

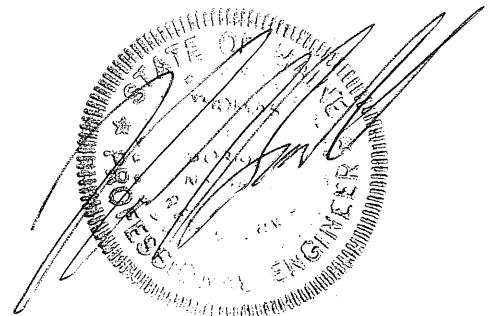
**Traffic Impact Study  
Proposed Expansion  
Bramhall Campus  
Portland, Maine**

**Prepared for:**

**Maine Medical Center  
22 Bramhall Street  
Portland, Maine, 04102**

**January 2004**

**Prepared by:**



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## *Executive Summary*

The following Executive Summary is prepared for the reader's convenience, but is not intended to be a substitute for reading the full report.

Gorrill-Palmer Consulting Engineers, Inc. was retained by Maine Medical Center to complete a traffic impact study for a proposed Charles Street project planned at the Maine Medical Center (MMC) in Portland, Maine. The project includes the addition of a 192,000 s.f. building for the Obstetrics and Newborn Center, which would be bordered by reconfigured Charles, Ellsworth and Wescott Streets. Many of the functions for the new center already exist within the campus but are overcrowded and do not meet current industry layout standards. In addition, Maine Medical Center proposes to expand the existing ramp parking garage on the corner of Gilman Street and Congress Street to include an additional 512 parking spaces. The expansion will include a new driveway on Congress Street across from the Medical Office Building Garage. The location of the site is shown on Figure 1 in Appendix A.

The following is a summary of the major findings of the traffic study:

- 1) The proposed expansion is forecast to generate 19 and 25 new trip ends during the AM and PM peak hours, respectively. In addition, our office anticipates that 78 and 11 trip ends will be relocated from other areas on the campus and on-street parking to the new garage. This level of trip generation does not require a traffic movement permit from MDOT.
- 2) The level of service analyses show that all existing intersections in the study area are anticipated to operate at an acceptable level of service in the post development condition, with the exception of Congress Street at Gilman Street. However, the Gilman Street approaches have operated at low levels of service for some time, which is common for an unsignalized road entering to an arterial. This location is not forecast to warrant a traffic signal, and its close proximity to the signals at Valley Street result in gaps in traffic beyond those indicated in the level of service analysis.

Delay is also anticipated for left turning traffic exiting the proposed garage drive, but this location is not anticipated to satisfy signal warrants. As with traffic exiting Gilman Street, nearby traffic signals will result in gaps in traffic that are anticipated to result in noticeably less delay for exiting traffic than the model indicates.

- 3) The crash data indicates that there are several high crash locations in or near the study area. Based on an analysis of these areas, Gorrill-Palmer Consulting Engineers, Inc. recommends the following:

➤ Consideration of relocating the bus stop on the east side of St. John Street.

- Placement of “ONLY” and left arrow pavement markings in the left lane of the northbound approach of St. John Street at Park Avenue. Installation of a green arrow section under the green ball of the left signal head of both St. John Street approaches.
  - Maintaining skip marks through intersection for left turn from St. John Street northbound onto Park Avenue westbound.
  - That the broken white line be replaced by a solid white line to just beyond the Fairfield Inn driveway and two sets of thru-right and thru-left pavement marking arrows be installed in each lane approaching the Inn. In addition, a “ONE WAY” sign on Park Avenue west of St. John Street to alert drivers that this is a one-way road.
  - Strict enforcement of parking regulations on Weymouth Street near Congress Street.
  - Placement of signs on the eastbound approach of Congress Street in advance of Gilman Street warning of the merging lanes ahead.
- 4) The sight lines at the site drive exiting onto Congress Street are in excess of Maine DOT requirements provided parking is prohibited within 75 feet of the new garage entrance. Gorrill-Palmer Consulting Engineers, Inc. recommends that all plantings, which will be located within the right of way, not exceed 3 feet in height and be maintained at or below that height. Planned signage associated with the development should not interfere with sight lines. In addition, we recommend that during construction, when heavy equipment is entering and exiting into the site, that appropriate measures, such as signage and flag persons, be utilized in accordance with the Manual on Uniform Traffic Control Devices.

Based on these conclusions, it is the opinion of Gorrill-Palmer Consulting Engineers, Inc. that the existing traffic network can safely and effectively accommodate the traffic generated by the proposed development with measures taken as noted above.

## *I. Existing Conditions*

The site for the proposed expansion is currently a paved lot on the corner of Charles Street, Ellsworth Street and Wescott Street. A 192,000 s.f. Obstetrics and Newborn Center is proposed as an expansion to Maine Medical Center with completion planned for 2007.

A 512 space-parking garage is also planned to be constructed as part of the project adjacent and to the east of the existing 1276 space garage at the corner of Gilman and Congress. Access to the proposed garage is planned from Congress Street opposite the Medical Office Building and an additional access provided on Crescent Street.

## *II. Background Traffic Conditions*

Gorrill-Palmer Consulting Engineers, Inc. based the study on the following information:

- A concept plan prepared for Maine Medical Center by Sebago Technics.
- Crash data for the period 2000-2002 supplied by the Maine DOT.
- Turning movement volumes collected on Tuesday, July 29, 2003 from 6:30 – 8:30 AM and again on Tuesday, August 5 from 3:30 – 6:00 PM at the following locations:
  - Congress Street/Deering Avenue/Bramhall Street
  - Congress Street/Ellsworth Street
  - Congress Street/Forest Street
  - Congress Street/Valley Street
  - Congress Street/Saint John Street
- Turning movement volumes collected on Wednesday, July 30, 2003 from 6:30 – 8:30 AM and on Wednesday, August 6 from 3:30 – 6:00 PM at the following locations:
  - Park Avenue/Saint John Street
  - Park Avenue/Deering Avenue

### *Predevelopment Traffic Volumes*

The project is expected to be complete in the year 2007. The year 2007 predevelopment design hour volumes were determined utilizing the following methodology:

- The raw turning movement volumes were seasonally adjusted for a Group I arterial using information furnished by the Maine DOT to reach the estimated 30<sup>th</sup> highest hour.
- Volumes were annually adjusted by two percent per year, based on previous studies in the area and historic count data published by Maine DOT.
- Gorrill-Palmer Consulting Engineers, Inc. contacted the City of Portland to determine if any other projects, either in the approval process or under construction, would influence volumes within the study area. According to City, a proposed congregate housing facility is anticipated at the end of Frederic Street. However, traffic from this project is minimal, and has been included in the background growth. In addition, several projects are planned for the future, which would reduce traffic volumes in the study area. A new connector road is proposed to run from I-295 to the traffic circle at the intersection of St. John Street and Commercial Street. This new road will allow vehicles to get from I-295 to Commercial Street and the Casco Bay Bridge without having to use Congress Street, Park Street or St. John Street. This should significantly reduce volumes along these corridors. In addition, Mercy Hospital is proposing to relocate its entire campus to Commercial Street west of the Veterans Memorial Bridge. The hospital will be accessible from the new connector road, therefore, its traffic will no longer need to use the Congress Street and St. John Street corridors. Both of these projects are anticipated to reach completion after the expansion of the Maine Medical Center's Bramhall Campus. Therefore, the reductions in traffic have not been included in the predevelopment volumes although they are anticipated to reduce future traffic volumes in the study area.

The raw volumes shown on Figures 2 and 3 of Appendix A were seasonally and annually adjusted to reflect anticipated 2007 predevelopment traffic volumes on Figures 4 and 5 of Appendix A for the AM and PM peak hours, respectively.

### *Crash Information*

Gorrill-Palmer Consulting Engineers, Inc. examined the High Crash Locations from Maine DOT for the period of 2000 to 2002, the most recent period available.

In order to evaluate whether a location has a crash problem, Maine DOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual crash rate to the rate for similar

intersection in the state. A CRF of less than 1.00 indicates a rate of less than average) and:

2. A minimum of 8 crashes over a three-year period.

Based on the published history, the following locations within the study area were determined to be High Crash Locations:

**Maine DOT High Crash Locations: 2000-2002**

Node	Location	# of Crashes	CRF
08991	Congress Street/Gilman Street	15	1.49
07245	Congress Street/Weymouth Street	8	1.00
07187	Park Avenue/ St. John Street	34	1.01
07181	St. John Street/ A Street	10	1.28
7187-7188	Park Ave from St. John to Marston	9	1.13
7181-7182	St John from A to Congress	16	2.57
7182-7187	St John from Congress to Park	38	3.03

The Maine DOT crash printouts as well as the collision diagrams can be found in Appendix C. A discussion of each location follows:

*St. John Street at A Street*

This intersection is a high crash location with a critical rate factor of 1.28 and 10 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are two apparent collision types at this location. The first type of collision occurs when an oncoming vehicle strikes a pedestrian attempting to cross from Union Station Plaza to A Street at night. Lighting in this location is poor at night and no crosswalks or pedestrian crossing signs exist. This location has been reviewed by the Portland Crosswalk Committee and found to be an appropriate location for pedestrians to cross therefore Gorrill-Palmer Consulting Engineers, Inc. recommends installation of signs directing pedestrians to cross St. John Street at the Congress Street traffic signal. The second type of collision occurs when vehicles crossing between Union Station Plaza and A Street collide with vehicles going straight on St. John Street. There was no pattern involving any one particular movement. The remaining collision was a rear-end collision and involved a driver under the influence of prescription drugs.

*St. John Street from A Street to Congress Street*

This location is an HCL with a critical rate factor of 2.57 and 16 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are three apparent collision types at this location. The first type of collision occurs when vehicles exiting Union Station Plaza collide with vehicles on St. John Street. There were four of these collisions with no apparent correctable conditions. The second type of collision occurs when vehicles turning into a driveway collide with other vehicles. Out of the four collisions of this type, three occurred at the D'Angelo's driveway. Vehicles making a right turn from the inner lane into the

D'Angelo's driveway caused two of these collisions and the third was a southbound rearend. Clear pavement markings would address the improper turns. The provision of a more visible sign for D'Angelo's may reduce the collisions occurring with vehicles making the right turn from the inner lane. The third type of collision occurred when vehicles heading south on Saint John Street stopped for pedestrians crossing from Union Station Plaza and were subsequently rear-ended. As mentioned above, signs should be placed to direct pedestrians to cross at Congress Street. The remaining collisions are random in nature and do not indicate a collision pattern.

#### *St. John Street from Congress Street to Park Avenue*

This location is an HCL with a critical rate factor of 3.03 and 38 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are three apparent collision types at this location. The first type of collision occurs when vehicles making a left turn out of a driveway collide with vehicles going straight on St. John Street. Three such collision occurred at Amato's, three occurred at McDonald's, three occurred at the Tire Center, six occurred at Dunkin' Donuts, and one occurred at Lang's Express. The second collision type occurs when vehicles making a left turn into a driveway collide with oncoming traffic or are rear-ended by a following vehicle. Three such collisions occurred at Amato's, one occurred at McDonald's, and three occurred at Dunkin' Donuts. Traffic volumes are high on St. John Street during peak hours and few adequate gaps in traffic exist to allow for a left turn. Additionally several collisions resulted from stacked traffic in one lane blocking the view to turning drivers of flowing traffic in the second lane. These could be addressed by restricting left turns. The third type of collision occurs when vehicles stopping or slowing for a bus at the bus stop on the eastern side of St. John Street are rear-ended by following vehicles. Consideration should be given to relocating the bus stop. The remaining collisions are random in nature and do not indicate an apparent collision pattern.

#### *St. John Street at Park Avenue*

This intersection is an HCL with a critical rate factor of 1.01 and 34 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are three apparent collision types at this location. The first type of collision occurs when vehicles making the left turn from St. John Street onto Park Avenue collide with other vehicles making this same turn. Currently, there is a left turn lane and a left/thru lane on the northbound approach of St. John Street. Although skip marks are painted through the intersection, the lines have become faint and drivers often do not know in which lane they need to be. Gorrill-Palmer Consulting Engineers, Inc. recommends maintaining skip marks through the intersection. The second type of collision occurs when vehicles in the left turn only lane on the northbound approach of St. John Street decide to go straight and are struck by vehicles making a left-turn from the left/thru lane. Gorrill-Palmer Consulting Engineers, Inc. recommends installation of "ONLY" and left arrow pavement markings in the left lane. Additionally, a green arrow section should be added to the left signal head on both St. John Street approaches. The third type of collision occurs when vehicles stopped or slowing in traffic on the northbound



approach of St. John Street are rear-ended by following vehicles. This type of collision is typical at intersections where a free-right turn exists.

*Park Avenue from St. John Street to Marston Street*

This location is an HCL with a critical rate factor of 1.13 and 9 collisions occurring during the years 2000-2002. Upon examination of the collision reports, it was found that one of the nine collisions actually occurred along St. John Street. The remaining eight collisions are shown on the collision diagram in Appendix C. As shown in the collision diagram, all of the eight collisions occur at the entrance to the Fairfield Inn. They all occur when a vehicle in the right hand lane attempts to make a left turn into the driveway and is struck by a vehicle going straight in the left lane. This driveway is in close proximity to the intersection of St. John Street and Park Avenue and drivers often do not know which lane to use to get to their hotel. Gorrill-Palmer Consulting Engineers, Inc. recommends that the broken white line be replaced by a solid white line to just beyond the Fairfield Inn driveway and two sets of thru-right and thru-left pavement marking arrows be installed in each lane approaching the Inn. In addition, a "ONE-WAY" sign should be posted along Park Avenue so that drivers know that this section of Park Avenue is a one-way road.

*Congress Street at Weymouth Street*

This location is an HCL with a critical rate factor of 1.00 and 8 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are two collision types apparent at this location. The first type of collision occurs when vehicles turning from Congress Street onto Weymouth Street collide with vehicles parked illegally on Weymouth Street. Gorrill-Palmer Consulting Engineers, Inc. recommends strict enforcement of parking regulations on this street. The second type of collision occurs when vehicles waiting to make the left turn from Congress Street onto Weymouth Street are rear-ended by following vehicles. Congress Street could be re-stripped to allow a short left turn lane or by-pass lane. However this would require removal of approximately ten parking spaces and would increase speeds around the curve in Congress Street.

*Congress Street at Gilman Street*

This location is an HCL with a critical rate factor of 1.49 and 15 collisions occurring during the years 2000-2002. Based on the collision diagram included in Appendix C, there are four collision types apparent at this intersection. The first collision type occurs when vehicles turning left from Gilman Street onto Congress Street collide with vehicles going straight on Congress Street. There do not appear to be any specific contributing factors that could be addressed for these collisions. The second type of collision occurs when vehicles headed east on Congress Street and slowing in traffic are rear-ended by a following vehicle. The eastbound approach of Congress Street drops from two lanes to one lane immediately to the east of the intersection with Gilman Street, which leads to several rear-end collisions as vehicles merge. Gorrill-Palmer Consulting Engineers, Inc. recommends advance signage that Congress Street reduces to a single lane ahead.

### III. Trip Generation

The current Bramhall campus consists of approximately 900,000 s.f. of hospital space (inpatient and outpatient) as well as medical office space. Much of the hospital space does not meet current industry standards. Therefore, the Obstetrics and Newborn Center is proposed largely to allow for some decompression of the campus. The facility is to be a total of 165,000 s.f. of space, with another 27,000 s.f. devoted to the mechanical penthouse. The expansion will allow for some increase in patient population, from 480 in 2003 to 490 in 2007, or approximately two percent.

#### *New Trips for Obstetrics and Newborn Center*

Our office utilized the Institute of Transportation Engineers (ITE) publication, *Trip Generation*, 7<sup>th</sup> Edition to determine the campus increase in trips from 480 to 490 patients. Our office referenced Land Use Code 610, Hospital, to determine the increase based on the increase of ten beds for the campus. The net increase is shown as follows:

**Trip Generation from 480 to 490 Beds\* Due to Hospital Expansion**

LUC 610: Hospital**	Weekday	AM Peak Hour	PM Peak Hour	Saturday
480 Beds	16,087	921	1,205	10,099
490 Beds	15,758	902	1,230	10,310
<b>Net Increase</b>	<b>329</b>	<b>19</b>	<b>25</b>	<b>211</b>

\*Occupied beds for the Bramhall campus.

\*\*Based on the maximum observed rate in the ITE database to provide conservative results.

As can be seen from the above table, the addition of ten beds is anticipated to add an additional 19 and 25 trip ends for the AM and PM peak hours, respectively. This level of additional trip generation is lower than the 100-trip threshold triggering the need for an MDOT traffic movement permit.

#### *Total Trips to Proposed Garage*

The proposed parking garage off of Gilman Street is expected to contain parking for the Center as well as the current on-street parking and overcrowded sites such as the visitor's lot and the current garage off Gilman Street. This garage will have 512 spaces. Except for the additional trips estimated above for the Obstetrics and Newborn Center, the parking garage itself will not generate any new trips to the campus but rather accommodate existing trips already traveling to the campus but parking elsewhere.

The new garage will generate a combination of the new and relocated trips at the proposed Congress Street driveway. Gorrill-Palmer Consulting Engineers Inc. estimated the trips to and from the proposed 512 space garage based on a 1998 study by DeLuca-Hoffman Associates, Inc. which determined the number of trip ends generated per space to be 0.19 and 0.07 for the AM and PM peak hours respectively. Applying this rate to the proposed 512 space garage yields an estimate of 97 and 36 trip ends during the AM and PM peak hours respectively.

Again, it is important to note that of these trips, some of them would be net new trips for the Obstetrics and Newborn Center, with the remaining trips being those relocated from on-street parking and other overcrowded facilities.

#### ***Relocated Trips from On-Street and Off-Street Parking***

The total amount of relocated trips to the proposed garage is the total garage trips minus the net new trips due to the Obstetrics and Newborn Center. The total trips are as follows:

AM Peak Hour:	97-19 = 78 Relocated Trips
PM Peak Hour:	36-25 = 11 Relocated Trips

#### ***IV. Trip Distribution***

Gorrill-Palmer Consulting Engineers, Inc. based the trip distribution on ITE Land Use Code 610, Hospital:

AM Peak Hour:	63% Enter, 37% Exit
PM Peak Hour:	38% Enter, 62% Exit

All trip generation-related calculations are in Appendix C of this report.

#### ***V. Trip Composition***

Gorrill-Palmer Consulting Engineers, Inc. has estimated the trip composition will consist entirely of trips that are primary in nature traveling to and from their home to the Hospital.

#### ***VI. Trip Assignment***

Gorrill-Palmer Consulting Engineers, Inc. based the trip assignment on the medical office traffic study completed in 1999 by DeLuca-Hoffman Associates. This was completed for both the trips relocated from other parts of the campus as well as the new trips attributable to the Obstetrics and Newborn Center.

#### ***VII. 2007 Postdevelopment Traffic***

Raw volumes were increased by two percent per year to represent the 2007 predevelopment figures. The trip assignment and trip reassignment were then added to the 2007 predevelopment figures to represent the 2007 postdevelopment figures, as shown on Figures 12 and 13 of Appendix A for the AM and PM peak hours, respectively.

#### ***VIII. Study Area***

For the purposes of this study, we have analyzed the following intersections:

- Congress Street/Deering Avenue/Bramhall Street
- Congress Street/Ellsworth Street
- Congress Street/Forest Street
- Congress Street/Valley Street
- Congress Street/Saint John Street
- Saint John Street/Park Avenue
- Park Avenue/Deering Avenue
- Congress Street/Gilman Street
- Congress Street/MOB Garage Access/Garage Driveway

### ***IX. Capacity Analysis***

Gorrill-Palmer Consulting Engineers, Inc. completed capacity analyses using Synchro 5, Traffic Signal Coordination Software. Levels of service rankings are similar to the academic ranking system where an 'A' is very good with little control delay and an 'F' represents very poor conditions. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if a traffic signal is warranted.

The following table summarizes the relationship between delay and level of service for a signalized intersection:

Level of Service	Control Delay per Vehicle (sec)
A	Up to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The following table summarizes the relationship between delay and level of service for an unsignalized intersection.

Level of Service	Control Delay per Vehicle (sec)
A	Up to 10.0

B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Gorrill-Palmer Consulting Engineers, Inc. based our analyses on the existing roadway configurations. The analyses were based on Figure 5 for the predevelopment scenario and Figure 8 for the post development scenario. The results of the capacity analyses are summarized as follows. The detailed analyses are included in Appendix B.

#### Level of Service for Congress Street at Bramhall/Deering - Signalized

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bramhall NBL	21	C	18	B	20	C	18	B
Bramhall NBTR	17	B	17	B	16	B	16	B
Deering SB	26	C	15	B	25	C	21	C
Congress EBL	14	B	12	B	14	B	15	B
Congress EBTR	25	C	20	B	22	C	24	C
Congress WBL	9	A	8	A	8	A	9	A
Congress WBTR	8	A	7	A	11	B	11	B

(Signal splits and phases were optimized for both the pre and post condition.)

#### Level of Service for Congress Street at Valley Street - Signalized

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Valley NBL	18	B	16	B	13	B	10	A
Valley NBTR	14	B	12	B	12	B	8	A
Congress EB	8	A	18	B	19	B	13	A
Congress WBLT	15	B	18	B	24	C	22	C
Congress WBR	6	A	8	A	11	B	6	A

(Existing signal splits and phases were use for both the AM pre and post condition)

(Signal splits and phases were optimized for the PM post condition.)

**Level of Service for Congress Street at St. John Street - Signalized**

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
St. John NB	24	C	18	B	20	B	20	B
St. John SB	17	B	20	C	21	C	21	C
Congress EBL	84	F	36	D	42	D	42	D
Congress EBTR	24	C	15	B	19	B	18	B
Congress WBL	39	D	49	D	41	D	44	D
Congress WBR	2	A	8	A	25	C	26	C

(Signal splits and phases were optimized for both the pre and post condition.)

**Level of Service for Park Avenue at St. John Street - Signalized**

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
St. John NBL	22	C	22	C	42	D	43	D
St. John NBLT	22	C	22	C	46	D	47	D
St. John NBR	4	A	4	A	8	A	8	A
St. John SBLT	76	E	76	E	37	D	36	D
St. John SBR	6	A	6	A	17	B	18	B
Park WBLT	26	C	26	C	54	D	55	D
Park WBR	7	A	7	A	4	A	4	A

(Existing signal splits and phases were use for both the pre and post condition)

**Level of Service for Park Avenue at Deering Avenue - Signalized**

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Deering NBL	18	B	18	B	23	C	23	C
Deering NBTR	17	B	17	B	23	C	23	C
Deering SBL	16	B	17	B	24	C	24	C
Deering SBTR	16	B	17	B	23	C	23	C
Park EB	15	B	15	B	15	B	15	B
Park WBLT	16	B	16	B	17	B	17	B
Park WBR	4	A	4	A	2	A	2	A

(Existing signal splits and phases were use for both the pre and post condition)

**Level of Service for Congress Street at Forest Street - Unsignalized**

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
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	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Forest SB	24	C	30	D	16	C	17	C
Congress EB	1	A	2	A	2	A	2	A
Congress WB	<1	A	<1	A	<1	A	<1	A

#### Level of Service for Congress Street at Gilman Street - Unsignalized

Approach	2007 AM Peak Hour				2007 PM Peak Hour			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Gilman NBL	53	F	86	F	49	E	50	E
Gilman NBR	17	C	19	C	15	B	15	B
Gilman SB	20	C	25	C	19	C	19	C
Congress EBTR	<1	A	<1	A	<1	A	<1	A
Congress WBTL	2	A	2	A	1	A	1	A

#### Level of Service for Congress Street at Site Drive - Unsignalized

Approach	2007 AM Peak Hour *				2007 PM Peak Hour *			
	Pre		Post		Pre		Post	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Existing Drive SB	13	B	13	B	20	C	23	C
Site Drive NBL	-	-	34	D	-	-	58	F
Site Drive NBR	-	-	14	B	-	-	12	B
Congress EBL	8	A	8	A	9	A	9	A
Congress EBT	<1	A	-	-	<1	A	-	-
Congress EBTR	-	-	<1	A	-	-	<1	A
Congress WBL	-	-	9	A	-	-	9	A
Congress WBTR	<1	A	<1		<1	A	<1	A

\* (-) indicates movements or lane groups that do not exist in the pre or post development condition.

As shown in the table above, all existing locations in the study area are anticipated to operate at acceptable levels of service, with the exception of Congress Street at Gilman Street. However, the Gilman Street approaches have operated at low levels of service for some time, which is common for an unsignalized road coming into a high-volume arterial. This location is not forecast to warrant a traffic signal, and the existing approach geometry on each leg of Gilman Street is appropriate to the volumes.

In addition, left turning traffic exiting the proposed garage will face potential delay. As with the traffic at Gilman Street, volumes do not warrant a traffic signal, and the garage exit volume is forecast to be only about one vehicle per two minutes.

Based on the capacity analyses shown in the tables above, it is the opinion of Gorrill-Palmer Consulting Engineers, Inc. that the existing roadway network can accommodate the additional traffic generated by the proposed expansion.

## X. *Sight Lines*

The Maine Department of Transportation has guidelines for driveway sight distances within an urban compact. These sight distances are as follows:

Posted Speed (mph)	Sight Distance
25	200
30	250
35	305
40	360
45	425
50	495
55	570

Gorrill-Palmer Consulting Engineers, Inc. has evaluated the available sight lines at the proposed driveway in accordance with Maine DOT standards.

The Maine DOT standards are as follows:

Driveway observation point:	10 feet off major street travel way
Height of eye at driveway:	3 ½ feet above ground
Height of approaching vehicle:	4 ¼ feet above road surface

The results of this sight line analysis exiting onto Congress Street are summarized in the following table:

Direction	Posted Travel Speed (mph)	Recommended Sight Line (ft)	Actual Sight Line (ft)
Exiting onto Congress Street Looking:			
Left	25	200	>200*
Right	25	200	>200*

\*Exceeds 200 ft if no on-street parking is nearby.

As shown, the sight lines for these locations exceed Maine DOT requirements. Our office recommends prohibiting on-street parking within 75 feet of the new entrance to improve sight lines and safety. Gorrill-Palmer Consulting Engineers, Inc. recommends that all plantings, which will be located within the right of way, not exceed 3 feet in height and be maintained at or below that height. Signage should not interfere with sight lines. In addition, we recommend that during construction, when heavy equipment is entering and exiting into the site, that appropriate measures, such as signage and flag persons, be utilized in accordance with the Manual on Uniform Traffic Control Devices.

## XII. *Conclusions*

The following is a summary of the major findings of the traffic study:



- 1) The proposed expansion is forecast to generate 19 and 25 new trip ends during the AM and PM peak hours, respectively. In addition, our office anticipates that 78 and 11 trip ends will be relocated from other areas on the campus and on-street parking to the new garage. This level of trip generation does not require a traffic movement permit from MDOT.
- 2) The level of service analyses show that all existing intersections in the study area are anticipated to operate at an acceptable level of service in the post development condition, with the exception of Congress Street at Gilman Street. However, the Gilman Street approaches have operated at low levels of service for some time, which is common for an unsignalized road entering to an arterial. This location is not forecast to warrant a traffic signal, and its close proximity to the signals at Valley Street result in gaps in traffic beyond those indicated in the level of service analysis.

Delay is also anticipated for left turning traffic exiting the proposed garage drive, but this location is not anticipated to satisfy signal warrants. As with traffic exiting Gilman Street, nearby traffic signals will result in gaps in traffic that are anticipated to result in noticeably less delay for exiting traffic than the model indicates.

