

COLLISION DIAGRAM

SHEET 1 OF 2

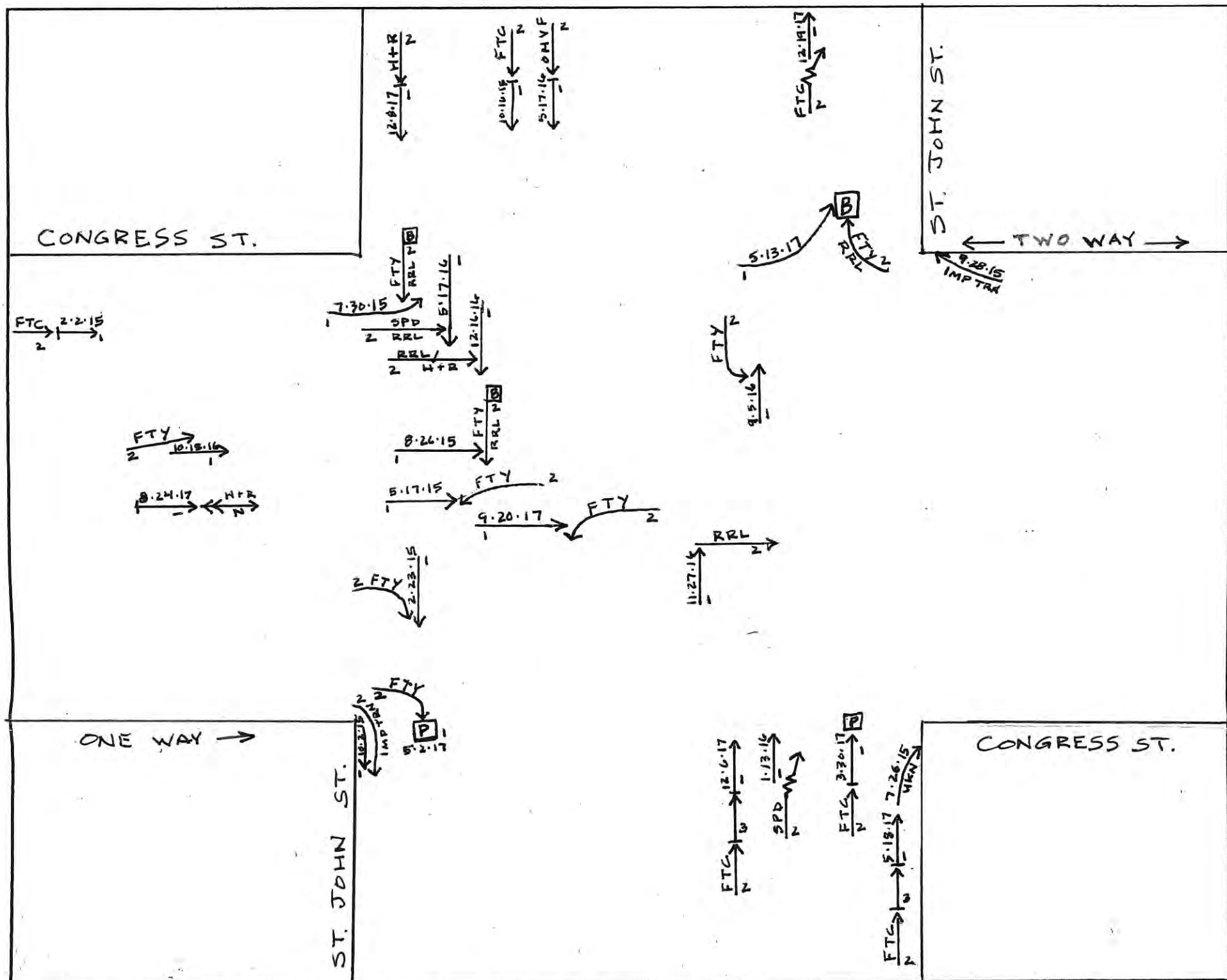
LOCATION Intersection of Congress Street & St. John Street

TOWN Portland, Maine

NODE NO(S) 16765

YEARS REVIEWED 2015 - 2017

DATE PREPARED Nov. 16, 2018



CRITICAL RATE FACTOR _____ EQUIV. PROP. DAMAGE ACC/YEAR _____ 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-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 | | 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

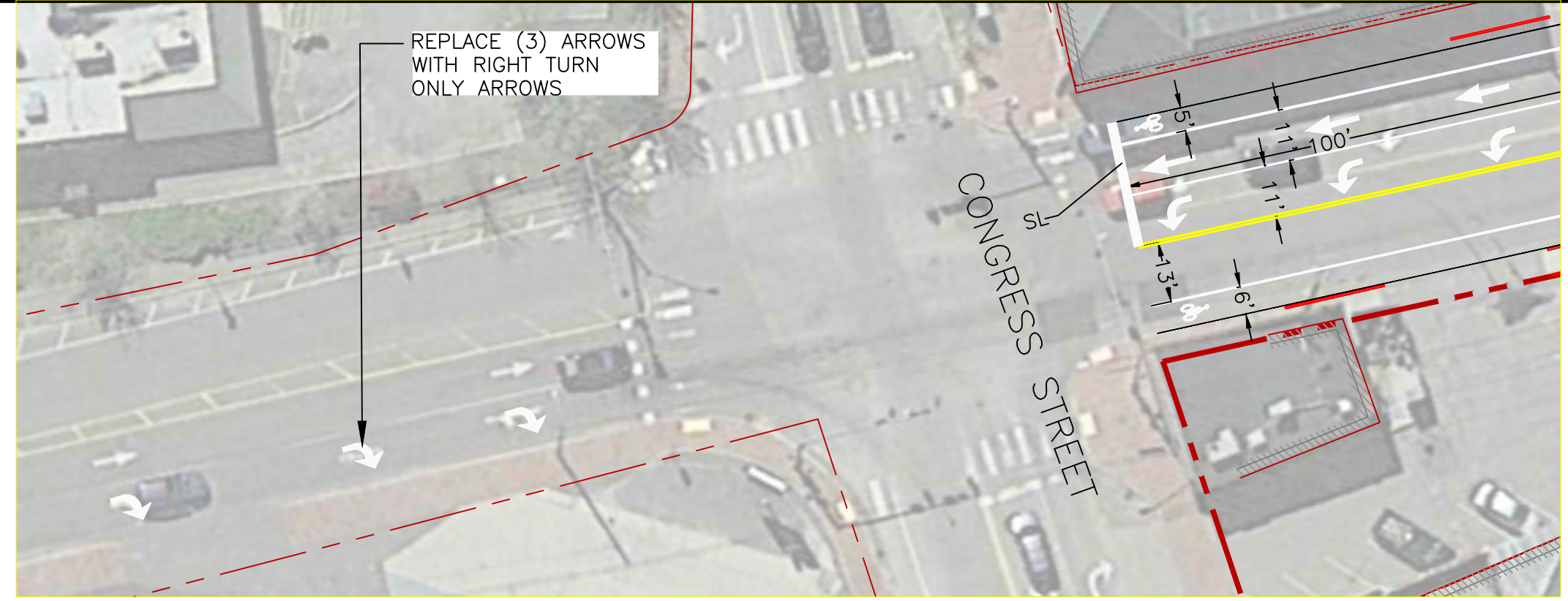
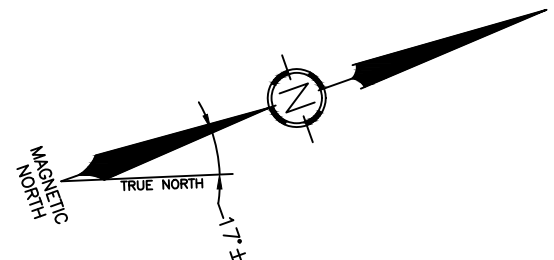
R = RAIN
CL = CLOUDY
XW = CROSS WINDS

INJURIES

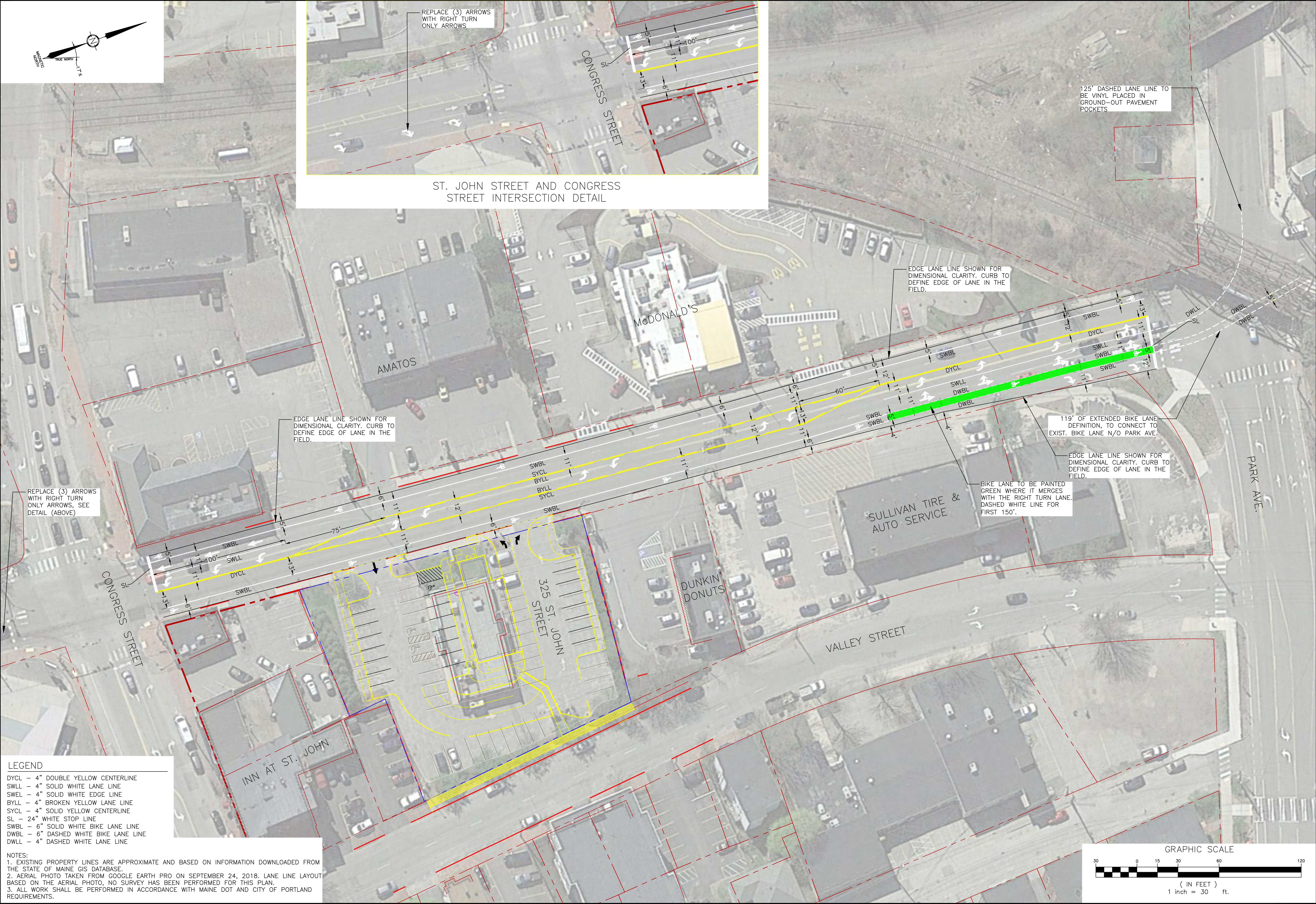
K = FATAL
A = INCAPACITATING

B = NON-INCAPACITATING
C = POSSIBLE INJURY

S:\SHEETS\COLLISION DIAGRAM.DWG



ST. JOHN STREET AND CONGRESS STREET INTERSECTION DETAIL



125' DASHED LANE LINE TO BE VINYL PLACED IN GROUND-OUT PAVEMENT POCKETS

EDGE LANE LINE SHOWN FOR DIMENSIONAL CLARITY. CURB TO DEFINE EDGE OF LANE IN THE FIELD.

EDGE LANE LINE SHOWN FOR DIMENSIONAL CLARITY. CURB TO DEFINE EDGE OF LANE IN THE FIELD.

119' OF EXTENDED BIKE LANE DEFINITION, TO CONNECT TO EXIST. BIKE LANE N/O PARK AVE.

BIKE LANE TO BE PAINTED GREEN WHERE IT MERGES WITH THE RIGHT TURN LANE. DASHED WHITE LINE FOR FIRST 150'.

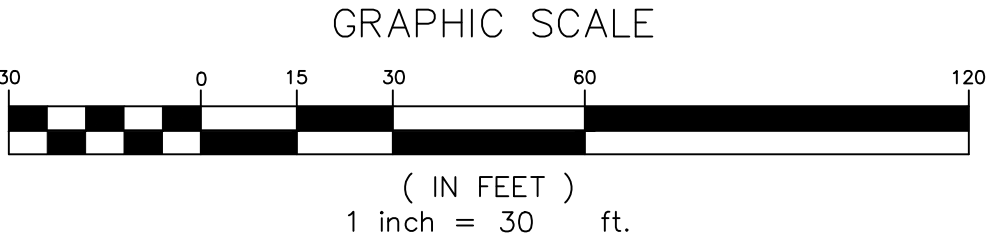
REPLACE (3) ARROWS WITH RIGHT TURN ONLY ARROWS, SEE DETAIL (ABOVE)

REPLACE (3) ARROWS WITH RIGHT TURN ONLY ARROWS

LEGEND

- DYCL - 4" DOUBLE YELLOW CENTERLINE
- SWLL - 4" SOLID WHITE LANE LINE
- SWEL - 4" SOLID WHITE EDGE LINE
- BYLL - 4" BROKEN YELLOW LANE LINE
- SYCL - 4" SOLID YELLOW CENTERLINE
- SL - 24" WHITE STOP LINE
- SWBL - 6" SOLID WHITE BIKE LANE LINE
- DWBL - 6" DASHED WHITE BIKE LANE LINE
- DWLL - 4" DASHED WHITE LANE LINE

NOTES:
 1. EXISTING PROPERTY LINES ARE APPROXIMATE AND BASED ON INFORMATION DOWNLOADED FROM THE STATE OF MAINE GIS DATABASE.
 2. AERIAL PHOTO TAKEN FROM GOOGLE EARTH PRO ON SEPTEMBER 24, 2018. LANE LINE LAYOUT BASED ON THE AERIAL PHOTO, NO SURVEY HAS BEEN PERFORMED FOR THIS PLAN.
 3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINE DOT AND CITY OF PORTLAND REQUIREMENTS.

