P0595-015
December 19, 2022

Ms. Beverly Zendt, Planning Director
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Site Review Permit & Lot Line Revision Applications**
Proposed Advanced Manufacturing Facility

Dear Beverly:

On behalf of Aviation Avenue Group, LLC, we are pleased to submit the following information to support a request to the Planning Board for a recommendation for approval to the Pease Development Authority (PDA) for Site Plan Review and Subdivision for a proposed Advanced Manufacturing Facility on a previously developed site located at 80 Rochester Avenue:

- One (1) copy of the PDA Application for Site Review, dated December 19, 2022;
- One (1) copy of the PDA Application for Subdivision, dated December 19, 2022;
- One (1) copy of the Owner Authorization, dated October 25, 2022;
- One (1) full size & one (1) half size copy of the Site Plan Set, dated December 19, 2022;
- Three (3) full size & one (1) half size copy of the Subdivision Plan, dated December 19, 2022;
- One (1) copy of the Truck Turning Exhibits, dated December 19, 2022;
- One (1) copy of the Drainage Analysis, dated December 19, 2022;
- One (1) copy of the Operations and Maintenance Plan, dated December 19, 2022;
- One (1) copy of the Traffic Impact Assessment, dated October 7, 2022;
- One (1) copy of the Pease abutters list/labels;
- One (1) copy of the Eversource Will Serve Letter, dated December 6, 2022;
- One (1) copy of the Unitil Will Serve Letter, dated December 1, 2022;
- One (1) copy of the proposed light poles and fixtures cut sheets
- One (1) application fee calculation form for the Site Review & Lot Line Revision;
- One (1) Site Review Application Fee check in the amount of $9,220.00;
- One (1) Lot Line Revision Application Fee check in the amount of $250.00

The proposed project is located at 80 Rochester Avenue which is identified as Map 308 Lot 1 on the City of Portsmouth Tax Maps. The proposed project is for the construction of a ±209,750 SF advanced manufacturing building including ±18,145 SF of office space, two (2) parking areas, two (2) loading dock areas, minor realignment of a portion of Rochester Avenue, and associated site improvements consisting of underground utilities, landscaping, lighting, and a stormwater management system.

There is approximately 196,665 SF of existing impervious area that is currently untreated before entering the municipal drainage system. The proposed stormwater management system has been designed to provide treatment for the existing impervious surface that are currently untreated and

for ±161,130 SF of additional impervious that results from the proposed project as required by the PDA Site Plan Regulations.

On October 20, 2022, the PDA Board granted conceptual approval for the proposed project. The project was granted a variance from the Zoning Board of Adjustment for the front yard setback requirements at their meeting on November 15, 2022.

We respectfully request to be placed on the Technical Advisory Committee (TAC) meeting agenda for the January 3, 2023, meeting. If you have any questions or need any additional information, please contact Patrick Crimmins by phone at (603) 433-8818 or by email at pmcrimmins@tighebond.com.

Sincerely,
TIGHE & BOND, INC.





Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

Copy: Aviation Avenue Group, LLC (via email)
Pease Development Authority

J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Report_Evaluation\Applications\City of Portsmouth\TAC\20221219_TAC\TAC Cover Letter.docx

AUTHORIZATION
100 New Hampshire Avenue
Map 308, Lot 1

The undersigned owner of the above referenced property hereby authorizes representatives of Bosen & Associates, PLLC, and Tighe & Bond to represent the company's interests before the Portsmouth land use boards and to submit any and all applications and materials related thereto on its behalf.

Aviation Avenue Group, LLC

Date: October 25, 2022

By: _____
Name: JOHN STEBBLER
Title: MANAGING MEMBER

Pease Development Authority
55 International Drive, Portsmouth, NH 03801, (603) 433-6088

Subdivision Application

For PDA Use Only			
Date Submitted:_____	Municipal Review:_____	Fee:_____	
Application Complete:_____	Date Forwarded:_____	Paid:_____	Check #:_____

Applicant Information

Applicant: **Aviation Avenue Group, LLC**	Agent: **Tighe & Bond**
Address: **210 Commerce Way, Suite 300, Portsmouth, NH**	Address: **177 Corporate Drive Portsmouth, NH**
Business Phone: **603-430-4000**	Business Phone: **603-433-8818**
Mobile Phone:	Mobile Phone:
Fax: **603-430-8940**	Fax:

Site Information

Address / Location of Original Lot: **80 Rochester Ave (100 New Hampshire Ave)**

Portsmouth Tax Map: **308** **Lot #:** **1** **Zone:** **Pease Industrial (PI)**

Proposed Activity (check one) **Subdivision** **X** **Lot Line Adjustment** _____

Existing Lot

Total # of Existing Lot(s) **1**

Existing Lot Area **±10.9**

Created Lot

Total # of Proposed Lot(s) **1**

Area of Proposed Lot(s) **±11.4**

All above information shall be shown on a site plan submitted with this application. Provide 3 Full size hard copies and 1 PDF copy of all application materials as well as 1 half size set of drawings to PDA. Applicant shall supply additional copies as may be required by applicable municipality. Refer to Chapter 500 of PDA Land Use Controls for additional information

Checklist: Application fee (as required) **(X)** Abbutters List **(X)** Drawings **(X)**

Copies of approvals for any Required State/Federal permits (See Ch 500 of PDA LUC) ( )

Certification

I hereby certify under the penalties of perjury that the foregoing information and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I hereby apply for Subdivision and acknowledge I will comply with all regulations and any conditions established by the Review Committee(s) and the PDA Board of Directors in the development and construction of this

Neil Hansen — Signature of Applicant

12/19/22 — Date

Neil A. Hansen — Printed Name

N:\Engineer\Subdivision Application.xlsx

TAX MAP 308, LOT 9
PEASE DEV AUTH.
PEASE, NH 03801

AVIATION AVENUE

TAX MAP 307, LOT 2
PEASE DEV AUTH.
PEASE, NH 03801

AVIATION AVENUE

TAX MAP 308, LOT 0

TAX MAP 308, LOT 4
PEASE DEVELOP. AUTH.
CORPORATE DRIVE
PORTSMOUTH, NH 03801

TAX MAP 308, LOT 0

LEE STREET

TAX MAP 308, LOT 5
PEASE DEVELOPMENT AUTH.
CORPORATE DRIVE
PORTSMOUTH, NH 03801

TH=58.8'

AVIATION STREET

TAX MAP 307, LOT 3
PEASE DEV AUTH.
PEASE, NH 03801

TAX MAP 308,
LOT 6

ROCHESTER AVENUE

ROCHESTER AVENUE

PROPOSED MONUMENT
(TYP)

PROPOSED MONUMENT
(TYP)

±1199.724'
±S31° 33' 17.07"E

±N58° 24' 13.86"E
±15.034'

PROPOSED RELOCATED
LOT LINE

APPROX LOCATION OF
EXISTING LOT LINE
TO BE RELOCATED

±N31° 07' 09.17"W
±1199.752'

±S58° 26' 01.83"W
±24.154'

PORTSMOUTH GIS DOES NOT SHOW THIS AS A PARCEL
LEASE LOT 308-1
PER REF. PLAN 17

PROPOSED LEASE AREA
±11.4 ACRES
±496,584 SF

NEWFIELDS STREET

STRATHAM STREET

PORTSMOUTH GIS
DOES NOT SHOW THIS
AS A PARCEL
LEASE LOT 308-2
PER REF. PLAN 17

±S58° 24' 13.86"W
±309.986'

±N58° 26' 01.83"E
±330.846'

ZONE 3 GMZ
AREA

TAX MAP 307, LOT 1
CINTHESYS REAL ESTATE
68 NEW HAMPSHIRE AVE.
PORTSMOUTH, NH 03801

TAX MAP 308, LOT 1
PEASE DEVELOPMENT AUTH.
80 ROCHESTER AVENUE
PORTSMOUTH, NH 03801

±2642.080'
±S70° 12' 41.00"E

ZONE 3 GMZ
BOUNDARY

APPROX LOCATION OF
EXISTING LOT LINE
(TYP)

PROPOSED MONUMENT
(TYP)

TAX MAP 311, LOT 1
US DEPARTMENT OF STATE
NATIONAL PASSPORT CENTER
31 ROCHESTER AVENUE
PORTSMOUTH, NH 03801

PROPOSED MONUMENT
(TYP)

±1199.507'
±S31° 33' 17.07"E

±1024.230'
±S31° 00' 21.00"E

ZONE 3 GMZ
BOUNDARY

NEW HAMPSHIRE AVENUE

NEW HAMPSHIRE AVENUE

TBM 7239B
MAG NAIL SET UP 8"
IN POLE PSNH 453/19
ELEV.=52.87'

±1010.340'
±S60° 40' 52.00"E

TAX MAP 312, LOT 2

TAX MAP 306, LOT 4
SEACOAST NEWSPAPERS, INC.
111 NEW HAMPSHIRE AVE.
PORTSMOUTH, NH 03801

TAX MAP 306, LOT 4
SEACOAST NEWSPAPERS, INC.
111 NEW HAMPSHIRE AVE.
PORTSMOUTH, NH 03801

TBM 7239A
MAG NAIL SET UP 8"
IN POLE PSNH 453/10
ELEV.=61.06'

TAX MAP 306, LOTS 0003-***
(MULTIPLE PARCELS,
NAMES, AND ADDRESSES)
PORTSMOUTH, NH 03801

SUBDIVISION LINES SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL SUBDIVISION PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PRIOR TO ISSUING BUILDING PERMITS.

SITE DATA:
LOCATION: TAX MAP 308, LOT 1
80 ROCHESTER AVENUE
PORTSMOUTH, NEW HAMPSHIRE

ZONING DISTRICT: INDUSTRIAL
ALLOWED USE: INDUSTRIAL / WAREHOUSE

DIMENSIONAL REQUIREMENTS:	REQUIRED
MINIMUM LOT AREA:	10 ACRES
MINIMUM STREET FRONTAGE:	200 FT
MINIMUM SETBACKS:	
• FRONT:	70 FT
• SIDE:	50 FT
• REAR:	50 FT
MAXIMUM BUILDING HEIGHT:	PER FAA
MINIMUM OPEN SPACE:	25%

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

SUBDIVISION PLAN

SCALE: AS SHOWN

1 OF 1

Last Save Date: December 19, 2022 9:06 AM By: CML
Plot Date: Monday, December 19, 2022 9:06 AM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Subdivision

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1 Junkins Avenue
Portsmouth, New Hampshire 03801

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Sincerely,
TIGHE & BOND, INC.





Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

Copy: Aviation Avenue Group, LLC (via email)
Pease Development Authority

J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Report_Evaluation\Applications\City of Portsmouth\TAC\20221219_TAC\TAC Cover Letter.docx

Pease Development Authority
55 International Drive, Portsmouth, NH 03801, (603) 433-6088

Application for Site Review

For PDA Use Only			
Date Submitted:_____	Municipal Review:_____	Fee:_____	
Application Complete:_____	Date Forwarded:_____	Paid:_____	Check #:_____

Applicant Information

Applicant: **Aviation Avenue Group, LLC**	Agent: **Tighe & Bond**
Address: **210 Commerce Way, Suite 300, Portsmouth, NH**	Address: **177 Corporate Drive Portsmouth, NH**
Business Phone: **603-430-4000**	Business Phone: **603-433-8818**
Mobile Phone:	Mobile Phone:
Fax: **603-430-8940**	Fax:

Site Information

Portsmouth Tax Map: **308**	Lot #: **1**	Zone: **Pease Industrial (PI)**
Site Address / Location : **80 Rochester Ave (100 New Hampshire Ave)**		
Site Address / Location :		Area of On-site Wetlands:

Activity Information

Change of Use: Yes [X] No [ ] Existing Use: **Vacant**

Proposed Use: **Manufacturing**

Description of Project: **The proposed project is for the construction of a ±209,750 SF advanced manufacturing building including ±18,145 SF of office space, two (2) parking areas, two (2) loading dock areas, minor realignment of a portion of Rochester Avenue, and associated site improvements consisting of underground utilities, landscaping, lighting, and a stormwater management system.**

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Certification

I hereby certify under the penalties of perjury that the foregoing information and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I hereby apply for Site Review and acknowledge I will comply with all regulations and any conditions established by the Review Committee(s) and PDA Board in the development and construction of this project.

Signature of Applicant — Date: 12/19/22

Neil A. Hansen

Printed Name

N:\Engineer\ ApplicationforSiteReview.xlsx

AUTHORIZATION
100 New Hampshire Avenue
Map 308, Lot 1

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Aviation Avenue Group, LLC

Date: October 25, 2022

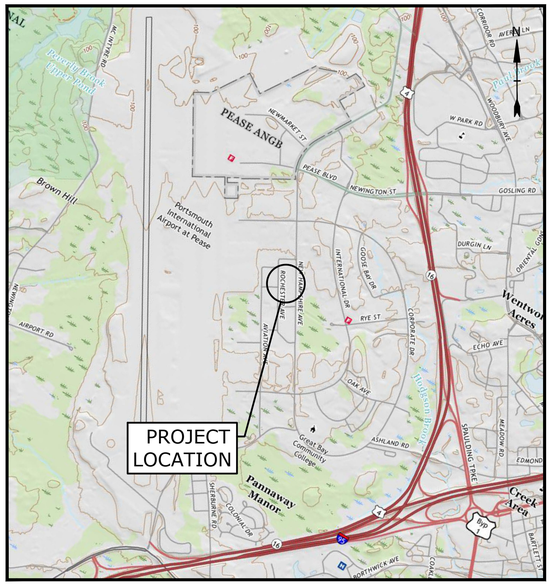
By: _____
Name: JOHN STEBBLER
Title: MANAGING MEMBER

PROPOSED ADVANCED MANUFACTURING FACILITY

100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NEW HAMPSHIRE
PERMIT DRAWINGS

DECEMBER 19, 2022

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	12/19/2022
1 OF 8	EXISTING CONDITIONS PLAN	09/21/2022
2 OF 8	EXISTING CONDITIONS PLAN	09/21/2022
7 OF 8	EXISTING CONDITIONS PLAN	09/21/2022
8 OF 8	EXISTING CONDITIONS PLAN	09/21/2022
C-101	OVERALL EXISTING CONDITIONS / DEMOLITION PLAN	12/19/2022
C-101.1	EXISTING CONDITIONS / DEMOLITION PLAN	12/19/2022
C-101.2	EXISTING CONDITIONS / DEMOLITION PLAN	12/19/2022
C-102	OVERALL SITE PLAN	12/19/2022
C-102.1	SITE PLAN	12/19/2022
C-102.2	SITE PLAN	12/19/2022
C-103	OVERALL GRADING, DRAINAGE & EROSION CONTROL PLAN	12/19/2022
C-103.1	GRADING, DRAINAGE & EROSION CONTROL PLAN	12/19/2022
C-103.2	GRADING, DRAINAGE & EROSION CONTROL PLAN	12/19/2022
C-104	UTILITY PLAN	12/19/2022
C-105	OVERALL LANDSCAPE PLAN	12/19/2022
C-105.1	LANDSCAPE PLAN	12/19/2022
C-105.2	LANDSCAPE PLAN	12/19/2022
C-501	EROSION CONTROL NOTES & DETAILS SHEET	12/19/2022
C-502	DETAILS SHEET	12/19/2022
C-503	DETAILS SHEET	12/19/2022
C-504	DETAILS SHEET	12/19/2022
C-505	DETAILS SHEET	12/19/2022
C-506	DETAILS SHEET	12/19/2022
A1	PROPOSED EXTERIOR ELEVATIONS	12/12/2022
1 OF 1	PHOTOMETRICS ALT 2	12/16/2022



LOCATION MAP
SCALE: 1" = 2,000'

CONSTRUCTION NOTES:
1. THE CONTRACTOR SHALL NOT RELY ON SCALED DIMENSIONS AND SHALL CONTACT THE ENGINEER FOR CLARIFICATION IF A REQUIRED DIMENSION IS NOT PROVIDED ON THE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND FOR SITE CONDITIONS THROUGHOUT CONSTRUCTION. NEITHER THE PLANS NOR THE SEAL OF THE ENGINEER AFFIXED HEREON EXTEND TO OR INCLUDE SYSTEMS REQUIRED FOR THE SAFETY OF THE CONTRACTOR, THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND IMPLEMENTING SAFETY PROCEDURES AND SYSTEMS AS REQUIRED BY THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ANY STATE OR LOCAL SAFETY REGULATIONS.
3. TIGHE & BOND. ASSUMES NO RESPONSIBILITY FOR ANY ISSUES LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION OF TIGHE & BOND.

PREPARED BY:
Tighe&Bond
177 Corporate Drive
Portsmouth New Hampshire, 03801
603.433.8818

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
12/19/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – STATE OF NEW HAMPSHIRE
12/19/22

LESSOR:
Pease Development Authority
55 International Drive
Portsmouth, NH 03801
603.433.6088

APPLICANT:
Aviation Avenue Group, LLC
210 Commerce Way
Suite 300
603.427.5500

SURVEY CONSULTANT:
DOUCET SURVEY INC
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

811 DigSafe MA-ME-NH-RI-VT

COMPLETE SET 26 SHEETS

Last Save Date: December 19, 2022 8:15 AM By: CML
Plot Date: Monday, December 19, 2022 8:15 AM By: Cinda M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_CS.dwg Layout Tab: CS

NOTES:

1. REFERENCE: PEASE HANGAR 227 AREA
(ENCOMPASSING PARTS OF NEW HAMPSHIRE AVE, AVIATION AVE, STRATHAM ST, ROCHESTER AVE, NEWFIELD ST, LEE STREET, & FLIGHTLINE ROAD IN PORTSMOUTH, NH)
D.S.I. PROJECT NO. 7239

2. OWNER OF RECORD: PEASE DEVELOPMENT AUTHORITY (ALL BUT ONE PARCEL)
55 INTERNATIONAL DRIVE
PORTSMOUTH NH 03801

NEW ENGLAND TELEGRAPH & TELEPHONE (MAP 308 LOT 6 ONLY)
NKA FAIRPOINT COMMUNICATIONS
770 ELM STREET
MANCHESTER, NH 03101

3. FIELD SURVEY PERFORMED BY DOUCET SURVEY LLC STAFF DURING JANUARY & FEBRUARY 2022 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.

4. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK INCLUDING OBSERVATIONS ON PRIMARY AIRPORT CONTROL STATION PSM C AND PSM D.

5. VERTICAL DATUM IS BASED PRIMARY AIRPORT CONTROL STATION PSM C (NAVD88 ELEVATION = 78.70 AS PUBLISHED BY NATIONAL GEODETIC SURVEY).

6. JURISDICTIONAL WETLANDS DELINEATED BY TIGHE & BOND DURING DECEMBER 2021 IN ACCORDING TO THE:
   - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY, 1987).
   - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
   - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (2013).
   - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
   - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.0, 2016 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEHSTC (MAY 2017).

7. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.

8. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.

9. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC. SEVERAL STRUCTURES SHOWN HEREON WERE INACCESSIBLE FOR INVERT MEASUREMENTS DUE TO WINTER CONDITIONS.

10. DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF (THE ROAD(S)) AS DEPICTED HEREON IS/ARE BASED ON RESEARCH CONDUCTED AT THE PEASE DEVELOPMENT AUTHORITY (PDA), NHDOT, PORTSMOUTH ENGINEERING DEPARTMENT, AND ROCKINGHAM COUNTY REGISTRY OF DEEDS. AN OFFICIAL AT PDA ADVISED DOUCET SURVEY THAT THEY HAVE PREVIOUSLY SEARCHED AND BELIEVE THAT THERE WERE NEVER ANY LAYOUT PLANS DEVELOPED FOR THE RIGHT-OF-WAYS AT PEASE. ROAD LAYOUTS FOR THE STREETS SHOWN HEREON WERE ALSO NOT FOUND AT NHDOT PROJECT VIEWER OR AT THE PORTSMOUTH CITY ENGINEERING OFFICES.

11. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.

12. AERIAL TOPOGRAPHY WAS CONDUCTED BY EASTERN TOPOGRAPHICS FROM IMAGES TAKEN DURING DECEMBER 2021 WITH A PHOTO SCALE OF 40 FEET. AERIAL MAPPING CONTOURS AND OBJECTS SHOWN WITHIN OBSCURED AREAS ARE APPROXIMATE AND SHOULD BE VERIFIED BEFORE USE FOR DESIGN & CONSTRUCTION PURPOSES.

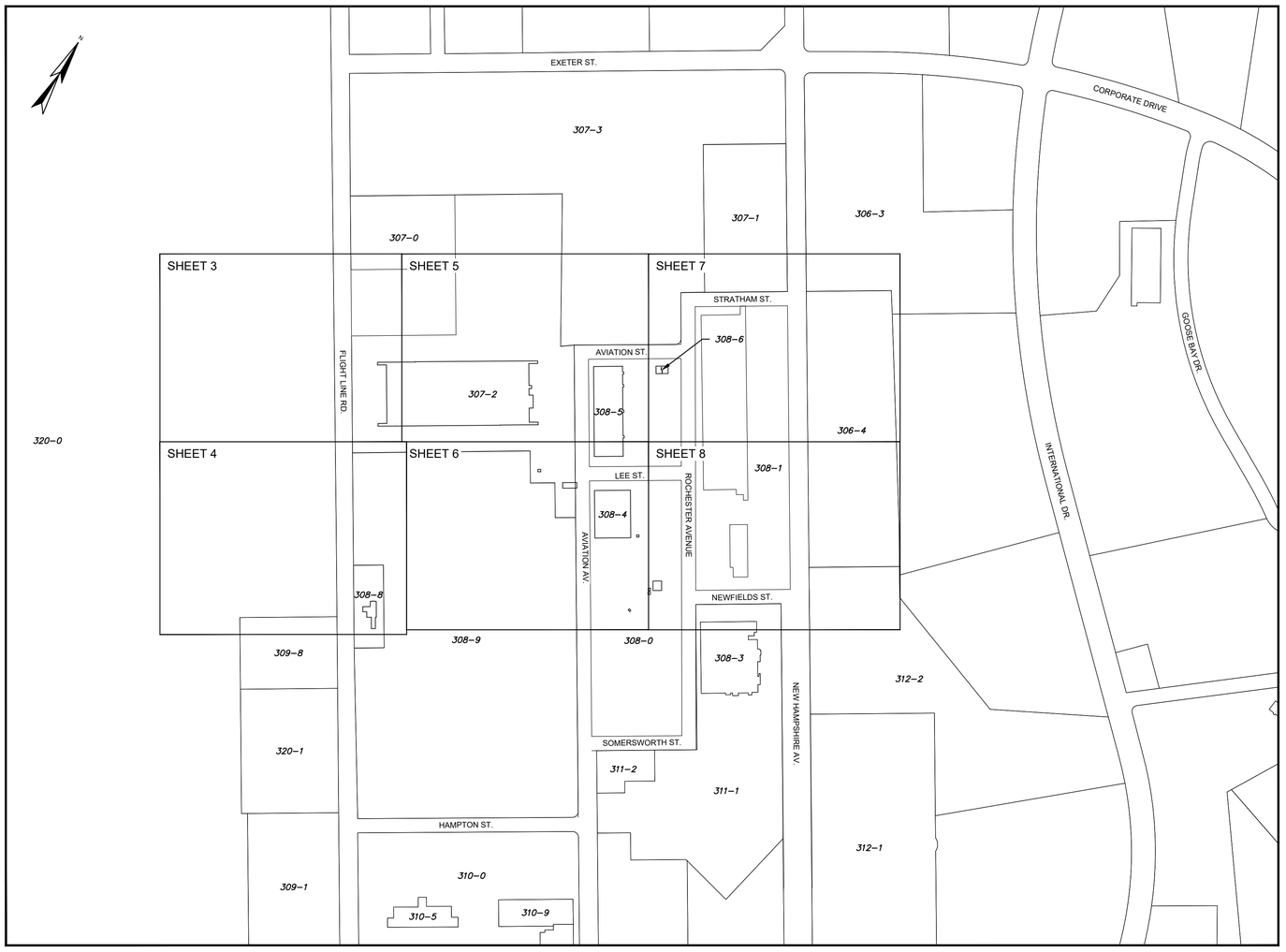
13. THIS FIELD SURVEY WAS PERFORMED IN WINTER CONDITIONS WITH SNOW AND ICE COVER ON THE GROUND. A SITE CHECK IS RECOMMENDED IN THE SPRING TO ENSURE THE COMPLETENESS/ACCURACY OF THE INFORMATION SHOWN HEREON.

14. THIS PLAN WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY / BOUNDARY SURVEY FOR THE COMPLETE SET OF TAX MAP AND LOTS SHOWN HEREON, AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE. THIS PLAN DOES, HOWEVER, ILLSTRATE THE BOUNDARIES OF THE FOLLOWING TAX MAP AND LOT NUMBERS PER THE REFERENCE PLANS INDICATED BELOW AND RECORD MONUMENTS RECOVERED BY THIS SURVEY:
   A. MAP 307 LOT 1 (PER REF. PLAN 3)
   B. MAP 307 LOT 2 (PER REF. PLAN 7)
   C. MAP 306 LOT 4 (PER REF. PLAN 12)

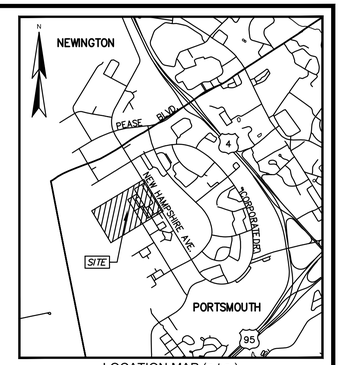
15. THE LOCATIONS OF THE VARIOUS RESTRICTED ZONES CALLED FOR IN REFERENCE PLANS 8, 9, 10, 12, AND 14 ARE SHOWN HEREON BASED ON COORDINATE VALUES PROVIDED IN THOSE PLANS AND/OR FEATURES SHOWN IN THOSE PLANS (E.G. MONITORING WELLS) THAT WERE LOCATED DURING THIS SURVEY.

REFERENCE PLANS:

1. "SUBLEASE BOUNDARY PLAN FOR PEASE DEVELOPMENT AUTHORITY – BUILDINGS 115 AND 116 – 31 ROCHESTER AVENUE – PEASE INTERNATIONAL TRADEPORT – PORTSMOUTH, N.H.: DATED NOV. 6, 1995 AND LAST REVISED (REV-2) ON 03/03/97 BY RICHARD P. MILLETTE AND ASSOCIATES.
2. "SUBDIVISION PLAN FOR 5, 7, 19, AND 21 HAMPTON STREET – PORTSMOUTH, NH – LAND OF PEASE DEVELOPMENT AUTHORITY LEASED TO EXECUTIVE AIRDOCK, LLC (A PORTION OF TAX MAP 310, LOT 0) HAMPTON ST. & AVIATION AVE. PORTSMOUTH, NEW HAMPSHIRE" DATED JULY 1, 2021 AND REVISED (REV-1) NOV 30, 2021 BY DOUCET SURVEY LLC
3. "ALTA/NSPS LAND TITLE SURVEY FOR CINTHESYS REAL ESTATE MANAGEMENT LLC (LESSEE) C/O THE KANE COMPANY AND PEASE DEVELOPMENT AUTHORITY (LESSOR) OF TAX MAP 307, LOT 1 – 68 NEW HAMPSHIRE AVE. PORTSMOUTH, NEW HAMPSHIRE" DATED DECEMBER 21, 2021 BY DOUCET SURVEY LLC.
4. "APPENDIX VI MUNICIPAL SERVICES AGREEMENT BETWEEN CITY OF PORTSMOUTH – TOWN OF NEWINGTON– AND PEASE DEVELOPMENT AUTHORITY EFFECTIVE AS OF JULY 1, 1998".
5. "SUBDIVISION PLAN 68 NEW HAMPSHIRE AVENUE"FOR LONDAVIA, INC. DATED 29-SEPT-1998 BY KIMBALL CHASE. R.C.R.D. PLAN 26777.
6. "SUBDIVISON PLAN – AIR CARGO FACILITY 139 FLIGHTLINE ROAD" DATED 20-FEB-1998 AND REVISED (REV-1) 26-OCT-98 BY KIMBALL CHASE. R.C.R.D. PLAN 26778.
7. "SUBDIVISON PLAN FOR LAND TO BE LEASED TO PAN-AM 14 AVIATION AVE. PEASE INTERNATIONAL TRADEPORT PORTSMOUTH, NH" LAST REVISED (REV-3) ON AUG. 26, 1999 BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN 27540.
8. "EXCEPTED SUBPARCEL ZONE 3 PEASE AIR FORCE BASE PORTSMOUTH AND NEWINGTON, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED OCTOBER 22, 2002 AND LAST REVISED (REV-3) 10/22-03 BY TFM. R.C.R.D. PLAN 31494.
9. "PLAN OF GROUNDWATER MANAGEMENT ZONE – ZONE 3 – PEASE AIR FORCE BASE PORTSMOUTH AND NEWINGTON, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED JUNE 4, 2002 AND LAST REVISED (REV-2) 6/27/02 BY TFM. R.C.R.D. PLAN 31503.
10. "PLAN OF USE RESTRICTION ZONE SITE 32 PEASE AIR FORCE BASE PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED JULY 11, 2002 AND REVISED (REV-1) 7/18/02 BY TFM. R.C.R.D. PLAN 31506.
11. "PLAN OF USE RESTRICTION ZONE SITE 81 PEASE AIR FORCE BASE PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED JUNE 10, 2005 BY TFM. R.C.R.D. PLAN 33301.
12. "PLAN OF USE RESTRICTION ZONE SITE 72 – BASE MOTOR POOL – PEASE AIR FORCE BASE PORTSMOUTH, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED JUNE 10, 2005 BY TFM. R.C.R.D. PLAN 33302.
13. "SUBDIVISION PLAN DEPICTING PORTSMOUTH TAX MAP 306 LOT 3" DATED AUGUST 1, 2005 AND LAST REVISED (REV-2) SAME DATE AUGUST 1, 2005 BY ALTUS ENGINEERING. R.C.R.D. PLAN 33592.
14. "USE RESTRICTION ZONE – ZONE 3 – PEASE AIR FORCE BASE PORTSMOUTH AND NEWINGTON, NEW HAMPSHIRE PREPARED FOR MWH AMERICAS MALVERN, PA" DATED JUNE 10, 2005 AND REVISED (REV-1) JUNE 17, 2005 BY TFM. R.C.R.D. PLAN 33593.
15. "SUBDIVISION PLAN FOR 75 NEW HAMPSHIRE LLC – 75 NEW HAMPSHIRE AVENUE – 50 INTERNATIONAL DRIVE & 80 INTERNATIONAL DRIVE (TAX MAP 306, LOTS 1, 2, 4 & 5) PEASE INTERNATIONAL TRADEPORT ROCKINGHAM COUNTY PORTSMOUTH, NEW HAMPSHIRE" DATED AUG 14, 2007 AND LAST REVISED (REV-4) 10/15/07 BY DOUCET SURVEY INC. R.C.R.D. PLAN 35260.
16. "PLAN FOR NEW HAMPSHIRE AIR NATIONAL GUARD PEASE BLVD, AIRLINE AVE & NEW HAMSHIRE AVE PEASE INTERNATIONAL TRADEPORT, NEWINGTON ROCKINGHAM COUNTY, NH" DATED 7-DEC-2009 AND LAST REVISED 1/21/11 BY EASTERLY SURVEYING, INC.
17. "PROPOSED 4 STORY OFFICE BUILDING 100 NEW HAMPSHIRE AVENUE PORTSMOUTH, NH" DATED NOVEMBER 16, 2018 AND LAST REVISED 12/04/18 BY HOYLE, TANNER & ASSOCIATES.



KEY MAP



LOCATION MAP (n.t.s.)

300 0 300 600
SCALE: 1 INCH = 300 FT.

LEGEND

- LOT LINE
- APPROXIMATE LOT LINE
- APPROXIMATE ABUTTERS LOT LINE
- EXISTING EASEMENT LINE
- APPROXIMATE RIGHT-OF-WAY LINE
- CHAIN LINK FENCE
- FENCE
- FENCE OBSCURED
- OHW — OVERHEAD WIRE
- SS — SEWER LINE
- SD — DRAIN LINE
- G — GAS LINE
- W — WATER LINE
- 100 — MAJOR CONTOUR LINE
- 98 — MINOR CONTOUR LINE
- 100 — LIDAR MAJOR CONTOUR LINE
- 98 — LIDAR MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- EDGE OF WETLAND
- EDGE OF WETLAND (PER CLIENT)
- EDGE OF WATER
- WATERCOURSE
- WETLAND AREA
- CONCRETE

- MEDIUM LONE TREE
- SMALL LONE TREE
- UTILITY COVER
- UTILITY COVER
- FIRE HYDRANT
- WATER GATE VALVE
- GAS GATE VALVE
- VENT PIPE
- ELECTRIC BOX
- TELEPHONE BOX
- DRAIN
- CATCH BASIN
- DRAIN MANHOLE
- F.E.S — FLARED END SECTION
- MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE
- CLEANOUT
- FLAG POLE
- MONITORING WELL LOCATION
- ACCESSIBLE PARKING SPACE

- RIP RAP
- RETAINING WALL
- DRIVEWAY
- DRIVEWAY OBSCURED
- ASPHALT TAXIWAY
- CONCRETE TAXIWAY
- CURB BOTTOM
- CURB BACK
- PIPELINES
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- UTILITY POLE W/LIGHT
- UTILITY POLE OBSCURED
- LIGHT POLE
- SIGN
- SIGN (TWO POSTS)
- BOUND FOUND
- IRON PIPE/ROD FOUND
- POST
- POST
- BOLLARD
- LOCATED OBJECT

- ×100.0 — SPOT GRADE
- TYP. — TYPICAL
- BND. FND. — BOUND FOUND
- I.P.F. — IRON PIPE FOUND
- CONC. — CONCRETE
- GRAN. — GRANITE
- HDWL — HEADWALL
- SGC — SLOPED GRANITE CURB
- "NP" — NO PARKING SIGN
- "NT" — NO TRESPASSING SIGN
- "NTT" — NO THRU TRAFFIC SIGN
- ACP — ASBESTOS CEMENT PIPE
- CIP — CAST IRON PIPE
- CMP — CORRUGATED METAL PIPE
- RCP — REINFORCED CONCRETE PIPE
- HDPE — HIGH DENSITY POLYETHYLENE PIPE
- PVC — POLYVINYL CHLORIDE PIPE
- UNK — UNKNOWN
- VCP — VITREOUS CLAY PIPE
- TOP — TOP OF PIPE
- NM — NOT MEASURED

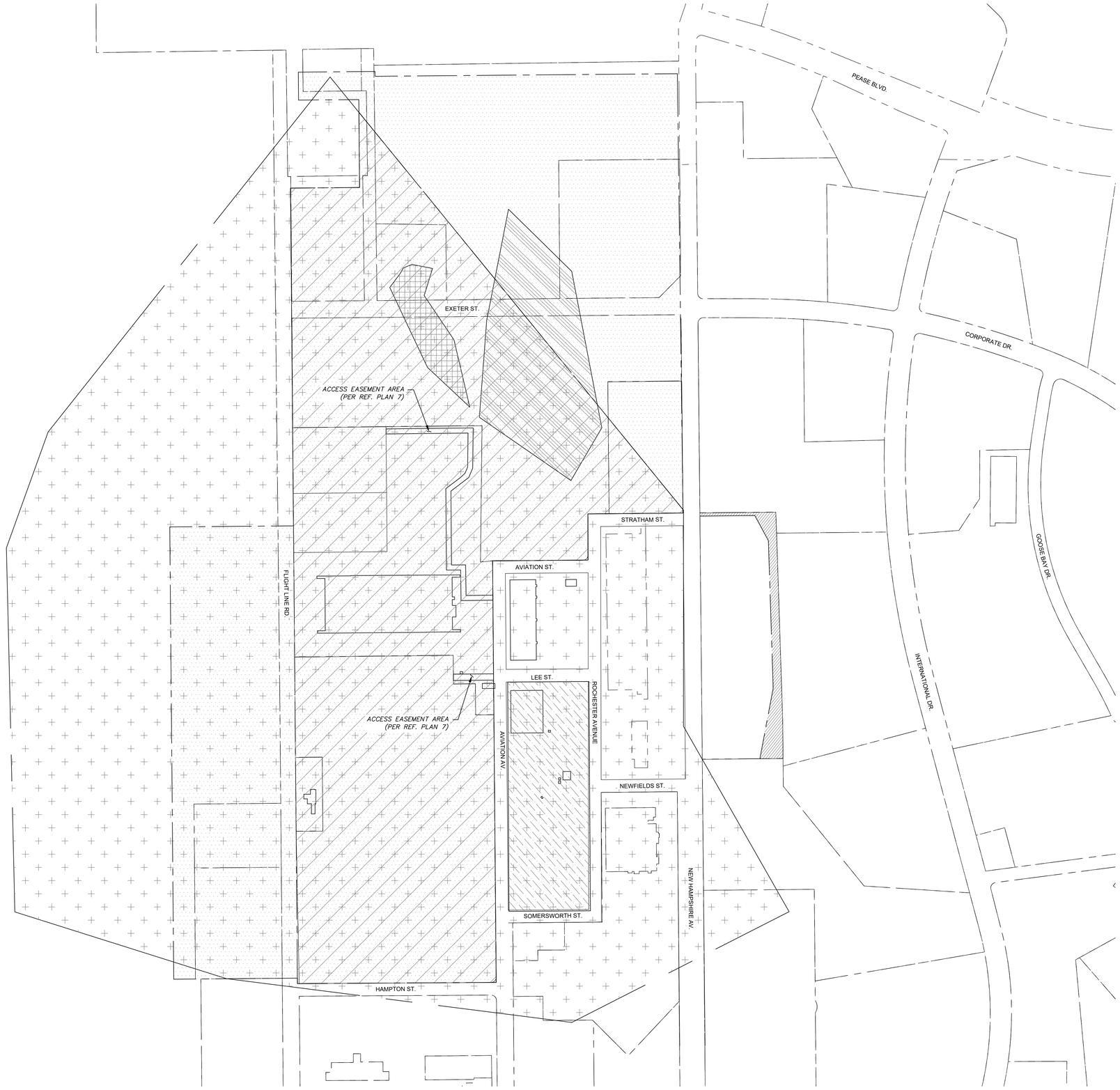
EXISTING CONDITIONS PLAN
FOR
TIGHE & BOND
OF
PEASE HANGAR 227 AREA
PORTIONS OF AVIATION AVENUE, FLIGHTLINE ROAD, LEE STREET, NEWFIELDS STREET, NEW HAMPSHIRE AVENUE ROCHESTER AVENUE AND STRATHAM STREET
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	09/21/22	UPDATED DMH 1925 OUTLET SIZE	W.D.C.

DRAWN BY:	W.D.C.	DATE:	FEBRUARY 2022
CHECKED BY:	M.J.C.	DRAWING NO.	7239A
JOB NO.	7239	SHEET	1 OF 8

DOUCET SURVEY LLC
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
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FILE NAME: C:\Users\whitney.kjellqvist\Local\Temp\AcPublish_7176\7239A (REV 1) 2022-09-21.dwg LAYOUT NAME: ISO95 PLOTTED: Wednesday, September 21, 2022 - 11:03am



LEGEND

- EXCEPTED SUBPARCEL ZONE 3 (PER REF. PLAN 8)
- GROUNDWATER MANAGEMENT ZONE 3 (PER REF. PLAN 9)
- USE RESTRICTION ZONE SITE 32 (PER REF. PLAN 10)
- USE RESTRICTION ZONE SITE 81 (PER REF. PLAN 11)
- USE RESTRICTION ZONE SITE 72 (PER REF. PLAN 12)
- LIMIT OF DRAINAGE LICENSE RESERVED BY OWNER (PER REF. PLAN 13)
- USE RESTRICTION ZONE SITE 3 (PER REF. PLAN 14)

250 0 250 500

SCALE: 1 INCH = 250 FT.

EXISTING CONDITIONS PLAN

FOR

TIGHE & BOND

OF

PEASE HANGAR 227 AREA

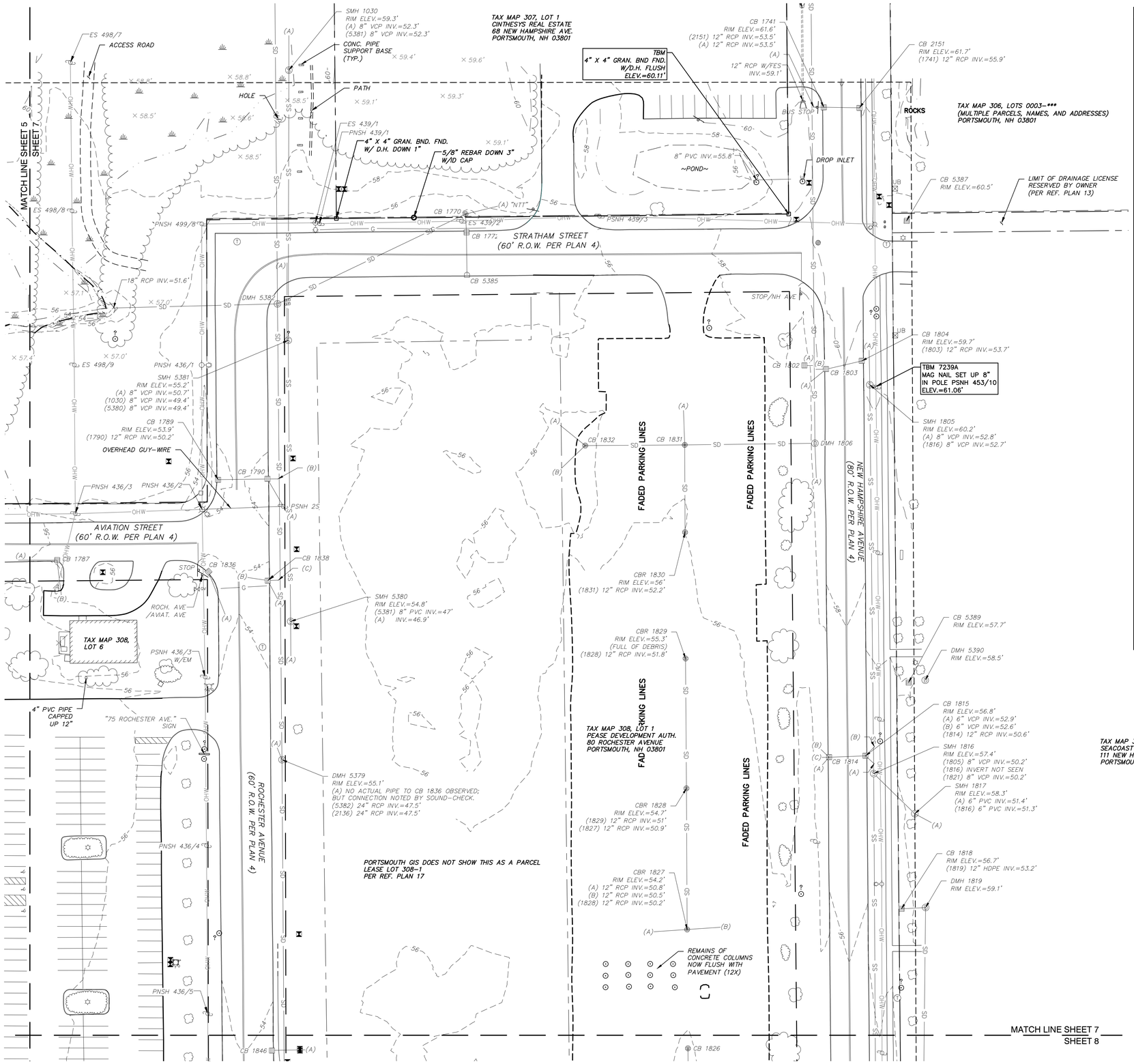
PORTIONS OF AVIATION AVENUE,
FLIGHTLINE ROAD, LEE STREET,
NEWFIELDS STREET,
NEW HAMPSHIRE AVENUE
ROCHESTER AVENUE
AND STRATHAM STREET
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	09/21/22	UPDATED DMH 1925 OUTLET SIZE	W.D.C.

DRAWN BY:	W.D.C.	DATE:	FEBRUARY 2022
CHECKED BY:	M.J.C.	DRAWING NO.	7239A
JOB NO.	7239	SHEET	2 OF 8

DOUCET SURVEY LLC
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FILE NAME: C:\Users\whitney.kyle\Documents\Revit Autodesk_7170_R24_(NO 1) 2022-09-21.rvt LAYOUT NAME: TOPO PLAN (2) PLOTTED: Wednesday, September 21, 2022 - 11:05:10am



DRAINAGE STRUCTURES	
CB 1770	CB 1831
RIM ELEV.=52.3'	RIM ELEV.=56.5'
(1772) 12" RCP INV.=50.4'	(1806) 12" RCP INV.=51.7'
(A) 4" HDPE INV.=50.2'	(1830) 12" RCP INV.=51.5'
(5382) 15" RCP INV.=49.9'	(A) 12" RCP INV.=51.5'
SUMP ELEV.=50.2'	(1832) 10" VCP INV.=51.5'
CB 1772	CB 1832
RIM ELEV.=54.1'	RIM ELEV.=55'
(5385) 12" RCP INV.=50.5'	(A) 6" PVC INV.=53.1'
(1770) 12" RCP INV.=50.3'	(B) 6" PVC INV.=53'
DEBRIS=50.7'	(1831) 10" VCP INV.=52.5'
CB 1787	CB 1836
RIM ELEV.=55.7'	RIM ELEV.=53.6'
(A) 6" VCP INV.=51.1'	(A) 12" RCP INV.=50.4'
NOTE: "A" DOES NOT CON. TO CB 1719	DEBRIS=50.4'
(B) 12" RCP INV.=51.0'	
CB 1790	CB 1838
RIM ELEV.=53.8'	RIM ELEV.=53.9'
(A) 6" UNK INV.=49.6'	(A) 6" VCP INV.=49.5'
(1789) 12" RCP INV.=49.6'	(B) 18" RCP INV.=49.5'
(B) 12" RCP INV.=49.6'	(C) 18" RCP INV.=49.4'
TO REFUSAL=49.5'	DEBRIS=49.3'
CB 1802	CB 1846
RIM ELEV.=56.4'	RIM ELEV.=53.8'
(A) 12" RCP INV.=52.5'	(A) 12" RCP INV.=49.5'
	BROKEN BOTTOM=49.6'
CB 1803	DMH 5382
RIM ELEV.=59.6'	RIM ELEV.=55.4'
(A) 6" VCP INV.=55.3'	(1770) 15" RCP INV.=49.1'
(1804) 12" RCP INV.=51.1'	(WETLAND INLET) 18" RCP INV.=49.0'
(B) 12" RCP INV.=50.6'	(5383) 24" RCP INV.=48.7'
	(5379) 24" RCP INV.=48.7'
DMH 1806	DEBRIS=48.6'
RIM ELEV.=58.5'	
(1831) 12" RCP INV.=50.6'	CB 5385
(2152) 36" RCP INV.=49.0'	RIM ELEV.=54.3'
(A) 36" RCP INV.=48.8'	(1772) 12" RCP INV.=50.6'
GIS SHOWS ONE STRUCTURE	DEBRIS=50.7'
BETWEEN DMH 1806 & DMH 1925	
(VERY CLOSE TO 1925) BUT IT	
WAS NOT FOUND BELOW SNOWBANKS.	
CB 1814	
RIM ELEV.=56.8'	
(A) 6" VCP INV.=52'	
(B) 6" VCP INV.=51.9'	
(1815) 12" RCP INV.=49.3'	
(C) 12" RCP INV.=49.1'	

DOUCET SURVEY
NHSPC (NAD83 / 2011)

40 0 40 80
SCALE: 1 INCH = 40 FT.

EXISTING CONDITIONS PLAN
FOR
TIGHE & BOND
OF
PEASE HANGAR 227 AREA
PORTIONS OF AVIATION AVENUE,
FLIGHTLINE ROAD, LEE STREET,
NEWFIELDS STREET,
NEW HAMPSHIRE AVENUE
ROCHESTER AVENUE
AND STRATHAM STREET
PORTSMOUTH, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	09/21/22	UPDATED DMH 1925 OUTLET SIZE	W.D.C.

DRAWN BY:	W.D.C.	DATE:	FEBRUARY 2022
CHECKED BY:	M.J.C.	DRAWING NO.	7239A
JOB NO.	7239	SHEET	7 OF 8

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FILE NAME: C:\Users\whitney\AppData\Local\Temp\AcPublish_31772\7239A (REV 1) 2022-09-21.dwg LAYOUT NAME: TOPO PLAN (7) PLOTTED: Wednesday, September 21, 2022 - 11:21am

MATCH LINE SHEET 7
SHEET 8

MATCH LINE SHEET 6
SHEET 8

DRAINAGE STRUCTURES	
CB 1824	DMH 1925
RIM ELEV.=54.7'	RIM ELEV.=52.2'
(A) 6" VCP INV.=50.2'	(A) 12" RCP RECESSED UNABLE TO MEAS.
(B) 6" VCP INV.=49.1'	(B) 36" RCP INV.=43.7'
(1820) 12" RCP INV.=48'	(C) 36" RCP INV.=43.5'
(C) 12" RCP INV.=48'	(OUTFALL) 60" RCP INV.=41.7'
CB 1825	DMH 2136
RIM ELEV.=53.6'	RIM ELEV.=54.2'
(1826) 12" RCP INV.=50.1'	(5379) 24" RCP INV.=47.0'
(1912) 12" RCP INV.=49.9'	(A) 42" RCP INV.=46.9'
	(1947) 42" RCP INV.=46.7'
CB 1826	
RIM ELEV.=53.9'	CB 2137
(1825) 12" RCP INV.=50.4'	RIM ELEV.=52.7'
SUMP ELEV.=50.4'	(A) 8" VCP INV.=48.6'
	(B) 12" RCP INV.=48.1'
CB 1846	(C) 8" VCP INV.=48.1'
RIM ELEV.=53.8'	(D) 12" RCP INV.=48.1'
(A) 12" RCP INV.=49.5'	
BROKEN BOTTOM=49.6'	CB 2142
	RIM ELEV.=52.2'
CB 1855	(A) 12" RCP INV.=48.3'
RIM ELEV.=52.7'	
(A) 12" HDPE INV.=46.6'	CB 2144
(1853) 12" HDPE INV.=46.5'	RIM ELEV.=50.8'
BOTTOM OF CHANNEL=46.6'	(A) 6" VCP INV.=46.3'
	(1902) 12" RCP INV.=46.3'
CB 1879	(B) 12" RCP INV.=46.1'
RIM ELEV.=51.2'	
(A) 6" VCP INV.=46.3'	
(B) 6" VCP INV.=46.3'	
(1878) 12" RCP INV.=44.3'	
(C) 12" RCP INV.=43.9'	
SUMP ELEV.=44.3'	
CB 1912	
RIM ELEV.=53.5'	
(1825) 12" RCP INV.=49.3'	
(1913) 12" RCP INV.=49.2'	

NO.	DATE	DESCRIPTION	BY
1	09/21/22	UPDATED DMH 1925 OUTLET SIZE	W.D.C.

DRAWN BY: W.D.C.	DATE: FEBRUARY 2022
CHECKED BY: M.J.C.	DRAWING NO. 7239A
JOB NO. 7239	SHEET 8 OF 8

SCALE: 1 INCH = 40 FT.

EXISTING CONDITIONS PLAN
FOR
TIGHE & BOND
OF
PEASE HANGAR 227 AREA
PORTIONS OF AVIATION AVENUE,
FLIGHTLINE ROAD, LEE STREET,
NEWFIELDS STREET,
NEW HAMPSHIRE AVENUE
ROCHESTER AVENUE
AND STRATHAM STREET
PORTSMOUTH, NEW HAMPSHIRE

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FILE NAME: C:\Users\whitney.dyjack\Documents\Survey\AutoData_7172\7239A (REV 1) 2022-09-21.dwg LAYOUT NAME: TOPO PLAN 09 PLOTTED: Wednesday, September 21, 2022 - 11:21am

EXISTING CONDITIONS PLAN NOTES:

1. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY DOUCET SURVEY LLC DURING JANUARY & FEBRUARY 2022.
2. JURISDICTIONAL WETLANDS DELINEATED BY TIGHE & BOND, DURING DECEMBER 2021.

REFERENCE PLANS:

1. "EXISTING CONDITIONS PLAN FOR TIGHE & BOND OF PEASE HANGAR 227 AREA, PORTIONS OF AVIATION AVENUE, FLIGHTLINE ROAD, LEE STREET, NEWFIELDS STREET, NEW HAMPSHIRE AVENUE, ROCHESTER AVENUE, AND STRATHEM STREET" PREPARED BY DOUCET SURVEY LLC, LAST REVISED 09/21/2022.

DEMOLITION NOTES:

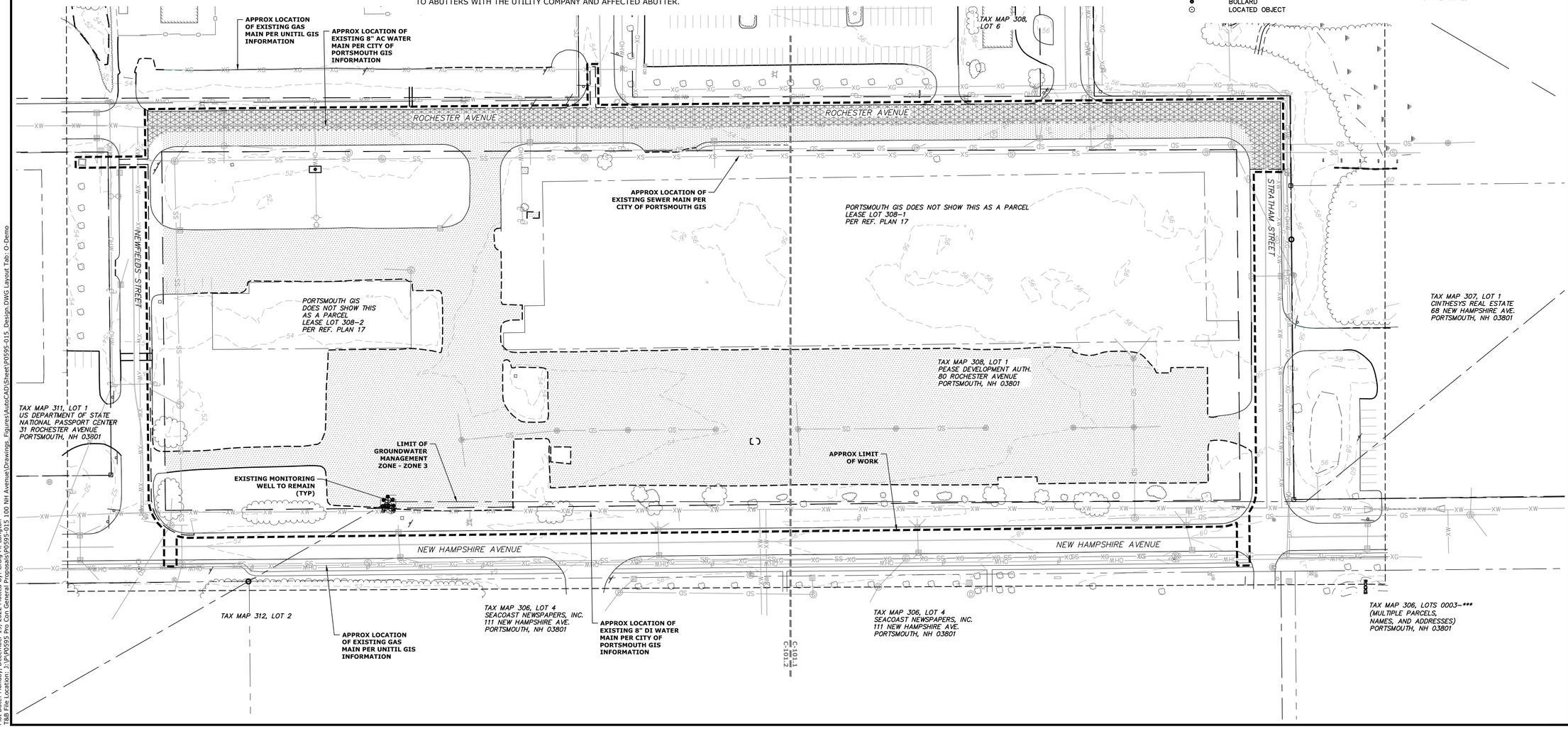
1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
3. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
4. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
5. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS. MATERIAL DEMOLITION AND DISPOSAL SHALL BE DONE IN CONFORMANCE WITH THE PEASE WASTE MANAGEMENT PLAN REQUIREMENTS.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY AND CITY OF PORTSMOUTH STANDARD. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK.
11. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE, AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
12. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
13. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CURBS, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, SIGNS, BOLLARDS, TREES AND LANDSCAPING.
14. COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH AND PEASE DEVELOPMENT AUTHORITY.
15. REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
16. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
17. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS/CURB INLETS WITHIN CONSTRUCTION LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
18. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES AND SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
19. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
20. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
21. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
22. BEFORE ANY DEWATERING IS PERFORMED A TEMPORARY DISCHARGE PERMIT FROM THE NHDES IS REQUIRED.
23. THE SITE IS IN A GROUNDWATER MANAGEMENT ZONE (GMZ). THE APPLICANT SHALL COORDINATE WITH PDA, NHDES AND THE AIR FORCE TO DETERMINE IF ANY SPECIAL MEASURES ARE REQUIRED DURING CONSTRUCTION TO ENSURE THE SAFETY OF WORKERS AND PROPER HANDLING OF MATERIALS. NO EXISTING SOILS OR MATERIALS MAY BE REMOVED AND DISPOSED OF OFFSITE UNLESS TESTING AND PROTOCOLS ESTABLISHED ARE FOLLOWED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED AREA OF SPECIAL NOTICE PROVISIONS ISSUED BY THE AIR FORCE.
24. THE CONTRACTOR SHALL ACQUIRE A PDA DIG PERMIT BEFORE ANY DISTURBANCE CAN TAKE PLACE. ALLOW 7 CALENDAR DAYS FOR PROCESSING.
25. ALL MONITORING WELLS WITHIN THE LIMIT OF WORK SHALL BE PROTECTED DURING CONSTRUCTION. IF ANY MONITORING WELL NEEDS TO BE REMOVED OR ADJUSTED THIS WORK SHALL BE COORDINATED WITH PDA AND THE AIR FORCE.

DEMOLITION LEGEND

- APPROXIMATE LIMIT OF WORK
- APPROXIMATE LIMIT OF SAWCUT
- APPROXIMATE LIMIT OF PAVEMENT TO BE REMOVED
- APPROXIMATE LIMIT OF PAVEMENT TO BE MILL AND OVERLAID

LEGEND

- LOT LINE
- APPROXIMATE LOT LINE
- APPROXIMATE ABUTTERS LOT LINE
- EXISTING EASEMENT LINE
- APPROXIMATE RIGHT-OF-WAY LINE
- CHAIN LINK FENCE
- FENCE
- FENCE OBSCURED
- OVERHEAD WIRE
- SEWER LINE
- DRAIN LINE
- GAS LINE
- WATER LINE
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- LIDAR MAJOR CONTOUR LINE
- LIDAR MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- EDGE OF WETLAND
- EDGE OF WETLAND (PER CLIENT)
- EDGE OF WATER
- WATERCOURSE
- WETLAND AREA
- CONCRETE
- RIP RAP
- RETAINING WALL
- DRIVEWAY
- DRIVEWAY OBSCURED
- ASPHALT TAXIWAY
- CONCRETE TAXIWAY
- CURB BOTTOM
- CURB BACK
- PIPELINES
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- UTILITY POLE W/LIGHT
- UTILITY POLE OBSCURED
- LIGHT POLE
- SIGN
- SIGN (TWO POSTS)
- BOUND FOUND
- IRON PIPE/ROD FOUND
- POST
- POST
- BOLLARD
- LOCATED OBJECT
- MEDIUM LONE TREE
- SMALL LONE TREE
- UTILITY COVER
- UTILITY COVER
- FIRE HYDRANT
- WATER GATE VALVE
- GAS GATE VALVE
- VENT PIPE
- ELECTRIC BOX
- TELEPHONE BOX
- DRAIN
- CATCH BASIN
- DRAIN MANHOLE
- FLARED END SECTION
- MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE
- CLEANOUT
- FLAG POLE
- MONITORING WELL LOCATION
- ACCESSIBLE PARKING SPACE
- SPOT GRADE
- TYP. TYPICAL
- BND. FND. BOUND FOUND
- I.P.F. IRON PIPE FOUND
- CONC. CONCRETE
- GRAN. GRANITE
- HDWL HEADWALL
- SGC SLOPED GRANITE CURB
- "NP" NO PARKING SIGN
- "NT" NO TRESPASSING SIGN
- "NTT" NO THRU TRAFFIC SIGN
- ACP ASBESTOS CEMENT PIPE
- CIP CAST IRON PIPE
- CMP CORRUGATED METAL PIPE
- RCP REINFORCED CONCRETE PIPE
- HDPE HIGH DENSITY POLYETHYLENE PIPE
- PVC POLYVINYL CHLORIDE PIPE
- UNK UNKNOWN
- VCP VITREOUS CLAY PIPE
- TOP TOP OF PIPE
- NM NOT MEASURED



Tighe&Bond

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
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CHECKED:	NAH
APPROVED:	PMC

OVERALL EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: AS SHOWN

C-101

Last Save Date: December 19, 2022 8:56 AM By: CML
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Tighe&Bond

EDGE OF POND LOCATED ON ICE
TOE OF DITCH LINE SHOT ON ICE
~POND~
ES 498/7
ACCESS ROAD
CBR 5383
RIM ELEV.=59.2'
(A) 24" RCP INV.=50.4'
(5382) 24" RCP INV.=49.9'
SMH 1030
RIM ELEV.=59.3'
(A) 8" VCP INV.=52.3'
(5381) 8" VCP INV.=52.3'
CONC. PIPE SUPPORT BASE (TYP.)
TAX MAP 307, LOT 1
CINTHESYS REAL ESTATE
68 NEW HAMPSHIRE AVE.
PORTSMOUTH, NH 03801
TBM
4" X 4" GRAN. BND FND.
W/D.H. FLUSH
ELEV.=60.11'
DMH 2152
RIM ELEV.=62.4'
(A) 12" RCP INV.=53.9'
(B) 24" RCP INV.=53.5'
(C) 36" RCP INV.=52.9'
(1806) 36" RCP INV.=52.8'
12" RCP W/FES INV.=59.5'
CB 1741
RIM ELEV.=61.6'
(2151) 12" RCP INV.=53.5'
(A) 12" RCP INV.=53.5'
12" RCP W/FES INV.=59.1'
CB 2151
RIM ELEV.=61.7'
(1741) 12" RCP INV.=55.9'
HOLE
PATH
ES 439/1
PNSH 439/1
CB 1770
RIM ELEV.=52.3'
(1772) 12" RCP INV.=50.4'
(A) 4" HDPE INV.=50.2'
(5382) 15" RCP INV.=49.9'
SUMP ELEV.=50.2'
CB 1772
RIM ELEV.=54.1'
(5385) 12" RCP INV.=50.5'
(1770) 12" RCP INV.=50.3'
DEBRIS=50.7'
8" PVC INV.=55.8'
~POND~
DROP INLET
ROCKS
TAX MAP 306, LOTS 0003-*** (MULTIPLE PARCELS, NAMES, AND ADDRESSES) PORTSMOUTH, NH 03801
LIMIT OF DRAINAGE LICENSE RESERVED BY OWNER (PER REF. PLAN 13)
CB 5387
RIM ELEV.=60.5'
DMH 5382
RIM ELEV.=55.4'
(1770) 15" RCP INV.=49.1'
(WETLAND INLET) 18" RCP INV.=49.0'
(5383) 24" RCP INV.=48.7'
(5379) 24" RCP INV.=48.7'
DEBRIS=49.6'
TO REMAIN
CB 5385 TO REMAIN
RIM ELEV.=54.3'
(1772) 12" RCP INV.=50.6'
DEBRIS=50.7'
PNSH 499/8
PNSH 439/3
STRATHAM STREET
PROPOSED PAVEMENT TO BE MILL AND OVERLAID (TYP)
PROPOSED SAW CUT (TYP)
APPROX LIMIT OF WORK
STOP SIGN TO REMAIN
CB 1803
RIM ELEV.=59.6'
(A) 6" VCP INV.=55.3'
(1804) 12" RCP INV.=51.1'
(B) 12" RCP INV.=50.6'
CB 1804
RIM ELEV.=59.7'
(1803) 12" RCP INV.=53.7'
TBM 7239A
MAG NAIL SET UP 8" IN POLE PSNH 453/10
ELEV.=61.06'
PSNH 433/28 (ABANDONED)
12" CMP INV.=56.6'
12" CMP INV.=56.5'
TAX MAP 307, LOT 3
PEASE DEV AUTH.
PEASE, NH 03801
~STREAM~
18" RCP INV.=51.6'
SD
SMH 5381
RIM ELEV.=55.2'
(A) 8" VCP INV.=50.7'
(1030) 8" VCP INV.=49.4'
(5380) 8" VCP INV.=49.4'
TO REMAIN
ES 498/9
PNSH 436/1
TO REMAIN
CB 1790
RIM ELEV.=53.8'
(A) 6" UNK INV.=49.6'
(1789) 12" RCP INV.=49.6'
(B) 12" RCP INV.=49.6'
TO REFUSAL=49.5'
EXISTING LEASE LINE TO BE ABANDONED (TYP)
APPROX LOCATION OF EXISTING DRAIN LINE TO REMAIN
CB 1802
SMH 1805
RIM ELEV.=60.2'
(A) 8" VCP INV.=52.8'
(1816) 8" VCP INV.=52.7'
5' CHAIN-LINK FENCE W/BARBED WIRE
CB 1685
RIM ELEV.=56.9'
(A) 6" VCP INV.=52.3'
(B) 12" RCP INV.=52.0'
(NO CON. OBSERVED TO CB 1720)
EXISTING LEASE LINE TO BE RELOCATED
TO REMAIN
CB 1789
RIM ELEV.=53.9'
(1790) 12" RCP INV.=50.2'
OVERHEAD GUY-WIRE
6" DIA. PIPE CUT FLUSH
PNSH 436/3
PNSH 436/2
CB 1832
CB 1831
SD
PROPOSED PAVEMENT TO BE REMOVED (TYP)
DMH 1806
RIM ELEV.=58.5'
(1831) 12" RCP INV.=50.6'
(2152) 36" RCP INV.=49.0'
(A) 36" RCP INV.=48.8'
GIS SHOWS ONE STRUCTURE BETWEEN DMH 1806 & DMH 1925 (VERY CLOSE TO 1925) BUT IT WAS NOT FOUND BELOW SNOWBANKS.
TO REMAIN
DMH 5378
PSNH 433/27
CB 1720
AVIATION STREET
CB 1838
RIM ELEV.=53.9'
(A) 6" VCP INV.=49.5'
(B) 18" RCP INV.=49.5'
(C) 18" RCP INV.=49.4'
DEBRIS=49.3'
TO REMAIN
CB 1719
CB 1787
CB 1836
RIM ELEV.=53.6'
(A) 12" RCP INV.=50.4'
DEBRIS=50.4'
ROCH. AVE./AVIAT. AVE
CB 2132
DMH 2131
TAX MAP 308, LOT 6
SMH 1717
RIM ELEV.=58.3'
(VAULTED STRUCTURE) INV.'S BEHIND WEIR UNABLE TO MEASURE WATER ELEV.=50.9'
SUMP ELEV.=49.1'
DMH 1715
PSNH 433/26
SMH 1691
RIM ELEV.=57.3'
(A) 6" VCP INV.=53.2'
(1717) 8" ACP INV.=49.3'
(B) 6" VCP INV.=49.2'
(1737) 8" VCP INV.=48.5'
(1695) 8" VCP INV.=48.4'
MW 782
CB 1695
SMH 5380
RIM ELEV.=54.8'
(5381) 8" PVC INV.=47'
(A) INV.=46.9'
TO REMAIN
PSNH 430/3
W/EM
4" PVC PIPE CAPPED UP 12"
"75 ROCHESTER AVE." SIGN
SMH 1696
RIM ELEV.=58.4'
(OLD OIL SEPARATOR, PER TENANT)
(A) 4" CIP INV.=56'
(B) 4" CIP INV.=55'
(C) 6" PVC INV.=53.6'
(D) 4" CIP INV.=53.4'
(E) 6" PVC INV.=53.3'
(F) CAPPED 4" CIP TOP=53.1'
SUMP ELEV.=48.9'
TAX MAP 308, LOT 5
PEASE DEVELOPMENT AUTH.
CORPORATE DRIVE
PORTSMOUTH, NH 03801
CB 1694
PSNH 433/25
TAX MAP 307, LOT 2
PEASE DEV AUTH.
PEASE, NH 03801
APPROX LOCATION OF EXISTING SEWER MAIN TO REMAIN
APPROX LOCATION OF EXISTING WATER MAIN TO REMAIN
DMH 5379
RIM ELEV.=55.1'
(A) NO ACTUAL PIPE TO CB 1836 OBSERVED; BUT CONNECTION NOTED BY SOUND-CHECK
(5382) 24" RCP INV.=47.5'
(2136) 24" RCP INV.=47.3'
TO REMAIN
PNSH 436/4
PORTSMOUTH GIS DOES NOT SHOW THIS AS A PARCEL
LEASE LOT 308-1
PER REF. PLAN 17
CB 1929
DMH 1697
CB 1698
SMH 1695
RIM ELEV.=57.3'
(A) 8" VCP INV.=48.2'
(1691) 8" VCP INV.=48.0'
CBR 1830
RIM ELEV.=56'
(1831) 12" RCP INV.=52.2'
CBR 1829
RIM ELEV.=55.3'
(FULL OF DEBRIS)
(1828) 12" RCP INV.=51.8'
TAX MAP 308, LOT 1
PEASE DEVELOPMENT AUTH.
80 ROCHESTER AVENUE
PORTSMOUTH, NH 03801
CBR 1828
RIM ELEV.=54.7'
(1829) 12" RCP INV.=51'
(1827) 12" RCP INV.=50.9'
UTILITY POLE TO REMAIN
CBR 1827
RIM ELEV.=54.2'
(A) 12" RCP INV.=50.8'
(B) 12" RCP INV.=50.5'
(1828) 12" RCP INV.=50.2'
REMAINS OF CONCRETE COLUMNS NOW FLUSH WITH PAVEMENT (TYP)
NEW HAMPSHIRE AVENUE
CB 1814 TO REMAIN
RIM ELEV.=56.8'
(A) 6" VCP INV.=52'
(B) 6" VCP INV.=51.9'
(1815) 12" RCP INV.=49.3'
(C) 12" RCP INV.=49.1'
CB 5389
RIM ELEV.=57.7'
DMH 5390
RIM ELEV.=58.5'
CB 1815
RIM ELEV.=56.8'
(A) 6" VCP INV.=52.9'
(B) 6" VCP INV.=52.6'
(1814) 12" RCP INV.=50.6'
SMH 1816
RIM ELEV.=57.4'
(1805) 8" VCP INV.=50.2'
(1816) INVERT NOT SEEN
(1821) 8" VCP INV.=50.2'
SMH 1817
RIM ELEV.=58.3'
(A) 6" PVC INV.=51.4'
(1816) 6" PVC INV.=51.3'
TAX MAP 306, LOT 4
SEACOAST NEWSPAPERS, INC
111 NEW HAMPSHIRE AVE.
PORTSMOUTH, NH 03801
CB 1818
RIM ELEV.=56.7'
(1819) 12" HDPE INV.=53.2'
DMH 1819
RIM ELEV.=59.1'
C-101.1
C-101.2

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
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CHECKED:	NAH
APPROVED:	PMC

EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: AS SHOWN

C-101.1

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Tighe&Bond

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

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EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: AS SHOWN

C-101.2

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12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

Last Save Date: December 19, 2022 8:56 AM By: CML
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T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings_Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Demo-2

SITE NOTES:

1. STRIPE PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, ADA SYMBOLS, PAINTED ISLANDS, CROSS WALKS, ARROWS, LEGENDS AND CENTERLINES SHALL BE THERMOPLASTIC MATERIAL. THERMOPLASTIC MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO AASHTO M249. (ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT. CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F").
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PARKING STALL MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES. STOP BARS SHALL BE EIGHTEEN (18) INCHES WIDE.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
9. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAY WITH THE CITY OF PORTSMOUTH AND PEASE DEVELOPMENT AUTHORITY.
10. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
11. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
12. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
13. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
14. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
15. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
16. THE SITE ENGINEER SHALL OBSERVE THE CONSTRUCTION AND SHALL SUBMIT TO THE PDA A LETTER STATING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE PLANS.
17. CONSTRUCTION CANNOT BEGIN UNTIL A DETERMINATION OF NO OBJECTION IS ISSUED BY FAA. TO OBTAIN THE FAA DETERMINATION, THE CONTRACTOR/DEVELOPER MUST SUBMIT TO FAA A NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION FORM 7460-1, AVAILABLE AT "https://www.faa.gov/documentLibrary/media/Form/FAA_Form_7460-1_042023.pdf".
18. PROPERTY MANAGER WILL BE RESPONSIBLE FOR TIMELY SNOW REMOVAL FROM ALL PUBLIC WALKS, DRIVES, AND AIRSIDE PAVEMENT AREAS ON-SITE. SNOW SHALL BE HAULED OFF-SITE AND LEGALLY DISPOSED OF, WHEN NECESSARY, WHEN SNOW STORAGE AREAS HAVE REACHED CAPACITY.
19. RETAINING WALL SHALL BE DESIGNED AND STAMPED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER AND SHALL BE SUBMITTED TO PEASE DEVELOPMENT AUTHORITY FOR REVIEW.

SITE DATA:
LOCATION: TAX MAP 308, LOT 1
80 ROCHESTER AVENUE
PORTSMOUTH, NEW HAMPSHIRE

ZONING DISTRICT: INDUSTRIAL
ALLOWED USE: INDUSTRIAL / WAREHOUSE

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROPOSED
MINIMUM LOT AREA:	10 ACRES	±11.4 ACRES
MINIMUM STREET FRONTAGE:	200 FT	±1,200 FT
MINIMUM SETBACKS:		
• FRONT:	70 FT	±51 FT(1)
• SIDE:	50 FT	±202 FT
• REAR:	50 FT	±50 FT(2)
MAXIMUM BUILDING HEIGHT:	PER FAA	36 FT
MINIMUM OPEN SPACE:	25%	±35%

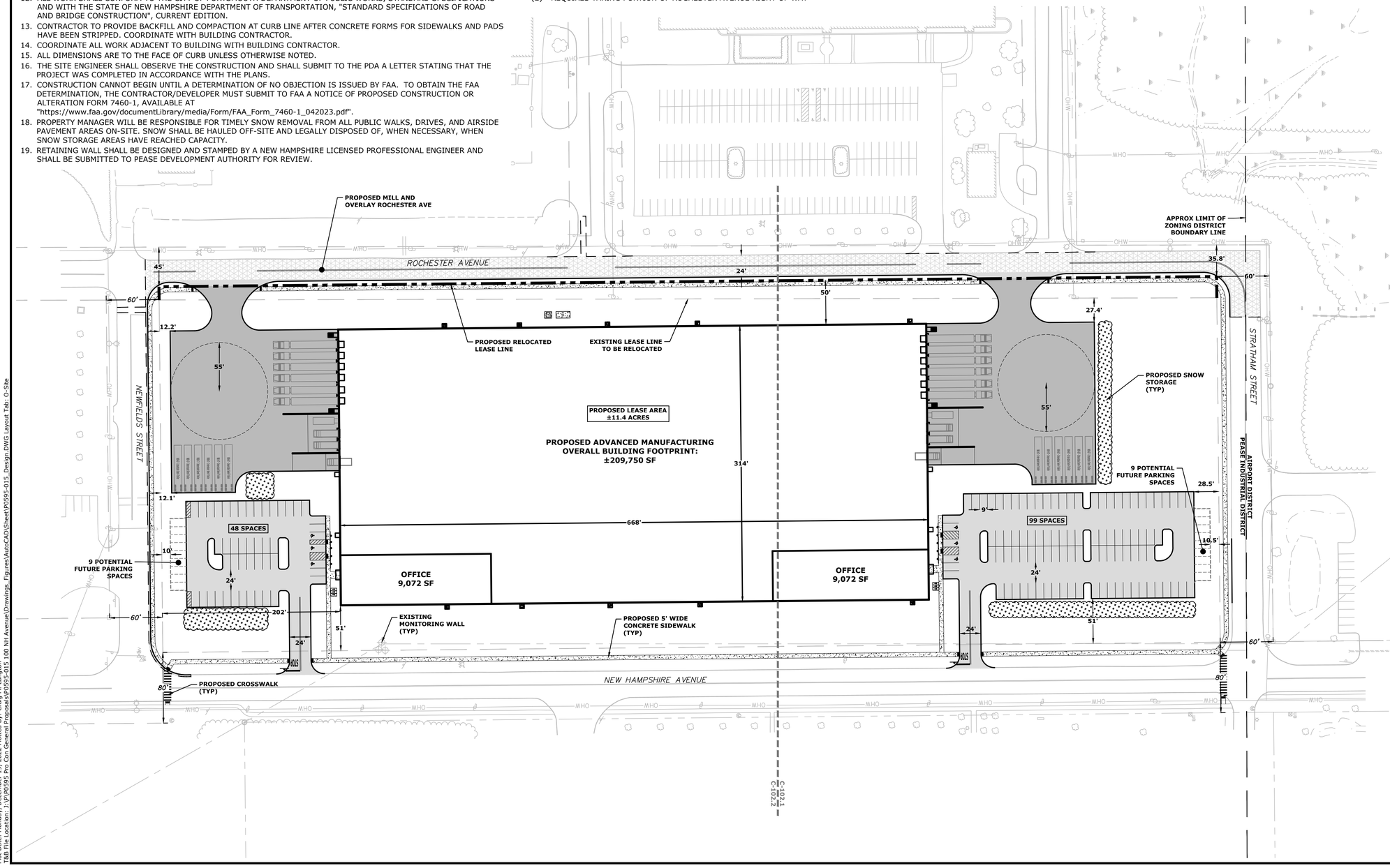
(1) - ON NOVEMBER 15, 2022 THE CITY OF PORTSMOUTH ZONING BOARD OF ADJUSTMENT VOTED TO RECOMMEND APPROVAL TO THE PDA BOARD FOR A VARIANCE FROM PART 304.03(C) TO ALLOW A 51 FOOT FRONT YARD WHERE 70 FEET IS REQUIRED.
(2) - REQUIRES TAKING PORTION OF ROCHESTER AVENUE RIGHT OF WAY

PARKING REQUIREMENTS:	REQUIRED	PROPOSED
PARKING STALL LAYOUT:		
• STANDARD 90°	WIDTH: 8.5' MIN AREA: 160 SF MIN	9' X 18' (162 SF)
DRIVE AISLE WIDTH:		
• 90° (2-WAY TRAFFIC)	24 FT	24 FT (MIN)
PARKING SPACE REQUIREMENTS:		
INDUSTRIAL:		
2 / 3 EMPLOYEES (LARGEST SHIFT) +1 / COMPANY-OWNED-VEHICLE = 161 EMPLOYEES x 2/3 EMPLOYEES) + 2 COMPANY-OWNED-VEHICLE =	110 SPACES	
OFFICE:		
1 / 2 EMPLOYEES = 73 EMPLOYEES x (1 / 2 EMPLOYEES) =	37 SPACES	
TOTAL REQUIRED PARKING:	147 SPACES	147 SPACES(1)

(1) - SIX (6) ADA SPACES PROVIDED

LEGEND

- PROPOSED LEASE LINE
- PROPOSED CONCRETE
- PROPOSED STANDARD DUTY PAVEMENT SECTION
- PROPOSED HEAVY DUTY PAVEMENT SECTION
- PROPOSED MILL AND OVERLAY
- PROPOSED SNOW STORAGE AREA
- APPROXIMATE LIMIT OF SAWCUT
- PROPOSED LIGHT POLE BASE
- EXISTING PROPOSED SIGN
- PROPOSED BOLLARD



Tighe&Bond

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

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CHECKED:	NAH
APPROVED:	PMC

OVERALL SITE PLAN

SCALE: AS SHOWN

C-102

Last Save Date: December 19, 2022 8:56 AM By: CML
Plot Date: December 19, 2022 8:57 AM By: Christopher M. Langston
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Tighe&Bond

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

BEGIN VGC MEET/MATCH EXISTING

END VGC MEET/MATCH EXISTING

AIRPORT DISTRICT
PEASE INDUSTRIAL DISTRICT

PROPOSED CROSSWALK (COORD W/ PDA & DPW)

APPROX LIMIT OF ZONING DISTRICT BOUNDARY LINE

BEGIN VGC MEET/MATCH EXISTING

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

PROPOSED 5' WIDE CONCRETE SIDEWALK

9 POTENTIAL FUTURE PARKING SPACES

PROPOSED MILL AND OVERLAY

EXISTING LEASE LINE TO BE RELOCATED

PROPOSED STANDARD DUTY PAVEMENT SECTION

PROPOSED DOUBLE YELLOW LANE LINE (TYP)

PROPOSED SNOW STORAGE (TYP)

PROPOSED HEAVY DUTY PAVEMENT SECTION

PROPOSED TRAILER STORAGE AREA

PROPOSED RELOCATED LEASE LINE

END VGC BEGIN SGC WITH CURB TRANSITION

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

END VGC BEGIN SGC WITH CURB TRANSITION

PROPOSED WALL (COORD W/ BLDG DWGS)

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

PROPOSED WALL (COORD W/ BLDG DWGS)

6 PROPOSED LOADING DOCKS

END SGC MEET @ BLDG

END SGC MEET @ BLDG

PROPOSED TRASH COMPACTER (COORD W/ BLDG DWGS)

PROPOSED R7-8 "RESERVED" & R7-8A "VAN ACCESSIBLE" SIGNS

PROPOSED AT GRADE LOADING BAY

2 PROPOSED BOX TRUCK LOADING DOCKS

PROPOSED R7-1 "NO PARKING" SIGN

PROPOSED BIKE RACK (TYP OF 3)

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

BEGIN VGC MEET/MATCH EXISTING

END VGC MEET/MATCH EXISTING

PROPOSED R1-1 "STOP" SIGN, BAR & LEGEND

PROPOSED 5' WIDE CONCRETE SIDEWALK

OFFICE
9,072 SF

PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF

C-102.1
C-102.2

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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APPROVED:	PMC

SITE PLAN

SCALE: AS SHOWN

C-102.1

Last Save Date: December 19, 2022 8:56 AM By: CML
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PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF

C-102.1
C-102.2

EXISTING LEASE LINE TO BE RELOCATED

PROPOSED RELOCATED LEASE LINE

PROPOSED GENERATOR PAD (COORD W/ BLDG DWGS)

PROPOSED TRANSFORMER PAD (COORD W/ EVERSOURCE)

PROPOSED MILL AND OVERLAY

PROPOSED EGRESS (TYP)

PROPOSED 5' WIDE CONCRETE SIDEWALK

257'

57'

171'

OFFICE
9,072 SF

PROPOSED AT GRADE LOADING BAY

2 PROPOSED BOX TRUCK LOADING DOCKS

PROPOSED TRASH COMPACTER (COORD W/ BLDG DWGS)

END SGC MEET @ BLDG

PROPOSED R7-8 "RESERVED" & R7-8A "VAN ACCESSIBLE" SIGNS

PROPOSED R7-8 "RESERVED" SIGN

END SGC MEET @ BLDG

PROPOSED DOUBLE YELLOW LANE LINE (TYP)

6 PROPOSED LOADING DOCKS

PROPOSED WALL (COORD W/ BLDG DWGS)

PROPOSED BIKE RACK (TYP OF 3)

PROPOSED R7-1 "NO PARKING" SIGN

BEGIN VGC MEET/MATCH EXISTING

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

END VGC MEET/MATCH EXISTING

PROPOSED R1-1 "STOP" SIGN, BAR & LEGEND

PROPOSED STANDARD DUTY PAVEMENT SECTION

23 SPACES

18 SPACES

9'

24'

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL AND FLUSH VGC

PROPOSED WALL (COORD W/ BLDG DWGS)

55'

PROPOSED SNOW STORAGE (TYP)

9 POTENTIAL FUTURE PARKING SPACES

PROPOSED HEAVY DUTY PAVEMENT SECTION

PROPOSED TRAILER STORAGE AREA

PROPOSED CONCRETE TIP DOWN RAMP WITH DETECTABLE WARNING PANEL

PROPOSED CROSSWALK (COORD W/ PDA & DPW)

END VGC BEGIN SGC WITH CURB TRANSITION

END VGC BEGIN SGC WITH CURB TRANSITION

Tighe&Bond

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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APPROVED:	PMC

SITE PLAN

SCALE: AS SHOWN

C-102.2

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GRADING AND DRAINAGE & EROSION CONTROL NOTES:

1. COMPACTION REQUIREMENTS:
   - BELOW PAVED OR CONCRETE AREAS 95%
   - TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL 95%
   - BELOW LOAM AND SEED AREAS 90%
   - * ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL), UNLESS OTHERWISE SPECIFIED.
3. SEE UTILITY PLAN FOR ALL SITE UTILITY INFORMATION.
4. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
5. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND LOADING DOCK AREAS ADJACENT TO THE BUILDING.
6. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
7. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
8. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
9. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
10. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.
11. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS, AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
12. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
13. SEE EXISTING CONDITIONS PLAN AND REFERENCE PLAN #1 FOR BENCH MARK INFORMATION.
14. SEE SHEET C-501 FOR GENERAL EROSION CONTROL NOTES AND DETAILS.

LEGEND

- PD PD — PROPOSED DRAIN LINE
- 100 — EXISTING MAJOR CONTOUR LINE
- 98 — EXISTING MINOR CONTOUR LINE
- 56 — PROPOSED CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED DRAIN MANHOLE
- ±44.45 — APPROX EXISTING SPOT GRADE
- 44.45 — PROPOSED SPOT GRADE

PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF
FF=58.00

314'

668'

OFFICE
9,072 SF

OFFICE
9,072 SF

PROPOSED UNDERGROUND DETENTION BASIN-01
17-ROWS OF 60" HDPE
PIPE INV = 45.00
STONE INV = 44.50
(SEE DETAIL)

APPROX LOCATION OF EXISTING DRAIN PER CITY OF PORTSMOUTH GIS INFORMATION

PROPOSED JELLYFISH STORMWATER TREATMENT UNIT
INV IN=44.95
INV OUT=44.45
(SEE DETAIL)

15" RCP INV.=46.3'
18" RCP INV.=51.6'
56'-8" PVC INV.=55.8'
12" RCP W/FES INV.=59.1'
12" RCP W/FES INV.=59.5'
60" RCP INV.=41.5'
CB 1879
CB 1966
CB 964
CB 1778
TH=58.8'

C-103
C-103

Tighe&Bond

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE
12/19/22

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE
12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
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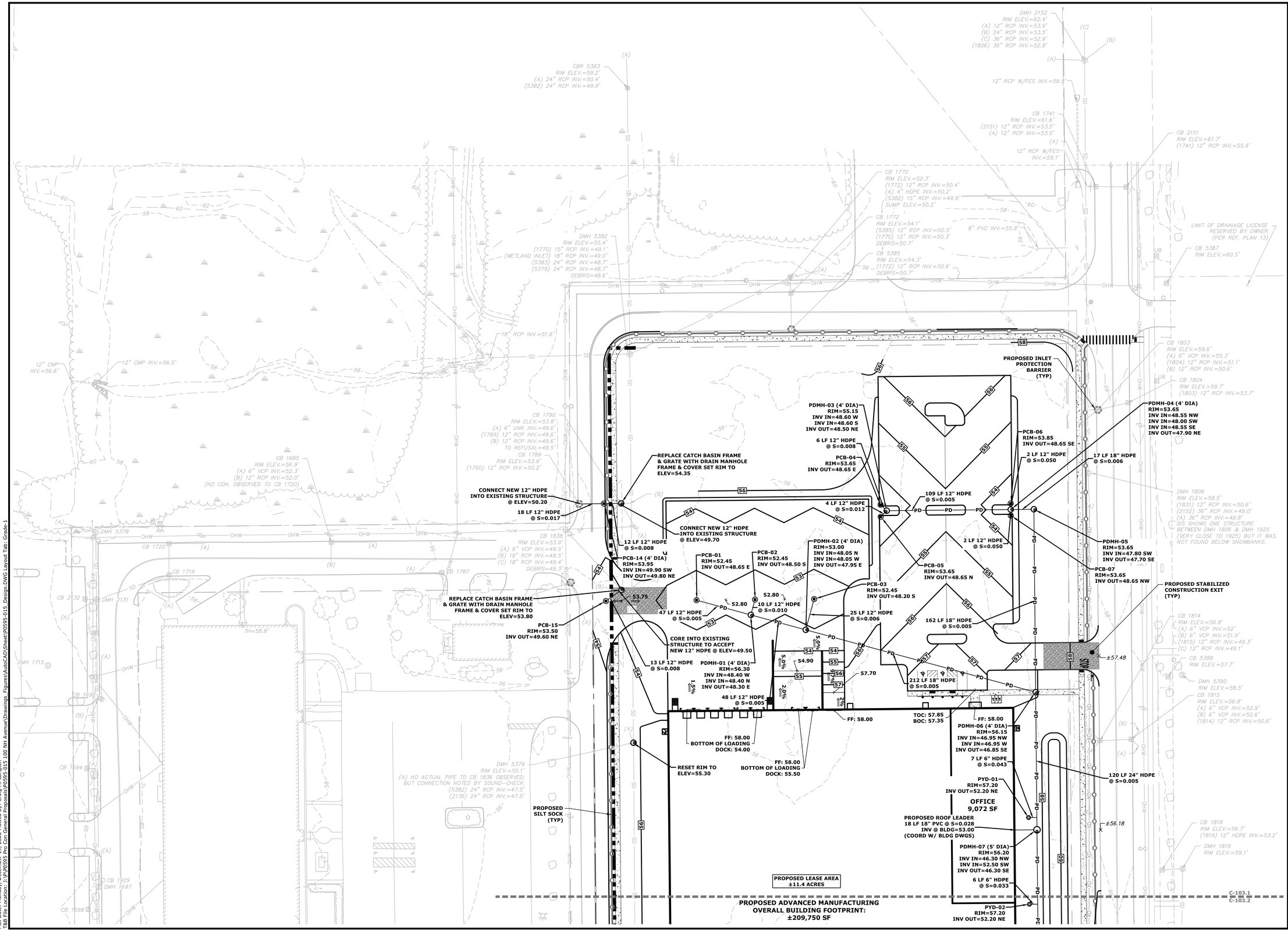
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CHECKED:	NAH
APPROVED:	PMC

OVERALL GRADING, DRAINAGE & EROSION CONTROL PLAN

SCALE: AS SHOWN

C-103

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Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

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GRADING, DRAINAGE & EROSION CONTROL PLAN

SCALE: AS SHOWN

C-103.1

Last Save Date: December 19, 2022 8:56 AM By: CML
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PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF

PCB-16
RIM=53.90
INV OUT=50.10 NE

11 LF 12" HDPE
@ S=0.009

REPLACE CATCH BASIN FRAME
& GRATE WITH DRAIN MANHOLE
FRAME & COVER SET RIM TO
ELEV=55.15

CONNECT NEW 12" HDPE
INTO EXISTING STRUCTURE
@ ELEV=50.00

±53.56

RESET RIM TO
ELEV=55.30

CONNECT NEW 12" HDPE TO
EXISTING RCP @ ELEV=48.35
(CONTRACTOR TO CONFIRM
CONNECTION ELEVATION
PRIOR TO CONSTRUCTION)

PCB-17
RIM=52.85
INV IN=48.30 SW
INV OUT=48.20 NE

10 LF 12" HDPE
@ S=0.010

CONNECT NEW 12" HDPE
INTO EXISTING STRUCTURE
@ ELEV=48.10

9 LF 12" HDPE
@ S=0.006

REPLACE CATCH BASIN FRAME
& GRATE WITH DRAIN MANHOLE
FRAME & COVER SET RIM TO
ELEV=54.30

INV OUT=46.30 SE

6 LF 6" HDPE
@ S=0.033

PYD-02
RIM=57.20
INV OUT=52.20 NE

217 LF 36" HDPE
@ S=0.0025

6 LF 6" HDPE
@ S=0.033

PYD-03
RIM=57.20
INV OUT=52.20 NE

PROPOSED ROOF LEADER
17 LF 18" PVC @ S=0.029
INV @ BLDG=53.00
(COORD W/ BLDG DWGS)

PDMH-08 (6' DIA)
RIM=56.20
INV IN=45.75 NW
INV IN=52.50 SW
INV OUT=45.75 SE

6 LF 6" HDPE
@ S=0.033

PYD-04
RIM=57.20
INV OUT=52.20 NE

216 LF 42" HDPE
@ S=0.0021

6 LF 6" HDPE
@ S=0.033

PYD-05
RIM=57.20
INV OUT=52.20 NE

PDMH-09 (7' DIA)
RIM=56.20
INV IN=45.30 NW
INV IN=52.50 SW
INV OUT=45.30 SE

PROPOSED ROOF LEADER
17 LF 18" PVC @ S=0.029
INV @ BLDG=53.00
(COORD W/ BLDG DWGS)

OFFICE
9,072 SF

147 LF 48" HDPE
@ S=0.0014

PDMH-10 (7' DIA)
RIM=52.90
INV IN=47.75 E
INV IN=45.10 NW
INV OUT=45.00 SW

PROPOSED UNDERGROUND
DETENTION BASIN-01
17-ROWS OF 60" HDPE
PIPE INV = 45.00
STONE INV = 44.50
(SEE DETAIL)

FF: 58.00
BOTTOM OF LOADING
DOCK: 55.50

FF: 58.00
BOTTOM OF LOADING
DOCK: 54.00

FF: 58.00

TOC: 57.85
BOC: 57.35

57.70

54.90

53.50

52.65

15 LF 48" HDPE

56 LF 18" HDPE
@ S=0.005

PROPOSED JELLYFISH
STORMWATER
TREATMENT UNIT
INV IN=44.95
INV OUT=44.45
(SEE DETAIL)

6 LF 12" HDPE
@ S=0.017

PCB-12
RIM=53.50
INV OUT=48.50 NW

10 LF 60" HDPE

PCB-11
RIM=53.50
INV OUT=48.50 NW

4 LF 24" HDPE
@ S=0.013

4 LF 24" HDPE
@ S=0.012

4 LF 48" HDPE
@ S=0.050

PDMH-13
RIM=53.95
INV IN=45.45 W
INV OUT=45.35 N

POS-01 (SEE DETAIL)
RIM=54.35
INV IN=45.00 SW
INV OUT=45.65 E
INV OUT=45.00 N

CORE INTO EXISTING
STRUCTURE TO ACCEPT
NEW 48" HDPE @ ELEV=43.70

RESET RIM TO
ELEV=51.55

PDMH-11 (4' DIA)
RIM=52.10
INV IN=45.75 NW
INV IN=45.75 SW
INV OUT=45.65 NE

PCB-09
RIM=52.10
INV OUT=45.85 SE

13 LF 12" HDPE
@ S=0.008

13 LF 12" HDPE
@ S=0.008

50 LF 12" HDPE
@ S=0.005

13 LF 12" HDPE
@ S=0.008

49 LF 12" HDPE
@ S=0.005

PCB-10
RIM=52.10
INV OUT=45.50 SE

PDMH-12 (4' DIA)
RIM=52.10
INV IN=45.40 NW
INV IN=45.40 SW
INV OUT=45.30 NE

PCB-08
RIM=52.10
INV OUT=46.10 SE

PDMH-18 (4' DIA)
RIM=52.05
INV IN=46.00 NW
INV IN=46.10 W
INV OUT=46.00 NE

6 LF 12" HDPE
@ S=0.017

PCB-18
RIM=51.10
INV OUT=46.50 E

81 LF 12" HDPE
@ S=0.005

PROPOSED INLET
PROTECTION BARRIER
(TYP)

PROPOSED
SILT SOCK
(TYP)

RESET CURB
INLET FRAME
AND GRATE

REPLACE CATCH BASIN FRAME
& GRATE WITH DRAIN MANHOLE
FRAME & COVER SET RIM TO
ELEV=50.85

RESET RIM TO
ELEV=54.50

PROPOSED STABILIZED
CONSTRUCTION EXIT

PROPOSED INLET
PROTECTION
BARRIER
(TYP)

PROPOSED
SILT SOCK
(TYP)

PROPOSED STABILIZED
CONSTRUCTION EXIT

30 LF 12" HDPE
@ S=0.005

PCB-13
RIM=52.90
INV OUT=47.90 W

PDMH-14 (4' DIA)
RIM=54.10
INV IN=44.40 S
INV OUT=44.30 E

6 LF 24" HDPE
@ S=0.008

PDMH-16 (8' DIA)
RIM=53.90
INV IN=44.65 S
INV IN=44.25 W
INV OUT=44.15 NE

20 LF 48" HDPE
@ S=0.005

CONNECT EXISTING 36" RCP TO
NEW MANHOLE @ ELEV=±44.05
(VERIFY EXISTING INVERT
ELEVATION IN FIELD)

PDMH-17 (8' DIA)
RIM=52.10
INV IN=44.05 NW
INV IN=44.05 SW
INV OUT=43.95 SE

37 LF 48" HDPE
@ S=0.007

14 LF 48" HDPE
@ S=0.050

CB 1824
RIM ELEV.=54.7'
(A) 6" VCP INV.=50.2'
(B) 6" VCP INV.=49.1'
(1820) 12" RCP INV.=48'
(C) 12" RCP INV.=48'

CB 1820
RIM ELEV.=54.8'
(A) 6" VCP INV.=50'
(B) 6" VCP INV.=49.8'
(1824) 12" RCP INV.=48.9'

DMH 1823
RIM ELEV.=55.9'
(1822) 12" HDPE INV.=52.1'
(A) 15" HDPE INV.=52.0'
(1819) 18" HDPE INV.=52.0'

CB 1822
RIM ELEV.=55.1'
(NO VISIBLE INV. FULL OF WATER)
WATER ELEV.=52.1'
SUMP ELEV.=48.9'

CB 1855
RIM ELEV.=52.7'
(A) 12" HDPE INV.=46.6'
(1853) 12" HDPE INV.=46.5'
BOTTOM OF CHANNEL=46.6'

CB 1853
RIM ELEV.=52.6'
(A) 6" VCP INV.=47.8'
(B) 6" VCP INV.=47.8'
(1855) 12" RCP INV.=47'
SUMP ELEV.=47'

DMH 1925
RIM ELEV.=52.2'
(A) 12" RCP RECESSED, UNABLE TO MEAS.
(B) 36" RCP INV.=43.7'
(C) 36" RCP INV.=43.5'
(OUTFALL) 60" RCP INV.=41.7'

CB 1846
RIM ELEV.=53.8'
(A) 12" RCP INV.=49.5'
BROKEN BOTTOM=49.6'

DMH 1947
RIM ELEV.=56.7'
(1945) RECESSED
(1951) 28" ACP INV.=48.8'
(1697) 28" ACP INV.=48.6'
(2136) 42" RCP INV.=48.4'

CB 1966

CB 1964

CB 1965
RIM ELEV.=55.3'
(1964) 12" RCP INV.=50.8'
(A) 12" RCP INV.=50.7'

CB 2138
RIM ELEV.=54.8'
(A) 12" RCP INV.=51.4'

DMH 2136
RIM ELEV.=54.2'
(5379) 24" RCP INV.=47.0'
(A) 42" RCP INV.=46.9'
(1947) 42" RCP INV.=46.7'

CB 2137
RIM ELEV.=52.7'
(A) 8" VCP INV.=48.6'
(B) 12" RCP INV.=48.1'
(C) 8" VCP INV.=48.1'
(D) 12" RCP INV.=48.1'

CB 2144
RIM ELEV.=50.8'
(A) 6" VCP INV.=46.3'
(1902) 12" RCP INV.=46.3'
(B) 12" RCP INV.=46.1'

CB 1902
RIM ELEV.=50.9'
(A) 6" VCP INV.=47.2'
(2144) 12" RCP INV.=46.6'

CB 1896
RIM ELEV.=50.2'
(A) 12" RCP INV.=47.1'

CB 1898
RIM ELEV.=51.7'
(1897) 12" RCP INV.=46.7'

CB 1897
RIM ELEV.=51.7'
(1898)12" RCP INV.=46.3'
(A) 12" RCP INV.=46.5'

CB 1895
RIM ELEV.=52.0'
(A) 12" RCP INV.=46.9'
(B) 12" RCP INV.=46.8'

CB 1893
RIM ELEV.=52.9'
(A) 6" VCP INV.=47.8'
(B) 12" RCP INV.=47.7'
NOTE: "B" DOES NOT
AIM TOWARD CB 1895
SUMP ELEV.=47.7'

CB 1879

CB 1972
RIM ELEV.=54.4'
(1971) 12" RCP INV.=49.6'
DIRT=49.6'

CB 1971
RIM ELEV.=54.3'
(1972) 12" RCP INV.=49.3'
(1970) 12" RCP INV.=48.9'

DMH 1970
RIM ELEV.=54.4'
(A) 12" RCP INV.=49.2'
(1971) 12" RCP INV.=48.9'
(B) 15" RCP TOP BELL=49.9'
DIRT=48.9'

DMH 1951

CB 1952

CB 1953

DMH 2145
RIM ELEV.=52.5'

CB 1945

CB 1931

CB 1929
DMH 1697

CB 1698

CB 1932

CONC. INLET

15" RCP INV.=46.3'

60" RCP INV.=41.5'

C-103.1
C-103.2

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
12/19/22

Tighe&Bond

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
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DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

GRADING, DRAINAGE & EROSION CONTROL PLAN

SCALE: AS SHOWN

C-103.2

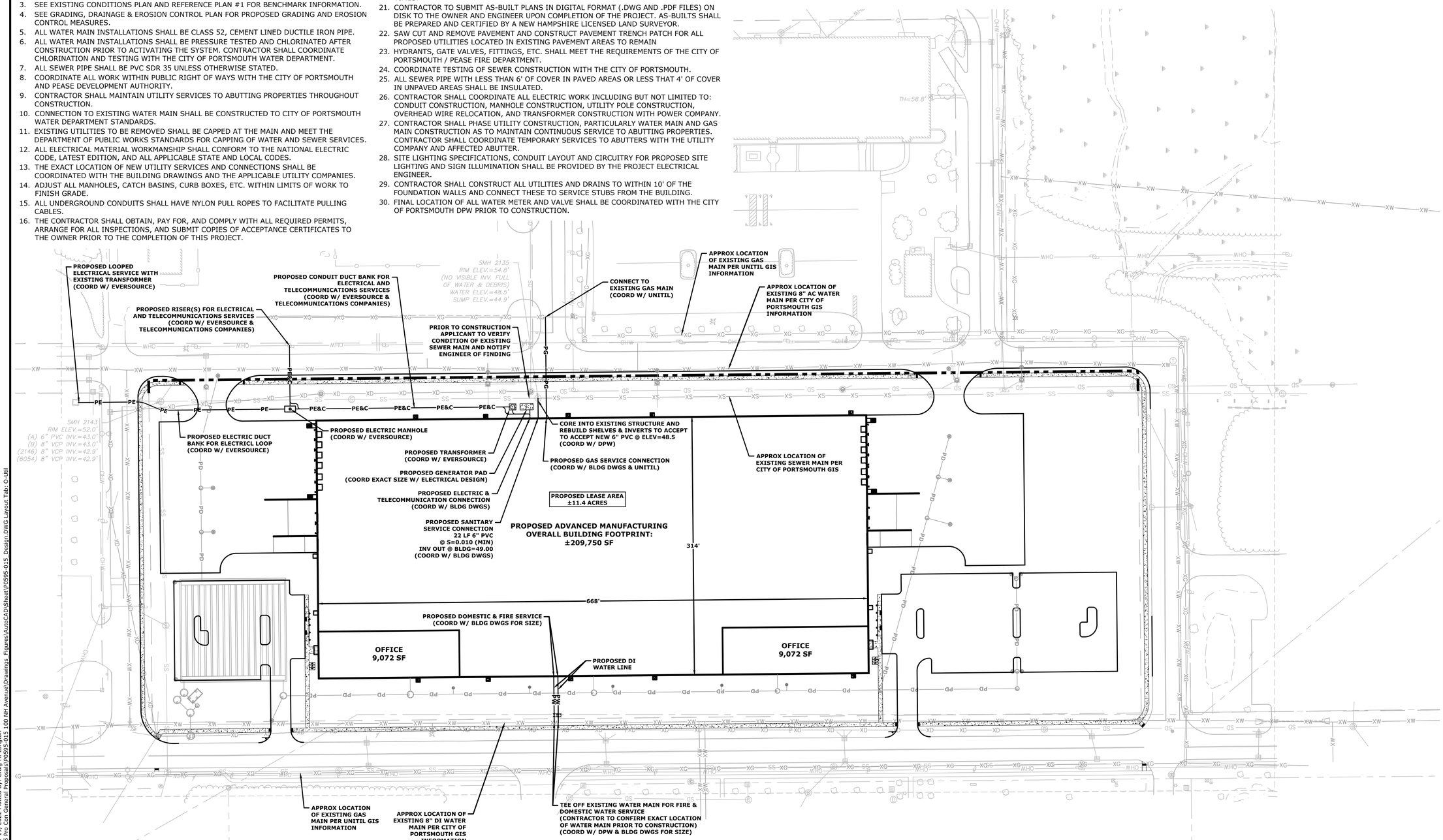
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T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings_Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Grade-2

UTILITY NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - NATURAL GAS - UNITIL / NORTHERN UTILITIES
   - WATER - CITY OF PORTSMOUTH
   - SEWER - CITY OF PORTSMOUTH
   - ELECTRIC - EVERSOURCE
   - COMMUNICATIONS - FAIRPOINT COMMUNICATIONS
3. SEE EXISTING CONDITIONS PLAN AND REFERENCE PLAN #1 FOR BENCHMARK INFORMATION.
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
5. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, CEMENT LINED DUCTILE IRON PIPE.
6. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF PORTSMOUTH WATER DEPARTMENT.
7. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
8. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH AND PEASE DEVELOPMENT AUTHORITY.
9. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
10. CONNECTION TO EXISTING WATER MAIN SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS.
11. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
12. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
13. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
14. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
15. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
16. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
17. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
18. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
19. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
20. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
21. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
22. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
23. HYDRANTS, GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH / PEASE FIRE DEPARTMENT.
24. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
25. ALL SEWER PIPE WITH LESS THAN 6' OF COVER IN PAVED AREAS OR LESS THAT 4' OF COVER IN UNPAVED AREAS SHALL BE INSULATED.
26. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
27. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
28. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER.
29. CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
30. FINAL LOCATION OF ALL WATER METER AND VALVE SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH DPW PRIOR TO CONSTRUCTION.