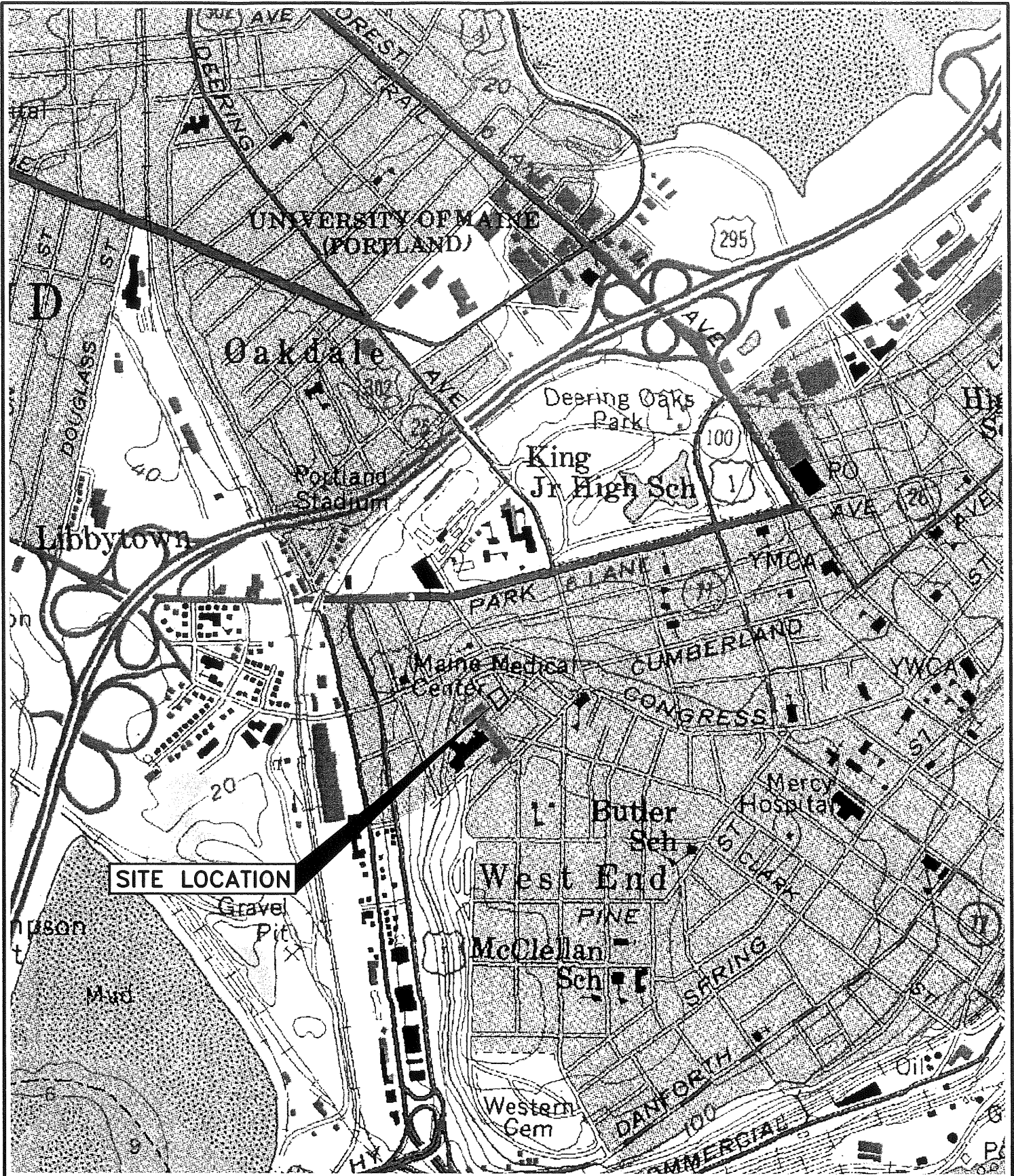
- 3) The crash data indicates that there are several high crash locations in or near the study area. Based on an analysis of these areas, Gorrill-Palmer Consulting Engineers, Inc. recommends the following:
  - Consideration of relocating the bus stop on the east side of St. John Street.
  - Placement of “ONLY” and left arrow pavement markings in the left lane of the northbound approach of St. John Street at Park Avenue. Installation of a green arrow section under the green ball of the left signal head of both St. John Street approaches.
  - Maintaining skip marks through intersection for left turn from St. John Street northbound onto Park Avenue.
  - That the broken white line be replaced by a solid white line to just beyond the Fairfield Inn driveway and two sets of thru-right and thru-left pavement marking arrows be installed in each lane approaching the Inn. In addition, a “ONE WAY” sign on Park Avenue west of St. John Street to alert drivers that this is a one-way road.
  - Strict enforcement of parking regulations on Weymouth Street near Congress Street.
  - Placement of signs on the eastbound approach of Congress Street in advance of Gilman Street warning of the merging lanes ahead.
- 4) The sight lines at site drive exiting onto Congress Street are in excess of Maine DOT requirements provided parking is prohibited within 75 feet of the new garage entrance. Gorrill-Palmer Consulting Engineers, Inc. recommends that all

plantings, which will be located within the right of way, not exceed 3 feet in height and be maintained at or below that height. Planned signage associated with the development should not interfere with sight lines. In addition, we recommend that during construction, when heavy equipment is entering and exiting into the site, that appropriate measures, such as signage and flag persons, be utilized in accordance with the Manual on Uniform Traffic Control Devices.

Based on these conclusions, it is the opinion of Gorrill-Palmer Consulting Engineers, Inc. that the existing traffic network can safely and effectively accommodate the traffic generated by the proposed development with measures taken as noted above.

*Appendix A*  
Site Location Diagram  
Turning Movement Diagrams

S:\Land Projects\317\DWG\317-locmap.dwg, 8-5x11 LOC MAP, 1/5/2004 1:07:06 PM, 1:1, DB



**U.S.G.S. Location Map**  
 Maine Medical Center - Portland, Maine  
 U.S.G.S. Portland-West, Maine-7.5 Minute Series (Topographic)

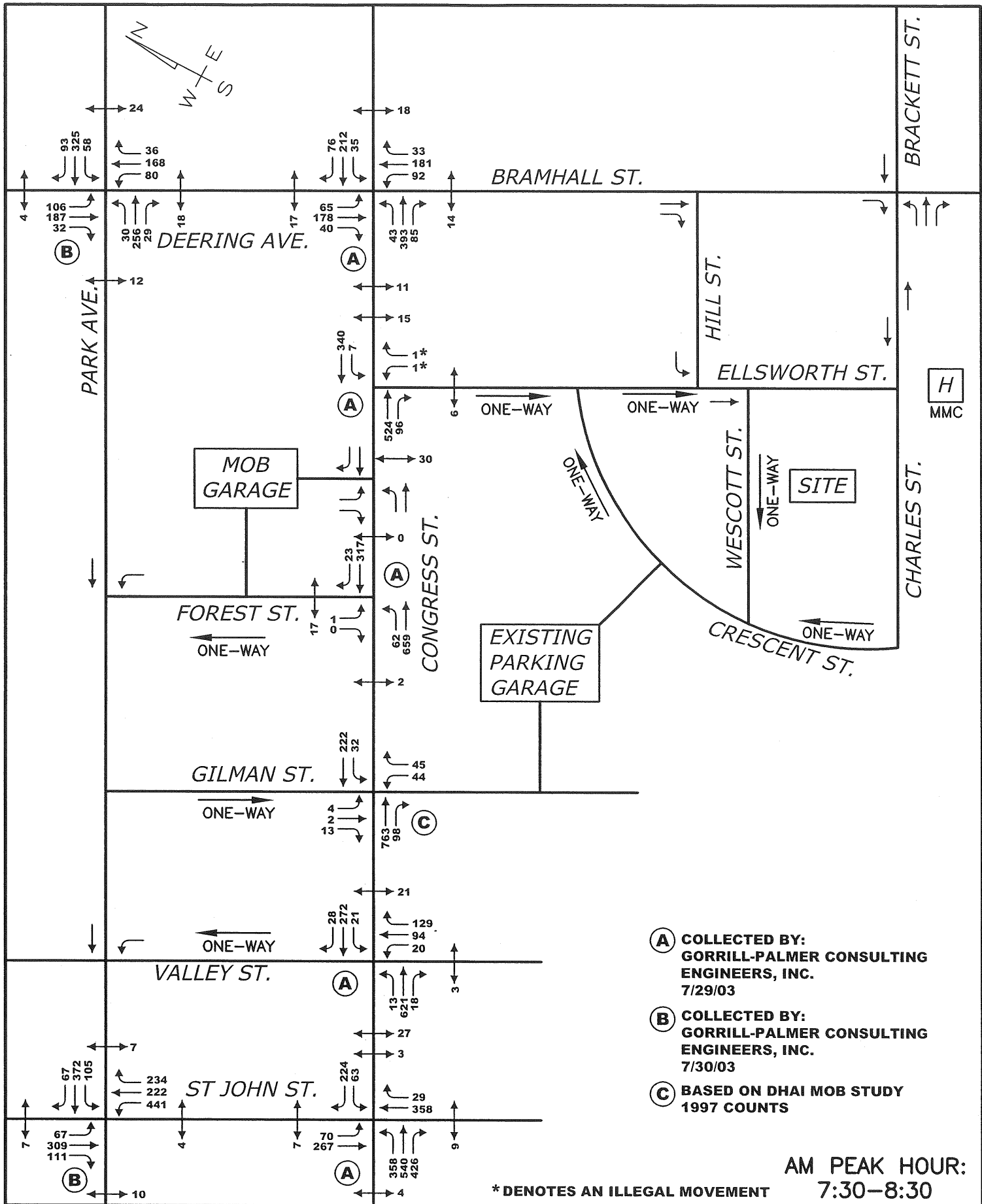
Design: JJB	Date: JAN 2004
Draft: DB	Job No.: 317
Checked: RCN	Scale: None
File Name: 317-LOC MAP.DWG	



Gorrill-Palmer Consulting Engineers, Inc.  
 Traffic and Civil Engineering Services

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 15 Shaker Road  
 Gray, ME 04039  
 207-657-6910  
 FAX: 207-657-6912  
 E-Mail: mailbox@gorrillpalmer.com

Figure  
 1



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

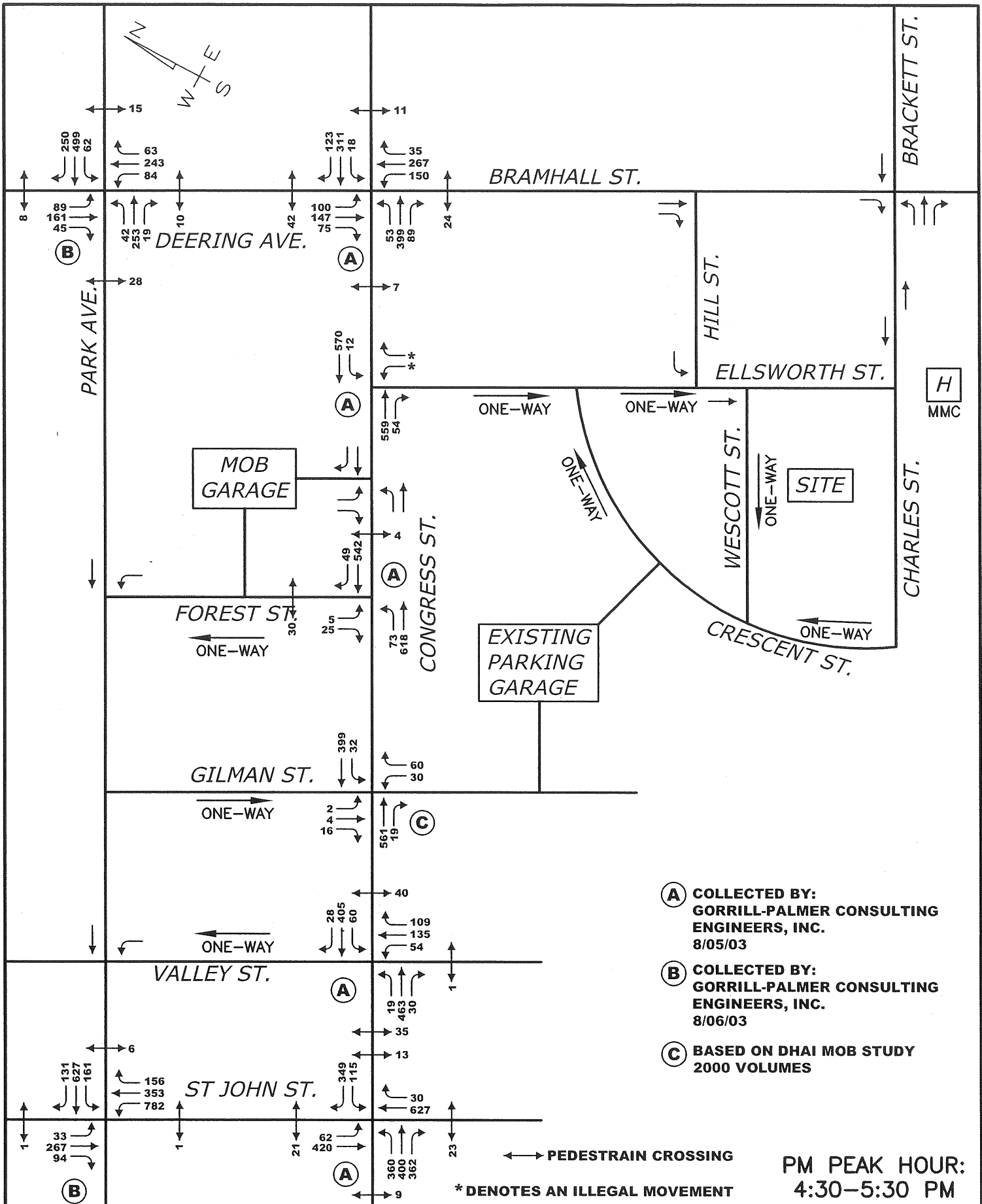
**GP** Gorrill-Palmer Consulting Engineers, Inc.  
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 Gray, ME 04039

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 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:	Raw Data
Project:	MAINE MEDICAL CENTER

Figure No.	2
------------	---



- (A) COLLECTED BY:  
GORRILL-PALMER CONSULTING  
ENGINEERS, INC.  
8/05/03
- (B) COLLECTED BY:  
GORRILL-PALMER CONSULTING  
ENGINEERS, INC.  
8/06/03
- (C) BASED ON DHAI MOB STUDY  
2000 VOLUMES

↔ PEDESTRAIN CROSSING

\* DENOTES AN ILLEGAL MOVEMENT

PM PEAK HOUR:  
4:30-5:30 PM

Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

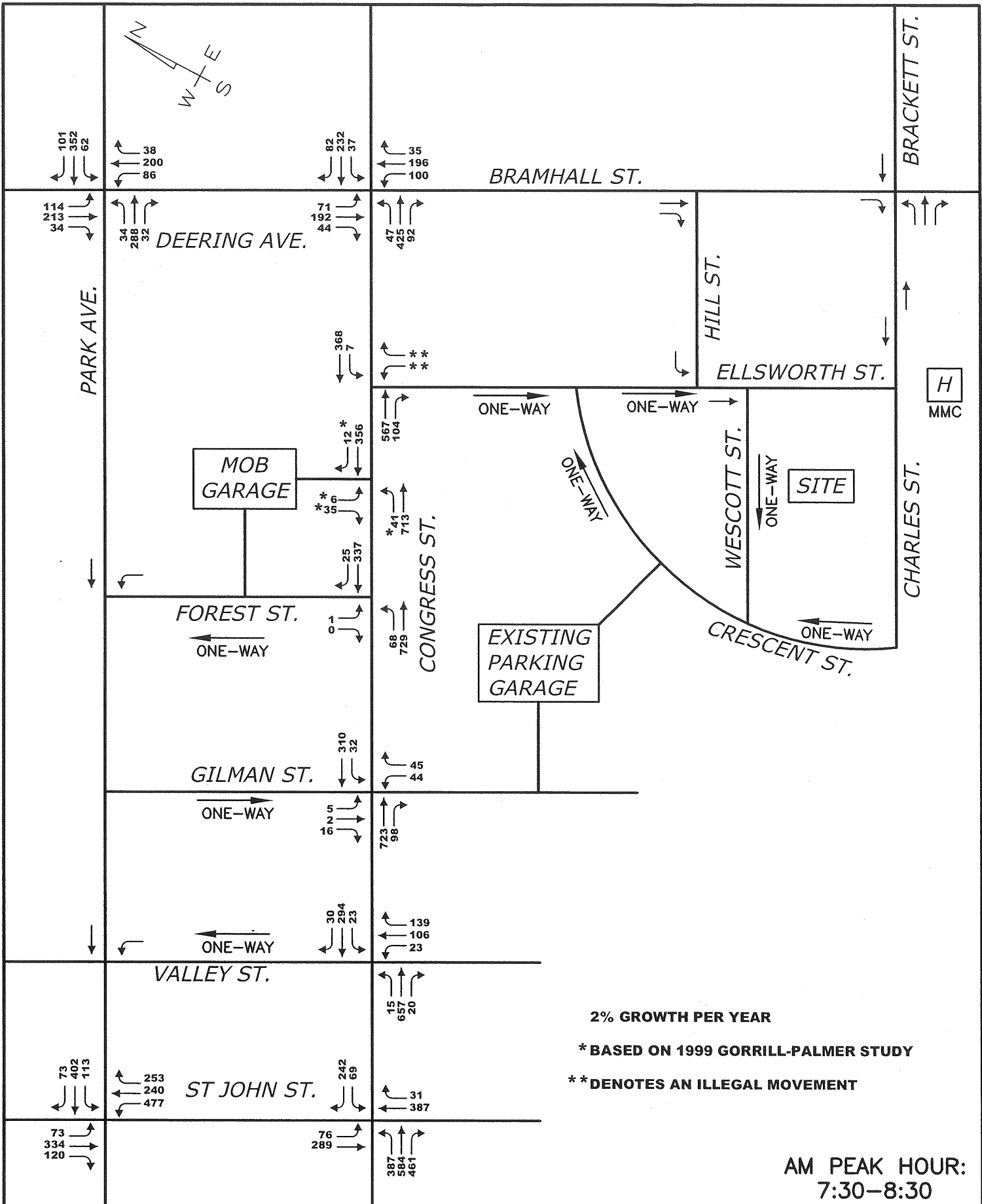
**GP** Gorrill-Palmer Consulting Engineers, Inc.  
Traffic and Civil Engineering Services

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15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:	Raw Data
Project:	MAINE MEDICAL CENTER

Figure No.	3
------------	---



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
 Traffic and Civil Engineering Services

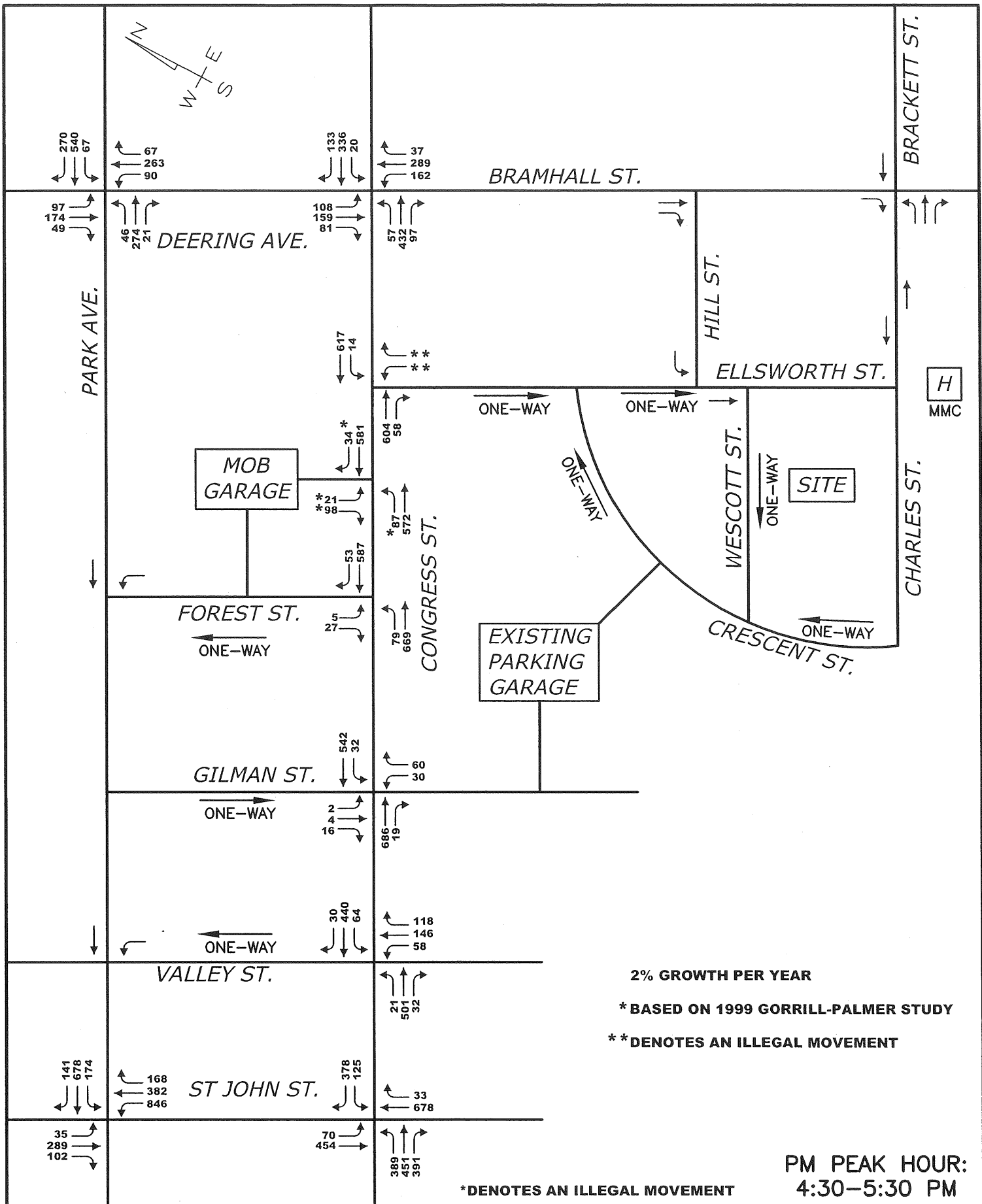
PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

Phone: 207-657-6910  
 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**2007 Predevelopment Volumes**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**4**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
 Traffic and Civil Engineering Services

PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

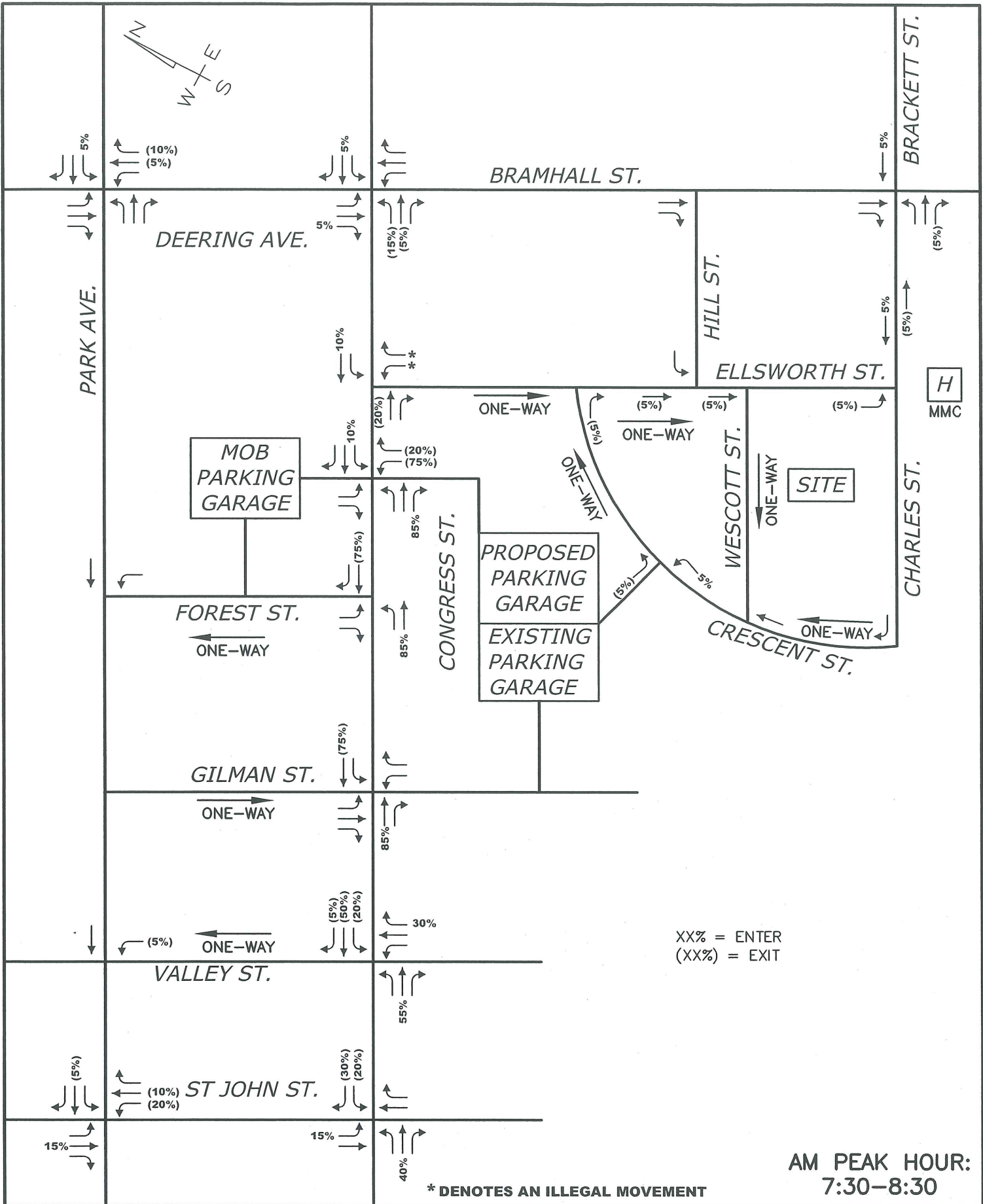
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 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**2005 Predevelopment Volumes**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**5**





Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
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**GP** Gorrill-Palmer Consulting Engineers, Inc.  
 Traffic and Civil Engineering Services