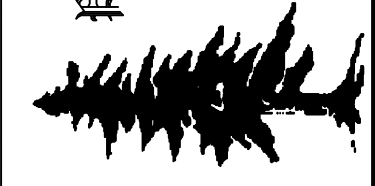


| NO. | DATE | DESCRIPTION |
|-----|----------|--------------------------------|
| 1 | 11/12/18 | REVISED PER CITY/MDOT COMMENTS |

PROJECT NAME: ST. JOHN STREET RE-STRIPING PLAN
 PROJECT NO.: 171140
 DRAWING NO.: 171140 RE-STRIPING
 FIELDBOOK: 1"=30'
 SCALE: 1"=30'
 DATE ISSUED: 09-25-18

ISSUED: Maine Traffic Resources
 DRAWN: DAC
 CHECKED: JHW
 APPROVED: DM
 PLAN DATE: 09-25-18
 CLIENT & OWNER: Plymouth Engineering, Inc.
 130 Royal St.
 Canton, MA 02021

Plymouth Engineering, Inc.
 P.O. Box 46 30 Lower Detroit Road
 Plymouth, Maine 04989
 Tel: (207) 257-2071 Fax: (207) 257-2130
 info@plymouthengineering.com
 www.plymouthengineering.com



DRAWINGS NOT SEALED ARE FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR PERMITTING, BIDDING OR CONSTRUCTION

SHEET 1 OF 1
ST1

Baseline**Summary of All Intervals**

| Run Number | 1 | 2 | 3 | 4 | 5 | Avg |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 |
| Total Time (min) | 63 | 63 | 63 | 63 | 63 | 63 |
| Time Recorded (min) | 60 | 60 | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 7646 | 7538 | 7768 | 7754 | 7712 | 7687 |
| Vehs Exited | 7626 | 7569 | 7729 | 7698 | 7683 | 7659 |
| Starting Vehs | 239 | 271 | 247 | 222 | 259 | 242 |
| Ending Vehs | 259 | 240 | 286 | 278 | 288 | 271 |
| Denied Entry Before | 2 | 1 | 0 | 0 | 1 | 0 |
| Denied Entry After | 3 | 2 | 2 | 1 | 3 | 0 |
| Travel Distance (mi) | 5425 | 5384 | 5489 | 5511 | 5512 | 5464 |
| Travel Time (hr) | 275.8 | 275.2 | 276.8 | 283.5 | 278.1 | 277.9 |
| Total Delay (hr) | 79.3 | 80.8 | 77.7 | 84.1 | 78.6 | 80.1 |
| Total Stops | 9140 | 9229 | 9289 | 9366 | 9326 | 9268 |
| Fuel Used (gal) | 197.0 | 195.8 | 198.4 | 200.6 | 199.3 | 198.2 |

Interval #0 Information Seeding

| | |
|-------------------------------------|------|
| Start Time | 6:57 |
| End Time | 7:00 |
| Total Time (min) | 3 |
| Volumes adjusted by Growth Factors. | |
| No data recorded this interval. | |

Interval #1 Information Recording

| | |
|-------------------------------------|------|
| Start Time | 7:00 |
| End Time | 8:00 |
| Total Time (min) | 60 |
| Volumes adjusted by Growth Factors. | |

| Run Number | 1 | 2 | 3 | 4 | 5 | Avg |
|----------------------|-------|-------|-------|-------|-------|-------|
| Vehs Entered | 7646 | 7538 | 7768 | 7754 | 7712 | 7687 |
| Vehs Exited | 7626 | 7569 | 7729 | 7698 | 7683 | 7659 |
| Starting Vehs | 239 | 271 | 247 | 222 | 259 | 242 |
| Ending Vehs | 259 | 240 | 286 | 278 | 288 | 271 |
| Denied Entry Before | 2 | 1 | 0 | 0 | 1 | 0 |
| Denied Entry After | 3 | 2 | 2 | 1 | 3 | 0 |
| Travel Distance (mi) | 5425 | 5384 | 5489 | 5511 | 5512 | 5464 |
| Travel Time (hr) | 275.8 | 275.2 | 276.8 | 283.5 | 278.1 | 277.9 |
| Total Delay (hr) | 79.3 | 80.8 | 77.7 | 84.1 | 78.6 | 80.1 |
| Total Stops | 9140 | 9229 | 9289 | 9366 | 9326 | 9268 |
| Fuel Used (gal) | 197.0 | 195.8 | 198.4 | 200.6 | 199.3 | 198.2 |

1: St. John Street & Margaritas Performance by approach

| Approach | EB | NB | SB | All |
|---------------------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 3.4 | 0.0 | 0.0 | 0.2 |
| Total Del/Veh (s) | 8.1 | 3.1 | 2.0 | 2.8 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

3: St. John Street & Garage Access/D St Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 1.4 | 0.1 | 0.5 | 0.1 | 0.4 |
| Total Del/Veh (s) | 15.0 | 6.9 | 5.9 | 6.8 | 7.9 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

5: Valley & St. John Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.1 | 2.7 | 0.0 | 2.1 | 0.8 |
| Total Del/Veh (s) | 12.7 | 16.2 | 13.7 | 16.4 | 14.2 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

7: St. John Street & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.6 | 0.3 | 1.2 | 0.0 | 0.6 |
| Total Del/Veh (s) | 30.7 | 17.5 | 42.3 | 26.9 | 30.8 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

12: Congress Street Performance by approach

| Approach | EB | WB | NB | All |
|---------------------|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 1.3 | 1.4 | 23.5 | 1.8 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

13: Fore River Pkwy & Valley Performance by approach

| Approach | EB | WB | SB | All |
|---------------------|------|------|------|------|
| Denied Del/Veh (s) | 0.4 | 0.4 | 0.0 | 0.3 |
| Total Del/Veh (s) | 24.6 | 17.2 | 11.6 | 19.9 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

16: Valley & Congress Street Performance by approach

| Approach | EB | WB | NB | All |
|---------------------|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 2.7 | 0.2 |
| Total Del/Veh (s) | 1.9 | 0.9 | 10.3 | 2.3 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

19: St. John Street & Park Avenue Performance by approach

| Approach | WB | NB | SB | All |
|---------------------|------|------|------|------|
| Denied Del/Veh (s) | 1.3 | 0.0 | 0.7 | 0.6 |
| Total Del/Veh (s) | 31.4 | 20.6 | 24.1 | 25.0 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

24: Gilman Street & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|-----|-----|------|------|-----|
| Denied Del/Veh (s) | 0.3 | 0.0 | 0.1 | 0.1 | 0.2 |
| Total Del/Veh (s) | 1.3 | 1.0 | 12.8 | 10.8 | 2.1 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

29: Bramhall Street/Deering Avenue & Congress Street Performance by approach

| Approach | EB | WB | NE | SW | All |
|---------------------|-----|------|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 1.9 | 2.2 | 2.8 | 1.2 |
| Total Del/Veh (s) | 7.3 | 13.3 | 13.1 | 10.0 | 9.9 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

35: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|-----|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 2.0 | 1.9 | 16.6 | 5.3 | 2.3 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

Total Network Performance

| | |
|---------------------|------|
| Denied Del/Veh (s) | 1.1 |
| Total Del/Veh (s) | 35.3 |
| Denied Entry Before | 0 |
| Denied Entry After | 0 |

Baseline

Intersection: 1: St. John Street & Margaritas

| Movement | EB | EB | NB | SB |
|-----------------------|-----|-----|-----|-----|
| Directions Served | L | R | LT | TR |
| Maximum Queue (ft) | 38 | 62 | 158 | 61 |
| Average Queue (ft) | 10 | 31 | 29 | 4 |
| 95th Queue (ft) | 34 | 54 | 91 | 26 |
| Link Distance (ft) | 620 | | 678 | 670 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | 125 | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

Intersection: 3: St. John Street & Garage Access/D St

| Movement | EB | EB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|----|-----|
| Directions Served | LT | R | LTR | L | TR | L | TR |
| Maximum Queue (ft) | 158 | 82 | 36 | 54 | 128 | 74 | 196 |
| Average Queue (ft) | 67 | 29 | 11 | 23 | 52 | 25 | 83 |
| 95th Queue (ft) | 119 | 62 | 35 | 46 | 104 | 63 | 150 |
| Link Distance (ft) | 564 | | 489 | | 1605 | | 678 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 150 | | 100 | | 75 | |
| Storage Blk Time (%) | 0 | | | | 1 | 0 | 6 |
| Queuing Penalty (veh) | 0 | | | | 0 | 1 | 2 |

Intersection: 5: Valley & St. John Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB |
|-----------------------|------|-----|-----|------|-----|-----|-----|-----|
| Directions Served | LT | R | L | TR | L | TR | LT | TR |
| Maximum Queue (ft) | 302 | 132 | 254 | 93 | 170 | 270 | 48 | 54 |
| Average Queue (ft) | 64 | 70 | 131 | 24 | 77 | 136 | 13 | 13 |
| 95th Queue (ft) | 190 | 116 | 211 | 59 | 144 | 229 | 40 | 41 |
| Link Distance (ft) | 1605 | | | 1012 | 268 | 268 | 937 | |
| Upstream Blk Time (%) | | | | | | | 0 | |
| Queuing Penalty (veh) | | | | | | | 1 | |
| Storage Bay Dist (ft) | | 110 | 335 | | | | | 265 |
| Storage Blk Time (%) | 1 | 1 | | | | | | |
| Queuing Penalty (veh) | 2 | 1 | | | | | | |

Baseline

Intersection: 7: St. John Street & Congress Street

| Movement | EB | EB | EB | WB | WB | NB | NB | SB | SB |
|-----------------------|------|------|-----|----|-----|-----|-----|-----|-----|
| Directions Served | L | T | R | L | R | T | R | L | T |
| Maximum Queue (ft) | 644 | 847 | 315 | 98 | 123 | 428 | 168 | 124 | 245 |
| Average Queue (ft) | 187 | 355 | 186 | 44 | 59 | 204 | 38 | 75 | 127 |
| 95th Queue (ft) | 403 | 689 | 359 | 87 | 107 | 369 | 147 | 136 | 219 |
| Link Distance (ft) | 1767 | 1767 | | | 178 | 670 | | | 796 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 290 | 80 | | | 175 | 100 | |
| Storage Blk Time (%) | | 13 | 0 | 3 | 3 | 20 | 0 | 6 | 13 |
| Queuing Penalty (veh) | | 43 | 1 | 5 | 2 | 8 | 0 | 18 | 12 |

Intersection: 12: Congress Street

| Movement | EB | WB | NB |
|-----------------------|-----|-----|-----|
| Directions Served | TR | LT | LR |
| Maximum Queue (ft) | 4 | 112 | 73 |
| Average Queue (ft) | 0 | 14 | 23 |
| 95th Queue (ft) | 3 | 66 | 58 |
| Link Distance (ft) | 169 | 202 | 174 |
| Upstream Blk Time (%) | | 0 | |
| Queuing Penalty (veh) | | 0 | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Intersection: 13: Fore River Pkwy & Valley

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB |
|-----------------------|-----|-----|------|------|------|------|-----|-----|-----|-----|
| Directions Served | L | L | T | T | T | T | R | L | R | R |
| Maximum Queue (ft) | 375 | 394 | 349 | 319 | 187 | 192 | 91 | 146 | 138 | 135 |
| Average Queue (ft) | 177 | 250 | 105 | 105 | 127 | 110 | 40 | 60 | 70 | 72 |
| 95th Queue (ft) | 394 | 428 | 318 | 240 | 175 | 169 | 80 | 110 | 112 | 111 |
| Link Distance (ft) | | | 2719 | 2719 | 1454 | 1454 | | 268 | 268 | 268 |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | 430 | 430 | | | | | 415 | | | |
| Storage Blk Time (%) | 2 | 4 | 0 | | | | | | | |
| Queuing Penalty (veh) | 8 | 22 | 2 | | | | | | | |

Baseline

Intersection: 16: Valley & Congress Street

| Movement | EB | EB | WB | NB | NB |
|-----------------------|----|-----|----|-----|-----|
| Directions Served | L | TR | L | LT | R |
| Maximum Queue (ft) | 24 | 24 | 46 | 62 | 63 |
| Average Queue (ft) | 2 | 1 | 13 | 23 | 28 |
| 95th Queue (ft) | 13 | 12 | 37 | 52 | 55 |
| Link Distance (ft) | | 178 | | 315 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 50 | | 50 | | 170 |
| Storage Blk Time (%) | | 0 | 0 | | |
| Queuing Penalty (veh) | | 0 | 1 | | |

Intersection: 19: St. John Street & Park Avenue

| Movement | WB | WB | WB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|------|-----|-----|-----|------|-----|
| Directions Served | L | T | TR | L | LT | R | LT | R |
| Maximum Queue (ft) | 150 | 215 | 250 | 198 | 395 | 135 | 401 | 80 |
| Average Queue (ft) | 73 | 106 | 134 | 110 | 171 | 110 | 181 | 66 |
| 95th Queue (ft) | 132 | 180 | 203 | 198 | 295 | 170 | 329 | 105 |
| Link Distance (ft) | | | 1678 | | 796 | | 2255 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 95 | 95 | | 175 | | 110 | | 55 |
| Storage Blk Time (%) | 4 | 10 | 26 | 0 | 19 | 1 | 36 | 5 |
| Queuing Penalty (veh) | 13 | 31 | 101 | 1 | 90 | 4 | 60 | 20 |

Intersection: 24: Gilman Street & Congress Street

| Movement | EB | WB | NB | SB |
|-----------------------|-----|----|------|-----|
| Directions Served | TR | L | LTR | LTR |
| Maximum Queue (ft) | 62 | 47 | 88 | 48 |
| Average Queue (ft) | 5 | 12 | 37 | 17 |
| 95th Queue (ft) | 31 | 37 | 68 | 45 |
| Link Distance (ft) | 124 | | 1063 | 624 |
| Upstream Blk Time (%) | 0 | | | |
| Queuing Penalty (veh) | 0 | | | |
| Storage Bay Dist (ft) | | 65 | | |
| Storage Blk Time (%) | | 0 | | |
| Queuing Penalty (veh) | | 1 | | |

Baseline

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

| Movement | EB | EB | WB | WB | NE | NE | SW | SW |
|-----------------------|-----|-----|------|-----|------|-----|-----|----|
| Directions Served | L | TR | L | TR | L | TR | L | TR |
| Maximum Queue (ft) | 51 | 226 | 165 | 90 | 104 | 125 | 125 | 75 |
| Average Queue (ft) | 17 | 101 | 46 | 70 | 48 | 60 | 35 | 45 |
| 95th Queue (ft) | 44 | 174 | 126 | 102 | 96 | 111 | 83 | 77 |
| Link Distance (ft) | 965 | | 1272 | | 1186 | | 795 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | 400 | | 65 | | 135 | | 50 |
| Storage Blk Time (%) | | | 0 | 12 | | 0 | 2 | 7 |
| Queuing Penalty (veh) | | | 1 | 4 | | 0 | 3 | 5 |

Intersection: 35: Visitor Garage/Forest Street Garage & Congress Street

| Movement | EB | WB | NB | SB |
|-----------------------|-----|-----|-----|-----|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 104 | 29 | 48 | 30 |
| Average Queue (ft) | 32 | 2 | 19 | 5 |
| 95th Queue (ft) | 82 | 16 | 46 | 22 |
| Link Distance (ft) | 202 | 965 | 508 | 434 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

Network Summary

| |
|-----------------------------------|
| Network wide Queuing Penalty: 464 |
|-----------------------------------|