LEGEND

- PS — PROPOSED SEWER LINE
- PG — PROPOSED GAS LINE
- PC — PROPOSED COMMUNICATIONS LINE
- PE — PROPOSED ELECTRIC LINE
- PE&C — PROPOSED ELECTRIC & COMMUNICATIONS LINE
- PW — PROPOSED WATER LINE
- PROPOSED WATER GATE VALVE
- PROPOSED ELECTRIC MANHOLE
- PROPOSED SEWER MANHOLE



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12/19/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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UTILITY PLAN

SCALE: AS SHOWN

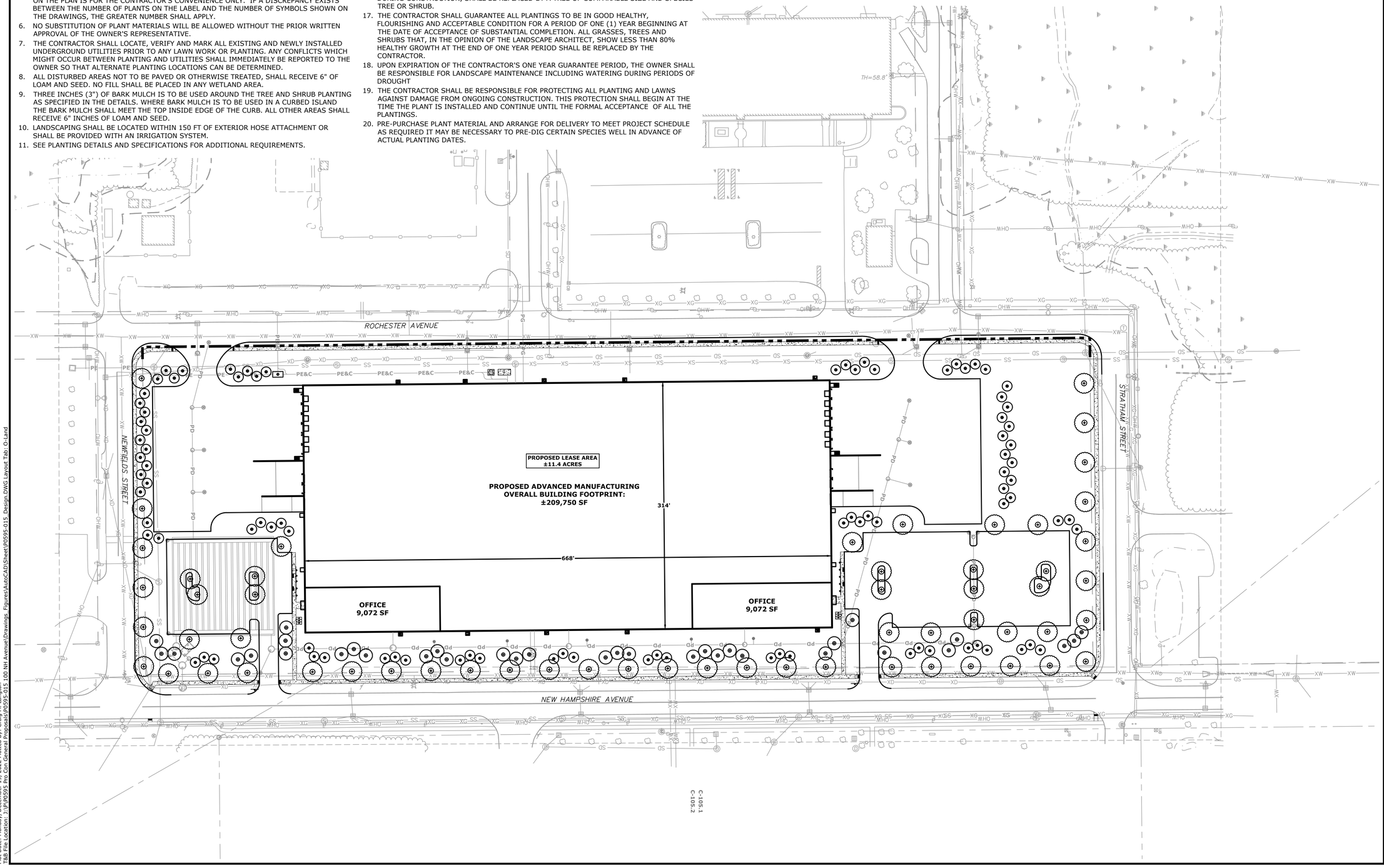
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LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL FURNISH AND PLANT ALL PLANTS IN QUANTITIES AS SHOWN ON THIS PLAN. NO SUBSTITUTIONS WILL BE PERMITTED UNLESS APPROVED BY OWNER. ALL PLANTS SHALL BE NURSERY GROWN.
2. ALL PLANTS SHALL BE NURSERY GROWN AND PLANTS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS, INCLUDING BUT NOT LIMITED TO SIZE, HEALTH, SHAPE, ETC., AND SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO ARRIVAL ON-SITE AND AFTER PLANTING.
3. PLANT STOCK SHALL BE GROWN WITHIN THE HARDINESS ZONES 4 THRU 7 ESTABLISHED BY THE PLANT HARDINESS ZONE MAP, MISCELLANEOUS PUBLICATIONS NO. 814, AGRICULTURAL RESEARCH SERVICE, UNITED STATES DEPARTMENT AGRICULTURE, LATEST REVISION.
4. PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS TO THE ORIGINAL PLANTING GRADE PRIOR TO DIGGING.
5. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE PROVIDED IN THE PLANT LIST OR ON THE PLAN IS FOR THE CONTRACTOR'S CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LABEL AND THE NUMBER OF SYMBOLS SHOWN ON THE DRAWINGS, THE GREATER NUMBER SHALL APPLY.
6. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL LOCATE, VERIFY AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWN WORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES SHALL IMMEDIATELY BE REPORTED TO THE OWNER SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
8. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED, SHALL RECEIVE 6" OF LOAM AND SEED. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
9. THREE INCHES (3") OF BARK MULCH IS TO BE USED AROUND THE TREE AND SHRUB PLANTING AS SPECIFIED IN THE DETAILS. WHERE BARK MULCH IS TO BE USED IN A CURBED ISLAND THE BARK MULCH SHALL MEET THE TOP INSIDE EDGE OF THE CURB. ALL OTHER AREAS SHALL RECEIVE 6" INCHES OF LOAM AND SEED.
10. LANDSCAPING SHALL BE LOCATED WITHIN 150 FT OF EXTERIOR HOSE ATTACHMENT OR SHALL BE PROVIDED WITH AN IRRIGATION SYSTEM.
11. SEE PLANTING DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. TREE STAKES SHALL REMAIN IN PLACE FOR NO LESS THAN 6 MONTHS AND NO MORE THAN 1 YEAR.
13. PLANTING SHALL BE COMPLETED FROM APRIL 15TH THROUGH OCTOBER 1ST. NO PLANTING DURING JULY AND AUGUST UNLESS SPECIAL PROVISIONS ARE MADE FOR DROUGHT.
14. TREES SHALL BE PRUNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI A300 'TREES, SHRUBS AND OTHER WOOD PLANT MAINTENANCE STANDARD PRACTICES.
15. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN, IF NECESSARY DURING THE FIRST GROWING SEASON. LANDSCAPE CONTRACTOR SHALL COORDINATE WATERING SCHEDULE WITH OWNER DURING THE ONE (1) YEAR GUARANTEE PERIOD.
16. EXISTING TREES AND SHRUBS SHOWN ON THE PLAN ARE TO REMAIN UNDISTURBED. ALL EXISTING TREES AND SHRUBS SHOWN TO REMAIN ARE TO BE PROTECTED WITH A 4-FOOT SNOW FENCE PLACED AT THE DRIP LINE OF THE BRANCHES OR AT 8 FEET MINIMUM FROM THE TREE TRUNK. ANY EXISTING TREE OR SHRUB SHOWN TO REMAIN, WHICH IS REMOVED DURING CONSTRUCTION, SHALL BE REPLACED BY A TREE OF COMPARABLE SIZE AND SPECIES TREE OR SHRUB.
17. THE CONTRACTOR SHALL GUARANTEE ALL PLANTINGS TO BE IN GOOD HEALTHY, FLOURISHING AND ACCEPTABLE CONDITION FOR A PERIOD OF ONE (1) YEAR BEGINNING AT THE DATE OF ACCEPTANCE OF SUBSTANTIAL COMPLETION. ALL GRASSES, TREES AND SHRUBS THAT, IN THE OPINION OF THE LANDSCAPE ARCHITECT, SHOW LESS THAN 80% HEALTHY GROWTH AT THE END OF ONE YEAR PERIOD SHALL BE REPLACED BY THE CONTRACTOR.
18. UPON EXPIRATION OF THE CONTRACTOR'S ONE YEAR GUARANTEE PERIOD, THE OWNER SHALL BE RESPONSIBLE FOR LANDSCAPE MAINTENANCE INCLUDING WATERING DURING PERIODS OF DROUGHT
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTING AND LAWNS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. THIS PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL THE FORMAL ACCEPTANCE OF ALL THE PLANTINGS.
20. PRE-PURCHASE PLANT MATERIAL AND ARRANGE FOR DELIVERY TO MEET PROJECT SCHEDULE AS REQUIRED IT MAY BE NECESSARY TO PRE-DIG CERTAIN SPECIES WELL IN ADVANCE OF ACTUAL PLANTING DATES.

PLANT SCHEDULE				
CODE	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES				
AF	ACER FREEMANII	AUTUM BLAZE MAPLE	2-1/2" - 3"	CALIPER
GD	GYMNOCLADUS DIOICUS 'ESPROSSO'	KENTUCKY COFFEE	2-1/2" - 3"	CALIPER
LT	LIRIODENDRON TULIPIFERA	TULIP TREE	2-1/2" - 3"	CALIPER
QR	QUERCUS RUBRA	RED OAK	2-1/2" - 3"	CALIPER
MS	MALUS 'SUTYZAM'	SUGAR TYME CRABAPPLE	2" - 2-1/2"	CALIPER
MP	MALUS 'PRAIRIE FIRE'	PRAIRIE FIRE CRABAPPLE	2" - 2-1/2"	CALIPER
CK	CORNUS KOUSA	KOUSA DOGWOOD	2" - 2-1/2"	CALIPER
PG	PICEA GLAUCA	WHITE SPRUCE	7' - 8' HT	
PN	CASUARINA EQUISETIFOLIA	AUSTRALIAN PINE	7' - 8' HT	



LEGEND

PROPOSED DECIDUOUS TREE (W/ BARK MULCH)

PROPOSED DECICUOUS TREE (W/O BARK MULCH)

Tighe&Bond

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STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 12/19/22

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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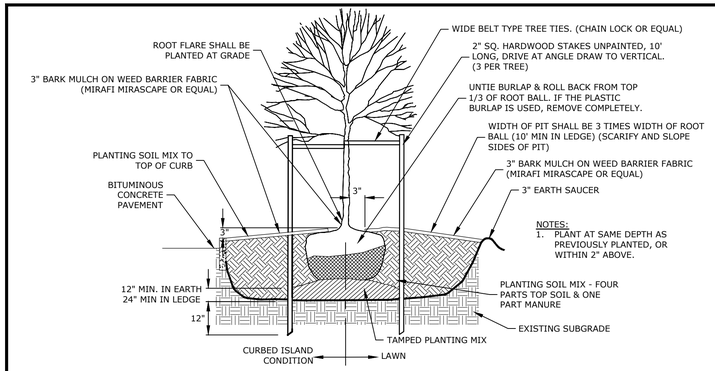
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APPROVED:	PMC

OVERALL LANDSCAPE PLAN

SCALE: AS SHOWN

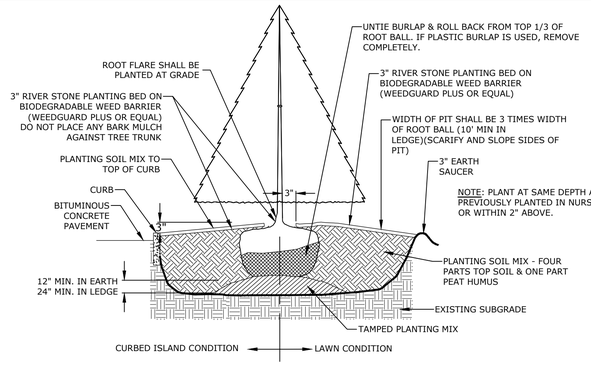
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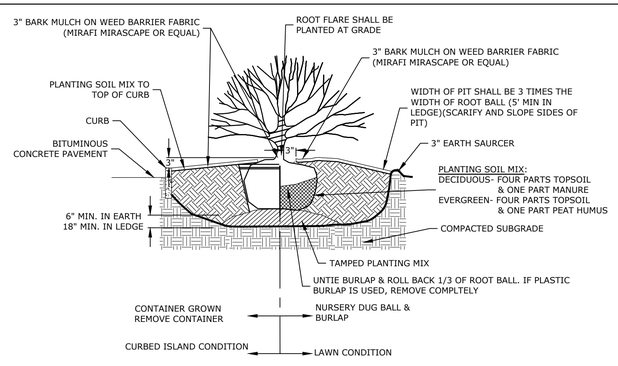
DECIDUOUS TREE PLANTING

NO SCALE



EVERGREEN TREE PLANTING

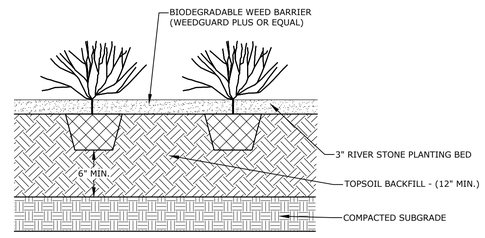
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NOTES:
1. PLANT AT SAME DEPTH AS PREVIOUSLY PLANTED, OR WITHIN 2" ABOVE.

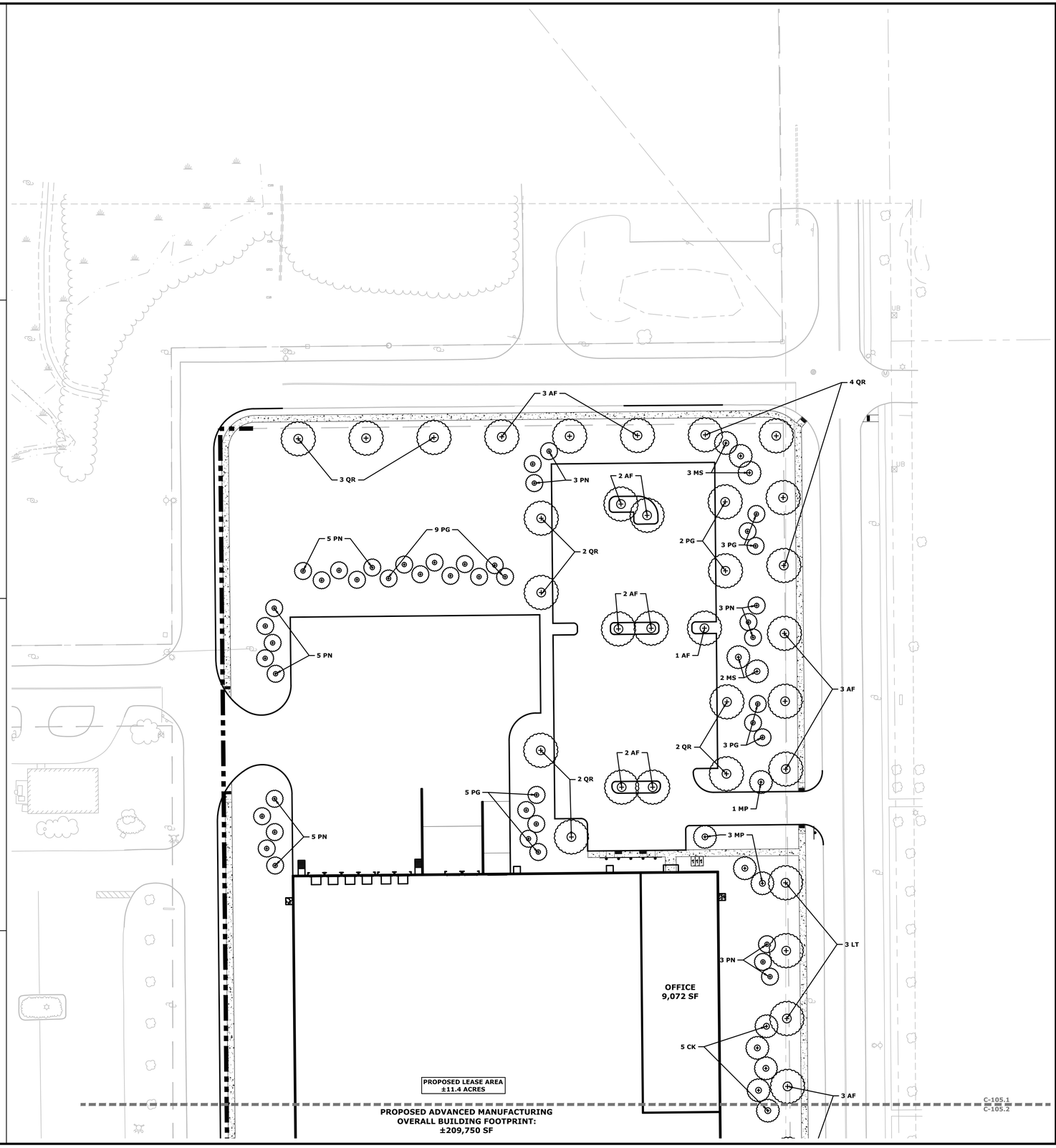
SHRUB PLANTING

NO SCALE



PERENNIAL PLANTING

NO SCALE



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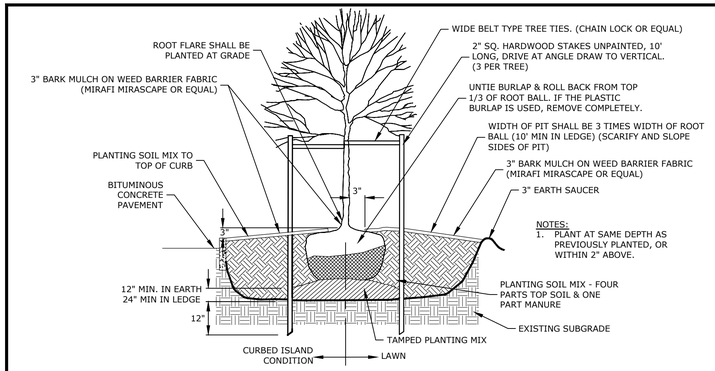
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LANDSCAPE PLAN

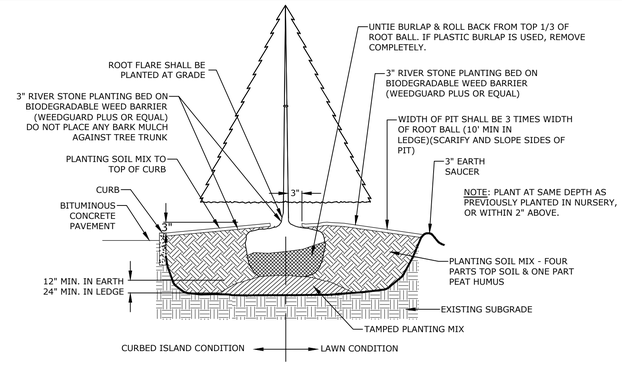
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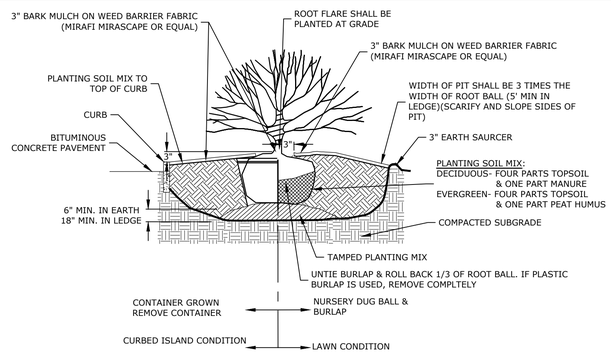
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DECIDUOUS TREE PLANTING
NO SCALE

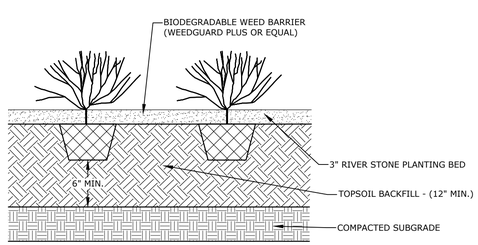


EVERGREEN TREE PLANTING
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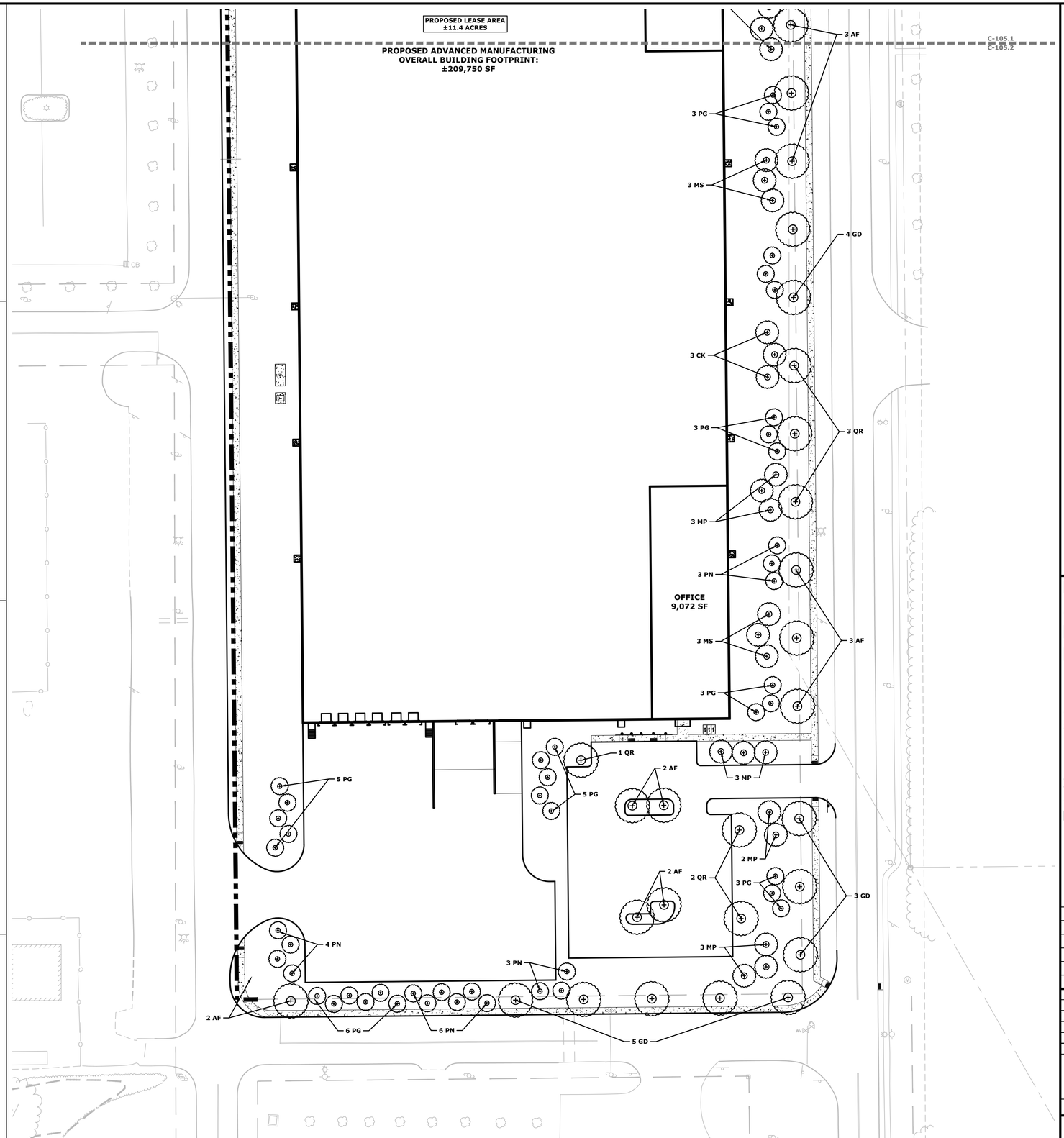


NOTES:
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SHRUB PLANTING
NO SCALE



PERENNIAL PLANTING
NO SCALE



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LANDSCAPE PLAN

SCALE: AS SHOWN

C-105.2

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GENERAL PROJECT INFORMATION

PROJECT LESSOR:	PEASE DEVELOPMENT AUTHORITY 55 INTERNATIONAL DRIVE PORTSMOUTH, NH 03801
PROJECT APPLICANT:	AVIATION AVENUE GROUP, LLC 210 COMMERCE WAY, SUITE 300
PROJECT NAME:	PROPOSED ADVANCED MANUFACTURING FACILITY
PROJECT ADDRESS:	80 ROCHESTER AVE (100 NEW HAMPSHIRE AVE) PORTSMOUTH, NH 03801
PROJECT MAP / LOT:	MAP 308 / LOT 1
PROJECT LATITUDE:	43°04'49.9"N
PROJECT LONGITUDE:	70°48'33.6"W

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OR A NEW INDUSTRIAL WAREHOUSE ON A PREVIOUSLY DEVELOPED LOT THE WORK IS ANTICIPATED TO START IN SUMMER OF 2023, AND BE COMPLETED BY WINTER OF 2025.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 11.4 ACRES.

SOIL CHARACTERISTICS

BASED ON THE NRCS WEB SOIL SURVEY FOR ROCKINGHAM COUNTY - NEW HAMPSHIRE. THE SOILS ON SITE CONSIST OF URBAN LAND AS THE SITE HAS BEEN PREVIOUSLY DEVELOPED AND THE HYDROLOGIC SOIL GROUP RATING(S) IS ASSUMED TO BE "C".

NAME OF RECEIVING WATERS

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA OVERLAND FLOW TO A CLOSED DRAINAGE SYSTEM AND ULTIMATELY FLOWS TO NEWFIELDS DITCH.
(STATE WATERBODY ID: NHRIV600031001-10).

CONSTRUCTION SEQUENCE OF MAJOR ACTIVITIES:

1. CUT AND CLEAR TREES.
2. CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
   - NEW CONSTRUCTION
   - CONTROL OF DUST
   - CONSTRUCTION OF ACCESS DRIVES
   - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
   - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
3. ALL PERMANENT DITCHES, SWALES, DETENTION, RETENTION AND SEDIMENTATION BASINS TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPS PRIOR TO DIRECTING RUNOFF TO THEM.
4. CLEAR AND DISPOSE OF DEBRIS.
5. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
6. GRADE AND GRAVEL ROADWAYS AND PARKING AREAS - ALL ROADS AND PARKING AREA SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
7. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
8. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, PERIMETER EROSION CONTROL MEASURES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
9. SEDIMENT TRAPS AND/OR BASINS SHALL BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
10. FINISH PAVING ALL ROADWAYS AND PARKING LOTS.
11. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
12. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
13. REMOVE TRAPPED SEDIMENTS FROM COLLECTOR DEVICES AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

SPECIAL CONSTRUCTION NOTES:

1. THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
2. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
2. PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
3. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING HAY BALES, SILT FENCES, MULCH BERMS, SILT SACKS AND SILT SOCKS AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
4. SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AND BE MAINTAINED FOR THE DURATION OF THE PROJECT.
5. PERIMETER CONTROLS INCLUDING SILT FENCES, MULCH BERM, SILT SOCK, AND/OR HAY BALE BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL NON-PAVED AREAS HAVE BEEN STABILIZED.
6. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
7. ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED AND FERTILIZER.
8. INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
9. CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

STABILIZATION:

1. AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.;
   E. IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, ITEM 304.2 HAVE BEEN INSTALLED.
2. WINTER STABILIZATION PRACTICES:
   A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
   C. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
3. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
   A. TEMPORARY SEEDING;
   B. MULCHING.
4. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
5. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
6. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT FENCES, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

DUST CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
2. DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
3. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

STOCKPILES:

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING:

1. THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

VEGETATION:

1. TEMPORARY GRASS COVER:
   A. SEEDBED PREPARATION:
      a. APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE;
   B. SEEDING:
      a. UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE;
      b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED;
      c. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING;
   C. MAINTENANCE:
      a. TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
2. PERMANENT MEASURES AND PLANTINGS:
   A. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF THREE (3) TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5;
   B. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE OF 10-20-20 FERTILIZER;
   C. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH;
   D. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH;
   E. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE;
   F. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED;
   G. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED;
   H. A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE APPLIED AT THE INDICATED RATE:

SEED MIX	APPLICATION RATE	MINIMUM GERMINATION (%)	MINIMUM PURITY (%)
TALL FESCUE (*FESTUCA ARUNDINACEA)*	72 LBS/ACRE	85%	96%
SALTY ALKALI GRASS (*PUCCINELLIA TENUIFLORA)*	36 LBS/ACRE	85%	96%
RELIANT HARD FESCUE / CREEPING RED FESCUE	12 LBS/ACRE	85%	96%

   IN NO CASE SHALL THE WEED CONTENT EXCEED ONE (1) PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. SEEDING SHALL BE DONE NO LATER THAN SEPTEMBER 15. IN NO CASE SHALL SEEDING TAKE PLACE OVER SNOW.
3. DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL):
   A. FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

CONCRETE WASHOUT AREA:

1. THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE:
   A. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY;
   B. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER;
   C. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS;
   D. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON-STORMWATER DISCHARGES:

1. FIRE-FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
4. WATER USED TO CONTROL DUST;
5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
6. ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
7. PAVEMENT WASH WATERS WHERE DETERGENTS ARE NOT USED;
8. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATION;
9. UNCONTAMINATED GROUND WATER OR SPRING WATER;
10. FOUNDATION OR FOOTING DRAINS WHICH ARE UNCONTAMINATED;
11. UNCONTAMINATED EXCAVATION DEWATERING;
12. LANDSCAPE IRRIGATION.

WASTE DISPOSAL:

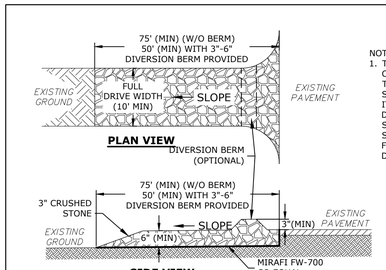
1. WASTE MATERIAL:
   A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER;
   B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE:
   A. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
   B. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE:
   A. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION:

1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   A. GOOD HOUSEKEEPING - THE FOLLOWING GOOD HOUSEKEEPING PRACTICE SHALL BE FOLLOWED ON SITE DURING CONSTRUCTION:
      a. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE;
      b. ALL REGULATED MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE, ON AN IMPERVIOUS SURFACE;
      c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED;
      d. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS;
      e. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
      f. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
      g. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
   B. HAZARDOUS PRODUCTS - THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
      a. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
      b. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION;
      c. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
   C. PRODUCT SPECIFIC PRACTICES - THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
      a. PETROLEUM PRODUCTS:
         - ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE;
         - PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
         - SECURE FUEL STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
         - INSPECT FUEL STORAGE AREAS WEEKLY;
         - WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS;
         - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
         - SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
         - THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
           (1) EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;
           (2) PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
           (3) HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
           (4) USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES;
           (5) PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
         - FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT SHALL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT, OR ITS SUCCESSOR DOCUMENT.
         HTTPS://WWW.DES.NH.GOV/ORGANIZATION/COMMISSIONER/PIP/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF
      b. FERTILIZERS:
         - FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS;
         - ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER;
         - STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
         - PAINTS;
         - ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE;
         - EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM;
         - EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   D. SPILL CONTROL PRACTICES - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
      a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES;
      b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE;
      c. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
      d. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE;
      e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED;
      f. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
   E. VEHICLE FUELING AND MAINTENANCE PRACTICE:
      a. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPMENT/VEHICLE FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY;
      b. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY;
      c. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED;
      d. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA;
      e. CONTRACTOR SHALL REGULARLY INSPECT VEHICLES FOR LEAKS AND DAMAGE;
      f. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

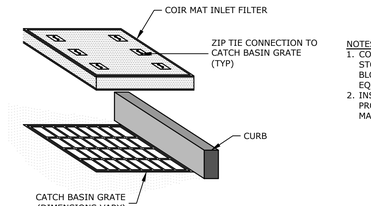
EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

1. THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRES CONSTRUCTION GENERAL PERMIT (CGP), FILING OF AN NOTICE OF INTENT (NOI), AND THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
2. THE SWPPP SHALL BE PREPARED BY A QUALIFIED ENGINEER. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.
3. THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
   A. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY A QUALIFIED PERSON AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER;
   B. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
   C. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
   D. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.



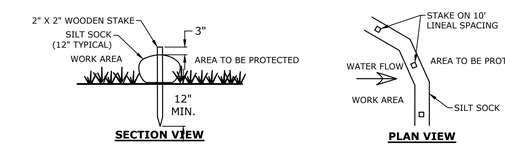
NOTES:
1. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT
NO SCALE



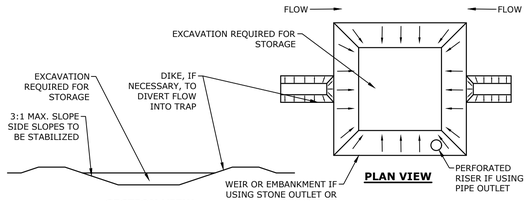
NOTES:
1. COIR MAT INLET FILTER SHALL BE STORM WATER INLET FILTER BY BLOCKSOM & CO. OR APPROVED EQUAL.
2. INSTALL AND MAINTAIN INLET PROTECTION IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

INLET PROTECTION BARRIER
NO SCALE

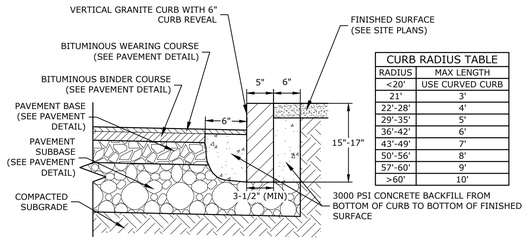


NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR APPROVED EQUAL.
2. SILT SOCK SHALL BE FILLED WITH FILTERMEDIA BY FILTREXX OR APPROVED EQUAL.
3. WHERE TWO SILT SOCKS ARE JOINED, A MINIMUM OF 2 FEET OF OVERLAP SHALL BE MAINTAINED.
4. SILT SOCKS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SILT SOCK
NO SCALE



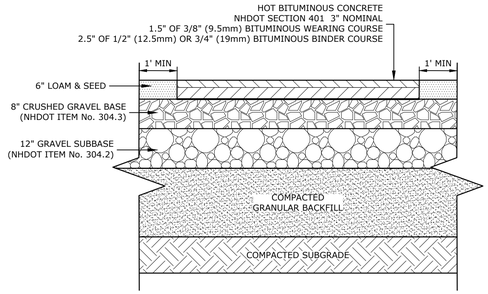
NOTES:
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING AREA TO A SINGLE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. TRAP OUTLET



CURB RADIUS TABLE	
RADIUS	MAX LENGTH
<20'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
>60'	10'

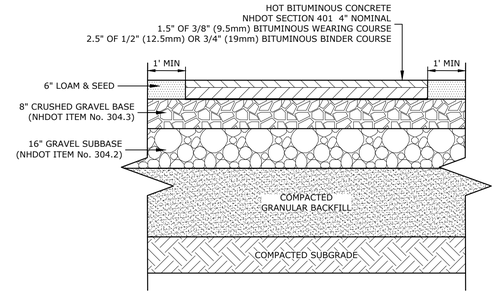
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).
6. ALL RADII 20 FEET AND SMALLER SHALL BE CONSTRUCTED USING CURVED SECTIONS.
7. JOINTS BETWEEN STONES SHALL HAVE A MAXIMUM SPACING OF 1/2" AND SHALL BE MORTARED.

VERTICAL GRANITE CURB
NO SCALE



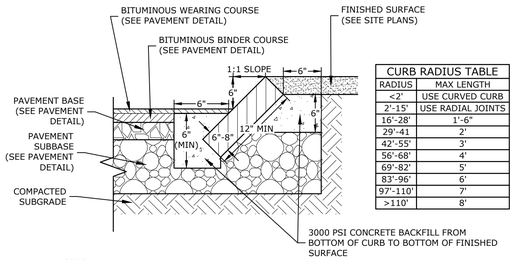
NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. FINAL PAVEMENT SECTION DESIGN SHALL BE APPROVED BY THE PROJECTS GEOTECHNICAL ENGINEER.

TYPICAL STANDARD DUTY PAVEMENT SECTION
NO SCALE



NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.
4. FINAL PAVEMENT SECTION DESIGN SHALL BE APPROVED BY THE PROJECTS GEOTECHNICAL ENGINEER.

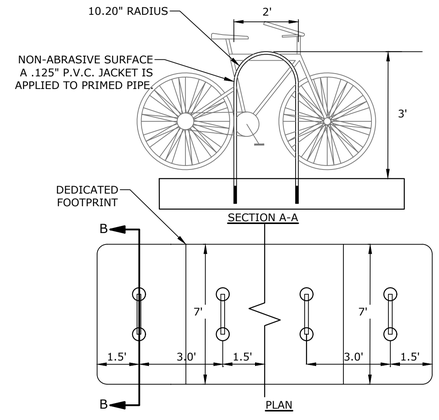
TYPICAL HEAVY DUTY PAVEMENT SECTION
NO SCALE



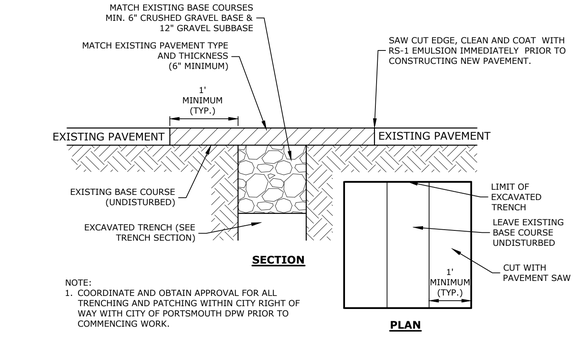
CURB RADIUS TABLE	
RADIUS	MAX LENGTH
<2'	USE CURVED CURB
2'-15'	USE RADIAL JOINTS
16'-28'	1'-6"
29'-41	2'
42'-55'	3'
56'-68'	4'
69'-82'	5'
83'-96'	6'
97'-110'	7'
>110'	8'

NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF SLOPED GRANITE CURB (SGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).
6. JOINTS BETWEEN STONES SHALL HAVE A MAXIMUM SPACING OF 1/2" AND SHALL BE MORTARED.

SLOPED GRANITE CURB
NO SCALE

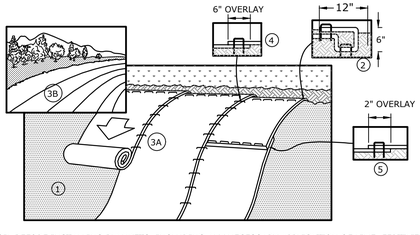


BIKE RACK
NO SCALE



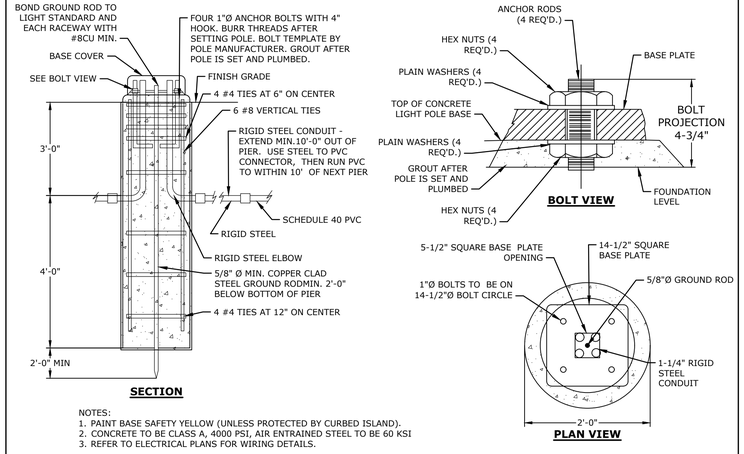
NOTE:
1. COORDINATE AND OBTAIN APPROVAL FOR ALL TRENCHING AND PATCHING WITHIN CITY RIGHT OF WAY WITH CITY OF PORTSMOUTH DPW PRIOR TO COMMENCING WORK.

ROADWAY TRENCH PATCH
NO SCALE



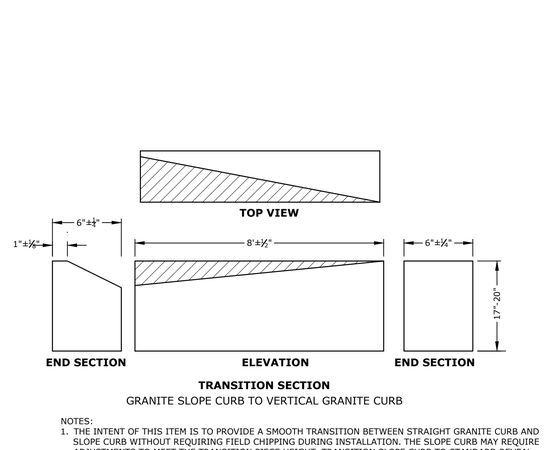
NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAPLE PATTERN GUIDE.
4. STAPLE LENGTHS SHALL BE A MINIMUM OF 8 INCHES.
5. EROSION CONTROL BLANKET SHALL BE 'EAST COAST EROSION CONTROL ECC-2B™' OR APPROVED EQUAL.

STABILIZATION BLANKET
NO SCALE



NOTES:
1. PAINT BASE SAFETY YELLOW (UNLESS PROTECTED BY CURBED ISLAND).
2. CONCRETE TO BE CLASS A, 4000 PSI, AIR ENTRAINED STEEL TO BE 60 KSI
3. REFER TO ELECTRICAL PLANS FOR WIRING DETAILS.

TYPICAL LIGHT POLE BASE
NO SCALE



TRANSITION SECTION
GRANITE SLOPE CURB TO VERTICAL GRANITE CURB

NOTES:
1. THE INTENT OF THIS ITEM IS TO PROVIDE A SMOOTH TRANSITION BETWEEN STRAIGHT GRANITE CURB AND SLOPE CURB WITHOUT REQUIRING FIELD CHIPPING DURING INSTALLATION. THE SLOPE CURB MAY REQUIRE ADJUSTMENTS TO MEET THE TRANSITION PIECE HEIGHT. TRANSITION SLOPE CURB TO STANDARD REVEAL AS QUICKLY AS POSSIBLE TO PROVIDE FOR THIS SMOOTH TRANSITION.

CURB TRANSITION
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

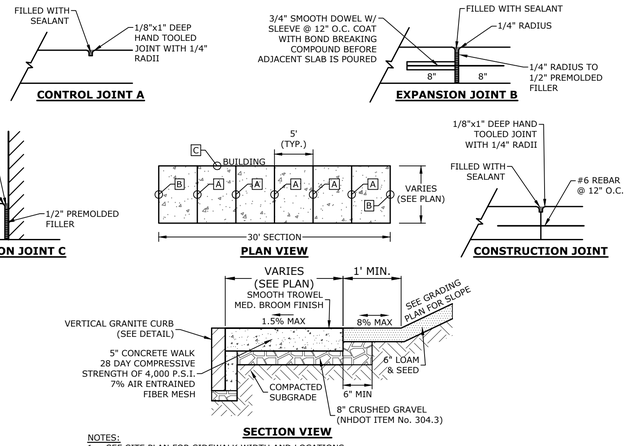
PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DETAILS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

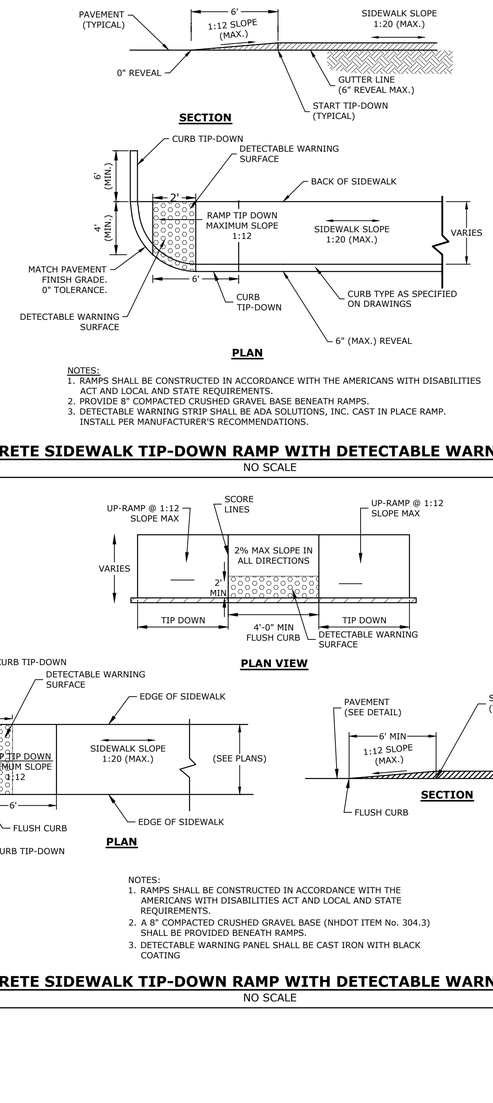
C-502

Last Save Date: December 15, 2022 9:05 AM By: CML
Plot Date: December 15, 2022 9:05 AM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Com General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Details.DWG Layout Tab: C-502



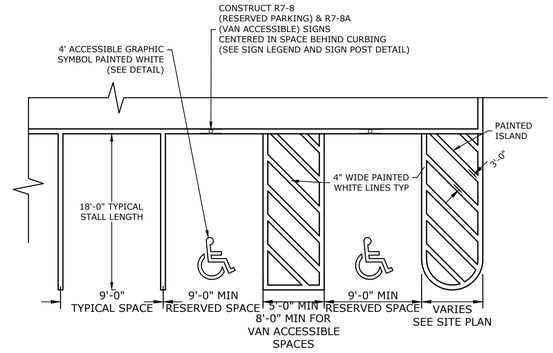
NOTES:
1. SEE SITE PLAN FOR SIDEWALK WIDTH AND LOCATIONS.
2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR WALK AND SIDE SLOPE GRADES.
3. ISOLATION JOINTS ADJACENT TO BUILDING SHALL BE COORDINATED WITH BUILDING DRAWINGS.

CONCRETE SIDEWALK WITH GRANITE CURB
NO SCALE



NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. PROVIDE 8" COMPACTED CRUSHED GRAVEL BASE BENEATH RAMPS.
3. DETECTABLE WARNING STRIP SHALL BE ADA SOLUTIONS, INC. CAST IN PLACE RAMP. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE SIDEWALK TIP-DOWN RAMP WITH DETECTABLE WARNING PANEL
NO SCALE



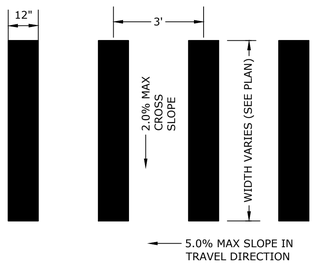
NOTE:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
3. FINISH PAVEMENT GRADES AT ALL HANDICAP ACCESSIBLE STALLS AND PAINTED ACCESS AISLES SHALL NOT EXCEED 2% IN ANY DIRECTION.

PARKING SPACE STRIPING
NO SCALE

Tighe&Bond

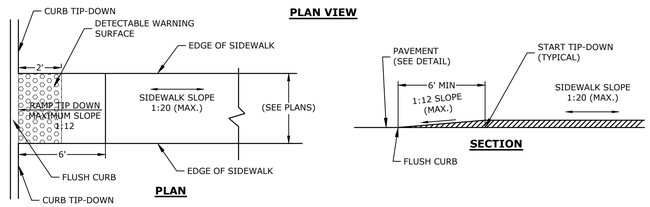






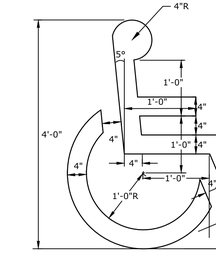
NOTE:
STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

CROSSWALK STRIPING
NO SCALE



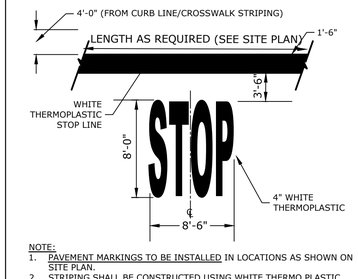
NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 8" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON WITH BLACK COATING

CONCRETE SIDEWALK TIP-DOWN RAMP WITH DETECTABLE WARNING PANEL
NO SCALE



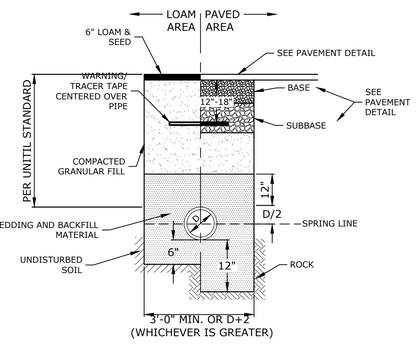
NOTES:
1. SYMBOL SHALL BE CONSTRUCTED IN ALL ACCESSIBLE SPACES USING FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOL SHALL BE CONSTRUCTED TO THE LATEST ADA, STATE AND LOCAL REQUIREMENTS.

ACCESSIBLE SYMBOL
NO SCALE



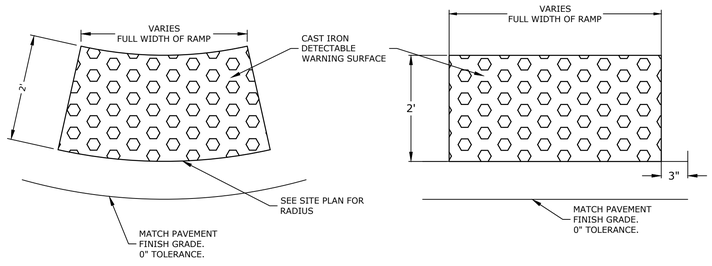
NOTE:
1. PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS AS SHOWN ON SITE PLAN.
2. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

STOP BAR & LEGEND
NO SCALE



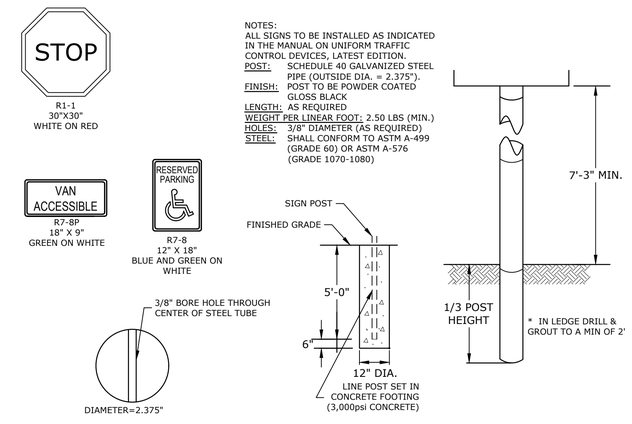
NOTE:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. GAS SHALL BE INSTALLED PER UNITIL STANDARDS. COORDINATE ALL INSTALLATIONS WITH UNITIL AND THE CITY OF PORTSMOUTH.

TYPICAL GAS TRENCH
NO SCALE



NOTES:
1. DETECTABLE WARNING SURFACE SHALL BE 2' X 3' CAST IRON PANEL SET IN CONCRETE.
2. DETECTABLE WARNING SURFACE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

CAST IRON DETECTABLE WARNING SURFACE
NO SCALE



SIGN LEGEND & POST
NO SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DETAILS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-503

Last Save Date: December 15, 2022 9:05 AM By: CML
Plot Date: December 19, 2022 10:22 AM By: Christina M. Langton
File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Details.DWG Layout Tab: C-503

JELLYFISH DESIGN NOTES

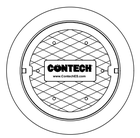
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE SELECTION

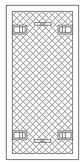
CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-0"	5'-4"	4'-3"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	7.84	5.88	3.92	2.16
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00

SITE SPECIFIC DATA REQUIREMENTS

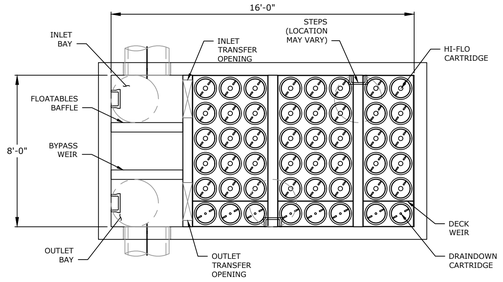
STRUCTURE ID	JFPD0816
WATER QUALITY FLOW RATE (cfs)	7.46
PEAK FLOW RATE (cfs)	23.8
RETURN PERIOD OF PEAK FLOW (yrs)	50
# OF CARTRIDGES REQUIRED (HF / DD)	(40/8)
CARTRIDGE LENGTH	54"



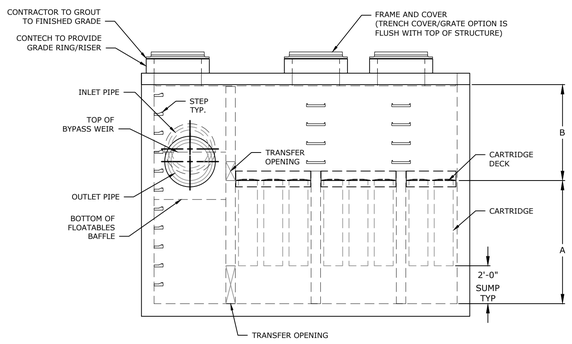
FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.



PLAN VIEW

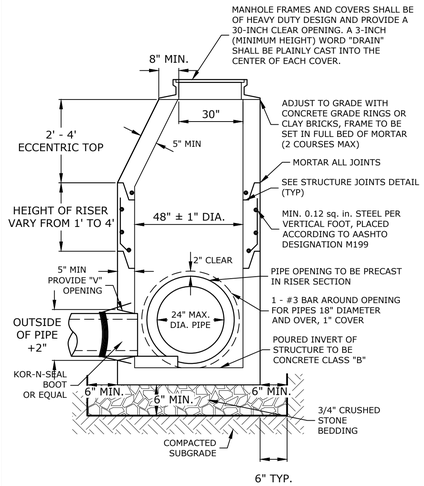


ELEVATION VIEW

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

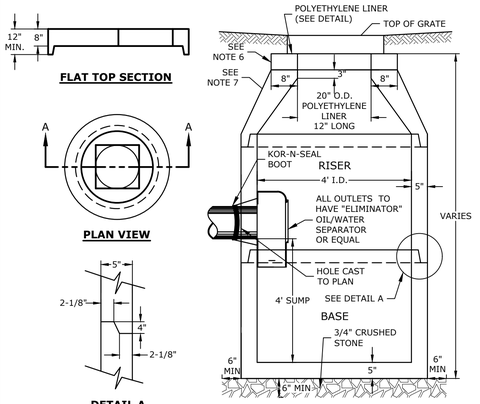
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

JELLYFISH (JFPD0816) TREATMENT UNIT
NO SCALE



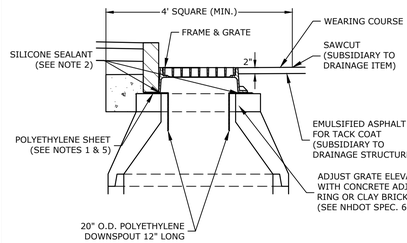
NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER (6" MINIMUM THICKNESS)
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
7. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
8. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
9. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
10. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZNTAL CROSS SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

4' DIAMETER DRAIN MANHOLE
NO SCALE

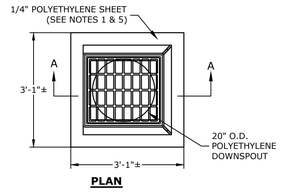


NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
6. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
7. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
8. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
11. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
12. "ELIMINATOR" OIL/WATER SEPARATOR SHALL BE INSTALLED TIGHT TO INSIDE OF CATCHBASIN.

4' DIAMETER CATCH BASIN
NO SCALE



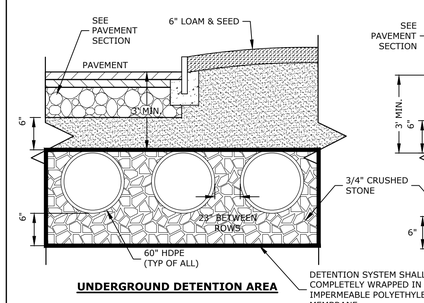
SECTION A-A



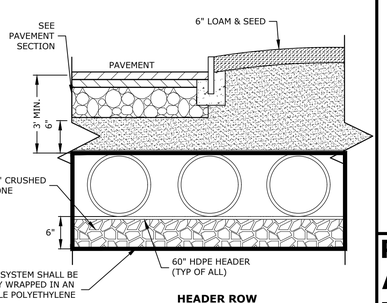
PLAN

NOTES:
1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET.
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF THE GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
4. USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3-FLANGE FRAME AND CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
7. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.
8. SEE NHDOT DR-04, "DI-DB, UNDERDRAIN FLUSHING BASIN AND POLYETHYLENE LINER DETAILS", FOR ADDITIONAL INFORMATION.
9. CATCHBASINS WITHIN CITY RIGHT OF WAY SHALL HAVE A POLYETHYLENE LINER

POLYETHYLENE LINER
NO SCALE



UNDERGROUND DETENTION AREA

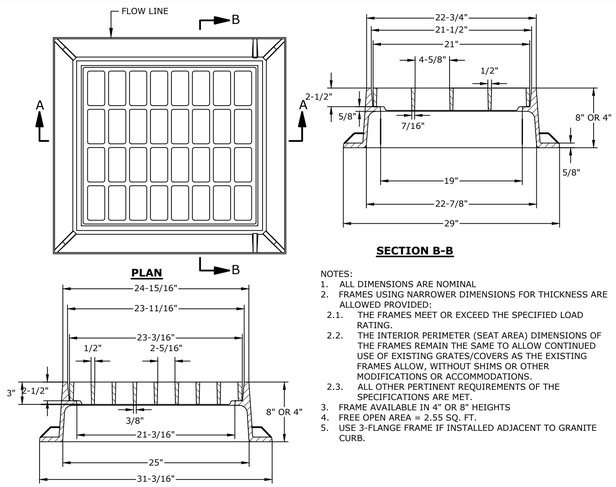


HEADER ROW

FIELD ELEVATIONS				
	TOP OF STONE ELEV	TOP OF PIPE ELEV	BOTTOM OF PIPE ELEV	BOTTOM OF STONE ELEV
PUD-01	50.50'	50.50'	45.00'	44.50'

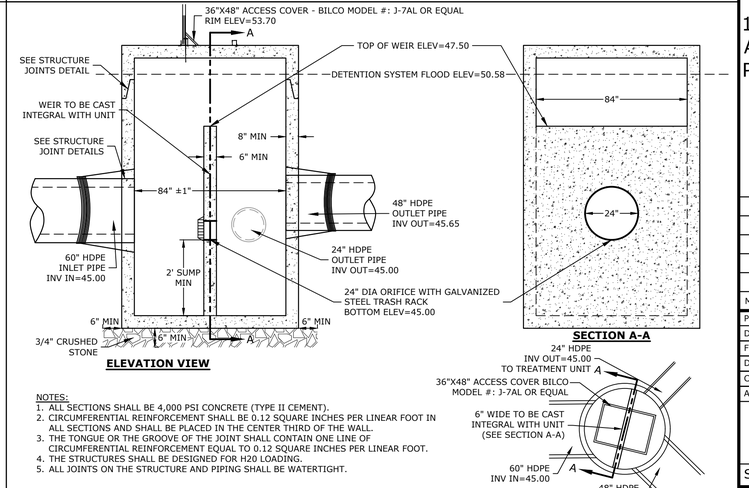
NOTES:
1. UNDERGROUND DETENTION SYSTEM TO BE 60" HDPE PIPE DESIGNED FOR H-20 LOADING. CONTRACTOR TO SUBMIT PIPE SPECIFICATIONS AND FINAL MANUFACTURES DESIGN TO ENGINEER FOR APPROVAL.
2. MANUFACTURER TO SUBMIT PLANS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
3. THE DESIGN ENGINEER SHALL PROVIDE SUFFICIENT INSPECTION TO CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED PER THE APPROVED DESIGN PLAN.

UNDERGROUND DETENTION SYSTEM
NO SCALE



NOTES:
1. ALL DIMENSIONS ARE NOMINAL
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   2.1. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   2.2. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   2.3. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS
4. FREE OPEN AREA = 2.55 SQ. FT.
5. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

CATCH BASIN FRAME & GRATE
NO SCALE



NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.

PROPOSED OUTLET STRUCTURE-01
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

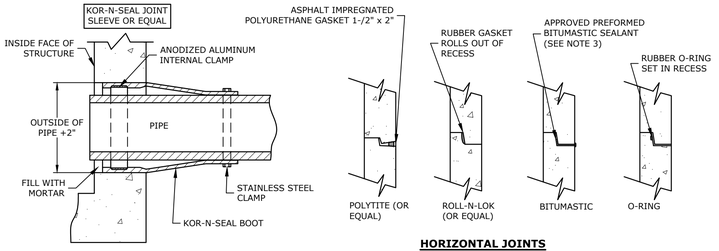
PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DETAILS.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-504

Last Save Date: December 15, 2022 9:05 AM By: CML
Plot Date: December 19, 2022 3:20 PM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Details.DWG Layout Tab: C-504

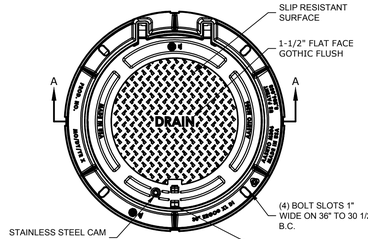


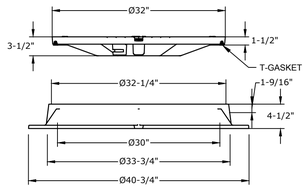
PIPE JOINTS

HORIZONTAL JOINTS

NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER CITY OF PORTSMOUTH DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER CITY OF PORTSMOUTH STANDARD.
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.
4. ALL GASKETS, SEALANTS, MORTAR, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

STRUCTURE JOINTS
NO SCALE

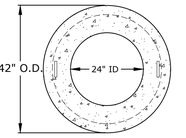




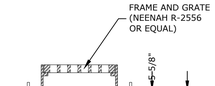
SECTION A-A

NOTES:
1. MANHOLE FRAME AND COVER SHALL BE 32" HINGED ERGO XL BY EJ CO.
2. ALL DIMENSIONS ARE NOMINAL.
3. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
4. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN HE CENTER OF THE COVER.

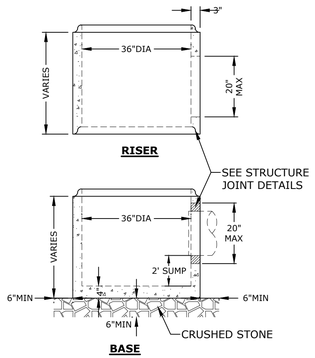
DRAIN MANHOLE FRAME & COVER
NO SCALE



TOP SLAB PLAN VIEW

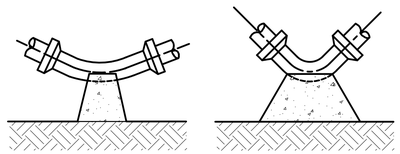


TOP SLAB SECTION VIEW

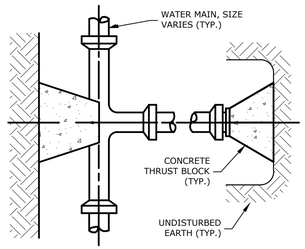


NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
2. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
3. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.
4. PRECAST CONCRETE YARD DRAINS SHALL BE PHOENIX PRECAST PRODUCTS OR EQUAL.

YARD DRAIN
NO SCALE

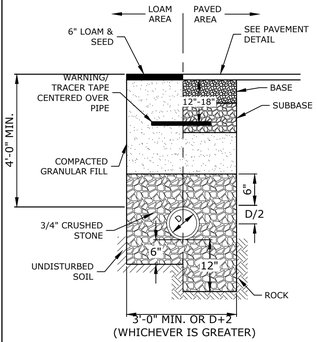


TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
REACTION TYPE	PIPE SIZE					
	4"	6"	8"	10"	12"
A 90°	0.89	2.19	3.82	11.14	17.24
B 180°	0.65	1.55	2.78	8.38	12.00
C 45°	0.48	1.19	2.12	6.02	9.32
D 22-1/2°	0.25	0.60	1.06	3.08	4.74
E 11-1/4°	0.13	0.30	0.54	1.54	2.38



NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE WITH CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS.

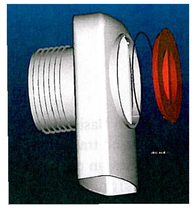
THRUST BLOCKING
NO SCALE



(WHICHEVER IS GREATER)

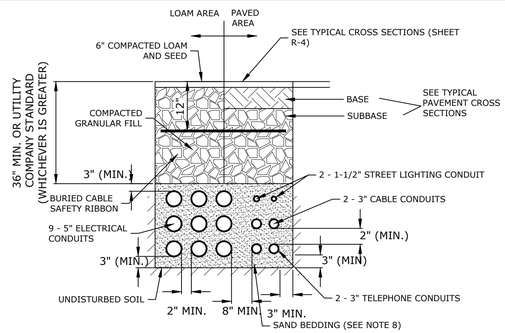
NOTE:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF PORTSMOUTH.

STORM DRAIN TRENCH
NO SCALE



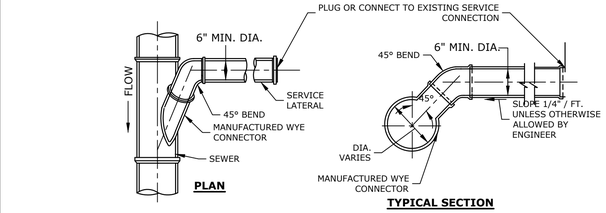
NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)
2. INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.
3. 1/4" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP

"ELIMINATOR" OIL FLOATING DEBRIS TRAP
NO SCALE

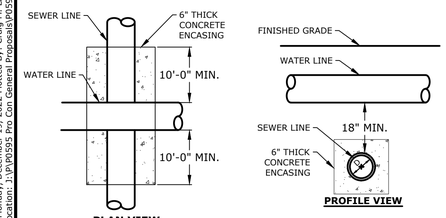


NOTES:
1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL UTILITY OR AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY TO BUILDING.
2. DIMENSIONS SHOWN REPRESENT OWNERS MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT SHALL NOT BE LESS THAN THOSE SHOWN.
3. NO CONDUIT RUN SHALL EXCEED 360 DEGREES IN TOTAL BENDS.
4. A SUITABLE PULLING STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE UTILITY COMPANY IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.
5. UTILITY COMPANY MUST BE GIVEN THE OPPORTUNITY TO INSPECT THE CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD THE UTILITY COMPANY BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND, WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.
7. ALL 90° SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL. SWEEPS WITH A 36 TO 48 INCH RADIUS.
8. SAND BEDDING TO BE REPLACED WITH CONCRETE ENCASEMENT WHERE COVER IS LESS THAN 3 FEET, WHEN LOCATED BELOW PAVEMENT, OR WHERE SHOWN ON THE UTILITIES PLAN.

TYPICAL ELECTRICAL AND COMMUNICATION CONDUIT
NO SCALE

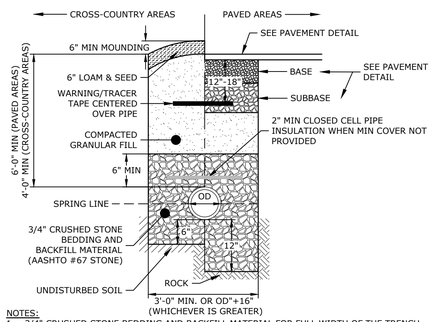


STANDARD SERVICE LATERAL CONNECTION
NO SCALE



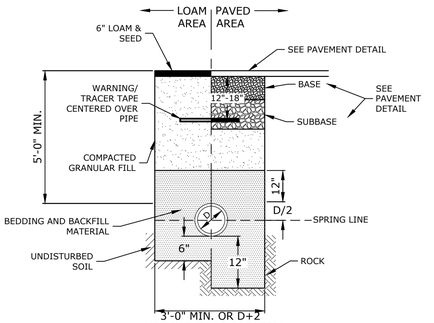
NOTES:
1. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED FROM ANY EXISTING OR PROPOSED WATER LINE.
2. AN 18" MINIMUM EDGE TO EDGE VERTICAL SEPARATION SHALL BE PROVIDED, WITH WATER ABOVE SEWER, AT ALL CROSSINGS.
3. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
4. WHERE AN 18" VERTICAL SEPARATION CANNOT BE PROVIDED, SEWER PIPE SHALL BE CONSTRUCTED USING A SDR 26 PVC PIPE OR ENCASED CONCRETE FOR A MINIMUM DISTANCE OF 10 FEET ON BOTH SIDES OF THE LINE BEING CROSSED, AS SHOWN ABOVE.
5. CROSSINGS SHALL CONFORM TO THE CITY PORTSMOUTH DPW STANDARDS AND SPECIFICATIONS.

WATER SEWER CROSSING
NO SCALE



NOTES:
1. 3/4" CRUSHED STONE BEDDING AND BACKFILL MATERIAL FOR FULL WIDTH OF THE TRENCH FROM MINIMUM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO MINIMUM OF 6" OVER THE TOP OF THE PIPE.
2. SANITARY SEWER SHALL BE INSTALLED PER THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

TYPICAL SEWER TRENCH
NO SCALE



(WHICHEVER IS GREATER)

NOTES:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. WATER MAIN SHALL BE INSTALLED PER CITY OF PORTSMOUTH STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

TYPICAL WATER TRENCH
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE - PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
12/19/22

STATE OF NEW HAMPSHIRE - NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
12/19/22

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

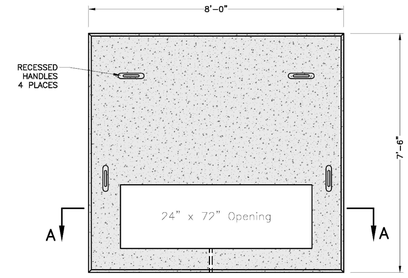
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CHECKED:	NAH
APPROVED:	PMC

DETAILS SHEET

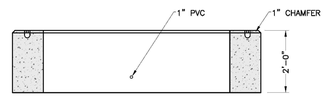
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C-505

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PLAN

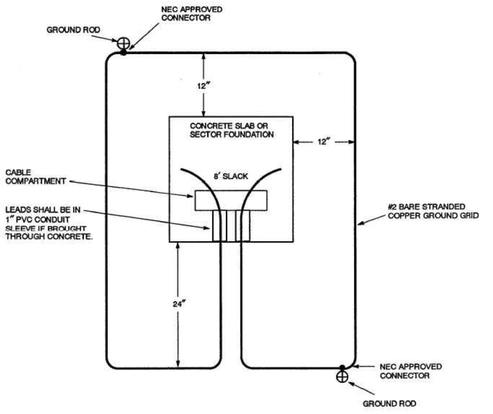


SECTION A-A

NOTES:
1. DIMENSIONS SHOWN REPRESENT TYPICAL REQUIREMENTS. MANHOLE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED WITH EVERSOURCE PRIOR TO CONSTRUCTION
2. CONCRETE MINIMUM STRENGTH - 4,000 PSI @ 28 DAYS
3. STEEL REINFORCEMENT - ASTM A615, GRADE 60
4. PAD MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS

TYPICAL 3-PHASE TRANSFORMER PAD

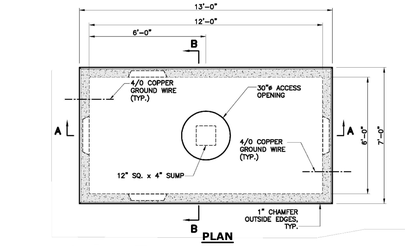
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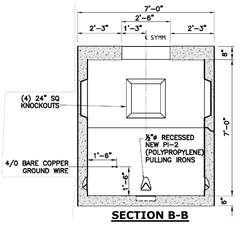
NOTES:
1. THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AND IS TO BE BURIED AT LEAST 12 INCHES BELOW GRADE. EIGHT FEET OF EXTRA WIRE FOR EACH GROUND GRID LEG SHALL BE LEFT EXPOSED IN THE CABLE COMPARTMENT TO ALLOW FOR THE CONNECTION TO THE TRANSFORMER. THE TWO 8-FOOT GROUND RODS MAY BE EITHER GALVANIZED STEEL OR COPPERWELD AND THEY SHALL BE CONNECTED TO THE GRID WITH NEC APPROVED CONNECTORS.

TYPICAL PAD-MOUNTED EQUIPMENT GROUNDING GRID DETAIL

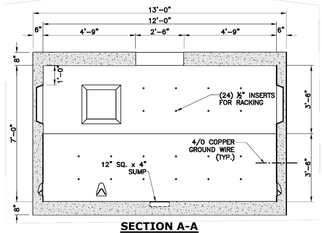
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PLAN



SECTION B-B



SECTION A-A

NOTE:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PERASTM A615, GRADE 60, 1" MINIMUM COVER.
3. DESIGNED FOR HS20-44 LOADING.
4. EXTERIOR COATING PROVIDED.
5. DIMENSIONS SHOWN REPRESENT TYPICAL REQUIREMENTS. MANHOLE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED WITH EVERSOURCE PRIOR TO CONSTRUCTION.

TYPICAL ELECTRIC MANHOLE

NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE – PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER – 12/19/22

STATE OF NEW HAMPSHIRE – NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER – 12/19/22

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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DETAILS SHEET

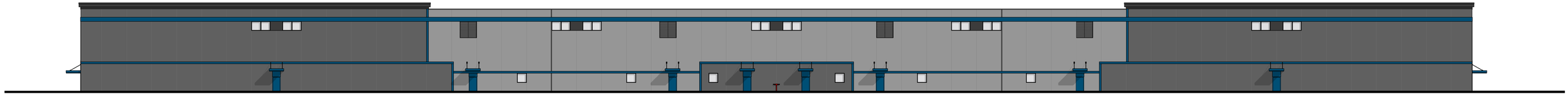
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C-506

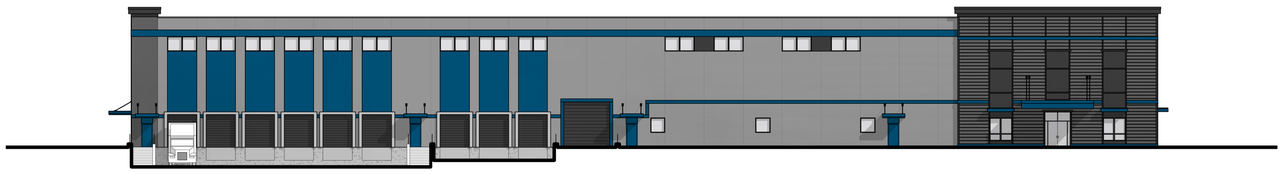
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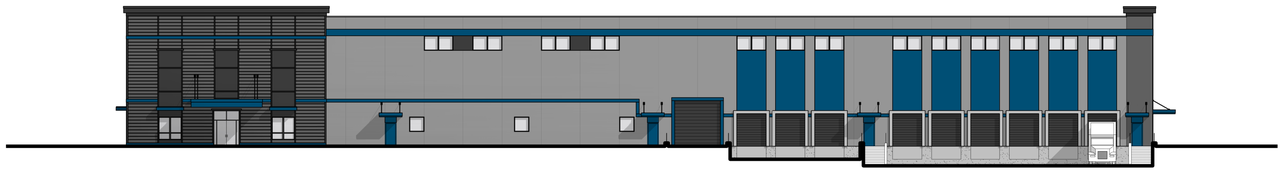
1 NEW HAMPSHIRE AVENUE ELEVATION
3/64" = 1'-0"



2 ROCHESTER AVENUE ELEVATION
3/64" = 1'-0"



3 NEWFIELDS AVENUE ELEVATION
3/64" = 1'-0"



4 STRATHAM STREET ELEVATION
3/64" = 1'-0"

PROCON
CONNECT • CREATE • CONSTRUCT

Scale: 3/64" = 1'-0"

PROPOSED EXTERIOR ELEVATIONS

Project
ADVANCED MANUFACTURING
100 NEW HAMPSHIRE AVE
PORTSMOUTH, NH

Date
12/12/2022

Dwg. No.
A1



Page 1 of 1

100 NH Ave Portsmouth
Photometrics Alt 2

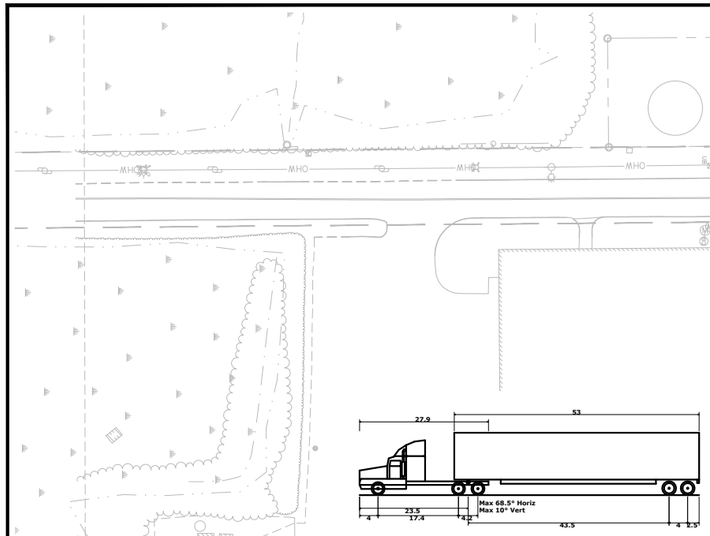
Drawn By: Daniel Hebert
Checked By:
Date:12/16/2022

Scale:

Revisions

#	Date	Comments

Post Office Box 4550
Manchester, NH 03108
t.603.624.4827 f.603.624.9765
www.charroninc.com
CHARRON



WB-67 - Interstate Semi-Trailer

Overall Length	**73.501ft**
Overall Width	**8.500ft**
Overall Body Height	**13.500ft**
Min Body Ground Clearance	**1.334ft**
Max Track Width	**8.500ft**
Lock-to-lock time	**6.00s**
Max Steering Angle (Virtual)	**28.40°**

AVIATION AVENUE

LEE STREET

TH=58.8'

ROCHESTER AVENUE

NEWFIELDS STREET

STRATHAM STREET

NEW HAMPSHIRE AVENUE

PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF

314'

668'

OFFICE
9,072 SF

OFFICE
9,072 SF

Tighe&Bond

N

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

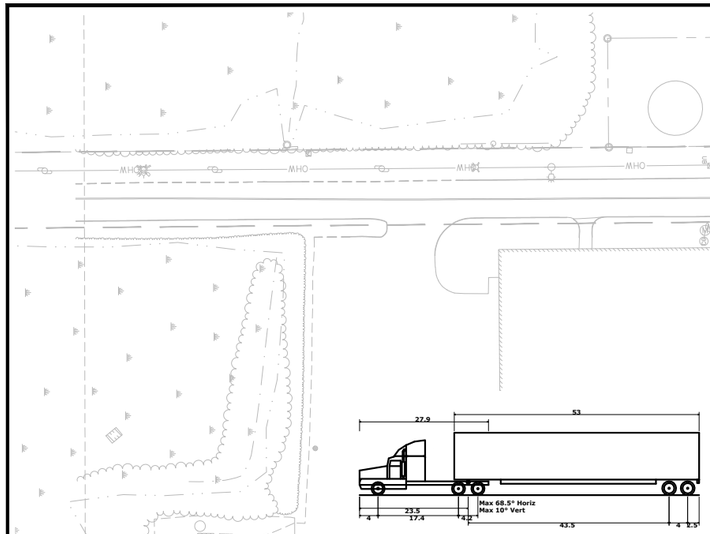
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DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
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CHECKED:	NAH
APPROVED:	PMC

WB-67 TRUCK ENTERING TURNING EXHIBIT

SCALE: AS SHOWN

1 OF 3

Last Save Date: December 15, 2022 2:14 PM By: CML
Plot Date: Thursday, December 15, 2022 2:14 PM By: Craig M. Langston
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WB-67 - Interstate Semi-Trailer

Overall Length	**73.501ft**
Overall Width	**8.500ft**
Overall Body Height	**13.500ft**
Min Body Ground Clearance	**1.334ft**
Max Track Width	**8.500ft**
Lock-to-lock time	**6.00s**
Max Steering Angle (Virtual)	**28.40°**

Tighe&Bond

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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APPROVED:	PMC

WB-67 TRUCK EXITING TURNING EXHIBIT

SCALE: AS SHOWN

2 OF 3

Last Save Date: December 15, 2022 2:14 PM By: CML
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AVIATION AVENUE

LEE STREET

TH=58.8'

ROCHESTER AVENUE

NEWFIELDS STREET

STRATHAM STREET

NEW HAMPSHIRE AVENUE

47.83

8.16 20.8 6

PROPOSED LEASE AREA
±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING
OVERALL BUILDING FOOTPRINT:
±209,750 SF

Portsmouth Fire Truck	
Overall Length	47.830ft
Overall Width	8.500ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	38.00°

314'

668'

OFFICE
9,072 SF

OFFICE
9,072 SF

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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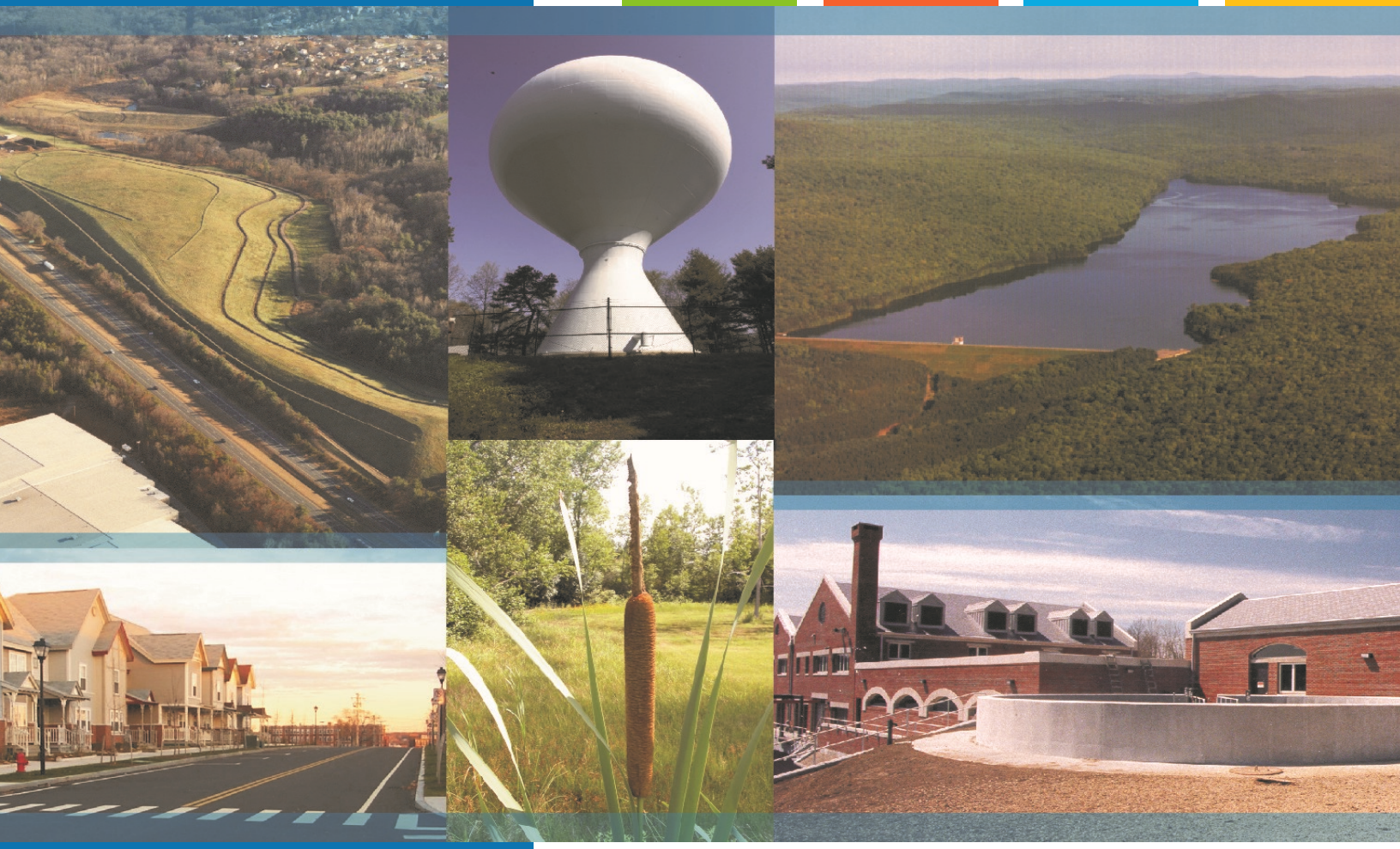
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DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

FIRE TRUCK TURNING EXHIBIT

SCALE: AS SHOWN

3 OF 3

Last Save Date: December 15, 2022 2:14 PM By: CML
Plot Date: Thursday, December 15, 2022 2:14 PM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015_100 NH Avenue\Drawings_Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Fire Truck



Proposed Advanced Manufacturing Facility

Portsmouth, NH

Drainage Analysis

Prepared For:

Aviation Avenue Group, LLC
210 Commerce Way Suite 300
Portsmouth, NH 03801

December 19, 2022

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
12/19/22

100% Recyclable

Section 1 Drainage Analysis

1.1 Calculation Methods....1-1
1.2 Pre-Development Conditions....1-2
1.2.1 Pre-Development Watershed Plan....1-2
1.2.2 Pre-Development Soil Plan....1-3
1.2.3 Pre-Development Calculation....1-4
1.3 Post-Development Conditions....1-5
1.3.1 Post-Development Watershed Plan....1-5
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1.4 Peak Rate Comparisons....1-8
1.5 Mitigation Description....1-8
1.5.1 Mitigation Calculations....1-8
1.5.2 Pre-Treatment Methods for Protecting Water Quality....1-8
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Appendices

A Civil Plans (Bound Separately)
B Extreme Precipitation Tables
C Contech Engineered Solutions – Jellyfish Filter Maintenance Guide
D Remediation Site Documentation
E BMP Worksheets
F NRCS Web Soil Survey

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Section 1
Drainage Analysis

The project site is identified as Map 308 Lot 1 on the City of Portsmouth Tax Maps. The site is located on a piece of land that is bound by Stratham Street to the north, New Hampshire Avenue to the east, Newfields Street to the south, and Rochester Avenue to the west. The proposed project is for the construction of a ±209,750 SF advanced manufacturing facility including ±18,145 SF of office space, two (2) parking areas, two (2) loading dock areas, minor realignment of a portion of Rochester Avenue, and associated site improvements consisting of underground utilities, landscaping, lighting, and a stormwater management system. There is approximately 196,665 SF of existing impervious area that is currently untreated before entering the municipal drainage system. The proposed stormwater management system has been designed to provide treatment for the existing impervious surface that are currently untreated and for ±161,130 SF of additional impervious that results from the proposed project.

The Stormwater Management System was designed in accordance with the requirements of the New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain (AoT) rules and regulations (Env-Wq 1500). The system includes deep sump catch basins with oil water separator hoods, an underground detention system and a proprietary Jellyfish Filter Treatment Unit. The use of a proprietary treatment unit is proposed due to the site being located within multiple remediation areas as well a Groundwater Management Zone (GMZ), and per the requirements of Env-Wq 1507.02 (c) no infiltration, filtering, or groundwater recharge practices are permitted in these areas.

1.1 Calculation Methods

The design storms analyzed in this study are the 1-year, 2-year, 10-year, 25-year and 50-year 24-hour Type III duration storm events. The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. A Type III storm pattern was used in the model. The rainfall data for these storm events was obtained from the data published by the Northeast Regional Climate Center (NRCC) at Cornell University, with an additional 15% added factor of safety as required by Env-Wq 1503.08(l) and shown in Table 1.1.

TABLE 1.1 – EXTREME PRECIPITATION ESTIMATES (NRCC)

YEAR	24-hr Estimate (inches)	+ 15% (inches)
1	2.66	3.06
2	3.21	3.69
10	4.87	5.60
25	6.17	7.10
50	7.40	8.51

The time of concentration was computed using the TR-55 Method, which provides a means of determining the time for an entire watershed to contribute runoff to a specific location via sheet flows, shallow concentrated flow, and channel flow. Runoff curve numbers were

calculated by estimating the coverage areas and then summing the curve number for the coverage area as a percent of the entire watershed.

References:

1. HydroCAD Stormwater Modeling System, by HydroCAD Software Solutions LLC, Chocorua, New Hampshire.

2. New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Selection and Design, December 2008.

3. "Extreme Precipitation in New York & New England." Extreme Precipitation in New York & New England by Northeast Regional Climate Center (NRCC), 26 June 2012.

1.2 Pre-Development Conditions

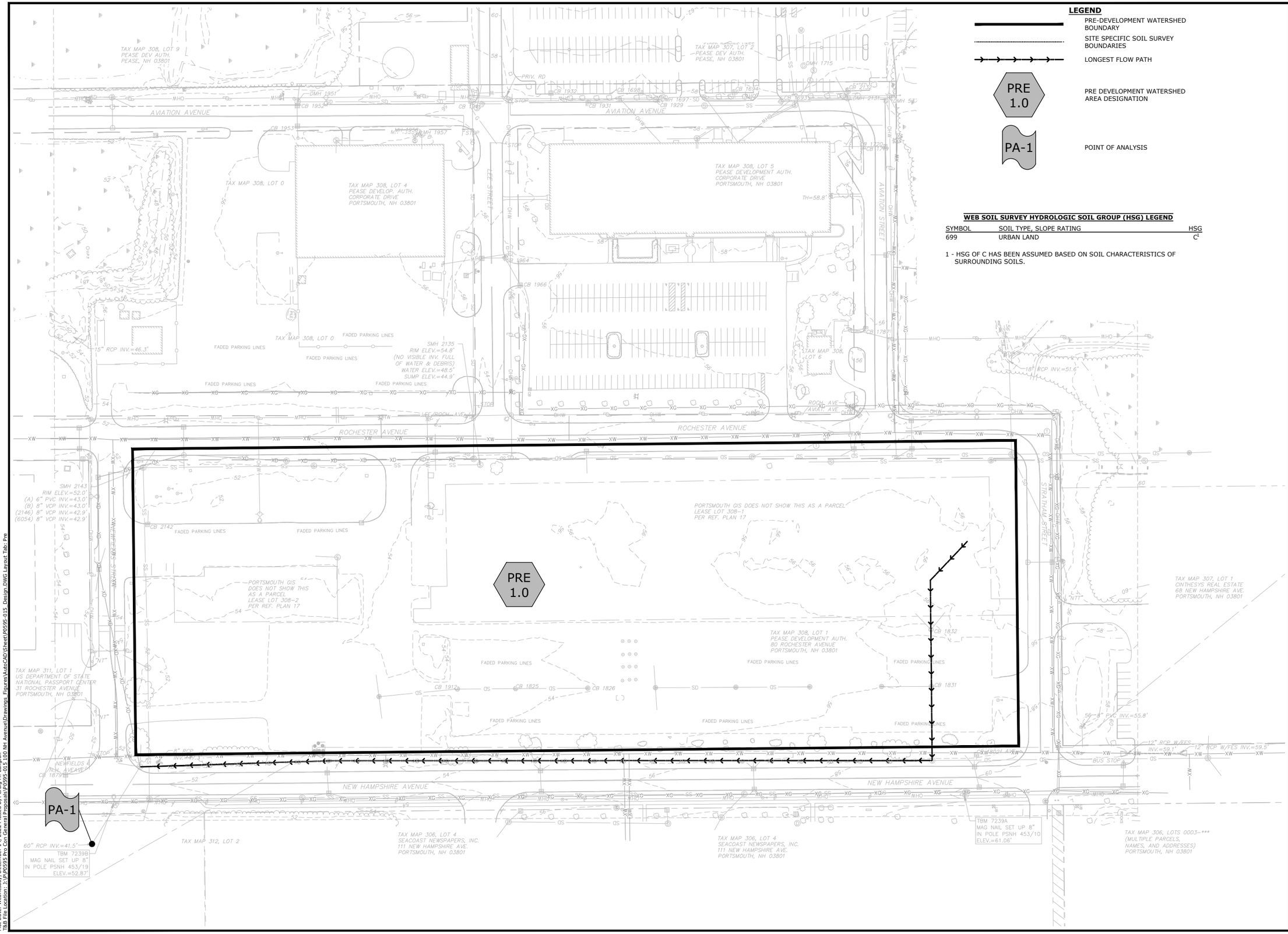
To analyze the Pre-Development condition, the site has been modeled utilizing one (1) sub-catchment area (PRE-1.0) with the distinct point of analysis (PA-1). This point of analysis and watershed are depicted on the plan entitled "Pre-Development Watershed Plan", Sheet C-801.

The point of analysis and their contributing watershed area is described below:

Point of Analysis One (PA-1)

Point of analysis PA-1 is comprised of one (1) watershed area (PRE-1.0). This area includes the land that is currently utilized as an abandoned parking lot along with a grassed area. Runoff from this area travels southwest to northeast across the site via overland flow which is then collected in a closed drainage system then flowing through Point of Analysis 1 (PA-1).

1.2.1 Pre-Development Watershed Plan



LEGEND

- PRE-DEVELOPMENT WATERSHED BOUNDARY
- SITE SPECIFIC SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- PRE 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- PA-1 — POINT OF ANALYSIS

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
699	URBAN LAND	C[1]

1 - HSG OF C HAS BEEN ASSUMED BASED ON SOIL CHARACTERISTICS OF SURROUNDING SOILS.

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

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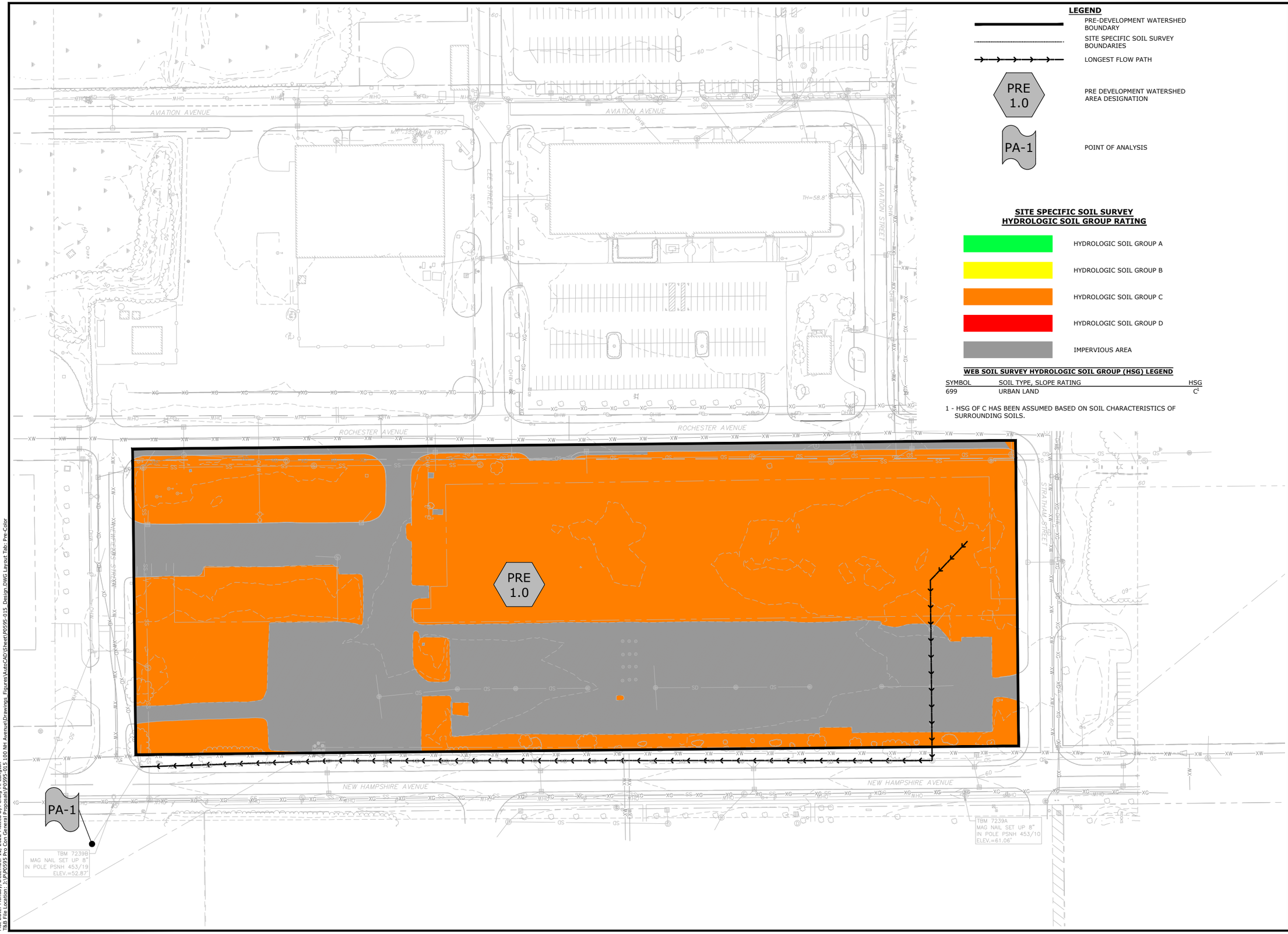
PRE-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-801

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1.2.2 Pre-Development Soil Plan



LEGEND

- PRE-DEVELOPMENT WATERSHED BOUNDARY
- SITE SPECIFIC SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- PRE 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- PA-1 — POINT OF ANALYSIS

SITE SPECIFIC SOIL SURVEY HYDROLOGIC SOIL GROUP RATING

- HYDROLOGIC SOIL GROUP A
- HYDROLOGIC SOIL GROUP B
- HYDROLOGIC SOIL GROUP C
- HYDROLOGIC SOIL GROUP D
- IMPERVIOUS AREA

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
699	URBAN LAND	C[1]

1 - HSG OF C HAS BEEN ASSUMED BASED ON SOIL CHARACTERISTICS OF SURROUNDING SOILS.

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

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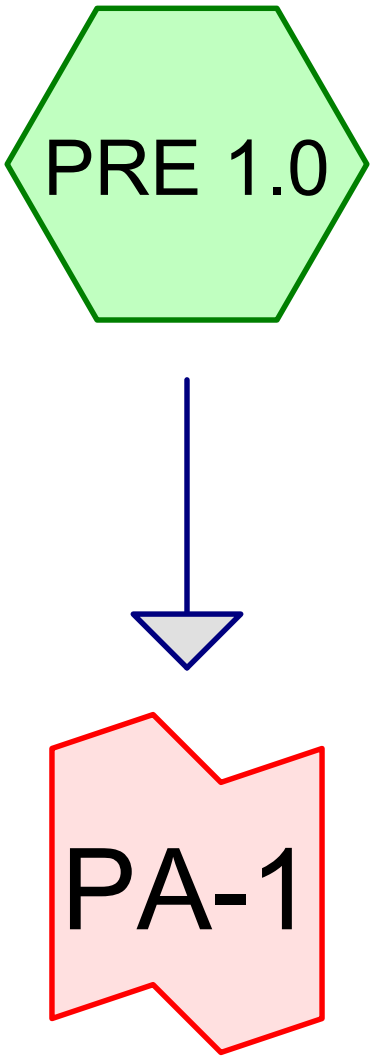
PRE-DEVELOPMENT SOIL COVERAGE COLOR PLAN

SCALE: AS SHOWN

C-803

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Last Plot Date: December 12, 2022 4:02 PM By: Craig M. Langton
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1.2.3 Pre-Development Calculation



Subcat Reach Pond Link

Routing Diagram for P0595-015_Pre
Prepared by Tighe & Bond, Printed 12/14/2022
HydroCAD® 10.00-20 s/n 03436 © 2017 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.914	74	>75% Grass cover, Good, HSG C (PRE 1.0)
4.515	98	Paved parking, HSG C (PRE 1.0)
11.429	**83**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPRE 1.0: Runoff Area=497,841 sf 39.50% Impervious Runoff Depth>1.49"
Flow Length=1,512' Tc=5.0 min CN=83 Runoff=20.01 cfs 1.423 af

Link PA-1: Inflow=20.01 cfs 1.423 af
Primary=20.01 cfs 1.423 af

Total Runoff Area = 11.429 ac Runoff Volume = 1.423 af Average Runoff Depth = 1.49"
60.50% Pervious = 6.914 ac 39.50% Impervious = 4.515 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPRE 1.0: Runoff Area=497,841 sf 39.50% Impervious Runoff Depth>2.02"
Flow Length=1,512' Tc=5.0 min CN=83 Runoff=27.08 cfs 1.922 af

Link PA-1: Inflow=27.08 cfs 1.922 af
Primary=27.08 cfs 1.922 af

Total Runoff Area = 11.429 ac Runoff Volume = 1.922 af Average Runoff Depth = 2.02"
60.50% Pervious = 6.914 ac 39.50% Impervious = 4.515 ac

Summary for Subcatchment PRE 1.0:

Runoff = 49.71 cfs @ 12.07 hrs, Volume= 3.542 af, Depth> 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.60"

Area (sf)	CN	Description
301,177	74	>75% Grass cover, Good, HSG C
196,664	98	Paved parking, HSG C
497,841	83	Weighted Average
301,177		60.50% Pervious Area
196,664		39.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0150	0.83		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.69"
0.2	38	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
2.3	595	0.0030	4.27	13.42	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012 Concrete pipe, finished
2.3	869	0.0030	6.20	59.70	**Pipe Channel,** 42.0" Round Area= 9.6 sf Perim= 11.0' r= 0.88' n= 0.012 Concrete pipe, finished
5.0	1,512	Total			

Summary for Link PA-1:

Inflow Area = 11.429 ac, 39.50% Impervious, Inflow Depth > 3.72" for 10-Year event
Inflow = 49.71 cfs @ 12.07 hrs, Volume= 3.542 af
Primary = 49.71 cfs @ 12.07 hrs, Volume= 3.542 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPRE 1.0: Runoff Area=497,841 sf 39.50% Impervious Runoff Depth>5.12"
Flow Length=1,512' Tc=5.0 min CN=83 Runoff=67.64 cfs 4.876 af

Link PA-1: Inflow=67.64 cfs 4.876 af
Primary=67.64 cfs 4.876 af

Total Runoff Area = 11.429 ac Runoff Volume = 4.876 af Average Runoff Depth = 5.12"
60.50% Pervious = 6.914 ac 39.50% Impervious = 4.515 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPRE 1.0: Runoff Area=497,841 sf 39.50% Impervious Runoff Depth>6.46"
Flow Length=1,512' Tc=5.0 min CN=83 Runoff=84.49 cfs 6.154 af

Link PA-1: Inflow=84.49 cfs 6.154 af
Primary=84.49 cfs 6.154 af

Total Runoff Area = 11.429 ac Runoff Volume = 6.154 af Average Runoff Depth = 6.46"
60.50% Pervious = 6.914 ac 39.50% Impervious = 4.515 ac

1.3 Post-Development Conditions

The post-development drainage condition is characterized by one (1) watershed area (POST-1.0) modeled at the same point of analysis as the pre-development condition. This point of analysis and watersheds are depicted on the plan entitled "Post Development Watershed Plan", Sheets C-802.

The point of analysis and their contributing watershed area is described below:

Point of Analysis One (PA-1)

Point of analysis PA-1 is comprised of one (1) watershed area (POST-1.0). This area includes all additional proposed impervious area on site as well the proposed green / landscaped areas on site. The proposed impervious areas generating runoff on site include roofs, parking lots, concrete sidewalks, and loading dock areas. Runoff from site is captured via overland flow then captured in the proposed onsite drainage system where it is detained and treated prior to being discharged through Point of Analysis 1 (PA-1).

1.3.1 Post-Development Watershed Plan

LEGEND

- POST-DEVELOPMENT WATERSHED BOUNDARY
- LONGEST FLOW PATH
- POST 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- POST POND 1 — POST-DEVELOPMENT POND DESIGNATION
- PA-1 — POINT OF ANALYSIS

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
699	URBAN LAND	C[1]

1 - HSG OF C HAS BEEN ASSUMED BASED ON SOIL CHARACTERISTICS OF SURROUNDING SOILS.

POST 1.0

PROPOSED LEASE AREA ±11.4 ACRES

PROPOSED ADVANCED MANUFACTURING OVERALL BUILDING FOOTPRINT: ±209,750 SF FF=58.00

314'

668'

OFFICE 9,072 SF

OFFICE 9,072 SF

POST POND PUD-1

PROPOSED UNDERGROUND DETENTION BASIN-01 17-ROWS OF 60" HDPE PIPE INV = 45.00 STONE INV = 44.50 (SEE DETAIL)

PROPOSED JELLYFISH STORMWATER TREATMENT UNIT INV IN=44.95 INV OUT=44.45 (SEE DETAIL)

APPROX LOCATION OF EXISTING DRAIN PER CITY OF PORTSMOUTH GIS INFORMATION

PA-1

15" RCP INV.=46.3'

18" RCP INV.=51.6'

60" RCP INV.=41.5'

56"-8" PVC INV.=55.8'

12" RCP W/FES INV.=59.1'

12" RCP W/FES INV.=59.5'

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

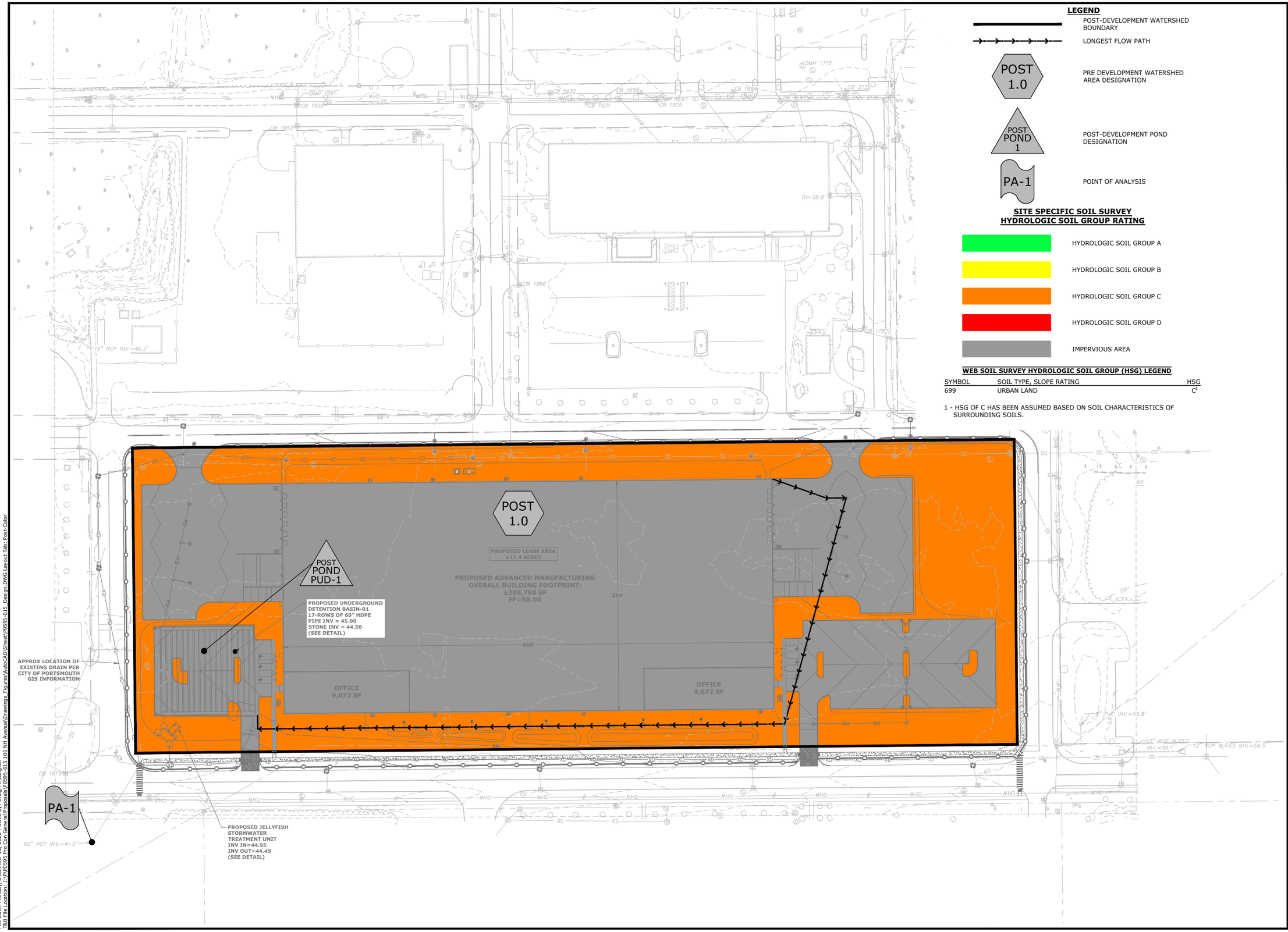
POST-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-802

Last Save Date: December 14, 2022 11:43 AM By: CML
Plot Date: Wednesday, December 14, 2022 11:43 AM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Post

1.3.2 Post-Development Soil Plan



LEGEND

- POST-DEVELOPMENT WATERSHED BOUNDARY
- LONGEST FLOW PATH
- POST 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- POST POND 1 — POST-DEVELOPMENT POND DESIGNATION
- PA-1 — POINT OF ANALYSIS

SITE SPECIFIC SOIL SURVEY
HYDROLOGIC SOIL GROUP RATING

- HYDROLOGIC SOIL GROUP A
- HYDROLOGIC SOIL GROUP B
- HYDROLOGIC SOIL GROUP C
- HYDROLOGIC SOIL GROUP D
- IMPERVIOUS AREA

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
699	URBAN LAND	C[1]

1 - HSG OF C HAS BEEN ASSUMED BASED ON SOIL CHARACTERISTICS OF SURROUNDING SOILS.

