City of Syracuse Zoning Administration
Application for SPECIAL PERMIT Review by the Planning Commission
City Hall Commons * Room 101 * 201 E. Washington Street * Syracuse, NY 13202-1426 * 315-448-8640

For Office Use: Filing Date: 2/26/20 **Case Number:** SP-20-07 **Zoning District:** 1A

☒ **NEW SPECIAL PERMIT** ☐ **MODIFICATION OF EXISTING SPECIAL PERMIT**

LIST ALL ADDRESSES INVOLVED IN YOUR PROJECT:

2027 Park St. & Hiawatha Blvd E

TAX MAP SECTION, BLOCK, and LOT information from Assessment Department (call 448-8280)

Section: 001.2	**Block:** 01	**Lot:** 05.1
Section:	**Block:**	**Lot:**
Section:	**Block:**	**Lot:**

This APPLICATION is for a:

- ☐ Restaurant (this also includes uses such as Bars, Taverns, Coffee Shops, Night Clubs)
- ☐ Gasoline Service Station
- ☒ Car Wash Facility
- ☐ Care Home
- ☐ Parking Lot or Parking Garage
- ☐ Transitional Parking Area
- ☐ Offices of Religious and Educational Institutions
- ☐ Bed and Breakfast
- ☐ Other Special Permit Uses (describe)

PLEASE DESCRIBE ALL ASPECTS OF YOUR PROJECT IN DETAIL:

Renovation of former "Babies R Us" building at 2027 Park St. into a car wash facility with vacuum stations, wash and wax tunnels to be added to the interior of the building and additional vacuum stations to be added within the existing parking lot. The existing lot will be re-striped for wash queue lanes, pay stations and vacuum stations.

OWNER INFORMATION:

Name(s): Rose State 3230 LLC

Mailing Address: 390 E. ParkCenter Blvd Ste 250 Boise ID

Zip: 83706 Daytime phone: Home phone:

E-mail:

APPLICANT INFORMATION:
(Copy of contract to purchase must be included with application)

☒ Contract Purchaser(s) ☐ Tenant ☐ Co-Applicant ☐ Other (please state):

Name(s): 2027 Park Street, LLC

Mailing Address: 4573 S. Broad St. Suite 2, Hamilton, NJ

Zip: 08620 Home phone: Day Phone

E-mail:

REPRESENTATIVE INFORMATION:
(Only if involved in this application)

☐ Attorney ☐ Architect ☐ Contractor ☒ Other Engineer

Name(s): CHA Consulting Inc. (c/o Brian Bouchard)

Mailing Address: 300 S. State Street, Syracuse, NY

Zip: 13202 Telephone: 315-471-3920 E-mail: BBouchard@chacompanies.com

DESCRIPTION OF OPERATION:

Days of week open: 7

Hours of operation: 7 am - 7 pm

Maximum number of employees on premises at one time: 6

Number of off-street parking available (site plan required to indicate location): 25

Other uses currently on the property: FIRST FLOOR: None - Vacant Retail

SECOND FLOOR N/A OTHER FLOORS: N/A

Indicate types and uses of other structures on the property if any (i.e. garage, storage building, etc.):

SIGNAGE INFORMATION:

Size and location of all **existing AND proposed** signage (use additional sheet if necessary)

A sign plan is required, see attachment (Wall, Ground, Projecting, Window)

Size Location See attached table Type

Size Location Type

Size Location Type

SPECIAL PERMIT FUNCTIONS: (Check all that apply)

☐ Dining room ☐ Bar Service ☐ Drive-thru
☐ Entertainment ☐ Stage ☐ DJ Booth
☐ Light Duty auto repair ☐ Heavy Duty auto repair
☒ Car Wash Facility ☐ New Auto Sales ☐ Used Auto Sales

Has owner obtained or applied for a Certificate of Use: ☐ Yes ☐ No

DECLARATION:

I understand that false statements made herein are punishable as a Class A Misdemeanor, pursuant to section 210.45 of the Penal Law of the State of New York. I declare that, subject to the penalties of perjury, any statements made on this application and any attachments are the truth and to the best of my knowledge correct.

I also understand that any false statements and/or attachments presented knowingly in connection with this application will be considered null and void.

CURRENT PROPERTY OWNER SIGNATURE

As listed on the City of Syracuse Tax Assessment Roll. If not listed as the owner on the current rolls, please include a proof of ownership, for example, a copy of the deed. Attorney's signing on behalf of the owner must include a one page letter describing the legal representative arrangement. Architects, engineers, contractors, tenants, etc. cannot sign on behalf of the property owner. If property owner is a Corporation or an Organization, then the person signing must provide verification they are a member of such, and can sign on the owners' behalf.

01-28-2019

CURRENT PROPERTY OWNER SIGNATURE **DATE**

KRISTIAN EIDE, MANAGER

Please legibly PRINT SIGNATURE NAME and TITLE

***Please note that if referrals are necessary for this application, additional copies of all required materials will be requested.**

FOR STAFF USE ONLY

****

REFERRAL NEEDED

☐ ONONDAGA COUNTY PLANNING BOARD

☐ SYRACUSE LANDMARK PRESERVATION BOARD (This project is located within _____ Historic District; is listed individually in the National Register of Historic Places; is Eligible for inclusion in the National Register of Historic Places; or is architecturally significant).

☐ OTHER CITY/COUNTY/STATE AGENCY OR DEPARTMENT(S) _____

Proposed Valet Auto Wash

2027 Park Street, Syracuse NY 13208

Site Signage Summary

EXISTING SIGNAGE (waiver per AS-01-15)		PROPOSED SIGNAGE	
Ground Sign	300 SF (40' Height)	Ground Sign	300 SF (40' Height)
West (front) Wall Sign	140 SF	West (front) Wall Sign	120 SF
North Wall Sign	140 SF	North Wall Sign	69 SF
East Wall Sign	140 SF	East Wall Sign	69 SF
		South Wall Sign	69 SF
TOTAL SITE SIGNAGE	720 SF	TOTAL SITE SIGNAGE	627 SF

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:

Park Street - Valet Auto Wash

Project Location (describe, and attach a location map):

2027 Park Street, Syracuse NY 13208

Brief Description of Proposed Action:

Proposed renovation of existing retail store for the new car wash facility. Site Work will include re-striping the existing parking lot, outdoor vacuums, curbing and signage.

Name of Applicant or Sponsor:	Telephone: 315-228-0036
CHA Consulting Inc (c/o Brian Bouchard)	E-Mail: bbouchard@chacompanies.com

Address:

300 S. State Street, Suite 600

City/PO:	State:	Zip Code:
Syracuse	NY	13202

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3. a. Total acreage of the site of the proposed action? 4.22 acres
   b. Total acreage to be physically disturbed? 0.20 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 4.22 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☑ Urban ☐ Rural (non-agriculture) ☑ Industrial ☑ Commercial ☐ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	☐	☑
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	☐	☑
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	☐	☑
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☑ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	☐	☑
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe:	☐	☑
Existing site drainage system includes catch basins and stormwater management system discharging to the existing City drainage system, all of which will remain in service for the renovation.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: Brian F. Bouchard, P.E. Date: 1/29/2020

Signature: Title: Project Engineer

PRINT FORM

January 29, 2020

Syracuse Zoning Administration
City Hall Commons
201 East Washington Street
Syracuse, New York 13202

Re: Special Permit – Valet Auto Wash
2027 Park Street
CHA Project No.: 059720

Dear Syracuse Zoning Administration:

CHA, on behalf of the applicant, is pleased to submit the following Special Use permit for the above referenced project. The proposed project includes the renovation of the vacant retail store formerly known as "Babies R Us". The building interior will be renovated for the new car wash and vacuum equipment installation. The interior layout will include one (1) wash bay tunnel, indoor vacuum equipment parking spaces, and a wax/polish bay tunnel. Exterior improvements will be limited to re-striping and directional pavement markings on the existing asphalt parking lot surface. The building exterior will be re-painted and include new overhead doors for vehicle access, as well as business identification signage as listed on the attached application.

The following materials are provided in this submission:

- Special Use Permit Application
- Environmental Assessment Form (EAF)
- Example Project Photos
- Existing Site Photos
- Three (3) copies - Full Size Site Plan (Plus One (1) ½ Size)
- Three (3) copies – Full size Overall Floor Plans (Plus One (1) ½ Size)
- Three (3) copies – Full size Building Elevations (Plus One ½ Size)
- Three (3) copies - Full Size Survey (Plus One (1) ½ Size)
- Traffic Impact Assessment

Should you have any questions related to the submission or require any additional copies, please do not hesitate to contact me at 315-228-0036 or BBouchard@chacompanies.com

Very truly yours,

Brian F. Bouchard, P.E.
Project Engineer V

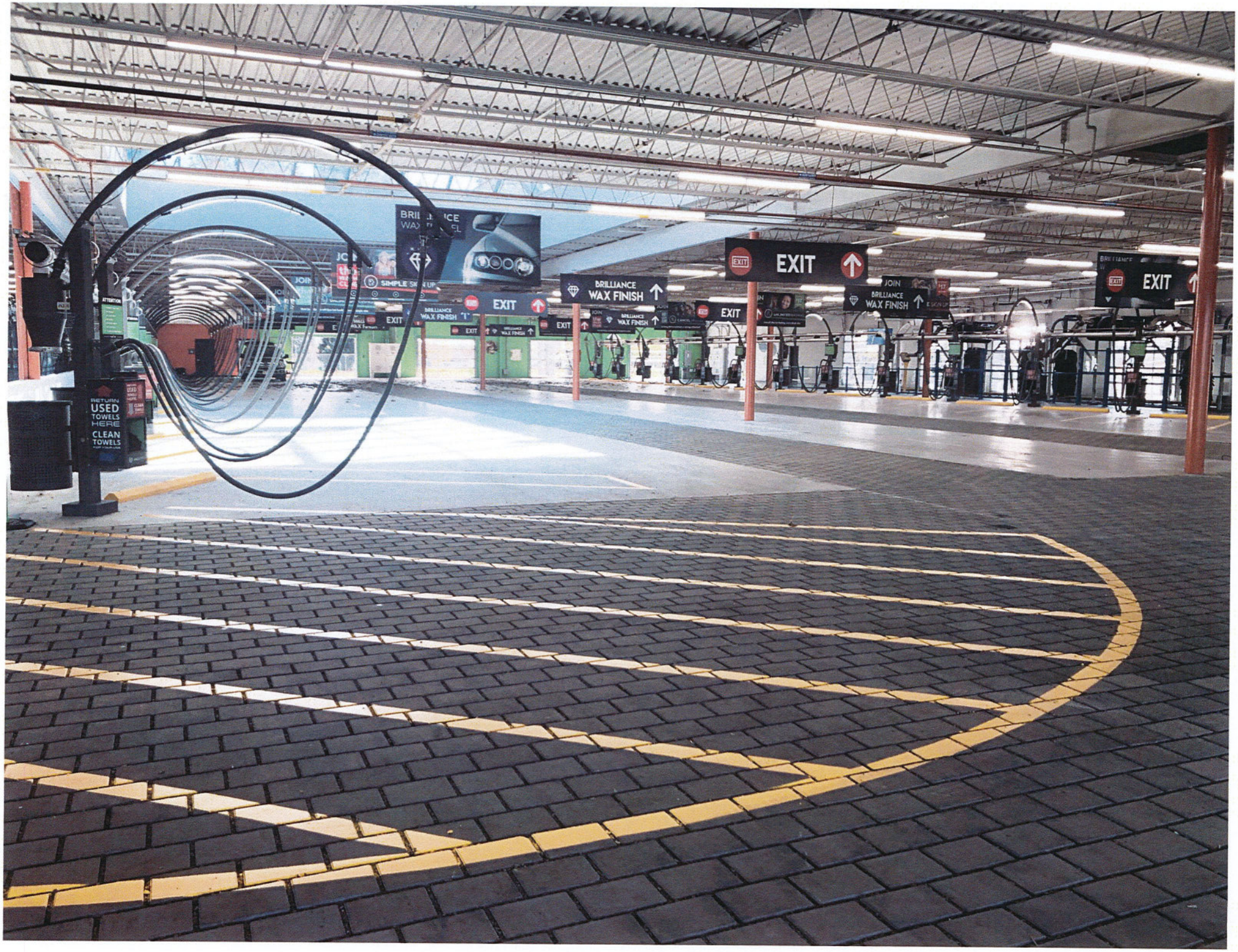
Enclosures
Cc:
V:\Projects\ANY\K4\32263\Corres\Applications_TENANT APPLICATIONS\Kung Fu Tea\1-17-20 - Special Use Permit\0 - Kung Fu Tea SP and Parking Waiver-1-27-20.docx

One Park Place, 300 South State Street, Suite 600, Syracuse, NY 13202-2024
T 315.471.3920 • F 315.471.3569 • www.chacompanies.com

EXAMPLE PROJECT PHOTOS

AUTO WASH
NO PARKING FIRE LANE
NO PARKING FIRE LANE
NO PARKING FIRE LANE
AVALON FLOORING

AUTO WASH
JOIN THE CLUB
2345
EXIT


EXIT
BRILLIANCE
WAX FINISH
JOIN
SIMPLE SIGN UP
RETURN
USED
TOWELS
HERE
CLEAN
TOWELS

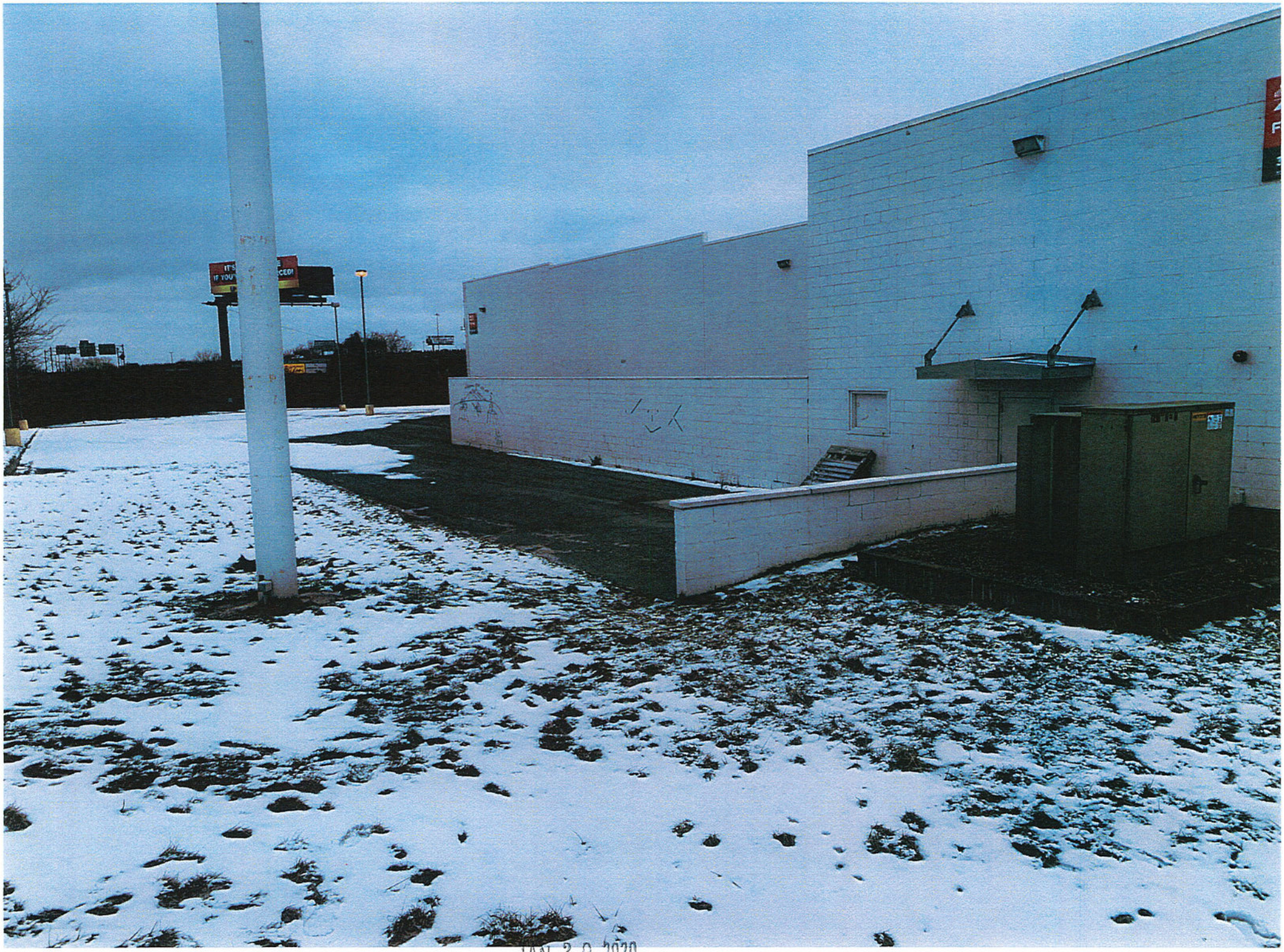
BRILLIANCE
WAX FINISH
RETURN
USED
TOWELS
HERE
CLEAN
TOWELS
FOR YOUR USE
UNLIMITED
AUTO WASH

VALET
AUTO WASH
VALET
AUTO WASH

AUTO WASH
Goodwill
goodwill
NOW OPEN
FREE AUTO WASH
FREE AUTO WASH TODAY
VALET AUTO WASH
NOW HIRING ALL POSITIONS
(609) 557-7100 x0
VALETWASH.COM
VALET AUTO WASH

EXISTING SITE PHOTOS

RESERVED
PARKING
VAN
ACCESSIBLE



JAN 2 9 2020

CUSHMAN & WAKEFIELD
Pyramid Brokerage Company
FOR SALE
315 445 1030

JAN 29 2020

FOR SALE
315 445 1030
FOR SALE
315 445 1030

JAN 29 2020

AVAILABLE
315 445 1030

VALET AUTO WASH

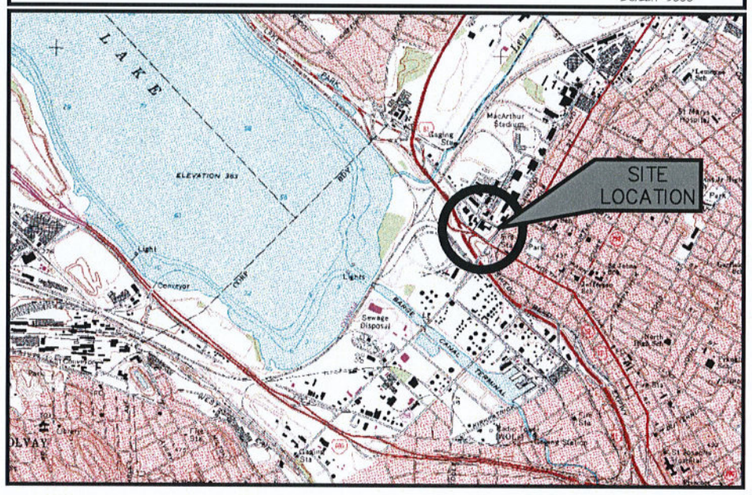
2027 PARK STREET

CITY OF SYRACUSE, NEW YORK

SITE LOCATION MAP

NORTH

SCALE: 1"=5000'



DRAWING INDEX

SHEET NUMBER	SHEET TITLE
C-001	TITLE SHEET
C-003	EXISTING CONDITIONS & DEMOLITION PLAN
C-101	SITE LAYOUT PLAN
C-601	DETAILS
C-602	DETAILS
C-603	DETAILS

Dig Safely. New York Call 811 before you dig

FEBRUARY 2020

CHA
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Syracuse, NY 13202
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OWNER:
2027 PARK STREET, LLC
4569 SOUTH BROAD STREET, SUITE 2
YARDVILLE NJ 08620

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

VALET AUTO WASH
2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	App'd.	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

TITLE SHEET

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.:
C-001

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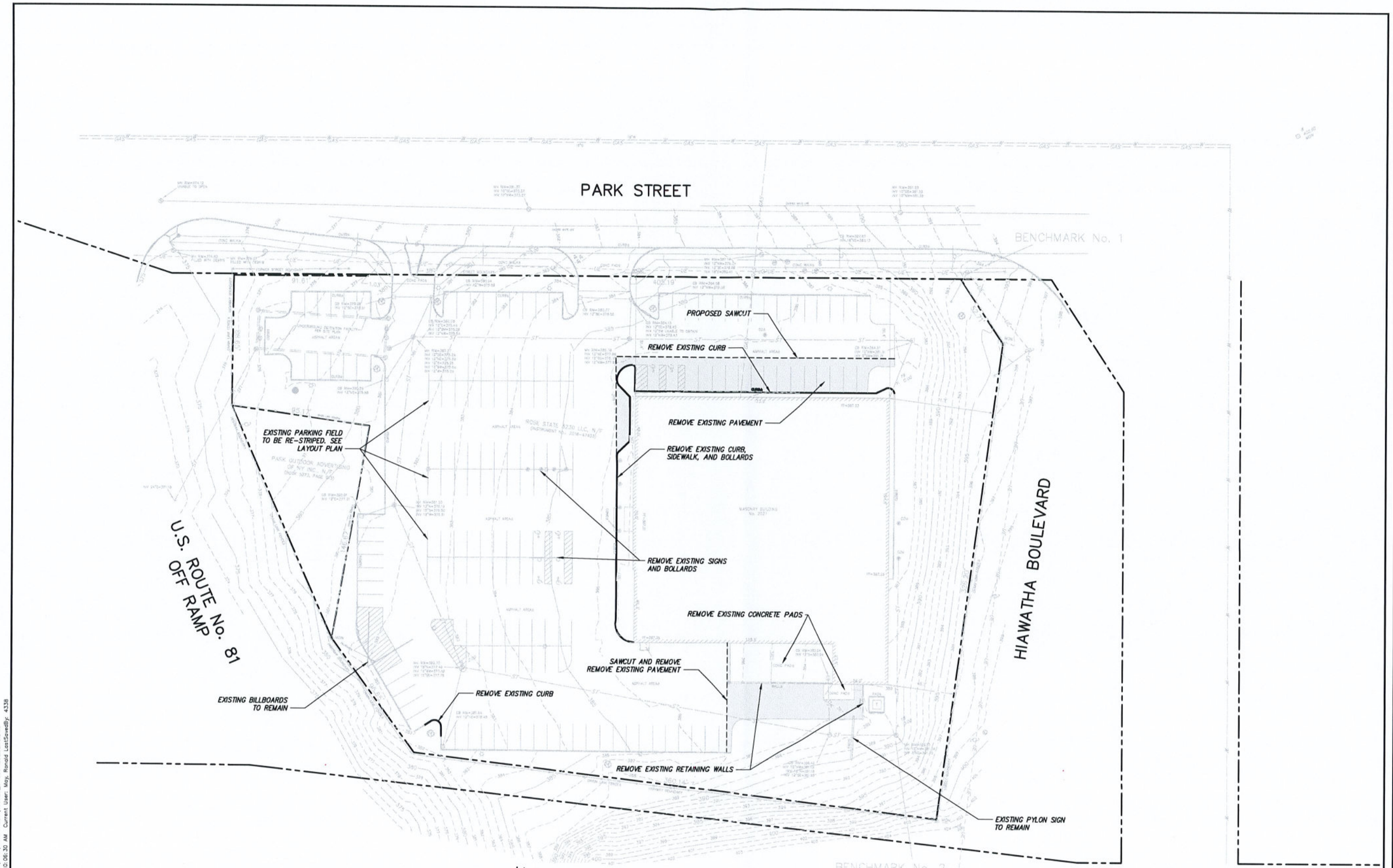

SURVEY NOTES:
- TOTAL AREA: 3,505± ACRES
- TOTAL NUMBER OF LOTS: 1
- ZONE: IA–INDUSTRIAL DISTRICT
- ELEVATIONS REFERRED TO NAVD 88
- LOCATION OF UNDERGROUND UTILITIES TAKEN BY FIELD MEASUREMENT WHERE PRACTICABLE, OTHERWISE TAKEN FROM VARIOUS OTHER SOURCES AND ARE APPROXIMATE ONLY.
- TAX MAP NO. 1.2–01–05.1