Baseline

Intersection: 3: St. John Street & Garage Access/D St

| Phase | 2 | 4 | 5 | 6 | 8 |
|----------------------|-------|-------|-------|------|-------|
| Movement(s) Served | NBTL | EBTL | NBL | SBTL | WBTL |
| Maximum Green (s) | 45.0 | 5.0 | 6.5 | 34.0 | 5.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | Min | None | None | Min | None |
| Avg. Green (s) | 27.9 | 5.0 | 5.7 | 22.2 | 5.0 |
| g/C Ratio | -0.01 | -0.01 | -0.01 | NA | -0.01 |
| Cycles Skipped (%) | 9 | 9 | 75 | 0 | 9 |
| Cycles @ Minimum (%) | 0 | 91 | 7 | 1 | 91 |
| Cycles Maxed Out (%) | 9 | 91 | 7 | 20 | 91 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

| Phase | 2 | 3 | 4 | 6 | 8 |
|----------------------|-------|-------|-------|-------|-------|
| Movement(s) Served | NBTL | WBL | EBTL | SBTL | WBT |
| Maximum Green (s) | 26.0 | 21.0 | 18.0 | 26.0 | 44.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | None | None | None | None |
| Avg. Green (s) | 13.8 | 16.2 | 11.5 | 13.8 | 30.6 |
| g/C Ratio | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Cycles Skipped (%) | 6 | 4 | 12 | 6 | 3 |
| Cycles @ Minimum (%) | 0 | 0 | 1 | 0 | 0 |
| Cycles Maxed Out (%) | 4 | 29 | 16 | 4 | 6 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Baseline

Intersection: 7: St. John Street & Congress Street

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
|----------------------|------|------|-------|------|-------|------|------|
| Movement(s) Served | EBL | WBL | SBL | NBT | WBL | EBTL | SBT |
| Maximum Green (s) | 19.1 | 15.7 | 4.7 | 17.7 | 5.0 | 29.8 | 29.2 |
| Minimum Green (s) | 8.0 | 8.0 | 3.0 | 8.0 | 5.0 | 8.0 | 5.0 |
| Recall | None | Min | None | None | None | Min | None |
| Avg. Green (s) | 16.3 | 15.3 | 4.9 | 17.2 | 5.2 | 30.3 | 27.6 |
| g/C Ratio | NA | NA | -0.01 | NA | -0.01 | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 9 | 0 | 38 | 0 | 0 |
| Cycles @ Minimum (%) | 2 | 23 | 0 | 0 | 62 | 0 | 0 |
| Cycles Maxed Out (%) | 49 | 60 | 91 | 79 | 62 | 94 | 71 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

| Phase | 4 | 6 | 7 | 8 |
|----------------------|-------|-------|------|------|
| Movement(s) Served | EBT | SBL | EBL | WBT |
| Maximum Green (s) | 39.0 | 11.0 | 17.0 | 17.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | None | None | None |
| Avg. Green (s) | 38.9 | 10.3 | 16.8 | 15.9 |
| g/C Ratio | -0.01 | -0.01 | NA | NA |
| Cycles Skipped (%) | 3 | 3 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 60 | 70 | 92 | 66 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Baseline

Intersection: 19: St. John Street & Park Avenue

| Phase | 2 | 6 | 8 |
|----------------------|------|------|------|
| Movement(s) Served | NBTL | SBTL | WBTL |
| Maximum Green (s) | 15.0 | 20.0 | 10.0 |
| Minimum Green (s) | 3.0 | 3.0 | 3.0 |
| Recall | Min | Min | Min |
| Avg. Green (s) | 14.7 | 18.1 | 10.0 |
| g/C Ratio | NA | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 90 | 65 | 98 |
| Cycles with Peds (%) | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Intersection: 29: Bramhall Street/Deering Avenue & Congress Street

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Movement(s) Served | SWL | NETL | WBL | EBTL | NEL | SWTL | EBL | WBTL |
| Maximum Green (s) | 5.5 | 13.5 | 5.5 | 17.5 | 5.5 | 13.5 | 5.5 | 17.5 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | Max | None | None | None | Max | None | None |
| Avg. Green (s) | 5.6 | 15.0 | 6.7 | 14.3 | 5.4 | 16.3 | 7.5 | 14.6 |
| g/C Ratio | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Cycles Skipped (%) | 60 | 2 | 77 | 6 | 71 | 2 | 80 | 6 |
| Cycles @ Minimum (%) | 1 | 0 | 11 | 0 | 10 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 35 | 98 | 11 | 38 | 17 | 98 | 20 | 33 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
 Number of Complete Cycles : 0

Summary of All Intervals

| Run Number | 1 | 2 | 3 | 4 | 5 | Avg |
|-------------------------|------|------|------|------|------|------|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 7:10 | 7:10 | 7:10 | 7:10 | 7:10 | 7:10 |
| Total Time (min) | 13 | 13 | 13 | 13 | 13 | 13 |
| Time Recorded (min) | 10 | 10 | 10 | 10 | 10 | 10 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 1312 | 1361 | 1422 | 1347 | 1303 | 1354 |
| Vehs Exited | 1256 | 1336 | 1384 | 1268 | 1261 | 1302 |
| Starting Vehs | 217 | 241 | 248 | 228 | 209 | 227 |
| Ending Vehs | 273 | 266 | 286 | 307 | 251 | 272 |
| Denied Entry Before | 1 | 1 | 1 | 3 | 3 | 1 |
| Denied Entry After | 33 | 5 | 6 | 11 | 0 | 9 |
| Travel Distance (mi) | 773 | 800 | 844 | 789 | 747 | 790 |
| Travel Time (hr) | 47.2 | 45.2 | 48.0 | 45.9 | 39.3 | 45.1 |
| Total Delay (hr) | 18.9 | 16.1 | 17.3 | 17.2 | 12.1 | 16.3 |
| Total Stops | 1821 | 1757 | 1918 | 1743 | 1493 | 1748 |
| Fuel Used (gal) | 30.5 | 30.6 | 32.5 | 30.5 | 27.7 | 30.4 |

Interval #0 Information Seeding

| | |
|-------------------------------------|------|
| Start Time | 6:57 |
| End Time | 7:00 |
| Total Time (min) | 3 |
| Volumes adjusted by Growth Factors. | |
| No data recorded this interval. | |

Interval #1 Information Recording

| | |
|-------------------------------------|------|
| Start Time | 7:00 |
| End Time | 7:10 |
| Total Time (min) | 10 |
| Volumes adjusted by Growth Factors. | |

| Run Number | 1 | 2 | 3 | 4 | 5 | Avg |
|----------------------|------|------|------|------|------|------|
| Vehs Entered | 1312 | 1361 | 1422 | 1347 | 1303 | 1354 |
| Vehs Exited | 1256 | 1336 | 1384 | 1268 | 1261 | 1302 |
| Starting Vehs | 217 | 241 | 248 | 228 | 209 | 227 |
| Ending Vehs | 273 | 266 | 286 | 307 | 251 | 272 |
| Denied Entry Before | 1 | 1 | 1 | 3 | 3 | 1 |
| Denied Entry After | 33 | 5 | 6 | 11 | 0 | 9 |
| Travel Distance (mi) | 773 | 800 | 844 | 789 | 747 | 790 |
| Travel Time (hr) | 47.2 | 45.2 | 48.0 | 45.9 | 39.3 | 45.1 |
| Total Delay (hr) | 18.9 | 16.1 | 17.3 | 17.2 | 12.1 | 16.3 |
| Total Stops | 1821 | 1757 | 1918 | 1743 | 1493 | 1748 |
| Fuel Used (gal) | 30.5 | 30.6 | 32.5 | 30.5 | 27.7 | 30.4 |

1: St. John Street & Margaritas Performance by approach

| Approach | EB | NB | SB | All |
|---------------------|------|-----|-----|-----|
| Denied Del/Veh (s) | 2.5 | 0.0 | 0.0 | 0.3 |
| Total Del/Veh (s) | 11.7 | 3.7 | 2.2 | 3.9 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

3: St. John Street & Garage Access/D St Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|-----|-----|------|------|
| Denied Del/Veh (s) | 1.7 | 0.1 | 0.3 | 0.1 | 0.7 |
| Total Del/Veh (s) | 11.7 | 7.1 | 8.2 | 10.6 | 10.2 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

5: Valley & St. John Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 2.5 | 0.0 | 1.4 | 0.8 |
| Total Del/Veh (s) | 10.9 | 14.1 | 12.5 | 20.6 | 12.6 |
| Denied Entry Before | 0 | 1 | 0 | 0 | 1 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

7: St. John Street & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.4 | 0.4 | 12.9 | 0.0 | 4.2 |
| Total Del/Veh (s) | 25.8 | 25.1 | 50.3 | 26.1 | 32.9 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 7 | 0 | 7 |

12: Gilman Street & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|-----|-----|------|------|-----|
| Denied Del/Veh (s) | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 1.1 | 1.7 | 19.9 | 12.9 | 2.8 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

13: Fore River Pkwy & Valley Performance by approach

| Approach | EB | WB | SB | All |
|---------------------|------|------|------|------|
| Denied Del/Veh (s) | 0.8 | 0.4 | 0.0 | 0.4 |
| Total Del/Veh (s) | 18.1 | 18.6 | 11.8 | 16.5 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 1 | 0 | 0 | 1 |

18: Bramhall Street/Deering Avenue & Congress Street Performance by approach

| Approach | EB | WB | NE | SW | All |
|---------------------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 1.4 | 2.6 | 3.2 | 1.5 |
| Total Del/Veh (s) | 13.7 | 22.4 | 13.5 | 13.7 | 15.1 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

19: St. John Street & Park Avenue Performance by approach

| Approach | WB | NB | SB | All |
|---------------------|------|------|------|------|
| Denied Del/Veh (s) | 1.6 | 1.5 | 1.1 | 1.5 |
| Total Del/Veh (s) | 40.0 | 31.4 | 27.0 | 34.2 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 1 | 0 | 1 |

22: Proposed Drop Off & Congress Street Performance by approach

| Approach | EB | WB | NB | All |
|---------------------|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.1 | 0.1 | 0.0 |
| Total Del/Veh (s) | 1.2 | 1.8 | 19.9 | 2.2 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

24: Valley & Congress Street Performance by approach

| Approach | EB | WB | NB | All |
|---------------------|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 1.8 | 0.2 |
| Total Del/Veh (s) | 2.1 | 1.0 | 14.4 | 3.0 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 |

32: Visitor Garage/Forest Street Garage & Congress Street Performance by approach

| Approach | EB | WB | NB | SB | All |
|---------------------|-----|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 1.2 | 2.0 | 15.6 | 6.9 | 2.6 |
| Denied Entry Before | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 0 | 0 | 0 | 0 | 0 |

Total Network Performance

| | |
|---------------------|------|
| Denied Del/Veh (s) | 2.6 |
| Total Del/Veh (s) | 35.1 |
| Denied Entry Before | 1 |
| Denied Entry After | 9 |

Queuing and Blocking Report
Baseline

11/26/2018

Intersection: 1: St. John Street & Margaritas

| Movement | EB | EB | NB | SB |
|-----------------------|-----|-----|-----|-----|
| Directions Served | L | R | LT | TR |
| Maximum Queue (ft) | 60 | 46 | 100 | 4 |
| Average Queue (ft) | 36 | 33 | 42 | 1 |
| 95th Queue (ft) | 67 | 50 | 116 | 8 |
| Link Distance (ft) | 549 | | 677 | 671 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | 125 | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

Intersection: 3: St. John Street & Garage Access/D St

| Movement | EB | EB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|----|-----|
| Directions Served | LT | R | LTR | L | TR | L | TR |
| Maximum Queue (ft) | 150 | 77 | 34 | 43 | 143 | 63 | 156 |
| Average Queue (ft) | 100 | 48 | 11 | 11 | 80 | 32 | 103 |
| 95th Queue (ft) | 178 | 115 | 36 | 54 | 159 | 71 | 169 |
| Link Distance (ft) | 559 | | 663 | | 1605 | | 677 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | 150 | | 100 | | 75 | |
| Storage Blk Time (%) | 2 | 0 | | | 2 | 1 | 13 |
| Queuing Penalty (veh) | 3 | 0 | | | 0 | 5 | 5 |

Intersection: 5: Valley & St. John Street

| Movement | EB | EB | WB | WB | NB | NB | SB | SB |
|-----------------------|------|-----|-----|-----|-----|-----|------|-----|
| Directions Served | LT | R | L | TR | L | TR | LT | TR |
| Maximum Queue (ft) | 81 | 114 | 201 | 33 | 85 | 140 | 34 | 36 |
| Average Queue (ft) | 49 | 79 | 131 | 21 | 58 | 89 | 11 | 10 |
| 95th Queue (ft) | 97 | 125 | 217 | 46 | 99 | 160 | 37 | 36 |
| Link Distance (ft) | 1605 | | | 988 | 270 | 270 | 1083 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | 110 | 335 | | | | | 265 |
| Storage Blk Time (%) | 0 | 2 | | | | | | |
| Queuing Penalty (veh) | 0 | 2 | | | | | | |

Queuing and Blocking Report
Baseline

11/26/2018

Intersection: 7: St. John Street & Congress Street

| Movement | EB | EB | EB | WB | WB | NB | NB | SB | SB |
|-----------------------|------|------|-----|----|-----|-----|-----|-----|-----|
| Directions Served | L | T | R | L | R | T | R | L | T |
| Maximum Queue (ft) | 209 | 352 | 129 | 74 | 123 | 510 | 197 | 117 | 238 |
| Average Queue (ft) | 148 | 248 | 58 | 38 | 92 | 393 | 87 | 69 | 139 |
| 95th Queue (ft) | 249 | 405 | 153 | 95 | 153 | 672 | 237 | 129 | 260 |
| Link Distance (ft) | 1767 | 1767 | | | 180 | 671 | | | 794 |
| Upstream Blk Time (%) | | | | | 0 | 1 | | | |
| Queuing Penalty (veh) | | | | | 1 | 8 | | | |
| Storage Bay Dist (ft) | | | 290 | 80 | | | 175 | 100 | |
| Storage Blk Time (%) | | 4 | 0 | 0 | 15 | 41 | 0 | 2 | 14 |
| Queuing Penalty (veh) | | 7 | 0 | 0 | 7 | 32 | 1 | 7 | 11 |

Intersection: 12: Gilman Street & Congress Street

| Movement | EB | WB | NB | SB |
|-----------------------|-----|----|------|-----|
| Directions Served | TR | L | LTR | LTR |
| Maximum Queue (ft) | 34 | 66 | 65 | 43 |
| Average Queue (ft) | 9 | 29 | 42 | 21 |
| 95th Queue (ft) | 36 | 65 | 71 | 51 |
| Link Distance (ft) | 122 | | 1063 | 624 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | 65 | | |
| Storage Blk Time (%) | | 2 | | |
| Queuing Penalty (veh) | | 7 | | |

Intersection: 13: Fore River Pkwy & Valley

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB |
|-----------------------|-----|-----|------|------|------|------|-----|-----|-----|-----|
| Directions Served | L | L | T | T | T | T | R | L | R | R |
| Maximum Queue (ft) | 213 | 255 | 138 | 73 | 209 | 191 | 52 | 79 | 127 | 126 |
| Average Queue (ft) | 104 | 178 | 66 | 50 | 164 | 143 | 28 | 52 | 92 | 95 |
| 95th Queue (ft) | 238 | 300 | 179 | 84 | 257 | 241 | 56 | 90 | 136 | 132 |
| Link Distance (ft) | | | 1519 | 1519 | 1275 | 1275 | | 270 | 270 | 270 |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | 430 | 430 | | | | | 415 | | | |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

