRM.
 - LOCATIONS OF FIRE EXTINGUISHERS SHALL COMPLY WITH SECTION 906 OF CBC 2019. THE TRAVEL DISTANCE TO FIRE EXTINGUISHERS SHALL NOT EXCEED 75'-0", UON.
 - ALL PLAN BACKGROUND FEATURES SUCH AS RACKING, EQUIPMENT, FURNITURE, ETC. ARE SHOWN LIGHTENED ON THE FLOOR PLANS AND DISPLAYED FOR COORDINATION PURPOSES ONLY. THEY ARE NOT TO BE CONSIDERED A PART OF THIS PERMIT, NOR SHALL THEY BE USED FOR FIELD DIMENSIONING.



KEY NOTES

L1	TACTILE EXIT SIGN: "EXIT"
L2	TACTILE EXIT SIGN: "TO EXIT"
L4	EXISTING DOUBLE DOOR TO BE SECURED IN THE LOCKED POSITION. SIGNAGE TO BE PROVIDED INDICATING "NOT AN EXIT"

OCCUPANCY LOAD CALCULATION

Name	Occupancy Type	Area	Load Factor	Occupancy Load
KITCHENETTE	A-3	274.98 SF	15	19
A-3				19
OFFICE	B	2477.75 SF	100	25
OFFICE	B	1164.38 SF	100	12
B				37
STORAGE	S-1	6357.25 SF	300	22
STORAGE	S-1	2349.13 SF	300	8
STORAGE	S-1	204.94 SF	300	1
STORAGE	S-1	104.04 SF	300	1
MECH.	S-1	80 SF	300	1
S-1				33
				89

REQUIRED DOOR WIDTH: 98 X 0.2" = 19.6" PROVIDED DOOR WIDTH: 2 EXITS X 32" (MIN.) = 64"

PLUMBING CALCULATION

CLASSIFICATION (OCCUPANTS)	WATER CLOSETS	LAVATORIES	DRINKING FOUNTAINS	SERVICE SINKS
STORAGE (9,114 + 408) / 300 = 32	MENS = 16 1 PER 100 = 0.16	1 PER 100 = 0.16	1 PER 1000 = 0.02	1 REQUIRED PER FACILITY
BUSINESS (3642) / 100 = 37	WOMENS = 16 1 PER 100 = 0.16	1 PER 100 = 0.16	1 PER 100 = 0.37	
	MENS = 19 2 FOR 11-25 = 2, 1 ADDL FOR EACH 25 IN EXCESS OF 25 = 0.48 2.48 / 2 = 1.24 EACH	1 PER 40 = 0.48		
	WOMENS = 19 1 PER 40 = 0.48	1 PER 40 = 0.48		
SUBTOTALS	MEN 1.40	0.64	0.37	1
	WOMEN 1.40	0.64		
REQUIRED TOTALS	MEN 2	1	1	1
	WOMEN 2	1		
TOTAL PROVIDED	MEN 2	2	2	1
	WOMEN 2	2		

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CARRIE SECRIST GALLERY

PROJECT
SECRETIST RENOVATION
 424 N Wood St.
 Chicago, IL 60622

JOB NO: GA1170
 PA: AP
 ISSUE DATE: 02-16-2023

REVISIONS:

#	DESCRIPTION	DATE
1	PERMIT COMMENTS	04/17/2023

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SHEET NUMBER
LS1.1
 LIFE SAFETY

Level of Service Table

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets
Weekday Morning Peak Hour – Existing Conditions

HCM 6th AWSC
3: Wood Street & Hubbard Street

06/26/2023

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	155	15	6	35	21	4	105	5	28	158	15
Future Vol, veh/h	18	155	15	6	35	21	4	105	5	28	158	15
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	170	16	7	38	23	4	115	5	31	174	16
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	8.4	8.9	9.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	10%	10%	14%
Vol Thru, %	92%	82%	56%	79%
Vol Right, %	4%	8%	34%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	114	188	62	201
LT Vol	4	18	6	28
Through Vol	105	155	35	158
RT Vol	5	15	21	15
Lane Flow Rate	125	207	68	221
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0.276	0.092	0.291
Departure Headway (Hd)	4.855	4.818	4.849	4.74
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	742	734	755
Service Time	2.915	2.872	2.914	2.793
HCM Lane V/C Ratio	0.17	0.279	0.093	0.293
HCM Control Delay	8.9	9.7	8.4	9.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1.1	0.3	1.2