Tighe&Bond

SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Aviation Avenue Group, LLC

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

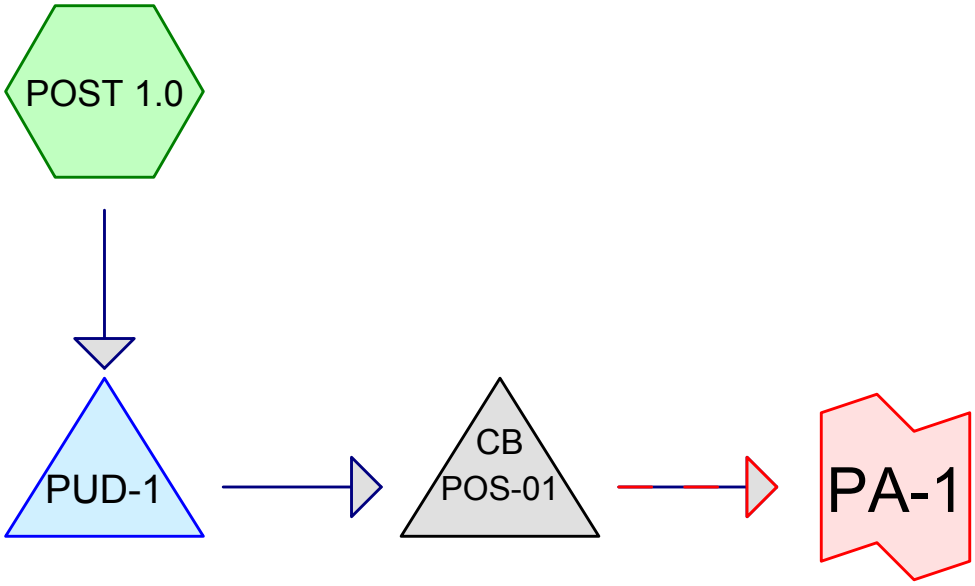
POST-DEVELOPMENT SOIL COVERAGE COLOR PLAN

SCALE: AS SHOWN

C-804

Last Save Date: December 12, 2022 4:02 PM By: CML
Plot Date: Monday, December 12, 2022 4:02 PM By: Christopher M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: Post-Color

1.3.3 Post-Development Calculation



Subcat Reach Pond Link

Routing Diagram for P0595-015_Post
Prepared by Tighe & Bond, Printed 12/14/2022
HydroCAD® 10.00-20 s/n 03436 © 2017 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.215	74	>75% Grass cover, Good, HSG C (POST 1.0)
2.469	98	Paved parking, HSG C (POST 1.0)
5.745	98	Roofs, HSG C (POST 1.0)
11.429	**91**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPOST 1.0: Runoff Area=497,842 sf 71.87% Impervious Runoff Depth>2.13"
Flow Length=934' Tc=5.0 min CN=91 Runoff=28.25 cfs 2.025 af

Pond POS-01: Peak Elev=46.40' Inflow=14.24 cfs 2.025 af
Primary=9.45 cfs 1.769 af Secondary=4.79 cfs 0.255 af Outflow=14.24 cfs 2.025 af

Pond PUD-1: Peak Elev=47.28' Storage=15,242 cf Inflow=28.25 cfs 2.025 af
Outflow=14.24 cfs 2.025 af

Link PA-1: Inflow=14.24 cfs 2.025 af
Primary=14.24 cfs 2.025 af

Total Runoff Area = 11.429 ac Runoff Volume = 2.025 af Average Runoff Depth = 2.13"
28.13% Pervious = 3.215 ac 71.87% Impervious = 8.214 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPOST 1.0: Runoff Area=497,842 sf 71.87% Impervious Runoff Depth>2.72"
Flow Length=934' Tc=5.0 min CN=91 Runoff=35.79 cfs 2.590 af

Pond POS-01: Peak Elev=46.58' Inflow=18.71 cfs 2.590 af
Primary=11.41 cfs 2.198 af Secondary=7.30 cfs 0.392 af Outflow=18.71 cfs 2.590 af

Pond PUD-1: Peak Elev=47.71' Storage=19,767 cf Inflow=35.79 cfs 2.590 af
Outflow=18.71 cfs 2.590 af

Link PA-1: Inflow=18.71 cfs 2.590 af
Primary=18.71 cfs 2.590 af

Total Runoff Area = 11.429 ac Runoff Volume = 2.590 af Average Runoff Depth = 2.72"
28.13% Pervious = 3.215 ac 71.87% Impervious = 8.214 ac

Summary for Subcatchment POST 1.0:

Runoff = 58.48 cfs @ 12.07 hrs, Volume= 4.347 af, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.60"

Area (sf)	CN	Description
250,258	98	Roofs, HSG C
140,048	74	>75% Grass cover, Good, HSG C
107,536	98	Paved parking, HSG C
497,842	91	Weighted Average
140,048		28.13% Pervious Area
357,794		71.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	77	0.0125	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.69"
0.2	27	0.0125	2.27		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	102	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.9	216	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	125	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.8	223	0.0025	4.72	33.35	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.013 Corrugated PE, smooth interior
0.6	164	0.0015	4.43	55.63	**Pipe Channel,** 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.013 Corrugated PE, smooth interior
4.5	934	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond POS-01:

Inflow Area = 11.429 ac, 71.87% Impervious, Inflow Depth > 4.56" for 10-Year event
Inflow = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af
Outflow = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af, Atten= 0%, Lag= 0.0 min
Primary = 18.00 cfs @ 12.14 hrs, Volume= 3.391 af
Secondary = 24.20 cfs @ 12.15 hrs, Volume= 0.954 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 47.42' @ 12.14 hrs
Flood Elev= 54.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	**24.0" Vert. To JellyFish Treatment Unit** C= 0.600
#2	Secondary	45.65'	**48.0" Vert. To PDMH-13** C= 0.600

Primary OutFlow Max=17.93 cfs @ 12.14 hrs HW=47.41' TW=0.00' (Dynamic Tailwater)
└─**1=To JellyFish Treatment Unit** (Orifice Controls 17.93 cfs @ 5.71 fps)

Secondary OutFlow Max=23.95 cfs @ 12.15 hrs HW=47.41' TW=0.00' (Dynamic Tailwater)
└─**2=To PDMH-13** (Orifice Controls 23.95 cfs @ 4.51 fps)

Summary for Pond PUD-1:

Inflow Area = 11.429 ac, 71.87% Impervious, Inflow Depth > 4.56" for 10-Year event
Inflow = 58.48 cfs @ 12.07 hrs, Volume= 4.347 af
Outflow = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af, Atten= 28%, Lag= 4.4 min
Primary = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 45.00' Surf.Area= 16,096 sf Storage= 0 cf
Peak Elev= 48.51' @ 12.16 hrs Surf.Area= 16,096 sf Storage= 28,105 cf
Flood Elev= 50.00' Surf.Area= 16,096 sf Storage= 40,389 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 13.6 min (795.5 - 781.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	44.50'	0 cf	**128.59'W x 125.17'L x 6.08'H Field A** 97,923 cf Overall - 48,988 cf Embedded = 48,934 cf x 0.0% Voids
#2A	45.00'	41,267 cf	**ADS N-12 60"** x 85 Inside #1 Inside= 59.5"W x 59.5"H => 19.30 sf x 20.00'L = 386.0 cf Outside= 67.0"W x 67.0"H => 22.91 sf x 20.00'L = 458.2 cf Row Length Adjustment= +11.00' x 19.30 sf x 17 rows 125.59' Header x 19.30 sf x 2 = 4,847.8 cf Inside
		41,267 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.00'	**24.0" Vert. Orifice** C= 0.600
#2	Primary	47.50'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=40.99 cfs @ 12.15 hrs HW=48.49' TW=47.41' (Dynamic Tailwater)
├─**1=Orifice** (Orifice Controls 15.77 cfs @ 5.02 fps)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 25.22 cfs @ 3.26 fps)

Summary for Link PA-1:

Inflow Area = 11.429 ac, 71.87% Impervious, Inflow Depth > 4.56" for 10-Year event
Inflow = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af
Primary = 42.20 cfs @ 12.15 hrs, Volume= 4.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPOST 1.0: Runoff Area=497,842 sf 71.87% Impervious Runoff Depth>6.03"
Flow Length=934' Tc=5.0 min CN=91 Runoff=76.11 cfs 5.747 af

Pond POS-01: Peak Elev=47.98' Inflow=60.59 cfs 5.741 af
Primary=21.29 cfs 4.239 af Secondary=39.31 cfs 1.502 af Outflow=60.59 cfs 5.741 af

Pond PUD-1: Peak Elev=48.97' Storage=32,678 cf Inflow=76.11 cfs 5.747 af
Outflow=60.59 cfs 5.741 af

Link PA-1: Inflow=60.59 cfs 5.741 af
Primary=60.59 cfs 5.741 af

Total Runoff Area = 11.429 ac Runoff Volume = 5.747 af Average Runoff Depth = 6.03"
28.13% Pervious = 3.215 ac 71.87% Impervious = 8.214 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPOST 1.0: Runoff Area=497,842 sf 71.87% Impervious Runoff Depth>7.42"
Flow Length=934' Tc=5.0 min CN=91 Runoff=92.55 cfs 7.071 af

Pond POS-01: Peak Elev=48.42' Inflow=76.08 cfs 7.062 af
Primary=23.53 cfs 4.988 af Secondary=52.55 cfs 2.073 af Outflow=76.08 cfs 7.062 af

Pond PUD-1: Peak Elev=49.39' Storage=36,337 cf Inflow=92.55 cfs 7.071 af
Outflow=76.08 cfs 7.062 af

Link PA-1: Inflow=76.08 cfs 7.062 af
Primary=76.08 cfs 7.062 af

Total Runoff Area = 11.429 ac Runoff Volume = 7.071 af Average Runoff Depth = 7.42"
28.13% Pervious = 3.215 ac 71.87% Impervious = 8.214 ac

1.4 Peak Rate Comparisons

The following table summarizes and compares the pre- and post-development peak runoff rates from the 1-year, 2-year, 10-year, 25-year and 50-year storm events at each point of analysis.

Table 1.4 – Comparison of Pre- and Post-Development Flows (CFS)

Point of Analysis	1-Year Storm	2-Year Storm	10-Year Storm	25-Year Storm	50-Year Storm
Pre-Development Watershed (PA-1)	20.01	27.08	49.71	67.64	84.49
Post-Development Watershed (PA-1)	14.24	18.71	42.20	60.59	76.08

The Peak Runoff Control Requirements of Env-Wq 1507.06 are required to be met for the point of analysis. As shown in Table 1.4 the Post-Development flows are decreased from the Pre-Development flows at PA-1.

The Channel Protection requirements of Env-Wq 1507.05 are met for the point of analysis as the 2-year, 24-hour Post-Development peak flowrate (18.71 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flowrate (20.01 cfs).

1.5 Mitigation Description

1.5.1 Mitigation Calculations

The proposed project area has been evaluated to treat the required water quality flow (WQF) per the requirements of Env-Wq 1500. These calculations have been provided in appendix E of this report.

1.5.2 Pre-Treatment Methods for Protecting Water Quality

Pretreatment methods for protecting water quality on this site include offline deep sump catch basins with oil water separator hoods.

Table 1.5 – Pollutant Removal Efficiencies

BMP	Total Suspended Solids	Total Phosphorus
Deep Sump Catch Basin w/Hood[1]	15%	5%

1. Pollutant removal efficiencies from NH Stormwater Manual Volume 2, Appendix B.

1.5.3 Treatment Methods for Protecting Water Quality

The runoff from proposed impervious areas will be captured in the proposed closed drainage system directed to an underground detention system and then treated by an ADS Water Quality Unit. The water quality unit has been sized to treat the Water Quality Flow from the contributing subcatchment areas. The system has been designed with an internal bypass structure that diverts peak flows greater than the 1-inch storm event.

Table 1.6 below, shows design pollutant removal efficient for the proposed Jellyfish Filter Treatment Unit which meets the requirements of Env-Wq 1508.10. Additional reference information on the proposed Jellyfish Filter Treatment Unit can be found in Appendix C.

Table 1.6 – Pollutant Removal Efficiencies		
BMP	Total Suspended Solids	Total Phosphorus
Jellyfish Filter Treatment Unit [1]	89%	59%

1. Pollutant removal efficiencies per Contech Engineered Solutions Jellyfish Filter Performance testing results.

Table 1.7 – Pollutant Removal Calculations				
Total Suspended Solids Removal				
BMP	TSS Removal Rate	Starting TSS Load	TSS Removed	Remaining TSS Load
Deep Sump Catch Basin w/Hood[1]	0.15	1.00	0.15	0.85
Jellyfish Filter Treatment Unit [2]	0.89	0.85	0.76	0.09
			Total Suspended Solids Removed:	**91%**

Total Phosphorus Removal				
	TP Removal Rate	Starting TP Load	TP Removed	Remaining TP Load
Deep Sump Catch Basin w/Hood[1]	0.05	1.00	0.05	0.95
Jellyfish Filter Treatment Unit [2]	0.59	0.95	0.56	0.39
			Total Phosphorus Removed:	**61%**

1. Pollutant removal efficiencies from NH Stormwater Manual Volume 2, Appendix B.
2. Pollutant removal efficiencies per Contech Engineered Solutions Jellyfish Filter Performance testing results.

APPENDIX A

(Bound Separately)

APPENDIX B

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.808 degrees West
Latitude	43.075 degrees North
Elevation	0 feet
Date/Time	Tue, 29 Jun 2021 09:16:17 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.81	3.21	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.51	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.24	1.60	**5yr**	1.07	1.46	1.88	2.43	3.14	4.07	4.57	**5yr**	3.60	4.40	5.03	5.93	6.70	**5yr**
10yr	0.41	0.64	0.81	1.11	1.44	1.88	**10yr**	1.25	1.72	2.22	2.88	3.74	4.87	5.53	**10yr**	4.31	5.31	6.07	7.10	7.98	**10yr**
25yr	0.47	0.75	0.96	1.32	1.76	2.32	**25yr**	1.52	2.13	2.76	3.61	4.73	6.17	7.10	**25yr**	5.46	6.82	7.78	9.02	10.06	**25yr**
50yr	0.53	0.85	1.09	1.52	2.05	2.74	**50yr**	1.77	2.51	3.27	4.30	5.65	7.40	8.58	**50yr**	6.55	8.25	9.40	10.81	11.99	**50yr**
100yr	0.60	0.97	1.25	1.76	2.39	3.22	**100yr**	2.06	2.96	3.86	5.11	6.74	8.86	10.38	**100yr**	7.84	9.98	11.35	12.96	14.30	**100yr**
200yr	0.67	1.09	1.41	2.02	2.79	3.80	**200yr**	2.41	3.49	4.58	6.09	8.06	10.62	12.55	**200yr**	9.40	12.07	13.71	15.54	17.05	**200yr**
500yr	0.79	1.30	1.69	2.45	3.43	4.71	**500yr**	2.96	4.34	5.71	7.65	10.19	13.50	16.15	**500yr**	11.95	15.53	17.61	19.77	21.55	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.89	**1yr**	0.63	0.87	0.92	1.32	1.66	2.23	2.53	**1yr**	1.97	2.43	2.85	3.16	3.88	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.46	**2yr**	2.70	3.32	3.82	4.55	5.07	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.13	2.74	3.80	4.21	**5yr**	3.36	4.05	4.71	5.54	6.26	**5yr**
10yr	0.39	0.59	0.73	1.03	1.32	1.60	**10yr**	1.14	1.56	1.81	2.40	3.07	4.38	4.89	**10yr**	3.88	4.70	5.46	6.43	7.22	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.78	3.56	4.70	5.94	**25yr**	4.16	5.72	6.69	7.84	8.73	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.17	**50yr**	1.53	2.12	2.35	3.10	3.97	5.31	6.88	**50yr**	4.70	6.61	7.80	9.11	10.08	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.47	**100yr**	1.74	2.42	2.63	3.45	4.40	5.96	7.96	**100yr**	5.27	7.65	9.09	10.60	11.64	**100yr**
200yr	0.59	0.89	1.13	1.64	2.29	2.82	**200yr**	1.98	2.76	2.94	3.83	4.86	6.67	9.21	**200yr**	5.91	8.85	10.59	12.34	13.46	**200yr**
500yr	0.69	1.03	1.32	1.92	2.73	3.38	**500yr**	2.36	3.30	3.41	4.39	5.56	7.76	11.16	**500yr**	6.87	10.73	12.98	15.12	16.29	**500yr**

Upper Confidence Limits

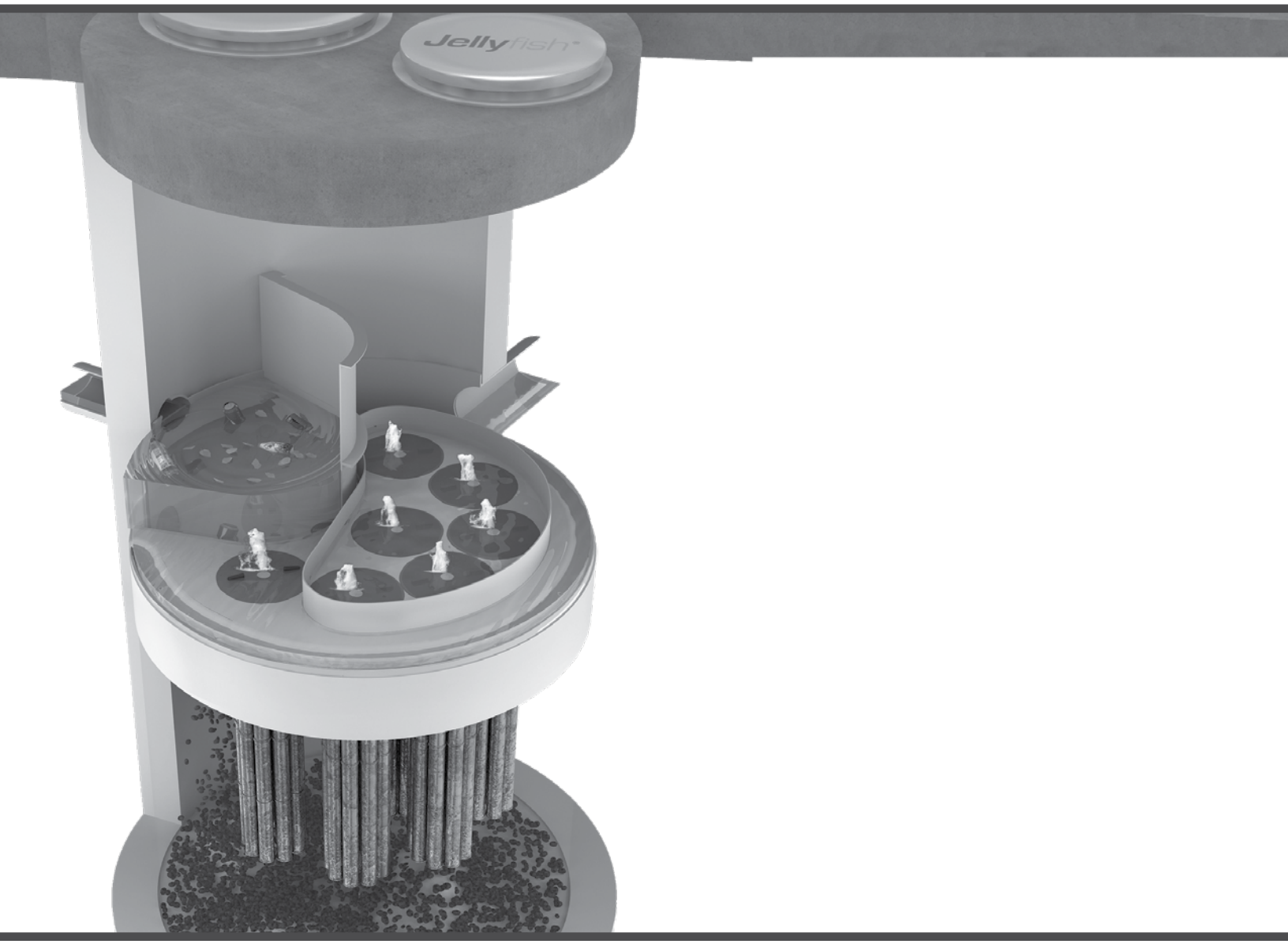
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.75	2.21	3.00	3.14	**1yr**	2.66	3.02	3.58	4.37	5.05	**1yr**
2yr	0.33	0.52	0.64	0.86	1.06	1.26	**2yr**	0.92	1.24	1.48	1.96	2.51	3.43	3.69	**2yr**	3.03	3.54	4.07	4.82	5.64	**2yr**
5yr	0.40	0.61	0.76	1.05	1.33	1.61	**5yr**	1.15	1.58	1.88	2.53	3.24	4.33	4.93	**5yr**	3.84	4.74	5.36	6.34	7.13	**5yr**
10yr	0.47	0.71	0.89	1.24	1.60	1.96	**10yr**	1.38	1.92	2.27	3.09	3.93	5.33	6.16	**10yr**	4.72	5.92	6.75	7.80	8.71	**10yr**
25yr	0.57	0.87	1.08	1.54	2.03	2.55	**25yr**	1.75	2.49	2.93	4.05	5.10	7.79	8.26	**25yr**	6.90	7.95	9.02	10.27	11.35	**25yr**
50yr	0.66	1.01	1.26	1.81	2.43	3.10	**50yr**	2.10	3.03	3.57	4.96	6.24	9.76	10.34	**50yr**	8.64	9.94	11.25	12.63	13.88	**50yr**
100yr	0.78	1.18	1.47	2.13	2.92	3.77	**100yr**	2.52	3.68	4.34	6.10	7.64	12.21	12.94	**100yr**	10.81	12.44	14.02	15.57	16.99	**100yr**
200yr	0.91	1.37	1.73	2.51	3.50	4.59	**200yr**	3.02	4.49	5.29	7.51	9.36	15.32	16.21	**200yr**	13.56	15.59	17.49	19.17	20.80	**200yr**
500yr	1.12	1.67	2.15	3.13	4.44	5.95	**500yr**	3.84	5.81	6.86	9.90	12.27	20.70	21.84	**500yr**	18.32	21.00	23.45	25.25	27.19	**500yr**

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APPENDIX C

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter Maintenance Guide



Jellyfish®

JELLYFISH® FILTER
INSPECTION & MAINTENANCE GUIDE

Jellyfish units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the Jellyfish filter to be successful, it is imperative that all other components be properly maintained. The maintenance and repair of upstream facilities should be carried out prior to Jellyfish maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

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Cartridge Assembly & Cleaning.....5

Inspection Process 7

1.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.

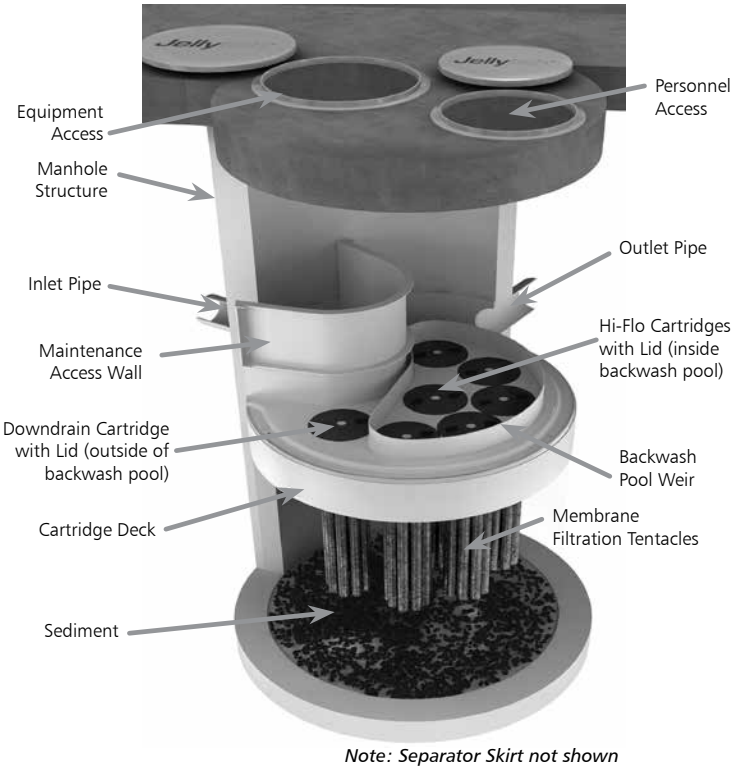
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed



Note: Separator Skirt not shown

2.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

3.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.



Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

3.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

4.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

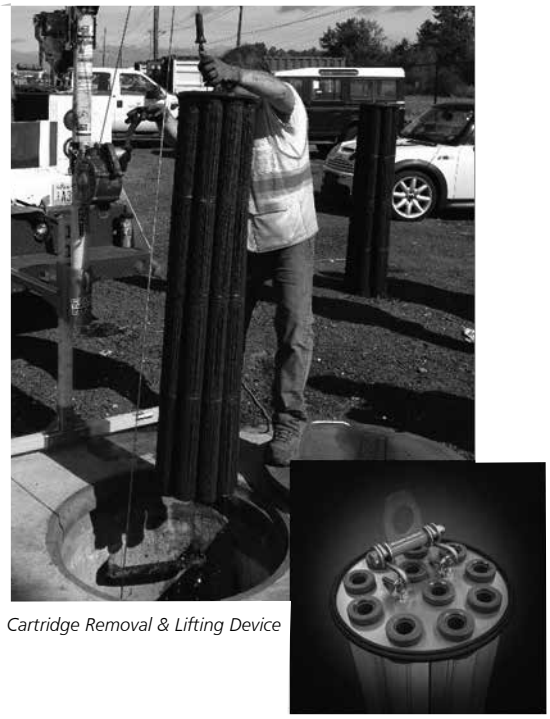
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

5.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. *Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

5.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.



Cartridge Removal & Lifting Device

2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.
3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.

4. Collected rinse water is typically removed by vacuum hose.
5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

5.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.



Vacuuming Sump Through MAW

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.



Vacuuming Sump Through MAW

6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

5.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. ***Caution: Do not force the cartridge downward; damage may occur.***
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

5.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

5.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

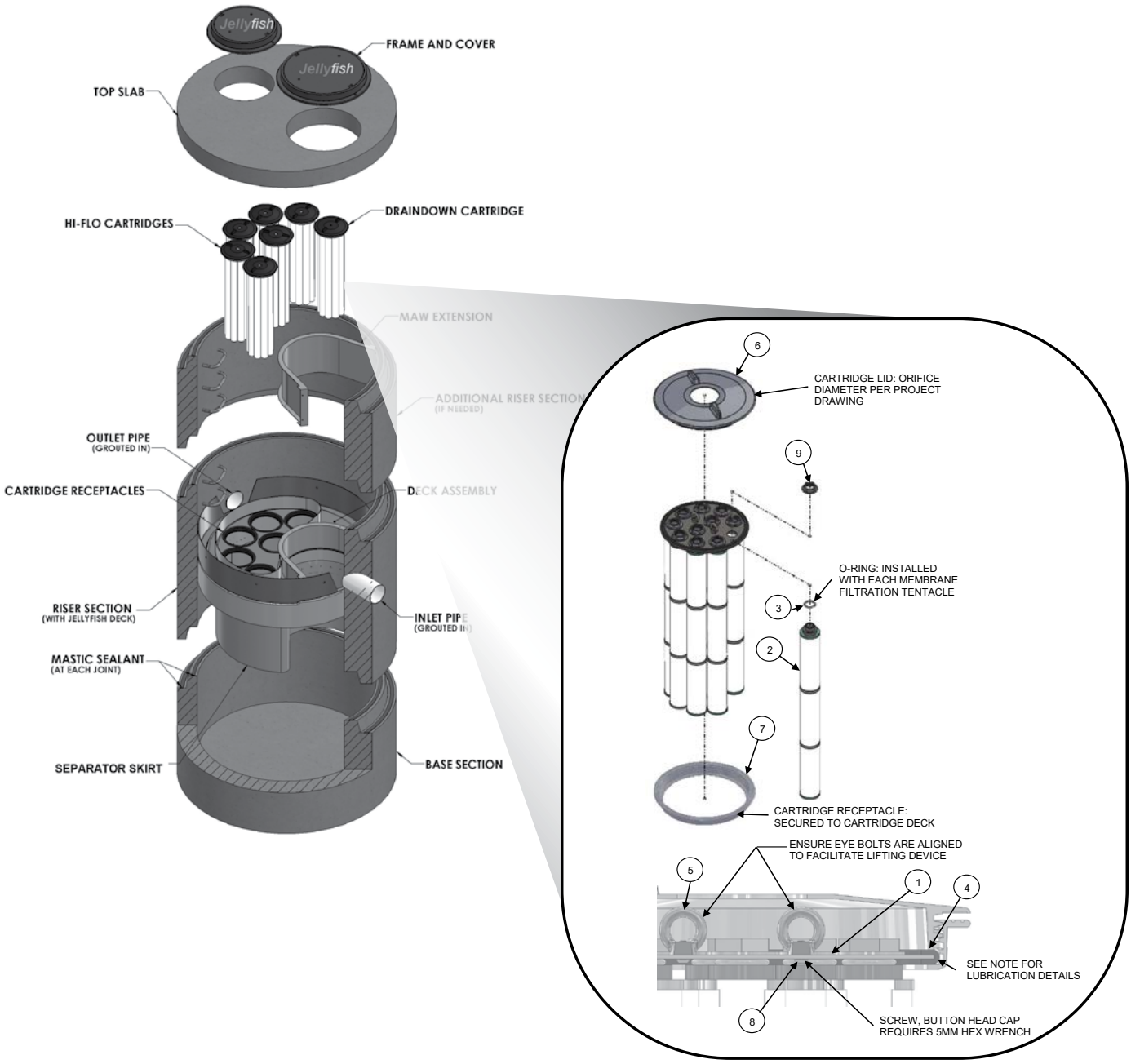


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lide (ITem 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner:				Jellyfish Model No:		
Location:				GPS Coordinates:		
Land Use:	Commercial:		Industrial:		Service Station:	
	Roadway/Highway:		Airport:		Residential:	

Date/Time:						
Inspector:						
Maintenance Contractor:						
Visible Oil Present: (Y/N)						
Oil Quantity Removed:						
Floatable Debris Present: (Y/N)						
Floatable Debris Removed: (Y/N)						
Water Depth in Backwash Pool						
Draindown Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Draindown Cartridges: (Y/N)						
Hi-Flo Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Hi-Flo Cartridges: (Y/N)						
Sediment Depth Measured: (Y/N)						
Sediment Depth (inches or mm):						
Sediment Removed: (Y/N)						
Cartridge Lids intact: (Y/N)						
Observed Damage:						
Comments:						



Jellyfish®

CONTECH ENGINEERED SOLUTIONS

Support

- Drawings and specifications are available at www.conteches.com/jellyfish.
- Site-specific design support is available from Contech Engineered Solutions.
- Find a Certified Maintenance Provider at www.conteches.com/ccmp

800.338.1122
www.ContechES.com

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APPENDIX D

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Project Related Documents (2)

	Document Type	Name/Title	Date Submitted	File Size
4543399	CORRESPONDENCE	DES REVIEW WHITE PAPERS FOR SITE 73 AND 49	12/07/2011	.08 MB
4543398	CORRESPONDENCE	PEASE AFB DES REVIEW OF WHITE PAPERS FOR SITES 73 AND 49	12/07/2011	.01 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
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PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
01/05/2021	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4895543	REPORT TO DES	DRAFT 2020 REMEDIAL STATUS REPORT	01/05/2021	5.00 MB

10/05/2020	Annual Report Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4879382	REPORT TO DES	2019 BIENNIAL GROUNDWATER MONITORING REPORT	10/05/2020	5.00 MB

07/10/2018	Annual Report Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4722926	REPORT TO DES	2017 BIENNIAL AND PERFORMANCE MONITORING REPORT	07/10/2018	5.00 MB

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JBSA LACKLAND TX 78236-9853

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Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
09/28/2016	Additional Information Received	HILTON	10/20/2016	Not Approved	SEE 6/30/16 DES LETTER FOR PBC SITES WITHOUT CONCURRENCE

Activity Documents (3)

	Document Type	Document Title	Document Date	File Size
4625363	REPORT TO DES	FINAL LONG-TERM MONITORING PLAN REVISION 5 - ZONE 3	09/01/2016	5.00 MB
4649646	CORRESPONDENCE	TRANSMITTAL EMAIL TO AFCEC	06/30/2016	.04 MB
4649632	CORRESPONDENCE	DES LETTER FOR PBC SITES WITHOUT CONCURRENCE	06/30/2016	.04 MB

11/19/2015	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4579330	REPORT TO DES	2014 ANNUAL REPORT 01-NOV-2015	11/19/2015	5.00 MB

04/24/2015	Additional Information Received	HILTON	07/02/2015	Not Approved	EMAIL RESPONSE TO PROPOSED LTM CHANGES

Activity Documents (2)

	Document Type	Document Title	Document Date	File Size
4559687	CORRESPONDENCE	DES COMMENTS 7.2.15 TO 4.23.15 LTM CHANGES	07/02/2015	.05 MB
4545104	REPORT TO DES	PROPOSED LONG-TERM MONITORING PROGRAM CHANGES 23-APR-2015	04/24/2015	2.39 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
02/25/2015	Additional Information Received	HILTON	02/25/2015	Technical Report Approved	LTMP APPROVED

Activity Documents (2)

Document Type		Document Title	Document Date	File Size
4538382	CORRESPONDENCE	ZONE 3 LTMP REV 3 MOD APROVAL	03/02/2015	.04 MB
4538376	CORRESPONDENCE-TO	PROPOSED MODIFICATION TO THE ZONE 3 LONG-TERM MONITORING PLAN 23-FEB-2015	02/25/2015	.35 MB

10/15/2014	Annual Report Received	HILTON	11/01/2014	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4517123	REPORT TO DES	2013 ANNUAL REPORT 01-OCT-2014	10/15/2014	5.00 MB

06/12/2014	Additional Information Received	HILTON	02/25/2015	Technical Report Approved	LTMP REVISION 3 APPROVED SEE 25-FEB-2015 CORRSPONDENCE

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4504066	CORRESPONDENCE-TO	REQUEST FOR DISCONTIUATION OF MONITORING 11-JUN-2014	06/12/2014	.66 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
05/14/2014	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4497434	REPORT TO DES	DRAFT 2013 NONHEATING SEASON SUB-SLAB VAPOR AND INDOOR AIR SAMPLINC REPORT 01-MAY-2014	05/14/2014	5.00 MB

04/07/2014	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4488911	CORRESPONDENCE-TO	EXPLANATION OF SIGNIFICANT DIFFERENCES 01-MAR-2014	04/07/2014	1.30 MB

02/12/2014	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4486984	REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT FEBRUARY 2014 12-FEB-2014	02/12/2014	1.45 MB

10/17/2013	Annual Report Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4474024	REPORT TO DES	2012 ANNUAL REPORT FOR ZONE 3 12-SEP-2013	10/17/2013	5.00 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
10/11/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4473132	REPORT TO DES	HAVEN WELL SENTRY/SENTINEL WELLS QUARTERLY DATA REPORT SUMMER 2013 01-SEP-2013	10/11/2013	.69 MB

10/11/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4473133	REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT SEPTEMBER 2013 01-SEP-2013	10/11/2013	1.27 MB

08/30/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4464049	CORRESPONDENCE-TO	REPLACEMENT PAGES FOR THE FINAL 2013 NONHEATING SEASON SUB-SLAB VAPOR AND INDOOR 26-AUG-2013	08/30/2013	5.00 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
07/26/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4458343	REPORT TO DES	HAVEN WELL JULY 2013 PRELIMINARY DATA 01-JUL-2013	07/26/2013	1.62 MB

04/09/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4438314	REPORT TO DES	MONTHLY DATA REPORT FEBRUARY 2013 01-APR-2013	04/09/2013	1.21 MB

03/11/2013	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4434948	REPORT TO DES	MONTHLY DATA REPORT 01-JAN-2013	03/11/2013	2.93 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424835	REPORT TO DES	MONTHLY DATA REPORT (SEPTEMBER 2012) 01-SEP-2012	12/11/2012	.58 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424834	REPORT TO DES	MONTHLY DATA REPORT (AUGUST 2012) 01-AUG-2012	12/11/2012	.61 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424833	REPORT TO DES	MONTHLY DATA REPORT (JULY 2012) 01-JUL-2012	12/11/2012	.65 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424832	REPORT TO DES	MONTHLY DATA REPORT (JUNE 2012) 01-JUN-2012	12/11/2012	.58 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424831	REPORT TO DES	MONTHLY DATA REPORT (MAY 2012) 01-MAY-2012	12/11/2012	.62 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424829	REPORT TO DES	MONTHLY DATA REPORT (FEBRUARY 2012) 01-FEB-2012	12/11/2012	.57 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424828	REPORT TO DES	MONTHLY DATA REPORT (JANUARY 2012) 01-FEB-2012	12/11/2012	.57 MB

12/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4424827	REPORT TO DES	MONTHLY DATA REPORT (DECEMBER 2011) 01-DEC-2012	12/11/2012	.61 MB

10/23/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4418631	REPORT TO DES	FINAL SUPPLEMENTAL REMEDIAL ACTION WORK PLAN 01-OCT-2012	10/23/2012	5.00 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
10/11/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4416497	CORRESPONDENCE-TO	EXPLANATION OF SIGNIFICANT DIFFERENCES 01-JUL-2012	10/11/2012	1.05 MB

08/31/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4409340	CORRESPONDENCE-TO	EXPLANATION OF SIGNIFICANT DIFFERENCES 01-AUG-2012	08/31/2012	3.63 MB

08/08/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4402784	REPORT TO DES	ZONE 3 2011 ANNUAL REPORT 07-AUG-2012	08/08/2012	5.00 MB

07/09/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4395449	CORRESPONDENCE-TO	DRAFT EXPLANATION OF SIGNIFICANT DIFFERENCES 01-JUL-2012	07/09/2012	1.05 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
04/16/2012	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4361917	REPORT TO DES	MONTHLY DATA REPORT 01-MAR-2012	04/16/2012	.63 MB

12/16/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4337905	REPORT TO DES	MONTHLY DATA REPORT 16-DEC-2011	12/16/2011	.37 MB

12/12/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4337484	REPORT TO DES	MONTHLY DATA REPORT 12-DEC-2011	12/12/2011	.37 MB

12/07/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4543663	CORRESPONDENCE	DES REVIEW WHITE PAPERS FOR SITE 73 AND 49	12/07/2011	.08 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
11/22/2011	Additional Information Received	UNASSIGNED			
11/18/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4334120	REPORT TO DES	MONTHLY DATA REPORT 07-NOV-2011	11/18/2011	.32 MB

11/02/2011	Additional Information Received	UNASSIGNED			

Activity Documents (3)

	Document Type	Document Title	Document Date	File Size
4543401	CORRESPONDENCE	SITE 49 SUPPLEMENTAL REMEDIATION WP WHITE PAPER	11/02/2011	.19 MB
4543402	CORRESPONDENCE	SITE 73 SUPPLEMENTAL REMEDIATION WP WHITE PAPER DRAFT	11/02/2011	.18 MB
4543400	CORRESPONDENCE	PEASE WHITE PAPERS	11/02/2011	.03 MB

09/12/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4320379	REPORT TO DES	MONTHLY DATA REPORT 08-SEP-2011	09/12/2011	.32 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/24/2011	Additional Information Received	HILTON	08/31/2011	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4315571	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 23-AUG-2011	08/24/2011	.74 MB

08/23/2011	Additional Information Received	HILTON	08/31/2011	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4315567	REPORT TO DES	MONTHLY DATA REPORT 22-AUG-2011	08/23/2011	.32 MB

07/27/2011	Additional Information Received	HILTON	08/15/2011	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4310754	REPORT TO DES	MONTHLY DATA REPORT 21-JUL-2011	07/27/2011	.32 MB

07/23/2011	Additional Information Received	HILTON	08/14/2011	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4310739	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 22-JUL-2011	07/23/2011	.73 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/23/2011	Additional Information Received	HILTON	07/13/2011	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4305771	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 20-JUN-2011	06/23/2011	.73 MB

05/19/2011	Additional Information Received	HILTON	06/17/2011	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4298638	REPORT TO DES	MONTHLY DATA REPORT 19-MAY-2011	05/19/2011	.37 MB

05/11/2011	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4296656	REPORT TO DES	ZONE 3 2010 ANNUAL REPORT 10-MAY-2011	05/11/2011	5.00 MB

04/26/2011	Additional Information Received	HILTON	05/20/2011	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4293800	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 22-APR-2011	04/26/2011	.73 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
04/01/2011	Additional Information Received	HILTON	04/15/2011	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4286126	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 29-MAR-2011	04/01/2011	.72 MB

04/01/2011	Additional Information Received	HILTON	04/13/2011	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4286127	REPORT TO DES	MONTHLY DATA REPORT 01-APR-2011	04/01/2011	.31 MB

12/13/2010	Additional Information Received	HILTON	12/15/2010	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4268181	REPORT TO DES	MONTHLY DATA REPORT 13-DEC-2010	12/13/2010	.38 MB

11/22/2010	Additional Information Received	HILTON	11/30/2010	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4265036	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 22-NOV-2010	11/22/2010	.92 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
11/16/2010	Additional Information Received	HILTON	11/20/2010	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4263025	REPORT TO DES	MONTHLY DATA REPORT 15-NOV-2010	11/16/2010	.34 MB

10/12/2010	Additional Information Received	HILTON	11/03/2010	Technical Infomation Provided	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4257229	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 12-OCT-2010	10/12/2010	.76 MB

09/30/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4255666	REPORT TO DES	MONTHLY DATA REPORT 27-SEP-2010	09/30/2010	.72 MB

09/14/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4252988	REPORT TO DES	MONTHLY DATA REPORT 14-SEP-2010	09/14/2010	.30 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/20/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4250259	REPORT TO DES	MONTHLY DATA REPORT 20-AUG-2010	08/20/2010	.31 MB

07/26/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4248118	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 22-JUL-2010	07/26/2010	1.11 MB

06/23/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4239811	REPORT TO DES	ZONE 3 2009 ANNUAL REPORT 21-JUN-2010	06/23/2010	5.00 MB

06/11/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4239250	REPORT TO DES	MONTHLY DATA REPORT 11-JUN-2010	06/11/2010	.29 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/11/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4239249	REPORT TO DES	MONTHLY DATA REPORT 11-JUN-2010	06/11/2010	.35 MB

06/01/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4237931	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 28-MAY-2010	06/01/2010	.75 MB

05/17/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4234876	REPORT TO DES	SPRING SAMPLING AND ANALYSIS PLAN ADDENDUM FOR SITES 73 & 81 01-MAY-2010	05/17/2010	.08 MB

05/10/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4233971	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 05-MAY-2010	05/10/2010	.72 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
04/13/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4227753	REPORT TO DES	MONTHLY DATA REPORT 13-APR-2010	04/13/2010	.37 MB

04/08/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4226539	REPORT TO DES	MONTHLY DATA REPORT 08-APR-2010	04/08/2010	.29 MB

03/29/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4224877	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 29-MAR-2010	03/29/2010	.72 MB

03/15/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4222317	REPORT TO DES	QUARTERLY DATA REPORT 12-MAR-2010	03/15/2010	.30 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
03/15/2010	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4222316	REPORT TO DES	MONTHLY DATA REPORT 12-MAR-2010	03/15/2010	.31 MB

11/09/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4199788	REPORT TO DES	MONTHLY DATA REPORT 30-NOV-2009	11/09/2009	.37 MB

09/24/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4193656	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 24-SEP-2009	09/24/2009	.72 MB

09/24/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4193655	REPORT TO DES	MONTHLY DATA REPORT 23-SEP-2009	09/24/2009	.33 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
09/03/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4191681	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 22-JUL-2009	09/03/2009	.73 MB

08/27/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4189803	REPORT TO DES	DATA REPORT 27-AUG-2009	08/27/2009	5.00 MB

08/27/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4189802	REPORT TO DES	VOC RESAMPLE 25-AUG-2009	08/27/2009	.31 MB

08/27/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4189801	REPORT TO DES	REPORT OF ANALYTICAL RESULTS FOR 8/25/09 26-AUG-2009	08/27/2009	.64 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/12/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4186685	REPORT TO DES	ZONE 3 2008 ANNUAL REPORT 11-AUG-2009	08/12/2009	5.00 MB

08/10/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4186629	REPORT TO DES	MONTHLY DATA REPORT - JULY 2009 10-AUG-2009	08/10/2009	.30 MB

07/27/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4185273	REPORT TO DES	REPORT OF ANALYTICAL RESULTS FOR JULY SAMPLING 22-JUL-2009	07/27/2009	.73 MB

07/08/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4182711	REPORT TO DES	MONTHLY DATA REPORT 08-JUL-2009	07/08/2009	.31 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/26/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4181599	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS FOR JUNE SAMPLING 26-JUN-2009	06/26/2009	.76 MB

06/22/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4180552	REPORT TO DES	QUARTERLY SAMPLING REPORT - WINTER 2009 22-JUN-2009	06/22/2009	.29 MB

06/22/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4180551	REPORT TO DES	QUARTERLY SAMPLING REPORT SPRING 2009 22-JUN-2009	06/22/2009	.29 MB

06/16/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4180085	REPORT TO DES	MONTHLY DATA REPORT 16-JUN-2009	06/16/2009	.28 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
05/27/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4177535	REPORT TO DES	REPORT OF ANALYTICAL RESULTS FOR MAY SAMPLING 22-MAY-2009	05/27/2009	.75 MB

05/06/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4175742	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 06-MAY-2009	05/06/2009	.36 MB

04/21/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4173079	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 17-APR-2009	04/21/2009	.79 MB

04/06/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4171075	REPORT FROM DES	REPORT OF ANALYTICAL REULTS 06-APR-2009	04/06/2009	2.21 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
04/06/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4171072	REPORT TO DES	MARCH 2009 HAVEN WELL MONTHLY DATA REPORT 06-APR-2009	04/06/2009	.32 MB

03/26/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4168441	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 19-MAR-2009	03/26/2009	.70 MB

03/19/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4166080	REPORT TO DES	MONTHLY DATA REPORT - FEBRUARY 2009 18-MAR-2009	03/19/2009	.32 MB

03/10/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4164572	REPORT TO DES	JANUARY 2009 HAVEN WELL MONTHLY DATA REPORT 10-MAR-2009	03/10/2009	.33 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
02/22/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4163512	REPORT TO DES	REPORT OF ANALYTICAL RESULTS - HAVEN WELL 20-FEB-2009	02/22/2009	.72 MB

02/09/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4160966	CORRESPONDENCE-TO	RECOMMENDATIONS FOR MODIFICATIONS TO LONG-TERM MONITORING PLANS 09-FEB-2009	02/09/2009	.31 MB

02/09/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4160963	REPORT TO DES	DECEMBER 2008 MONTHLY DATA REPORT 09-FEB-2009	02/09/2009	.31 MB

02/02/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4160797	REPORT TO DES	REPORT OF ANALYTICAL RESULTS 06-FEB-2009	02/02/2009	5.00 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
01/06/2009	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4156237 MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 06-JAN-2009	01/06/2009	.70 MB

12/15/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4151864 REPORT TO DES	FALL 2008 HAVEN WELL SENTRY-SENTINEL WELL PRELIMINARY DATA 15-DEC-200	12/15/2008	3.96 MB

12/12/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4151865 REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT - NOVEMBER 2008 08-DEC-2008	12/12/2008	.32 MB

11/04/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4145958 REPORT TO DES	SEPTEMBER 2008 HAVEN WELL MONTHLY REPORT - 04-NOV-2008	11/04/2008	.33 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
10/22/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4143870 MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 22-OCT-2008	10/22/2008	1.32 MB

10/10/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4142007 MONITORING NONPERMIT	HAVEN WELL SENTRY/SENTINEL QUARTERLY GROUNDWATER SAMPLING 10-OCT-2008	10/10/2008	.74 MB

09/25/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4138051 MONITORING NONPERMIT	SEPTEMBER 2008 REPORT OF ANALYTICAL RESULTS 22-SEP-2008	09/25/2008	1.21 MB

09/22/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4137765 REPORT TO DES	AUGUST 2008 HAVEN WELL MONTHLY DATA REPORT 15-SEP-2008	09/22/2008	.27 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/28/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4130318	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS 28-AUG-2008	08/28/2008	.73 MB

08/20/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4127369	MONITORING NONPERMIT	JULY 2008 HAVEN WELL MONTHLY DATA REPORT 20-AUG-2008	08/20/2008	.32 MB

08/14/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4125774	MONITORING NONPERMIT	REPORT OF ANALYTICAL RESULTS FOR 7/16/08 14-AUG-2008	08/14/2008	.71 MB

07/21/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4116436	REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT - MAY 2008 21-JUL-2008	07/21/2008	.36 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/27/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4108311	REPORT TO DES	REPORT OF ANALYTICAL RESULTS FOR 6/19/08 27-JUN-2008	06/27/2008	.76 MB

06/10/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4098511	REPORT TO DES	MAY 2008 HAVEN WELL MONTHLY DATA REPORT 10-JUN-2008	06/10/2008	.32 MB

06/10/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4098510	REPORT TO DES	APRIL 2008 HAVEN WELL MONTHLY DATA REPORT 05-JUN-2008	06/10/2008	.32 MB

06/10/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4098509	REPORT TO DES	HAVEN WELL SENTRY/SENTINEL QUARTERLY REPORT 10-JUN-2008	06/10/2008	.31 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/06/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4101820	REPORT TO DES	ZONE 3 2007 ANNUAL REPORT 05-JUN-2008	06/06/2008	64.83 MB

05/23/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4089588	REPORT TO DES	REPORT OF ANALYTICAL RESULTS FOR 5/14/08 22-MAY-2008	05/23/2008	.75 MB

05/08/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4083944	REPORT TO DES	HAVEN WELL MONTHLY REPORT - MARCH 2008 08-MAY-2008	05/08/2008	.32 MB

04/22/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4074446	REPORT TO DES	REPORT OF ANALYTICAL DATA FOR 4/14/08 21-APR-2008	04/22/2008	.75 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
04/07/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4069163	REPORT TO DES	FEBRUARY 2008 HAVEN WELL MONTHLY DATA REPORT 07-APR-2008	04/07/2008	.27 MB

03/26/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4067801	MONITORING NONPERMIT	MARCH 2008 REPORT OF ANALYTICAL RESULTS 24-MAR-2008	03/26/2008	1.04 MB

02/26/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4063539	MONITORING NONPERMIT	FEBRUARY 2008 ANALYTICAL RESULTS 26-FEB-2008	02/26/2008	.57 MB

02/18/2008	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4062517	MONITORING NONPERMIT	HAVEN WELL SENTRY/SENTINEL QUARTERLY SAMPLING 18-FEB-2008	02/18/2008	.34 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
01/09/2008	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4058322	REPORT TO DES	DRAFT STANDARD OPERATING PROCEDURE 08-JAN-2008	01/09/2008	.81 MB

12/03/2007	Annual Report Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4054776	REPORT TO DES	ZONE 3 2006 ANNUAL REPORT 30-NOV-2007	12/03/2007	85.99 MB

11/21/2007	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4054284	REPORT TO DES	OCTOBER 2007 HAVEN WELL MONTHLY DATA REPORT 21-NOV-2007	11/21/2007	.32 MB

10/23/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4050119	MONITORING NONPERMIT	HAVEN WELL SENTRY/SENTINEL WELL QUARTERLY SAMPLING - SUMMER 2007 22-OCT-2007	10/23/2007	.52 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
10/23/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4050120	MONITORING NONPERMIT	PRELIMINARY ANALYTICAL RESULTS 22-OCT-2007	10/23/2007	.59 MB

10/16/2007	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4049459	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT - SEPTEMBER 2007 16-OCT-2007	10/16/2007	.51 MB

09/21/2007	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4046620	REPORT TO DES	HAVEN WELL MONTHLY DATAT REPORT - AUGUST 2007 09-AUG-2007	09/21/2007	.68 MB

08/22/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4042774	MONITORING NONPERMIT	HAVEN WELL MONTHLY REPORT - AUG 2007 22-AUG-2007	08/22/2007	.62 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/20/2007	Additional Information Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4042248	REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT - JULY 2007 20-AUG-2007	08/20/2007	1.04 MB

08/13/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4041253	MONITORING NONPERMIT	SUMMER 2007 HAVEN WELL DATA 13-AUG-2007	08/13/2007	8.56 MB

07/31/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4040251	MONITORING NONPERMIT	HAVEN WELL JULY 2007 PRELIMINARY ANALYTICAL RESULTS 31-JUL-2007	07/31/2007	.89 MB

07/11/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4036398	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT - JUNE 2007 11-JUL-2007	07/11/2007	.53 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
06/22/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4032186	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT MAY 2007 21-JUN-2007	06/22/2007	.47 MB

06/22/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4032187	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT MARCH 2007 21-JUN-2007	06/22/2007	1.21 MB

06/22/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4032189	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT APRIL 2007 22-JUN-2007	06/22/2007	.90 MB

06/07/2007	Non-Permit GW Monitoring Result Received	UNASSIGNED			

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4031098	MONITORING NONPERMIT	HAVEN WELL MONTHLY DATA REPORT FEBRUARY 2007 07-JUN-2007	06/07/2007	2.23 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
05/21/2007	Additional Information Received	UNASSIGNED			

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4029061	CORRESPONDENCE-TO	FINAL MINUTES PEASE AFB BCT MEETING 21-MAY-2007	05/21/2007	.08 MB

04/10/2007	Additional Information Received	HILTON	04/18/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4021734	REPORT TO DES	HAVEN WELL MONTHLY DATA REPORT - JANUARY 2007 09-APR-2007	04/10/2007	1.35 MB

04/03/2007	Additional Information Received	HILTON	04/09/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4020725	MONITORING NONPERMIT	HAVEN WELL SENTRY-SENTINEL WELL QUARTERLY GROUNDWATER SAMPLING 03-APR-2007	04/03/2007	2.69 MB

03/23/2007	Non-Permit GW Monitoring Result Received	HILTON	04/03/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type		Document Title	Document Date	File Size
4018216	MONITORING NONPERMIT	HAVEN WELL SAMPLING FOR 3/14/07 23-MAR-2007	03/23/2007	1.43 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
03/22/2007	Additional Information Received	HILTON	04/03/2007	No Action Necessary (Report filed)	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4018627	CORRESPONDENCE	SUMMER 2006 ZONE 3 HAVEN SAMPLING REGARDING FEB 8 2007 LETTER 19-MAR-2007	03/22/2007	.18 MB

02/27/2007	Non-Permit GW Monitoring Result Received	HILTON	02/28/2007	Technical Report Approved	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4016204	REPORT	HAVEN WELL - QUARTERLY GROUNDWATER SAMPLING DATA REPORT FALL 2006 27-FEB-2007	02/27/2007	.37 MB

02/23/2007	Non-Permit GW Monitoring Result Received	HILTON	02/24/2007	Technical Report Approved	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4015884	REPORT	HAVEN WELL FEBRUARY 2007 PRELIMINARY ANALYTICAL RESULTS 23-FEB-2007	02/23/2007	6.04 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
02/20/2007	Non-Permit GW Monitoring Result Received	HILTON	02/22/2007	Technical Report Approved	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4015189	MONITORING NONPERMIT	WINTER 2007 HAVEN WELL SENTRY-SENTUNEL WELL DATA 20-FEB-2007	02/20/2007	4.78 MB

02/02/2007	Additional Information Received	HILTON	02/08/2007	Technical Report Approved	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4014283	CORRESPONDENCE-FROM	RESPONSE TO SUMMER 2006 ZONE 3 HAVEN SENTRY WELL SAMPLING	02/08/2007	.04 MB

01/26/2007	Non-Permit GW Monitoring Result Received	HILTON	01/27/2007	No Action Necessary (Report filed)	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4012609	MONITORING NONPERMIT	ANALYTICAL RESULTS FOR 1/24/07 26-JAN-2007	01/26/2007	1.49 MB

01/25/2007	Non-Permit GW Monitoring Result Received	HILTON	01/26/2007	No Action Necessary (Report filed)	

Activity Documents (1)

	Document Type	Document Title	Document Date	File Size
4012607	MONITORING NONPERMIT	ANALYTICAL RESULTS FOR 1/23/07 25-JAN-2007	01/25/2007	1.75 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
01/24/2007	Non-Permit GW Monitoring Result Received	HILTON	01/25/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4012606	MONITORING NONPERMIT	ANALYTICAL RESULTS FOR 1/17/07 23-JAN-2007	01/24/2007	.74 MB

01/22/2007	Non-Permit GW Monitoring Result Received	HILTON	02/23/2007	Technical Report Approved	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4013663	MONITORING NONPERMIT	HAVEN WELL SENTRY SENTINAL SAMPLING 09-OCT-2006	01/22/2007	6.71 MB

01/22/2007	Non-Permit GW Monitoring Result Received	HILTON	01/24/2007	Technical Report Approved	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4013667	MONITORING NONPERMIT	SUMMER 2006 HAVEN WELL SENTRY SENTINAL 20-JUL-2006	01/22/2007	10.52 MB

01/22/2007	Non-Permit GW Monitoring Result Received	HILTON	01/23/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4012604	MONITORING NONPERMIT	ANALYTICAL RESULTS FOR 7/5/06 20-JUL-2006	01/22/2007	10.52 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
01/22/2007	Non-Permit GW Monitoring Result Received	HILTON	01/23/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4012603	MONITORING NONPERMIT	ANALYTICAL RESULTS FOR 9/27/06 09-OCT-2007	01/22/2007	6.71 MB

01/19/2007	Additional Information Received	HILTON	01/20/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4011696	REPORT	HAVEN WELL MONTHLY DATA REPORT 19-JAN-2007	01/19/2007	.43 MB

01/02/2007	Non-Permit GW Monitoring Result Received	HILTON	01/03/2007	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4009327	MONITORING NONPERMIT	DECEMBER 2006 HAVEN WELL MONTHLY DATA REPORT 21-DEC-2006	01/02/2007	.89 MB

12/15/2006	Non-Permit GW Monitoring Result Received	HILTON	12/16/2006	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4008329	MONITORING NONPERMIT	OCTOBER 2006 HAVEN WELL MONTHLY DATA REPORT 13-DEC-2006	12/15/2006	.43 MB

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Assigned To: **SANDIN**

Discovery Date: **06/11/1993**

Eligibile:

Eligibilty Determined on:

MTBE: **N**

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
12/15/2006	Non-Permit GW Monitoring Result Received	HILTON	12/16/2006	No Action Necessary (Report filed)	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4008328 MONITORING NONPERMIT	NOVEMBER 2006 HAVEN WELL MONTHLY DATA REPORT 13-DEC-2006	12/15/2006	.56 MB

11/22/2006	Non-Permit GW Monitoring Result Received	HILTON	11/18/2006	Technical Report Approved	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
4004421 MONITORING NONPERMIT	SEPTEMBER 2006 HAVEN WELL MONTHLY DATA REPORT 17-NOV-2006	11/22/2006	.42 MB

11/02/2006	Additional Information Received	HILTON	11/03/2006	Technical Report Approved	

Activity Documents (1)

Document Type	Document Title	Document Date	File Size
3999731 REPORT	AUGUST 2006 HAVEN WELL MONTHLY DATA REPORT 02-NOV-2006	11/02/2006	.43 MB

06/27/2006	Permit Related GW Data Submittal	HILTON	06/28/2006	Technical Report Approved	
06/09/2006	Permit Related GW Data Submittal	HILTON	06/14/2006	Technical Report Approved	
05/24/2006	Permit Related GW Data Submittal	HILTON	05/25/2006	Technical Report Approved	
02/28/2006	Permit Related GW Data Submittal	HILTON	03/24/2006	Technical Report Approved	
04/16/2002	Additional Information Received	HILTON	05/16/2002	Technical Report Approved	
04/10/2002	Annual Report Received	HILTON	05/15/2002	Technical Report Approved	

Site Number: **100330300**

Name and Address: **PAFB ZONE 3**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004331**

Responsible Party: **U S AIR FORCE**
2261 HUGHES AVE, STE 155
JBSA LACKLAND TX 78236-9853

PHONE: 210-395-9420

Wellhead Protection Area: **Unknown**

Assigned To: **SANDIN**

Eligibile:

MTBE: **N**

Risk Level: **DW SUPPLY WITHIN 1000' OR SITE IN SWPA**

Discovery Date: **06/11/1993**

Eligibilty Determined on:

Brownfield: **N**

Activities (165)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
05/18/1993	Additional Information Received	SMITH	06/17/1993	Comments to Waste Management Division	

Site Number:	**100330300**	Project Number:	**0004331**
Name and Address:	**PAFB ZONE 3** **PEASE AIR FORCE BASE** **PORTSMOUTH**	Responsible Party:	**U S AIR FORCE** **2261 HUGHES AVE, STE 155** **JBSA LACKLAND TX 78236-9853** **PHONE: 210-395-9420**
Mapit			
Wellhead Protection Area:	**Unknown**	Risk Level:	**DW SUPPLY WITHIN 1000' OR SITE IN SWPA**
Assigned To:	**SANDIN**	Discovery Date:	**06/11/1993**
Eligibile:		Eligibilty Determined on:	
MTBE:	**N**	Brownfield:	**N**

No Vapor Recovery Information

Leaking Underground Storage Tank Project Report

Site Number: **100330215**

Name and Address: **PAFB 215**
PEASE AIR FORCE BASE
PORTSMOUTH

Mapit

Project Number: **0004797**

Responsible Party: **PEASE AFB**
POTSMOUTH NH 03801-0157

PHONE: 604-430-3573

Wellhead Protection Area: **Unknown**

Assigned To: **CLOSED**

Eligibile: **UNKNOWN OR NOT YET ACHIEVED**

MTBE: **N**

Risk Level: **NO SOURCES/NO AGQS VIO'S FROM ONSITE**

Discovery Date: **04/12/1994**

Eligibilty Determined on:

Brownfield: **N**

Activities (3)

Submittal Date	Submittal Description	Staff Assigned	Action Date	Action Description	Comments
08/08/1995	Site Investigation Report Received	KARNAUKH-S	09/08/1995	Regulatory Action Compl.-DES File Closed	
07/19/1994	Additional Information Received	KARNAUKH-S	08/05/1994	Work Scope Approved	
04/11/1994	Work Scope Submitted	KARNAUKH-S	04/27/1994	Work Scope Approved	

Leaking Underground Storage Tank Project Report

Site Number:	**100330215**	Project Number:	**0004797**
Name and Address:	**PAFB 215** **PEASE AIR FORCE BASE** **PORTSMOUTH**	Responsible Party:	**PEASE AFB** **POTSMOUTH NH 03801-0157** **PHONE: 604-430-3573**
Mapit			
Wellhead Protection Area:	**Unknown**	Risk Level:	**NO SOURCES/NO AGQS VIO'S FROM ONSITE**
Assigned To:	**CLOSED**	Discovery Date:	**04/12/1994**
Eligibile:	**UNKNOWN OR NOT YET ACHIEVED**	Eligibilty Determined on:	
MTBE:	**N**	Brownfield:	**N**

No Vapor Recovery Information

Tighe&Bond

APPENDIX E

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

11.43	ac	A = Area draining to the practice
8.21	ac	A_I = Impervious area draining to the practice
0.72	decimal	I = Percent impervious area draining to the practice, in decimal form
0.70	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
7.96	ac-in	WQV= 1" x Rv x A
28,909	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.70	inches	Q = Water quality depth. Q = WQV/A
97	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.3	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.064	inches	Ia = Initial abstraction. Ia = 0.2S
5.0	minutes	T_c = Time of Concentration
600.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
7.466	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes:

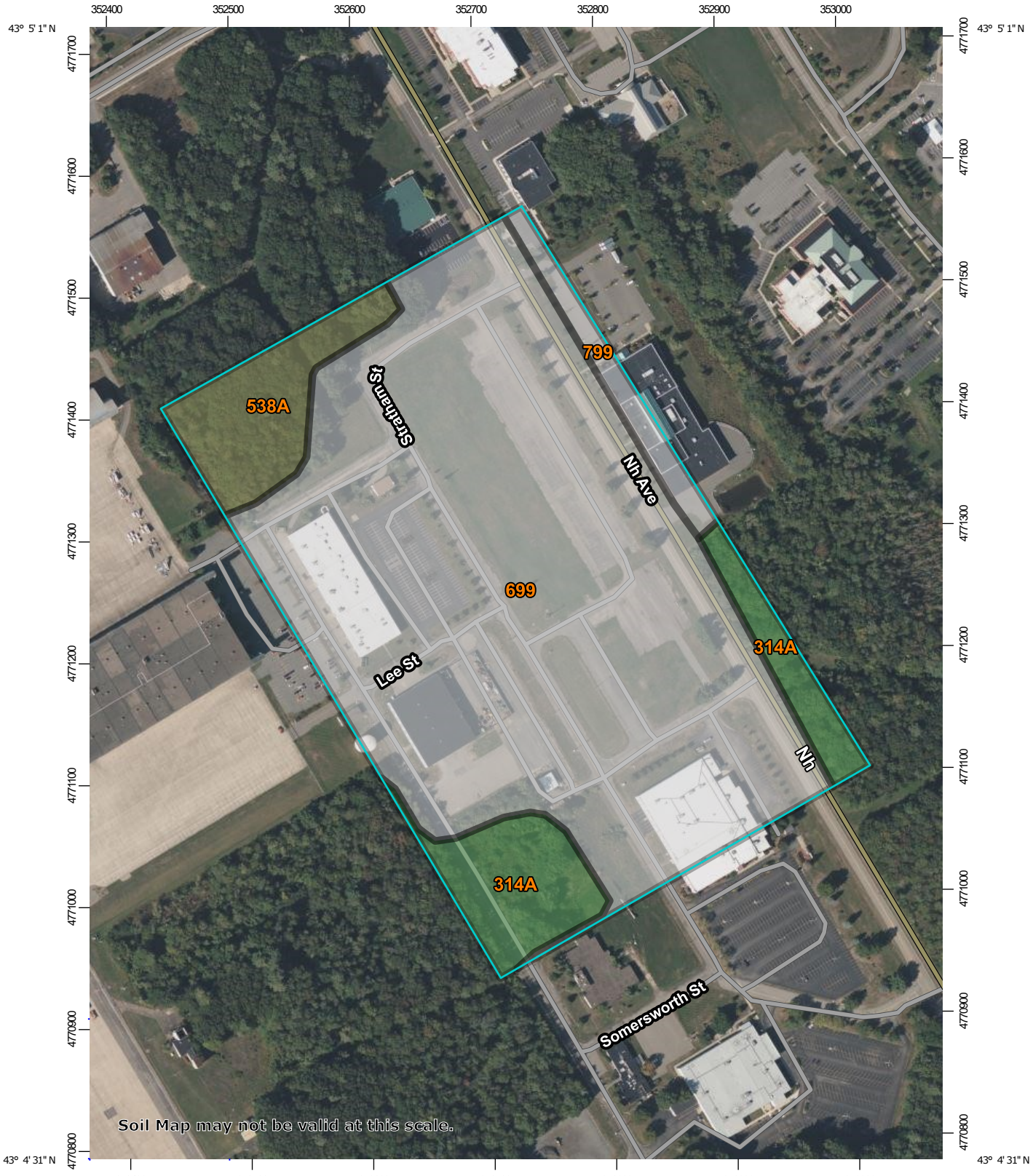
This calculation represents the treatment train directed to Contech Jellyfish Treatment Unit.

Full Treatment in compliance with Env-Wq 1508.10 shall be achieved by use of a proprietary flow-through device. The proposed Contech Jellyfish Treatment Unit - Model#: JFPD0816 will be used to treat the WQF as calculated in the above spreadsheet. The specified device is designed to treat up to 7.84 cfs of flow.

Tighe&Bond

APPENDIX F

Hydrologic Soil Group—Rockingham County, New Hampshire
(100 New Hampshire Ave)



Map Scale: 1:4,520 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 24, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
314A	Pipestone sand, 0 to 5 percent slopes	A/D	4.7	10.0%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	C/D	3.4	7.4%
699	Urban land		36.8	79.3%
799	Urban land-Canton complex, 3 to 15 percent slopes		1.5	3.3%
Totals for Area of Interest			**46.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

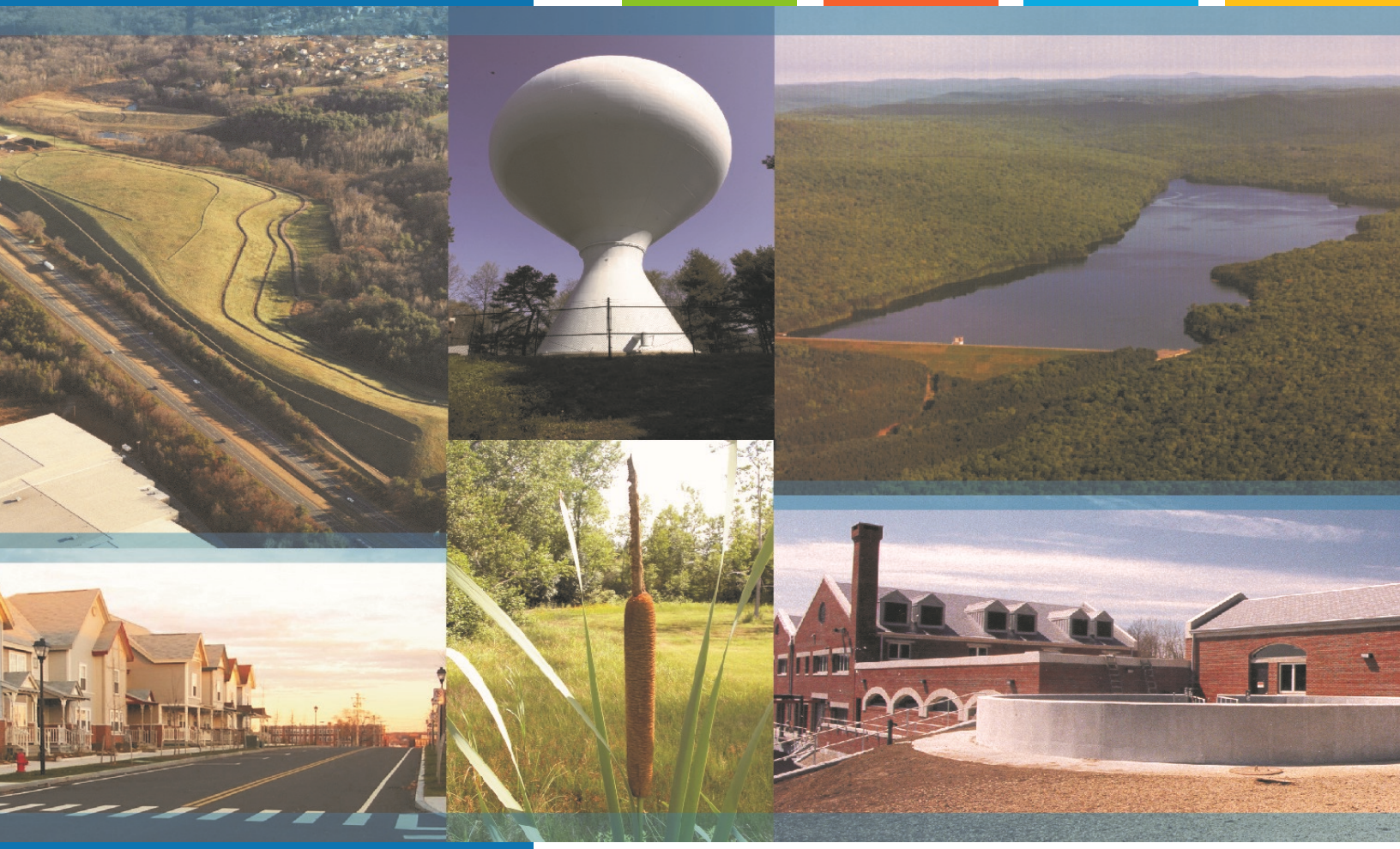
The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



Proposed Advanced Manufacturing Facility

Portsmouth, NH

Long Term Operation & Maintenance Plan

Prepared For:

Aviation Avenue Group, LLC
210 Commerce Way Suite 300
Portsmouth, NH 03801

December 19, 2022

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Tighe&Bond

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Section 1
Long-Term Operation & Maintenance Plan

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high-quality stormwater runoff.

1.1 Contact/Responsible Party

Joe Geoghegan
Aviation Avenue Group, LLC
210 Commerce Way Suite 300
Portsmouth, NH 03801

Cell: 603 518.2113
Office: 207.650.0907

Email: Joe@tdmrk.com

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

1.2 Maintenance Items

Maintenance of the following items shall be recorded:

- Litter/Debris Removal
- Landscaping
- Catch Basin / Sediment & Oil Separator Cleaning
- Pavement Sweeping
- Underground Detention Basin
- Jellyfish Filter Treatment Unit

The following maintenance items and schedule represent the minimum action required. Periodic site inspections shall be conducted, and all measures must be maintained in effective operating condition. The following items shall be observed during site inspection and maintenance:

- Inspect vegetated areas, particularly slopes and embankments for areas of erosion. Replant and restore as necessary
- Inspect catch basins for sediment buildup
- Inspect site for trash and debris

1.3 Overall Site Operation & Maintenance Schedule

Maintenance Item	Frequency of Maintenance
Litter/Debris Removal	Weekly
Pavement Sweeping - Sweep impervious areas to remove sand and litter.	Annually / as needed
Landscaping - Landscaped islands to be maintained and mulched.	Maintained as required and mulched each Spring
Catch Basin (CB) - CBs to be cleaned of solids and oils.	Bi-Annually / as needed when catch basin sumps
Underground Detention Basin - Visual observation of sediment levels within system	Bi-Annually
Jellyfish Filter Treatment Unit - Per manufacturer recommendations	- In accordance with Manufacturer's Recommendations

1.3.1 Disposal Requirements

Disposal of debris, trash, sediment and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

1.4 Underground Detention System Maintenance Requirements

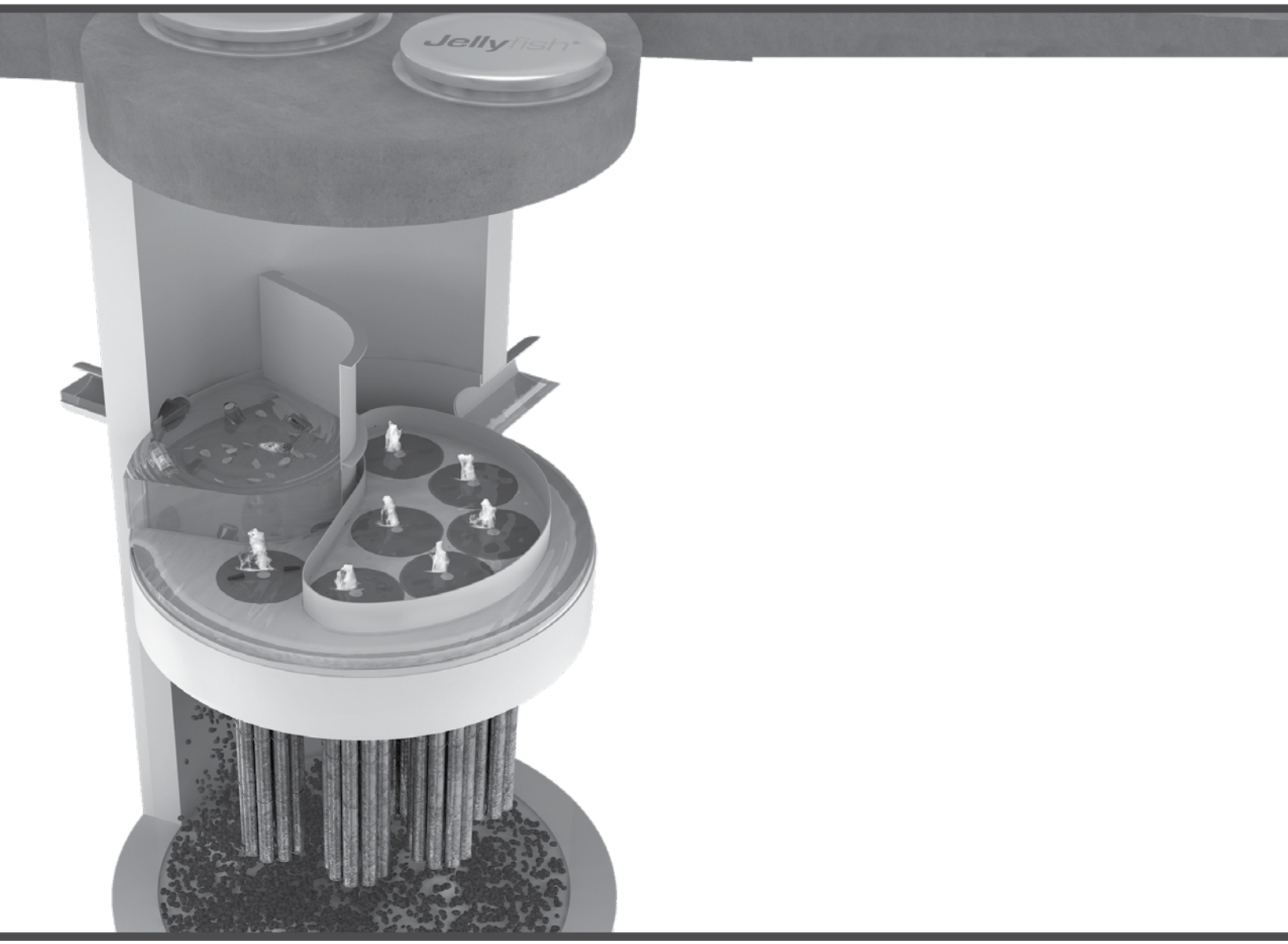
Underground Detention System Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Monitor inlet and outlet structures for sediment accumulation	Two (2) times annually	- Trash, debris and sediment to be removed - Any required maintenance shall be addressed
Deep Sump Catchbasins	Two (2) times annually	- Removal of sediment as warranted by inspection - No less than once annually

Monitor detention system for sediment accumulation	Two (2) times annually	- Trash, debris and sediment to be removed - Any required maintenance shall be addressed

1.5 Jellyfish Filter Treatment Unit Maintenance Requirements

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter Maintenance Guide



Jellyfish®

JELLYFISH® FILTER
INSPECTION & MAINTENANCE GUIDE

Jellyfish units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the Jellyfish filter to be successful, it is imperative that all other components be properly maintained. The maintenance and repair of upstream facilities should be carried out prior to Jellyfish maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

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Inspection Process 7

1.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.

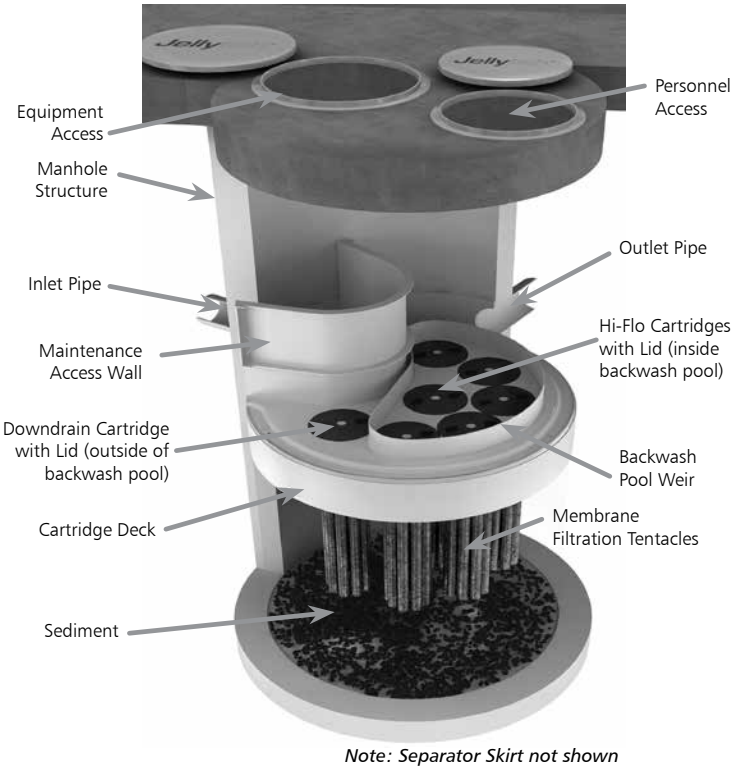
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed



Note: Separator Skirt not shown

2.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

3.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.



Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

3.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

4.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

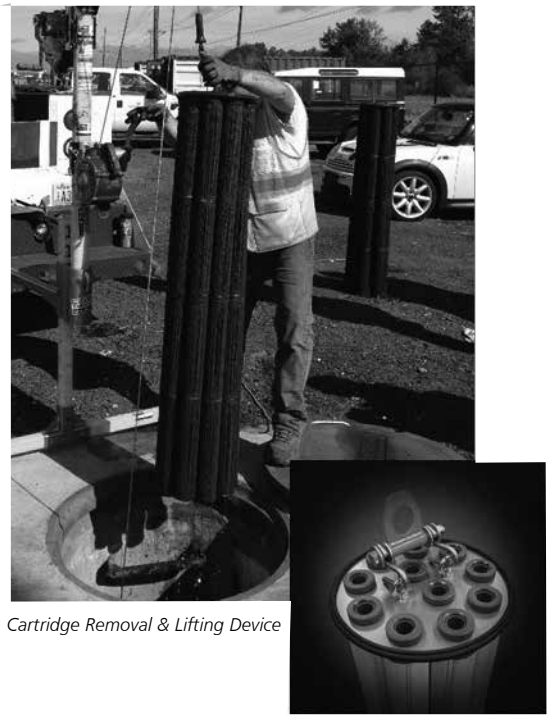
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

5.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. *Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

5.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.



Cartridge Removal & Lifting Device

2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.
3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.

4. Collected rinse water is typically removed by vacuum hose.
5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

5.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.



Vacuuming Sump Through MAW

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.



Vacuuming Sump Through MAW

6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

5.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. ***Caution: Do not force the cartridge downward; damage may occur.***
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

5.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

5.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

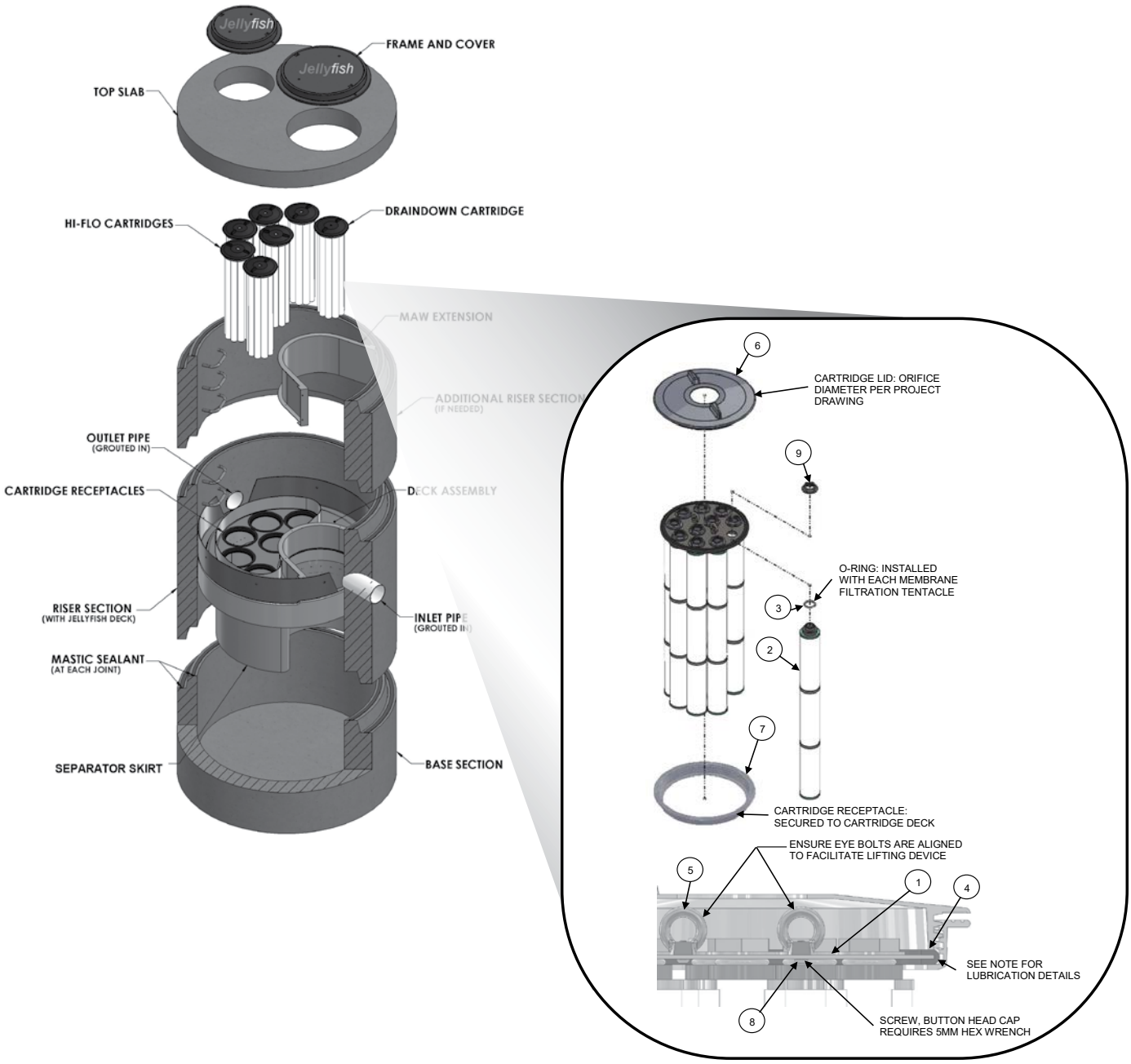


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lide (ITem 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner:				Jellyfish Model No:		
Location:				GPS Coordinates:		
Land Use:	Commercial:		Industrial:		Service Station:	
	Roadway/Highway:		Airport:		Residential:	

Date/Time:						
Inspector:						
Maintenance Contractor:						
Visible Oil Present: (Y/N)						
Oil Quantity Removed:						
Floatable Debris Present: (Y/N)						
Floatable Debris Removed: (Y/N)						
Water Depth in Backwash Pool						
Draindown Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Draindown Cartridges: (Y/N)						
Hi-Flo Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Hi-Flo Cartridges: (Y/N)						
Sediment Depth Measured: (Y/N)						
Sediment Depth (inches or mm):						
Sediment Removed: (Y/N)						
Cartridge Lids intact: (Y/N)						
Observed Damage:						
Comments:						



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Support

- Drawings and specifications are available at www.conteches.com/jellyfish.
- Site-specific design support is available from Contech Engineered Solutions.
- Find a Certified Maintenance Provider at www.conteches.com/ccmp

800.338.1122
www.ContechES.com

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1.6 Snow & Ice Management for Standard Asphalt and Walkways

Snow storage areas shall be located such that no direct untreated discharges are possible to receiving waters from the storage site (snow storage areas have been shown on the Site Plan). Salt and sand shall be used to the minimum extent practical (refer to the attached for de-icing application rate guideline from the New Hampshire Stormwater Management Manual, Volume 2,).

Deicing Application Rate Guidelines

24' of pavement (typcial two-lane road)

These rates are not fixed values, but rather the middle of a range to be selected and adjusted by an agency according to its local conditions and experience.

			Pounds per two-lane mile			
Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Salt Prewetted / Pretreated with Salt Brine	Salt Prewetted / Pretreated with Other Blends	Dry Salt*	Winter Sand (abrasives)
> 30° ↑	Snow	Plow, treat intersections only	80	70	100*	Not recommended
	Freezing Rain	Apply Chemical	80 - 160	70 - 140	100 - 200*	Not recommended
30° ↓	Snow	Plow and apply chemical	80 - 160	70 - 140	100 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↑	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↓	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↑	Snow or Freezing Rain	Plow and apply chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↓	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↑	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↓	Snow or Freezing Rain	Plow and apply chemical	240 - 320	210 - 280	300 - 400*	500 for freezing rain
0° - 15° ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	300 - 400	Not recommended	500 - 750 spot treatment as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	400 - 600**	Not recommended	500 - 750 spot treatment as needed

* Dry salt is not recommended. It is likely to blow off the road before it melts ice.

** A blend of 6 - 8 gal/ton $MgCl_2$ or $CaCl_2$ added to NaCl can melt ice as low as -10°.

Anti-icing Route Data Form				
Truck Station:				
Date:				
Air Temperature	Pavement Temperature	Relative Humidity	Dew Point	Sky
Reason for applying:				
Route:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				
Name:				

Section 2
Chloride Management Plan

Winter Operational Guidelines

The following Chloride Management Plan is for the Proposed Advanced Manufacturing Facility in Portsmouth, New Hampshire. The Plan includes operational guidelines for; winter operator certification requirements, weather monitoring, equipment calibration requirements, mechanical removal, and salt usage evaluation and monitoring. Due to the evolving nature of chloride management efforts, the Chlorides Management Plan will be reviewed annually, in advance of the winter season, to reflect the current management standards.

2.1 Background Information

The Proposed Advanced Manufacturing Facility is located within the Portsmouth Harbor Watershed in Portsmouth, New Hampshire. Portsmouth Harbor watershed is identified as a chloride-impaired waterbody.

2.2 Operational Guidelines – Chloride Management

All Aviation Avenue Group, LLC private contractors engaged at the advanced manufacturing facility premises for the purposes of winter operational snow removal and surface maintenance, are responsible for assisting in meeting compliance for the following protocols. Aviation Avenue Group, LLC private contractors are expected to minimize the effects of the use of de-icing, anti-icing and pretreatment materials by adhering to the strict guidelines outlined below.

The advanced manufacturing facility winter operational de-icing, anti-icing and pretreatment materials will adhere to the following protocols:

2.2.1 Winter Operator Certification Requirements

All private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance must be current UNHT2 Green SnowPro Certified operators or equivalent and will use only pre-approved methods for spreading abrasives on private roadways and parking lots. All private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance shall provide to Aviation Avenue Group, LLC management two copies of the annual UNHT2 Green SnowPro certificate or equivalent for each operator utilized on the advanced manufacturing facility premises. The annual UNHT2 Green SnowPro certificate or equivalent for each operator will be available on file in the advanced manufacturing facility office and be present in the vehicle/carrier at all times.

2.2.2 Improved Weather Monitoring

Aviation Avenue Group, LLC will coordinate weather information for use by winter

maintenance contractors. This information in conjunction with site specific air/ground surface temperature monitoring will ensure that private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance will make more informed decisions as to when and to what extent de-icing, anti-icing and pretreatment materials are applied to private roadways, sidewalks, and parking lots.

2.2.3 Equipment Calibration Requirements

All equipment utilized on the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance will conform to the following calibration requirements.

2.2.3.1 Annual Calibration Requirements

All private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance shall provide two copies of the annual calibration report for each piece of equipment utilized on the advanced manufacturing facility premises. Each calibration report shall include the vehicle/carrier VIN number and the serial numbers for each component including, but not limited to, spreader control units, salt aggregate spreader equipment, brining/pre-wetting equipment, ground speed orientation unit, and air/ground surface temperature monitor. Annual calibration reports will be available on file in the advanced manufacturing facility office and be present in the vehicle/carrier at all times.

Prior to each use, each vehicle/carrier operator will perform a systems check to verify that unit settings remain within the guidelines established by the Aviation Avenue Group, LLC Team in order to accurately dispense material. All private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance will be subject to spot inspections by members of the Aviation Avenue Group, LLC Team to ensure that each vehicle/carrier is operating in a manner consistent with the guidelines set herein or State and Municipal regulations. All units will be recalibrated, and the updated calibration reports will be provided each time repairs or maintenance procedures affect the hydraulic system of the vehicle/carrier.

2.2.4 Increased Mechanical Removal Capabilities

All private contractors engaged at the advanced manufacturing facility premises will endeavor to use mechanical removal means on a more frequent basis for roadways, parking lots and sidewalks. Dedicating more manpower and equipment to increase snow removal frequencies prevents the buildup of snow and the corresponding need for de-icing, anti-icing and pretreatment materials. Shortened maintenance routes, with shorter service intervals, will be used to stay ahead of snowfall. Minimized snow and ice packing will reduce the need for abrasives, salt aggregates, and/or brining solution to restore surfaces back to bare surface states after winter precipitation events.

After storm events the Aviation Avenue Group, LLC management team will be

responsible for having the streets swept to recapture un-melted de-icing materials, when practical.

2.3 Salt Usage Evaluation and Monitoring

All private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance shall provide two copies of a storm report, which includes detailed information regarding treatment areas and the use of de-icing, anti- icing and pretreatment materials applied for the removal of snow and surface maintenance on the advanced manufacturing facility premises. Aviation Avenue Group, LLC will maintain copies of Summary Documents, including copies of the Storm Reports, operator certifications, equipment used for roadway and sidewalk winter maintenance, calibration reports and amount of de-icing materials used.

2.4 Summary

The above-described methodologies are incorporated into the advanced manufacturing facility Operational Manual and are to be used to qualify and retain all private contractors engaged at the advanced manufacturing facility premises for the purpose of winter operational snow removal and surface maintenance. This section of the Manual is intended to be an adaptive management document that is modified as required based on experience gained from past practices and technological advancements that reflect chloride BMP standards. All advanced manufacturing facility employees directly involved with winter operational activities are required to review this document and the current standard Best Management Practices published by the UNH Technology Transfer (T2) program annually. All advanced manufacturing facility employees directly involved with winter operational activities, and all private contractors engaged at the advanced manufacturing facility premises for the purposes of winter operational snow removal and surface maintenance, must be current UNHT2 Green SnowPro Certified operators or equivalent and undergo the necessary requirements to maintain this certification annually.

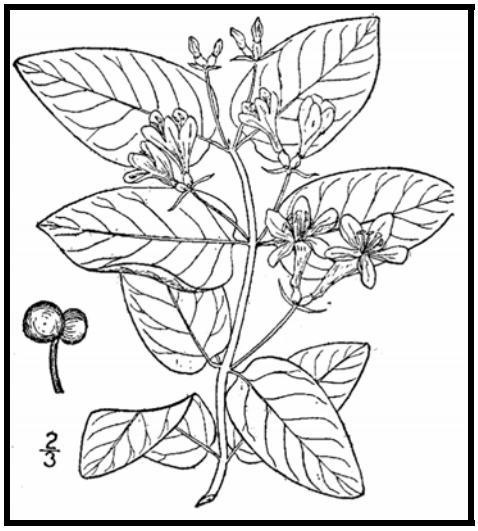
Section 3
Invasive Species

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem is classified as an invasive species. Refer to the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species.

UNIVERSITY of NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

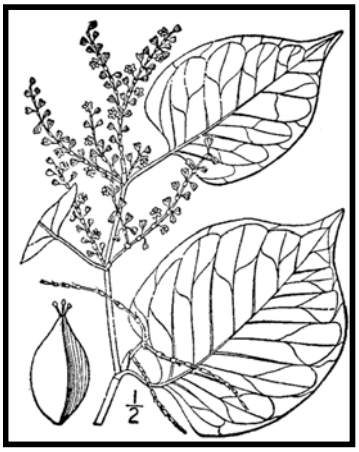
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

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Managing Invasive Plants
Methods of Control

by Christopher Mattrick

They're out there. The problem of invasive plants is as close as your own backyard.

Maybe a favorite dogwood tree is struggling in the clutches of an Oriental bittersweet vine. Clawlike canes of multiflora rose are scratching at the side of your house. That handsome burning bush you planted few years ago has become a whole clump in practically no time … but what happened to the azalea that used to grow right next to it?

If you think controlling or managing invasive plants on your property is a daunting task, you're not alone. Though this topic is getting lots of attention from federal, state, and local government agencies, as well as the media, the basic question for most homeowners is simply, "How do I get rid of the invasive plants in my own landscape?" Fortunately, the best place to begin to tackle this complex issue is in our own backyards and on local conservation lands. We hope the information provided here will help you take back your yard. We won't kid you—there's some work involved, but the payoff in beauty, wildlife habitat, and peace of mind makes it all worthwhile.

PLAN OF ATTACK

Three broad categories cover most invasive plant control: mechanical, chemical, and biological. Mechanical control means physically removing plants from the environment through cutting or pulling. Chemical control uses herbicides to kill plants and inhibit regrowth. Techniques and chemicals used will vary depending on the species. Biological controls use plant diseases or insect predators, typically from the targeted species' home range. Several techniques may be effective in controlling a single species, but there is usually one preferred method—the one that is most resource efficient with minimal impact on non-target species and the environment.



Spraying chemicals to control invasive plants.

MECHANICAL CONTROL METHODS

Mechanical treatments are usually the first ones to look at when evaluating an invasive plant removal project. These procedures do not require special licensing or introduce chemicals into the environment. They do require permits in some situations, such as wetland zones. [See sidebar on page 23.] Mechanical removal is highly labor intensive and creates a significant amount of site disturbance, which can lead to rapid reinvasion if not handled properly.

Pulling and digging

Many herbaceous plants and some woody species (up to about one inch in diameter), if present in limited quantities, can be pulled out or dug up. It's important to remove as much of the root system as possible; even a small portion can restart the infestation. Pull plants by hand or use a digging fork, as shovels can shear off portions of the root system, allowing for regrowth. To remove larger woody stems (up to about three inches in diameter), use a Weed Wrench™, Root Jack, or Root Talon. These tools, available from several manufacturers, are designed to remove the aboveground portion of the plant as well as the entire root system. It's easiest to undertake this type of control in the spring or early summer when soils are moist and plants come out more easily.



Using tools to remove woody stems.





Volunteers hand pulling invasive plants.

Suffocation

Try suffocating small seedlings and herbaceous plants. Place double or triple layers of thick UV-stabilized plastic sheeting, either clear or black (personally I like clear), over the infestation and secure the plastic with stakes or weights. Make sure the plastic extends at least five feet past the edge of infestation on all sides. Leave the plastic in place for at least two years. This technique will kill everything beneath the plastic—invasive and non-invasive plants alike. Once the plastic is removed, sow a cover crop such as annual rye to prevent new invasions.

Cutting or mowing

This technique is best suited for locations you can visit and treat often. To be effective, you will need to mow or cut infested areas three or four times a year for up to five years. The goal is to interrupt the plant's ability to photosynthesize by removing as much leafy material as possible. Cut the plants at ground level and remove all resulting debris from the site. With this treatment, the infestation may actually appear to get worse at first, so you will need to be as persistent as the invasive plants themselves. Each time you cut the plants back, the root system gets slightly larger, but must also rely on its energy reserves to push up new growth. Eventually, you will exhaust these reserves and the plants will die. This may take many years, so you have to remain committed to this process once you start; otherwise the treatment can backfire, making the problem worse.

CHEMICAL CONTROL METHODS

Herbicides are among the most effective and resource-efficient tools to treat invasive species. Most of the commonly known invasive plants can be treated using only two herbicides—glyphosate (the active ingredient in Roundup™ and Rodeo™) and triclopyr (the active ingredient in Brush-B-Gone™ and Garlon™). Glyphosate is non-selective, meaning it kills everything it contacts. Triclopyr is selective and does not injure monocots (grasses, orchids, lilies, etc.). Please read labels and follow directions precisely for both environmental and personal safety. These are relatively benign herbicides, but improperly used they can still cause both short- and long-term health and environmental problems. Special aquatic formulations are required when working in wetland zones. You are required to have a state-issued pesticide applicator license when applying these chemicals on land you do not own. To learn more about the pesticide regulations in your state, visit or call your state's pesticide control division, usually part of the state's Department of Agriculture. In wetland areas, additional permits are usually required by the Wetlands Protection Act. [See sidebar on page 23.]

Foliar applications

When problems are on a small scale, this type of treatment is usually applied with a backpack sprayer or even a small handheld spray bottle. It is an excellent way to treat large monocultures of herbaceous plants, or to spot-treat individual plants that are difficult to remove mechanically, such as goutweed, swallowwort, or purple loosestrife. It is also an effective treatment for some woody species, such as Japanese barberry, multiflora rose, Japanese honeysuckle, and Oriental bittersweet that grow in dense masses or large numbers over many acres. The herbicide mixture should contain no more than five percent of the active ingredient, but it is important to follow the instructions on the product label. This treatment is most effective when the plants are actively growing, ideally when they are flowering or beginning to form fruit. It has been shown that plants are often more susceptible to this type of treatment if the existing stems are cut off and the regrowth is treated. This is especially true for Japanese knotweed. The target plants should be thoroughly wetted with the herbicide on a day when there is no rain in the forecast for the next 24 to 48 hours.

Cut stem treatments

There are several different types of cut stem treatments, but here we will review only the one most commonly used. All treatments of this type require a higher concentration of the active ingredient than is used in foliar applications. A 25 to 35 percent solution of the active ingredient should be used for cut stem treatments, but read and follow all label instructions. In most cases, the appropriate herbicide is glyphosate, except for Oriental bittersweet, on which triclopyr should be used. This treatment can be used on all woody stems, as well as phragmites and Japanese knotweed.

For woody stems, treatments are most effective when applied in the late summer and autumn—between late August and November. Stems should be cut close to the ground, but not so close that you will lose track of them. Apply herbicide directly to the cut surface as soon as possible after cutting. Delaying the application will reduce the effectiveness of the treatment. The herbicide can be applied with a sponge, paintbrush, or spray bottle.



Cut stem treatment tools.

For phragmites and Japanese knotweed, treatment is the same, but the timing and equipment are different. Plants should be treated anytime from mid-July through September, but the hottest, most humid days of the summer are best for this method. Cut the stems halfway between two leaf nodes at a comfortable height. Inject (or squirt) herbicide into the exposed hollow stem. All stems in an infestation should be treated. A wash bottle is the most effective application tool, but you can also use an eyedropper, spray bottle, or one of the recently developed high-tech injection systems.

It is helpful to mix a dye in with the herbicide solution. The dye will stain the treated surface and mark the areas that have been treated, preventing unnecessary reapplication. You can buy a specially formulated herbicide dye, or use food coloring or laundry dye.

There is not enough space in this article to describe all the possible ways to control invasive plants. You can find other treatments, along with more details on the above-described methods, and species-specific recommendations on The Nature Conservancy Web site (tncweeds.ucdavis.edu). An upcoming posting on the Invasive Plant Atlas of New England (www.ipane.org) and the New England Wild Flower Society (www.newfs.org) Web sites will also provide further details.



Hollow stem injection tools.

Biological controls—still on the horizon

Biological controls are moving into the forefront of control methodology, but currently the only widely available and applied biocontrol relates to purple loosestrife. More information on purple loosestrife and other biological control projects can be found at www.invasiveplants.net.

DISPOSAL OF INVASIVE PLANTS

Proper disposal of removed invasive plant material is critical to the control process. Leftover plant material can cause new infestations or reinfest the existing project area. There are many appropriate ways to dispose of invasive plant debris. I've listed them here in order of preference.

1. **Burn it**—Make a brush pile and burn the material following local safety regulations and restrictions, or haul it to your town's landfill and place it in their burn pile.

2. **Pile it**—Make a pile of the woody debris. This technique will provide shelter for wildlife as well.

3. **Compost it**—Place all your herbaceous invasive plant debris in a pile and process as compost. Watch the pile closely for resprouts and remove as necessary. Do not use the resulting compost in your garden. The pile is for invasive plants only.



Injecting herbicide into the hollow stem of phragmites.

4. **Dry it/cook it**—Place woody debris out on your driveway or any asphalt surface and let it dry out for a month. Place herbaceous material in a doubled-up black trash bag and let it cook in the sun for one month. At the end of the month, the material should be non-viable and you can dump it or dispose of it with the trash. The method assumes there is no viable seed mixed in with the removed material.

Care should be taken in the disposal of all invasive plants, but several species need extra attention. These are the ones that have the ability to sprout vigorously from plant fragments and should ideally be burned or dried prior to disposal: Oriental bittersweet, multiflora rose, Japanese honeysuckle, phragmites, and Japanese knotweed.

Christopher Mattrick is the former Senior Conservation Programs Manager for New England Wild Flower Society, where he managed conservation volunteer and invasive and rare plant management programs. Today, Chris and his family work and play in the White Mountains of New Hampshire, where he is the Forest Botanist and Invasive Species Coordinator for the White Mountain National Forest.



Controlling Invasive Plants in Wetlands

Special concerns; special precautions

Control of invasive plants in or around wetlands or bodies of water requires a unique set of considerations. Removal projects in wetland zones can be legal and effective if handled appropriately. In many cases, herbicides may be the least disruptive tools with which to remove invasive plants. You will need a state-issued pesticide license to apply herbicide on someone else's property, but all projects in wetland or aquatic systems fall under the jurisdiction of the Wetlands Protection Act and therefore require a permit. ***Yes, even hand-pulling that colony of glossy buckthorn plants from your own swampland requires a permit.*** Getting a permit for legal removal is fairly painless if you plan your project carefully.

1. Investigate and understand the required permits and learn how to obtain them. The entity charged with the enforcement of the Wetlands Protection Act varies from state to state. For more information in your state, contact:

   ME: Department of Environmental Protection
   www.state.me.us/dep/blwq/docstand/nrpapage.htm

   NH: Department of Environmental Services
   www.des.state.nh.us/wetlands/

   VT: Department of Environmental Conservation
   www.anr.state.vt.us/dec/waterq/permits/htm/pm_cud.htm

   MA: Consult your local town conservation commission

   RI: Department of Environmental Management
   www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm

   CT: Consult your local town Inland Wetland and Conservation Commission

2. Consult an individual or organization with experience in this area. Firsthand experience in conducting projects in wetland zones and navigating the permitting process is priceless. Most states have wetland scientist societies whose members are experienced in working in wetlands and navigating the regulations affecting them. A simple Web search will reveal the contact point for these societies. Additionally, most environmental consulting firms and some nonprofit organizations have skills in this area.

3. Develop a well-written and thorough project plan. You are more likely to be successful in obtaining a permit for your project if you submit a project plan along with your permit application. The plan should include the reasons for the project, your objectives in completing the project, how you plan to reach those objectives, and how you will monitor the outcome.

4. Ensure that the herbicides you plan to use are approved for aquatic use. Experts consider most herbicides harmful to water quality or aquatic organisms, but rate some formulations as safe for aquatic use. Do the research and select an approved herbicide, and then closely follow the instructions on the label.

5. If you are unsure—research, study, and most of all, ask for help. Follow the rules. The damage caused to aquatic systems by the use of an inappropriate herbicide or the misapplication of an appropriate herbicide not only damages the environment, but also may reduce public support for safe, well-planned projects.

Section 4
Annual Updates and Log Requirements

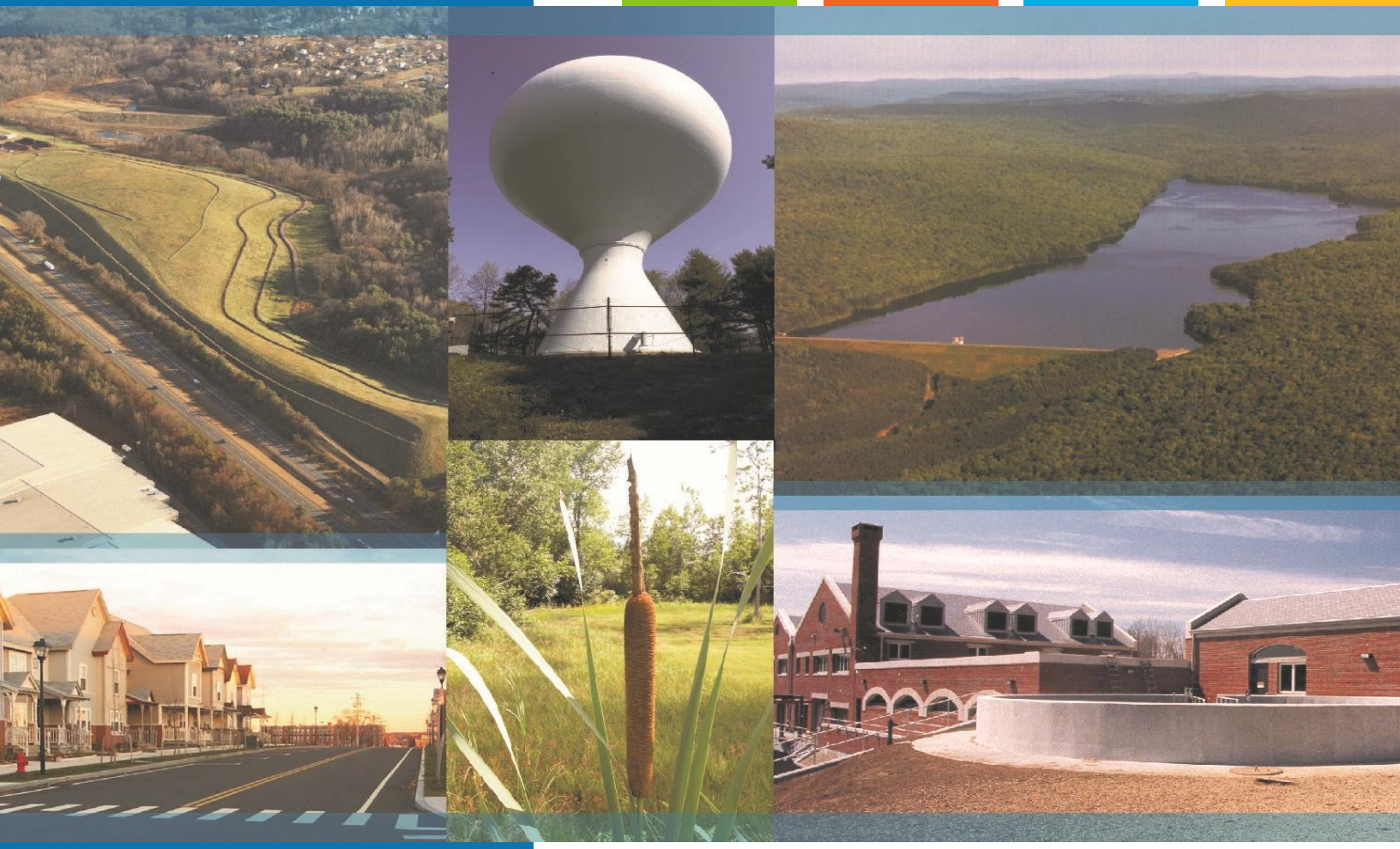
The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site including NHDES.

Copies of the Stormwater Maintenance report shall be submitted to the Pease Development Authority on an annual basis.

Stormwater Management Report						
Proposed Advanced Manufacturing Facility		**100 New Hampshire Avenue – Portsmouth NH 03801**				
BMP Description	**Date of Inspection**	**Inspector**	**BMP Installed and Operating Properly?**	**Cleaning / Corrective Action Needed**	**Date of Cleaning / Repair**	**Performed By**
Deep Sump CB's			❑Yes ❑No			
Underground Detention			❑Yes ❑No			
Jellyfish Filter Treatment Unit			❑Yes ❑No			

J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Report_Evaluation\Drainage Report\P0595-015_O&M_IN PROGRESS.docx



Advanced Manufacturing Facility
100 New Hampshire Avenue

TRAFFIC IMPACT ASSESSMENT

Procon, INC.

October 7, 2022

Tighe&Bond

100% Recyclable

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Section 1
Introduction

This Traffic Impact Assessment (TIA) evaluates the potential traffic impact of the proposed manufacturing facility, located at 100 New Hampshire Avenue within the Pease International Tradeport in Portsmouth, NH. The TIA was prepared in accordance with NHDOT and industry standards. The Project Site is bounded by Rochester Avenue to the west, New Hampshire Avenue to the east, Stratham Street to the north, and Newfields Street to the south. The site is bounded by industrial, manufacturing, and office land uses, consistent with the Tradeport as a whole. The Site location is shown in Figure 1.

The applicant plans to construct a 209,750± square foot advanced manufacturing facility on the presently vacant lot on site and within a portion of the roadway right-of-way of Rochester Avenue from Stratham Street to Newfields Street. Access to the Site will be provided via four driveways – two on New Hampshire Avenue providing access to employee and visitor parking, and two on Rochester Avenue providing access to loading areas at the north and south ends of the proposed facility. As part of the project, parking will be provided by two on-site surface parking lots accessible with a total of 147 parking spaces. The proposed Site Plan Layout is enclosed in Appendix H. The proposed facility is expected to be complete and occupied in 2025.

Based on the analyses conducted herein, it is the professional opinion of Tighe & Bond that the traffic expected to be generated by the proposed manufacturing development is has a negligible effect on traffic operations within the study area.

Section 2
Existing Conditions

The Project Site is bounded by Rochester Avenue to the west, New Hampshire Avenue to the east, Stratham Street to the north, and Newfields Street to the south. The following sections describe the roadways and intersections included within the study area.