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Syracuse, NY 13202
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0 30 60
Scale in feet

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YARDVILLE NJ 08620

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VALET AUTO WASH
2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	Appd.	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

EXISTING CONDITIONS & DEMOLITION PLAN

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.:
C-003

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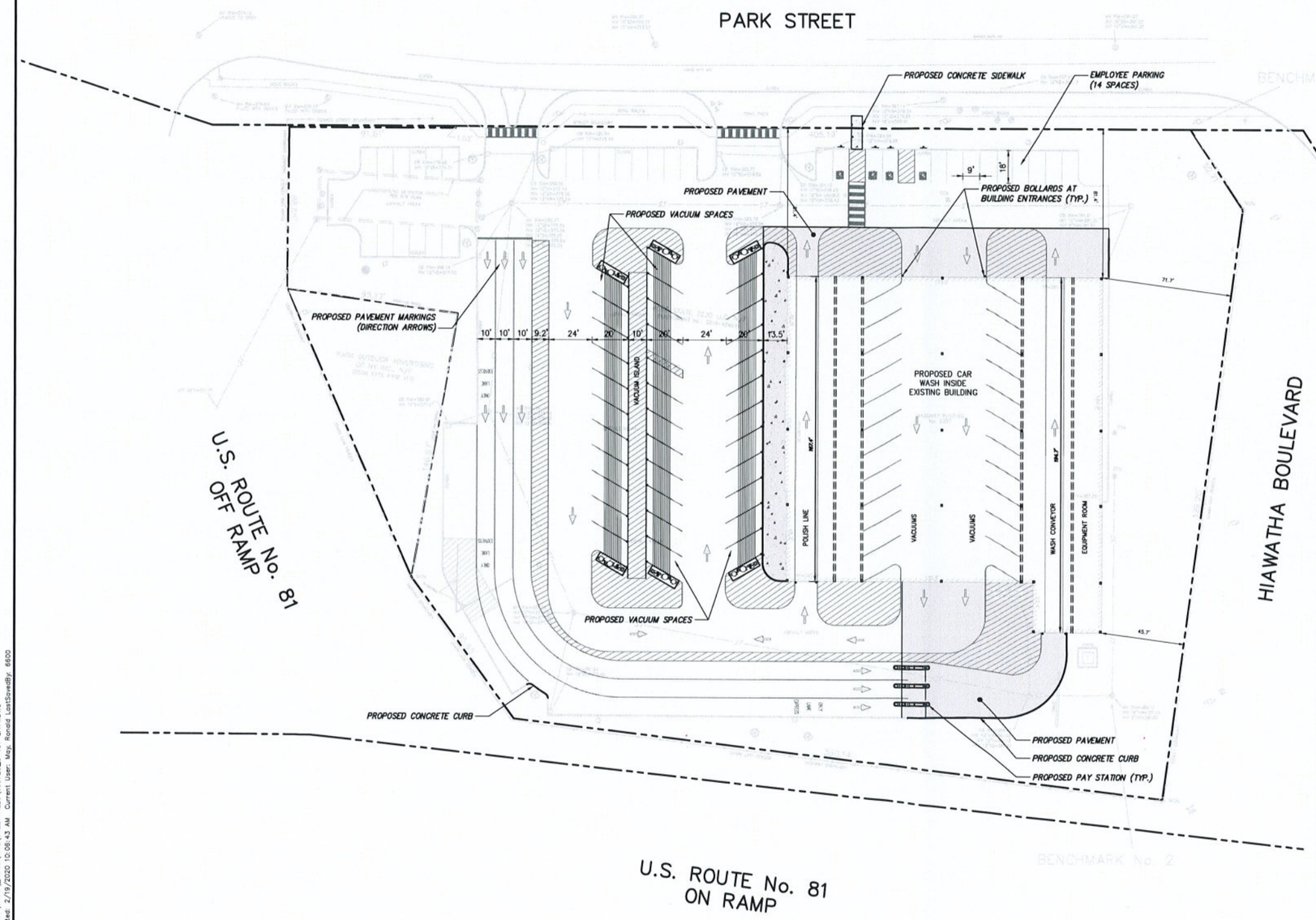

LAYOUT LEGEND

- PROPOSED ASPHALT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED PAVEMENT STRIPING
- PROPOSED CURB
- PROPOSED INTERIOR BUILDING WALL

ZONING REGULATIONS FOR DEVELOPMENT

EXISTING LOT INFORMATION:

ADDRESS	TAX MAP	ACREAGE	ZONING
2027 PARK STREET AND HIAWATHA BLVD E	001.2-01-05.1	±4.22 AC	IA

EXISTING ZONING: IA - INDUSTRIAL DISTRICT, CLASS A
*CAR WASH IS A SPECIAL PERMIT USE IN THIS DISTRICT

LOT REQUIREMENTS:

-PRIMARY OR SECONDARY STREETS SETBACK: 40'
-OTHER PROPERTY LINES SETBACK: 20'
-MAXIMUM STRUCTURAL COVERAGE: 100%
-MAXIMUM PARKING SURFACE COVERAGE: 100%

PARKING REQUIREMENTS:

PARKING SPACE SIZE:	9' X 18'	9 'X 18'
NUMBER OF PARKING SPACES:	REQUIRED:	PROVIDED:
EMPLOYEE= 1 SP./2 EMP (6 EMP) =	3 SP.	35 SP.
WAITING RESERVE= 4 SP/BAY (1 BAY)	4 SP.	66 SP.
FINISHING RESERVE= 2 SP/BAY (1 BAY)	2 SP.	57 SP.
TOTAL NUMBER OF SPACES	9 SP.	158 SP.

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0 30 60
Scale in feet

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VALET AUTO WASH

2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	App'd.	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

SITE LAYOUT PLAN

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.:
C-101

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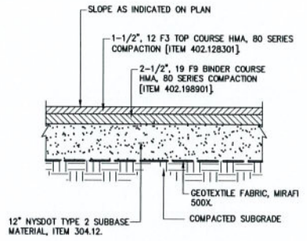
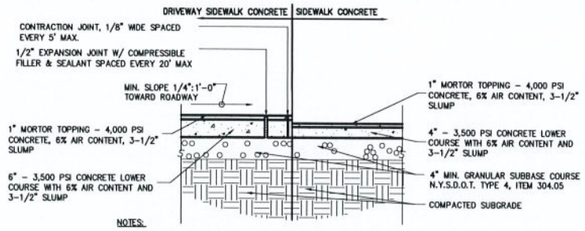


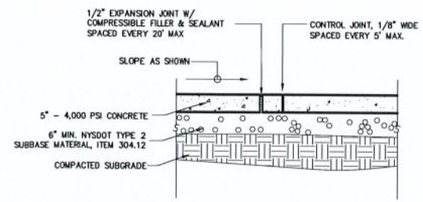
NOTE: USE ASPHALT JOINT SEALER ALONG TRANSITION TO EXISTING PAVEMENT

1 ASPHALT PAVEMENT
SCALE: N.T.S.



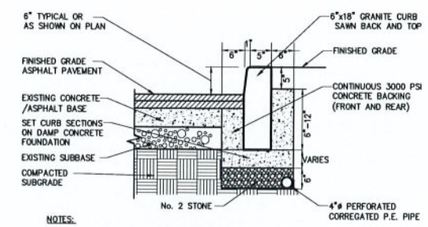
NOTES:
1. CONTRACTOR SHALL ADHERE TO CITY OF SYRACUSE PORTLAND CEMENT CONCRETE SIDEWALKS AND DRIVEWAYS REGULATIONS (FOUND IN SIDEWALK CONSTRUCTION APPLICATION).
2. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE, AT CURBS, AT PENETRATING STRUCTURES, OR EXISTING JOINTS.
3. MORTOR TOPPING UPPER COURSE SHALL BE PROPORTIONED TO CONTAIN ONE (1) PART PORTLAND CEMENT TO TWO (2) PARTS CONCRETE SAND.
4. TOP COURSE SHALL BE PLACED WITHIN 45 MINUTES AFTER THE BASE COURSE IS PLACED. NO MORE THAN 50 L.F. OF BASE COURSE SHALL BE PLACED PRIOR TO STARTING THE TOP COURSE.

2 CONCRETE SIDEWALK DETAIL (ROW)
SCALE: N.T.S.



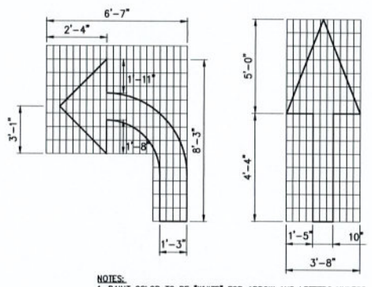
NOTES:
1. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE, AT CURBS, AT PENETRATING STRUCTURES, OR EXISTING JOINTS.

3 CONCRETE SIDEWALK (SITE)
SCALE: N.T.S.



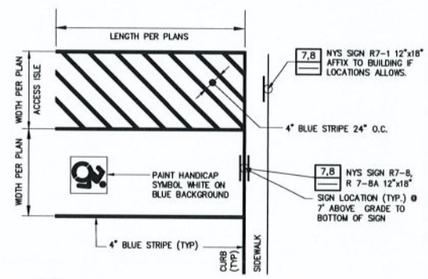
NOTES:
1. CURB JOINTS TO BE POINTED WITH MORTAR.
2. 1" REVEAL CURB WHERE DRIVEWAYS MEET ROADWAYS.
3. UNDERDRAIN MAY BE OMITTED FOR CURBING WITHIN SITE.

4 GRANITE CURB DETAIL
SCALE: N.T.S.



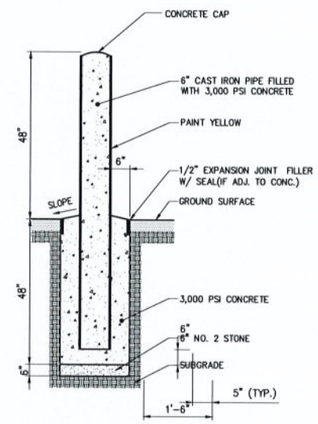
NOTES:
1. PAINT COLOR TO BE "WHITE" FOR ARROW AND LETTERS UNLESS OTHERWISE SPECIFIED ON PLANS. 4" WIDE STROKES.
2. STRIPPING COLOR TO BE "YELLOW" WITH 4" WIDE STROKES.
3. ALL MARKINGS TO RECEIVE TWO COATS OF PAINT.

5 PAVEMENT PAINTING DETAIL
SCALE: N.T.S.

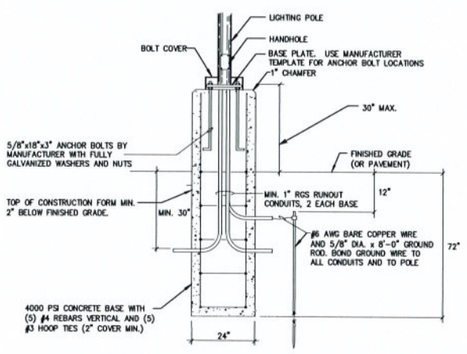


NOTE:
ALL DIMENSIONS TO CENTER OF 4" PAVEMENT STRIPING.

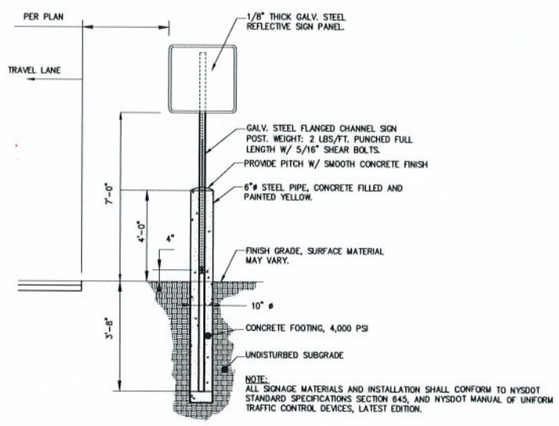
6 ACCESSIBLE PARKING SPACE
SCALE: N.T.S.



7 PIPE BOLLARD DETAIL
SCALE: N.T.S.



8 LIGHT POLE BASE
SCALE: N.T.S.



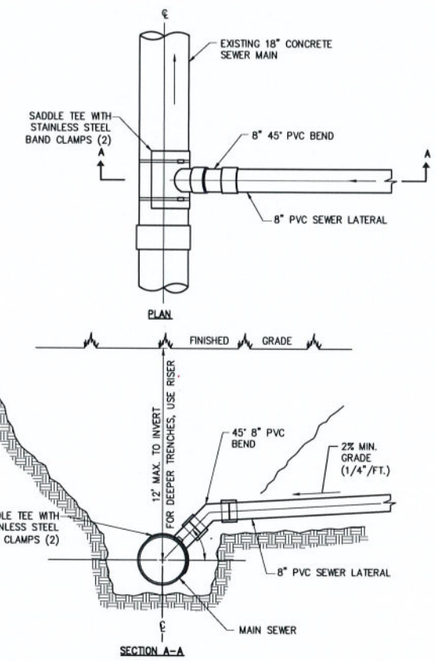
NOTE:
ALL SIGNAGE MATERIALS AND INSTALLATION SHALL CONFORM TO NYSDOT STANDARD SPECIFICATIONS SECTION 645, AND NYSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

9 ROADWAY SIGNAGE W/ BOLLARD
SCALE: N.T.S.

SITE SIGN TABLE

SIGN NO.	DESCRIPTION	M.U.T.C.D. NO./SIZE
2	RESERVED PARKING	R7-8 12"x18"
3	VAN ACCESSIBLE	R7-8A (12"x18")
5	NO PARKING ANY TIME	R7-1 (12"x18")

10 SITE SIGN TABLE
SCALE: N.T.S.



11 SEWER SERVICE SADDLE CONNECTIONS
SCALE: N.T.S.

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OWNER:
2027 PARK STREET, LLC
4569 SOUTH BROAD STREET, SUITE 2
YARDVILLE NJ 08620

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VALET AUTO WASH
2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	App'd.	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

DETAILS

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date: 1/29/20	Project No: 059720	Scale: AS SHOWN

Drawing No.:
C-601

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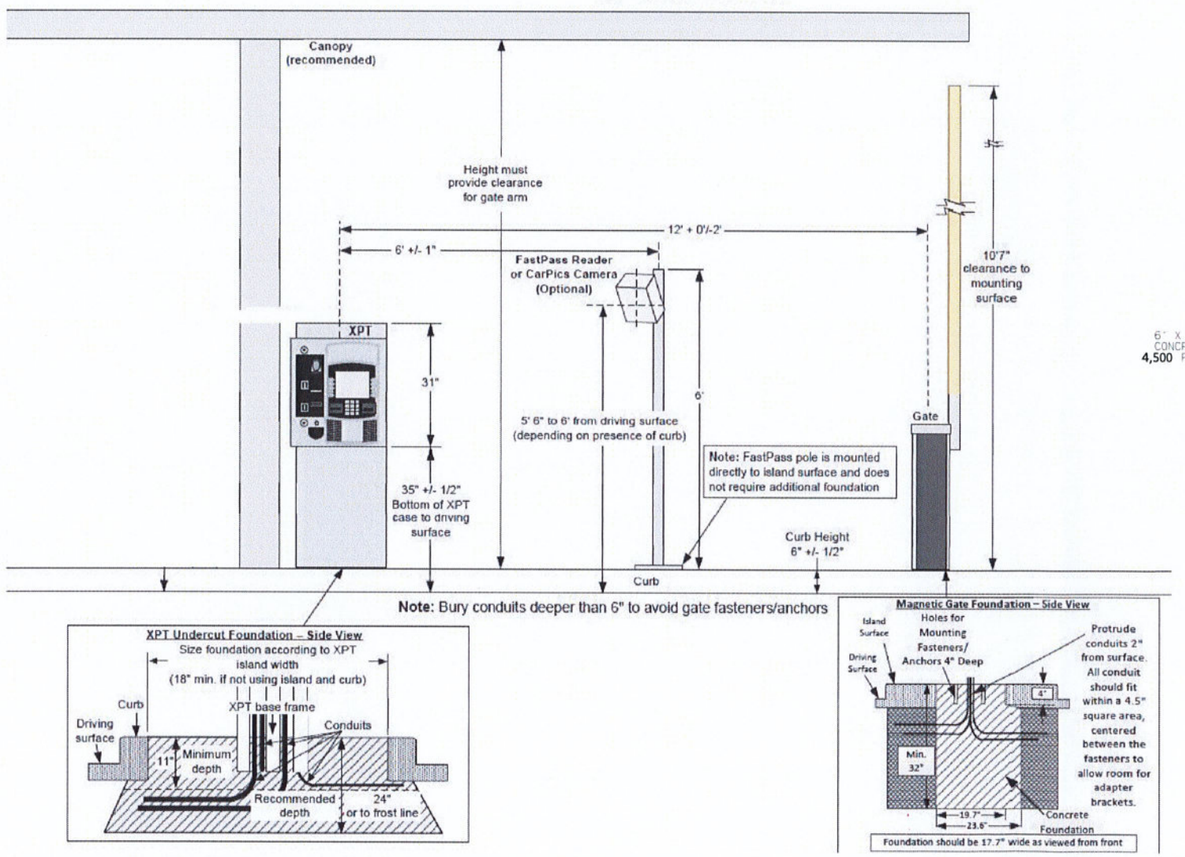
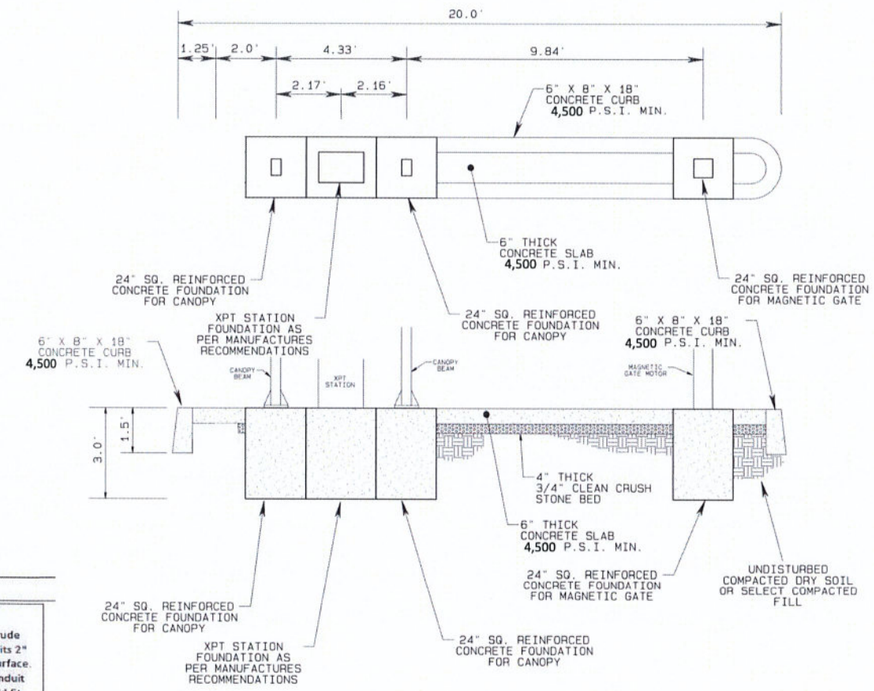
XPT Elevation



1 PAY STATION SECTION DETAILS
SCALE: N.T.S.



2 CONCRETE ISLAND DETAIL
SCALE: N.T.S.

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VALET AUTO WASH
2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No	Submittal / Revision	App'd	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

DETAILS

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.:
C-602

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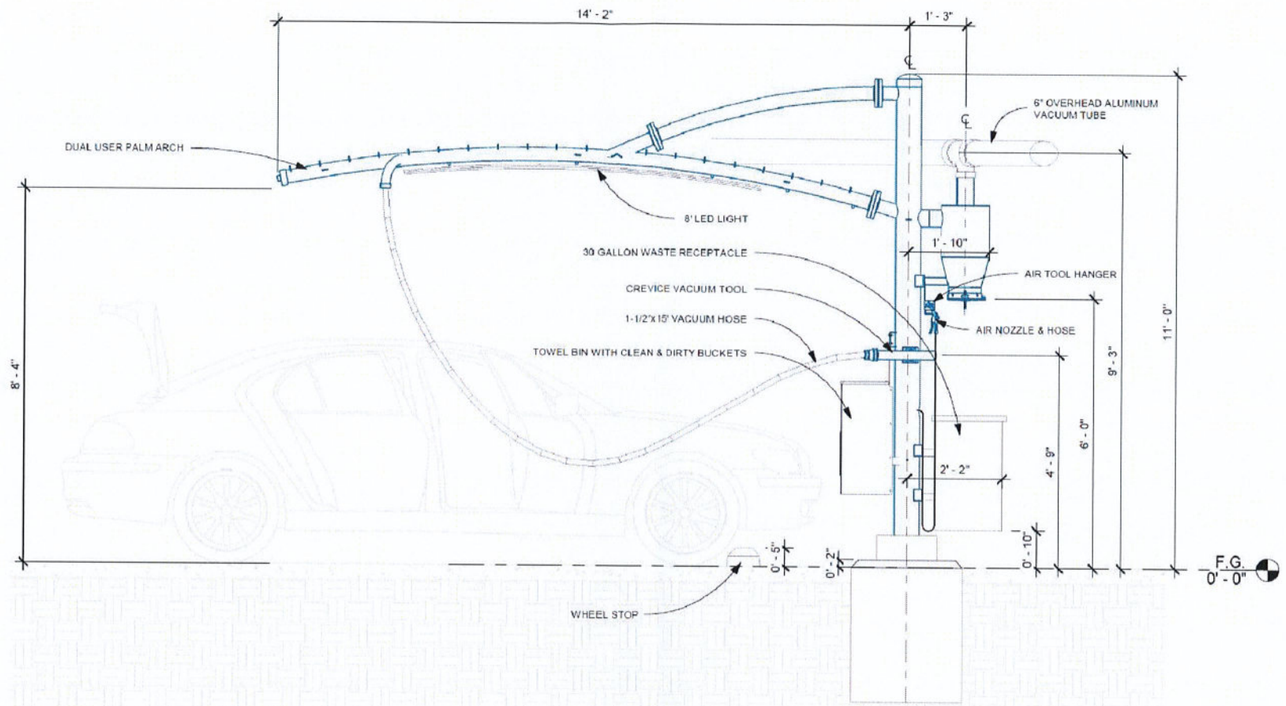
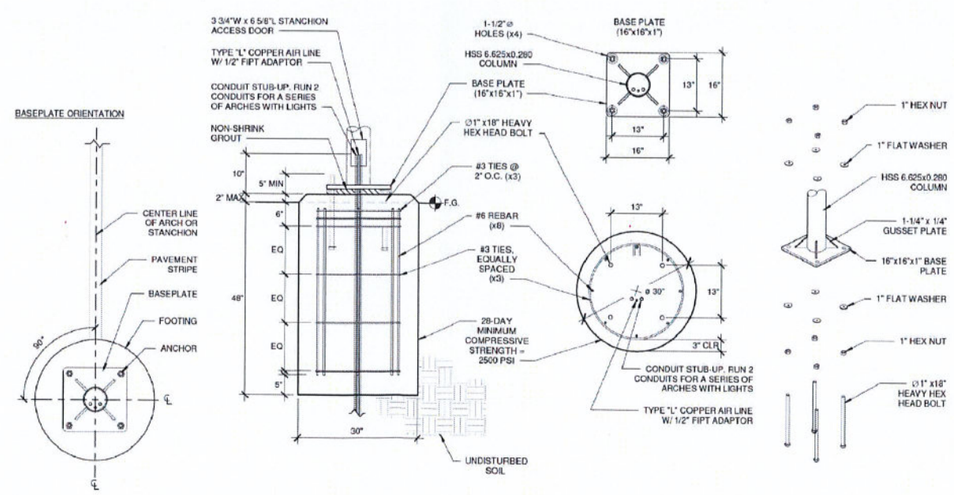