Queuing and Blocking Report
Baseline

11/26/2018

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

| Movement | EB | EB | WB | WB | NE | NE | SW | SW |
|-----------------------|-----|-----|------|-----|------|-----|-----|----|
| Directions Served | L | TR | L | TR | L | TR | L | TR |
| Maximum Queue (ft) | 134 | 183 | 133 | 87 | 113 | 128 | 188 | 75 |
| Average Queue (ft) | 78 | 121 | 82 | 65 | 43 | 85 | 103 | 69 |
| 95th Queue (ft) | 153 | 189 | 180 | 100 | 133 | 146 | 213 | 86 |
| Link Distance (ft) | 966 | | 1272 | | 1186 | | 795 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | 400 | | 65 | | 135 | | 50 |
| Storage Blk Time (%) | | | 5 | 16 | | 2 | 5 | 28 |
| Queuing Penalty (veh) | | | 9 | 16 | | 1 | 20 | 25 |

Intersection: 19: St. John Street & Park Avenue

| Movement | WB | WB | WB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|------|-----|-----|-----|------|----|
| Directions Served | L | T | TR | L | LT | R | LT | R |
| Maximum Queue (ft) | 138 | 218 | 321 | 200 | 558 | 135 | 188 | 78 |
| Average Queue (ft) | 96 | 193 | 270 | 170 | 385 | 118 | 134 | 55 |
| 95th Queue (ft) | 172 | 268 | 448 | 250 | 740 | 179 | 213 | 99 |
| Link Distance (ft) | | | 1640 | | 794 | | 1376 | |
| Upstream Blk Time (%) | 0 | | | | | | | |
| Queuing Penalty (veh) | 3 | | | | | | | |
| Storage Bay Dist (ft) | 95 | 95 | | 175 | | 110 | | 55 |
| Storage Blk Time (%) | 12 | 33 | 54 | 1 | 37 | 0 | 37 | 3 |
| Queuing Penalty (veh) | 52 | 141 | 287 | 9 | 225 | 2 | 41 | 8 |

Intersection: 22: Proposed Drop Off & Congress Street

| Movement | EB | WB | NB |
|-----------------------|-----|-----|-----|
| Directions Served | TR | LT | LR |
| Maximum Queue (ft) | 4 | 90 | 57 |
| Average Queue (ft) | 1 | 34 | 32 |
| 95th Queue (ft) | 8 | 118 | 70 |
| Link Distance (ft) | 170 | 201 | 194 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Queuing and Blocking Report Baseline

11/26/2018

Intersection: 24: Valley & Congress Street

| Movement | EB | WB | WB | NB | NB |
|-----------------------|----|----|-----|-----|----|
| Directions Served | L | L | TR | LT | R |
| Maximum Queue (ft) | 14 | 38 | 2 | 72 | 45 |
| Average Queue (ft) | 3 | 16 | 0 | 45 | 28 |
| 95th Queue (ft) | 16 | 43 | 4 | 85 | 56 |
| Link Distance (ft) | | | 122 | 393 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 50 | 50 | | 170 | |
| Storage Blk Time (%) | | 1 | | | |
| Queuing Penalty (veh) | | 2 | | | |

Intersection: 32: Visitor Garage/Forest Street Garage & Congress Street

| Movement | EB | WB | NB | SB |
|-----------------------|-----|-----|-----|-----|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 11 | 52 | 55 | 47 |
| Average Queue (ft) | 2 | 12 | 37 | 35 |
| 95th Queue (ft) | 20 | 59 | 63 | 50 |
| Link Distance (ft) | 201 | 966 | 624 | 434 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

Network Summary

Network wide Queuing Penalty: 937

Intersection: 3: St. John Street & Garage Access/D St

| Phase | 2 | 4 | 5 | 6 | 8 |
|----------------------|------|------|-------|------|------|
| Movement(s) Served | NBTL | EBTL | NBL | SBTL | WBTL |
| Maximum Green (s) | 31.0 | 19.0 | 5.5 | 21.0 | 19.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | Min | None | None | Min | None |
| Avg. Green (s) | 20.4 | 13.9 | 5.5 | 19.6 | 13.9 |
| g/C Ratio | NA | NA | -0.01 | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 92 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 0 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 8 | 31 | 8 | 46 | 31 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

| Phase | 2 | 3 | 4 | 6 | 8 |
|----------------------|-------|------|-------|-------|-------|
| Movement(s) Served | NBTL | WBL | EBTL | SBTL | WBT |
| Maximum Green (s) | 18.0 | 19.0 | 18.0 | 18.0 | 42.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | None | None | None | None |
| Avg. Green (s) | 12.0 | 15.3 | 13.2 | 12.0 | 34.5 |
| g/C Ratio | -0.01 | NA | -0.01 | -0.01 | -0.01 |
| Cycles Skipped (%) | 9 | 0 | 9 | 9 | 9 |
| Cycles @ Minimum (%) | 0 | 0 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 18 | 36 | 27 | 18 | 18 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Actuated Signals, Observed Splits
Baseline

11/26/2018

Intersection: 7: St. John Street & Congress Street

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
|----------------------|------|------|------|------|-------|------|------|
| Movement(s) Served | EBL | WBL | SBL | NBT | WBL | EBTL | SBT |
| Maximum Green (s) | 19.2 | 11.8 | 4.7 | 31.5 | 4.5 | 26.5 | 43.0 |
| Minimum Green (s) | 8.0 | 8.0 | 3.0 | 8.0 | 4.5 | 8.0 | 5.0 |
| Recall | None | Min | None | None | None | Min | None |
| Avg. Green (s) | 17.3 | 10.2 | 5.3 | 29.5 | 4.6 | 31.9 | 40.4 |
| g/C Ratio | NA | NA | NA | NA | -0.01 | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 57 | 0 | 0 | 33 | 0 | 0 |
| Cycles Maxed Out (%) | 57 | 29 | 100 | 71 | 50 | 83 | 71 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

| Phase | 4 | 6 | 7 | 8 |
|----------------------|------|------|------|------|
| Movement(s) Served | EBT | SBL | EBL | WBT |
| Maximum Green (s) | 34.0 | 11.0 | 11.0 | 18.0 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | None | None | None |
| Avg. Green (s) | 33.9 | 10.8 | 11.4 | 19.2 |
| g/C Ratio | NA | NA | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 70 | 82 | 80 | 90 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

Actuated Signals, Observed Splits
Baseline

11/26/2018

Intersection: 18: Bramhall Street/Deering Avenue & Congress Street

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------|-------|------|-------|-------|-------|------|-------|-------|
| Movement(s) Served | SWL | NETL | WBL | EBTL | NEL | SWTL | EBL | WBTL |
| Maximum Green (s) | 5.5 | 18.5 | 5.5 | 12.5 | 5.5 | 18.5 | 5.5 | 12.5 |
| Minimum Green (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Recall | None | Max | None | None | None | Max | None | None |
| Avg. Green (s) | 6.4 | 20.3 | 6.7 | 13.3 | 5.3 | 23.0 | 9.0 | 11.6 |
| g/C Ratio | -0.01 | NA | -0.01 | -0.01 | -0.01 | NA | -0.01 | -0.01 |
| Cycles Skipped (%) | 50 | 0 | 30 | 9 | 70 | 0 | 20 | 10 |
| Cycles @ Minimum (%) | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 50 | 100 | 50 | 55 | 10 | 100 | 80 | 40 |
| Cycles with Peds (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

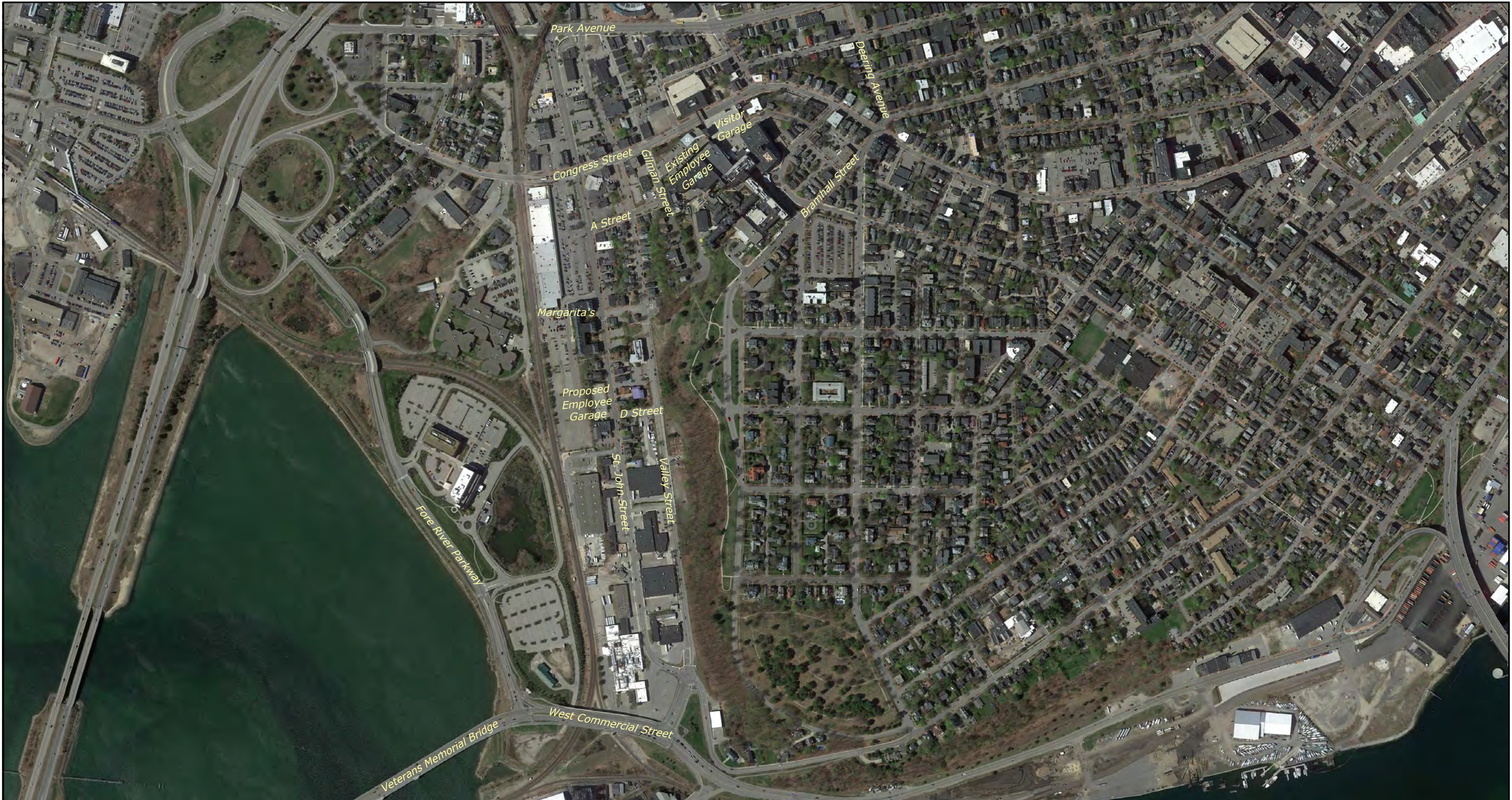
Intersection: 19: St. John Street & Park Avenue

| Phase | 2 | 6 | 8 |
|----------------------|------|------|------|
| Movement(s) Served | NBTL | SBTL | WBTL |
| Maximum Green (s) | 29.0 | 17.0 | 19.0 |
| Minimum Green (s) | 3.0 | 3.0 | 3.0 |
| Recall | Min | Min | Min |
| Avg. Green (s) | 31.4 | 16.3 | 19.0 |
| g/C Ratio | NA | NA | NA |
| Cycles Skipped (%) | 0 | 0 | 0 |
| Cycles @ Minimum (%) | 0 | 0 | 0 |
| Cycles Maxed Out (%) | 100 | 57 | 86 |
| Cycles with Peds (%) | 0 | 0 | 0 |

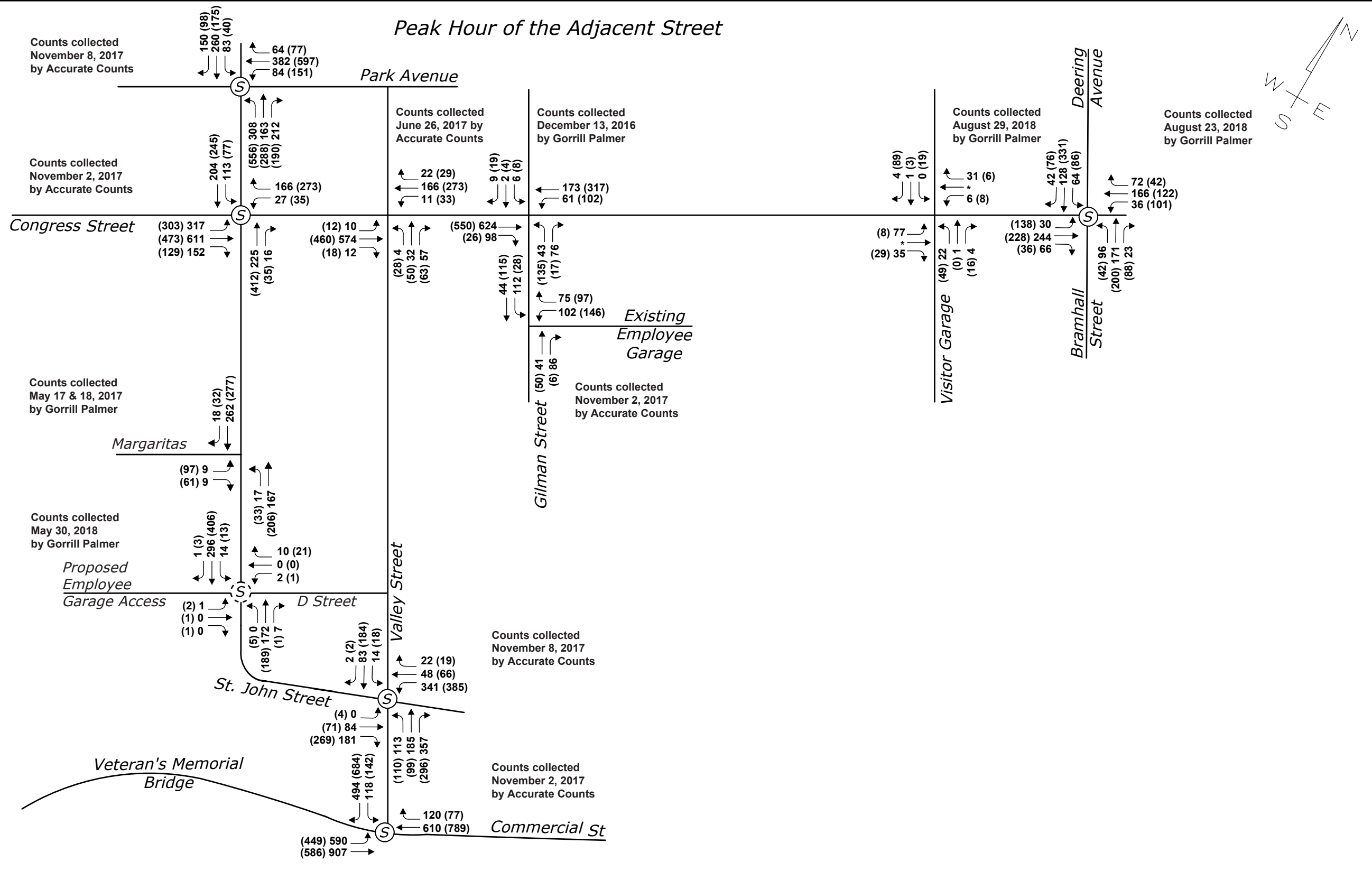
Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