2.1 Roadways

2.1.1 New Hampshire Avenue

New Hampshire Avenue is classified as an urban major collector and maintained by the City of Portsmouth. The roadway runs primarily in the north to south direction connecting Pease Boulevard to the north and Durham Street, International Drive and Corporate Drive to the south. Near the project site, New Hampshire Avenue is generally a two-lane roadway with approximate 15-foot travel lanes separated by a double yellow center line. No marked shoulder or edge lines are provided. The roadway widens to provide marked left turn lanes northbound at Rochester Avenue, and both northbound and southbound at Exeter Street/Manchester Square.

A five-foot (min.) sidewalk is located on the east side of the roadway for the entirety of New Hampshire Avenue. The speed limit is posted at 35 mph in both directions.

2.1.2 Pease Boulevard

Pease Boulevard is classified as an urban major collector and is maintained by the City of Portsmouth and Town of Newington. The roadway is located north of the site location and runs primarily in the east-west direction connecting US Route 4 On/Off Ramps to the east and Pease Air National Guard Base to the west. Between Arboretum Drive/New Hampshire Avenue and International Drive, the Pease Boulevard cross section varies. Pease Boulevard at Arboretum/New Hampshire Avenue starts as a three-lane roadway (two westbound, one eastbound) with 11-foot travel lanes and narrow shoulders. The single eastbound travel lane widens to two lanes approaching International Drive, with two 11-foot travel lanes in each direction and narrow shoulders, a dedicated eastbound left turn lane, and two westbound left turn lanes. Pease Boulevard widens to a five-lane section eastbound with four 11-foot wide through lanes and a right-turn lane to the US Route 4 southbound on-ramp, with the four travel lanes aligning with two left turn lanes and two through lanes at the US Route 4 northbound ramps. Four 11-foot travel lanes are also carried westbound under the US Route 4 overpass, with two left turn lanes to the southbound on-ramp and two through lanes. The roadway continues west of US Route 4 as Gosling Road.

A five-foot sidewalk is provided on both sides of Pease Boulevard between Arboretum Drive/New Hampshire Avenue and International Drive, with a 10-foot buffered multi-use path provided on the north side of the roadway between International Drive and the US Route 4 southbound off-ramp. A 6-foot sidewalk is provided on the north side of Pease Boulevard between the US Route 4 ramps. The speed limit is posted at 35 mph in both directions.

2.1.3 Grafton Road

Grafton Road is classified as an urban major collector and maintained by the City of Portsmouth. The roadway runs in a northeast to southwest alignment connecting Corporate Drive to the northeast and Route 33 (Greenland Road) to the southwest. Grafton Road is typically a two-lane roadway with 12-foot travel lanes, widening to provide a two-lane approach with separate left and right turn lanes at its northeastern termini at Corporate Drive and its southern termini at Route 33. Shoulder lane widths vary along the roadway. Narrow shoulder widths are found near the Aviation Avenue intersection which gradually increases to 3-foot shoulders on the west side of the roadway and 5-foot shoulder on the east side of the roadway. Near Pease Golf Course Driveway/Park & Ride Driveway, the shoulder lane width increases to 10 feet on the east side of the roadway. Between Pease Golf Course Driveway/Park & Ride Driveway and Route 33, the shoulder width on both sides of the roadway is 10 feet which reduces to 3 feet on the west side of the roadway with no marked shoulder on the east at Route 33 intersection. A 10-foot buffered multi-use path is provided on the northwest side of the roadway. The speed limit is posted at 35 mph in both directions.

2.1.4 Route 33 (Greenland Road)

Route 33 (Greenland Road) is classified as an urban minor arterial and maintained by the State of New Hampshire. The roadway runs primarily in the east to west direction connecting Route 151 (Portsmouth Avenue) to the west of the study area and US Route 1 (Lafayette Road) to the east of the study area. Between the I-95 Southbound ramps and Grafton Road, Route 33 is a four-lane divided roadway with 11-foot travel lanes and 8-foot-wide shoulders on both sides of the roadway. Route 33 continues as an undivided four-lane roadway east of Grafton Road, with 11-foot travel lanes and 8-foot shoulders. Shoulder widths are narrower were dedicated turn lanes are provided at Grafton Road and at the I-95 Northbound ramps. No pedestrian accommodations are provided east of Grafton Road, with a speed limit of 35 mph.

2.2 Study Area Intersections

2.2.1 Gosling Road at US Route 4 Northbound Ramps

Gosling Road intersects the US Route 4 Northbound Ramps to the east of the US Route 4 (Spaulding Turnpike) overpass at a signalized intersection, with the Northbound off-ramp approaching from the south and the Northbound on-ramp departing to the north. The Gosling Road eastbound approach provides four lanes, with two left-turn lanes and two through travel lanes. The Gosling Road westbound approach consists of three lanes, with two through lanes and one shared through/right-turn lane. The left-most westbound through lane aligns with a left-turn lane at the downstream southbound ramp intersection. The northbound off-ramp approach provides four lanes, with two left-turn lanes and two right-turn lanes. Left turn movements from Gosling Road eastbound and from the northbound off-ramp are controlled with exclusive signal phases. The northbound on-ramp provides two lanes departing the intersection. As previously described, a sidewalk is provided on the north side of Gosling Road through the intersection, with a crosswalk across the northbound on-ramp. A concurrent pedestrian traffic signal phase is provided for this crosswalk. Marked edge lines are provided on all approaches with a 1-to-2-foot offset from the curb or edge of roadway.

2.2.2 Pease Boulevard at US Route 4 Southbound Ramps

Pease Boulevard intersects the US Route 4 Southbound Ramps to the west of the US Route 4 (Spaulding Turnpike) overpass at a signalized intersection, with the Southbound off-ramp approaching from the north and the Southbound on-ramp departing to the south. The Pease Boulevard westbound approach provides four lanes, with two left-turn lanes and two through travel lanes. The Pease Boulevard eastbound approach consists of five lanes, with four through lanes and one exclusive right-turn lane. The two left-most eastbound through lanes align with the left-turn lanes at the downstream northbound ramp intersection. The southbound off-ramp approach provides four lanes, with two left-turn lanes and two right-turn lanes. Left turn movements from Pease Boulevard westbound and from the southbound off-ramp are controlled with exclusive signal phases. The southbound on-ramp provides two lanes departing the intersection. As previously described, a sidewalk is provided on the north side of Pease Boulevard through the intersection, with a crosswalk across the southbound off-ramp. A concurrent pedestrian traffic signal phase is provided for this crosswalk. Marked edge lines are provided on all approaches with a 1-to-2-foot offset from the curb or edge of roadway.

2.2.3 Pease Boulevard at International Drive

International Drive intersects Pease Boulevard from the north and south to form a 4-way, signalized intersection. Pease Boulevard is median divided, with the eastbound approach providing an exclusive left-turn lane and two through travel lanes, while the westbound approach provides two left-turn lanes and two through lanes. The north leg of International Drive is median divided and provides a wide, unmarked southbound approach, which is of adequate width to accommodate two vehicles side-by-side. International Drive northbound provides one shared left/through lane and two channelized right turn lanes under signal control. Sidewalks are provided on both sides of Pease Boulevard west of the intersection, on both sides of International Drive to the south, on the west side of International Drive to the north, and on the north side of Pease Boulevard to the east. Crosswalks are provided across all four approaches and across the channelized northbound right-turn lanes, and concurrent pedestrian traffic signal phases are provided. Marked edge lines are provided on Pease Boulevard, with a 1-to-2-foot offset from the curb or edge of roadway. Variable width shoulders are provided on International Drive south of the intersection, ranging from 2 to 8 feet.

2.2.4 Pease Boulevard at Arboretum Drive and New Hampshire Avenue

Arboretum Drive intersects Pease Boulevard from the north and New Hampshire Avenue intersects from the south to form a 4-way, stop controlled intersection. Pease Boulevard provides two lanes eastbound, with an exclusive left-turn lane and a shared through/right-turn lane. All other approaches provide one general purpose lane. Sidewalks are provided on the north side of Pease Boulevard on both sides of the intersection, and on the south side of Pease Boulevard east of the intersection. Crosswalks are provided across the east and north legs of the intersection. Marked edge lines with a 1-to-2-foot offset are provided on Pease Boulevard east of the intersection, with 6-foot shoulders on Arboretum Drive north of the intersection.

2.2.5 New Hampshire Avenue at Exeter Street and Manchester Square

Exeter Street intersects New Hampshire Avenue from the west and Manchester Square intersects from the east to form a 4-way, unsignalized intersection with stop control on Exeter Street and Manchester Square. Exclusive left turn lanes are provided on New Hampshire Avenue in both directions, and an exclusive right turn lane is provided on

Manchester Square westbound. All other movements are provided through single general purpose or shared lanes on each approach. Sidewalks are present on the east side of New Hampshire Avenue and on the south side of Exeter Street and Manchester Square, with crosswalks across the south and east legs of the intersection. No marked shoulders are present.

2.2.6 New Hampshire Avenue and Corporate Drive at Durham Street and International Drive

New Hampshire Avenue and Corporate Drive form the north and south legs, respectively, of a 4-way unsignalized intersection, with Durham Street approaching from the west and International Drive approaching from the east under stop control. All approaches provide single general-purpose lanes, with no marked shoulders. Sidewalks are provided on the north side of Durham Street and International Drive, on the east side of New Hampshire Avenue, and on both sides of Corporate Drive. Crosswalks are provided across the north and west legs of the intersection.

2.2.7 Corporate Drive at Grafton Road

Grafton Road intersects Corporate Drive from the southwest under stop control at a 3-way, T-intersection. Corporate Drive southbound provides a through travel lane and a right-turn lane, while Corporate Drive northbound provides a left-turn lane and a through lane. Grafton Road widens at its approach to Corporate Drive to provide separate left and right turn lanes. No shoulders or edge lines are present. Sidewalks are provided on the south side of Grafton Road and on the east side of Corporate Drive, with a crosswalk across the south leg of the intersection.

2.2.8 Grafton Road at Aviation Avenue

Aviation Avenue intersects Grafton Road from the north to form a 3-way, T-intersection, with Aviation Avenue under stop control. All approaches provide a single general-purpose lane, with a wide departure lane on Aviation Avenue to accommodate truck turns from Grafton Road. A multi-use path is provided along the northwest side of Grafton Road, with a wide crosswalk across Aviation Avenue. 1-to-2-foot shoulders are provided on Grafton Road, with 1-to-4-foot shoulders on Aviation Avenue.

2.2.9 Grafton Road at Golf Course and Park & Ride Driveways

The driveway for the Pease Golf Course approaches from the west and the combined driveway for the Portsmouth Transportation Center and Park & Ride lot approaches from the east to form a 4-way, unsignalized intersection with Grafton Road. The golf course and Park & Ride driveways are stop controlled. Grafton Road provides a single general-purpose lane in each direction at this intersection with typical 8-foot shoulders that taper and narrow to approximately 1-foot at the intersection. The driveway approaches also feature a single general-purpose lane, with no marked shoulders. A multi-use path is provided along the west side of Grafton Road, with a wide crosswalk across the golf course driveway.

2.2.10 Grafton Road at I-95 Southbound Off-Ramp

I-95 Southbound Exit 3A includes a direct off-ramp to Grafton Road. Grafton Road is median divided in the vicinity of the off-ramp, prohibiting left turns to Grafton Road southbound. The ramp provides a single-lane approach under stop control, while Grafton Road provides a single lane northbound through the intersection.

2.2.11 Grafton Road at Route 33 (Greenland Road)

Grafton Road intersects Route 33 (Greenland Road) from the north to form a 3-way, T-type, signalized intersection. Grafton Road southbound has a two-lane approach with exclusive left and right turn lanes. Route 33 eastbound provides an exclusive left-turn lane and two through lanes, while the westbound approach provides two through lanes and a right-turn lane. The north and west legs of the intersection are median divided. The multi-use path along the west side of Grafton Road continues adjacent to the intersection, turning towards the west and continuing on the north side of Route 33; however, no connection to the intersection is provided and no crosswalks or other pedestrian accommodations are provided. A narrow 2-foot shoulder is provided on the Grafton Road approach, with 7-to-10-foot shoulders provided on Route 33.

2.2.12 Route 33 (Greenland Road) at I-95 Southbound Ramps

I-95 Southbound Exit 3B provides an off-ramp to Route 33 (Greenland Road) to the west of Grafton Road, creating a 3-way, T-type signalized intersection. Route 33 westbound provides a four-lane approach with two left-turn lanes and two through lanes, while Route 33 eastbound provides three through lanes and a right-turn lane to the I-95 southbound on-ramp. The I-95 southbound off-ramp provides two left turn lanes and a right turn lane, while the on-ramp contains two lanes departing the intersection. The multi-use path continues along the north side of Route 33, but does not directly connect to the intersection, and no crosswalks or other pedestrian accommodations are provided.

2.2.13 Route 33 (Greenland Road) at I-95 Northbound Ramps

The I-95 Northbound ramps intersect Route 33 (Greenland Road) at a 3-way, T-type signalized intersection. Route 33 eastbound provides two through lanes at the intersection, with a channelized ramp departing Route 33 in advance of the intersection, yielding to, and merging with the on-ramp serving the left turn from Route 33 westbound, which provides an exclusive left-turn lane and two through lanes. The northbound off-ramp provides separate left and right turn lanes. 6-foot shoulders are provided on Route 33, with 1-to-2-foot left and right shoulders on the off-ramp. No pedestrian accommodations are provided in the vicinity of the intersection.

2.3 Traffic Volumes

Turning movement counts (TMC) were collected at the study area intersections on a typical weekday in February 2022 during the weekday morning (7:00 AM to 9:00 AM) and afternoon peak hour (4:00 PM to 6:00 PM). Automatic traffic recorder (ATR) data was collected on Pease Boulevard, just west of the US Route 4 southbound ramps during a 96-hour period from Wednesday thru Saturday. The ATR location was strategically chosen to align with the NHDOT Count Station (LOC ID 82379024) to serve as a basis for comparison of existing traffic volumes to recent NHDOT traffic volumes to determine if adjustments to traffic volumes should be made. The historical traffic volumes on Pease Boulevard at this location are presented below in Table 1 below.

TABLE 1
Pease Boulevard Historical Traffic Volumes

Year	AADT	Peak Hour Traffic Volumes		Source
		AM Peak (8:00 AM to 9:00 AM)	PM Peak (4:00 PM to 5:00 PM	
2015	21,000	2,160	2,272	NHDOT (October)[1]
2016	21,420	Not Available		NHDOT Growth Estimate[2]
2017	21,848	Not Available		NHDOT Growth Estimate[2]
2018	20,100	1,835	2,052	NHDOT July[3]
2019	20,341	Not Available		NHDOT Growth Estimate[2]
2020	17,168	Not Available		NHDOT Growth Estimate[2]
2021	15,807	1,212	1,558	NHDOT (August)
2022	12,894	1,161	1,428	Tighe & Bond February 2022 ATR[4]

[1]Peak Hour Traffic Volumes Adjusted based on 2017 Seasonal Adjustment Factor to Peak
[2]Based on NHDOT Yearly Growth Rates
[3]Peak Hour Traffic Volumes Adjusted based on 2018 Seasonal Adjustment Factor to Peak
[4]Total Daily Traffic and Peak Hour Traffic Volumes Adjusted based on 2019 Seasonal Adjustment Factor to Peak

The variance in volumes over time, and specifically the decrease in volume between 2018 and 2021, represent the impact of the COVID-19 pandemic on work schedules and commuting patterns. Traffic volume trends nation- and region-wide confirm that traffic volumes have generally returned to pre-pandemic levels in 2022. Based on this understanding, it is prudent to assume that post-2020 traffic volumes represent current conditions, and that it would be overly conservative to apply adjustment factors to conform current traffic volumes to a pre-pandemic level. Adjustments were considered and have been applied to peak hour intersection volumes based on a comparison of post-pandemic 2022 traffic volumes to 2021 volumes.

Based on a review of the collected traffic volumes and comparison to the historical volumes, it was determined the existing morning and afternoon peak hour traffic volumes should be adjusted by a factor of 4% during the weekday morning peak period, and 9% during the weekday afternoon peak period. These adjustment factors were determined by reviewing the historical NHDOT traffic volume data during the peak hour time periods and comparing it to the 2021 peak hour volumes. NHDOT seasonal adjustment factors were applied to both the historical volumes and existing traffic volumes per NHDOT guidelines. The raw TMC and ATR data are provided in Appendix A. The Traffic Volume Adjustment Factor calculation and NHDOT traffic volumes on Pease Boulevard are provided in Appendix B. Adjusted 2022 Existing Peak Hour Traffic Volumes are provided in Figure 2.

2.4 Capacity and Queue Analyses - Existing Conditions

Capacity and queue analyses were performed for the study intersections for the 2022 Existing Conditions during the weekday morning and weekday afternoon peak hours. Analyses were conducted using Trafficware Synchro Studio 11 software, which conducts the analysis based on *Highway Capacity Manual (HCM)* methodology. Consistent with NHDOT guidelines, analyses for signalized intersections were conducted using methods of the 2000 HCM, while analysis for unsignalized intersections utilized the HCM 6th Edition

methodology. The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix F. The queue analysis results are summarized based upon the length of vehicle queueing on an intersection approach. For unsignalized intersections, queues are quantified for 95th percentile (design queues). For signalized intersections, queues are quantified by 95th percentile (design) and 50th percentile (average) queues. Tables 4 and 5 in Section 7 summarize the capacity and queue analyses results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix G.

As shown in Table 3, most of the overall intersections and individual intersection approaches operate at acceptable LOS D or better during the peak hours with the exception of the following:

- **Route 33 (Greenland Road) at Grafton Road:**
  - The eastbound left movement operates at LOS F during the weekday morning and weekday afternoon peak hour.
  - The intersection operates at overall LOS E during the weekday afternoon peak, with failing operations on the eastbound left and southbound right movements.
- **Route 33 (Greenland Road) at I-95 Northbound Ramps:**
  - The westbound left turn from Route 33 operates at LOS E during the weekday morning and weekday afternoon peak hour. Predicted 50th and 95th percentile queues exceed available storage.
  - The northbound left turn from the off-ramp operates at LOS E during the weekday morning and weekday afternoon peak hour.
- **Grafton Road at Pease Golf Course/Park & Ride Driveways:**
  - The westbound movement from the Park & Ride and Portsmouth Transportation Center driveway operates at LOS F during both peak periods.
- **New Hampshire Avenue/Corporate Drive at International Drive/Durham Street:**
  - The stop-controlled International Drive approach operates at LOS F during the weekday afternoon peak hour.

2.5 Collision History

Crash data was collected from police reports from the City of Portsmouth Police Department and Town of Newington Police Department for the most recent three-year period between January 2019 and December 2021 for the study area intersections. At the time of study completion, updated crash data was not available for the intersections of New Hampshire Avenue/Corporate Drive at Durham Street/International Drive and Corporate Drive at Grafton Road; in lieu of updated data, crash data from 2007 to 2009 has been provided from a historical report, and will be supplemented by more recent data once available. Table 2 on the following page provides a summary of the collisions within the study area. Appendix E includes detailed collision summaries for each of the study intersections.

As shown in Table 2, there were 66 motor vehicle collisions reported in the study area during the three-year period analyzed. Crashes occurred most frequently at the intersection of New Hampshire Avenue at Exeter Street and Manchester Square, with eleven collisions, accounting for about 17% of the reported total. The intersection of Grafton Road at the Pease Golf Course and Park & Ride Driveways experienced the second highest number of collisions with nine, accounting for about 14% of the reported total. The Route 33 (Greenland Road) at Grafton Road and Corporate Drive at Grafton Road each experienced eight collisions, each representing approximately 12 percent of the total. The intersections of Pease Boulevard at the Us Route 4 Southbound Ramps and New Hampshire Avenue/Corporate Drive at Durham Street/International Drive each experienced seven collisions, each representing approximately 11 percent of the total. The remaining intersections experienced five or fewer crashes within the study period. For the three-year period, the intersections of Grafton Road at the I-95 Southbound off-ramp and Route 33 (Greenland Road) at the I-95 Southbound ramps did not have any reported collisions based on data provided by the City of Portsmouth.

TABLE 2

Study Area Collision History Summary

	2007	2008	2009	2019	2020	2021	Total	Percent
Gosling Road at US Route 4 NB Ramps				1	0	3	**4**	**6.1%**
Pease Boulevard at US Route 4 SB Ramps				1	3	3	**7**	**10.6%**
Pease Boulevard at International Drive				1	0	0	**1**	**1.5%**
Pease Blvd at NH Ave/ Arboretum Dr				1	1	3	**5**	**7.6%**
NH Ave at Exeter St/ Manchester Sq				4	4	3	**11**	**16.7%**
Grafton Road at Aviation Avenue				2	2	0	**4**	**6.1%**
Grafton Road at Golf Course/Park and Ride				4	1	4	**9**	**13.6%**
Route 33 at Graton Road				5	1	2	**8**	**12.1%**
Route 33 at I-95 NB Ramps				1	1	0	**2**	**3.0%**
NH Ave at International Dr/ Durham Street	1	2	4				**7**	**10.6%**
Corporate Drive at Graton Road	3	5	0				**8**	**12.1%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

More detailed collision history summary data is provided in Appendix E. The most frequent types of collision were angle and rear-end, accounting for about 39% and 24% of the total collisions within the study area, respectively. The third most frequent collision type was single vehicle crashes with animal or fixed objects which made up about 8% of the total collisions. The remaining crashes were sideswipe – same direction, accounting for about 5% of the total collisions. The fifteen crashes summarized from historical data from 2007 to 2009 are unclassified, as detailed data was not available for these intersections.

About 86% of collisions occurred on weekdays, spread throughout the day. With the remaining 14% occurring on weekends. Weather and road surface conditions were only provided by the Newington Police Department and was available for the two intersections where historical data was utilized. 24 out of the 32 reported collisions in the study area for which weather data was available occurred when the weather was clear. The remaining eight collisions occurred when it was raining or snowing. 22 of the 32 reported collisions occurred when the road surface was dry.

The collision data indicates no reported fatalities. One reported serious injury was reported for an angle collision at the intersection of New Hampshire Avenue at Exeter Street/Manchester Square. An additional serious injury crash was reported in the historical data reviewed for the intersection of Corporate Drive at Grafton Road. The remaining 64 crashes resulted in minor injuries or property damage only. There were no pedestrian or cyclist crashes reported in the three-year period.

2.6 Public Transportation

The Cooperative Alliance for Seacoast Transportation (COAST) provides transit service within the study area. Bus Route 42 is the primary bus route in the study area with stops along New Hampshire Avenue including two bus stops at the site location (New Hampshire Ave at Stratham Street and New Hampshire Avenue at Newfields Street). Bus Route 42 also have bus stops along Grafton Road to the Portsmouth Transportation Center/Park & Ride and provides service to downtown Portsmouth. The route operates from 6:43AM to 6:34PM Monday through Friday. Bus Route 40 also operates in the study area with a bus stop at the Portsmouth Transportation Center and provides access to downtown Portsmouth. The route operates from 7:24 AM to 7:46 PM Monday through Friday. Bus Route 42 and 40 map and schedule are included in Appendix J.

Section 3
No Build Conditions

The No-Build Condition represents the projection of traffic volumes and operating conditions without the anticipated additional site generated traffic. Consistent with NHDOT guidelines, the study area is analyzed for an Opening Year (2025) and Design Year (2035). This section describes the growth and development considerations included in the 2025 and 2035 No-Build traffic volumes.

3.1 Traffic Growth

To develop the traffic volumes for the 2025 and 2035 No-Build Conditions, the 2022 Existing traffic volumes were grown by one percent per year to represent the general growth of traffic on the study area roadways. This growth rate is consistent with the average growth rate in NHDOT Region E - Southeast, the region in which Portsmouth is located. Background NHDOT growth data is included in Appendix B.

NHDOT and the Pease Development Authority (PDA) were contacted about other planned/approved developments in the area that may add new traffic to the study area prior to 2025. The following developments were identified:

- Lonza Biologics: This project proposes to construct 1,046,000± sf of new industrial space and 700 new parking spaces contained within two garages along Corporate Drive as an expansion of existing facilities located between Goose Bay Drive and International Drive.

- 73 Corporate Drive: This project proposes to construct additional medical office space adjacent to the existing Wentworth-Douglass facility on Corporate Drive.

- Pease Surface Transportation Master Plan: Traffic volumes for the full occupancy of existing buildings and projects that are planned or under construction are included in the No-Build Condition.

Traffic volumes for these projects were obtained from record studies and assigned to the study area intersections in the No-Build conditions. Data for background development projects are included in Appendix D. It is assumed that other smaller developments or small vacancies in existing developments are captured by the background traffic growth rate.

The 2025 and 2035 No-Build traffic volumes for the weekday morning and weekday evening peak hours are shown in Figures 3 and 4, respectively.

3.2 Capacity and Queue Analyses - No-Build Conditions

Capacity and queue analyses were conducted for the 2025 and 2035 No-Build Conditions traffic volumes for both peak periods using the methodology described in Section 2.4. Tables 3 and 4 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix G.

The increase in expected future traffic based on the 1 percent per year compounded growth rate and the site-specific development added to the future No-Build Conditions result in some degradation of operations when compared to existing conditions. Most of the overall intersections and individual intersection approaches operate at acceptable LOS D or better during the peak hours except for the following:

- **Route 33 (Greenland Road) at Grafton Road:**
  - The eastbound left movement continues to operate at LOS F during the weekday morning and weekday afternoon peak hour, with increases in approach delay and queue increases of approximately one vehicle in the 2025 No-Build Condition and up to four vehicles in the 2035 No-Build Condition in the weekday morning peak, and up to two vehicles in 2035 in the weekday afternoon peak.
  - The intersection degrades to LOS F in the 2035 No-Build Condition during the weekday morning peak hour. It continues to operate at LOS E in the weekday afternoon peak hour in the 2025 No-Build Condition, degrading to LOS F overall in the 2035 No-Build Condition.
- **Route 33 (Greenland Road) at I-95 Northbound Ramps:**
  - The westbound left turn from Route 33 continues to operate at LOS E during the weekday morning and weekday afternoon peak hour in both No-Build conditions. Predicted queue lengths continue to exceed available storage.
  - The northbound left turn from the off-ramp continues to operate at LOS E during the weekday morning peak hour in the 2025 No-Build Condition and during the weekday afternoon peak hour in both No-Build conditions. It degrades to LOS F in the weekday morning peak hour in 2035, with increases in predicted 95th percentile queues which are still contained within the available storage.
  - The eastbound right turn to I-95 degrades from LOS D to LOS F in the weekday afternoon peak hour between the 2025 and 2035 No-Build conditions.
  - The overall intersection degrades to LOS E in the 2035 No-Build condition in the weekday afternoon peak hour.
- **Grafton Road at Pease Golf Course/Park & Ride Driveways:**
  - The westbound movement from the Park & Ride and Portsmouth Transportation Center driveway continues to operate at LOS F during both peak periods.
  - The eastbound movement from the Pease Golf Course degrades from LOS D to LOS F during the weekday afternoon peak hour between the 2025 and 2035 No-Build conditions.
- **Pease Boulevard at International Drive:**

  - The signal-controlled northbound right turn from International Drive degrades from LOS C to LOS F in the weekday afternoon peak hour between the 2025 and 2035 No-Build conditions.
  - The overall intersection also degrades from LOS C to LOS F in the weekday afternoon peak hour between the 2025 and 2035 No-Build conditions.

- **Pease Boulevard at US Route 4 Southbound Ramps:**
  - The southbound right turn from the US Route 4 southbound off-ramp degrades from LOS C to LOS F in the weekday morning peak hour between the 2025 and 2035 No-Build conditions.
- **Pease Boulevard/Gosling Road at US Route 4 Northbound Ramps:**
  - The northbound left turn from the US Route 4 northbound off-ramp degrades from LOS D to LOS E in the weekday morning peak hour between the 2025 and 2035 No-Build conditions.
- **Pease Boulevard at Arboretum Drive/New Hampshire Avenue:**
  - The northbound New Hampshire Avenue approach operates at LOS E in the weekday afternoon peak hour 2035 No-Build condition.
- **Route 33 (Greenland Road) at I-95 Southbound Ramps:**
  - The left turn from the I-95 southbound off-ramp degrades to LOS E in the both peak periods in the 2025 No-Build condition, and to LOS F in the 20235 No-Build condition. Increases in predicted 95th percentile queues are contained within the available storage.
  - The left turn from Route 33 to the I-95 on-ramp operates at LOS F in the weekday afternoon peak hour in the 2035 No-Build condition.
- **New Hampshire Avenue/Corporate Drive at International Drive/Durham Street:**
  - The stop-controlled International Drive approach continues to operate at LOS F during the weekday afternoon peak hour during both No-Build conditions.
- **Corporate Drive at Grafton Road:**
  - The eastbound left turn to Grafton Road degrades from LOS C to LOS F between the 2025 and 2035 No-Build conditions in the weekday morning peak hour, and from LOS D to LOS F between the 2025 and 2035 No-Build conditions in the weekday afternoon peak hour.
- **Grafton Road at Aviation Avenue:**
  - The Aviation Avenue approach degrades from LOS C to LOS E between the 2025 and 2035 No-Build conditions in the weekday afternoon peak hour.

Section 4
Proposed Conditions

The proposed 209,750± square foot manufacturing facility will include approximately 147 surface parking spaces. The proposed development is expected to be complete and occupied in 2025. The Site Layout Plan is presented in Appendix H.

4.1 Site Access

Access to the Site will be provided via four full access, unsignalized driveways, with two on New Hampshire Avenue for passenger cars, and two on Rochester Avenue for trucks. The proposed northern site driveway on New Hampshire Avenue is located approximately 280 feet south of Stratham Street and provides access to a 99-vehicle space surface parking lot, while the second driveway is located approximately 700 feet south on New Hampshire Avenue and provides access to a 48-space surface parking lot. The two proposed driveways on Rochester Avenue provide access to two truck loading dock areas at the northern and southern end of the proposed facility. It is anticipated that trucks will access the Site to/ from Rochester Avenue to the south.

Intersection sight distance was reviewed at the proposed Site driveways in accordance with criteria set forth in the AASHTO publication *A Policy on the Geometric Design of Highways and Streets*, 7th Edition, 2018. Available site distances were estimated based on the site layout plan and available aerial mapping. The posted speed of 35 miles per hour on New Hampshire Avenue was used as a basis for the analysis.

Based on AASHTO guidelines and the posted speed of the roadway, the intersection sight distance requirement is 386 feet for passenger cars and 592 feet for combination trucks turning left under *Case B – Left Turn from Stop*. Each site driveway provides intersection sight distance exceeding the AASHTO requirements for passenger vehicles and combination trucks except for the northern site driveway on Rochester Avenue. Intersection sight distance is limited looking to the north due to the sharp curvature at Rochester Avenue/ Stratham Street. While the available sight distance is approximately 250 feet, this is not expected to be a safety issue due to the perceived low traffic volumes in this industrial area and the expected reduced vehicle speeds due to the 90 degree turn between Rochester Avenue and Stratham Street.

4.2 Multi-Modal Accommodations

Multi-modal access is provided in the general vicinity of the proposed development. Site improvements include a sidewalk along the western side of the facility, with connections to the employee and visitor parking areas and the building itself, as well as a proposed crosswalk across New Hampshire Avenue at Newfields Street which connects to existing sidewalk on the east side of New Hampshire Avenue. Near the site location there is a sidewalk network that connects to Pease Boulevard and to Grafton Road. Just east of the proposed development on the eastern side of New Hampshire Avenue there is a 5-foot-wide sidewalk that connects to the multi-use path along Grafton Road and Route 33 (Greenland Road). These facilities may encourage cycling and walking to the development. In addition, the previously mentioned COAST bus stops are located at the intersection of Stratham Street at New Hampshire Avenue and Newfields Street at New Hampshire

Avenue directly in front of the proposed development with bus connection at the Portsmouth Transportation Center to downtown Portsmouth.

4.3 Trip Generation

Site generated traffic volumes were estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021. The proposed land use for the project site is advanced manufacturing, which uses innovative technologies in the manufacturing process, which in turn reduces the number of employees needed over a traditional manufacturing process; however, since ITE does not have a comparable Land Use Code (LUC) for advancing manufacturing, and in the absence of end user data for similar facilities, LUC 140 – Manufacturing was used to estimate traffic for the development. This likely represents a conservative estimate of expected trips for the proposed use. Table 3 summarizes the trip generation estimates, which have been separated into passenger car trips and truck trips.

TABLE 3
Site-Generated Traffic Summary

Proposed - 209,750 SF Manufacturing Facility (Passenger Cars)			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	105	32	137
Weekday Afternoon	46	103	149
Weekday	451	451	902

Proposed - 209,750 SF Manufacturing Facility (Trucks)			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	3	3	6
Weekday Afternoon	2	4	6
Weekday	47	47	94

Proposed - 209,750 SF Manufacturing Facility (Total Vehicles)			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	108	35	143
Weekday Afternoon	48	107	155
Weekday	498	498	996

Based on the ITE data, the proposed development is expected to generate 996 vehicles over a typical weekday, comprised of 902 passenger car vehicle trips and 94 truck trips. During the weekday morning peak hour, the project is expected to generate 143 vehicle trips, with 108 entering and 35 exiting, comprised of 137 passenger car trips and 6 truck trips. During the weekday afternoon peak hour, the project is expected to generate 155 vehicle trips, with 48 entering and 107 exiting, comprised of 149 passenger car trips and 6 truck trips.

While the nearby COAST bus stop and sidewalk facilities in the area may provide additional options for employees to travel to the proposed development, no credit was taken for these trips.

4.4 Arrival and Departure Distribution

The distribution of the proposed site generated traffic entering and exiting the Site was applied to the roadway network based on existing travel patterns within the study area. Separate distribution patterns were determined for passenger car and truck trips. Truck trip distribution is partially based on prior consultation with PDA and distributes trucks exclusively to and from I-95 to the south, prohibiting site-generated truck distribution on Pease Boulevard.

Arrive and distribution patterns are shown in Figures 5 and 6, and are as follows:

Passenger Cars:

- 25% East to/from Pease Boulevard/Gosling Road
- 25% South to/from I-95
- 20% Northeast to/from I-95
- 20% Northwest to/from US Route 4
- 10% East (Local) to/from Route 33

Trucks:

- 55% South to/from I-95
- 45% Northeast to/from I-95

Site generated employee and visitor passenger car trips are expected to balance between the two site driveways on New Hampshire Avenue based on parking availability and the proximity of parking to the employee's work area. Similarly, truck trips are expected to be split between the two driveways on Rochester Avenue based on availability and proximity of loading dock locations.

Figures 7 and 8 show the proposed site generated traffic distributed to the study area roadways for the weekday morning and afternoon peak hours.

Section 5
Build Conditions

The anticipated site generated traffic volumes associated with the proposed development were added to the 2025 and 2035 No-Build Conditions traffic volumes to develop the 2025 and 2035 Build Conditions traffic volumes, which are presented in Figure 9 and 10, respectively, for the weekday morning and afternoon peaks.

5.1 Capacity and Queue Analyses – Build Conditions

Capacity and queue analyses were conducted for the 2025 and 2035 Build Conditions for the peak hours using the methodology described in Section 2.4. Tables 4 and 5 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix D.

Many of the study area intersections and individual intersection approaches continue to operate at acceptable LOS D or better during the peak hours in the 2025 and 2035 Build Conditions. Study area intersections that were identified in Section 2.4 and 3.2 to operate at LOS E or LOS F in the No-Build Conditions continue to operate at the same LOS under Build Conditions, except for the following:

- **Pease Boulevard at Arboretum Drive/New Hampshire Avenue:**
    - For the weekday afternoon peak hour, the northbound New Hampshire Avenue approach degrades from LOS C to LOS E in the 2025 Build condition and from LOS E to LOS F in the 2035 Build condition.
    - The overall intersection LOS degrades from LOS D in the 2035 No-Build to LOS E in the 2035 Build condition.

A review of calculated queue lengths in Table 5 reveals that the majority of queues are unchanged between the No-Build and Build Conditions for both 2025 and 2035 or increase by one car length or fewer. An exception is the Route 33 (Greenland Road) at I-95 Northbound ramps intersection, which experiences increasing queues extending beyond available capacity in the weekday afternoon peak hour for both the eastbound right turn and westbound left turn to I-95 Northbound. Storage is limited for the westbound left turn by the adjacent signalized intersection of Sherburne Road approximately 500 feet east of the I-95 Northbound ramp intersection, and the existing accommodation of back-to-back left turn lanes for Route 33 westbound at I-95 and eastbound at Sherburne Road.

Increasing queues are also predicted for the Grafton Road eastbound left turn at Corporate Drive in both peak periods, which operates at LOS F in both the 2035 No-Build and 2035 Build conditions.

Section 6
Conclusions & Recommendations

1. A 209,750± square foot advanced manufacturing facility is proposed to be constructed on the presently vacant lot on New Hampshire Avenue in the Pease Tradeport area in Portsmouth, NH. The development will provide approximately 147 parking spaces to accommodate employee and visitor parking. The proposed development is expected to be complete and occupied by 2025.

2. Access to the Site will be provided via for full access, unsignalized driveways. Two driveways on New Hampshire Avenue will serve passenger cars, while two driveways on Rochester Avenue will serve truck traffic to and from the proposed loading docks. Trucks will access the site to and from Rochester Avenue to the south.

3. The proposed land use for the project site is advanced manufacturing, which uses innovative technologies in the manufacturing process, which in turn reduces the number of employees needed over a traditional manufacturing process. ITE Land Use Code 140 – Manufacturing was used to estimate traffic for the development, which is based on more traditional manufacturing methods. This likely represents a conservative estimate of expected trips for the proposed use.

4. Based on the ITE data, the proposed manufacturing facility is expected to generate 996 vehicles over a typical weekday, comprised of 902 passenger car vehicle trips and 94 truck trips. During the weekday morning peak hour, the project is expected to generate 143 vehicle trips, with 108 entering and 35 exiting, comprised of 137 passenger car trips and 6 truck trips. During the weekday afternoon peak hour, the project is expected to generate 155 vehicle trips, with 48 entering and 107 exiting, comprised of 149 passenger car trips and 6 truck trips.

5. The project proposes internal and adjacent roadway sidewalk connections, creating and promoting connections to a robust existing sidewalk network along study area roadways.

6. Vehicle collision history, compiled from local police and historic reports, do not indicate a significant or notable pattern of collisions in the study area.

7. The capacity analyses show that the study area intersections will continue to operate at the same LOS under Build Conditions as in No-Build Conditions for both the 2025 opening year and 2035 design year. One exception is the intersection of Pease Boulevard at Arboretum Drive and New Hampshire Avenue, which degrades to LOS E in the weekday afternoon peak hour in the 2035 No-Build condition and further degrades to LOS F in the 2035 Build condition.

8. Based on the results of the foregoing analysis, it is the professional opinion of Tighe & Bond that while the addition of background growth on a 13-year horizon to the 2035 design year results in undesirable LOS at some area intersections, the addition of site-generated traffic has a negligible effect on traffic operations within the study area.

Section 7
Additional Tables

TABLE 4
Intersection Operation Summary - Capacity

	Lane Use	Weekday Morning Peak Hour																Weekday Afternoon Peak Hour											
		2022 Existing			2025 No-Build			2025 Build			2035 No-Build			2035 Build				2022 Existing			2025 No-Build			2025 Build			2035 No-Build			2035 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Traffic Signal - Pease Boulevard at International Drive																													
Overall		**B**	**15.0**	**0.71**	**B**	**15.3**	**0.71**	**B**	**15.3**	**0.72**	**C**	**25.4**	**0.88**	**C**	**25.6**	**0.88**		**B**	**19.8**	**0.86**	**C**	**21.0**	**0.89**	**C**	**22.0**	**0.90**	**F**	**124.8**	**1.50**	**F**	**129.7**	**1.54**
Pease Boulevard	EBL	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00		C	25.5	0.11	C	25.7	0.11	C	26.3	0.11	C	32.2	0.09	C	33.0	0.09
	EBTR	C	25.0	0.27	C	25.7	0.28	C	25.9	0.32	D	42.4	0.43	D	42.5	0.47		B	19.7	0.58	B	19.8	0.59	C	20.3	0.64	C	22.7	0.55	C	23.0	0.59
	WBL	B	17.8	0.71	B	18.1	0.71	B	18.4	0.72	C	26.4	0.88	C	27.1	0.88		C	24.9	0.17	C	25.0	0.17	C	25.6	0.18	C	27.9	0.59	C	28.9	0.59
	WBTR	A	5.6	0.30	A	5.7	0.31	A	5.8	0.34	A	6.8	0.32	A	6.9	0.34		B	16.3	0.32	B	16.3	0.33	B	16.3	0.37	B	13.5	0.28	B	13.5	0.29
	NBTL	C	21.1	0.03	C	21.6	0.03	C	21.9	0.03	C	31.1	0.03	C	31.3	0.03		B	10.6	0.02	B	10.7	0.02	B	11.1	0.02	B	18.5	0.03	B	19.4	0.03
International Drive	NBR	C	23.6	0.47	C	24.3	0.48	C	24.6	0.49	D	46.1	0.82	D	46.8	0.82		C	22.5	0.86	C	25.0	0.89	C	27.0	0.90	F	259.0	1.50	F	277.9	1.54
	SB	C	21.0	0.02	C	21.5	0.02	C	21.8	0.02	C	31.0	0.02	C	31.2	0.02		B	11.3	0.17	B	11.5	0.18	B	11.9	0.18	C	20.2	0.27	C	21.1	0.28
Traffic Signal - Pease Boulevard at US Route 4 SB On/Off Ramps																													
Overall		**C**	**24.8**	**0.61**	**C**	**25.6**	**0.67**	**C**	**26.5**	**0.73**	**C**	**62.6**	**1.25**	**C**	**69.5**	**1.30**		**C**	**28.8**	**0.72**	**C**	**29.2**	**0.74**	**C**	**29.1**	**0.74**	**C**	**30.2**	**0.79**	**C**	**30.2**	**0.79**
Pease Boulevard	EBT	C	24.8	0.14	C	24.9	0.14	C	24.9	0.15	C	25.2	0.21	C	25.2	0.22		C	24.1	0.44	C	24.7	0.46	C	25.0	0.49	C	27.8	0.58	C	28.1	0.61
	EBR	C	24.4	0.08	C	24.6	0.08	C	24.5	0.08	C	24.6	0.13	C	24.5	0.13		C	23.5	0.34	C	24.0	0.35	C	24.0	0.35	C	27.8	0.51	C	27.8	0.51
	WBL	C	25.2	0.18	C	25.1	0.18	C	26.3	0.18	C	27.3	0.20	C	28.1	0.20		D	53.3	0.72	D	53.8	0.74	D	53.4	0.74	D	52.8	0.79	D	52.6	0.79
	WBT	B	15.8	0.40	B	15.9	0.41	B	15.5	0.42	B	16.5	0.55	B	16.3	0.56		A	6.7	0.17	A	7.1	0.17	A	7.3	0.18	B	10.8	0.28	B	11.1	0.29
US Route 4 SB On/ Off Ramps	SBL	C	29.7	0.52	C	30.7	0.54	C	31.4	0.55	D	35.2	0.63	D	35.5	0.64		C	33.7	0.48	C	33.9	0.49	C	33.9	0.49	C	34.7	0.52	C	34.8	0.52
	SBR	C	31.8	0.61	C	33.7	0.67	D	36.6	0.73	F	159.4	1.25	F	182.7	1.30		C	29.6	0.05	C	29.7	0.05	C	29.7	0.06	C	30.4	0.11	C	30.5	0.11
Traffic Signal - Pease Boulevard at US Route 4 NB On/Off Ramps																													
Overall		**C**	**29.9**	**0.70**	**C**	**30.7**	**0.73**	**C**	**30.7**	**0.74**	**D**	**41.8**	**1.01**	**D**	**41.9**	**1.01**		**C**	**25.0**	**0.65**	**C**	**25.5**	**0.67**	**C**	**26.0**	**0.69**	**C**	**31.7**	**0.82**	**C**	**32.2**	**0.84**
Pease Boulevard	EBL	C	20.4	0.09	C	20.4	0.10	C	20.2	0.11	B	16.4	0.17	B	16.2	0.18		C	30.7	0.65	C	30.2	0.67	C	32.4	0.69	D	48.3	0.82	D	49.7	0.84
	EBT	D	36.7	0.57	D	37.3	0.58	D	36.8	0.58	D	35.1	0.64	C	34.6	0.64		B	17.3	0.56	B	17.7	0.59	B	17.4	0.61	B	19.0	0.71	B	18.9	0.73
	WBTR	B	18.6	0.18	B	18.5	0.18	B	18.4	0.20	C	20.5	0.27	C	20.6	0.29		C	23.5	0.55	C	24.7	0.58	C	25.3	0.60	C	30.9	0.75	C	31.6	0.77
US Route 4 NB On/ Off Ramps	NBL	C	33.6	0.70	D	35.2	0.73	D	36.2	0.74	E	70.1	1.01	E	71.6	1.01		C	31.1	0.23	C	31.2	0.23	C	31.2	0.23	C	32.7	0.36	C	32.8	0.36
	NBR	C	25.7	0.11	C	26.2	0.12	C	26.8	0.12	C	28.9	0.13	C	29.1	0.13		C	30.7	0.17	C	30.8	0.18	C	30.8	0.18	C	31.2	0.20	C	31.3	0.20
Traffic Signal - Greenland Road (State Route 33) at I-95 SB On/Off Ramps																													
Overall		**C**	**30.7**	**0.95**	**C**	**32.5**	**0.97**	**C**	**32.7**	**0.97**	**D**	**43.3**	**1.08**	**D**	**43.8**	**1.08**		**C**	**32.2**	**0.95**	**C**	**34.2**	**0.98**	**C**	**34.9**	**0.98**	**D**	**49.2**	**1.09**	**D**	**51.8**	**1.09**
I-95 SB On/ Off Ramps	WBL	D	51.8	0.95	E	57.6	0.97	E	57.6	0.97	F	87.0	1.08	F	87.0	1.08		D	53.0	0.95	E	59.3	0.98	E	59.3	0.98	F	89.7	1.09	F	89.7	1.09
	WBR	C	27.2	0.27	C	27.4	0.28	C	27.4	0.28	C	28.5	0.39	C	28.5	0.39		C	25.7	0.10	C	25.7	0.10	C	25.7	0.10	C	25.8	0.11	C	25.8	0.11
	NBT	C	27.2	0.76	C	28.2	0.79	C	28.6	0.80	D	38.0	0.93	D	39.1	0.94		C	34.0	0.83	D	35.5	0.86	D	36.0	0.87	D	46.3	0.96	D	46.3	0.96
Greenland Road (State Route 33)	NBR	B	18.5	0.13	B	18.7	0.13	B	18.9	0.13	C	20.3	0.15	C	20.5	0.15		C	23.0	0.17	C	23.2	0.17	C	23.3	0.17	C	23.7	0.19	C	23.7	0.19
	SBL	D	38.5	0.53	D	38.5	0.54	D	38.5	0.56	D	38.2	0.61	D	38.2	0.62		D	43.7	0.83	D	45.3	0.85	D	48.9	0.89	F	81.9	1.04	F	97.1	1.09
	SBT	A	8.9	0.25	A	9.0	0.25	A	9.0	0.25	A	9.2	0.28	A	9.2	0.28		B	12.6	0.59	B	12.8	0.60	B	12.8	0.60	B	14.0	0.67	B	14.0	0.67
Traffic Signal - Greenland Road (State Route 33) at Grafton Road																													
Overall		**D**	**39.1**	**1.31**	**D**	**43.8**	**1.38**	**D**	**46.6**	**1.43**	**F**	**86.9**	**2.01**	**F**	**94.0**	**2.13**		**E**	**60.1**	**1.75**	**E**	**66.0**	**1.81**	**E**	**70.4**	**1.81**	**F**	**107.6**	**1.99**	**F**	**114.9**	**1.99**
Greenland Road (State Route 33)	EBL	F	183.1	1.31	F	211.3	1.38	F	232.4	1.43	F	494.4	2.01	F	547.6	2.13		F	392.5	1.75	F	415.5	1.81	F	415.5	1.81	F	496.8	1.99	F	496.8	1.99
	EBT	B	10.5	0.74	B	11.2	0.77	B	11.7	0.78	C	20.6	0.92	C	22.5	0.94		B	16.4	0.80	B	17.2	0.82	B	17.2	0.82	C	22.1	0.91	C	22.1	0.91
	WBT	B	18.5	0.50	B	18.7	0.51	B	18.7	0.51	B	19.5	0.57	B	19.5	0.57		D	36.5	0.94	D	41.4	0.97	D	41.4	0.97	E	69.5	1.07	E	69.5	1.07
	WBR	B	16.5	0.24	B	16.6	0.25	B	16.9	0.27	B	17.4	0.31	B	17.8	0.34		B	15.2	0.11	B	15.2	0.11	B	15.3	0.12	B	15.4	0.13	B	15.5	0.15
Grafton Road	SBL	C	22.5	0.42	C	22.4	0.42	C	22.3	0.45	C	22.4	0.58	C	22.3	0.59		B	19.4	0.59	B	19.9	0.61	C	21.8	0.68	D	40.4	0.92	E	55.4	0.99
	SBR	C	20.2	0.10	C	20.1	0.11	B	19.8	0.11	B	18.1	0.15	B	17.8	0.16		F	84.6	1.08	F	99.4	1.12	F	124.3	1.19	F	238.5	1.46	F	267.2	1.53
Traffic Signal - Greenland Road (State Route 33) at I-95 NB On/Off Ramps																													
Overall		**C**	**31.3**	**0.89**	**C**	**32.1**	**0.90**	**C**	**33.7**	**0.94**	**D**	**39.6**	**1.05**	**D**	**43.9**	**1.12**		**C**	**30.5**	**0.82**	**C**	**31.8**	**0.83**	**C**	**33.4**	**0.87**	**E**	**55.6**	**1.16**	**E**	**62.7**	**1.22**
Greenland Road (State Route 33)	EBT	C	24.6	0.55	C	25.4	0.57	C	26.6	0.58	C	29.6	0.67	C	29.7	0.67		C	24.6	0.45	C	25.6	0.47	C	26.5	0.48	C	32.0	0.60	C	33.4	0.62
	EBR	C	22.3	0.37	C	22.8	0.38	C	23.7	0.39	C	26.0	0.46	C	26.1	0.46		D	37.6	0.78	D	41.9	0.83	D	46.7	0.87	F	127.1	1.16	F	151.5	1.22
	WBL	E	63.0	0.51	E	63.2	0.52	E	63.2	0.52	E	63.2	0.54	E	63.2	0.54		E	62.1	0.82	E	62.0	0.83	E	62.0	0.83	E	60.9	0.84	E	60.7	0.84
	WBT	B	11.0	0.27	B	11.3	0.28	B	12.0	0.29	B	12.7	0.32	B	12.7	0.33		A	6.0	0.41	A	6.2	0.43	A	6.7	0.43	A	7.9	0.49	A	8.5	0.50
I-95 NB On/ Off Ramps	NBL	E	66.9	0.89	E	68.9	0.90	E	75.4	0.94	F	102.8	1.05	F	126.7	1.12		E	62.6	0.66	E	62.7	0.67	E	62.7	0.68	E	62.2	0.70	E	61.2	0.71
	NBR	D	42.6	0.44	D	43.0	0.48	D	42.2	0.49	D	46.7	0.65	D	49.2	0.71		D	52.9	0.25	D	52.7	0.26	D	51.8	0.26	D	50.6	0.29	D	49.6	0.29

TABLE 4 (CONTINUED)
Intersection Operation Summary - Capacity

	Lane Use	Weekday Morning Peak Hour																Weekday Afternoon Peak Hour											
		2022 Existing			2025 No-Build			2025 Build			2035 No-Build			2035 Build				2022 Existing			2025 No-Build			2025 Build			2035 No-Build			2035 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Unsignalized AWSC - Pease Boulevard at Arboretum Drive/New Hampshire Avenue																													
Overall		**B**	**13.2**	**0.52**	**B**	**13.7**	**0.54**	**C**	**15.4**	**0.61**	**C**	**15.5**	**0.62**	**C**	**18.0**	**0.69**		**C**	**17.2**	**0.75**	**C**	**18.6**	**0.78**	**D**	**26.9**	**0.89**	**D**	**28.2**	**0.91**	**E**	**43.6**	**1.02**
Pease Boulevard	EB	A	9.7	0.08	A	9.8	0.09	B	10.1	0.09	B	10.3	0.10	B	10.6	0.10		B	12.1	0.30	B	12.5	0.31	B	13.3	0.33	B	14.1	0.37	B	14.9	0.39
	WBL	B	14.9	0.47	C	15.4	0.48	C	19.6	0.61	C	17.7	0.55	C	23.8	0.69		B	14.1	0.37	B	14.6	0.39	C	16.5	0.45	C	16.8	0.45	C	18.9	0.52
	WBTR	B	11.3	0.34	B	11.6	0.36	B	11.8	0.36	B	12.7	0.41	B	13.0	0.42		A	9.4	0.06	A	9.6	0.06	A	9.9	0.06	B	10.1	0.07	B	10.4	0.07
New Hampshire Avenue	NB	B	10.6	0.26	B	10.8	0.27	B	11.5	0.30	B	11.7	0.31	B	12.5	0.35		C	22.0	0.75	C	24.4	0.78	E	38.8	0.89	E	41.9	0.91	F	69.9	1.02
Arboretum Drive	SB	B	14.9	0.52	C	15.6	0.54	C	16.6	0.56	C	18.3	0.62	C	19.8	0.64		B	11.4	0.25	B	11.7	0.26	B	12.4	0.27	B	13.0	0.31	B	13.6	0.32
Unsignalized TWSC - New Hampshire Avenue at Exeter Street/Manchester Square																													
Exeter Street	EB	C	16.3	0.09	C	16.7	0.09	C	18.5	0.10	C	18.8	0.12	C	21.0	0.13		C	16.3	0.08	C	16.7	0.08	C	18.2	0.09	C	18.6	0.10	C	20.5	0.12
Manchester Square	WBLT	C	20.7	0.12	C	21.4	0.13	C	24.5	0.16	D	25.1	0.17	D	29.0	0.20		C	21.6	0.21	C	22.5	0.22	D	25.9	0.26	D	27.3	0.29	D	32.1	0.33
	WBR	A	9.6	0.02	A	9.6	0.02	A	9.7	0.02	A	9.8	0.02	A	9.9	0.02		B	11.2	0.05	B	11.3	0.05	B	11.9	0.06	B	11.8	0.06	B	12.4	0.07
New Hampshire Avenue	NBL	A	8.4	0.03	A	8.4	0.03	A	8.6	0.03	A	8.6	0.03	A	8.8	0.03		A	7.9	0.01	A	7.9	0.01	A	8.0	0.01	A	8.0	0.01	A	8.1	0.01
	SBL	A	7.8	0.04	A	7.8	0.04	A	7.9	0.04	A	7.9	0.04	A	8.0	0.04		A	8.3	0.01	A	8.4	0.01	A	8.6	0.02	A	8.5	0.02	A	8.7	0.02
Unsignalized TWSC - New Hampshire Avenue/Corporate Drive at International Drive/Durham Street																													
Durham Street	EB	C	15.1	0.06	C	15.4	0.06	C	16.9	0.07	C	16.8	0.08	C	18.5	0.09		C	15.6	0.08	C	16.0	0.08	C	17.7	0.09	C	17.5	0.10	C	19.6	0.12
International Drive	WB	C	16.6	0.18	C	17.2	0.19	C	19.4	0.21	C	19.5	0.23	C	22.5	0.27		F	53.3	0.84	F	63.5	0.89	F	106.7	1.04	F	133.6	1.13	F	211.1	1.32
Corporate Drive	NBL	A	7.5	0.00	A	7.6	0.00	A	7.6	0.00	A	7.6	0.01	A	7.7	0.01		A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00	A	0.0	0.00
New Hampshire Avenue	SBL	A	8.8	0.02	A	8.8	0.02	A	9.1	0.02	A	9.1	0.02	A	9.3	0.02		A	7.8	0.00	A	7.9	0.00	A	7.9	0.01	A	7.9	0.01	A	8.0	0.01
Unsignalized TWSC - Corporate Drive at Grafton Road																													
Grafton Road	EBL	C	18.1	0.70	C	19.3	0.73	C	23.8	0.80	F	140.3	1.23	F	191.0	1.35		C	24.7	0.59	D	27.3	0.63	D	33.2	0.72	F	612.9	2.19	F	793.9	2.59
	EBR	A	9.6	0.24	A	9.7	0.25	A	9.7	0.25	B	10.7	0.38	B	10.7	0.38		A	8.9	0.11	A	8.9	0.12	A	8.9	0.12	A	9.1	0.17	A	9.1	0.17
Corporate Drive	NBL	A	7.7	0.02	A	7.7	0.02	A	7.8	0.02	A	8.0	0.11	A	8.1	0.12		B	10.3	0.23	B	10.5	0.24	B	10.9	0.25	B	14.6	0.54	C	15.9	0.58
Unsignalized TWSC - Grafton Road at Aviation Avenue																													
Aviation Avenue	EB	A	9.7	0.03	A	9.8	0.03	B	10.0	0.03	B	11.1	0.05	B	11.3	0.05		C	21.0	0.41	C	22.2	0.43	D	25.2	0.48	E	49.5	0.71	F	62.4	0.79
Grafton Road	NBL	A	8.2	0.14	A	8.2	0.15	A	8.3	0.15	A	8.9	0.19	A	9.0	0.19		A	9.5	0.02	A	9.6	0.03	A	9.9	0.03	B	11.0	0.04	B	11.4	0.04
Unsignalized TWSC - Grafton Road at Pease Golf Course Driveway/Park & Ride Driveway																													
Pease Golf Course Driveway	EB	B	10.3	0.02	B	10.3	0.02	B	10.5	0.02	B	11.9	0.03	B	12.2	0.03		D	26.3	0.20	D	27.8	0.21	D	31.7	0.24	F	62.3	0.44	F	77.4	0.51
Park and Ride Driveway	WB	F	90.3	0.48	F	105.8	0.54	F	150.0	0.67	F	576.3	1.51	F	953.4	2.15		F	75.9	0.53	F	89.3	0.59	F	123.9	0.70	F	501.2	1.55	F	683.1	1.88
Grafton Road	NBL	A	7.9	0.02	A	7.9	0.03	A	8.0	0.03	A	8.5	0.03	A	8.6	0.03		B	10.3	0.07	B	10.5	0.07	B	10.8	0.08	B	12.5	0.11	B	13.0	0.12
	SBL	B	12.3	0.02	B	12.5	0.02	B	13.1	0.02	B	14.7	0.03	C	15.5	0.03		A	8.5	0.01	A	8.5	0.01	A	8.6	0.01	A	8.8	0.02	A	8.9	0.02
Unsignalized TWSC - Grafton Road at I-95 SB Off Ramp																													
I-95 SB Off Ramp	WBR	C	23.1	0.48	C	24.9	0.51	D	31.4	0.62	F	61.4	0.86	F	97.8	1.01		B	11.1	0.07	B	11.2	0.07	B	11.5	0.09	B	12.1	0.11	B	12.4	0.13

TABLE 5
Intersection Operation Summary - Queues (In Feet)

	Lane Use	Available Storage	Weekday Morning Peak Hour										Weekday Afternoon Peak Hour									
			2022 Existing		2025 No-Build		2025 Build		2035 No-Build		2035 Build		2022 Existing		2025 No-Build		2025 Build		2035 No-Build		2035 Build	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Traffic Signal - Pease Boulevard at International Drive																						
Pease Boulevard	EBL	290	0	0	0	0	0	0	0	0	0	0	1	8	1	8	1	8	3	9	3	9
	EBTR	>1000	22	43	23	45	28	51	44	57	51	65	52	91	53	94	62	105	104	118	121	134
	WBL	690	150	186	159	195	161	199	418	378	423	385	3	15	3	16	3	16	65	110	68	113
	WBTR	>1000	50	67	53	71	59	80	86	85	97	95	22	74	23	76	28	88	29	103	34	117
	NBLT	840	2	12	2	12	2	12	5	16	5	16	1	12	1	12	1	12	3	15	3	16
International Drive	NBR	530	47	84	50	88	50	89	157	190	158	192	91	356	96	374	102	387	385	618	402	639
	SB	>1000	2	9	2	9	2	9	3	13	4	13	14	59	14	61	15	63	38	82	39	85
Traffic Signal - Pease Boulevard at US Route 4 SB On/Off Ramps																						
Pease Boulevard	EBT	>1000	31	41	32	42	34	44	53	64	56	67	143	163	148	169	158	179	190	211	200	222
	EBR	530	0	27	0	27	0	27	0	31	0	31	0	51	0	52	0	52	34	113	34	113
	WBL	370	41	61	42	62	43	62	47	55	47	55	195	251	202	258	202	258	224	282	224	282
	WBT	370	207	242	215	248	220	249	312	311	314	312	37	50	38	54	39	56	68	119	70	123
US Route 4 SB On/ Off Ramps	SBL	520	128	161	134	166	137	166	172	184	172	184	110	125	113	129	113	129	127	142	127	142
	SBR	520	112	137	128	153	152	175	423	407	452	434	0	15	0	14	0	14	0	14	0	14
Traffic Signal - Pease Boulevard at US Route 4 NB On/Off Ramps																						
Pease Boulevard	EBL	375	19	38	20	39	21	40	36	55	37	56	148	195	159	207	171	220	227	277	236	286
	EBT	375	134	180	139	185	141	184	160	284	160	287	92	110	95	113	96	113	105	122	106	123
	WBTR	460	44	72	46	73	52	81	73	110	79	117	178	246	189	256	196	261	267	327	271	331
US Route 4 NB On/ Off Ramps	NBL	360	181	228	189	235	193	235	324	346	324	346	48	77	50	79	50	79	81	119	81	119
	NBR	360	0	18	0	19	0	19	0	18	0	18	0	43	0	43	0	43	0	45	0	45
Traffic Signal - Greenland Road (State Route 33) at I-95 SB On/Off Ramps																						
I-95 SB On/ Off Ramps	WBL	675	250	346	259	363	259	363	325	422	325	422	257	372	268	389	268	389	337	451	337	451
	WBR	675	0	60	1	61	1	61	21	98	21	98	0	43	0	44	0	44	0	46	0	46
	NBT	800	274	354	287	371	289	375	348	500	350	504	278	337	289	350	289	350	332	439	332	439
Greenland Road (State Route 33)	NBR	385	0	41	0	42	0	42	0	46	0	46	0	49	0	50	0	50	0	52	0	52
	SBL	785	70	92	72	94	76	98	95	117	98	121	174	215	180	223	192	252	256	329	277	351
	SBT	>1000	66	81	68	84	68	84	77	93	77	93	218	247	228	259	228	259	268	301	268	301
Traffic Signal - Greenland Road (State Route 33) at Grafton Road																						
Greenland Road (State Route 33)	EBL	400	227	412	240	428	246	435	316	500	331	500	145	261	151	269	151	269	172	295	172	295
	EBT	>1000	176	288	187	307	193	323	272	464	289	464	199	267	210	281	210	281	249	388	249	388
	WBT	>1000	76	116	79	120	79	120	89	134	89	134	182	298	190	312	190	312	248	360	248	360
	WBR	275	0	52	0	52	0	55	0	58	0	60	0	35	0	36	0	37	0	40	0	41
Grafton Road	SBL	300	42	64	44	65	48	70	74	100	77	105	96	161	100	167	114	188	169	315	187	348
	SBR	1000	0	24	0	24	0	24	0	24	0	25	212	374	229	392	254	419	359	530	384	557
Traffic Signal - Greenland Road (State Route 33) at I-95 NB On/Off Ramps																						
Greenland Road (State Route 33)	EBT	>1000	321	416	335	434	337	436	403	519	405	520	233	352	246	371	254	382	326	477	336	494
	EBR	700	0	67	0	69	0	69	0	78	0	78	240	645	297	708	350	760	818	1093	870	1146
	WBL	200	71	123	73	126	73	126	81	136	81	136	304	368	313	376	313	376	344	410	344	408
	WBT	475	118	151	123	155	126	159	145	181	148	184	158	227	168	241	176	252	218	308	228	320
I-95 NB On/ Off Ramps	NBL	>1000	340	403	353	417	394	483	494	587	560	649	135	195	140	200	151	212	168	231	179	243
	NBR	340	22	53	35	68	42	79	116	168	157	211	0	81	0	82	0	81	0	81	0	80

TABLE 5 (CONTINUED)
Intersection Operation Summary - Queues (In Feet)

			Weekday Morning Peak Hour										Weekday Afternoon Peak Hour									
	Lane Use	Available Storage	2022 Existing		2025 No-Build		2025 Build		2035 No-Build		2035 Build		2022 Existing		2025 No-Build		2025 Build		2035 No-Build		2035 Build	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Unsignalized AWSC - Pease Boulevard at Arboretum Drive/New Hampshire Avenue																						
Pease Boulevard	EB	900	--	8	--	8	--	8	--	8	--	8	--	30	--	33	--	35	--	43	--	45
	WBL	>1000	--	63	--	65	--	102	--	83	--	133	--	43	--	45	--	57	--	57	--	70
	WBTR	>1000	--	38	--	40	--	40	--	50	--	50	--	5	--	5	--	5	--	5	--	5
New Hampshire Avenue	NB	>1000	--	25	--	28	--	33	--	33	--	38	--	170	--	188	--	290	--	300	--	433
Arboretum Drive	SB	>1000	--	75	--	83	--	88	--	105	--	113	--	25	--	25	--	28	--	33	--	33
Unsignalized TWSC - New Hampshire Avenue at Exeter Street/Manchester Square																						
Exeter Street	EB	>1000	--	8	--	8	--	8	--	10	--	10	--	8	--	8	--	8	--	8	--	10
Manchester Square	WBLT	950	--	10	--	13	--	13	--	15	--	18	--	10	--	20	--	25	--	30	--	35
	WBR	80	--	3	--	3	--	3	--	3	--	3	--	3	--	5	--	5	--	5	--	5
New Hampshire Avenue	NBL	85	--	3	--	3	--	3	--	3	--	3	--	3	--	0	--	0	--	0	--	0
	SBL	165	--	3	--	3	--	3	--	3	--	3	--	3	--	0	--	0	--	3	--	3
Unsignalized TWSC - New Hampshire Avenue/Corporate Drive at International Drive/Durham Street																						
Durham St	EB	860	--	5	--	5	--	5	--	5	--	8	--	5	--	8	--	8	--	8	--	10
International Drive	WB	>1000	--	15	--	18	--	20	--	23	--	28	--	15	--	210	--	278	--	335	--	418
Corporate Drive	NBL	920	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
New Hampshire Avenue	SBL	>1000	--	3	--	3	--	3	--	3	--	3	--	3	--	0	--	0	--	0	--	0
Unsignalized TWSC - Corporate Drive at Grafton Road																						
Grafton Road	EBL	220	--	148	--	163	--	217	--	648	--	830	--	148	--	105	--	138	--	608	--	720
	EBR	220	--	23	--	25	--	25	--	45	--	45	--	23	--	10	--	10	--	15	--	15
Corporate Drive	NBL	>1000	--	3	--	3	--	3	--	10	--	10	--	3	--	23	--	25	--	83	--	93
Unsignalized TWSC - Grafton Road at Aviation Avenue																						
Aviation Avenue	EB	>1000	--	3	--	3	--	3	--	3	--	3	--	3	--	53	--	60	--	120	--	140
Grafton Road	NBL	>1000	--	13	--	13	--	13	--	18	--	18	--	13	--	3	--	3	--	3	--	3
Unsignalized TWSC - Grafton Road at Pease Golf Course Driveway/Park & Ride Driveway																						
Golf Course Driveway	EB	>1000	--	0	--	0	--	0	--	3	--	3	--	0	--	20	--	23	--	48	--	55
Park and Ride Driveway	WB	>1000	--	50	--	57	--	70	--	123	--	138	--	50	--	68	--	83	--	158	--	170
Grafton Road	NBL	800	--	3	--	3	--	3	--	3	--	3	--	3	--	5	--	8	--	10	--	10
	SBL	>1000	--	3	--	3	--	3	--	3	--	3	--	3	--	0	--	0	--	3	--	3
Unsignalized TWSC - Grafton Road at I-95 SB Off Ramp																						
I-95 SB Off Ramp	WB	>1000	--	63	--	70	--	100	--	188	--	263	--	63	--	5	--	8	--	10	--	10

Section 8
Figures



100 NEW HAMPSHIRE AVENUE MANUFACTURING FACILITY

PORTSMOUTH, NH

SITE LOCATION MAP

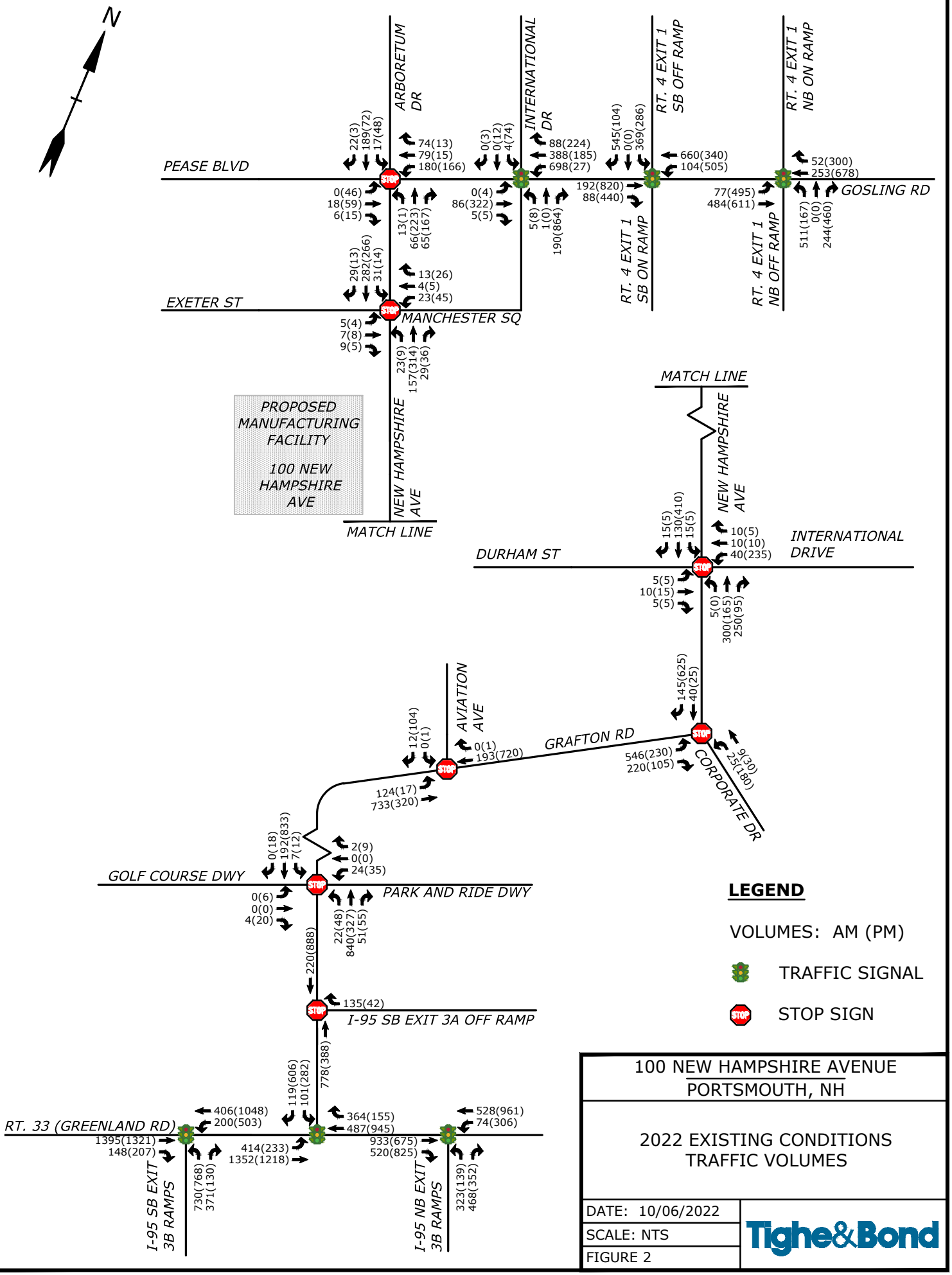
NORTH

NO SCALE

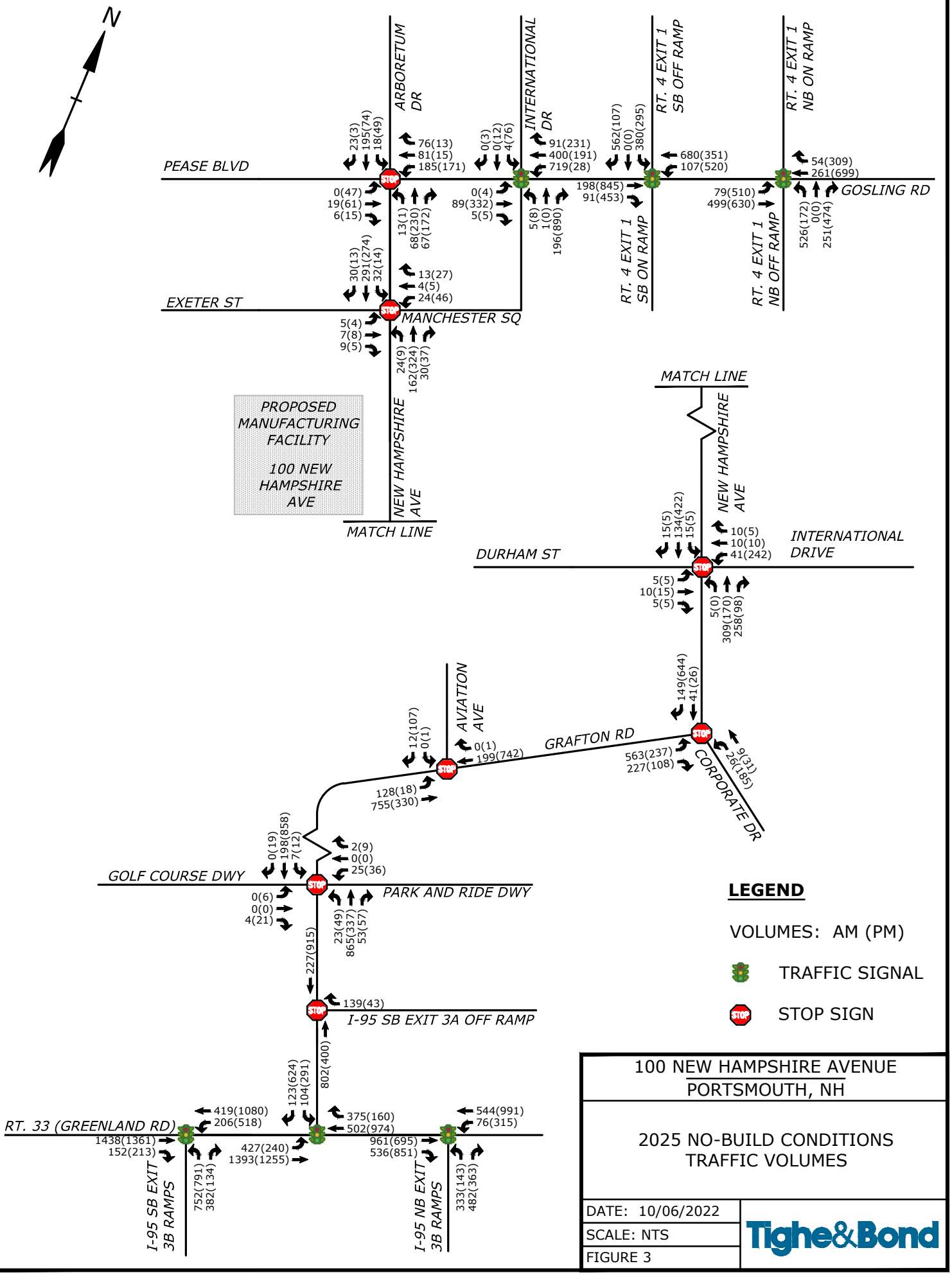
FIGURE 1

Tighe&Bond

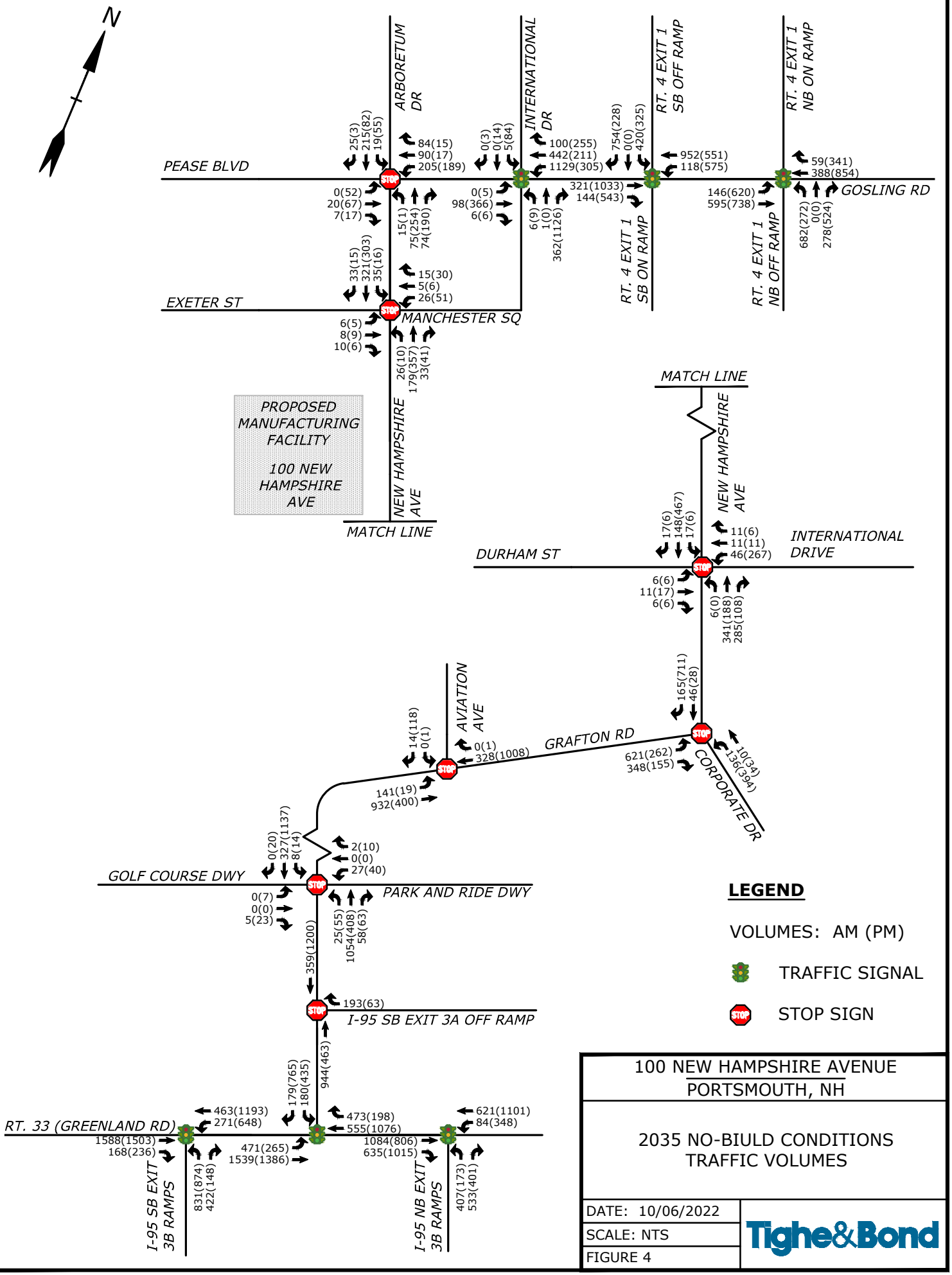
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Oct 06, 2022-3:57pm Plotted By: KHuang
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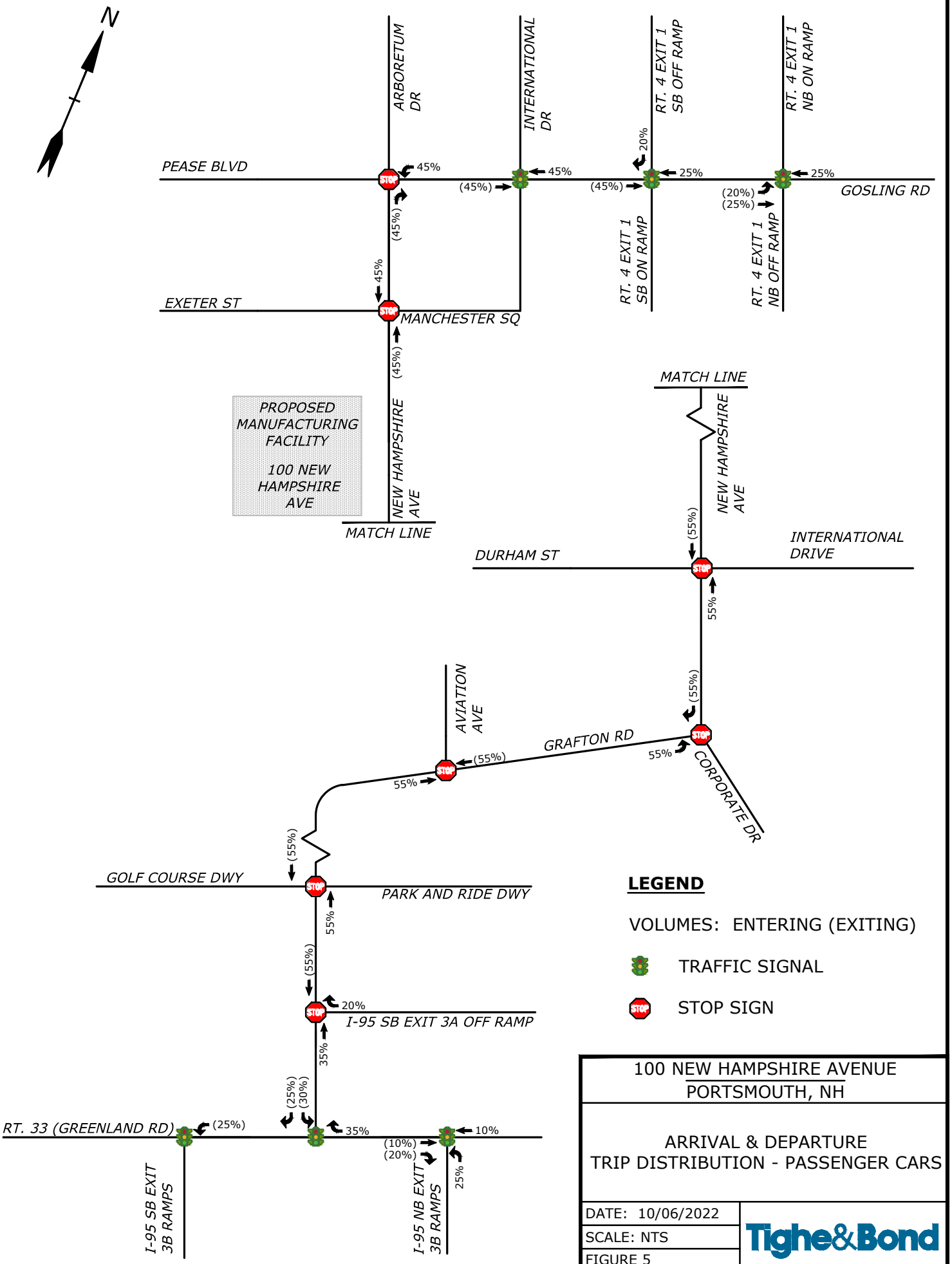
100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NH

2035 NO-BIULD CONDITIONS
TRAFFIC VOLUMES

DATE: 10/06/2022
SCALE: NTS
FIGURE 4

Tighe&Bond

Oct 06, 2022-3:57pm Plotted By: KHuang
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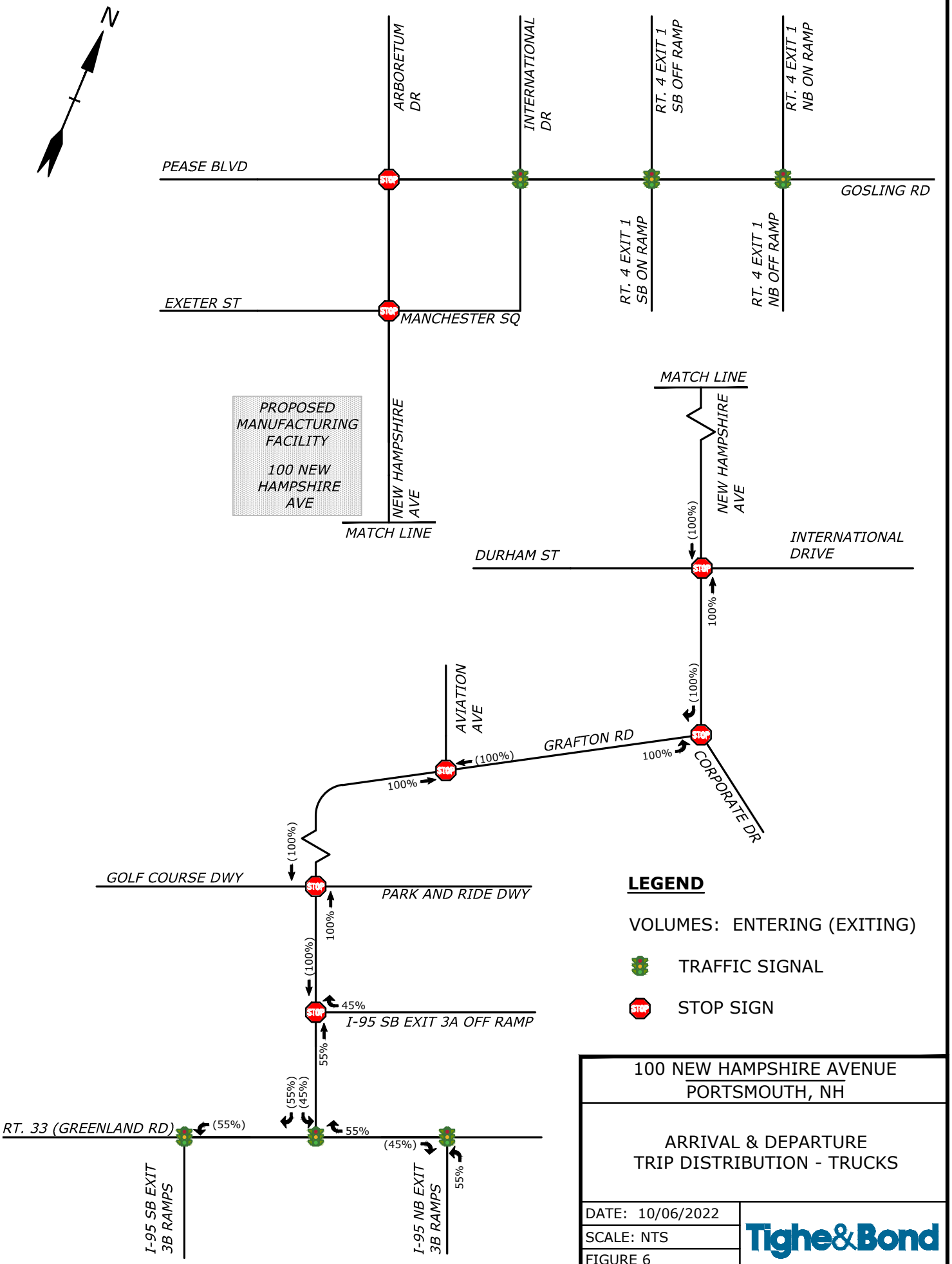
100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NH

ARRIVAL & DEPARTURE
TRIP DISTRIBUTION - PASSENGER CARS

DATE: 10/06/2022
SCALE: NTS
FIGURE 5

Tighe&Bond

Oct 06, 2022-3:58pm Plotted By: KHuang
Tighe & Bond, Inc. C:\Users\KHuang\AppData\Local\Temp\AcPublish_12216\Traffic Volume Figures.dwg



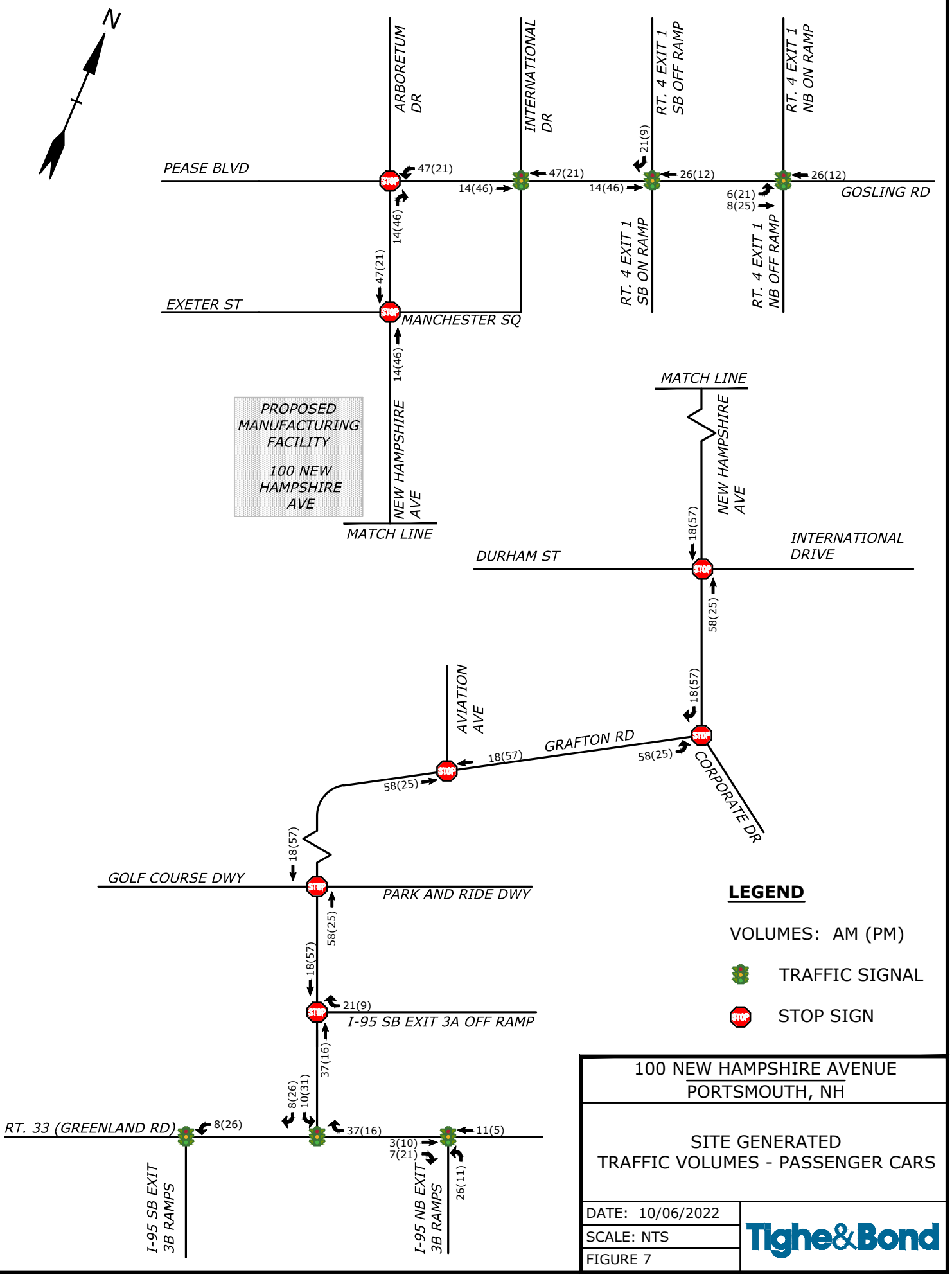
100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NH

ARRIVAL & DEPARTURE
TRIP DISTRIBUTION - TRUCKS

DATE: 10/06/2022
SCALE: NTS
FIGURE 6

Tighe&Bond

Oct 06, 2022-3:58pm Plotted By: KHuang
Tighe & Bond, Inc. C:\Users\KHuang\AppData\Local\Temp\AcPublish_12216\Traffic Volume Figures.dwg



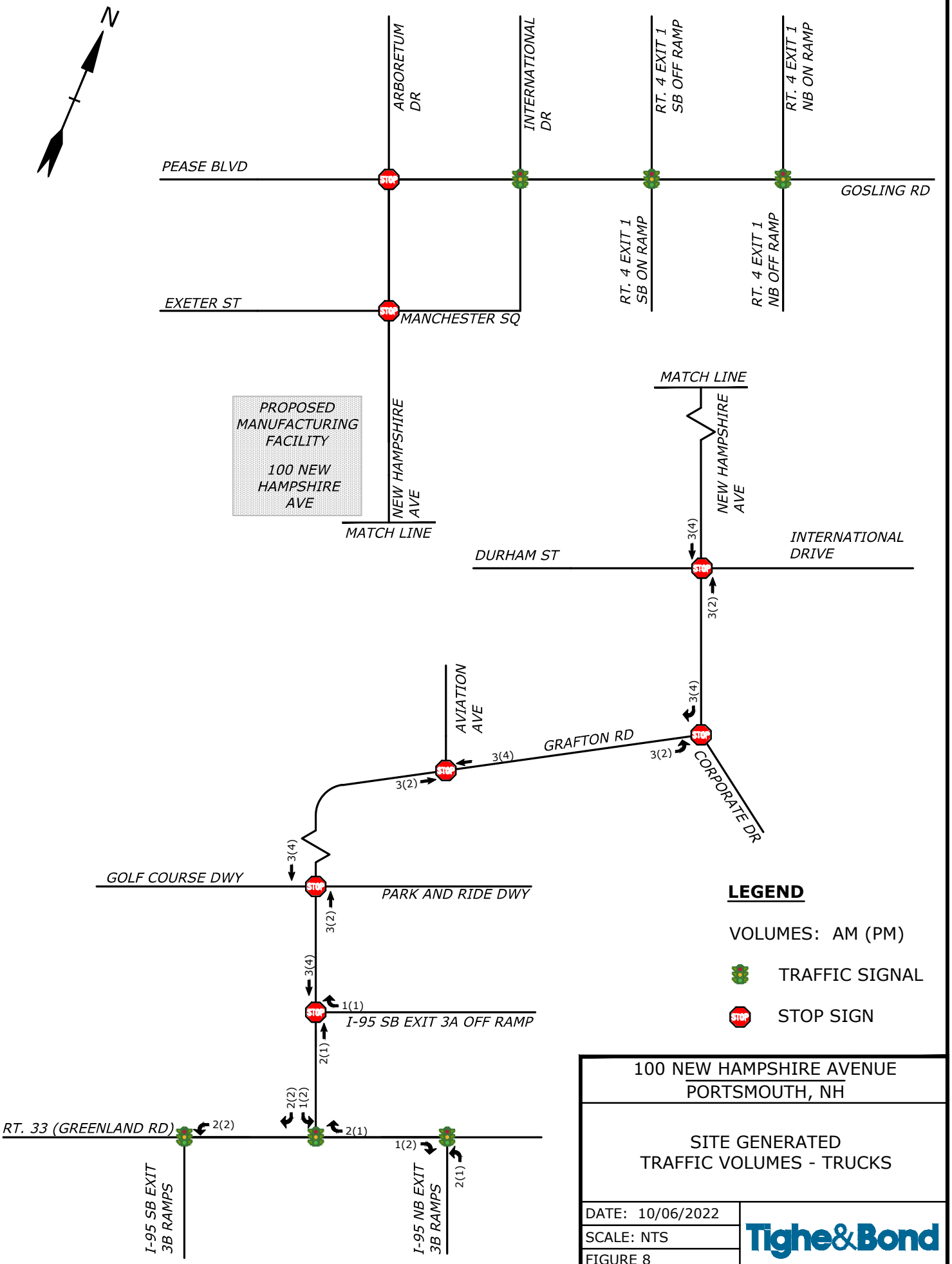
100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NH

SITE GENERATED
TRAFFIC VOLUMES - PASSENGER CARS

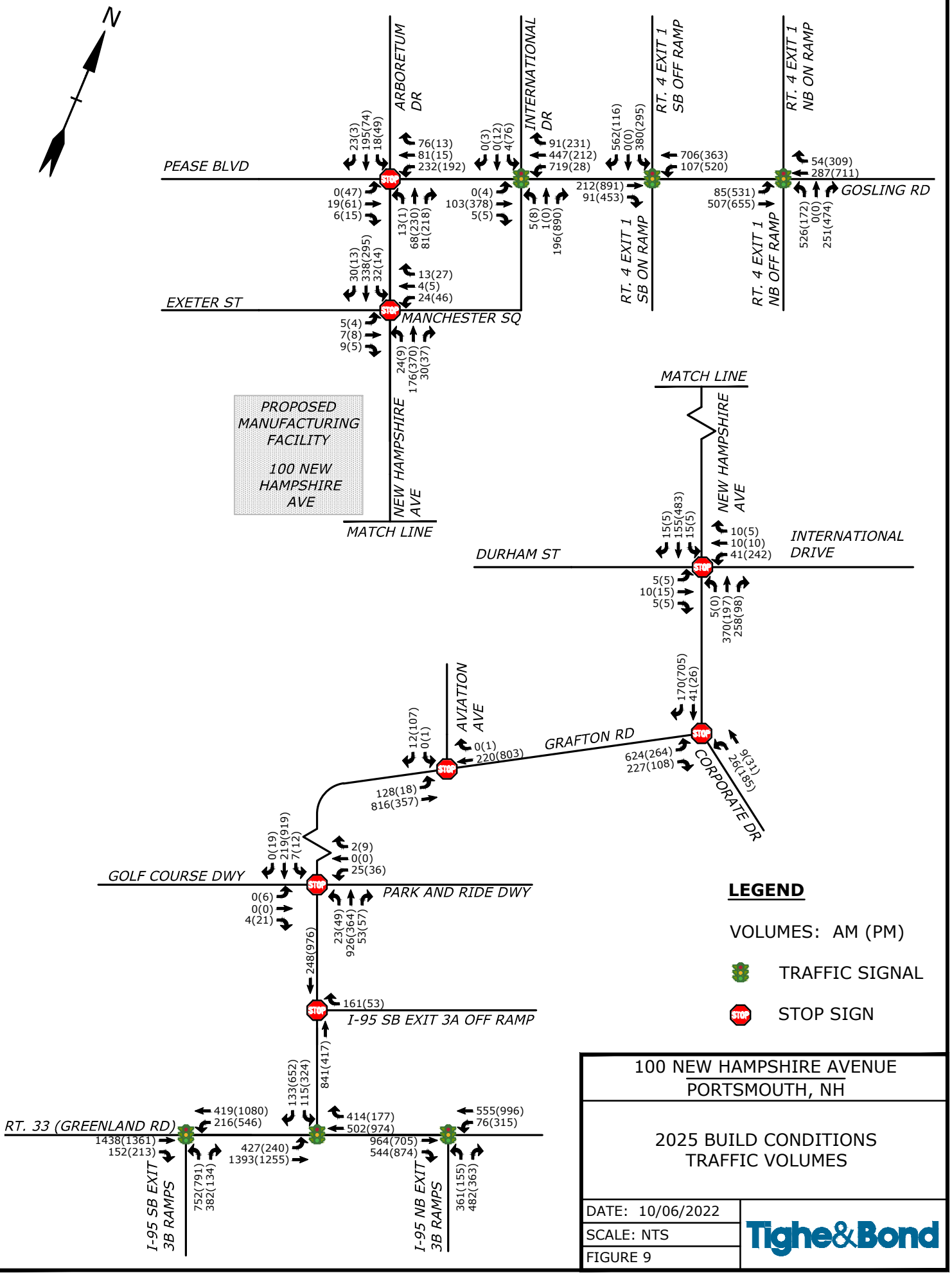
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FIGURE 7

Tighe&Bond

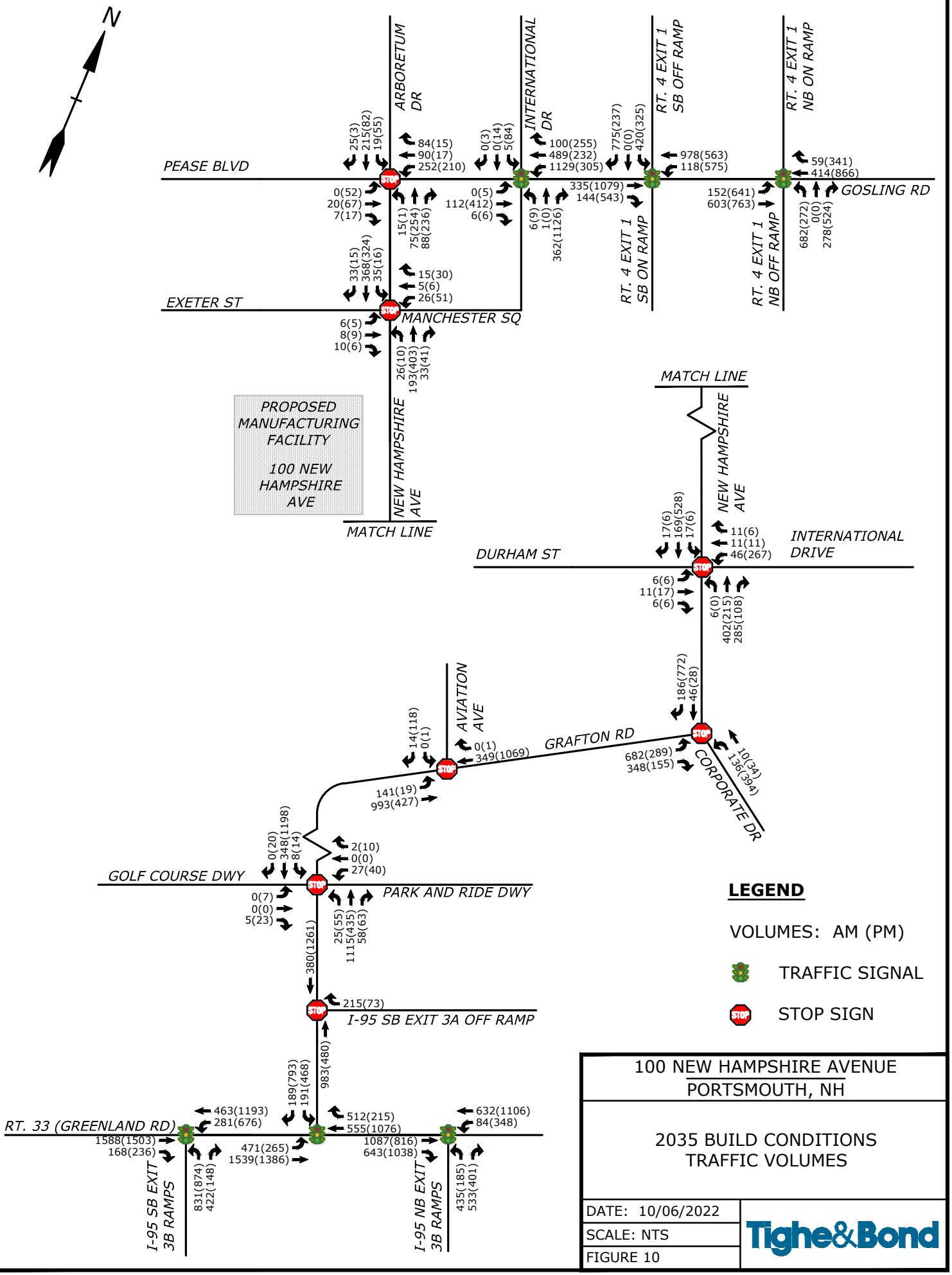
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Oct 06, 2022-3:58pm Plotted By: KHuang
Tighe & Bond, Inc. C:\Users\KHuang\AppData\Local\Temp\AcPublish_12216\Traffic Volume Figures.dwg

APPENDIX A
Traffic Count Data

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	International Drive
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	0	41	0	7	0	1	0	0	15	0	0	118	51	11
7:15 AM	0	2	1	27	0	4	0	1	0	0	8	1	0	125	54	15
7:30 AM	0	0	2	23	0	3	0	0	0	0	9	3	0	145	65	7
7:45 AM	0	1	0	33	0	0	0	0	0	0	18	1	0	196	115	16
8:00 AM	0	1	1	49	0	1	0	0	0	0	12	2	0	131	68	22
8:15 AM	0	0	0	35	0	1	0	0	0	0	15	0	0	125	63	15
8:30 AM	0	2	0	38	0	1	0	0	0	0	25	1	0	117	70	19
8:45 AM	0	1	0	43	0	0	0	0	0	1	20	0	0	104	72	8

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	1	160	0	10	1	0	0	0	66	0	0	3	38	42
4:15 PM	0	1	0	155	0	11	4	0	0	1	59	0	0	3	30	44
4:30 PM	0	2	0	179	0	8	3	0	0	1	48	3	0	5	39	46
4:45 PM	0	1	0	164	0	18	1	2	0	0	51	0	0	6	37	53
5:00 PM	0	2	0	171	0	20	1	0	0	1	91	1	2	5	38	31
5:15 PM	0	1	0	115	0	9	1	0	0	0	53	0	1	1	34	43
5:30 PM	0	0	0	106	0	7	0	1	0	0	50	1	2	2	27	23
5:45 PM	0	0	0	83	0	7	0	0	0	0	44	1	0	1	32	40

AM PEAK HOUR 7:45 AM to 8:45 AM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**4**	**1**	**155**	**0**	**3**	**0**	**0**	**0**	**0**	**70**	**4**	**0**	**569**	**316**	**72**
PHF	**0.78**				**0.75**				**0.71**				**0.73**			
HV %	**0.0%**	**25.0%**	**0.0%**	**3.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.3%**	**50.0%**	**0.0%**	**0.9%**	**1.6%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**6**	**0**	**669**	**0**	**57**	**9**	**2**	**0**	**3**	**249**	**4**	**2**	**19**	**144**	**174**
PHF	**0.93**				**0.81**				**0.69**				**0.88**			
HV %	**0.0%**	**16.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**33.3%**	**2.0%**	**0.0%**	**0.0%**	**10.5%**	**1.4%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	International Drive
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	2	0	0	2	4	0
7:45 AM	0	0	0	3	0	0	0	0	0	0	1	1	0	1	2	0
8:00 AM	0	0	0	2	0	0	0	0	0	0	0	1	0	1	3	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	3	0	0
8:45 AM	0	0	0	3	0	0	0	0	0	0	4	0	0	1	2	0

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	1	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**6**	**9**	**0**
PHF	**0.58**				**0.00**				**0.75**				**0.63**			

PM PEAK HOUR 4:00 PM to 5:00 PM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**0**	**2**	**2**	**0**
PHF	**0.25**				**0.00**				**0.50**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	International Drive
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	International Drive Northbound				International Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	38	0	91	0	0	41	21	0	15	81	0
7:15 AM	0	0	0	0	0	65	0	86	0	0	23	16	0	16	105	0
7:30 AM	0	0	0	0	0	73	0	104	0	0	17	16	1	22	113	0
7:45 AM	0	0	0	0	0	96	0	152	0	0	34	19	1	17	175	0
8:00 AM	0	0	0	0	0	61	0	94	0	0	47	15	1	21	121	0
8:15 AM	0	0	0	0	0	71	0	94	0	0	38	13	0	22	126	0
8:30 AM	0	0	0	0	0	59	0	77	0	0	43	21	0	18	121	0
8:45 AM	0	0	0	0	0	64	0	72	0	0	47	16	0	35	119	0

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	66	0	14	0	0	129	89	2	81	63	0
4:15 PM	0	0	0	0	0	55	0	21	0	0	151	74	0	90	54	0
4:30 PM	0	0	0	0	0	57	0	27	0	0	162	73	0	99	68	0
4:45 PM	0	0	0	0	0	50	1	21	0	0	133	96	3	92	77	0
5:00 PM	0	0	0	0	0	59	0	11	0	0	187	99	0	103	62	0
5:15 PM	0	0	0	0	0	64	0	23	0	0	119	57	0	88	52	0
5:30 PM	0	0	0	0	0	55	0	16	0	0	96	67	1	94	39	0
5:45 PM	0	0	0	0	0	49	0	25	1	0	79	55	0	74	50	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**301**	**0**	**444**	**0**	**0**	**136**	**63**	**3**	**82**	**535**	**0**
PHF	**0.00**				**0.75**				**0.80**				**0.80**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**2.2%**	**9.5%**	**0.0%**	**12.2%**	**1.3%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**221**	**1**	**80**	**0**	**0**	**633**	**342**	**3**	**384**	**261**	**0**
PHF	**0.00**				**0.90**				**0.85**				**0.94**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.5%**	**0.6%**	**0.0%**	**0.8%**	**1.1%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	0	0	0	1	1	0	2	2	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0
7:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	6	3	0
7:45 AM	0	0	0	0	0	2	0	3	0	0	2	2	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	2	0	1	0	0	2	0	0	3	2	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	5	2	0	2	3	0

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**3**	**0**	**6**	**0**	**0**	**4**	**6**	**0**	**10**	**8**	**0**
PHF	**0.00**				**0.45**				**0.63**				**0.50**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**3**	**0**	**5**	**3**	**0**
PHF	**0.00**				**0.25**				**0.63**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
7:30 AM to 8:30 AM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3

PM PEAK HOUR[1]	Route 4 Southbound On-Ramp Northbound				Route 4 Southbound Off-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
4:15 PM to 5:15 PM	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	68	0	38	0	0	0	0	0	24	56	0	0	0	27	10
7:15 AM	0	76	0	47	0	0	0	0	0	17	72	0	0	0	46	9
7:30 AM	0	71	0	47	0	0	0	0	0	4	85	0	0	0	70	12
7:45 AM	0	130	0	66	0	0	0	0	0	18	111	0	0	0	59	14
8:00 AM	0	94	0	53	0	0	0	0	0	16	91	0	0	0	48	9
8:15 AM	0	98	0	39	0	0	0	0	0	12	97	0	0	0	47	10
8:30 AM	0	94	0	41	0	0	0	0	0	15	87	0	0	0	52	9
8:45 AM	0	85	0	55	0	0	0	0	0	16	95	0	0	0	64	13