1 VACUUM CANOPY DETAIL
SCALE: N.T.S.



2 VACUUM CANOPY FOUNDATION DETAIL
SCALE: N.T.S.

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VALET AUTO WASH

2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	App'd.	By	Date
0	PRELIMINARY SITE PLAN APPROVAL	JFT	AMV	2/18/20

DETAILS

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.:
C-603

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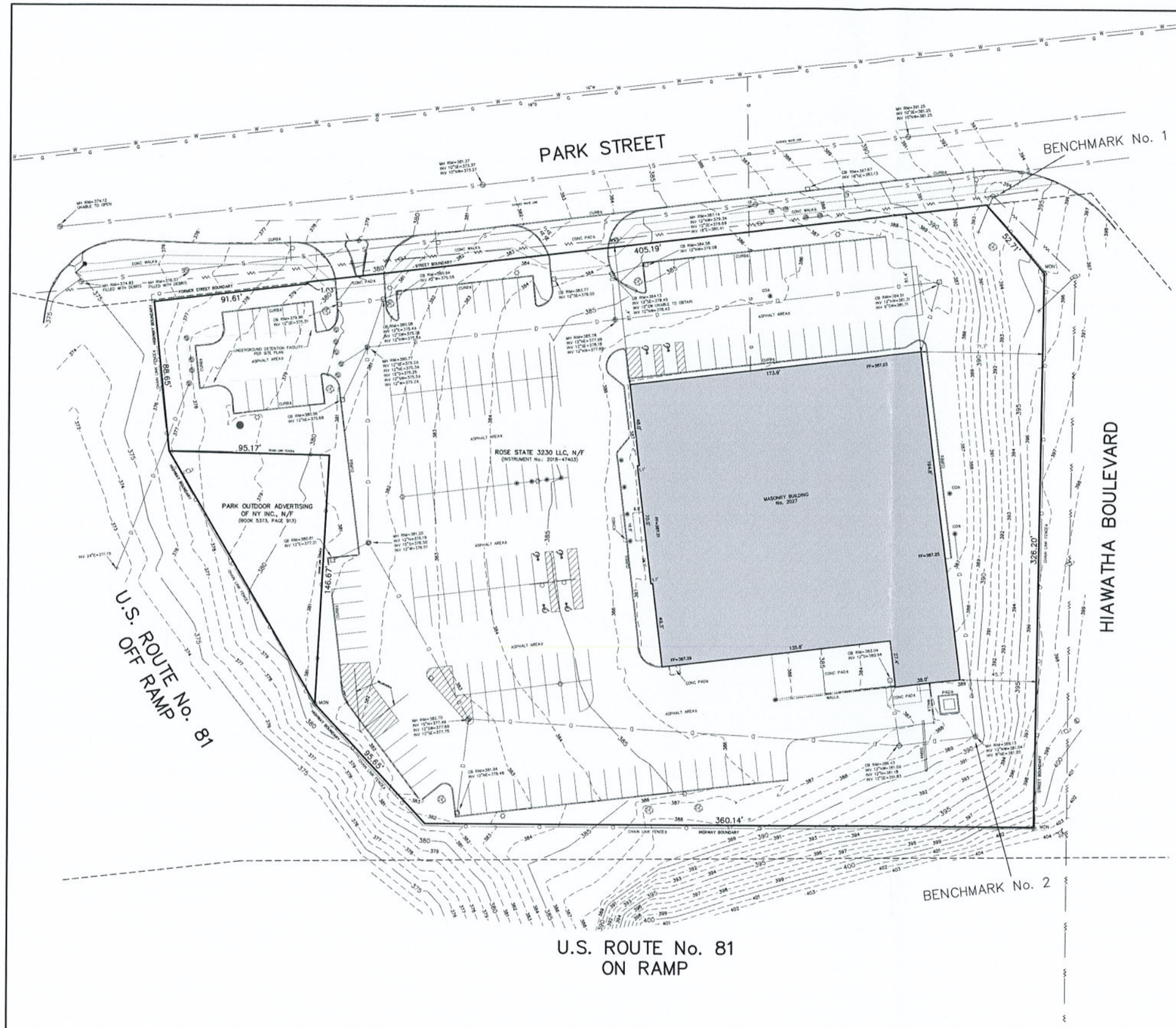


BENCHMARKS:

BENCHMARK NO. 1 – NAIL SPIKE SET IN UTILITY POLE
NM98
ELEV=393.95

BENCHMARK NO. 2 – CHISELED "X" ON MH RIM
ELEV=389.20

NOTES:

Total area: 3.505± acres.
Total number of lots: 1
Present Zone: IA–Industrial District
Elevations referred to NAVD 88.
Location of underground utilities taken by field measurement where practicable, otherwise taken from various other sources and are approximate only.
The premises shown hereon is within Zone "X" (Areas determined to be outside the 0.2% annual chance floodplain.)according to Federal Emergency Management Agency National Flood Insurance Program Flood Insurance Rate Map Community Panel No. 360595 208 F, Effective date: November 4, 2016.
Tax Map No. 1.2–01–05.1
C.E.P. 572

LEGEND:

- indicates original grade
- indicates light stand
- indicates utility pole, anchor & overhead lines
- indicates iron pipe and/or monument found
- indicates bollard
- indicates sign
- indicates storm culvert
- indicates gas main, gas valve & gas line marker
- indicates water main, water valve & hydrant
- indicates storm sewer, catch basin & manhole
- indicates sanitary sewer, sewer vent & manhole
- indicates underground telephone line, manhole & box
- indicates underground electric line & manhole
- indicates underground television cable & box
- indicates boundary line
- indicates adjacent parcel line
- indicates old/original parcel line
- indicates easement line
- indicates centerline road

TRACT MAP:

By: Lehr Land Surveyors
Date Filed: April 23, 2001
Map No.: 9175

Subject to any statement of facts an accurate and up to date abstract of title will show.

Unauthorized alteration or addition to a survey map bearing a licensed land surveyor's seal is a violation of section 7209, sub-division 2, of the New York State Education Law.

\\server\Civil 3D Projects\ONONDAGA COUNTY\CITY OF SYRACUSE\PARK STREET_2027\DWG\PARK STREET_2027_TS.dwg

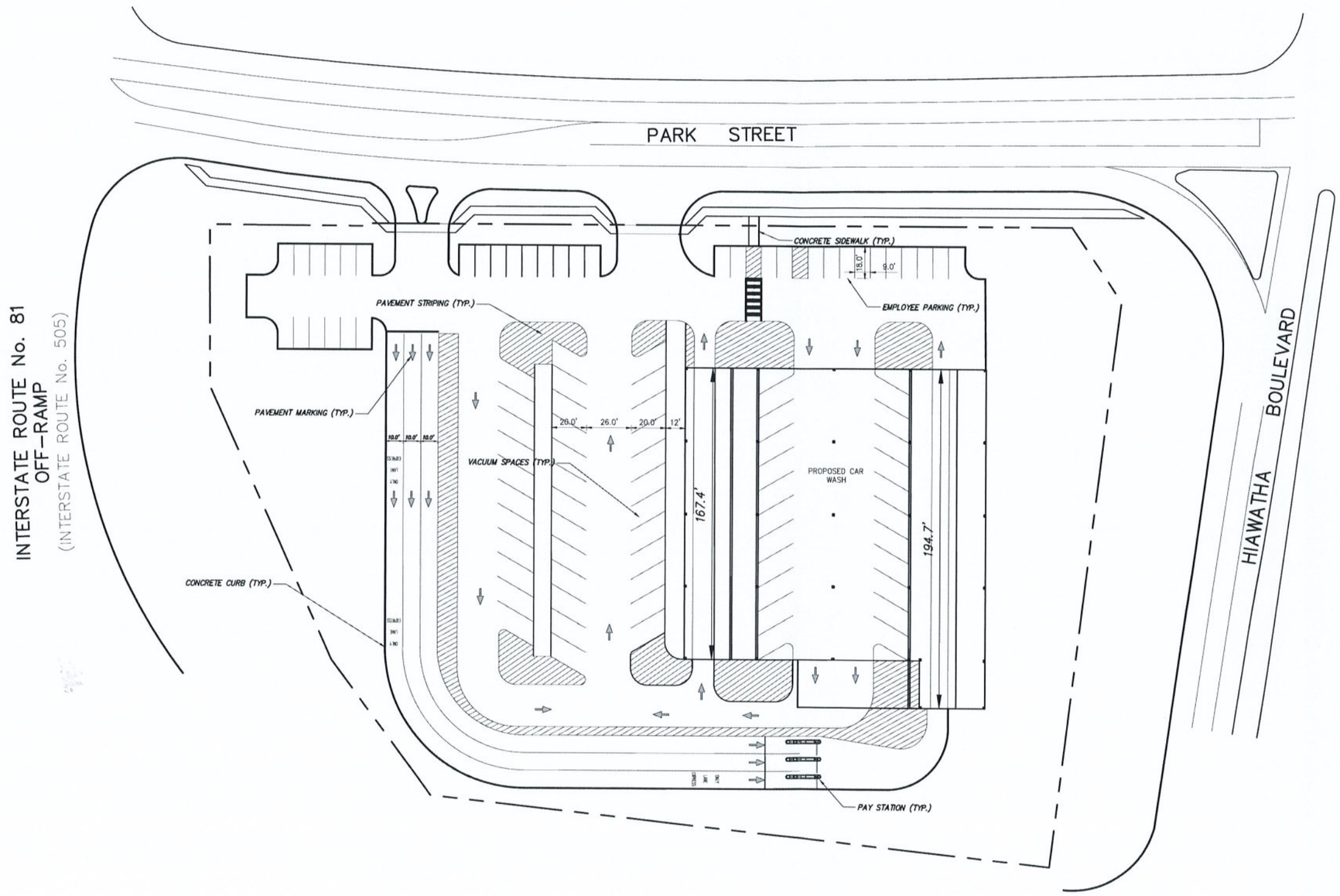
REVISIONS	

TOPOGRAPHIC SURVEY
NEW LOT 2A
PART OF FINE SALT LOT Nos. 48 1/2, 53, 55, 56, 57 & 58
PART OF SOUTH SIDE CUT OF FORMER OSWEGO CANAL
CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

STATE OF NEW YORK · TIMOTHY J. COYLE · No. 050808 · LICENSED LAND SURVEYOR

IANUZI & ROMANS LAND SURVEYING, P.C.
5251 WITZ DRIVE
NORTH SYRACUSE, NY 13212
PHONE: (315) 457-7200
FAX: (315) 457-9251
EMAIL: mail@omansp.com

DATE: FEBRUARY 4, 2020
SCALE: 1" = 30'
FILE No.: 2286.088
SHEET No.
F.B. No. 1656



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0 30 60
Scale in feet

OWNER:
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YARDVILLE, NJ 08620

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VALET AUTO WASH

2027 PARK ST. & HIAWATHA BLVD E.
CITY OF SYRACUSE
ONONDAGA COUNTY

No.	Submittal / Revision	App'd.	By	Date

SITE LAYOUT PLAN

Designed By:	Drawn By:	Checked By:
BFB	BGH	JFT
Issue Date:	Project No:	Scale:
1/29/20	059720	AS SHOWN

Drawing No.
C-101

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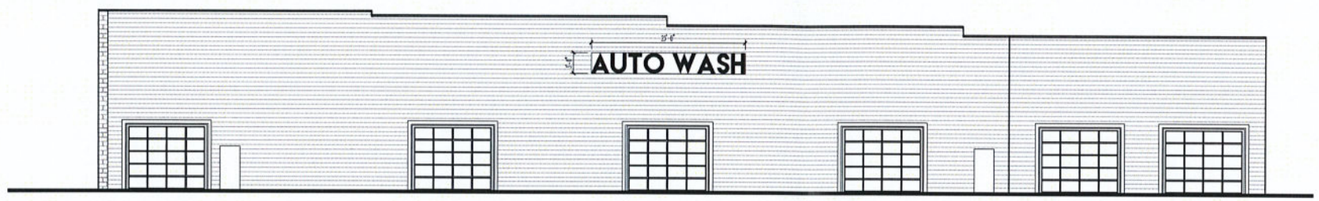
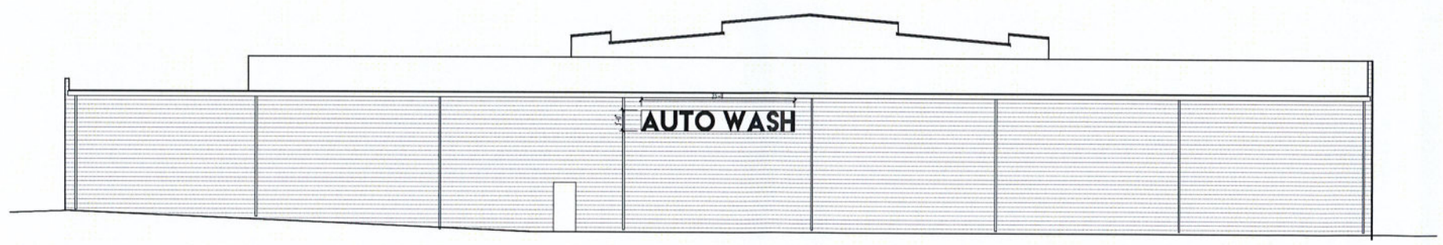
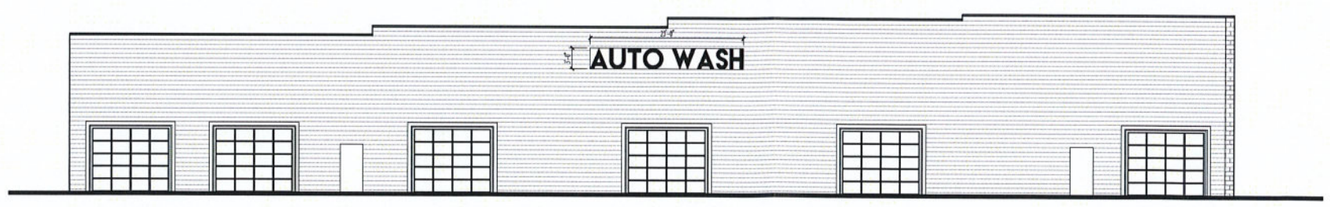
WEST ELEVATION
SCALE 1/8" = 1'-0"



NORTH ELEVATION
SCALE 1/8" = 1'-0"



EAST ELEVATION
SCALE 1/8" = 1'-0"



SOUTH ELEVATION
SCALE 1/8" = 1'-0"

James B. Foran AIA
N.J. 07690
PA. 008777-B

JAMES B. FORAN
ARCHITECT
4569 SOUTH BROAD STREET YARDVILLE, N.J. 08620
VOICE: 609-668-0818 jbforan13@gmail.com FAX: 609 981-7379

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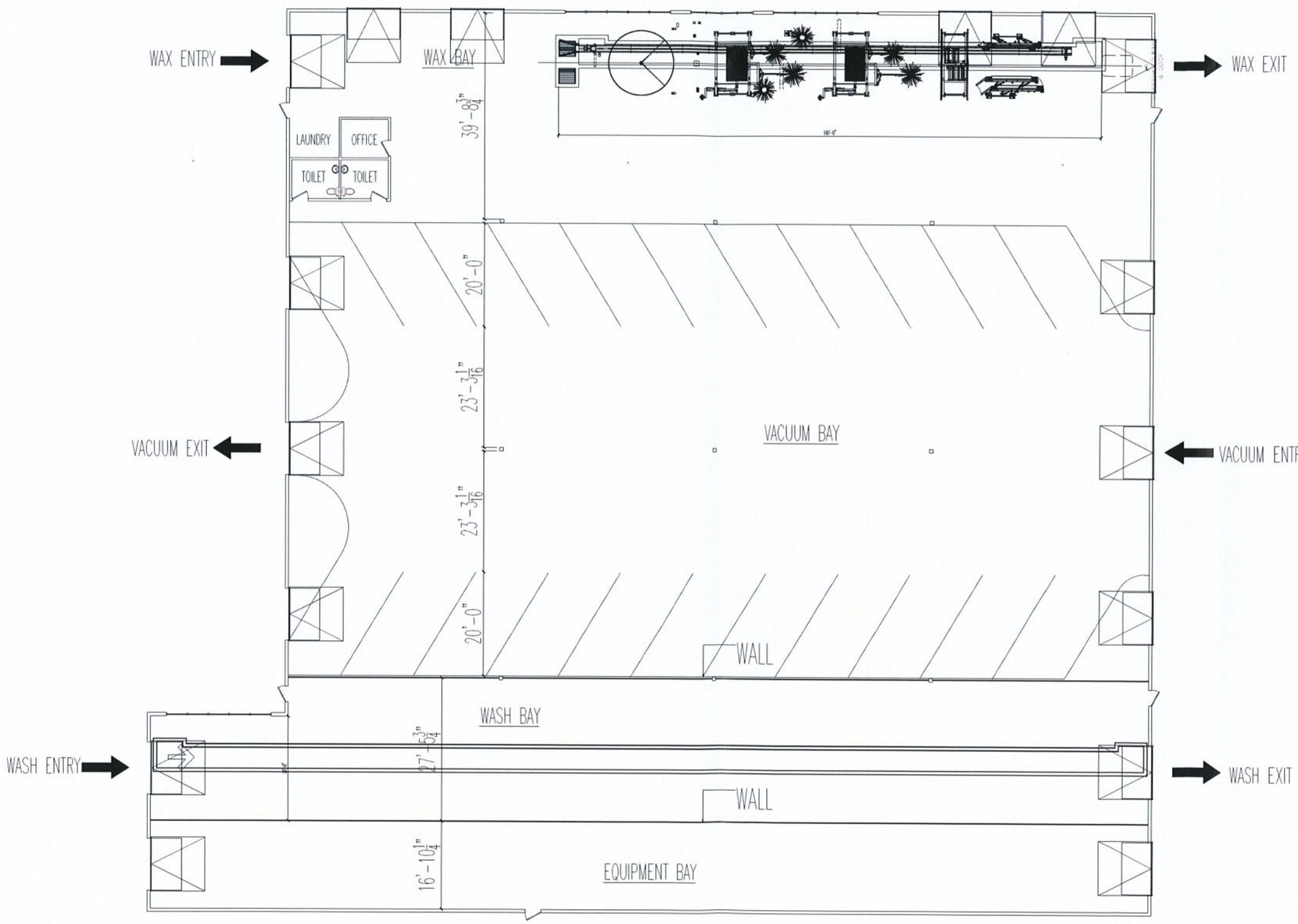
PROPOSED ALTERATIONS FOR:
VALET AUTO WASH
2027 PARK STREET
SYRACUSE, NEW YORK

project no.
2019.0929

date
JANUARY 15, 2020

drawing title
PRELIMINARY
ELEVATIONS

drawing no.
P-2



PRELIMINARY FLOOR PLAN
SCALE 1/8" = 1'-0"

James B. Foran AIA
N.J. 07606
PA. 008777.B

JAMES B. FORAN
ARCHITECT
4569 SOUTH BROAD STREET YARDVILLE, N.J. 08620
VOICE: 609-468-0818 jbforan13@gmail.com FAX: 609 981-7379

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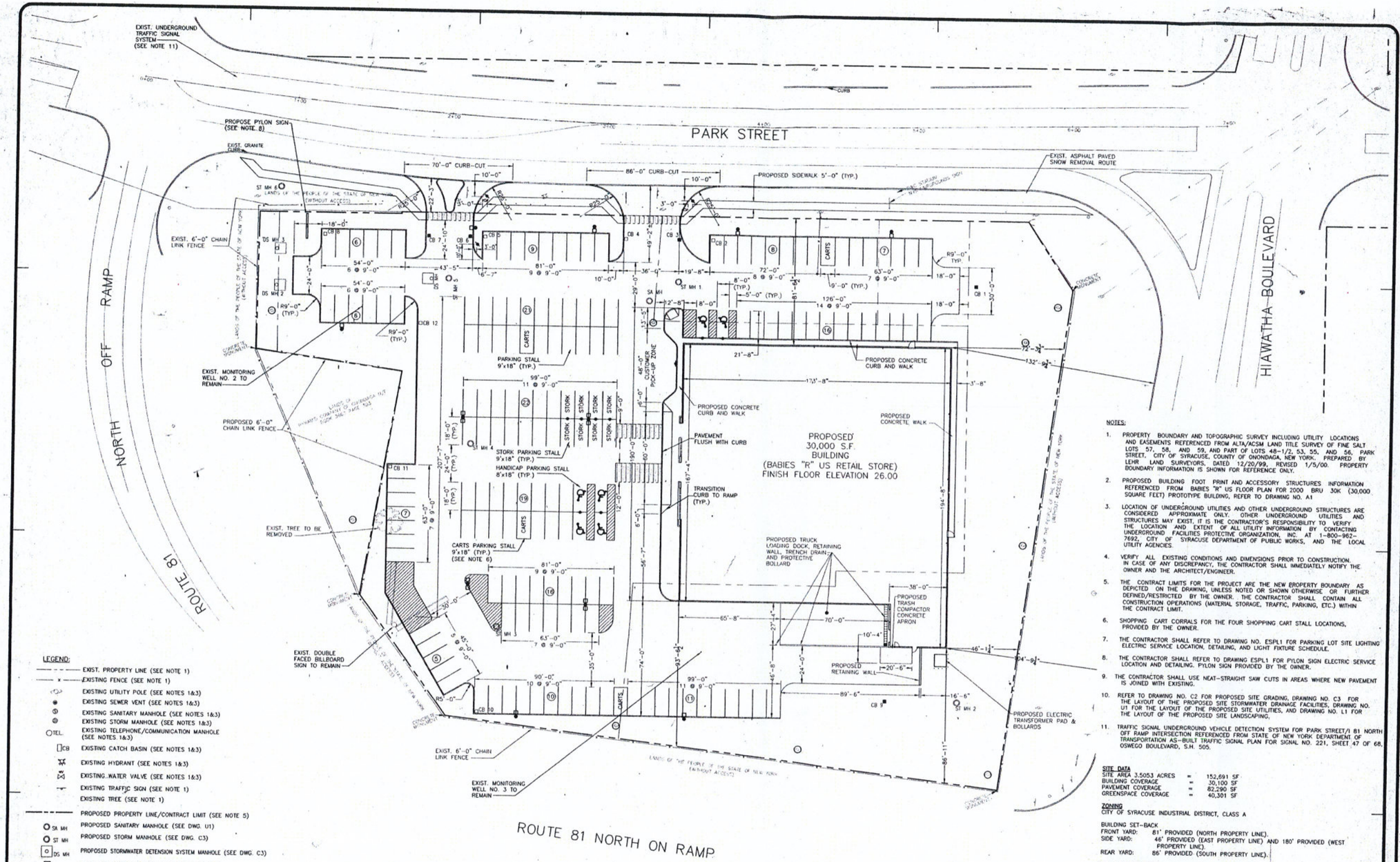
project
PROPOSED ALTERATIONS FOR:
VALET AUTO WASH
2027 PARK STREET
SYRACUSE, NEW YORK

project no.
2019.0929

date:
JANUARY 15, 2020

drawing title
PRELIMINARY
FLOOR PLAN

drawing no.
P-1



SITE LAYOUT PLAN

SCALE: 1" = 30'

LEGEND:

- EXIST. PROPERTY LINE (SEE NOTE 1)
- EXISTING FENCE (SEE NOTE 1)
- EXISTING UTILITY POLE (SEE NOTES 1&3)
- EXISTING SEWER VENT (SEE NOTES 1&3)
- EXISTING SANITARY MANHOLE (SEE NOTES 1&3)
- EXISTING STORM MANHOLE (SEE NOTES 1&3)
- EXISTING TELEPHONE/COMMUNICATION MANHOLE (SEE NOTES 1&3)
- EXISTING CATCH BASIN (SEE NOTES 1&3)
- EXISTING HYDRANT (SEE NOTES 1&3)
- EXISTING WATER VALVE (SEE NOTES 1&3)
- EXISTING TRAFFIC SIGN (SEE NOTE 1)
- EXISTING TREE (SEE NOTE 1)
- PROPOSED PROPERTY LINE/CONTRACT LIMIT (SEE NOTE 5)
- SA MH — PROPOSED SANITARY MANHOLE (SEE DWG. U1)
- ST MH — PROPOSED STORM MANHOLE (SEE DWG. C3)
- DS MH — PROPOSED STORMWATER DETENSION SYSTEM MANHOLE (SEE DWG. C3)
- CB — PROPOSED TYPE 1 CATCH BASIN (SEE DWG. C3)
- CB — PROPOSED TYPE 2 CATCH BASIN (SEE DWG. C3)
- PROPOSED SIGN
- PROPOSED SITE LIGHT (SEE NOTE 7)
- PROPOSED CHAIN LINK FENCE
- EXISTING UTILITY POLE TO BE REMOVED (SEE DWG. C0)
- EXISTING UTILITY POLE TO BE RELOCATED (SEE DWG. U1)

NOTES:

1. PROPERTY BOUNDARY AND TOPOGRAPHIC SURVEY INCLUDING UTILITY LOCATIONS AND EASEMENTS REFERENCED FROM ALTA/ACSM LAND TITLE SURVEY OF FINE SALT LOTS 57, 58, AND 59, AND PART OF LOTS 48-1/2, 53, 55, AND 56, PARK STREET, CITY OF SYRACUSE, COUNTY OF ONONDAGA, NEW YORK. PREPARED BY LEHR LAND SURVEYORS, DATED 12/20/99, REVISED 1/5/00. PROPERTY BOUNDARY INFORMATION IS SHOWN FOR REFERENCE ONLY.
2. PROPOSED BUILDING FOOT PRINT AND ACCESSORY STRUCTURES INFORMATION REFERENCED FROM BABIES "R" US FLOOR PLAN FOR 2000 BRU 30K (30,000 SQUARE FEET) PROTOTYPE BUILDING, REFER TO DRAWING NO. A1
3. LOCATION OF UNDERGROUND UTILITIES AND OTHER UNDERGROUND STRUCTURES ARE CONSIDERED APPROXIMATE ONLY. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UTILITY INFORMATION BY CONTACTING UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION, INC. AT 1-800-962-7692, CITY OF SYRACUSE DEPARTMENT OF PUBLIC WORKS, AND THE LOCAL UTILITY AGENCIES.
4. VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. IN CASE OF ANY DISCREPANCY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE ARCHITECT/ENGINEER.
5. THE CONTRACT LIMITS FOR THE PROJECT ARE THE NEW PROPERTY BOUNDARY AS DEPICTED ON THE DRAWING, UNLESS NOTED OR SHOWN OTHERWISE OR FURTHER DEFINED/RESTRICTED BY THE OWNER. THE CONTRACTOR SHALL CONTAIN ALL CONSTRUCTION OPERATIONS (MATERIAL STORAGE, TRAFFIC, PARKING, ETC.) WITHIN THE CONTRACT LIMIT.
6. SHOPPING CART CORRALS FOR THE FOUR SHOPPING CART STALL LOCATIONS, PROVIDED BY THE OWNER.
7. THE CONTRACTOR SHALL REFER TO DRAWING NO. ESPL1 FOR PARKING LOT SITE LIGHTING ELECTRIC SERVICE LOCATION, DETAILING, AND LIGHT FIXTURE SCHEDULE.
8. THE CONTRACTOR SHALL REFER TO DRAWING ESPL1 FOR PYLON SIGN ELECTRIC SERVICE LOCATION AND DETAILING. PYLON SIGN PROVIDED BY THE OWNER.
9. THE CONTRACTOR SHALL USE NEAT-STRAIGHT SAW CUTS IN AREAS WHERE NEW PAVEMENT IS JOINED WITH EXISTING.
10. REFER TO DRAWING NO. C2 FOR PROPOSED SITE GRADING, DRAWING NO. C3 FOR THE LAYOUT OF THE PROPOSED SITE STORMWATER DRAINAGE FACILITIES, DRAWING NO. U1 FOR THE LAYOUT OF THE PROPOSED SITE UTILITIES, AND DRAWING NO. L1 FOR THE LAYOUT OF THE PROPOSED SITE LANDSCAPING.
11. TRAFFIC SIGNAL UNDERGROUND VEHICLE DETECTION SYSTEM FOR PARK STREET/I 81 NORTH OFF RAMP INTERSECTION REFERENCED FROM STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION AS-BUILT TRAFFIC SIGNAL PLAN FOR SIGNAL NO. 221, SHEET 47 OF 68, OSWEGO BOULEVARD, S.H. 505.

SITE DATA

SITE AREA 3.5053 ACRES	=	152,691 SF
BUILDING COVERAGE	=	30,100 SF
PAVEMENT COVERAGE	=	82,290 SF
GREENSPACE COVERAGE	=	40,301 SF

ZONING

CITY OF SYRACUSE INDUSTRIAL DISTRICT, CLASS A

BUILDING SET-BACK
FRONT YARD: 81' PROVIDED (NORTH PROPERTY LINE).
SIDE YARD: 46' PROVIDED (EAST PROPERTY LINE) AND 180' PROVIDED (WEST PROPERTY LINE).
REAR YARD: 86' PROVIDED (SOUTH PROPERTY LINE).

LOT REQUIREMENTS

LOT SIZE: NO MINIMUM LOT AREA OR WIDTH REQUIRED.
MAXIMUM COVERAGE OF LOT BY BUILDING: 100% OR 152,691, SF.
PROPOSED BUILDING LOT COVERAGE: 19.71% OR 30,100 SF.
MAXIMUM COVERAGE OF LOT BY PARKING LOT SURFACE: 100% OR 152,691 SF.
PROPOSED PARKING LOT COVERAGE: 53.89% OR 82,290 SF.
PROPOSED BUILDING HEIGHT: 32' - 7".

PARKING REQUIREMENTS

REQUIRED: CITY OF SYRACUSE - ONE SPACE FOR EACH 300 SF OF GROSS FLOOR AREA (RETAIL STORE).
BABIES "R" US - ONE SPACE FOR EACH 200 SF OF GROSS FLOOR AREA.

PARKING SPACES REQUIRED: CITY OF SYRACUSE = 100
BABIES "R" US = 150

PARKING SPACES PROVIDED:

TYPICAL SPACE	=	149
STORK (MOTHER-TO-BE) SPACE	=	8
HANDICAP SPACE	=	6
TOTAL	=	163

PROPOSED PARKING SPACE SIZE: 9'-0" X 18'-0" (TYPICAL SPACE)
8'-0" X 18'-0" (HANDICAP SPACE)
5'-0" X 18'-0" (HANDICAP ACCESS AISLE)
8'-0" X 18'-0" (VAN HANDICAP ACCESS AISLE)

PROPOSED ACCESS AISLE:

PARKING	=	24'-0"
BUILDING	=	30'-0"
MAIN SITE ENTRANCE	=	36'-0"
SECONDARY SITE ENTRANCE	=	30'-0"

Revisions

No	Date	Description
	4/24/00	PERMIT APPLICATION
	7/21/00	CONSTRUCTION BID
1	10/31/00	NYSDOT PERMIT APPLICATION
2	2/28/01	REVISED SITE GRADES & ELIMINATED RETAINING WALL

Drawing References

No	Drawings
C0	EXISTING SITE CONDITIONS & DEMOLITION PLAN
C2	SITE GRADING & IMPROVEMENTS PLAN
C3	STORMWATER MANAGEMENT & EROSION CONTROL SITE PLAN
U1	SITE UTILITIES PLAN
SP1	SITE COORDINATION PLAN

BID DATE:
CADD NAME: 71501-C1 PROJECT NO.: 800138
DRAWN BY: FJS/MK CHECKED BY: CJL
PROTOTYPE DESIGNATION: 2000 BRU 30K REV. 0.00

C&H engineers, p.c.
PROFESSIONAL ENGINEERING SERVICES
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(315)475-8000 Fax(315)475-3523

PROFESSIONAL OF RECORD
PRACTICING AS AN INDIVIDUAL

PROFESSIONAL OF RECORD:
Raymond N. Cudney, P.E.
315-472-6980

BABIES "R" US®

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Paramus, NJ 07652
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Location
SYRACUSE, NY

Drawing Title
SITE LAYOUT PLAN

Scale: AS NOTED
Date: 4/24/00

Sheet No.
C1

2R

As Built

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3/9/01 10:09 MK

GTS Consulting
1396 White Bridge Road
Chittenango, NY 13037
Tel: (315) 391-5110 Fax: (315) 687-6267

January 27, 2020

CHA
441 South Salina Street
Syracuse, NY 13202-4712

Attn: Mr. Brian Bouchard

Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

Dear Mr. Bouchard:

I have completed my review of the traffic operations associated with the proposed Car wash development on the south side of Park Street in Syracuse, NY. This letter summarizes the work completed in this review as well as my findings.

Project Understanding

The site is located at 2027 Park Street. The site was formerly occupied by a Babies "R" Us store which has been closed for a few years. The proposed redevelopment includes a car wash facility with a single car wash tunnel, a vacuum area and a single wax tunnel. Access to the site is proposed via the two existing access driveways to Park Street. The west site access is a right in/right out only driveway and the east driveway provides full access.

A site layout plan developed by CHA, dated December 19, 2019 and a traffic flow schematic diagram developed by James Foran, Architect, dated January 15th, 2020 has been attached.

Data Collection

The 2019 build traffic volumes were taken from the Dunkin' Donuts traffic impact assessment (GTS Consulting, dated November 9th, 2018) and used as the base traffic volumes for this study. The study area includes the intersections of Park Street with Hiawatha Boulevard, I-81 Northbound Offramp/Farmers Market Place, Harborside Drive/NBT Bank Parkway, and the site access driveways.

Site visits were conducted on Thursday, January 23rd, 2020 to collect the following:

- Park Street Gap Data – Gap data was collected to assess the ability for vehicles to turn in and out of the existing site access driveways on Park Street. In order for a vehicle to turn right out of the site, or left into the site, the vehicle only requires a gap in the eastbound direction on Park Street. A vehicle requires a gap in traffic in both directions at the same time to turn left out of the site onto Park Street. These gaps in traffic were observed and timed on Park Street during both the morning and evening traffic count periods. The gaps were then converted to a number of vehicles that could turn left or right out of the site during each gap and then totaled for the peak hour. For example, one vehicle can turn from the driveway with a 6-9 second gap

in traffic, two can turn with a 10-13 second gap, 3 with a 14-17 second gap, 4 with an 18-19 second gap, etc.

- Spot Speed Measurements – 50 spot speed measurements were collected passing the site in each direction on Park Street to identify the average and 85th percentile speeds in the area. The 85th percentile speed is typically considered the design speed.

- Sight Distance Measurements – Sight lines looking east and west along Park Street from the existing site access driveways were collected for comparison to design standards in order to confirm that adequate sight lines are available for safe ingress and egress from the site.

- Operational Data - Other data needed to evaluate traffic operations, such as intersection geometry, control, signal timings, and speeds limits were also collected.

Existing Operations

Based on the previous study completed for the Dunkin' Donuts development, the peak hours were identified as follows:

Morning Peak Hour – 7:15am to 8:15am
Evening Peak Hour – 4:30pm to 5:30pm

The 2019 base traffic volumes with the approved Dunkin' Donuts development are shown in the attached Figure 1. Park Street operates as a minor arterial roadway in the area. Park Street carries approximately 300-500 vehicles in each direction passing the site during the morning peak hour and approximately 550 vehicles in each direction passing the site during the evening peak hour.

Based on the gap data collected, there are sufficient gaps in traffic to accommodate approximately 500-550 vehicles turning right onto Park Street from the site access driveways during both the morning and evening peak hours. These gaps would also be available for vehicles turning left into the site from Park Street. There were sufficient gaps observed to accommodate approximately 427 vehicles turning left out of the site onto Park Street during the morning peak hour and 271 vehicles turning left during the evening peak hour. There are more than sufficient gaps in traffic to accommodate potential traffic accessing the site under the proposed redevelopment. The gap data is attached.

The posted speed limit is 30 mph on Park Street. The speed data collected indicates that the average speeds passing the site on Park Street are 33 mph in the eastbound direction and 34 mph in the westbound direction. The 85th percentile speeds based on the data collected are 36.5 mph eastbound and 37.5 mph westbound on Park Street. The 85th percentile speeds are considered the operating speeds and are typically used for design. The spot speed data has been attached.

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Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

The following table provides a summary of the recommended sight distances along Park Street from the AASHTO A Policy on Design of Highways and Streets as well as the available sight distances based on field measurements. An operating speed of 40 mph on Park Street was used in the review. The sight distances were adjusted to account for the extra two lanes being crossed when turning left out of the site.

Sight Distance Summary

Location	Operating Speed	Direction	AASHTO Recommended Sight Distance	Available Sight Distance
Park Street @ East Site Drive – Turning Left	40 mph	Looking Left	500 feet	1,000+ feet
		Looking Right	500 feet	550+ feet
Park Street @ East Site Drive – Turning Right	40 mph	Looking Left	385 feet	1,000+ feet
Park Street @ West Site Drive – Turning Right	40 mph	Looking Left	385 feet	1,000+ feet

There is more than adequate sight distance available on Park Street looking both east and west from the existing access locations. There are no concerns with sight distances and safety for ingress and egress from the existing site driveways.

Capacity analysis of the existing traffic operations was completed using Synchro10, the industry accepted standards for the analysis of both signalized and unsignalized intersections that is based on methodologies developed in the Highway Capacity Manual. Intersection and individual movement operations are graded in terms of Level of Service ranging from A to F, as described in the HCM. For example, an unsignalized intersection movement with an average delay of 5 seconds per vehicle is considered a Level of Service A while an average delay per vehicle of 20 seconds is considered a C. A Level of Service D or better is generally considered acceptable for a signalized intersection while a Level of Service E or better is generally considered acceptable for an unsignalized intersection.

The results of the 2019 existing conditions capacity analysis with the approved Dunkin' Donuts development indicate that all traffic movements at the signalized intersections in the study area are operating at Level of Service D or better during both peak hours. Overall intersection Levels of Service are C or better during both peak hours. The detailed Level of Service summary and Synchro capacity analysis printouts have been attached.

There are no concerns noted with access to the site from Park Street. There are good sight lines, numerous gaps in traffic, moderate traffic volumes, and acceptable delays at adjacent intersections. These findings are consistent with observations made during the data collection effort.

Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

Accident Analysis

An accident analysis was completed for the study area using history reports obtained for a three year period from September 2015 through August 2017. Over the three year period, there were 106 total accidents in the study area. Overall, only 20 (19%) of the accidents were injury accidents with no fatalities and the remainder being property damage only accidents.

There were 50 accidents at the Park Street intersection with Harborside Drive and NBT Bank Parkway including 28 rearend accidents, 8 left turn accidents, 4 right angle accidents, 2 overtaking accidents, 2 fixed object accidents, 1 head on accident, 1 right turn accident, 1 sideswipe accident and 1 other accident. Assuming the evening peak hour volume in the intersection is 9% of the average daily traffic volume, the resulting accident rate is 2.00 accidents per million entering vehicles. This rate is nearly 4 times the statewide average rate of 0.52 accidents per million entering vehicles for similar facilities, indicating that this is a high accident location.

There were 23 accidents at the Park Street intersection with the I-81 northbound offramp and Farmers Market Place including 10 rearend accidents, 6 right angle accidents, 3 overtaking accidents, 2 left turn accidents, 1 right turn accident and 1 fixed object accident. Assuming the evening peak hour volume in the intersection is 9% of the average daily traffic volume, the resulting accident rate is 1.33 accidents per million entering vehicles. This rate is over double the statewide average rate of 0.52 accidents per million entering vehicles for similar facilities, indicating that this is a high accident location.

There were 19 accidents at the Park Street intersection with Hiawatha Boulevard including 7 rearend accidents, 7 overtaking accidents and 5 right angle accidents. Assuming the evening peak hour volume in the intersection is 9% of the average daily traffic volume, the resulting accident rate is 0.96 accidents per million entering vehicles. This rate is nearly two times the statewide average rate of 0.52 accidents per million entering vehicles for similar facilities, indicating that this is also a high accident location.

There were 14 midblock accidents along Park Street including 5 rearend accidents, 5 fixed object accidents, 1 overtaking accident, 1 right turn accident, 1 head on accident and 1 non-collision accident. Assuming the evening peak hour volume on the link is 9% of the average daily traffic volume, the resulting accident rate is 2.80 accidents per million vehicle miles. This rate is just slightly above the statewide average rate of 2.71 accidents per million vehicle miles for similar facilities. This would not be considered a high accident location. The accident rate is significantly skewed by the short length of the roadway segment reviewed.

Overall, 65 (61%) of the accidents in the study area were rearend or overtaking accidents and only 28 (26%) of the accidents involved conflicting turning movements. The accident data and calculations have been attached.

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Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

2021 Background Operations

The proposed car wash is assumed to be completed by 2021. In order to fully understand the impacts of the development on the adjacent roadway system, analysis of the operations immediately before the project opening must first be completed. The existing traffic volumes were adjusted by a growth rate to account for any unknown development that may occur prior to completion of the project.

Historical traffic volumes along Park Street between the Syracuse City Line and Farmers Market Place, and between Farmers Market Place and Wolf Street, were taken from the 2017 NYSDOT Traffic Volume Report and reviewed in order to identify an appropriate background growth rate. Long term growth rates in the area have been –0.2% per year between 2000 and 2017 on the western section of Park Street, but have been +1.5% per year between 2011 and 2017 on the eastern section of Park Street. A positive 1.5% annual background growth in traffic was assumed from 2019 to 2021 in order to maintain a conservative traffic analysis. The 2021 background traffic volumes with 3% total growth are shown in Figure 2.

The capacity analyses of the 2021 background condition shows no notable increases in delay from the base condition. The signalized intersections will continue to operate at overall Levels of Service C or better with all individual movements continuing to operate at Level of Service D or better during both peak hours. The detailed Level of Service summary and the Synchro capacity analysis printouts have been attached.

Trip Generation Estimate and Distribution

The proposed development includes a single car wash bay, with a vacuum bay and a single wax bay. The site provides ample space for vehicle stacking on the site with three lanes along the west and south side of the development. Traffic will circulate through the three bay areas with the availability to exit the site after each one if so desired.

Trips generated by the proposed development were estimated using the ITE Trip Generation, 10th Edition, which is the industry accepted standard for estimating traffic for new developments. Land Use 948 – Automated Car Wash was used for the estimate.

A portion of the traffic generated will be drawn from traffic already passing the site on Park Street and is referred to as pass-by trips. Pass-by trips are vehicles that stop at the development on their way to another location, such as stopping on their way to work in the morning or on their way home in the evening. These vehicles are already traveling on the roadway and are diverted to the site. While there is no data available regarding pass-by trips for a car wash, a conservative estimate of 30% was assumed during each peak hour.

Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

The following tables summarizes the trip generation estimate for the proposed Car wash development in Syracuse, NY.

Trip Generation Summary

	Morning Peak		Evening Peak	
	Entering	**Exiting**	**Entering**	**Exiting**
Car Wash – 1 Tunnel	24	24	39	39
Pass-by Trips – 30%	*-7*	*-7*	*-11*	*-11*
Total New Trips Generated	***17***	***17***	***28***	***28***

Overall the proposed development can be expected to generate approximately 25 total trips entering and exiting during the morning peak hour and 40 total trips entering and exiting during the evening peak hour. The detailed trip generation estimate is attached.

Based on existing traffic patterns and population centers in the area, 25% of the new trips generated are expected to travel to/from the south on Hiawatha Boulevard, 25% is expected to travel to/from the west on Park Street, 15% is expected to travel to/from the north on Hiawatha Boulevard, 10% is expected to travel to/from the south on Harborside Drive, 5% is expected to travel to/from the north on NBT Bank Parkway and 10% is expected to arrive from I-81 northbound with 5% returning south on Harborside Drive and 5% returning south on Hiawatha Boulevard. Separate pass-by trip distributions were developed for each peak hour based on existing traffic patterns traveling past the site on Park Street. The morning and evening peak hour trip distribution percentages are shown in Figures 3 and 4 respectively. The trips generated by the development during the morning and evening peak hours are shown in Figure 5 and the resultant full build traffic volumes expected when the development is complete are shown in Figure 6.

Build Operations

Based on the projected turning movements on Park Street at the site driveway, there are more than sufficient gaps available to accommodate the proposed development.

The capacity analyses of the 2021 build condition shows no changes in Level of Service for any movement at the signalized study area intersections during either peak hour. No individual movement delay increases by more than 1 second. The analysis of the site driveways indicates that the traffic exiting the site will operate at Level of Service C or better during both peak hours with minimal delays on Park Street. The detailed Level of Service summary and the Synchro capacity analysis printouts have been attached.

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Re: Traffic Impact Assessment – Proposed Car Wash
Park Street, Syracuse, NY

Conclusions

The proposed car wash is a minor traffic generator during the morning and evening peak hours. Overall, there are no impacts to traffic capacity identified, there are ample gaps in traffic to accommodate the development, and there are excellent sight lines looking east and west from the driveways to provide safe access. There are no mitigation measures recommended.

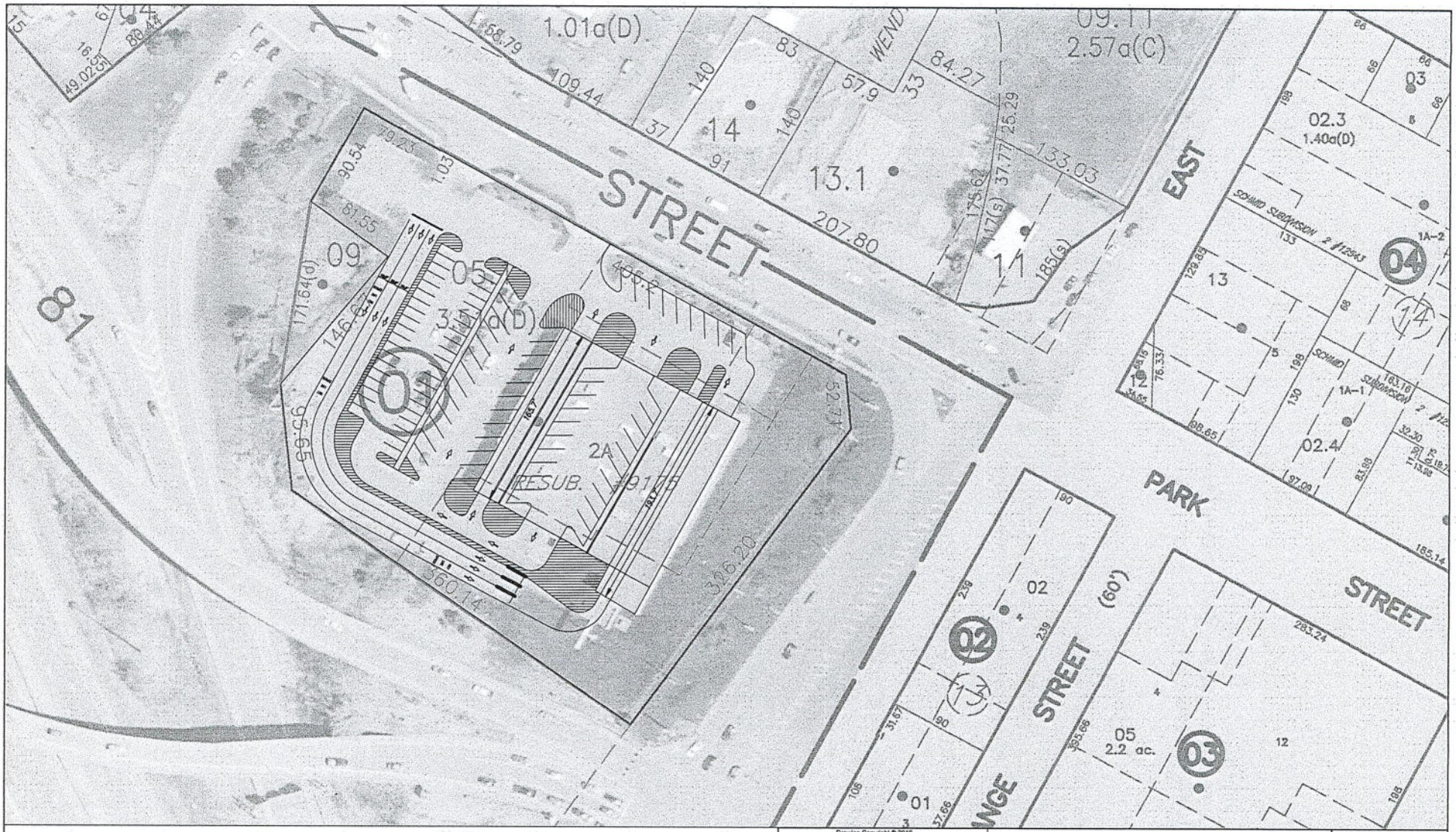
If you have any questions or need additional information, please call.

