



181 WEST HIGH STREET
SOMERVILLE, NJ 08876

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TRAFFIC IMPACT ANALYSIS

FOR

VALOR GROUP

PROPOSED WAREHOUSE EXPANSION

50 ATRIUM DRIVE
BLOCK 468.01, LOT 24.01
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

JANUARY 18, 2022

A handwritten signature in black ink, appearing to read 'Elizabeth Dolan', written over a horizontal line.

ELIZABETH DOLAN, P.E.
NJ LICENSE NO. 37071

A handwritten signature in black ink, appearing to read 'Gary W. Dean', written over a horizontal line.

GARY W. DEAN, P.E., P.P.
NJ LICENSE NO. 33722

TRAFFIC ENGINEERING
PARKING STUDIES
HIGHWAY DESIGN
DOT ACCESS PERMITS
MUNICIPAL CONSULTING

INTRODUCTION

Dolan and Dean Consulting Engineers, LLC (D&D) has prepared this Traffic Impact Analysis to support the application for a proposed warehouse expansion in the northeast corner of Atrium Drive and Davidson Avenue in Franklin Township, Somerset County. The site is currently occupied by a 70,642 square foot warehouse, with 14,426 square feet of ancillary office space. A proposed expansion will add another 70,300 square feet of warehouse space.

While any redevelopment of the property will result in traffic changes, both the volume and characteristics of that traffic are of important consideration in the evaluation of this application. D&D has been commissioned by the applicant to prepare this Traffic Impact Analysis for the proposed warehouses and to evaluate the adequacy of the roadway system to accommodate the new site generated traffic generated. Accordingly, this analysis includes the following:

- A review of the existing roadway and traffic conditions in the site
- A projection of traffic volumes that could be generated by the warehouse expansion
- An analysis of the existing and future roadway and site driveway operations
- A site plan review focusing on the access design, interior circulation, and parking supply



EXISTING CONDITIONS

The site is designated as Lot 24.01 in Block 468.01 and is also known as 50 Atrium Way. See appended Figure 1 showing the site location in the corner of the Atrium Drive and Davidson Avenue intersection.

The property is developed with an 85,068 square foot building, used by Valor Group for warehousing. Site access is provided on Atrium Drive opposite a driveway for 220 Davidson Avenue. The site also has a right-in/right-out driveway on Davidson Avenue.

EXISTING ROADWAY CONDITIONS

Atrium Drive is a private roadway between Davidson Avenue and Pierce Street. The posted speed limit is 25 miles per hour and, although unstriped, one travel lane per direction is provided. The Atrium Drive approach to Davidson Avenue and Pierce Street is controlled by a STOP sign. The approach to Davidson Avenue provides separate right-turn and left-turn lanes. Atrium Drive provides access to Atrium Corporate Park and DoubleTree hotel.

Davidson Avenue has a general northeast-southwest orientation between Easton Avenue and New Brunswick Road. Along the site frontage, the speed limit is 45 miles per hour and one lane is provided for each direction of travel.

EXISTING TRAFFIC VOLUMES

Manual turning movement traffic volume counts were conducted during weekday morning and evening periods when area traffic is typically at peak levels. Vehicular traffic counts were performed by D&D on Tuesday, September 21, 2021, from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:30 p.m. at the existing site driveways and the Atrium Drive intersection with Davidson Avenue.



Peak site driveway volumes were recorded from 8:00 to 9:00 a.m. and from 5:30 to 6:30 p.m.
 Peak street hours were recorded from 7:45 a.m. to 8:45 a.m. from 5:00 p.m. to 6:00 p.m.

The peak site hour volumes are shown on appended Figure 2.

Table I summarizes peak hour trip generation recorded at the site driveways.

TABLE I
 EXISTING TRIP GENERATION
 85,068 SF WAREHOUSE

| PEAK HOUR | ENTER | EXIT | TOTAL |
|-----------|-------|------|-------|
| Morning | 30 | 4 | 34 |
| Evening | 13 | 52 | 65 |

D&D had counted the Davidson Avenue and Executive Drive intersection (north of the site) in 2017. Comparison of 2017 and 2021 peak hour volumes shows a reduction in traffic associated with the office vacancies in the area. Due to the uncertain impacts of COVID-19, no adjustments have been made to the 2021 peak hour counts.

ANALYSIS OF EXISTING TRAFFIC VOLUMES

While traffic volumes provide a measure of activity on the area roadway system, it is also important to evaluate how well that system can accommodate those volumes – i.e., a comparison of peak hour traffic volumes with available roadway capacity. Capacity represents the maximum number of vehicles that can be accommodated given the constraints of roadway geometry, environment, traffic characteristics, and controls. Intersections are usually the critical point in any road network since it is at such points that conflicts exist between through, crossing, and turning traffic. It is at these locations where congestion is most likely to occur.

A description of intersection Levels of Service is noted below:



INTERSECTION LEVELS OF SERVICE AND DELAY

| Level of Service | Signalized Delay per Vehicle (seconds) | Unsignalized Delay per Vehicle (seconds) |
|------------------|--|--|
| A | < 10.0 | <0-10 |
| B | >10 and <20 | >10 to <15 |
| C | >20 and < 35 | >15 to <25 |
| D | >35 and < 55 | > 25 to <35 |
| E | >55 and < 80 | > 35 to <50 |
| F | > 80 | >50 |

A volume/capacity Level of Service analysis was conducted for the existing traffic volumes at the site driveway along Frontage Road using the updated Highway Capacity Manual (HCM) and the Synchro (Version 10) modeling software the follows the HCM procedures. This type of analysis is performed to assist intersection operations and to identify any areas of excessive delay or congestion.

It was found that all movements at the study intersections operate at favorable Levels of Service “C” or better during both peak hours with most movements operating with minimal delays. The analysis results are consistent with the observations made during the traffic counts which showed relatively short delays and minimal queuing on all approaches. No congestion was observed, and all vehicles were able to turn from the intersecting streets during both peak hours.



TRAFFIC CHARACTERISTICS OF THE PROPOSED USE

The potential traffic generation from any use is directly related to the type, size, and characteristic of the use itself. The specific location of a particular use may also affect trip generation due to volumes of passing street traffic, and competing uses. Trip generation projections are customarily made using estimates compiled by the Institute of Transportation Engineers (ITE) in the 11th Edition of the Trip Generation Manual for uses that closely resemble the anticipated operation, however ITE also suggests using specific on-site peak hour operational data, when such data exists.

As Valor Group is currently operating on site and generating volumes at the site driveways, peak hour traffic projections for the proposed warehouse expansion can be calculated based on data collected through the previously mentioned traffic counts.

Table II summarizes the morning and evening peak hour driveway volumes projected for the proposed 70,300 square foot warehouse expansion based on the existing trip rates which currently exist on site:

TABLE II
ITE TRIP GENERATION PROJECTIONS
70,300 SF WAREHOUSE

| PEAK HOUR | ENTER | EXIT | TOTAL |
|-----------|-------|------|-------|
| Morning | 25 | 3 | 28 |
| Evening | 11 | 43 | 54 |

As shown, forecasted development traffic will be relatively low. It should be noted that the ITE Manual of Transportation Engineering Studies recommends that traffic impact studies be performed for developments that will generate 100 or more peak hour trips. Site traffic falls well below this threshold and accounts for only 54% of what would be considered a



significant increase. as a result, the site development will not create a negative traffic impact on the adjacent roadway network.

The additional traffic to the site were routed through the adjacent roadway network based on the existing roadway distributions. Site generated traffic volumes for the proposed warehouse expansion are shown on appended Figure 4.



FUTURE TRAFFIC CONDITIONS

FUTURE TRAFFIC VOLUMES

The existing Atrium Drive and Davidson Avenue traffic volumes were increased by 1.0% per year over a projected two-year development build-out horizon to create a projection of future traffic conditions that would exist if the site were to remain unchanged. This background traffic growth rate is consistent with the current estimate for urban local roadways in Somerset County as published by the NJDOT in April 2019 and is used to develop the future 2024 “base” traffic volumes. The future 2024 “base” traffic volumes are shown on appended Figure 5. The assumption of traffic growth in general is conservative as it remains to be seen what the long-term impacts of the COVID pandemic will have on typical commuting traffic due to the increase in more remote workplace options and e-commerce. The growth rate also conservatively accounts for potential re-occupancy of the various office buildings in the area. In addition, anticipated volumes for the approved Hampton Inn & Suites Hotel, and the proposed Puleo International Warehouse (pending submission) located along Atrium Drive have been considered within this analysis. Forecasted volumes for these uses are shown on appended Figures 6 & 7.

Accordingly, the base traffic volumes and adjacent development volumes were totaled to establish the 2024 “no-build” volumes as shown in Figure 8.

Future “build” traffic volumes were established by surcharging the site generated traffic volumes onto the future “no-build” traffic volumes. The resulting future “build” traffic volumes assuming the development of a general warehouse, are shown on Figure 9.



ANALYSIS OF FUTURE TRAFFIC VOLUMES

Level of Service analyses were conducted for the future “no-build” and “build” weekday morning and evening peak hour traffic volumes at the subject intersections. The future “No-Build” and “Build” levels of service are shown on appended Figures 10 and 11 respectively.

The addition of background growth and site traffic will not significantly change Levels of Service at the adjacent intersections. All movements at the subject intersections will continue to operate at favorable Level of Service “C” or better during the study peak hours.

This study therefore demonstrates that the proposed development will not have a negative or perceptible impact on the operating conditions at surrounding intersection.



SITE ACCESS, CIRCULATION AND PARKING

The following comments address access and parking as shown on the Site Plan prepared by The Reynolds Group Inc.

- Primary access will be provided via the existing right-in, right-out driveway along Davidson Avenue, with alternative access provided via a full-movement driveway along Atrium Drive.
- The Ordinance requires one parking stall per 1,00 square feet of warehouse space up to 5,000 square feet, and one space per every 2,500 square feet thereafter, equating to a requirement of 60 parking stalls for the existing and proposed warehouse. In addition, the existing office use requires 58 spaces at a rate of one space per 250 square feet, for a total on-site requirement of 118 parking spaces.
- The site plan provides 174 passenger car parking spaces served by a 26-foot aisle. 10 trailer loading spaces served by a 80-foot aisle is proposed southeast of the new warehouse building. These dimensions will provide efficient two-way flow and parking maneuvers, especially for larger trucks that would frequent the site.

Based on this review, it is concluded that safe and efficient access and circulation can be provided to the site with reasonable and prudent driver behavior. Consequently, from a traffic engineering perspective, the site is particularly well suited for the proposed development and will have no detrimental impact on traffic conditions on the roads surrounding the site.



CONCLUSIONS

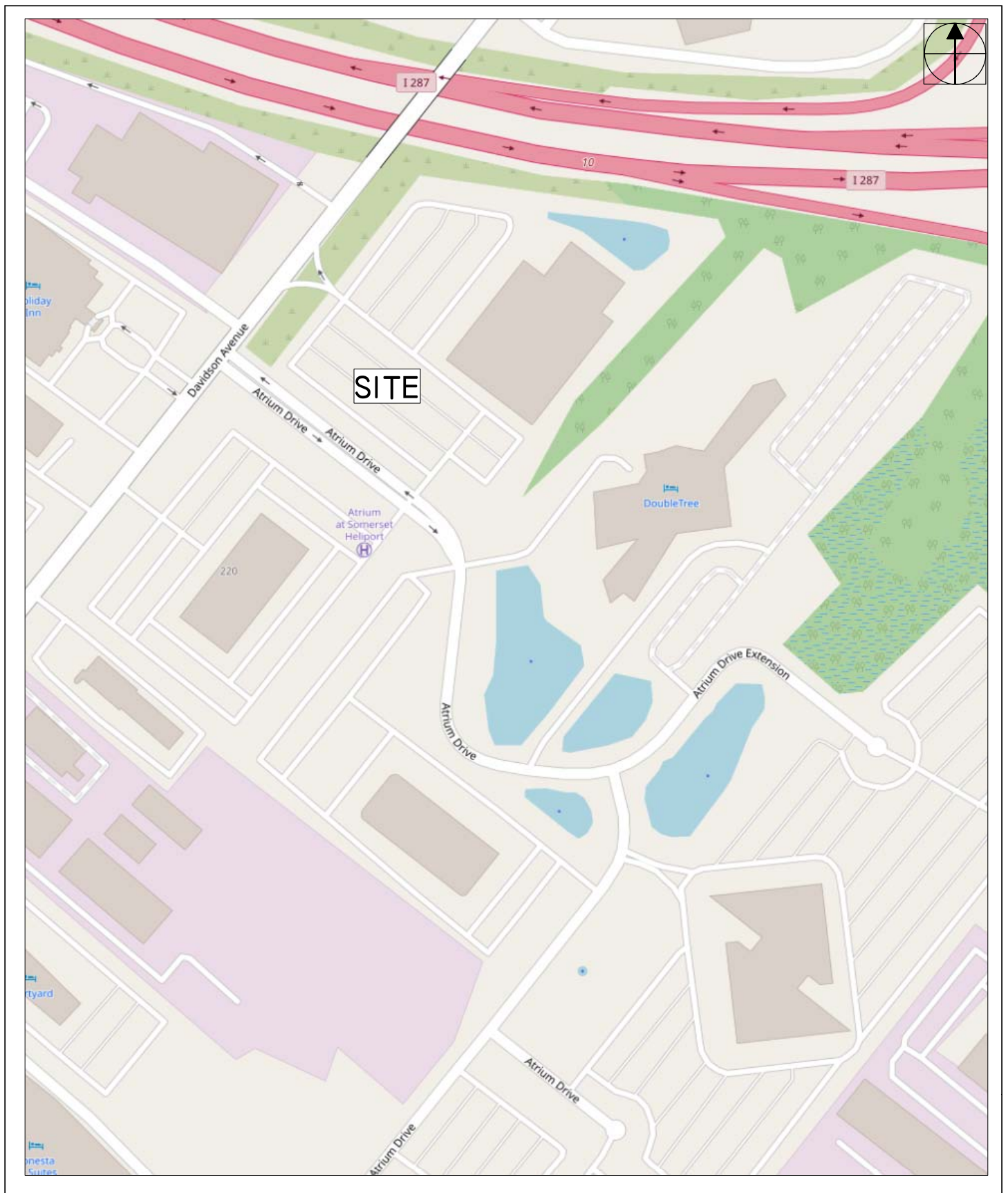
In summary, it is evident from this analysis of projected future traffic conditions, that the proposed site development for a warehousing facility would generate traffic increases which will not create a negative impact on the local roadway network.

With only minor traffic generation associated with the general warehouse use, adequate roadway capacity will continue to exist to accommodate future site traffic. All movements to and from the site will operate safely and efficiently with reasonable and prudent driver behavior.

Based on these findings, it is concluded that the site is particularly well suited for the proposed development. Such an operation will not negatively impact the traffic in the surrounding area or along the adjacent streets as adequate roadway capacity exists to accommodate the increases. The traffic characteristics of the uses will be consistently minimal, will be similar to most recent site use and will not result in any additional off tract congestion or unfavorable conditions.