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	29	0	86	0	0	0	0	0	79	118	0	0	0	111	51
4:15 PM	0	28	1	94	0	0	0	0	0	89	117	0	0	0	122	51
4:30 PM	0	30	0	89	0	0	0	0	0	89	120	0	0	0	140	72
4:45 PM	0	36	0	94	0	0	0	0	0	91	108	0	0	0	130	44
5:00 PM	0	36	0	80	0	0	0	0	0	116	130	0	0	0	135	66
5:15 PM	0	24	0	94	0	0	0	0	0	72	108	0	0	0	117	63
5:30 PM	0	16	0	92	0	0	0	0	0	57	91	0	0	0	114	57
5:45 PM	0	24	0	73	0	0	0	0	0	45	80	0	0	0	100	52

AM PEAK HOUR 7:45 AM to 8:45 AM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**416**	**0**	**199**	**0**	**0**	**0**	**0**	**0**	**61**	**386**	**0**	**0**	**0**	**206**	**42**
PHF	**0.78**				**0.00**				**0.87**				**0.85**			
HV %	**0.0%**	**2.4%**	**0.0%**	**3.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.9%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**4.8%**

PM PEAK HOUR 4:15 PM to 5:15 PM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**130**	**1**	**357**	**0**	**0**	**0**	**0**	**0**	**385**	**475**	**0**	**0**	**0**	**527**	**233**
PHF	**0.94**				**0.00**				**0.87**				**0.90**			
HV %	**0.0%**	**1.5%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	2	0	5	0	0	0	0	0	0	1	0	0	0	2	0
7:15 AM	0	1	0	7	0	0	0	0	0	2	1	0	0	0	1	1
7:30 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	0	8	0
7:45 AM	0	2	0	4	0	0	0	0	0	2	2	0	0	0	0	2
8:00 AM	0	5	0	1	0	0	0	0	0	0	1	0	0	0	2	0
8:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0
8:30 AM	0	3	0	1	0	0	0	0	0	1	2	0	0	0	2	0
8:45 AM	0	3	0	2	0	0	0	0	0	1	5	0	0	0	3	0

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**8**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**11**	**3**
PHF	**0.78**				**0.00**				**0.50**				**0.44**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**6**	**0**
PHF	**0.42**				**0.00**				**0.25**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	Route 4 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	Route 4 Northbound Off-Ramp Northbound				Route 4 Northbound On-Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 13
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	I-95 Southbound Off-Ramp Northbound				I-95 Southbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	79	0	24	0	0	0	0	0	0	172	21	0	37	54	0
7:15 AM	0	112	0	35	0	0	0	0	0	0	236	34	0	27	57	0
7:30 AM	0	149	0	89	0	0	0	0	0	0	258	23	0	38	69	0
7:45 AM	0	151	0	101	0	0	0	0	0	0	293	30	0	33	67	0
8:00 AM	0	133	0	56	0	0	0	0	0	0	256	21	0	52	92	0
8:15 AM	0	162	0	40	0	0	0	0	0	0	270	47	0	31	86	0
8:30 AM	0	135	0	36	0	0	0	0	0	0	223	33	0	40	84	0
8:45 AM	0	123	0	36	0	0	0	0	0	0	220	29	0	35	73	0

	I-95 Southbound Off-Ramp Northbound				I-95 Southbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	154	0	29	0	0	0	0	0	0	238	41	0	110	194	0
4:15 PM	0	170	0	25	0	0	0	0	0	0	254	39	0	85	180	0
4:30 PM	0	134	0	31	0	0	0	0	0	0	256	32	0	99	182	0
4:45 PM	0	147	0	23	0	0	0	0	0	0	212	37	0	81	182	0
5:00 PM	0	146	0	15	0	0	0	0	0	0	236	53	0	109	234	0
5:15 PM	0	139	0	17	0	0	0	0	0	0	223	30	0	105	146	0
5:30 PM	0	107	0	15	0	0	0	0	0	0	154	33	0	71	154	0
5:45 PM	0	107	0	12	0	0	0	0	0	0	155	34	0	43	128	0

AM PEAK HOUR 7:30 AM to 8:30 AM	I-95 Southbound Off-Ramp Northbound				I-95 Southbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**595**	**0**	**286**	**0**	**0**	**0**	**0**	**0**	**0**	**1077**	**121**	**0**	**154**	**314**	**0**
PHF	**0.87**				**0.00**				**0.93**				**0.81**			
HV %	**0.0%**	**5.9%**	**0.0%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.8%**	**27.3%**	**0.0%**	**8.4%**	**7.3%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	I-95 Southbound Off-Ramp Northbound				I-95 Southbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**597**	**0**	**94**	**0**	**0**	**0**	**0**	**0**	**0**	**958**	**161**	**0**	**374**	**778**	**0**
PHF	**0.89**				**0.00**				**0.95**				**0.84**			
HV %	**0.0%**	**4.4%**	**0.0%**	**7.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.8%**	**18.0%**	**0.0%**	**1.9%**	**1.8%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 13
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	7	0	0	0	0	0	0	0	0	7	10	0	4	4	0
7:15 AM	0	8	0	0	0	0	0	0	0	0	7	5	0	0	7	0
7:30 AM	0	6	0	1	0	0	0	0	0	0	11	5	0	2	2	0
7:45 AM	0	9	0	1	0	0	0	0	0	0	12	8	0	5	7	0
8:00 AM	0	12	0	0	0	0	0	0	0	0	9	6	0	5	4	0
8:15 AM	0	8	0	1	0	0	0	0	0	0	9	14	0	1	10	0
8:30 AM	0	12	0	1	0	0	0	0	0	0	15	6	0	2	4	0
8:45 AM	0	12	0	0	0	0	0	0	0	0	10	8	0	4	6	0

	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	10	0	3	0	0	0	0	0	0	2	2	0	3	10	0
4:15 PM	0	6	0	2	0	0	0	0	0	0	5	7	0	0	2	0
4:30 PM	0	7	0	2	0	0	0	0	0	0	6	10	0	3	5	0
4:45 PM	0	6	0	1	0	0	0	0	0	0	2	5	0	1	4	0
5:00 PM	0	7	0	2	0	0	0	0	0	0	4	7	0	3	3	0
5:15 PM	0	11	0	2	0	0	0	0	0	0	4	4	0	2	4	0
5:30 PM	0	8	0	0	0	0	0	0	0	0	4	3	0	2	6	0
5:45 PM	0	7	0	0	0	0	0	0	0	0	5	8	0	2	3	0

AM PEAK HOUR 7:45 AM to 8:45 AM	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**41**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**34**	**0**	**13**	**25**	**0**
PHF	**0.85**				**0.00**				**0.86**				**0.79**			

PM PEAK HOUR 4:30 PM to 5:30 PM	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**31**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**26**	**0**	**9**	**16**	**0**
PHF	**0.73**				**0.00**				**0.66**				**0.78**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 13
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Southbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:30 AM to 8:30 AM	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	I-95 Southbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 12
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Greenland Road (Route 33)
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Grafton Road Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	8	0	25	0	52	142	0	0	0	67	26
7:15 AM	0	0	0	0	0	19	0	12	0	53	222	0	0	0	82	39
7:30 AM	0	0	0	0	0	12	0	19	0	68	305	0	0	0	90	70
7:45 AM	0	0	0	0	0	18	0	19	0	128	292	0	0	0	82	99
8:00 AM	0	0	0	0	0	20	0	36	0	74	269	0	0	0	117	59
8:15 AM	0	0	0	0	0	28	0	19	0	67	236	0	0	0	108	69
8:30 AM	0	0	0	0	0	14	0	25	0	80	209	0	0	0	97	57
8:45 AM	0	0	0	0	0	15	0	29	0	73	204	0	0	0	84	64

	Grafton Road Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	63	0	122	0	32	247	0	0	0	207	43
4:15 PM	0	0	0	0	0	36	0	102	0	37	225	0	0	0	154	37
4:30 PM	0	0	0	0	0	60	0	123	0	45	265	0	0	0	179	33
4:45 PM	0	0	0	0	0	50	0	104	0	46	207	0	0	0	178	22
5:00 PM	0	0	0	0	0	58	0	140	0	34	237	0	0	0	205	18
5:15 PM	0	0	0	0	0	51	0	104	0	23	238	0	0	0	173	26
5:30 PM	0	0	0	0	0	39	0	103	0	31	185	0	0	0	145	23
5:45 PM	0	0	0	0	0	25	0	63	0	29	216	0	0	0	117	27

AM PEAK HOUR 7:30 AM to 8:30 AM	Grafton Road Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**78**	**0**	**93**	**0**	**337**	**1102**	**0**	**0**	**0**	**397**	**297**
PHF	**0.00**				**0.76**				**0.86**				**0.96**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.1%**	**0.0%**	**5.4%**	**0.0%**	**0.3%**	**4.1%**	**0.0%**	**0.0%**	**0.0%**	**8.3%**	**1.7%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Grafton Road Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**219**	**0**	**471**	**0**	**148**	**947**	**0**	**0**	**0**	**735**	**99**
PHF	**0.00**				**0.87**				**0.88**				**0.93**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.4%**	**0.0%**	**1.3%**	**0.0%**	**0.7%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**2.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 12
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Greenland Road (Route 33)
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	4	0	0	7	0	0	0	6	1
7:15 AM	0	0	0	0	0	2	0	0	0	1	4	0	0	0	6	4
7:30 AM	0	0	0	0	0	1	0	2	0	0	13	0	0	0	4	1
7:45 AM	0	0	0	0	0	1	0	1	0	1	12	0	0	0	10	0
8:00 AM	0	0	0	0	0	0	0	2	0	0	8	0	0	0	8	1
8:15 AM	0	0	0	0	0	2	0	0	0	0	12	0	0	0	11	3
8:30 AM	0	0	0	0	0	0	0	1	0	2	14	0	0	0	5	3
8:45 AM	0	0	0	0	0	0	0	1	0	1	9	0	0	0	9	2

	Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	6	0	0	0	12	0
4:15 PM	0	0	0	0	0	2	0	0	0	0	6	0	0	0	2	2
4:30 PM	0	0	0	0	0	1	0	3	0	1	5	0	0	0	5	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	4	1
5:00 PM	0	0	0	0	0	0	0	2	0	0	7	0	0	0	4	0
5:15 PM	0	0	0	0	0	2	0	0	0	0	5	0	0	0	5	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	9	1
5:45 PM	0	0	0	0	0	0	0	2	0	0	5	0	0	0	2	2

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**3**	**0**	**4**	**0**	**3**	**46**	**0**	**0**	**0**	**34**	**7**
PHF	**0.00**				**0.88**				**0.77**				**0.73**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				Grafton Road Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**1**	**20**	**0**	**0**	**0**	**23**	**3**
PHF	**0.00**				**0.50**				**0.88**				**0.54**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 12
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Greenland Road (Route 33)
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Grafton Road								Greenland Road (Route 33)				Greenland Road (Route 33)			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Grafton Road								Greenland Road (Route 33)				Greenland Road (Route 33)			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	Grafton Road								Greenland Road (Route 33)				Greenland Road (Route 33)			
7:30 AM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1]	Grafton Road								Greenland Road (Route 33)				Greenland Road (Route 33)			
4:30 PM	Northbound				Southbound				Eastbound				Westbound			
to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 14
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	23	0	54	0	0	0	0	0	0	79	73	0	12	69	0
7:15 AM	0	39	0	89	0	0	0	0	0	0	119	111	0	11	79	0
7:30 AM	0	64	0	87	0	0	0	0	0	0	171	120	0	10	88	0
7:45 AM	0	80	0	119	0	0	0	0	0	0	212	90	0	19	103	0
8:00 AM	0	54	0	83	0	0	0	0	0	0	184	107	0	20	113	0
8:15 AM	0	58	0	92	0	0	0	0	0	0	173	95	0	11	114	0
8:30 AM	0	45	0	78	0	0	0	0	0	0	114	97	0	9	106	0
8:45 AM	0	54	0	62	0	0	0	0	0	0	132	92	0	23	92	0

	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	24	0	58	0	0	0	0	0	0	120	185	0	47	222	0
4:15 PM	0	30	0	59	0	0	0	0	0	0	114	157	0	45	145	0
4:30 PM	0	29	0	64	0	0	0	0	0	0	147	175	0	58	181	0
4:45 PM	0	26	0	81	0	0	0	0	0	0	139	115	0	55	160	0
5:00 PM	0	25	0	55	0	0	0	0	0	0	115	166	0	75	201	0
5:15 PM	0	21	0	74	0	0	0	0	0	0	112	171	0	50	165	0
5:30 PM	0	30	0	45	0	0	0	0	0	0	81	100	0	39	145	0
5:45 PM	0	33	0	59	0	0	0	0	0	0	106	111	0	29	106	0

AM PEAK HOUR 7:30 AM to 8:30 AM	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**256**	**0**	**381**	**0**	**0**	**0**	**0**	**0**	**0**	**740**	**412**	**0**	**60**	**418**	**0**
PHF	**0.80**				**0.00**				**0.95**				**0.90**			
HV %	**0.0%**	**10.9%**	**0.0%**	**4.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.8%**	**10.2%**	**0.0%**	**3.3%**	**4.5%**	**0.0%**

PM PEAK HOUR 4:30 PM to 5:30 PM	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**101**	**0**	**274**	**0**	**0**	**0**	**0**	**0**	**0**	**513**	**627**	**0**	**238**	**707**	**0**
PHF	**0.88**				**0.00**				**0.89**				**0.86**			
HV %	**0.0%**	**13.9%**	**0.0%**	**2.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**3.0%**	**0.0%**	**0.8%**	**2.1%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 14
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	5	0	1	0	0	0	0	0	0	5	5	0	1	2	0
7:15 AM	0	8	0	3	0	0	0	0	0	0	2	5	0	2	2	0
7:30 AM	0	5	0	4	0	0	0	0	0	0	3	12	0	1	2	0
7:45 AM	0	7	0	6	0	0	0	0	0	0	5	9	0	0	7	0
8:00 AM	0	6	0	4	0	0	0	0	0	0	2	11	0	1	5	0
8:15 AM	0	10	0	4	0	0	0	0	0	0	3	10	0	0	5	0
8:30 AM	0	4	0	7	0	0	0	0	0	0	4	11	0	0	5	0
8:45 AM	0	8	0	4	0	0	0	0	0	0	4	7	0	1	5	0

	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	5	0	1	0	0	0	0	0	0	2	7	0	0	6	0
4:15 PM	0	2	0	3	0	0	0	0	0	0	5	5	0	1	4	0
4:30 PM	0	4	0	0	0	0	0	0	0	0	3	5	0	0	3	0
4:45 PM	0	4	0	3	0	0	0	0	0	0	1	3	0	1	3	0
5:00 PM	0	3	0	2	0	0	0	0	0	0	3	5	0	1	4	0
5:15 PM	0	3	0	1	0	0	0	0	0	0	3	6	0	0	5	0
5:30 PM	0	6	0	0	0	0	0	0	0	0	1	3	0	0	4	0
5:45 PM	0	4	0	1	0	0	0	0	0	0	1	5	0	0	1	0

AM PEAK HOUR 7:45 AM to 8:45 AM	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**27**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**41**	**0**	**1**	**22**	**0**
PHF	**0.86**				**0.00**				**0.92**				**0.82**			

PM PEAK HOUR 4:00 PM to 5:00 PM	I-95 Northbound Off-Ramp Northbound				I-95 Northbound Off-Ramp Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**15**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**20**	**0**	**2**	**16**	**0**
PHF	**0.79**				**0.00**				**0.78**				**0.75**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 14
Location:	Portsmouth, NH
Street 1:	Greenland Road (Route 33)
Street 2:	I-95 Northbound On/Off-Ramps
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	I-95 Northbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	I-95 Northbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:30 AM to 8:30 AM	I-95 Northbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	I-95 Northbound Off-Ramp Northbound				Southbound				Greenland Road (Route 33) Eastbound				Greenland Road (Route 33) Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 4
Location:	Newington, NH
Street 1:	Newington Street
Street 2:	Arboretum Dr/New Hampshire Ave
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	4	12	10	0	0	17	8	0	2	7	1	0	18	24	9
7:15 AM	0	3	9	7	0	3	23	7	0	1	1	1	0	25	19	9
7:30 AM	0	6	8	6	0	6	35	5	0	0	3	1	0	32	14	9
7:45 AM	0	6	12	16	0	4	57	5	0	0	2	1	0	55	27	15
8:00 AM	0	3	15	13	0	3	33	7	0	0	0	0	0	35	14	13
8:15 AM	0	2	19	11	0	3	34	4	0	0	6	1	0	21	14	13
8:30 AM	0	0	8	13	0	4	30	2	0	0	7	3	0	36	9	19
8:45 AM	0	5	8	14	0	3	27	3	0	0	1	1	0	40	6	12

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	49	27	0	5	22	1	0	7	24	4	0	29	2	4
4:15 PM	0	0	37	37	0	6	21	0	0	12	16	5	0	30	0	1
4:30 PM	0	1	43	28	0	7	11	1	0	12	10	4	0	31	4	2
4:45 PM	0	0	35	22	0	11	16	0	0	8	9	2	0	31	5	6
5:00 PM	0	0	58	43	0	13	8	1	0	4	11	1	0	37	3	1
5:15 PM	0	1	31	22	0	12	14	0	0	1	2	1	0	28	2	6
5:30 PM	0	1	25	21	0	6	17	1	0	5	9	4	0	21	3	1
5:45 PM	0	9	12	25	0	7	11	0	0	4	9	4	0	22	11	2

AM PEAK HOUR 7:45 AM to 8:45 AM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**11**	**54**	**53**	**0**	**14**	**154**	**18**	**0**	**0**	**15**	**5**	**0**	**147**	**64**	**60**
PHF	**0.87**				**0.70**				**0.50**				**0.70**			
HV %	**0.0%**	**0.0%**	**5.6%**	**7.5%**	**0.0%**	**14.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.0%**	**0.0%**	**5.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**173**	**130**	**0**	**37**	**56**	**2**	**0**	**36**	**46**	**12**	**0**	**129**	**12**	**10**
PHF	**0.75**				**0.88**				**0.71**				**0.90**			
HV %	**0.0%**	**0.0%**	**1.2%**	**3.1%**	**0.0%**	**10.8%**	**3.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.6%**	**0.0%**	**10.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 4
Location:	Newington, NH
Street 1:	Newington Street
Street 2:	Arboretum Dr/New Hampshire Ave
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	3
7:45 AM	0	0	1	1	0	1	0	0	0	0	0	0	0	2	0	0
8:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	2
8:15 AM	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	1	0	2	0	0	0	0	0	0	0	2	0	0

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	1	2	0	2	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**3**	**3**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**5**
PHF	**0.50**				**0.42**				**0.00**				**0.56**			

PM PEAK HOUR 4:00 PM to 5:00 PM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**2**	**4**	**0**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**
PHF	**0.50**				**0.50**				**0.00**				**0.75**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 4
Location:	Newington, NH
Street 1:	Newington Street
Street 2:	Arboretum Dr/New Hampshire Ave
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	New Hampshire Avenue Northbound				Arboretum Drive Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 8
Location:	Portsmouth, NH
Street 1:	New Hampshire Avenue
Street 2:	Exeter Street & Manchester Square
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	24	3	0	1	30	8	0	2	0	1	0	0	0	0
7:15 AM	0	1	27	5	0	3	42	1	0	1	0	1	0	1	1	1
7:30 AM	0	4	17	4	0	4	54	6	0	1	1	2	0	3	1	1
7:45 AM	0	6	39	9	0	9	91	5	0	0	2	1	0	5	1	4
8:00 AM	0	4	34	6	0	5	51	4	0	1	1	3	0	7	0	1
8:15 AM	0	5	29	4	0	4	38	5	0	1	0	2	0	3	1	3
8:30 AM	0	4	26	5	0	7	50	10	0	2	3	1	0	4	1	3
8:45 AM	0	11	25	5	0	4	52	8	0	2	3	3	0	3	9	3

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	3	78	15	0	4	58	1	0	1	3	1	0	10	1	4
4:15 PM	0	1	54	5	0	3	53	4	0	1	0	2	0	9	2	6
4:30 PM	0	2	67	5	0	1	49	2	0	0	3	1	0	8	0	5
4:45 PM	0	1	45	3	0	3	47	3	0	1	0	0	0	8	1	5
5:00 PM	0	4	84	5	0	0	44	7	0	2	0	0	0	7	2	9
5:15 PM	0	6	43	3	0	1	43	2	0	1	1	3	0	5	5	2
5:30 PM	0	3	43	4	0	1	36	4	0	3	1	0	0	8	6	2
5:45 PM	0	3	36	1	0	0	32	9	0	1	1	1	0	4	1	0

AM PEAK HOUR 7:45 AM to 8:45 AM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**19**	**128**	**24**	**0**	**25**	**230**	**24**	**0**	**4**	**6**	**7**	**0**	**19**	**3**	**11**
PHF	**0.79**				**0.66**				**0.71**				**0.83**			
HV %	**0.0%**	**0.0%**	**3.9%**	**0.0%**	**0.0%**	**4.0%**	**0.9%**	**4.2%**	**0.0%**	**25.0%**	**0.0%**	**14.3%**	**0.0%**	**0.0%**	**33.3%**	**9.1%**

PM PEAK HOUR 4:00 PM to 5:00 PM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**7**	**244**	**28**	**0**	**11**	**207**	**10**	**0**	**3**	**6**	**4**	**0**	**35**	**4**	**20**
PHF	**0.73**				**0.90**				**0.65**				**0.87**			
HV %	**0.0%**	**0.0%**	**2.5%**	**0.0%**	**0.0%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**25.0%**	**0.0%**	**2.9%**	**25.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 8
Location:	Portsmouth, NH
Street 1:	New Hampshire Avenue
Street 2:	Exeter Street & Manchester Square
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1
8:30 AM	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
4:15 PM	0	0	3	0	0	0	1	0	0	0	0	1	0	0	1	0
4:30 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**5**	**0**	**0**	**1**	**2**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**1**
PHF	**0.63**				**0.50**				**0.50**				**0.25**			

PM PEAK HOUR 4:00 PM to 5:00 PM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**6**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**
PHF	**0.50**				**0.38**				**0.25**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 8
Location:	Portsmouth, NH
Street 1:	New Hampshire Avenue
Street 2:	Exeter Street & Manchester Square
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:00 PM to 5:00 PM	New Hampshire Avenue Northbound				New Hampshire Avenue Southbound				Exeter Street Eastbound				Manchester Square Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 9
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Aviation Avenue
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	3	0	7	81	0	0	0	23	0
7:15 AM	0	0	0	0	0	0	0	4	0	18	80	0	0	0	25	0
7:30 AM	0	0	0	0	0	0	0	2	0	16	108	0	0	0	24	0
7:45 AM	0	0	0	0	0	0	0	0	0	43	204	0	0	0	39	0
8:00 AM	0	0	0	0	0	0	0	4	0	21	127	0	0	0	52	0
8:15 AM	0	0	0	0	0	0	0	5	0	17	122	0	0	0	31	0
8:30 AM	0	0	0	0	0	0	0	1	0	20	108	0	0	0	35	0
8:45 AM	0	0	0	0	0	0	0	0	0	15	139	0	0	0	30	0

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	33	0	5	65	0	0	0	129	0
4:15 PM	0	0	0	0	0	0	0	9	0	2	63	0	0	0	123	0
4:30 PM	0	0	0	0	0	0	0	30	0	2	75	0	0	0	149	0
4:45 PM	0	0	0	0	0	1	0	13	0	4	67	0	0	0	131	0
5:00 PM	0	0	0	0	0	0	0	29	0	5	44	0	0	0	157	1
5:15 PM	0	0	0	0	0	0	0	20	0	4	42	0	0	0	116	0
5:30 PM	0	0	0	0	0	0	0	13	0	3	38	0	0	0	104	0
5:45 PM	0	0	0	0	0	0	0	5	0	1	43	0	0	0	64	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**101**	**561**	**0**	**0**	**0**	**157**	**0**
PHF	**0.00**				**0.50**				**0.67**				**0.75**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.0%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**81**	**0**	**13**	**249**	**0**	**0**	**0**	**560**	**1**
PHF	**0.00**				**0.68**				**0.85**				**0.89**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 9
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Aviation Avenue
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**11**	**0**	**0**	**0**	**5**	**0**
PHF	**0.00**				**0.00**				**0.65**				**0.63**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**6**	**0**
PHF	**0.00**				**0.25**				**0.50**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 9
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	Aviation Avenue
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:15 PM to 5:15 PM	Aviation Avenue Northbound				Aviation Avenue Southbound				Grafton Road Eastbound				Grafton Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 10
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	P. Golf Course Dr/Park & Ride Dr
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	85	3	0	1	26	0	0	0	0	0	0	5	0	2
7:15 AM	0	3	96	13	0	2	24	2	0	1	0	0	0	6	0	2
7:30 AM	0	8	141	13	0	0	25	0	0	0	0	2	0	7	0	0
7:45 AM	0	5	241	9	0	1	31	0	0	0	0	0	0	3	0	1
8:00 AM	0	2	148	4	0	2	53	0	0	0	0	0	0	1	0	1
8:15 AM	0	2	140	15	0	3	38	0	0	0	0	1	0	7	0	0
8:30 AM	0	4	141	12	0	2	31	0	0	0	0	3	0	2	0	1
8:45 AM	0	5	148	8	0	0	35	0	0	0	0	2	0	4	0	0

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	15	66	8	0	1	163	5	0	2	0	6	0	7	0	3
4:15 PM	0	6	61	12	0	3	131	2	0	2	0	3	0	7	0	1
4:30 PM	0	11	63	12	0	1	174	5	0	1	0	1	0	5	0	2
4:45 PM	0	5	64	11	0	4	151	2	0	0	0	5	0	7	0	1
5:00 PM	0	2	46	11	0	0	183	2	0	1	0	2	0	14	0	5
5:15 PM	0	5	43	5	0	3	135	6	0	1	0	6	0	9	0	2
5:30 PM	0	4	42	15	0	0	127	0	0	1	0	5	0	2	0	1
5:45 PM	0	6	45	13	0	1	79	1	0	2	0	4	0	11	0	0

AM PEAK HOUR 7:30 AM to 8:30 AM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**17**	**670**	**41**	**0**	**6**	**147**	**0**	**0**	**0**	**0**	**3**	**0**	**18**	**0**	**2**
PHF	**0.71**				**0.70**				**0.38**				**0.71**			
HV %	**0.0%**	**5.9%**	**1.2%**	**7.3%**	**0.0%**	**16.7%**	**3.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**33.3%**	**0.0%**	**16.7%**	**0.0%**	**50.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**37**	**254**	**43**	**0**	**9**	**619**	**14**	**0**	**5**	**0**	**15**	**0**	**26**	**0**	**7**
PHF	**0.94**				**0.89**				**0.63**				**0.83**			
HV %	**0.0%**	**0.0%**	**1.2%**	**11.6%**	**0.0%**	**22.2%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**11.5%**	**0.0%**	**28.6%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 10
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	P. Golf Course Dr/Park & Ride Dr
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	2	1	0	0	2	0	0	0	0	0	0	2	0	1
7:15 AM	0	0	3	2	0	2	0	0	0	0	0	0	0	2	0	0
7:30 AM	0	1	1	0	0	0	4	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	4	1	0	0	1	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	2	2	0	1	0	0	0	0	0	0	0	2	0	0
8:30 AM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	2	0	1	0	0	0	0	0	0	0	2	0	0
4:30 PM	0	0	2	1	0	0	4	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1
5:15 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	3	0	1	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**14**	**4**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**
PHF	**0.90**				**1.00**				**0.00**				**0.50**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**3**	**5**	**0**	**2**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**2**
PHF	**0.67**				**0.44**				**0.00**				**0.63**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 10
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	P. Golf Course Dr/Park & Ride Dr
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:30 AM to 8:30 AM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0

PM PEAK HOUR[1] 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Pease Golf Course Driveway Eastbound				Park & Ride Driveway Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	0	0	1	0	1	0	0	0	2	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 11
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	I-95 Southbound Off-Ramp
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	78	0	0	0	33	0	0	0	0	0	0	0	0	7
7:15 AM	0	0	92	0	0	0	31	0	0	0	0	0	0	0	0	26
7:30 AM	0	0	138	0	0	0	31	0	0	0	0	0	0	0	0	26
7:45 AM	0	0	227	0	0	0	37	0	0	0	0	0	0	0	0	36
8:00 AM	0	0	133	0	0	0	56	0	0	0	0	0	0	0	0	23
8:15 AM	0	0	136	0	0	0	47	0	0	0	0	0	0	0	0	23
8:30 AM	0	0	137	0	0	0	39	0	0	0	0	0	0	0	0	28
8:45 AM	0	0	137	0	0	0	44	0	0	0	0	0	0	0	0	24

	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	75	0	0	0	185	0	0	0	0	0	0	0	0	11
4:15 PM	0	0	74	0	0	0	138	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	78	0	0	0	183	0	0	0	0	0	0	0	0	11
4:45 PM	0	0	68	0	0	0	154	0	0	0	0	0	0	0	0	8
5:00 PM	0	0	52	0	0	0	198	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	49	0	0	0	155	0	0	0	0	0	0	0	0	6
5:30 PM	0	0	54	0	0	0	142	0	0	0	0	0	0	0	0	12
5:45 PM	0	0	56	0	0	0	88	0	0	0	0	0	0	0	0	8

AM PEAK HOUR 7:45 AM to 8:45 AM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**633**	**0**	**0**	**0**	**179**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**110**
PHF	**0.70**				**0.80**				**0.00**				**0.76**			
HV %	**0.0%**	**0.0%**	**1.6%**	**0.0%**	**0.0%**	**0.0%**	**3.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.7%**

PM PEAK HOUR 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**295**	**0**	**0**	**0**	**660**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**32**
PHF	**0.95**				**0.89**				**0.00**				**0.73**			
HV %	**0.0%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**12.5%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 11
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	I-95 Southbound Off-Ramp
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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HEAVY VEHICLES

	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1

	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**8**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
PHF	**0.40**				**0.69**				**0.00**				**0.38**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**4**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
PHF	**0.50**				**0.50**				**0.00**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	856_010_TB
BTD #:	Location 11
Location:	Portsmouth, NH
Street 1:	Grafton Road
Street 2:	I-95 Southbound Off-Ramp
Count Date:	2/17/2022
Day of Week:	Thursday
Weather:	Cloudy, 55°F

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PEDESTRIANS & BICYCLES

	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

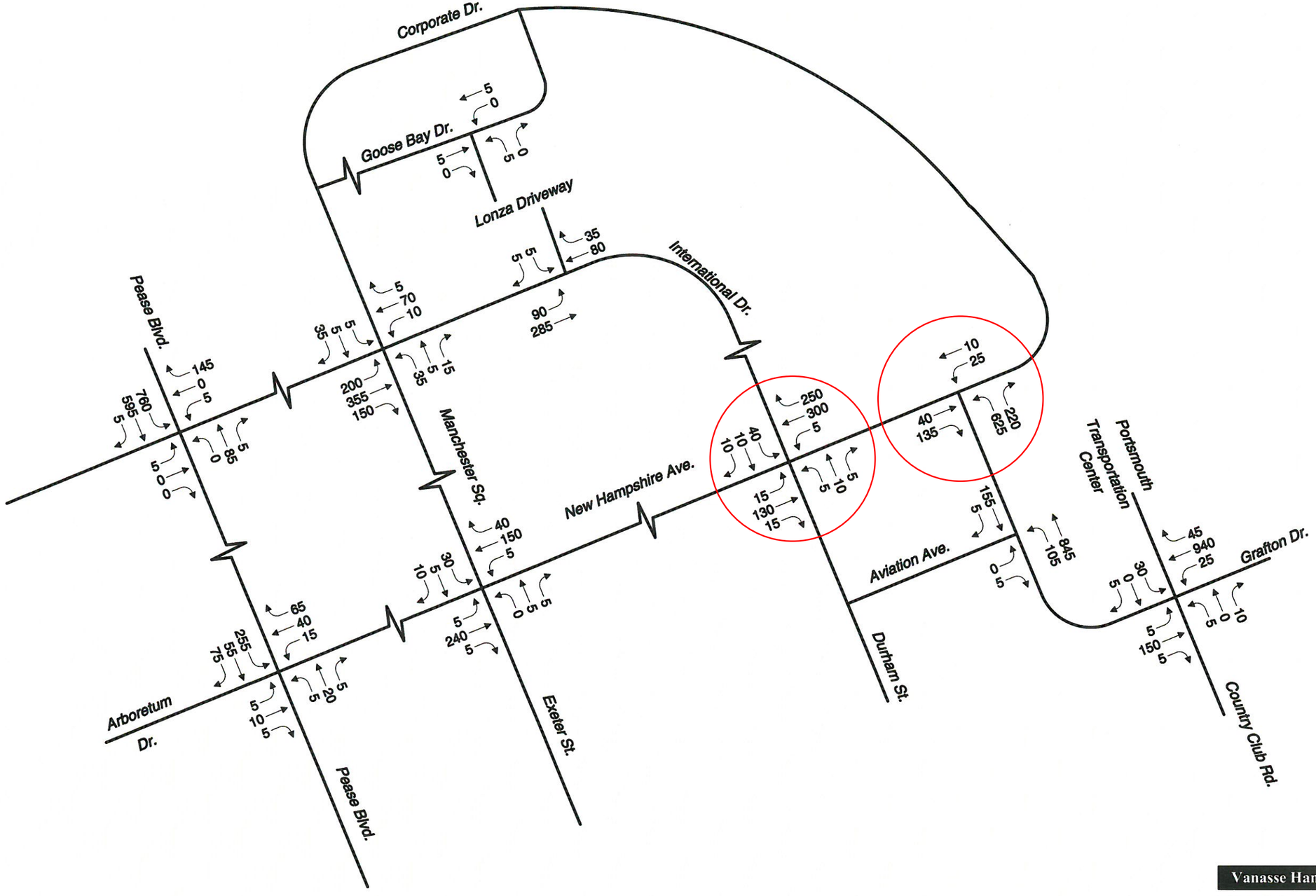
	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1] 4:00 PM to 5:00 PM	Grafton Road Northbound				Grafton Road Southbound				Eastbound				I-95 Southbound Off-Ramp Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

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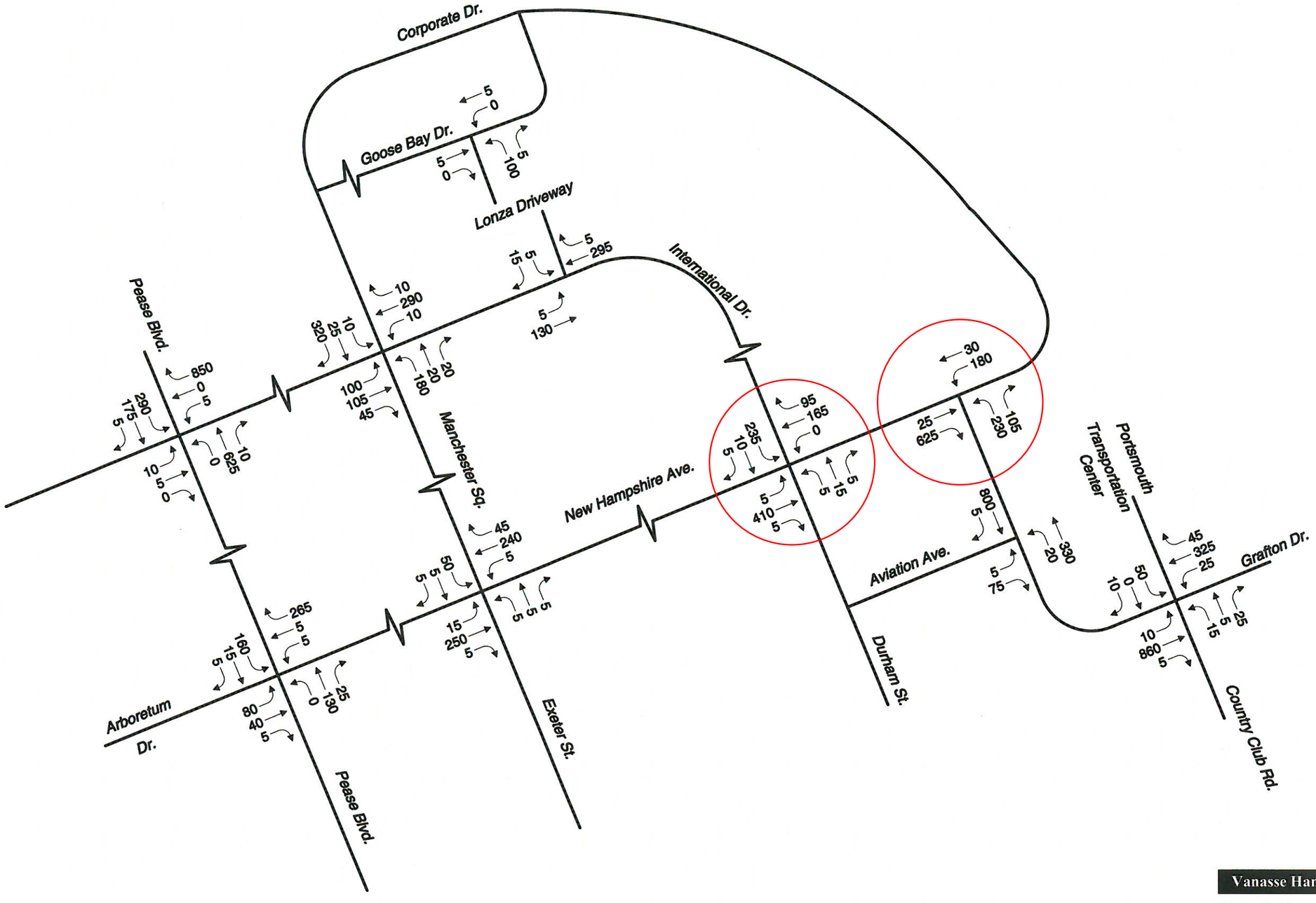
Not to Scale

Vanasse Hangen Brustlin, Inc.

Figure 1-9

2010 Existing
Weekday Morning (7:45 AM-8:45 AM)
Peak Hour Traffic Volume Network
Pease InternationalTradeport

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Not to Scale

Vanasse Hangen Brustlin, Inc.

Figure 1-10

2010 Existing
Weekday Evening (4:30 PM-5:30 PM)
Peak Hour Traffic Volume Network
Pease International Tradeport

Volume Report

Job 856_010_TB_ATR 6A
Area Portsmouth, NH
Location Newington Street EB, west of Route 4 Southbound On/Off-Ramps

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Wednesday, February 16, 2022

Time	Total		EB				Time	Total		EB			
0000	73		73		0		1200	178		178		0	
0015	18		18		0		1215	138		138		0	
0030	47		47		0		1230	115		115		0	
0045	9	147	9	147	0	0	1245	118	549	118	549	0	0
0100	9		9		0		1300	123		123		0	
0115	2		2		0		1315	113		113		0	
0130	3		3		0		1330	131		131		0	
0145	1	15	1	15	0	0	1345	111	478	111	478	0	0
0200	8		8		0		1400	134		134		0	
0215	4		4		0		1415	147		147		0	
0230	1		1		0		1430	184		184		0	
0245	6	19	6	19	0	0	1445	148	613	148	613	0	0
0300	5		5		0		1500	184		184		0	
0315	6		6		0		1515	133		133		0	
0330	6		6		0		1530	231		231		0	
0345	4	21	4	21	0	0	1545	166	714	166	714	0	0
0400	5		5		0		1600	230		230		0	
0415	9		9		0		1615	215		215		0	
0430	11		11		0		1630	251		251		0	
0445	7	32	7	32	0	0	1645	176	872	176	872	0	0
0500	13		13		0		1700	278		278		0	
0515	14		14		0		1715	193		193		0	
0530	6		6		0		1730	177		177		0	
0545	16	49	16	49	0	0	1745	133	781	133	781	0	0
0600	22		22		0		1800	127		127		0	
0615	27		27		0		1815	82		82		0	
0630	53		53		0		1830	82		82		0	
0645	56	158	56	158	0	0	1845	75	366	75	366	0	0
0700	49		49		0		1900	85		85		0	
0715	29		29		0		1915	72		72		0	
0730	52		52		0		1930	56		56		0	
0745	52	182	52	182	0	0	1945	26	239	26	239	0	0
0800	57		57		0		2000	50		50		0	
0815	50		50		0		2015	34		34		0	
0830	49		49		0		2030	19		19		0	
0845	56	212	56	212	0	0	2045	19	122	19	122	0	0
0900	63		63		0		2100	29		29		0	
0915	56		56		0		2115	17		17		0	
0930	69		69		0		2130	17		17		0	
0945	98	286	98	286	0	0	2145	25	88	25	88	0	0
1000	74		74		0		2200	23		23		0	
1015	88		88		0		2215	18		18		0	
1030	98		98		0		2230	56		56		0	
1045	99	359	99	359	0	0	2245	37	134	37	134	0	0
1100	130		130		0		2300	29		29		0	
1115	129		129		0		2315	15		15		0	
1130	134		134		0		2330	24		24		0	
1145	185	578	185	578	0	0	2345	13	81	13	81	0	0
							Total	**7095**		**7095**		**0**	

Volume Report

Job 856_010_TB_ATR 6A
Area Portsmouth, NH
Location Newington Street EB, west of Route 4 Southbound On/Off-Ramps

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Thursday, February 17, 2022

Time	Total		EB				Time	Total		EB			
0000	66		66		0		1200	197		197		0	
0015	17		17		0		1215	160		160		0	
0030	47		47		0		1230	132		132		0	
0045	12	142	12	142	0	0	1245	113	602	113	602	0	0
0100	9		9		0		1300	143		143		0	
0115	4		4		0		1315	94		94		0	
0130	8		8		0		1330	125		125		0	
0145	4	25	4	25	0	0	1345	114	476	114	476	0	0
0200	2		2		0		1400	142		142		0	
0215	10		10		0		1415	129		129		0	
0230	3		3		0		1430	211		211		0	
0245	7	22	7	22	0	0	1445	173	655	173	655	0	0
0300	4		4		0		1500	192		192		0	
0315	4		4		0		1515	144		144		0	
0330	6		6		0		1530	237		237		0	
0345	8	22	8	22	0	0	1545	177	750	177	750	0	0
0400	2		2		0		1600	217		217		0	
0415	12		12		0		1615	215		215		0	
0430	18		18		0		1630	218		218		0	
0445	7	39	7	39	0	0	1645	220	870	220	870	0	0
0500	14		14		0		1700	265		265		0	
0515	9		9		0		1715	174		174		0	
0530	6		6		0		1730	162		162		0	
0545	21	50	21	50	0	0	1745	134	735	134	735	0	0
0600	17		17		0		1800	127		127		0	
0615	21		21		0		1815	107		107		0	
0630	45		45		0		1830	84		84		0	
0645	62	145	62	145	0	0	1845	80	398	80	398	0	0
0700	64		64		0		1900	95		95		0	
0715	40		40		0		1915	90		90		0	
0730	34		34		0		1930	59		59		0	
0745	54	192	54	192	0	0	1945	29	273	29	273	0	0
0800	60		60		0		2000	53		53		0	
0815	49		49		0		2015	40		40		0	
0830	65		65		0		2030	27		27		0	
0845	60	234	60	234	0	0	2045	23	143	23	143	0	0
0900	91		91		0		2100	32		32		0	
0915	72		72		0		2115	24		24		0	
0930	85		85		0		2130	21		21		0	
0945	74	322	74	322	0	0	2145	32	109	32	109	0	0
1000	85		85		0		2200	28		28		0	
1015	76		76		0		2215	16		16		0	
1030	115		115		0		2230	64		64		0	
1045	116	392	116	392	0	0	2245	17	125	17	125	0	0
1100	122		122		0		2300	24		24		0	
1115	125		125		0		2315	7		7		0	
1130	141		141		0		2330	21		21		0	
1145	156	544	156	544	0	0	2345	16	68	16	68	0	0
							Total	**7333**		**7333**		**0**	

Volume Report

Job 856_010_TB_ATR 6A
Area Portsmouth, NH
Location Newington Street EB, west of Route 4 Southbound On/Off-Ramps

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Friday, February 18, 2022

Time	Total		EB				Time	Total		EB			
0000	75		75		0		1200	166		166		0	
0015	13		13		0		1215	139		139		0	
0030	53		53		0		1230	150		150		0	
0045	13	154	13	154	0	0	1245	93	548	93	548	0	0
0100	13		13		0		1300	130		130		0	
0115	3		3		0		1315	113		113		0	
0130	4		4		0		1330	133		133		0	
0145	2	22	2	22	0	0	1345	121	497	121	497	0	0
0200	6		6		0		1400	150		150		0	
0215	9		9		0		1415	133		133		0	
0230	4		4		0		1430	202		202		0	
0245	8	27	8	27	0	0	1445	161	646	161	646	0	0
0300	3		3		0		1500	172		172		0	
0315	4		4		0		1515	158		158		0	
0330	7		7		0		1530	211		211		0	
0345	2	16	2	16	0	0	1545	154	695	154	695	0	0
0400	8		8		0		1600	192		192		0	
0415	8		8		0		1615	141		141		0	
0430	11		11		0		1630	182		182		0	
0445	10	37	10	37	0	0	1645	169	684	169	684	0	0
0500	14		14		0		1700	191		191		0	
0515	7		7		0		1715	165		165		0	
0530	12		12		0		1730	116		116		0	
0545	20	53	20	53	0	0	1745	91	563	91	563	0	0
0600	15		15		0		1800	83		83		0	
0615	16		16		0		1815	74		74		0	
0630	45		45		0		1830	62		62		0	
0645	61	137	61	137	0	0	1845	74	293	74	293	0	0
0700	65		65		0		1900	84		84		0	
0715	31		31		0		1915	64		64		0	
0730	31		31		0		1930	43		43		0	
0745	52	179	52	179	0	0	1945	31	222	31	222	0	0
0800	45		45		0		2000	32		32		0	
0815	57		57		0		2015	30		30		0	
0830	51		51		0		2030	33		33		0	
0845	70	223	70	223	0	0	2045	25	120	25	120	0	0
0900	80		80		0		2100	22		22		0	
0915	76		76		0		2115	10		10		0	
0930	70		70		0		2130	22		22		0	
0945	61	287	61	287	0	0	2145	27	81	27	81	0	0
1000	100		100		0		2200	20		20		0	
1015	82		82		0		2215	19		19		0	
1030	88		88		0		2230	60		60		0	
1045	108	378	108	378	0	0	2245	23	122	23	122	0	0
1100	115		115		0		2300	16		16		0	
1115	117		117		0		2315	17		17		0	
1130	118		118		0		2330	18		18		0	
1145	134	484	134	484	0	0	2345	11	62	11	62	0	0
							Total	**6530**		**6530**		**0**	

Volume Report

Job 856_010_TB_ATR 6A
Area Portsmouth, NH
Location Newington Street EB, west of Route 4 Southbound On/Off-Ramps

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Saturday, February 19, 2022

Time	Total		EB				Time	Total		EB			
0000	60		60		0		1200	86		86		0	
0015	16		16		0		1215	69		69		0	
0030	34		34		0		1230	60		60		0	
0045	7	117	7	117	0	0	1245	73	288	73	288	0	0
0100	7		7		0		1300	62		62		0	
0115	6		6		0		1315	57		57		0	
0130	4		4		0		1330	68		68		0	
0145	5	22	5	22	0	0	1345	50	237	50	237	0	0
0200	6		6		0		1400	54		54		0	
0215	5		5		0		1415	61		61		0	
0230	4		4		0		1430	59		59		0	
0245	3	18	3	18	0	0	1445	48	222	48	222	0	0
0300	2		2		0		1500	70		70		0	
0315	1		1		0		1515	65		65		0	
0330	5		5		0		1530	52		52		0	
0345	3	11	3	11	0	0	1545	38	225	38	225	0	0
0400	3		3		0		1600	45		45		0	
0415	6		6		0		1615	44		44		0	
0430	6		6		0		1630	52		52		0	
0445	6	21	6	21	0	0	1645	44	185	44	185	0	0
0500	8		8		0		1700	66		66		0	
0515	6		6		0		1715	44		44		0	
0530	4		4		0		1730	55		55		0	
0545	12	30	12	30	0	0	1745	48	213	48	213	0	0
0600	11		11		0		1800	52		52		0	
0615	8		8		0		1815	44		44		0	
0630	19		19		0		1830	56		56		0	
0645	28	66	28	66	0	0	1845	57	209	57	209	0	0
0700	35		35		0		1900	54		54		0	
0715	14		14		0		1915	35		35		0	
0730	15		15		0		1930	18		18		0	
0745	18	82	18	82	0	0	1945	36	143	36	143	0	0
0800	15		15		0		2000	29		29		0	
0815	18		18		0		2015	21		21		0	
0830	29		29		0		2030	24		24		0	
0845	18	80	18	80	0	0	2045	19	93	19	93	0	0
0900	25		25		0		2100	14		14		0	
0915	49		49		0		2115	9		9		0	
0930	43		43		0		2130	17		17		0	
0945	33	150	33	150	0	0	2145	14	54	14	54	0	0
1000	38		38		0		2200	10		10		0	
1015	53		53		0		2215	18		18		0	
1030	48		48		0		2230	10		10		0	
1045	52	191	52	191	0	0	2245	8	46	8	46	0	0
1100	65		65		0		2300	8		8		0	
1115	65		65		0		2315	11		11		0	
1130	69		69		0		2330	6		6		0	
1145	70	269	70	269	0	0	2345	4	29	4	29	0	0
							Total	**3001**		**3001**		**0**	

Volume Report

Job 856_010_TB_ATR 6B
Area Portsmouth, NH
Location Newington Street WB, west of Route 4 Southbound On/Off-Ramps

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Wednesday, February 16, 2022

Time	Total		WB				Time	Total		WB			
0000	3		3		0		1200	130		130		0	
0015	3		3		0		1215	139		139		0	
0030	4		4		0		1230	146		146		0	
0045	0	10	0	10	0	0	1245	145	560	145	560	0	0
0100	3		3		0		1300	149		149		0	
0115	3		3		0		1315	126		126		0	
0130	5		5		0		1330	121		121		0	
0145	5	16	5	16	0	0	1345	140	536	140	536	0	0
0200	5		5		0		1400	116		116		0	
0215	5		5		0		1415	99		99		0	
0230	3		3		0		1430	94		94		0	
0245	2	15	2	15	0	0	1445	95	404	95	404	0	0
0300	1		1		0		1500	106		106		0	
0315	6		6		0		1515	108		108		0	
0330	5		5		0		1530	84		84		0	
0345	6	18	6	18	0	0	1545	97	395	97	395	0	0
0400	6		6		0		1600	58		58		0	
0415	4		4		0		1615	92		92		0	
0430	15		15		0		1630	85		85		0	
0445	35	60	35	60	0	0	1645	96	331	96	331	0	0
0500	43		43		0		1700	82		82		0	
0515	67		67		0		1715	56		56		0	
0530	102		102		0		1730	64		64		0	
0545	169	381	169	381	0	0	1745	64	266	64	266	0	0
0600	115		115		0		1800	70		70		0	
0615	164		164		0		1815	68		68		0	
0630	158		158		0		1830	48		48		0	
0645	257	694	257	694	0	0	1845	35	221	35	221	0	0
0700	137		137		0		1900	37		37		0	
0715	178		178		0		1915	23		23		0	
0730	214		214		0		1930	24		24		0	
0745	262	791	262	791	0	0	1945	35	119	35	119	0	0
0800	233		233		0		2000	24		24		0	
0815	202		202		0		2015	21		21		0	
0830	176		176		0		2030	29		29		0	
0845	164	775	164	775	0	0	2045	18	92	18	92	0	0
0900	102		102		0		2100	22		22		0	
0915	101		101		0		2115	13		13		0	
0930	91		91		0		2130	13		13		0	
0945	102	396	102	396	0	0	2145	16	64	16	64	0	0
1000	107		107		0		2200	24		24		0	
1015	85		85		0		2215	31		31		0	
1030	84		84		0		2230	12		12		0	
1045	112	388	112	388	0	0	2245	5	72	5	72	0	0
1100	92		92		0		2300	7		7		0	
1115	110		110		0		2315	8		8		0	
1130	125		125		0		2330	3		3		0	
1145	128	455	128	455	0	0	2345	4	22	4	22	0	0
							Total	**7081**		**7081**		**0**	

Volume Report

Job 856_010_TB_ATR 6B
Area Portsmouth, NH
Location Newington Street WB, west of Route 4 Southbound On/Off-Ramps

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Thursday, February 17, 2022

Time	Total		WB				Time	Total		WB			
0000	7		7		0		1200	117		117		0	
0015	3		3		0		1215	155		155		0	
0030	1		1		0		1230	140		140		0	
0045	3	14	3	14	0	0	1245	172	584	172	584	0	0
0100	5		5		0		1300	142		142		0	
0115	5		5		0		1315	122		122		0	
0130	4		4		0		1330	120		120		0	
0145	4	18	4	18	0	0	1345	155	539	155	539	0	0
0200	3		3		0		1400	131		131		0	
0215	4		4		0		1415	120		120		0	
0230	7		7		0		1430	93		93		0	
0245	2	16	2	16	0	0	1445	107	451	107	451	0	0
0300	5		5		0		1500	136		136		0	
0315	3		3		0		1515	118		118		0	
0330	8		8		0		1530	96		96		0	
0345	10	26	10	26	0	0	1545	96	446	96	446	0	0
0400	2		2		0		1600	77		77		0	
0415	6		6		0		1615	75		75		0	
0430	13		13		0		1630	96		96		0	
0445	32	53	32	53	0	0	1645	92	340	92	340	0	0
0500	40		40		0		1700	75		75		0	
0515	69		69		0		1715	74		74		0	
0530	97		97		0		1730	53		53		0	
0545	170	376	170	376	0	0	1745	75	277	75	277	0	0
0600	110		110		0		1800	49		49		0	
0615	153		153		0		1815	67		67		0	
0630	157		157		0		1830	57		57		0	
0645	242	662	242	662	0	0	1845	35	208	35	208	0	0
0700	164		164		0		1900	29		29		0	
0715	178		178		0		1915	34		34		0	
0730	207		207		0		1930	28		28		0	
0745	286	835	286	835	0	0	1945	26	117	26	117	0	0
0800	194		194		0		2000	25		25		0	
0815	190		190		0		2015	23		23		0	
0830	185		185		0		2030	18		18		0	
0845	181	750	181	750	0	0	2045	26	92	26	92	0	0
0900	113		113		0		2100	20		20		0	
0915	124		124		0		2115	12		12		0	
0930	115		115		0		2130	15		15		0	
0945	112	464	112	464	0	0	2145	16	63	16	63	0	0
1000	93		93		0		2200	23		23		0	
1015	71		71		0		2215	32		32		0	
1030	81		81		0		2230	14		14		0	
1045	99	344	99	344	0	0	2245	11	80	11	80	0	0
1100	81		81		0		2300	4		4		0	
1115	99		99		0		2315	4		4		0	
1130	124		124		0		2330	4		4		0	
1145	146	450	146	450	0	0	2345	5	17	5	17	0	0
							Total	**7222**		**7222**		**0**	

Volume Report

Job 856_010_TB_ATR 6B
Area Portsmouth, NH
Location Newington Street WB, west of Route 4 Southbound On/Off-Ramps

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Friday, February 18, 2022

Time	Total		WB				Time	Total		WB			
0000	3		3		0		1200	95		95		0	
0015	0		0		0		1215	107		107		0	
0030	5		5		0		1230	139		139		0	
0045	3	11	3	11	0	0	1245	145	486	145	486	0	0
0100	1		1		0		1300	112		112		0	
0115	5		5		0		1315	117		117		0	
0130	3		3		0		1330	115		115		0	
0145	1	10	1	10	0	0	1345	109	453	109	453	0	0
0200	4		4		0		1400	109		109		0	
0215	2		2		0		1415	105		105		0	
0230	4		4		0		1430	88		88		0	
0245	1	11	1	11	0	0	1445	102	404	102	404	0	0
0300	2		2		0		1500	84		84		0	
0315	1		1		0		1515	88		88		0	
0330	5		5		0		1530	80		80		0	
0345	7	15	7	15	0	0	1545	91	343	91	343	0	0
0400	3		3		0		1600	66		66		0	
0415	9		9		0		1615	66		66		0	
0430	10		10		0		1630	74		74		0	
0445	32	54	32	54	0	0	1645	52	258	52	258	0	0
0500	29		29		0		1700	61		61		0	
0515	64		64		0		1715	46		46		0	
0530	70		70		0		1730	46		46		0	
0545	102	265	102	265	0	0	1745	69	222	69	222	0	0
0600	103		103		0		1800	28		28		0	
0615	118		118		0		1815	45		45		0	
0630	126		126		0		1830	41		41		0	
0645	197	544	197	544	0	0	1845	34	148	34	148	0	0
0700	130		130		0		1900	35		35		0	
0715	122		122		0		1915	36		36		0	
0730	172		172		0		1930	31		31		0	
0745	218	642	218	642	0	0	1945	36	138	36	138	0	0
0800	171		171		0		2000	25		25		0	
0815	179		179		0		2015	41		41		0	
0830	139		139		0		2030	25		25		0	
0845	155	644	155	644	0	0	2045	17	108	17	108	0	0
0900	90		90		0		2100	14		14		0	
0915	89		89		0		2115	11		11		0	
0930	91		91		0		2130	7		7		0	
0945	82	352	82	352	0	0	2145	13	45	13	45	0	0
1000	79		79		0		2200	5		5		0	
1015	66		66		0		2215	8		8		0	
1030	90		90		0		2230	13		13		0	
1045	86	321	86	321	0	0	2245	7	33	7	33	0	0
1100	85		85		0		2300	6		6		0	
1115	86		86		0		2315	4		4		0	
1130	97		97		0		2330	5		5		0	
1145	109	377	109	377	0	0	2345	4	19	4	19	0	0
							Total	**5903**		**5903**		**0**	

Volume Report

Job 856_010_TB_ATR 6B
Area Portsmouth, NH
Location Newington Street WB, west of Route 4 Southbound On/Off-Ramps

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

Saturday, February 19, 2022

Time	Total		WB				Time	Total		WB			
0000	4		4		0		1200	48		48		0	
0015	5		5		0		1215	65		65		0	
0030	1		1		0		1230	59		59		0	
0045	5	15	5	15	0	0	1245	59	231	59	231	0	0
0100	3		3		0		1300	55		55		0	
0115	0		0		0		1315	54		54		0	
0130	3		3		0		1330	59		59		0	
0145	9	15	9	15	0	0	1345	47	215	47	215	0	0
0200	1		1		0		1400	55		55		0	
0215	2		2		0		1415	66		66		0	
0230	6		6		0		1430	59		59		0	
0245	3	12	3	12	0	0	1445	55	235	55	235	0	0
0300	0		0		0		1500	56		56		0	
0315	3		3		0		1515	44		44		0	
0330	4		4		0		1530	49		49		0	
0345	3	10	3	10	0	0	1545	42	191	42	191	0	0
0400	2		2		0		1600	61		61		0	
0415	4		4		0		1615	41		41		0	
0430	8		8		0		1630	40		40		0	
0445	14	28	14	28	0	0	1645	39	181	39	181	0	0
0500	13		13		0		1700	51		51		0	
0515	20		20		0		1715	58		58		0	
0530	23		23		0		1730	64		64		0	
0545	31	87	31	87	0	0	1745	54	227	54	227	0	0
0600	32		32		0		1800	44		44		0	
0615	37		37		0		1815	57		57		0	
0630	50		50		0		1830	61		61		0	
0645	53	172	53	172	0	0	1845	46	208	46	208	0	0
0700	22		22		0		1900	34		34		0	
0715	15		15		0		1915	28		28		0	
0730	24		24		0		1930	22		22		0	
0745	31	92	31	92	0	0	1945	13	97	13	97	0	0
0800	28		28		0		2000	24		24		0	
0815	29		29		0		2015	15		15		0	
0830	39		39		0		2030	20		20		0	
0845	36	132	36	132	0	0	2045	14	73	14	73	0	0
0900	22		22		0		2100	15		15		0	
0915	23		23		0		2115	11		11		0	
0930	27		27		0		2130	10		10		0	
0945	25	97	25	97	0	0	2145	8	44	8	44	0	0
1000	32		32		0		2200	4		4		0	
1015	29		29		0		2215	7		7		0	
1030	46		46		0		2230	6		6		0	
1045	45	152	45	152	0	0	2245	3	20	3	20	0	0
1100	46		46		0		2300	11		11		0	
1115	38		38		0		2315	6		6		0	
1130	60		60		0		2330	3		3		0	
1145	61	205	61	205	0	0	2345	4	24	4	24	0	0
							Total	**2763**		**2763**		**0**	

APPENDIX B

NHDOT Historical Traffic Volumes,
Seasonal Adjustment Factors &
Historical Growth Rates

Location Info	
Location ID	82379024
Type	I-SECTION
Functional Class	7
Located On	Pease Blvd
Direction	2-WAY
Community	PORTSMOUTH
MPO_ID	
HPMS ID	
Agency	New Hampshire DOT

Count Data Info	
Start Date	8/12/2021
End Date	8/13/2021
Start Time	12:00 AM
End Time	12:00 AM
Direction	2-WAY
Notes	nhdot
Count Source	8.2379E+11
File Name	823790247030.prn
Weather	
Study	
Owner	iwong
QC Status	Accepted

Interval: 60 mins	
Time	**Hourly Count**
00:00 - 01:00	225
01:00 - 02:00	87
02:00 - 03:00	74
03:00 - 04:00	67
04:00 - 05:00	125
05:00 - 06:00	455
06:00 - 07:00	1066
07:00 - 08:00	1232
08:00 - 09:00	1212
09:00 - 10:00	1036
10:00 - 11:00	1072
11:00 - 12:00	1355
12:00 - 13:00	1557
13:00 - 14:00	1369
14:00 - 15:00	1363
15:00 - 16:00	1628
16:00 - 17:00	1558
17:00 - 18:00	1206
18:00 - 19:00	742
19:00 - 20:00	520
20:00 - 21:00	409
21:00 - 22:00	233
22:00 - 23:00	202
23:00 - 24:00	149
TOTAL	18942

Year 2019 Monthly Data

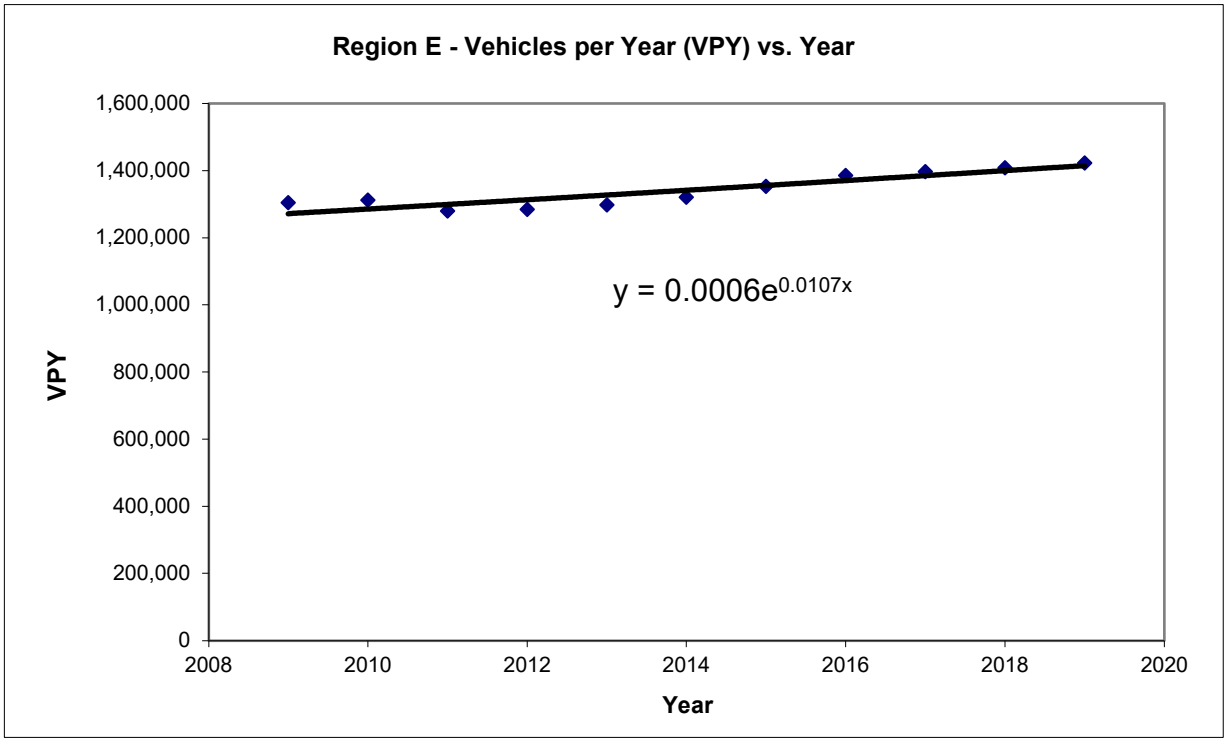
Group 4 Averages: Urban Highways

Month	ADT	Adjustment to Average	Adjustment to Peak
January	11,431	1.12	1.23
February	11,848	1.08	1.18
March	12,141	1.06	1.15
April	12,860	1.00	1.09
May	13,551	0.95	1.03
June	13,785	0.93	1.02
July	13,942	0.92	1.01
August	14,016	0.92	1.00
September	13,379	0.96	1.05
October	13,339	0.96	1.05
November	12,265	1.05	1.14
December	11,496	1.12	1.22
Average ADT:	12,838		
Peak ADT:	14,016		

GROUP	COUNTER	TOWN	LOCATION
04	02051003	BOW	NH 3A south of Robinson Rd
04	02089001	CHICHESTER	NH 28 (Suncook Valley Rd) north of Bear Hill Rd
04	02091001	CLAREMONT	NH 12/103 east of Vermont SL
04	62099056	CONCORD	NH 106 (Sheep Davis Rd) at Loudon TL (north of Ashby Rd)
04	72099278	CONCORD	US 3 (Fisherville Rd) north of Sewalls Falls Rd
04	02125001	DOVER	Dover Point Rd south of Thornwood Ln
04	02133021	DURHAM	US 4 east of NH 108
04	82197076	HAMPTON	US 1 (Lafayette Rd) south of Ramp to NH 101
04	*02229022*	*HUDSON**	*Circumferential Hwy east of Nashua TL*
04	02253025	LEBANON	NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
04	02255001	LEE	NH 125 (Calef Hwy) north of Pinkham Rd
04	02287001	MARLBOROUGH	NH 12 at Swanzey TL
04	02297001	MERRIMACK	US 3 (Daniel Webster Hwy) north of Hilton Dr
04	*02303001*	*MILFORD**	*NH 101A at Amherst TL (west of Overlook Dr)*
04	*02315051*	*NASHUA**	*NH 111 (Bridge / Ferry St) at Hudson TL*
04	02339001	NEWPORT	NH 10 1 mile south of Croydon TL (north of Corbin Rd)
04	02345001	NORTH HAMPTON	US 1 (Lafayette Rd) north of North Rd
04	*62387052*	*RINDGE**	*US 202 at Jaffrey TL (north of County Rd)*
04	02445001	TEMPLE	NH 101 at Wilton TL (west of Old County Farm Rd)
04	02489001	WINDHAM	NH 28 at Derry TL (north of Northland Rd)

** denotes counter that is not included in calculation*

Year	Total
2009	1303948
2010	1312251
2011	1279824
2012	1284314
2013	1298171
2014	1320862
2015	1353486
2016	1385361
2017	1396932
2018	1408237
2019	1422176
CAGR	0.87%
Exp	1.07%
Avg	0.97%



APPENDIX C

Traffic Volume Adjustment Calculation

Traffic Volume Adjustment Factor Calculation

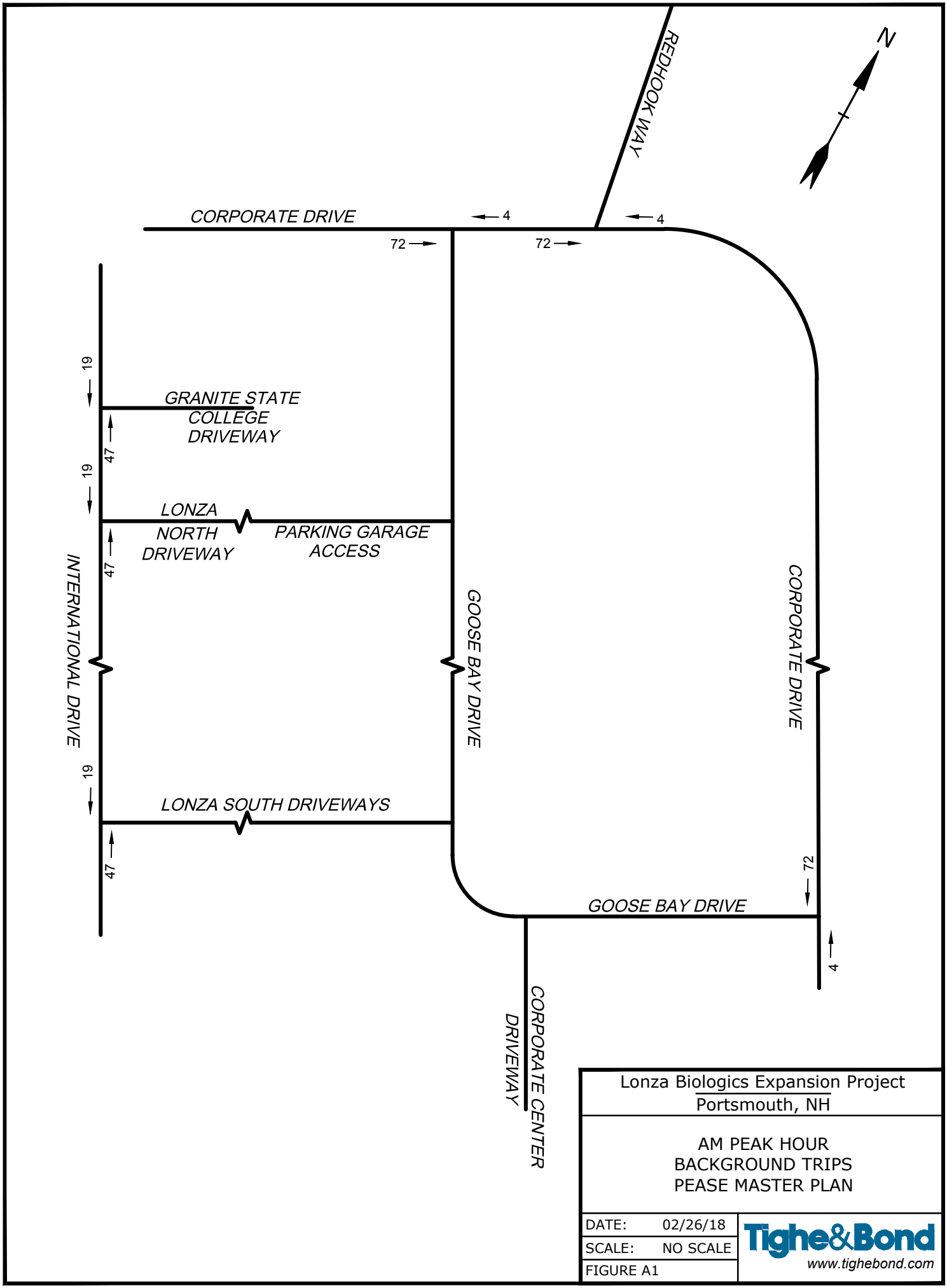
	February 2022 ATR Data		NHDOT Count Station Data (Loc ID 82379024) - Pease Blvd, West of Route 4 SB Ramps	
Peak Hour	**Feb 2022**	**2022 Seasonally Adjust to Peak[1]**	**August 2021[2]**	**Adjustment Factor (to 2021)**
AM Peak (7-8)	1027	**1212**	1232	**2%**
AM Peak (8-9)	984	**1161**	1212	**4%**
PM Peak (4-5)	1210	**1428**	1558	**9%**
PM Peak (5-6)	1012	**1194**	1206	**1%**

[1] 2019 Seasonal Adjustment Factor to Peak 1.18

[2] September 2019 Seasonal Adjustment Factor 1.0

APPENDIX D

Background Development
Traffic Volumes



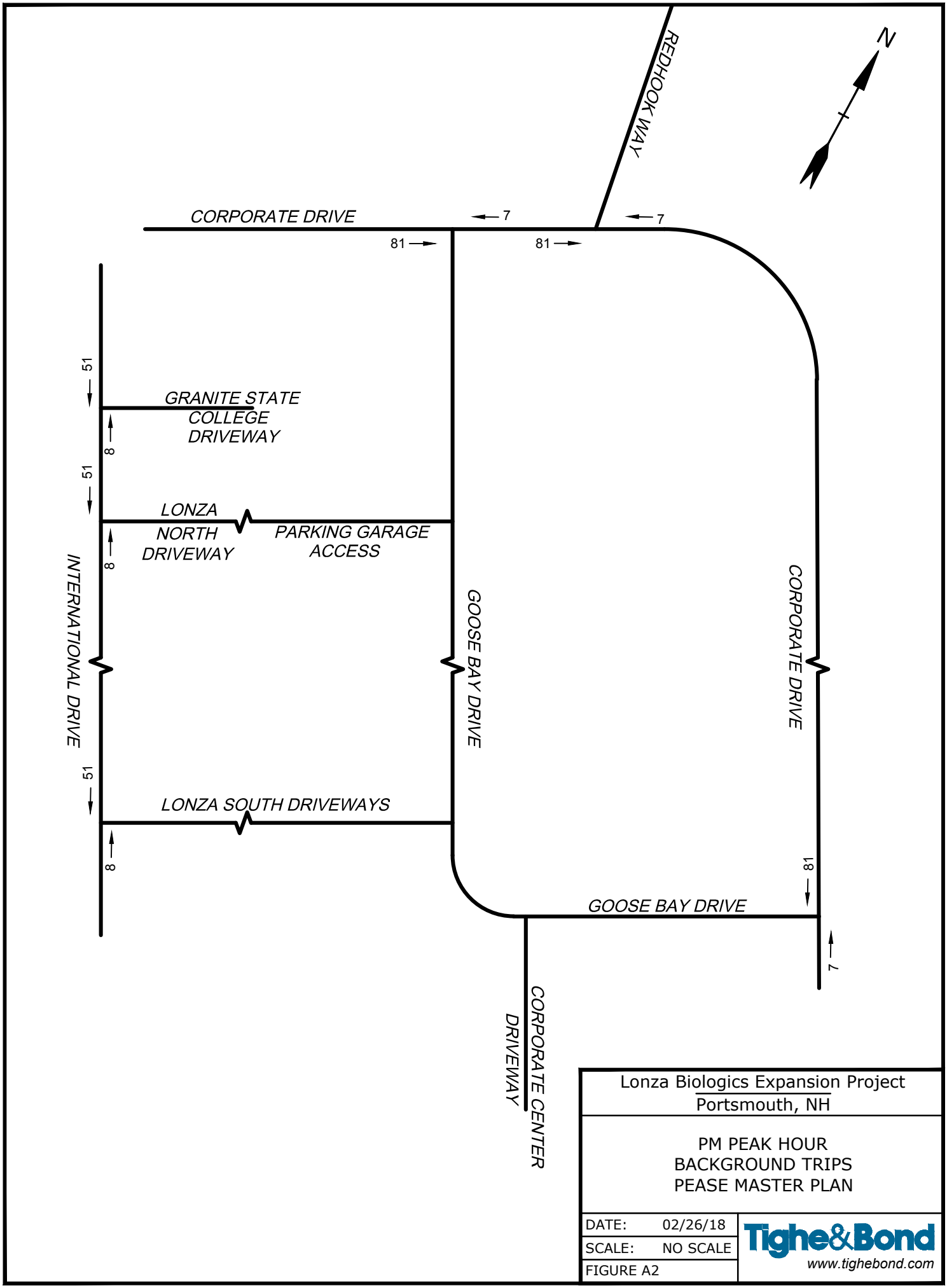
Lonza Biologics Expansion Project
Portsmouth, NH

AM PEAK HOUR
BACKGROUND TRIPS
PEASE MASTER PLAN

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE A1	

Tighe&Bond
www.tighebond.com

Feb 27, 2018-4:40pm Plotted By: DWBradshaw
Tighe & Bond, Inc. \\nas-wfo\data\Projects\L\L0700 Lonza Biologics Expansion was 1576F\013 Iron Parcel Redevelopment\Drawings_Figures\AutoCAD\Figures\Traffic Volumes_recover.dwg



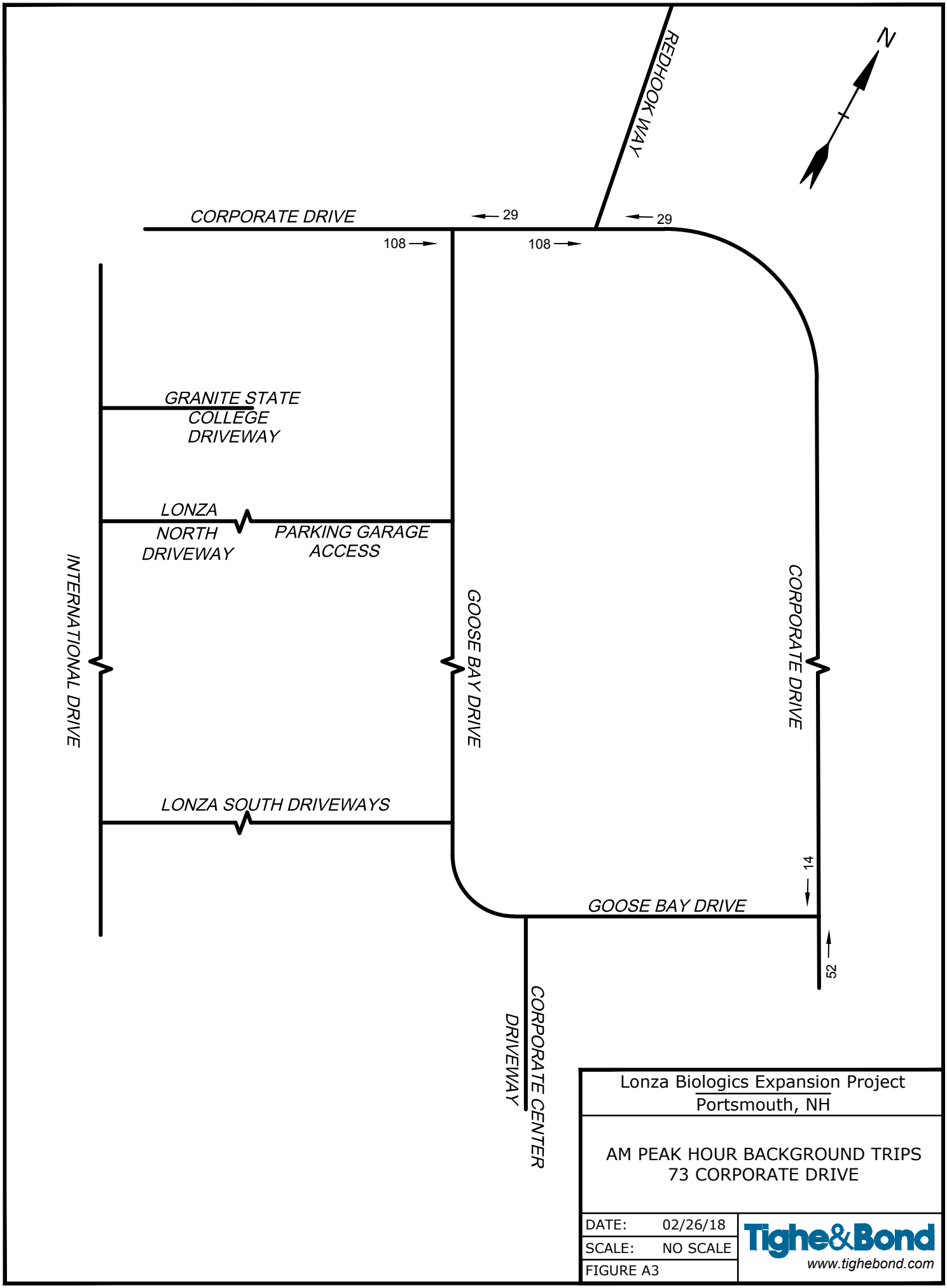
Lonza Biologics Expansion Project
Portsmouth, NH

PM PEAK HOUR
BACKGROUND TRIPS
PEASE MASTER PLAN

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE A2	

Tighe&Bond
www.tighebond.com

Feb 27, 2018-4:40pm Plotted By: DWBradshaw
Tighe & Bond, Inc. \\nas-wfo\data\Projects\LL\L0700 Lonza Biologics Expansion was 1576F\013 Iron Parcel Redevelopment\Drawings_Figures\AutoCAD\Figures\Traffic Volumes_recover.dwg



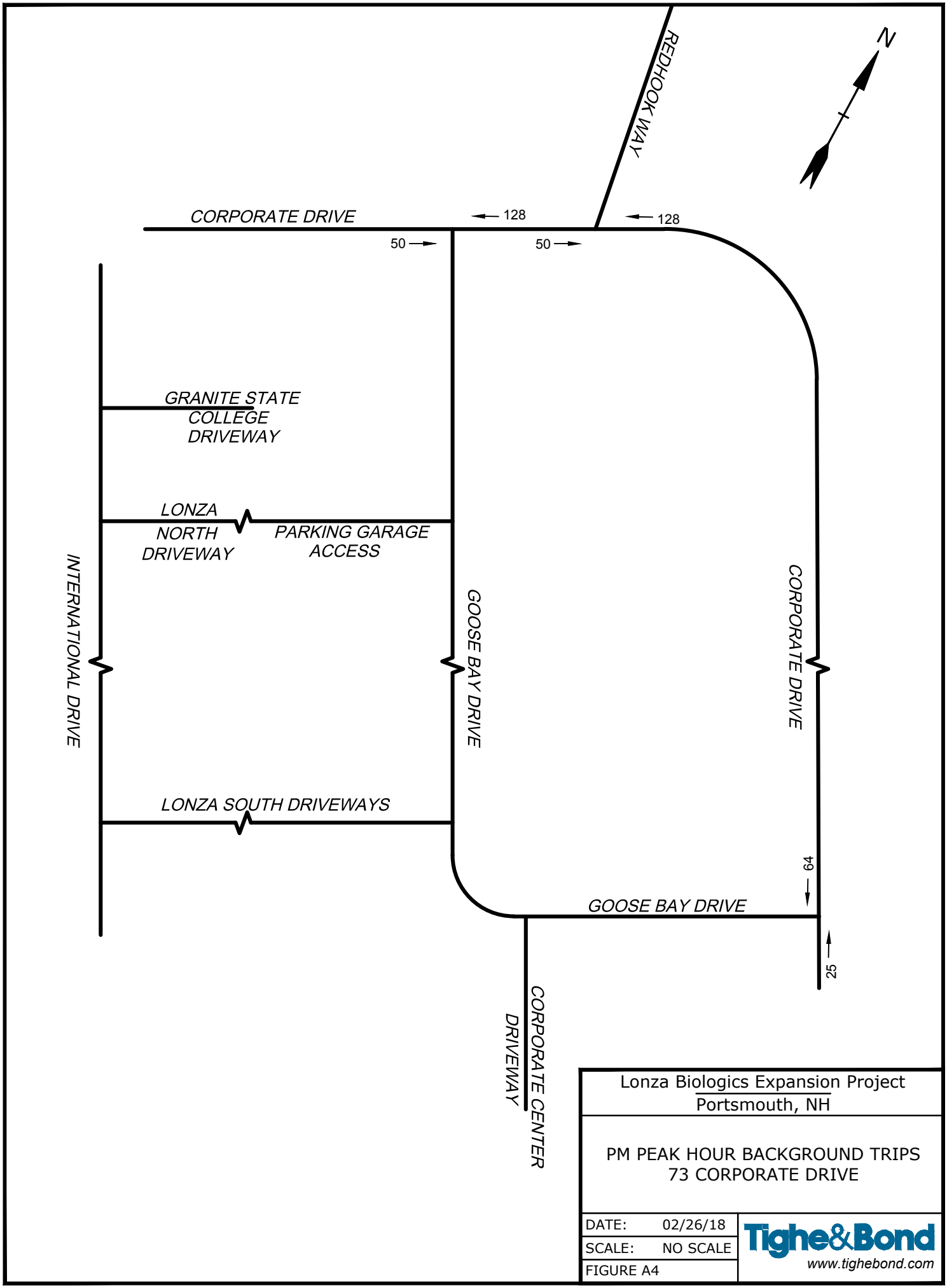
Lonza Biologics Expansion Project
Portsmouth, NH

AM PEAK HOUR BACKGROUND TRIPS
73 CORPORATE DRIVE

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE A3	

Tighe&Bond
www.tighebond.com

Feb 27, 2018-4:40pm Plotted By: DWBradshaw
Tighe & Bond, Inc. \\nas-wfo\data\Projects\L\L0700 Lonza Biologics Expansion was 1576F\013 Iron Parcel Redevelopment\Drawings_Figures\AutoCAD\Figures\Traffic Volumes_recover.dwg



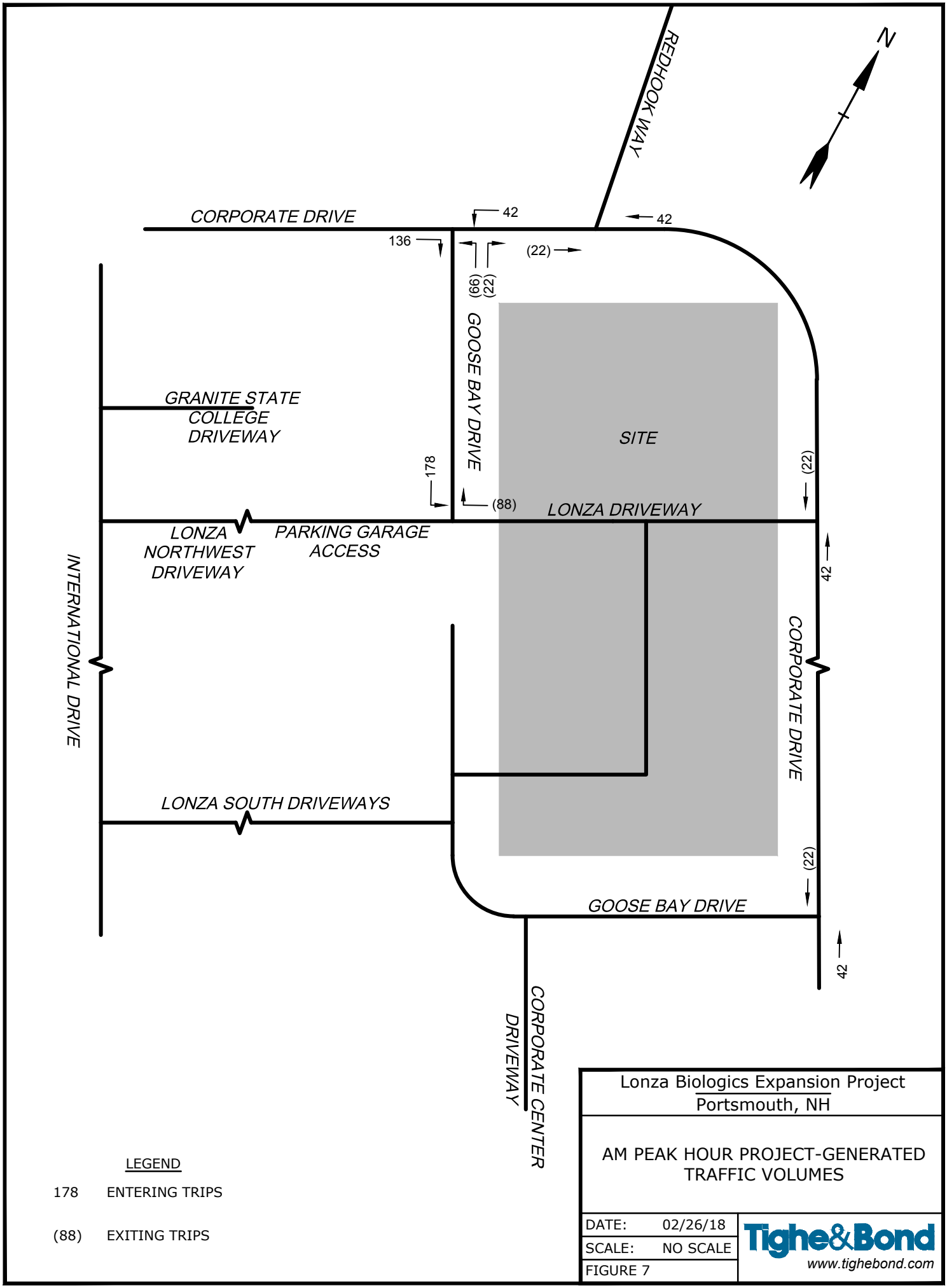
Lonza Biologics Expansion Project
Portsmouth, NH

PM PEAK HOUR BACKGROUND TRIPS
73 CORPORATE DRIVE

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE A4	

Tighe&Bond
www.tighebond.com

Feb 27, 2018-4:40pm Plotted By: DWBradshaw
Tighe & Bond, Inc. \\nas-wfo\data\Projects\LL\L0700 Lonza Biologics Expansion was 1576F\013 Iron Parcel Redevelopment\Drawings_Figures\AutoCAD\Figures\Traffic Volumes_recover.dwg



LEGEND

178 ENTERING TRIPS

(88) EXITING TRIPS

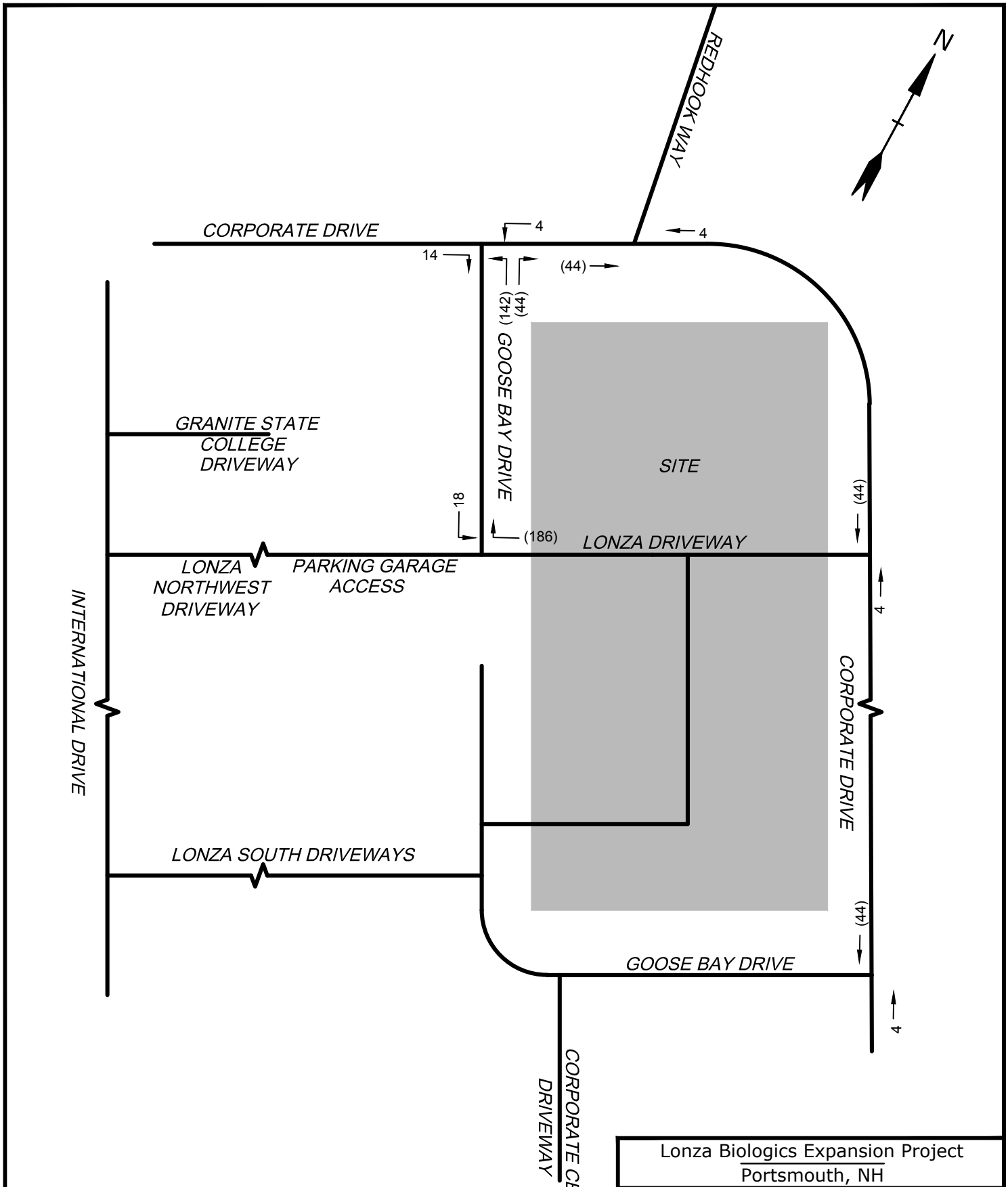
Lonza Biologics Expansion Project
Portsmouth, NH

AM PEAK HOUR PROJECT-GENERATED TRAFFIC VOLUMES

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE 7	

Tighe&Bond
www.tighebond.com

Mar 09, 2018-3:34pm Plotted By: MSantos
Tighe & Bond, Inc. C:\Users\MSantos\appdata\local\temp\AcPublish_5532\Traffic Volumes.dwg



LEGEND

18 ENTERING TRIPS

(186) EXITING TRIPS

Lonza Biologics Expansion Project
Portsmouth, NH

PM PEAK HOUR PROJECT-GENERATED TRAFFIC VOLUMES

DATE:	02/26/18
SCALE:	NO SCALE
FIGURE 8	

Tighe&Bond
www.tighebond.com

Mar 09, 2018-3:34pm Plotted By: MSantos
Tighe & Bond, Inc. C:\Users\MSantos\appdata\local\temp\AcPublish_5532\Traffic Volumes.dwg

APPENDIX E
Collision History Summary

Study Area Collision History Summary

COLLISION TYPE

	2007	2008	2009	2019	2020	2021	Total	Percent
Angle	0	0	0	10	8	8	**26**	**39.4%**
Rear-End	0	0	0	9	3	4	**16**	**24.2%**
Sideswipe, Same Direction	0	0	0	0	1	2	**3**	**4.5%**
Animal	0	0	0	0	1	1	**2**	**3.0%**
Fixed Object	1	0	0	0	0	2	**3**	**4.5%**
Other/Unknown	3	7	4	0	0	1	**15**	**22.7%**
Overturn/Rollover	0	0	0	1	0	0	**1**	**1.5%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

CONTRIBUTING FACTOR

	2007	2008	2009	2019	2020	2021	Total	Percent
Other/Unknown	4	7	4	20	13	18	**66**	**100.0%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

COLLISION EVENT

	2007	2008	2009	2019	2020	2021	Total	Percent
Motor Vehicle	4	7	4	20	13	18	**66**	**100.0%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

SEVERITY

	2007	2008	2009	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	3	7	4	19	13	18	**64**	**97.0%**
Serious Injury	1	0	0	1	0	0	**2**	**3.0%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

DAY & TIME

	2007	2008	2009	2019	2020	2021	Total	Percent
Weekday 6-9 A.M.	1	0	1	1	4	1	**8**	**12.1%**
Weekday 3-6 P.M.	0	0	0	3	1	3	**7**	**10.6%**
Weekday Off-Peak	1	7	3	14	7	10	**42**	**63.6%**
Saturday 11 A.M. - 2 P.M.	0	0	0	1	0	1	**2**	**3.0%**
Weekend Off-Peak	2	0	0	1	1	3	**7**	**10.6%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

WEATHER

	2007	2008	2009	2019	2020	2021	Total	Percent
Clear	4	2	3	3	3	9	**24**	**36.4%**
Rain	0	1	0	1	0	0	**2**	**3.0%**
Snow	0	4	1	0	1	0	**6**	**9.1%**
Other/Unknown	0	0	0	16	9	9	**34**	**51.5%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

ROAD SURFACE CONDITION

	2007	2008	2009	2019	2020	2021	Total	Percent
Dry	4	2	2	3	3	8	**22**	**33.3%**
Wet	0	1	1	1	0	1	**4**	**6.1%**
Snow	0	4	1	0	1	0	**6**	**9.1%**
Other/Unknown	0	0	0	16	9	9	**34**	**51.5%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

LIGHT CONDITIONS

	2007	2008	2009	2019	2020	2021	Total	Percent
Other/Unknown	4	7	4	20	13	18	**66**	**100.0%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

COLLISIONS BY STUDY AREA INTERSECTION

	2007	2008	2009	2019	2020	2021	Total	Percent
Gosling Road/Pease Boulevard at US Route 4 NB Ramps				1	0	3	**4**	**6.1%**
Pease Boulevard at US Route 4 SB Ramps				1	3	3	**7**	**10.6%**
Pease Boulevard at International Drive				1	0	0	**1**	**1.5%**
Pease Boulevard at New Hampshire Avenue/Arboretum Drive				1	1	3	**5**	**7.6%**
New Hampshire Avenue at Exeter Street/Manchester Square				4	4	3	**11**	**16.7%**
Grafton Road at Aviation Avenue				2	2	0	**4**	**6.1%**
Grafton Road at Pease Golf Course/Park and Ride Driveway				4	1	4	**9**	**13.6%**
Route 33 (Greenland Road) at Graton Road				5	1	2	**8**	**12.1%**
Route 33 (Greenland Road) at I-95 NB Ramps				1	1	0	**2**	**3.0%**
New Hampshire Avenue at International Drive/Durham Street	1	2	4				**7**	**10.6%**
Coporate Drive at Graton Road	3	5	0				**8**	**12.1%**
TOTAL	**4**	**7**	**4**	**20**	**13**	**18**	**66**	**100%**

Intersection Collision History Summary

Intersection: Gosling Road/Pease Boulevard at US Route 4 NB Ramps

COLLISION TYPE

	2019	2020	2021	Total	Percent
Rear-End	1	0	1	**2**	**50.0%**
Angle	0	0	1	**1**	**25.0%**
Sideswipe, Same Direction	0	0	1	**1**	**25.0%**
TOTAL	**1**	**0**	**3**	**4**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	0	3	**4**	**100.0%**
TOTAL	**1**	**0**	**3**	**4**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday Off-Peak	1	0	3	**4**	**100.0%**
TOTAL	**1**	**0**	**3**	**4**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Clear	1	0	3	**4**	**100.0%**
TOTAL	**1**	**0**	**3**	**4**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Dry	1	0	3	**4**	**100.0%**
TOTAL	**1**	**0**	**3**	**4**	**100%**

Intersection Collision History Summary

Intersection: Pease Boulevard at US Route 4 SB Ramps

COLLISION TYPE

	2019	2020	2021	Total	Percent
Angle	0	2	2	**4**	**57.1%**
Rear-End	1	0	1	**2**	**28.6%**
Sideswipe, Same Direction	0	1	0	**1**	**14.3%**
TOTAL	**1**	**3**	**3**	**7**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	3	3	**7**	**100.0%**
TOTAL	**1**	**3**	**3**	**7**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 6-9 A.M.	0	1	0	**1**	**14.3%**
Weekday Off-Peak	1	2	1	**4**	**57.1%**
Weekend Off-Peak	0	0	2	**2**	**28.6%**
TOTAL	**1**	**3**	**3**	**7**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Clear	1	2	3	**6**	**85.7%**
Snow	0	1	0	**1**	**14.3%**
TOTAL	**1**	**3**	**3**	**7**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Dry	1	2	3	**6**	**85.7%**
Snow	0	1	0	**1**	**14.3%**
TOTAL	**1**	**3**	**3**	**7**	**100%**

Intersection Collision History Summary

Intersection: Pease Boulevard at International Drive

COLLISION TYPE

	2019	2020	2021	Total	Percent
Overturn/Rollover	1	0	0	**1**	**100.0%**
TOTAL	**1**	**0**	**0**	**1**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	0	0	**1**	**100.0%**
TOTAL	**1**	**0**	**0**	**1**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday Off-Peak	1	0	0	**1**	**100.0%**
TOTAL	**1**	**0**	**0**	**1**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Clear	1	0	0	**1**	**100.0%**
TOTAL	**1**	**0**	**0**	**1**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Dry	1	0	0	**1**	**100.0%**
TOTAL	**1**	**0**	**0**	**1**	**100%**

Intersection Collision History Summary

Intersection: Pease Boulevard at New Hampshire Avenue/Arboretum Drive

COLLISION TYPE

	2019	2020	2021	Total	Percent
Angle	1	1	2	**4**	**80.0%**
Fixed Object	0	0	1	**1**	**20.0%**
TOTAL	**1**	**1**	**3**	**5**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	1	3	**5**	**100.0%**
TOTAL	**1**	**1**	**3**	**5**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 6-9 A.M.	0	1	0	**1**	**20.0%**
Weekday 3-6 P.M.	1	0	2	**3**	**60.0%**
Weekday Off-Peak	0	0	1	**1**	**20.0%**
TOTAL	**1**	**1**	**3**	**5**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Clear	0	1	3	**4**	**80.0%**
Rain	1	0	0	**1**	**20.0%**
TOTAL	**1**	**1**	**3**	**5**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Dry	0	1	2	**3**	**60.0%**
Wet	1	0	1	**2**	**40.0%**
TOTAL	**1**	**1**	**3**	**5**	**100%**

Intersection Collision History Summary

Intersection: New Hampshire Avenue at Exeter Street/Manchester Square

COLLISION TYPE

	2019	2020	2021	Total	Percent
Angle	4	4	3	**11**	**100.0%**
TOTAL	**4**	**4**	**3**	**11**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Serious Injury	1	0	0	**1**	**9.1%**
Minor Injury / Property Damage Only (PDO)	3	4	3	**10**	**90.9%**
TOTAL	**4**	**4**	**3**	**11**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 6-9 A.M.	0	2	1	**3**	**27.3%**
Weekday Off-Peak	4	2	2	**8**	**72.7%**
TOTAL	**4**	**4**	**3**	**11**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Other/Unknown	4	4	3	**11**	**100.0%**
TOTAL	**4**	**4**	**3**	**11**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Other/Unknown	4	4	3	**11**	**100.0%**
TOTAL	**4**	**4**	**3**	**11**	**100%**

Intersection Collision History Summary

Intersection: Grafton Road at Aviation Avenue

COLLISION TYPE

	2019	2020	2021	Total	Percent
Rear-End	1	1	0	**2**	**50.0%**
Angle	1	0	0	**1**	**25.0%**
Animal	0	1	0	**1**	**25.0%**
TOTAL	**2**	**2**	**0**	**4**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	2	2	0	**4**	**100.0%**
TOTAL	**2**	**2**	**0**	**4**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 6-9 A.M.	1	0	0	**1**	**25.0%**
Weekday Off-Peak	1	1	0	**2**	**50.0%**
Weekend Off-Peak	0	1	0	**1**	**25.0%**
TOTAL	**2**	**2**	**0**	**4**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Other/Unknown	2	2	0	**4**	**100.0%**
TOTAL	**2**	**2**	**0**	**4**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Other/Unknown	2	2	0	**4**	**100.0%**
TOTAL	**2**	**2**	**0**	**4**	**100%**

Intersection Collision History Summary

Intersection: Grafton Road at Pease Golf Course/Park and Ride Driveway

COLLISION TYPE

	2019	2020	2021	Total	Percent
Angle	4	0	0	**4**	**44.4%**
Rear-End	0	1	0	**1**	**11.1%**
Animal	0	0	1	**1**	**11.1%**
Fixed Object	0	0	1	**1**	**11.1%**
Other/Unknown	0	0	1	**1**	**11.1%**
Sideswipe, Same Direction	0	0	1	**1**	**11.1%**
TOTAL	**4**	**1**	**4**	**9**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	4	1	4	**9**	**100.0%**
TOTAL	**4**	**1**	**4**	**9**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 3-6 P.M.	0	0	1	**1**	**11.1%**
Weekday Off-Peak	4	1	2	**7**	**77.8%**
Weekend Off-Peak	0	0	1	**1**	**11.1%**
TOTAL	**4**	**1**	**4**	**9**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Other/Unknown	4	1	4	**9**	**100.0%**
TOTAL	**4**	**1**	**4**	**9**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Other/Unknown	4	1	4	**9**	**100.0%**
TOTAL	**4**	**1**	**4**	**9**	**100%**

Intersection Collision History Summary

Intersection: Route 33 (Greenland Road) at Grafton Road

COLLISION TYPE

	2019	2020	2021	Total	Percent
Rear-End	5	1	2	**8**	**100.0%**
TOTAL	**5**	**1**	**2**	**8**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	5	1	2	**8**	**100.0%**
TOTAL	**5**	**1**	**2**	**8**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday 3-6 P.M.	2	1	0	**3**	**37.5%**
Weekday Off-Peak	2	0	1	**3**	**37.5%**
Saturday 11 A.M. - 2 P.M.	0	0	1	**1**	**12.5%**
Weekend Off-Peak	1	0	0	**1**	**12.5%**
TOTAL	**5**	**1**	**2**	**8**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Other/Unknown	5	1	2	**8**	**100.0%**
TOTAL	**5**	**1**	**2**	**8**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Other/Unknown	5	1	2	**8**	**100.0%**
TOTAL	**5**	**1**	**2**	**8**	**100%**

Intersection Collision History Summary

Intersection: Route 33 (Greenland Road) at I-95 NB Ramps

COLLISION TYPE

	2019	2020	2021	Total	Percent
Angle	0	1	0	**1**	**50.0%**
Rear-End	1	0	0	**1**	**50.0%**
TOTAL	**1**	**1**	**0**	**2**	**100%**

SEVERITY

	2019	2020	2021	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	1	0	**2**	**100.0%**
TOTAL	**1**	**1**	**0**	**2**	**100%**

DAY & TIME

	2019	2020	2021	Total	Percent
Weekday Off-Peak	0	1	0	**1**	**50.0%**
Saturday 11 A.M. - 2 P.M.	1	0	0	**1**	**50.0%**
TOTAL	**1**	**1**	**0**	**2**	**100%**

WEATHER

	2019	2020	2021	Total	Percent
Other/Unknown	1	1	0	**2**	**100.0%**
TOTAL	**1**	**1**	**0**	**2**	**100%**

ROAD SURFACE CONDITION

	2019	2020	2021	Total	Percent
Other/Unknown	1	1	0	**2**	**100.0%**
TOTAL	**1**	**1**	**0**	**2**	**100%**

Intersection Collision History Summary

Intersection: New Hampshire Avenue at International Drive/Durham Street

COLLISION TYPE

	2007	2008	2009	Total	Percent
Other/Unknown	0	2	4	**6**	**85.7%**
Fixed Object	1	0	0	**1**	**14.3%**
TOTAL	**1**	**2**	**4**	**7**	**100%**

SEVERITY

	2007	2008	2009	Total	Percent
Minor Injury / Property Damage Only (PDO)	1	2	4	**7**	**100.0%**
TOTAL	**1**	**2**	**4**	**7**	**100%**

WEATHER

	2007	2008	2009	Total	Percent
Clear	1	2	3	**6**	**85.7%**
Snow	0	0	1	**1**	**14.3%**
TOTAL	**1**	**2**	**4**	**7**	**100%**

ROAD SURFACE CONDITION

	2007	2008	2009	Total	Percent
Dry	1	2	2	**5**	**71.4%**
Wet	0	0	1	**1**	**14.3%**
Snow	0	0	1	**1**	**14.3%**
TOTAL	**1**	**2**	**4**	**7**	**100%**

Source: Pease Surface Transportation Master Plan 2010 Update, June 2011

Intersection Collision History Summary

Intersection: Corporate Drive at Grafton Road

COLLISION TYPE

	2007	2008	2009	Total	Percent
Other/Unknown	3	5	0	**8**	**100.0%**
TOTAL	**3**	**5**	**0**	**8**	**100%**

SEVERITY

	2007	2008	2009	Total	Percent
Minor Injury / Property Damage Only (PDO)	2	5	0	**7**	**87.5%**
Serious Injury	1	0	0	**1**	**12.5%**
TOTAL	**3**	**5**	**0**	**8**	**100%**

WEATHER

	2007	2008	2009	Total	Percent
Snow	0	4	0	**4**	**50.0%**
Clear	3	0	0	**3**	**37.5%**
TOTAL	**3**	**5**	**0**	**8**	**100%**

ROAD SURFACE CONDITION

	2007	2008	2009	Total	Percent
Snow	0	4	0	**4**	**50.0%**
Dry	3	0	0	**3**	**37.5%**
Wet	0	1	0	**1**	**12.5%**
TOTAL	**3**	**5**	**0**	**8**	**100%**

Source: Pease Surface Transportation Master Plan 2010 Update, June 2011

APPENDIX F

Capacity Analysis Methodology

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[1] The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

[1] *Highway Capacity Manual, 6TH Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the movement is fully utilized and indicates a capacity failure. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**V/C Ratio >1.00[a]**
A	≤10	≤10	F
B	>10 and ≤20	>10 and ≤15	F
C	>20 and ≤35	>15 and ≤25	F
D	>35 and ≤55	>25 and ≤35	F
E	>55 and ≤80	>35 and ≤50	F
F	>80	>50	F

Note: [a]For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *Highway Capacity Manual, 6th Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016. Exhibit 19-8, Pg. 19-16.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