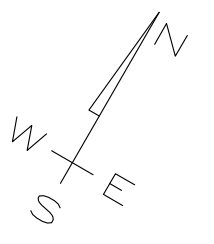
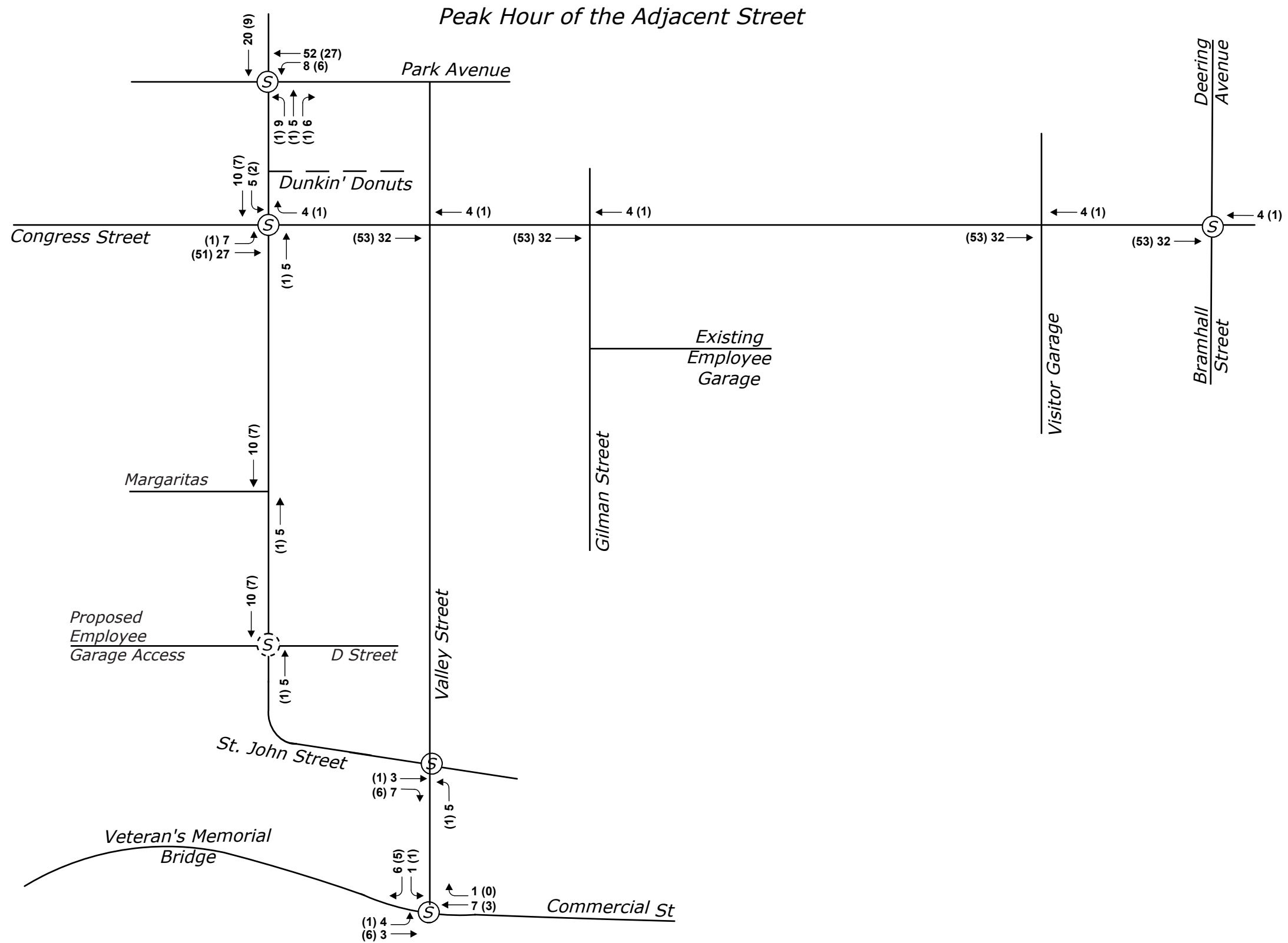
Location Map



**Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE**

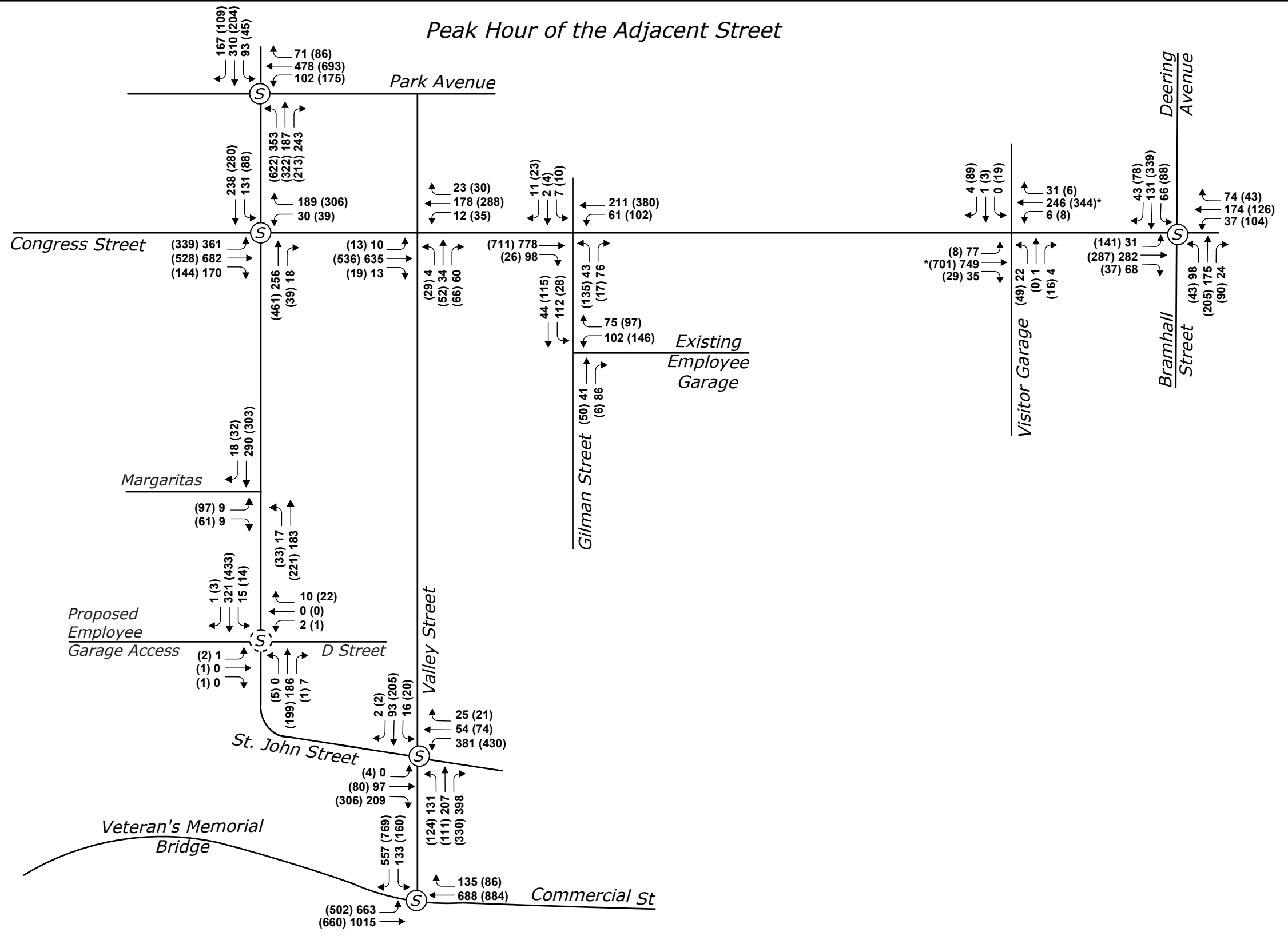


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S Proposed Signalized Intersection
S Denotes Signalized Intersection
 XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

**Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE**



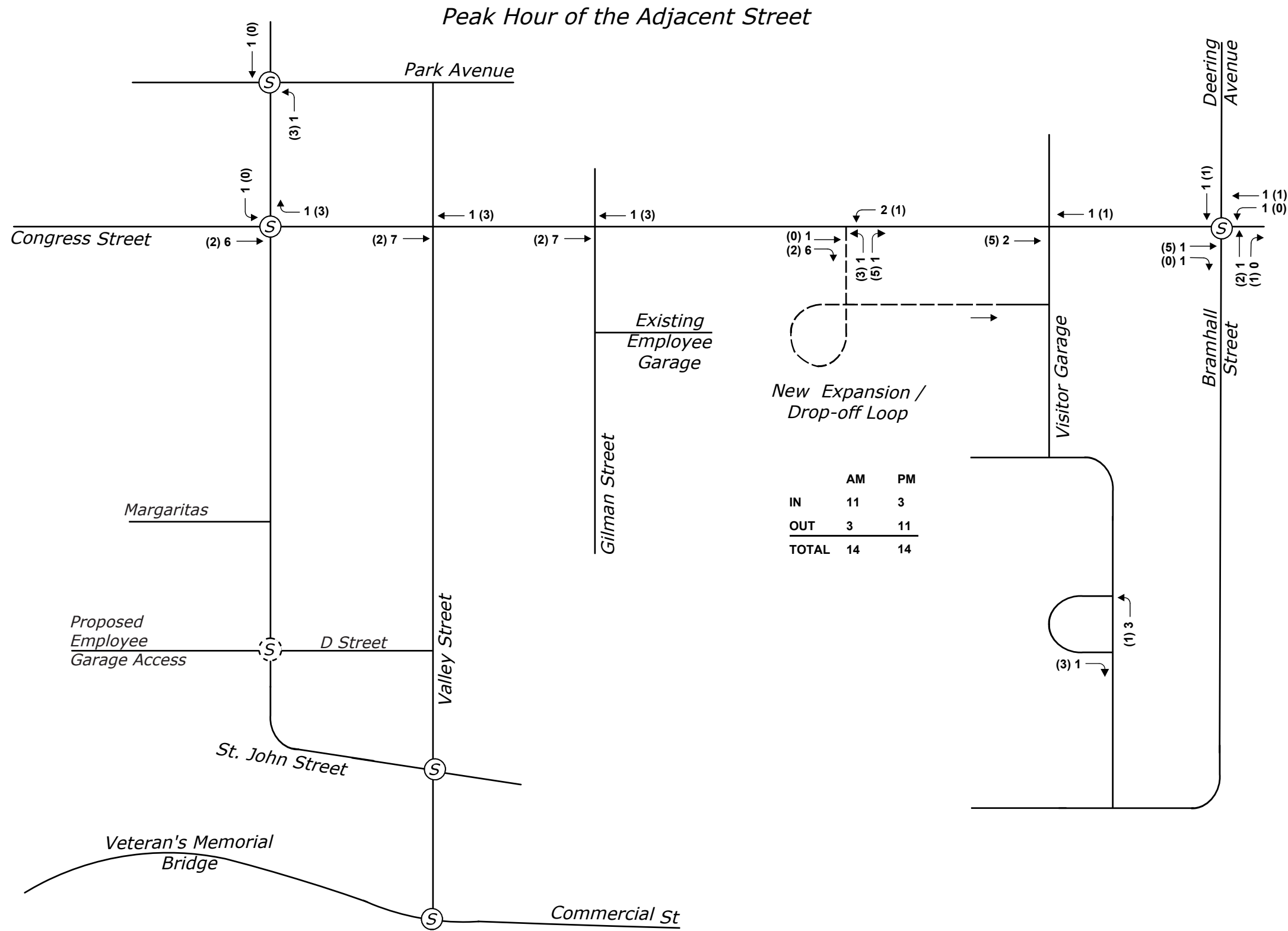
* Through volumes based on volumes at adjacent intersections.

⊙ Proposed Signalized Intersection
 ⊙ Denotes Signalized Intersection

XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

**Bramhall St. - 22; MMC Congress Street Building
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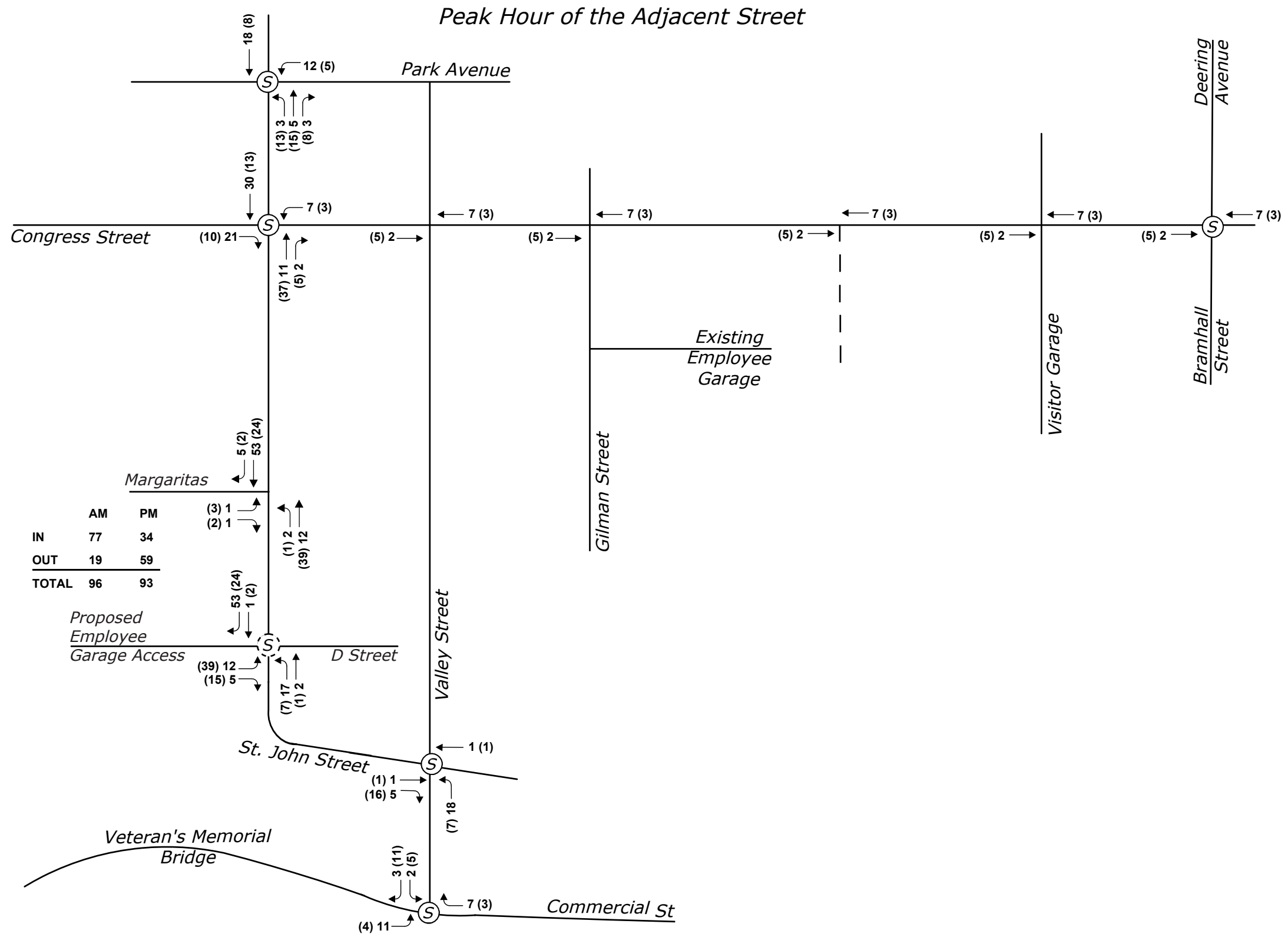
Phase 3 Patient/Visitor Assignment