Sincerely,

Gordon T. Stansbury, P.E., P.T.O.E.
GTS Consulting

Attachments –

- Site Layout Plans
- Traffic Volume Figures 1-6
- Spot Speed Data
- Trip Generation Estimates
- Capacity Analysis Printouts
- Level of Service Summary
- Gap Calculations
- Background Growth Calculations
- Accident Data



Scale in feet: 0 80 160

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CHA
300 South State Street - Suite 600
Syracuse, NY 13202
315.471.3920 • www.chacompanies.com

PROPOSED CAR WASH

2027 PARK ST. & HIAWATHA BLVD
SYRACUSE NY 13208

PROJECT NO.
–

DATE: 12/19/19

FIGURE

File: V:\CH_DATA\OFFICES\SNY\GOVCOMMINFR\CIVIL-SITE\BOUCHARD\CAR WASH - PARK STREET\CADD\CONCEPT_12-19-19.DWG
Saved: 12/19/2019 4:57:04 PM Plotted: 12/19/2019 4:59:26 PM Current User: Bouchard, Brian LastSavedBy: 3191

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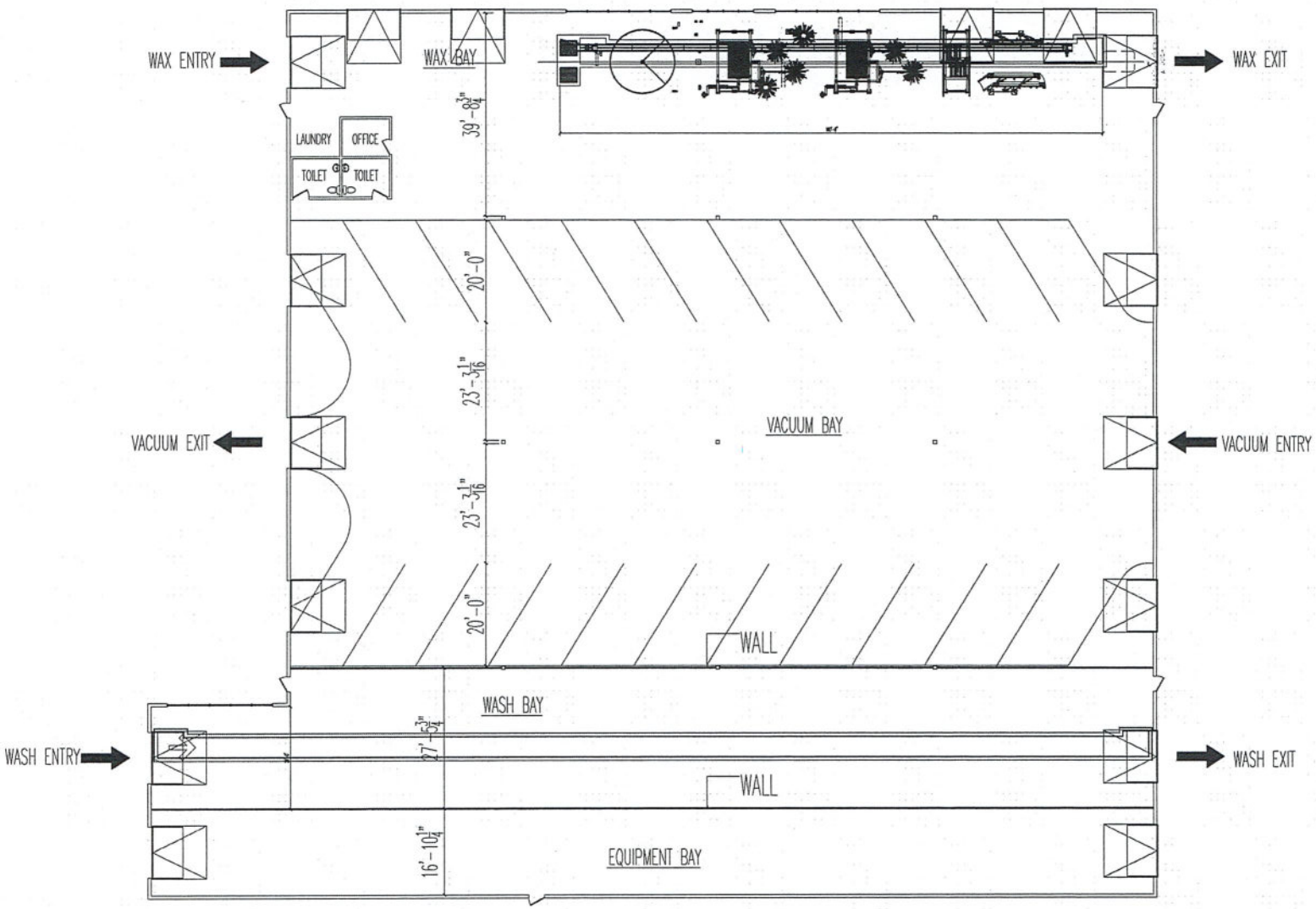

PRELIMINARY FLOOR PLAN
SCALE 1/8" = 1'-0"

James B. Foran AIA
N.J. 07600
PA. 026777S

JAMES B. FORAN
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PROPOSED ALTERATIONS FOR:
VALET AUTO WASH
2027 PARK STREET
SYRACUSE, NEW YORK

2019.0929

JANUARY 15, 2020

PRELIMINARY
FLOOR PLAN

P-1

Proposed Car Wash – 2027 Park Street – Syracuse, NY

Intersection Level of Service Summary

Morning Peak Hour

Intersection	2019 Base	2021 Background	2021 Build
Park Street @ Hiawatha Boulevard	**C(22)**	**C(23)**	**C(23)**
EB Left	C(35)	D(36)	D(36)
EB Through	C(26)	C(27)	C(27)
EB Right	A(1)	A(1)	A(1)
WB Left	D(36)	D(36)	D(36)
WB Through/Right	C(31)	C(31)	C(32)
NB Left	C(31)	C(32)	C(32)
NB Left/Through/Right	C(26)	C(27)	C(27)
SB Left	C(27)	C(28)	C(28)
SB Through	C(33)	C(33)	C(34)
SB Right	A(1)	A(1)	A(1)
Park Street @ I-81 NB Offramp / Farmers Market Place	**A(7)**	**A(8)**	**A(8)**
EB Left/Through	A(7)	A(8)	A(8)
WB Through/Right	A(7)	A(7)	A(7)
NB Left	B(11)	B(11)	B(11)
NB Through/Right	A(6)	A(6)	A(6)
SB Left	B(13)	B(13)	B(13)
SB Right	A(1)	A(1)	A(1)
Park Street @ Harborside Drive / NBT Bank Parkway	**B(20)**	**C(21)**	**C(21)**
EB Left	B(12)	B(12)	B(12)
EB Through	C(33)	C(34)	C(34)
EB Right	A(8)	A(9)	A(9)
WB Left	B(13)	B(13)	B(13)
WB Through/Right	B(20)	C(21)	C(21)
NB Left	B(15)	B(15)	B(15)
NB Through/Right	B(12)	B(12)	B(12)
SB Left	B(13)	B(13)	B(13)
SB Through/Right	B(12)	B(12)	B(12)
Park Street @ East Site Access			
EB Through/Right	-	-	a(0)
WB Left/Through	-	-	a(1)
NB Left/Right	-	-	b(14)
Park Street @ West Site Access			
EB Through/Right	-	-	a(0)
WB Through	-	-	a(0)
NB Right	-	-	b(11)

A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds)
a(9) – Unsignalized Level of Service (Average Delay per Vehicle in Seconds)

JAN 29 2020

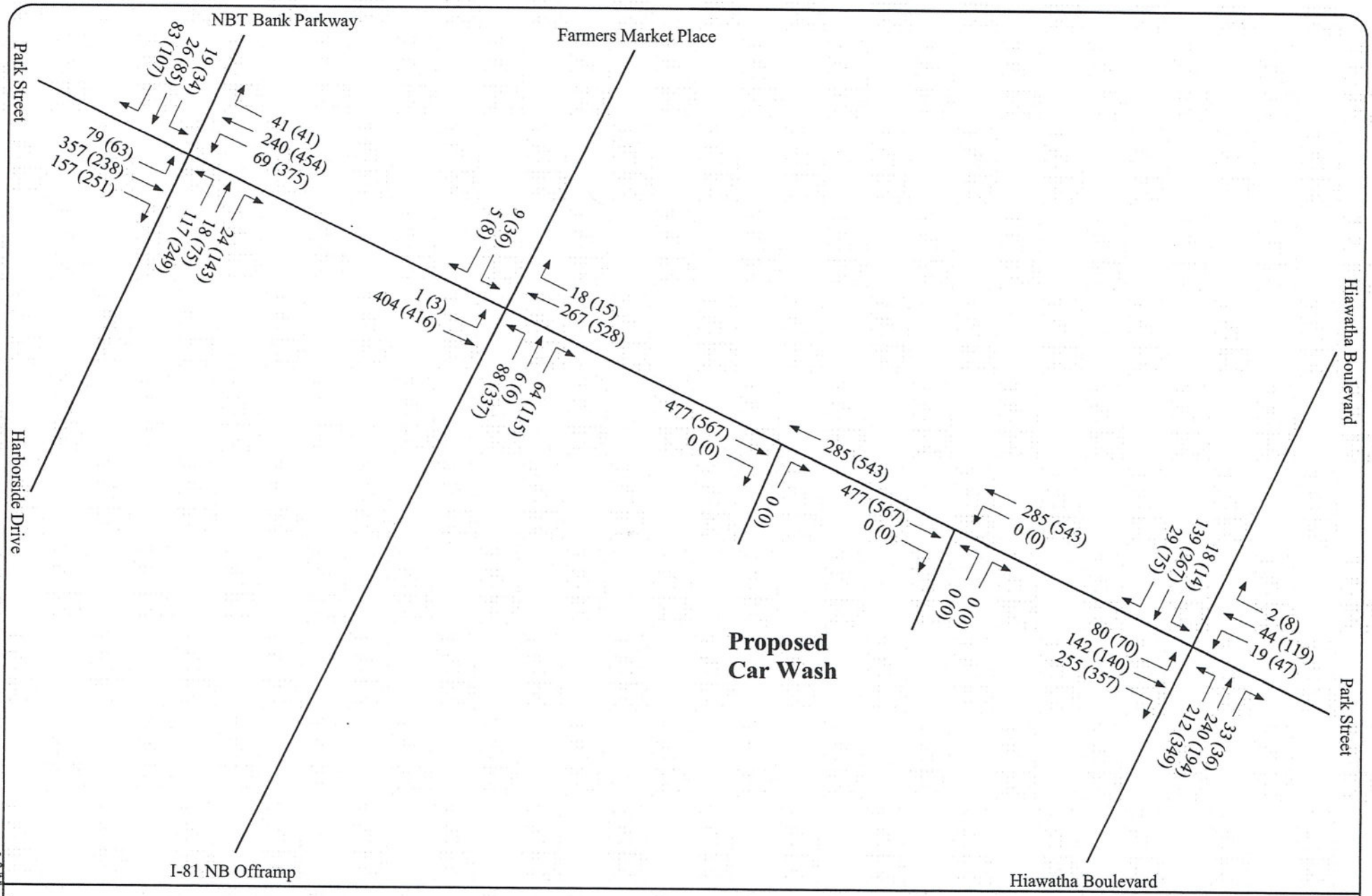
Proposed Car Wash – 2027 Park Street – Syracuse, NY

Intersection Level of Service Summary

Evening Peak Hour

Intersection	2019 Base	2021 Background	2021 Build
Park Street @ Hiawatha Boulevard	**C(26)**	**C(27)**	**C(27)**
EB Left	D(39)	D(40)	D(40)
EB Through	C(33)	C(33)	C(33)
EB Right	A(1)	A(1)	A(1)
WB Left	D(39)	D(39)	D(40)
WB Through/Right	D(36)	D(37)	D(37)
NB Left	C(35)	D(36)	D(36)
NB Left/Through/Right	C(29)	C(30)	C(31)
SB Left	C(28)	C(28)	C(28)
SB Through	D(40)	D(40)	D(40)
SB Right	A(6)	A(6)	A(6)
Park Street @ I-81 NB Offramp / Farmers Market Place	**B(12)**	**B(13)**	**B(13)**
EB Left/Through	B(12)	B(13)	B(13)
WB Through/Right	B(12)	B(14)	B(14)
NB Left	B(13)	B(15)	B(15)
NB Through/Right	A(6)	A(6)	A(6)
SB Left	B(18)	B(20)	B(20)
SB Right	A(1)	A(1)	A(1)
Park Street @ Harborside Drive / NBT Bank Parkway	**C(27)**	**C(28)**	**C(28)**
EB Left	B(17)	B(18)	B(18)
EB Through	D(44)	D(45)	D(46)
EB Right	B(13)	B(14)	B(15)
WB Left	C(27)	C(29)	C(30)
WB Through/Right	C(24)	C(24)	C(24)
NB Left	C(27)	C(28)	C(29)
NB Through/Right	C(22)	C(23)	C(23)
SB Left	C(21)	C(22)	C(22)
SB Through/Right	D(39)	D(41)	D(41)
Park Street @ East Site Access			
EB Through/Right	-	-	a(0)
WB Left/Through	-	-	a(1)
NB Left/Right	-	-	c(17)
Park Street @ West Site Access			
EB Through/Right	-	-	a(0)
WB Through	-	-	a(0)
NB Right	-	-	b(11)

A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds)
a(9) – Unsignalized Level of Service (Average Delay per Vehicle in Seconds)



Proposed Car Wash - 2027 Park Street - Syracuse, NY

2019 Base Traffic Volumes - With Approved Dunkin' Donuts Development - Taken from 11/9/18 Dunkin' Donuts Study

Morning (Evening) Peak Hour

Figure 1

Not To Scale

N
W E

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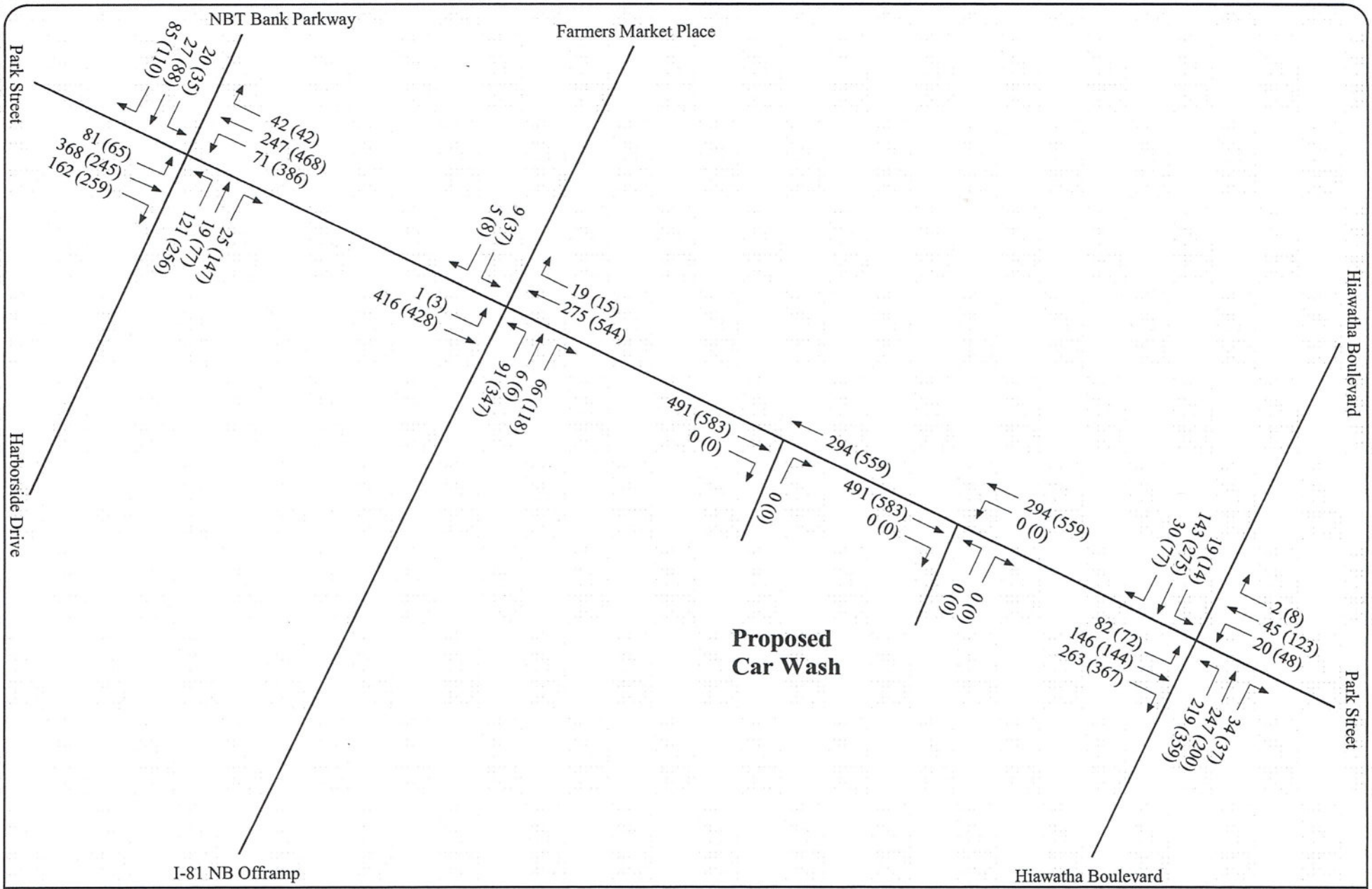


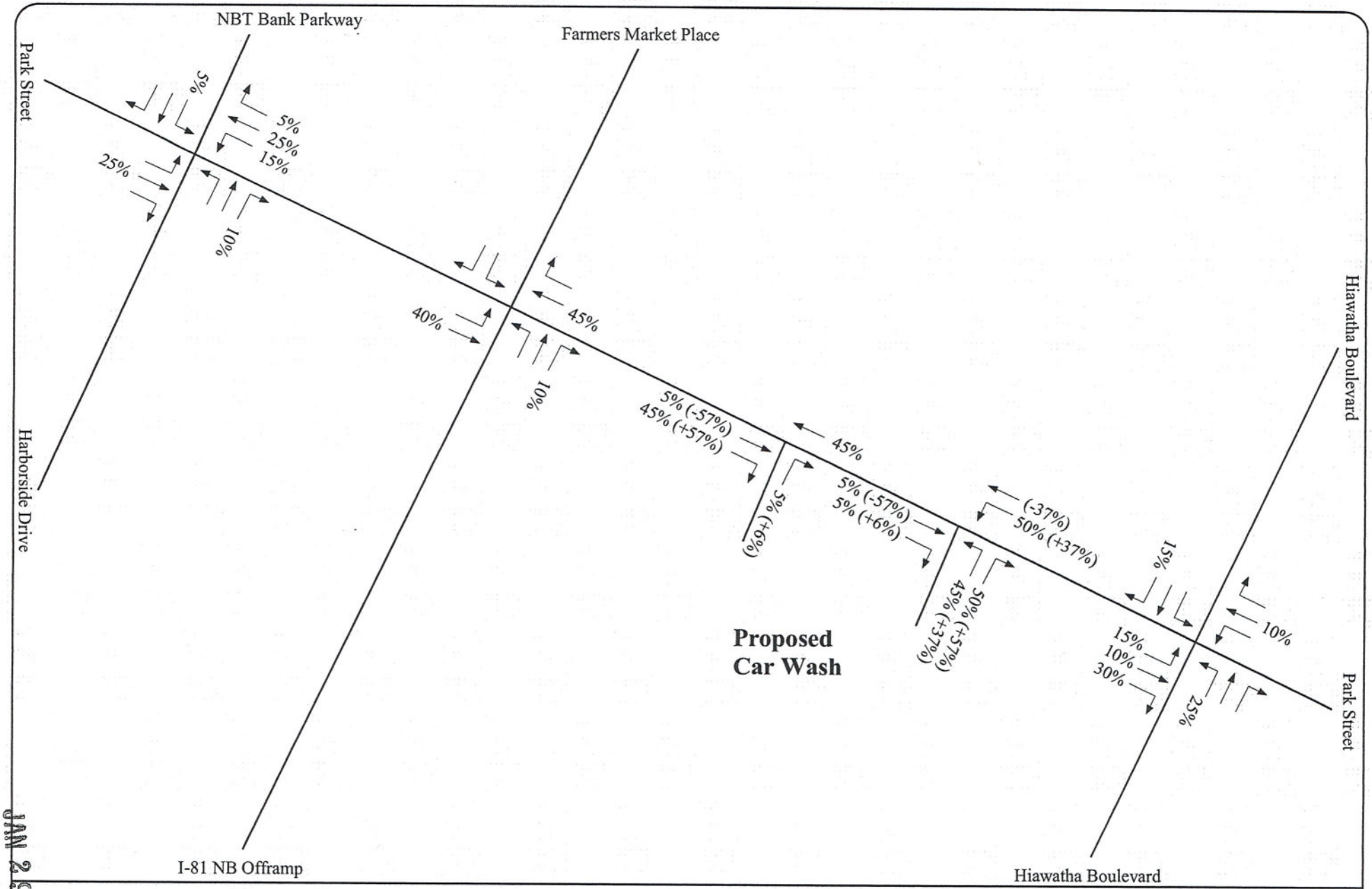
Proposed Car Wash - 2027 Park Street - Syracuse, NY