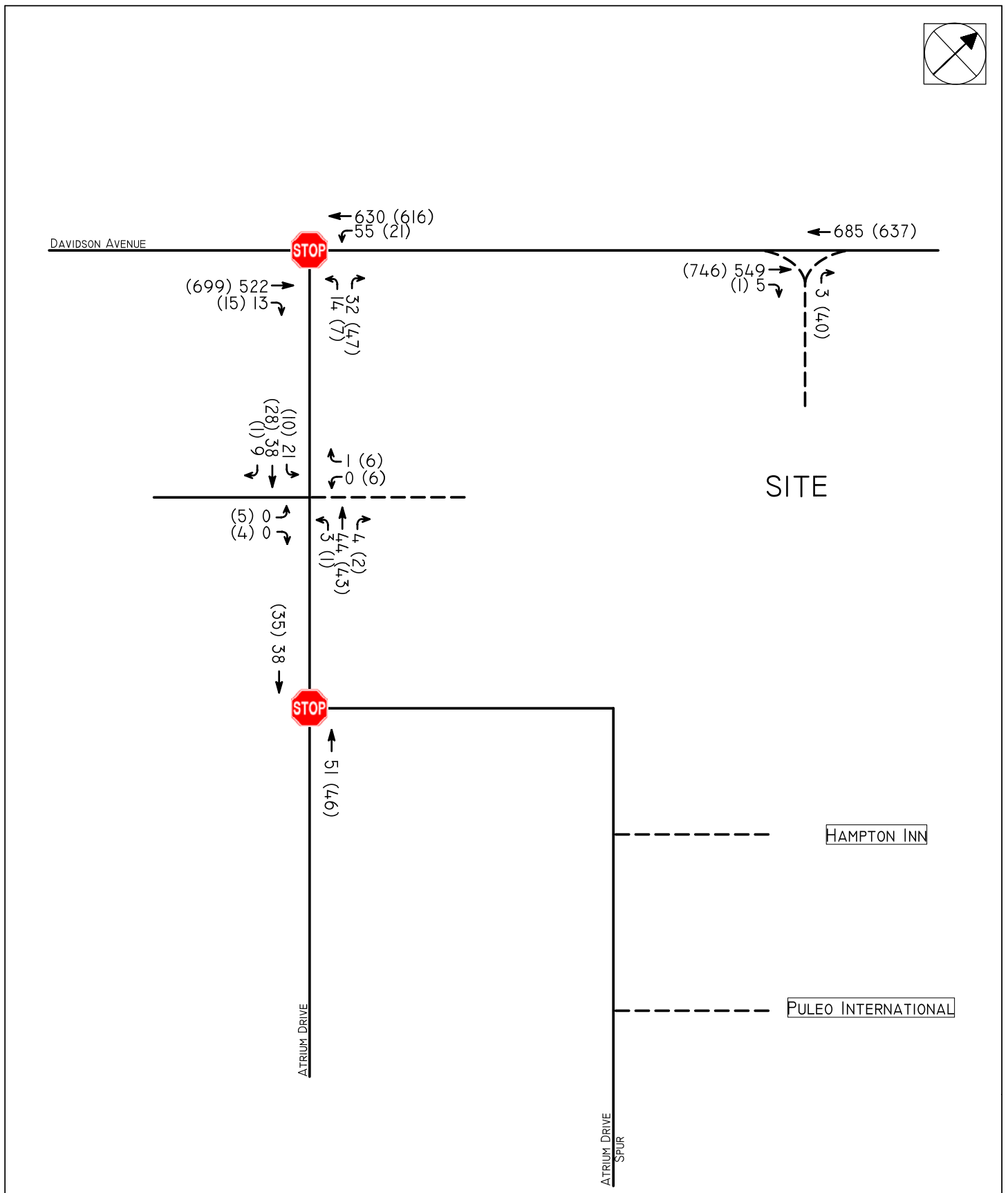
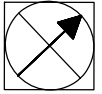


TECHNICAL APPENDIX



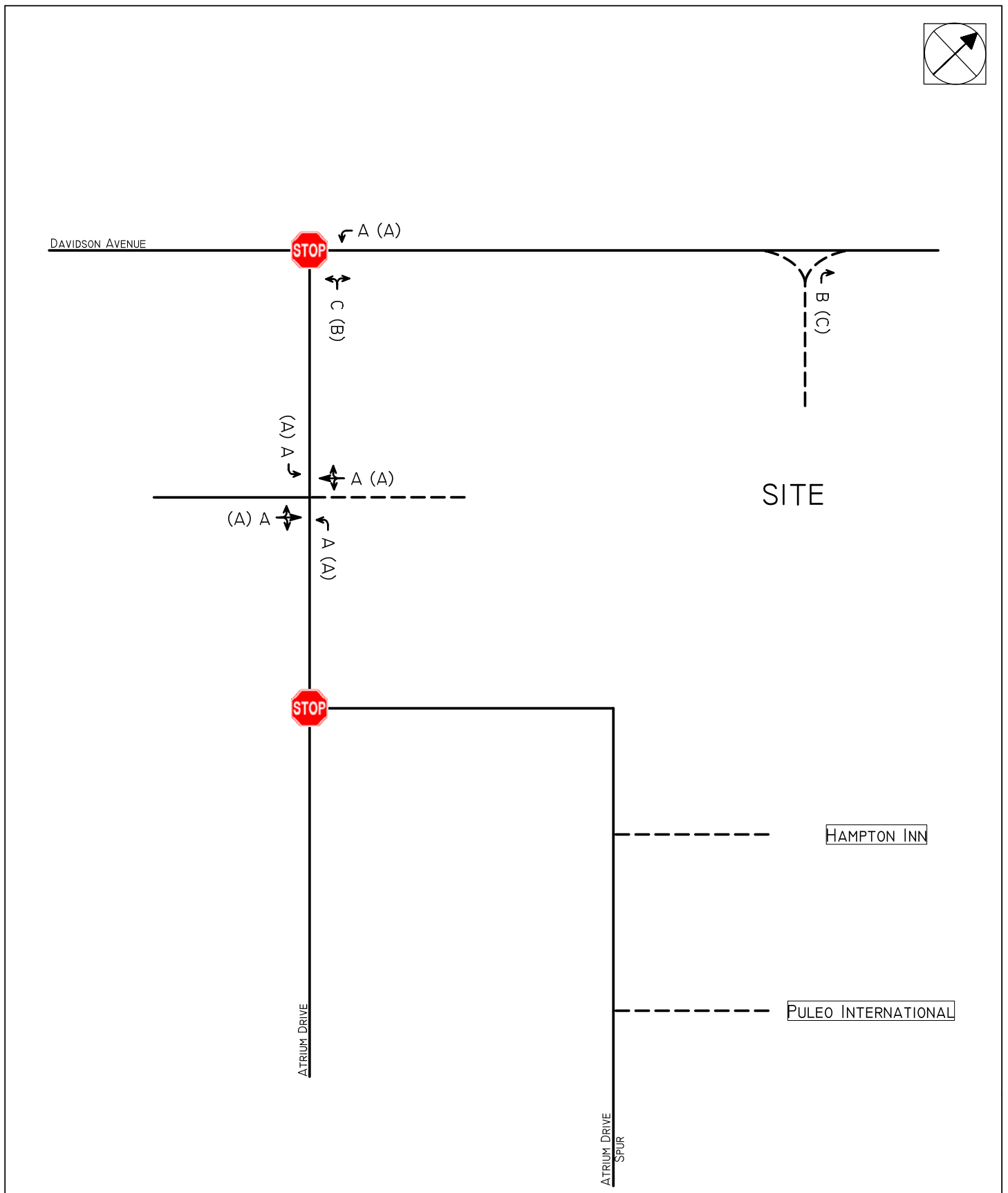
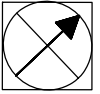
PROPOSED WAREHOUSE
 FRANKLIN TOWNSHIP
 SOMERSET COUNTY, NEW JERSEY

FIGURE 1



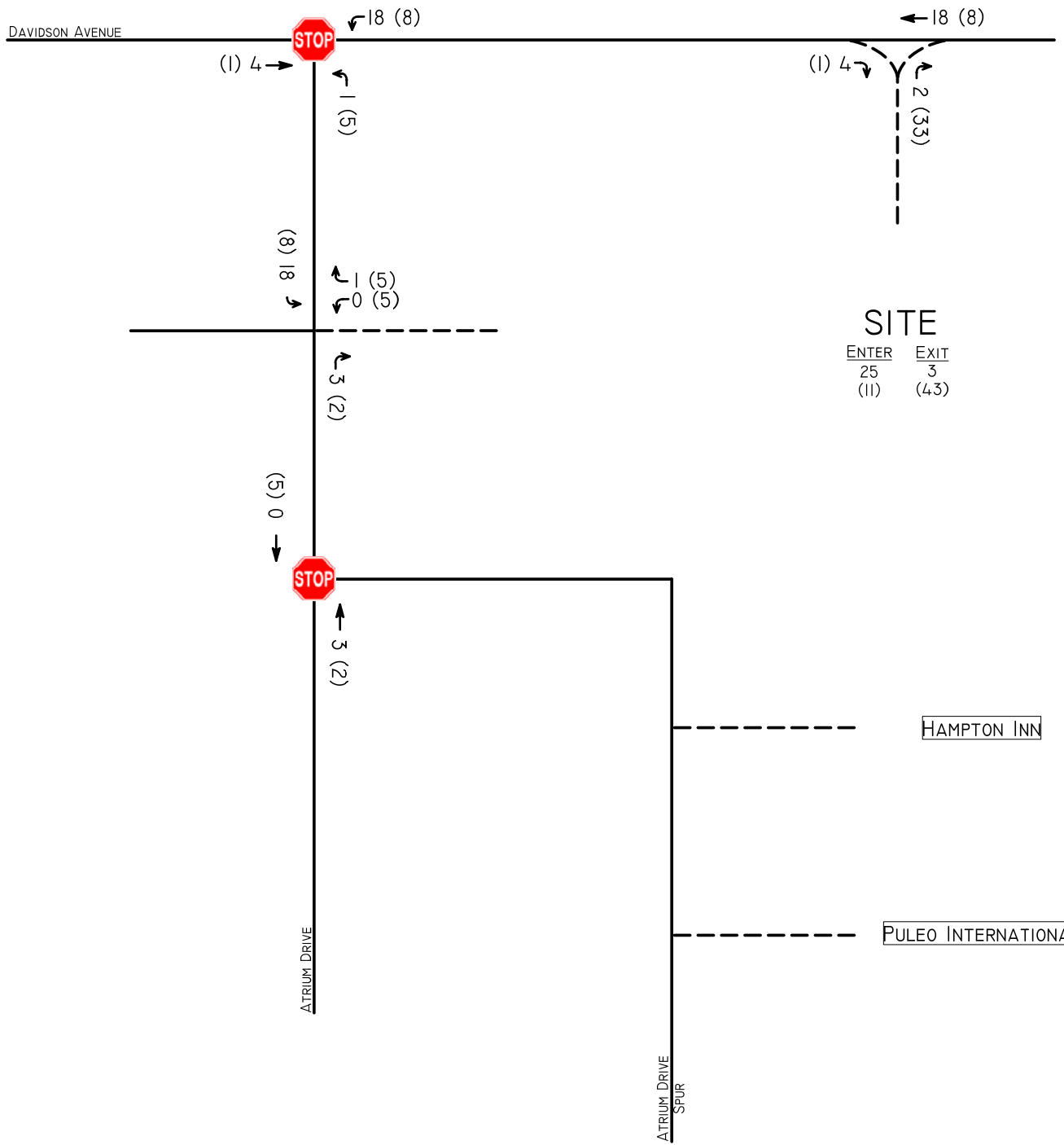
PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 2



PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 3

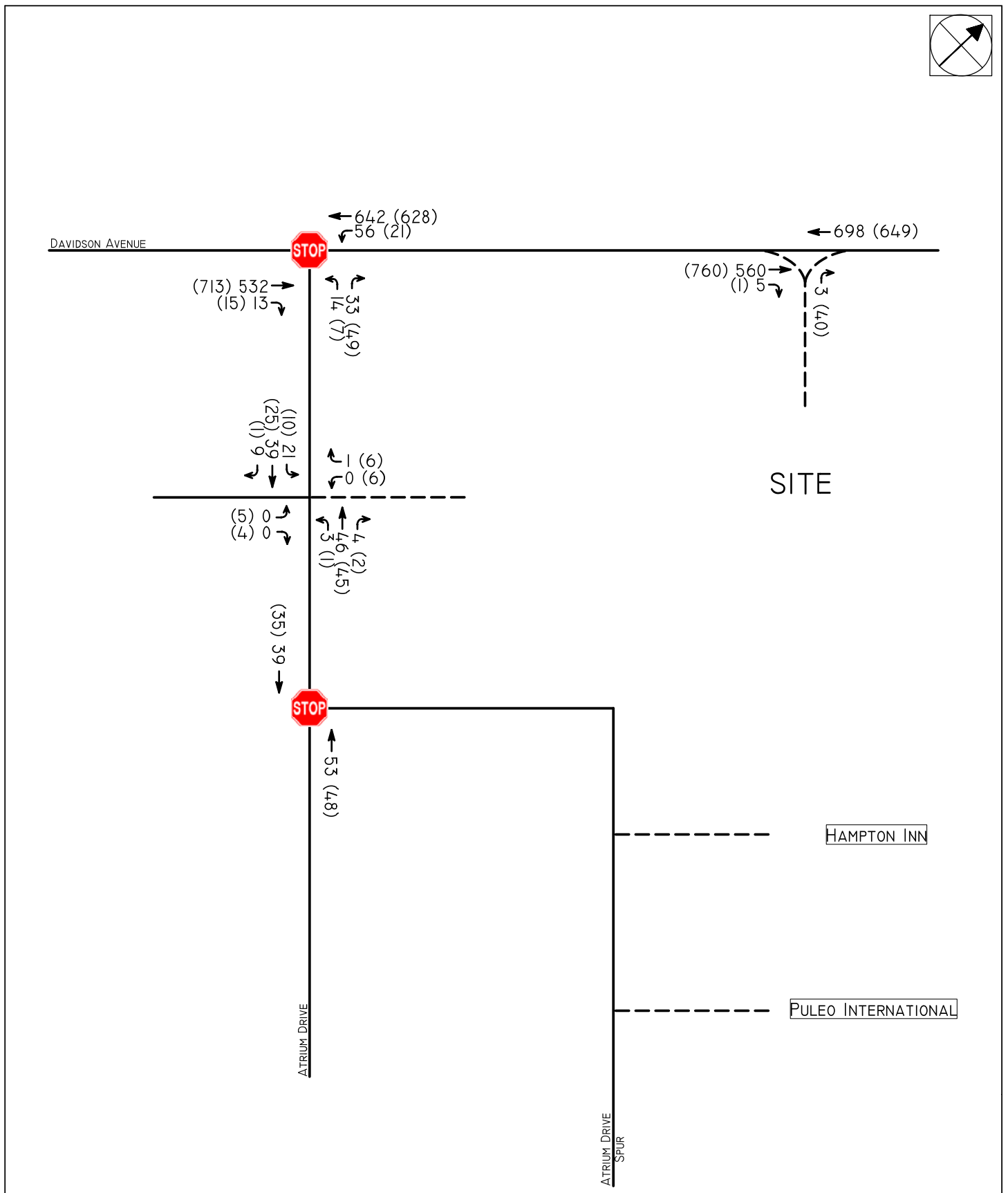


PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 4



SITE GENERATED TRAFFIC VOLUMES
MORNING (EVENING) PEAK HOUR

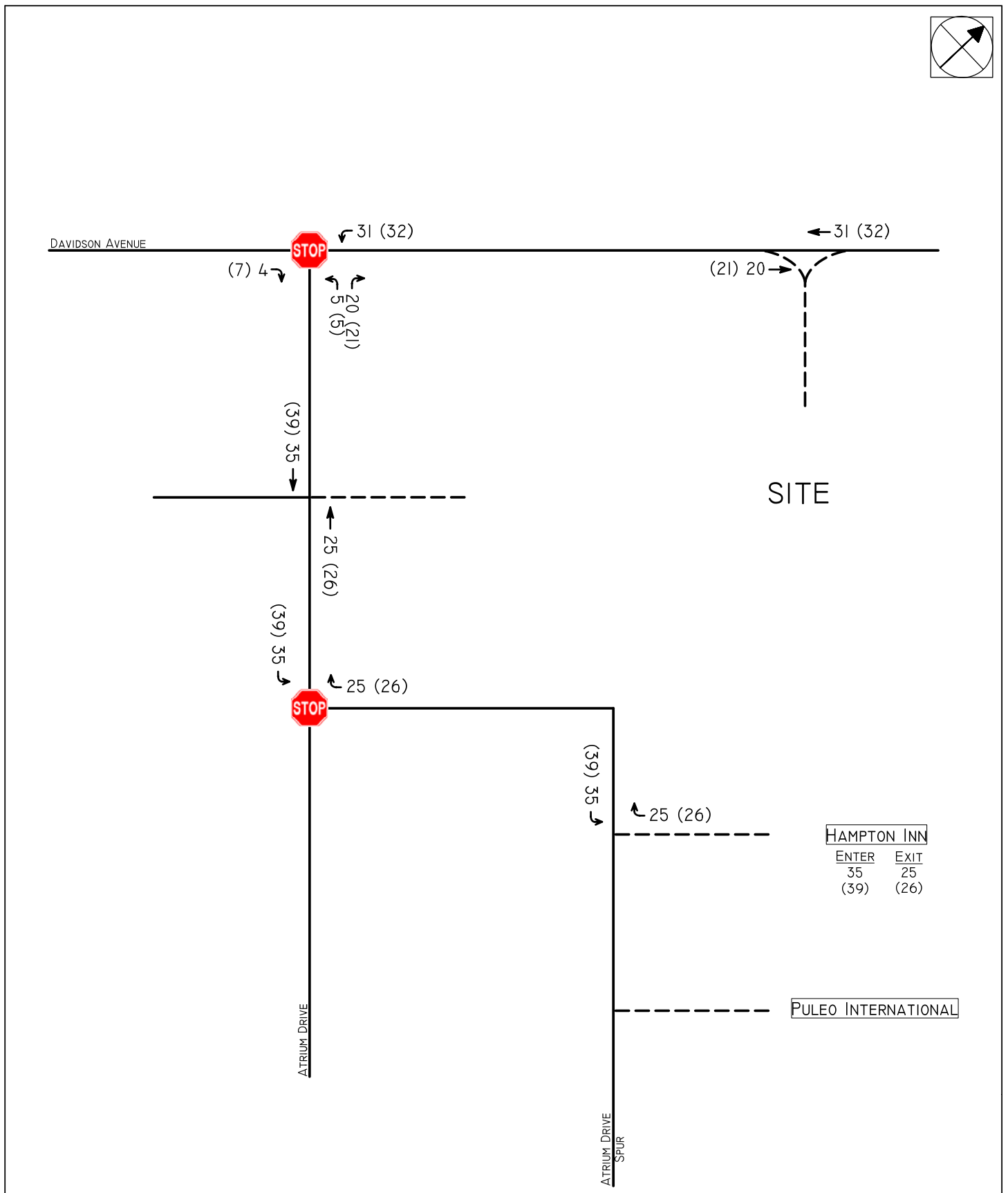


PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 5



BASE NO-BUILD TRAFFIC VOLUMES
MORNING (EVENING) PEAK HOUR

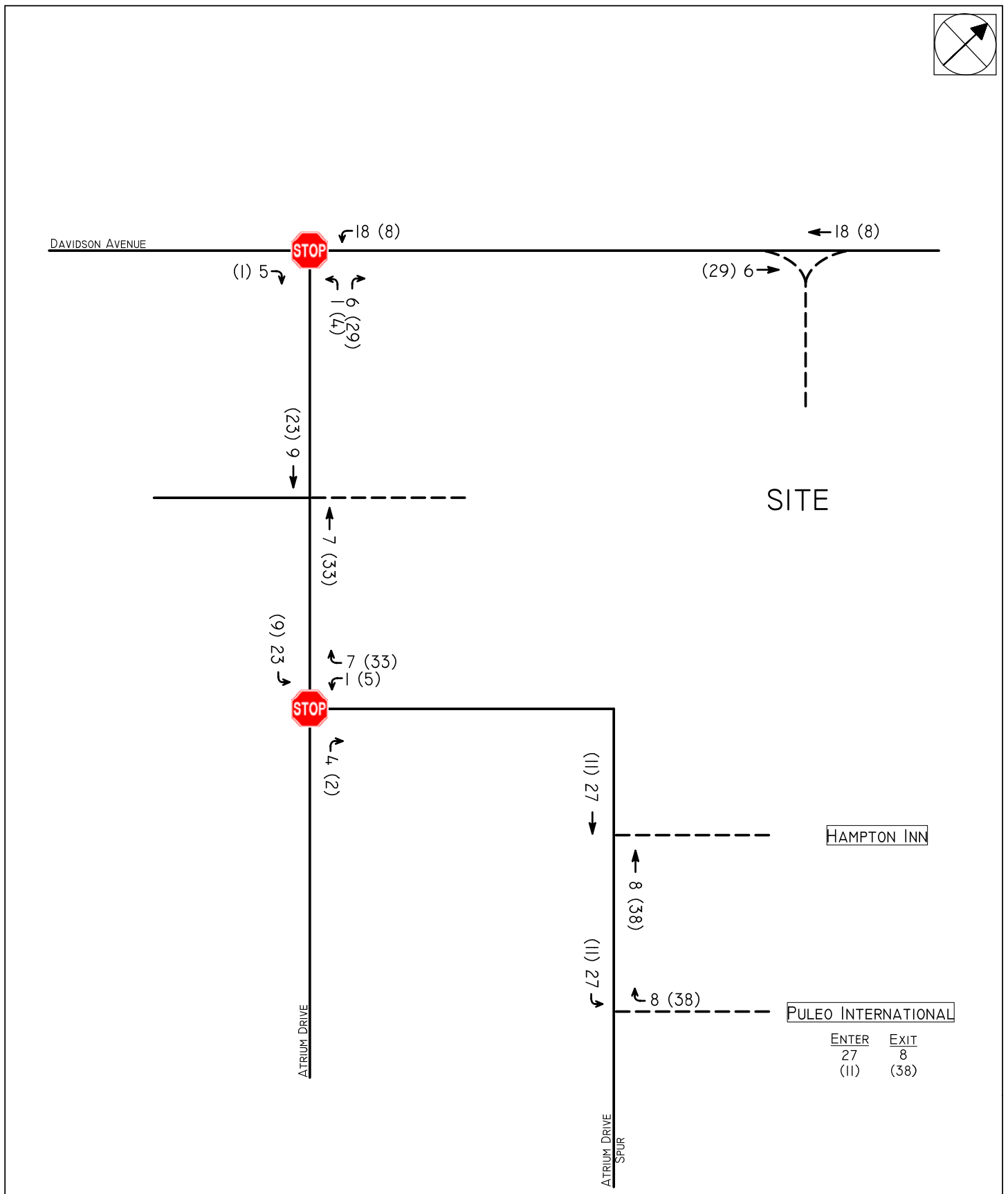


PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 6



TRAFFIC FROM HAMPTON INN
MORNING (EVENING) PEAK HOUR

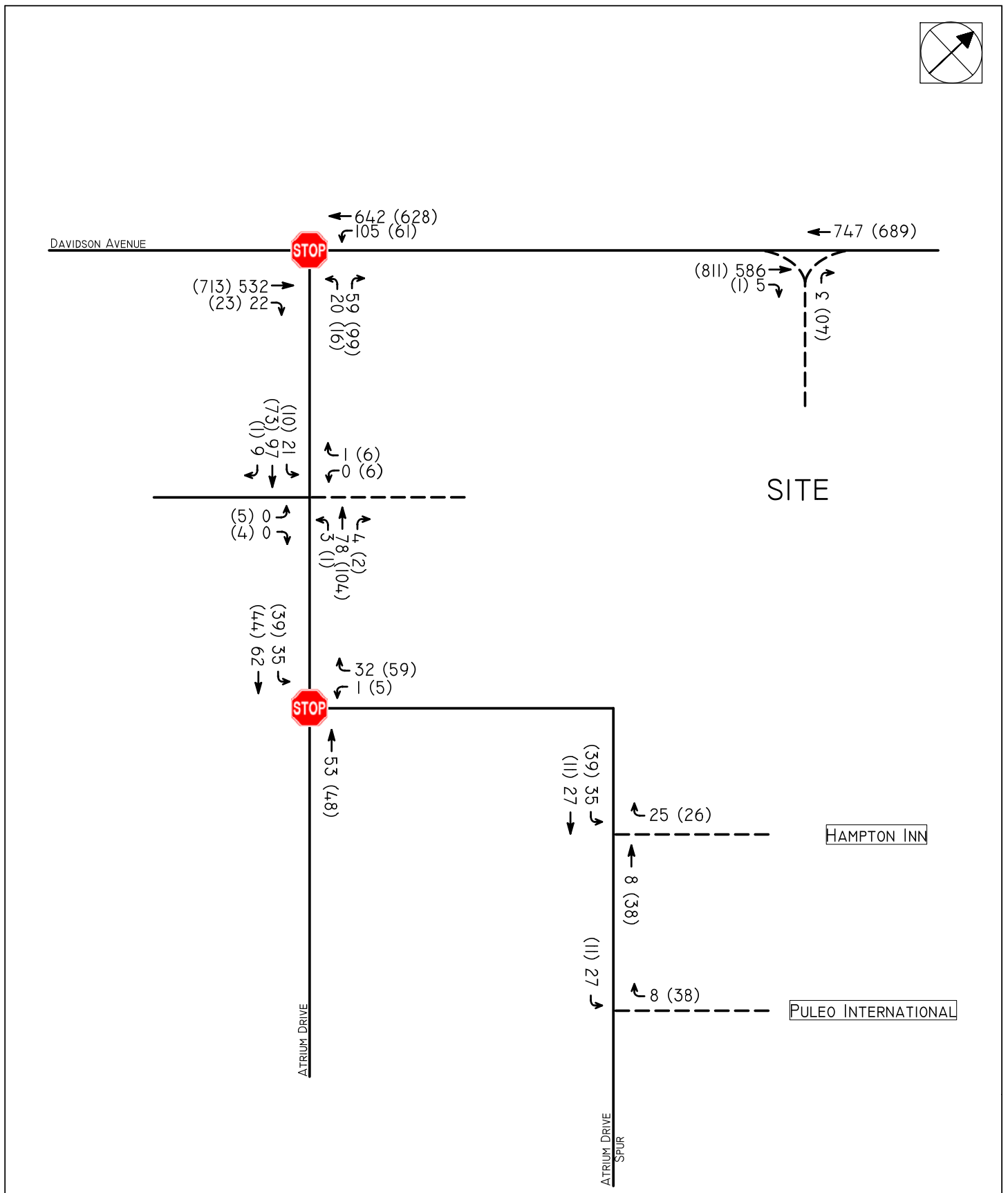
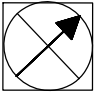


PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 7

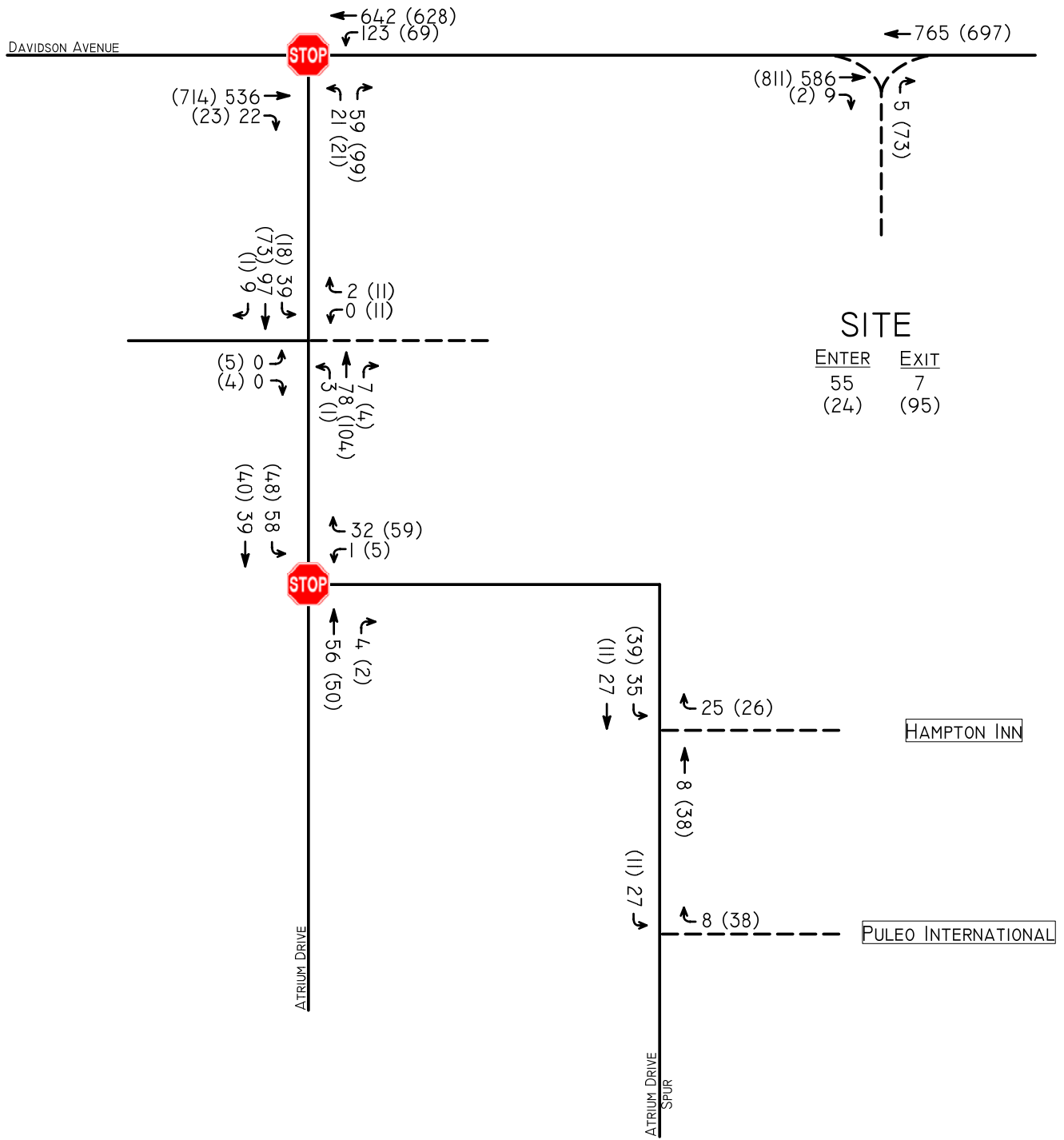


TRAFFIC FROM PULEO INTERNATIONAL
MORNING (EVENING) PEAK HOUR



PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 8

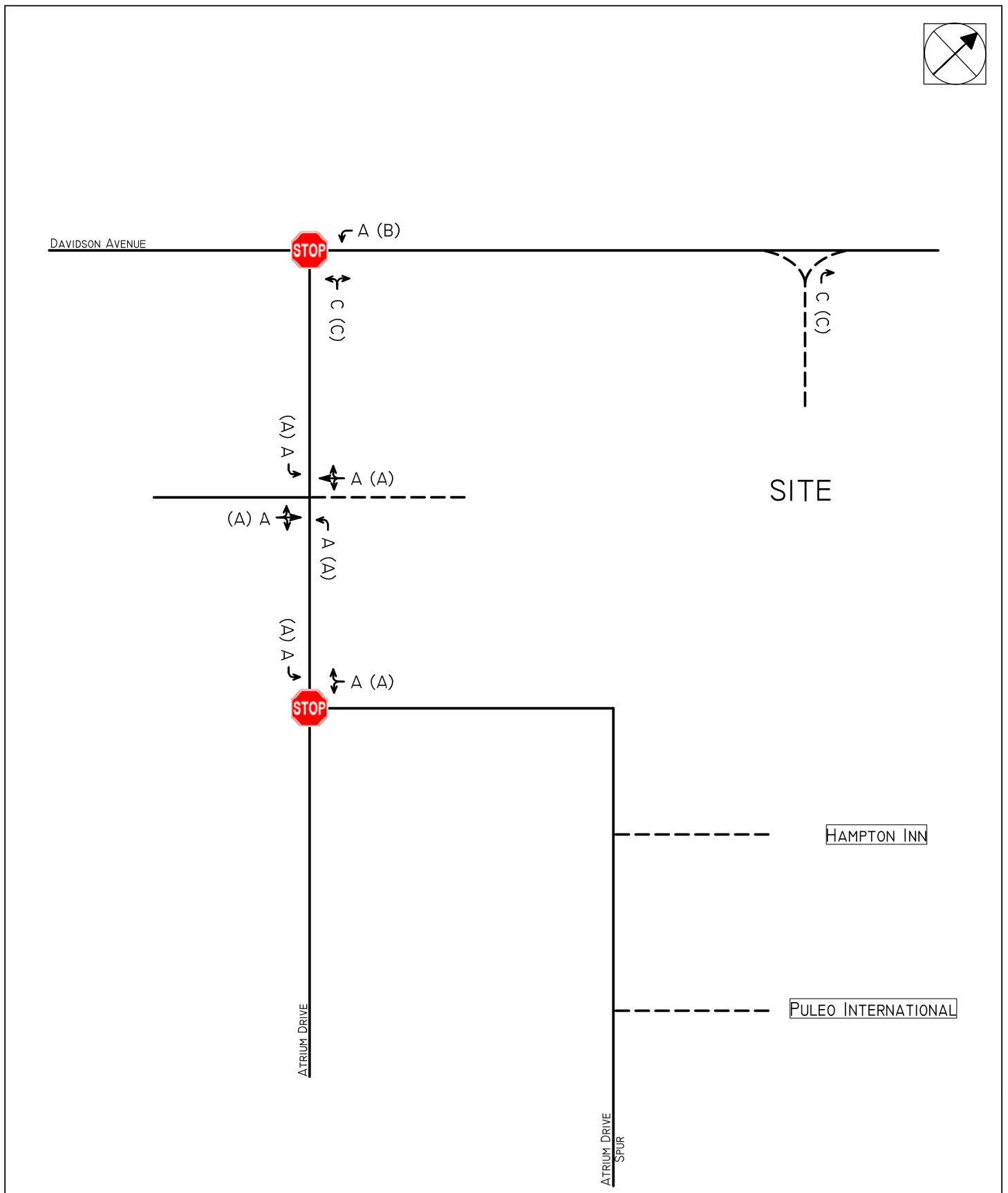
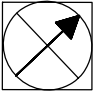


PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 9

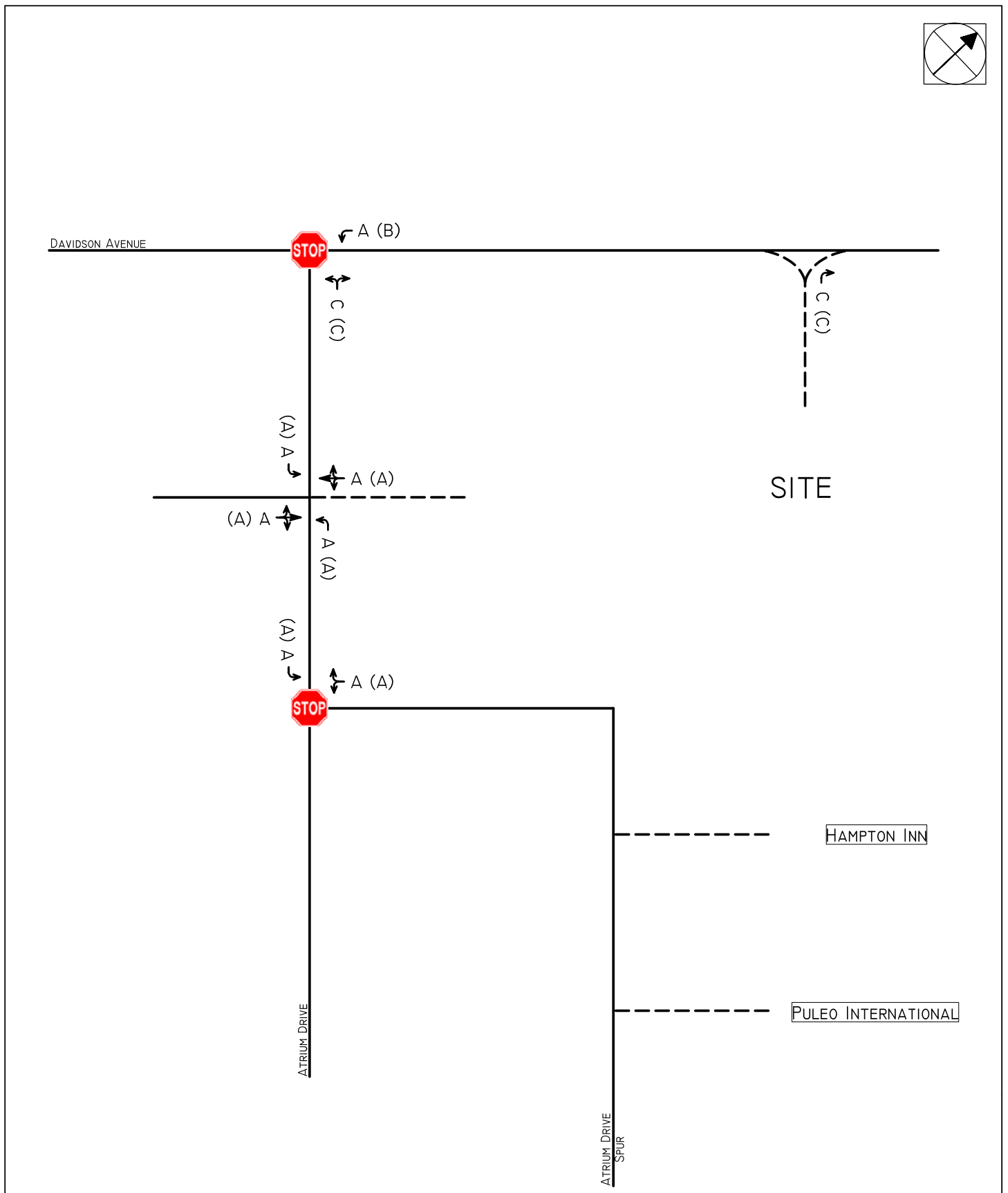


BUILD TRAFFIC VOLUMES
MORNING (EVENING) PEAK HOUR



PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE 10



PROPOSED WAREHOUSE
FRANKLIN TOWNSHIP
SOMERSET COUNTY, NEW JERSEY

FIGURE II

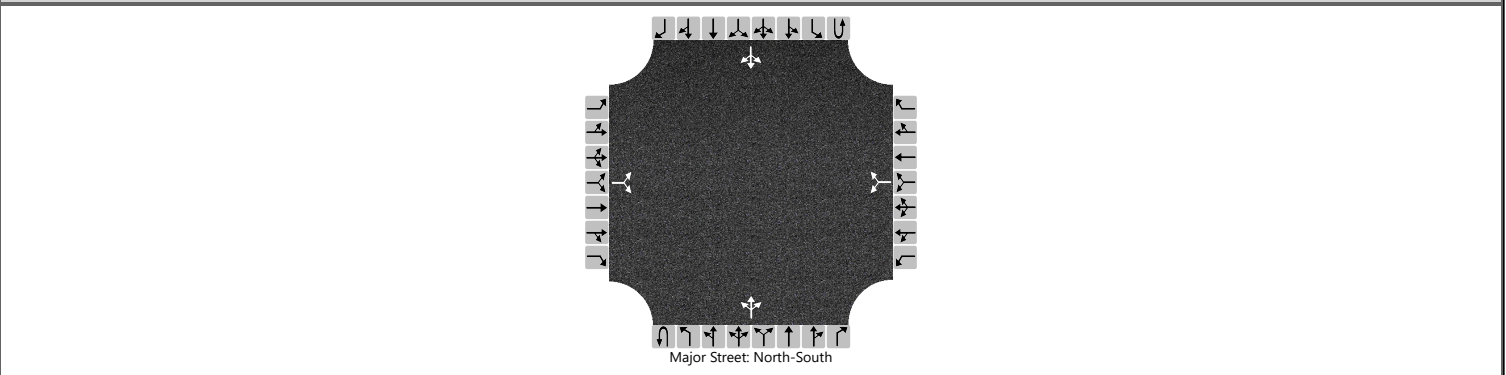


BUILD LEVELS OF SERVICE
MORNING (EVENING) PEAK HOUR

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Am Ex | Peak Hour Factor | 0.82 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|---|----|-----|------------|---|-----|---|------------|----|-----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | | | | | | | | | | | | | | | | |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | |
| Volume (veh/h) | | 0 | | 0 | | 0 | | 1 | | 3 | 44 | 4 | | 21 | 38 | 9 |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 100 | | 0 | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 7.20 | | 4.10 | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 4.20 | | 2.20 | | | | 2.20 | | |

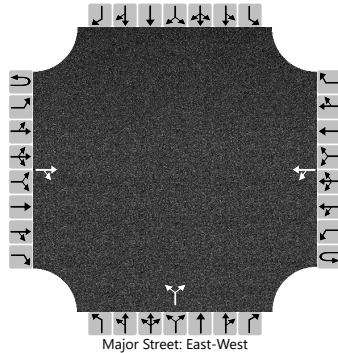
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|---|--|-----|--|------|--|-----|--|------|--|-----|--|------|--|
| Flow Rate, v (veh/h) | | | 0 | | | | 1 | | | | 4 | | | | 26 | |
| Capacity, c (veh/h) | | | | | | | 792 | | | | 1560 | | | | 1558 | |
| v/c Ratio | | | | | | | 0.00 | | | | 0.00 | | | | 0.02 | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | 0.0 | | | | 0.0 | | | | 0.1 | |
| Control Delay (s/veh) | | | | | | | 9.6 | | | | 7.3 | | | | 7.3 | |
| Level of Service (LOS) | | | | | | | A | | | | A | | | | A | |
| Approach Delay (s/veh) | | | | | 9.6 | | | | 0.4 | | | | 2.4 | | | |
| Approach LOS | | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|--------------------------|------------------|--|--|--|
| Analyst | EC | Intersection | Davidson Ave & Atrium Dr | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Dr | | | | |
| Time Analyzed | Am Ex | Peak Hour Factor | 0.99 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | LT | | | | | LR | | | | | |
| Volume (veh/h) | | | 522 | 13 | | 55 | 630 | | | 14 | | 31 | | | | |
| Percent Heavy Vehicles (%) | | | | | | 5 | | | | 13 | | 6 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec) | | | | | | 4.1 | | | | 7.1 | | 6.2 | | | | |
| Critical Headway (sec) | | | | | | 4.15 | | | | 6.53 | | 6.26 | | | | |
| Base Follow-Up Headway (sec) | | | | | | 2.2 | | | | 3.5 | | 3.3 | | | | |
| Follow-Up Headway (sec) | | | | | | 2.25 | | | | 3.62 | | 3.35 | | | | |

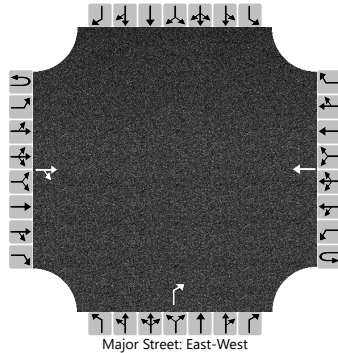
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|-----|------|--|--|------|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h) | | | | | | 56 | | | | 45 | | | | | | |
| Capacity, c (veh/h) | | | | | | 1013 | | | | 308 | | | | | | |
| v/c Ratio | | | | | | 0.05 | | | | 0.15 | | | | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.2 | | | | 0.5 | | | | | | |
| Control Delay (s/veh) | | | | | | 8.8 | | | | 18.7 | | | | | | |
| Level of Service (LOS) | | | | | | A | | | | C | | | | | | |
| Approach Delay (s/veh) | | | | | 1.4 | | | | 18.7 | | | | | | | |
| Approach LOS | | | | | | | | | C | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Am Ex | Peak Hour Factor | 0.96 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|-----|---|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | | T | | | | R | | | | | |
| Volume (veh/h) | | | 549 | 5 | | | 685 | | | | 3 | | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | 100 | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 7.20 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 4.20 |

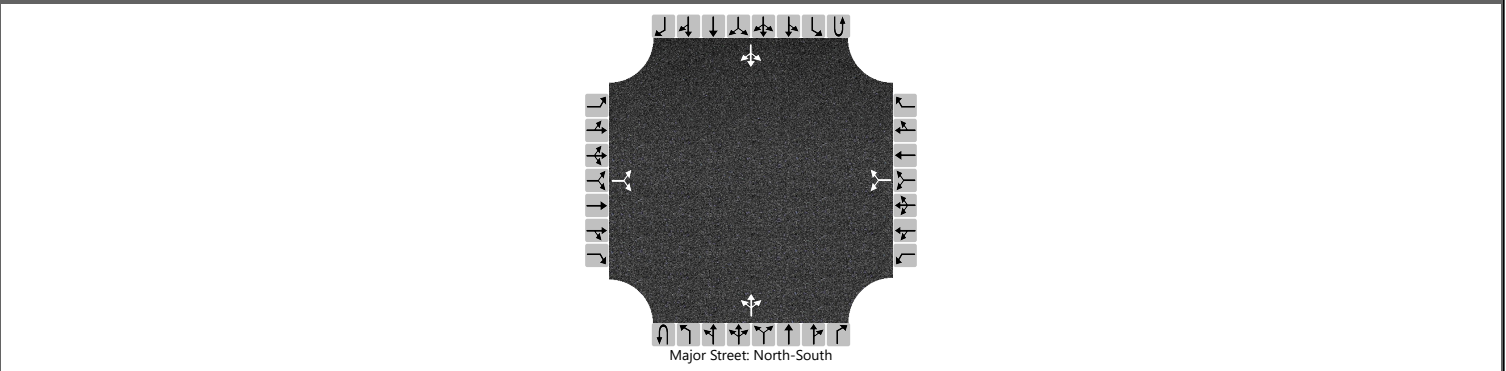
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|--|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 3 | |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 373 | |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.01 | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.0 | |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 14.7 | |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | B | |
| Approach Delay (s/veh) | | | | | | | | | | | | | 14.7 | | | | | |
| Approach LOS | | | | | | | | | | | | | B | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Pm Ex | Peak Hour Factor | 0.88 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|---|----|----|------------|-----|-----|---|------------|----|-----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | | 0 | 1 | 0 | | 0 | 1 | 0 |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | |
| Volume (veh/h) | | 5 | | 4 | | 6 | | 6 | | 1 | 43 | 2 | | 10 | 28 | 1 |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 50 | | 100 | | | | 20 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 6.70 | | 5.10 | | | | 4.30 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 3.75 | | 3.10 | | | | 2.38 | | |

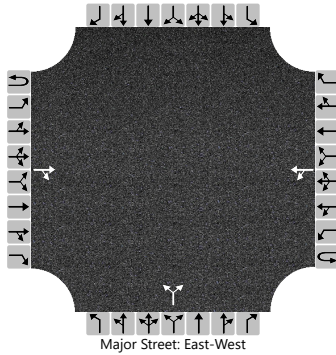
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|-----|--|------|--|-----|--|------|--|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h) | | | 10 | | | | 14 | | | 1 | | | | 11 | | |
| Capacity, c (veh/h) | | | 934 | | | | 880 | | | 1124 | | | | 1447 | | |
| v/c Ratio | | | 0.01 | | | | 0.02 | | | 0.00 | | | | 0.01 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | 0.0 | | | | 0.0 | | | 0.0 | | | | 0.0 | | |
| Control Delay (s/veh) | | | 8.9 | | | | 9.2 | | | 8.2 | | | | 7.5 | | |
| Level of Service (LOS) | | | A | | | | A | | | A | | | | A | | |
| Approach Delay (s/veh) | 8.9 | | | | 9.2 | | | | 0.2 | | | | 2.0 | | | |
| Approach LOS | A | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|--|--|----------------------------|--------------------------|--|--|
| Analyst | EC | | | Intersection | Davidson Ave & Atrium Dr | | |
| Agency/Co. | DD | | | Jurisdiction | | | |
| Date Performed | 1/14/2022 | | | East/West Street | Davidson Avenue | | |
| Analysis Year | 2022 | | | North/South Street | Atrium Dr | | |
| Time Analyzed | Pm Ex | | | Peak Hour Factor | 0.92 | | |
| Intersection Orientation | East-West | | | Analysis Time Period (hrs) | 0.25 | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | LT | | | | | LR | | | | | |
| Volume (veh/h) | | | 699 | 15 | | 21 | 616 | | | 7 | | 47 | | | | |
| Percent Heavy Vehicles (%) | | | | | | 15 | | | | 29 | | 0 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | | 0 | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec) | | | | | | 4.1 | | | | 7.1 | | 6.2 | | | | |
| Critical Headway (sec) | | | | | | 4.25 | | | | 6.69 | | 6.20 | | | | |
| Base Follow-Up Headway (sec) | | | | | | 2.2 | | | | 3.5 | | 3.3 | | | | |
| Follow-Up Headway (sec) | | | | | | 2.34 | | | | 3.76 | | 3.30 | | | | |