Proposed Signalized Intersection
 Denotes Signalized Intersection
 XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

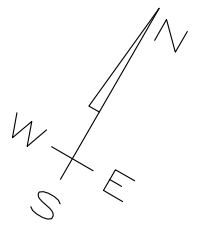
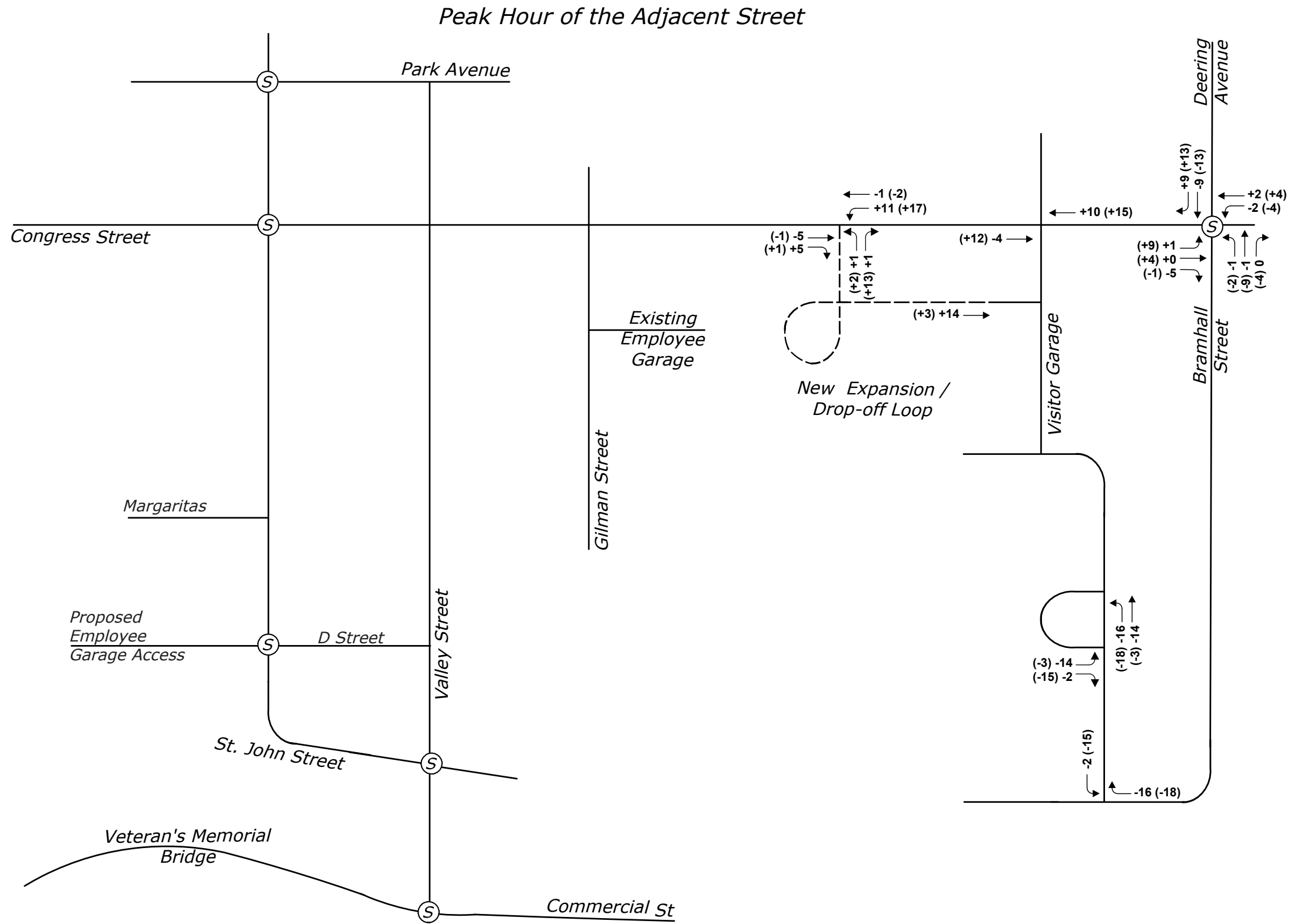
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Phase 3 Employee Trip Assignment



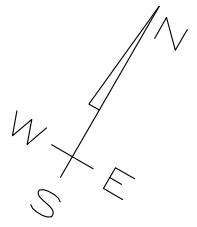
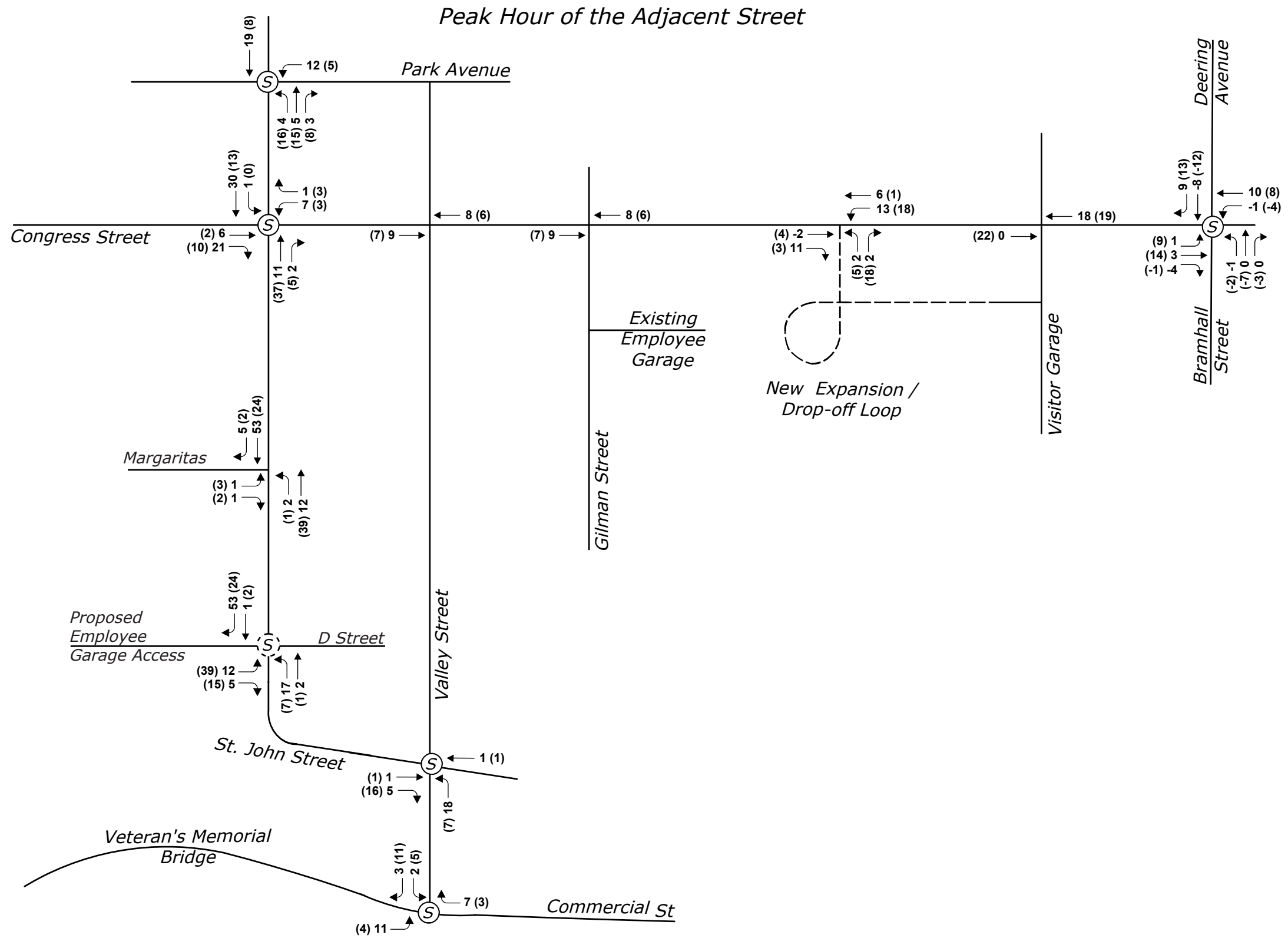
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Phase 3 Drop Off Reassignment



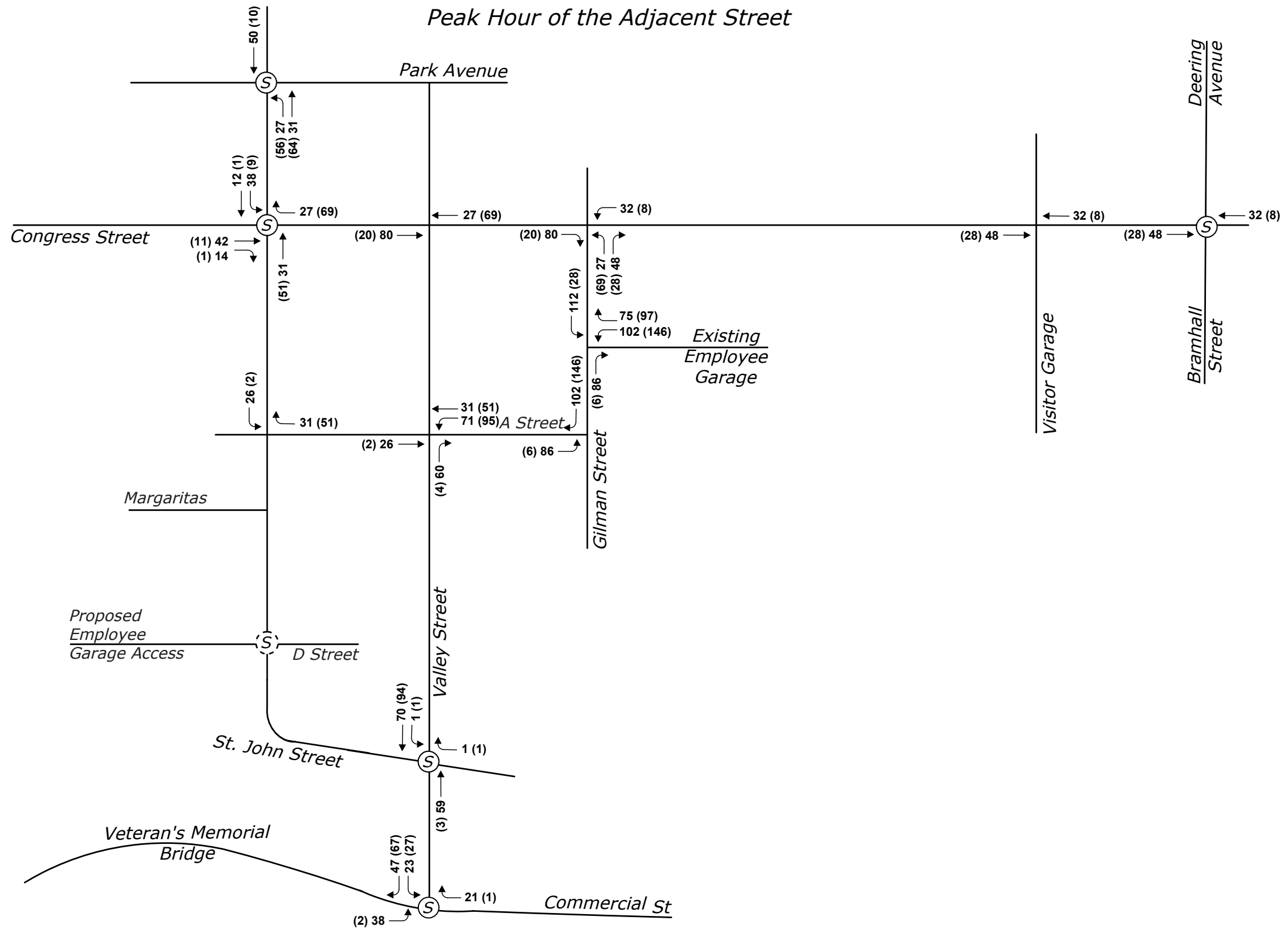
Proposed Signalized Intersection
 Denotes Signalized Intersection
 XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