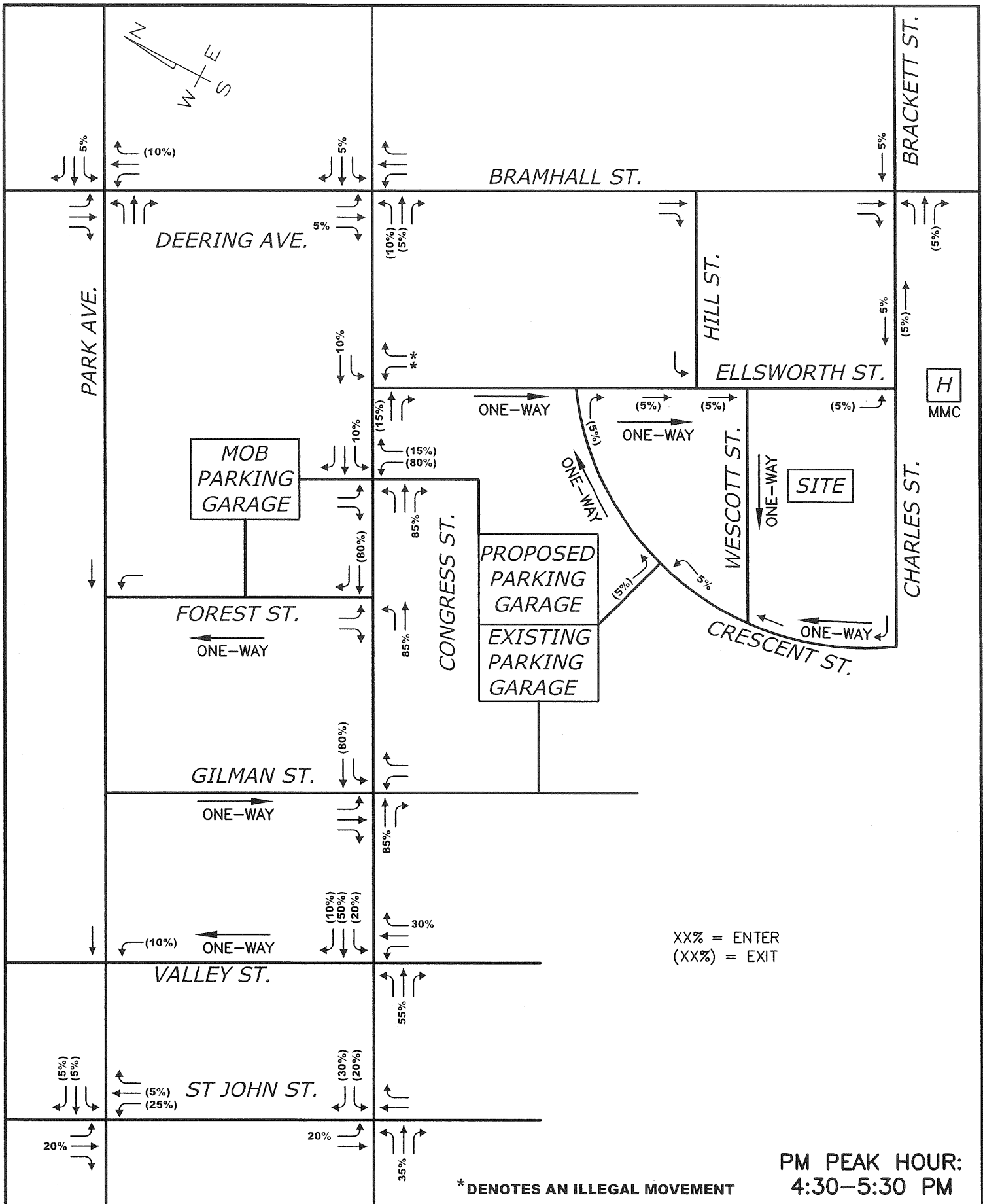
PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

Phone: 207-657-6910  
 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Primary Trip Distribution**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**6**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
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File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
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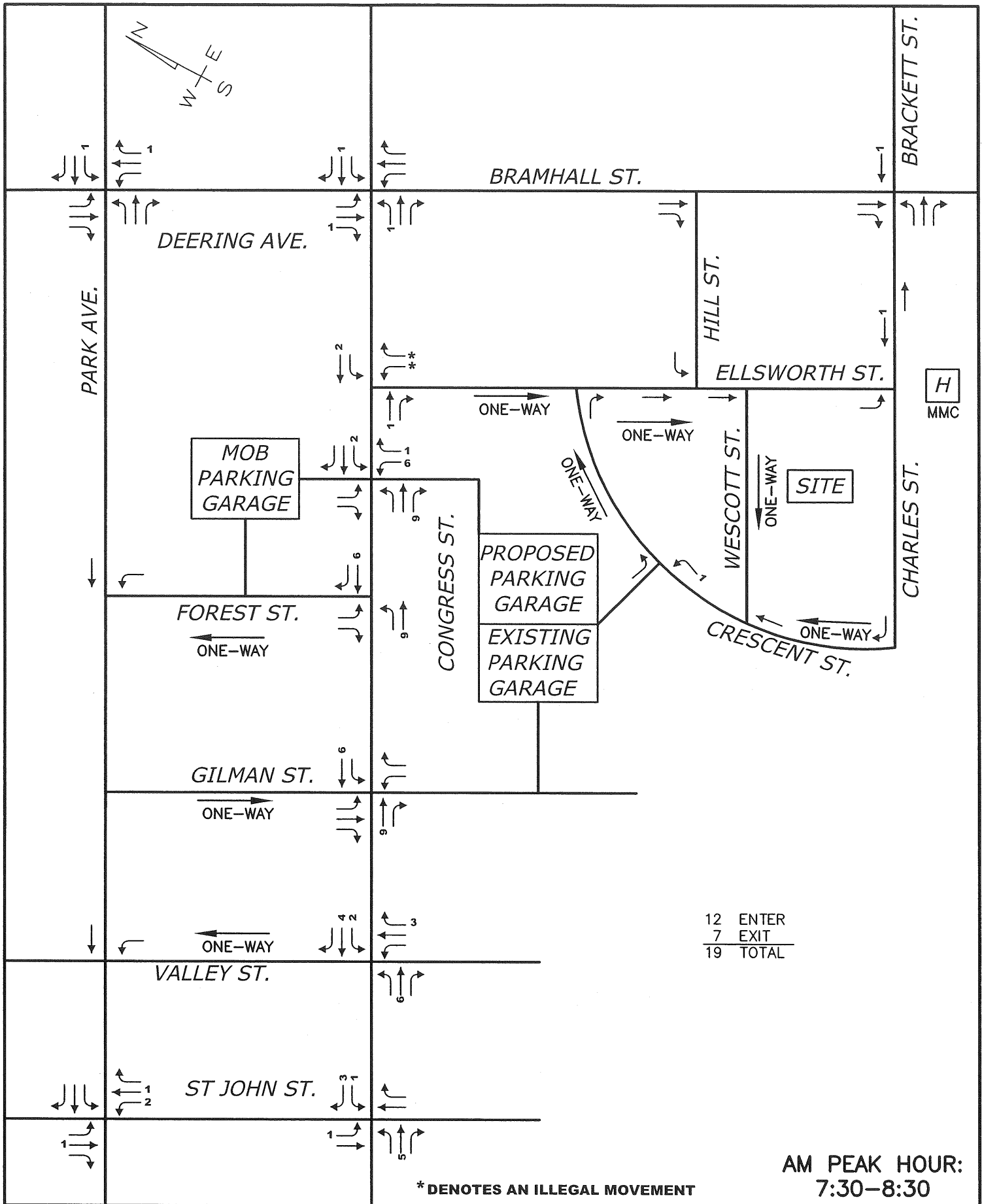
PO Box 1237  
15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Primary Trip Distribution**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**7**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

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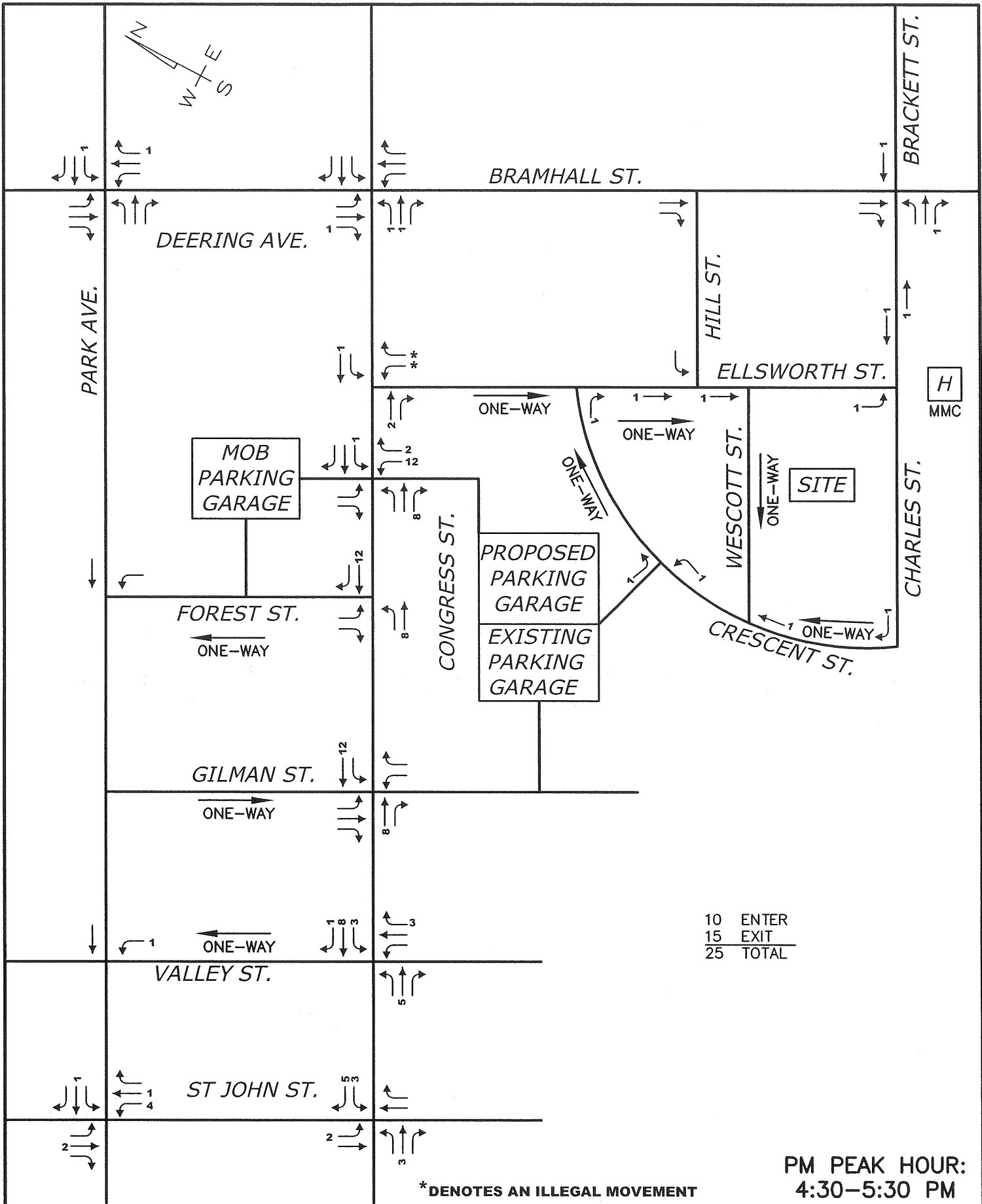
PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

Phone: 207-657-6910  
 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Primary Trip Assignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**8**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
Traffic and Civil Engineering Services

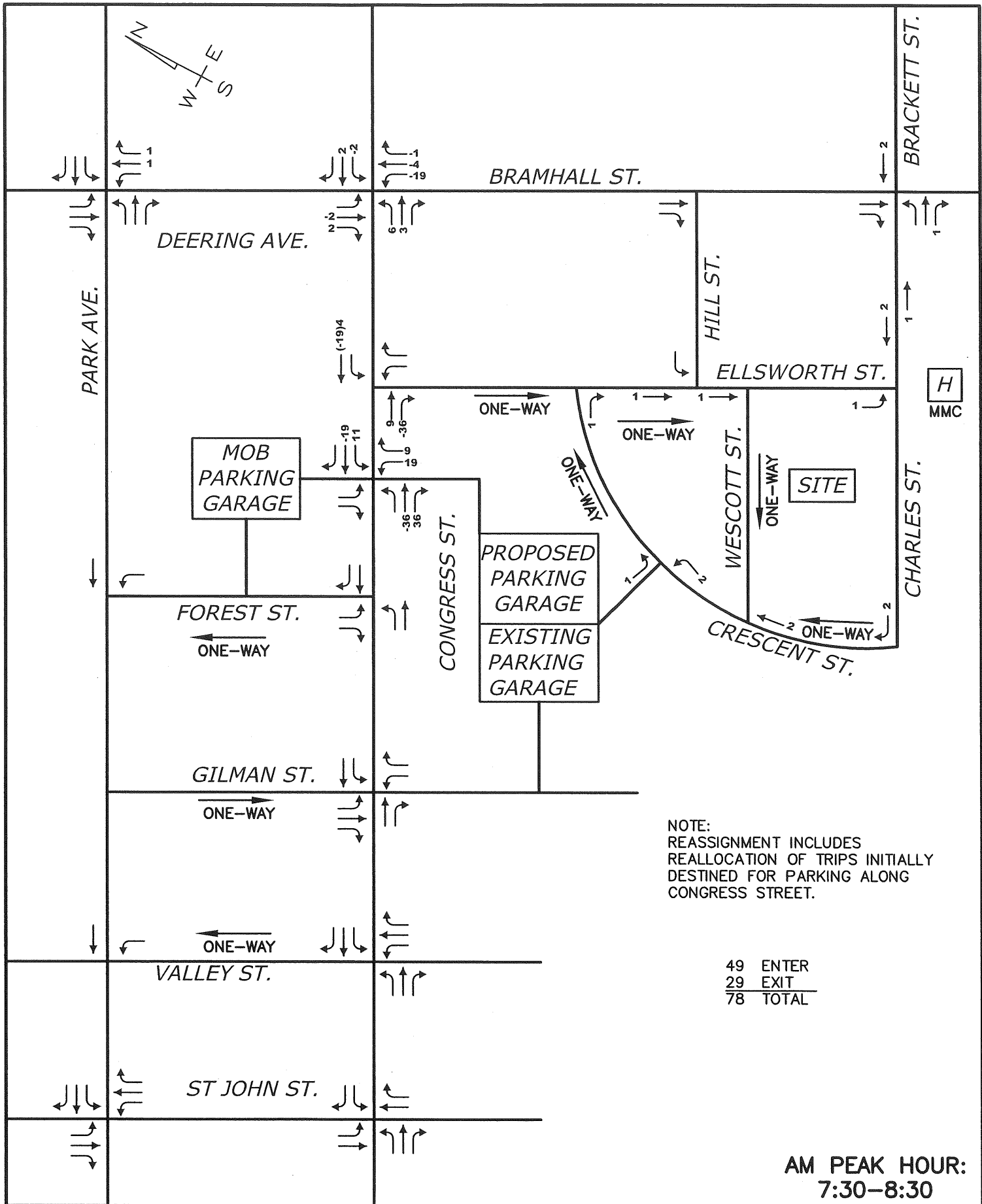
PO Box 1237  
15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Primary Trip Assignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**9**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
Traffic and Civil Engineering Services

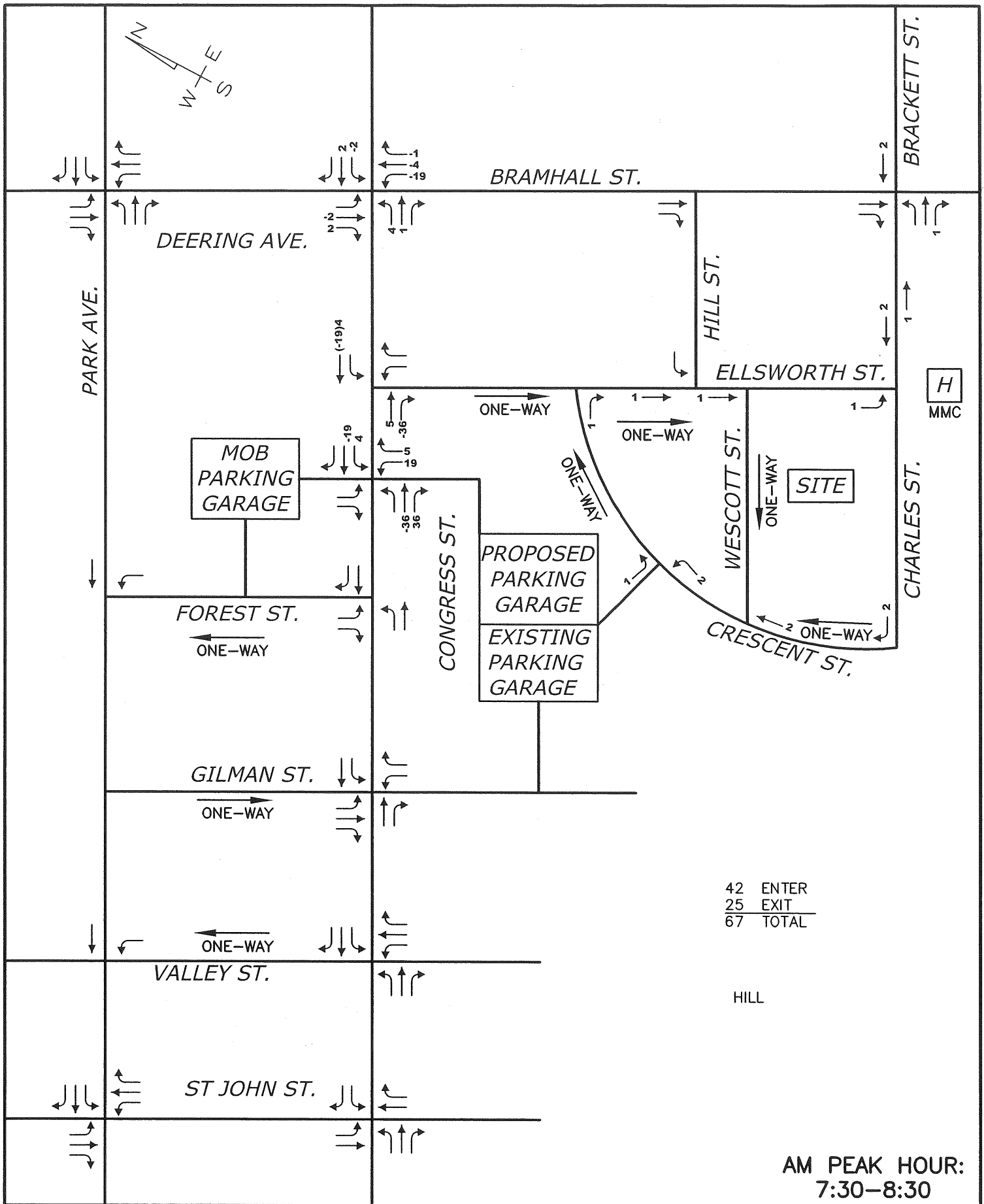
PO Box 1237  
15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**10**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
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File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
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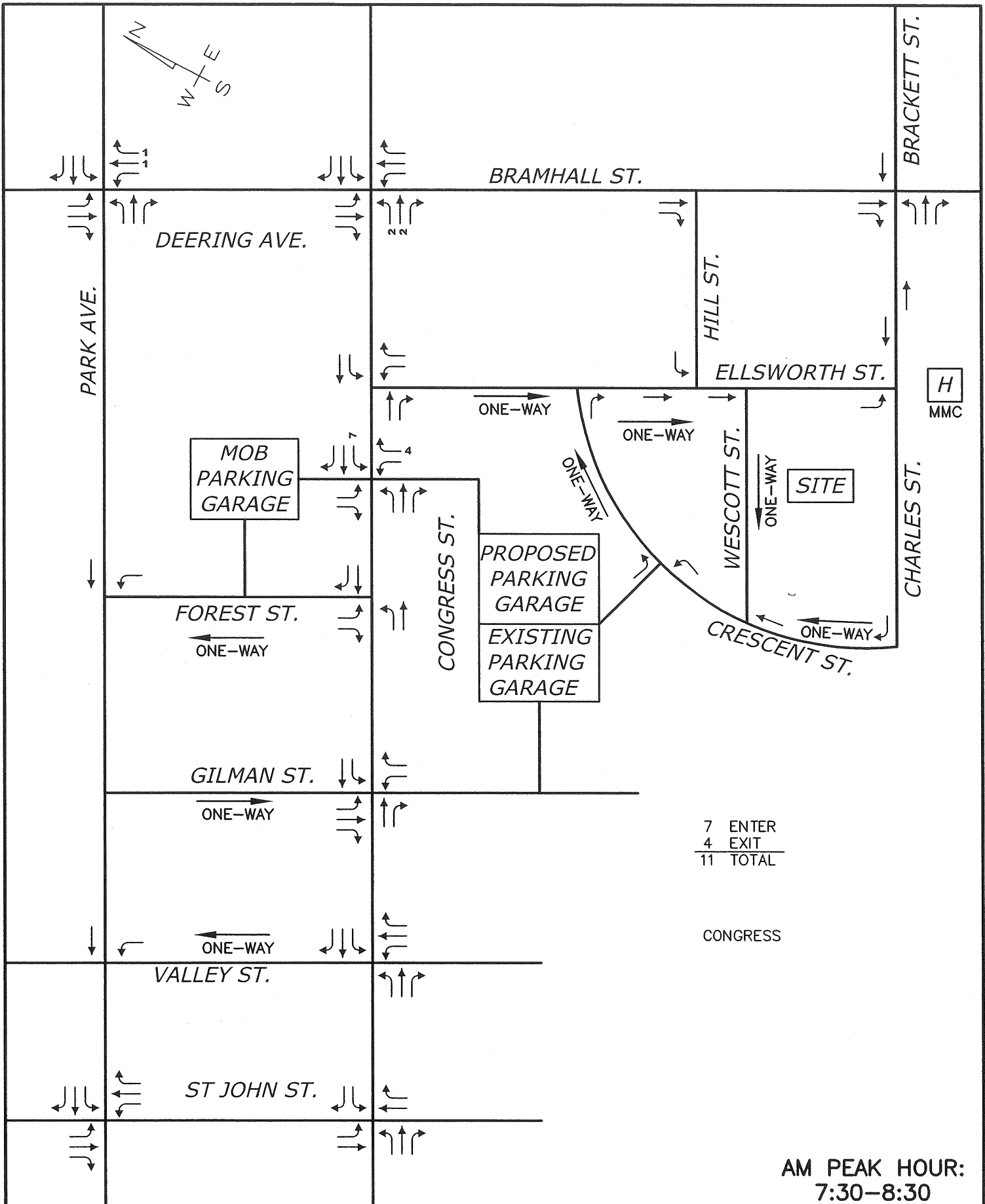
PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

Phone: 207-657-6910  
 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**10A**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
*Traffic and Civil Engineering Services*

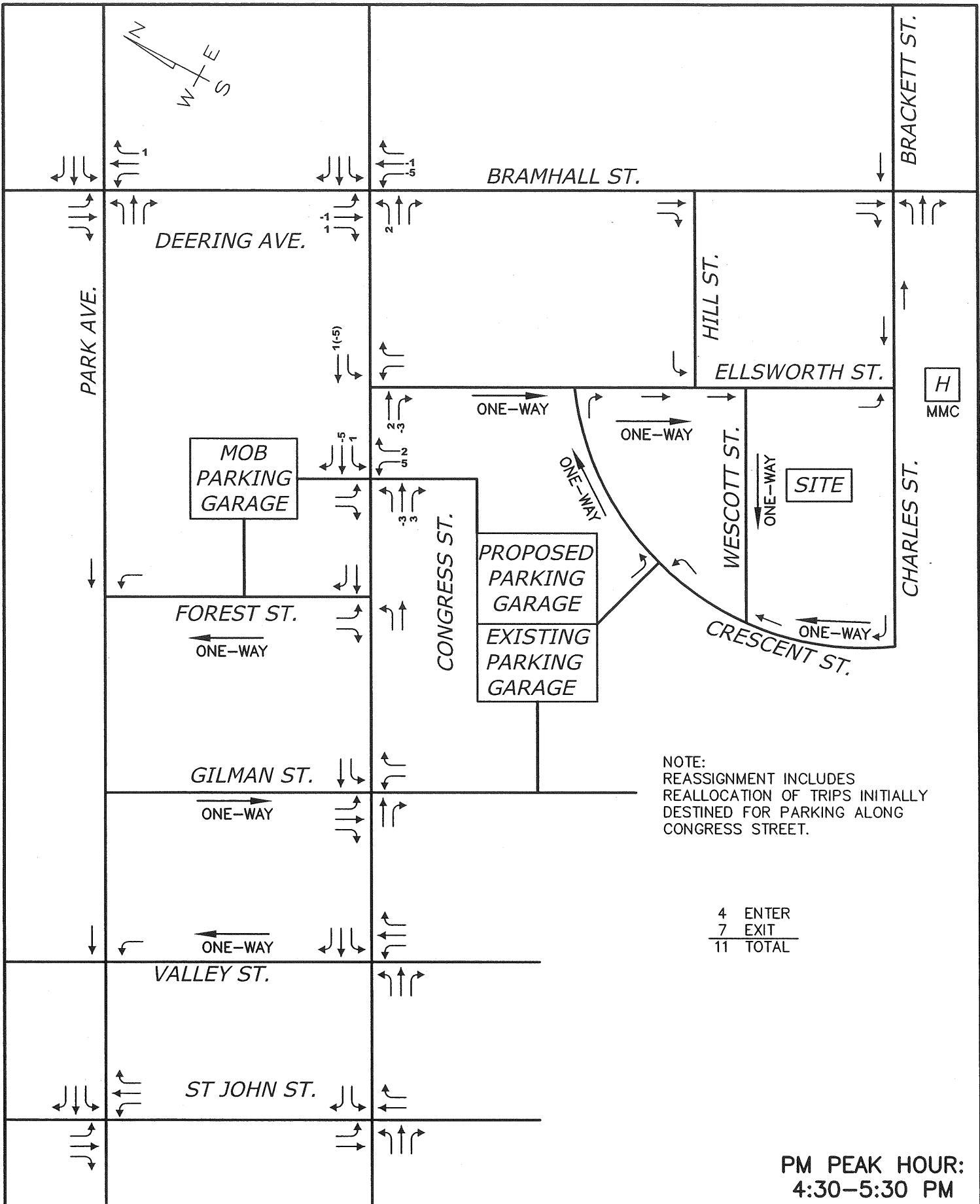
PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039

Phone: 207-657-6910  
 Fax: 207-657-6912  
 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**10B**



NOTE:  
 REASSIGNMENT INCLUDES  
 REALLOCATION OF TRIPS INITIALLY  
 DESTINED FOR PARKING ALONG  
 CONGRESS STREET.