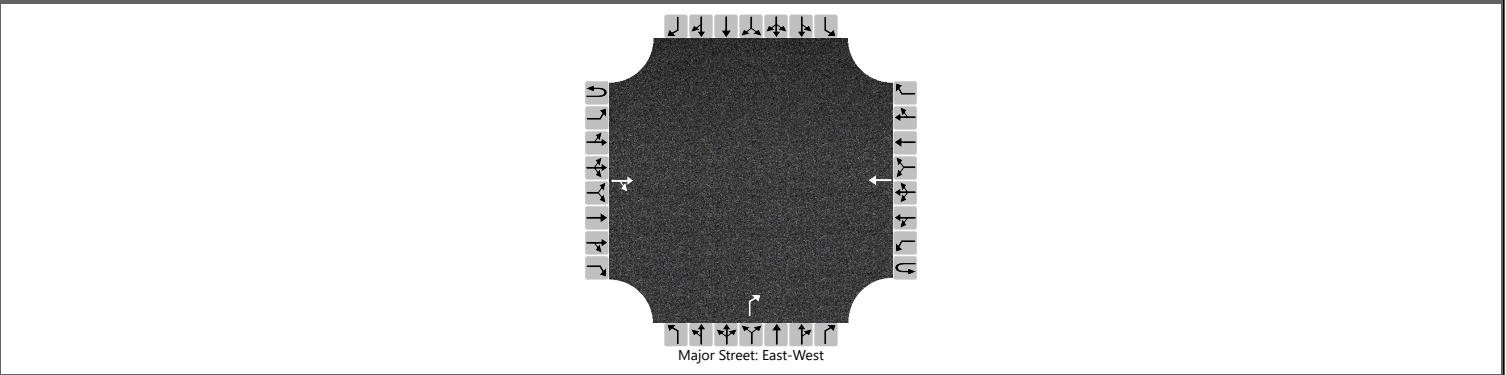
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|-----|------|--|--|------|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h) | | | | | | 23 | | | | 59 | | | | | | |
| Capacity, c (veh/h) | | | | | | 785 | | | | 465 | | | | | | |
| v/c Ratio | | | | | | 0.03 | | | | 0.13 | | | | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.1 | | | | 0.4 | | | | | | |
| Control Delay (s/veh) | | | | | | 9.7 | | | | 13.9 | | | | | | |
| Level of Service (LOS) | | | | | | A | | | | B | | | | | | |
| Approach Delay (s/veh) | | | | | 0.8 | | | | 13.9 | | | | | | | |
| Approach LOS | | | | | | | | | B | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Pm Ex | Peak Hour Factor | 0.94 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|----|---|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | | T | | | | R | | | | | |
| Volume (veh/h) | | | 746 | 1 | | | 637 | | | | 40 | | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | 5 | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.25 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.35 |

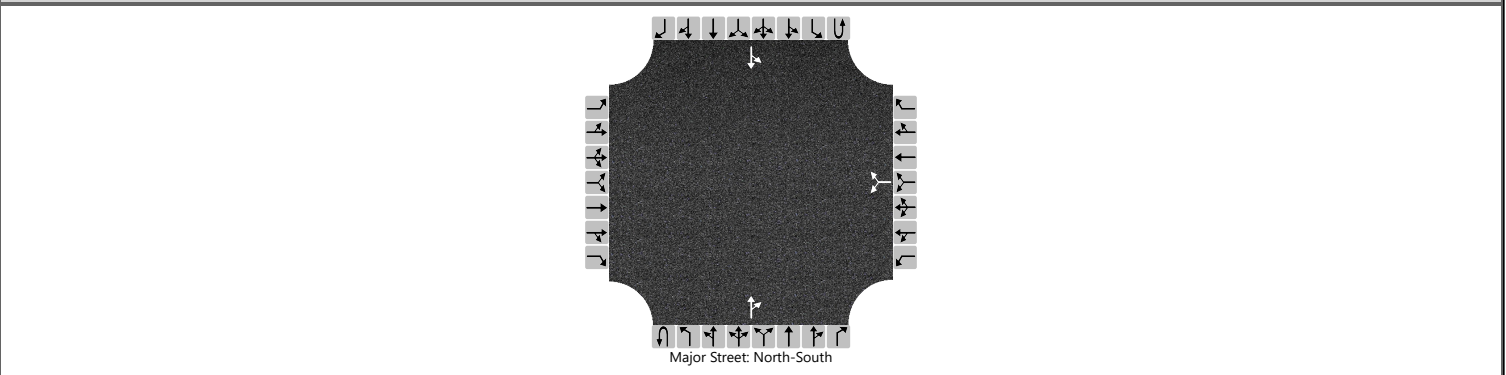
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 43 |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 383 |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.11 |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.4 |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 15.6 |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C |
| Approach Delay (s/veh) | | | | | | | | | | | | | 15.6 | | | | |
| Approach LOS | | | | | | | | | | | | | C | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | Site Information | |
|--------------------------|-------------|----------------------------|----------------------|
| Analyst | EIC | Intersection | Atrium & Atrium Spur |
| Agency/Co. | DD | Jurisdiction | |
| Date Performed | 1/14/2022 | East/West Street | Atrium Spur |
| Analysis Year | 2022 | North/South Street | Atrium Drive |
| Time Analyzed | Am Nb | Peak Hour Factor | 0.92 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|-----------|----|----|------------|---|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | | | | | LR | | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 1 | | 32 | | | 53 | 0 | | 35 | 62 | |
| Percent Heavy Vehicles (%) | | | | | | 0 | | 0 | | | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | 0 | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | | | | | | Undivided | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec) | | | | | | 7.1 | | 6.2 | | | | | | 4.1 | | |
| Critical Headway (sec) | | | | | | 6.40 | | 6.20 | | | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | | | | | 3.5 | | 3.3 | | | | | | 2.2 | | |
| Follow-Up Headway (sec) | | | | | | 3.50 | | 3.30 | | | | | | 2.20 | | |

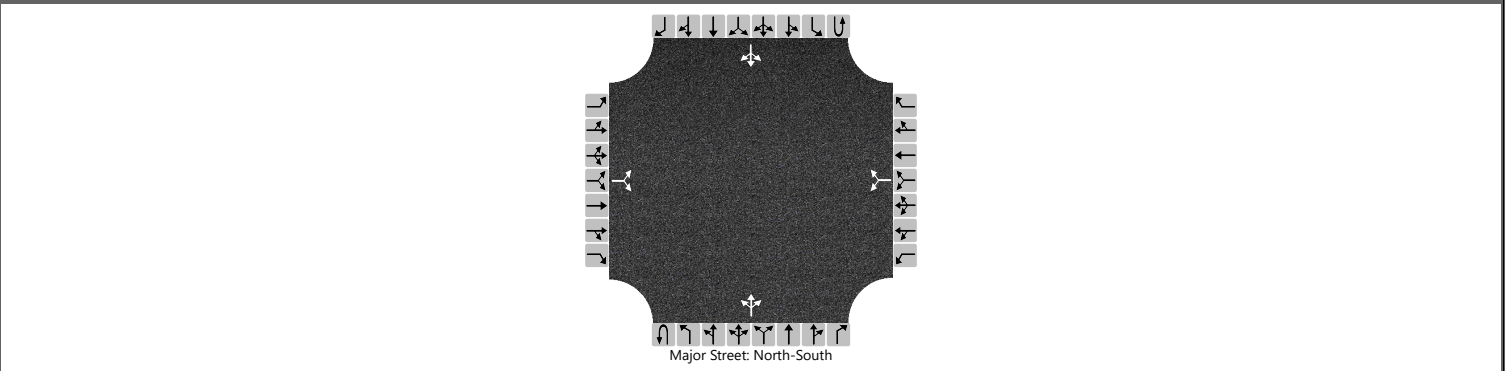
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|------|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h) | | | | | | 36 | | | | | | | | 38 | | |
| Capacity, c (veh/h) | | | | | | 1005 | | | | | | | | 1560 | | |
| v/c Ratio | | | | | | 0.04 | | | | | | | | 0.02 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.1 | | | | | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | 8.7 | | | | | | | | 7.4 | | |
| Level of Service (LOS) | | | | | | A | | | | | | | | A | | |
| Approach Delay (s/veh) | | | | | | 8.7 | | | | | | | | 2.8 | | |
| Approach LOS | | | | | | A | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Am Nb | Peak Hour Factor | 0.82 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|---|----|-----|------------|---|-----|---|------------|----|-----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | |
| Volume (veh/h) | | 0 | | 0 | | 0 | | 1 | | 3 | 78 | 4 | | 21 | 97 | 9 |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 100 | | 0 | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 7.20 | | 4.10 | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 4.20 | | 2.20 | | | | 2.20 | | |

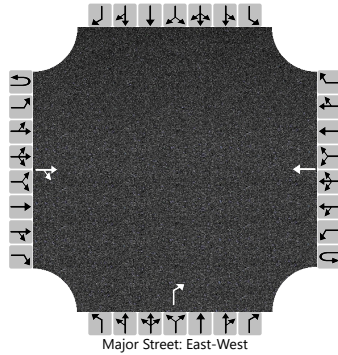
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|---|--|-----|--|------|--|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h) | | | 0 | | | | 1 | | | 4 | | | | 26 | | |
| Capacity, c (veh/h) | | | | | | | 746 | | | 1469 | | | | 1505 | | |
| v/c Ratio | | | | | | | 0.00 | | | 0.00 | | | | 0.02 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | 0.0 | | | 0.0 | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | | 9.8 | | | 7.5 | | | | 7.4 | | |
| Level of Service (LOS) | | | | | | | A | | | A | | | | A | | |
| Approach Delay (s/veh) | | | | | 9.8 | | | | 0.3 | | | | 1.3 | | | |
| Approach LOS | | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | Site Information | |
|--------------------------|-----------|----------------------------|------------------------|
| Analyst | EIC | Intersection | Davidson & Valor Group |
| Agency/Co. | DD | Jurisdiction | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue |
| Analysis Year | 2022 | North/South Street | Valor Group Dw |
| Time Analyzed | Am Nb | Peak Hour Factor | 0.96 |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 |
| Project Description | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|---|-----|------------|----|----|----|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | | 7 | 8 | 9 | | 10 | 11 | 12 |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | | 0 | 0 | 1 | | 0 | 0 | 0 |
| Configuration | | | | TR | | | T | | | | | R | | | | |
| Volume (veh/h) | | | 586 | 5 | | | 747 | | | | | 3 | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | | 100 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 7.20 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 4.20 |

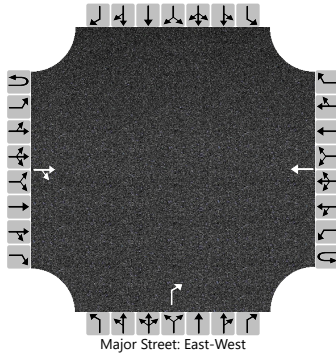
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 3 |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 352 |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.01 |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.0 |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 15.3 |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C |
| Approach Delay (s/veh) | | | | | | | | | | | | | 15.3 | | | | |
| Approach LOS | | | | | | | | | | | | | C | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Am Nb | Peak Hour Factor | 0.96 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|---|-----|------------|----|----|----|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | | 7 | 8 | 9 | | 10 | 11 | 12 |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | | 0 | 0 | 1 | | 0 | 0 | 0 |
| Configuration | | | | TR | | | T | | | | | R | | | | |
| Volume (veh/h) | | | 586 | 5 | | | 747 | | | | | 3 | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | | 100 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 7.20 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 4.20 |

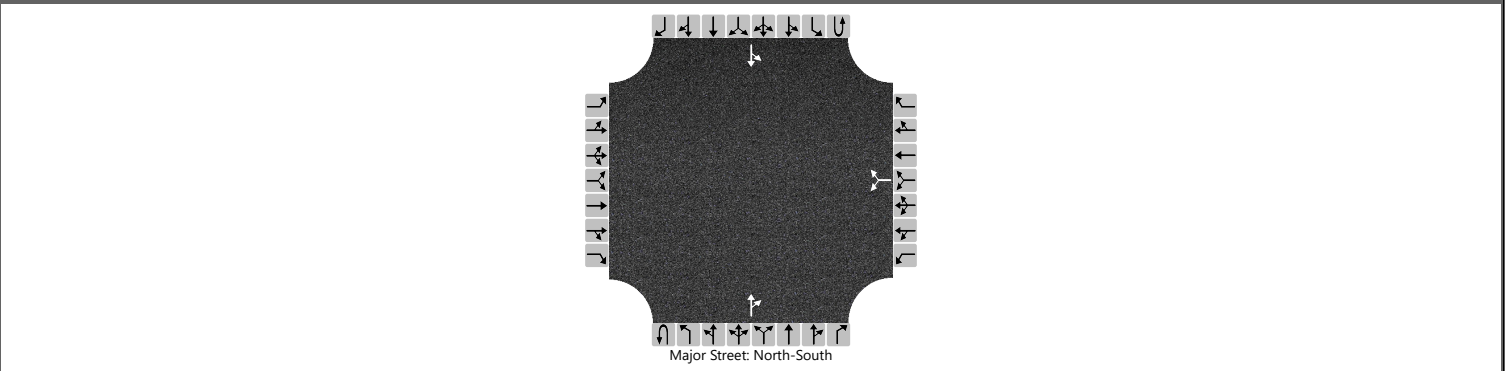
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 3 |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 352 |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.01 |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.0 |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 15.3 |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C |
| Approach Delay (s/veh) | | | | | | | | | | | | | 15.3 | | | | |
| Approach LOS | | | | | | | | | | | | | C | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | Site Information | |
|--------------------------|-------------|----------------------------|----------------------|
| Analyst | EIC | Intersection | Atrium & Atrium Spur |
| Agency/Co. | DD | Jurisdiction | |
| Date Performed | 1/14/2022 | East/West Street | Atrium Spur |
| Analysis Year | 2022 | North/South Street | Atrium Drive |
| Time Analyzed | Pm Nb | Peak Hour Factor | 0.92 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|-----------|----|----|------------|---|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | | | | | LR | | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 5 | | 59 | | | 48 | 0 | | 39 | 44 | |
| Percent Heavy Vehicles (%) | | | | | | 0 | | 0 | | | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | 0 | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | | | | | | Undivided | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec) | | | | | | 7.1 | | 6.2 | | | | | | 4.1 | | |
| Critical Headway (sec) | | | | | | 6.40 | | 6.20 | | | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | | | | | 3.5 | | 3.3 | | | | | | 2.2 | | |
| Follow-Up Headway (sec) | | | | | | 3.50 | | 3.30 | | | | | | 2.20 | | |

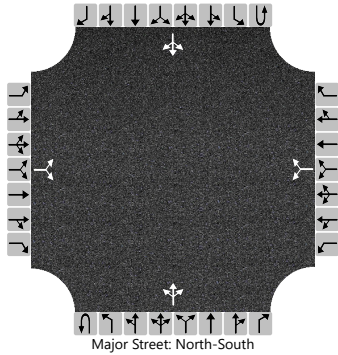
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|------|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h) | | | | | | 70 | | | | | | | | 42 | | |
| Capacity, c (veh/h) | | | | | | 998 | | | | | | | | 1567 | | |
| v/c Ratio | | | | | | 0.07 | | | | | | | | 0.03 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.2 | | | | | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | 8.9 | | | | | | | | 7.4 | | |
| Level of Service (LOS) | | | | | | A | | | | | | | | A | | |
| Approach Delay (s/veh) | | | | | | 8.9 | | | | | | | | 3.6 | | |
| Approach LOS | | | | | | A | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Pm B | Peak Hour Factor | 0.88 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | |
|----------------------------|-----------|-----------|----|----|-----------|---|----|----|------------|-----|-----|---|------------|----|-----|---|--|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R | |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | | |
| Volume (veh/h) | | 5 | | 4 | | 6 | | 6 | | 1 | 104 | 2 | | 10 | 73 | 1 | |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 50 | | 100 | | | | 20 | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | | |
| Median Type Storage | | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 6.70 | | 5.10 | | | | 4.30 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 3.75 | | 3.10 | | | | 2.38 | | |

