

Evaluation / Observations Summary Memo
MMC Parking Garage Access / Saint John Street / D Street
Portland, Maine
JN 2866.01

Date: February 3, 2020
Subject: MMC Parking Garage Access / Saint John Street / D Street
Portland, Maine
To: Alexander Green (MMC), Dominic Gagnon (Colliers)
From: Randy Dunton, Gorrill Palmer

Introduction

Gorrill Palmer (GP) was retained by MMC to evaluate / observe the operations of the intersection of the newly opened MMC parking garage access / Saint John Street / D Street intersection. The intersection is currently operating as unsignalized but is designed and equipped for signalization once it is determined to be warranted. The garage was opened for employee parking on January 5, 2020 with 1,834 parking spaces available, 50 of which are being used by the Eagles. From the garage, employees can take a shuttle, walk, or ride a bicycle to the hospital.

The garage entrance/exit has three gated lanes. In the peak AM time periods, the three lanes are designated as two entering lanes and one exiting lane. The remainder of the time, the center lane is closed and there is one entering lane and one exiting lane. This access only serves employees, as the shuttles use a separate access to the ground level of the garage.

GP completed the turning movement counts and conducted observations on Tuesday January 14 and Wednesday January 15, 2020. The turning movement counts and observations are described in more detail as follows:

AM Peak Time Period (Observed / Counted from 6:00 AM to 9:00 AM)

AM Peak Hour Volumes

Because the parking garage provides parking for MMC employees, the peak hour of the access is typically offset from the adjacent street (commuter) peak hour of the overall intersection, and more related to employee shift changes in the hospital. In the AM, the employee shift change in the hospital occurs at approximately 7:00 AM. This was reflected in the turning movement counts, with a garage driveway peak hour from 6:00 AM to 7:00 AM. This is the peak hour when



the entering / exiting traffic on the garage access was the highest. When the total volume of the intersection (including Saint John Street and D Street) are considered, the overall intersection peak hour was 7:15 AM to 8:15 AM, which is after the garage peak hour and more typical of a commuter peak hour. These two peak hours were consistent on both days that were counted. The turning movement volumes are shown on the attached figures.

AM Peak Hour Observations

During the two days of AM observation periods, the middle of the three gated lanes into the garage was open to entering traffic, allowing two lanes of vehicular traffic into the garage and one exiting the garage. The two entering lanes merge into one lane soon after entering through the parking gates. A traffic person was located at the garage entrance on both days assisting in keeping traffic moving into the garage. For the majority of the three AM peak hours each day when the observations were being made, vehicles entering the garage from St. John Street and D Street did not affect traffic flow of vehicles traveling along St. John Street. However, there was a brief approximately ten to fifteen-minute time period between 6:30 AM & 6:45 AM when the flow of traffic entering the garage appeared to exceed the capacity, which in turn caused minor queuing of traffic in the left and right turn auxiliary lanes on Saint John Street. This queuing exceeded the auxiliary lane lengths which occasionally interrupted the flow of Saint John Street through traffic. Fortunately, this occurred before the peak hour of traffic on Saint John Street, and only for a ten to fifteen-minute time period. Based on the observations, the merging of the two entering lanes into one that occurs just inside the garage was a contributing factor for the queuing of traffic out of the garage.

AM Peak Hour Observation Conclusions

Based on our observations, there was an approximately ten to fifteen-minute time period in the AM before the adjacent street traffic reaches its peak when traffic entering the garage backs out to Saint John Street. These observations were made within two weeks of the opening of the garage and as such, the traffic patterns have not yet reached an “equilibrium”. As employees figure out the traffic patterns, it is expected that traffic will dissipate over a longer period of time and the sudden surge of traffic will decrease. As employees also get used to the merge on the inside of the garage, this would also be expected to operate more smoothly and efficiently.