4 ENTER  
 7 EXIT  
 11 TOTAL

PM PEAK HOUR:  
 4:30-5:30 PM

Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
 Traffic and Civil Engineering Services

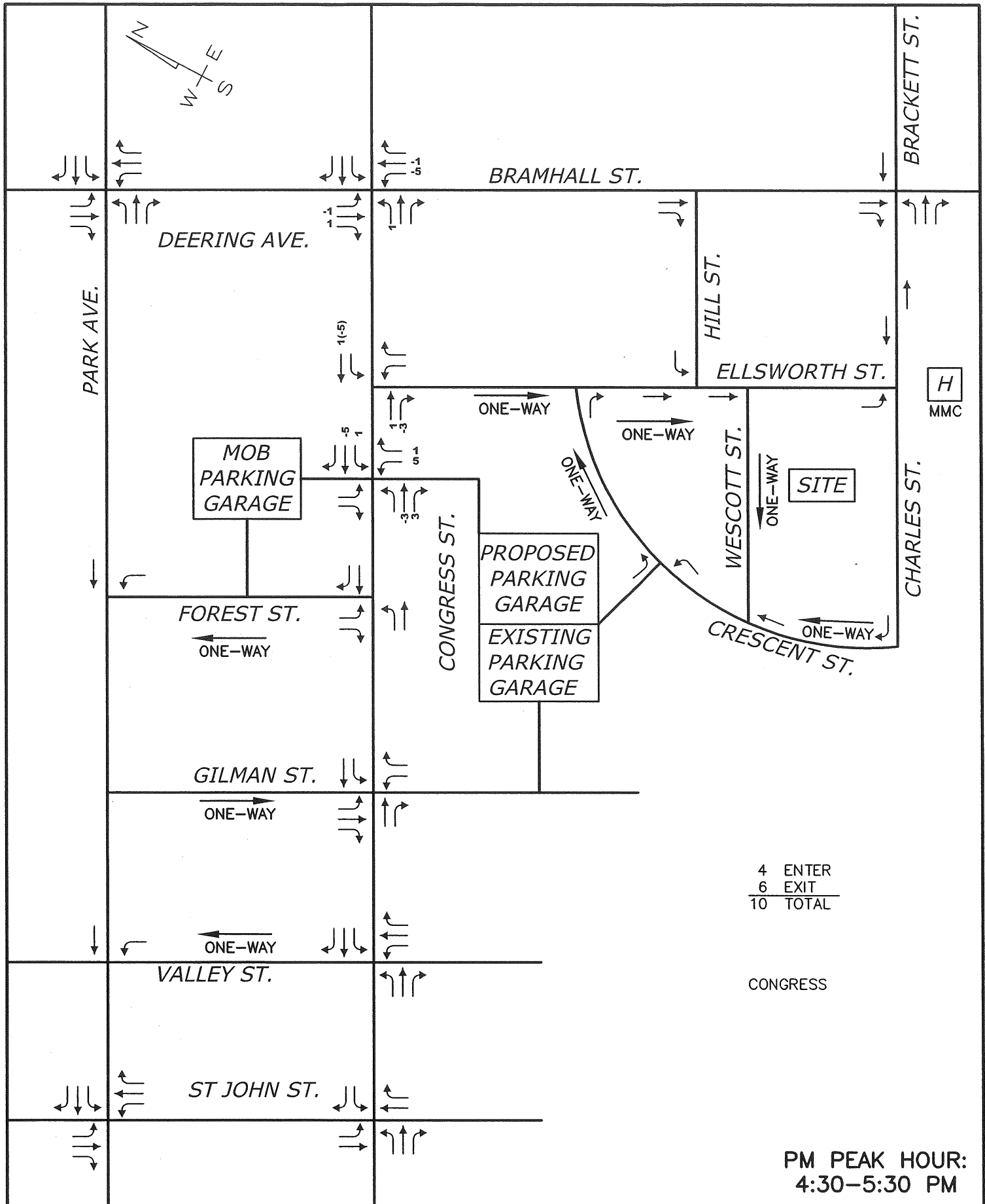
PO Box 1237 Phone: 207-657-6910  
 15 Shaker Road Fax: 207-657-6912  
 Gray, ME 04039 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**11**





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Draft: DB	Job No.: 317
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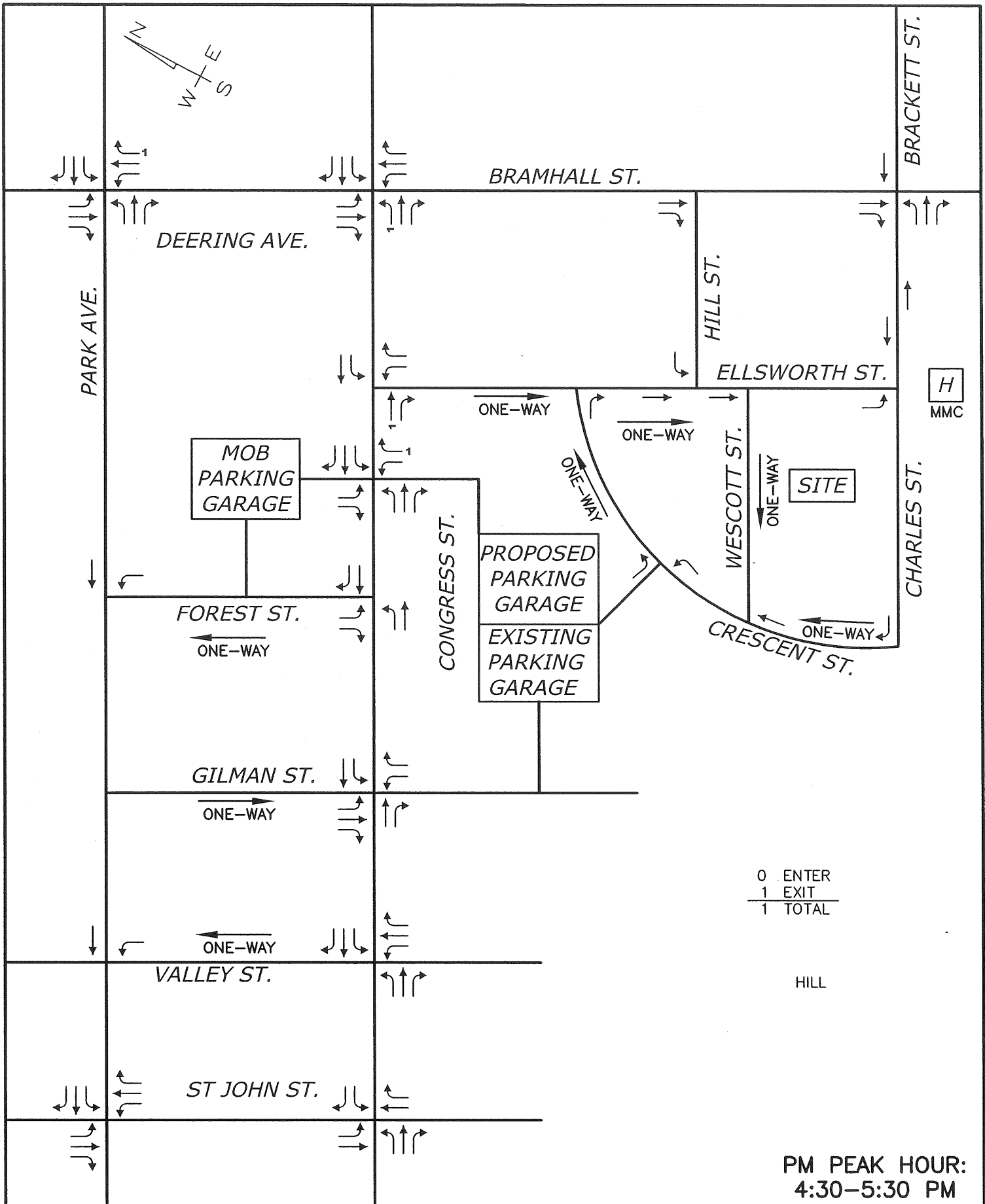
**GP** Gorrill-Palmer Consulting Engineers, Inc.  
*Traffic and Civil Engineering Services*

P.O. Box 1237 Phone: 207-657-6910  
 15 Shaker Road Fax: 207-657-6912  
 Gray, ME 04039 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**11A**



PM PEAK HOUR:  
4:30-5:30 PM

Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
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File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
Traffic and Civil Engineering Services

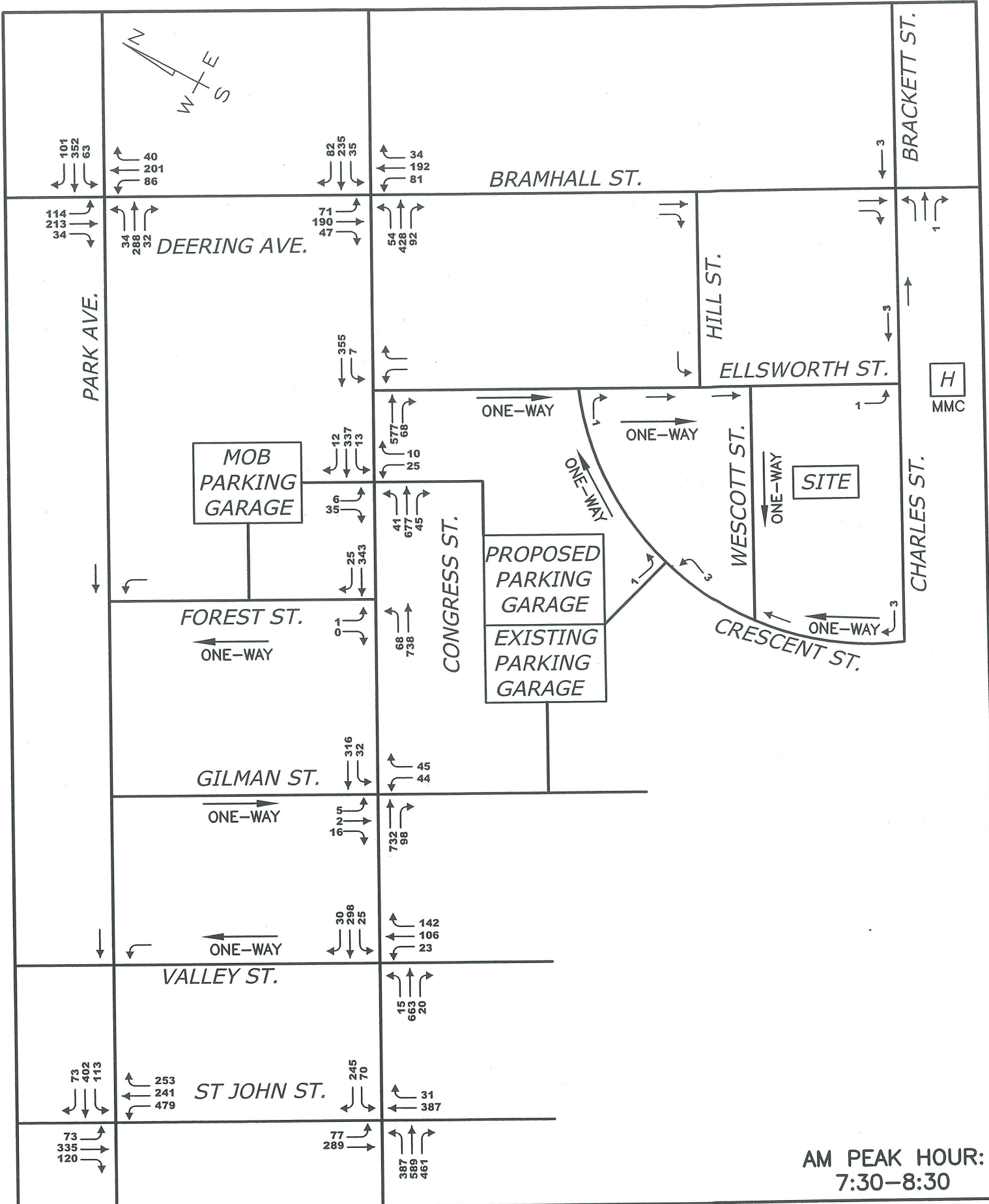
PO Box 1237  
15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:  
**Trip Reassignment**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**11B**



AM PEAK HOUR:  
7:30-8:30

Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
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File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
Traffic and Civil Engineering Services

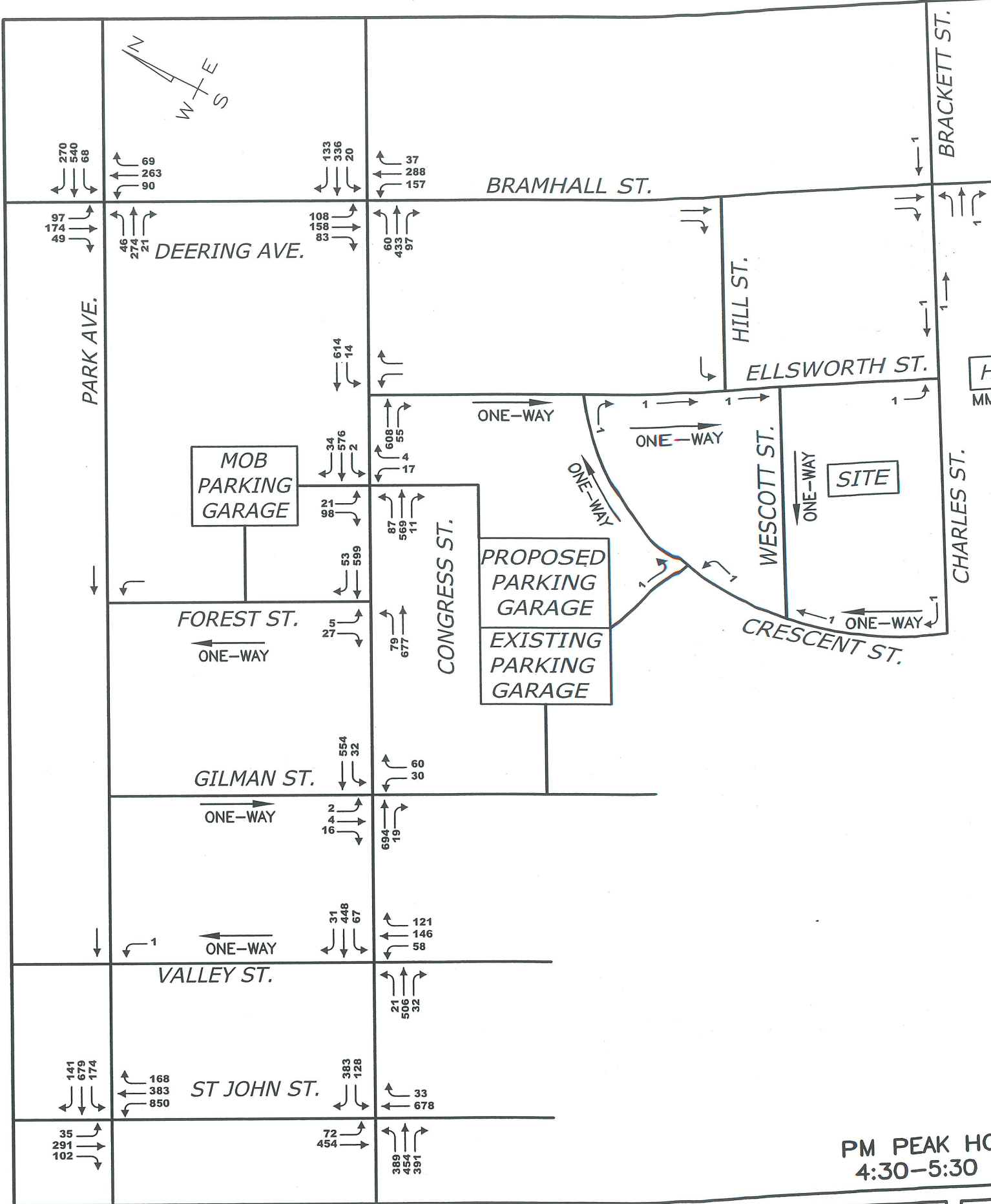
P.O. Box 1237  
15 Shaker Road  
Gray, ME 04039

Phone: 207-657-6910  
Fax: 207-657-6912  
Email: mailbox@gorrillpalmer.com

Drawing Name:  
**2007 Postdevelopment Volumes**

Project:  
**MAINE MEDICAL CENTER**

Figure No.  
**12**



Design: MJM	Date: JAN 04
Draft: DB	Job No.: 317
Checked: RCN	Scale: NONE
File Name: 317-TRAF.DWG	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
*Traffic and Civil Engineering Services*

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 15 Shaker Road Fax: 207-657-6912  
 Gray, ME 04039 Email: mailbox@gorrillpalmer.com

Drawing Name:  
**2007 Postdevelopment Volumes**

Project:  
**MAINE MEDICAL CENTER**

Fig  
 .  
 .

## STATEMENT OF SERVICES RENDERED

Glen C. Knock DDS PA  
 202 US Route One  
 Foreside Place  
 Falmouth, ME 04105  
 (207)781-5900

CHART NO.	PAGE NO.
-----------	----------

1

**BILLING DATE**

04/06/2004

**PROVIDERS: (ID,Name,Number)**  
 DR01-Glen C Knock, DDS #01-0470361

**GUARANTOR NAME AND MAILING ADDRESS**

Richard Seeley  
 P.O. Box 18161  
 Portland, ME 04112

PATIENT	TOOTH	SURF	DESCRIPTION	CHARGE	CREDIT
Richard	31		DR01:D0220:Intraoral-periapical-1st	21.00	
Richard	32		DR01:D9110:Emerg treatment, palliati	42.00	
Richard			Check Payment - Thank You Ch # 390		-63.00

PRIOR BALANCE	CURRENT CREDITS	CURRENT CHARGES	NEW BALANCE	DENTAL INS. EST.	PLEASE PAY
0.00	- 63.00	+ 63.00	= 0.00	- 0.00	= 0.00





















PATIENT	DATE	TIME	REASON
Richard	Tue. - Jul. 20, 2004	11:00 am	POE,ProA

*Appendix B*  
Capacity Analyses

## **2007 AM Peak Hour Predevelopment**

Lanes, Volumes, Timings  
 16: Congress Street & Deering Avenue

T:\317\Synchro\2007\2007 Pre AM.sy6  
 12/30/2003

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1425	1550	0	1464	1547	0	1425	1564	0	1593	1623	0
Flt Permitted	0.491			0.234			0.391			0.445		
Satd. Flow (perm)	736	1550	0	360	1547	0	586	1564	0	746	1623	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			42			14			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		836			1680			1440			1264	
Travel Time (s)		19.0			38.2			32.7			28.7	
Volume (vph)	47	425	92	37	232	82	100	196	35	71	192	44
Peak Hour Factor	1.00	0.89	0.83	1.00	0.96	0.86	0.88	0.89	0.83	1.00	0.84	0.77
Heavy Vehicles (%)	14%	4%	21%	11%	7%	3%	14%	4%	21%	2%	2%	3%
Lane Group Flow (vph)	47	589	0	37	337	0	114	262	0	71	286	0
Turn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		4		3	8		1	6			2	
Permitted Phases	4			8			6			2		
Detector Phases	4	4		3	8		1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		9.0	21.0		21.0	21.0	
Total Split (s)	36.0	36.0	0.0	9.0	45.0	0.0	9.0	30.0	0.0	21.0	21.0	0.0
Total Split (%)	48%	48%	0%	12%	60%	0%	12%	40%	0%	28%	28%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag			Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Act Effct Green (s)	27.1	27.1		33.9	31.5		22.9	21.4		14.9	14.9	
Actuated g/C Ratio	0.44	0.44		0.52	0.51		0.36	0.35		0.24	0.24	
v/c Ratio	0.15	0.86		0.13	0.42		0.41	0.48		0.40	0.71	
Uniform Delay, d1	11.7	16.9		8.1	7.9		16.9	15.3		21.2	21.8	
Delay	13.5	25.0		9.3	8.7		21.0	17.3		25.6	29.0	
LOS	B	C		A	A		C	B		C	C	
Approach Delay		24.1			8.8			18.5			28.3	
Approach LOS		C			A			B			C	
Queue Length 50th (ft)	13	235		7	71		37	88		28	118	
Queue Length 95th (ft)	34	#426		20	126		73	153		68	#204	
Internal Link Dist (ft)		756			1600			1360			1184	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	75			75								
50th Bay Block Time %		41%			6%							
95th Bay Block Time %		51%			23%							





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)		21			5							

**Intersection Summary**

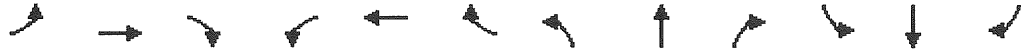
Area Type: CBD  
 Cycle Length: 75  
 Actuated Cycle Length: 62  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 20.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.6%  
 ICU Level of Service B  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 16: Congress Street & Deering Avenue

ø2	ø1	ø4	ø3
21 s	9 s	36 s	9 s
ø6	ø8		
30 s	45 s		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕	↕	↕	↕				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	125		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3400	0	0	1778	1553	1805	1653	0	0	0	0
Flt Permitted		0.930			0.906		0.950					
Satd. Flow (perm)	0	3171	0	0	1618	1553	1805	1653	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				15		91				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			1088			950			1230	
Travel Time (s)		19.5			24.7			21.6			28.0	
Volume (vph)	15	657	20	23	294	30	23	106	139	0	0	0
Peak Hour Factor	0.41	0.98	0.90	0.75	0.86	1.00	0.63	0.90	0.79	0.92	0.92	0.92
Heavy Vehicles (%)	8%	5%	11%	0%	7%	4%	0%	4%	5%	2%	2%	2%
Lane Group Flow (vph)	0	729	0	0	373	30	37	294	0	0	0	0
Turn Type	pm+pt			Perm		Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8		8	2					
Detector Phases	7	4		8	8	8	2	2				
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Minimum Split (s)	9.0	21.0		21.0	21.0	21.0	21.0	21.0				
Total Split (s)	20.0	55.0	0.0	35.0	35.0	35.0	35.0	35.0	0.0	0.0	0.0	0.0
Total Split (%)	22%	61%	0%	39%	39%	39%	39%	39%	0%	0%	0%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0				
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Coord	Coord				
Act Effct Green (s)		42.3			42.3	42.3	39.7	39.7				
Actuated g/C Ratio		0.47			0.47	0.47	0.44	0.44				
v/c Ratio		0.49			0.49	0.04	0.05	0.38				
Uniform Delay, d1		16.2			16.4	6.4	14.3	11.2				
Delay		7.9			15.4	6.1	18.2	13.6				
LOS		A			B	A	B	B				
Approach Delay		7.9			14.7			14.1				
Approach LOS		A			B			B				
Queue Length 50th (ft)		63			136	4	12	74				
Queue Length 95th (ft)		m65			163	15	24	160				
Internal Link Dist (ft)		776			1008			870			1150	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						50	125					
50th Bay Block Time %					35%							
95th Bay Block Time %					32%			18%				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)					10			3				

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 11.2  
 Intersection Capacity Utilization 60.5%  
 m Volume for 95th percentile queue is metered by upstream signal.




















Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 9: Congress Street & Valley Street

↑ ø2 35 s	→ ø4 55 s
	↖ ø7 20 s
	← ø8 35 s

Lanes, Volumes, Timings  
5: Congress Street & St. John Street








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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50		50		50		50	50	
Trailing Detector (ft)	0	0		0		0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1703	3214	0	1492	0	1583	0	3332	0	0	3447	0
Flt Permitted	0.950			0.950							0.606	
Satd. Flow (perm)	1703	3214	0	1492	0	1583	0	3332	0	0	2118	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		259				260		10				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1084			856			929				1276
Travel Time (s)		24.6			19.5			21.1				29.0
Volume (vph)	387	584	461	69	0	242	0	387	31	76	289	0
Peak Hour Factor	0.84	0.90	0.87	1.00	0.92	0.93	0.92	0.88	0.73	0.70	1.00	0.92
Heavy Vehicles (%)	6%	3%	7%	21%	2%	2%	2%	3%	48%	4%	3%	2%
Lane Group Flow (vph)	461	1179	0	69	0	260	0	482	0	0	398	0
Turn Type	Prot			Prot		custom				custom		
Protected Phases	3	8		7		4		2		1	6	
Permitted Phases						4				1		
Detector Phases	3	8		7		4		2		1	6	
Minimum Initial (s)	4.0	4.0		4.0		4.0		4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0		21.0		21.0		21.0	21.0	
Total Split (s)	27.0	37.0	0.0	11.0	0.0	21.0	0.0	21.0	0.0	21.0	42.0	0.0
Total Split (%)	30%	41%	0%	12%	0%	23%	0%	23%	0%	23%	47%	0%
Yellow Time (s)	3.0	3.0		3.0		3.0		3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0		2.0		2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag		Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes		Yes		Yes		
Recall Mode	None	None		None		None		Coord		Min	Coord	
Act Effct Green (s)	23.0	33.1		7.0		14.9		29.6			40.1	
Actuated g/C Ratio	0.26	0.37		0.08		0.17		0.33			0.45	
v/c Ratio	1.06	0.88		0.60		0.54		0.44			0.38	
Uniform Delay, d1	33.5	20.4		41.3		0.0		23.9			16.3	
Delay	84.0	23.9		38.9		2.2		24.2			16.6	
LOS	F	C		D		A		C			B	
Approach Delay		40.8			9.9			24.2			16.6	
Approach LOS		D			A			C			B	
Queue Length 50th (ft)	~291	262		27		0		113			75	
Queue Length 95th (ft)	#427	#393		#92		0		155			108	
Internal Link Dist (ft)		1004			776			849			1196	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 6 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 31.0 Intersection LOS: C  
 Intersection Capacity Utilization 76.7% ICU Level of Service C  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Congress Street & St. John Street

 ø1	 ø2	 ø3	 ø4
21 s	21 s	27 s	21 s
 ø6	 ø8		 ø7
42 s	37 s		11 s

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕	↗	↘	↕	↗		↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		100	0		0
Storage Lanes	0		0	0		1	1		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50	50	50	50	50	50	50	50
Trailing Detector (ft)				0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	0	0	0	3381	1599	1649	1723	1524	0	1840	1538
Flt Permitted					0.991		0.950	0.981			0.990	
Satd. Flow (perm)	0	0	0	0	3381	1599	1649	1723	1524	0	1840	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						73			267			133
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1088			4972			1276			886	
Travel Time (s)		24.7			113.0			29.0			20.1	
Volume (vph)	0	0	0	113	402	73	477	240	253	73	334	120
Peak Hour Factor	0.92	0.92	0.92	1.00	0.78	1.00	0.91	1.00	0.86	0.76	0.93	0.87
Heavy Vehicles (%)	2%	2%	2%	5%	6%	1%	4%	2%	6%	3%	2%	5%
Lane Group Flow (vph)	0	0	0	0	628	73	368	396	294	0	455	138
Turn Type				Prot		Perm	Split		Perm	Split		Perm
Protected Phases				3	8		6	6		2	2	
Permitted Phases						8			6			2
Detector Phases				3	8	8	6	6	6	2	2	2
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	0.0	0.0	0.0	24.0	24.0	24.0	34.0	34.0	34.0	22.0	22.0	22.0
Total Split (%)	0%	0%	0%	30%	30%	30%	43%	43%	43%	28%	28%	28%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)					20.2	20.2	23.6	23.6	23.6		18.2	18.2
Actuated g/C Ratio					0.27	0.27	0.32	0.32	0.32		0.25	0.25
v/c Ratio					0.68	0.15	0.70	0.72	0.44		1.01	0.29
Uniform Delay, d1					24.0	0.0	22.0	22.1	1.6		27.8	0.8
Delay					25.6	6.6	21.9	22.1	3.5		75.8	5.9
LOS					C	A	C	C	A		E	A
Approach Delay					23.6			16.9			59.6	
Approach LOS					C			B			E	
Queue Length 50th (ft)					139	0	152	165	8		~234	2
Queue Length 95th (ft)					176	30	245	263	50		#437	42
Internal Link Dist (ft)		1008			4892			1196			806	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						200			100			
50th Bay Block Time %								29%				
95th Bay Block Time %								40%				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)								102				

**Intersection Summary**

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 74  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 29.6  
 Intersection Capacity Utilization 72.6%  
 Intersection LOS: C  
 ICU Level of Service C  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Park Avenue & St. John Street

ø2	ø6	ø3
22 s	34 s	24 s
		ø8
		24 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖	↕		↖	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	125		0	75		0
Storage Lanes	0		0	0		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3049	0	0	3146	1384	1624	1655	0	1608	1641	0
Flt Permitted		0.884			0.833		0.595			0.233		
Satd. Flow (perm)	0	2706	0	0	2639	1384	1017	1655	0	394	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				105		9			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4972			1648			1264			984	
Travel Time (s)		113.0			37.5			28.7			22.4	
Volume (vph)	34	288	32	62	352	101	86	200	38	114	213	34
Peak Hour Factor	1.00	0.91	1.00	0.86	0.86	0.96	1.00	0.81	1.00	0.88	0.95	0.80
Heavy Vehicles (%)	7%	4%	10%	0%	3%	5%	0%	1%	3%	1%	2%	0%
Lane Group Flow (vph)	0	382	0	0	481	105	86	285	0	130	266	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phases	4	4		8	8	8	1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	45.0	45.0	0.0	45.0	45.0	45.0	10.0	30.0	0.0	15.0	35.0	0.0
Total Split (%)	50%	50%	0%	50%	50%	50%	11%	33%	0%	17%	39%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Act Effct Green (s)		16.4			16.4	16.4	16.8	15.2		17.4	17.7	
Actuated g/C Ratio		0.32			0.32	0.32	0.30	0.30		0.33	0.35	
v/c Ratio		0.43			0.57	0.20	0.21	0.57		0.38	0.46	
Uniform Delay, d1		13.7			15.0	0.0	13.3	14.2		12.4	12.9	
Delay		15.0			16.3	4.2	17.7	17.3		16.4	16.4	
LOS		B			B	A	B	B		B	B	
Approach Delay		15.0			14.2			17.4			16.4	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		47			65	0	20	72		31	67	
Queue Length 95th (ft)		101			126	30	59	149		83	163	
Internal Link Dist (ft)		4892			1568			1184			904	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						150	125			75		
50th Bay Block Time %											4%	
95th Bay Block Time %								17%		14%	41%	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)								7		18	26	