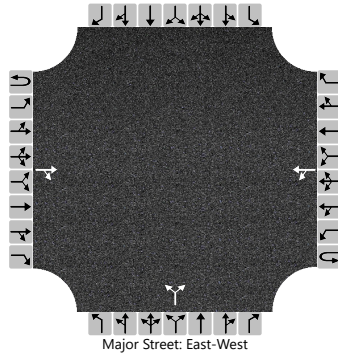
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|--|-----|------|--|--|-----|------|--|--|------|--|--|--|------|--|--|--|
| Flow Rate, v (veh/h) | | | 10 | | | | 14 | | | 1 | | | | 11 | | | |
| Capacity, c (veh/h) | | | 814 | | | | 766 | | | 1069 | | | | 1363 | | | |
| v/c Ratio | | | 0.01 | | | | 0.02 | | | 0.00 | | | | 0.01 | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | 0.0 | | | | 0.1 | | | 0.0 | | | | 0.0 | | | |
| Control Delay (s/veh) | | | 9.5 | | | | 9.8 | | | 8.4 | | | | 7.7 | | | |
| Level of Service (LOS) | | | A | | | | A | | | A | | | | A | | | |
| Approach Delay (s/veh) | | 9.5 | | | | 9.8 | | | | 0.1 | | | | 1.0 | | | |
| Approach LOS | | A | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|--|--|----------------------------|--------------------------|--|--|
| Analyst | EC | | | Intersection | Davidson Ave & Atrium Dr | | |
| Agency/Co. | DD | | | Jurisdiction | | | |
| Date Performed | 1/14/2022 | | | East/West Street | Davidson Avenue | | |
| Analysis Year | 2022 | | | North/South Street | Atrium Dr | | |
| Time Analyzed | Pm Nb | | | Peak Hour Factor | 0.92 | | |
| Intersection Orientation | East-West | | | Analysis Time Period (hrs) | 0.25 | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | LT | | | | | LR | | | | | |
| Volume (veh/h) | | | 713 | 23 | | 61 | 628 | | | 16 | | 99 | | | | |
| Percent Heavy Vehicles (%) | | | | | | 15 | | | | 29 | | 0 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec) | | | | | | 4.1 | | | | 7.1 | | 6.2 | | | | |
| Critical Headway (sec) | | | | | | 4.25 | | | | 6.69 | | 6.20 | | | | |
| Base Follow-Up Headway (sec) | | | | | | 2.2 | | | | 3.5 | | 3.3 | | | | |
| Follow-Up Headway (sec) | | | | | | 2.34 | | | | 3.76 | | 3.30 | | | | |

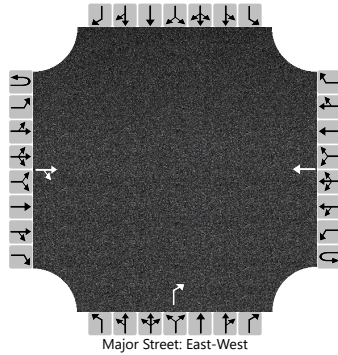
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h) | | | | | | 66 | | | | | 125 | | | | | |
| Capacity, c (veh/h) | | | | | | 769 | | | | | 361 | | | | | |
| v/c Ratio | | | | | | 0.09 | | | | | 0.35 | | | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.3 | | | | | 1.5 | | | | | |
| Control Delay (s/veh) | | | | | | 10.1 | | | | | 20.2 | | | | | |
| Level of Service (LOS) | | | | | | B | | | | | C | | | | | |
| Approach Delay (s/veh) | | | | | 2.2 | | | | 20.2 | | | | | | | |
| Approach LOS | | | | | | | | | C | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Pm Nb | Peak Hour Factor | 0.94 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|----|---|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | | T | | | | R | | | | | |
| Volume (veh/h) | | | 811 | 1 | | | 689 | | | | 40 | | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | 5 | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.25 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.35 |

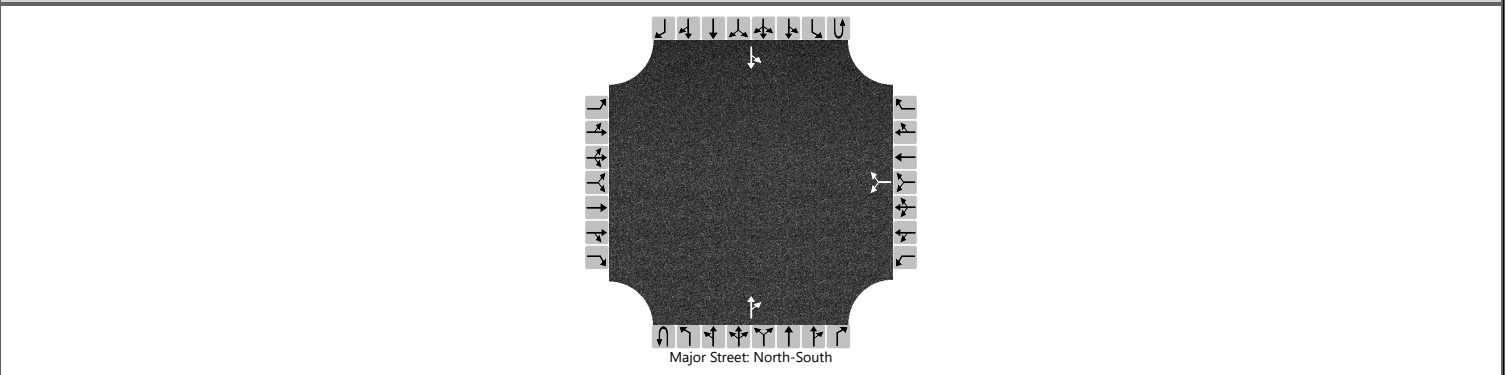
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 43 |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 350 |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.12 |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.4 |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 16.7 |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C |
| Approach Delay (s/veh) | 16.7 | | | | | | | | | | | | | | | | |
| Approach LOS | C | | | | | | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | Site Information | |
|--------------------------|-------------|----------------------------|----------------------|
| Analyst | EIC | Intersection | Atrium & Atrium Spur |
| Agency/Co. | DD | Jurisdiction | |
| Date Performed | 1/14/2022 | East/West Street | Atrium Spur |
| Analysis Year | 2022 | North/South Street | Atrium Drive |
| Time Analyzed | Am Build | Peak Hour Factor | 0.92 |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 |
| Project Description | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|-----------|----|----|------------|---|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | | | | | LR | | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 1 | | 32 | | | 56 | 4 | | 58 | 39 | |
| Percent Heavy Vehicles (%) | | | | | | 10 | | 10 | | | | | | 10 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | 0 | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | | | | | | Undivided | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec) | | | | | | 7.1 | | 6.2 | | | | | | 4.1 | | |
| Critical Headway (sec) | | | | | | 6.50 | | 6.30 | | | | | | 4.20 | | |
| Base Follow-Up Headway (sec) | | | | | | 3.5 | | 3.3 | | | | | | 2.2 | | |
| Follow-Up Headway (sec) | | | | | | 3.59 | | 3.39 | | | | | | 2.29 | | |

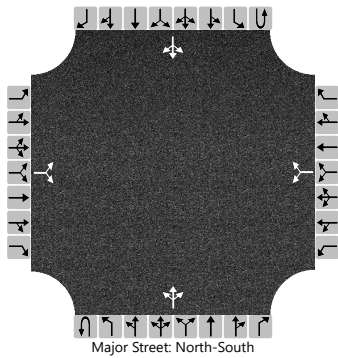
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|------|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h) | | | | | | 36 | | | | | | | | 63 | | |
| Capacity, c (veh/h) | | | | | | 968 | | | | | | | | 1487 | | |
| v/c Ratio | | | | | | 0.04 | | | | | | | | 0.04 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.1 | | | | | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | 8.9 | | | | | | | | 7.5 | | |
| Level of Service (LOS) | | | | | | A | | | | | | | | A | | |
| Approach Delay (s/veh) | | | | | | 8.9 | | | | | | | | 4.6 | | |
| Approach LOS | | | | | | A | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Am Build | Peak Hour Factor | 0.82 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|---|----|-----|------------|---|-----|---|------------|----|-----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | |
| Volume (veh/h) | | 0 | | 0 | | 0 | | 2 | | 3 | 78 | 7 | | 39 | 97 | 9 |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 100 | | 0 | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 7.20 | | 4.10 | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 4.20 | | 2.20 | | | | 2.20 | | |

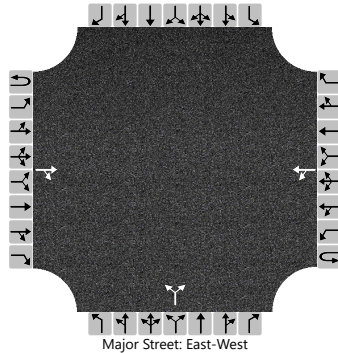
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|---|--|-----|--|------|--|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h) | | | 0 | | | | 2 | | | 4 | | | | 48 | | |
| Capacity, c (veh/h) | | | | | | | 744 | | | 1469 | | | | 1501 | | |
| v/c Ratio | | | | | | | 0.00 | | | 0.00 | | | | 0.03 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | 0.0 | | | 0.0 | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | | 9.9 | | | 7.5 | | | | 7.5 | | |
| Level of Service (LOS) | | | | | | | A | | | A | | | | A | | |
| Approach Delay (s/veh) | | | | | 9.9 | | | | 0.3 | | | | 2.2 | | | |
| Approach LOS | | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|--|--|----------------------------|--------------------------|--|--|
| Analyst | EC | | | Intersection | Davidson Ave & Atrium Dr | | |
| Agency/Co. | DD | | | Jurisdiction | | | |
| Date Performed | 1/14/2022 | | | East/West Street | Davidson Avenue | | |
| Analysis Year | 2022 | | | North/South Street | Atrium Dr | | |
| Time Analyzed | Am Build | | | Peak Hour Factor | 0.99 | | |
| Intersection Orientation | East-West | | | Analysis Time Period (hrs) | 0.25 | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|-----|-----|---|------------|----|----|----|------------|----|----|----|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | | 7 | 8 | 9 | | 10 | 11 | 12 |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | | 0 | 1 | 0 | | 0 | 0 | 0 |
| Configuration | | | | TR | | LT | | | | | LR | | | | | |
| Volume (veh/h) | | | 536 | 22 | | 123 | 642 | | | 21 | | 59 | | | | |
| Percent Heavy Vehicles (%) | | | | | | 5 | | | | 13 | | 6 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | | 0 | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec) | | | | | | 4.1 | | | | 7.1 | | 6.2 | | | | |
| Critical Headway (sec) | | | | | | 4.15 | | | | 6.53 | | 6.26 | | | | |
| Base Follow-Up Headway (sec) | | | | | | 2.2 | | | | 3.5 | | 3.3 | | | | |
| Follow-Up Headway (sec) | | | | | | 2.25 | | | | 3.62 | | 3.35 | | | | |

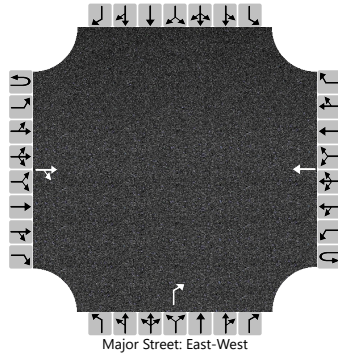
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|------|--|--|--|------|------|--|--|--|--|--|
| Flow Rate, v (veh/h) | | | | | | 124 | | | | | 81 | | | | | |
| Capacity, c (veh/h) | | | | | | 993 | | | | | 263 | | | | | |
| v/c Ratio | | | | | | 0.13 | | | | | 0.31 | | | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.4 | | | | | 1.3 | | | | | |
| Control Delay (s/veh) | | | | | | 9.1 | | | | | 24.6 | | | | | |
| Level of Service (LOS) | | | | | | A | | | | | C | | | | | |
| Approach Delay (s/veh) | | | | | | 3.0 | | | | 24.6 | | | | | | |
| Approach LOS | | | | | | C | | | | C | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Am Build | Peak Hour Factor | 0.96 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|-----|---|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | | T | | | | R | | | | | |
| Volume (veh/h) | | | 586 | 9 | | | 765 | | | | 5 | | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | 100 | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 7.20 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 4.20 |

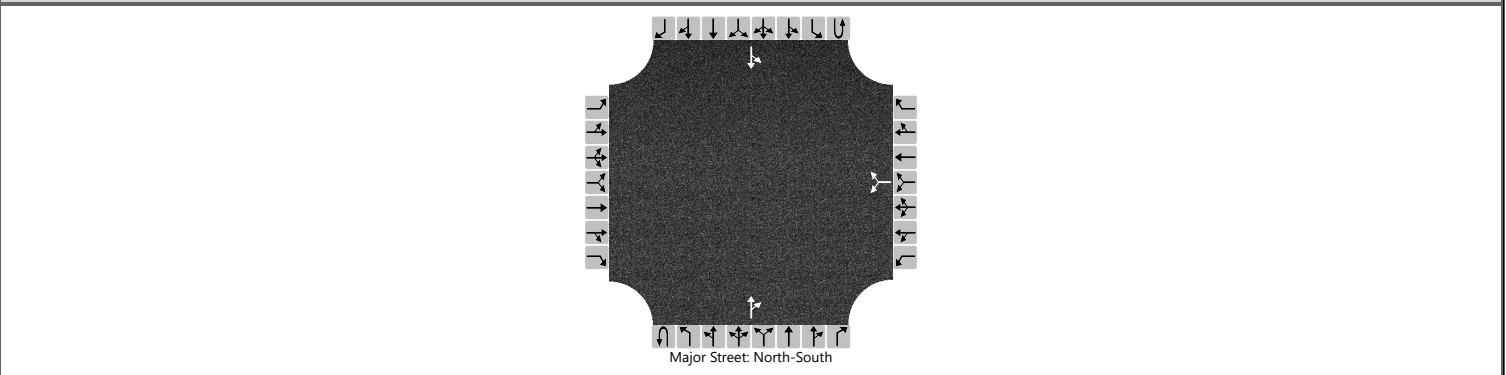
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|--|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 5 | |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 351 | |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.01 | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.0 | |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 15.4 | |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C | |
| Approach Delay (s/veh) | | | | | | | | | | | | | 15.4 | | | | | |
| Approach LOS | | | | | | | | | | | | | C | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Atrium Spur | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Atrium Spur | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Pm Build | Peak Hour Factor | 0.92 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|----|----|----|-----------|---|----|----|------------|---|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | | | | | | | | | | | | | | | | |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 |
| Number of Lanes | | 0 | 0 | 0 | | 0 | 1 | 0 | | 0 | 1 | 0 | | 0 | 1 | 0 |
| Configuration | | | | | | | LR | | | | | TR | | LT | | |
| Volume (veh/h) | | | | | | 5 | | 59 | | | 50 | 2 | | 48 | 40 | |
| Percent Heavy Vehicles (%) | | | | | | 0 | | 0 | | | | | | 0 | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec) | | | | | | 7.1 | | 6.2 | | | | | | 4.1 | | |
| Critical Headway (sec) | | | | | | 6.40 | | 6.20 | | | | | | 4.10 | | |
| Base Follow-Up Headway (sec) | | | | | | 3.5 | | 3.3 | | | | | | 2.2 | | |
| Follow-Up Headway (sec) | | | | | | 3.50 | | 3.30 | | | | | | 2.20 | | |