To confirm the assumption that this brief queuing will decrease after employees are more familiar with the garage patterns, GP will be recounting and observing the intersection in the future. A supplemental memo like this one will be provided that describes the future traffic counts / observations.



PM Peak Time Period (Observed / Counted 4:00 PM to 6:00 PM [Jan. 14] & 3:00 PM to 6:00 PM [Jan. 15])

PM Peak Hour Volumes

The site was first observed in the PM peak hours from 4:00 PM to 6:00 PM on Jan. 14, 2020. The results of these counts showed a consistent but low flow of vehicles out of the garage from the start of the count and continued for about an hour into the count, at which time the volumes decreased. There was no surge of vehicles that occurred during the PM peak hours that was similar to the AM peak hour traffic flow. Since observations on the first day indicated that the peak hour may have already started by 4:00 PM, the counts for the second day were started at 3:00 PM and continued until 6:00 PM. The following presents the peak hours for the PM time period for each of the two days.

The PM peak hours for the overall intersection were as follows:

- Jan. 14: 4:00 PM – 5:00 PM
- Jan. 15: 4:15 PM – 5:15 PM

The PM peak hours for the parking garage driveway were as follows:

- Jan. 14: 4:15 PM – 5:15 PM
- Jan. 15: 3:45 PM – 4:45 PM

As the turning movement counts indicate, the PM peak hour for the parking garage occurred from 3:45 to 4:45, so it overlapped with the peak hour of adjacent street traffic by approximately one-half hour. The peak hour movements are shown on the attached figures.

PM Peak Hour Observations

Despite the peak hours differing between the two days, there were similar observations made on each day. There was no surge of traffic during the PM time periods similar to what occurred in the AM time period, and the flow of traffic from the garage was consistent, but low in volume. Based on our observations, the queue of traffic exiting the parking garage never queued back to the garage gates, and typically the maximum queue was only a few vehicles queued at any one time. This consistent and low flow of vehicles could be a result of two factors. The first is the metering of traffic due to the shuttles. Unlike the AM peak hour, the employees arrive at the garage from shuttles. These shuttles limit the number of employees that can arrive at any one time, and also meters the arrival of the employees. The second potential factor is that employees tend to leave at staggered times once their shift is over. It is also our understanding that all the employees who arrived at 7:00 AM do not have the same shift, with some having eight-hour shifts and some twelve-hour shifts.



PM Peak Hour Observation Conclusions

Based on our observations, there were no issues with queuing or operations of the intersection during the PM peak hours.

Summary

The observations confirmed assumptions and expectations from the original traffic study and were not entirely unexpected. The overall layout of the garage entrance/exit and adjacent intersection accommodated the traffic demand of the AM and PM peak hours for most of the time. There was a brief ten to fifteen-minute time period in the AM when traffic volume exceeded the capacity; however, this occurs prior to the peak hour of the adjacent street traffic. Since the observations were completed less than two weeks after the opening of the garage, employees are not yet familiar with the traffic patterns and this influx of traffic is expected to dissipate as time goes on and employees get more familiar with traffic patterns. To confirm this assumption, the intersection will be re-counted and observed in the near future and a summary memo will be provided.