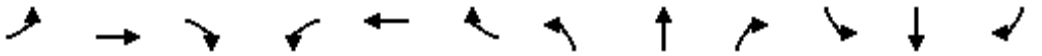
APPENDIX G

Capacity Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	86	5	698	388	88	5	1	190	4	0	0
Future Volume (vph)	0	86	5	698	388	88	5	1	190	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		0.97	0.95			1.00	0.88		1.00	
Frt		0.99		1.00	0.97			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.95	
Satd. Flow (prot)		3361		3433	3441			1450	2760		2046	
Flt Permitted		1.00		0.95	1.00			0.83	1.00		0.75	
Satd. Flow (perm)		3361		3433	3441			1254	2760		1622	
Peak-hour factor, PHF	0.71	0.71	0.71	0.73	0.73	0.73	0.78	0.78	0.78	0.75	0.75	0.75
Adj. Flow (vph)	0	121	7	956	532	121	6	1	244	5	0	0
RTOR Reduction (vph)	0	4	0	0	8	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	124	0	956	645	0	0	7	244	0	5	0
Heavy Vehicles (%)	0%	4%	50%	2%	2%	2%	25%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		8.5		25.0	39.5			11.9	11.9		11.9	
Effective Green, g (s)		8.5		25.0	39.5			11.9	11.9		11.9	
Actuated g/C Ratio		0.13		0.39	0.62			0.19	0.19		0.19	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		450		1353	2143			235	518		304	
v/s Ratio Prot		0.04		c0.28	c0.19							
v/s Ratio Perm								0.01	c0.09		0.00	
v/c Ratio		0.27		0.71	0.30			0.03	0.47		0.02	
Uniform Delay, d1		24.7		16.1	5.5			21.0	22.9		21.0	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3		1.7	0.1			0.1	0.7		0.0	
Delay (s)		25.0		17.8	5.6			21.1	23.6		21.0	
Level of Service		C		B	A			C	C		C	
Approach Delay (s)		25.0			12.9			23.6			21.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

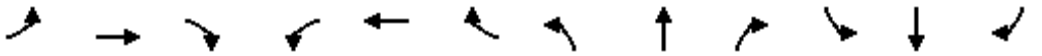
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	192	88	104	660	0	0	0	0	369	0	545
Future Volume (vph)	0	192	88	104	660	0	0	0	0	369	0	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5981	1419	2918	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5981	1419	2918	3455					3502		2814
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	0	240	110	130	825	0	0	0	0	492	0	727
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	0	260
Lane Group Flow (vph)	0	240	31	130	825	0	0	0	0	492	0	467
Heavy Vehicles (%)	0%	2%	10%	12%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		26.6	26.6	23.2	55.8					25.2		25.2
Effective Green, g (s)		26.6	26.6	23.2	55.8					25.2		25.2
Actuated g/C Ratio		0.29	0.29	0.25	0.60					0.27		0.27
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		1710	405	727	2073					948		762
v/s Ratio Prot		0.04	0.02	0.04	c0.24					0.14		c0.17
v/s Ratio Perm												
v/c Ratio		0.14	0.08	0.18	0.40					0.52		0.61
Uniform Delay, d1		24.7	24.2	27.4	9.8					28.8		29.6
Progression Factor		1.00	1.00	0.91	1.60					1.00		1.00
Incremental Delay, d2		0.1	0.2	0.1	0.2					1.0		2.1
Delay (s)		24.8	24.4	25.2	15.8					29.7		31.8
Level of Service		C	C	C	B					C		C
Approach Delay (s)		24.7			17.1			0.0			30.9	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	484	0	0	253	52	511	0	244	0	0	0
Future Volume (vph)	77	484	0	0	253	52	511	0	244	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.97		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3113	3421			4660		3433		2733			
Flt Permitted	0.53	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1734	3421			4660		3433		2733			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.85	0.85	0.78	0.92	0.78	0.92	0.92	0.92
Adj. Flow (vph)	89	556	0	0	298	61	655	0	313	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	228	0	0	0
Lane Group Flow (vph)	89	556	0	0	332	0	655	0	85	0	0	0
Heavy Vehicles (%)	5%	2%	2%	2%	2%	5%	2%	2%	4%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	40.0	26.6			36.4		25.2		25.2			
Effective Green, g (s)	40.0	26.6			36.4		25.2		25.2			
Actuated g/C Ratio	0.43	0.29			0.39		0.27		0.27			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	944	978			1823		930		740			
v/s Ratio Prot	c0.01	c0.16			c0.07		c0.19		0.03			
v/s Ratio Perm	0.03											
v/c Ratio	0.09	0.57			0.18		0.70		0.11			
Uniform Delay, d1	15.5	28.3			18.5		30.5		25.5			
Progression Factor	1.31	1.26			1.00		1.00		1.00			
Incremental Delay, d2	0.1	1.2			0.1		3.1		0.1			
Delay (s)	20.4	36.7			18.6		33.6		25.7			
Level of Service	C	D			B		C		C			
Approach Delay (s)		34.5			18.6			31.0			0.0	
Approach LOS		C			B			C			A	

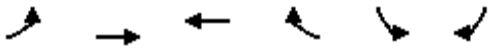
Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	730	371	1395	148	200	406
Future Volume (vph)	730	371	1395	148	200	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3303	1599	4988	1229	3242	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3303	1599	4988	1229	3242	3374
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.81	0.81
Adj. Flow (vph)	839	426	1500	159	247	501
RTOR Reduction (vph)	0	311	0	96	0	0
Lane Group Flow (vph)	839	115	1500	63	247	501
Heavy Vehicles (%)	6%	1%	4%	27%	8%	7%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	36.7	36.7	13.3	56.0
Effective Green, g (s)	25.0	25.0	36.7	36.7	13.3	56.0
Actuated g/C Ratio	0.27	0.27	0.39	0.39	0.14	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	887	429	1968	484	463	2031
v/s Ratio Prot	c0.25	0.07	c0.30	0.05	c0.08	0.15
v/s Ratio Perm						
v/c Ratio	0.95	0.27	0.76	0.13	0.53	0.25
Uniform Delay, d1	33.3	26.8	24.4	18.0	37.0	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.5	0.5	2.9	0.6	1.5	0.3
Delay (s)	51.8	27.2	27.2	18.5	38.5	8.9
Level of Service	D	C	C	B	D	A
Approach Delay (s)	43.5		26.4			18.7
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	414	1352	487	364	101	119
Future Volume (vph)	414	1352	487	364	101	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3471	3343	1583	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3471	3343	1583	1719	1538
Peak-hour factor, PHF	0.86	0.86	0.96	0.96	0.76	0.76
Adj. Flow (vph)	481	1572	507	379	133	157
RTOR Reduction (vph)	0	0	0	263	0	128
Lane Group Flow (vph)	481	1572	507	116	133	29
Heavy Vehicles (%)	1%	4%	8%	2%	5%	5%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	12.1	36.1	18.0	18.0	10.9	10.9
Effective Green, g (s)	12.1	36.1	18.0	18.0	10.9	10.9
Actuated g/C Ratio	0.21	0.61	0.31	0.31	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	366	2123	1019	482	317	284
v/s Ratio Prot	c0.27	c0.45	0.15		c0.08	0.02
v/s Ratio Perm				0.07		
v/c Ratio	1.31	0.74	0.50	0.24	0.42	0.10
Uniform Delay, d1	23.4	8.1	16.8	15.4	21.3	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	159.6	2.4	1.7	1.2	1.2	0.2
Delay (s)	183.1	10.5	18.5	16.5	22.5	20.2
Level of Service	F	B	B	B	C	C
Approach Delay (s)		50.9	17.7		21.2	
Approach LOS		D	B		C	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	933	520	74	528	323	468
Future Volume (vph)	933	520	74	528	323	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1468	1752	3438	1680	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1468	1752	3438	1680	1538
Peak-hour factor, PHF	0.95	0.95	0.90	0.90	0.80	0.80
Adj. Flow (vph)	982	547	82	587	404	585
RTOR Reduction (vph)	0	271	0	0	0	401
Lane Group Flow (vph)	982	276	82	587	404	184
Heavy Vehicles (%)	2%	10%	3%	5%	11%	5%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	69.7	69.7	12.8	88.5	37.5	37.5
Effective Green, g (s)	69.7	69.7	12.8	88.5	37.5	37.5
Actuated g/C Ratio	0.51	0.51	0.09	0.64	0.27	0.27
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1787	741	162	2204	456	417
v/s Ratio Prot	c0.28	0.19	c0.05	0.17	c0.24	0.12
v/s Ratio Perm						
v/c Ratio	0.55	0.37	0.51	0.27	0.89	0.44
Uniform Delay, d1	23.4	20.8	59.6	10.7	48.2	41.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.4	3.4	0.3	18.7	1.0
Delay (s)	24.6	22.3	63.0	11.0	66.9	42.6
Level of Service	C	C	E	B	E	D
Approach Delay (s)	23.8			17.4	52.5	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	18	6	180	79	74	13	66	65	17	189	22
Future Vol, veh/h	0	18	6	180	79	74	13	66	65	17	189	22
Peak Hour Factor	0.50	0.50	0.50	0.70	0.70	0.70	0.87	0.87	0.87	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	2	0	5	0	6	8	14	0	0
Mvmt Flow	0	36	12	257	113	106	15	76	75	24	270	31
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	9.7	13.2	10.6	14.9
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	0%	100%	0%	7%
Vol Thru, %	46%	75%	0%	52%	83%
Vol Right, %	45%	25%	0%	48%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	24	180	153	228
LT Vol	13	0	180	0	17
Through Vol	66	18	0	79	189
RT Vol	65	6	0	74	22
Lane Flow Rate	166	48	257	219	326
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.258	0.081	0.467	0.343	0.52
Departure Headway (Hd)	5.606	6.073	6.534	5.649	5.75
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	639	588	550	636	625
Service Time	3.656	4.135	4.273	3.388	3.792
HCM Lane V/C Ratio	0.26	0.082	0.467	0.344	0.522
HCM Control Delay	10.6	9.7	14.9	11.3	14.9
HCM Lane LOS	B	A	B	B	B
HCM 95th-tile Q	1	0.3	2.5	1.5	3

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	7	9	23	4	13	23	157	29	31	282	29
Future Vol, veh/h	5	7	9	23	4	13	23	157	29	31	282	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	83	83	83	79	79	79	66	66	66
Heavy Vehicles, %	25	0	14	0	33	9	0	4	0	4	1	4
Mvmt Flow	7	10	13	28	5	16	29	199	37	47	427	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	829	837	449	831	841	218	471	0	0	236	0	0
Stage 1	543	543	-	276	276	-	-	-	-	-	-	-
Stage 2	286	294	-	555	565	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.5	6.34	7.1	6.83	6.29	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	3.426	3.5	4.297	3.381	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	265	305	586	291	269	805	1101	-	-	1319	-	-
Stage 1	485	523	-	735	629	-	-	-	-	-	-	-
Stage 2	674	673	-	520	461	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	286	586	264	253	805	1101	-	-	1319	-	-
Mov Cap-2 Maneuver	244	286	-	264	253	-	-	-	-	-	-	-
Stage 1	472	504	-	716	613	-	-	-	-	-	-	-
Stage 2	638	656	-	481	444	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	17.1	0.9	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	348	262	805	1319	-	-
HCM Lane V/C Ratio	0.026	-	-	0.085	0.124	0.019	0.036	-	-
HCM Control Delay (s)	8.4	-	-	16.3	20.7	9.6	7.8	-	-
HCM Lane LOS	A	-	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	10	5	40	10	10	5	300	250	15	130	15
Future Vol, veh/h	5	10	5	40	10	10	5	300	250	15	130	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	11	6	44	11	11	6	333	278	17	144	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	682	810	153	679	679	472	161	0	0	611	0	0
Stage 1	187	187	-	484	484	-	-	-	-	-	-	-
Stage 2	495	623	-	195	195	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	364	314	893	366	374	592	1418	-	-	968	-	-
Stage 1	815	745	-	564	552	-	-	-	-	-	-	-
Stage 2	556	478	-	807	739	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	342	306	893	347	364	592	1418	-	-	968	-	-
Mov Cap-2 Maneuver	342	306	-	347	364	-	-	-	-	-	-	-
Stage 1	809	731	-	560	548	-	-	-	-	-	-	-
Stage 2	531	475	-	775	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	16.6	0.1	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1418	-	-	378	376	968	-	-
HCM Lane V/C Ratio	0.004	-	-	0.059	0.177	0.017	-	-
HCM Control Delay (s)	7.5	0	-	15.1	16.6	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	546	220	25	9	40	145
Future Vol, veh/h	546	220	25	9	40	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	607	244	28	10	44	161

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	110	44	205	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	887	1026	1366	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	869	1026	1366	-	-	-
Mov Cap-2 Maneuver	869	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	5.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1366	-	869	1026	-	-
HCM Lane V/C Ratio	0.02	-	0.698	0.238	-	-
HCM Control Delay (s)	7.7	-	18.1	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	5.9	0.9	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	124	733	193	0
Future Vol, veh/h	0	12	124	733	193	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	67	67	75	75
Heavy Vehicles, %	2	2	1	2	2	0
Mvmt Flow	0	24	185	1094	257	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1721	257	257	0	-	0
Stage 1	257	-	-	-	-	-
Stage 2	1464	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	98	782	1314	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	63	782	1314	-	-	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	212	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1314	-	782	-	-
HCM Lane V/C Ratio	0.141	-	0.031	-	-
HCM Control Delay (s)	8.2	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	24	0	2	22	840	51	7	192	0
Future Vol, veh/h	0	0	4	24	0	2	22	840	51	7	192	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	71	71	71	71	71	71	70	70	70
Heavy Vehicles, %	0	0	33	17	0	50	6	1	7	17	3	0
Mvmt Flow	0	0	11	34	0	3	31	1183	72	10	274	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1577	1611	274	1581	1575	1219	274	0	0	1255	0	0
Stage 1	294	294	-	1281	1281	-	-	-	-	-	-	-
Stage 2	1283	1317	-	300	294	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.53	7.27	6.5	6.7	4.16	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	3.653	4	3.75	2.254	-	-	2.353	-	-
Pot Cap-1 Maneuver	90	105	696	81	111	175	1266	-	-	506	-	-
Stage 1	719	673	-	189	238	-	-	-	-	-	-	-
Stage 2	205	229	-	678	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	81	94	696	73	99	175	1266	-	-	506	-	-
Mov Cap-2 Maneuver	81	94	-	73	99	-	-	-	-	-	-	-
Stage 1	659	658	-	173	218	-	-	-	-	-	-	-
Stage 2	185	210	-	652	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	90.3	0.2	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1266	-	-	696	76	506	-	-
HCM Lane V/C Ratio	0.024	-	-	0.015	0.482	0.02	-	-
HCM Control Delay (s)	7.9	0	-	10.3	90.3	12.3	0	-
HCM Lane LOS	A	A	-	B	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	2	0.1	-	-

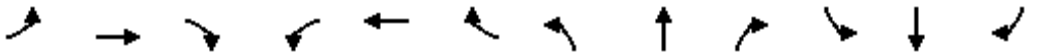
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	135	778	0	0	220
Future Vol, veh/h	0	135	778	0	0	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	76	95	92	92	80
Heavy Vehicles, %	2	3	2	2	2	4
Mvmt Flow	0	178	819	0	0	275

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	819	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.245	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3285	-	-	-	-
Pot Cap-1 Maneuver	0	373	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	373	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.1	0	0
HCM LOS	C		

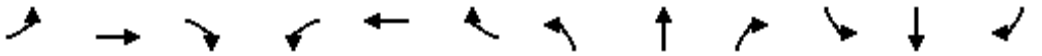
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	373	-
HCM Lane V/C Ratio	-	0.476	-
HCM Control Delay (s)	-	23.1	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	2.5	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	322	5	27	185	224	8	0	864	74	12	3
Future Volume (vph)	4	322	5	27	185	224	8	0	864	74	12	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95			1.00	0.88		1.00	
Frt	1.00	1.00		1.00	0.92			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	
Satd. Flow (prot)	1357	3532		3155	3298			1491	2842		2058	
Flt Permitted	0.95	1.00		0.95	1.00			0.69	1.00		0.77	
Satd. Flow (perm)	1357	3532		3155	3298			1077	2842		1653	
Peak-hour factor, PHF	0.69	0.69	0.69	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81
Adj. Flow (vph)	6	467	7	31	210	255	9	0	929	91	15	4
RTOR Reduction (vph)	0	1	0	0	182	0	0	0	0	0	1	0
Lane Group Flow (vph)	6	473	0	31	283	0	0	9	929	0	109	0
Heavy Vehicles (%)	33%	2%	0%	11%	1%	0%	17%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.3	12.6		3.2	14.5			20.8	20.8		20.8	
Effective Green, g (s)	2.3	12.6		3.2	14.5			20.8	20.8		20.8	
Actuated g/C Ratio	0.04	0.23		0.06	0.27			0.38	0.38		0.38	
Clearance Time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	57	815		184	875			410	1082		629	
v/s Ratio Prot	0.00	c0.13		0.01	c0.09							
v/s Ratio Perm								0.01	c0.33		0.07	
v/c Ratio	0.11	0.58		0.17	0.32			0.02	0.86		0.17	
Uniform Delay, d1	25.2	18.7		24.4	16.1			10.6	15.5		11.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	1.1		0.4	0.2			0.0	6.9		0.1	
Delay (s)	25.5	19.7		24.9	16.3			10.6	22.5		11.3	
Level of Service	C	B		C	B			B	C		B	
Approach Delay (s)		19.8			16.9			22.4			11.3	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	820	440	505	340	0	0	0	0	286	0	104
Future Volume (vph)	0	820	440	505	340	0	0	0	0	286	0	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		6040	1546	3236	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		6040	1546	3236	3455					3502		2814
Peak-hour factor, PHF	0.92	0.85	0.85	0.94	0.94	0.92	0.92	0.92	0.92	0.75	0.25	0.75
Adj. Flow (vph)	0	965	518	537	362	0	0	0	0	381	0	139
RTOR Reduction (vph)	0	0	332	0	0	0	0	0	0	0	0	107
Lane Group Flow (vph)	0	965	186	537	362	0	0	0	0	381	0	32
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		35.2	35.2	22.4	61.0					22.2		22.2
Effective Green, g (s)		35.2	35.2	22.4	61.0					22.2		22.2
Actuated g/C Ratio		0.36	0.36	0.23	0.62					0.23		0.23
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		2173	556	741	2154					794		638
v/s Ratio Prot		c0.16	0.12	c0.17	c0.10					c0.11		0.01
v/s Ratio Perm												
v/c Ratio		0.44	0.34	0.72	0.17					0.48		0.05
Uniform Delay, d1		23.8	22.8	34.8	7.7					32.8		29.6
Progression Factor		1.00	1.00	1.43	0.85					1.00		1.00
Incremental Delay, d2		0.3	0.7	3.3	0.1					1.0		0.1
Delay (s)		24.1	23.5	53.3	6.7					33.7		29.6
Level of Service		C	C	D	A					C		C
Approach Delay (s)		23.9			34.5			0.0			32.6	
Approach LOS		C			C			A			C	

Intersection Summary					
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.53				
Actuated Cycle Length (s)	97.8	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	64.8%	ICU Level of Service		C	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	495	611	0	0	678	300	167	0	460	0	0	0
Future Volume (vph)	495	611	0	0	678	300	167	0	460	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3236	3455			4644		3433		2814			
Flt Permitted	0.20	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	675	3455			4644		3433		2814			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.90	0.90	0.94	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	569	702	0	0	753	333	178	0	489	0	0	0
RTOR Reduction (vph)	0	0	0	0	71	0	0	0	378	0	0	0
Lane Group Flow (vph)	569	702	0	0	1015	0	178	0	111	0	0	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	54.2	35.2			38.6		22.2		22.2			
Effective Green, g (s)	54.2	35.2			38.6		22.2		22.2			
Actuated g/C Ratio	0.55	0.36			0.39		0.23		0.23			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	871	1243			1832		779		638			
v/s Ratio Prot	c0.13	0.20			c0.22		c0.05		0.04			
v/s Ratio Perm	c0.24											
v/c Ratio	0.65	0.56			0.55		0.23		0.17			
Uniform Delay, d1	12.6	25.1			22.9		30.8		30.4			
Progression Factor	2.29	0.65			1.00		1.00		1.00			
Incremental Delay, d2	1.8	0.9			0.6		0.3		0.3			
Delay (s)	30.7	17.3			23.5		31.1		30.7			
Level of Service	C	B			C		C		C			
Approach Delay (s)		23.3			23.5			30.8			0.0	
Approach LOS		C			C			C			A	

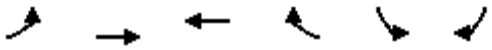
Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	768	130	1321	207	503	1048
Future Volume (vph)	768	130	1321	207	503	1048
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1509	5085	1323	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1509	5085	1323	3433	3539
Peak-hour factor, PHF	0.89	0.89	0.95	0.95	0.84	0.84
Adj. Flow (vph)	863	146	1391	218	599	1248
RTOR Reduction (vph)	0	107	0	147	0	0
Lane Group Flow (vph)	863	39	1391	71	599	1248
Heavy Vehicles (%)	4%	7%	2%	18%	2%	2%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	30.5	30.5	19.5	56.0
Effective Green, g (s)	25.0	25.0	30.5	30.5	19.5	56.0
Actuated g/C Ratio	0.27	0.27	0.33	0.33	0.21	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	905	405	1667	433	719	2131
v/s Ratio Prot	c0.26	0.03	c0.27	0.05	c0.17	0.35
v/s Ratio Perm						
v/c Ratio	0.95	0.10	0.83	0.17	0.83	0.59
Uniform Delay, d1	33.4	25.5	28.9	22.2	35.2	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.6	0.1	5.1	0.8	8.5	1.2
Delay (s)	53.0	25.7	34.0	23.0	43.7	12.6
Level of Service	D	C	C	C	D	B
Approach Delay (s)	49.1		32.5			22.7
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	233	1218	945	155	282	606
Future Volume (vph)	233	1218	945	155	282	606
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3539	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3539	3539	1583	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.87	0.87
Adj. Flow (vph)	265	1384	1016	167	324	697
RTOR Reduction (vph)	0	0	0	116	0	171
Lane Group Flow (vph)	265	1384	1016	51	324	526
Heavy Vehicles (%)	1%	2%	2%	2%	1%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	5.0	29.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	5.0	29.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.08	0.49	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	151	1739	1079	482	545	487
v/s Ratio Prot	c0.15	0.39	c0.29		0.18	c0.33
v/s Ratio Perm				0.03		
v/c Ratio	1.75	0.80	0.94	0.11	0.59	1.08
Uniform Delay, d1	27.0	12.5	20.0	14.7	17.4	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	365.5	3.9	16.5	0.4	2.0	64.1
Delay (s)	392.5	16.4	36.5	15.2	19.4	84.6
Level of Service	F	B	D	B	B	F
Approach Delay (s)		76.8	33.5		63.9	
Approach LOS		E	C		E	

Intersection Summary			
HCM 2000 Control Delay	60.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	675	825	306	961	139	352
Future Volume (vph)	675	825	306	961	139	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1787	3539	1636	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1787	3539	1636	1583
Peak-hour factor, PHF	0.89	0.89	0.86	0.86	0.88	0.88
Adj. Flow (vph)	758	927	356	1117	158	400
RTOR Reduction (vph)	0	340	0	0	0	341
Lane Group Flow (vph)	758	587	356	1117	158	59
Heavy Vehicles (%)	2%	3%	1%	2%	14%	2%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	66.3	66.3	33.4	105.7	20.3	20.3
Effective Green, g (s)	66.3	66.3	33.4	105.7	20.3	20.3
Actuated g/C Ratio	0.48	0.48	0.24	0.77	0.15	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1700	753	432	2710	240	232
v/s Ratio Prot	0.21	c0.37	c0.20	0.32	c0.10	0.04
v/s Ratio Perm						
v/c Ratio	0.45	0.78	0.82	0.41	0.66	0.25
Uniform Delay, d1	23.7	29.8	49.5	5.5	55.6	52.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	7.8	12.6	0.5	7.0	0.8
Delay (s)	24.6	37.6	62.1	6.0	62.6	52.9
Level of Service	C	D	E	A	E	D
Approach Delay (s)	31.7			19.6	55.7	
Approach LOS	C			B	E	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	59	15	166	15	13	1	223	167	48	72	3
Future Vol, veh/h	46	59	15	166	15	13	1	223	167	48	72	3
Peak Hour Factor	0.71	0.71	0.71	0.90	0.90	0.90	0.75	0.75	0.75	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	2	0	10	0	1	3	11	4	0
Mvmt Flow	65	83	21	184	17	14	1	297	223	55	82	3
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	12.1	13.4	22	11.4
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	38%	100%	0%	39%
Vol Thru, %	57%	49%	0%	54%	59%
Vol Right, %	43%	12%	0%	46%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	391	120	166	28	123
LT Vol	1	46	166	0	48
Through Vol	223	59	0	15	72
RT Vol	167	15	0	13	3
Lane Flow Rate	521	169	184	31	140
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.747	0.297	0.368	0.054	0.244
Departure Headway (Hd)	5.161	6.324	7.176	6.3	6.284
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	699	565	498	565	566
Service Time	3.225	4.412	4.957	4.08	4.376
HCM Lane V/C Ratio	0.745	0.299	0.369	0.055	0.247
HCM Control Delay	22	12.1	14.1	9.4	11.4
HCM Lane LOS	C	B	B	A	B
HCM 95th-tile Q	6.8	1.2	1.7	0.2	1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	5	45	5	26	9	314	36	14	266	13
Future Vol, veh/h	4	8	5	45	5	26	9	314	36	14	266	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	87	87	87	73	73	73	90	90	90
Heavy Vehicles, %	0	0	25	3	25	0	0	3	0	0	1	0
Mvmt Flow	6	12	8	52	6	30	12	430	49	16	296	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	832	838	303	824	821	455	310	0	0	479	0	0
Stage 1	335	335	-	479	479	-	-	-	-	-	-	-
Stage 2	497	503	-	345	342	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.45	7.13	6.75	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.525	3.527	4.225	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	291	305	686	291	285	609	1262	-	-	1094	-	-
Stage 1	683	646	-	566	518	-	-	-	-	-	-	-
Stage 2	559	545	-	668	599	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	267	297	686	274	278	609	1262	-	-	1094	-	-
Mov Cap-2 Maneuver	267	297	-	274	278	-	-	-	-	-	-	-
Stage 1	676	636	-	560	513	-	-	-	-	-	-	-
Stage 2	521	540	-	638	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	18	0.2	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	345	274	609	1094	-	-
HCM Lane V/C Ratio	0.01	-	-	0.076	0.21	0.049	0.014	-	-
HCM Control Delay (s)	7.9	-	-	16.3	21.6	11.2	8.3	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	14.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	15	5	235	10	5	0	165	95	5	410	5
Future Vol, veh/h	5	15	5	235	10	5	0	165	95	5	410	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	17	6	261	11	6	0	183	106	6	456	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	716	760	459	719	710	236	462	0	0	289	0	0
Stage 1	471	471	-	236	236	-	-	-	-	-	-	-
Stage 2	245	289	-	483	474	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	345	336	602	344	359	803	1099	-	-	1273	-	-
Stage 1	573	560	-	767	710	-	-	-	-	-	-	-
Stage 2	759	673	-	565	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	333	334	602	326	357	803	1099	-	-	1273	-	-
Mov Cap-2 Maneuver	333	334	-	326	357	-	-	-	-	-	-	-
Stage 1	573	557	-	767	710	-	-	-	-	-	-	-
Stage 2	742	673	-	540	555	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	53.3	0	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1099	-	-	366	331	1273	-	-
HCM Lane V/C Ratio	-	-	-	0.076	0.839	0.004	-	-
HCM Control Delay (s)	0	-	-	15.6	53.3	7.8	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	7.4	0	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	230	105	180	30	25	625
Future Vol, veh/h	230	105	180	30	25	625
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	256	117	200	33	28	694

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	461	28	722	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	559	1047	880	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	432	1047	880	-	-	-
Mov Cap-2 Maneuver	432	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	8.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	880	-	432	1047	-	-
HCM Lane V/C Ratio	0.227	-	0.592	0.111	-	-
HCM Control Delay (s)	10.3	-	24.7	8.9	-	-
HCM Lane LOS	B	-	C	A	-	-
HCM 95th %tile Q(veh)	0.9	-	3.7	0.4	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	104	17	320	720	1
Future Vol, veh/h	1	104	17	320	720	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	85	85	89	89
Heavy Vehicles, %	0	1	0	1	1	0
Mvmt Flow	1	153	20	376	809	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1226	810	810	0	-	0
Stage 1	810	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	199	381	825	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	193	381	825	-	-	-
Mov Cap-2 Maneuver	193	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	670	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	825	-	377	-	-
HCM Lane V/C Ratio	0.024	-	0.41	-	-
HCM Control Delay (s)	9.5	0	21	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.9	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	20	35	0	9	48	327	55	12	833	18
Future Vol, veh/h	6	0	20	35	0	9	48	327	55	12	833	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	83	83	83	94	94	94	89	89	89
Heavy Vehicles, %	0	0	0	12	0	29	0	1	12	22	1	0
Mvmt Flow	10	0	32	42	0	11	51	348	59	13	936	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1457	1481	946	1468	1462	378	956	0	0	407	0	0
Stage 1	972	972	-	480	480	-	-	-	-	-	-	-
Stage 2	485	509	-	988	982	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.22	6.5	6.49	4.1	-	-	4.32	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.608	4	3.561	2.2	-	-	2.398	-	-
Pot Cap-1 Maneuver	109	127	320	100	130	613	727	-	-	1052	-	-
Stage 1	306	333	-	548	558	-	-	-	-	-	-	-
Stage 2	567	541	-	285	330	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	112	320	82	115	613	727	-	-	1052	-	-
Mov Cap-2 Maneuver	98	112	-	82	115	-	-	-	-	-	-	-
Stage 1	278	324	-	498	507	-	-	-	-	-	-	-
Stage 2	506	492	-	250	321	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.3	75.9	1.2	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	210	100	1052	-	-
HCM Lane V/C Ratio	0.07	-	-	0.197	0.53	0.013	-	-
HCM Control Delay (s)	10.3	0	-	26.3	75.9	8.5	0	-
HCM Lane LOS	B	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	2.4	0	-	-

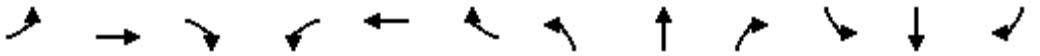
Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	42	388	0	0	888
Future Vol, veh/h	0	42	388	0	0	888
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	100	100	92	92	100
Heavy Vehicles, %	2	13	1	2	2	1
Mvmt Flow	0	42	388	0	0	888

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	388	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.395	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.4235	-	-	-	-
Pot Cap-1 Maneuver	0	631	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	631	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0
HCM LOS	B		

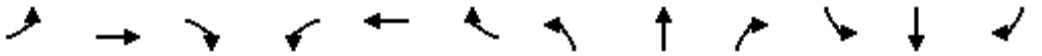
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	631	-
HCM Lane V/C Ratio	-	0.067	-
HCM Control Delay (s)	-	11.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	89	5	719	400	91	5	1	196	4	0	0
Future Volume (vph)	0	89	5	719	400	91	5	1	196	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		0.97	0.95			1.00	0.88		1.00	
Frt		0.99		1.00	0.97			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.95	
Satd. Flow (prot)		3365		3433	3441			1450	2760		2046	
Flt Permitted		1.00		0.95	1.00			0.83	1.00		0.75	
Satd. Flow (perm)		3365		3433	3441			1257	2760		1622	
Peak-hour factor, PHF	0.71	0.71	0.71	0.73	0.73	0.73	0.78	0.78	0.78	0.75	0.75	0.75
Adj. Flow (vph)	0	125	7	985	548	125	6	1	251	5	0	0
RTOR Reduction (vph)	0	4	0	0	8	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	128	0	985	665	0	0	7	251	0	5	0
Heavy Vehicles (%)	0%	4%	50%	2%	2%	2%	25%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		8.7		26.1	40.8			12.2	12.2		12.2	
Effective Green, g (s)		8.7		26.1	40.8			12.2	12.2		12.2	
Actuated g/C Ratio		0.13		0.40	0.63			0.19	0.19		0.19	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		450		1378	2159			235	518		304	
v/s Ratio Prot		0.04		c0.29	c0.19							
v/s Ratio Perm								0.01	c0.09		0.00	
v/c Ratio		0.28		0.71	0.31			0.03	0.48		0.02	
Uniform Delay, d1		25.3		16.3	5.6			21.6	23.6		21.5	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.3		1.8	0.1			0.1	0.7		0.0	
Delay (s)		25.7		18.1	5.7			21.6	24.3		21.5	
Level of Service		C		B	A			C	C		C	
Approach Delay (s)		25.7			13.1			24.2			21.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

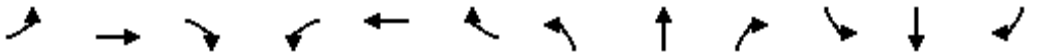
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	198	91	107	680	0	0	0	0	380	0	562
Future Volume (vph)	0	198	91	107	680	0	0	0	0	380	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5981	1419	2918	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5981	1419	2918	3455					3502		2814
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	0	248	114	134	850	0	0	0	0	507	0	749
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	0	0	0	248
Lane Group Flow (vph)	0	248	33	134	850	0	0	0	0	507	0	501
Heavy Vehicles (%)	0%	2%	10%	12%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		27.2	27.2	23.8	57.0					25.2		25.2
Effective Green, g (s)		27.2	27.2	23.8	57.0					25.2		25.2
Actuated g/C Ratio		0.29	0.29	0.25	0.61					0.27		0.27
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		1726	409	737	2090					936		752
v/s Ratio Prot		0.04	0.02	0.05	c0.25					0.14		c0.18
v/s Ratio Perm												
v/c Ratio		0.14	0.08	0.18	0.41					0.54		0.67
Uniform Delay, d1		24.9	24.4	27.6	9.7					29.6		30.8
Progression Factor		1.00	1.00	0.90	1.61					1.00		1.00
Incremental Delay, d2		0.1	0.2	0.1	0.2					1.1		3.0
Delay (s)		24.9	24.6	25.1	15.9					30.7		33.7
Level of Service		C	C	C	B					C		C
Approach Delay (s)		24.8			17.1			0.0			32.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	499	0	0	261	54	526	0	251	0	0	0
Future Volume (vph)	79	499	0	0	261	54	526	0	251	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.97		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3113	3421			4658		3433		2733			
Flt Permitted	0.52	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1713	3421			4658		3433		2733			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.85	0.85	0.78	0.92	0.78	0.92	0.92	0.92
Adj. Flow (vph)	91	574	0	0	307	64	674	0	322	0	0	0
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	236	0	0	0
Lane Group Flow (vph)	91	574	0	0	343	0	674	0	86	0	0	0
Heavy Vehicles (%)	5%	2%	2%	2%	2%	5%	2%	2%	4%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	40.7	27.2			37.5		25.2		25.2			
Effective Green, g (s)	40.7	27.2			37.5		25.2		25.2			
Actuated g/C Ratio	0.43	0.29			0.40		0.27		0.27			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	940	987			1854		918		731			
v/s Ratio Prot	c0.01	c0.17			c0.07		c0.20		0.03			
v/s Ratio Perm	0.03											
v/c Ratio	0.10	0.58			0.18		0.73		0.12			
Uniform Delay, d1	15.6	28.6			18.4		31.4		26.1			
Progression Factor	1.30	1.26			1.00		1.00		1.00			
Incremental Delay, d2	0.1	1.3			0.1		3.7		0.2			
Delay (s)	20.4	37.3			18.5		35.2		26.2			
Level of Service	C	D			B		D		C			
Approach Delay (s)		35.0			18.5			32.3			0.0	
Approach LOS		D			B			C			A	

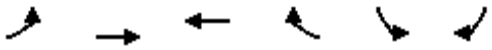
Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	752	382	1438	152	206	419
Future Volume (vph)	752	382	1438	152	206	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3303	1599	4988	1229	3242	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3303	1599	4988	1229	3242	3374
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.81	0.81
Adj. Flow (vph)	864	439	1546	163	254	517
RTOR Reduction (vph)	0	320	0	99	0	0
Lane Group Flow (vph)	864	119	1546	64	254	517
Heavy Vehicles (%)	6%	1%	4%	27%	8%	7%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	36.5	36.5	13.5	56.0
Effective Green, g (s)	25.0	25.0	36.5	36.5	13.5	56.0
Actuated g/C Ratio	0.27	0.27	0.39	0.39	0.15	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	887	429	1957	482	470	2031
v/s Ratio Prot	c0.26	0.07	c0.31	0.05	c0.08	0.15
v/s Ratio Perm						
v/c Ratio	0.97	0.28	0.79	0.13	0.54	0.25
Uniform Delay, d1	33.7	26.9	24.9	18.1	36.9	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	0.5	3.3	0.6	1.6	0.3
Delay (s)	57.6	27.4	28.2	18.7	38.5	9.0
Level of Service	E	C	C	B	D	A
Approach Delay (s)	47.4		27.3			18.7
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	427	1393	502	375	104	123
Future Volume (vph)	427	1393	502	375	104	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3471	3343	1583	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3471	3343	1583	1719	1538
Peak-hour factor, PHF	0.86	0.86	0.96	0.96	0.76	0.76
Adj. Flow (vph)	497	1620	523	391	137	162
RTOR Reduction (vph)	0	0	0	272	0	132
Lane Group Flow (vph)	497	1620	523	119	137	30
Heavy Vehicles (%)	1%	4%	8%	2%	5%	5%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	11.9	35.9	18.0	18.0	11.1	11.1
Effective Green, g (s)	11.9	35.9	18.0	18.0	11.1	11.1
Actuated g/C Ratio	0.20	0.61	0.31	0.31	0.19	0.19
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	360	2112	1019	482	323	289
v/s Ratio Prot	c0.28	c0.47	0.16		c0.08	0.02
v/s Ratio Perm				0.08		
v/c Ratio	1.38	0.77	0.51	0.25	0.42	0.11
Uniform Delay, d1	23.6	8.5	16.9	15.4	21.1	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	187.8	2.7	1.8	1.2	1.2	0.2
Delay (s)	211.3	11.2	18.7	16.6	22.4	20.1
Level of Service	F	B	B	B	C	C
Approach Delay (s)		58.2	17.8		21.1	
Approach LOS		E	B		C	

Intersection Summary			
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	961	536	76	544	333	482
Future Volume (vph)	961	536	76	544	333	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1468	1752	3438	1680	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1468	1752	3438	1680	1538
Peak-hour factor, PHF	0.95	0.95	0.90	0.90	0.80	0.80
Adj. Flow (vph)	1012	564	84	604	416	602
RTOR Reduction (vph)	0	282	0	0	0	399
Lane Group Flow (vph)	1012	282	84	604	416	204
Heavy Vehicles (%)	2%	10%	3%	5%	11%	5%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	69.1	69.1	12.9	88.0	38.0	38.0
Effective Green, g (s)	69.1	69.1	12.9	88.0	38.0	38.0
Actuated g/C Ratio	0.50	0.50	0.09	0.64	0.28	0.28
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1772	735	163	2192	462	423
v/s Ratio Prot	c0.29	0.19	c0.05	0.18	c0.25	0.13
v/s Ratio Perm						
v/c Ratio	0.57	0.38	0.52	0.28	0.90	0.48
Uniform Delay, d1	24.1	21.3	59.6	11.0	48.2	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.5	3.6	0.3	20.7	1.2
Delay (s)	25.4	22.8	63.2	11.3	68.9	43.0
Level of Service	C	C	E	B	E	D
Approach Delay (s)	24.5			17.6	53.6	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	19	6	185	81	76	13	68	67	18	195	23
Future Vol, veh/h	0	19	6	185	81	76	13	68	67	18	195	23
Peak Hour Factor	0.50	0.50	0.50	0.70	0.70	0.70	0.87	0.87	0.87	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	2	0	5	0	6	8	14	0	0
Mvmt Flow	0	38	12	264	116	109	15	78	77	26	279	33
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	9.8	13.7	10.8	15.6
HCM LOS	A	B	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	0%	100%	0%	8%
Vol Thru, %	46%	76%	0%	52%	83%
Vol Right, %	45%	24%	0%	48%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	148	25	185	157	236
LT Vol	13	0	185	0	18
Through Vol	68	19	0	81	195
RT Vol	67	6	0	76	23
Lane Flow Rate	170	50	264	224	337
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.268	0.086	0.484	0.356	0.544
Departure Headway (Hd)	5.678	6.173	6.596	5.711	5.805
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	631	578	547	628	620
Service Time	3.733	4.241	4.341	3.455	3.849
HCM Lane V/C Ratio	0.269	0.087	0.483	0.357	0.544
HCM Control Delay	10.8	9.8	15.4	11.6	15.6
HCM Lane LOS	B	A	C	B	C
HCM 95th-tile Q	1.1	0.3	2.6	1.6	3.3

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	7	9	24	4	13	24	162	30	32	291	30
Future Vol, veh/h	5	7	9	24	4	13	24	162	30	32	291	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	83	83	83	79	79	79	66	66	66
Heavy Vehicles, %	25	0	14	0	33	9	0	4	0	4	1	4
Mvmt Flow	7	10	13	29	5	16	30	205	38	48	441	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	855	863	464	855	866	224	486	0	0	243	0	0
Stage 1	560	560	-	284	284	-	-	-	-	-	-	-
Stage 2	295	303	-	571	582	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.5	6.34	7.1	6.83	6.29	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	3.426	3.5	4.297	3.381	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	254	295	574	281	260	798	1087	-	-	1312	-	-
Stage 1	474	514	-	727	624	-	-	-	-	-	-	-
Stage 2	666	667	-	509	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	233	276	574	255	243	798	1087	-	-	1312	-	-
Mov Cap-2 Maneuver	233	276	-	255	243	-	-	-	-	-	-	-
Stage 1	461	495	-	707	607	-	-	-	-	-	-	-
Stage 2	630	648	-	470	436	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	17.7	0.9	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	336	253	798	1312	-	-
HCM Lane V/C Ratio	0.028	-	-	0.088	0.133	0.02	0.037	-	-
HCM Control Delay (s)	8.4	-	-	16.7	21.4	9.6	7.8	-	-
HCM Lane LOS	A	-	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	10	5	41	10	10	5	309	258	15	134	15
Future Vol, veh/h	5	10	5	41	10	10	5	309	258	15	134	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	11	6	46	11	11	6	343	287	17	149	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	702	834	158	699	699	487	166	0	0	630	0	0
Stage 1	192	192	-	499	499	-	-	-	-	-	-	-
Stage 2	510	642	-	200	200	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	353	304	887	354	364	581	1412	-	-	952	-	-
Stage 1	810	742	-	554	544	-	-	-	-	-	-	-
Stage 2	546	469	-	802	736	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	331	296	887	335	354	581	1412	-	-	952	-	-
Mov Cap-2 Maneuver	331	296	-	335	354	-	-	-	-	-	-	-
Stage 1	804	727	-	550	540	-	-	-	-	-	-	-
Stage 2	521	466	-	769	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	17.2	0.1	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1412	-	-	367	363	952	-	-
HCM Lane V/C Ratio	0.004	-	-	0.061	0.187	0.018	-	-
HCM Control Delay (s)	7.6	0	-	15.4	17.2	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	13

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	563	227	26	9	41	149
Future Vol, veh/h	563	227	26	9	41	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	252	29	10	46	166

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	114	46	212	0	-	0
Stage 1	46	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	882	1023	1358	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	863	1023	1358	-	-	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.5	5.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1358	-	863	1023	-	-
HCM Lane V/C Ratio	0.021	-	0.725	0.247	-	-
HCM Control Delay (s)	7.7	-	19.3	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	6.5	1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	128	755	199	0
Future Vol, veh/h	0	12	128	755	199	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	67	67	75	75
Heavy Vehicles, %	2	2	1	2	2	0
Mvmt Flow	0	24	191	1127	265	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1774	265	265	0	-	0
Stage 1	265	-	-	-	-	-
Stage 2	1509	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	91	774	1305	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	202	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	55	774	1305	-	-	-
Mov Cap-2 Maneuver	55	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	202	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1305	-	774	-	-
HCM Lane V/C Ratio	0.146	-	0.031	-	-
HCM Control Delay (s)	8.2	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	25	0	2	23	865	53	7	198	0
Future Vol, veh/h	0	0	4	25	0	2	23	865	53	7	198	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	71	71	71	71	71	71	70	70	70
Heavy Vehicles, %	0	0	33	17	0	50	6	1	7	17	3	0
Mvmt Flow	0	0	11	35	0	3	32	1218	75	10	283	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1624	1660	283	1629	1623	1256	283	0	0	1293	0	0
Stage 1	303	303	-	1320	1320	-	-	-	-	-	-	-
Stage 2	1321	1357	-	309	303	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.53	7.27	6.5	6.7	4.16	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	3.653	4	3.75	2.254	-	-	2.353	-	-
Pot Cap-1 Maneuver	83	98	688	75	104	166	1257	-	-	489	-	-
Stage 1	711	667	-	180	228	-	-	-	-	-	-	-
Stage 2	195	219	-	670	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	74	87	688	67	92	166	1257	-	-	489	-	-
Mov Cap-2 Maneuver	74	87	-	67	92	-	-	-	-	-	-	-
Stage 1	645	651	-	163	207	-	-	-	-	-	-	-
Stage 2	174	199	-	644	651	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	105.8	0.2	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1257	-	-	688	70	489	-	-
HCM Lane V/C Ratio	0.026	-	-	0.015	0.543	0.02	-	-
HCM Control Delay (s)	7.9	0	-	10.3	105.8	12.5	0	-
HCM Lane LOS	A	A	-	B	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	2.3	0.1	-	-

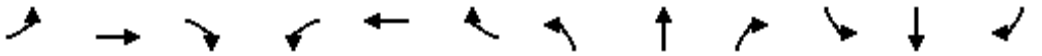
Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	139	802	0	0	227
Future Vol, veh/h	0	139	802	0	0	227
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	76	95	92	92	80
Heavy Vehicles, %	2	3	2	2	2	4
Mvmt Flow	0	183	844	0	0	284

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	844	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.245	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3285	-	-	-	-
Pot Cap-1 Maneuver	0	360	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	360	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	360	-
HCM Lane V/C Ratio	-	0.508	-
HCM Control Delay (s)	-	24.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	2.8	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	332	5	28	191	231	8	0	890	76	12	3
Future Volume (vph)	4	332	5	28	191	231	8	0	890	76	12	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95			1.00	0.88		1.00	
Frt	1.00	1.00		1.00	0.92			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	
Satd. Flow (prot)	1357	3533		3155	3298			1491	2842		2057	
Flt Permitted	0.95	1.00		0.95	1.00			0.68	1.00		0.77	
Satd. Flow (perm)	1357	3533		3155	3298			1074	2842		1647	
Peak-hour factor, PHF	0.69	0.69	0.69	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81
Adj. Flow (vph)	6	481	7	32	217	262	9	0	957	94	15	4
RTOR Reduction (vph)	0	1	0	0	182	0	0	0	0	0	1	0
Lane Group Flow (vph)	6	487	0	32	298	0	0	9	957	0	112	0
Heavy Vehicles (%)	33%	2%	0%	11%	1%	0%	17%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.2	12.8		3.2	14.8			20.8	20.8		20.8	
Effective Green, g (s)	2.2	12.8		3.2	14.8			20.8	20.8		20.8	
Actuated g/C Ratio	0.04	0.23		0.06	0.27			0.38	0.38		0.38	
Clearance Time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	54	825		184	890			407	1078		625	
v/s Ratio Prot	0.00	c0.14		0.01	c0.09							
v/s Ratio Perm								0.01	c0.34		0.07	
v/c Ratio	0.11	0.59		0.17	0.33			0.02	0.89		0.18	
Uniform Delay, d1	25.4	18.7		24.5	16.0			10.6	15.9		11.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	1.1		0.5	0.2			0.0	9.0		0.1	
Delay (s)	25.7	19.8		25.0	16.3			10.7	25.0		11.5	
Level of Service	C	B		C	B			B	C		B	
Approach Delay (s)		19.9			16.8			24.8			11.5	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	845	453	520	351	0	0	0	0	295	0	107
Future Volume (vph)	0	845	453	520	351	0	0	0	0	295	0	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		6040	1546	3236	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		6040	1546	3236	3455					3502		2814
Peak-hour factor, PHF	0.92	0.85	0.85	0.94	0.94	0.92	0.92	0.92	0.92	0.75	0.25	0.75
Adj. Flow (vph)	0	994	533	553	373	0	0	0	0	393	0	143
RTOR Reduction (vph)	0	0	343	0	0	0	0	0	0	0	0	110
Lane Group Flow (vph)	0	994	190	553	373	0	0	0	0	393	0	33
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		35.2	35.2	22.7	60.8					22.6		22.6
Effective Green, g (s)		35.2	35.2	22.7	60.8					22.6		22.6
Actuated g/C Ratio		0.36	0.36	0.23	0.62					0.23		0.23
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		2158	552	745	2132					803		645
v/s Ratio Prot		c0.16	0.12	c0.17	c0.11					c0.11		0.01
v/s Ratio Perm												
v/c Ratio		0.46	0.35	0.74	0.17					0.49		0.05
Uniform Delay, d1		24.3	23.2	35.2	8.1					32.9		29.6
Progression Factor		1.00	1.00	1.42	0.86					1.00		1.00
Incremental Delay, d2		0.3	0.8	3.7	0.1					1.0		0.1
Delay (s)		24.7	24.0	53.8	7.1					33.9		29.7
Level of Service		C	C	D	A					C		C
Approach Delay (s)		24.4			35.0			0.0			32.8	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	510	630	0	0	699	309	172	0	474	0	0	0
Future Volume (vph)	510	630	0	0	699	309	172	0	474	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3236	3455			4644		3433		2814			
Flt Permitted	0.18	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	615	3455			4644		3433		2814			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.90	0.90	0.94	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	586	724	0	0	777	343	183	0	504	0	0	0
RTOR Reduction (vph)	0	0	0	0	72	0	0	0	388	0	0	0
Lane Group Flow (vph)	586	724	0	0	1048	0	183	0	116	0	0	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	55.0	35.2			38.1		22.6		22.6			
Effective Green, g (s)	55.0	35.2			38.1		22.6		22.6			
Actuated g/C Ratio	0.56	0.36			0.39		0.23		0.23			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	870	1234			1796		787		645			
v/s Ratio Prot	c0.14	0.21			c0.23		c0.05		0.04			
v/s Ratio Perm	c0.24											
v/c Ratio	0.67	0.59			0.58		0.23		0.18			
Uniform Delay, d1	13.1	25.7			23.9		30.9		30.5			
Progression Factor	2.15	0.65			1.00		1.00		1.00			
Incremental Delay, d2	2.0	1.0			0.8		0.3		0.3			
Delay (s)	30.2	17.7			24.7		31.2		30.8			
Level of Service	C	B			C		C		C			
Approach Delay (s)		23.3			24.7			30.9			0.0	
Approach LOS		C			C			C			A	

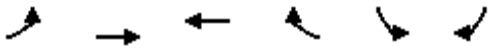
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	791	134	1361	213	518	1080
Future Volume (vph)	791	134	1361	213	518	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1509	5085	1323	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1509	5085	1323	3433	3539
Peak-hour factor, PHF	0.89	0.89	0.95	0.95	0.84	0.84
Adj. Flow (vph)	889	151	1433	224	617	1286
RTOR Reduction (vph)	0	110	0	151	0	0
Lane Group Flow (vph)	889	41	1433	73	617	1286
Heavy Vehicles (%)	4%	7%	2%	18%	2%	2%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	30.4	30.4	19.6	56.0
Effective Green, g (s)	25.0	25.0	30.4	30.4	19.6	56.0
Actuated g/C Ratio	0.27	0.27	0.33	0.33	0.21	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	905	405	1662	432	723	2131
v/s Ratio Prot	c0.26	0.03	c0.28	0.06	c0.18	0.36
v/s Ratio Perm						
v/c Ratio	0.98	0.10	0.86	0.17	0.85	0.60
Uniform Delay, d1	33.8	25.5	29.3	22.3	35.3	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	0.1	6.2	0.8	9.9	1.3
Delay (s)	59.3	25.7	35.5	23.2	45.3	12.8
Level of Service	E	C	D	C	D	B
Approach Delay (s)	54.4		33.8			23.4
Approach LOS	D		C			C

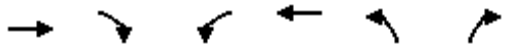
Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	240	1255	974	160	291	624
Future Volume (vph)	240	1255	974	160	291	624
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3539	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3539	3539	1583	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.87	0.87
Adj. Flow (vph)	273	1426	1047	172	334	717
RTOR Reduction (vph)	0	0	0	120	0	170
Lane Group Flow (vph)	273	1426	1047	52	334	547
Heavy Vehicles (%)	1%	2%	2%	2%	1%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	5.0	29.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	5.0	29.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.08	0.49	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	151	1739	1079	482	545	487
v/s Ratio Prot	c0.15	0.40	c0.30		0.19	c0.34
v/s Ratio Perm				0.03		
v/c Ratio	1.81	0.82	0.97	0.11	0.61	1.12
Uniform Delay, d1	27.0	12.8	20.2	14.7	17.5	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	388.5	4.5	21.1	0.5	2.3	78.9
Delay (s)	415.5	17.2	41.4	15.2	19.9	99.4
Level of Service	F	B	D	B	B	F
Approach Delay (s)		81.2	37.7		74.1	
Approach LOS		F	D		E	

Intersection Summary			
HCM 2000 Control Delay	66.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	695	851	315	991	143	363
Future Volume (vph)	695	851	315	991	143	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1787	3539	1636	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1787	3539	1636	1583
Peak-hour factor, PHF	0.89	0.89	0.86	0.86	0.88	0.88
Adj. Flow (vph)	781	956	366	1152	162	412
RTOR Reduction (vph)	0	343	0	0	0	351
Lane Group Flow (vph)	781	613	366	1152	163	62
Heavy Vehicles (%)	2%	3%	1%	2%	14%	2%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	65.2	65.2	34.1	105.3	20.7	20.7
Effective Green, g (s)	65.2	65.2	34.1	105.3	20.7	20.7
Actuated g/C Ratio	0.47	0.47	0.25	0.76	0.15	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1672	740	441	2700	245	237
v/s Ratio Prot	0.22	c0.39	c0.20	0.33	c0.10	0.04
v/s Ratio Perm						
v/c Ratio	0.47	0.83	0.83	0.43	0.67	0.26
Uniform Delay, d1	24.6	31.6	49.2	5.7	55.4	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	10.4	12.8	0.5	7.3	0.8
Delay (s)	25.6	41.9	62.0	6.2	62.7	52.7
Level of Service	C	D	E	A	E	D
Approach Delay (s)	34.6			19.7	55.5	
Approach LOS	C			B	E	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	18.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	61	15	171	15	13	1	230	172	49	74	3
Future Vol, veh/h	47	61	15	171	15	13	1	230	172	49	74	3
Peak Hour Factor	0.71	0.71	0.71	0.90	0.90	0.90	0.75	0.75	0.75	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	2	0	10	0	1	3	11	4	0
Mvmt Flow	66	86	21	190	17	14	1	307	229	56	84	3
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	12.5	13.9	24.4	11.7
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	38%	100%	0%	39%
Vol Thru, %	57%	50%	0%	54%	59%
Vol Right, %	43%	12%	0%	46%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	403	123	171	28	126
LT Vol	1	47	171	0	49
Through Vol	230	61	0	15	74
RT Vol	172	15	0	13	3
Lane Flow Rate	537	173	190	31	143
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.779	0.314	0.383	0.055	0.258
Departure Headway (Hd)	5.217	6.529	7.369	6.491	6.479
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	688	554	492	555	557
Service Time	3.304	4.529	5.069	4.191	4.491
HCM Lane V/C Ratio	0.781	0.312	0.386	0.056	0.257
HCM Control Delay	24.4	12.5	14.6	9.6	11.7
HCM Lane LOS	C	B	B	A	B
HCM 95th-tile Q	7.5	1.3	1.8	0.2	1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	5	46	5	27	9	324	37	14	274	13
Future Vol, veh/h	4	8	5	46	5	27	9	324	37	14	274	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	87	87	87	73	73	73	90	90	90
Heavy Vehicles, %	0	0	25	3	25	0	0	3	0	0	1	0
Mvmt Flow	6	12	8	53	6	31	12	444	51	16	304	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	855	862	311	847	844	470	318	0	0	495	0	0
Stage 1	343	343	-	494	494	-	-	-	-	-	-	-
Stage 2	512	519	-	353	350	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.45	7.13	6.75	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.525	3.527	4.225	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	281	295	679	281	276	598	1253	-	-	1079	-	-
Stage 1	676	641	-	555	510	-	-	-	-	-	-	-
Stage 2	548	536	-	662	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	257	288	679	264	269	598	1253	-	-	1079	-	-
Mov Cap-2 Maneuver	257	288	-	264	269	-	-	-	-	-	-	-
Stage 1	669	631	-	549	505	-	-	-	-	-	-	-
Stage 2	509	531	-	632	585	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	18.6	0.2	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	335	264	598	1079	-	-
HCM Lane V/C Ratio	0.01	-	-	0.078	0.222	0.052	0.014	-	-
HCM Control Delay (s)	7.9	-	-	16.7	22.5	11.3	8.4	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	15	5	242	10	5	0	170	98	5	422	5
Future Vol, veh/h	5	15	5	242	10	5	0	170	98	5	422	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	17	6	269	11	6	0	189	109	6	469	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	736	782	472	740	731	244	475	0	0	298	0	0
Stage 1	484	484	-	244	244	-	-	-	-	-	-	-
Stage 2	252	298	-	496	487	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	335	326	592	333	349	795	1087	-	-	1263	-	-
Stage 1	564	552	-	760	704	-	-	-	-	-	-	-
Stage 2	752	667	-	556	550	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	323	324	592	315	347	795	1087	-	-	1263	-	-
Mov Cap-2 Maneuver	323	324	-	315	347	-	-	-	-	-	-	-
Stage 1	564	549	-	760	704	-	-	-	-	-	-	-
Stage 2	735	667	-	531	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	63.5	0	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	356	320	1263	-	-
HCM Lane V/C Ratio	-	-	-	0.078	0.892	0.004	-	-
HCM Control Delay (s)	0	-	-	16	63.5	7.9	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	8.4	0	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	237	108	185	31	26	644
Future Vol, veh/h	237	108	185	31	26	644
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	120	206	34	29	716

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	475	29	745	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	548	1046	863	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	417	1046	863	-	-	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.5	9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	863	-	417	1046	-	-
HCM Lane V/C Ratio	0.238	-	0.631	0.115	-	-
HCM Control Delay (s)	10.5	-	27.3	8.9	-	-
HCM Lane LOS	B	-	D	A	-	-
HCM 95th %tile Q(veh)	0.9	-	4.2	0.4	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	107	18	330	742	1
Future Vol, veh/h	1	107	18	330	742	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	85	85	89	89
Heavy Vehicles, %	0	1	0	1	1	0
Mvmt Flow	1	157	21	388	834	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1265	835	835	0	-	0
Stage 1	835	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	189	369	807	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	369	807	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	807	-	366	-	-
HCM Lane V/C Ratio	0.026	-	0.434	-	-
HCM Control Delay (s)	9.6	0	22.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	21	36	0	9	49	337	57	12	858	19
Future Vol, veh/h	6	0	21	36	0	9	49	337	57	12	858	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	83	83	83	94	94	94	89	89	89
Heavy Vehicles, %	0	0	0	12	0	29	0	1	12	22	1	0
Mvmt Flow	10	0	33	43	0	11	52	359	61	13	964	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1500	1525	975	1511	1505	390	985	0	0	420	0	0
Stage 1	1001	1001	-	494	494	-	-	-	-	-	-	-
Stage 2	499	524	-	1017	1011	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.22	6.5	6.49	4.1	-	-	4.32	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.608	4	3.561	2.2	-	-	2.398	-	-
Pot Cap-1 Maneuver	101	119	308	94	122	603	709	-	-	1040	-	-
Stage 1	295	323	-	539	550	-	-	-	-	-	-	-
Stage 2	557	533	-	275	320	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	90	105	308	76	107	603	709	-	-	1040	-	-
Mov Cap-2 Maneuver	90	105	-	76	107	-	-	-	-	-	-	-
Stage 1	267	314	-	487	497	-	-	-	-	-	-	-
Stage 2	494	482	-	238	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.8	89.3	1.2	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	200	92	1040	-	-
HCM Lane V/C Ratio	0.074	-	-	0.214	0.589	0.013	-	-
HCM Control Delay (s)	10.5	0	-	27.8	89.3	8.5	0	-
HCM Lane LOS	B	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	2.7	0	-	-

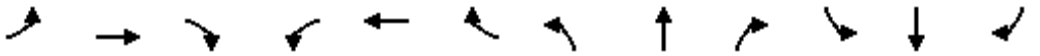
Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	43	400	0	0	915
Future Vol, veh/h	0	43	400	0	0	915
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	100	100	92	92	100
Heavy Vehicles, %	2	13	1	2	2	1
Mvmt Flow	0	43	400	0	0	915

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	400	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.395	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.4235	-	-	-	-
Pot Cap-1 Maneuver	0	621	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	621	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

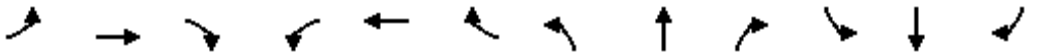
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	621	-
HCM Lane V/C Ratio	-	0.069	-
HCM Control Delay (s)	-	11.2	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	103	5	719	447	91	5	1	196	4	0	0
Future Volume (vph)	0	103	5	719	447	91	5	1	196	4	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		0.97	0.95			1.00	0.88		1.00	
Frt		0.99		1.00	0.97			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.95	
Satd. Flow (prot)		3378		3433	3449			1450	2760		2046	
Flt Permitted		1.00		0.95	1.00			0.83	1.00		0.75	
Satd. Flow (perm)		3378		3433	3449			1258	2760		1622	
Peak-hour factor, PHF	0.71	0.71	0.71	0.73	0.73	0.73	0.78	0.78	0.78	0.75	0.75	0.75
Adj. Flow (vph)	0	145	7	985	612	125	6	1	251	5	0	0
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	149	0	985	730	0	0	7	251	0	5	0
Heavy Vehicles (%)	0%	4%	50%	2%	2%	2%	25%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		9.1		26.3	41.4			12.3	12.3		12.3	
Effective Green, g (s)		9.1		26.3	41.4			12.3	12.3		12.3	
Actuated g/C Ratio		0.14		0.40	0.63			0.19	0.19		0.19	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		467		1374	2173			235	516		303	
v/s Ratio Prot		0.04		c0.29	c0.21							
v/s Ratio Perm								0.01	c0.09		0.00	
v/c Ratio		0.32		0.72	0.34			0.03	0.49		0.02	
Uniform Delay, d1		25.5		16.6	5.7			21.8	23.9		21.8	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.4		1.8	0.1			0.1	0.7		0.0	
Delay (s)		25.9		18.4	5.8			21.9	24.6		21.8	
Level of Service		C		B	A			C	C		C	
Approach Delay (s)		25.9			13.0			24.5			21.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	212	91	107	706	0	0	0	0	380	0	583
Future Volume (vph)	0	212	91	107	706	0	0	0	0	380	0	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5981	1419	2918	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5981	1419	2918	3455					3502		2814
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	0	265	114	134	882	0	0	0	0	507	0	777
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	0	0	0	232
Lane Group Flow (vph)	0	265	34	134	883	0	0	0	0	507	0	545
Heavy Vehicles (%)	0%	2%	10%	12%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		28.1	28.1	24.1	58.2					25.2		25.2
Effective Green, g (s)		28.1	28.1	24.1	58.2					25.2		25.2
Actuated g/C Ratio		0.29	0.29	0.25	0.61					0.26		0.26
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		1761	417	737	2107					925		743
v/s Ratio Prot		0.04	0.02	0.05	c0.26					0.14		c0.19
v/s Ratio Perm												
v/c Ratio		0.15	0.08	0.18	0.42					0.55		0.73
Uniform Delay, d1		24.8	24.3	27.9	9.7					30.2		32.0
Progression Factor		1.00	1.00	0.94	1.57					1.00		1.00
Incremental Delay, d2		0.1	0.2	0.1	0.2					1.2		4.6
Delay (s)		24.9	24.5	26.3	15.5					31.4		36.6
Level of Service		C	C	C	B					C		D
Approach Delay (s)		24.8			17.0			0.0			34.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	507	0	0	287	54	526	0	251	0	0	0
Future Volume (vph)	85	507	0	0	287	54	526	0	251	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.98		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3113	3421			4669		3433		2733			
Flt Permitted	0.51	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1660	3421			4669		3433		2733			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.85	0.85	0.78	0.92	0.78	0.92	0.92	0.92
Adj. Flow (vph)	98	583	0	0	338	64	674	0	322	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	237	0	0	0
Lane Group Flow (vph)	98	583	0	0	378	0	674	0	85	0	0	0
Heavy Vehicles (%)	5%	2%	2%	2%	2%	5%	2%	2%	4%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	41.6	28.1			38.7		25.2		25.2			
Effective Green, g (s)	41.6	28.1			38.7		25.2		25.2			
Actuated g/C Ratio	0.44	0.29			0.41		0.26		0.26			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	929	1007			1894		906		721			
v/s Ratio Prot	c0.01	c0.17			c0.08		c0.20		0.03			
v/s Ratio Perm	0.03											
v/c Ratio	0.11	0.58			0.20		0.74		0.12			
Uniform Delay, d1	15.7	28.6			18.3		32.1		26.7			
Progression Factor	1.29	1.24			1.00		1.00		1.00			
Incremental Delay, d2	0.1	1.2			0.1		4.0		0.2			
Delay (s)	20.2	36.8			18.4		36.2		26.8			
Level of Service	C	D			B		D		C			
Approach Delay (s)		34.4			18.4			33.1			0.0	
Approach LOS		C			B			C			A	

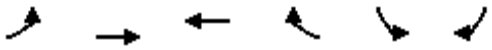
Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	752	382	1438	152	216	419
Future Volume (vph)	752	382	1438	152	216	419
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3303	1599	4988	1229	3242	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3303	1599	4988	1229	3242	3374
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.81	0.81
Adj. Flow (vph)	864	439	1546	163	267	517
RTOR Reduction (vph)	0	320	0	100	0	0
Lane Group Flow (vph)	864	119	1546	63	267	517
Heavy Vehicles (%)	6%	1%	4%	27%	8%	7%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	36.2	36.2	13.8	56.0
Effective Green, g (s)	25.0	25.0	36.2	36.2	13.8	56.0
Actuated g/C Ratio	0.27	0.27	0.39	0.39	0.15	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	887	429	1941	478	481	2031
v/s Ratio Prot	c0.26	0.07	c0.31	0.05	c0.08	0.15
v/s Ratio Perm						
v/c Ratio	0.97	0.28	0.80	0.13	0.56	0.25
Uniform Delay, d1	33.7	26.9	25.1	18.3	36.8	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	0.5	3.5	0.6	1.7	0.3
Delay (s)	57.6	27.4	28.6	18.9	38.5	9.0
Level of Service	E	C	C	B	D	A
Approach Delay (s)	47.4		27.7			19.0
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	427	1393	502	414	115	133
Future Volume (vph)	427	1393	502	414	115	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3471	3343	1583	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3471	3343	1583	1719	1538
Peak-hour factor, PHF	0.86	0.86	0.96	0.96	0.76	0.76
Adj. Flow (vph)	497	1620	523	431	151	175
RTOR Reduction (vph)	0	0	0	300	0	141
Lane Group Flow (vph)	497	1620	523	131	151	34
Heavy Vehicles (%)	1%	4%	8%	2%	5%	5%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	11.5	35.5	18.0	18.0	11.5	11.5
Effective Green, g (s)	11.5	35.5	18.0	18.0	11.5	11.5
Actuated g/C Ratio	0.19	0.60	0.31	0.31	0.19	0.19
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	348	2088	1019	482	335	299
v/s Ratio Prot	c0.28	c0.47	0.16		c0.09	0.02
v/s Ratio Perm				0.08		
v/c Ratio	1.43	0.78	0.51	0.27	0.45	0.11
Uniform Delay, d1	23.8	8.8	16.9	15.5	21.0	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	208.6	2.9	1.8	1.4	1.3	0.2
Delay (s)	232.4	11.7	18.7	16.9	22.3	19.8
Level of Service	F	B	B	B	C	B
Approach Delay (s)		63.5	17.9		20.9	
Approach LOS		E	B		C	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	964	544	76	555	361	482
Future Volume (vph)	964	544	76	555	361	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1468	1752	3438	1680	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1468	1752	3438	1680	1538
Peak-hour factor, PHF	0.95	0.95	0.90	0.90	0.80	0.80
Adj. Flow (vph)	1015	573	84	617	451	602
RTOR Reduction (vph)	0	292	0	0	0	386
Lane Group Flow (vph)	1015	281	84	617	451	217
Heavy Vehicles (%)	2%	10%	3%	5%	11%	5%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	67.7	67.7	12.9	86.6	39.4	39.4
Effective Green, g (s)	67.7	67.7	12.9	86.6	39.4	39.4
Actuated g/C Ratio	0.49	0.49	0.09	0.63	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1736	720	163	2157	479	439
v/s Ratio Prot	c0.29	0.19	c0.05	0.18	c0.27	0.14
v/s Ratio Perm						
v/c Ratio	0.58	0.39	0.52	0.29	0.94	0.49
Uniform Delay, d1	25.1	22.1	59.6	11.7	48.2	41.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.6	3.6	0.3	27.2	1.2
Delay (s)	26.6	23.7	63.2	12.0	75.4	42.2
Level of Service	C	C	E	B	E	D
Approach Delay (s)	25.5			18.1	56.4	
Approach LOS	C			B	E	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	19	6	232	81	76	13	68	81	18	195	23
Future Vol, veh/h	0	19	6	232	81	76	13	68	81	18	195	23
Peak Hour Factor	0.50	0.50	0.50	0.70	0.70	0.70	0.87	0.87	0.87	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	2	0	5	0	6	8	14	0	0
Mvmt Flow	0	38	12	331	116	109	15	78	93	26	279	33
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	10.1	16.5	11.5	16.6
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	8%	0%	100%	0%	8%
Vol Thru, %	42%	76%	0%	52%	83%
Vol Right, %	50%	24%	0%	48%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	25	232	157	236
LT Vol	13	0	232	0	18
Through Vol	68	19	0	81	195
RT Vol	81	6	0	76	23
Lane Flow Rate	186	50	331	224	337
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.303	0.089	0.616	0.361	0.564
Departure Headway (Hd)	5.857	6.4	6.689	5.802	6.021
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	611	556	540	619	597
Service Time	3.923	4.484	4.44	3.553	4.076
HCM Lane V/C Ratio	0.304	0.09	0.613	0.362	0.564
HCM Control Delay	11.5	10.1	19.6	11.8	16.6
HCM Lane LOS	B	B	C	B	C
HCM 95th-tile Q	1.3	0.3	4.1	1.6	3.5

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	7	9	24	4	13	24	176	30	32	338	30
Future Vol, veh/h	5	7	9	24	4	13	24	176	30	32	338	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	83	83	83	79	79	79	66	66	66
Heavy Vehicles, %	25	0	14	0	33	9	0	4	0	4	1	4
Mvmt Flow	7	10	13	29	5	16	30	223	38	48	512	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	944	952	535	944	955	242	557	0	0	261	0	0
Stage 1	631	631	-	302	302	-	-	-	-	-	-	-
Stage 2	313	321	-	642	653	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.5	6.34	7.1	6.83	6.29	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	3.426	3.5	4.297	3.381	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	220	261	523	244	229	780	1024	-	-	1292	-	-
Stage 1	432	477	-	712	612	-	-	-	-	-	-	-
Stage 2	651	655	-	466	419	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	201	244	523	219	214	780	1024	-	-	1292	-	-
Mov Cap-2 Maneuver	201	244	-	219	214	-	-	-	-	-	-	-
Stage 1	419	459	-	691	594	-	-	-	-	-	-	-
Stage 2	614	636	-	428	403	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	19.8	0.9	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1024	-	-	297	218	780	1292	-	-
HCM Lane V/C Ratio	0.03	-	-	0.1	0.155	0.02	0.038	-	-
HCM Control Delay (s)	8.6	-	-	18.5	24.5	9.7	7.9	-	-
HCM Lane LOS	A	-	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	10	5	41	10	10	5	370	258	15	155	15
Future Vol, veh/h	5	10	5	41	10	10	5	370	258	15	155	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	11	6	46	11	11	6	411	287	17	172	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	793	925	181	790	790	555	189	0	0	698	0	0
Stage 1	215	215	-	567	567	-	-	-	-	-	-	-
Stage 2	578	710	-	223	223	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	306	269	862	308	322	531	1385	-	-	898	-	-
Stage 1	787	725	-	508	507	-	-	-	-	-	-	-
Stage 2	501	437	-	780	719	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	285	261	862	290	313	531	1385	-	-	898	-	-
Mov Cap-2 Maneuver	285	261	-	290	313	-	-	-	-	-	-	-
Stage 1	781	710	-	504	503	-	-	-	-	-	-	-
Stage 2	476	434	-	747	704	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	19.4	0.1	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	324	317	898	-	-
HCM Lane V/C Ratio	0.004	-	-	0.069	0.214	0.019	-	-
HCM Control Delay (s)	7.6	0	-	16.9	19.4	9.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	15.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	624	227	26	9	41	170
Future Vol, veh/h	624	227	26	9	41	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	693	252	29	10	46	189

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	114	46	235	0	-	0
Stage 1	46	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	882	1023	1332	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	863	1023	1332	-	-	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20	5.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1332	-	863	1023	-	-
HCM Lane V/C Ratio	0.022	-	0.803	0.247	-	-
HCM Control Delay (s)	7.8	-	23.8	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	8.7	1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	128	816	220	0
Future Vol, veh/h	0	12	128	816	220	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	67	67	75	75
Heavy Vehicles, %	2	2	1	2	2	0
Mvmt Flow	0	24	191	1218	293	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1893	293	293	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	1600	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	77	746	1274	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	41	746	1274	-	-	-
Mov Cap-2 Maneuver	41	-	-	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	182	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1274	-	746	-	-
HCM Lane V/C Ratio	0.15	-	0.032	-	-
HCM Control Delay (s)	8.3	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	4	25	0	2	23	926	53	7	219	0
Future Vol, veh/h	0	0	4	25	0	2	23	926	53	7	219	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	71	71	71	71	71	71	70	70	70
Heavy Vehicles, %	0	0	33	17	0	50	6	1	7	17	3	0
Mvmt Flow	0	0	11	35	0	3	32	1304	75	10	313	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1740	1776	313	1745	1739	1342	313	0	0	1379	0	0
Stage 1	333	333	-	1406	1406	-	-	-	-	-	-	-
Stage 2	1407	1443	-	339	333	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.53	7.27	6.5	6.7	4.16	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	3.653	4	3.75	2.254	-	-	2.353	-	-
Pot Cap-1 Maneuver	69	84	661	62	88	147	1225	-	-	452	-	-
Stage 1	685	647	-	160	208	-	-	-	-	-	-	-
Stage 2	174	199	-	645	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	60	72	661	54	76	147	1225	-	-	452	-	-
Mov Cap-2 Maneuver	60	72	-	54	76	-	-	-	-	-	-	-
Stage 1	606	630	-	141	184	-	-	-	-	-	-	-
Stage 2	151	176	-	618	630	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	150	0.2	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1225	-	-	661	57	452	-	-
HCM Lane V/C Ratio	0.026	-	-	0.016	0.667	0.022	-	-
HCM Control Delay (s)	8	0	-	10.5	150	13.1	0	-
HCM Lane LOS	A	A	-	B	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	2.8	0.1	-	-

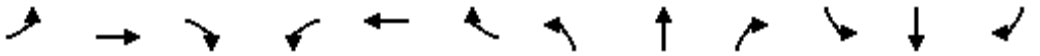
Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	161	841	0	0	248
Future Vol, veh/h	0	161	841	0	0	248
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	76	95	92	92	80
Heavy Vehicles, %	2	3	2	2	2	4
Mvmt Flow	0	212	885	0	0	310

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	885	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.245	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3285	-	-	-	-
Pot Cap-1 Maneuver	0	341	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	341	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	0
HCM LOS	D		

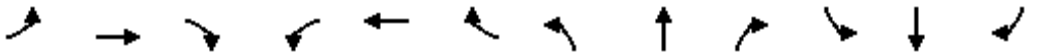
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	341	-
HCM Lane V/C Ratio	-	0.621	-
HCM Control Delay (s)	-	31.4	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	378	5	28	212	231	8	0	890	76	12	3
Future Volume (vph)	4	378	5	28	212	231	8	0	890	76	12	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95			1.00	0.88		1.00	
Frt	1.00	1.00		1.00	0.92			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	
Satd. Flow (prot)	1357	3533		3155	3312			1491	2842		2057	
Flt Permitted	0.95	1.00		0.95	1.00			0.68	1.00		0.77	
Satd. Flow (perm)	1357	3533		3155	3312			1074	2842		1645	
Peak-hour factor, PHF	0.69	0.69	0.69	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81
Adj. Flow (vph)	6	548	7	32	241	262	9	0	957	94	15	4
RTOR Reduction (vph)	0	1	0	0	161	0	0	0	0	0	1	0
Lane Group Flow (vph)	6	554	0	32	343	0	0	9	957	0	112	0
Heavy Vehicles (%)	33%	2%	0%	11%	1%	0%	17%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	2.2	13.8		3.2	15.8			20.9	20.9		20.9	
Effective Green, g (s)	2.2	13.8		3.2	15.8			20.9	20.9		20.9	
Actuated g/C Ratio	0.04	0.25		0.06	0.28			0.37	0.37		0.37	
Clearance Time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	53	872		180	936			401	1062		615	
v/s Ratio Prot	0.00	c0.16		0.01	c0.10							
v/s Ratio Perm								0.01	c0.34		0.07	
v/c Ratio	0.11	0.64		0.18	0.37			0.02	0.90		0.18	
Uniform Delay, d1	25.9	18.8		25.1	16.0			11.0	16.5		11.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	1.5		0.5	0.2			0.0	10.5		0.1	
Delay (s)	26.3	20.3		25.6	16.3			11.1	27.0		11.9	
Level of Service	C	C		C	B			B	C		B	
Approach Delay (s)		20.4			16.8			26.9			11.9	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

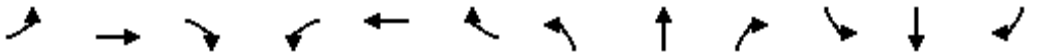
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	891	453	520	363	0	0	0	0	295	0	116
Future Volume (vph)	0	891	453	520	363	0	0	0	0	295	0	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		6040	1546	3236	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		6040	1546	3236	3455					3502		2814
Peak-hour factor, PHF	0.92	0.85	0.85	0.94	0.94	0.92	0.92	0.92	0.92	0.75	0.25	0.75
Adj. Flow (vph)	0	1048	533	553	386	0	0	0	0	393	0	155
RTOR Reduction (vph)	0	0	343	0	0	0	0	0	0	0	0	119
Lane Group Flow (vph)	0	1048	190	553	386	0	0	0	0	393	0	36
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		35.2	35.2	22.7	60.2					22.6		22.6
Effective Green, g (s)		35.2	35.2	22.7	60.2					22.6		22.6
Actuated g/C Ratio		0.36	0.36	0.23	0.61					0.23		0.23
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		2158	552	745	2111					803		645
v/s Ratio Prot		c0.17	0.12	c0.17	0.11					c0.11		0.01
v/s Ratio Perm												
v/c Ratio		0.49	0.35	0.74	0.18					0.49		0.06
Uniform Delay, d1		24.6	23.2	35.2	8.4					32.9		29.6
Progression Factor		1.00	1.00	1.41	0.87					1.00		1.00
Incremental Delay, d2		0.4	0.8	3.6	0.1					1.0		0.1
Delay (s)		25.0	24.0	53.4	7.3					33.9		29.7
Level of Service		C	C	D	A					C		C
Approach Delay (s)		24.6			34.5			0.0			32.7	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	655	0	0	711	309	172	0	474	0	0	0
Future Volume (vph)	531	655	0	0	711	309	172	0	474	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3236	3455			4647		3433		2814			
Flt Permitted	0.17	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	583	3455			4647		3433		2814			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.90	0.90	0.94	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	610	753	0	0	790	343	183	0	504	0	0	0
RTOR Reduction (vph)	0	0	0	0	71	0	0	0	388	0	0	0
Lane Group Flow (vph)	610	753	0	0	1062	0	183	0	116	0	0	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	55.6	35.2			37.5		22.6		22.6			
Effective Green, g (s)	55.6	35.2			37.5		22.6		22.6			
Actuated g/C Ratio	0.56	0.36			0.38		0.23		0.23			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	878	1234			1769		787		645			
v/s Ratio Prot	c0.14	0.22			0.23		c0.05		0.04			
v/s Ratio Perm	c0.25											
v/c Ratio	0.69	0.61			0.60		0.23		0.18			
Uniform Delay, d1	14.3	26.0			24.5		30.9		30.5			
Progression Factor	2.10	0.63			1.00		1.00		1.00			
Incremental Delay, d2	2.3	1.2			0.9		0.3		0.3			
Delay (s)	32.4	17.4			25.3		31.2		30.8			
Level of Service	C	B			C		C		C			
Approach Delay (s)		24.1			25.3			30.9			0.0	
Approach LOS		C			C			C			A	

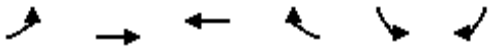
Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	791	134	1361	213	546	1080
Future Volume (vph)	791	134	1361	213	546	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1509	5085	1323	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1509	5085	1323	3433	3539
Peak-hour factor, PHF	0.89	0.89	0.95	0.95	0.84	0.84
Adj. Flow (vph)	889	151	1433	224	650	1286
RTOR Reduction (vph)	0	110	0	151	0	0
Lane Group Flow (vph)	889	41	1433	73	650	1286
Heavy Vehicles (%)	4%	7%	2%	18%	2%	2%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	30.2	30.2	19.8	56.0
Effective Green, g (s)	25.0	25.0	30.2	30.2	19.8	56.0
Actuated g/C Ratio	0.27	0.27	0.32	0.32	0.21	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	905	405	1651	429	730	2131
v/s Ratio Prot	c0.26	0.03	c0.28	0.05	c0.19	0.36
v/s Ratio Perm						
v/c Ratio	0.98	0.10	0.87	0.17	0.89	0.60
Uniform Delay, d1	33.8	25.5	29.5	22.4	35.5	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5	0.1	6.5	0.9	13.3	1.3
Delay (s)	59.3	25.7	36.0	23.3	48.9	12.8
Level of Service	E	C	D	C	D	B
Approach Delay (s)	54.4		34.3			24.9
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	240	1255	974	177	324	652
Future Volume (vph)	240	1255	974	177	324	652
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3539	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3539	3539	1583	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.87	0.87
Adj. Flow (vph)	273	1426	1047	190	372	749
RTOR Reduction (vph)	0	0	0	132	0	170
Lane Group Flow (vph)	273	1426	1047	58	372	579
Heavy Vehicles (%)	1%	2%	2%	2%	1%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	5.0	29.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	5.0	29.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.08	0.49	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	151	1739	1079	482	545	487
v/s Ratio Prot	c0.15	0.40	c0.30		0.21	c0.36
v/s Ratio Perm				0.04		
v/c Ratio	1.81	0.82	0.97	0.12	0.68	1.19
Uniform Delay, d1	27.0	12.8	20.2	14.8	18.0	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	388.5	4.5	21.1	0.5	3.8	103.8
Delay (s)	415.5	17.2	41.4	15.3	21.8	124.3
Level of Service	F	B	D	B	C	F
Approach Delay (s)		81.2	37.4		90.3	
Approach LOS		F	D		F	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	705	874	315	996	155	363
Future Volume (vph)	705	874	315	996	155	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1787	3539	1636	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1787	3539	1636	1583
Peak-hour factor, PHF	0.89	0.89	0.86	0.86	0.88	0.88
Adj. Flow (vph)	792	982	366	1158	176	412
RTOR Reduction (vph)	0	348	0	0	0	348
Lane Group Flow (vph)	792	634	366	1158	176	65
Heavy Vehicles (%)	2%	3%	1%	2%	14%	2%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	64.1	64.1	34.1	104.2	21.8	21.8
Effective Green, g (s)	64.1	64.1	34.1	104.2	21.8	21.8
Actuated g/C Ratio	0.46	0.46	0.25	0.76	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1643	728	441	2672	258	250
v/s Ratio Prot	0.22	c0.40	c0.20	0.33	c0.11	0.04
v/s Ratio Perm						
v/c Ratio	0.48	0.87	0.83	0.43	0.68	0.26
Uniform Delay, d1	25.5	33.2	49.2	6.2	54.8	51.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	13.5	12.8	0.5	7.8	0.8
Delay (s)	26.5	46.7	62.0	6.7	62.7	51.8
Level of Service	C	D	E	A	E	D
Approach Delay (s)	37.7			19.9	55.0	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	61	15	192	15	13	1	230	218	49	74	3
Future Vol, veh/h	47	61	15	192	15	13	1	230	218	49	74	3
Peak Hour Factor	0.71	0.71	0.71	0.90	0.90	0.90	0.75	0.75	0.75	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	2	0	10	0	1	3	11	4	0
Mvmt Flow	66	86	21	213	17	14	1	307	291	56	84	3
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	13.3	15.7	38.8	12.4
HCM LOS	B	C	E	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	38%	100%	0%	39%
Vol Thru, %	51%	50%	0%	54%	59%
Vol Right, %	49%	12%	0%	46%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	449	123	192	28	126
LT Vol	1	47	192	0	49
Through Vol	230	61	0	15	74
RT Vol	218	15	0	13	3
Lane Flow Rate	599	173	213	31	143
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.905	0.33	0.451	0.058	0.27
Departure Headway (Hd)	5.44	6.851	7.607	6.727	6.789
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	671	523	474	531	527
Service Time	3.44	4.919	5.37	4.49	4.852
HCM Lane V/C Ratio	0.893	0.331	0.449	0.058	0.271
HCM Control Delay	38.8	13.3	16.5	9.9	12.4
HCM Lane LOS	E	B	C	A	B
HCM 95th-tile Q	11.6	1.4	2.3	0.2	1.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	8	5	46	5	27	9	370	37	14	295	13
Future Vol, veh/h	4	8	5	46	5	27	9	370	37	14	295	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	87	87	87	73	73	73	90	90	90
Heavy Vehicles, %	0	0	25	3	25	0	0	3	0	0	1	0
Mvmt Flow	6	12	8	53	6	31	12	507	51	16	328	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	942	949	335	934	931	533	342	0	0	558	0	0
Stage 1	367	367	-	557	557	-	-	-	-	-	-	-
Stage 2	575	582	-	377	374	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.45	7.13	6.75	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.525	3.527	4.225	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	245	262	657	245	244	551	1228	-	-	1023	-	-
Stage 1	657	626	-	513	477	-	-	-	-	-	-	-
Stage 2	507	502	-	642	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	222	255	657	229	238	551	1228	-	-	1023	-	-
Mov Cap-2 Maneuver	222	255	-	229	238	-	-	-	-	-	-	-
Stage 1	650	616	-	508	472	-	-	-	-	-	-	-
Stage 2	468	497	-	612	570	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	21.1	0.2	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1228	-	-	298	230	551	1023	-	-
HCM Lane V/C Ratio	0.01	-	-	0.088	0.255	0.056	0.015	-	-
HCM Control Delay (s)	8	-	-	18.2	25.9	11.9	8.6	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1	0.2	0	-	-

Intersection	
Int Delay, s/veh	26.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	15	5	242	10	5	0	197	98	5	483	5
Future Vol, veh/h	5	15	5	242	10	5	0	197	98	5	483	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	17	6	269	11	6	0	219	109	6	537	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	834	880	540	838	829	274	543	0	0	328	0	0
Stage 1	552	552	-	274	274	-	-	-	-	-	-	-
Stage 2	282	328	-	564	555	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	286	542	286	306	765	1026	-	-	1232	-	-
Stage 1	518	515	-	732	683	-	-	-	-	-	-	-
Stage 2	725	647	-	510	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	276	284	542	269	304	765	1026	-	-	1232	-	-
Mov Cap-2 Maneuver	276	284	-	269	304	-	-	-	-	-	-	-
Stage 1	518	511	-	732	683	-	-	-	-	-	-	-
Stage 2	708	647	-	485	509	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	106.7	0	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1026	-	-	312	274	1232	-	-
HCM Lane V/C Ratio	-	-	-	0.089	1.042	0.005	-	-
HCM Control Delay (s)	0	-	-	17.7	106.7	7.9	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	11.1	0	-	-

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	264	108	185	31	26	705
Future Vol, veh/h	264	108	185	31	26	705
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	120	206	34	29	783

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	475	29	812	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	548	1046	814	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	1046	814	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.1	9.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	814	-	409	1046	-	-
HCM Lane V/C Ratio	0.253	-	0.717	0.115	-	-
HCM Control Delay (s)	10.9	-	33.2	8.9	-	-
HCM Lane LOS	B	-	D	A	-	-
HCM 95th %tile Q(veh)	1	-	5.5	0.4	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	107	18	357	803	1
Future Vol, veh/h	1	107	18	357	803	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	85	85	89	89
Heavy Vehicles, %	0	1	0	1	1	0
Mvmt Flow	1	157	21	420	902	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1365	903	903	0	-	0
Stage 1	903	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	164	337	761	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	158	337	761	-	-	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.2	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	761	-	334	-	-
HCM Lane V/C Ratio	0.028	-	0.476	-	-
HCM Control Delay (s)	9.9	0	25.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	2.4	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	21	36	0	9	49	364	57	12	919	19
Future Vol, veh/h	6	0	21	36	0	9	49	364	57	12	919	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	83	83	83	94	94	94	89	89	89
Heavy Vehicles, %	0	0	0	12	0	29	0	1	12	22	1	0
Mvmt Flow	10	0	33	43	0	11	52	387	61	13	1033	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1597	1622	1044	1608	1602	418	1054	0	0	448	0	0
Stage 1	1070	1070	-	522	522	-	-	-	-	-	-	-
Stage 2	527	552	-	1086	1080	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.22	6.5	6.49	4.1	-	-	4.32	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.608	4	3.561	2.2	-	-	2.398	-	-
Pot Cap-1 Maneuver	87	104	281	80	107	581	668	-	-	1014	-	-
Stage 1	270	300	-	520	534	-	-	-	-	-	-	-
Stage 2	538	518	-	251	297	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	90	281	63	93	581	668	-	-	1014	-	-
Mov Cap-2 Maneuver	77	90	-	63	93	-	-	-	-	-	-	-
Stage 1	242	291	-	465	478	-	-	-	-	-	-	-
Stage 2	473	464	-	214	288	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	123.9	1.1	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	668	-	-	177	77	1014	-	-
HCM Lane V/C Ratio	0.078	-	-	0.242	0.704	0.013	-	-
HCM Control Delay (s)	10.8	0	-	31.7	123.9	8.6	0	-
HCM Lane LOS	B	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.9	3.3	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	417	0	0	976
Future Vol, veh/h	0	53	417	0	0	976
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	100	100	92	92	100
Heavy Vehicles, %	2	13	1	2	2	1
Mvmt Flow	0	53	417	0	0	976

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	417	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.395	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.4235	-	-	-	-
Pot Cap-1 Maneuver	0	607	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	607	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

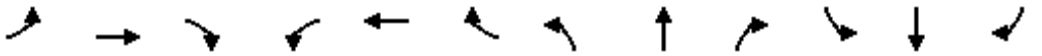
Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	607	-
HCM Lane V/C Ratio	-	0.087	-
HCM Control Delay (s)	-	11.5	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	98	6	1129	442	100	6	1	362	5	0	0
Future Volume (vph)	0	98	6	1129	442	100	6	1	362	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		0.97	0.95			1.00	0.88		1.00	
Frt		0.99		1.00	0.97			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.95	
Satd. Flow (prot)		3361		3433	3441			1439	2760		2046	
Flt Permitted		1.00		0.95	1.00			0.85	1.00		0.75	
Satd. Flow (perm)		3361		3433	3441			1280	2760		1619	
Peak-hour factor, PHF	0.71	0.71	0.71	0.73	0.73	0.73	0.78	0.78	0.78	0.75	0.75	0.75
Adj. Flow (vph)	0	138	8	1547	605	137	8	1	464	7	0	0
RTOR Reduction (vph)	0	5	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	141	0	1547	735	0	0	9	464	0	7	0
Heavy Vehicles (%)	0%	4%	50%	2%	2%	2%	25%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		9.5		50.0	65.5			20.0	20.0		20.0	
Effective Green, g (s)		9.5		50.0	65.5			20.0	20.0		20.0	
Actuated g/C Ratio		0.10		0.51	0.67			0.21	0.21		0.21	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		327		1760	2311			262	566		332	
v/s Ratio Prot		c0.04		c0.45	0.21							
v/s Ratio Perm								0.01	c0.17		0.00	
v/c Ratio		0.43		0.88	0.32			0.03	0.82		0.02	
Uniform Delay, d1		41.5		21.1	6.7			31.0	37.0		30.9	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.9		5.4	0.1			0.1	9.1		0.0	
Delay (s)		42.4		26.4	6.8			31.1	46.1		31.0	
Level of Service		D		C	A			C	D		C	
Approach Delay (s)		42.4			20.0			45.8			31.0	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	321	144	118	952	0	0	0	0	420	0	754
Future Volume (vph)	0	321	144	118	952	0	0	0	0	420	0	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5981	1419	2918	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5981	1419	2918	3455					3502		2814
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	0	401	180	148	1190	0	0	0	0	560	0	1005
RTOR Reduction (vph)	0	0	123	0	0	0	0	0	0	0	0	122
Lane Group Flow (vph)	0	401	57	148	1190	0	0	0	0	560	0	883
Heavy Vehicles (%)	0%	2%	10%	12%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		31.3	31.3	25.1	62.4					25.1		25.1
Effective Green, g (s)		31.3	31.3	25.1	62.4					25.1		25.1
Actuated g/C Ratio		0.31	0.31	0.25	0.63					0.25		0.25
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		1881	446	736	2166					883		709
v/s Ratio Prot		0.07	0.04	0.05	c0.34					0.16		c0.31
v/s Ratio Perm												
v/c Ratio		0.21	0.13	0.20	0.55					0.63		1.25
Uniform Delay, d1		25.1	24.3	29.3	10.6					33.1		37.2
Progression Factor		1.00	1.00	0.93	1.53					1.00		1.00
Incremental Delay, d2		0.1	0.3	0.1	0.3					2.1		122.2
Delay (s)		25.2	24.6	27.3	16.5					35.2		159.4
Level of Service		C	C	C	B					D		F
Approach Delay (s)		25.0			17.7			0.0			114.9	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	62.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	595	0	0	388	59	682	0	278	0	0	0
Future Volume (vph)	146	595	0	0	388	59	682	0	278	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.98		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3113	3421			4693		3433		2733			
Flt Permitted	0.45	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1465	3421			4693		3433		2733			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.85	0.85	0.78	0.92	0.78	0.92	0.92	0.92
Adj. Flow (vph)	168	684	0	0	456	69	874	0	356	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	266	0	0	0
Lane Group Flow (vph)	168	684	0	0	507	0	874	0	90	0	0	0
Heavy Vehicles (%)	5%	2%	2%	2%	2%	5%	2%	2%	4%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	48.3	31.3			39.4		25.1		25.1			
Effective Green, g (s)	48.3	31.3			39.4		25.1		25.1			
Actuated g/C Ratio	0.49	0.31			0.40		0.25		0.25			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	992	1076			1858		866		689			
v/s Ratio Prot	c0.03	c0.20			c0.11		c0.25		0.03			
v/s Ratio Perm	0.05											
v/c Ratio	0.17	0.64			0.27		1.01		0.13			
Uniform Delay, d1	13.9	29.2			20.3		37.2		28.8			
Progression Factor	1.17	1.15			1.00		1.00		1.00			
Incremental Delay, d2	0.1	1.6			0.2		32.9		0.2			
Delay (s)	16.4	35.1			20.5		70.1		28.9			
Level of Service	B	D			C		E		C			
Approach Delay (s)		31.4			20.5			58.2			0.0	
Approach LOS		C			C			E			A	

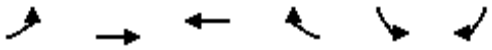
Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	831	422	1588	168	271	463
Future Volume (vph)	831	422	1588	168	271	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3303	1599	4988	1229	3242	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3303	1599	4988	1229	3242	3374
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.81	0.81
Adj. Flow (vph)	955	485	1708	181	335	572
RTOR Reduction (vph)	0	320	0	114	0	0
Lane Group Flow (vph)	955	165	1708	67	335	572
Heavy Vehicles (%)	6%	1%	4%	27%	8%	7%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	34.3	34.3	15.7	56.0
Effective Green, g (s)	25.0	25.0	34.3	34.3	15.7	56.0
Actuated g/C Ratio	0.27	0.27	0.37	0.37	0.17	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	887	429	1839	453	547	2031
v/s Ratio Prot	c0.29	0.10	c0.34	0.05	c0.10	0.17
v/s Ratio Perm						
v/c Ratio	1.08	0.39	0.93	0.15	0.61	0.28
Uniform Delay, d1	34.0	27.7	28.2	19.6	35.8	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.0	0.8	9.8	0.7	2.3	0.3
Delay (s)	87.0	28.5	38.0	20.3	38.2	9.2
Level of Service	F	C	D	C	D	A
Approach Delay (s)	67.3		36.3			19.9
Approach LOS	E		D			B

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	1539	555	473	180	179
Future Volume (vph)	471	1539	555	473	180	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3471	3343	1583	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3471	3343	1583	1719	1538
Peak-hour factor, PHF	0.86	0.86	0.96	0.96	0.76	0.76
Adj. Flow (vph)	548	1790	578	493	237	236
RTOR Reduction (vph)	0	0	0	343	0	180
Lane Group Flow (vph)	548	1790	578	150	237	56
Heavy Vehicles (%)	1%	4%	8%	2%	5%	5%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	9.0	33.0	18.0	18.0	14.0	14.0
Effective Green, g (s)	9.0	33.0	18.0	18.0	14.0	14.0
Actuated g/C Ratio	0.15	0.56	0.31	0.31	0.24	0.24
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	272	1941	1019	482	407	364
v/s Ratio Prot	c0.31	c0.52	0.17		c0.14	0.04
v/s Ratio Perm				0.09		
v/c Ratio	2.01	0.92	0.57	0.31	0.58	0.15
Uniform Delay, d1	25.0	11.8	17.2	15.7	19.9	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	469.4	8.8	2.3	1.7	2.5	0.3
Delay (s)	494.4	20.6	19.5	17.4	22.4	18.1
Level of Service	F	C	B	B	C	B
Approach Delay (s)		131.7	18.6		20.3	
Approach LOS		F	B		C	

Intersection Summary			
HCM 2000 Control Delay	86.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1084	635	84	621	407	533
Future Volume (vph)	1084	635	84	621	407	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1468	1752	3438	1680	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1468	1752	3438	1680	1538
Peak-hour factor, PHF	0.95	0.95	0.90	0.90	0.80	0.80
Adj. Flow (vph)	1141	668	93	690	509	666
RTOR Reduction (vph)	0	347	0	0	0	376
Lane Group Flow (vph)	1141	321	93	690	509	290
Heavy Vehicles (%)	2%	10%	3%	5%	11%	5%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	66.3	66.3	13.7	86.0	40.0	40.0
Effective Green, g (s)	66.3	66.3	13.7	86.0	40.0	40.0
Actuated g/C Ratio	0.48	0.48	0.10	0.62	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1700	705	173	2142	486	445
v/s Ratio Prot	c0.32	0.22	c0.05	0.20	c0.30	0.19
v/s Ratio Perm						
v/c Ratio	0.67	0.46	0.54	0.32	1.05	0.65
Uniform Delay, d1	27.5	23.8	59.1	12.3	49.0	42.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.1	4.1	0.4	53.8	3.8
Delay (s)	29.6	26.0	63.2	12.7	102.8	46.7
Level of Service	C	C	E	B	F	D
Approach Delay (s)	28.3			18.7	71.0	
Approach LOS	C			B	E	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	20	7	205	90	84	15	75	74	19	215	25
Future Vol, veh/h	0	20	7	205	90	84	15	75	74	19	215	25
Peak Hour Factor	0.50	0.50	0.50	0.70	0.70	0.70	0.87	0.87	0.87	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	2	0	5	0	6	8	14	0	0
Mvmt Flow	0	40	14	293	129	120	17	86	85	27	307	36
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	10.3	15.4	11.7	18.3
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	9%	0%	100%	0%	7%
Vol Thru, %	46%	74%	0%	52%	83%
Vol Right, %	45%	26%	0%	48%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	27	205	174	259
LT Vol	15	0	205	0	19
Through Vol	75	20	0	90	215
RT Vol	74	7	0	84	25
Lane Flow Rate	189	54	293	249	370
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.31	0.097	0.553	0.408	0.617
Departure Headway (Hd)	5.929	6.494	6.802	5.916	6.005
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	603	548	530	607	599
Service Time	3.997	4.584	4.559	3.672	4.06
HCM Lane V/C Ratio	0.313	0.099	0.553	0.41	0.618
HCM Control Delay	11.7	10.3	17.7	12.7	18.3
HCM Lane LOS	B	B	C	B	C
HCM 95th-tile Q	1.3	0.3	3.3	2	4.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	8	10	26	5	15	26	179	33	35	321	33
Future Vol, veh/h	6	8	10	26	5	15	26	179	33	35	321	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	83	83	83	79	79	79	66	66	66
Heavy Vehicles, %	25	0	14	0	33	9	0	4	0	4	1	4
Mvmt Flow	8	11	14	31	6	18	33	227	42	53	486	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	943	952	511	944	956	248	536	0	0	269	0	0
Stage 1	617	617	-	314	314	-	-	-	-	-	-	-
Stage 2	326	335	-	630	642	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.5	6.34	7.1	6.83	6.29	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	3.426	3.5	4.297	3.381	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	221	261	540	244	229	774	1042	-	-	1283	-	-
Stage 1	440	484	-	701	604	-	-	-	-	-	-	-
Stage 2	641	646	-	473	424	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	242	540	217	213	774	1042	-	-	1283	-	-
Mov Cap-2 Maneuver	200	242	-	217	213	-	-	-	-	-	-	-
Stage 1	426	464	-	679	585	-	-	-	-	-	-	-
Stage 2	600	625	-	431	407	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.8	20.1	0.9	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1042	-	-	294	216	774	1283	-	-
HCM Lane V/C Ratio	0.032	-	-	0.115	0.173	0.023	0.041	-	-
HCM Control Delay (s)	8.6	-	-	18.8	25.1	9.8	7.9	-	-
HCM Lane LOS	A	-	-	C	D	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	11	6	46	11	11	6	341	285	17	148	17
Future Vol, veh/h	6	11	6	46	11	11	6	341	285	17	148	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	12	7	51	12	12	7	379	317	19	164	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	776	922	174	773	773	538	183	0	0	696	0	0
Stage 1	212	212	-	552	552	-	-	-	-	-	-	-
Stage 2	564	710	-	221	221	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	315	270	869	316	330	543	1392	-	-	900	-	-
Stage 1	790	727	-	518	515	-	-	-	-	-	-	-
Stage 2	510	437	-	781	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	261	869	295	319	543	1392	-	-	900	-	-
Mov Cap-2 Maneuver	291	261	-	295	319	-	-	-	-	-	-	-
Stage 1	783	710	-	513	510	-	-	-	-	-	-	-
Stage 2	482	433	-	743	703	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	19.5	0.1	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	330	323	900	-	-
HCM Lane V/C Ratio	0.005	-	-	0.077	0.234	0.021	-	-
HCM Control Delay (s)	7.6	0	-	16.8	19.5	9.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	69.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	621	348	136	10	46	165
Future Vol, veh/h	621	348	136	10	46	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	690	387	151	11	51	183

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	364	51	234	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 635	1017	1333	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 563	1017	1333	-	-	-
Mov Cap-2 Maneuver	~ 563	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	93.8	7.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1333	-	563	1017	-	-
HCM Lane V/C Ratio	0.113	-	1.226	0.38	-	-
HCM Control Delay (s)	8	-	140.3	10.7	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	25.9	1.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	141	932	328	0
Future Vol, veh/h	0	14	141	932	328	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	67	67	75	75
Heavy Vehicles, %	2	2	1	2	2	0
Mvmt Flow	0	28	210	1391	437	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2248	437	437	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	1811	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	46	620	1128	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	143	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	8	620	1128	-	-	-
Mov Cap-2 Maneuver	8	-	-	-	-	-
Stage 1	118	-	-	-	-	-
Stage 2	143	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1128	-	620	-	-
HCM Lane V/C Ratio	0.187	-	0.045	-	-
HCM Control Delay (s)	8.9	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.1	-	-

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	5	27	0	2	25	1054	58	8	327	0
Future Vol, veh/h	0	0	5	27	0	2	25	1054	58	8	327	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	71	71	71	71	71	71	70	70	70
Heavy Vehicles, %	0	0	33	17	0	50	6	1	7	17	3	0
Mvmt Flow	0	0	13	38	0	3	35	1485	82	11	467	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2087	2126	467	2092	2085	1526	467	0	0	1567	0	0
Stage 1	489	489	-	1596	1596	-	-	-	-	-	-	-
Stage 2	1598	1637	-	496	489	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.53	7.27	6.5	6.7	4.16	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	3.653	4	3.75	2.254	-	-	2.353	-	-
Pot Cap-1 Maneuver	39	51	537	~ 35	54	112	1074	-	-	381	-	-
Stage 1	564	553	-	123	168	-	-	-	-	-	-	-
Stage 2	135	160	-	529	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	29	36	537	~ 26	38	112	1074	-	-	381	-	-
Mov Cap-2 Maneuver	29	36	-	~ 26	38	-	-	-	-	-	-	-
Stage 1	412	531	-	90	123	-	-	-	-	-	-	-
Stage 2	96	117	-	496	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	$ 576.3	0.2	0.4
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	537	27	381	-	-
HCM Lane V/C Ratio	0.033	-	-	0.025	1.513	0.03	-	-
HCM Control Delay (s)	8.5	0	-	11.9	$ 576.3	14.7	0	-
HCM Lane LOS	A	A	-	B	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	4.9	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

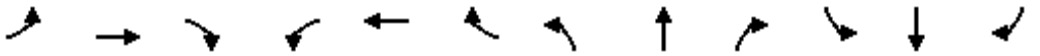
Intersection	
Int Delay, s/veh	9.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	193	944	0	0	359
Future Vol, veh/h	0	193	944	0	0	359
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	76	95	92	92	80
Heavy Vehicles, %	2	3	2	2	2	4
Mvmt Flow	0	254	994	0	0	449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	994	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.245	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3285	-	-	-	-
Pot Cap-1 Maneuver	0	295	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	295	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.4	0	0
HCM LOS	F		

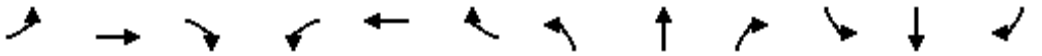
Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	295	-
HCM Lane V/C Ratio	-	0.861	-
HCM Control Delay (s)	-	61.4	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	7.5	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	366	6	305	211	255	9	0	1126	84	14	3
Future Volume (vph)	5	366	6	305	211	255	9	0	1126	84	14	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95			1.00	0.88		1.00	
Frt	1.00	1.00		1.00	0.92			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	
Satd. Flow (prot)	1357	3532		3155	3299			1491	2842		2058	
Flt Permitted	0.95	1.00		0.95	1.00			0.71	1.00		0.76	
Satd. Flow (perm)	1357	3532		3155	3299			1120	2842		1619	
Peak-hour factor, PHF	0.69	0.69	0.69	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81
Adj. Flow (vph)	7	530	9	347	240	290	10	0	1211	104	17	4
RTOR Reduction (vph)	0	1	0	0	142	0	0	0	0	0	1	0
Lane Group Flow (vph)	7	538	0	347	388	0	0	10	1211	0	124	0
Heavy Vehicles (%)	33%	2%	0%	11%	1%	0%	17%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	3.9	19.7		13.4	30.2			20.2	20.2		20.2	
Effective Green, g (s)	3.9	19.7		13.4	30.2			20.2	20.2		20.2	
Actuated g/C Ratio	0.05	0.28		0.19	0.42			0.28	0.28		0.28	
Clearance Time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	74	975		592	1397			317	805		458	
v/s Ratio Prot	0.01	c0.15		c0.11	0.12							
v/s Ratio Perm								0.01	c0.43		0.08	
v/c Ratio	0.09	0.55		0.59	0.28			0.03	1.50		0.27	
Uniform Delay, d1	32.0	22.0		26.4	13.4			18.5	25.5		19.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.7		1.5	0.1			0.0	233.4		0.3	
Delay (s)	32.2	22.7		27.9	13.5			18.5	259.0		20.2	
Level of Service	C	C		C	B			B	F		C	
Approach Delay (s)		22.8			19.2			257.0			20.2	
Approach LOS		C			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	124.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1033	543	575	551	0	0	0	0	325	0	228
Future Volume (vph)	0	1033	543	575	551	0	0	0	0	325	0	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		6040	1546	3236	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		6040	1546	3236	3455					3502		2814
Peak-hour factor, PHF	0.92	0.85	0.85	0.94	0.94	0.92	0.92	0.92	0.92	0.75	0.25	0.75
Adj. Flow (vph)	0	1215	639	612	586	0	0	0	0	433	0	304
RTOR Reduction (vph)	0	0	369	0	0	0	0	0	0	0	0	232
Lane Group Flow (vph)	0	1215	270	612	586	0	0	0	0	433	0	72
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		35.0	35.0	24.2	60.5					24.0		24.0
Effective Green, g (s)		35.0	35.0	24.2	60.5					24.0		24.0
Actuated g/C Ratio		0.35	0.35	0.24	0.60					0.24		0.24
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		2088	534	773	2065					830		667
v/s Ratio Prot		c0.20	0.17	c0.19	0.17					c0.12		0.03
v/s Ratio Perm												
v/c Ratio		0.58	0.51	0.79	0.28					0.52		0.11
Uniform Delay, d1		27.1	26.2	36.1	9.9					33.6		30.2
Progression Factor		1.00	1.00	1.34	1.08					1.00		1.00
Incremental Delay, d2		0.6	1.6	4.4	0.1					1.1		0.2
Delay (s)		27.8	27.8	52.8	10.8					34.7		30.4
Level of Service		C	C	D	B					C		C
Approach Delay (s)		27.8			32.3			0.0			32.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	620	738	0	0	854	341	272	0	524	0	0	0
Future Volume (vph)	620	738	0	0	854	341	272	0	524	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.96		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3236	3455			4659		3433		2814			
Flt Permitted	0.11	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	389	3455			4659		3433		2814			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.90	0.90	0.94	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	713	848	0	0	949	379	289	0	557	0	0	0
RTOR Reduction (vph)	0	0	0	0	68	0	0	0	425	0	0	0
Lane Group Flow (vph)	713	848	0	0	1260	0	289	0	132	0	0	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	57.9	35.0			36.3		24.0		24.0			
Effective Green, g (s)	57.9	35.0			36.3		24.0		24.0			
Actuated g/C Ratio	0.57	0.35			0.36		0.24		0.24			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	866	1194			1671		814		667			
v/s Ratio Prot	c0.19	0.25			0.27		c0.08		0.05			
v/s Ratio Perm	c0.28											
v/c Ratio	0.82	0.71			0.75		0.36		0.20			
Uniform Delay, d1	25.3	28.7			28.5		32.2		30.9			
Progression Factor	1.69	0.59			1.00		1.00		1.00			
Incremental Delay, d2	5.7	2.1			2.4		0.6		0.3			
Delay (s)	48.3	19.0			30.9		32.7		31.2			
Level of Service	D	B			C		C		C			
Approach Delay (s)		32.3			30.9			31.7			0.0	
Approach LOS		C			C			C			A	