Capacity Analysis Summary Sheets
Weekday Evening Peak Hour – Existing Conditions

HCM 6th AWSC
3: Wood Street & Hubbard Street

06/26/2023

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	56	6	6	192	63	32	303	10	12	90	8
Future Vol, veh/h	18	56	6	6	192	63	32	303	10	12	90	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	62	7	7	211	69	35	333	11	13	99	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	12.2	14.3	9.9
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	23%	2%	11%
Vol Thru, %	88%	70%	74%	82%
Vol Right, %	3%	7%	24%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	345	80	261	110
LT Vol	32	18	6	12
Through Vol	303	56	192	90
RT Vol	10	6	63	8
Lane Flow Rate	379	88	287	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.545	0.141	0.422	0.186
Departure Headway (Hd)	5.177	5.777	5.295	5.55
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	698	620	680	645
Service Time	3.209	3.824	3.331	3.594
HCM Lane V/C Ratio	0.543	0.142	0.422	0.188
HCM Control Delay	14.3	9.8	12.2	9.9
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	3.3	0.5	2.1	0.7

Capacity Analysis Summary Sheets
Weekday Morning Peak Hour – Projected Conditions

HCM 6th AWSC
3: Wood Street & Hubbard Street

06/26/2023

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	160	18	7	36	22	4	108	5	29	166	15
Future Vol, veh/h	19	160	18	7	36	22	4	108	5	29	166	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	182	20	8	41	25	5	123	6	33	189	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	8.6	9.1	10.2
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	10%	11%	14%
Vol Thru, %	92%	81%	55%	79%
Vol Right, %	4%	9%	34%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	197	65	210
LT Vol	4	19	7	29
Through Vol	108	160	36	166
RT Vol	5	18	22	15
Lane Flow Rate	133	224	74	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.183	0.304	0.102	0.32
Departure Headway (Hd)	4.95	4.89	4.952	4.82
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	719	730	716	740
Service Time	3.022	2.957	3.033	2.884
HCM Lane V/C Ratio	0.185	0.307	0.103	0.323
HCM Control Delay	9.1	10.1	8.6	10.2
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.7	1.3	0.3	1.4

HCM 6th TWSC
7: Wood Street & Alley

06/26/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	0	1	117	184	7
Future Vol, veh/h	0	0	1	117	184	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1	133	209	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	348	213	217	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	649	827	1353	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	648	827	1353	-	-	-
Mov Cap-2 Maneuver	648	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1353	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	7.7	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Capacity Analysis Summary Sheets
Weekday Evening Peak Hour – Projected Conditions

HCM 6th AWSC
3: Wood Street & Hubbard Street

06/26/2023

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	58	6	6	198	65	36	313	11	12	93	8
Future Vol, veh/h	19	58	6	6	198	65	36	313	11	12	93	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	64	7	7	218	71	40	344	12	13	102	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10	12.6	15.2	10.1
HCM LOS	A	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	23%	2%	11%
Vol Thru, %	87%	70%	74%	82%
Vol Right, %	3%	7%	24%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	83	269	113
LT Vol	36	19	6	12
Through Vol	313	58	198	93
RT Vol	11	6	65	8
Lane Flow Rate	396	91	296	124
Geometry Grp	1	1	1	1
Degree of Util (X)	0.575	0.149	0.441	0.194
Departure Headway (Hd)	5.234	5.876	5.37	5.636
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	688	608	671	635
Service Time	3.271	3.93	3.412	3.687
HCM Lane V/C Ratio	0.576	0.15	0.441	0.195
HCM Control Delay	15.2	10	12.6	10.1
HCM Lane LOS	C	A	B	B
HCM 95th-tile Q	3.7	0.5	2.3	0.7

HCM 6th TWSC
7: Wood Street & Alley

06/26/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	7	1	0	360	105	0
Future Vol, veh/h	7	1	0	360	105	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	1	0	396	115	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	511	115	115	0	-	0
Stage 1	115	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	523	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	523	937	1474	-	-	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	680	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1474	-	554	-	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	0	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-