2021 Background Traffic Volumes - With 1.5% per year (3% Total)

Morning (Evening) Peak Hour

Figure 2

Not To Scale



Proposed Car Wash - 2027 Park Street - Syracuse, NY

Arrival/Departure Trip Distribution - Morning Peak Hour

New (Pass-by) Trip Percentage

Figure 3

Not To Scale

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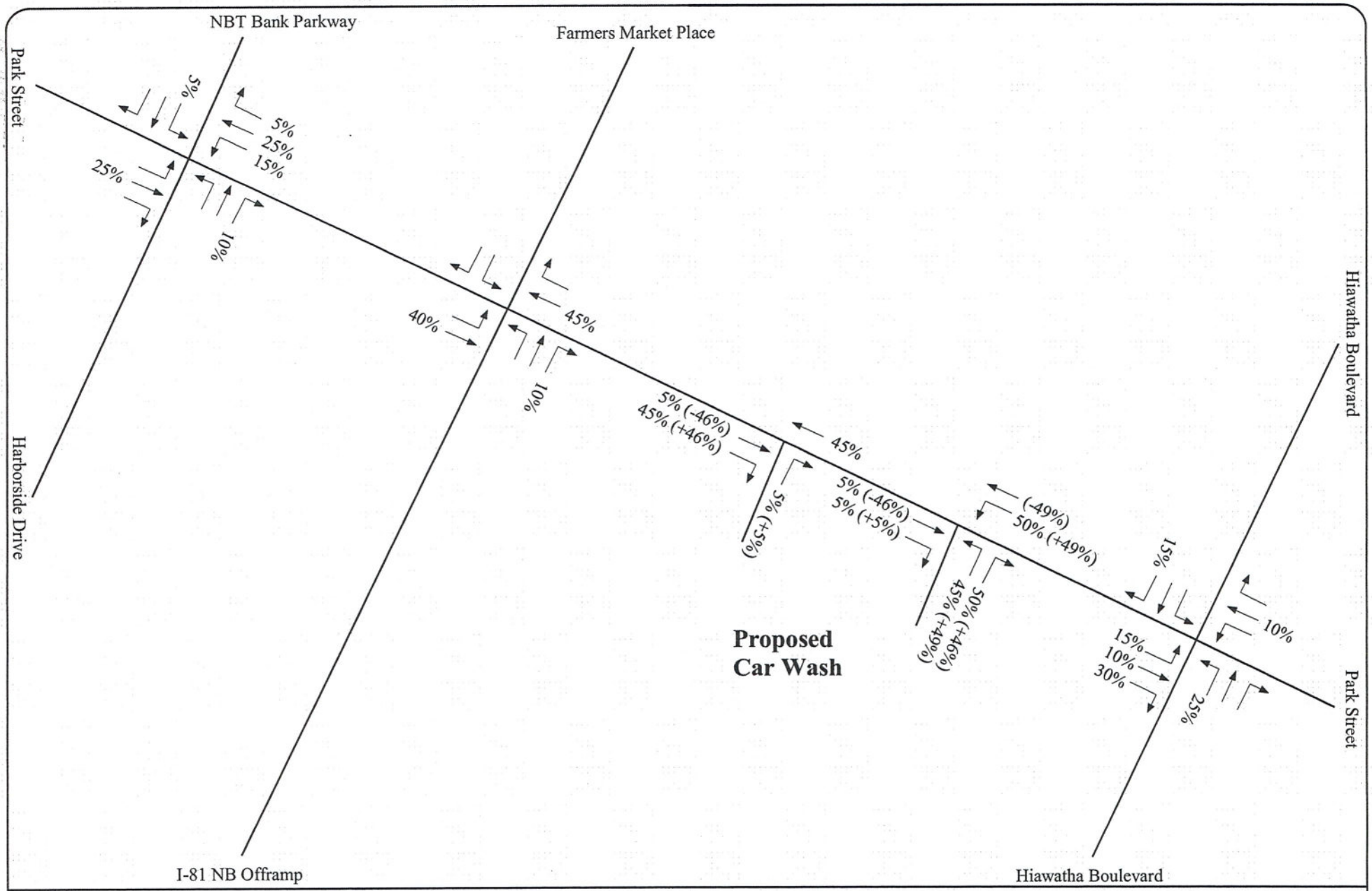

Proposed Car Wash - 2027 Park Street - Syracuse, NY

Arrival/Departure Trip Distribution - Evening Peak Hour

New (Pass-by) Trip Percentage

Figure 4

Not To Scale

N
W E

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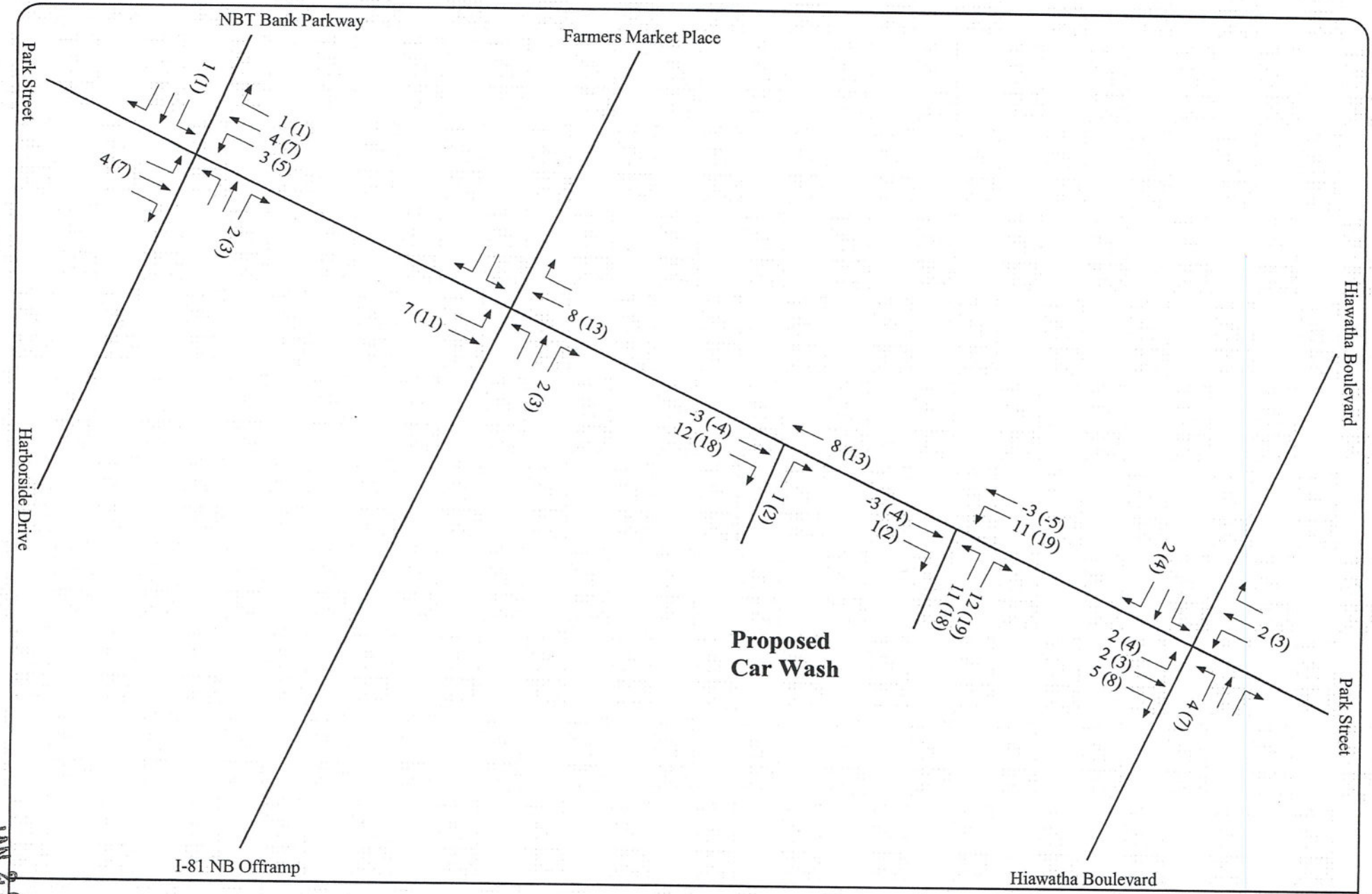

Proposed Car Wash - 2027 Park Street - Syracuse, NY

Trips Generated

Morning (Evening) Peak Hour

Figure 5

Not To Scale

N
W E

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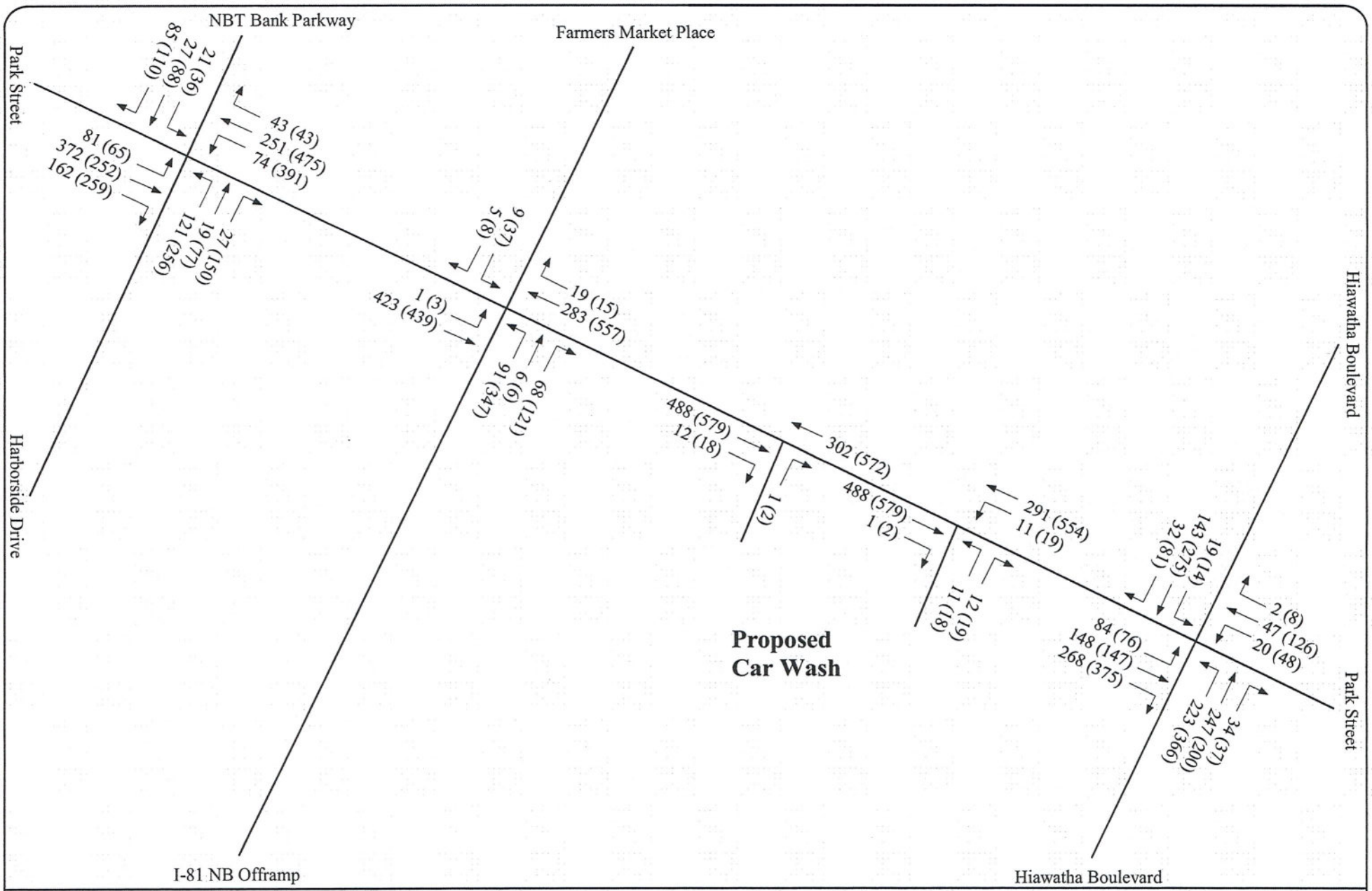

Proposed Car Wash - 2027 Park Street - Syracuse, NY

2021 Build Traffic Volumes

Morning (Evening) Peak Hour

Figure 6

Not To Scale

N
W E

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Intersection Gap Study

GTS Consulting

Project: Proposed Car Wash - 2027 Park Street - Syracuse, NY
Date: 1/23/2020

Intersection: Site Access @ Park Street
Movement: Right Turns Exiting / Left Turns Entering

Time Interval		6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
Morning Peak											
7:15-7:30am	# of Gaps	7	5	8	1	2	2	0	10		
	# of Vehicles	**7**	**10**	**24**	**4**	**10**	**12**	**0**	**80**	**147**	
7:30-7:45am	# of Gaps	7	4	4	0	3	1	1	9		
	# of Vehicles	**7**	**8**	**12**	**0**	**15**	**6**	**7**	**72**	**127**	
7:45-8:00am	# of Gaps	8	3	3	1	4	1	1	10		
	# of Vehicles	**8**	**6**	**9**	**4**	**20**	**6**	**7**	**80**	**140**	
8:00-8:15am	# of Gaps	6	5	4	3	2	3	3	6		
	# of Vehicles	**6**	**10**	**12**	**12**	**10**	**18**	**21**	**48**	**137**	**551**
Evening Peak											
4:30-4:45pm	# of Gaps	13	11	9	2	5	1	1	1		
	# of Vehicles	**13**	**22**	**27**	**8**	**25**	**6**	**7**	**8**	**116**	
4:45-5:00pm	# of Gaps	9	10	4	1	4	2	3	3		
	# of Vehicles	**9**	**20**	**12**	**4**	**20**	**12**	**21**	**24**	**122**	
5:00-5:15pm	# of Gaps	13	7	6	1	4	1	3	4		
	# of Vehicles	**13**	**14**	**18**	**4**	**20**	**6**	**21**	**32**	**128**	
5:15-5:30pm	# of Gaps	14	7	4	1	8	1	2	3		
	# of Vehicles	**14**	**14**	**12**	**4**	**40**	**6**	**14**	**24**	**128**	**494**

JAN 29 2020

Intersection Gap Study

GTS Consulting

Project: Proposed Car Wash - 2027 Park Street - Syracuse, NY
Date: 1/23/2020

Intersection: Site Access @ Park Street
Movement: Left Turns Exiting

Time Interval		6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
Morning Peak											
7:15-7:30am	# of Gaps	10	11	11	1	2	2	2	1		
	# of Vehicles	**10**	**22**	**33**	**4**	**10**	**12**	**14**	**8**	**113**	
7:30-7:45am	# of Gaps	12	9	2	1	3	2	1	2		
	# of Vehicles	**12**	**18**	**6**	**4**	**15**	**12**	**7**	**16**	**90**	
7:45-8:00am	# of Gaps	7	6	3	5	3	2	2	2		
	# of Vehicles	**7**	**12**	**9**	**20**	**15**	**12**	**14**	**16**	**105**	
8:00-8:15am	# of Gaps	8	10	5	2	4	3	2	2		
	# of Vehicles	**8**	**20**	**15**	**8**	**20**	**18**	**14**	**16**	**119**	**427**
Evening Peak											
4:30-4:45pm	# of Gaps	16	6	3	0	4	0	1	0		
	# of Vehicles	**16**	**12**	**9**	**0**	**20**	**0**	**7**	**0**	**64**	
4:45-5:00pm	# of Gaps	13	6	4	2	4	0	0	0		
	# of Vehicles	**13**	**12**	**12**	**8**	**20**	**0**	**0**	**0**	**65**	
5:00-5:15pm	# of Gaps	19	6	5	2	1	0	2	0		
	# of Vehicles	**19**	**12**	**15**	**8**	**5**	**0**	**14**	**0**	**73**	
5:15-5:30pm	# of Gaps	17	8	2	3	2	0	0	1		
	# of Vehicles	**17**	**16**	**6**	**12**	**10**	**0**	**0**	**8**	**69**	**271**

Proposed Car Wash - 2027 Park Street, Syracuse, NY
Speed Study Measurements - Park Street Passing Site
1/23/2020

Distance Travelled (ft) = 137 50 Speed Measurements per Direction Speed Limit 30 mph

EB Time Seconds	Calculated Speed	EB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed
3.15	30	2.81	33	3.69	25	2.67	35
3.14	30	2.81	33	3.68	25	2.66	35
3.13	30	2.81	33	3.28	28	2.63	36
3.1	30	2.81	33	3.11	30	2.63	36
3.09	30	2.79	33	3.1	30	2.62	36
3.07	30	2.78	34	3.06	31	2.6	36
3.07	30	2.78	34	3.03	31	2.59	36
3.05	31	2.69	35	3.01	31	2.59	36
3.03	31	2.69	35	3.00	31	2.59	36
3.01	31	2.69	35	2.94	32	2.59	36
3.01	31	2.68	35	2.94	32	2.58	36
3	31	2.63	36	2.87	33	2.57	36
3	31	2.63	36	2.84	33	2.57	36
3	31	2.62	36	2.81	33	2.53	37
3	31	2.57	36	2.81	33	2.53	37
2.97	31	2.57	36	2.79	33	2.52	37
2.97	31	2.56	36	2.79	33	2.51	37
2.94	32	2.53	37	2.79	33	2.49	38
2.91	32	2.49	38	2.79	33	2.48	38
2.9	32	2.48	38	2.78	34	2.48	38
2.88	32	2.46	38	2.75	34	2.47	38
2.87	33	2.44	38	2.75	34	2.47	38
2.85	33	2.44	38	2.72	34	2.47	38
2.85	33	2.42	39	2.69	35	2.45	38
2.83	33	2.38	39	2.68	35	2.41	39

Eastbound
Average Speed = 33 mph
85th Percentile Speed = 36.5 mph

Westbound
Average Speed = 34 mph
85th Percentile Speed = 37.5 mph

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Background Traffic Growth Calculations

Proposed Car Wash - 2027 Park Street, Syracuse, NY

Historical Traffic Counts Taken from the NYSDOT 2017 Traffic Volume Report

Park Street (Route 370) - Between Syracuse City Line and Farmers Market Place

2017 (Est)	2006	2003	2000
12,892 veh	15,182 veh	12,069 veh	13,419 veh

-1.4% per year | +8.6% per year | -3.4% per year

+0.5% per year

-0.2% per year

Park Street (Route 370) - Between Farmers Market Place and Wolf Street

2017 (Est)	2014	2011
3,532 veh	3,575 veh	3,243 veh

-0.4% per year | +3.4% per year

+1.5% per year

Use +1.5% annual growth for conservative traffic projections

Proposed Car Wash - 2027 Park Street, Syracuse, NY

Trip Generation Estimate

Proposed Developent — 1 Car Wash Bay, with Vaccuum Bay and Wax Bay

ITE Trip Generation - 10th Edition

Land Use 948 - Automated Car Wash

AM Peak Hour*	46.50 Trips/1,000 SF	50% Enter	50% Exit
PM Peak Hour	77.50 Trips/Wash Tunnel	50% Enter	50% Exit

* - No data available for the weekday morning peak hour - Assume trip generation rate = 60% of PM rate

Average Pass-by Percentages

No pass-by data available - Assume 30% pass-by trips during each peak hour

Trip Generation Estimate - Car Wash

		Morning Peak Hour			Evening Peak Hour		
Development	**Size**	**Total Trips**	**Entering**	**Exiting**	**Total Trips**	**Entering**	**Exiting**
Car Wash	1 Tunnel	48	24	24	78	39	39
Pass-by Trips - 30%		-14	-7	-7	-22	-11	-11
Total New Trips Generated		**33**	**17**	**17**	**55**	**28**	**28**

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Proposed Car Wash - 2027 Park Street - Syraucse, NY
Accident History Summaries - September 1 2015 Through August 31, 2018

Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
1	9/6/2015	Hiawatha @ Park	Overtaking	2	INJ	NB Left / NB Left	Dry	Turning Improper
2	9/8/2015	Park Midblock	Right Turn	3	PDO	EB / EB Right / EB Parked	Dry	Brakes Defective
3	9/5/2015	Hiawatha @ Park	Right Angle	2	INJ	SB / WB	Dry	Traffic Control Disregarded
4	9/27/2015	I-81 @ Park	Rearend	2	PDO	NB / NB Left	Dry	Following Too Closely
5	10/1/2015	I-81 @ Park	Rearend	2	INJ	WB / WB Stopped	Dry	Following Too Closely
6	10/4/2015	I-81 @ Park	Rearend	2	PDO	NB / NB	Dry	Following Too Closely
7	10/7/2015	Hiawatha @ Park	Overtaking	2	PDO	EB Left / EB Left	Dry	Improper Lane Use
8	11/3/2015	I-81 @ Park	Rearend	2	INJ	EB / EB Stopped	Dry	Following Too Closely
9	10/30/2015	Harborside @ Park	Fixed Object	4	PDO	NB / Utility Pole / EWS Stopped	Dry	Unsafe Speed
10	11/15/2015	Hiawatha @ Park	Rearend	2	INJ	SB Right / SB Right	Dry	Following Too Closely
11	12/4/2015	Park Midblock	Rearend	2	PDO	NB / NB	Dry	Following Too Closely
12	11/12/2015	Harborside @ Park	Rearend	2	INJ	EB / EB Stopped	Wet	Driver Inattention
13	12/12/2015	I-81 @ Park	Right Angle	2	PDO	NB Left / WB	Dry	Failure to Yield ROW
14	12/9/2015	Harborside @ Park	Rearend	2	INJ	EB / EB	Dry	Following Too Closely
15	12/31/2015	Harborside @ Park	Rearend	2	PDO	EB / EB	Dry	Following Too Closely
16	1/3/2016	I-81 @ Park	Right Angle	2	PDO	SB Left / NB	Dry	Failure to Yield ROW
17	12/20/2015	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Dry	Unsafe Speed
18	1/5/2016	Hiawatha @ Park	Rearend	2	PDO	SB / SB Stopped	Icy	Pavement Slippery
19	1/21/2016	I-81 @ Park	Rearend	2	PDO	SB / SB Stopped	Wet	Following Too Closely
20	1/27/2016	Harborside @ Park	Left Turn	2	PDO	SB Right / WB Left	Dry	Failure to Yield ROW
21	1/19/2016	I-81 @ Park	Right Turn	2	PDO	NB Right / WB Stopped	Icy	Turning Improper
22	2/15/2016	Harborside @ Park	Rearend	2	INJ	NB / NB Stopped	Icy	Unsafe Speed
23	2/14/2016	Hiawatha @ Park	Rearend	3	PDO	NB / WB Left / NB Stopped	Icy	Traffic Control Disregarded
24	3/8/2016	Harborside @ Park	Rearend	2	PDO	WB / WB Stopped	Dry	Following Too Closely
25	2/21/2016	Harborside @ Park	Left Turn	2	PDO	NB Left / SB	Dry	Failure to Yield ROW
26	3/28/2016	Harborside @ Park	Left Turn	2	INJ	NB Left / SB	Wet	Failure to Yield ROW
27	4/2/2016	Hiawatha @ Park	Rearend	2	PDO	Unknown / Unknown	Dry	Not Entered
28	4/5/2016	Park Midblock	Fixed Object	2	PDO	EB Backing/EB Stopped/Bridge	Dry	Backing Unsafely
29	3/19/2016	Park Midblock	Rearend	2	PDO	NB Backing / EB	Dry	Backing Unsafely
30	4/6/2016	Harborside @ Park	Left Turn	2	PDO	NB Left / SB	Dry	Turning Improper
31	4/24/2016	Hiawatha @ Park	Rearend	2	PDO	NB Left / NB Left	Dry	Following Too Closely
32	4/18/2016	I-81 @ Park	Rearend	2	PDO	NB Left / NB Left	Dry	Following Too Closely
33	4/10/2016	Park Midblock	Non-Collision	1	PDO	NB	Dry	Traffic Control Disregarded
34	5/4/2016	Park Midblock	Rearend	2	PDO	WB Right / WB	Dry	Following Too Closely
35	4/20/2016	Harborside @ Park	Left Turn	2	PDO	WB Left / SB	Dry	Failure to Yield ROW
36	5/27/2016	Harborside @ Park	Rearend	2	PDO	EB / EB Stopped	Dry	Following Too Closely
37	5/13/2016	I-81 @ Park	Rearend	3	PDO	NB / NB / NB Left	Wet	Following Too Closely
38	7/13/2016	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely

39	6/28/2016	Harborside @ Park	Rearend	2	PDO	EB / EB	Dry	Following Too Closely
40	7/15/2016	Harborside @ Park	Rearend	2	PDO	NB / NB	Dry	Following Too Closely
41	7/22/2016	Harborside @ Park	Rearend	2	INJ	EB / EB	Dry	Following Too Closely