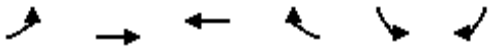
Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	874	148	1503	236	648	1193
Future Volume (vph)	874	148	1503	236	648	1193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1509	5085	1323	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1509	5085	1323	3433	3539
Peak-hour factor, PHF	0.89	0.89	0.95	0.95	0.84	0.84
Adj. Flow (vph)	982	166	1582	248	771	1420
RTOR Reduction (vph)	0	121	0	168	0	0
Lane Group Flow (vph)	982	45	1582	80	771	1420
Heavy Vehicles (%)	4%	7%	2%	18%	2%	2%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	30.0	30.0	20.0	56.0
Effective Green, g (s)	25.0	25.0	30.0	30.0	20.0	56.0
Actuated g/C Ratio	0.27	0.27	0.32	0.32	0.22	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	905	405	1640	426	738	2131
v/s Ratio Prot	c0.29	0.03	c0.31	0.06	c0.22	0.40
v/s Ratio Perm						
v/c Ratio	1.09	0.11	0.96	0.19	1.04	0.67
Uniform Delay, d1	34.0	25.6	31.0	22.7	36.5	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.7	0.2	15.3	1.0	45.4	1.7
Delay (s)	89.7	25.8	46.3	23.7	81.9	14.0
Level of Service	F	C	D	C	F	B
Approach Delay (s)	80.5		43.2			37.9
Approach LOS	F		D			D

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	1386	1076	198	435	765
Future Volume (vph)	265	1386	1076	198	435	765
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3539	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3539	3539	1583	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.87	0.87
Adj. Flow (vph)	301	1575	1157	213	500	879
RTOR Reduction (vph)	0	0	0	148	0	168
Lane Group Flow (vph)	301	1575	1157	65	500	711
Heavy Vehicles (%)	1%	2%	2%	2%	1%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	5.0	29.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	5.0	29.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.08	0.49	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	151	1739	1079	482	545	487
v/s Ratio Prot	c0.17	0.45	c0.33		0.28	c0.44
v/s Ratio Perm				0.04		
v/c Ratio	1.99	0.91	1.07	0.13	0.92	1.46
Uniform Delay, d1	27.0	13.7	20.5	14.9	19.8	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	469.8	8.3	49.0	0.6	20.6	218.0
Delay (s)	496.8	22.1	69.5	15.4	40.4	238.5
Level of Service	F	C	E	B	D	F
Approach Delay (s)		98.2	61.1		166.7	
Approach LOS		F	E		F	

Intersection Summary			
HCM 2000 Control Delay	107.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	806	1015	348	1101	173	401
Future Volume (vph)	806	1015	348	1101	173	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1787	3539	1636	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1787	3539	1636	1583
Peak-hour factor, PHF	0.89	0.89	0.86	0.86	0.88	0.88
Adj. Flow (vph)	906	1140	405	1280	197	456
RTOR Reduction (vph)	0	361	0	0	0	378
Lane Group Flow (vph)	906	779	405	1280	197	78
Heavy Vehicles (%)	2%	3%	1%	2%	14%	2%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	59.2	59.2	37.1	102.3	23.7	23.7
Effective Green, g (s)	59.2	59.2	37.1	102.3	23.7	23.7
Actuated g/C Ratio	0.43	0.43	0.27	0.74	0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1518	672	480	2623	280	271
v/s Ratio Prot	0.26	c0.50	c0.23	0.36	c0.12	0.05
v/s Ratio Perm						
v/c Ratio	0.60	1.16	0.84	0.49	0.70	0.29
Uniform Delay, d1	30.2	39.4	47.7	7.2	53.8	49.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	87.7	13.2	0.7	8.3	0.8
Delay (s)	32.0	127.1	60.9	7.9	62.2	50.6
Level of Service	C	F	E	A	E	D
Approach Delay (s)	85.0			20.6	54.1	
Approach LOS	F			C	D	

Intersection Summary			
HCM 2000 Control Delay	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	28.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	67	17	189	17	15	1	254	190	55	82	3
Future Vol, veh/h	52	67	17	189	17	15	1	254	190	55	82	3
Peak Hour Factor	0.71	0.71	0.71	0.90	0.90	0.90	0.75	0.75	0.75	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	2	0	10	0	1	3	11	4	0
Mvmt Flow	73	94	24	210	19	17	1	339	253	63	93	3
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	14.1	15.8	41.9	13
HCM LOS	B	C	E	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	38%	100%	0%	39%
Vol Thru, %	57%	49%	0%	53%	59%
Vol Right, %	43%	12%	0%	47%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	445	136	189	32	140
LT Vol	1	52	189	0	55
Through Vol	254	67	0	17	82
RT Vol	190	17	0	15	3
Lane Flow Rate	593	192	210	36	159
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.919	0.371	0.453	0.068	0.306
Departure Headway (Hd)	5.576	6.965	7.758	6.874	6.928
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	653	515	464	520	517
Service Time	3.617	5.03	5.519	4.634	4.992
HCM Lane V/C Ratio	0.908	0.373	0.453	0.069	0.308
HCM Control Delay	41.9	14.1	16.8	10.1	13
HCM Lane LOS	E	B	C	B	B
HCM 95th-tile Q	12	1.7	2.3	0.2	1.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	9	6	51	6	30	10	357	41	16	303	15
Future Vol, veh/h	5	9	6	51	6	30	10	357	41	16	303	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	87	87	87	73	73	73	90	90	90
Heavy Vehicles, %	0	0	25	3	25	0	0	3	0	0	1	0
Mvmt Flow	8	14	9	59	7	34	14	489	56	18	337	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	948	955	346	938	935	517	354	0	0	545	0	0
Stage 1	382	382	-	545	545	-	-	-	-	-	-	-
Stage 2	566	573	-	393	390	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.45	7.13	6.75	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.525	3.527	4.225	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	243	260	648	243	243	562	1216	-	-	1034	-	-
Stage 1	645	616	-	521	483	-	-	-	-	-	-	-
Stage 2	513	507	-	630	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	218	252	648	225	236	562	1216	-	-	1034	-	-
Mov Cap-2 Maneuver	218	252	-	225	236	-	-	-	-	-	-	-
Stage 1	637	606	-	515	477	-	-	-	-	-	-	-
Stage 2	469	501	-	596	560	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	22	0.2	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1216	-	-	295	226	562	1034	-	-
HCM Lane V/C Ratio	0.011	-	-	0.104	0.29	0.061	0.017	-	-
HCM Control Delay (s)	8	-	-	18.6	27.3	11.8	8.5	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	35.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	17	6	267	11	6	0	188	108	6	467	6
Future Vol, veh/h	6	17	6	267	11	6	0	188	108	6	467	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	19	7	297	12	7	0	209	120	7	519	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	816	866	523	819	809	269	526	0	0	329	0	0
Stage 1	537	537	-	269	269	-	-	-	-	-	-	-
Stage 2	279	329	-	550	540	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	296	291	554	~ 294	314	770	1041	-	-	1231	-	-
Stage 1	528	523	-	737	687	-	-	-	-	-	-	-
Stage 2	728	646	-	519	521	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	283	289	554	~ 274	311	770	1041	-	-	1231	-	-
Mov Cap-2 Maneuver	283	289	-	~ 274	311	-	-	-	-	-	-	-
Stage 1	528	519	-	737	687	-	-	-	-	-	-	-
Stage 2	709	646	-	490	517	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	133.6	0	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	319	279	1231	-	-
HCM Lane V/C Ratio	-	-	-	0.101	1.131	0.005	-	-
HCM Control Delay (s)	0	-	-	17.5	133.6	7.9	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	13.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	105.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	262	155	394	34	28	711
Future Vol, veh/h	262	155	394	34	28	711
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	291	172	438	38	31	790

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	945	31	821	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 291	1043	808	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 133	1043	808	-	-	-
Mov Cap-2 Maneuver	~ 133	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 388.5	13.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	808	-	133	1043	-	-
HCM Lane V/C Ratio	0.542	-	2.189	0.165	-	-
HCM Control Delay (s)	14.6	-	$ 612.9	9.1	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	3.3	-	24.3	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	118	19	400	1008	1
Future Vol, veh/h	1	118	19	400	1008	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	85	85	89	89
Heavy Vehicles, %	0	1	0	1	1	0
Mvmt Flow	1	174	22	471	1133	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1649	1134	1134	0	-	0
Stage 1	1134	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	110	248	623	-	-	-
Stage 1	310	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	248	623	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	295	-	-	-	-	-
Stage 2	604	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	49.5	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	623	-	245	-	-
HCM Lane V/C Ratio	0.036	-	0.714	-	-
HCM Control Delay (s)	11	0	49.5	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.8	-	-

Intersection	
Int Delay, s/veh	17.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	23	40	0	10	55	408	63	14	1137	20
Future Vol, veh/h	7	0	23	40	0	10	55	408	63	14	1137	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	83	83	83	94	94	94	89	89	89
Heavy Vehicles, %	0	0	0	12	0	29	0	1	12	22	1	0
Mvmt Flow	11	0	37	48	0	12	59	434	67	16	1278	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1913	1940	1289	1926	1918	468	1300	0	0	501	0	0
Stage 1	1321	1321	-	586	586	-	-	-	-	-	-	-
Stage 2	592	619	-	1340	1332	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.22	6.5	6.49	4.1	-	-	4.32	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.608	4	3.561	2.2	-	-	2.398	-	-
Pot Cap-1 Maneuver	52	66	202	~ 47	68	543	540	-	-	968	-	-
Stage 1	195	228	-	479	500	-	-	-	-	-	-	-
Stage 2	496	483	-	179	225	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	53	202	~ 32	54	543	540	-	-	968	-	-
Mov Cap-2 Maneuver	43	53	-	~ 32	54	-	-	-	-	-	-	-
Stage 1	165	214	-	406	424	-	-	-	-	-	-	-
Stage 2	411	409	-	138	212	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.3	$ 501.2	1.3	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	540	-	-	108	39	968	-	-
HCM Lane V/C Ratio	0.108	-	-	0.441	1.545	0.016	-	-
HCM Control Delay (s)	12.5	0	-	62.3	$ 501.2	8.8	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	1.9	6.3	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	63	463	0	0	1200
Future Vol, veh/h	0	63	463	0	0	1200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	100	100	92	92	100
Heavy Vehicles, %	2	13	1	2	2	1
Mvmt Flow	0	63	463	0	0	1200

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	463	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.395	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.4235	-	-	-	-
Pot Cap-1 Maneuver	0	571	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	571	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

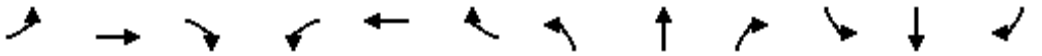
Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	571	-
HCM Lane V/C Ratio	-	0.11	-
HCM Control Delay (s)	-	12.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	112	6	1129	489	100	6	1	362	5	0	0
Future Volume (vph)	0	112	6	1129	489	100	6	1	362	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor		0.95		0.97	0.95			1.00	0.88		1.00	
Frt		0.99		1.00	0.97			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.96	1.00		0.95	
Satd. Flow (prot)		3374		3433	3449			1439	2760		2046	
Flt Permitted		1.00		0.95	1.00			0.85	1.00		0.75	
Satd. Flow (perm)		3374		3433	3449			1280	2760		1619	
Peak-hour factor, PHF	0.71	0.71	0.71	0.73	0.73	0.73	0.78	0.78	0.78	0.75	0.75	0.75
Adj. Flow (vph)	0	158	8	1547	670	137	8	1	464	7	0	0
RTOR Reduction (vph)	0	4	0	0	6	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	162	0	1547	801	0	0	9	464	0	7	0
Heavy Vehicles (%)	0%	4%	50%	2%	2%	2%	25%	0%	3%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		10.0		50.0	66.0			20.0	20.0		20.0	
Effective Green, g (s)		10.0		50.0	66.0			20.0	20.0		20.0	
Actuated g/C Ratio		0.10		0.51	0.67			0.20	0.20		0.20	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		344		1751	2322			261	563		330	
v/s Ratio Prot		c0.05		c0.45	0.23							
v/s Ratio Perm								0.01	c0.17		0.00	
v/c Ratio		0.47		0.88	0.34			0.03	0.82		0.02	
Uniform Delay, d1		41.5		21.4	6.8			31.3	37.3		31.2	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.0		5.7	0.1			0.1	9.5		0.0	
Delay (s)		42.5		27.1	6.9			31.3	46.8		31.2	
Level of Service		D		C	A			C	D		C	
Approach Delay (s)		42.5			20.2			46.5			31.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

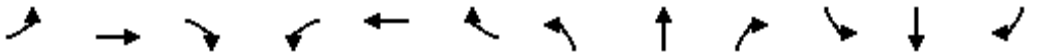
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	144	118	978	0	0	0	0	420	0	775
Future Volume (vph)	0	335	144	118	978	0	0	0	0	420	0	775
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5981	1419	2918	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5981	1419	2918	3455					3502		2814
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.92	0.92	0.92	0.75	0.75	0.75
Adj. Flow (vph)	0	419	180	148	1222	0	0	0	0	560	0	1033
RTOR Reduction (vph)	0	0	123	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	419	57	148	1223	0	0	0	0	560	0	919
Heavy Vehicles (%)	0%	2%	10%	12%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		31.7	31.7	25.1	62.8					25.1		25.1
Effective Green, g (s)		31.7	31.7	25.1	62.8					25.1		25.1
Actuated g/C Ratio		0.32	0.32	0.25	0.63					0.25		0.25
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		1897	450	733	2171					879		707
v/s Ratio Prot		0.07	0.04	0.05	c0.35					0.16		c0.33
v/s Ratio Perm												
v/c Ratio		0.22	0.13	0.20	0.56					0.64		1.30
Uniform Delay, d1		25.0	24.3	29.5	10.7					33.3		37.4
Progression Factor		1.00	1.00	0.95	1.49					1.00		1.00
Incremental Delay, d2		0.1	0.3	0.1	0.4					2.1		145.3
Delay (s)		25.2	24.5	28.1	16.3					35.5		182.7
Level of Service		C	C	C	B					D		F
Approach Delay (s)		25.0			17.5			0.0			130.9	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	69.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	603	0	0	414	59	682	0	278	0	0	0
Future Volume (vph)	152	603	0	0	414	59	682	0	278	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.98		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3113	3421			4699		3433		2733			
Flt Permitted	0.43	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1420	3421			4699		3433		2733			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.85	0.85	0.78	0.92	0.78	0.92	0.92	0.92
Adj. Flow (vph)	175	693	0	0	487	69	874	0	356	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	267	0	0	0
Lane Group Flow (vph)	175	693	0	0	540	0	874	0	89	0	0	0
Heavy Vehicles (%)	5%	2%	2%	2%	2%	5%	2%	2%	4%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	48.7	31.7			39.8		25.1		25.1			
Effective Green, g (s)	48.7	31.7			39.8		25.1		25.1			
Actuated g/C Ratio	0.49	0.32			0.40		0.25		0.25			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	980	1085			1872		862		686			
v/s Ratio Prot	c0.03	c0.20			c0.11		c0.25		0.03			
v/s Ratio Perm	0.06											
v/c Ratio	0.18	0.64			0.29		1.01		0.13			
Uniform Delay, d1	13.9	29.2			20.4		37.4		29.0			
Progression Factor	1.16	1.13			1.00		1.00		1.00			
Incremental Delay, d2	0.1	1.6			0.2		34.2		0.2			
Delay (s)	16.2	34.6			20.6		71.6		29.1			
Level of Service	B	C			C		E		C			
Approach Delay (s)		30.9			20.6			59.3			0.0	
Approach LOS		C			C			E			A	

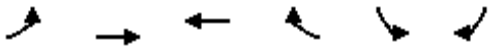
Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	831	422	1588	168	281	463
Future Volume (vph)	831	422	1588	168	281	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3303	1599	4988	1229	3242	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3303	1599	4988	1229	3242	3374
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.81	0.81
Adj. Flow (vph)	955	485	1708	181	347	572
RTOR Reduction (vph)	0	320	0	115	0	0
Lane Group Flow (vph)	955	165	1708	66	347	572
Heavy Vehicles (%)	6%	1%	4%	27%	8%	7%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	34.0	34.0	16.0	56.0
Effective Green, g (s)	25.0	25.0	34.0	34.0	16.0	56.0
Actuated g/C Ratio	0.27	0.27	0.37	0.37	0.17	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	887	429	1823	449	557	2031
v/s Ratio Prot	c0.29	0.10	c0.34	0.05	c0.11	0.17
v/s Ratio Perm						
v/c Ratio	1.08	0.39	0.94	0.15	0.62	0.28
Uniform Delay, d1	34.0	27.7	28.5	19.8	35.7	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.0	0.8	10.7	0.7	2.5	0.3
Delay (s)	87.0	28.5	39.1	20.5	38.2	9.2
Level of Service	F	C	D	C	D	A
Approach Delay (s)	67.3		37.3			20.1
Approach LOS	E		D			C

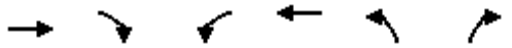
Intersection Summary			
HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	1539	555	512	191	189
Future Volume (vph)	471	1539	555	512	191	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3471	3343	1583	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3471	3343	1583	1719	1538
Peak-hour factor, PHF	0.86	0.86	0.96	0.96	0.76	0.76
Adj. Flow (vph)	548	1790	578	533	251	249
RTOR Reduction (vph)	0	0	0	370	0	188
Lane Group Flow (vph)	548	1790	578	163	251	61
Heavy Vehicles (%)	1%	4%	8%	2%	5%	5%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	8.5	32.5	18.0	18.0	14.5	14.5
Effective Green, g (s)	8.5	32.5	18.0	18.0	14.5	14.5
Actuated g/C Ratio	0.14	0.55	0.31	0.31	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	257	1911	1019	482	422	377
v/s Ratio Prot	c0.31	c0.52	0.17		c0.15	0.04
v/s Ratio Perm				0.10		
v/c Ratio	2.13	0.94	0.57	0.34	0.59	0.16
Uniform Delay, d1	25.2	12.3	17.2	15.9	19.7	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	522.4	10.2	2.3	1.9	2.6	0.3
Delay (s)	547.6	22.5	19.5	17.8	22.3	17.8
Level of Service	F	C	B	B	C	B
Approach Delay (s)		145.6	18.7		20.0	
Approach LOS		F	B		C	

Intersection Summary			
HCM 2000 Control Delay	94.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1087	643	84	632	435	533
Future Volume (vph)	1087	643	84	632	435	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1468	1752	3438	1680	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1468	1752	3438	1680	1538
Peak-hour factor, PHF	0.95	0.95	0.90	0.90	0.80	0.80
Adj. Flow (vph)	1144	677	93	702	544	666
RTOR Reduction (vph)	0	352	0	0	0	352
Lane Group Flow (vph)	1144	325	93	702	544	314
Heavy Vehicles (%)	2%	10%	3%	5%	11%	5%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	66.3	66.3	13.7	86.0	40.0	40.0
Effective Green, g (s)	66.3	66.3	13.7	86.0	40.0	40.0
Actuated g/C Ratio	0.48	0.48	0.10	0.62	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1700	705	173	2142	486	445
v/s Ratio Prot	c0.32	0.22	c0.05	0.20	c0.32	0.20
v/s Ratio Perm						
v/c Ratio	0.67	0.46	0.54	0.33	1.12	0.71
Uniform Delay, d1	27.5	23.9	59.1	12.3	49.0	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	2.2	4.1	0.4	77.7	5.4
Delay (s)	29.7	26.1	63.2	12.7	126.7	49.2
Level of Service	C	C	E	B	F	D
Approach Delay (s)	28.3			18.6	84.0	
Approach LOS	C			B	F	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	20	7	252	90	84	15	75	88	19	215	25
Future Vol, veh/h	0	20	7	252	90	84	15	75	88	19	215	25
Peak Hour Factor	0.50	0.50	0.50	0.70	0.70	0.70	0.87	0.87	0.87	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	2	0	5	0	6	8	14	0	0
Mvmt Flow	0	40	14	360	129	120	17	86	101	27	307	36
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	10.6	19.4	12.5	19.8
HCM LOS	B	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	8%	0%	100%	0%	7%
Vol Thru, %	42%	74%	0%	52%	83%
Vol Right, %	49%	26%	0%	48%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	178	27	252	174	259
LT Vol	15	0	252	0	19
Through Vol	75	20	0	90	215
RT Vol	88	7	0	84	25
Lane Flow Rate	205	54	360	249	370
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.347	0.103	0.69	0.415	0.639
Departure Headway (Hd)	6.106	6.843	6.895	6.008	6.217
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	585	527	522	597	577
Service Time	4.195	4.843	4.667	3.779	4.29
HCM Lane V/C Ratio	0.35	0.102	0.69	0.417	0.641
HCM Control Delay	12.5	10.6	23.8	13	19.8
HCM Lane LOS	B	B	C	B	C
HCM 95th-tile Q	1.5	0.3	5.3	2	4.5

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	8	10	26	5	15	26	193	33	35	368	33
Future Vol, veh/h	6	8	10	26	5	15	26	193	33	35	368	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	83	83	83	79	79	79	66	66	66
Heavy Vehicles, %	25	0	14	0	33	9	0	4	0	4	1	4
Mvmt Flow	8	11	14	31	6	18	33	244	42	53	558	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1032	1041	583	1033	1045	265	608	0	0	286	0	0
Stage 1	689	689	-	331	331	-	-	-	-	-	-	-
Stage 2	343	352	-	702	714	-	-	-	-	-	-	-
Critical Hdwy	7.35	6.5	6.34	7.1	6.83	6.29	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.35	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4	3.426	3.5	4.297	3.381	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	191	232	490	213	202	757	980	-	-	1265	-	-
Stage 1	401	450	-	687	593	-	-	-	-	-	-	-
Stage 2	627	635	-	432	392	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	215	490	187	187	757	980	-	-	1265	-	-
Mov Cap-2 Maneuver	172	215	-	187	187	-	-	-	-	-	-	-
Stage 1	387	431	-	664	573	-	-	-	-	-	-	-
Stage 2	585	613	-	391	376	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21	22.8	0.9	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	259	187	757	1265	-	-
HCM Lane V/C Ratio	0.034	-	-	0.131	0.2	0.024	0.042	-	-
HCM Control Delay (s)	8.8	-	-	21	29	9.9	8	-	-
HCM Lane LOS	A	-	-	C	D	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.7	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	11	6	46	11	11	6	402	285	17	169	17
Future Vol, veh/h	6	11	6	46	11	11	6	402	285	17	169	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	12	7	51	12	12	7	447	317	19	188	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	868	1014	198	865	865	606	207	0	0	764	0	0
Stage 1	236	236	-	620	620	-	-	-	-	-	-	-
Stage 2	632	778	-	245	245	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	273	239	843	274	292	497	1364	-	-	849	-	-
Stage 1	767	710	-	476	480	-	-	-	-	-	-	-
Stage 2	468	407	-	759	703	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	231	843	254	282	497	1364	-	-	849	-	-
Mov Cap-2 Maneuver	251	231	-	254	282	-	-	-	-	-	-	-
Stage 1	760	692	-	472	476	-	-	-	-	-	-	-
Stage 2	441	403	-	721	685	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	22.5	0.1	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1364	-	-	292	281	849	-	-
HCM Lane V/C Ratio	0.005	-	-	0.088	0.269	0.022	-	-
HCM Control Delay (s)	7.7	0	-	18.5	22.5	9.3	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	96

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	682	348	136	10	46	186
Future Vol, veh/h	682	348	136	10	46	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	758	387	151	11	51	207

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	364	51	258	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 635	1017	1307	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	~ 741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 561	1017	1307	-	-	-
Mov Cap-2 Maneuver	~ 561	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	~ 741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	130.1	7.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1307	-	561	1017	-	-
HCM Lane V/C Ratio	0.116	-	1.351	0.38	-	-
HCM Control Delay (s)	8.1	-	191	10.7	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	33.2	1.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	141	993	349	0
Future Vol, veh/h	0	14	141	993	349	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	67	67	75	75
Heavy Vehicles, %	2	2	1	2	2	0
Mvmt Flow	0	28	210	1482	465	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2367	465	465	0	-	0
Stage 1	465	-	-	-	-	-
Stage 2	1902	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	39	597	1102	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	597	1102	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	129	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1102	-	597	-	-
HCM Lane V/C Ratio	0.191	-	0.047	-	-
HCM Control Delay (s)	9	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0.1	-	-

Intersection	
Int Delay, s/veh	17.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	5	27	0	2	25	1115	58	8	348	0
Future Vol, veh/h	0	0	5	27	0	2	25	1115	58	8	348	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	71	71	71	71	71	71	70	70	70
Heavy Vehicles, %	0	0	33	17	0	50	6	1	7	17	3	0
Mvmt Flow	0	0	13	38	0	3	35	1570	82	11	497	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2202	2241	497	2207	2200	1611	497	0	0	1652	0	0
Stage 1	519	519	-	1681	1681	-	-	-	-	-	-	-
Stage 2	1683	1722	-	526	519	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.53	7.27	6.5	6.7	4.16	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	3.653	4	3.75	2.254	-	-	2.353	-	-
Pot Cap-1 Maneuver	32	43	515	~ 29	45	99	1047	-	-	353	-	-
Stage 1	544	536	-	110	152	-	-	-	-	-	-	-
Stage 2	121	145	-	509	536	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	19	22	515	~ 18	23	99	1047	-	-	353	-	-
Mov Cap-2 Maneuver	19	22	-	~ 18	23	-	-	-	-	-	-	-
Stage 1	295	513	-	60	83	-	-	-	-	-	-	-
Stage 2	64	79	-	475	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	$ 953.4	0.2	0.3
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1047	-	-	515	19	353	-	-
HCM Lane V/C Ratio	0.034	-	-	0.026	2.15	0.032	-	-
HCM Control Delay (s)	8.6	0	-	12.2	$ 953.4	15.5	0	-
HCM Lane LOS	A	A	-	B	F	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	5.5	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	15.4

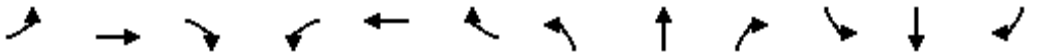
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	215	983	0	0	380
Future Vol, veh/h	0	215	983	0	0	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	76	95	92	92	80
Heavy Vehicles, %	2	3	2	2	2	4
Mvmt Flow	0	283	1035	0	0	475

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1035	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.245	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3285	-	-	-	-
Pot Cap-1 Maneuver	0	~ 279	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 279	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	97.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	279	-
HCM Lane V/C Ratio	-	1.014	-
HCM Control Delay (s)	-	97.8	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	10.5	-

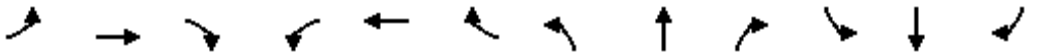
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	412	6	305	232	255	9	0	1126	84	14	3
Future Volume (vph)	5	412	6	305	232	255	9	0	1126	84	14	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	12	12	16	12
Total Lost time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Lane Util. Factor	1.00	0.95		0.97	0.95			1.00	0.88		1.00	
Frt	1.00	1.00		1.00	0.92			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.96	
Satd. Flow (prot)	1357	3532		3155	3311			1491	2842		2058	
Flt Permitted	0.95	1.00		0.95	1.00			0.71	1.00		0.76	
Satd. Flow (perm)	1357	3532		3155	3311			1118	2842		1619	
Peak-hour factor, PHF	0.69	0.69	0.69	0.88	0.88	0.88	0.93	0.93	0.93	0.81	0.81	0.81
Adj. Flow (vph)	7	597	9	347	264	290	10	0	1211	104	17	4
RTOR Reduction (vph)	0	1	0	0	129	0	0	0	0	0	1	0
Lane Group Flow (vph)	7	605	0	347	425	0	0	10	1211	0	124	0
Heavy Vehicles (%)	33%	2%	0%	11%	1%	0%	17%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	6	2		1	5			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	4.1	21.4		13.6	31.9			20.2	20.2		20.2	
Effective Green, g (s)	4.1	21.4		13.6	31.9			20.2	20.2		20.2	
Actuated g/C Ratio	0.06	0.29		0.19	0.44			0.28	0.28		0.28	
Clearance Time (s)	5.0	6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)	2.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	76	1032		586	1442			308	784		446	
v/s Ratio Prot	0.01	c0.17		c0.11	0.13							
v/s Ratio Perm								0.01	c0.43		0.08	
v/c Ratio	0.09	0.59		0.59	0.29			0.03	1.54		0.28	
Uniform Delay, d1	32.8	22.1		27.3	13.4			19.4	26.5		20.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.9		1.6	0.1			0.0	251.4		0.3	
Delay (s)	33.0	23.0		28.9	13.5			19.4	277.9		21.1	
Level of Service	C	C		C	B			B	F		C	
Approach Delay (s)		23.1			19.4			275.8			21.1	
Approach LOS		C			B			F			C	

Intersection Summary			
HCM 2000 Control Delay	129.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

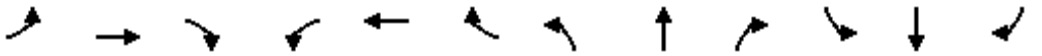
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1079	543	575	563	0	0	0	0	325	0	237
Future Volume (vph)	0	1079	543	575	563	0	0	0	0	325	0	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		6040	1546	3236	3455					3502		2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		6040	1546	3236	3455					3502		2814
Peak-hour factor, PHF	0.92	0.85	0.85	0.94	0.94	0.92	0.92	0.92	0.92	0.75	0.25	0.75
Adj. Flow (vph)	0	1269	639	612	599	0	0	0	0	433	0	316
RTOR Reduction (vph)	0	0	369	0	0	0	0	0	0	0	0	241
Lane Group Flow (vph)	0	1269	270	612	599	0	0	0	0	433	0	75
Heavy Vehicles (%)	0%	1%	1%	1%	1%	0%	2%	2%	2%	0%	0%	1%
Turn Type		NA	Prot	Prot	NA					Prot		Prot
Protected Phases		6	6	5	2 5					3		3
Permitted Phases												
Actuated Green, G (s)		35.1	35.1	24.2	60.2					24.0		24.0
Effective Green, g (s)		35.1	35.1	24.2	60.2					24.0		24.0
Actuated g/C Ratio		0.35	0.35	0.24	0.59					0.24		0.24
Clearance Time (s)		6.0	6.0	6.0						6.0		6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0		5.0
Lane Grp Cap (vph)		2092	535	773	2053					829		666
v/s Ratio Prot		c0.21	0.17	c0.19	0.17					c0.12		0.03
v/s Ratio Perm												
v/c Ratio		0.61	0.51	0.79	0.29					0.52		0.11
Uniform Delay, d1		27.4	26.2	36.2	10.1					33.7		30.3
Progression Factor		1.00	1.00	1.34	1.09					1.00		1.00
Incremental Delay, d2		0.7	1.6	4.3	0.1					1.1		0.2
Delay (s)		28.1	27.8	52.6	11.1					34.8		30.5
Level of Service		C	C	D	B					C		C
Approach Delay (s)		28.0			32.1			0.0			33.0	
Approach LOS		C			C			A			C	

Intersection Summary					
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.64				
Actuated Cycle Length (s)	101.3	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	74.3%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	641	763	0	0	866	341	272	0	524	0	0	0
Future Volume (vph)	641	763	0	0	866	341	272	0	524	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			11%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0		6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97		0.88			
Frt	1.00	1.00			0.96		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3236	3455			4660		3433		2814			
Flt Permitted	0.11	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	388	3455			4660		3433		2814			
Peak-hour factor, PHF	0.87	0.87	0.92	0.92	0.90	0.90	0.94	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	737	877	0	0	962	379	289	0	557	0	0	0
RTOR Reduction (vph)	0	0	0	0	68	0	0	0	425	0	0	0
Lane Group Flow (vph)	737	877	0	0	1273	0	289	0	132	0	0	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	1%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Prot		Prot			
Protected Phases	1	6			2		3		3			
Permitted Phases	6											
Actuated Green, G (s)	58.4	35.1			36.0		24.0		24.0			
Effective Green, g (s)	58.4	35.1			36.0		24.0		24.0			
Actuated g/C Ratio	0.58	0.35			0.36		0.24		0.24			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0		5.0			
Lane Grp Cap (vph)	878	1197			1656		813		666			
v/s Ratio Prot	c0.19	0.25			0.27		c0.08		0.05			
v/s Ratio Perm	c0.29											
v/c Ratio	0.84	0.73			0.77		0.36		0.20			
Uniform Delay, d1	25.8	29.0			29.0		32.2		30.9			
Progression Factor	1.69	0.57			1.00		1.00		1.00			
Incremental Delay, d2	6.2	2.4			2.6		0.6		0.3			
Delay (s)	49.7	18.9			31.6		32.8		31.3			
Level of Service	D	B			C		C		C			
Approach Delay (s)		32.9			31.6			31.8			0.0	
Approach LOS		C			C			C			A	

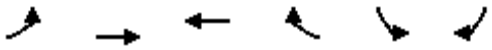
Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	874	148	1503	236	676	1193
Future Volume (vph)	874	148	1503	236	676	1193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	11	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1509	5085	1323	3433	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1509	5085	1323	3433	3539
Peak-hour factor, PHF	0.89	0.89	0.95	0.95	0.84	0.84
Adj. Flow (vph)	982	166	1582	248	805	1420
RTOR Reduction (vph)	0	121	0	168	0	0
Lane Group Flow (vph)	982	45	1582	80	805	1420
Heavy Vehicles (%)	4%	7%	2%	18%	2%	2%
Turn Type	Prot	Prot	NA	Prot	Prot	NA
Protected Phases	7	7	6	6	5	2
Permitted Phases						
Actuated Green, G (s)	25.0	25.0	30.0	30.0	20.0	56.0
Effective Green, g (s)	25.0	25.0	30.0	30.0	20.0	56.0
Actuated g/C Ratio	0.27	0.27	0.32	0.32	0.22	0.60
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	905	405	1640	426	738	2131
v/s Ratio Prot	c0.29	0.03	c0.31	0.06	c0.23	0.40
v/s Ratio Perm						
v/c Ratio	1.09	0.11	0.96	0.19	1.09	0.67
Uniform Delay, d1	34.0	25.6	31.0	22.7	36.5	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.7	0.2	15.3	1.0	60.6	1.7
Delay (s)	89.7	25.8	46.3	23.7	97.1	14.0
Level of Service	F	C	D	C	F	B
Approach Delay (s)	80.5		43.2			44.0
Approach LOS	F		D			D

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	1386	1076	215	468	793
Future Volume (vph)	265	1386	1076	215	468	793
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3539	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3539	3539	1583	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.93	0.93	0.87	0.87
Adj. Flow (vph)	301	1575	1157	231	538	911
RTOR Reduction (vph)	0	0	0	161	0	168
Lane Group Flow (vph)	301	1575	1157	70	538	743
Heavy Vehicles (%)	1%	2%	2%	2%	1%	1%
Turn Type	Prot	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases				2		
Actuated Green, G (s)	5.0	29.0	18.0	18.0	18.0	18.0
Effective Green, g (s)	5.0	29.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.08	0.49	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	151	1739	1079	482	545	487
v/s Ratio Prot	c0.17	0.45	c0.33		0.30	c0.46
v/s Ratio Perm				0.04		
v/c Ratio	1.99	0.91	1.07	0.15	0.99	1.53
Uniform Delay, d1	27.0	13.7	20.5	14.9	20.4	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	469.8	8.3	49.0	0.6	35.0	246.7
Delay (s)	496.8	22.1	69.5	15.5	55.4	267.2
Level of Service	F	C	E	B	E	F
Approach Delay (s)		98.2	60.5		188.5	
Approach LOS		F	E		F	

Intersection Summary			
HCM 2000 Control Delay	114.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	816	1038	348	1106	185	401
Future Volume (vph)	816	1038	348	1106	185	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1568	1787	3539	1636	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1568	1787	3539	1636	1583
Peak-hour factor, PHF	0.89	0.89	0.86	0.86	0.88	0.88
Adj. Flow (vph)	917	1166	405	1286	210	456
RTOR Reduction (vph)	0	367	0	0	0	373
Lane Group Flow (vph)	917	799	405	1286	210	83
Heavy Vehicles (%)	2%	3%	1%	2%	14%	2%
Turn Type	NA	Prot	Prot	NA	Prot	Prot
Protected Phases	6	6	5	2	7	7
Permitted Phases						
Actuated Green, G (s)	57.8	57.8	37.2	101.0	25.0	25.0
Effective Green, g (s)	57.8	57.8	37.2	101.0	25.0	25.0
Actuated g/C Ratio	0.42	0.42	0.27	0.73	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1482	656	481	2590	296	286
v/s Ratio Prot	0.26	c0.51	c0.23	0.36	c0.13	0.05
v/s Ratio Perm						
v/c Ratio	0.62	1.22	0.84	0.50	0.71	0.29
Uniform Delay, d1	31.5	40.1	47.6	7.8	53.1	48.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	111.4	13.1	0.7	8.1	0.8
Delay (s)	33.4	151.5	60.7	8.5	61.2	49.6
Level of Service	C	F	E	A	E	D
Approach Delay (s)	99.5			21.0	53.2	
Approach LOS	F			C	D	

Intersection Summary			
HCM 2000 Control Delay	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	138.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	43.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	67	17	210	17	15	1	254	236	55	82	3
Future Vol, veh/h	52	67	17	210	17	15	1	254	236	55	82	3
Peak Hour Factor	0.71	0.71	0.71	0.90	0.90	0.90	0.75	0.75	0.75	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	2	0	10	0	1	3	11	4	0
Mvmt Flow	73	94	24	233	19	17	1	339	315	63	93	3
Number of Lanes	0	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	14.9	17.8	69.9	13.6
HCM LOS	B	C	F	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	38%	100%	0%	39%
Vol Thru, %	52%	49%	0%	53%	59%
Vol Right, %	48%	12%	0%	47%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	491	136	210	32	140
LT Vol	1	52	210	0	55
Through Vol	254	67	0	17	82
RT Vol	236	17	0	15	3
Lane Flow Rate	655	192	233	36	159
Geometry Grp	2	5	7	7	2
Degree of Util (X)	1.039	0.38	0.51	0.069	0.313
Departure Headway (Hd)	5.715	7.393	8.092	7.205	7.32
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	642	490	448	500	495
Service Time	3.715	5.393	5.792	4.905	5.32
HCM Lane V/C Ratio	1.02	0.392	0.52	0.072	0.321
HCM Control Delay	69.9	14.9	18.9	10.4	13.6
HCM Lane LOS	F	B	C	B	B
HCM 95th-tile Q	17.3	1.8	2.8	0.2	1.3

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	9	6	51	6	30	10	403	41	16	324	15
Future Vol, veh/h	5	9	6	51	6	30	10	403	41	16	324	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	80	85	-	-	165	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	87	87	87	73	73	73	90	90	90
Heavy Vehicles, %	0	0	25	3	25	0	0	3	0	0	1	0
Mvmt Flow	8	14	9	59	7	34	14	552	56	18	360	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1034	1041	369	1024	1021	580	377	0	0	608	0	0
Stage 1	405	405	-	608	608	-	-	-	-	-	-	-
Stage 2	629	636	-	416	413	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.45	7.13	6.75	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.525	3.527	4.225	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	212	232	628	213	216	518	1193	-	-	980	-	-
Stage 1	626	602	-	481	451	-	-	-	-	-	-	-
Stage 2	474	475	-	612	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	225	628	196	210	518	1193	-	-	980	-	-
Mov Cap-2 Maneuver	188	225	-	196	210	-	-	-	-	-	-	-
Stage 1	618	591	-	475	446	-	-	-	-	-	-	-
Stage 2	430	469	-	578	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.5	25.3	0.2	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1193	-	-	263	197	518	980	-	-
HCM Lane V/C Ratio	0.011	-	-	0.117	0.333	0.067	0.018	-	-
HCM Control Delay (s)	8.1	-	-	20.5	32.1	12.4	8.7	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.4	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	51.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	17	6	267	11	6	0	215	108	6	528	6
Future Vol, veh/h	6	17	6	267	11	6	0	215	108	6	528	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	19	7	297	12	7	0	239	120	7	587	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	914	964	591	917	907	299	594	0	0	359	0	0
Stage 1	605	605	-	299	299	-	-	-	-	-	-	-
Stage 2	309	359	-	618	608	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	254	255	507	~ 253	276	741	982	-	-	1200	-	-
Stage 1	485	487	-	710	666	-	-	-	-	-	-	-
Stage 2	701	627	-	477	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	253	507	~ 234	274	741	982	-	-	1200	-	-
Mov Cap-2 Maneuver	242	253	-	~ 234	274	-	-	-	-	-	-	-
Stage 1	485	483	-	710	666	-	-	-	-	-	-	-
Stage 2	682	627	-	448	482	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	211.1	0	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	982	-	-	279	239	1200	-	-
HCM Lane V/C Ratio	-	-	-	0.115	1.32	0.006	-	-
HCM Control Delay (s)	0	-	-	19.6	211.1	8	0	-
HCM Lane LOS	A	-	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	16.7	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	141.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	289	155	394	34	28	772
Future Vol, veh/h	289	155	394	34	28	772
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	290	100	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	321	172	438	38	31	858

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	945	31	889	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 291	1043	762	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 124	1043	762	-	-	-
Mov Cap-2 Maneuver	~ 124	-	-	-	-	-
Stage 1	422	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 519.9	14.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	762	-	124	1043	-	-
HCM Lane V/C Ratio	0.575	-	2.59	0.165	-	-
HCM Control Delay (s)	15.9	-	$ 793.9	9.1	-	-
HCM Lane LOS	C	-	F	A	-	-
HCM 95th %tile Q(veh)	3.7	-	28.8	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	118	19	427	1069	1
Future Vol, veh/h	1	118	19	427	1069	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	68	68	85	85	89	89
Heavy Vehicles, %	0	1	0	1	1	0
Mvmt Flow	1	174	22	502	1201	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1748	1202	1202	0	-	0
Stage 1	1202	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	96	226	588	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	91	226	588	-	-	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	272	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	62.4	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	588	-	223	-	-
HCM Lane V/C Ratio	0.038	-	0.785	-	-
HCM Control Delay (s)	11.4	0	62.4	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	5.6	-	-

Intersection	
Int Delay, s/veh	22

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	7	0	23	40	0	10	55	435	63	14	1198	20
Future Vol, veh/h	7	0	23	40	0	10	55	435	63	14	1198	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	83	83	83	94	94	94	89	89	89
Heavy Vehicles, %	0	0	0	12	0	29	0	1	12	22	1	0
Mvmt Flow	11	0	37	48	0	12	59	463	67	16	1346	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2010	2037	1357	2023	2015	497	1368	0	0	530	0	0
Stage 1	1389	1389	-	615	615	-	-	-	-	-	-	-
Stage 2	621	648	-	1408	1400	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.22	6.5	6.49	4.1	-	-	4.32	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.22	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.608	4	3.561	2.2	-	-	2.398	-	-
Pot Cap-1 Maneuver	44	57	184	~ 40	59	522	508	-	-	943	-	-
Stage 1	178	212	-	462	485	-	-	-	-	-	-	-
Stage 2	478	469	-	163	209	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	36	44	184	~ 26	46	522	508	-	-	943	-	-
Mov Cap-2 Maneuver	36	44	-	~ 26	46	-	-	-	-	-	-	-
Stage 1	148	197	-	385	404	-	-	-	-	-	-	-
Stage 2	389	391	-	121	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	77.4	$ 683.1	1.3	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	508	-	-	94	32	943	-	-
HCM Lane V/C Ratio	0.115	-	-	0.507	1.883	0.017	-	-
HCM Control Delay (s)	13	0	-	77.4	$ 683.1	8.9	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	2.2	6.8	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	73	480	0	0	1261
Future Vol, veh/h	0	73	480	0	0	1261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	100	100	92	92	100
Heavy Vehicles, %	2	13	1	2	2	1
Mvmt Flow	0	73	480	0	0	1261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	480	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.395	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.4235	-	-	-	-
Pot Cap-1 Maneuver	0	558	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	558	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	558	-
HCM Lane V/C Ratio	-	0.131	-
HCM Control Delay (s)	-	12.4	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.4	-

APPENDIX H
Site Development Plan

SITE NOTES:

1. STRIPE PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, ADA SYMBOLS, PAINTED ISLANDS, CROSS WALKS, ARROWS, LEGENDS AND CENTERLINES SHALL BE THERMOPLASTIC MATERIAL. THERMOPLASTIC MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO AASHTO M249. (ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT. CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F").
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PARKING STALL MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES. STOP BARS SHALL BE EIGHTEEN (18) INCHES WIDE.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
9. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAY WITH THE CITY OF PORTSMOUTH AND PEASE DEVELOPMENT AUTHORITY.
10. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
11. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
12. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
13. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
14. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
15. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

SITE DATA:
LOCATION: TAX MAP 308, LOT 1
80 ROCHESTER AVENUE
PORTSMOUTH, NEW HAMPSHIRE

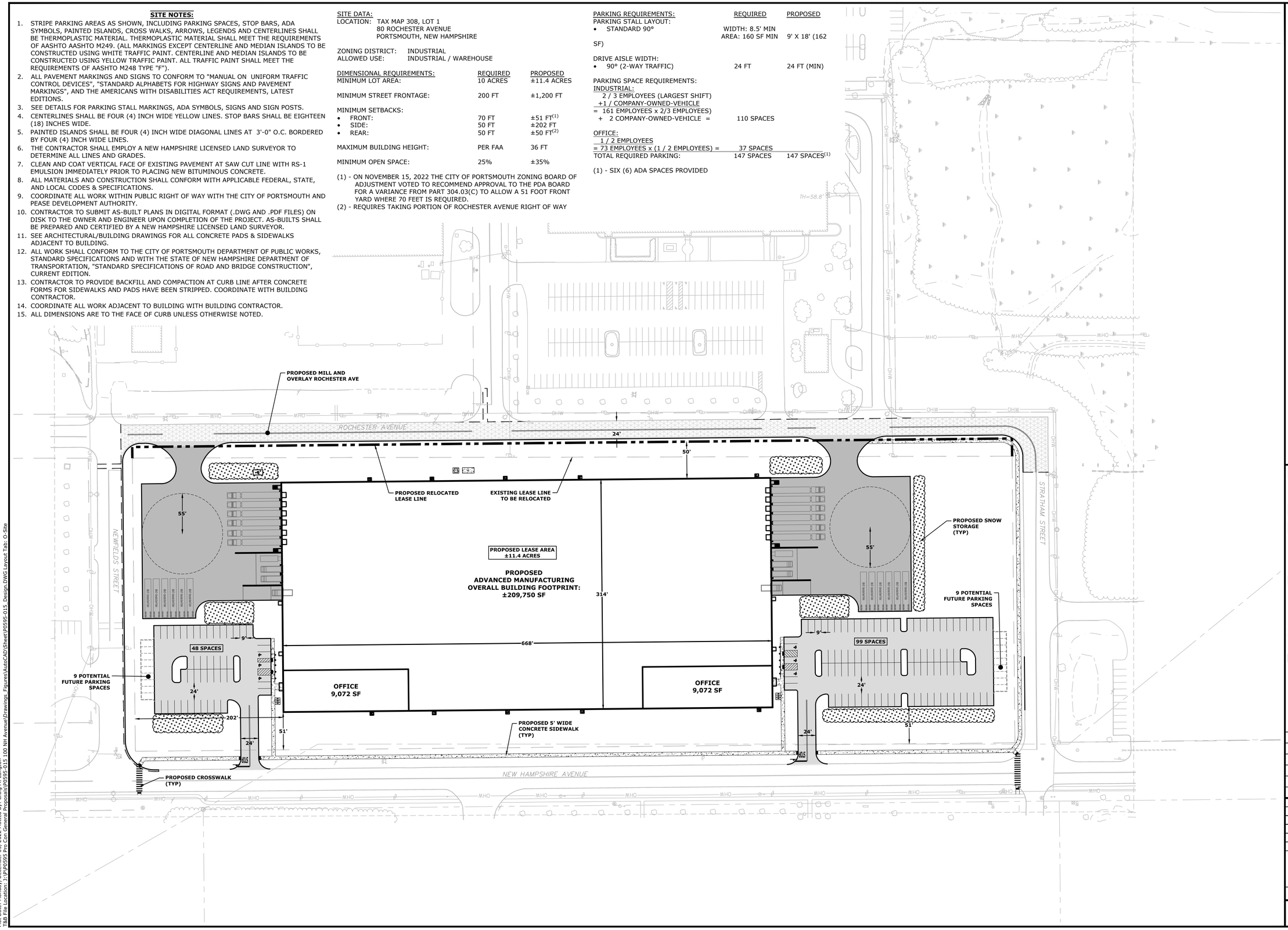
ZONING DISTRICT: INDUSTRIAL
ALLOWED USE: INDUSTRIAL / WAREHOUSE

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROPOSED
MINIMUM LOT AREA:	10 ACRES	±11.4 ACRES
MINIMUM STREET FRONTAGE:	200 FT	±1,200 FT
MINIMUM SETBACKS:		
• FRONT:	70 FT	±51 FT(1)
• SIDE:	50 FT	±202 FT
• REAR:	50 FT	±50 FT(2)
MAXIMUM BUILDING HEIGHT:	PER FAA	36 FT
MINIMUM OPEN SPACE:	25%	±35%

(1) - ON NOVEMBER 15, 2022 THE CITY OF PORTSMOUTH ZONING BOARD OF ADJUSTMENT VOTED TO RECOMMEND APPROVAL TO THE PDA BOARD FOR A VARIANCE FROM PART 304.03(C) TO ALLOW A 51 FOOT FRONT YARD WHERE 70 FEET IS REQUIRED.
(2) - REQUIRES TAKING PORTION OF ROCHESTER AVENUE RIGHT OF WAY

PARKING REQUIREMENTS:	REQUIRED	PROPOSED
PARKING STALL LAYOUT:		
• STANDARD 90°	WIDTH: 8.5' MIN AREA: 160 SF MIN	9' X 18' (162 SF)
DRIVE AISLE WIDTH:		
• 90° (2-WAY TRAFFIC)	24 FT	24 FT (MIN)
PARKING SPACE REQUIREMENTS:		
INDUSTRIAL:		
2 / 3 EMPLOYEES (LARGEST SHIFT)		
+1 / COMPANY-OWNED-VEHICLE		
= 161 EMPLOYEES x 2/3 EMPLOYEES)		
+ 2 COMPANY-OWNED-VEHICLE =	110 SPACES	
OFFICE:		
1 / 2 EMPLOYEES		
= 73 EMPLOYEES x (1 / 2 EMPLOYEES) =	37 SPACES	
TOTAL REQUIRED PARKING:	147 SPACES	147 SPACES(1)

(1) - SIX (6) ADA SPACES PROVIDED



SCALE IN FEET
0 60' 120'
GRAPHIC SCALE

Proposed Advanced Manufacturing Facility

Procon, Inc.

100 New Hampshire Avenue
Portsmouth, NH

MARK	DATE	DESCRIPTION
A	12/19/2022	TAC Submission

PROJECT NO:	P0595-015
DATE:	12/19/2022
FILE:	P0595-015_DESIGN.DWG
DRAWN BY:	CML
CHECKED:	NAH
APPROVED:	PMC

OVERALL SITE PLAN

SCALE: AS SHOWN

C-102

Last Save Date: December 5, 2022 10:21 AM By: CML
Plot Date: Monday, December 05, 2022 10:31 AM By: Craig M. Langton
T&B File Location: J:\P\P0595 Pro Con General Proposals\P0595-015 100 NH Avenue\Drawings, Figures\AutoCAD\Sheet\P0595-015_Design.DWG Layout Tab: O-Site

APPENDIX I

Traffic Control Signal Plans

SIGN 9"X 12" 1 EACH

R10-3A(R) BLACK ON WHITE

1 MOUNTED OVER PUSH BUTTON

SIGN 9"X 12" 5 EACH

R10-3A(L) BLACK ON WHITE

5 MOUNTED OVER PUSH BUTTONS

SIGN 24"X 30" 2 EACH

R3-5L ONLY BLACK ON WHITE

MOUNTED ON MAST ARM NEXT TO LEFT TURN SIGNAL

SIGN 30"X 30" 4 EACH

R3-7L LEFT LANE MUST TURN LEFT BLACK ON WHITE

1 T.S. POST MOUNTED

SIGN 24"X 30" 2 EACH

R4-7

1 T.S. POST MOUNTED (PAIR)

PULL BOX SCHEDULE

49+36 – 42' RT
49+42 – 05' LT
49+61 – 17' LT
50+36 – 11' LT
50+51 – 01' RT (2)
64+55 – 44' RT (SHEET 36)
65+45 – 44' RT (SHEET 34)
66+35 – 44' RT (SHEET 34)
67+25 – 44' RT
68+15 – 44' RT
68+70 – 35' LT
68+93 – 22' RT
68+95 – 85' RT (2)
69+02 – 45' LT
69+01 – 46' RT
69+20 – 54' RT (2)
69+54 – 56' RT (2)

SIGN 30"X 30" 1 EACH

ONLY ONLY

MAST ARM MOUNTED

NOTES:

1. SIGNS MOUNTED ON MAST ARMS AND T.S. POSTS SHOWN ON THIS SHEET. OTHER POST MOUNTED SIGNS SHOWN ON SHEET 41.
2. FOR PAVEMENT MARKINGS SEE SHEET 41.
3. QUADRUPLE LOOPS TO HAVE 2-4-2 LOOP WIRE CONFIGURATION; 6'x6' LOOPS TO HAVE 3 TURNS.

CONDUIT SCHEDULE

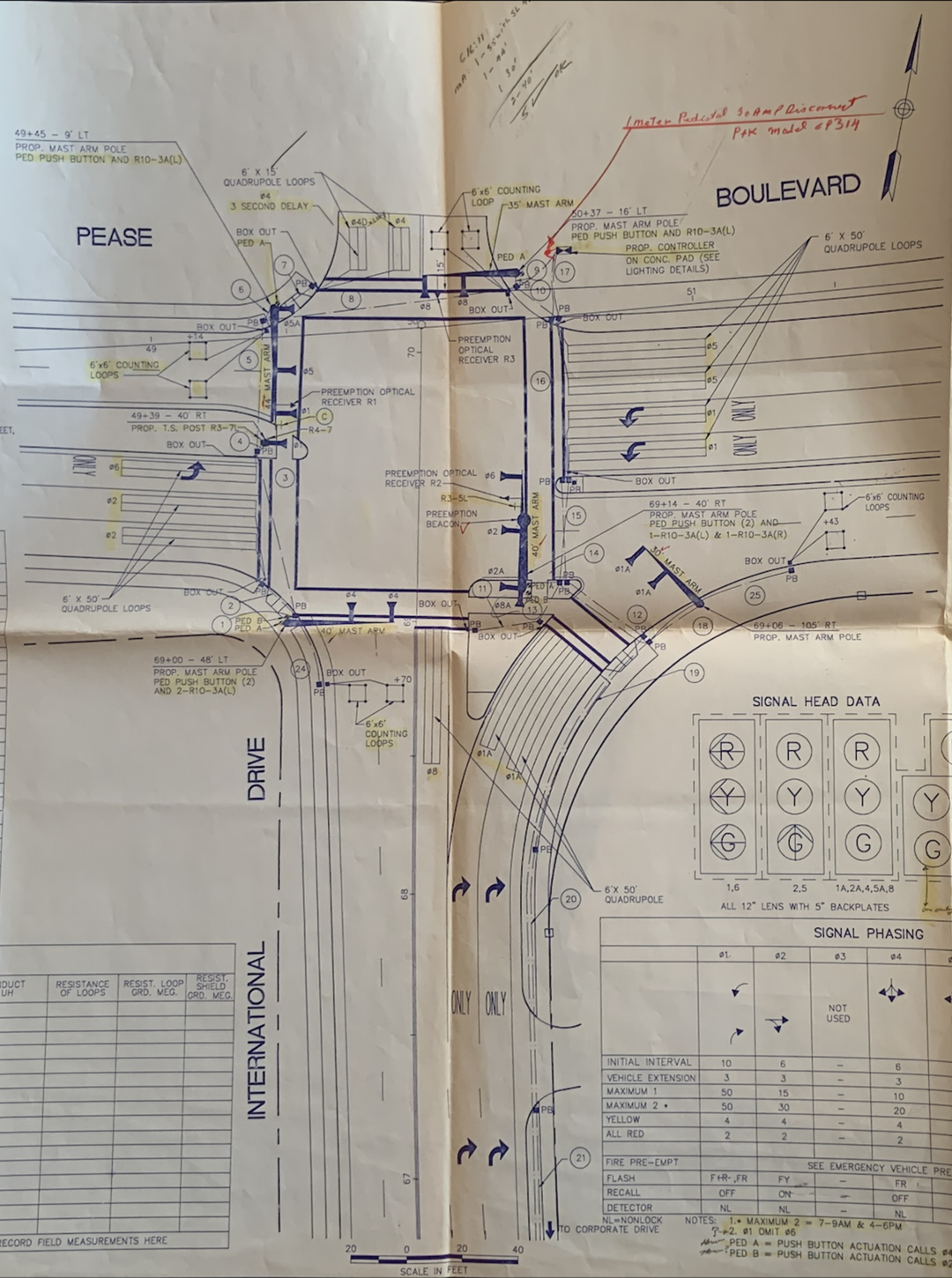
I.D.	STATION TO STATION	NO.	LENGTH	SCHEDULE TYPE	REMARKS
(1)	69+00 – 48' LT — 69+02 – 45' LT	1	4'	40	FROM MAST ARM
(2)	69+02 – 45' LT — 69+14 – 58' LT	1	16'	40	
(3)	69+02 – 45' LT — 49+36 – 42' RT	1	61'	80	
(4)	49+36 – 42' RT — 49+39 – 40' RT	1	4'	40	TO TS POST
(5)	49+39 – 40' RT — 49+42 – 05' LT	1	46'	80	
(6)	49+42 – 05' LT — 49+45 – 09' LT	1	5'	40	TO MAST ARM
(7)	49+42 – 05' LT — 49+61 – 17' LT	1	21'	40	
(8)	49+42 – 05' LT — 50+36 – 11' LT	1	94'	80	
(9)	50+37 – 16' LT — 50+36 – 11' LT	1	4'	40	FROM MAST ARM
(10)	50+36 – 11' LT — 50+64 – 22' LT	1	20'	40	TO CONTROLLER
(11)	68+97 – 22' RT — 69+01 – 46' RT	1	23'	40	
(12)	68+95 – 85' RT — 69+20 – 54' RT	2	40'	80	1 POWER SERVICE
(13)	69+01 – 46' RT — 69+20 – 54' RT	1	20'	40	
(14)	69+17 – 40' RT — 69+20 – 54' RT	1	13'	40	
(15)	69+20 – 54' RT — 69+54 – 56' RT	2	32'	80	1 POWER SERVICE
(16)	69+54 – 56' RT — 50+51 – 01' RT	2	59'	80	1 POWER SERVICE
(17)	50+51 – 01' RT — 50+64 – 22' LT	2	26'	40	1 POWER SERVICE
(18)	68+95 – 85' RT — 69+06 – 105' RT	1	23'	40	TO MAST ARM
(19)	68+95 – 85' RT — 68+15 – 44' RT	1	90'	80	
(20)	68+15 – 44' RT — 67+25 – 44' RT	1•	90'	80	•SEE SHT. 8 TYNCH DTL.
(21)	67+25 – 44' RT — 66+35 – 44' RT	1•	90'	40	•SEE SHT. 8 TYNCH DTL.
(22)	66+35 – 44' RT — 65+45 – 44' RT	1•	90'	40	•SEE SHT. 8 TYNCH DTL.
(23)	65+45 – 44' RT — 64+55 – 44' RT	1•	90'	40	•SEE SHT. 8 TYNCH DTL.
(24)	68+70 – 35' LT — 69+02 – 45' LT	1	35'	40	
(25)	68+95 – 85' RT — 51+30 – 98' RT	1	60'	40	

DETECTOR SCHEDULE

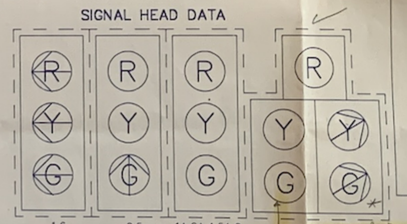
DETECTOR STREET	DIRECTION	LANE	Ø	AMPLIFIER NO.	AMPLIFIER CHANNEL	INDUCT UH	RESISTANCE OF LOOPS	RESIST. LOOP GRD. MEG.	RESIST. SHIELD GRD. MEG.
PEASE BOULEVARD	EASTBOUND	LEFT	6	1	1				
PEASE BOULEVARD	EASTBOUND	CENTER & RIGHT	2	1	2				
PEASE BOULEVARD	WESTBOUND	LEFT & CENTER	1	2	1				
PEASE BOULEVARD	WESTBOUND	CENTER & RIGHT	5	2	2				
INTERNATIONAL DRIVE	NORTHBOUND	LEFT	8	3	1				
INTERNATIONAL DRIVE	NORTHBOUND	CENTER & RIGHT	1	3	2				
DRIVE	SOUTHBOUND	LEFT	4	4	1				
DRIVE	SOUTHBOUND	RIGHT	4D	5	2				
PEASE BOULEVARD	EB EGRESS	LEFT	C	6	1				
PEASE BOULEVARD	EB EGRESS	RIGHT	C	6	2				
PEASE BOULEVARD	WB EGRESS	LEFT	C	7	1				
PEASE BOULEVARD	WB EGRESS	RIGHT	C	7	2				
INTERNATIONAL DRIVE	SB EGRESS	LEFT	C	8	1				
INTERNATIONAL DRIVE	SB EGRESS	RIGHT	C	8	2				
DRIVE	NB EGRESS	LEFT	C	9	1				
DRIVE	NB EGRESS	RIGHT	C	9	2				

C – COUNTING LOOP

RECORD FIELD MEASUREMENTS HERE



SIGNAL HEAD DATA



1,6 2,5 1A,2A,4,5A,8

ALL 12" LENS WITH 5" BACKPLATES

8A Ped only During #1

8 Ped only During Ø 8

SIGNAL PHASING

NO COORD

	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
			NOT USED				NOT USED	
INITIAL INTERVAL	10	6	–	6	10	6	–	6
VEHICLE EXTENSION	3	3	–	3	3	2	–	3
MAXIMUM 1	50	15	–	10	20	10	–	10
MAXIMUM 2 •	50	30	–	20	30	15	–	20
YELLOW	4	4	–	4	4	3	–	4
ALL RED	2	2	–	2	2	2	–	2
FIRE PRE-EMPT	SEE EMERGENCY VEHICLE PRE-EMPTION OPERATION							
FLASH	FLASH	FLASH	–	FLASH	FLASH	FLASH	–	FLASH
RECALL	OFF	ON	–	OFF	ON	OFF	–	OFF
DETECTOR	NL	NL	–	NL	NL	NL	–	NL

NL=NONLOCK

NOTES: 1.• MAXIMUM 2 = 7–9AM & 4–6PM
Ø2, Ø1 OMIT Ø5
PED A = PUSH BUTTON ACTUATION CALLS Ø4 MAX 2
PED B = PUSH BUTTON ACTUATION CALLS Ø2 MAX 1

TO CORPORATE DRIVE

SCALE IN FEET 20 0 20 40

PRE-EMPTION PHASING & PRIORITY

RECEIVER & PRIORITY	PREEMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
R1	1		1 + 5
R2	2		2 + 6
R3	3		8

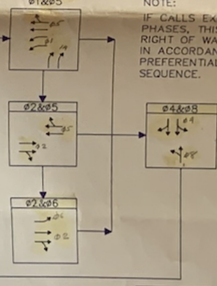
* If pre-empt 3 is called Ø4 will also be called

EMERGENCY VEHICLE PRE-EMPTION OPERATION

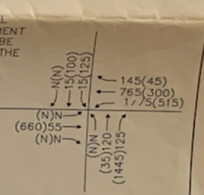
1. PRE-EMPTION OPERATION UTILIZES AVAILABLE PHASES IN 8 PHASE TIMER THROUGH THE MSD PRE-EMPT INPUTS TO EFFECT APPROPRIATE SIGNAL DISPLAYS FOR SINGLE APPROACH MOVEMENTS AS SHOWN IN THE PRE-EMPTION PHASING AND PRIORITY CHART.
2. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
3. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS 1, 2, OR 3 ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (1 HIGHEST AND 3 LOWEST)
4. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR # 1 (OR #2, #3) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4 SECONDS: YELLOW AND 1 SECOND: ALL RED) AND SERVICE EMERGENCY VEHICLE PRE-EMPTION PHASE #2 (OR #1) IF NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION. EMERGENCY VEHICLE PRE-EMPTION PHASES #3 SHALL BE SIMILARLY SERVED.
5. MINIMUM GREEN & NORMAL VEHICLE CLEARANCE, SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
6. EMERGENCY VEHICLE PRE-EMPTION SHALL OVERRIDE COORDINATION.

NO COORDINATION

PREFERENTIAL PHASE SEQUENCE



NOTE:
IF CALLS EXIST ON ALL PHASES, THIS ASSIGNMENT RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.



DESIGN YEAR TRAFFIC VOLUMES AM(PM)

Rev. No.	Date	Description	Made by	Chk. by	Appd. by

Pease Development Authority
Portsmouth, New Hampshire

Pease International Tradeport
Portsmouth, New Hampshire
E.D.A. No. 01-49-03235

Pease Boulevard and International Drive Signalization Plan

Vanasse Hangen Brustlin, Inc.
Engineers • Planners • Scientists
Six Bedford Farms, Kilton Road
Bedford, New Hampshire 03110
603 644 0888 • FAX 603 644 2385

6/16:11

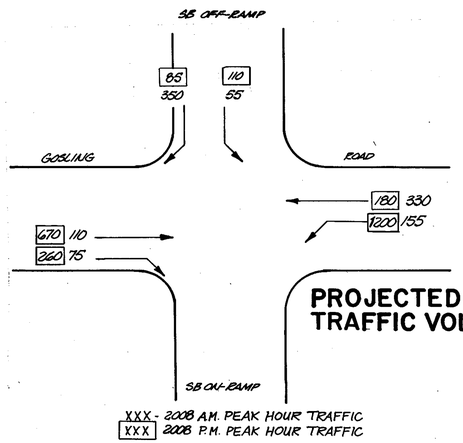
Designed by:	Drawn by:	Checked by:
Scale: 1" = 20'	Date: March 18, 1994	
Sheet:	of	

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	DATE	STATION

NOTEBOOKS — BOOK ____ PAGE ____ ; BOOK ____ PAGE ____ ; BOOK ____ PAGE ____

EXISTING DETAIL — DATE
PROPOSED DESIGN — P. Konigsdale — DATE 10-6-89
SHEET CHECKED — Smith — DATE 10-6-89
AS BUILT DETAILS — DATE



PROJECTED TRAFFIC VOLUMES

SIGNAL HEADS

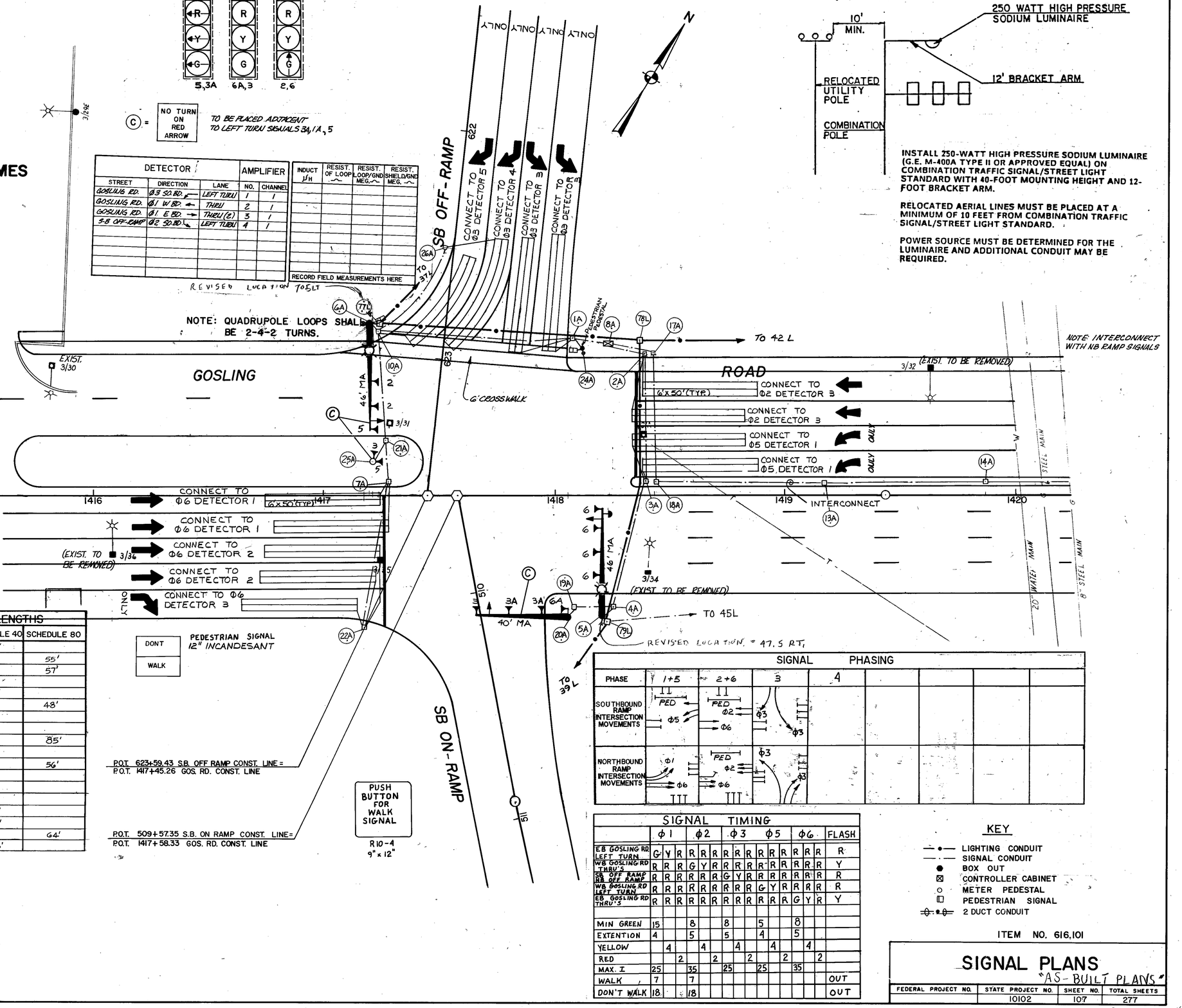
12" LENSES
5" (NOMINAL) BACKPLATES

Ⓒ = NO TURN ON RED ARROW — TO BE PLACED ADJACENT TO LEFT TURN SIGNALS 3A, 1A, 5

DETECTOR			AMPLIFIER	
STREET	DIRECTION	LANE	NO.	CHANNEL
GOSLING RD.	Ø3 SO. BD.	LEFT TURN	1	1
GOSLING RD.	Ø1 W. BD.	THRU	2	1
GOSLING RD.	Ø1 E. BD.	THRU (2)	3	1
SB OFF-RAMP	Ø2 SO. BD.	LEFT TURN	4	1

INDUCT μH	RESIST. OF LOOP ~	RESIST. LOOP/GND MEG.~	RESIST. SHIELD/GND MEG. ~
RECORD FIELD MEASUREMENTS HERE			

REVISED LOCATION TO 51L



P.O.T. 623+59.43 S.B. OFF RAMP CONST. LINE =
P.O.T. 1417+45.26 GOS. RD. CONST. LINE

P.O.T. 509+57.35 S.B. ON RAMP CONST. LINE=
P.O.T. 1417+58.33 GOS. RD. CONST. LINE

SCHEMATIC COMBINATION POLES

INSTALL 250-WATT HIGH PRESSURE SODIUM LUMINAIRE (G.E. M-400A TYPE II OR APPROVED EQUAL) ON COMBINATION TRAFFIC SIGNAL/STREET LIGHT STANDARD WITH 40-FOOT MOUNTING HEIGHT AND 12-FOOT BRACKET ARM.

RELOCATED AERIAL LINES MUST BE PLACED AT A MINIMUM OF 10 FEET FROM COMBINATION TRAFFIC SIGNAL/STREET LIGHT STANDARD.

POWER SOURCE MUST BE DETERMINED FOR THE LUMINAIRE AND ADDITIONAL CONDUIT MAY BE REQUIRED.

FOUNDATIONS

FOUNDATION LOC.	FOUNDATION TYPE	STATION	OFFSET	NOTES
1A	PB	14+08	68' LT	
2A	PB	14+39	62' LT	
3A	PB	14+39	6' LT	
4A	PB	14+25	48' RT	
5A	MA	14+20	56' RT	SIGNAL POLE WITH 46' MAST ARM
6A	SP	14+20	75' LT	SIGNAL POLE W/46' MAST ARM, PEDESTRIAN SIGNAL & PB
7A	PB	14+28	6' LT	
8A	CC	14+24	66' LT	AUXILIARY CABINET
24A	SP	14+12	64' LT	8' SIGNAL PEDESTAL, WITH PEDESTRIAN SIGNAL & PUSH BUTTON
10A	PB	14+24	72' LT	
22A	PB	14+18	57' RT.	
13A	PB	14+17	5' LT.	
14A	PB	14+87	5' LT.	
21A	PB	14+27	24' LT.	
17A	PB	14+43	62' LT.	
18A		14+43	6' LT.	
20A	SP	14+05	53' RT.	SIGNAL POLE W/40' MA.
26A	PB	622+52	4' RT.	

CONDUIT LENGTHS

FROM	TO	SCHEDULE 40	SCHEDULE 80
1A	8A	17'	
2A	3A		55'
3A	4A		57'
4A	5A	5'	
10A	6A	5'	
10A	21A		48'
8A	2A	16'	
1A	24A	5'	
1A	10A		85'
17A	8A	20'	
17A	18A		56'
21A	7A	18'	
18A	13A	73'	
13A	14A	70'	
4A	19A	17'	
19A	20A	5'	
7A	22A		64'
10A	26A	48'	

SIGNAL PHASING

PHASE	1+5	2+6	3	4
SOUTHBOUND RAMP INTERSECTION MOVEMENTS	PED Ø5	PED Ø2 Ø6	Ø3	Ø3
NORTHBOUND RAMP INTERSECTION MOVEMENTS	Ø1 Ø6	PED Ø2 Ø6	Ø3	Ø3

SIGNAL TIMING

	Ø1			Ø2			Ø3			Ø5			Ø6			FLASH
EB GOSLING RD LEFT TURN	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R
WB GOSLING RD THRU'S	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	Y
SB OFF RAMP NB OFF RAMP	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R
WB GOSLING RD LEFT TURN	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R
EB GOSLING RD THRU'S	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	Y
MIN GREEN	15			8			8			5			8			
EXTENTION	4			5			5			4			5			
YELLOW		4			4			4			4			4		
RED			2			2			2			2			2	
MAX. I	25			35			25			25			35			
WALK	7			7												OUT
DON'T WALK	18			18												OUT

KEY

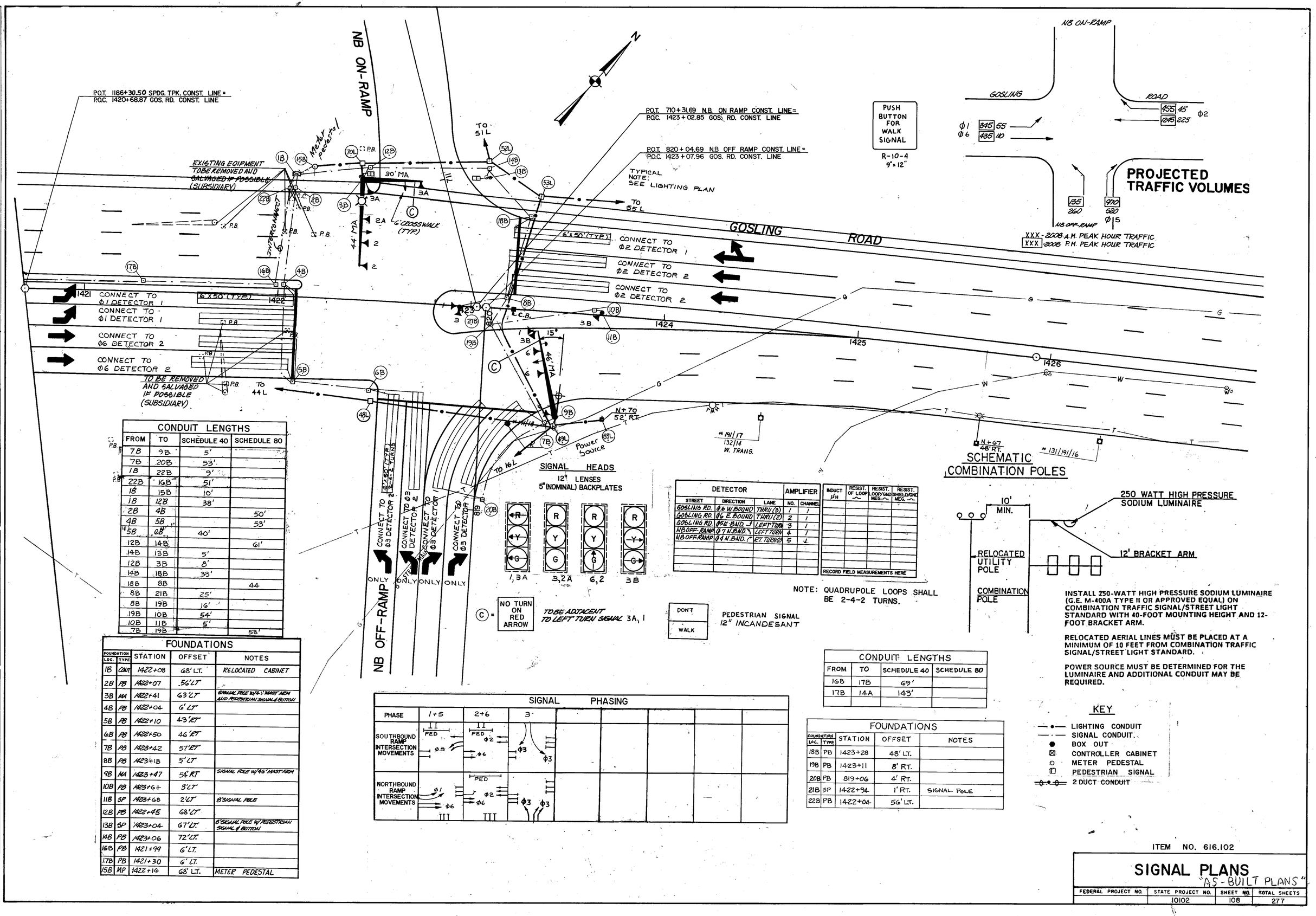
- LIGHTING CONDUIT
- SIGNAL CONDUIT
- BOX OUT
- CONTROLLER CABINET
- METER PEDESTAL
- PEDESTRIAN SIGNAL
- 2 DUCT CONDUIT

ITEM NO. 616,101

SIGNAL PLANS

"AS-BUILT PLANS"

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	10102	107	277



CONDUIT LENGTHS			
FROM	TO	SCHEDULE 40	SCHEDULE 80
7B	9B	5'	
7B	20B	53'	
1B	22B	9'	
22B	16B	51'	
1B	15B	10'	
1B	12B	38'	
2B	4B		50'
4B	5B		53'
5B	6B	40'	
12B	14B		61'
14B	13B	5'	
12B	3B	8'	
14B	18B	33'	
18B	8B		44
8B	21B	25'	
8B	19B	16'	
19B	10B	54'	
10B	11B	5'	
7B	19B		58'

FOUNDATIONS				
FOUNDATION LOC.	TYPE	STATION	OFFSET	NOTES
1B	CONT	1422+08	68' LT.	RELOCATED CABINET
2B	PB	1422+07	56' LT	
3B	MA	1422+41	63' LT	SIGNAL POLE W/45' MAST ARM AND PEDESTRIAN SIGNAL & BUTTON
4B	PB	1422+04	6' LT	
5B	PB	1422+10	43' RT	
6B	PB	1422+50	46' RT	
7B	PB	1423+42	57' RT	
8B	PB	1423+18	5' LT	
9B	MA	1423+47	54' RT	SIGNAL POLE W/45' MAST ARM
10B	PB	1423+64	3' LT	
11B	SP	1423+68	2' LT	8' SIGNAL POLE
12B	PB	1422+45	68' LT	
13B	SP	1423+04	67' LT	8' SIGNAL POLE W/ PEDESTRIAN SIGNAL & BUTTON
14B	PB	1423+06	72' LT	
16B	PB	1421+99	6' LT	
17B	PB	1421+30	6' LT	
15B	MP	1422+16	68' LT	METER PEDESTAL

SIGNAL HEADS
12" LENSES
5" (NOMINAL) BACKPLATES

DETECTOR			AMPLIFIER	
STREET	DIRECTION	LANE	NO.	CHANNEL
GOSLING RD.	@ W. BOUND	THRU (3)	1	1
GOSLING RD.	@ E. BOUND	THRU (2)	2	1
GOSLING RD.	@ E. BND.	LEFT TURN	3	1
NB OFF-RAMP	@ N. BND.	LEFT TURN	4	1
NB OFF-RAMP	@ N. BND.	RT. TURN (2)	5	1

INDUCT μH	RESIST. OF LOOP	RESIST. LOOP/GND MEG.	RESIST. SHIELD/GND MEG.
RECORD FIELD MEASUREMENTS HERE			

NOTE: QUADRUPOLE LOOPS SHALL BE 2-4-2 TURNS.

INSTALL 250-WATT HIGH PRESSURE SODIUM LUMINAIRE (G.E. M-400A TYPE II OR APPROVED EQUAL) ON COMBINATION TRAFFIC SIGNAL/STREET LIGHT STANDARD WITH 40-FOOT MOUNTING HEIGHT AND 12-FOOT BRACKET ARM.

RELOCATED AERIAL LINES MUST BE PLACED AT A MINIMUM OF 10 FEET FROM COMBINATION TRAFFIC SIGNAL/STREET LIGHT STANDARD.

POWER SOURCE MUST BE DETERMINED FOR THE LUMINAIRE AND ADDITIONAL CONDUIT MAY BE REQUIRED.

SIGNAL PHASING

PHASE	1+5	2+6	3				
SOUTHBOUND RAMP INTERSECTION MOVEMENTS	PED Φ5	PED Φ2 Φ6	Φ3 Φ3				
NORTHBOUND RAMP INTERSECTION MOVEMENTS	Φ1 Φ6	PED Φ2 Φ6	Φ3 Φ3				

CONDUIT LENGTHS			
FROM	TO	SCHEDULE 40	SCHEDULE 80
16B	17B	69'	
17B	14A	143'	

FOUNDATIONS				
FOUNDATION LOC.	TYPE	STATION	OFFSET	NOTES
18B	PB	1423+28	48' LT.	
19B	PB	1423+11	8' RT.	
20B	PB	819+06	4' RT.	
21B	SP	1422+94	1' RT.	SIGNAL POLE
22B	PB	1422+04	56' LT.	

KEY
- LIGHTING CONDUIT
- SIGNAL CONDUIT
- BOX OUT
- CONTROLLER CABINET
- METER PEDESTAL
- PEDESTRIAN SIGNAL
- 2 DUCT CONDUIT

ITEM NO. 616.102

SIGNAL PLANS
"AS-BUILT PLANS"

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	10102	108	277

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE 10-6-89
SHEET CHECKED	DATE 10-6-89
AS BUILT DETAILS	DATE

REVISIONS AFTER PROPOSAL

DESCRIPTION	STATION	DATE	NUMBER

SDR PROCCESSED	CMB	DATE 7/7/03
NEW DESIGN	DJD	DATE 8/11/03
SHEET CHECKED	CMB	DATE 8/21/03
AS BUILT DETAILS		DATE

8 PHASE NEMA DUAL RING QUAD LEFT CONTROLLER

SIGNAL PHASING & TIMING

	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
TIMING IN SECONDS	NOT USED	← ←	NOT USED	NOT USED	← ←	→ → →	↑ ↑ ↑	NOT USED
INITIAL INTERVAL	–	8	–	–	5	8	5	–
VEHICLE EXTENSION	–	4	–	–	4	4	4	–
MAXIMUM 1	–	30	–	–	20	30	25	–
MAXIMUM 2	–	30	–	–	20	30	25	–
YELLOW	–	4	–	–	4	4	4	–
ALL RED	–	2	–	–	2	2	2	–
PEDESTRIAN WALK	–	–	–	–	–	–	–	–
PEDESTRIAN CLEAR	–	–	–	–	–	–	–	–
FLASH	–	FY	–	–	FRA	FY	FR	–
RECALL	–	SOFT	–	–	OFF	SOFT	OFF	–
DETECTOR	–	NL	–	–	NL	NL	NL	–
PRE-EMPT PRIORITY	–	2	–	–	2	1	3	–

SYSTEM TO MAXIMUM 2 UNDER COORDINATION

FIRE PREEMPTION

PREEMPT 1	CALLS ø6
PREEMPT 2	CALLS ø2 & ø5
PREEMPT 3	CALLS ø7

FIRE PREEMPTION NOTES:

1. PROGRAM PREEMPTION PRIORITY TO MATCH PHASING CHANGE.
2. PREEMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH OPTICAL RECEIVERS ASSIGNED WITH DESCENDING PRIORITIES AS FOLLOWS: #1 HIGHEST TO #3 LOWEST.
3. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE TIMES SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PREEMPTION DEMAND.

SIGNAL HEAD DATA

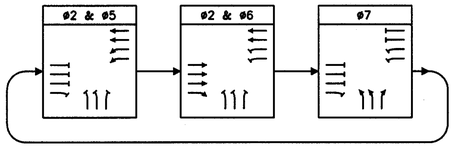
EXISTING

5	2, 6, 7	6A
12" LENS	12" LENS	12" LENS

WITH 5" LOUVERED BACKPLATES

NOTE: ALL SIGNAL HEADS ARE EQUIPPED WITH L.E.D. MODULES.

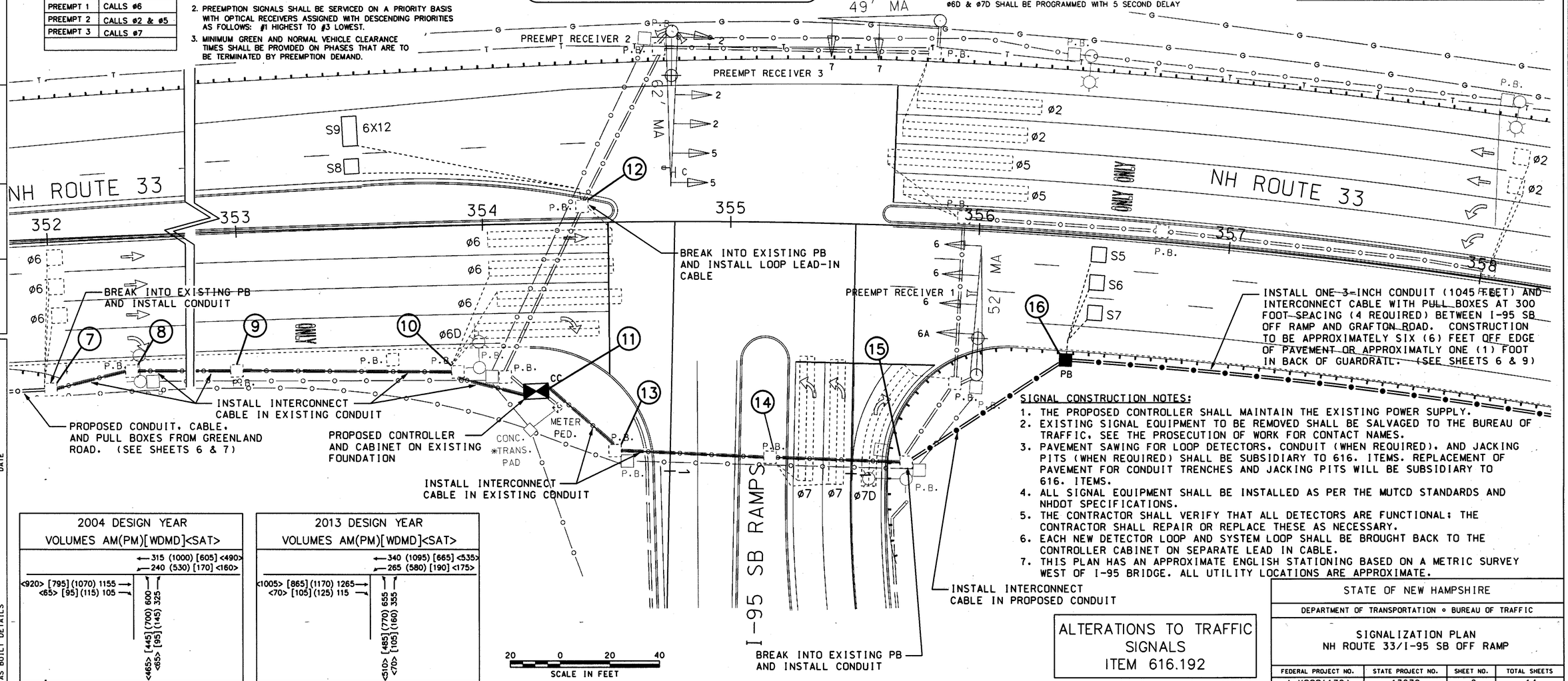
N.E.M.A. PHASE SEQUENCE



DETECTOR SCHEDULE

DETECTOR				AMPLIFIER		INDUCT UH	RESISTANCE OF LOOPS	RESIST. LOOP GRD. MEG.	RESIST. SHIELD GRD. MEG.
STREET	DIRECTION	LANE	ø	NO.	CHANNEL				
NH ROUTE 33	EASTBOUND	THRU (MEDIAN)	6	1	1				
NH ROUTE 33	EASTBOUND	THRU (CEN-LEFT)	6	1	2				
NH ROUTE 33	EASTBOUND	THRU (CEN-RIGHT)	6	2	1				
NH ROUTE 33	EASTBOUND	RIGHT	6D	2	2				
NH ROUTE 33	EASTBOUND	THRU-BACK (MEDIAN)	6	3	1				
NH ROUTE 33	EASTBOUND	THRU-BACK (CEN-LEFT)	6	3	2				
NH ROUTE 33	EASTBOUND	THRU-BACK (CEN-RIGHT)	6	4	1				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (MEDIAN)**	**S5**	10	1				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (CENTER)**	**S6**	10	2				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (RIGHT)**	**S7**	11	1				
NH ROUTE 33	WESTBOUND	LEFT (MEDIAN)	5	5	1				
NH ROUTE 33	WESTBOUND	LEFT (CEN-LEFT)	5	5	2				
NH ROUTE 33	WESTBOUND	THRU (CEN-RIGHT)	2	6	1				
NH ROUTE 33	WESTBOUND	THRU (RIGHT)	2	6	2				
NH ROUTE 33	WESTBOUND	THRU-BACK (CEN-RIGHT)	2	7	1				
NH ROUTE 33	WESTBOUND	THRU-BACK (CEN-LEFT)	2	7	2				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (LEFT)**	**S8**	12	1				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (RIGHT)**	**S9**	12	2				
I-95 SB RAMP	NORTHBOUND	LEFT (MEDIAN)	7	8	1				
I-95 SB RAMP	NORTHBOUND	LEFT (CENTER)	7	8	2				
I-95 SB RAMP	NORTHBOUND	RIGHT	7D	9	1				
						RECORD FIELD MEASUREMENTS HERE			

S = SYSTEM LOOP
ø6D & ø7D SHALL BE PROGRAMMED WITH 5 SECOND DELAY



2004 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>

2013 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>

20 0 20 40
SCALE IN FEET

ALTERATIONS TO TRAFFIC SIGNALS ITEM 616.192

SIGNAL CONSTRUCTION NOTES:

1. THE PROPOSED CONTROLLER SHALL MAINTAIN THE EXISTING POWER SUPPLY.
2. EXISTING SIGNAL EQUIPMENT TO BE REMOVED SHALL BE SALVAGED TO THE BUREAU OF TRAFFIC. SEE THE PROSECUTION OF WORK FOR CONTACT NAMES.
3. PAVEMENT SAWING FOR LOOP DETECTORS, CONDUIT (WHEN REQUIRED), AND JACKING PITS (WHEN REQUIRED) SHALL BE SUBSIDIARY TO 616. ITEMS. REPLACEMENT OF PAVEMENT FOR CONDUIT TRENCHES AND JACKING PITS WILL BE SUBSIDIARY TO 616. ITEMS.
4. ALL SIGNAL EQUIPMENT SHALL BE INSTALLED AS PER THE MUTCD STANDARDS AND NHDOT SPECIFICATIONS.
5. THE CONTRACTOR SHALL VERIFY THAT ALL DETECTORS ARE FUNCTIONAL; THE CONTRACTOR SHALL REPAIR OR REPLACE THESE AS NECESSARY.
6. EACH NEW DETECTOR LOOP AND SYSTEM LOOP SHALL BE BROUGHT BACK TO THE CONTROLLER CABINET ON SEPARATE LEAD IN CABLE.
7. THIS PLAN HAS AN APPROXIMATE ENGLISH STATIONING BASED ON A METRIC SURVEY WEST OF I-95 BRIDGE. ALL UTILITY LOCATIONS ARE APPROXIMATE.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF TRAFFIC

SIGNALIZATION PLAN
NH ROUTE 33/I-95 SB OFF RAMP

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
A-X000(179)	13879	8	14

8 PHASE NEMA DUAL RING QUAD LEFT CONTROLLER

SIGNAL PHASING & TIMING

	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
TIMING IN SECONDS	→	←←←	↓↓	NOT USED	NOT USED	→→	NOT USED	NOT USED
INITIAL INTERVAL	5	8	5	–	–	8	–	–
VEHICLE EXTENSION	4	4	4	–	–	4	–	–
MAXIMUM 1	20	35	20	–	–	35	–	–
MAXIMUM 2	20	35	20	–	–	35	–	–
YELLOW	4	4	4	–	–	4	–	–
ALL RED	2	2	2	–	–	2	–	–
PEDESTRIAN WALK	–	–	–	–	–	–	–	–
PEDESTRIAN CLEAR	–	–	–	–	–	–	–	–
FLASH	FRA	FY	FR	–	–	FY	–	–
RECALL	OFF	SOFT	OFF	–	–	SOFT	–	–
DETECTOR	NL	NL	NL	–	–	NL	–	–
PRE-EMPT PRIORITY	1	2	3	–	–	1	–	–

SYSTEM TO MAXIMUM 2 UNDER COORDINATION

N.E.M.A. PHASE SEQUENCE

FIRE PREEMPTION

PREEMPT 1	CALLS ø1 & ø6
PREEMPT 2	CALLS ø2
PREEMPT 3	CALLS ø3

FIRE PREEMPTION NOTES:

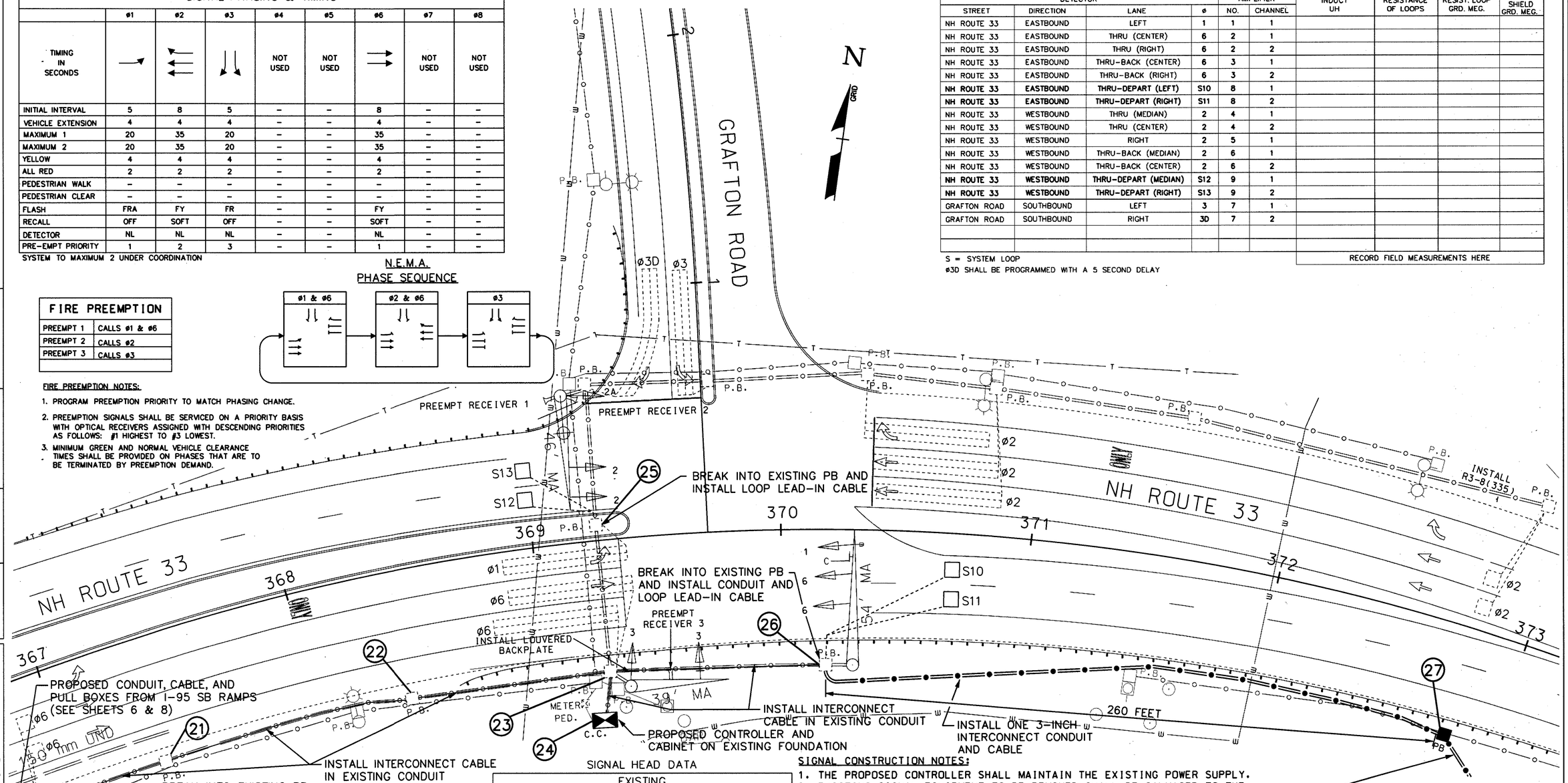
1. PROGRAM PREEMPTION PRIORITY TO MATCH PHASING CHANGE.
2. PREEMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH OPTICAL RECEIVERS ASSIGNED WITH DESCENDING PRIORITIES AS FOLLOWS: #1 HIGHEST TO #3 LOWEST.
3. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE TIMES SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PREEMPTION DEMAND.

DETECTOR SCHEDULE

DETECTOR STREET	DIRECTION	LANE	ø	AMPLIFIER NO.	AMPLIFIER CHANNEL	INDUCT UH	RESISTANCE OF LOOPS	RESIST. LOOP GRD. MEG.	RESIST. SHIELD GRD. MEG.
NH ROUTE 33	EASTBOUND	LEFT	1	1	1				
NH ROUTE 33	EASTBOUND	THRU (CENTER)	6	2	1				
NH ROUTE 33	EASTBOUND	THRU (RIGHT)	6	2	2				
NH ROUTE 33	EASTBOUND	THRU-BACK (CENTER)	6	3	1				
NH ROUTE 33	EASTBOUND	THRU-BACK (RIGHT)	6	3	2				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (LEFT)**	**S10**	**8**	**1**				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (RIGHT)**	**S11**	**8**	**2**				
NH ROUTE 33	WESTBOUND	THRU (MEDIAN)	2	4	1				
NH ROUTE 33	WESTBOUND	THRU (CENTER)	2	4	2				
NH ROUTE 33	WESTBOUND	RIGHT	2	5	1				
NH ROUTE 33	WESTBOUND	THRU-BACK (MEDIAN)	2	6	1				
NH ROUTE 33	WESTBOUND	THRU-BACK (CENTER)	2	6	2				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (MEDIAN)**	**S12**	**9**	**1**				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (RIGHT)**	**S13**	**9**	**2**				
GRAFTON ROAD	SOUTHBOUND	LEFT	3	7	1				
GRAFTON ROAD	SOUTHBOUND	RIGHT	3D	7	2				

RECORD FIELD MEASUREMENTS HERE

S = SYSTEM LOOP
ø3D SHALL BE PROGRAMMED WITH A 5 SECOND DELAY



SIGNAL HEAD DATA

EXISTING

1	2, 6	3	2A
12" LENS	12" LENS	12" LENS	12" LENS

WITH 5" LOUVERED BACKPLATES

NOTE: ALL SIGNAL HEADS TO BE EQUIPPED WITH NEW L.E.D. MODULES.

2004 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>	2013 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>
<165> [170] (185) 345 →	<180> [190] (205) 375 →
60 (670) [240] <165>	65 (735) [265] <180>
55 (425) [180] <75>	60 (465) [200] <85>
← 305 (130) [130] <45>	← 330 (145) [145] <50>
← 495 (865) [530] <480>	← 540 (945) [580] <525>
<815> [720] (1025) 1135 →	<890> [790] (1120) 1245 →

SIGNAL CONSTRUCTION NOTES:

1. THE PROPOSED CONTROLLER SHALL MAINTAIN THE EXISTING POWER SUPPLY.
2. EXISTING SIGNAL EQUIPMENT TO BE REMOVED SHALL BE SALVAGED TO THE BUREAU OF TRAFFIC. SEE THE PROSECUTION OF WORK FOR CONTACT NAMES.
3. PAVEMENT SAWING FOR LOOP DETECTORS, CONDUIT (WHEN REQUIRED), AND JACKING PITS (WHEN REQUIRED) SHALL BE SUBSIDIARY TO 616. ITEMS. REPLACEMENT OF PAVEMENT FOR CONDUIT TRENCHES AND JACKING PITS WILL BE SUBSIDIARY TO 616. ITEMS.
4. ALL SIGNAL EQUIPMENT SHALL BE INSTALLED AS PER THE MUTCD STANDARDS AND NHDOT SPECIFICATIONS.
5. THE CONTRACTOR SHALL VERIFY THAT ALL DETECTORS ARE FUNCTIONAL; THE CONTRACTOR SHALL REPAIR OR REPLACE THESE AS NECESSARY.
6. EACH NEW DETECTOR LOOP AND SYSTEM LOOP SHALL BE BROUGHT BACK TO THE CONTROLLER CABINET ON SEPARATE LEAD IN CABLE.
7. THIS PLAN HAS AN APPROXIMATE ENGLISH STATIONING BASED ON A METRIC SURVEY WEST OF I-95 BRIDGE. ALL UTILITY LOCATIONS ARE APPROXIMATE.

20 0 20 40
SCALE IN FEET

ALTERATIONS TO TRAFFIC SIGNALS
ITEM 616.193

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF TRAFFIC

SIGNALIZATION PLAN
NH ROUTE 33/GRAFTON ROAD (PEASE S. ENTRANCE)

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
A-X000(179)	13879	9	14

		DATE
SDR PROCCESSED	CMB	7/7/03
NEW DESIGN	DJD	8/11/03
SHEET CHECKED	CMB	8/21/03
AS BUILT DETAILS		DATE

NUMBER	DATE	STATION	DESCRIPTION
			REVISIONS AFTER PROPOSAL

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

SDR PROCCESSED	CMB	DATE 7/7/03
NEW DESIGN	DJD	DATE 8/11/03
SHEET CHECKED	CMB	DATE 8/21/03
AS BUILT DETAILS		DATE

SIGNAL HEAD DATA

PROPOSED		
5	2, 6	7
(R) (Y) (G)	R Y (G)	R Y G
12" LENS	12" LENS	12" LENS
WITH 5" LOUVERED BACKPLATES		

NOTE: ALL SIGNAL HEADS SHALL BE EQUIPPED WITH NEW L.E.D. MODULES.

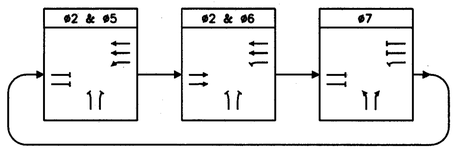
FIRE PREEMPTION

PREEMPT 1	CALLS ø6
PREEMPT 2	CALLS ø2 & ø5
PREEMPT 3	CALLS ø7

FIRE PREEMPTION NOTES:

1. PREEMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH OPTICAL RECEIVERS ASSIGNED WITH DESCENDING PRIORITIES AS FOLLOWS: #1 HIGHEST TO #3 LOWEST.
2. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE TIMES SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PREEMPTION DEMAND.