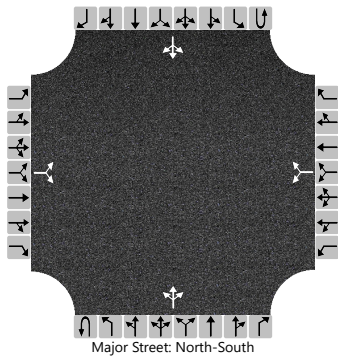
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|-----|------|--|--|--|--|--|--|-----|------|--|--|
| Flow Rate, v (veh/h) | | | | | | 70 | | | | | | | | 52 | | |
| Capacity, c (veh/h) | | | | | | 991 | | | | | | | | 1561 | | |
| v/c Ratio | | | | | | 0.07 | | | | | | | | 0.03 | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.2 | | | | | | | | 0.1 | | |
| Control Delay (s/veh) | | | | | | 8.9 | | | | | | | | 7.4 | | |
| Level of Service (LOS) | | | | | | A | | | | | | | | A | | |
| Approach Delay (s/veh) | | | | | 8.9 | | | | | | | | 4.1 | | | |
| Approach LOS | | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-------------|----------------------------|----------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Atrium & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Valor Group Dw | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Drive | | | | |
| Time Analyzed | Pm B | Peak Hour Factor | 0.88 | | | | |
| Intersection Orientation | North-South | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | |
|----------------------------|-----------|-----------|----|----|-----------|----|----|----|------------|-----|-----|---|------------|----|-----|---|--|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R | |
| Priority | | 10 | 11 | 12 | | 7 | 8 | 9 | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | |
| Number of Lanes | | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| Configuration | | | LR | | | | LR | | | | LTR | | | | LTR | | |
| Volume (veh/h) | | 5 | | 4 | | 11 | | 11 | | 1 | 104 | 4 | | 18 | 73 | 1 | |
| Percent Heavy Vehicles (%) | | 0 | | 0 | | 0 | | 50 | | 100 | | | | 20 | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | 0 | | | | 0 | | | | | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | | |
| Median Type Storage | | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|------|--|------|--|------|--|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec) | | 7.1 | | 6.2 | | 7.1 | | 6.2 | | 4.1 | | | | 4.1 | | |
| Critical Headway (sec) | | 7.10 | | 6.20 | | 7.10 | | 6.70 | | 5.10 | | | | 4.30 | | |
| Base Follow-Up Headway (sec) | | 3.5 | | 3.3 | | 3.5 | | 3.3 | | 2.2 | | | | 2.2 | | |
| Follow-Up Headway (sec) | | 3.50 | | 3.30 | | 3.50 | | 3.75 | | 3.10 | | | | 2.38 | | |

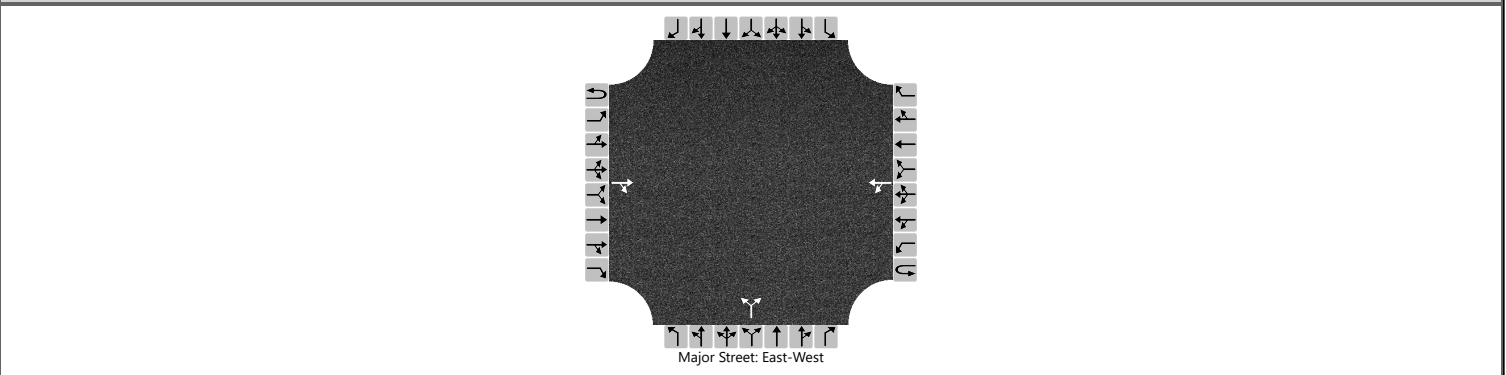
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | | |
|---|--|-----|------|--|--|------|------|--|--|------|--|--|--|------|--|--|--|
| Flow Rate, v (veh/h) | | | 10 | | | | 25 | | | 1 | | | | 20 | | | |
| Capacity, c (veh/h) | | | 791 | | | | 751 | | | 1069 | | | | 1360 | | | |
| v/c Ratio | | | 0.01 | | | | 0.03 | | | 0.00 | | | | 0.02 | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | 0.0 | | | | 0.1 | | | 0.0 | | | | 0.0 | | | |
| Control Delay (s/veh) | | | 9.6 | | | | 10.0 | | | 8.4 | | | | 7.7 | | | |
| Level of Service (LOS) | | | A | | | | A | | | A | | | | A | | | |
| Approach Delay (s/veh) | | 9.6 | | | | 10.0 | | | | 0.1 | | | | 1.6 | | | |
| Approach LOS | | A | | | | A | | | | | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|--------------------------|------------------|--|--|--|
| Analyst | EC | Intersection | Davidson Ave & Atrium Dr | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Atrium Dr | | | | |
| Time Analyzed | Pm Build | Peak Hour Factor | 0.92 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | LT | | | | | LR | | | | | |
| Volume (veh/h) | | | 714 | 23 | | 69 | 628 | | | 21 | | 99 | | | | |
| Percent Heavy Vehicles (%) | | | | | | 15 | | | | 29 | | 0 | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec) | | | | | | 4.1 | | | | 7.1 | | 6.2 | | | | |
| Critical Headway (sec) | | | | | | 4.25 | | | | 6.69 | | 6.20 | | | | |
| Base Follow-Up Headway (sec) | | | | | | 2.2 | | | | 3.5 | | 3.3 | | | | |
| Follow-Up Headway (sec) | | | | | | 2.34 | | | | 3.76 | | 3.30 | | | | |

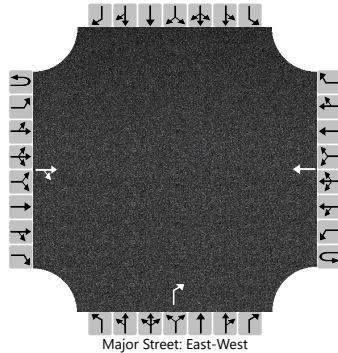
Delay, Queue Length, and Level of Service

| | | | | | | | | | | | | | | | | |
|---|--|--|--|--|-----|------|--|--|------|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h) | | | | | | 75 | | | | 130 | | | | | | |
| Capacity, c (veh/h) | | | | | | 768 | | | | 354 | | | | | | |
| v/c Ratio | | | | | | 0.10 | | | | 0.37 | | | | | | |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | 0.3 | | | | 1.7 | | | | | | |
| Control Delay (s/veh) | | | | | | 10.2 | | | | 21.0 | | | | | | |
| Level of Service (LOS) | | | | | | B | | | | C | | | | | | |
| Approach Delay (s/veh) | | | | | 2.5 | | | | 21.0 | | | | | | | |
| Approach LOS | | | | | | | | | C | | | | | | | |

HCS7 Two-Way Stop-Control Report

| General Information | | | | Site Information | | | |
|--------------------------|-----------|----------------------------|------------------------|------------------|--|--|--|
| Analyst | EIC | Intersection | Davidson & Valor Group | | | | |
| Agency/Co. | DD | Jurisdiction | | | | | |
| Date Performed | 1/14/2022 | East/West Street | Davidson Avenue | | | | |
| Analysis Year | 2022 | North/South Street | Valor Group Dw | | | | |
| Time Analyzed | Pm Build | Peak Hour Factor | 0.94 | | | | |
| Intersection Orientation | East-West | Analysis Time Period (hrs) | 0.25 | | | | |
| Project Description | | | | | | | |

Lanes



Vehicle Volumes and Adjustments

| Approach | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | |
|----------------------------|-----------|---|-----|----|-----------|---|-----|---|------------|---|----|---|------------|----|----|---|
| | U | L | T | R | U | L | T | R | U | L | T | R | U | L | T | R |
| Movement | 1U | 1 | 2 | 3 | 4U | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | |
| Priority | | | | | | | | | | | | | | | | |
| Number of Lanes | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | |
| Configuration | | | | TR | | | T | | | | R | | | | | |
| Volume (veh/h) | | | 811 | 2 | | | 697 | | | | 73 | | | | | |
| Percent Heavy Vehicles (%) | | | | | | | | | | | 5 | | | | | |
| Proportion Time Blocked | | | | | | | | | | | | | | | | |
| Percent Grade (%) | | | | | | | | | 0 | | | | | | | |
| Right Turn Channelized | | | | | | | | | Yes | | | | | | | |
| Median Type Storage | Undivided | | | | | | | | | | | | | | | |

Critical and Follow-up Headways

| | | | | | | | | | | | | | | | | | |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.2 |
| Critical Headway (sec) | | | | | | | | | | | | | | | | | 6.25 |
| Base Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.3 |
| Follow-Up Headway (sec) | | | | | | | | | | | | | | | | | 3.35 |

Delay, Queue Length, and Level of Service

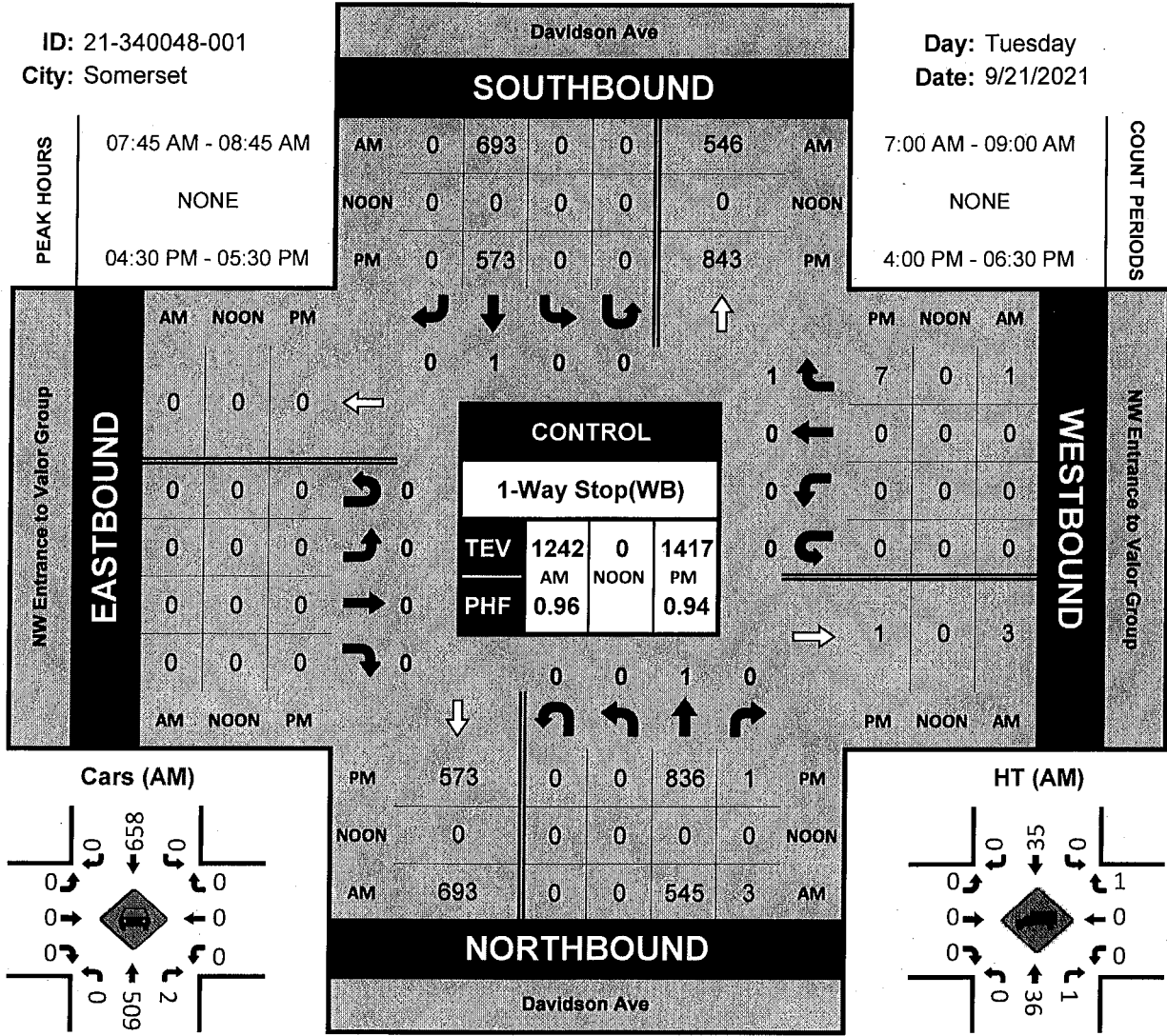
| | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|------|
| Flow Rate, v (veh/h) | | | | | | | | | | | | | | | | | 78 |
| Capacity, c (veh/h) | | | | | | | | | | | | | | | | | 349 |
| v/c Ratio | | | | | | | | | | | | | | | | | 0.22 |
| 95% Queue Length, Q ₉₅ (veh) | | | | | | | | | | | | | | | | | 0.8 |
| Control Delay (s/veh) | | | | | | | | | | | | | | | | | 18.2 |
| Level of Service (LOS) | | | | | | | | | | | | | | | | | C |
| Approach Delay (s/veh) | | | | | | | | | | | | | 18.2 | | | | |
| Approach LOS | | | | | | | | | | | | | C | | | | |

Davidson Ave & NW Entrance to Valor Group

Peak Hour Turning Movement Count

ID: 21-340048-001
City: Somerset

Day: Tuesday
Date: 9/21/2021

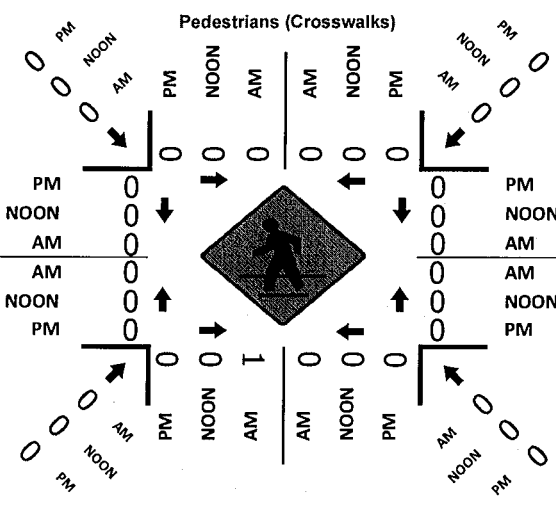
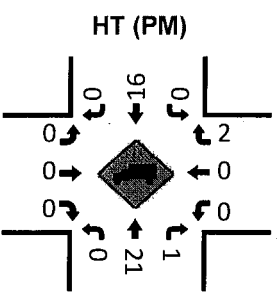
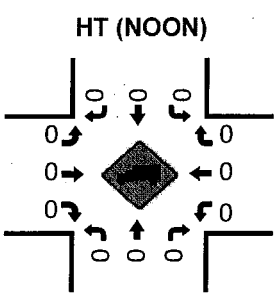
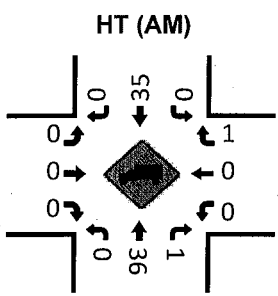
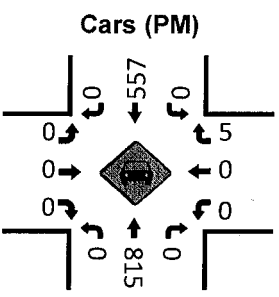
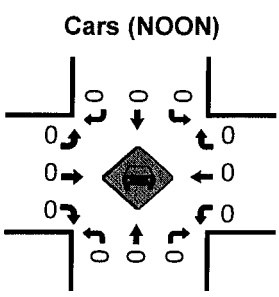
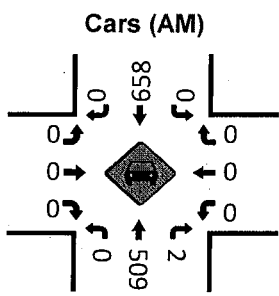