**Bramhall St. - 22; MMC Congress Street Building
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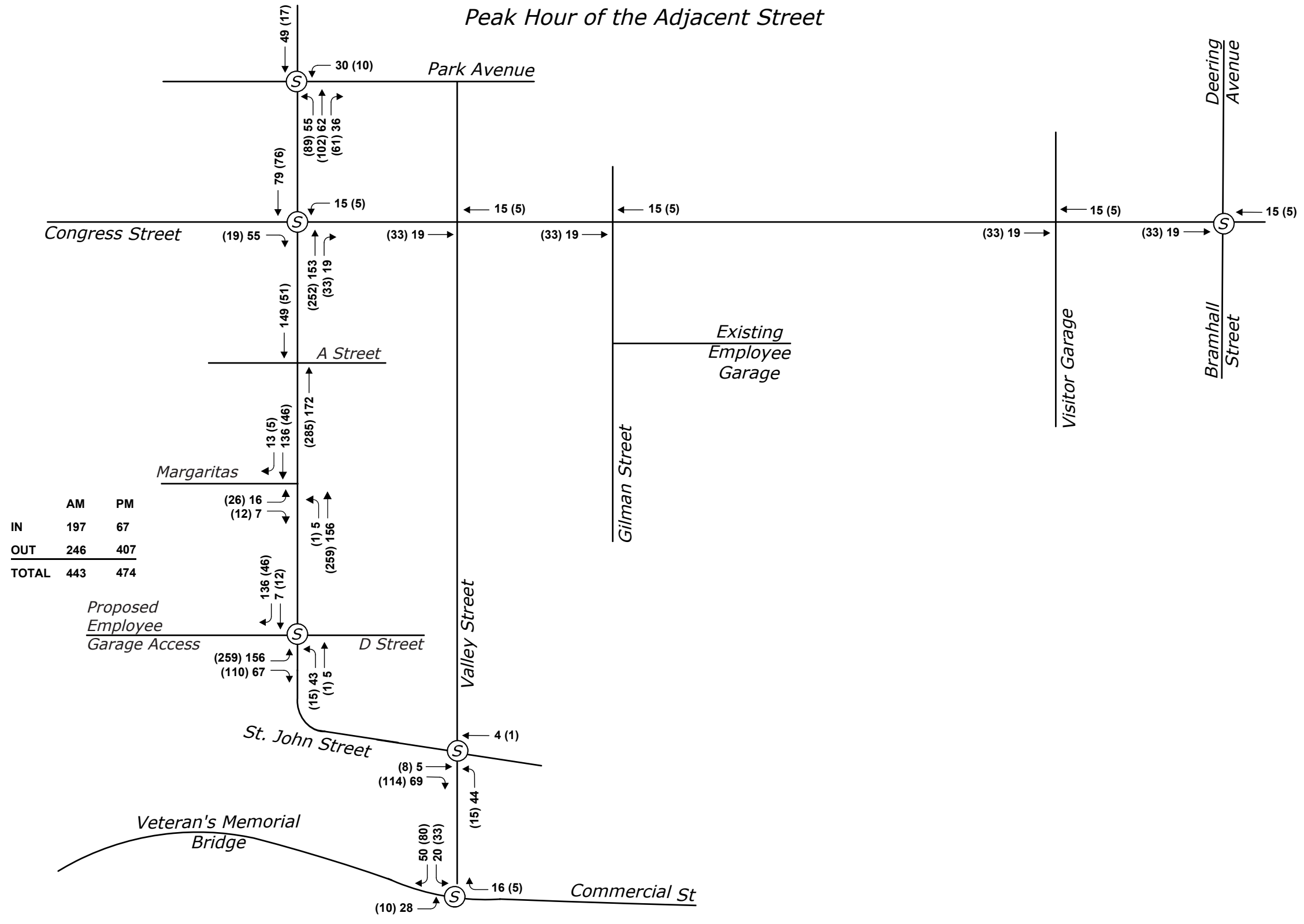
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Existing Employee Garage Assignment



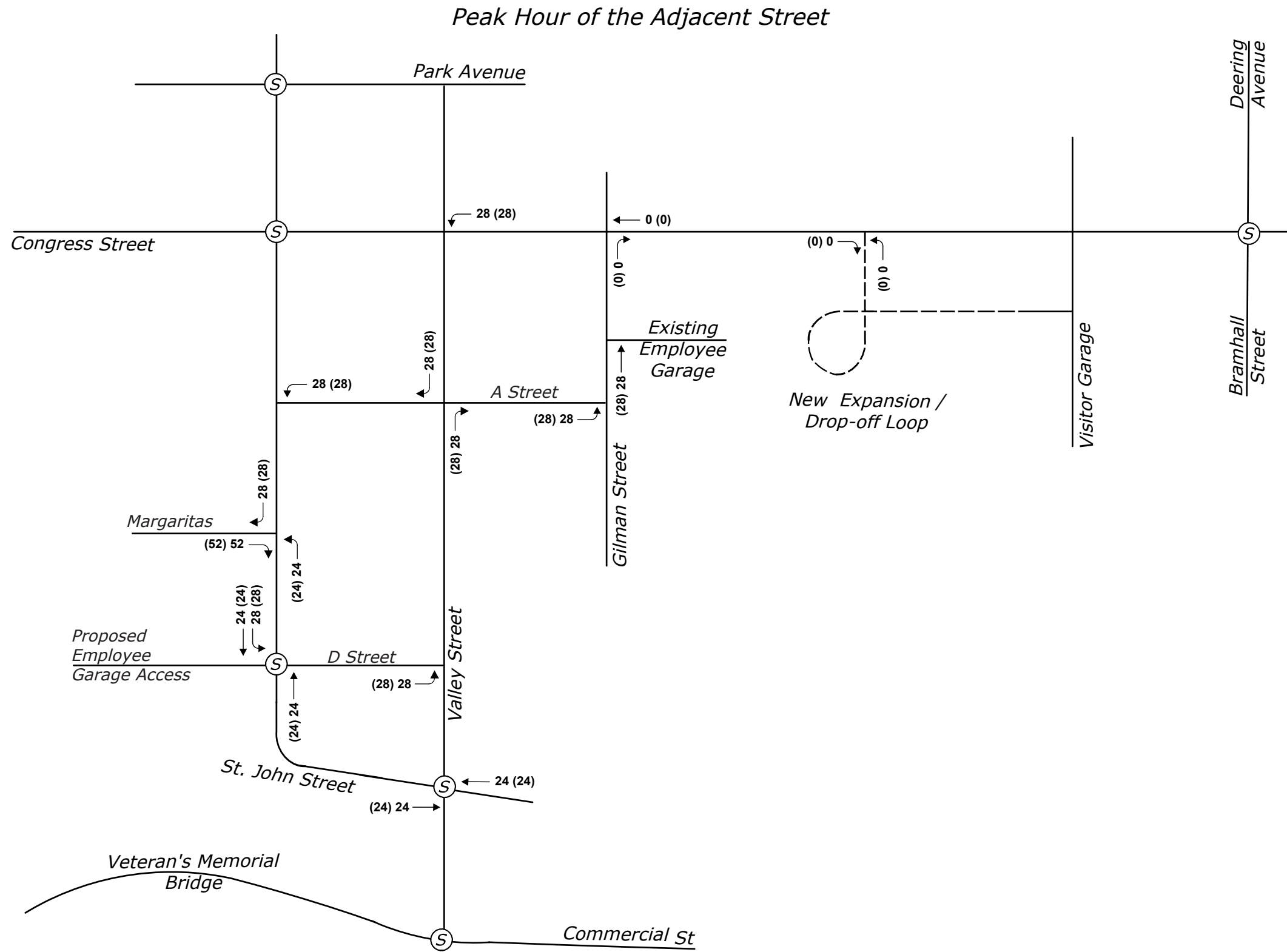
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Proposed Garage Reassignment



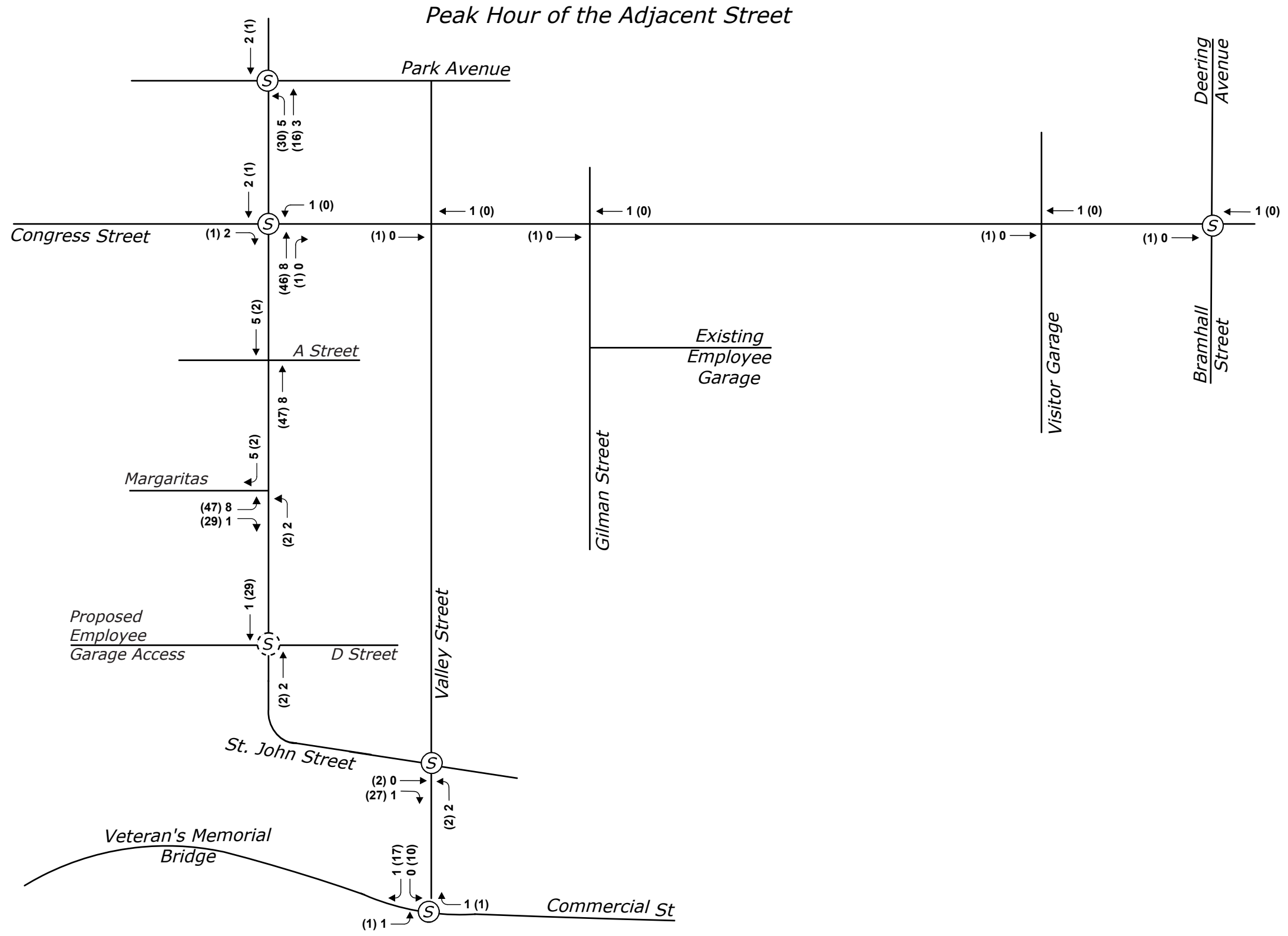
**Bramhall St. - 22; MMC Congress Street Building
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Shuttle Assignment



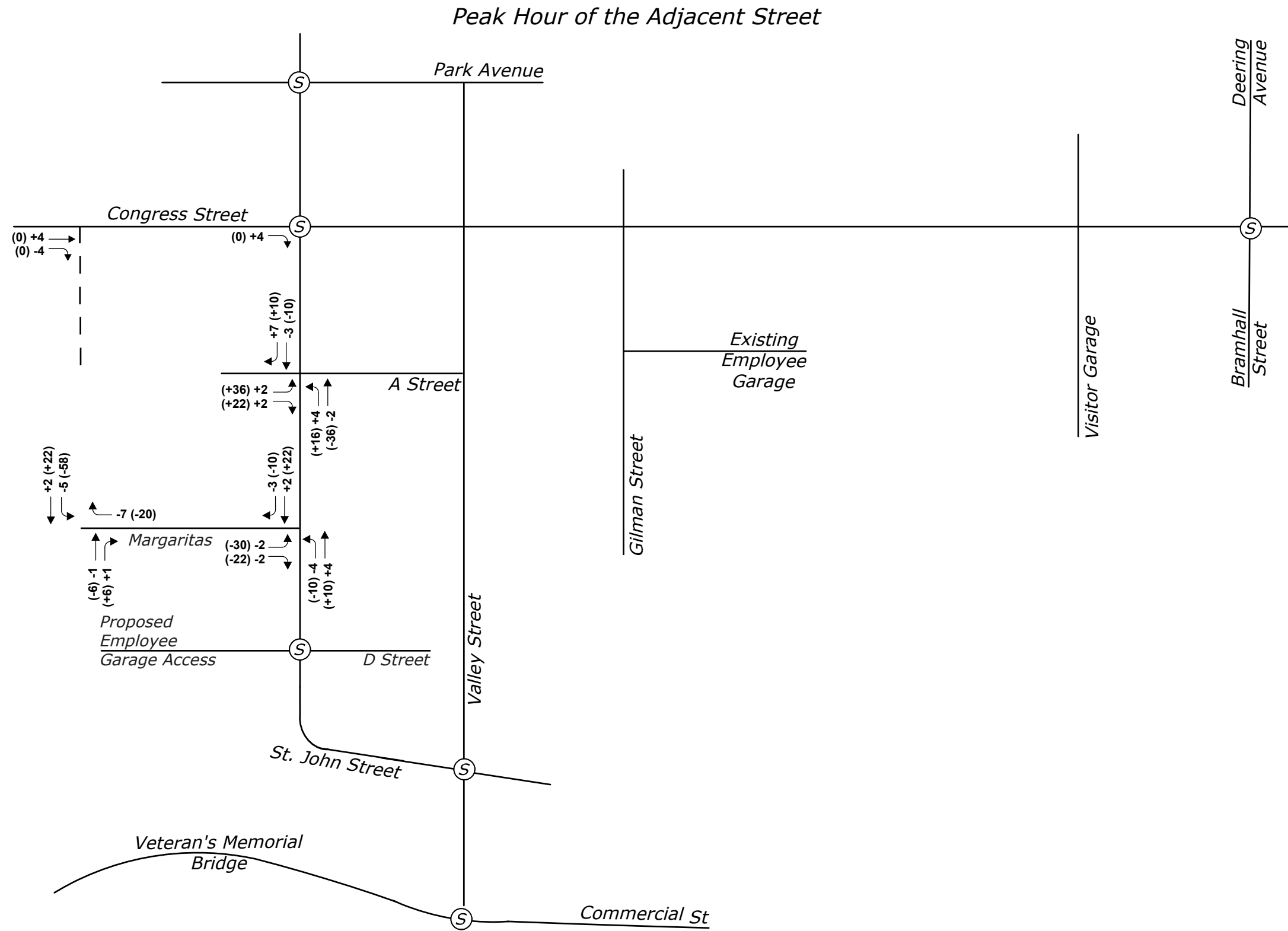
**Bramhall St. - 22; MMC Congress Street Building
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222 St. John Existing MMC Traffic