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 51.1  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 15.6  
 Intersection Capacity Utilization 65.2%  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 17: Park Avenue & Deering Avenue

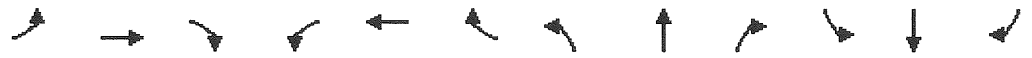
ø2	ø1	ø4
35 s	10 s	45 s
ø5	ø6	ø8
15 s	30 s	45 s



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	68	729	337	25	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	68	729	337	25	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	362				1214	350
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	362				1214	350
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				99	100
cM capacity (veh/h)	1208				191	698

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	797	362	1
Volume Left	68	0	1
Volume Right	0	25	0
cSH	1208	1700	191
Volume to Capacity	0.06	0.21	0.01
Queue Length (ft)	4	0	0
Control Delay (s)	1.4	0.0	24.0
Lane LOS	A		C
Approach Delay (s)	1.4	0.0	24.0
Approach LOS			C

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization	74.7%	ICU Level of Service	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗		↖		↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	723	98	32	310	0	44	0	45	5	2	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	0	723	98	32	310	0	44	0	45	5	2	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		1088										
pX, platoon unblocked				0.79			0.79	0.79	0.79	0.79	0.79	
vC, conflicting volume	310			821			1163	1146	772	1191	1195	310
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310			772			1207	1186	710	1243	1248	310
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			63	100	87	95	98	98
cM capacity (veh/h)	1262			666			118	142	342	100	131	735

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	821	342	44	45	23
Volume Left	0	32	44	0	5
Volume Right	98	0	0	45	16
cSH	1700	666	118	342	265
Volume to Capacity	0.48	0.05	0.37	0.13	0.09
Queue Length (ft)	0	4	38	11	7
Control Delay (s)	0.0	1.6	52.8	17.1	19.9
Lane LOS		A	F	C	C
Approach Delay (s)	0.0	1.6	34.7		19.9
Approach LOS			D		C

Intersection Summary		
Average Delay		3.2
Intersection Capacity Utilization	60.7%	ICU Level of Service B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	41	713	356	12	6	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	41	713	356	12	6	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	368				1157	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	368				1157	362
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1174				207	676

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	41	713	368	42
Volume Left	41	0	0	6
Volume Right	0	0	12	36
cSH	1174	1700	1700	510
Volume to Capacity	0.03	0.42	0.22	0.08
Queue Length (ft)	3	0	0	7
Control Delay (s)	8.2	0.0	0.0	12.7
Lane LOS	A			B
Approach Delay (s)	0.4		0.0	12.7
Approach LOS				B

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	47.5%	ICU Level of Service	A

## **2007 AM Peak Hour Postdevelopment**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1425	1551	0	1464	1547	0	1425	1564	0	0	3066	0
Flt Permitted	0.488			0.232			0.494				0.890	
Satd. Flow (perm)	732	1551	0	357	1547	0	741	1564	0	0	2757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			41			14			35	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		836			1680			1440			1264	
Travel Time (s)		19.0			38.2			32.7			28.7	
Volume (vph)	54	428	92	35	235	82	81	192	34	71	190	47
Peak Hour Factor	1.00	0.89	0.83	1.00	0.96	0.86	0.88	0.89	0.83	1.00	0.84	0.77
Heavy Vehicles (%)	14%	4%	21%	11%	7%	3%	14%	4%	21%	2%	2%	3%
Lane Group Flow (vph)	54	592	0	35	340	0	92	257	0	0	358	0
Turn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		4		3	8		1!	6			2	
Permitted Phases	4			8			6			2	6!	
Detector Phases	4	4		3	8		1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		9.0	21.0		21.0	21.0	
Total Split (s)	36.0	36.0	0.0	9.0	45.0	0.0	9.0	30.0	0.0	21.0	21.0	0.0
Total Split (%)	48%	48%	0%	12%	60%	0%	12%	40%	0%	28%	28%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag			Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Act Effct Green (s)	25.6	25.6		31.5	28.3		19.0	16.4			16.4	
Actuated g/C Ratio	0.47	0.47		0.53	0.53		0.33	0.30			0.30	
v/c Ratio	0.16	0.79		0.12	0.41		0.30	0.53			0.38	
Uniform Delay, d1	10.0	14.4		6.8	6.7		15.4	15.1			13.6	
Delay	11.7	19.8		7.8	7.4		18.3	16.8			14.5	
LOS	B	B		A	A		B	B			B	
Approach Delay		19.1			7.5			17.2			14.5	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	9	141		3	57		22	64			42	
Queue Length 95th (ft)	37	#418		19	123		61	150			82	
Internal Link Dist (ft)		756			1600			1360			1184	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	75			75								
50th Bay Block Time %		28%										
95th Bay Block Time %		50%			22%							



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)		21				4						

Intersection Summary

Area Type: CBD  
 Cycle Length: 75  
 Actuated Cycle Length: 53.9  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 15.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 72.4%  
 ICU Level of Service C  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 ! Phase conflict between lane groups.

Splits and Phases: 16: Congress Street & Deering Avenue

ø2	ø1	ø4	ø3
21 s	9 s	36 s	9 s
ø6	ø8		
30 s	45 s		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	125		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3403	0	0	1779	1553	1805	1651	0	0	0	0
Flt Permitted		0.930			0.899		0.950					
Satd. Flow (perm)	0	3175	0	0	1605	1553	1805	1651	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				14		93				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			1088			950			1230	
Travel Time (s)		19.5			24.7			21.6			28.0	
Volume (vph)	15	663	20	25	298	30	23	106	142	0	0	0
Peak Hour Factor	0.41	0.98	0.90	0.75	0.86	1.00	0.63	0.90	0.79	0.92	0.92	0.92
Heavy Vehicles (%)	8%	5%	11%	0%	7%	4%	0%	4%	5%	2%	2%	2%
Lane Group Flow (vph)	0	736	0	0	380	30	37	298	0	0	0	0
Turn Type	pm+pt			Perm		Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8		8	2					
Detector Phases	7	4		8	8	8	2	2				
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Minimum Split (s)	9.0	21.0		21.0	21.0	21.0	21.0	21.0				
Total Split (s)	20.0	55.0	0.0	35.0	35.0	35.0	35.0	35.0	0.0	0.0	0.0	0.0
Total Split (%)	22%	61%	0%	39%	39%	39%	39%	39%	0%	0%	0%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0				
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Coord	Coord				
Act Effct Green (s)		39.7			39.7	39.7	42.3	42.3				
Actuated g/C Ratio		0.44			0.44	0.44	0.47	0.47				
v/c Ratio		0.52			0.54	0.04	0.04	0.36				
Uniform Delay, d1		18.1			18.4	7.6	12.9	10.0				
Delay		17.6			17.7	7.7	15.7	11.8				
LOS		B			B	A	B	B				
Approach Delay		17.6			17.0			12.2				
Approach LOS		B			B			B				
Queue Length 50th (ft)		148			148	5	11	70				
Queue Length 95th (ft)		175			190	17	22	148				
Internal Link Dist (ft)		776			1008			870			1150	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						50	125					
50th Bay Block Time %					38%							
95th Bay Block Time %					37%			13%				





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)					11			2				

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 16.2  
 Intersection Capacity Utilization 64.9%  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 9: Congress Street & Valley Street

Ø2	Ø4
35 s	55 s
	Ø7
	Ø8
	20 s
	35 s















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖		↗		↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50		50		50		50	50	
Trailing Detector (ft)	0	0		0		0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1703	3214	0	1492	0	1583	0	3332	0	0	3447	0
Flt Permitted	0.950			0.950							0.589	
Satd. Flow (perm)	1703	3214	0	1492	0	1583	0	3332	0	0	2059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		334				210		11				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1084			856			929				1276
Travel Time (s)		24.6			19.5			21.1				29.0
Volume (vph)	387	589	461	70	0	245	0	387	31	77	289	0
Peak Hour Factor	0.84	0.90	0.87	1.00	0.92	0.93	0.92	0.88	0.73	0.70	1.00	0.92
Heavy Vehicles (%)	6%	3%	7%	21%	2%	2%	2%	3%	48%	4%	3%	2%
Lane Group Flow (vph)	461	1184	0	70	0	263	0	482	0	0	399	0
Turn Type	Prot			Prot		custom				custom		
Protected Phases	3	8		7		4		2		1	6	
Permitted Phases						4				1		
Detector Phases	3	8		7		4		2		1	6	
Minimum Initial (s)	4.0	4.0		4.0		4.0		4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0		21.0		21.0		9.0	21.0	
Total Split (s)	29.0	40.0	0.0	10.0	0.0	21.0	0.0	21.0	0.0	9.0	30.0	0.0
Total Split (%)	36%	50%	0%	13%	0%	26%	0%	26%	0%	11%	38%	0%
Yellow Time (s)	3.0	3.0		3.0		3.0		3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0		2.0		2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag		Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes		Yes		Yes		
Recall Mode	None	None		None		None		Coord		None	Coord	
Act Effct Green (s)	24.1	32.1		6.0		12.0		31.9			31.9	
Actuated g/C Ratio	0.30	0.40		0.08		0.15		0.40			0.40	
v/c Ratio	0.90	0.79		0.62		0.63		0.36			0.49	
Uniform Delay, d1	26.8	14.6		36.8		5.9		17.2			18.7	
Delay	36.3	14.6		48.7		7.8		18.0			20.0	
LOS	D	B		D		A		B			C	
Approach Delay		20.7			16.4			18.0			20.0	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	215	197		35		23		87			78	
Queue Length 95th (ft)	#338	252		#95		88		135			134	
Internal Link Dist (ft)		1004			776			849			1196	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 19.7 Intersection LOS: B  
 Intersection Capacity Utilization 77.0% ICU Level of Service C  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Congress Street & St. John Street

↙ ø1 9 s	↑ ø2 21 s	↗ ø3 29 s	↖ ø4 21 s
↓ ø6 30 s	→ ø8 40 s		↙ ø7 10 s

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕	↗	↘	↖	↗		↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		100	0		0
Storage Lanes	0		0	0		1	1		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50	50	50	50	50	50	50	50
Trailing Detector (ft)				0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	0	0	0	3381	1599	1649	1723	1524	0	1840	1538
Flt Permitted					0.991		0.950	0.981			0.990	
Satd. Flow (perm)	0	0	0	0	3381	1599	1649	1723	1524	0	1840	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						73			267			132
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1088			4972			1276			886	
Travel Time (s)		24.7			113.0			29.0			20.1	
Volume (vph)	0	0	0	113	402	73	479	241	253	73	335	120
Peak Hour Factor	0.92	0.92	0.92	1.00	0.78	1.00	0.91	1.00	0.86	0.76	0.93	0.87
Heavy Vehicles (%)	2%	2%	2%	5%	6%	1%	4%	2%	6%	3%	2%	5%
Lane Group Flow (vph)	0	0	0	0	628	73	370	397	294	0	456	138
Turn Type				Prot		Perm	Split		Perm	Split		Perm
Protected Phases				3	8		6	6		2	2	
Permitted Phases						8			6			2
Detector Phases				3	8	8	6	6	6	2	2	2
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	0.0	0.0	0.0	24.0	24.0	24.0	34.0	34.0	34.0	22.0	22.0	22.0
Total Split (%)	0%	0%	0%	30%	30%	30%	43%	43%	43%	28%	28%	28%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)					20.1	20.1	23.6	23.6	23.6		18.1	18.1
Actuated g/C Ratio					0.27	0.27	0.32	0.32	0.32		0.24	0.24
v/c Ratio					0.68	0.15	0.70	0.72	0.44		1.01	0.29
Uniform Delay, d1					24.0	0.0	22.0	22.2	1.6		27.8	0.9
Delay					25.6	6.6	21.9	22.1	3.5		75.9	6.0
LOS					C	A	C	C	A		E	A
Approach Delay					23.6			16.9			59.7	
Approach LOS					C			B			E	
Queue Length 50th (ft)					139	0	153	166	8		~235	2
Queue Length 95th (ft)					176	30	247	263	50		#439	42
Internal Link Dist (ft)		1008			4892			1196			806	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						200			100			
50th Bay Block Time %								29%				
95th Bay Block Time %								41%				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)												102

**Intersection Summary**

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 74  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 29.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 72.7%  
 ICU Level of Service C  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Park Avenue & St. John Street

ø2	ø6	ø3
22 s	34 s	24 s
		ø8
		24 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	125		0	75		0
Storage Lanes	0		0	0		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3049	0	0	3143	1384	1624	1653	0	1608	1641	0
Flt Permitted		0.884			0.831		0.595			0.228		
Satd. Flow (perm)	0	2706	0	0	2633	1384	1017	1653	0	386	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				105		9			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4972			1648			1264			984	
Travel Time (s)		113.0			37.5			28.7			22.4	
Volume (vph)	34	288	32	63	352	101	86	201	40	114	213	34
Peak Hour Factor	1.00	0.91	1.00	0.86	0.86	0.96	1.00	0.81	1.00	0.88	0.95	0.80
Heavy Vehicles (%)	7%	4%	10%	0%	3%	5%	0%	1%	3%	1%	2%	0%
Lane Group Flow (vph)	0	382	0	0	482	105	86	288	0	130	266	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phases	4	4		8	8	8	1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	45.0	45.0	0.0	45.0	45.0	45.0	10.0	30.0	0.0	15.0	35.0	0.0
Total Split (%)	50%	50%	0%	50%	50%	50%	11%	33%	0%	17%	39%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Act Effct Green (s)		16.5			16.5	16.5	17.0	15.4		17.4	17.7	
Actuated g/C Ratio		0.32			0.32	0.32	0.31	0.30		0.33	0.35	
v/c Ratio		0.43			0.57	0.20	0.21	0.57		0.38	0.46	
Uniform Delay, d1		13.7			15.0	0.0	13.3	14.2		12.4	13.0	
Delay		15.1			16.4	4.2	17.7	17.4		16.5	16.5	
LOS		B			B	A	B	B		B	B	
Approach Delay		15.1			14.2			17.4			16.5	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		47			66	0	20	74		32	68	
Queue Length 95th (ft)		101			126	30	59	151		83	164	
Internal Link Dist (ft)		4892			1568			1184			904	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						150	125			75		
50th Bay Block Time %											5%	
95th Bay Block Time %								18%		14%	41%	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)								7		18	26	

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 51.3  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 15.6  
 Intersection Capacity Utilization 65.4%  
 Intersection LOS: B  
 ICU Level of Service B

**Splits and Phases: 17: Park Avenue & Deering Avenue**

Ø2	Ø1	Ø4
35 s	10 s	45 s
Ø5	Ø6	Ø8
15 s	30 s	45 s



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	68	738	343	25	1	0
Peak Hour Factor	0.67	0.96	0.86	1.00	1.00	1.00
Hourly flow rate (veh/h)	101	769	399	25	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	424				1383	411
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	424				1383	411
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				99	100
cM capacity (veh/h)	1146				146	645

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	870	424	1
Volume Left	101	0	1
Volume Right	0	25	0
cSH	1146	1700	146
Volume to Capacity	0.09	0.25	0.01
Queue Length (ft)	7	0	1
Control Delay (s)	2.2	0.0	29.9
Lane LOS	A		D
Approach Delay (s)	2.2	0.0	29.9
Approach LOS			D

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization	81.9%	ICU Level of Service	D





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔		↔		↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	732	98	32	316	0	44	0	45	5	2	16
Peak Hour Factor	0.90	0.97	0.90	0.90	0.86	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	0	755	109	36	367	0	49	0	50	6	2	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		1088										
pX, platoon unblocked				0.76			0.76	0.76	0.76	0.76	0.76	
vC, conflicting volume	367			864			1267	1248	809	1298	1302	367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	367			820			1351	1326	749	1392	1397	367
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			45	100	84	92	98	97
cM capacity (veh/h)	1202			618			89	112	314	74	102	682

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	864	403	49	50	26
Volume Left	0	36	49	0	6
Volume Right	109	0	0	50	18
cSH	1700	618	89	314	207
Volume to Capacity	0.51	0.06	0.55	0.16	0.12
Queue Length (ft)	0	5	61	14	10
Control Delay (s)	0.0	1.7	86.2	18.6	24.8
Lane LOS		A	F	C	C
Approach Delay (s)	0.0	1.7	52.0		24.8
Approach LOS			F		C

Intersection Summary					
Average Delay			4.7		
Intersection Capacity Utilization		63.0%		ICU Level of Service	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑		↙	↑		↙	↑	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	677	45	13	337	12	25	0	10	6	0	35
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	41	677	45	13	337	12	25	0	10	6	0	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	349			722			1180	1156	700	1138	1173	343
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	349			722			1180	1156	700	1138	1173	343
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			83	100	98	96	100	95
cM capacity (veh/h)	1193			866			151	184	435	166	180	693

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	41	722	13	349	25	10	41
Volume Left	41	0	13	0	25	0	6
Volume Right	0	45	0	12	0	10	35
cSH	1193	1700	866	1700	151	435	473
Volume to Capacity	0.03	0.42	0.02	0.21	0.17	0.02	0.09
Queue Length (ft)	3	0	1	0	14	2	7
Control Delay (s)	8.1	0.0	9.2	0.0	33.6	13.5	13.3
Lane LOS	A		A		D	B	B
Approach Delay (s)	0.4		0.3		27.8		13.3
Approach LOS					D		B

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	55.0%		ICU Level of Service A

## **2007 PM Peak Hour Predevelopment**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1624	1622	0	1624	1590	0	1518	1651	0	0	3029	0
Flt Permitted	0.350			0.240			0.455				0.580	
Satd. Flow (perm)	598	1622	0	410	1590	0	727	1651	0	0	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			46			13			73	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		940			1680			1424			1280	
Travel Time (s)		21.4			38.2			32.4			29.1	
Volume (vph)	57	432	97	20	336	133	162	289	37	108	159	81
Peak Hour Factor	1.00	0.93	1.00	0.75	1.00	0.93	0.82	0.88	0.67	0.93	1.00	0.78
Heavy Vehicles (%)	0%	3%	1%	0%	3%	2%	7%	1%	3%	3%	1%	0%
Lane Group Flow (vph)	57	562	0	27	479	0	198	383	0	0	379	0
Turn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		4		3	8		1	6			2	
Permitted Phases	4			8			6			2		
Detector Phases	4	4		3	8		1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		9.0	21.0		9.0	9.0	
Total Split (s)	32.0	32.0	0.0	9.0	41.0	0.0	9.0	29.0	0.0	20.0	20.0	0.0
Total Split (%)	46%	46%	0%	13%	59%	0%	13%	41%	0%	29%	29%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag			Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	None	
Act Effct Green (s)	23.7	23.7		30.0	26.6		22.4	21.0			14.5	
Actuated g/C Ratio	0.42	0.42		0.48	0.47		0.38	0.37			0.26	
v/c Ratio	0.23	0.81		0.09	0.62		0.57	0.62			0.74	
Uniform Delay, d1	12.3	16.3		8.1	9.6		16.4	14.9			17.1	
Delay	13.9	21.7		8.4	10.6		20.3	16.1			24.7	
LOS	B	C		A	B		C	B			C	
Approach Delay		21.0			10.5			17.5			24.7	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	12	155		3	114		48	100			53	
Queue Length 95th (ft)	42	#390		13	196		100	211			#139	
Internal Link Dist (ft)		860			1600			1344			1200	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	75			75								
50th Bay Block Time %		32%			24%							
95th Bay Block Time %		53%			32%							



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)		24			8							

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 56.6  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 18.1  
 Intersection Capacity Utilization 79.0%  
 Intersection LOS: B  
 ICU Level of Service C  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 16: Congress Street & Deering Avenue

ø2	ø1	ø4	ø3
20 s	9 s	32 s	9 s
ø6	ø8		
29 s	41 s		

Lanes, Volumes, Timings  
 9: Congress Street & Valley Street

T:\317\Synchro\2007\2007 Pre PM.sy6  
 12/30/2003

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	125		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3475	0	0	1825	1553	1805	1695	0	0	0	0
Flt Permitted		0.902			0.869		0.950					
Satd. Flow (perm)	0	3140	0	0	1595	1553	1805	1695	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				18		53				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			1048			950			1230	
Travel Time (s)		19.5			23.8			21.6			28.0	
Volume (vph)	21	501	32	64	440	30	58	146	118	0	0	0
Peak Hour Factor	0.79	0.98	1.00	1.00	0.96	0.58	0.79	0.91	0.85	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	3%	0%	4%	4%	0%	1%	8%	2%	2%	2%
Lane Group Flow (vph)	0	570	0	0	522	52	73	299	0	0	0	0
Turn Type	pm+pt			Perm		Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8		8	2					
Detector Phases	7	4		8	8	8	2	2				
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Minimum Split (s)	9.0	21.0		21.0	21.0	21.0	21.0	21.0				
Total Split (s)	20.0	55.0	0.0	35.0	35.0	35.0	35.0	35.0	0.0	0.0	0.0	0.0
Total Split (%)	22%	61%	0%	39%	39%	39%	39%	39%	0%	0%	0%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0				
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Coord	Coord				
Act Effct Green (s)		35.3			35.3	35.3	46.7	46.7				
Actuated g/C Ratio		0.39			0.39	0.39	0.52	0.52				
v/c Ratio		0.46			0.84	0.08	0.08	0.33				
Uniform Delay, d1		19.8			24.7	11.1	10.8	10.1				
Delay		19.3			24.4	10.9	12.8	11.5				
LOS		B			C	B	B	B				
Approach Delay		19.3			23.2			11.8				
Approach LOS		B			C			B				
Queue Length 50th (ft)		123			267	12	19	73				
Queue Length 95th (ft)		140			339	16	43	157				
Internal Link Dist (ft)		776			968			870			1150	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						50	125					
50th Bay Block Time %					51%							
95th Bay Block Time %					45%			16%				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)						25			6			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 18.9  
 Intersection Capacity Utilization 70.5%  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 9: Congress Street & Valley Street

ø2 35 s	ø4 55 s
	ø7 20 s                  ø8 35 s



Lane Group	EBL	EBT	EBR	WB	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	190	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50		50		50		50	50	
Trailing Detector (ft)	0	0		0		0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1787	3295	0	162	0	1615	0	3502	0	0	3527	0
Flt Permitted	0.950			0.95							0.623	
Satd. Flow (perm)	1787	3295	0	162	0	1615	0	3502	0	0	2210	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		223				171		5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1084			856			929			1276	
Travel Time (s)		24.6			19.5			21.1			29.0	
Volume (vph)	389	451	391	12	0	378	0	678	33	70	454	0
Peak Hour Factor	0.94	0.89	1.00	0.8	0.25	0.95	0.92	0.89	1.00	1.00	0.95	0.92
Heavy Vehicles (%)	1%	2%	3%	11%	0%	0%	0%	2%	13%	0%	2%	0%
Lane Group Flow (vph)	414	898	0	14	0	398	0	795	0	0	548	0
Turn Type	Prot			Prot		custom					custom	
Protected Phases	3	8		7		4		2		1	6	
Permitted Phases						4				1		
Detector Phases	3	8		7		4		2		1	6	
Minimum Initial (s)	4.0	4.0		4.0		4.0		4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0		21.0		21.0		9.0	21.0	
Total Split (s)	25.0	32.0	0.0	14.0	0.0	21.0	0.0	25.0	0.0	9.0	34.0	0.0
Total Split (%)	31%	40%	0%	18%	0%	26%	0%	31%	0%	11%	43%	0%
Yellow Time (s)	3.0	3.0		3.0		3.0		3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0		2.0		2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag		Lag		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes		Yes		Yes		
Recall Mode	None	None		None		None		Coord		None	Coord	
Act Effct Green (s)	20.5	23.5		12.6		15.6		31.9			31.9	
Actuated g/C Ratio	0.26	0.29		0.16		0.20		0.40			0.40	
v/c Ratio	0.90	0.80		0.56		0.88		0.57			0.62	
Uniform Delay, d1	28.8	19.2		31.1		17.5		18.6			19.2	
Delay	42.0	18.9		40.6		25.2		19.5			20.5	
LOS	D	B		D		C		B			C	
Approach Delay		26.2				29.3		19.5			20.5	
Approach LOS		C				C		B			C	
Queue Length 50th (ft)	198	162		66		110		164			116	
Queue Length 95th (ft)	#360	212		#146		#262		218			173	
Internal Link Dist (ft)		1004				776		849			1196	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑	↵		↵	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	87	572	581	34	21	98
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	87	572	581	34	21	98
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	615				1344	598
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	615				1344	598
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				86	80
cM capacity (veh/h)	965				152	502

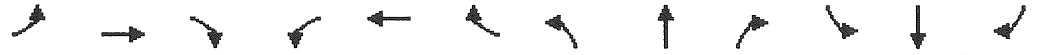
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	87	572	615	119
Volume Left	87	0	0	21
Volume Right	0	0	34	98
cSH	965	1700	1700	357
Volume to Capacity	0.09	0.34	0.36	0.33
Queue Length (ft)	7	0	0	36
Control Delay (s)	9.1	0.0	0.0	20.0
Lane LOS	A			C
Approach Delay (s)	1.2		0.0	20.0
Approach LOS				C

Intersection Summary			
Average Delay		2.3	
Intersection Capacity Utilization	54.7%		ICU Level of Service A

## **2007 PM Peak Hour Postdevelopment**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1624	1622	0	1624	1590	0	1518	1651	0	0	3026	0
Flt Permitted	0.339			0.225			0.461				0.594	
Satd. Flow (perm)	580	1622	0	385	1590	0	737	1651	0	0	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			45			14			77	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		940			1680			1424			1280	
Travel Time (s)		21.4			38.2			32.4			29.1	
Volume (vph)	60	433	97	20	336	133	157	288	37	108	158	83
Peak Hour Factor	1.00	0.93	1.00	0.75	1.00	0.93	0.82	0.88	0.67	0.93	1.00	0.78
Heavy Vehicles (%)	0%	3%	1%	0%	3%	2%	7%	1%	3%	3%	1%	0%
Lane Group Flow (vph)	60	563	0	27	479	0	191	382	0	0	380	0
Turn Type	Perm			pm+pt			pm+pt			Perm		
Protected Phases		4		3	8		1	6			2	
Permitted Phases	4			8			6			2		
Detector Phases	4	4		3	8		1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		9.0	21.0		9.0	21.0		21.0	21.0	
Total Split (s)	31.0	31.0	0.0	9.0	40.0	0.0	9.0	30.0	0.0	21.0	21.0	0.0
Total Split (%)	44%	44%	0%	13%	57%	0%	13%	43%	0%	30%	30%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lead		Lag			Lag			Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Act Effct Green (s)	23.6	23.6		29.8	26.5		22.7	21.3			14.8	
Actuated g/C Ratio	0.42	0.42		0.48	0.47		0.39	0.38			0.26	
v/c Ratio	0.25	0.82		0.09	0.62		0.54	0.61			0.71	
Uniform Delay, d1	12.6	16.6		8.3	9.8		16.0	14.7			16.6	
Delay	14.7	24.4		9.1	11.1		18.3	15.5			21.1	
LOS	B	C		A	B		B	B			C	
Approach Delay		23.5			11.0			16.5			21.1	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	13	162		4	118		44	96			51	
Queue Length 95th (ft)	46	#403		13	203		95	205			#130	
Internal Link Dist (ft)		860			1600			1344			1200	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)	75			75								
50th Bay Block Time %		34%			26%							
95th Bay Block Time %		55%			33%							