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Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
42	7/5/2016	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
43	7/27/2016	I-81 @ Park	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
44	8/31/2016	Park Midblock	Fixed Object	1	PDO	EB / Fixed Object	Dry	Glare
45	9/3/2016	I-81 @ Park	Rearend	3	INJ	WB / WB Stopped (2)	Dry	Following Too Closely
46	9/1/2016	Park Midblock	Fixed Object	1	PDO	SB / Bridge Structure	Dry	Traffic Control Disregarded
47	9/24/2016	Harborside @ Park	Overtaking	2	PDO	WB / WB Stopped	Dry	Passing Improperly
48	8/21/2016	I-81 @ Park	Overtaking	2	PDO	EB Left / EB	Wet	Failure to Yield ROW
49	9/17/2016	Harborside @ Park	Left Turn	2	PDO	NB Left / EB	Dry	Failure to Yield ROW
50	10/11/2016	Harborside @ Park	Left Turn	2	INJ	WB Left / SB	Dry	Failure to Yield ROW
51	11/1/2016	Hiawatha @ Park	Right Angle	2	INJ	SB / WB	Dry	Traffic Control Disregarded
52	12/1/2016	Hiawatha @ Park	Overtaking	2	PDO	NB Left / NB Left	Dry	Passing Improperly
53	11/21/2016	Harborside @ Park	Other	1	PDO	SB	Icy	Not Entered
54	11/13/2016	Harborside @ Park	Right Angle	2	PDO	SB Right / WB	Dry	Failure to Yield ROW
55	12/10/2016	I-81 @ Park	Left Turn	2	PDO	WB Left / SB	Wet	Failure to Yield ROW
56	11/20/2016	I-81 @ Park	Overtaking	2	PDO	NB Left / NB Left	Icy	Failure to Yield ROW
57	12/30/2016	Harborside @ Park	Rearend	2	PDO	EB / EB	Wet	Improper Lane Use
58	1/14/2017	Hiawatha @ Park	Overtaking	2	PDO	NB / NB Stopped	Dry	Passing Too Closely
59	1/19/2017	I-81 @ Park	Right Angle	2	INJ	NB / EB	Dry	Failure to Keep Right
60	10/21/2017	Park Midblock	Rearend	2	INJ	NB / NB Stopped	Wet	Driver Inattention
61	2/11/2017	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Wet	Following Too Closely
62	2/24/2017	Harborside @ Park	Overtaking	2	PDO	EB Left / EB	Dry	Unsafe Lane Change
63	3/25/2017	Park Midblock	Head On	2	PDO	Unknown / Unknown	Dry	Failure to Yield ROW
64	4/22/2017	Harborside @ Park	Overtaking	2	PDO	NB / NB Left	Dry	Failure to Keep Right
65	4/22/2017	Harborside @ Park	Rearend	3	INJ	EB / EB Stopped (2)	Dry	Following Too Closely
66	4/30/2017	Harborside @ Park	Rearend	3	PDO	NB / NB / NB Stopped	Dry	Following Too Closely
67	5/6/2017	Hiawatha @ Park	Right Angle	2	PDO	NB Stopped / EB	Wet	Backing Unsafely
68	5/6/2017	Harborside @ Park	Left Turn	2	PDO	WB / SB	Wet	Failure to Yield ROW
69	6/6/2017	Hiawatha @ Park	Overtaking	2	PDO	NB Left / NB Left	Wet	Passing Improperly
70	5/24/2017	Hiawatha @ Park	Rearend	2	INJ	WB / WB Stopped	Dry	Following Too Closely
71	3/16/2017	I-81 @ Park	Right Angle	2	PDO	EB / NB Left	Dry	Traffic Control Disregarded
72	6/24/2017	Hiawatha @ Park	Overtaking	2	PDO	NB Left / NB Left	Dry	Driver Inattention
73	6/12/2017	Hiawatha @ Park	Rearend	2	PDO	EB / EB Stopped	Dry	Following Too Closely
74	8/13/2017	I-81 @ Park	Fixed Object	1	PDO	EB / Curb	Dry	Alcohol Involvement
75	8/13/2017	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
76	6/3/2017	Hiawatha @ Park	Right Angle	2	PDO	Unknown / Unknown	Dry	Driver Inattention
77	9/5/2017	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Wet	Following Too Closely
78	10/20/2017	Harborside @ Park	Fixed Object	1	PDO	WB / Guide Rail	Dry	Unsafe Speed
79	10/29/2017	Harborside @ Park	Head On	2	PDO	SB / NB Stopped	Wet	Reaction to Another Vehicle
80	11/11/2017	Harborside @ Park	Right Angle	2	PDO	EB Right / NB	Dry	Failure to Yield ROW
81	12/3/2017	Harborside @ Park	Rearend	2	PDO	EB / EB	Dry	Following Too Closely
82	12/23/2017	Harborside @ Park	Rearend	2	PDO	NB / NB	Icy	Not Entered

Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
83	1/14/2018	Harborside @ Park	Sideswipe	2	PDO	EB / WB	Icy	Passing Improperly
84	1/14/2018	Harborside @ Park	Rearend	3	PDO	NB / NB Stopped (2)	Icy	Following Too Closely
85	1/14/2018	Harborside @ Park	Rearend	2	PDO	NB / NB Stopped	Icy	Following Too Closely
86	12/20/2017	Park Midblock	Rearend	2	PDO	EB / Unknown	Icy	Unknown
87	1/20/2018	Harborside @ Park	Rearend	2	PDO	WB / WB Stopped	Dry	Following Too Closely
88	1/18/2018	I-81 @ Park	Overtaking	2	PDO	SB Left / SB	Icy	Turning Improper
89	2/24/2018	I-81 @ Park	Right Angle	2	PDO	SB Right / SB Left	Dry	Failure to Yield ROW
90	2/20/2018	Harborside @ Park	Right Turn	2	INJ	NB / NB Right	Dry	Aggressive Driving
91	2/27/2018	Park Midblock	Overtaking	2	PDO	WB / WB	Dry	Passing Improperly
92	3/2/2018	Harborside @ Park	Rearend	2	PDO	NB / NB	Icy	Following Too Closely
93	2/25/2018	Harborside @ Park	Right Angle	3	PDO	WB / NB / SB Stopped	Dry	Failure to Yield ROW
94	3/3/2018	Harborside @ Park	Rearend	2	PDO	SB / SB Stopped	Wet	Following Too Closely
95	2/25/2018	Harborside @ Park	Rearend	2	PDO	SB / SB Stopped	Wet	Driver Inattention
96	5/12/2018	I-81 @ Park	Rearend	2	PDO	WB / WB Stopped	Wet	Driver Inattention
97	5/11/2018	Harborside @ Park	Right Angle	2	INJ	WB Left / SB	Dry	Failure to Yield ROW
98	6/10/2018	Harborside @ Park	Rearend	2	INJ	NB Left / NB Left	Dry	Not Entered
99	6/20/2018	Hiawatha @ Park	Right Angle	2	PDO	EB / NB Left	Dry	Traffic Control Disregarded
100	6/9/2018	Harborside @ Park	Overtaking	2	PDO	SB / SB	Dry	Unsafe Lane Change
101	7/8/2018	Park Midblock	Fixed Object	1	PDO	NB / Bridge Structure	Dry	Traffic Control Disregarded
102	7/20/2018	Park Midblock	Fixed Object	1	PDO	NB / Bridge Structure	Dry	Traffic Control Disregarded
103	8/17/2018	Harborside @ Park	Rearend	2	PDO	NB / NB	Wet	Following Too Closely
104	7/10/2018	I-81 @ Park	Right Angle	2	PDO	NB / EB	Dry	Driver Inattention
105	8/20/2018	I-81 @ Park	Left Turn	2	PDO	NB Left / EB	Dry	Traffic Control Disregarded
106	8/16/2018	Hiawatha @ Park	Overtaking	2	PDO	NB Uturn / NB	Dry	Turning Improper

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Park @ Harborside / NBT Bank - 50 Accidents
28 - Rearend Accidents
8 - Left Turn Accidents
4 - Right Angle Accidents
4 - Overtaking Accidents
2 - Fixed Object Accidents
1- Head On Accident
1 - Right Turn Accident
1 - Sideswipe Accidents
1 - Other

Park @ I-81 / Farmers Market - 23 Accidents
10 - Rearend Accidents
6 - Right angle Accidents
3 - Overtaking Accidents
2 - Left Turn Accidents
1 - Right Turn Accident
1 - Fixed Object Accident

Park @ Hiawatha - 19 Accidents
7 - Rearend Accidents
7 - Overtaking Accidents
5 - Right Angle Accidents

Park Street Midblock - 14 Accidents
5 - Rearend Accidents
5 - Fixed Object Accidents
1 - Overtaking Accident
1 - Right Turn Accident
1 - Head On Accident
1 - Non-Collision Accident

Park @ Harborside/NBT Bank Intersection - Evening Peak Hour - 2,057 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 22,856 Vehicles
Park @ I-81 / Farmers Market Intersection - Evening Peak Hour - 1,417 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 15,744 Vehicles
Park @ Hiawatha Intersection - Evening Peak Hour - 1,627 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 18,078 Vehicles

Park Street - Evening Peak Hour - 1,246 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 13,844 Vehicles

Intersection Accident Rates

$$\frac{\text{\# Accidents X 1,000,000}}{\text{AADT X \# Years X 365 Days}}$$

Time Period = 3 years

Park @ Harborside / NBT Bank - 50 Accidents
Accident Rate = 2.00 accidents per million entering vehicles
Statewide average for similar facilities = 0.52 accidents per million entering vehicles (Urban - 4 Legged Signal - 1-4 Lanes)
Intersection Accident History is Over the Statewide Average

Park @ I-81 / Farmers Market - 23 Accidents
Accident Rate = 1.33 accidents per million entering vehicles
Statewide average for similar facilities = 0.52 accidents per million entering vehicles (Urban - 4 Legged Signal - 1-4 Lanes)
Intersection Accident History is Over the Statewide Average

Park @ Hiawatha - 19 Accidents
Accident Rate = 0.96 accidents per million entering vehicles
Statewide average for similar facilities = 0.52 accidents per million entering vehicles (Urban - 4 Legged Signal - 1-4 Lanes)
Intersection Accident History is Over the Statewide Average

Link Accident Rates

$$\frac{\text{\# Accidents X 1,000,000}}{\text{Segment Length X AADT X \# Years X 365 Days}}$$

Time Period = 3 years

Park Street Midblock - 14 Accidents Length = 0.33 Miles
Accident Rate = 2.80 accidents per million vehicle miles

Statewide average for similar facilities = 2.71 accidents per million vehicle miles (Urban - 3 Lanes Undivided - Free Access Control)
Link Accident History is Over the Statewide Average

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Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	142	255	19	44	2	212	240	33	18	139	29
Future Volume (vph)	80	142	255	19	44	2	212	240	33	18	139	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor			0.99	1.00								
Frt			0.850		0.993			0.985				0.850
Flt Protected	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1610	3313	0	1719	1810	1538
Flt Permitted	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (perm)	1770	1863	1563	1764	1850	0	1610	3313	0	1719	1810	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			331		2			11				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			475			464			1015	
Travel Time (s)		9.3			10.8			10.5			23.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.77	0.77	0.77	0.71	0.71	0.71	0.79	0.79	0.79	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	104	184	331	27	62	3	268	304	42	21	164	34
Shared Lane Traffic (%)							25%					
Lane Group Flow (vph)	104	184	331	27	65	0	201	413	0	21	164	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	10.0	18.8	67.6	7.2	11.3		15.6	15.6		13.0	13.0	28.3
Actuated g/C Ratio	0.15	0.28	1.00	0.11	0.17		0.23	0.23		0.19	0.19	0.42
v/c Ratio	0.40	0.36	0.21	0.14	0.21		0.54	0.53		0.06	0.47	0.05
Control Delay	34.7	26.0	0.3	35.3	30.9		31.1	26.4		27.4	32.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.7	26.0	0.3	35.3	30.9		31.1	26.4		27.4	32.8	0.6
LOS	C	C	A	D	C		C	C		C	C	A
Approach Delay		13.7			32.2			27.9			27.3	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 67.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 22.4 — Intersection LOS: C
Intersection Capacity Utilization 45.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	25 s	30 s	25 s
Ø5	Ø6		
20 s	25 s		

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	404	0	0	267	18	88	6	64	9	0	5
Future Volume (vph)	1	404	0	0	267	18	88	6	64	9	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt					0.991			0.862				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3539	0	0	3537	0	3400	1590	0	1597	0	1429
Flt Permitted		0.954					0.950			0.950		
Satd. Flow (perm)	0	3376	0	0	3537	0	3400	1590	0	1597	0	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			89				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			187			521			550	
Travel Time (s)		22.6			4.3			11.8			12.5	
Confl. Peds. (#/hr)	2		1	1		2						
Peak Hour Factor	0.74	0.74	0.74	0.77	0.77	0.77	0.72	0.72	0.72	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	13%	13%	13%
Adj. Flow (vph)	1	546	0	0	347	23	122	8	89	11	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	547	0	0	370	0	122	97	0	11	0	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

Lanes, Volumes, Timings
2: I-81 NB Offramp/Farmers Market Place & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		14.5			14.5		6.3	6.3		5.2		5.2
Actuated g/C Ratio		0.50			0.50		0.22	0.22		0.18		0.18
v/c Ratio		0.32			0.21		0.16	0.23		0.04		0.02
Control Delay		7.4			6.7		11.0	6.0		12.9		0.2
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		7.4			6.7		11.0	6.0		12.9		0.2
LOS		A			A		B	A		B		A
Approach Delay		7.4			6.7			8.8			8.4	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 28.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 7.4 — Intersection LOS: A
Intersection Capacity Utilization 28.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street

Ø2	Ø3	Ø4
35 s	25 s	40 s
Ø6		
35 s		

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	357	157	69	240	41	117	18	24	19	26	83
Future Volume (vph)	79	357	157	69	240	41	117	18	24	19	26	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.99		1.00	0.99	
Frt			0.850		0.978			0.914			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1770	3454	0	1752	1662	0	1770	1633	0
Flt Permitted	0.508			0.244			0.438			0.720		
Satd. Flow (perm)	955	1881	1599	455	3454	0	807	1662	0	1338	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		21			32			109	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	2					2	1		2	2		1
Peak Hour Factor	0.75	0.75	0.75	0.73	0.73	0.73	0.74	0.74	0.74	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	105	476	209	95	329	56	158	24	32	25	34	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	476	209	95	385	0	158	56	0	25	143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
10: Harborside Drive/NBT Bank Parkway & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	26.4	22.3	22.3	26.0	22.1		20.6	18.1		14.4	11.3	
Actuated g/C Ratio	0.46	0.39	0.39	0.45	0.39		0.36	0.32		0.25	0.20	
v/c Ratio	0.19	0.65	0.29	0.24	0.29		0.35	0.10		0.06	0.35	
Control Delay	12.1	32.8	8.2	12.9	20.0		15.2	11.7		13.0	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.1	32.8	8.2	12.9	20.0		15.2	11.7		13.0	12.0	
LOS	B	C	A	B	B		B	B		B	B	
Approach Delay		23.5			18.6			14.3			12.2	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 57.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 19.7 — Intersection LOS: B
Intersection Capacity Utilization 49.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	20 s	20 s	20 s
Ø5	**Ø6**	**Ø7**	**Ø8**
20 s	20 s	20 s	20 s

JAN 29 2020

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Future Volume (vph)	70	140	357	47	119	8	349	194	36	14	267	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00	1.00				
Frt			0.850		0.991			0.986				0.850
Flt Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1787	1881	1599	1787	1862	0	1626	3308	0	1752	1845	1568
Flt Permitted	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (perm)	1775	1881	1578	1776	1862	0	1624	3306	0	1752	1845	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			384		3			10				77
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		401			475			464			1015	
Travel Time (s)		9.1			10.8			10.5			23.1	
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	75	151	384	55	138	9	401	223	41	16	300	84
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	75	151	384	55	147	0	221	444	0	16	300	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	9.2	16.2	74.0	8.4	12.8		17.2	17.2		17.1	17.1	31.6
Actuated g/C Ratio	0.12	0.22	1.00	0.11	0.17		0.23	0.23		0.23	0.23	0.43
v/c Ratio	0.34	0.37	0.24	0.27	0.45		0.59	0.57		0.04	0.70	0.12
Control Delay	38.8	32.5	0.4	38.7	36.2		34.7	29.4		27.6	39.6	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.8	32.5	0.4	38.7	36.2		34.7	29.4		27.6	39.6	5.5
LOS	D	C	A	D	D		C	C		C	D	A
Approach Delay		13.0			36.9			31.2			32.0	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 74
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 26.1 Intersection LOS: C
Intersection Capacity Utilization 55.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	25 s	30 s	25 s
Ø5	Ø6		
20 s	25 s		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	416	0	0	528	15	337	6	115	36	0	8
Future Volume (vph)	3	416	0	0	528	15	337	6	115	36	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99		1.00		
Frt					0.996			0.857				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3574	0	0	3560	0	3467	1592	0	1770	0	1583
Flt Permitted		0.951					0.950			0.950		
Satd. Flow (perm)	0	3399	0	0	3560	0	3462	1592	0	1767	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			122				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			195			521			550	
Travel Time (s)		22.6			4.4			11.8			12.5	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	3	478	0	0	587	17	359	6	122	42	0	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	0	0	604	0	359	128	0	42	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

JAN 29 2020

Lanes, Volumes, Timings
2: I-81 NB Offramp/Farmers Market Place & Park Street

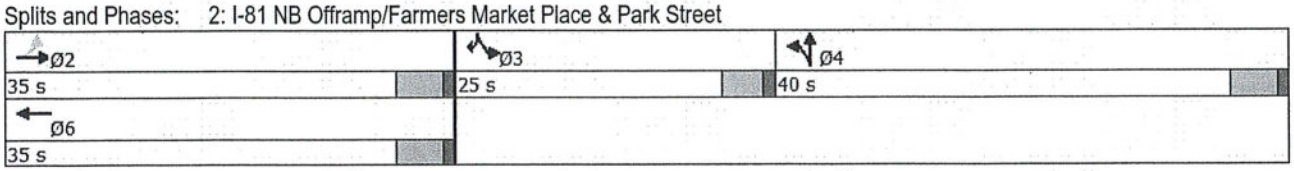
01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		12.0			12.0		9.8	9.8		6.3		6.3
Actuated g/C Ratio		0.34			0.34		0.28	0.28		0.18		0.18
v/c Ratio		0.42			0.50		0.37	0.24		0.13		0.03
Control Delay		11.6			12.2		13.3	5.5		17.9		0.1
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		11.6			12.2		13.3	5.5		17.9		0.1
LOS		B			B		B	A		B		A
Approach Delay		11.6			12.2			11.3			14.8	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 35.3
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 11.8 — Intersection LOS: B
Intersection Capacity Utilization 39.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street



Lanes, Volumes, Timings
10: Harborside Drive/NBT Bank Parkway & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	238	251	375	454	41	249	75	143	34	85	107
Future Volume (vph)	63	238	251	375	454	41	249	75	143	34	85	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.98		0.99	0.99	
Frt			0.850		0.988			0.902			0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1787	3527	0	1787	1659	0	1787	1710	0
Flt Permitted	0.449			0.300			0.345			0.612		
Satd. Flow (perm)	844	1881	1599	564	3527	0	649	1659	0	1145	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228		7			72			48	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	3					3	1		6	6		1
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	72	270	285	412	499	45	268	81	154	39	97	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	270	285	412	544	0	268	235	0	39	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

JAN 2 9 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	30.0	35.0	35.0	30.0	35.0		25.0	30.0		25.0	30.0	
Total Split (%)	25.0%	29.2%	29.2%	25.0%	29.2%		20.8%	25.0%		20.8%	25.0%	
Maximum Green (s)	25.0	30.0	30.0	25.0	30.0		20.0	25.0		20.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	27.7	19.6	19.6	44.3	34.2		36.4	29.6		23.4	16.0	
Actuated g/C Ratio	0.30	0.21	0.21	0.49	0.37		0.40	0.32		0.26	0.18	
v/c Ratio	0.21	0.67	0.55	0.77	0.41		0.60	0.40		0.11	0.65	
Control Delay	17.4	43.9	13.0	27.4	23.8		27.1	22.1		21.3	39.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.4	43.9	13.0	27.4	23.8		27.1	22.1		21.3	39.2	
LOS	B	D	B	C	C		C	C		C	D	
Approach Delay		26.8			25.3			24.8			36.5	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 91.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
30 s	35 s	25 s	30 s
Ø5	Ø6	Ø7	Ø8
30 s	35 s	25 s	30 s

JAN 2 9 2020

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	146	263	20	45	2	219	247	34	19	143	30
Future Volume (vph)	82	146	263	20	45	2	219	247	34	19	143	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor			0.99	1.00								
Frt			0.850		0.993			0.985				0.850
Flt Protected	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1610	3313	0	1719	1810	1538
Flt Permitted	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (perm)	1770	1863	1563	1764	1850	0	1610	3313	0	1719	1810	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			342		2			11				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			475			464			1015	
Travel Time (s)		9.3			10.8			10.5			23.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.77	0.77	0.77	0.71	0.71	0.71	0.79	0.79	0.79	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	106	190	342	28	63	3	277	313	43	22	168	35
Shared Lane Traffic (%)							25%					
Lane Group Flow (vph)	106	190	342	28	66	0	208	425	0	22	168	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	10.1	19.1	68.6	7.3	11.5		16.0	16.0		13.2	13.2	28.6
Actuated g/C Ratio	0.15	0.28	1.00	0.11	0.17		0.23	0.23		0.19	0.19	0.42
v/c Ratio	0.41	0.37	0.22	0.15	0.21		0.55	0.54		0.07	0.48	0.05
Control Delay	35.6	26.5	0.3	36.0	31.3		31.5	26.7		27.9	33.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.6	26.5	0.3	36.0	31.3		31.5	26.7		27.9	33.4	0.7
LOS	D	C	A	D	C		C	C		C	C	A
Approach Delay		14.0			32.7			28.3			27.8	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 68.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 22.7 — Intersection LOS: C
Intersection Capacity Utilization 47.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	25 s	30 s	25 s
Ø5	Ø6		
20 s	25 s		

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	416	0	0	275	19	91	6	66	9	0	5
Future Volume (vph)	1	416	0	0	275	19	91	6	66	9	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt					0.990			0.862				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3539	0	0	3533	0	3400	1590	0	1597	0	1429
Flt Permitted		0.954					0.950			0.950		
Satd. Flow (perm)	0	3376	0	0	3533	0	3400	1590	0	1597	0	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			92				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			187			521			550	
Travel Time (s)		22.6			4.3			11.8			12.5	
Confl. Peds. (#/hr)	2		1	1		2						
Peak Hour Factor	0.74	0.74	0.74	0.77	0.77	0.77	0.72	0.72	0.72	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	13%	13%	13%
Adj. Flow (vph)	1	562	0	0	357	25	126	8	92	11	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	563	0	0	382	0	126	100	0	11	0	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		14.5			14.5		6.3	6.3		5.3		5.3
Actuated g/C Ratio		0.50			0.50		0.22	0.22		0.18		0.18
v/c Ratio		0.33			0.21		0.17	0.24		0.04		0.02
Control Delay		7.5			6.8		11.0	6.0		12.9		0.2
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		7.5			6.8		11.0	6.0		12.9		0.2
LOS		A			A		B	A		B		A
Approach Delay		7.5			6.8			8.8			8.4	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 28.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 29.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street

Ø2	Ø3	Ø4
35 s	25 s	40 s
Ø6		
35 s		

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	368	162	71	247	42	121	19	25	20	27	85
Future Volume (vph)	81	368	162	71	247	42	121	19	25	20	27	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.99		1.00	0.99	
Frt			0.850		0.978			0.915			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1770	3454	0	1752	1664	0	1770	1633	0
Flt Permitted	0.498			0.223			0.431			0.718		
Satd. Flow (perm)	936	1881	1599	415	3454	0	795	1664	0	1334	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		21			34			112	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	2					2	1		2	2		1
Peak Hour Factor	0.75	0.75	0.75	0.73	0.73	0.73	0.74	0.74	0.74	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	108	491	216	97	338	58	164	26	34	26	36	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	491	216	97	396	0	164	60	0	26	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
10: Harborside Drive/NBT Bank Parkway & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	26.3	22.2	22.2	25.9	22.0		20.9	18.4		14.6	11.5	
Actuated g/C Ratio	0.46	0.39	0.39	0.45	0.38		0.37	0.32		0.26	0.20	
v/c Ratio	0.19	0.67	0.30	0.25	0.30		0.36	0.11		0.07	0.35	
Control Delay	12.3	33.9	8.7	13.2	20.3		15.3	11.6		13.1	12.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.3	33.9	8.7	13.2	20.3		15.3	11.6		13.1	12.1	
LOS	B	C	A	B	C		B	B		B	B	
Approach Delay		24.4			18.9			14.3			12.2	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 57.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 20.2 — Intersection LOS: C
Intersection Capacity Utilization 50.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	20 s	20 s	20 s
Ø5	Ø6	Ø7	Ø8
20 s	20 s	20 s	20 s