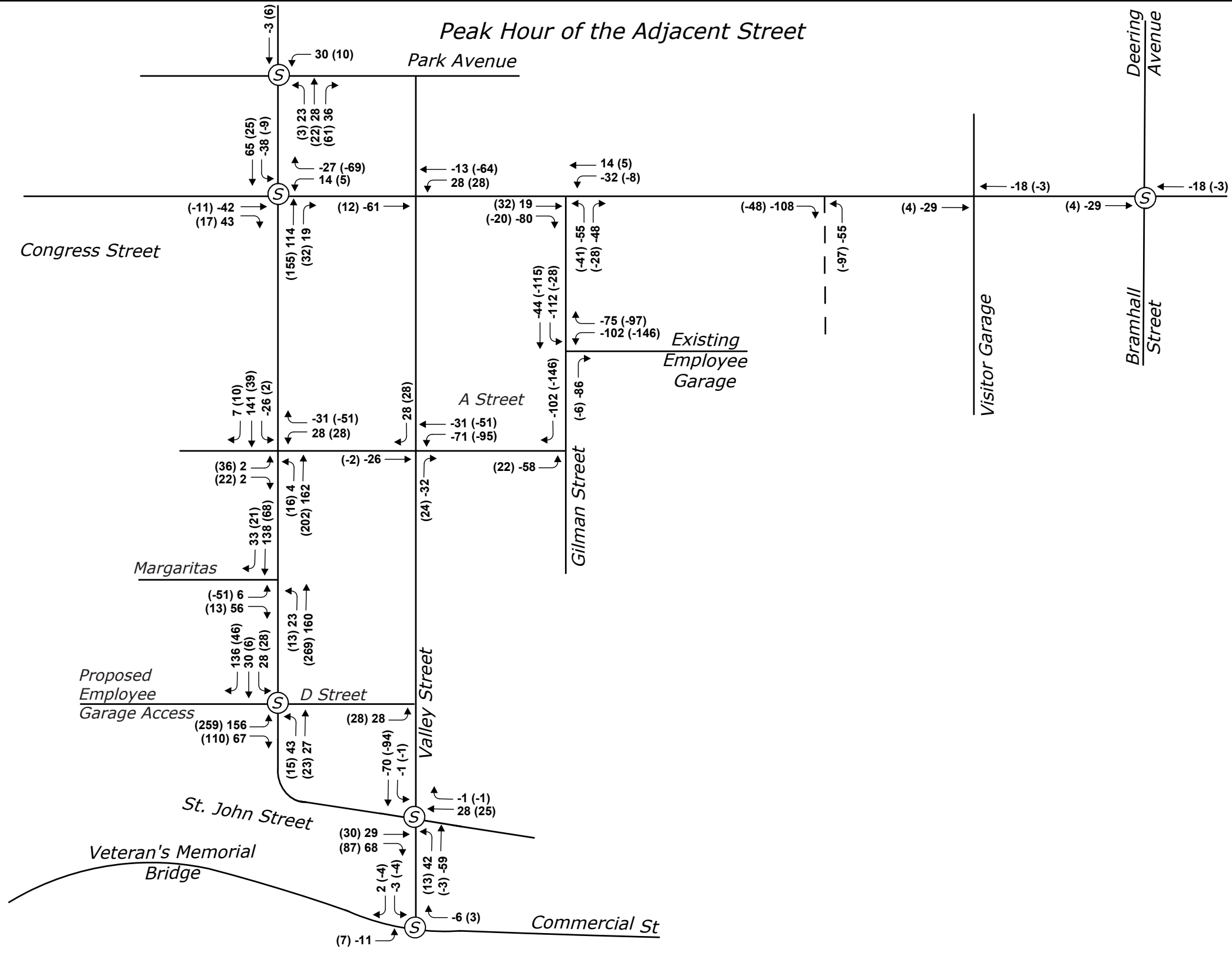
Proposed Signalized Intersection
 Denotes Signalized Intersection
 XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

**Bramhall St. - 22; MMC Congress Street Building
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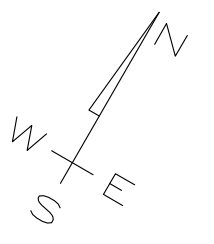
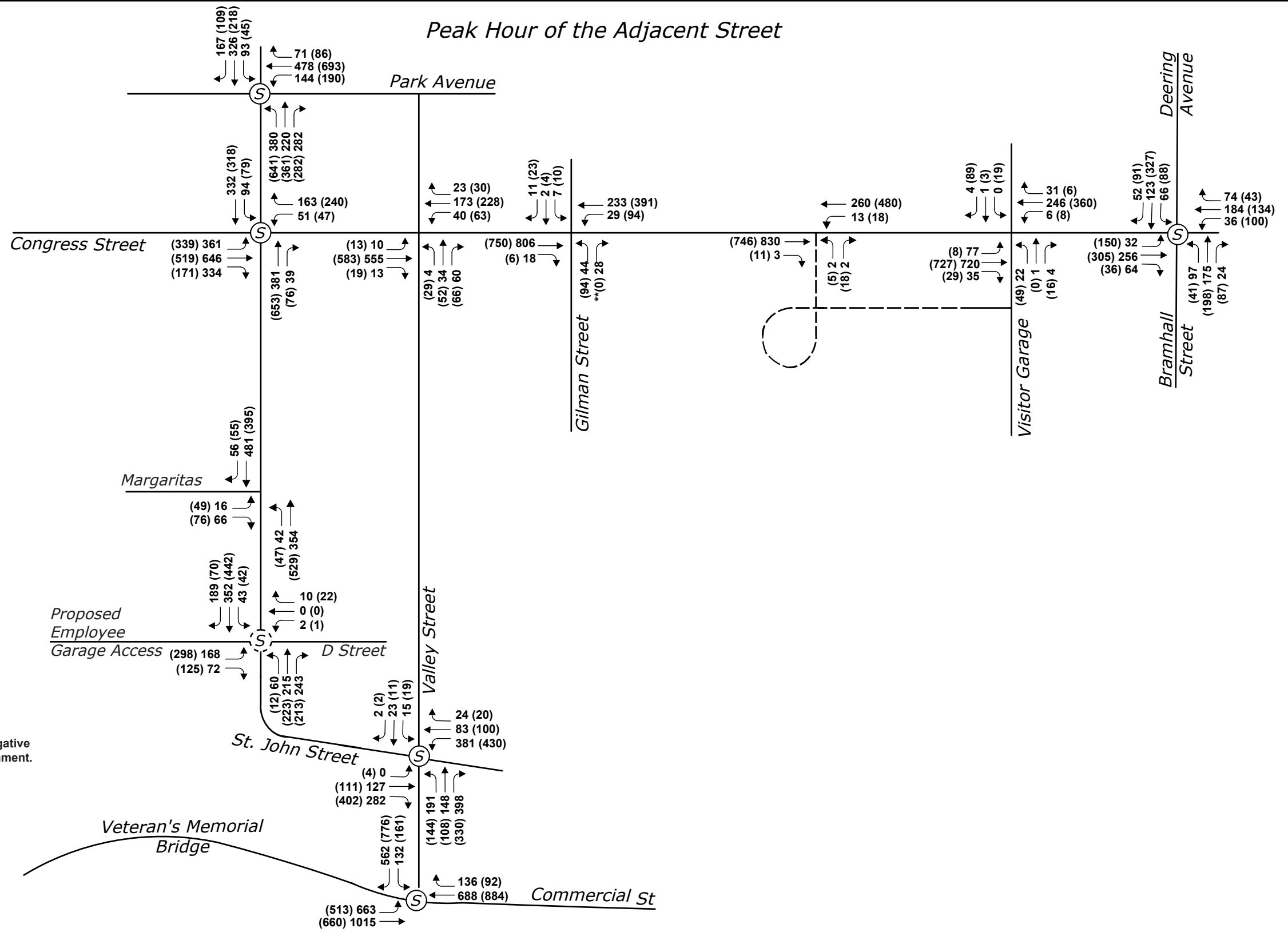


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Net Impact Due to Proposed Employee Garage



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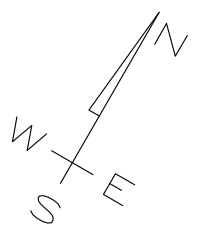
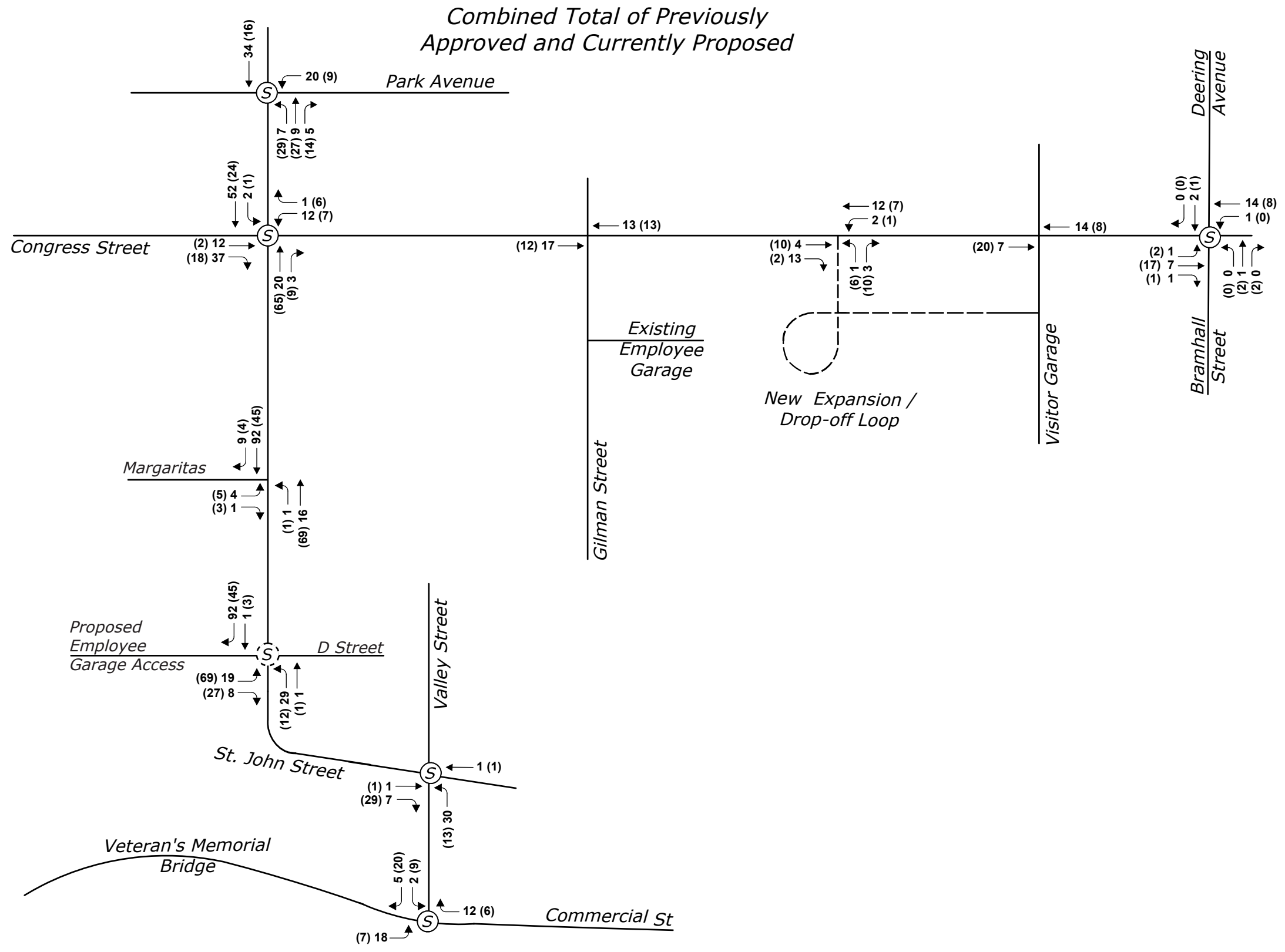


** Post development volumes forecast to be negative during the PM peak hour based on trip re-assignment.

* Through volumes based on volumes at adjacent intersections.

(S) Proposed Signalized Intersection
 (S) Denotes Signalized Intersection

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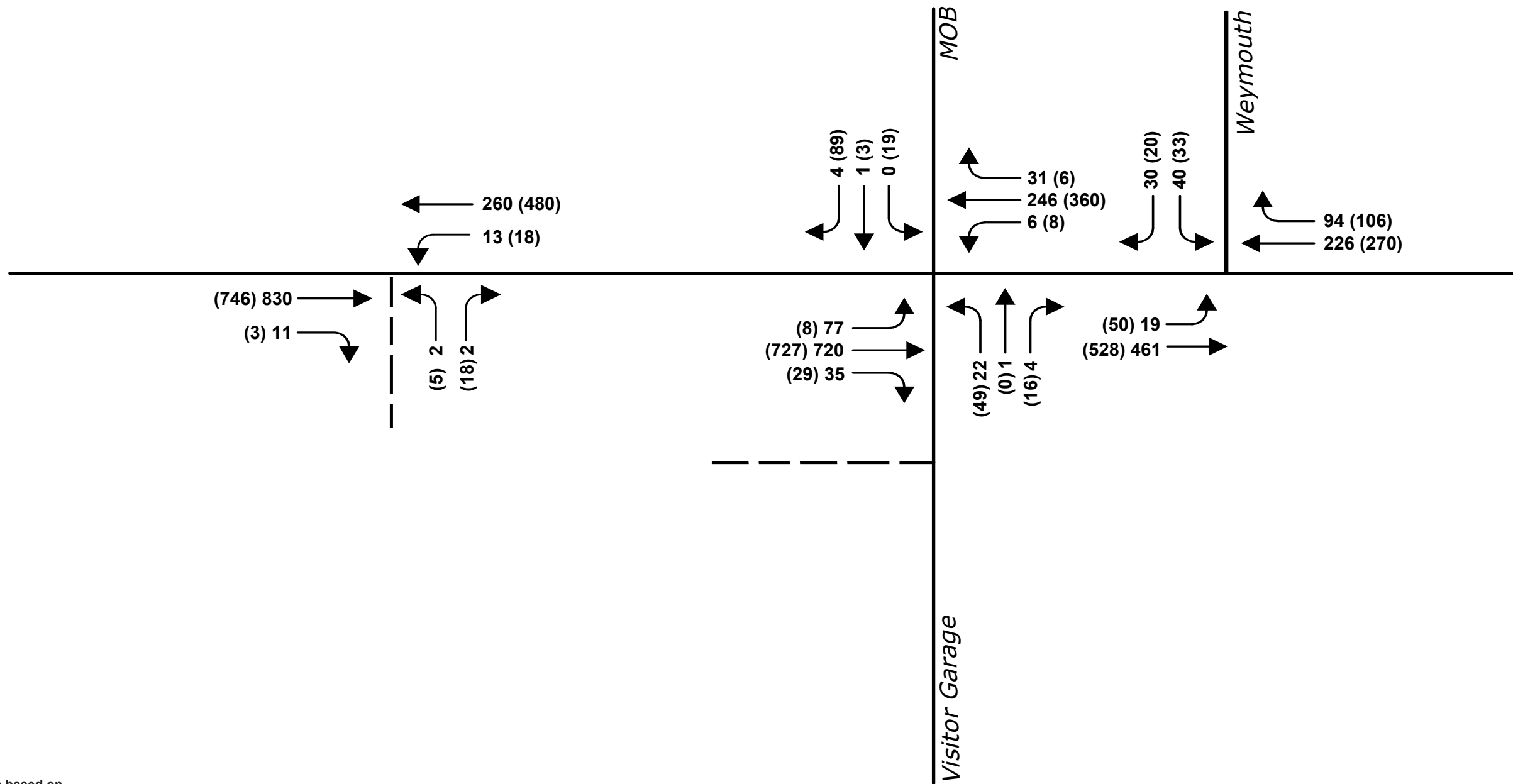
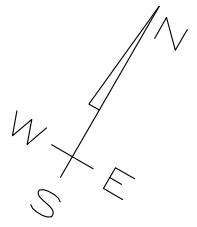


| | AM | PM |
|--------------|------------|------------|
| IN | 150 | 67 |
| OUT | 37 | 124 |
| TOTAL | 187 | 191 |

Proposed Signalized Intersection
 Denotes Signalized Intersection
 XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

**Bramhall St. - 22; MMC Congress Street Building
PORTLAND, MAINE**

Peak Hour of the Adjacent Street



* Through volumes based on volumes at adjacent intersections.

(S) Proposed Signalized Intersection
 (S) Denotes Signalized Intersection

XX = AM Peak Hour of Adjacent Street
 (XX) = PM Peak Hour of Adjacent Street

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