PEAK HOURS

07:45 AM - 08:45 AM
NONE
04:30 PM - 05:30 PM

COUNT PERIODS

7:00 AM - 09:00 AM
NONE
4:00 PM - 06:30 PM

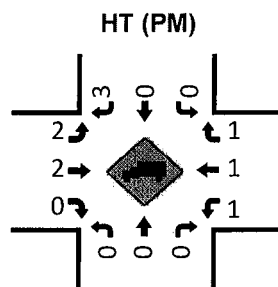
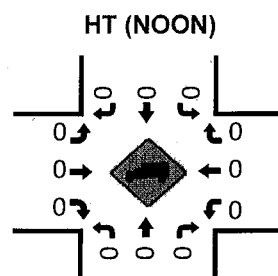
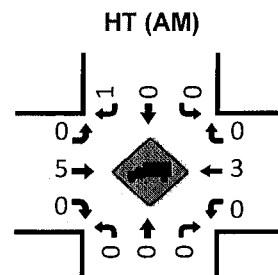
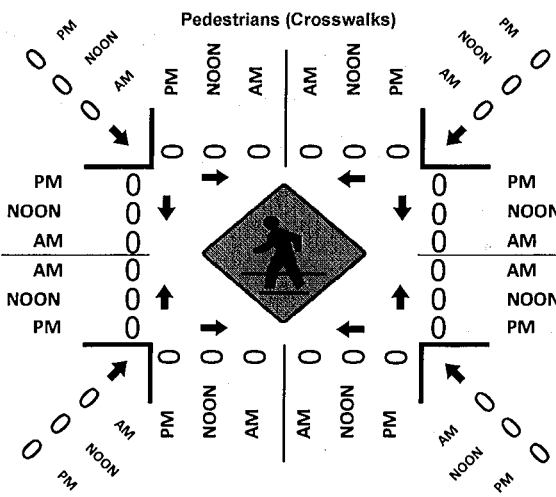
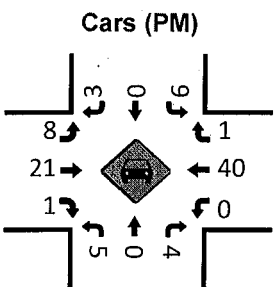
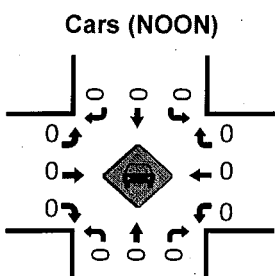
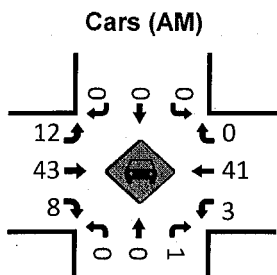
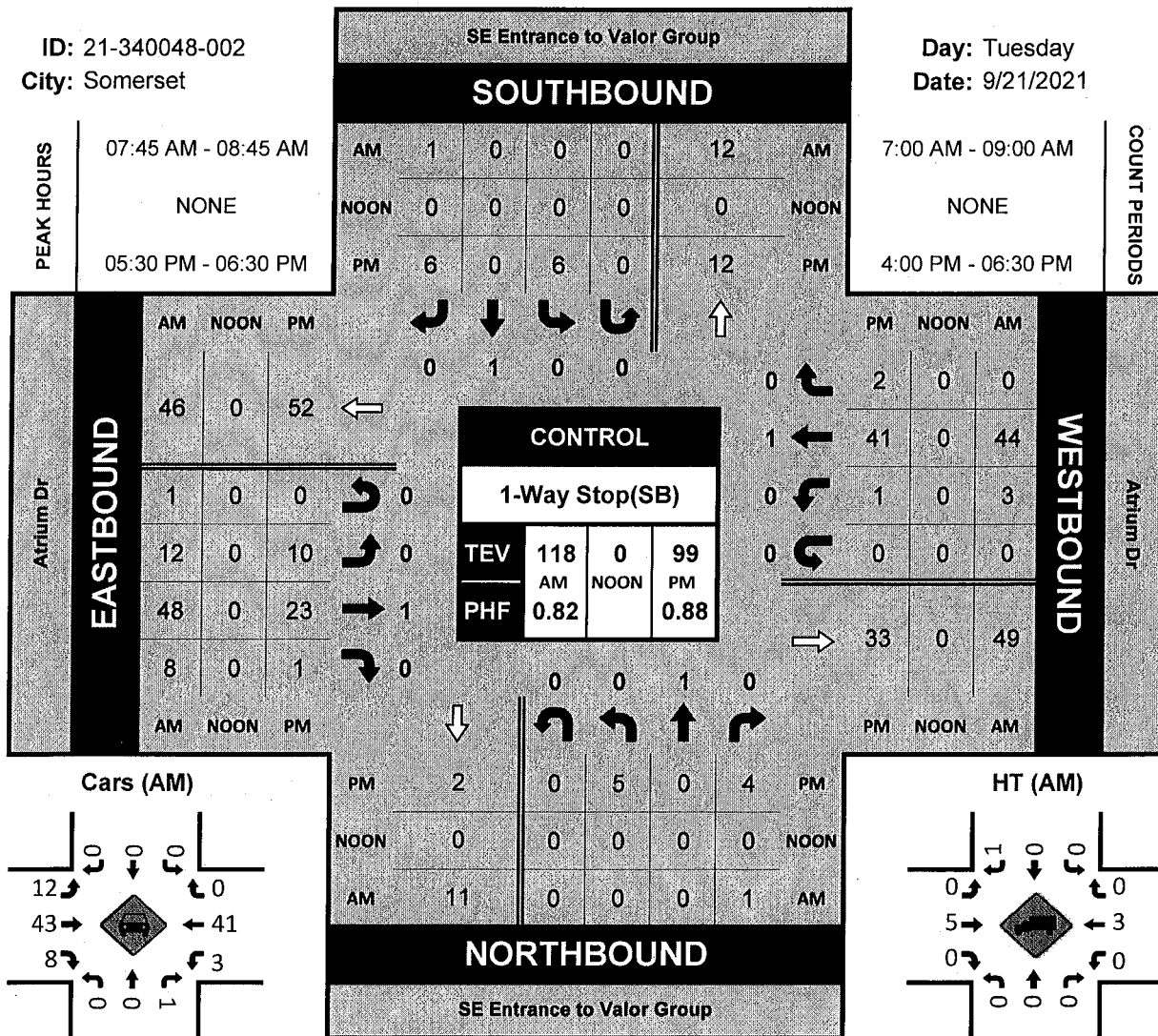


SE Entrance to Valor Group & Atrium Dr

Peak Hour Turning Movement Count

ID: 21-340048-002
City: Somerset

Day: Tuesday
Date: 9/21/2021

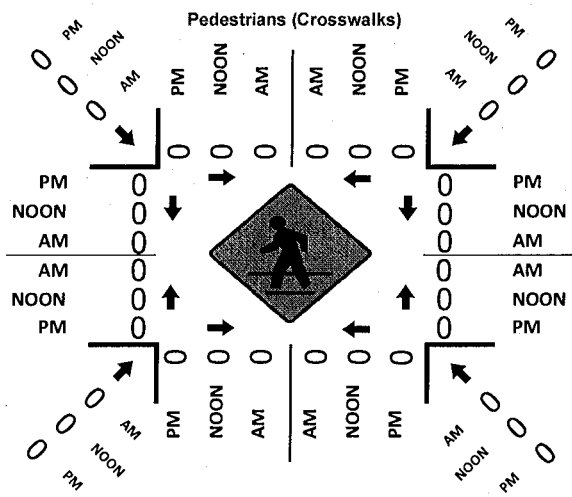
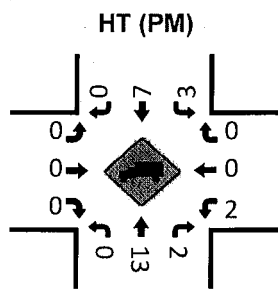
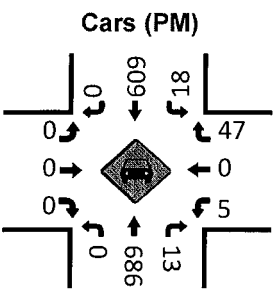
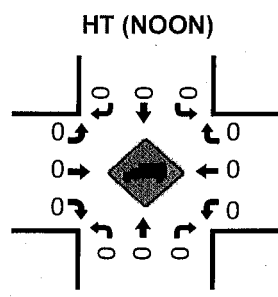
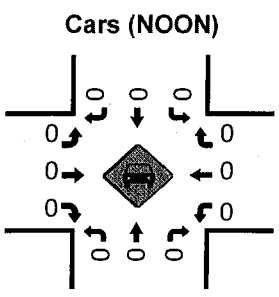
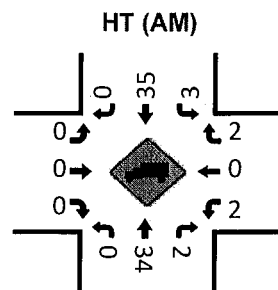
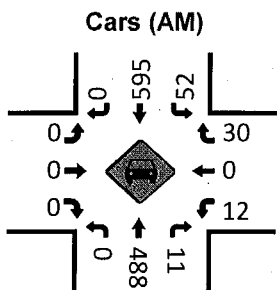
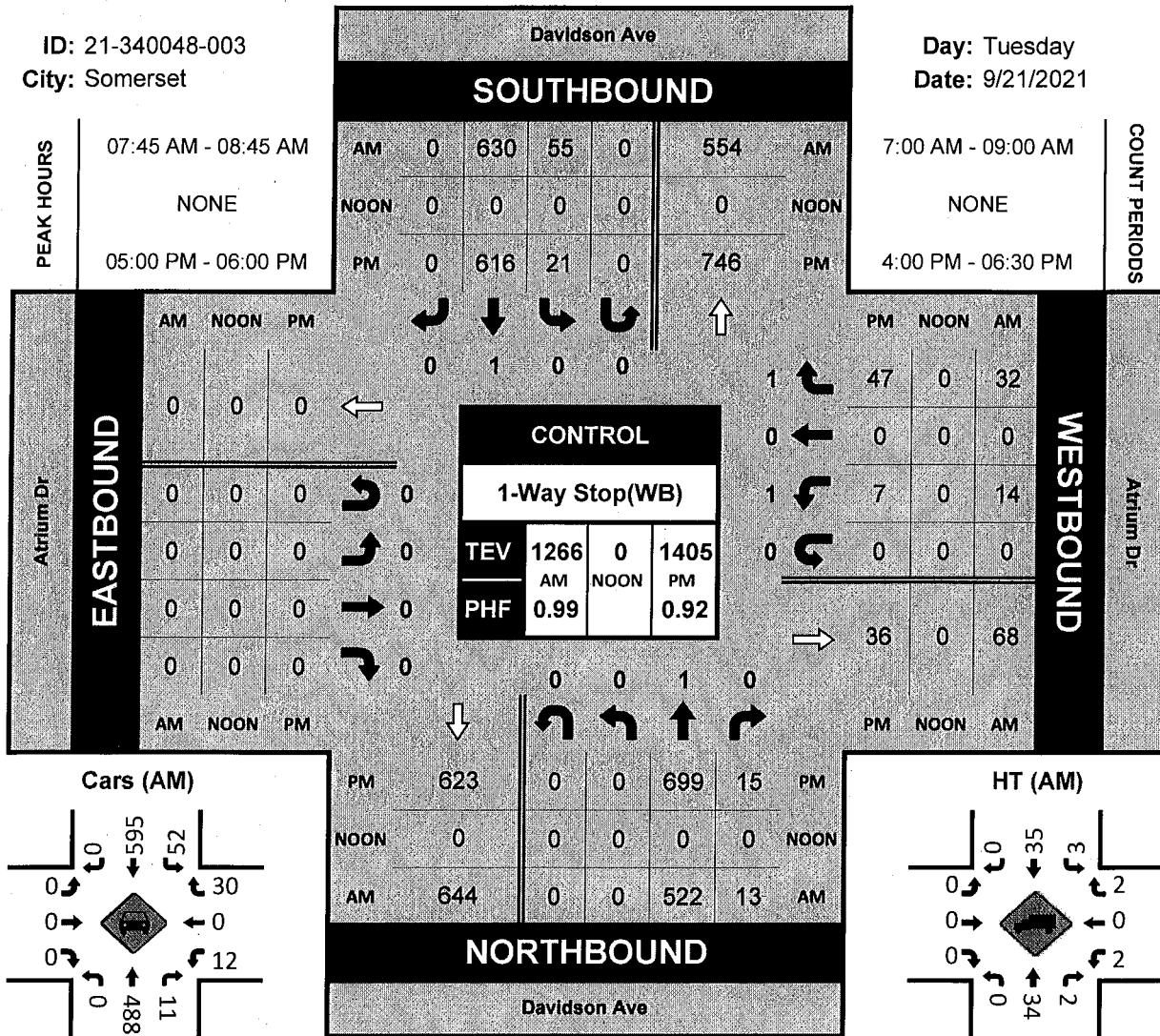


Davidson Ave & Atrium Dr

Peak Hour Turning Movement Count

ID: 21-340048-003
City: Somerset

Day: Tuesday
Date: 9/21/2021



50 ATRIUM DRIVE
 FRANKLIN TWP, SOMERSET CO, NJ
 TRAFFIC COUNTS
 TUESDAY SEPTEMBER 21, 2021
 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:30 p.m.

SITE DRIVEWAYS ON DAVIDSON AVENUE & ATRIUM DRIVE

| START TIME | ENTER | | | TOTAL | EXIT | | | TOTAL | SITE TOTAL |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|------------|
| | R-DAV | L-ATR | R-ATR | | R-DAV | L-ATR | R-ATR | | |
| 7:00 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 7:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 7:45 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 8:00 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 1 | 3 |
| 8:15 | 1 | 2 | 0 | 3 | 1 | 0 | 0 | 1 | 4 |
| 8:30 | 1 | 8 | 0 | 9 | 0 | 0 | 0 | 0 | 9 |
| 8:45 | 3 | 9 | 4 | 16 | 2 | 0 | 0 | 2 | 18 |

DAVIDSON AVENUE & ATRIUM DRIVE INTERSECTION

| START TIME | NB DAV | | SB DAV | | WB ATRIUM | | INT TOTAL | ATR/INT TOTAL |
|------------|--------|----|--------|-----|-----------|----|-----------|---------------|
| | T | R | L | T | L | R | | |
| 7:00 | 114 | 2 | 10 | 165 | 1 | 4 | 296 | 17 |
| 7:15 | 129 | 1 | 6 | 133 | 0 | 6 | 275 | 13 |
| 7:30 | 124 | 3 | 13 | 155 | 3 | 8 | 306 | 27 |
| 7:45 | 139 | 5 | 11 | 148 | 4 | 9 | 314 | 27 |
| 8:00 | 121 | 2 | 8 | 178 | 1 | 11 | 321 | 1191 |
| 8:15 | 125 | 3 | 13 | 167 | 8 | 8 | 319 | 1216 |
| 8:30 | 137 | 5 | 23 | 142 | 1 | 4 | 312 | 1260 |
| 8:45 | 147 | 2 | 17 | 158 | 0 | 5 | 299 | 1266 |
| site peak | 500 | 12 | 61 | 640 | 10 | 28 | 1251 | 4993 |

DAVIDSON AVENUE & ATRIUM DRIVE INTERSECTION

| START TIME | NB DAV | | SB DAV | | WB ATRIUM | | INT TOTAL | ATR/INT TOTAL |
|------------|--------|----|--------|-----|-----------|----|-----------|---------------|
| | T | R | L | T | L | R | | |
| 4:00 | 170 | 1 | 4 | 123 | 2 | 12 | 312 | 19 |
| 4:15 | 144 | 1 | 10 | 116 | 4 | 8 | 283 | 23 |
| 5:30 | 178 | 1 | 5 | 151 | 1 | 18 | 354 | 25 |
| 4:45 | 162 | 3 | 6 | 138 | 1 | 12 | 322 | 22 |
| 5:00 | 218 | 3 | 3 | 142 | 2 | 15 | 383 | 1271 |
| 5:15 | 178 | 1 | 5 | 136 | 1 | 10 | 331 | 1342 |
| 5:30 | 163 | 8 | 8 | 171 | 2 | 10 | 362 | 1390 |
| 5:45 | 140 | 3 | 5 | 167 | 2 | 12 | 329 | 1398 |
| 6:00 | 169 | 1 | 6 | 119 | 5 | 9 | 309 | 1405 |
| 6:15 | 98 | 0 | 3 | 98 | 3 | 9 | 211 | 1331 |
| site peak | 570 | 12 | 22 | 555 | 12 | 40 | 1211 | 5345 |