JAN 29 2020

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	144	367	48	123	8	359	200	37	14	275	77
Future Volume (vph)	72	144	367	48	123	8	359	200	37	14	275	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00	1.00				
Frt			0.850		0.991			0.986				0.850
Flt Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1787	1881	1599	1787	1862	0	1626	3308	0	1752	1845	1568
Flt Permitted	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (perm)	1776	1881	1578	1776	1862	0	1624	3306	0	1752	1845	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			395		3			10				78
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		401			475			464			1015	
Travel Time (s)		9.1			10.8			10.5			23.1	
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	77	155	395	56	143	9	413	230	43	16	309	87
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	77	155	395	56	152	0	227	459	0	16	309	87
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	9.3	16.4	75.1	8.5	13.0		17.4	17.4		17.7	17.7	32.3
Actuated g/C Ratio	0.12	0.22	1.00	0.11	0.17		0.23	0.23		0.24	0.24	0.43
v/c Ratio	0.35	0.38	0.25	0.28	0.47		0.60	0.59		0.04	0.71	0.12
Control Delay	39.5	32.8	0.4	39.4	36.8		35.6	30.1		27.9	40.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	39.5	32.8	0.4	39.4	36.8		35.6	30.1		27.9	40.2	5.7
LOS	D	C	A	D	D		D	C		C	D	A
Approach Delay		13.2			37.5			32.0			32.4	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 75.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 55.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	25 s	30 s	25 s
Ø5	Ø6		
20 s	25 s		

Lanes, Volumes, Timings
2: I-81 NB Offramp/Farmers Market Place & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	428	0	0	544	15	347	6	118	37	0	8
Future Volume (vph)	3	428	0	0	544	15	347	6	118	37	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99		1.00		
Frt					0.996			0.857				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3574	0	0	3560	0	3467	1592	0	1770	0	1583
Flt Permitted		0.951					0.950			0.950		
Satd. Flow (perm)	0	3399	0	0	3560	0	3462	1592	0	1767	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			126				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			195			521			550	
Travel Time (s)		22.6			4.4			11.8			12.5	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	3	492	0	0	604	17	369	6	126	44	0	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	495	0	0	621	0	369	132	0	44	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

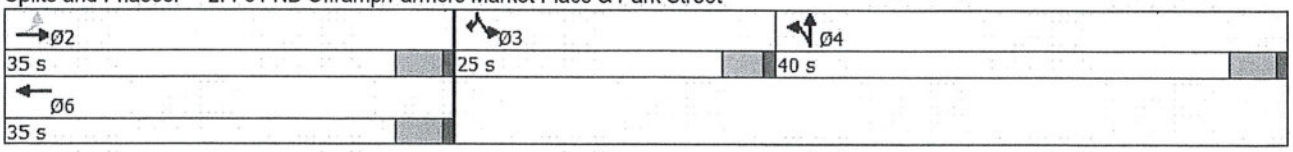
JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		12.5			12.5		10.1	10.1		6.4		6.4
Actuated g/C Ratio		0.33			0.33		0.26	0.26		0.17		0.17
v/c Ratio		0.45			0.53		0.40	0.26		0.15		0.03
Control Delay		13.0			13.7		14.9	5.7		19.5		0.1
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		13.0			13.7		14.9	5.7		19.5		0.1
LOS		B			B		B	A		B		A
Approach Delay		13.0			13.7			12.5			16.2	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 38.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 39.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street



Lanes, Volumes, Timings
10: Harborside Drive/NBT Bank Parkway & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	245	259	386	468	42	256	77	147	35	88	110
Future Volume (vph)	65	245	259	386	468	42	256	77	147	35	88	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.98		0.99	0.99	
Frt			0.850		0.988			0.902			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1787	3527	0	1787	1659	0	1787	1712	0
Flt Permitted	0.442			0.286			0.334			0.609		
Satd. Flow (perm)	831	1881	1599	538	3527	0	628	1659	0	1140	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228		7			72			47	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	3					3	1		6	6		1
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	74	278	294	424	514	46	275	83	158	40	100	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	278	294	424	560	0	275	241	0	40	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	30.0	35.0	35.0	30.0	35.0		25.0	30.0		25.0	30.0	
Total Split (%)	25.0%	29.2%	29.2%	25.0%	29.2%		20.8%	25.0%		20.8%	25.0%	
Maximum Green (s)	25.0	30.0	30.0	25.0	30.0		20.0	25.0		20.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	28.3	20.1	20.1	45.6	35.3		37.1	30.3		23.8	16.3	
Actuated g/C Ratio	0.30	0.22	0.22	0.49	0.38		0.40	0.33		0.26	0.17	
v/c Ratio	0.22	0.69	0.56	0.80	0.42		0.62	0.41		0.12	0.66	
Control Delay	17.7	45.1	13.9	29.3	24.1		28.1	22.6		21.5	40.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.7	45.1	13.9	29.3	24.1		28.1	22.6		21.5	40.8	
LOS	B	D	B	C	C		C	C		C	D	
Approach Delay		27.8			26.4			25.5			37.9	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 93.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 76.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
30 s	35 s	25 s	30 s
Ø5	Ø6	Ø7	Ø8
30 s	35 s	25 s	30 s

JAN 2 9 2020

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	148	268	20	47	2	223	247	34	19	143	32
Future Volume (vph)	84	148	268	20	47	2	223	247	34	19	143	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor			0.99	1.00								
Frt			0.850		0.993			0.985				0.850
Flt Protected	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1610	3313	0	1719	1810	1538
Flt Permitted	0.950			0.950			0.950	0.992		0.950		
Satd. Flow (perm)	1770	1863	1563	1764	1850	0	1610	3313	0	1719	1810	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			348		2			11				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		410			475			464			1015	
Travel Time (s)		9.3			10.8			10.5			23.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.77	0.77	0.77	0.71	0.71	0.71	0.79	0.79	0.79	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	109	192	348	28	66	3	282	313	43	22	168	38
Shared Lane Traffic (%)							26%					
Lane Group Flow (vph)	109	192	348	28	69	0	209	429	0	22	168	38
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	10.3	19.2	68.8	7.3	11.5		16.1	16.1		13.2	13.2	28.8
Actuated g/C Ratio	0.15	0.28	1.00	0.11	0.17		0.23	0.23		0.19	0.19	0.42
v/c Ratio	0.41	0.37	0.22	0.15	0.22		0.55	0.55		0.07	0.48	0.06
Control Delay	35.7	26.6	0.3	36.1	31.5		31.6	26.8		28.0	33.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.7	26.6	0.3	36.1	31.5		31.6	26.8		28.0	33.6	1.0
LOS	D	C	A	D	C		C	C		C	C	A
Approach Delay		14.0			32.8			28.3			27.6	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 68.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 22.7 — Intersection LOS: C
Intersection Capacity Utilization 47.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	25 s	30 s	25 s
Ø5	Ø6		
20 s	25 s		

JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	423	0	0	283	19	91	9	68	9	0	5
Future Volume (vph)	1	423	0	0	283	19	91	9	68	9	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt					0.990			0.868				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3539	0	0	3533	0	3400	1601	0	1597	0	1429
Flt Permitted		0.954					0.950			0.950		
Satd. Flow (perm)	0	3376	0	0	3533	0	3400	1601	0	1597	0	1429
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			94				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			187			521			550	
Travel Time (s)		22.6			4.3			11.8			12.5	
Confl. Peds. (#/hr)	2		1	1		2						
Peak Hour Factor	0.74	0.74	0.74	0.77	0.77	0.77	0.72	0.72	0.72	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	13%	13%	13%
Adj. Flow (vph)	1	572	0	0	368	25	126	13	94	11	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	573	0	0	393	0	126	107	0	11	0	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

Lanes, Volumes, Timings
2: I-81 NB Offramp/Farmers Market Place & Park Street

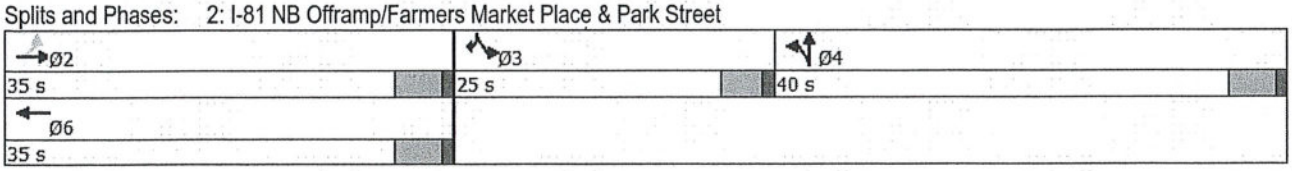
01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		13.1			13.1		6.5	6.5		5.3		5.3
Actuated g/C Ratio		0.43			0.43		0.21	0.21		0.17		0.17
v/c Ratio		0.40			0.26		0.18	0.26		0.04		0.02
Control Delay		8.0			7.1		11.1	6.4		13.0		0.2
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		8.0			7.1		11.1	6.4		13.0		0.2
LOS		A			A		B	A		B		A
Approach Delay		8.0			7.1			9.0			8.5	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 30.8
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 7.9 — Intersection LOS: A
Intersection Capacity Utilization 29.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	372	162	74	251	43	121	19	27	21	27	85
Future Volume (vph)	81	372	162	74	251	43	121	19	27	21	27	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.99		1.00	0.99	
Frt			0.850		0.978			0.913			0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1770	3454	0	1752	1660	0	1770	1633	0
Flt Permitted	0.491			0.215			0.431			0.717		
Satd. Flow (perm)	923	1881	1599	400	3454	0	795	1660	0	1332	1633	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		21			36			112	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	2					2	1		2	2		1
Peak Hour Factor	0.75	0.75	0.75	0.73	0.73	0.73	0.74	0.74	0.74	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	108	496	216	101	344	59	164	26	36	28	36	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	496	216	101	403	0	164	62	0	28	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	26.2	22.1	22.1	25.8	22.0		20.9	18.4		14.6	11.6	
Actuated g/C Ratio	0.46	0.39	0.39	0.45	0.39		0.37	0.32		0.26	0.20	
v/c Ratio	0.20	0.68	0.30	0.26	0.30		0.36	0.11		0.07	0.35	
Control Delay	12.3	34.3	8.7	13.3	20.3		15.3	11.5		13.0	12.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.3	34.3	8.7	13.3	20.3		15.3	11.5		13.0	12.1	
LOS	B	C	A	B	C		B	B		B	B	
Approach Delay		24.7			18.9			14.2			12.2	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 57.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 50.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
20 s	20 s	20 s	20 s
Ø5	Ø6	Ø7	Ø8
20 s	20 s	20 s	20 s

JAN 29 2020

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	1	11	291	11	12
Future Volume (vph)	488	1	11	291	11	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt					0.930	
Flt Protected				0.998	0.977	
Satd. Flow (prot)	3539	0	0	3567	1709	0
Flt Permitted				0.998	0.977	
Satd. Flow (perm)	3539	0	0	3567	1709	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	130			410	105	
Travel Time (s)	3.0			9.3	2.4	
Peak Hour Factor	0.77	0.77	0.74	0.74	0.90	0.90
Heavy Vehicles (%)	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	634	1	15	393	12	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	635	0	0	408	25	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 26.1% ICU Level of Service A
Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.5					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↰↑↑	ᛉ	
Traffic Vol, veh/h	488	1	11	291	11	12
Future Vol, veh/h	488	1	11	291	11	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	74	74	90	90
Heavy Vehicles, %	2	1	1	1	1	1
Mvmt Flow	634	1	15	393	12	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	635	0	862	318
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	951	-	296	681
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	951	-	290	681
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	776	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	414	-	-	951	-
HCM Lane V/C Ratio	0.062	-	-	0.016	-
HCM Control Delay (s)	14.3	-	-	8.8	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	12	0	302	0	1
Future Volume (vph)	488	12	0	302	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3526	0	0	3574	0	1627
Flt Permitted						
Satd. Flow (perm)	3526	0	0	3574	0	1627
Link Speed (mph)	30			30	30	
Link Distance (ft)	187			130	106	
Travel Time (s)	4.3			3.0	2.4	
Peak Hour Factor	0.77	0.77	0.74	0.74	0.90	0.90
Heavy Vehicles (%)	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	634	16	0	408	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	650	0	0	408	0	1
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.9% ICU Level of Service A
Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	488	12	0	302	0	1
Future Vol, veh/h	488	12	0	302	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	74	74	90	90
Heavy Vehicles, %	2	1	1	1	1	1
Mvmt Flow	634	16	0	408	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	317
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	0	0	-	0	682
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	682	-	-
HCM Lane V/C Ratio	0.002	-	-
HCM Control Delay (s)	10.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

JAN 29 2020

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	147	375	48	126	8	366	200	37	14	275	81
Future Volume (vph)	76	147	375	48	126	8	366	200	37	14	275	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		0	200		0	0		0	90		90
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	1.00	1.00
Ped Bike Factor	0.99		0.99	0.99	1.00		1.00	1.00				
Frt			0.850		0.991			0.986				0.850
Flt Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1787	1881	1599	1787	1862	0	1626	3308	0	1752	1845	1568
Flt Permitted	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (perm)	1776	1881	1578	1776	1862	0	1624	3306	0	1752	1845	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			403		3			10				81
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		401			475			464			1015	
Travel Time (s)		9.1			10.8			10.5			23.1	
Confl. Peds. (#/hr)	4		4	4		4	2					2
Peak Hour Factor	0.93	0.93	0.93	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	82	158	403	56	147	9	421	230	43	16	309	91
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	82	158	403	56	156	0	227	467	0	16	309	91
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	2
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	60
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	-10
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	30
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lanes, Volumes, Timings
1: Hiawatha Boulevard & Park Street

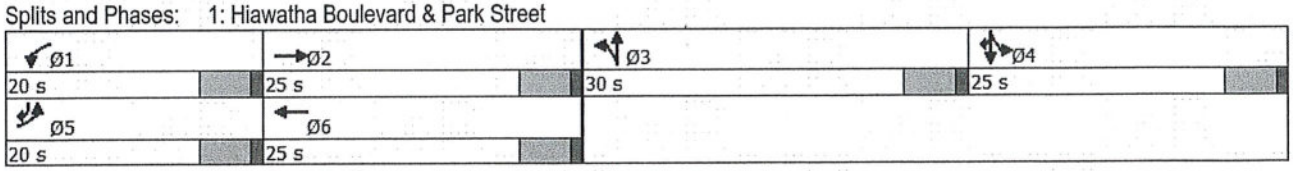
01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Free	Prot	NA		Split	NA		Split	NA	pt+ov
Protected Phases	5	2		1	6		3	3		4	4	4 5
Permitted Phases			Free									
Detector Phase	5	2		1	6		3	3		4	4	4 5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	15.0		11.0	15.0		15.0	15.0		15.0	15.0	
Total Split (s)	20.0	25.0		20.0	25.0		30.0	30.0		25.0	25.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		30.0%	30.0%		25.0%	25.0%	
Maximum Green (s)	15.0	20.0		15.0	20.0		25.0	25.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Act Effct Green (s)	9.5	16.7	76.1	8.5	13.1		17.8	17.8		18.1	18.1	32.8
Actuated g/C Ratio	0.12	0.22	1.00	0.11	0.17		0.23	0.23		0.24	0.24	0.43
v/c Ratio	0.37	0.38	0.26	0.28	0.48		0.60	0.60		0.04	0.71	0.13
Control Delay	39.9	32.7	0.4	39.8	37.2		35.7	30.5		28.2	40.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	39.9	32.7	0.4	39.8	37.2		35.7	30.5		28.2	40.2	5.8
LOS	D	C	A	D	D		D	C		C	D	A
Approach Delay		13.4			37.9			32.2			32.2	
Approach LOS		B			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 76.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 26.7 — Intersection LOS: C
Intersection Capacity Utilization 56.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Hiawatha Boulevard & Park Street



JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	439	0	0	557	15	347	6	121	37	0	8
Future Volume (vph)	3	439	0	0	557	15	347	6	121	37	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	250		0	0		225
Storage Lanes	1		0	0		0	2		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	0.99		1.00		
Frt					0.996			0.857				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	3574	0	0	3560	0	3467	1592	0	1770	0	1583
Flt Permitted		0.951					0.950			0.950		
Satd. Flow (perm)	0	3399	0	0	3560	0	3462	1592	0	1767	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3			129				68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		994			195			521			550	
Travel Time (s)		22.6			4.4			11.8			12.5	
Confl. Peds. (#/hr)			1	1			1		1	1		1
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.94	0.94	0.94	0.85	0.85	0.85
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	3	505	0	0	619	17	369	6	129	44	0	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	508	0	0	636	0	369	135	0	44	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		2	2		2		2
Detector Template	Left											
Leading Detector (ft)	20	62			62		62	60		64		60
Trailing Detector (ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Position(ft)	0	-10			-10		-10	-10		-10		-10
Detector 1 Size(ft)	20	31			31		31	30		32		30
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		4.0	6.0		4.0		6.0
Detector 2 Position(ft)		31			31		31	30		32		30
Detector 2 Size(ft)		31			31		31	30		32		30
Detector 2 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0		0.0	0.0		0.0		0.0

Lanes, Volumes, Timings
2: I-81 NB Offramp/Farmers Market Place & Park Street

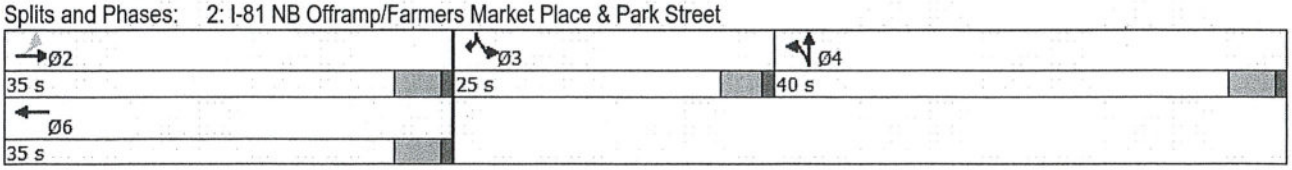
01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Split	NA		Prot		Prot
Protected Phases		2			6		4	4		3		3
Permitted Phases	2											
Detector Phase	2	2			6		4	4		3		3
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		4.0	4.0		4.0		4.0
Minimum Split (s)	12.6	12.6			12.6		8.6	8.6		8.2		8.2
Total Split (s)	35.0	35.0			35.0		40.0	40.0		25.0		25.0
Total Split (%)	35.0%	35.0%			35.0%		40.0%	40.0%		25.0%		25.0%
Maximum Green (s)	30.4	30.4			30.4		35.4	35.4		20.8		20.8
Yellow Time (s)	3.6	3.6			3.6		3.6	3.6		3.2		3.2
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		4.6			4.6		4.6	4.6		4.2		4.2
Lead/Lag							Lag	Lag		Lead		Lead
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min			Min		None	None		None		None
Act Effct Green (s)		12.7			12.7		10.2	10.2		6.4		6.4
Actuated g/C Ratio		0.33			0.33		0.26	0.26		0.17		0.17
v/c Ratio		0.45			0.54		0.40	0.26		0.15		0.03
Control Delay		13.1			13.8		15.0	5.7		19.7		0.1
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		13.1			13.8		15.0	5.7		19.7		0.1
LOS		B			B		B	A		B		A
Approach Delay		13.1			13.8			12.5			16.4	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 38.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 13.3 — Intersection LOS: B
Intersection Capacity Utilization 40.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-81 NB Offramp/Farmers Market Place & Park Street



JAN 29 2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	252	259	391	475	43	256	77	150	36	88	110
Future Volume (vph)	65	252	259	391	475	43	256	77	150	36	88	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		110	450		0	280		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00	0.98		0.99	0.99	
Frt			0.850		0.988			0.901			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1881	1599	1787	3527	0	1787	1657	0	1787	1712	0
Flt Permitted	0.438			0.275			0.333			0.607		
Satd. Flow (perm)	823	1881	1599	517	3527	0	626	1657	0	1136	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222		7			74			47	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		643			994			527			660	
Travel Time (s)		14.6			22.6			12.0			15.0	
Confl. Peds. (#/hr)	3					3	1		6	6		1
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.93	0.93	0.93	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	74	286	294	430	522	47	275	83	161	41	100	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	286	294	430	569	0	275	244	0	41	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	60	60	60	60	60		60	60		60	60	
Trailing Detector (ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Size(ft)	30	30	30	30	30		30	30		30	30	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
10: Harborside Drive/NBT Bank Parkway & Park Street

01/27/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	10.0	10.0	6.0	10.0		6.0	10.0		6.0	10.0	
Minimum Split (s)	11.0	15.0	15.0	11.0	15.0		11.0	15.0		11.0	15.0	
Total Split (s)	30.0	35.0	35.0	30.0	35.0		25.0	30.0		25.0	30.0	
Total Split (%)	25.0%	29.2%	29.2%	25.0%	29.2%		20.8%	25.0%		20.8%	25.0%	
Maximum Green (s)	25.0	30.0	30.0	25.0	30.0		20.0	25.0		20.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effct Green (s)	28.6	20.5	20.5	46.3	36.0		37.2	30.4		23.9	16.4	
Actuated g/C Ratio	0.30	0.22	0.22	0.49	0.38		0.40	0.32		0.25	0.17	
v/c Ratio	0.22	0.70	0.56	0.81	0.42		0.63	0.42		0.12	0.67	
Control Delay	17.7	45.8	14.6	30.4	24.1		28.5	22.8		21.8	41.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.7	45.8	14.6	30.4	24.1		28.5	22.8		21.8	41.2	
LOS	B	D	B	C	C		C	C		C	D	
Approach Delay		28.6			26.8			25.8			38.2	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 94
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 28.3 — Intersection LOS: C
Intersection Capacity Utilization 77.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Harborside Drive/NBT Bank Parkway & Park Street

Ø1	Ø2	Ø3	Ø4
30 s	35 s	25 s	30 s
Ø5	**Ø6**	**Ø7**	**Ø8**
30 s	35 s	25 s	30 s

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	579	2	19	554	18	19
Future Volume (vph)	579	2	19	554	18	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt					0.931	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	3574	0	0	3567	1709	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	3574	0	0	3567	1709	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			401	118	
Travel Time (s)	3.0			9.1	2.7	
Peak Hour Factor	0.87	0.87	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	666	2	21	616	20	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	668	0	0	637	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.1% ICU Level of Service A
Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↰↑↑	ᛉ	
Traffic Vol, veh/h	579	2	19	554	18	19
Future Vol, veh/h	579	2	19	554	18	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	666	2	21	616	20	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	668	0	1017	334
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	924	-	235	665
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	924	-	227	665
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	-	-	924	-
HCM Lane V/C Ratio	0.12	-	-	0.023	-
HCM Control Delay (s)	16.9	-	-	9	0.1
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

JAN 29 2020

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Volume (vph)	579	18	0	572	0	2
Future Volume (vph)	579	18	0	572	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.865
Flt Protected						
Satd. Flow (prot)	3556	0	0	3574	0	1627
Flt Permitted						
Satd. Flow (perm)	3556	0	0	3574	0	1627
Link Speed (mph)	30			30	30	
Link Distance (ft)	195			131	120	
Travel Time (s)	4.4			3.0	2.7	
Peak Hour Factor	0.87	0.87	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	666	21	0	636	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	687	0	0	636	0	2
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 26.6% ICU Level of Service A
Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↳			↑↑		↱
Traffic Vol, veh/h	579	18	0	572	0	2
Future Vol, veh/h	579	18	0	572	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	666	21	0	636	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	333
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	0	0	-	0	666
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	666
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	666	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	10.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

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