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)		27			8							

**Intersection Summary**

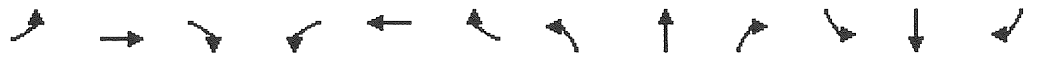
Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 56.7  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 18.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 79.0%  
 ICU Level of Service C  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 16: Congress Street & Deering Avenue**

ø2	ø1	ø4	ø3
21 s	9 s	31 s	9 s
ø6		ø8	
30 s		40 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕	↗	↖	↕				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	125		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50				
Trailing Detector (ft)	0	0		0	0	0	0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3475	0	0	1825	1553	1805	1692	0	0	0	0
Flt Permitted		0.928			0.873		0.950					
Satd. Flow (perm)	0	3231	0	0	1603	1553	1805	1692	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				31		76				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		856			1048			950			1230	
Travel Time (s)		19.5			23.8			21.6			28.0	
Volume (vph)	21	506	32	67	448	31	58	146	121	0	0	0
Peak Hour Factor	0.79	0.98	1.00	1.00	0.96	0.58	0.79	0.91	0.85	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	3%	0%	4%	4%	0%	1%	8%	2%	2%	2%
Lane Group Flow (vph)	0	575	0	0	534	53	73	302	0	0	0	0
Turn Type	pm+pt			Perm		Perm	Perm					
Protected Phases	7	4			8			2				
Permitted Phases	4			8		8	2					
Detector Phases	7	4		8	8	8	2	2				
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Minimum Split (s)	9.0	21.0		21.0	21.0	21.0	21.0	21.0				
Total Split (s)	9.0	38.0	0.0	29.0	29.0	29.0	22.0	22.0	0.0	0.0	0.0	0.0
Total Split (%)	15%	63%	0%	48%	48%	48%	37%	37%	0%	0%	0%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0				
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Coord	Coord				
Act Effct Green (s)		23.0			23.0	23.0	29.0	29.0				
Actuated g/C Ratio		0.38			0.38	0.38	0.48	0.48				
v/c Ratio		0.46			0.87	0.09	0.08	0.35				
Uniform Delay, d1		13.4			17.1	4.8	8.3	7.0				
Delay		13.2			21.6	6.3	9.5	8.0				
LOS		B			C	A	A	A				
Approach Delay		13.2			20.2			8.3				
Approach LOS		B			C			A				
Queue Length 50th (ft)		71			161	5	14	49				
Queue Length 95th (ft)		108			#320	11	29	98				
Internal Link Dist (ft)		776			968			870			1150	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						50	125					
50th Bay Block Time %					43%							
95th Bay Block Time %					51%							



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)	25											

**Intersection Summary**

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 14.7  
 Intersection Capacity Utilization 71.5%  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 9: Congress Street & Valley Street

↑ ø2 22 s	→ ø4 38 s
	↗ ø7 9 s
	← ø8 29 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖		↗		↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50		50		50		50	50	
Trailing Detector (ft)	0	0		0		0		0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	1787	3295	0	1626	0	1615	0	3502	0	0	3523	0
Flt Permitted	0.950			0.950							0.617	
Satd. Flow (perm)	1787	3295	0	1626	0	1615	0	3502	0	0	2189	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		221				171		5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1084			856			929			1276	
Travel Time (s)		24.6			19.5			21.1			29.0	
Volume (vph)	389	454	391	128	0	383	0	678	33	72	454	0
Peak Hour Factor	0.94	0.89	1.00	0.87	0.25	0.95	0.92	0.89	1.00	1.00	0.95	0.92
Heavy Vehicles (%)	1%	2%	3%	11%	0%	0%	0%	2%	13%	0%	2%	0%
Lane Group Flow (vph)	414	901	0	147	0	403	0	795	0	0	550	0
Turn Type	Prot			Prot		custom				custom		
Protected Phases	3	8		7		4		2		1	6	
Permitted Phases						4				1		
Detector Phases	3	8		7		4		2		1	6	
Minimum Initial (s)	4.0	4.0		4.0		4.0		4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0		21.0		21.0		9.0	21.0	
Total Split (s)	25.0	32.0	0.0	14.0	0.0	21.0	0.0	25.0	0.0	9.0	34.0	0.0
Total Split (%)	31%	40%	0%	18%	0%	26%	0%	31%	0%	11%	43%	0%
Yellow Time (s)	3.0	3.0		3.0		3.0		3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0		2.0		2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead		Lead		Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes		Yes		Yes		Yes		
Recall Mode	None	None		None		None		Coord		None	Coord	
Act Effct Green (s)	20.5	26.5		9.8		15.8		31.7			31.7	
Actuated g/C Ratio	0.26	0.33		0.12		0.20		0.40			0.40	
v/c Ratio	0.90	0.73		0.74		0.88		0.57			0.63	
Uniform Delay, d1	28.8	17.3		33.8		17.6		18.7			19.5	
Delay	42.0	17.4		44.0		26.2		19.6			20.7	
LOS	D	B		D		C		B			C	
Approach Delay		25.1			30.9			19.6			20.7	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	198	151		72		113		164			117	
Queue Length 95th (ft)	#360	213		#150		#270		218			175	
Internal Link Dist (ft)		1004			776			849			1196	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)												
50th Bay Block Time %												
95th Bay Block Time %												
Queuing Penalty (veh)												

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 24.0 Intersection LOS: C  
 Intersection Capacity Utilization 85.5% ICU Level of Service D  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.













Splits and Phases: 5: Congress Street & St. John Street

↙ ø1 9 s	↑ ø2 25 s	↖ ø4 21 s	↗ ø3 25 s
↓ ø6 34 s	↙ ø7 14 s	→ ø8 32 s	



Lanes, Volumes, Timings  
6: Park Avenue & St. John Street

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12/30/2003

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕↕	↗	↖	↖	↗		↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		200	0		100	0		0
Storage Lanes	0		0	0		1	1		1	0		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50	50	50	50	50	50	50	50
Trailing Detector (ft)				0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	0	0	0	3504	1599	1681	1746	1568	0	1872	1583
Flt Permitted					0.989		0.950	0.981			0.994	
Satd. Flow (perm)	0	0	0	0	3504	1599	1681	1746	1568	0	1872	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						199			115			42
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1088			4716			1276			886	
Travel Time (s)		24.7			107.2			29.0			20.1	
Volume (vph)	0	0	0	174	679	141	850	383	168	35	291	102
Peak Hour Factor	0.92	0.92	0.92	0.88	1.00	0.71	1.00	1.00	0.83	0.83	1.00	0.87
Heavy Vehicles (%)	2%	2%	2%	5%	1%	1%	2%	1%	3%	0%	1%	2%
Lane Group Flow (vph)	0	0	0	0	877	199	598	635	202	0	333	117
Turn Type				Prot		Perm	Split		Perm	Split		Perm
Protected Phases				3	8		6	6		2	2	
Permitted Phases						8			6			2
Detector Phases				3	8	8	6	6	6	2	2	2
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	0.0	0.0	0.0	24.0	24.0	24.0	34.0	34.0	34.0	22.0	22.0	22.0
Total Split (%)	0%	0%	0%	30%	30%	30%	43%	43%	43%	28%	28%	28%
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)					20.0	20.0	30.0	30.0	30.0		17.2	17.2
Actuated g/C Ratio					0.25	0.25	0.38	0.38	0.38		0.22	0.22
v/c Ratio					0.99	0.36	0.94	0.96	0.30		0.82	0.31
Uniform Delay, d1					29.5	0.0	23.7	24.0	7.0		29.5	16.3
Delay					54.6	4.2	43.1	46.8	8.2		36.0	17.6
LOS					D	A	D	D	A		D	B
Approach Delay					45.2			39.8			31.2	
Approach LOS					D			D			C	
Queue Length 50th (ft)					~231	0	298	321	28		158	31
Queue Length 95th (ft)					#358	21	#517	#549	63		#286	71
Internal Link Dist (ft)		1008			4636			1196			806	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						200			100			
50th Bay Block Time %						14%		44%				
95th Bay Block Time %						40%		55%				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)					53			100				

**Intersection Summary**

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 79.2  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay: 40.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 85.8%  
 ICU Level of Service D  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Park Avenue & St. John Street

ø2	ø6	ø3
22 s	34 s	24 s
		ø8
		24 s

Lanes, Volumes, Timings  
17: Park Avenue & Deering Avenue

T:\317\Synchro\2007\2007 Post PM.sy6  
12/30/2003

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		150	125		0	75		0
Storage Lanes	0		0	0		1	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	3168	0	0	3201	1425	1624	1616	0	1624	1617	0
Flt Permitted		0.791			0.861		0.613			0.200		
Satd. Flow (perm)	0	2523	0	0	2770	1425	1048	1616	0	342	1617	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				307		16			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4716			1648			1280			984	
Travel Time (s)		107.2			37.5			29.1			22.4	
Volume (vph)	46	274	21	68	540	270	90	263	69	97	174	49
Peak Hour Factor	0.89	0.89	1.00	0.88	0.80	0.88	0.88	1.00	0.95	1.00	0.95	0.98
Heavy Vehicles (%)	0%	1%	4%	1%	1%	2%	0%	3%	0%	0%	3%	0%
Lane Group Flow (vph)	0	381	0	0	752	307	102	336	0	97	233	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Detector Phases	4	4		8	8	8	1	6		5	2	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	45.0	45.0	0.0	45.0	45.0	45.0	10.0	30.0	0.0	15.0	35.0	0.0
Total Split (%)	50%	50%	0%	50%	50%	50%	11%	33%	0%	17%	39%	0%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Act Effct Green (s)		25.5			25.5	25.5	20.3	18.7		15.6	16.2	
Actuated g/C Ratio		0.40			0.40	0.40	0.31	0.29		0.24	0.25	
v/c Ratio		0.38			0.68	0.41	0.24	0.69		0.36	0.55	
Uniform Delay, d1		13.0			15.5	0.0	17.5	18.7		18.7	18.8	
Delay		14.6			17.1	2.2	22.6	22.9		23.8	23.4	
LOS		B			B	A	C	C		C	C	
Approach Delay		14.6			12.8			22.8			23.5	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)		56			133	0	32	118		33	81	
Queue Length 95th (ft)		101			186	41	82	256		81	172	
Internal Link Dist (ft)		4636			1568			1200			904	
50th Up Block Time (%)												
95th Up Block Time (%)												
Turn Bay Length (ft)						150	125			75		
50th Bay Block Time %								5%			13%	
95th Bay Block Time %					14%			39%		12%	43%	

Baseline

Synchro 5 Report  
Page 1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queuing Penalty (veh)								21		22	13	27

**Intersection Summary**

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 63.8  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 16.7  
 Intersection Capacity Utilization 74.7%

Intersection LOS: B  
 ICU Level of Service C

**Splits and Phases: 17: Park Avenue & Deering Avenue**

ø2 35 s	ø1 10 s	ø4 45 s
ø5 15 s	ø6 30 s	ø8 45 s



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	79	677	599	53	5	27
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	79	677	599	53	5	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	652				1460	626
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652				1460	626
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				96	94
cM capacity (veh/h)	944				132	488

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	756	652	32
Volume Left	79	0	5
Volume Right	0	53	27
cSH	944	1700	343
Volume to Capacity	0.08	0.38	0.09
Queue Length (ft)	7	0	8
Control Delay (s)	2.1	0.0	16.6
Lane LOS	A		C
Approach Delay (s)	2.1	0.0	16.6
Approach LOS			C

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		88.1%	ICU Level of Service D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕		↕		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	694	19	32	554	0	30	0	60	2	4	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	0	694	19	32	554	0	30	0	60	2	4	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		1048										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	554			713			1340	1322	704	1382	1331	554
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554			696			1360	1341	686	1405	1351	554
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			73	100	86	98	97	97
cM capacity (veh/h)	1026			853			110	140	424	93	138	536

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	713	586	30	60	22
Volume Left	0	32	30	0	2
Volume Right	19	0	0	60	16
cSH	1700	853	110	424	273
Volume to Capacity	0.42	0.04	0.27	0.14	0.08
Queue Length (ft)	0	3	26	12	7
Control Delay (s)	0.0	1.0	49.8	14.9	19.3
Lane LOS		A	E	B	C
Approach Delay (s)	0.0	1.0	26.5		19.3
Approach LOS			D		C

Intersection Summary					
Average Delay			2.4		
Intersection Capacity Utilization		72.5%		ICU Level of Service	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖		↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	87	569	11	2	576	34	17	0	4	21	0	98
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (veh/h)	87	569	11	2	576	34	17	0	4	21	0	98
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	610			580			1426	1362	574	1344	1351	593
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	610			580			1426	1362	574	1344	1351	593
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			80	100	99	82	100	81
cM capacity (veh/h)	969			994			85	134	518	119	136	506

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	87	580	2	610	17	4	119
Volume Left	87	0	2	0	17	0	21
Volume Right	0	11	0	34	0	4	98
cSH	969	1700	994	1700	85	518	321
Volume to Capacity	0.09	0.34	0.00	0.36	0.20	0.01	0.37
Queue Length (ft)	7	0	0	0	17	1	41
Control Delay (s)	9.1	0.0	8.6	0.0	57.9	12.0	22.7
Lane LOS	A		A		F	B	C
Approach Delay (s)	1.2		0.0		49.2		22.7
Approach LOS					E		C

Intersection Summary	
Average Delay	3.2
Intersection Capacity Utilization	56.5%
ICU Level of Service	A

*Appendix C*  
Collision Diagrams  
Trip Generation Calculations



JN: 317  
 Project Description: MMC  
 Project Location: Portland, ME  
 Date: Dec-03

Gorrill-Palmer Consulting Engineers, Inc.  
 P.O. Box 1237  
 15 Shaker Road  
 Gray, Maine 04039

**Hospital  
 Land Use Code (LUC) 610**

Beds (X): 480

**Range of Rates (Max):**

Time Period	ITE Trip Rate	Trip Ends	Directional Split		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	T = 32.83(X)	15758	50%	50%	7879	7879
AM Peak Hour of Generator	T = 1.88(X)	902	65%	35%	587	316
PM Peak Hour of Generator	T = 2.51(X)	1205	39%	61%	470	735
Saturday	T = 21.04(X)	10099	50%	50%	5050	5050

JN: 317  
 Project Description: MMC  
 Project Location: Portland, ME  
 Date: Dec-03

Gorrill-Palmer Consulting Engineers, Inc.  
 P.O. Box 1237  
 15 Shaker Road  
 Gray, Maine 04039

**Hospital  
 Land Use Code (LUC) 610**

Beds (X): 490

**Range of Rates (Max):**

Time Period	ITE Trip Rate	Trip Ends	Directional Split		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	T = 32.83(X)	16087	50%	50%	8043	8043
AM Peak Hour of Generator	T = 1.88(X)	921	65%	35%	599	322
PM Peak Hour of Generator	T = 2.51(X)	1230	39%	61%	480	750
Saturday	T = 21.04(X)	10310	50%	50%	5155	5155

JN: 317  
 Project Description: MMC  
 Project Location: Portland, ME  
 Date: Dec-03

Gorrill-Palmer Consulting Engineers, Inc.  
 P.O. Box 1237  
 15 Shaker Road  
 Gray, Maine 04039

**Hospital  
 Land Use Code (LUC) 610**

Difference Between 490 Beds and 480 Beds

Range of Rates (Max):

Time Period	ITE Trip Rate	Trip Ends	Directional Split		Directional Distribution	
			IN	OUT	IN	OUT
Weekday	T = 32.83(X)	328	50%	50%	164	164
AM Peak Hour of Generator	T = 1.88(X)	19	65%	35%	12	7
PM Peak Hour of Generator	T = 2.51(X)	25	39%	61%	10	15
Saturday	T = 21.04(X)	210	50%	50%	105	105

## Trip Reassignment

### Based on Traffic Count at Existing MMC Parking Garage

Number of Space in Existing MMC Parking Garage 1276  
 Number of Space in Proposed Expansion of Garage 512

Number of Vehicles Enter/Exiting Existing Garage		Trips per space for Existing MMC Parking Garage		Trips Generated by Proposed Garage		Net Trips Generated		Number of Trips to be Reassigned		Directional Split		Directional Distribution	
AM Peak Hour	PM Peak Hour	In	Out	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	IN	OUT	IN	OUT
228	15	228	15	0.19	0.07	97	36	19	78	63%	37%	49	29
25	68	25	68			36		25	11	38%	62%	4	7

Location of On-Street Parking	Number of Spaces	Percentage of Grand Total
<b>Parking South of Congress Street</b>		
Chadwick Street	49	
West Street	44	
Western Promenade	69	
Vaughan Street	61	
Brackett Street	11	
Bramhall Street	99	
Crescent Street	13	
Ellsworth Street	8	
Hill Street	18	
<b>Total</b>	<b>372</b>	<b>85%</b>
<b>Parking On and North of Congress Street</b>		
Congress Street	64	
<b>Total</b>	<b>64</b>	<b>15%</b>
<b>Grand Total</b>	<b>436</b>	

AM Reassignment Location	Percentage to be Reassigned	Number of Trips to Reassign
Parking South of Congress Street	85%	42
Parking On and North of Congress Street	15%	7
<b>Total</b>		<b>49</b>

PM Reassignment Location	Percentage to be Reassigned	Number of Trips to Reassign
Parking South of Congress Street	85%	4
Parking On and North of Congress Street	15%	0
<b>Total</b>		<b>4</b>





# COLLISION DIAGRAM

SHEET 1 OF 2

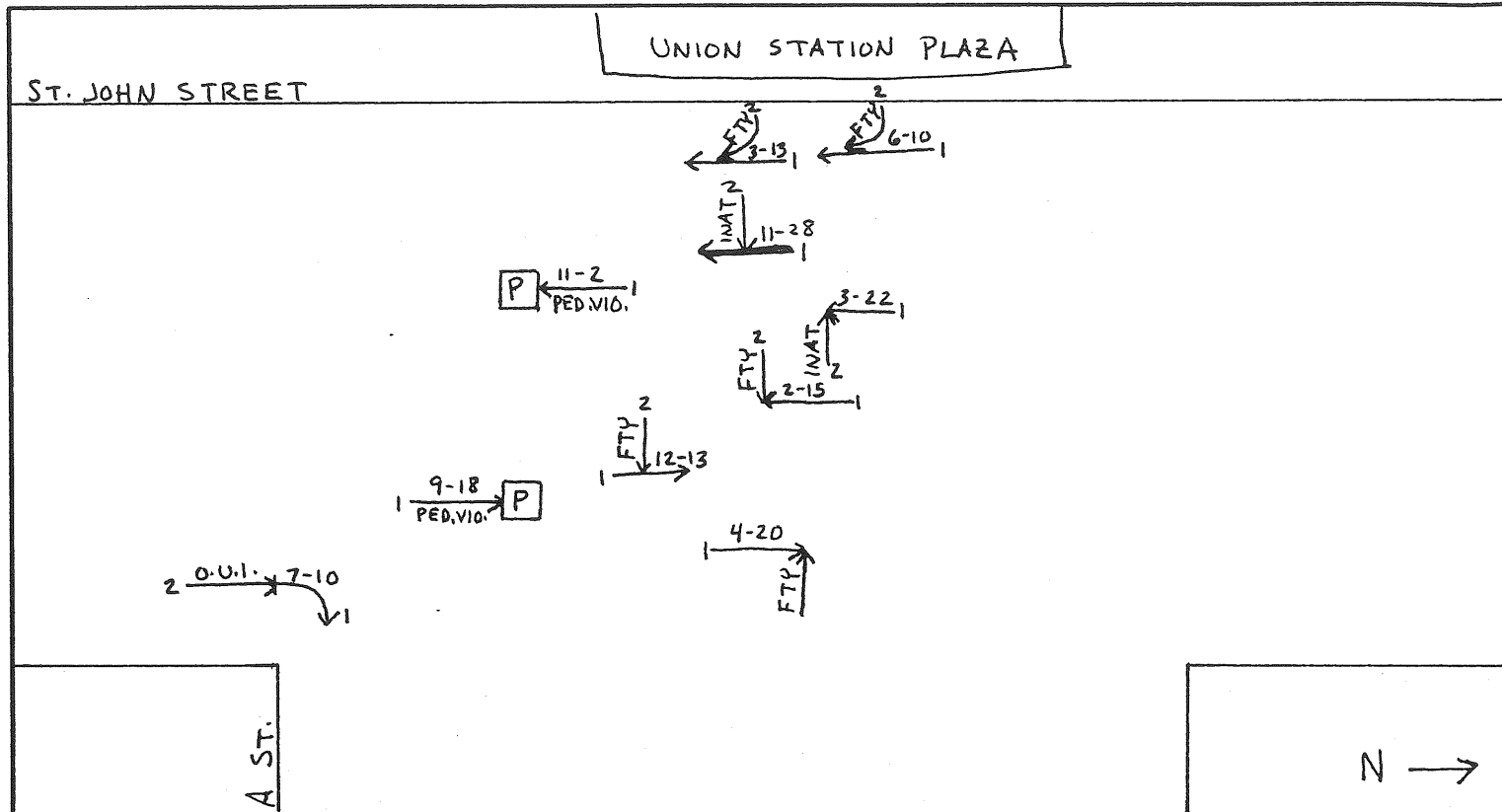
LOCATION ST. JOHN STREET AT A STREET

TOWN PORTLAND

NODE NO(S) 07181

YEARS REVIEWED 2000-2002

DATE PREPARED 8/16/03



CRITICAL RATE FACTOR 1.28 EQUIV. PROP. DAMAGE ACC/YEAR 10 ACCIDENTS ACC/MEV

- LIGHT**
- 1. DAWN ( MORNING )
  - 4. DARK ( ST. LIGHTS ON )
  - 7. OTHER
  - 2. DAYLIGHT
  - 5. DARK ( NO ST. LIGHTS )
  - 3. DUSK ( EVENING )
  - 6. DARK ( ST. LIGHTS OFF )
- ROAD SURFACE**
- 1. DRY
  - 4. ICE/PACKED SNOW-SANDED
  - 7. OILY
  - 10. OTHER
  - 2. WET
  - 5. MUDDY
  - 8. SNOW/SLUSH-NOT SANDED
  - 3. SNOW/SLUSH-SANDED
  - 6. DEBRIS
  - 9. ICE/PKD. SNOW-NOT SANDED
- APPARENT CONTRIBUTING FACTORS - HUMAN**
- 1. NO IMPROPER ACTION
  - 4. FOLLOW TOO CLOSE
  - 6. DRIVING LEFT OF CENTER - NO PASSING
  - 8. IMP. UNSAFE LANE CHANGE
  - 11. UNSAFE BACKING
  - 14. DRIVER INATTENTION - DISTRACTION
  - 16. PEDEST. VIOLATION ERROR
  - 18. WINDSHIELD GLASS
  - 20. OTHER VISION OBSCUREMENT
  - 31. HIT AND RUN
  - VEHICULAR
  - 41. DEFECTIVE BRAKES
  - 44. DEFECTIVE SUSPENSION OR FACTOR
  - 2. FAIL TO YLD. RIGHT OF WAY
  - 5. DISREGARD TRAFFIC CONTROL DEVICE
  - 9. IMP. PARKING START/STOP
  - 12. NO SIGNAL OR IMP. SIGNAL
  - 15. DRIVER INEXPERIENCE
  - 17. PHYSICAL IMPAIRMENT
  - 19. VISION OBSCURED - SUN/HEADLIGHTS
  - 30. OTHER HUMAN VIOLATION FACTOR
  - 51. UNKNOWN
  - 3. ILLEGAL UNSAFE SPEED
  - 7. IMPROPER PASS-OVERTAKING
  - 10. IMPROPER TURN
  - 13. IMPEDING TRAFFIC
  - 15. DRIVER INEXPERIENCE
  - 18. VISION OBSCURED -
  - 50. OTHER VEHICLE DEFECT
  - 42. DEFECTIVE TIRE/FAILURE
  - 45. DEFECTIVE STEERING
  - 51. UNKNOWN

**SYMBOLS**

ANGLE PEDESTRIAN FATAL ACCIDENT

BACKING REAR END

FIXED OBJECT SIDE SWIPE

HEAD ON TURNING MOVE

OVERTURN CHANGE LANE

PARKED VEHICLE OUT OF CONTROL

**WEATHER**

C = CLEAR SL = SLEET F = FOG S = SNOW R = RAIN CL = CLOUDY XW = CROSS WINDS

**INJURIES**

K = FATAL A = INCAPACITATING B = NON-INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES					LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C					
004003	3/22/02	16:50						DAY-2	DRY-1	14	
025012	12/13/02	9:30						DAY-2	WET-2	2,19	
006065	2/15/01	11:12				2		DAY-2	DRY-1	2	
00.09680	3/13/00	14:56						DAY-2	DRY-1	2	
00.12953	4/20/00	12:00						DAY-2	DRY-1	2	
00.17749	6/10/00	14:15						DAY-2	DRY-1	20,7	
00.21017	7/10/00	14:13						DAY-2	DRY-1	4,17	0.u.1 *
00.28999	9/18/00	21:08		1				DARK-4	DRY-1	16	

\* UNDER INFLUENCE OF PRESCRIPTION DRUGS

S:\SHEETS\COLLISION DIAGRAM.DWG





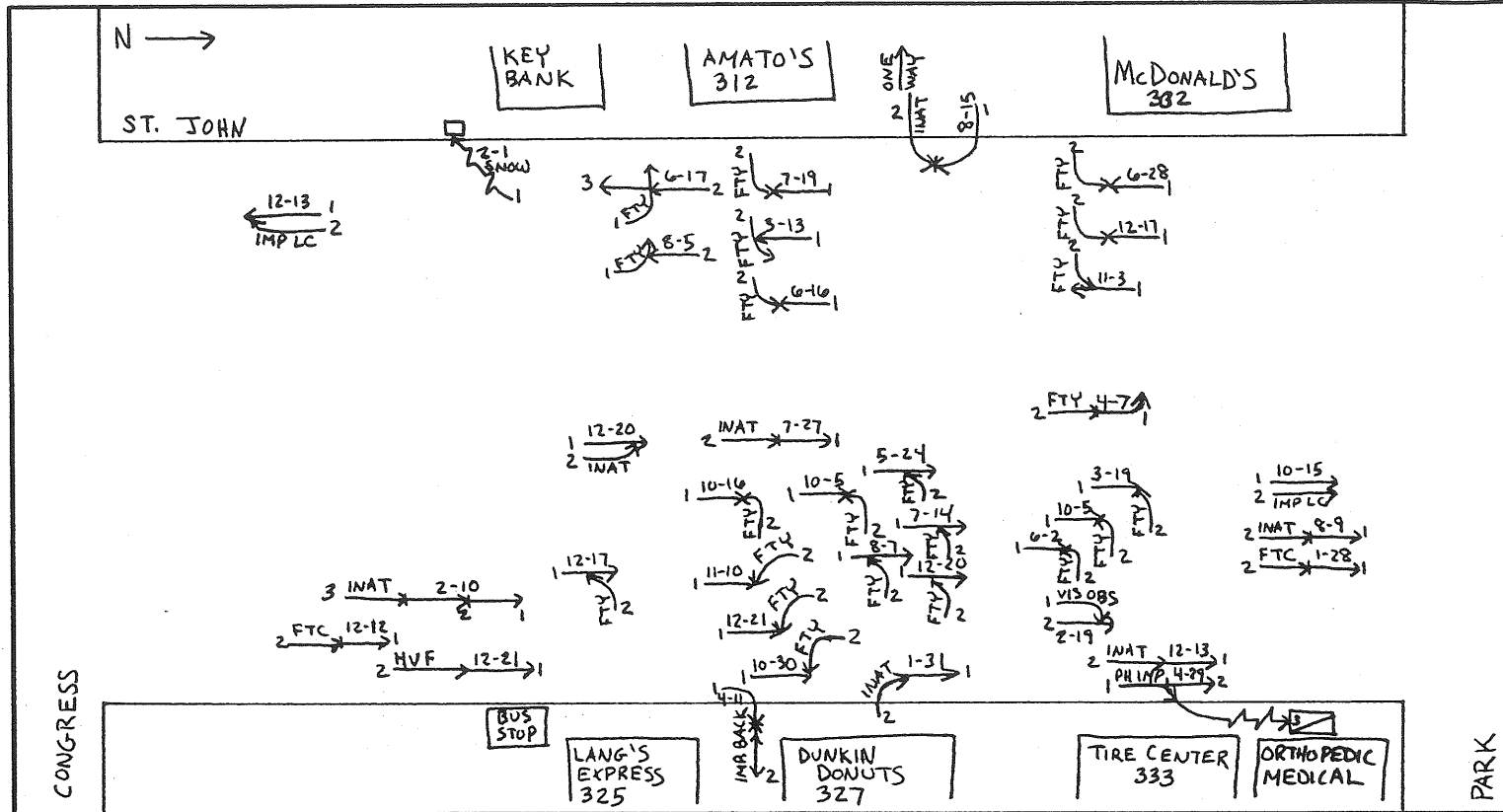
# COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION ST. JOHN STREET FROM CONGRESS ST. TO PARK AVE