N.E.M.A. PHASE SEQUENCE

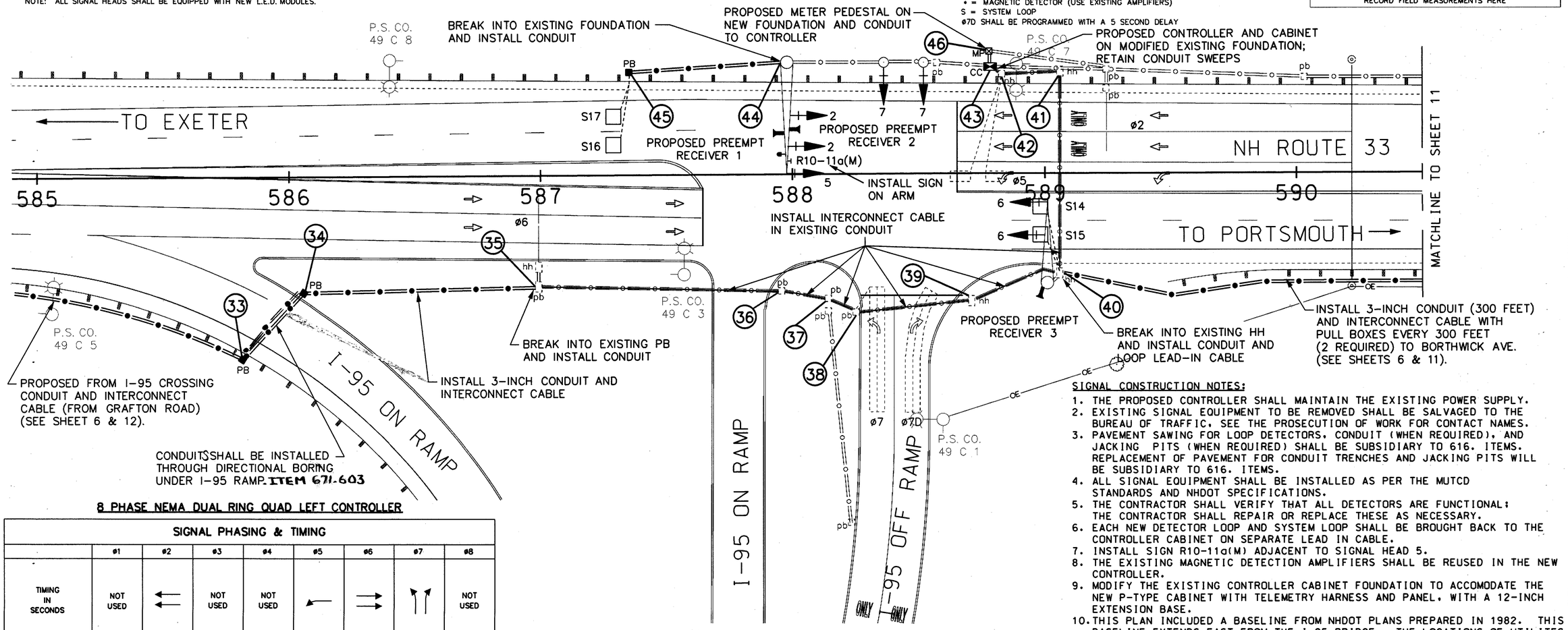


N GRID

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER		INDUCT UH	RESISTANCE OF LOOPS	RESIST. LOOP GRD. MEG.	RESIST. SHIELD GRD. MEG.
STREET	DIRECTION	LANE	ø	NO.	CHANNEL				
NH ROUTE 33	EASTBOUND	THRU (LEFT)	6•	•	•				
NH ROUTE 33	EASTBOUND	THRU (RIGHT)	6•	•	•				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (LEFT)**	**S14**	**3**	**1**				
NH ROUTE 33	**EASTBOUND**	**THRU-DEPART (RIGHT)**	**S15**	**3**	**2**				
NH ROUTE 33	WESTBOUND	LEFT (2)	5	1	1				
NH ROUTE 33	WESTBOUND	THRU (CENTER)	2•	•	•				
NH ROUTE 33	WESTBOUND	THRU (RIGHT)	2•	•	•				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (LEFT)**	**S16**	**4**	**1**				
NH ROUTE 33	**WESTBOUND**	**THRU-DEPART (RIGHT)**	**S17**	**4**	**2**				
I-95 OFF RAMP	NORTHBOUND	LEFT	7	2	1				
I-95 OFF RAMP	NORTHBOUND	RIGHT	7D	2	2				
						RECORD FIELD MEASUREMENTS HERE			

• = MAGNETIC DETECTOR (USE EXISTING AMPLIFIERS)
S = SYSTEM LOOP
ø7D SHALL BE PROGRAMMED WITH A 5 SECOND DELAY



8 PHASE NEMA DUAL RING QUAD LEFT CONTROLLER

SIGNAL PHASING & TIMING

	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
TIMING IN SECONDS	NOT USED	← ←	NOT USED	NOT USED	←	→ →	↑ ↑	NOT USED
INITIAL INTERVAL	-	10	-	-	5	10	8	-
VEHICLE EXTENSION	-	4	-	-	4	4	4	-
MAXIMUM 1	-	25	-	-	40	25	50	-
MAXIMUM 2	-	40	-	-	40	40	40	-
YELLOW	-	4	-	-	4	4	4	-
ALL RED	-	2	-	-	2	2	2	-
PEDESTRIAN WALK	-	-	-	-	-	-	-	-
PEDESTRIAN CLEAR	-	-	-	-	-	-	-	-
FLASH	-	FY	-	-	FRA	FY	FR	-
RECALL	-	SOFT	-	-	OFF	SOFT	OFF	-
DETECTOR	-	LOCK	-	-	NL	LOCK	NL	-
PRE-EMPT PRIORITY	-	2	-	-	2	1	3	-

ø4 & ø8 DUAL ENTRY SYSTEM TO MAXIMUM 2 UNDER COORDINATION

2004 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>	2013 DESIGN YEAR VOLUMES AM(PM)[WDMD]<SAT>
← 550 (845) [545] <455>	← 600 (920) [595] <495>
← 60 (395) [130] <120>	← 65 (430) [145] <135>
<395> [515] (700) 695 →	<430> [565] (770) 760 →
<495> [385] (745) 490 ←	<540> [420] (815) 535 ←
255 (150) [115] <75	275 (165) [125] <85
435 (420) [130] <155	475 (460) [145] <170

PROPOSED SIGN

NO TURN ON RED ARROW
24" X 30"
R10-11a(M)

SCALE IN FEET: 20 0 20 40

NOTES:

1. THE PROPOSED CONTROLLER SHALL MAINTAIN THE EXISTING POWER SUPPLY.
2. EXISTING SIGNAL EQUIPMENT TO BE REMOVED SHALL BE SALVAGED TO THE BUREAU OF TRAFFIC. SEE THE PROSECUTION OF WORK FOR CONTACT NAMES.
3. PAVEMENT SAWING FOR LOOP DETECTORS, CONDUIT (WHEN REQUIRED), AND JACKING PITS (WHEN REQUIRED) SHALL BE SUBSIDIARY TO 616. ITEMS. REPLACEMENT OF PAVEMENT FOR CONDUIT TRENCHES AND JACKING PITS WILL BE SUBSIDIARY TO 616. ITEMS.
4. ALL SIGNAL EQUIPMENT SHALL BE INSTALLED AS PER THE MUTCD STANDARDS AND NHDOT SPECIFICATIONS.
5. THE CONTRACTOR SHALL VERIFY THAT ALL DETECTORS ARE FUNCTIONAL; THE CONTRACTOR SHALL REPAIR OR REPLACE THESE AS NECESSARY.
6. EACH NEW DETECTOR LOOP AND SYSTEM LOOP SHALL BE BROUGHT BACK TO THE CONTROLLER CABINET ON SEPARATE LEAD IN CABLE.
7. INSTALL SIGN R10-11a(M) ADJACENT TO SIGNAL HEAD 5.
8. THE EXISTING MAGNETIC DETECTION AMPLIFIERS SHALL BE REUSED IN THE NEW CONTROLLER.
9. MODIFY THE EXISTING CONTROLLER CABINET FOUNDATION TO ACCOMODATE THE NEW P-TYPE CABINET WITH TELEMETRY HARNESS AND PANEL, WITH A 12-INCH EXTENSION BASE.
10. THIS PLAN INCLUDED A BASELINE FROM NHDOT PLANS PREPARED IN 1982. THIS BASELINE EXTENDS EAST FROM THE I-95 BRIDGE. THE LOCATIONS OF UTILITES ARE APPROXIMATE.

ALTERATIONS TO TRAFFIC SIGNALS ITEM 616.194

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF TRAFFIC

SIGNALIZATION PLAN
NH ROUTE 33/I-95 NB OFF RAMP

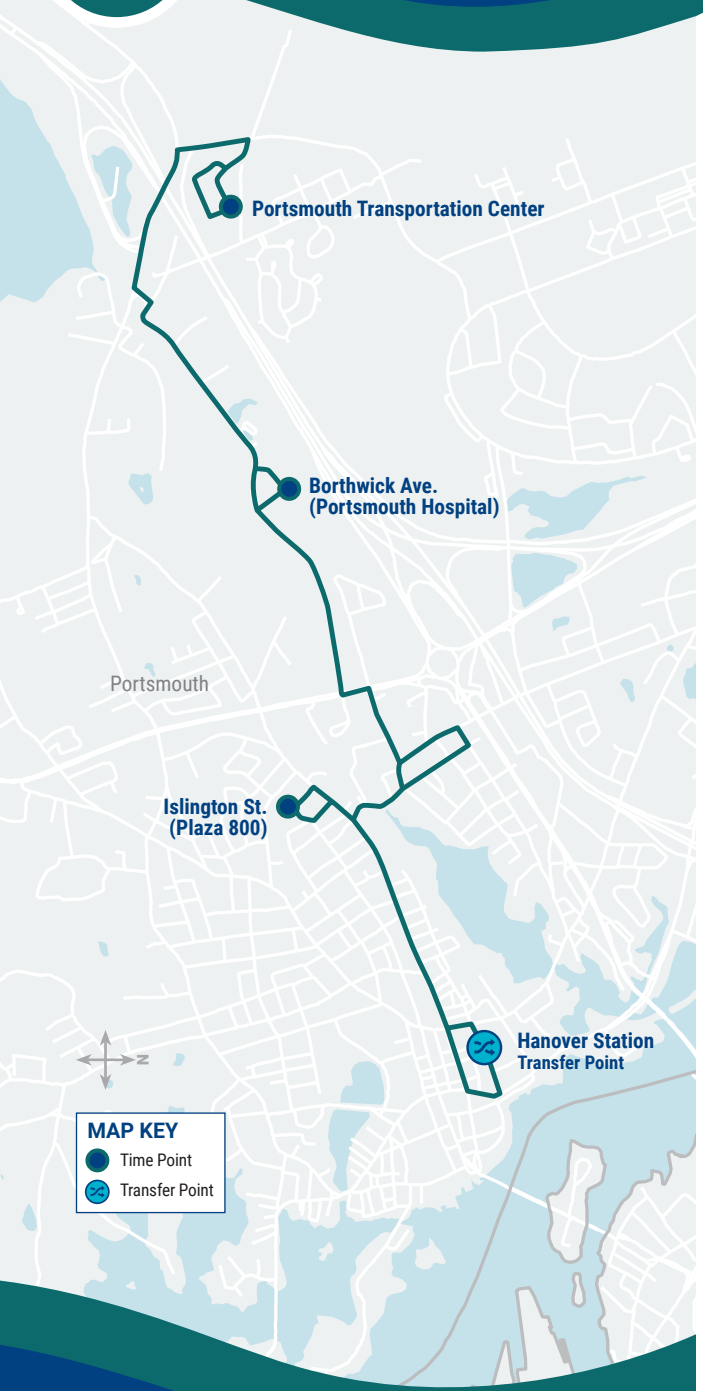
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
A-X000(179)	13879	10	14

APPENDIX J

COAST Bus Schedules & Map

Route 40 Map

Portsmouth • Islington • Borthwick



Ride Information

COAST BUS FARES

Base Cash Fare **$1.50**

All passengers ages 5 and up are required to pay this fare each time they board a COAST bus.

Half-Fare **$ 0.75**

Passengers 65 and older, or passengers with a disability are entitled to pay half the cash fare. Proof of eligibility is required by showing a Medicare card, photo ID with birth date, COAST ADA Paratransit Card, or COAST Half-Fare Card. Please contact COAST to apply for a Half-Fare Card.

Multi-Ride Tickets and Passes

*Available at **www.coastbus.org** or call 603-743-5777, TTY 711.*

Unlimited Monthly Pass **$ 52**

Unlimited rides on COAST Routes for the month.

YOUR RIGHTS

COAST adheres to all Federal regulations regarding Civil Rights. If you need to request an ADA Reasonable Modification/ Accommodation, or if you believe you have been discriminated against or would like to file a complaint under the ADA or Title VI, please contact COAST's Civil Rights Officer at 603-516-0788, TTY 711 or email CivilRights@coastbus.org.

NO SERVICE DAYS

COAST does not operate on the following holidays:

- New Year's Day
- Martin Luther King Jr./ Civil Rights Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Eve Day
- Christmas Day

42 Sumner Drive • Dover, NH 03820

603-743-5777 • TTY 711 • **www.coastbus.org**

This brochure is available in alternative formats upon request.

Bus Schedule & Map 40

Effective 09.17.22

ROUTE 40

Portsmouth • Islington • Borthwick



Find all of the full COAST schedules online at **coastbus.org**



MAP OUT YOUR GAME PLAN

Planning your trip has never been easier!

www.coastbus.org

COAST SYSTEM MAP

OUTBOUND • INBOUND

Route 40 Portsmouth • Islington • Borthwick

How to Read the Schedule

Printed bus schedules only show the timepoints ● (major bus stops where the bus will hold until the scheduled departure time). In between those timepoints are many other stops that you can use. For a full listing of bus stops, visit **www.coastbus.org**, or use the Passio GO! App.

The times shown represent the number of minutes after the hour that the bus will depart from that stop. Last stop times are arrivals. Any exceptions will be noted.

OUTBOUND (M-Sat)	Service On Every Hour		
Hanover Station - Portsmouth Transportation Center	First Bus	Minutes Past Hour	Last Bus
● Hanover Station	6:00am	:00*	7:00pm
● Islington St. (Plaza 800)	6:07am	:07*	7:07pm
● Borthwick Ave. (Ports. Hospital)	6:15am	:15*	7:15pm
● Portsmouth Transportation Center	6:23am	:23*	7:23pm

No Service during the hour of 3pm.

INBOUND (M-Sat)	Service On Every Hour		
Portsmouth Transportation Center- Hanover Station	First Bus	Minutes Past Hour	Last Bus
● Portsmouth Transportation Center	6:24am	:24*	7:24pm
● Borthwick Ave. (Ports. Hospital)	6:31am	:31*	7:31pm
● Islington St. (Plaza 800)	6:39am	:39*	7:39pm
● Hanover Station	6:47am	:47*	7:47pm

No Service during the hour of 3pm.

MAP IT!

For a full listing of bus stops, visit
www.coastbus.org
or use the Passio GO! App.



Passio GO! App

Download the Passio GO! App for real-time information at the Google Play or App store.

Making Connections

Please tell your driver if you are trying to make a connection to another Route.

TRANSFER POINTS

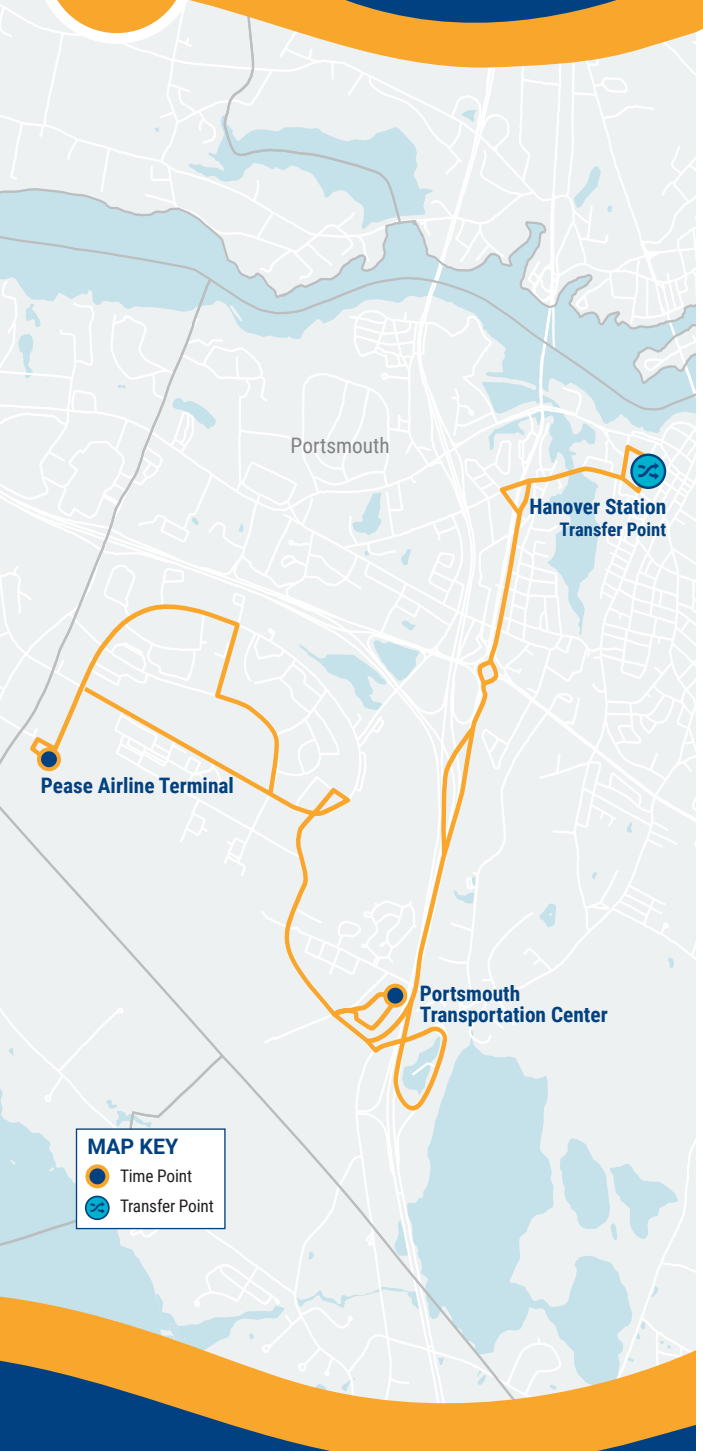
Hanover Station	13 14 40 41 42 43 44
Dover Transportation Center	1 12 13 33 M-F 33 SAT 34
Dover NHDOT Park & Ride (Exit 9)	1 14
Rochester City Hall	6 12 14

14 33 SAT Temporarily suspended part of route due to driver shortage.

Hanover Station, Portsmouth

Route 42 Map

Portsmouth • Pease Shuttle



Ride Information

COAST BUS FARES

Base Cash Fare **$1.50**

All passengers ages 5 and up are required to pay this fare each time they board a COAST bus.

Half-Fare **$ 0.75**

Passengers 65 and older, or passengers with a disability are entitled to pay half the cash fare. Proof of eligibility is required by showing a Medicare card, photo ID with birth date, COAST ADA Paratransit Card, or COAST Half-Fare Card. Please contact COAST to apply for a Half-Fare Card.

Multi-Ride Tickets and Passes

*Available at **www.coastbus.org** or call 603-743-5777, TTY 711.*

Unlimited Monthly Pass **$ 52**

Unlimited rides on COAST Routes for the month.

YOUR RIGHTS

COAST adheres to all Federal regulations regarding Civil Rights. If you need to request an ADA Reasonable Modification/ Accommodation, or if you believe you have been discriminated against or would like to file a complaint under the ADA or Title VI, please contact COAST's Civil Rights Officer at 603-516-0788, TTY 711 or email CivilRights@coastbus.org.

NO SERVICE DAYS

COAST does not operate on the following holidays:

- New Year's Day
- Martin Luther King Jr./ Civil Rights Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Eve Day
- Christmas Day

42 Sumner Drive • Dover, NH 03820
603-743-5777 • TTY 711 • **www.coastbus.org**

This brochure is available in alternative formats upon request.

Bus Schedule & Map 42

COAST

Effective 07.01.22

ROUTE 42

Portsmouth • Pease Shuttle



Find all of the full COAST schedules online at **coastbus.org**



MAP OUT YOUR GAME PLAN

Planning your trip has never been easier!

www.coastbus.org

COAST SYSTEM MAP

OUTBOUND • INBOUND

Route 42 Portsmouth • Pease Shuttle

How to Read the Schedule

Printed bus schedules only show the timepoints (major bus stops where the bus will hold until the scheduled departure time). In between those timepoints are many other stops that you can use. For a full listing of bus stops, visit **www.coastbus.org**, or use the Passio Go! App.

The times shown represent the number of minutes after the hour that the bus will depart from that stop. Last stop times are arrivals. Any exceptions will be noted.

OUTBOUND (M-F)	Service On Every Hour		
Hanover Station - Pease Airline Terminal	First Bus	Minutes Past Hour	Last Bus
Hanover Station	6:22am	:00*	6:00pm
Portsmouth Transportation Center	6:33am	:11*	6:11pm
Pease Airline Terminal	6:42am	:20*	6:20pm

**Regular hourly schedule starts during the hour of 7am and No Service during the hour of 10am.*

INBOUND (M-F)	Service On Every Hour		
Pease Airline Terminal - Hanover Station	First Bus	Minutes Past Hour	Last Bus
Pease Airline Terminal	6:43am	:21*	6:21pm
Portsmouth Transportation Center	6:47am	:25*	6:25pm
Hanover Station	6:57am	:35*	6:35pm

**Regular hourly schedule starts during the hour of 7am and No Service during the hour of 10am.*

MAP IT!

For a full listing of bus stops, visit
www.coastbus.org
or use the Passio GO! App.



Passio GO! App
Download the Passio GO! App for real-time information at the Google Play or App store.

Making Connections

Please tell your driver if you are trying to make a connection to another Route.

TRANSFER POINTS

Hanover Station	13 14 40 41 42 43 44
Dover Transportation Center	1 12 13 33 M-F 33 SAT 34
Dover NHDOT Park & Ride (Exit 9)	1 14
Rochester City Hall	6 12 14

14 33 SAT Temporarily suspended part of route due to driver shortage.

Hanover Station, Portsmouth

Newington

56-01
Smith Great Bay Farm Ltd Ptr
Po Box 156
Greenland, NH 03840-0156

53-05
Barbara Baird Rev Trust 2001
Barbara Baird Trustee
316 Newington Rd
Newington, NH 03801

54-06
Brian D & Mary Ann Short
336 Newington Rd
Newington, NH 03801

54-05
Alexander Richard Jack & Elaine M D'orto-Jack
62 Airport Road
Newington, NH 03801

54-03
Reginald Savageau & Pauline Church
66 Airport Road
Newington, NH 03801

54-02
Skillings, Brent Scott
56 Airport Road
Newington, NH 03801

52-06
Town of Newington
205 Nimble Hill Rd
Newington, NH 03801

52-05
Brendan W Cornwell & Sara Zoe Patterson
67 Airport Rd
Newington, NH 03801

52-04
Scott C. & Sandra M. Taylor
59 Airport Road
Newington, NH 03801

52-07
Wayne C. Wood
428 Newington Road
Newington, NH 0380

51-15
Kenneth L Peterson Rev. Trust
Kenneth L Peterson, Trustee
408 Newington Road
Newington, NH 03801

51-09
Wayne C Wood, Rev Trust
Wayne C Wood & Patricia L Bennett-Wood, Trustees
428 Newington Rd
Newington, NH 03801

47-01A
Alan N Thomas, Sr
501 Newington Rd
Newington, NH 03801

47-01B
Alan N. Thomas
501 Newington Road
Newington, NH 03801

51-06
Joanne L. Drinkwater Rev Trust
Joanne L. Drinkwater Trustee
36 Concord Point
Rye, NH 03870

51-09B
John W & Laura L Stone
436 Newington Rd
Newington, NH 03801

47-04B
Roger W Heath
468 Newington Rd
Newington, NH 03801

24-12
Town of Newington
205 Nimble Hill Rd
Newington, NH 03801

24-13
Town of Newington
205 Nimble Hill Rd
Newington, NH 03801

23-34
Mary Jeppesen Rev. Trust 50%
Russell Jeppesen Rev. Trust 50%
Po Box 9
Greenland NH 03840-0009

23-35
Michael Metzger & Myhanh Nguyen
23 Welsh Cove Drive
Newington, NH 03801

23-36
Marple Revoc Trust
Robert A. & Anastasia L Marple
15 Welsh Cove Drive
Newington, NH 03801

23-07B
Karen J Schaffer
338 Little Bay Rd
Newington, NH 03801

23-07A
Donald & Sylvia Bly Rev. Trust
340 Little Bay Rd
Newington, NH 03801

23-08
Gurubhai K Khalsa
11 Old Post Road
Newington, NH 03801

23-08-1
Greta & Donald Mcevoy
888 Mcintyre Rd
Newington NH 03801

23-11
Jennifer R. Ruel,
9 Little Bay Road Ext
Newington, NH 03801

23-09
Scott W. & Patricia Borkland
5 Little Bay Rd Ext.
Newington, NH 03801

23-20
Susan Gordon
299 Little Bay Rd
Newington NH 03801

23-19
Curtis J. Pickering
293C Little Bay Rd
Newington, NH 03801

23-18
Thomas P Redden Jr Rev Living Tr
Thomas P. Redden Jr., Trustee
283 Little Bay Rd
Newington, NH 03801

23-05
Dean R & Emily J Turner
275 Little Bay Road
Newington, NH 03801

23-04
Ruth K Fletcher Trustee
271 Little Bay Road
Newington, NH 03801

23-14
Brian C. Rogers Rev Trust
Brian C. Rogers Trustee
2 Little Bay Rd Ext
Newington, NH 03801

23-13
Donna L. Gifford
6 Little Bay Rd Ext.
Newington, NH 03801

23-12
William J. Murray, Trustee
10 Little Bay Rd Ext.
Newington, NH 03801

23-17
Marlen Frink Rev. Trusts
Marlen Frink Trustee
264 Little Bay Rd
Newington, NH 03801

23-03
Kimberly & Brian Dumont Rev Trusts
Kimberly & Brian Dumont, Trustees
251 Little Bay Road
Newington, NH 03801

23-15
Seth M. Frink & Debbie Shlain-Frink
1408 Centre St.
Newton, MA 02459

23-30
Robert M Chaikin, Revoc Trust
Robert M Chaikin, Trustee
59 Atlantic Avenue
North Hampton NH 03862

23-31
Dennis & Andrea Glynn
34 Welsh Cove Drive
Newington, NH 03801

23-32
Thomas B. & Catherine B. Hazelton
44 Welsh Cove Drive
Newington, NH 03801

23-33
Marlon S. Frink
264 Little Bay Road
Newington, NH 03801

23-23
Lulu Arline Pickering &William A Gilbert
339 Little Bay Rd
Newington, NH 03801

18-03A
John A. Byron Rev. Trust
John A. Byron Trustee
11 Hannah Ln
Newington NH 03801

18-03B
John Liatsis
271 Nimble Hill Rd
Newington, NH 03801

24-01
Alexander C. O'Brien
293 Nimble Hill Road
Newington, NH 03801

24-02
Paul & Carolyn Harvey
Carolyn Harvey, Trustee
517 New Castle Ave
Portsmouth, NH 03801

24-04
Christopher A & Cynthia B. Cross
327 Nimble Hill Road
Newington, NH 03801

24-11
Town of Newington Church UCC
c/o Cheryl Bagley
30 Hannah Ln.
Newington, NH 03801

24-03
MCEVOY, GRETA
888 MCINTYRE ROAD
Newington, NH 03801

24-12
Town of Newington
205 Nimble Hill Road
Newington, NH 03801

24-10
Town of Newington
205 Nimble Hill Road
Newington, NH 03801

24-06
Town of Newington
Town Office
205 Nimble Hill Road
Newington, NH 03801

23-08-3
Pease Development Authority
360 Corporate Drive
Portsmouth, NH 03801

12-12
Keith C. & Sara F. Frizzell
Keith C. Frizzell, Trustee
P.o. Box 310
Dover, NH 03820

18-02
Annette Lee Lord & Beverly Packard
8 Fox Point Road
Newington, NH 03801

18-01
Jay M. Link Ii & Deirdre L. Link
16 Fox Point Road
Newington, NH 03801

18-04
O'Reilly Family Rev Trust
John James & Luanne O'Reilly, Trustees
7 Fox Point Road
Newington, NH 03801

18-05
Renato J. Maldini
11 Fox Point Road
Newington, NH 03801

18-06

Frank Family Rev Trust of 2007
Vincent & Shirley Frank, Trustees
19 Fox Point Road
Newington, NH 03801

18-07
Jason M. Cole & Heather Cole-Geraci
61 Old Post Rd
Newington, NH 03801

18-11
Wendy Lou Sweeney, Rev Trust
Wendy Lou Sweeney, Trustee
28 Fox Point Road
Newington, NH 03801

18-08
Ralph & Barbara Cooley
37 Fox Point Rd
Newington, NH 03801

12-15
19 NIMBLE HILL REALTY LLC
19 Nimble Hill Rd
Newington, NH 03801

12-16
25 Nimble Property Ownes, LLC
133 Pearl St.
Boston, MA 02110

12-11A
Cynthia A Lyons
49 Nimble Hill Road
Newington, NH 03801

12-10-B
Michael P. & Robin H. Patenaude
65 Nimble Hill Rd.
Newington, NH 03801

12-12
Keith C. & Sara F Frizzell
Keith C. Frizzell, Trustee
P.O. Box 310
Dover, NH 03820

ACROSS THE SPAULDING:

07-14
Sprague Operating Resources LLC
185 International Dr
Portsmouth, NH 03801

07-16
Short Family Ltd Partnership
373 Shattuck Way
Newington, NH 03801

08-01
Short Family Ltd Partnership
373 Shattuck Way
Newington, NH 03801

13-01A
Mo Y Wong, Living Rev Trust
Mo Y Wong, Trustee
110 Hartford Drive
Portsmouth, NH 03801

13-01
WONG, JOHN
1 Fairway Dr
Dover, NH 03820

13-05A
Rollins Farm Holdings, LLC
35 Hodgdon Ln.
Newington, NH 03801

13-12
Rollins Farm Holdings, LLC
35 Hodgdon Ln.
Newington, NH 03801

13-06A
NEWINGTON FALLS LLC
155 BORTHWICK AVE
SUITE 200 EAST
PORTSMOUTH, NH 03801

19-05
Park River LLC
23 River Rd.
Newington, NH 03801

19-04
LAM, KARLA
801 ENTRAL AVENUE
DOVER, NH 03820

19-03
19 NIMBLE HILL
19 NIMBLE HILL ROAD SUITE 2
NEWINGTON, NH 03801

19-02
The Storage Barn of Newington LLC
35 Hodgdon Ln.
Newington, NH 03801

19-01B
Wal-Mart Stores, Inc. #2398
Property Tax Dept Ms 0555
PO Box 8050
Bentonville, AR 72712-8050

19-01
Wal-Mart Stores, Inc #2398
Property Tax Dept Ms 0555
PO Box 8050
Bentonville, AR 72712-8050

19-01A
2204 WOODBURY AVE LLC
2204 WOODBURY AVENUE
NEWINGTON, NH 03801

26-01
Holy Trinity Lutheran Church
22 Fox Run Rd
Newington, NH 03801

26-02
Rubin Newington, LLC
308 E. Main St.
Norton, MA 02766

26-03
Seritage SRC Finance LLC
c/o Seritage Growth Properties
500 Fifth Avenue, Suite 1530
New York, NY 10110

26-04
SUB HOLDINGS LLC, PENNEY PROPERTY
Po Box 10001
Dallas, TX 75301-1

34-03
RPT CROSSINGS LLC
19 W 44TH STREET
SUITE 1002
NEW YORK, NY 10036

34-03-1
MAG RE HOLDINGS-NEWINGTON LLC
777 WASHINGTON ST
NEWTON, MA 02460

34-03-2
RPT CROSSINGS LLC
19 W 44TH STREET
SUITE 1002
NEW YORK, NY 10036

34-03-3
BUGABOO CREEK OF NEWINGTON
C/O KEYPOINT PARTNERS
ONE BURLINGTON WOODS
BURLINGTON, MA 01803

34-03-4
IHOP PROPERTIES
450 NORTH BRAND BLVD
7TH FLOOR ATTN: TAX DEPT
GLENDALE, CA 91203-1

34-03-5
RPT CROSSINGS LLC
19 W 44TH STREET
SUITE 1002
NEW YORK, NY 10036

34-03-6
BEST BUY STORES LP
7601 PENN AVE S
RICHFIELD, MN 555423-364

GREENLAND

R21-018-000
Keith J Tobin & Emily E Harris
7 Portsmouth Ave.
Greenland, NH 03840

R21-019-000
Robert F & Theresa Krasko
11 Portsmouth Ave.
Greenland, NH 03840

R21-020-000
Mark A & Shawna L Chag
15 Portsmouth Ave.
Greenland, NH 03840

R21-021-000
Robert S Furino
17 Portsmouth Ave.
Greenland, NH 03840

R21-017-000
Marilyn Twombly
703 Narrow Leaf Dr.
Upper Marlborough, MD 20774

R22-015-000
Smith Great Bay Farm Ltd Ptr
PO Box 156
Greenland, NH 03840-0156

R22-033-000
Pease Development Authority
55 International drive
Portsmouth, NH 03801

R22-032-000
Pease Development Authority
55 International drive
Portsmouth, NH 03801

EVERSOURCE ENERGY

December 6, 2022

1700 Lafayette Road
Portsmouth, NH 03801

Michael J Busby
603-436-7708 x555-5678
michael.busby@eversource.com

Craig Langton
Tighe & Bond, Inc.
177 Corporate Drive
Portsmouth, NH 03801

Dear Mr. Langton:

I am responding to your request to confirm the availability of electric service for the proposed 80 Rochester Avenue project being constructed for/by Aviation Avenue Group, LLC.

The proposed project consists of a 1-story ±191,600 SF Manufacturing and approximately 18,144 s/f of office space with at grade parking. The proposed development will be constructed along New Hampshire Avenue.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The service will be as shown on attached marked up Utility Plan C-104, dated 12/6/2022. The proposed building service will be fed from a new transform adjacent to the building as determined by Eversource Engineering as depicted on utility plan C-104, dated 12/6/2022. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawing titled "Overall Utility Plan" sheet C-104 dated 12/6/2022, shows transformer locations to service your proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Portsmouth Office, 603-436-7708 Ext. 555-5678

Respectfully.

Michael J. Busby, PE
NH Eastern Regional Engineering and Design Manager, Eversource

cc: (via e-mail)
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

Unitil
Northern Utilities, Inc.

December 1st, 2022

Craig Langton, PE
Project Engineer
Tighe & Bond
177 Corporate Drive Portsmouth, NH

Natural Gas to 100 New Hampshire Ave - Portsmouth, NH

Hi Craig,

Unitil/Northern Utilities Natural Gas Division has reviewed the requested site for natural gas service:

Unitil hereby confirms that natural gas is available for the proposed building at 100 New Hampshire Ave - Portsmouth, NH.

If you have any questions, please contact me at 603-534-2379.

Sincerely,



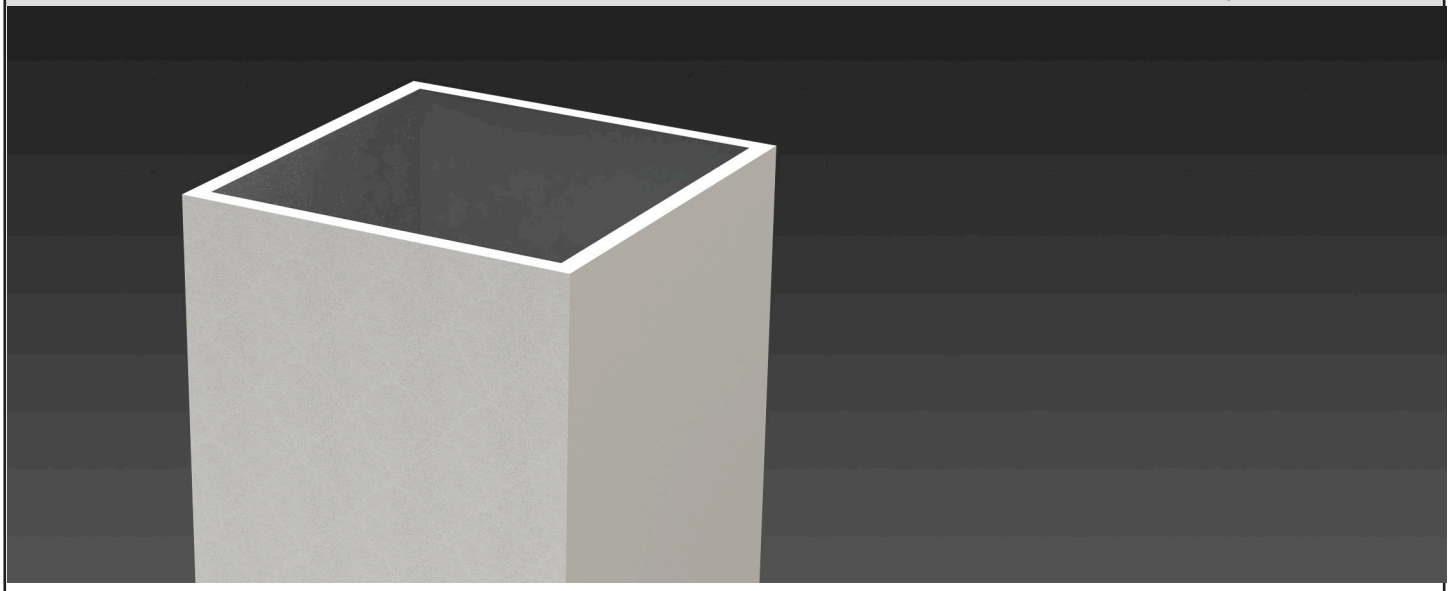
Dave MacLean
Senior Business Development Rep
Unitil

T 603.294.5261
M 603.534.2379
F 603.294.5264
Email macleand@unitil.com

NLS LIGHTING

SSAP

Square Straight Aluminum Pole



Height
10' - 25'

Pole Shaft
Square straight aluminum 6061 alloy, extruded pole shaft. Heat treated to produce a T6 temper. Ground lug welded inside hand hole opposite side of the Pole Extrusion. Pole shaft is welded to base plate on top and bottom of base plate.

Base Plate
Machined from aluminum. The Base Plate vary in size from 3/4" thick for poles 10 to 20 feet, or 1" thick for poles 20 feet and over.

Anchor Bolts
All anchor bolts are hot dipped galvanized steel and come with two galvanized nuts and washers per bolt. Minimum yield strength 50,000 psi. Anchor bolts are not included for Custom Bolt Circle.

Base Cover
All base covers are fabricated two-piece 6063 aluminum and powder coated to match the pole.

Hand-Hole
A reinforced hand-hole is 12" on center from the base plate and is constructed of 3"x 5" rectangular aluminum tubing which is welded to pole shaft for added strength. The hand-hole covers are provided with internal bridge support and powder coated to match pole finish.

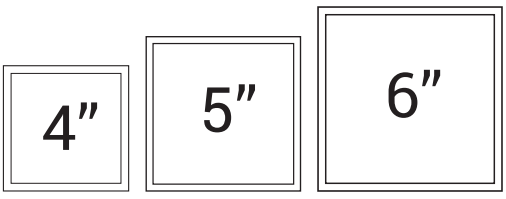
Pole Cap
All poles come with removable polymer pole cap installed. All pole caps are black finish.

Finish
All poles are treated with sand blast media for a near white finish, power blasted with 100 psi prior to powder coat application. Poles are pre-heated then electrostatically applied polyester powder coat with a 3 to 5 mil thickness for maximum adherence.

Marine Grade Finish
All poles are washed through a 5-stage cleaning system with a deionized rinse, a 3 to 5 mils zinc rich durable polyester primer powder coat, followed by a 3 to 5 mils super durable polyester powder coat finish.

Anodized Under Powder
Anodized Under Powder (AUP) poles are dipped in a 3 step process for a clear anodized finish inside and outside of the pole. The final stage is electrostatically applied polyester powder coat with a 3 to 5 mil thickness for maximum adherence.

Vibration Dampener
The Vibration Dampener is factory installed. The Vibration Dampener consists of a rugged galvanized chain coated with heavy duty polyester tubing that is factory secured at the bottom 2-3rds of the pole and field secured by contractor at the base during installation.



Project Name:	Type:

SSAP ORDERING GUIDE

Cat#

Square
Straight
Aluminum Pole
(SSAP)

Height

10′ **(10)**
12′ **(12)**
14′ **(14)**
16′ **(16)**
18′ **(18)**
20′ **(20)**
22′ **(22)**
24′ **(24)**
25′ **(25)**

Pole Dimension

4″ Square
(4S)

5″ Square
(5S)

6″ Square
(6S)

Gauge

.120
Wall Thickness
(120)❶

.188
Wall Thickness
(188)

.25
Wall Thickness
(250)

Base Pattern

(10′-20′)
8 3/16″- 10 3/16″
Bolt Circle
(9BC)

(22′-Over)
11 1/2″- 14″
Bolt Circle
(12BC)

Custom
Bolt Circle
(CBC)
** Consult Factory*

Mounting

Single
(SGL)

Double
(D-90)
(D-180)

Triple
(T-90)

Quad
(QD)

No Drill
(ND)
**Tenon Option*

Tenon

2 3/8″ Round **(T2R)**

3″ Round **(T3R)**

3 1/2″ Round **(T312R)**

4 1/2″ Round **(T412R)**

3 1/2″ Square **(T312S)**

4 1/2″ Square **(T412S)**

5 1/2″ Square **(T512S)**

Color

Bronze Textured
(BRZ)

White Textured
(WHT)

Smooth White
Gloss
(SWT)

Silver
(SVR)

Green Textured
(GRN)

Hunter Green Textured
(HGN)

Black Textured
(BLK)

Smooth Black
Gloss
(SBK)

Graphite Textured
(GPH)

Grey Textured
(GRY)

Custom
(CS)

Bolts

3/4″ x 30″
(3430)

1″ x 36″
(136)

Less Anchor
Bolts
(LAB)

Options

GFI Kit
(GFI20A)
20 Amp
Weather Proof Receptacle

GFI
Provision Only
(PROV)

1/2″ Coupling
(COUP)
** Specify Location*

Vibration Dampener
(VD)

Extra Hand Hole
(XHH)
** Specify Location*

Marine Grade
Finish
(MGF)

Anodized Under Powder
(AUP)

Notes:

❶ .120 Wall Thickness only available in Poles 16′ or shorter.
Pole Dimension of 6″ not available with .120 Wall Thickness.

Max. allowable EPA - SSAP poles (per AASHTO LRFDLTS-1)

Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dia., in.	Base Plate	Bolt Circle	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (lb)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
SSAP-10-4S-120-9BC	10	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.3	208	7.3	208	6.4	208	5.1	208	4.0	208	3.2	208	2.5	208	1.9	208	1.4	208
SSAP-12-4S-120-9BC	12	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	6.9	173	5.1	128	4.5	128	4.0	128	3.2	128	2.4	128	1.7	128	1.1	128	0.6	128	--	128
SSAP-14-4S-120-9BC	14	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	6.0	150	4.6	115	3.3	83	2.8	83	2.5	83	1.5	83	0.8	83	0.2	83	--	83	--	83	--	83
SSAP-15-4S-120-9BC	15	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	7.1	178	4.9	123	3.8	95	2.7	68	2.1	68	1.8	68	1.0	68	0.2	68	--	68	--	68	--	68	--	68
SSAP-16-4S-120-9BC	16	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	5.2	130	3.9	98	2.9	73	1.9	60	1.3	60	0.9	60	0.2	60	--	60	--	60	--	60	--	60	--	60
SSAP-18-4S-120-9BC	18	0.120	4	9"sq X 3/4"	9-3/16"	3/4"x30"	3.7	93	2.6	65	1.6	60	0.7	60	0.3	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-10-4S-188-9BC	10	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.9	225	6.4	225	5.4	225	4.4	225	3.8	225
SSAP-12-4S-188-9BC	12	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.4	225	6.4	225	5.2	225	4.2	225	3.2	225	2.6	225	2.0	225
SSAP-14-4S-188-9BC	14	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	7.2	180	6.3	180	5.3	180	4.3	180	3.3	180	2.3	180	1.7	180	1.1	180	0.4	180
SSAP-15-4S-188-9BC	15	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	8.2	205	5.7	143	5.0	143	4.5	143	3.3	143	2.5	143	1.7	143	1.0	143	0.4	143	--	143
SSAP-16-4S-188-9BC	16	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	8.8	220	6.0	150	4.6	115	4.0	115	3.3	115	2.5	115	1.5	115	0.9	115	0.3	115	--	115	--	115
SSAP-18-4S-188-9BC	18	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	8.7	218	5.6	140	4.2	105	3.0	75	2.3	75	2.0	75	1.1	75	0.2	75	--	75	--	75	--	75	--	75
SSAP-20-4S-188-9BC	20	0.188	4	9"sq X 3/4"	9-3/16"	3/4"x30"	5.3	133	4.0	100	2.6	65	1.5	60	1.0	60	0.7	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-22-4S-188-12BC	22	0.188	4	12"sq X 1"	12-3/4"	1"x36"	3.6	90	2.3	60	1.2	60	0.4	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-4S-188-12BC	24	0.188	4	12"sq X 1"	12-3/4"	1"x36"	2.5	63	1.3	60	0.1	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-4S-188-12BC	25	0.188	4	12"sq X 1"	12-3/4"	1"x36"	1.9	60	0.6	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-15-4S-250-9BC	15	0.250	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	8.3	225	7.0	225	5.4	225	4.0	225	3.0	225	1.9	225	1.1	225	0.6	225
SSAP-16-4S-250-9BC	16	0.250	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	7.2	180	6.1	180	5.4	180	4.2	180	3.0	180	2.0	180	1.0	180	0.3	180	--	180
SSAP-18-4S-250-9BC	18	0.250	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	6.6	165	4.9	123	4.1	123	3.5	123	2.4	123	1.3	123	0.4	123	--	123	--	123	--	123
SSAP-20-4S-250-9BC	20	0.250	4	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	6.3	158	4.6	115	3.1	78	2.7	78	2.0	78	0.9	78	--	78	--	78	--	78	--	78	--	78
SSAP-22-4S-250-12BC	22	0.250	4	12"sq X 1"	12-3/4"	1"x36"	5.6	140	4.0	100	2.7	68	1.7	60	1.2	60	0.7	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-4S-250-12BC	24	0.250	4	12"sq X 1"	12-3/4"	1"x36"	4.0	100	2.6	65	1.4	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-4S-250-12BC	25	0.250	4	12"sq X 1"	12-3/4"	1"x36"	3.3	83	2.1	60	0.8	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60

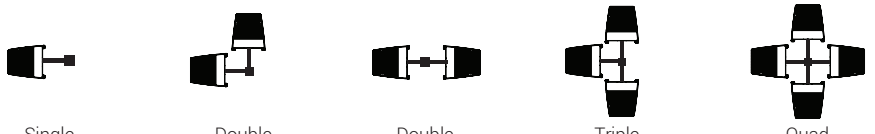
*Pole Assemblies With EPA>9.0 Require Specific Review

4"

***Anchor Bolts are NOT included with Custom Bolt Circle.**
***Do NOT pour concrete referencing this drawing. Consult Factory.**

***All wind loading calculations are based on sustained wind force plus an additional 1.3 gust.**

MOUNTING CONFIGURATION



Single **(SGL)** | Double **(D-90)** | Double **(D-180)** | Triple **(T-90)** | Quad **(QD)**

Max. allowable EPA - SSAP poles (per AASHTO LRFDLTS-1)

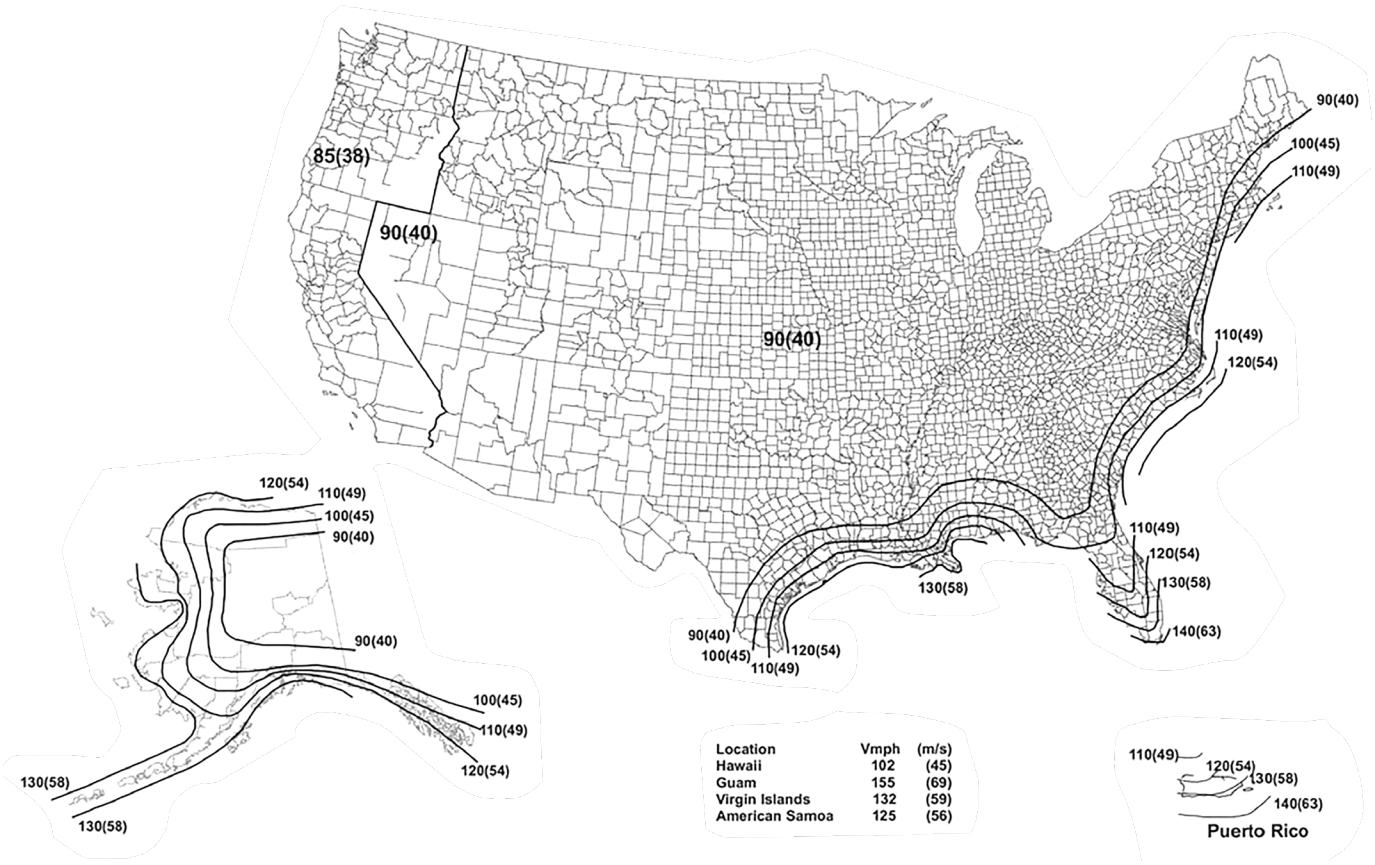
Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dia., in.	Base Plate	Bolt Circle	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (lb)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
SSAP-10-5S-120-9BC	10	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.2	225	6.4	225	5.3	225	4.2	225	3.5	225
SSAP-12-5S-120-9BC	12	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.6	225	6.4	225	4.9	225	3.8	225	3.0	225	2.0	225	1.3	225
SSAP-14-5S-120-9BC	14	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	7.4	185	6.2	185	5.4	185	3.9	185	2.9	185	1.8	185	1.1	185	0.4	185	--	185
SSAP-15-5S-120-9BC	15	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	8.4	210	5.9	148	4.9	148	4.2	148	2.9	148	2.0	148	0.9	148	0.3	148	--	148	--	148
SSAP-16-5S-120-9BC	16	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	6.2	155	4.5	113	3.8	113	3.0	113	2.0	113	0.9	113	0.2	113	--	113	--	113	--	113
SSAP-18-5S-120-9BC	18	0.120	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	6.0	150	4.0	100	2.5	63	1.9	63	1.3	63	0.4	63	--	63	--	63	--	63	--	63	--	63
SSAP-10-5S-188-9BC	10	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.7	225	6.1	225	4.9	225	4.1	225
SSAP-12-5S-188-9BC	12	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.0	225	6.1	225	4.7	225	3.7	225	2.6	225	1.9	225
SSAP-14-5S-188-9BC	14	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	8.5	225	7.3	225	5.2	225	3.7	225	2.5	225	1.5	225	0.8	225	0.1	225
SSAP-15-5S-188-9BC	15	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.2	205	7.1	205	5.8	205	4.2	205	2.7	205	1.7	205	0.6	205	--	205	--	205
SSAP-16-5S-188-9BC	16	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	6.3	158	5.2	158	4.3	158	2.8	158	1.7	158	0.7	158	--	158	--	158	--	158
SSAP-18-5S-188-9BC	18	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	6.5	163	4.2	105	3.1	105	2.3	105	0.9	105	--	105	--	105	--	105	--	105	--	105
SSAP-20-5S-188-9BC	20	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	7.0	175	4.3	108	2.1	60	1.4	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-22-5S-188-12BC	22	0.188	5	9"sq X 3/4"	9-3/16"	3/4"x30"	7.6	190	4.4	110	2.1	60	0.2	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-5S-188-12BC	24	0.188	5	12"sq X 1"	12-3/4"	1"x36"	6.9	173	4.1	103	2.5	63	0.9	60	0.2	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-5S-188-12BC	25	0.188	5	12"sq X 1"	12-3/4"	1"x36"	5.4	135	3.3	83	1.6	60	0.3	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-10-5S-250-9BC	10	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.7	193	6.1	153	4.9	123	4.1	103
SSAP-12-5S-250-9BC	12	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.0	200	6.1	153	4.7	118	3.7	93	2.6	65	1.9	60
SSAP-14-5S-250-9BC	14	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	8.5	213	7.3	183	5.2	130	3.7	93	2.5	63	1.5	60	0.8	60	0.1	60
SSAP-15-5S-250-9BC	15	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.2	205	7.1	178	5.8	145	4.2	105	2.7	68	1.7	60	0.6	60	--	60	--	60
SSAP-16-5S-250-9BC	16	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	6.3	158	5.2	130	4.3	108	2.8	70	1.7	60	0.7	60	--	60	--	60	--	60
SSAP-18-5S-250-9BC	18	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	6.5	163	4.2	105	3.1	78	2.3	60	0.9	60	--	60	--	60	--	60	--	60	--	60
SSAP-20-5S-250-9BC	20	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	7.0	175	4.3	108	2.1	60	1.4	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-22-5S-250-12BC	22	0.250	5	9"sq X 3/4"	9-3/16"	3/4"x30"	7.6	190	4.4	110	2.1	60	0.2	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-5S-250-12BC	24	0.250	5	12"sq X 1"	12-3/4"	1"x36"	9.0	225	7.9	198	5.0	125	3.2	80	2.4	60	1.7	60	0.4	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-5S-250-12BC	25	0.250	5	12"sq X 1"	12-3/4"	1"x36"	9.0	225	6.4	160	4.1	103	2.2	60	1.6	60	0.9	60	--	60	--	60	--	60	--	60	--	60	--	60

*Pole Assemblies With EPA>9.0 Require Specific Review

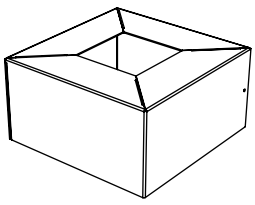


Max. allowable EPA - SSAP poles (per AASHTO LRFDLTS-1)																																
Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dia., in.	Base Plate	Bolt Circle	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (l b)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
SSAP-10-6S-120-9BC	10	0.120	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.4	210	6.6	165	5.2	130	4.2	105	3.1	78
SSAP-12-6S-120-9BC	12	0.120	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.0	175	5.2	130	3.8	95	2.5	63	1.7	60	0.7	60
SSAP-14-6S-120-9BC	14	0.120	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.4	210	7.2	180	6.0	150	4.0	100	2.5	63	1.3	60	0.3	60	--	60	--	60
SSAP-16-6S-120-9BC	16	0.120	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	7.6	190	4.9	123	3.9	98	3.1	78	1.7	60	0.3	60	--	60	--	60	--	60	--	60
SSAP-18-6S-120-9BC	18	0.120	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	8.0	200	4.8	120	2.8	70	1.7	60	0.9	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-20-6S-120-12BC	20	0.120	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	8.8	220	5.3	133	3.4	85	2.5	60	1.7	60	0.3	60	--	60	--	60	--	60	--	60	--	60
SSAP-22-6S-120-12BC	22	0.120	6	12"sq X 1"	12-3/4"	1"x36"	8.8	220	5.0	125	3.0	60	1.1	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-6S-120-12BC	24	0.120	6	12"sq X 1"	12-3/4"	1"x36"	5.2	60	3.0	60	1.2	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-6S-120-12BC	25	0.120	6	12"sq X 1"	12-3/4"	1"x36"	4.4	60	2.1	60	0.2	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-10-6S-188-9BC	10	0.188	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.4	210	6.6	165	5.2	130	4.2	105	3.1	78
SSAP-12-6S-188-9BC	12	0.188	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.0	175	5.2	130	3.8	95	2.5	63	1.7	60	0.7	60
SSAP-14-6S-188-9BC	14	0.188	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.4	210	7.2	180	6.0	150	4.0	100	2.5	63	1.3	60	0.3	60	--	60	--	60
SSAP-16-6S-188-9BC	16	0.188	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	7.8	195	5.1	128	4.1	103	3.2	80	1.5	60	0.4	60	--	60	--	60	--	60	--	60
SSAP-18-6S-188-9BC	18	0.188	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	8.2	205	5.0	125	2.6	65	1.8	60	1.0	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-20-6S-188-12BC	20	0.188	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	9.0	225	8.7	218	7.1	178	5.5	138	3.3	83	1.5	60	--	60	--	60	--	60	--	60
SSAP-22-6S-188-12BC	22	0.188	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	8.4	210	5.1	128	4.0	100	2.7	68	0.8	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-6S-188-12BC	24	0.188	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	5.8	145	2.9	73	1.6	60	0.7	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-6S-188-12BC	25	0.188	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	8.3	208	4.6	115	1.8	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-10-6S-250-9BC	10	0.250	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	8.4	210	6.6	165	5.2	130	4.2	105	3.1	78
SSAP-12-6S-250-9BC	12	0.250	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	9.0	225	7.0	175	5.2	130	3.8	95	2.5	63	1.7	60	0.7	60
SSAP-14-6S-250-9BC	14	0.250	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	9.0	225	8.4	210	7.2	180	6.0	150	4.0	100	2.5	63	1.3	60	0.3	60	--	60	--	60
SSAP-16-6S-250-9BC	16	0.250	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	9.0	225	7.8	195	5.1	128	4.1	103	3.2	80	1.5	60	0.4	60	--	60	--	60	--	60	--	60
SSAP-18-6S-250-9BC	18	0.250	6	9"sq X 3/4"	9-3/16"	3/4"x30"	9.0	225	8.2	205	5.0	125	2.6	65	1.8	60	1.0	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-20-6S-250-12BC	20	0.250	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	9.0	225	8.7	218	7.1	178	5.5	138	3.3	83	1.5	60	--	60	--	60	--	60	--	60
SSAP-22-6S-250-12BC	22	0.250	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	8.4	210	5.1	128	4.0	100	2.7	68	0.8	60	--	60	--	60	--	60	--	60	--	60
SSAP-24-6S-250-12BC	24	0.250	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	9.0	225	5.8	145	2.9	73	1.6	60	0.7	60	--	60	--	60	--	60	--	60	--	60	--	60
SSAP-25-6S-250-12BC	25	0.250	6	12"sq X 1"	12-3/4"	1"x36"	9.0	225	8.3	208	4.6	115	1.8	60	0.5	60	--	60	--	60	--	60	--	60	--	60	--	60	--	60
*Pole Assemblies With EPA>9.0 Require Specific Review																														

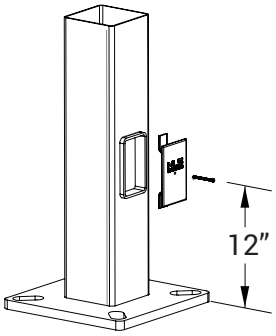




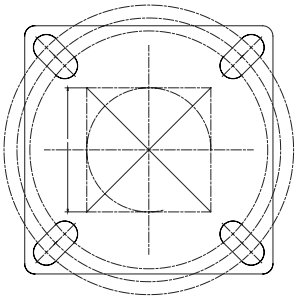
1) All wind load calculations are based on sustained wind force plus and additional 1.3 gust
2) Wind Map is to be used as a reference only. Please coordinate with local agencies for further review.
3) Wind Map values are based on a 50 year mean recurrence. These values do not account for severe conditions, such as hurricanes, tornadoes, etc…
4) For review of poles with additional configurations (arms, banners, shorter/longer pole lengths, etc…), please contact factory.



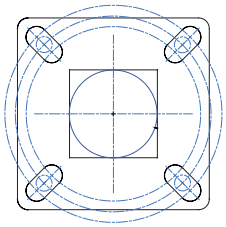
Base Cover



Base Detail



12″ Base Detail



9″ Base Detail

NLS LIGHTING

NV-1

AREA, SITE & ROADWAY

FORM AND FUNCTION
- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION
- Die Cast Aluminum
- External cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

FINISH
- 3-5 mils electrostatic powder coat.
- NLS' standard high-quality finishes prevent corrosion, protects against extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.



PROUDLY MADE IN THE USA

LED WATTAGE CHART

	16L	32L	48L	64L
350 milliamps	18w	-	-	-
530 milliamps	28w	-	-	-
700 milliamps	36w	71w	104w	136w
1050 milliamps	56w	106w	156w	205w

Project Name:

Type:

Cat#	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts	Mounting	Color	Options
NV-1 **(NV-1)**	Type 2 **(T2)** Type 3 **(T3)** Type 4 **(T4)** Type 5 **(T5)** Nema 2 24° Narrow Beam **(N2)** Nema 3 30° Narrow Beam **(N3)**	16 **(16L)** 32 **(32L)** 48 **(48L)** 64 **(64L)**	350 **(35)** 530 **(53)** 700 **(7)** 1050 **(1)**	2700K, 70 CRI **(27K7)**❻ 2700K, 80 CRI **(27K8)**❶❻ 3000K, 70 CRI **(30K7)**❻ 3000K, 80 CRI **(30K8)**❶❻ 3500K, 80 CRI **(35K8)** 4000K, 70 CRI **(40K7)** 4000K, 80 CRI **(40K8)**❶ 5000K, 70 CRI **(50K7)** 5000K, 80 CRI **(50K8)**❶	120-277 **(UNV)** 347-480 **(HV)**	Architectural Sweep Arm **(ASA)** Direct Pole 3" Arm Single, D180 **(DPS3)**❷ Direct Pole 7" Arm D180, D90, T90, T120, Quad **(DPS7)**❷ Knuckle Mount **(KM)** Wall Mount **(WM)** Trunnion Mount **(TM)**❸ Tennis Arm **(TA)** Mast Arm **(MA)**	Bronze Textured **(BRZ)** White Textured **(WHT)** Smooth White Gloss **(SWT)** Silver **(SVR)** Black Textured **(BLK)** Smooth Black Gloss **(SBK)** Graphite Textured **(GPH)** Grey Textured **(GRY)** Custom **(CS)**	Bird Spikes **(BS)** Marine Grade Finish **(MGF)** Optic Plate Painted to Match Fixture **(OPP)** Nema 7-Pin Receptacle **(PE7)** Photocell + Receptacle **(PCR)** Receptacle + Shorting Cap **(PER)** FSP-211 with Motion Sensor **(FSP-20)**❹ *9'-20" Heights* **(FSP-40)**❹ *21'-40' Heights* Quick Mount Bracket **(QMB)** Retrofit Mount Bracket **(RQMB)** Round Pole Adaptor 3"- 4" Pole **(RPA4)** Round Pole Adaptor 5"- 6" Pole **(RPA5)** Rotated Optic Left **(ROL)** Rotated Optic Right **(ROR)** Automotive House Side Shield **(AHS)** House Side Shield **(HSS)**❺ Black Hardware **(BH)** Black Optic Frame **(BOF)**

Notes:
❶ Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
❷ For Round Pole Specify RPA4 or RPA5
❸ Standard finish is stainless steel. Can be painted to match fixture
❹ Universal Voltage 120-277
❺ HSS not applicable with Nema 2 and Nema 3 Optics
❻ 3000K or lower must be selected to meet International Dark-Sky Association certification.

PRODUCT SPECIFICATIONS

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP65 compartment
- CRI 70, 80 or 90
- Color temperatures: 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KVA supplied as standard.

CONSTRUCTION
- Die Cast Aluminum
- External cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

OPTIONS

- BIRD SPIKES (BS) - Offers a practical and humane deterrent for larger bird species and provides a cost-effective long-term solution to nuisance bird infestations and protects your property.

- MARINE GRADE FINISH (MGF) - A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.

- OPTIC PLATE PAINTED TO MATCH FIXTURE (OPP) - Optic plate is clear anodized as standard. The optic plate can be powder coated to match the finish of the fixture.

- QUICK MOUNT BRACKET (QMB) - Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Has a 2″x4″ Drill Pattern.

- RETROFIT MOUNT BRACKET - Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Drill Pattern is adjustable from 2″x4″ to 2″x6″.

- ROUND POLE ADAPTER (RPA) - When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3″-4″ round poles, and RPA5 when installing on 5″-6″ round poles.

- ROTATED OPTICS (ROL) (ROR) - Rotated optics are designed for perimeter lighting for auto dealerships.

- SHIELDS (HSS, AHS) - House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.

- BLACK HARDWARE (BH) - Optional black, zinc coated steel hardware.

- BLACK OPTIC FRAME (BOF) - Optional black optic frame. Standard is white.

CONTROL OPTIONS
- FSP-211 (FSP-X) - Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-20 mounting heights 9-20 feet
  - FSP-40 mounting heights 21-40 feet.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.
  - FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering.

- Controls Agnostics: Please contact factory for your preferred controls option.

- NEMA 7-PIN RECEPTACLE (PE7)—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

- PHOTOCELL + RECEPTACLE (PCR)—7-Pin Receptacle and Electronic Twist Lock Photocell for dusk to dawn operation.

- RECEPTACLE + SHORTING CAP (PER)—7-Pin Receptacle and Shorting Cap.

FINISH
- 3-5 mils electrostatic powder coat.
- NLS Light's standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.

OPTICS
Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time

LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010
- IDA Dark Sky Approved
- IK10 Rated



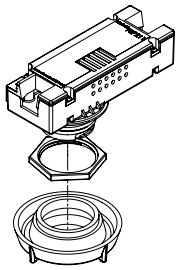
The information and specifications on this document are subject to change without any notification. All values are design, nominal, typical or prorated values when measured under internal and external laboratory conditions.

NLS LIGHTING
701 Kingshill Place, Carson, CA 90746
Call Us Today (310) 341-2037
nlslighting.com

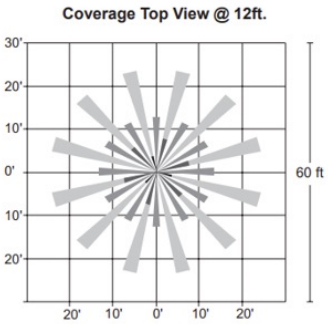
PRODUCT SPECIFICATIONS

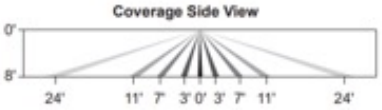
CONTROLS

- **DIMMING CONTROL (FSP)**—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-8 mounting heights 8 feet and below
  - FSP-20 mounting heights 9-20 feet
  - FSP-40 mounting heights 21-40 feet.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.

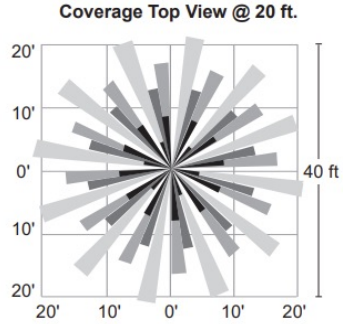


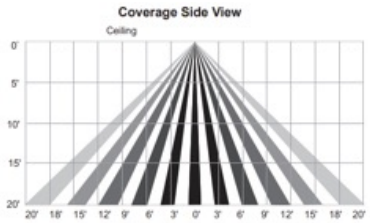
FSP-8



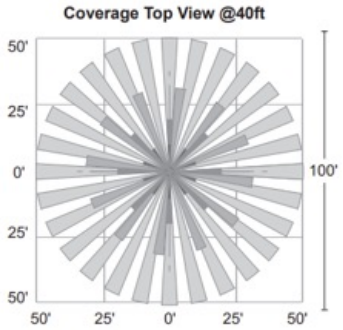


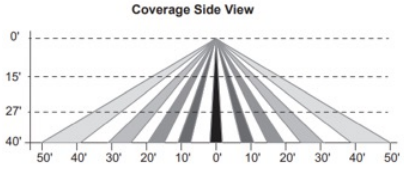
FSP-20



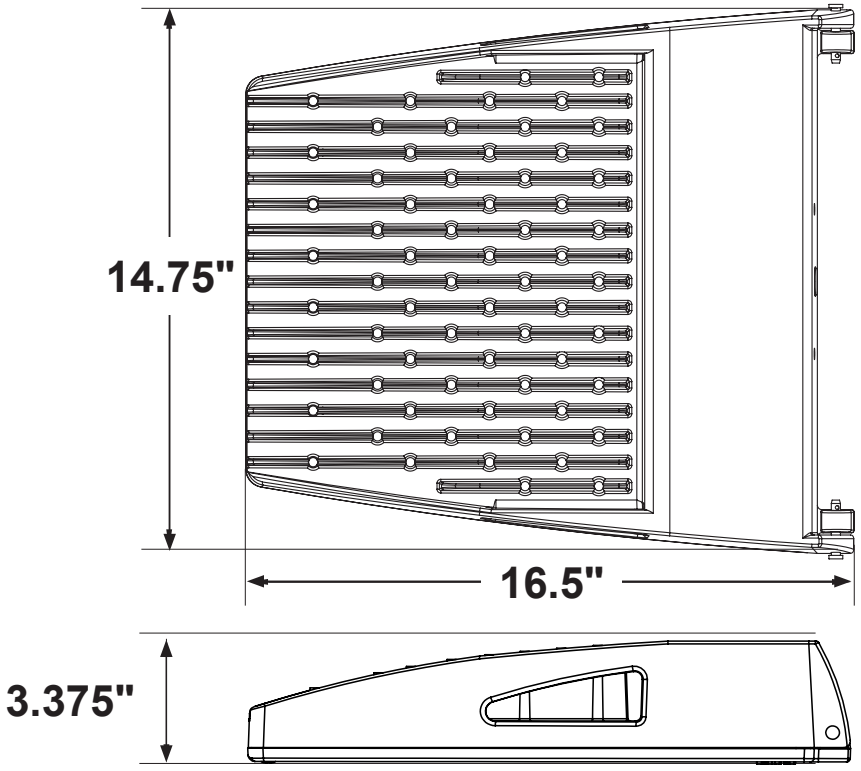


FSP-40





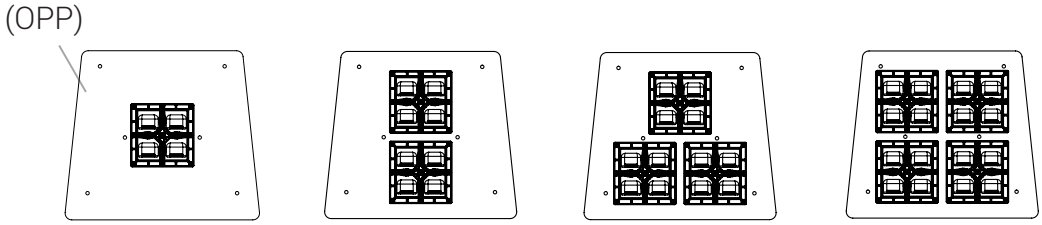
PRODUCT SPECIFICATIONS



Weight: 24 lbs

OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.



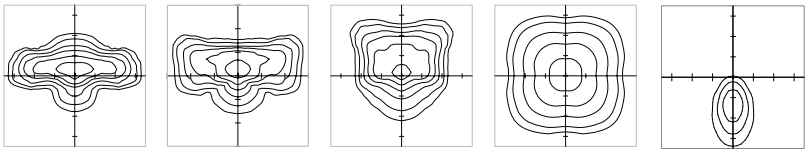
NV-1 / 16L **NV-1 / 32L** **NV-1 / 48L** **NV-1 / 64L**

*** OPTIC PLATE PAINTED TO MATCH FIXTURE FINISH (OPP)**– Optic Plate standard clear anodized, Grade 2. When (OPP) specified, Optic Plate finish will match fixture finish.

OPTICS

Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.

- IES Types

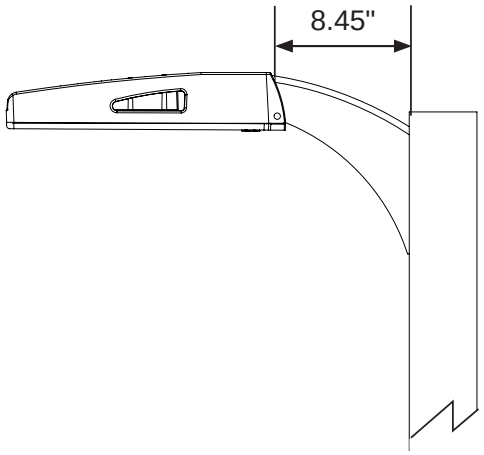


TYPE II (T2) TYPE III (T3) TYPE IV (T4) TYPE V (T5) NEMA 3 (N3)

MOUNTING OPTIONS

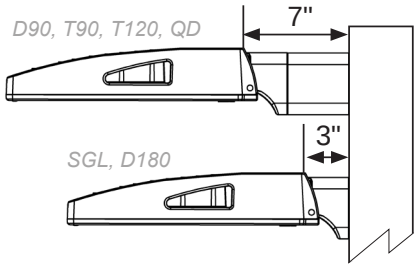
ARCHITECTURAL SWEEP ARM (ASA)

Cast Sweep Arm includes (as standard) Internal Quick Mount Bracket.



DIRECT POLE (DP)

Standard mounting arm is extruded aluminum in lengths of 3" and 7".
**Arm lengths may vary depending on configuration*

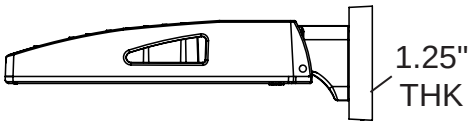


DPX ARM LENGTH

DPX ARM LENGTH	SGL	D90	D180	D180	T90	T120	QD
NV-1	3"	7"	3"	7"	7"	7"	7"

WALL MOUNT (WM)

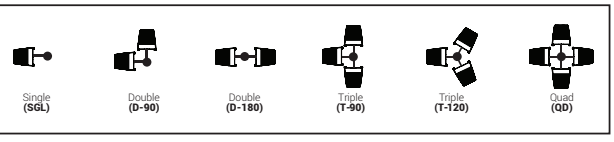
Cast Aluminum Plate for direct wall mount. 3" extruded aluminum arm mounts directly to a cast wall mount box.



EPA

EPA	SGL	D90	D180	T90	T120	QD
NV-1-DP3	0.46		0.92			
NV-1-DP7		1.14	1.05	1.34	1.37	1.34
NV-1-KM	0.54	N/A	1.08	N/A	N/A	N/A
NV-1-ASA	0.75	1.29	1.50	1.99	2.05	1.99

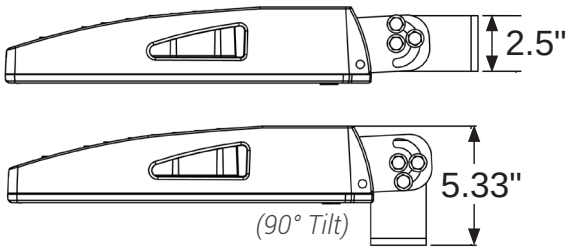
MOUNTING CONFIGURATION



MOUNTING OPTIONS

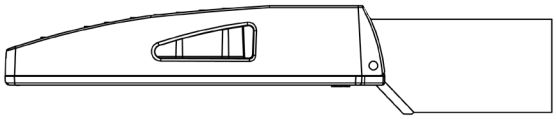
TRUNNION MOUNT (TM)

Steel, bolt-on-mounting for adjustable installation with a maximum uplift of 90 degrees.
**Unpainted stainless steel is standard*



TENNIS ARM (TA)

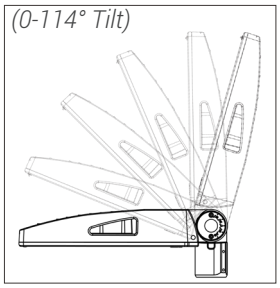
Steel fitter slips over 3.5" x 1.5" rectangular arm.
**See Tennis Arm Spec Sheet for details*

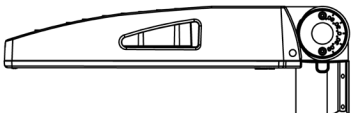


KNUCKLE MOUNT (KM)

Die Cast Knuckle great for adjustable installation on 2-3/8" OD vertical or horizontal tenon.

- Max Up-tilt of 90 degrees
- Adjustable in 6 degree increments
- 1.5G Vibration Rated per ANSI C136.31-2010



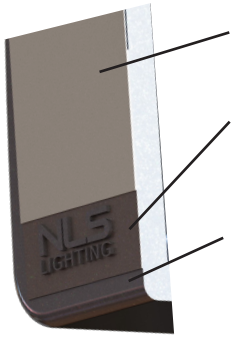


BIRD SPIKES (BS)

Bird Spikes offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.

MARINE GRADE FINISH (MGF)

The **(MGF)** is a multi step process. Chemically washed in a 5 stage cleaning system. Pre-baked. Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.



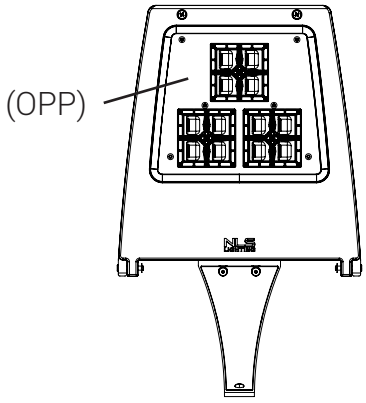
Powder Coat Finish
3-5mm Powder Coat

Primer Layer
3-5mm Zinc Rich
Super Durable Polyester Primer

Prepared Casting
Chemically washed in multi Step 5 stage cleaning process

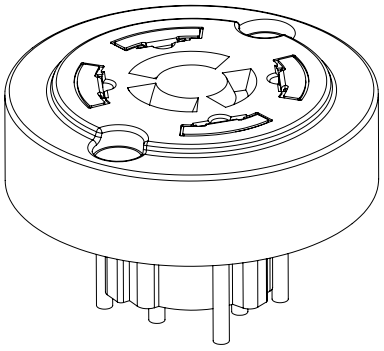
OPTIC PLATE PAINTED TO MATCH (OPP)

Optic plate is clear anodized as standard. The optic plate can be powder coated to match the finish of the fixture.



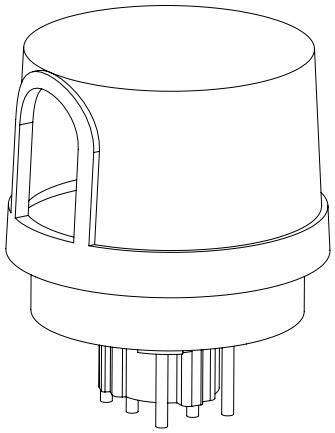
NEMA 7-PIN RECEPTACLE (PE7)

An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.



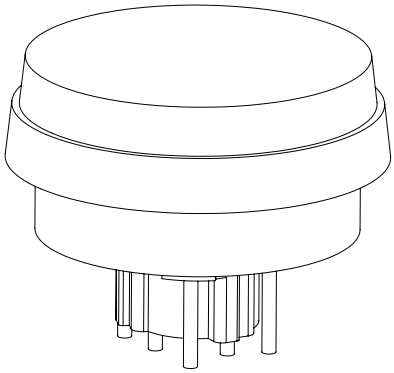
PHOTOCELL + RECEPTACLE (PCR)

7-Pin Receptacle and Electronic Twist Lock Photocell for dusk to dawn operation.



RECEPTACLE + SHORTING CAP (PER)

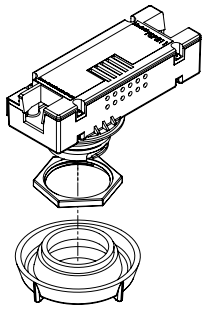
7-Pin Receptacle and Shorting Cap.



FSP-211 WITH MOTION SENSOR (FSP-XX)

- FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
- FSP-20 mounting heights 9-20 feet
- FSP-40 mounting heights 21-40 feet.
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.

FSP-211



QUICK MOUNT BRACKET (QMB)

Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Has a 2”x4” Drill Pattern.



RETROFIT MOUNT BRACKET (RQMB)

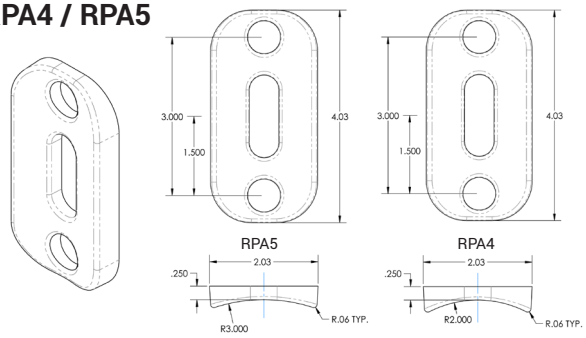
Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Drill Pattern is adjustable from 2”x4” to 2”x6”.



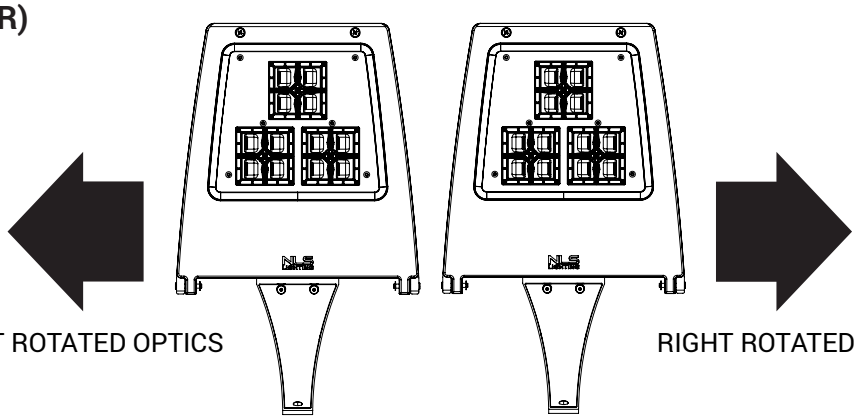
ROUND POLE ADAPTER OPTIONS (RPA4) (RPA5)

When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3”-4” round poles, and RPA5 when installing on 5”-6” round poles.

RPA4 / RPA5



ROTATED OPTICS (ROL) (ROR)



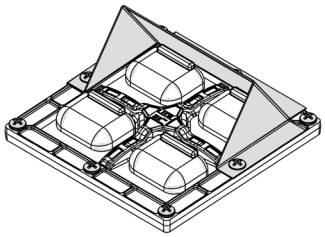
LEFT ROTATED OPTICS

RIGHT ROTATED OPTICS

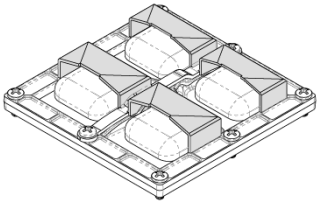
SHIELDING OPTIONS (AHS) (HSS)

SHIELDS (HSS, AHS)—House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.

AUTOMOTIVE HOUSE SIDE SHIELD

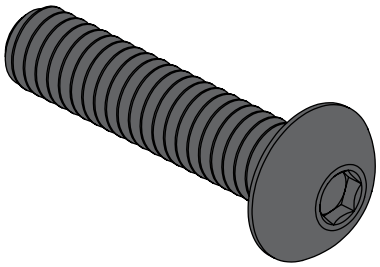


HOUSE SIDE SHIELD



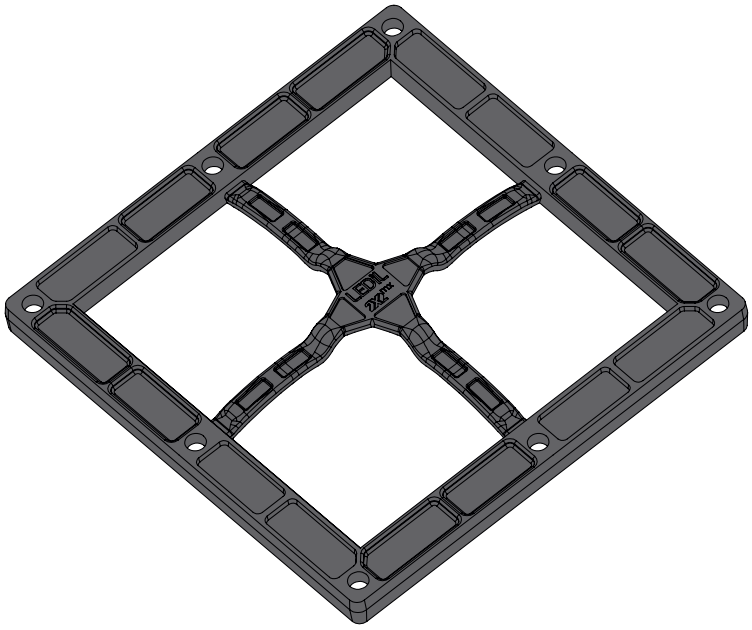
BLACK HARDWARE

Optional black, zinc coated steel hardware.



BLACK OPTIC FRAME

Optional Black Optic Frame.
Standard is white.



LUMENS

PART NUMBER	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 AHS	LM/W	T4 HSS	LM/W	T5	LM/W	DLC	W
NV-1-16L-35-30K7	2016	112	2106	117	P	2106	117	P	1134	63	2187	116	P	1296	72	1116	62	2231	118	P	18
NV-1-16L-35-40K7	2088	116	2268	126	P	2286	127	P	1206	67	2250	125	P	1368	76	1188	66	2304	128	P	18
NV-1-16L-35-50K7	2160	120	2376	132	P	2394	133	P	1278	71	2358	131	P	1440	80	1260	70	2412	134	P	18
NV-1-16L-53-30K7	3136	112	3192	114	P	3220	115	P	1764	63	3119	113	P	2016	72	1736	62	3248	116	P	28
NV-1-16L-53-40K7	3248	116	3472	124	P	3472	124	P	1876	67	3444	123	P	2128	76	1848	66	3500	125	P	28
NV-1-16L-53-50K7	3360	120	3612	129	P	3640	130	P	1988	71	3584	128	P	2240	80	1960	70	3668	131	P	28
NV-1-16L-7-30K7	4032	112	3960	110	P	3960	110	P	2268	63	3973	109	P	2592	72	2232	62	3996	111	P	36
NV-1-16L-7-40K7	4176	116	4428	123	P	4284	119	P	2412	67	4212	117	P	2736	76	2376	66	4320	120	P	36
NV-1-16L-7-50K7	4320	120	4644	129	P	4500	125	P	2556	71	4428	123	P	2880	80	2520	70	4500	125	P	36
NV-1-16L-1-30K7	6272	112	6160	110	S	6384	114	P	3528	63	6232	112	P	4032	72	3472	62	6440	115	P	56
NV-1-16L-1-40K7	6496	116	6832	122	P	6888	123	P	3752	67	6776	121	P	4256	76	3696	66	6944	124	P	56
NV-1-16L-1-50K7	6720	120	7168	128	P	7224	129	P	3976	71	7112	127	P	4480	80	3920	70	7280	130	P	56
NV-1-32L-7-30K7	7952	112	7810	110	S	7810	110	S	4473	63	7739	109	S	5112	72	4402	62	7881	111	S	71
NV-1-32L-7-40K7	8236	116	9017	127	P	8449	119	P	4757	67	8307	117	P	5396	76	4686	66	8520	120	P	71
NV-1-32L-7-50K7	8520	120	9159	129	P	8875	125	P	5041	71	8733	123	P	5680	80	4970	70	8946	126	P	71
NV-1-32L-1-30K7	11872	112	11660	110	S	12084	114	S	6678	63	11820	112	S	7632	72	6572	62	12190	115	S	106
NV-1-32L-1-40K7	12296	116	12932	122	P	13038	123	P	7102	67	12826	121	P	8056	76	6996	66	13144	124	P	106
NV-1-32L-1-50K7	12720	120	13568	128	P	13674	129	P	7526	71	13462	127	P	8480	80	7420	70	13780	130	P	106
NV-1-48L-7-30K7	11648	112	11440	110	S	11440	110	S	6552	63	11336	109	S	7488	72	6448	62	11544	111	S	104
NV-1-48L-7-40K7	12064	116	13208	127	P	12376	119	P	6968	67	12168	117	P	7904	76	6864	66	12480	120	P	104
NV-1-48L-7-50K7	12480	120	13520	130	P	13000	125	P	7384	71	12792	123	P	8320	80	7280	70	13104	126	P	104
NV-1-48L-1-30K7	17472	112	17160	110	S	17784	114	S	9828	63	17472	112	S	11232	72	9672	62	17940	115	S	156
NV-1-48L-1-40K7	18096	116	19032	122	P	19188	123	P	10452	67	18876	121	P	11856	76	10296	66	19344	124	P	156
NV-1-48L-1-50K7	18720	120	19968	128	P	20124	129	P	11076	71	19812	127	P	12480	80	10920	70	20280	130	P	156
NV-1-64L-7-30K7	15232	112	14960	110	S	14960	110	S	8568	63	14824	109	S	9792	72	8432	62	15096	111	S	136
NV-1-64L-7-40K7	15776	116	17272	127	P	16184	119	P	9112	67	15912	117	P	10336	76	8976	66	16320	120	P	136
NV-1-64L-7-50K7	16320	120	17680	130	P	17000	125	P	9656	71	16728	123	P	10880	80	9520	70	17136	126	P	136
NV-1-64L-1-30K7	22960	112	22550	110	S	23370	114	S	12915	63	22960	112	S	14760	72	12710	62	23575	115	S	205
NV-1-64L-1-40K7	23780	116	25010	122	P	25215	123	P	13735	67	24805	121	P	15580	76	13530	66	25420	124	P	205
NV-1-64L-1-50K7	24600	120	26240	128	P	26445	129	P	14555	71	26035	127	P	16400	80	14350	70	26650	130	P	205

3000k or warmer must be selected to meet International Dark-Sky Association certification.

BUG RATINGS

PART NUMBER	T2	T3	T3 HSS	T4	T4 HSS	T5
NV-1-16L-35-30K7	B1-U0-G1	B1-U0-G1	B0-U0-G0	B1-U0-G1	B0-U0-G0	B2-U0-G0
NV-1-16L-35-40K7	B1-U0-G1	B1-U0-G1	B0-U0-G0	B1-U0-G1	B0-U0-G0	B2-U0-G0
NV-1-16L-35-50K7	B1-U0-G1	B1-U0-G1	B0-U0-G0	B1-U0-G1	B0-U0-G0	B2-U0-G2
NV-1-16L-53-30K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B2-U0-G1
NV-1-16L-53-40K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B2-U0-G1
NV-1-16L-53-50K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B2-U0-G1
NV-1-16L-7-30K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B3-U0-G1
NV-1-16L-7-40K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B3-U0-G1
NV-1-16L-7-50K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B3-U0-G1
NV-1-16L-1-30K7	B1-U0-G1	B1-U0-G1	B0-U0-G1	B1-U0-G1	B0-U0-G1	B3-U0-G1
NV-1-16L-1-40K7	B1-U0-G1	B2-U0-G2	B0-U0-G1	B2-U0-G2	B0-U0-G1	B3-U0-G2
NV-1-16L-1-50K7	B1-U0-G2	B2-U0-G2	B0-U0-G1	B2-U0-G2	B0-U0-G1	B3-U0-G2
NV-1-32L-7-30K7	B1-U0-G2	B2-U0-G2	B0-U0-G1	B2-U0-G2	B0-U0-G1	B3-U0-G2
NV-1-32L-7-40K7	B1-U0-G2	B2-U0-G2	B0-U0-G1	B2-U0-G2	B0-U0-G2	B3-U0-G2
NV-1-32L-7-50K7	B2-U0-G2	B2-U0-G2	B0-U0-G2	B2-U0-G2	B0-U0-G2	B3-U0-G2
NV-1-32L-1-30K7	B2-U0-G2	B2-U0-G2	B0-U0-G2	B2-U0-G2	B0-U0-G2	B4-U0-G2
NV-1-32L-1-40K7	B2-U0-G2	B2-U0-G2	B0-U0-G2	B3-U0-G2	B0-U0-G2	B4-U0-G2
NV-1-32L-1-50K7	B2-U0-G2	B3-U0-G3	B0-U0-G2	B3-U0-G3	B0-U0-G2	B4-U0-G2
NV-1-48L-7-30K7	B2-U0-G2	B2-U0-G2	B0-U0-G2	B2-U0-G2	B0-U0-G2	B4-U0-G2
NV-1-48L-7-40K7	B2-U0-G2	B2-U0-G2	B0-U0-G2	B2-U0-G2	B0-U0-G2	B4-U0-G2
NV-1-48L-7-50K7	B2-U0-G2	B3-U0-G3	B0-U0-G2	B2-U0-G2	B0-U0-G2	B4-U0-G2
NV-1-48L-1-30K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B4-U0-G2
NV-1-48L-1-40K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-1-48L-1-50K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-1-64L-7-30K7	B2-U0-G2	B3-U0-G3	B0-U0-G2	B3-U0-G3	B1-U0-G2	B4-U0-G2
NV-1-64L-7-40K7	B3-U0-G3	B3-U0-G3	B0-U0-G2	B3-U0-G3	B1-U0-G2	B4-U0-G2
NV-1-64L-7-50K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B4-U0-G2
NV-1-64L-1-30K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G3	B5-U0-G3
NV-1-64L-1-40K7	B3-U0-G3	B3-U0-G3	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-1-64L-1-50K7	B3-U0-G3	B3-U0-G3	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3

Lumen Maintenance Data							
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%

*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21

NV-2

AREA LIGHTING

FORM AND FUNCTION
- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION
- Die Cast Aluminum
- External cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

FINISH
- 3-5 mils electrostatic powder coat.
- NLS' standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.



LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010
- IDA Dark Sky Approved

LED WATTAGE CHART

	80L	96L	112L	128L
700 milliamps	168w	200w	243w	265w
1050 milliamps	263w	316w	366w	409w

Project Name:

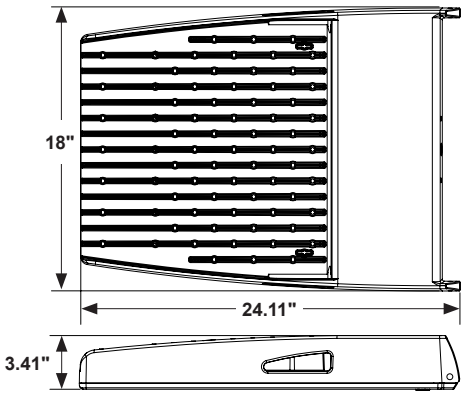
Type:

Cat#	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts	Mounting	Color	Options
NV-2 **(NV-2)**	Type 2 **(T2)** Type 3 **(T3)** Type 4 **(T4)** Type 5 **(T5)** Nema 3 30° Narrow Beam **(N3)**	80 **(80L)** 96 **(96L)** 112 **(112L)** 128 **(128L)**	700 **(7)** 1050 **(1)**	2700K, 70 CRI **(27K7)** ❻ 2700K, 80 CRI **(27K8)** ❶ ❻ 3000K, 70 CRI **(30K7)** ❻ 3000K, 80 CRI **(30K8)** ❶ ❻ 3500K, 80 CRI **(35K8)** 4000K, 70 CRI **(40K7)** 4000K, 80 CRI **(40K8)** ❶ 5000K, 70 CRI **(50K7)** 5000K, 80 CRI **(50K8)** ❶	120-277 **(UNV)** 347-480 **(HV)**	Direct Pole 6" Arm Single, D180 **(DPS6)** ❷ Direct Pole 11" Arm D90, T90, T120, Quad **(DPS11)** ❷ Knuckle Mount **(KM)** Wall Mount **(WM)** Trunnion Mount **(TM)** ❸ Tennis Arm **(TA)** Mast Arm **(MA)**	Bronze Textured **(BRZ)** White Textured **(WHT)** Smooth White Gloss **(SWT)** Silver **(SVR)** Black Textured **(BLK)** Smooth Black Gloss **(SBK)** Graphite Textured **(GPH)** Grey Textured **(GRY)** Custom **(CS)**	Bird Spikes **(BS)** Marine Grade Finish **(MGF)** Optic Plate Painted to Match Fixture **(OPP)** Nema 7-Pin Receptacle **(PE7)** Photocell + Receptacle **(PCR)** Receptacle + Shorting Cap **(PER)** FSP-211 with Motion Sensor **(FSP-20)** ❹ *9'-20" Heights* **(FSP-40)** ❹ *21'-40' Heights* Quick Mount Bracket **(QMB)** Retrofit Mount Bracket **(RQMB)** Round Pole Adaptor 3"- 4" Pole **(RPA4)** Round Pole Adaptor 5"- 6" Pole **(RPA5)** Rotated Optic Left **(ROL)** Rotated Optic Right **(ROR)** Automotive House Side Shield **(AHS)** House Side Shield **(HSS)** ❺

Notes:
❶ Consult Factory for Lead Time. Consult Factory for 90 CRI Requests
❷ Standard finish is stainless steel. Can be painted to match fixture
❸ For Round Pole Specify RPA4 or RPA5
❹ Universal Voltage 120-277
❺ HSS not applicable with Nema 2
❻ 3000K or lower must be selected to meet International Dark-Sky Association certification.

ELECTRICAL

- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- CRI 70, 80 or 90
- Color temperatures: 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA supplies as standard.

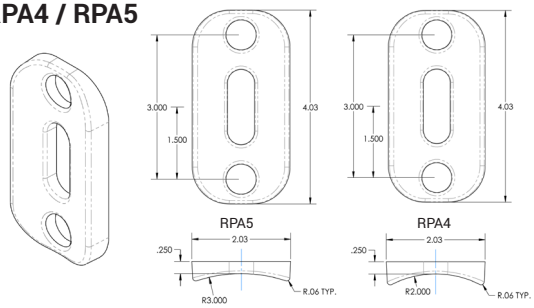


Weight: 42 lbs

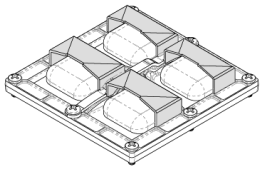
OPTIONS

- **BIRD SPIKES (BS)**—Offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.
- **MARINE GRADE FINISH (MGF)**—A multi-step process creating protective finishing coat against harsh environments.
  - Chemically washed in a 5 stage cleaning system.
  - Pre-baked
  - Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer.
  - 1-2 feet inside pole coverage top and bottom.
  - Oven Baked.
  - Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- **SHIELDS (HSS, AHS)**—House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.
- **ROUND POLE ADAPTER (RPA)–** When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3"-4" round poles, and RPA5 when installing on 5"-6" round poles.

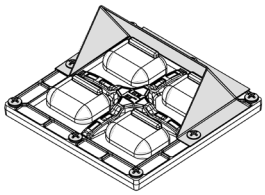
RPA4 / RPA5



HOUSE SIDE SHIELD



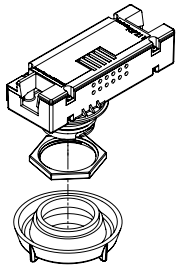
AUTOMOTIVE HOUSE SIDE SHIELD



CONTROLS

- **FSP-211 (FSP-X)**—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-20 mounting heights 9-20 feet
  - FSP-40 mounting heights 21-40 feet.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.
  - FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering.
- **NEMA 7-PIN RECEPTACLE (PE7)**—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

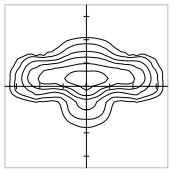
FSP-211

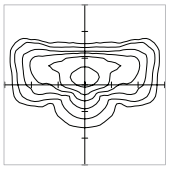


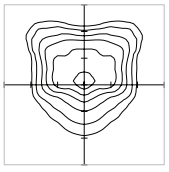
OPTICS

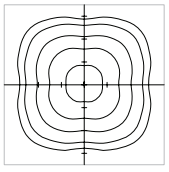
Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.

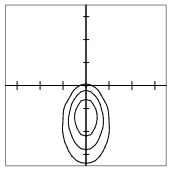
- IES Types


TYPE II (T2)


TYPE III (T3)


TYPE IV (T4)


TYPE V (T5)


NEMA 3 (N3)

The information and specifications on this document are subject to change without any notification. All values are design, nominal, typical or prorated values when measured under internal and external laboratory conditions.

LUMENS

PART NUMBER	N3	LM/W	T2	LM/W	DLC	T3	LM/W	DLC	T3 HSS	LM/W	T4	LM/W	DLC	T4 AHS	LM/W	T4 HSS	LM/W	T5	LM/W	DLC	W
NV-2-80L-7-30K7	18816	112	19744	116	S	19218	113	S	9744	58	18992	112	S	12096	72	9576	57	19713	117	P	168
NV-2-80L-7-40K7	19488	116	21000	125	P	20328	121	P	10416	62	20160	120	P	12768	76	10248	61	21168	126	P	168
NV-2-80L-7-50K7	20160	120	21672	129	P	21168	126	P	11088	66	21000	125	P	13440	80	10920	65	21840	130	P	168
NV-2-80L-1-30K7	29456	112	28141	107	S	27352	104	S	15254	58	30245	115	S	18936	72	14991	57	29193	111	S	263
NV-2-80L-1-40K7	30508	116	30245	115	S	29456	112	S	16306	62	32086	122	S	19988	76	16043	61	31297	119	S	263
NV-2-80L-1-50K7	31560	120	31297	119	P	30508	116	S	17358	66	33664	128	P	21040	80	17095	65	33138	126	P	263
NV-2-96L-7-30K7	22400	112	23200	116	S	22600	113	S	11600	58	22400	112	S	14400	72	11400	57	23400	117	S	200
NV-2-96L-7-40K7	23200	116	25000	125	P	24200	121	P	12400	62	24000	120	P	15200	76	12200	61	25200	126	P	200
NV-2-96L-7-50K7	24000	120	25800	129	P	25200	126	P	13200	66	25000	125	P	16000	80	13000	65	26000	130	P	200
NV-2-96L-1-30K7	35392	112	33812	107	S	32864	104	S	18328	58	36340	115	S	22752	72	18012	57	35076	111	S	316
NV-2-96L-1-40K7	36656	116	36340	115	S	35392	112	S	19592	62	38552	122	S	24016	76	19276	61	37604	119	S	316
NV-2-96L-1-50K7	37920	120	37604	119	P	36656	116	S	20856	66	40448	128	P	25280	80	20540	65	39816	126	P	316
NV-2-112L-7-30K7	27216	112	28188	116	S	27459	113	S	14094	58	27216	112	S	17496	72	13851	57	28431	117	P	243
NV-2-112L-7-40K7	28188	116	30375	125	P	29403	121	P	15066	62	29160	120	P	18468	76	14823	61	30618	126	P	243
NV-2-112L-7-50K7	29160	120	31347	129	P	30618	126	P	16038	66	30375	125	P	19440	80	15795	65	31590	130	P	243
NV-2-112L-1-30K7	40992	112	39162	107	S	38064	104	S	21228	58	42090	115	S	26352	72	20862	57	40626	111	S	366
NV-2-112L-1-40K7	42456	116	42090	115	S	40992	112	S	22692	62	44652	122	S	27816	76	22326	61	43554	119	S	366
NV-2-112L-1-50K7	43920	120	43554	119	P	42456	116	S	24156	66	46848	128	P	29280	80	23790	65	46116	126	P	366
NV-2-128L-7-30K7	29680	112	30740	116	S	29945	113	S	15370	58	29680	112	S	19080	72	15105	57	31005	117	P	265
NV-2-128L-7-40K7	30740	116	33125	125	P	32065	121	P	16430	62	31800	120	P	20140	76	16165	61	33390	126	P	265
NV-2-128L-7-50K7	31800	120	34185	129	P	33390	126	P	17490	66	33125	125	P	21200	80	17225	65	34450	130	P	265
NV-2-128L-1-30K7	45808	112	43763	107	S	42536	104	S	23722	58	47035	115	S	29448	72	23313	57	45399	111	S	409
NV-2-128L-1-40K7	47444	116	47035	115	S	45808	112	S	25358	62	49898	122	S	31084	76	24949	61	48671	119	S	409
NV-2-128L-1-50K7	49080	120	48671	119	P	47445	116	S	26994	66	52352	128	P	33129	81	26585	65	51534	126	P	409

3000k or warmer must be selected to meet International Dark-Sky Association certification.

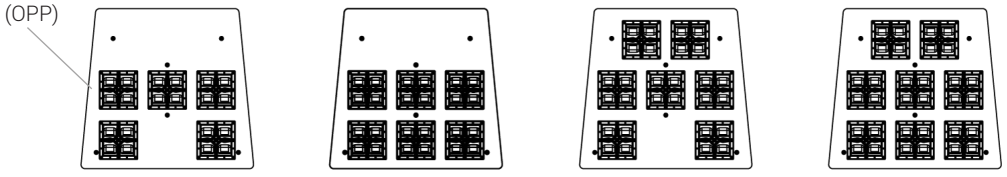
***DLC** *S= Standard* *P= Premium*

BUG RATINGS

PART NUMBER	T2	T3	T3 HSS	T4	T4 HSS	T5
NV-2-80L-7-30K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-2-80L-7-40K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-2-80L-7-50K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-2-80L-1-30K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-2-80L-1-40K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-2-80L-1-50K7	B3-U0-G4	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-96L-7-30K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-2-96L-7-40K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G3	B1-U0-G2	B5-U0-G3
NV-2-96L-7-50K7	B3-U0-G3	B3-U0-G3	B1-U0-G2	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-2-96L-1-30K7	B3-U0-G4	B4-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-96L-1-40K7	B3-U0-G4	B4-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G4	B5-U0-G4
NV-2-96L-1-50K7	B3-U0-G4	B4-U0-G4	B1-U0-G4	B3-U0-G4	B1-U0-G4	B5-U0-G4
NV-2-112L-7-30K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-2-112L-7-40K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G3
NV-2-112L-7-50K7	B3-U0-G4	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-112L-1-30K7	B4-U0-G4	B4-U0-G4	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G4
NV-2-112L-1-40K7	B4-U0-G4	B4-U0-G4	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G4
NV-2-112L-1-50K7	B4-U0-G4	B4-U0-G4	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G4
NV-2-128L-7-30K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-128L-7-40K7	B3-U0-G3	B3-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-128L-7-50K7	B3-U0-G4	B4-U0-G4	B1-U0-G3	B3-U0-G4	B1-U0-G3	B5-U0-G4
NV-2-128L-1-30K7	B4-U0-G4	B4-U0-G4	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G4
NV-2-128L-1-40K7	B4-U0-G4	B4-U0-G4	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G4
NV-2-128L-1-50K7	B4-U0-G4	B4-U0-G5	B1-U0-G4	B4-U0-G5	B1-U0-G4	B5-U0-G5

OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.



NV-2 / 80L **NV-2 / 96L** **NV-2 / 112L** **NV-2 / 128L**

*** OPTIC PLATE PAINTED TO MATCH FIXTURE FINISH (OPP)**– Optic Plate standard clear anodized, Grade 2. When (OPP) specified, Optic Plate finish will match fixture finish.

EPA

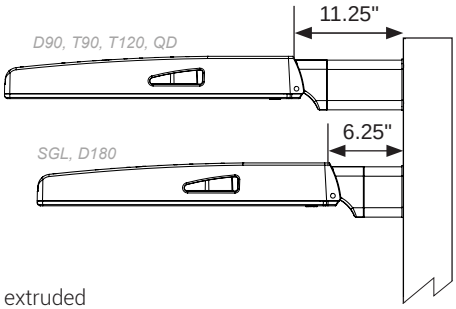
EPA	SGL	D90	D180	T90	T120	QD
NV-2-DP	0.89	1.22	1.78	1.96	1.91	1.96
NV-2-KM	0.69	1.18	1.38	1.85	2.68	1.85
NV-2-ASA	0.98	1.96	1.75	2.66	2.62	2.66

Lumen Maintenance Data							
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%
*Reported extrapolations per IESNA TM-21			**Projected extrapolations per IESNA TM-21				

DPX ARM LENGTH

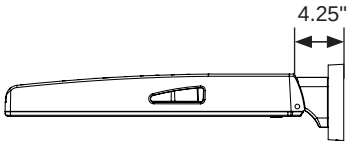
DPX ARM LENGTH	SGL	D90	D180	T90	T120	QD
NV-2	6.25"	11.25"	6.25"	11.25"	11.25"	11.25"

MOUNTING OPTIONS



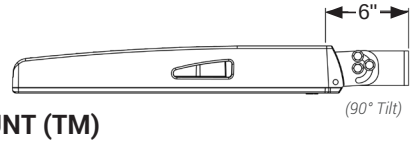
DIRECT POLE (DP)

Standard mounting arm is extruded aluminum in lengths of 6.25" and 11.25".
**Arm lengths may vary depending on configuration*



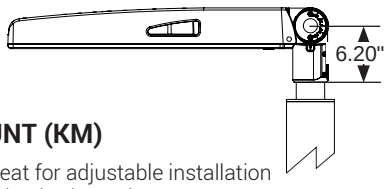
WALL MOUNT (WM)

Cast Aluminum Plate for direct wall mount. 3" extruded aluminum arm mounts directly to a cast wall mount box.



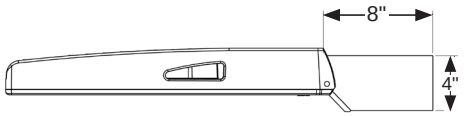
TRUNNION MOUNT (TM)

Steel, bolt-on-mounting for adjustable installation with a maximum uplift of 90 degrees.
**Unpainted stainless steel is standard*



KNUCKLE MOUNT (KM)

Die Cast Knuckle great for adjustable installation on 2-3/8" OD vertical or horizontal tenon.
- Max Up-tilt of 90 degrees
- Adjustable in 6 degree increments

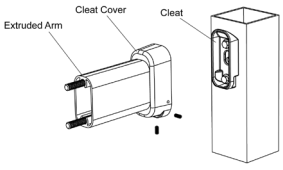


TENNIS ARM (TA)

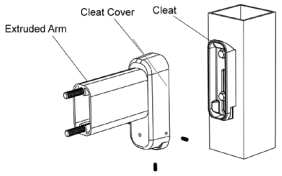
Steel fitter slips over 3.5" x 1.5" rectangular arm.
**See Tennis Arm Spec Sheet for details*

OPTIONAL

Optional Cast Aluminum Bracket, **Quick Mount Bracket (QMB)** and **Retrofit Quick Mount Bracket (RQMB)**, designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures.



QMB



RQMB

City of Portsmouth Planning Department

Site Plan Review Application Fee

Project: Proposed Advanced Manufacturing Facility **Map/Lot: 308 / 1**

Applicant: Aviation Avenue Group, LLC

All development

Base fee $500			$500.00
Plus $5.00 per $1,000 of site costs			
Site costs	$750,000	+	$3,750.00
Plus $10.00 per 1,000 S.F. of site development area			
Site development area	497,000 S.F.	+	$4,970.00
		Fee	**$9,220.00**

Maximum fee: $15,000.00

Fee received by: _____ Date: _____

Note: Initial application fee may be based on the applicant's estimates of site costs and site development area. Following site plan approval, the application fee will be recalculated based on the approved site plan and site engineer's corresponding site cost estimate as approved by the Department of Public Works, and any additional fee shall be paid prior to the issuance of a building permit.

City of Portsmouth Planning Department

Subdivision Application Fee

Project: Proposed Advanced Manufacturing Facility **Map/Lot: 308 / 1**

Applicant: Aviation Avenue Group, LLC

☐ Residential subdivision			
$500 plus $200 per lot			
Number of lots		Fee	$0.00
☐ Non-residential subdivision			
$700 plus $300 per lot			
Number of lots		Fee	$0.00
☒ Lot line revision/verification			
$250			
		Fee	$250.00
☐ Filing of condominium site			
$100			
		Fee	$0.00
☐ Lot consolidation			
$175			
		Fee	$0.00
		Total fee	**$250.00**

Fee received by: _____ Date: _____