Site Location

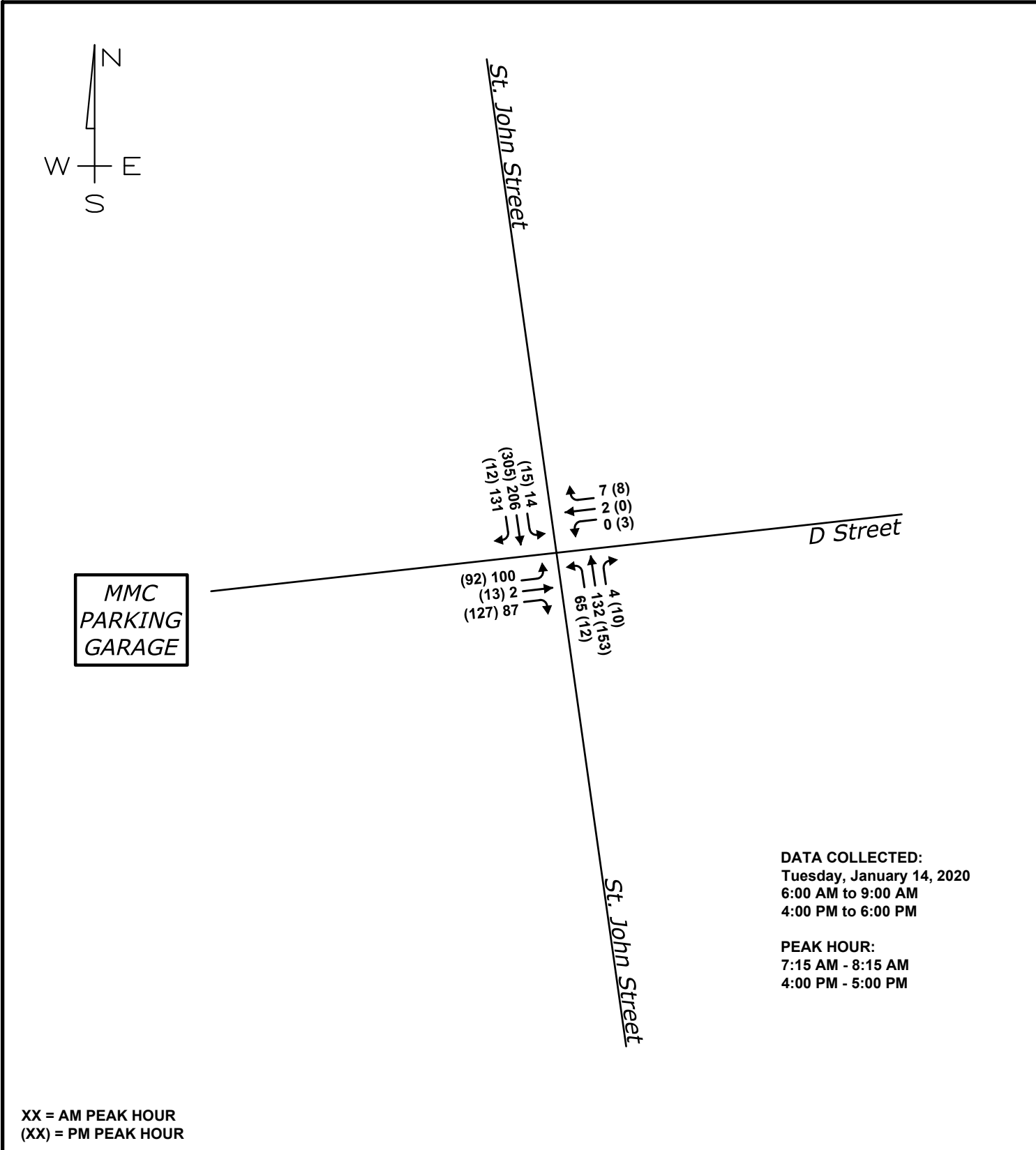


MAINE MEDICAL CENTER PARKING GARAGE PORTLAND, MAINE