TOWN PORTLAND NODE NO(S) 07182-07187

YEARS REVIEWED 2000-2002 DATE PREPARED 8/4/03



CRITICAL RATE FACTOR 3.03 EQUIV. PROP. DAMAGE ACC/YEAR 38 ACCIDENTS ACC/MEV

- LIGHT**  
 1. DAWN (MORNING)  
 4. DARK (ST. LIGHTS ON)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY  
 4. ICE/PACKED SNOW-SANDED  
 7. ORLY  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION  
 4. FOLLOW TOO CLOSE  
 6. DRIVING LEFT OF CENTER - NO PASSING  
 8. IMP. UNSAFE LANE CHANGE  
 11. UNSAFE BACKING  
 14. DRIVER INATTENTION - DISTRACTION  
 16. PEDEST. VIOLATION ERROR  
 20. OTHER VISION OBSCUREMENT  
 31. HIT AND RUN
- VEHICULAR**  
 41. DEFECTIVE BRAKES  
 44. DEFECTIVE SUSPENSION OR FACTOR
2. DAYLIGHT  
 5. DARK (NO ST. LIGHTS)  
 8. SNOW/SLUSH-NOT SANDED  
 2. WET  
 5. MUDDY  
 8. SNOW/SLUSH-SANDED  
 3. SNOW/SLUSH-SANDED  
 6. DEBRIS  
 9. ICE/PKD. SNOW-NOT SANDED
3. DUSK (EVENING)  
 6. DARK (ST. LIGHTS OFF)  
 3. RELEGAL UNSAFE SPEED  
 5. DISREGARD TRAFFIC CONTROL DEVICE  
 7. IMPROPER PASS-OVERTAKING  
 10. IMPROPER TURN  
 13. IMPEDING TRAFFIC  
 15. DRIVER INEXPERIENCE  
 18. VISION OBSCURED - SUN/HEADLIGHTS  
 30. OTHER HUMAN VIOLATION FACTOR  
 31. UNKNOWN
2. FAIL TO YLD. RIGHT OF WAY  
 3. IMP. PARKING START/STOP  
 12. NO SIGNAL OR IMP. SIGNAL  
 17. PHYSICAL IMPAIRMENT  
 19. VISION OBSCURED - BUN/HEADLIGHTS  
 30. OTHER HUMAN VIOLATION FACTOR  
 31. UNKNOWN
42. DEFECTIVE TIRE/FAILURE  
 43. DEFECTIVE LIGHTS  
 45. DEFECTIVE STEERING  
 51. UNKNOWN

**SYMBOLS**

ANGLE PEDESTRIAN FATAL ACCIDENT

BACKING REAR END

FIXED OBJECT SIDE SWIPE VEHICLE (MOVING)

HEAD ON TURNING MOVE BICYCLE

OVERTURN CHANGE LANE ANIMAL

PARKED VEHICLE OUT OF CONTROL SLED

**WEATHER**  
 C = CLEAR  
 SL = SLEET  
 F = FOG  
 S = SNOW  
 R = RAIN  
 CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**  
 K = FATAL  
 A = INCAPACITATING  
 B = NON-INCAPACITATING  
 C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
014772	6-17-02	10:43					DAY-2	DRY-1	2	
018533	8-5-02	20:05			1		DARK-4	DRY-1	10	
025021	12-13-02	13:00					DAY-2	DRY-1	14	
015376	6-28-02	12:07			2		DAY-2	DRY-1	14, 2	
002886	3-19-02	8:06					DAY-2	WET-2	2	
011073	4-29-02	14:42			1		DAY-2	WET-2	17	(SEIZURE)
006056	1-31-02	8:30			1		DAY-2	DRY-1	14	
032146	10-15-01	8:27					DAY-2	WET-2	8	

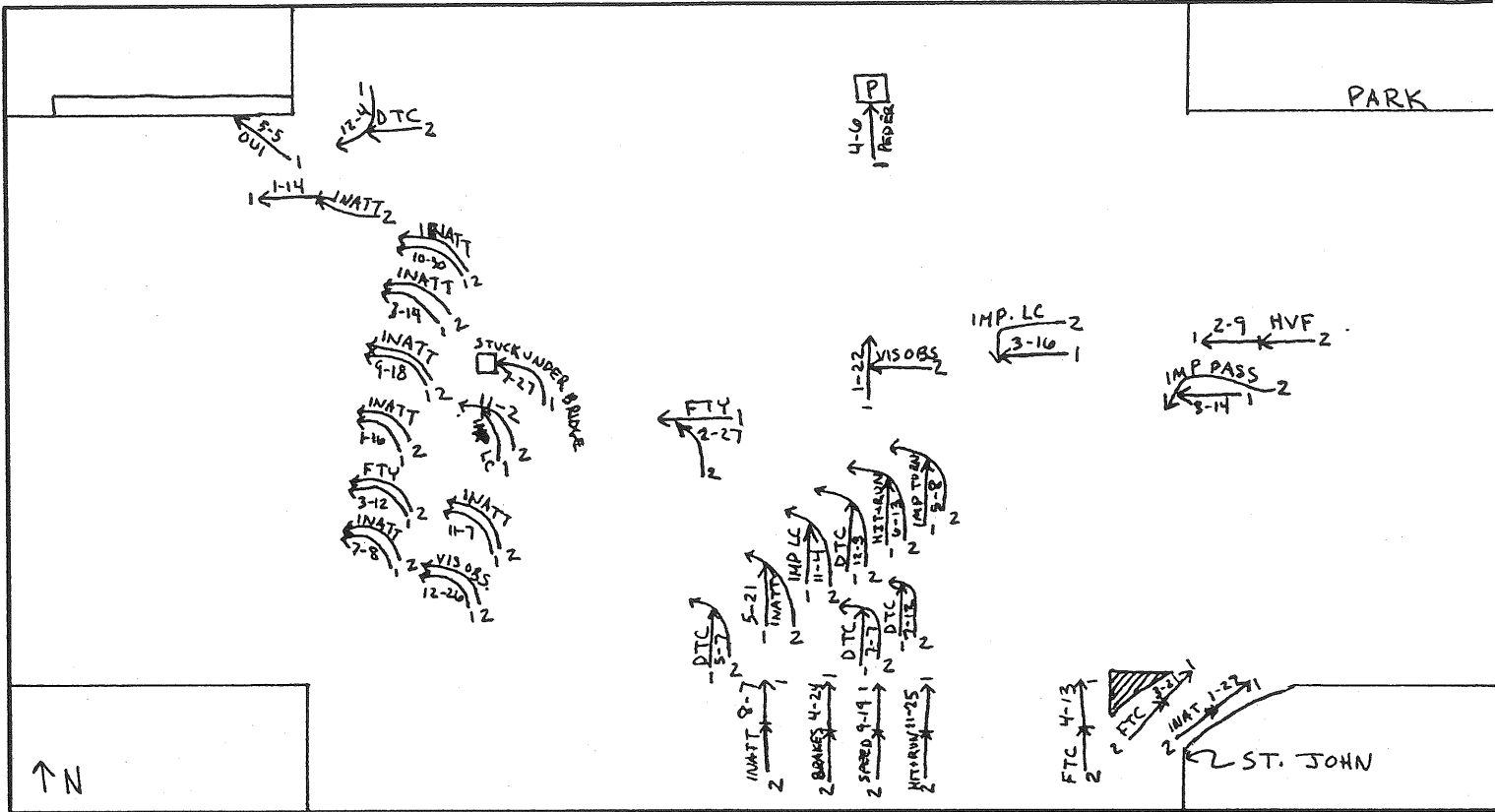
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# COLLISION DIAGRAM

SHEET 1 OF 2

LOCATION ST. JOHN STREET AT PARK AVENUE  
 TOWN PORTLAND NODE NO(S) 07187  
 YEARS REVIEWED 2000-2002 DATE PREPARED 8/4/03



CRITICAL RATE FACTOR 1.01 EQUIV. PROP. DAMAGE ACC/YEAR 34 ACCIDENTS ACC/MEV \_\_\_\_\_

- LIGHT**
1. DAWN ( MORNING )
  2. DAYLIGHT
  3. DUSK ( EVENING )
  4. DARK ( ST. LIGHTS ON )
  5. DARK ( NO ST. LIGHTS )
  6. DARK ( ST. LIGHTS OFF )
  7. OTHER
- ROAD SURFACE**
1. DRY
  2. WET
  3. SNOW/SLUSH-SANDED
  4. ICE/PACKED SNOW-SANDED
  5. MUDDY
  6. DEBRIS
  7. OILY
  8. SNOW/SLUSH-NOT SANDED
  9. ICE/PKD. SNOW-NOT SANDED
  10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**
1. NO IMPROPER ACTION
  2. FAIL TO YLD. RIGHT OF WAY
  3. ILLEGAL UNSAFE SPEED
  4. FOLLOW TOO CLOSE
  5. DISREGARD TRAFFIC CONTROL DEVICE
  6. DRIVING LEFT OF CENTER - NO PASSING
  7. IMPROPER PASS-OVERTAKING
  8. IMP. UNSAFE LANE CHANGE
  9. IMP. PARKING START/STOP
  10. IMPROPER TURN
  11. UNSAFE BACKING
  12. NO SIGNAL OR IMP. SIGNAL
  13. IMPEDING TRAFFIC
  14. DRIVER INATTENTION - DISTRACTION
  15. DRIVER INEXPERIENCE
  16. PEDEST. VIOLATION ERROR
  17. PHYSICAL IMPAIRMENT
  18. VISION OBSCURED - WINDSHIELD GLASS
  19. VISION OBSCURED - BURN/HEADLIGHTS
  20. OTHER VISION OBSCUREMENT
  30. OTHER HUMAN VIOLATION FACTOR
  31. HIT AND RUN
  51. UNKNOWN
- VEHICULAR**
41. DEFECTIVE BRAKES
  42. DEFECTIVE TIRE/FAULTURE
  43. DEFECTIVE LIGHTS
  44. DEFECTIVE SUSPENSION OR FACTOR
  45. DEFECTIVE STEERING
  50. OTHER VEHICLE DEFECT
  51. UNKNOWN

**SYMBOLS**

ANGLE		PEDESTRIAN		FATAL ACCIDENT	
BACKING		REAR END		VEHICLE ( MOVING )	
FIXED OBJECT		SIDE SWIPE		BICYCLE	
HEAD ON		TURNING		ANIMAL	
OVERTURN		CHANGE LANE		SLED	
PARKED VEHICLE		OUT OF CONTROL			

**WEATHER**

C = CLEAR  
 SL = SLEET  
 F = FOG  
 S = SNOW  
 R = RAIN  
 CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**

K = FATAL  
 A = INCAPACITATING  
 B = NON-INCAPACITATING  
 C = POSSIBLE INJURY

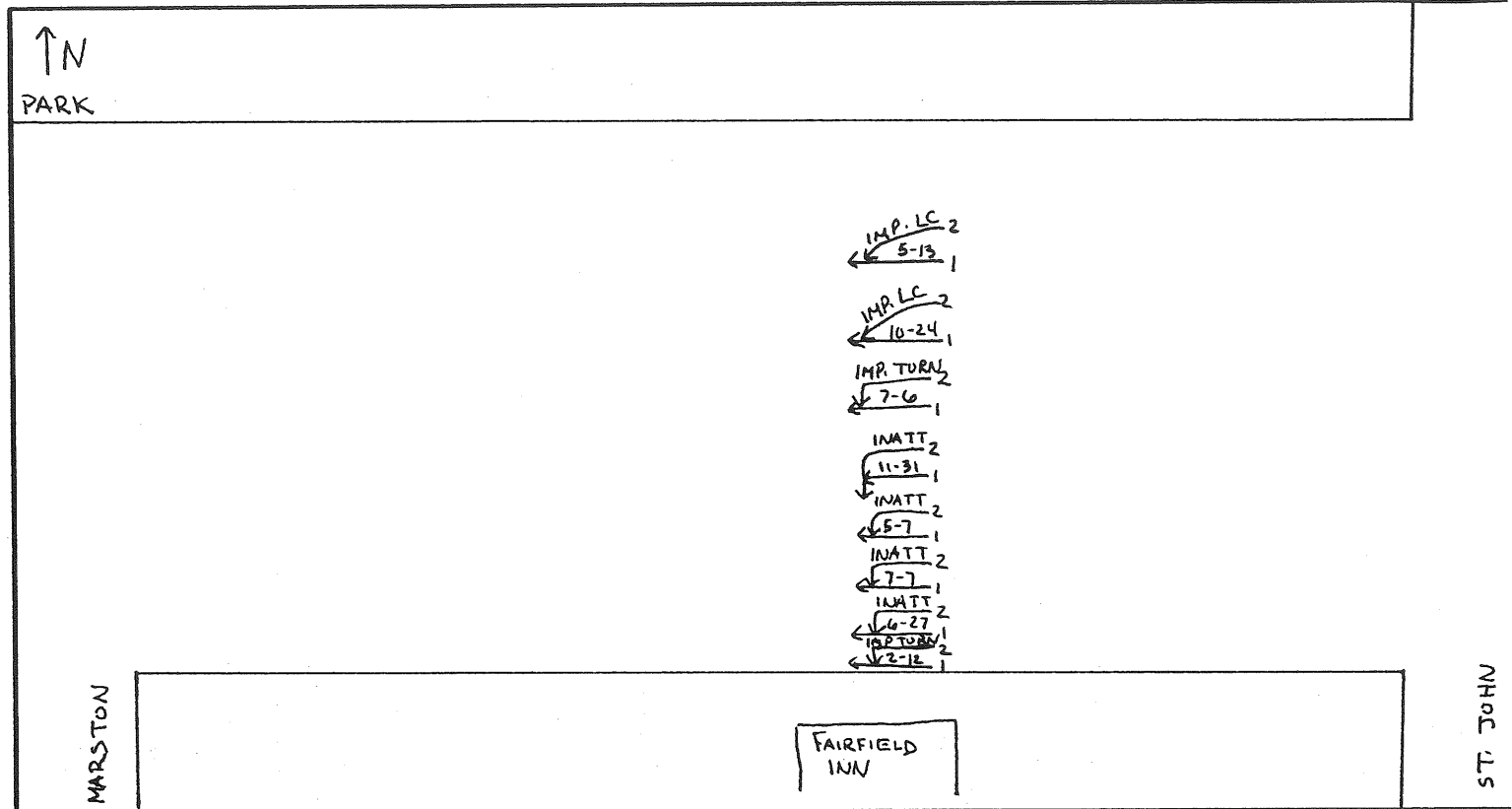
REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
020871	9-18-02	15:00					DAY-2	DRY-1	14	
013971	5-21-02	22:00					DARK-4	DRY-1	14	
009381	2-27-02	22:21					DARK-4	WET-2	2, 5	
011415	5-5-02	00:58		1			DARK-4	DRY-1	17	O.U.I.
001809	1-14-02	12:28					DAY-2	WET-2	14	
002797	3-16-02	12:36					DAY-2	WET-2	8	
003115	1-16-02	19:35					DARK-4	DRY-1	14	
002444	3-14-02	16:40					DAY-2	DRY-1	14	



# COLLISION DIAGRAM

SHEET 1 OF 1

LOCATION PARK AVENUE FROM ST. JOHN TO MARSTON STREET  
 TOWN PORTLAND NODE NO(S) 07187-07188  
 YEARS REVIEWED 2000-2002 DATE PREPARED 8/4/03



FAIRFIELD INN

CRITICAL RATE FACTOR 1.13 EQUIV. PROP. DAMAGE ACC/YEAR 9 ACCIDENTS ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)  
 4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY 2. WET 3. SNOW/SLUSH-SANDED  
 4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS  
 7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE/PYD. SNOW-NOT SANDED  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED  
 4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE 7. IMPROPER PASS-OVERTAKING  
 8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN  
 11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC  
 14. DRIVER INATTENTION - DISTRACTION 15. DRIVER INEXPERIENCE  
 16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED - WINDSHIELD GLASS  
 19. VISION OBSCURED - SUN/HEADLIGHTS 20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR  
 31. HIT AND RUN 51. UNKNOWN
- VEHICULAR**  
 41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS  
 44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT  
 51. UNKNOWN

**SYMBOLS**

ANGLE →  
 BACKING ←←←  
 FIXED OBJECT →□  
 HEAD ON →|  
 OVERTURN →○  
 PARKED VEHICLE □

PEDESTRIAN →P  
 REAR END →|  
 SIDE SWIPE →|  
 TURNING →|  
 CHANGE LANE →|  
 OUT OF CONTROL →|

FATAL ACCIDENT ●  
 VEHICLE (MOVING) —  
 BICYCLE ---B  
 ANIMAL ---A  
 SLED ---S

**WEATHER**  
 C = CLEAR SL = SLEET F = FOG S = SNOW  
 R = RAIN Cl = CLOUDY XW = CROSS WINDS

**INJURIES**  
 K = FATAL A = INCAPACITATING B = NON-INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
022493	10-24-02	17:28		1			DUSK-3	DRY-1	8	
016235	7-6-02	18:38		1			DUSK-3	DRY-1	10	
006066	11-31-02	15:40			1		DAY-2	ICE-9	14	
015693	5-13-01	11:20					DAY-2	DRY-1	8	
015162	5-7-01	13:17					DAY-2	DRY-1	14	
022139	7-7-01	20:54					DARK-4	DRY-1	14	
00.19309	6-27-00	14:19					DAY-2	DRY-1	14	
00.06303	2-12-00	22:30					DARK-4	WET-2	10,8	

S:\SHEETS\COLLISION DIAGRAM.DWG

# COLLISION DIAGRAM

SHEET 1 OF 2

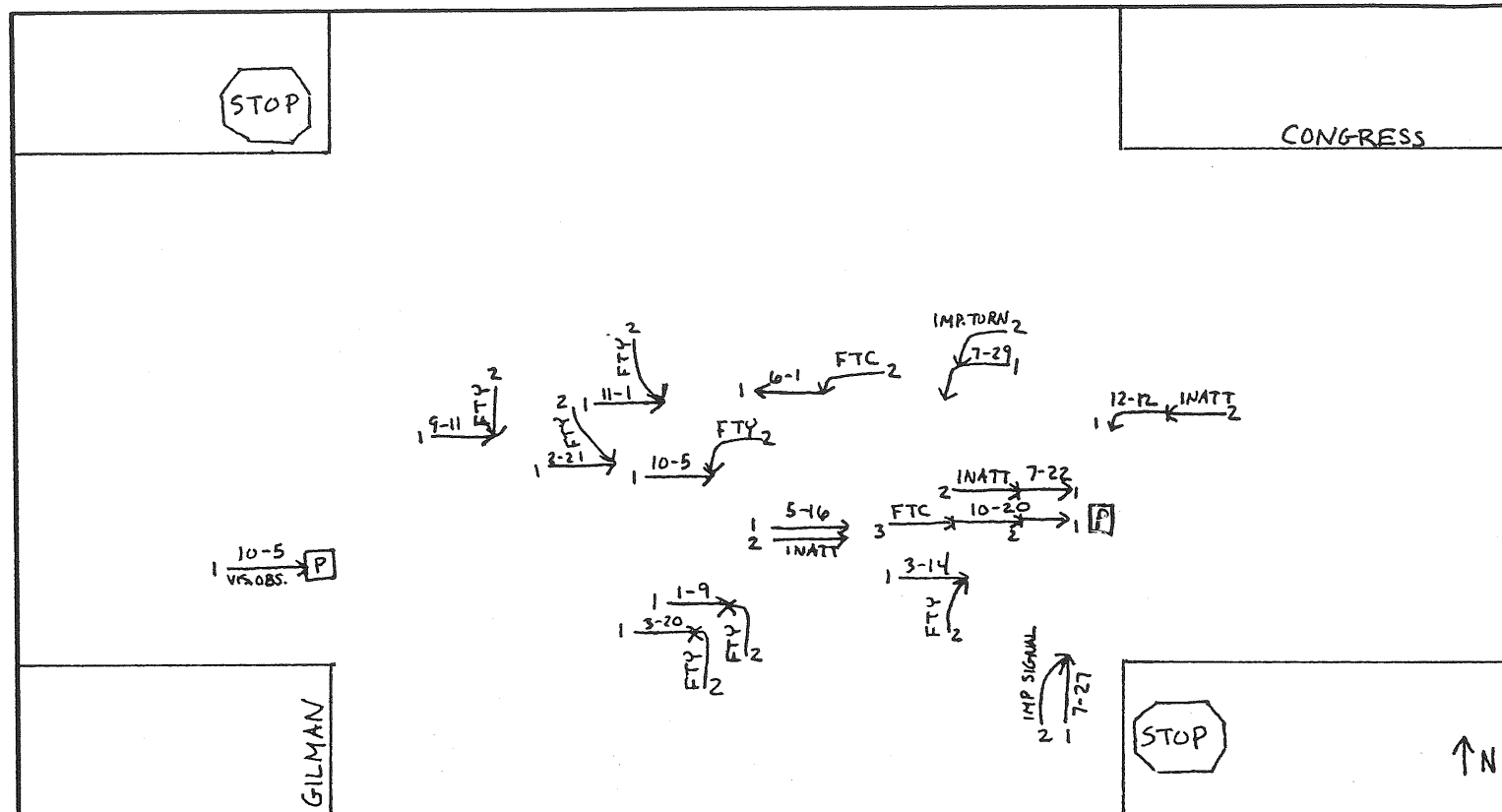
LOCATION CONGRESS STREET AT GILMAN STREET

TOWN PORTLAND

NODE NO(S) 08991

YEARS REVIEWED 2000-2008

DATE PREPARED 8/4/03



CRITICAL RATE FACTOR 1.49 EQUIV. PROP. DAMAGE ACC/YEAR 15 ACC ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN ( MORNING )  
 4. DARK ( ST. LIGHTS ON )  
 7. OTHER  
 2. DAYLIGHT  
 5. DARK ( NO ST. LIGHTS )  
 3. DUSK ( EVENING )  
 6. DARK ( ST. LIGHTS OFF )
- ROAD SURFACE**  
 1. DRY  
 4. ICE/PACKED SNOW-SANDED  
 7. OILY  
 10. OTHER  
 2. WET  
 5. MUDDY  
 8. SNOW/SLUSH-NOT SANDED  
 3. SNOW/SLUSH-SANDED  
 6. DEBRIS  
 9. ICE/PYD. SNOW-NOT SANDED
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION  
 4. FOLLOW TOO CLOSE  
 6. DRIVING LEFT OF CENTER - NO PASSING  
 8. IMP. UNSAFE LANE CHANGE  
 11. UNSAFE BACKING  
 14. DRIVER INATTENTION - DISTRACTION  
 16. PEDEST. VIOLATION ERROR  
 WINDSHIELD GLASS  
 20. OTHER VISION OBSCUREMENT  
 31. HIT AND RUN  
 - VEHICULAR  
 41. DEFECTIVE BRAKES  
 44. DEFECTIVE SUSPENSION OR FACTOR  
 2. FAIL TO YLD. RIGHT OF WAY  
 5. DISREGARD TRAFFIC CONTROL DEVICE  
 7. IMPROPER PASS-OVERTAKING  
 9. IMP. PARKING START/STOP  
 12. NO SIGNAL OR IMP. SIGNAL  
 15. DRIVER INEXPERIENCE  
 18. VISION OBSCURED -  
 30. OTHER HUMAN VIOLATION FACTOR  
 3. ILLEGAL UNSAFE SPEED  
 10. IMPROPER TURN  
 13. IMPEDING TRAFFIC  
 17. PHYSICAL IMPAIRMENT  
 19. VISION OBSCURED - BUN/HEADLIGHTS  
 35. UNKNOWN  
 42. DEFECTIVE TIRE/FAILURE  
 45. DEFECTIVE STEERING  
 2. DEFECTIVE LIGHTS  
 50. OTHER VEHICLE DEFECT  
 35. UNKNOWN

**SYMBOLS**

ANGLE PEDESTRIAN FATAL ACCIDENT

BACKING REAR END

FIXED OBJECT SIDE SWIPE VEHICLE ( MOVING ) \_\_\_\_\_

HEAD ON TURNING MOVE BICYCLE \_\_\_\_\_

OVERTURN CHANGE LANE ANIMAL \_\_\_\_\_

PARKED VEHICLE OUT OF CONTROL SLED \_\_\_\_\_

**WEATHER**  
 C = CLEAR  
 SL = SLEET  
 F = FOG  
 S = SNOW  
 R = RAIN  
 CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**  
 K = FATAL  
 A = INCAPACITATING  
 B = NON-INCAPACITATING  
 C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
024667	12-12-02	7:38					DAY-2	SNOW-8	14	
017429	7-22-02	10:36					DAY-2	DRY-1	14	
022545	9-11-01	15:45					DAY-2	DRY-1	2	
015956	5-16-01	8:17					DAY-2	WET-2	14	
017468	6-1-01	17:30				1	DAY-2	DRY-1	4	
001104	1-9-01	17:35					DARK-4	WET-2	2,14	
030990	10-5-01	9:00		1			DAY-2	DRY-1	2	
034008	11-1-01	13:40				1	DAY-2	DRY-1	2	

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MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION  
 ACCIDENT SUMMARY INPUT

TINACC30

TYPE OF STUDY: NODES AND LINKS TYPE OF REQUEST: ACCIDENT I & II WITH LINK DETAIL  
 STUDY PERIOD: FROM MONTH 01 YEAR 2000 TO MONTH 12 YEAR 2002

INPUT COMMENTS

RTE 1 / RTE 25 AREA  
 TOWN: PORTLAND

INPUT DATA

ROUTE	COUNTY	FIRST NODE	EXCLUDE FIRST	DISTANCE	SECOND NODE	LAST NODE	EXCLUDE LAST	DISTANCE
60160	05	07184	0	0.00	03168	07241	0	0.00
0022X		07189	0	0.00	07188	07187	0	0.00
B001X		07187	1	0.00	07170	07170	0	0.00
0001X		07170	1	0.00	09499	07251	0	0.00
0025X		03065	0	0.00	03161	03043	1	0.00
61239		03043	1	0.00	09491	07243	1	0.00
60077		07243	1	0.00	08771	03037	0	0.00
60785		03037	1	0.00	03164	03164	0	0.00
60128		03036	0	0.00	03029	09532	0	0.00
60071		09532	1	0.00	09531	09531	1	0.00
B001X		07180	0	0.00	07181	07182	1	0.00
		07182	1	0.00	07187	07187	1	0.00
60637		07187	1	0.00	03040	03041	0	0.00