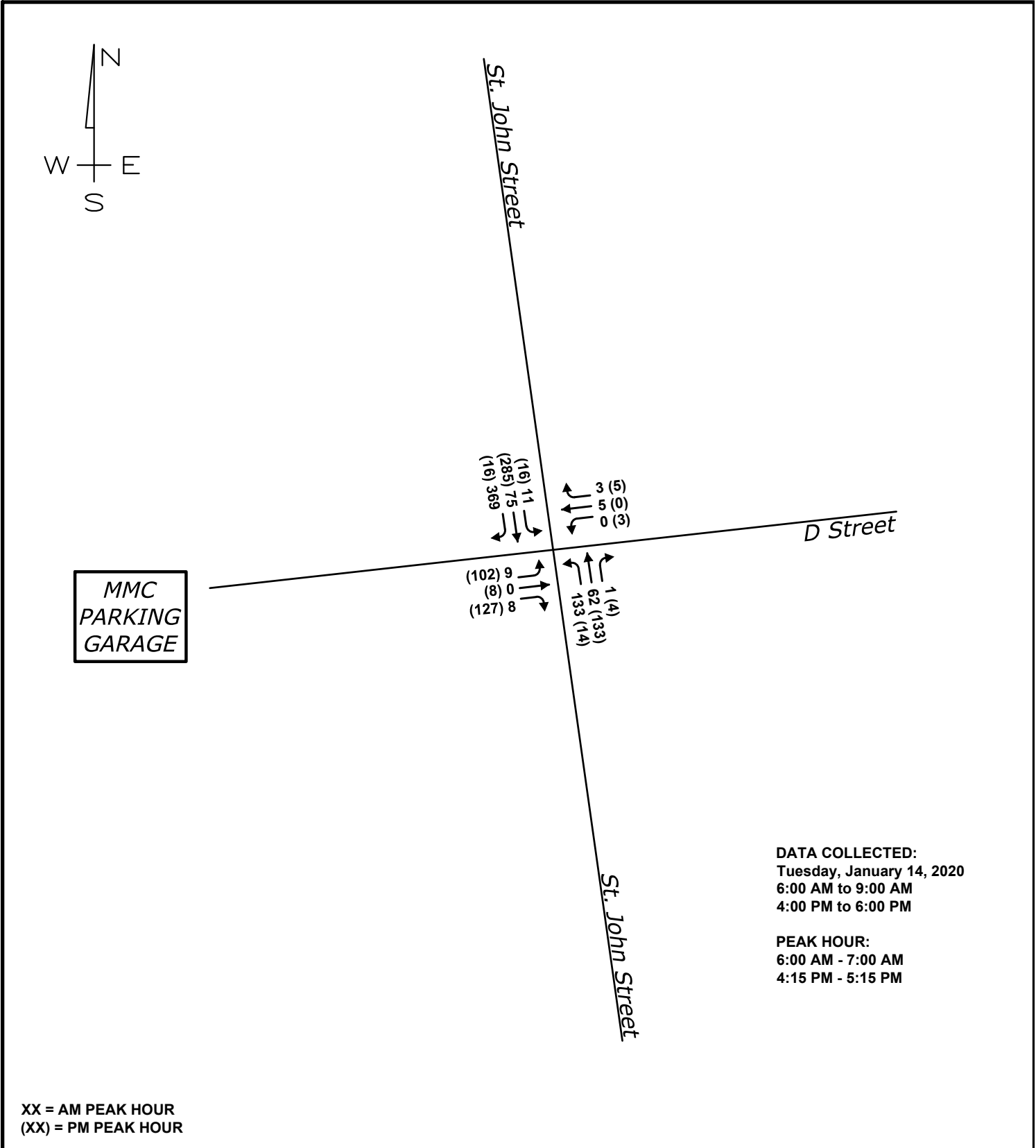
Design: TPG Scale: NONE
Draft: TPG Date: JANUARY 2020
Checked: RED File Name: St Johns Garage Figures.dwg



Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

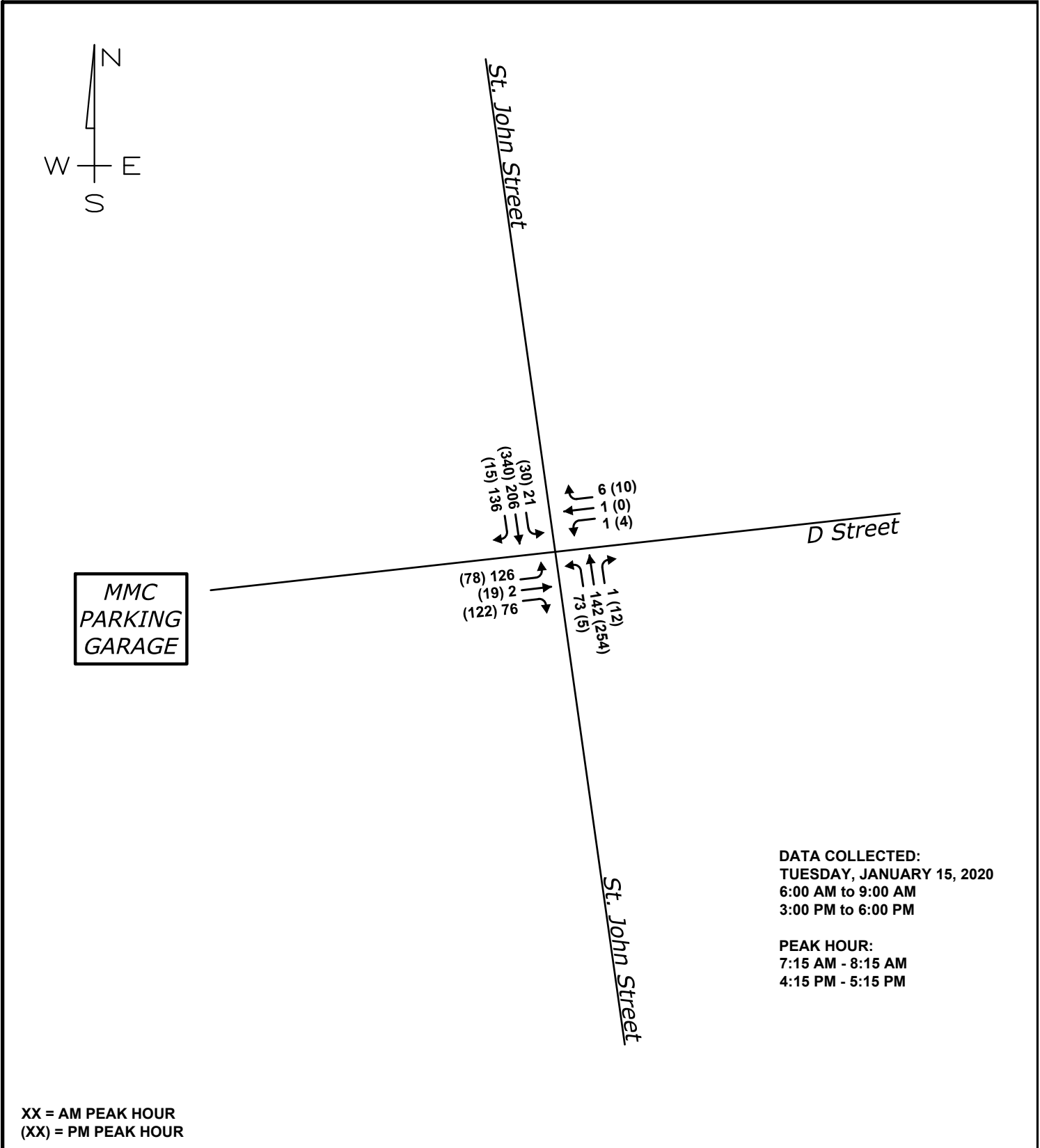


MAINE MEDICAL CENTER PARKING GARAGE PORTLAND, MAINE



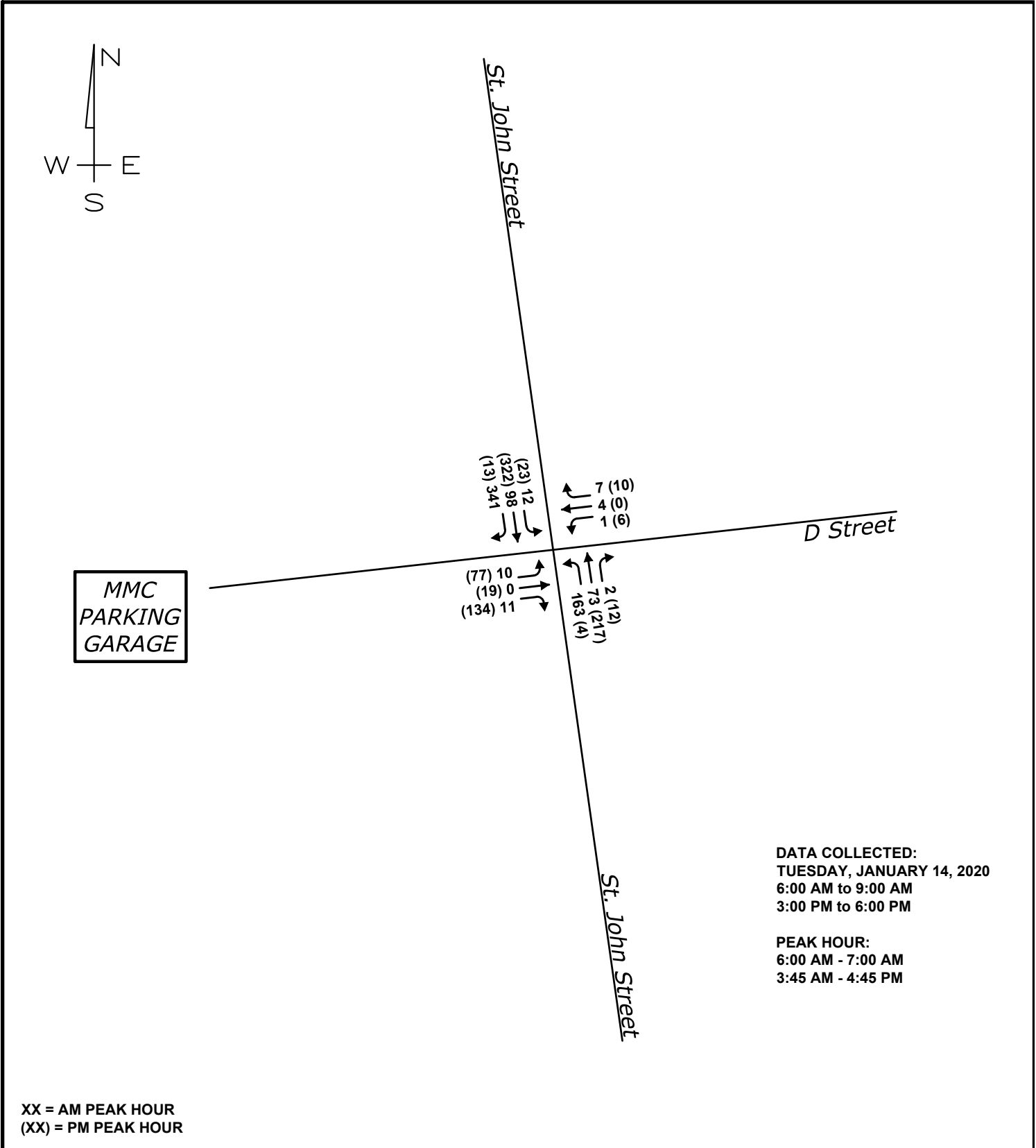
MAINE MEDICAL CENTER PARKING GARAGE PORTLAND, MAINE

January 15, 2020 - Overall Intersection Peak Hours



MAINE MEDICAL CENTER PARKING GARAGE PORTLAND, MAINE

January 15, 2020 - Garage Peak Hours



MAINE MEDICAL CENTER PARKING GARAGE PORTLAND, MAINE

Design: TPG Scale: NONE
 Draft: TPG Date: JANUARY 2020
 Checked: RED File Name: St Johns Garage Figures.dwg