MAINE DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

ACCIDENT SUMMARY I

COUNTY LOW TOWN#	HIGH NODE	STREET NAME OR ROUTE #	U/R	TOTAL ACCTS	LINK LENGTH	INJURY K	A	B	C	PD	PERCENT INJURY	ANNUAL HM VEH-MILES	ANNUAL M ENT-VEHS	ACCIDENT-RATES LINK	CRITI RATE	CRF														
05	07184	POR, CONGRESS, WESTFIELD	2	1		0	0	0	0	1	0.0	6.670	0.05	0.42	0.00	0.00														
05	03168	POR, HEMLOCK, CONGRESS ST	2	0		0	0	0	0	0	0.0	7.444	0.00	0.41	0.00	0.00														
05	02726	POR, CONGRESS ST, COUNTY	2	3		0	0	0	1	2	33.3	7.403	0.14	0.41	0.00	0.00														
05	07183	POR, CONGRESS ST, RING	8	2		0	0	0	0	0	0.0	6.970	0.00	0.41	0.00	0.00														
05	07182	POR, CONGRESS, ST JOHN ST	9	26		0	1	5	5	15	42.3	13.509	0.64	1.00	0.00	0.00														
05	07169	POR, VALLEY, CONGRESS ST.	9	24		0	0	0	6	18	25.0	7.850	1.02	1.10	0.00	0.00														
05	08991	POR, GILMAN, CONGRESS ST.	2	15		0	1	2	2	10	33.3	8.681	0.58	0.39	1.49	0.00														
05	07246	POR, CONGRESS, FOREST ST.	2	4		0	0	1	2	1	75.0	8.604	0.15	0.39	0.00	0.00														
05	07245	POR, CONGRESS, WEYMOUTH S	2	8		0	0	0	4	4	50.0	6.305	0.42	0.42	1.00	0.00														
05	07244	POR, CONGRESS, ELLSWORTH	2	1		0	0	0	0	1	0.0	7.476	0.04	0.40	0.00	0.00														
05	07243	POR, CONGRESS, DEERING, BR	9	21		0	1	1	7	12	42.9	13.017	0.54	1.01	0.00	0.00														
05	07242	POR, CONGRESS, NEAL ST.	2	1		0	0	0	1	0	100.0	8.839	0.04	0.39	0.00	0.00														
05	07241	POR, CONGRESS, NEAL ST.	2	2		0	0	0	0	2	0.0	9.064	0.07	0.39	0.00	0.00														
05	07189	POR, PARK AVE, ST. JAMES S	2	0		0	0	0	0	0	0.0	6.854	0.00	0.41	0.00	0.00														
05	07188	POR, PARK AVE, MARSTON ST	2	10		0	0	2	2	6	40.0	6.586	0.51	0.42	1.21	0.00														
05	07187	POR, RTE 22, PARK, ST JOHN	9	34		0	0	3	5	26	23.5	10.813	1.05	1.04	1.01	0.00														
05	07170	POR, PARK AVE, VALLEY S	2	5		0	0	0	1	4	20.0	5.196	0.32	0.49	0.00	0.00														
05	09499	POR, PARK AVE, GILMAN ST.	2	4		0	0	0	1	3	25.0	4.722	0.28	0.51	0.00	0.00														
05	09498	POR, PARK AVE, FOREST ST.	2	3		0	0	0	1	2	33.3	5.576	0.18	0.49	0.00	0.00														
05	09495	POR, PARK AVE, WEYMOUTH S	2	2		0	1	0	0	1	50.0	5.128	0.13	0.50	0.00	0.00														
05	03043	POR, DEERING, PARK AVE.	9	16		0	0	0	2	14	12.5	8.635	0.62	1.08	0.00	0.00														
05	09487	POR, PARK AVE, MELLEEN ST.	9	7		0	0	0	1	6	14.3	6.350	0.37	1.14	0.00	0.00														
05	07251	POR, STATE ST, PARK AVE.	9	24		0	1	5	7	11	54.2	10.428	0.77	1.04	0.00	0.00														
05	03065	POR, DEERING, WASHBURN AV	2	6		0	0	0	2	1	50.0	3.707	0.54	0.48	1.13	0.00														
05	03161	POR, DEERING AVE, D. O. UNN	2	0		0	0	0	0	0	0.0	3.677	0.00	0.48	0.00	0.00														
05	03045	POR, DEERING AVE, OAKES U	2	0		0	0	0	0	0	0.0	3.506	0.00	0.49	0.00	0.00														
05	09491	POR, GRANT ST, DEERING AV	2	4		1	0	1	0	2	50.0	4.660	0.29	0.42	0.00	0.00														
05	09493	POR, DEERING AVE, SHERMAN	2	1		0	0	0	0	1	0.0	5.251	0.06	0.41	0.00	0.00														
05	09446	POR, DEERING, CUMBERLAND	2	7		0	0	0	0	7	0.0	5.890	0.40	0.39	1.03	0.00														
05	08771	POR, BRAMHALL RD, BRAMHALL	2	1		0	0	0	1	0	100.0	3.413	0.10	0.45	0.00	0.00														
05	03016	POR, BRAMHALL, VAUGHN ST.	2	1		0	0	0	1	0	100.0	4.444	0.08	0.42	0.00	0.00														
05	03033	POR, BRAMHALL, HILL ST.	2	0		0	0	0	0	0	0.0	3.111	0.00	0.46	0.00	0.00														
05	09531	POR, BRACKETT, BRAMHALL S	2	1		0	0	0	0	1	0.0	4.167	0.08	0.43	0.00	0.00														
05	03015	POR, BRAMHALL, BRACKETT, C	2	0		0	0	0	0	0	0.0	2.639	0.00	0.46	0.00	0.00														
05	03037	POR, WESTERN PROM, BRAMHA	2	0		0	0	0	0	0	0.0	1.667	0.00	0.52	0.00	0.00														
05	03164	POR, WEST ST, WESTERN PRO	2	2		0	0	0	0	2	0.0	1.820	0.37	0.51	0.00	0.00														
05	03036	POR, CHARLES, CRESCENT ST	2	0		0	0	0	0	0	0.0	0.473	0.00	0.67	0.00	0.00														
05	03029	POR, ELLSWORTH, CHARLES S	2	1		0	0	0	0	1	0.0	0.723	0.46	0.63	0.00	0.00														
05	09532	POR, CHARLES, BRACKETT ST	2	1		0	0	0	0	1	0.0	0.612	0.54	0.65	0.00	0.00														
05	09530	POR, BRACKETT, VAUGHN ST.	2	5		0	0	0	2	3	40.0	5.478	0.30	0.40	0.00	0.00														
05	07180	POR, ST JOHN ST, C ST	2	3		0	0	1	1	1	66.7	5.255	0.19	0.44	0.00	0.00														
05	07181	POR, ST JOHN ST, A ST	2	10		0	0	2	1	7	30.0	6.046	0.55	0.43	1.28	0.00														
05	03040	POR, ST JOHN ST, WASHBURN	2	3		0	0	0	2	1	66.7	4.107	0.24	0.43	0.00	0.00														
05	03041	POR, ST JOHN, GRANITE ST	2	0		0	0	0	0	0	0.0	4.598	0.00	0.42	0.00	0.00														
														257	34.2	257.364	0.33	0.37	0.00											
														1	5	25	57	169	34.2											
														NODE SUBTOTALS-																

MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

ACCIDENT SUMMARY I

COUNTY TOWN#	LOW NODE	HIGH NODE	STREET NAME OR ROUTE #	U/R	TOTAL ACCTS	LINK LENGTH	INJURY K	INJURY A	INJURY B	INJURY C	INJURY PD	PERCENT INJURY	ANNUAL HM VEH-MILES	ANNUAL M ENT-VEHS	ACCIDENT-LINK	RATES-NODE	CRITI RATE	CRF
05170	03168	07184	CONGRESS ST	2	0	0.01	0	0	0	0	0	0.0	0.00074	0.00	0.00	701.60	0.00	
	02726	03168		2	1	0.04	0	0	0	0	1	0.0	0.00296	112.61	112.61	499.30	0.00	
	02726	07183		2	1	0.01	0	0	0	0	1	0.0	0.00074	450.45	450.45	701.60	0.00	
	07182	07183		2	4	0.07	0	0	0	4	0	0.0	0.00459	290.49	290.49	446.19	0.00	
	07169	07182		2	5	0.06	0	0	1	0	4	20.0	0.00412	404.53	404.53	458.59	0.00	
	07169	08991		2	2	0.02	0	0	0	0	2	0.0	0.00138	483.09	483.09	607.29	0.00	
	07246	08991		2	3	0.06	0	0	2	0	1	66.7	0.00540	185.19	185.19	428.37	0.00	
	07245	07246		2	3	0.10	0	0	1	2	33.3	33.3	0.00654	152.91	152.91	408.65	0.00	
	07244	07244		2	5	0.09	0	0	1	3	40.0	40.0	0.00516	323.00	323.00	433.25	0.00	
	07243	07243		2	6	0.04	0	0	0	5	16.7	16.7	0.00354	312.70	312.70	429.76	0.00	
	07241	07242		2	2	0.05	0	0	0	2	0.0	0.0	0.00440	151.52	151.52	450.99	0.00	
	07188	07189	PARK AVE	2	3	0.02	0	0	2	0	1	66.7	0.00140	714.29	714.29	605.11	1.18	
	07187	07188		2	9	0.11	0	0	2	1	6	33.3	0.00649	462.25	462.25	409.41	1.13	
	07170	07187		2	1	0.04	0	0	0	1	0.0	0.0	0.00208	160.26	160.26	547.10	0.00	
	09499	09499		2	0	0.02	0	0	0	0	0	0.0	0.00090	0.00	0.00	883.05	0.00	
	09498	09499		2	5	0.04	0	0	0	5	0	0.0	0.00184	905.80	905.80	735.74	1.23	
	09495	09498		2	4	0.09	0	0	1	2	1	75.0	0.00415	321.29	321.29	598.10	0.00	
	03043	09495		2	8	0.15	0	0	1	2	5	37.5	0.00702	379.87	379.87	527.90	0.00	
	03043	09487		2	6	0.14	0	0	0	1	5	16.7	0.00741	269.91	269.91	336.52	0.00	
	07251	09487		2	5	0.12	0	0	0	1	4	20.0	0.00673	247.65	247.65	405.82	0.00	
	03065	03161	DEERING AVE	2	2	0.12	0	0	0	0	2	0.0	0.00449	148.48	148.48	448.68	0.00	
	03045	03161		2	1	0.14	0	0	0	0	1	0.0	0.00475	70.18	70.18	442.35	0.00	
	03043	03045		2	3	0.04	0	0	1	0	2	33.3	0.00136	735.29	735.29	609.49	1.21	
	03043	09491		2	2	0.06	0	0	0	1	50.0	50.0	0.00234	284.90	284.90	554.16	0.00	
	09491	09493		2	3	0.04	0	0	0	1	2	33.3	0.00199	502.51	502.51	577.90	0.00	
	09446	09493		2	0	0.05	0	0	0	0	0	0.0	0.00249	0.00	0.00	545.30	0.00	
	07243	09446		2	1	0.03	0	0	0	0	1	0.0	0.00149	223.71	223.71	622.37	0.00	
	07243	08771	BRAMHALL ST	2	0	0.01	0	0	0	0	0	0.0	0.00033	0.00	0.00	780.64	0.00	
	03016	08771		2	0	0.02	0	0	0	0	0	0.0	0.00067	0.00	0.00	707.76	0.00	
	03016	03033		2	0	0.03	0	0	0	0	0	0.0	0.00092	0.00	0.00	661.77	0.00	
	03033	09531		2	0	0.05	0	0	0	0	0	0.0	0.00139	0.00	0.00	599.76	0.00	
	03015	09531	BRACKETT ST	2	2	0.02	0	0	0	1	1	50.0	0.00039	1709.40	1709.40	1410.73	1.21	
	03015	03037	BRAMHALL ST	2	3	0.11	0	0	1	0	2	33.3	0.00183	546.45	546.45	960.21	0.00	
	03029	03036	WESTERN PROM	2	0	0.05	0	0	0	0	0	0.0	0.00083	0.00	0.00	1177.61	0.00	
	03029	09532	CHARLES ST	2	1	0.06	0	0	0	0	0	100.0	0.00033	1010.10	1010.10	1460.35	0.00	
	09531	09532	BRACKETT ST	2	0	0.03	0	0	0	0	0	0.0	0.00017	0.00	0.00	1609.82	0.00	
	07180	07181	ST JOHN ST	2	0	0.04	0	0	0	0	0	0.0	0.00022	0.00	0.00	1564.90	0.00	
	07181	07182		2	6	0.10	0	0	0	0	0	0.0	0.00183	0.00	0.00	559.49	0.00	
	07182	07187		2	16	0.07	0	0	1	1	14	12.5	0.00468	385.36	385.36	432.62	0.00	
	03040	07187		2	38	0.17	0	0	2	8	28	26.3	0.01174	1139.60	1139.60	444.01	2.57	
	03040	07187		2	2	0.04	0	0	0	0	2	0.0	0.00144	1078.93	1078.93	356.60	3.03	
	03041	03041		2	3	0.11	0	0	0	0	3	0.0	0.00504	462.96	462.96	627.76	0.00	
			LINK SUBTOTALS-		161	2.79	0	3	15	23	120	25.5	0.13883	386.56	386.56	253.66	1.52	

MAINE DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

ACCIDENT SUMMARY I

GRAND TOTALS-	418	2.79	1	8	40	80	289	30.9	0.13883	257.364	1003.62	431.49	2.33
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MAINE DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

ACCIDENT SUMMARY II - CHARACTERISTICS

DAY OF WEEK	---A M---							---P M---							TOTAL											
	12	1	2	3	4	5	6	7	8	9	10	11	12	1		2	3	4	5	6	7	8	9	10	11	UNKNOWN
SUNDAY	4	1	0	1	0	0	0	3	1	1	2	4	4	5	2	2	3	2	1	3	1	0	0	1	0	41
MONDAY	0	0	0	0	0	0	2	4	1	3	3	1	5	5	8	10	9	6	0	2	2	3	1	1	0	66
TUESDAY	1	0	0	0	0	1	0	3	2	4	3	3	5	8	8	9	5	7	1	3	0	0	3	0	0	66
WEDNESDAY	1	0	1	0	0	0	0	2	4	1	5	3	5	2	9	6	9	8	2	3	1	1	1	0	0	64
THURSDAY	0	0	0	1	0	0	0	0	2	4	0	3	5	7	4	6	6	6	4	4	4	0	1	2	0	64
FRIDAY	1	1	0	0	0	0	0	0	2	3	5	2	5	7	7	1	12	5	8	5	3	2	1	2	0	72
SATURDAY	0	1	0	0	0	0	0	3	1	2	3	5	3	2	7	4	1	0	2	1	6	1	2	1	0	45
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	7	3	1	2	0	1	2	19	16	16	21	26	34	36	39	49	38	37	15	19	16	6	10	5	0	418

YEAR	TYPE OF UNIT												TOTAL																																									
	2000	2001	2002	01-2 DOOR	02-4 DOOR	03-CONVERTIBLE	04-STAT WGN	05-VAN/CAMPER	06-PICKUP TRK	12-SCHOOL BUS	13-MOTOR HOME	14-MOTORCYCLE		15-MOPED	16-MOTOR BIKE	17-BICYCLE	18-SNOWMOBILE	19-PEDESTRIAN	23-ATV	07-SUV	99-UNK/OTH																																	
JANUARY	48	15	16	134	10-BOBTAIL	1	134	20-2ADT	10	389	30-3ASU	5	53	40-4ASU	0	72	21-2ASA	0	88	22-2ATA	1	2	31-3ASA	0	0	32-3ATA	1	3	33-3ATR	0	0	42-4ATA	0	0	25-2AT1A2ATR	0	3	35-3AT1A2ATR	0	0	36-3AT2A2ATR	0	19	50-OTHER	0	0	81-2AX CM BUS	7	45	82-3AX CM BUS	3	0	98-FARM/TRAC	1
TOTAL	418	160	120	418	TOTAL	838																																																

MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION  
 ACCIDENT SUMMARY II - CHARACTERISTICS

TINACC30

* * *		TYPE OF LOCATION						INJURY DATA		
ACCIDENT TYPE	ST ROAD	CURV ROAD	**AT 3-LEG	**AT 4-LEG	DRIVE 5-LEG	BRIDGE INTER	UN CHANGE	SEV CODE	INJURY ACCIDENTS	NUMBER OF INJURIES
OBJECT IN ROAD	0	0	0	0	0	1	0	K	1	1
REAR END/SIDESWIPE	84	2	38	83	0	0	1	A	8	10
HEAD-ON/SIDESWIPE	4	2	4	2	0	0	0	B	40	46
INTERSECTION MOVEMENT	4	0	21	77	0	0	0	C	80	112
PEDESTRIANS	4	0	5	8	0	0	0	PD	289	
TRAIN	0	0	0	0	0	0	0	TOTAL	418	169
RAN OFF ROAD	4	0	3	2	0	0	1			
ANIMAL	0	0	0	0	0	0	0			
DEER	0	0	0	0	0	0	0			
MOOSE	0	0	0	0	0	0	0			
BEAR	0	0	0	0	0	0	0			
SLED/BIKE	0	0	1	0	0	0	0			
OTHER	2	0	2	1	0	0	0			
NON COLLISION	0	0	0	0	0	0	0			
UNKNOWN	0	0	0	0	0	0	0			
TOTAL	98	4	74	173	0	66	1			418

FIXED OBJECT STRUCK

FIXED OBJECT STRUCK	TRAFFIC CONTROL DEVICES	ROAD CHARACTER
CONSTRUCTION BARRICADES	2	
TRAFFIC SIGNAL	0	
R/R CROSSING	0	
LIGHT POLE	0	
UTILITY POLE	2	
SIGN POST	0	
MAIL BOXES	0	
OTHER POLES/POSTS	0	
FIRE PLUG/PARK METER	0	
TREE/SHRUBBERY	1	
CRASH CUSHION	0	
MEDIAN SAFETY BARRIER	0	
BRIDGE PIERS	2	
OTHER GUARDRAILS	0	
FENCING NOT BARRIER	0	
CULVERT HEADWALL	0	
EMBANKMENT/DITCH	1	
BUILDING WALL	0	
ROCK OUTCROPPING/LEDGE	0	
OTHER	5	
UNKNOWN	0	
TOTAL	13	418

MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION  
 ACCIDENT SUMMARY II - CHARACTERISTICS

TINACC30

APPARENT CONTRIBUTING FACTOR * *	DR					TOTAL	APPARENT PHYSICAL CONDITION * *	DR					TOTAL	
	1	2	3	4	5			1	2	3	4	5		
HUMAN FACTORS	259	115	12	1	0	387		402	373	26	2	0	0	803
NO IMPROPER DRIVING	31	56	0	0	0	87	NORMAL	1	12	0	0	0	0	13
FAIL TO YIELD R-WAY	2	3	0	0	0	5	UNDER THE INFLUENCE	1	3	0	0	0	0	4
ILLEGAL UNSAFE SPEED	4	17	2	0	0	23	DRINKING	1	0	1	0	0	0	2
FOLLOW TOO CLOSE	4	22	1	0	0	27	USING DRUGS	0	1	1	0	0	0	1
DISREGARD TRAF CONTROL	1	1	0	0	0	2	ASLEEP	1	0	0	0	0	0	1
DRIVING LEFT OF CENTER	0	3	0	0	0	3	FATIGUED	1	0	0	0	0	0	1
IMPROPER PASSING	7	9	1	0	0	17	ILL	0	0	0	0	0	0	0
IMPROPER LANE CHANGE	3	10	1	0	0	14	HANDICAPPED	0	1	0	0	0	0	1
IMPROPER START/STOP	8	14	0	0	0	22	OTHER/UNKNOWN	6	4	3	0	0	0	13
IMPROPER TURN	2	4	0	0	0	6								
UNSAFE BACKING	2	1	0	0	0	3	TOTAL	412	394	30	2	0	0	838
NO PROPER SIGNAL	0	1	0	0	0	1								
IMPEDING TRAFFIC	45	77	9	1	0	132								
DRIVER INATTENTION	5	2	0	0	0	7								
DRIVER INEXPERIENCE	0	15	0	0	0	15								
PEDESTRIAN VIOLATION	3	2	0	0	0	5								
PHYSICAL IMPAIRMENT	1	0	0	0	0	1								
VISION OBSCURED GLASS	2	3	0	0	0	5								
VISION OBSCURED LIGHT	10	12	0	0	0	22								
VISION OBSCURED OTHER	12	13	3	0	0	28								
OTHER HUMAN FACTOR	2	9	1	0	0	12								
HIT & RUN	0	0	0	0	0	0								
VEHICULAR FACTORS	0	0	0	0	0	0								
DEFECTIVE BRAKES	0	0	0	0	0	0								
DEFECTIVE TIRE	0	0	0	0	0	0								
DEFECTIVE LIGHTS	0	0	0	0	0	0								
DEFECTIVE SUSPENSION	0	0	0	0	0	0								
DEFECTIVE STEERING	2	1	0	0	0	3								
OTHER VEHICLE DEFECT	7	4	0	0	0	11								
UNKNOWN	412	394	30	2	0	838								
TOTAL	412	394	30	2	0	838								

TYPE OF UNIT	DR					TOTAL
	1	2	3	4	5	
AGE	0	0	0	0	0	0
* DRIVER	0	0	0	0	0	0
BIKE	0	0	0	0	0	0
SLED	0	0	0	0	0	0
SNOW SLED	0	0	0	0	0	0
PED	0	3	2	1	1	6
ATV	0	0	0	0	0	0
TOTAL	0	3	2	1	1	6



TINACC30  
 MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION  
 ACCIDENT SUMMARY II - CHARACTERISTICS

WEATHER	LIGHT * CONDITION *	DRY *	WET *	R O A D S U R F A C E										TOTAL			
				SNOW SAND	ICE SAND	MUD	DEBRIS	OIL	SNOW	ICE	OTHER	ICE	OTHER				
CROSS WINDS ( 0 )	DAWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAYLIGHT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DUSK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK-LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK NO LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK LIGHTS OFF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAND/DUST ( 0 )	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAYLIGHT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DUSK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK-LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLOUDY ( 68 )	DARK NO LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK LIGHTS OFF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAWN	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	DAYLIGHT	40	10	0	0	0	0	0	0	0	0	0	0	0	0	0	50
OTHER ( 2 )	DUSK	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	DARK-LIGHTS	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	11
	DARK NO LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK LIGHTS OFF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OTHER	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROAD SURFACE TOTALS	DAWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DAYLIGHT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DUSK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	DARK-LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK NO LIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	DARK LIGHTS OFF	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		291	88	13	5	0	0	0	0	0	14	6	1	418			



MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

ACCIDENT SUMMARY INPUT

TYPE OF STUDY: NODES AND LINKS TYPE OF REQUEST: ACCIDENT I & II WITH LINK DETAIL  
 STUDY PERIOD: FROM MONTH 01 YEAR 2000 TO MONTH 12 YEAR 2002

INPUT COMMENTS

RTE 1 / RTE 25 AREA  
 TOWN: PORTLAND

INPUT DATA

ROUTE	COUNTY	FIRST NODE	EXCLUDE FIRST	DISTANCE	SECOND NODE	LAST NODE	EXCLUDE LAST	DISTANCE
60160	05	07184	0	0.00	03168	07241	0	0.00
0022X		07189	0	0.00	07188	07187	0	0.00
B001X		07187	1	0.00	07170	07170	0	0.00
0001X		07170	1	0.00	09499	07251	0	0.00
0025X		03065	0	0.00	03161	03043	1	0.00
61239		03043	1	0.00	09491	07243	1	0.00
60077		07243	1	0.00	08771	03037	0	0.00
60785		03037	1	0.00	03164	03164	0	0.00
60128		03036	0	0.00	03029	09532	0	0.00
60071		09532	1	0.00	09531	09531	1	0.00
B001X		09531	1	0.00	09530	09530	0	0.00
		07180	0	0.00	07181	07182	1	0.00
		07182	1	0.00	07187	07187	1	0.00
60637		07187	1	0.00	03040	03041	0	0.00

MAINE DEPARTMENT OF TRANSPORTATION  
 TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

LINK DETAIL

TOWN#	STREET NAME OR ROUTE #	LOW NODE	HIGH NODE	DISTANCE	TOTAL ACCIDENTS	INJURY ACCIDENTS			A C C I D E N T	R E P O R T	N U M B E R S	
						K	A	B C P D				
05170	CONGRESS ST	03168	07184	0.0	0	0	0	0	0			
		02726	03168	0.1	1	0	0	0	1	200139633		
		02726	07183	0.1	1	0	0	0	1	200130425		
		07182	07183	0.1	4	0	0	0	4	200012896	200018244	200122888
		07169	07182	0.1	5	0	0	1	4	200013537	200031901	200209951
		07169	08991	0.1	2	0	0	0	2	200006326	200026647	200209117
		07246	08991	0.1	3	0	0	2	0	200032721	200204122	
		07245	07246	0.1	3	0	0	1	2	200004462	200022827	200127069
		07244	07245	0.1	5	0	0	1	3	200001554	200009009	200035471
		07243	07244	0.1	5	0	1	0	2	200004723	200040016	200040904
		07242	07243	0.1	6	0	0	1	5	200007733	200033466	200030551
										200219704	200030551	200101233
										200211116	200024122	200131233
										200218482	200022827	200138179
PARK AVE		07188	07189	0.1	3	0	0	2	0	200127799	200130514	200212066
		07187	07188	0.1	9	0	0	2	1	200006303	200019309	200115162
										200122139	200206066	200115693
		07170	07187	0.1	1	0	0	0	1	200218309	200216235	200222493
		09498	09499	0.1	5	0	0	0	5	200030796	200041955	200105130
		09495	09498	0.1	4	0	0	1	2	200037299	200038142	200130308
		03043	09495	0.1	8	0	0	1	2	200030556	200034911	200225350
										200214661	200215491	200039998
										200011017	200006312	200025852
										200225512	200029304	200217494
										200019251	200034842	20021090
										200024016	200203240	200217887
										200009782	200137321	200222631
DEERING AVE		03045	03161	0.1	1	0	0	0	1	200009782	200034509	20011953
		03043	03045	0.1	3	0	0	1	0	200029854	200034509	20011953
		03043	09491	0.1	2	0	0	0	1	200209377	200219255	20011953
		09491	09493	0.1	3	0	0	0	1	200008411	200124502	200225714
		07243	09446	0.1	1	4	0	0	0	200009013	200202270	200222074
		03015	09531	0.1	2	0	0	0	1	200129717	200221261	200222074
		03015	03037	0.1	3	0	0	1	0	200006769	200221261	200222074
		03029	03036	0.1	1	0	1	0	0	200116426	200036734	200120419
		07180	07181	0.1	6	0	0	0	0	200003033	200036734	200134556
										200225546	200036734	200200892
07181	07182	07181	07182	0.1	16	0	0	1	1	200016848	200022247	200031179
										200117882	200116054	200038362
										200217788	200122637	200126210
										200217788	200221457	200126210
										200225019	200221678	200222823
										200005875	200016103	200017012
										200004561	200031703	200017012
										200001544	200025205	200034708
										200040021	200040449	200034708
										200109174	200112445	200104146
										200127444	200130973	200124754
										200139534	200130999	200125773
										200140041	200140045	200132146
										200141182	200140045	200140944
								200202886	200206056	200211073		

BRAMHALL ST  
 BRACKETT ST  
 WESTERN FROM  
 BRACKETT ST  
 ST JOHN ST

MAINE DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING, ACCIDENT RECORDS SECTION

TINACC30

LINK DETAIL

03040	07187	0.1	2	0	0	0	0	200215376	200218533	200225021
03040	03041	0.1	3	0	0	0	0	200108764	200136503	
								200130991	200212686	200218951
TOTALS-		161	0	3	15	23	120			

# Portland

