TOWN OF
NEWMARKET
NEW HAMPSHIRE

Technical Review Committee Meeting

Wednesday, January 10, 2024, at 10:00 AM

Council Chambers. Town Hall

Agenda Item #1 – Regular Business

a. Notice is hereby given that the Technical Review Committee shall hold public meeting to review an application filed by **CC Railroad Street Newmarket LLC** requesting a boundary line adjustment, site plan review and special use permit approval for a 11,100 sf. mixed-use, three-story building comprising 41 one-bedroom apartments and 2,500 sf. of commercial space with associated utilities and parking facilities located on real property with an address at 3 Railroad Street, Tax Map U3, Lot 138A and 5 Railroad Street, Tax Map U4, Lot 16, M2A zoning district.

Planning Board Comprehensive Application Form

TO: Applicants

FROM: Newmarket Planning Board

SUBJECT: Guidelines for Processing Applications

The Newmarket Planning Board wants to process applications as speedily as possible. We understand that the Zoning Ordinance and our Regulations are complex and often confusing. These requirements are designed to deal with different situations from single-issue waivers and permits to large-scale residential developments and commercial site plans. Therefore, not all requirements may be applicable to your application.

Although it is not required, it is recommended that before you file your application if you have any questions or concerns, you should discuss your proposal informally with the Town Planner. The Town Planner will review your project conformance with the Town's Ordinances and Regulations and can advise you on procedures for obtaining approval as well as other governmental permits that may be required. Call (603) 659-8501 ext 1315 for an appointment or email: dhardy@newmarketnh.gov. Town of Newmarket Regulations and Ordinances are available online at www.newmarketnh.gov.

The key to receiving a prompt decision is to have all the necessary information in the Planning Department before the Planning Board meeting. All applications **MUST** be submitted to the Planning's office **TWENTY ONE DAYS** prior to the Planning Board meeting at which it will formally be reviewed. The Town Planner will schedule you for a Public Meeting. In order to be scheduled, your application must be substantially complete.

Type and Description of Project (this description will be used for notification purposes, please be detailed):

Application Type:	√	**Description of project or application**:
Subdivision:		Site plan approval for a mixed-use 3-story building with 41 one-bedroom apartments, and 2,500sf of commercial space.
Site Plan:	X	
Impact Fee Waiver:		
Special (Conditional) Use Permit:	X	
Other:		

TOWN OF NEWMARKET
COMPREHENSIVE APPLICATION

Note: This form and all required information must be filed at least **21 days** before the date of the meeting at which it is to be submitted to the Board. Revised plans of any type must be in the office **7 days** prior to the hearing date. Filing is to be done at the **Planning Department, Newmarket Town Hall, 186 Main Street, Newmarket, NH 03857**.

** Note regarding information requested: Name, mailing address, email, and telephone contacts must be supplied for an application to be scheduled for a hearing.

1. Name, mailing address, email, and telephone number of **owner of record**.

   CC Railroad Street Newmarket, LLC (Ben Stebbins)

   P.O. Box 571 Greenland, NH 03840

   bstebbins@condorcapitalllc.com

   603-801-2101

2. Name, mailing address, telephone numbers (voice and fax) and email of **agent**. The agent is the entity with the legal authority to bring the application to the board on behalf of the landowner. If the owner is not the applicant, the 'Authorization to Act as Agent' section must be filed with the Board.

   Horizons Engineering, Inc. (Michael Sievert)

   5 Railroad Street Newmarket, NH

   msievert@horizonsengineering.com

   603-659-4979

3. Name, mailing address, and telephone numbers (voice and fax) of **applicant**. An applicant is the entity with authority to represent an agent and/or landowner before the Board and will be responsible for dissemination of all information to the landowner and/or agent. An applicant is often (but not necessarily) a surveyor, engineer, attorney, or real estate professional.

CC Railroad Street Newmarket, LLC (Ben Stebbins)

P.O. Box 571 Greenland, NH 03840

bstebbins@condorcapitalllc.com

603-801-2101

4. Street Location of Subject Parcel: 3 Railroad Street

5. Tax Map U3 / U4 Lot 138A / 16

6. Zoning district property is located in M2A

7. Overlay Districts or other regulations affecting Subject Property:

State Highway Permit:	_____
Wetlands Overlay:	_____
Shoreland Protection:	_____
Aquifer Protection:	_____
Scenic Roadway:	_____
State Subdivision:	_____
Current Use Tax:	_____
Others (specify)	
_____	_____
_____	_____

8. Special (Conditional) Use Permit:

SPECIAL (CONDITIONAL) USE PERMITS. Pursuant to RSA 674:21,I(i), a provision which permits flexible and discretionary zoning among other innovative land use controls, the Town offers certain discretionary authority to the Planning Board in limited cases where generally stated standards appear inappropriate.

(A) Special (Conditional) Use Permits are provided in the following sections: § 1.05 (A)(3) for expansions of non-conforming uses; § 2.01(B)(2) for optional uses in the mills; § 2.04(B)(2)(a) for self-storage facilities within existing buildings in the mills; § 2.04(B)(2) for optional uses related to the golf course or outdoor recreation; § 2.07 (C) for flexible use development within the B-3 District; 5.01 (C)(7)(a) for excavations in the Aquifer Protection District; § 5.03 for impacts in the Wetland Overlay District; § 5.07(B)(3) for siting telecommunications facilities; § 7.01(B)(3) for permitting large home-based businesses; and § 7.05 Affordable Elderly Housing.

a. Section of Zoning Ordinance authorizing permit:

_____.

b. Information submitted must be sufficient for the Board to rule on the criteria found within the relevant section of ordinance authorizing the permit.

9. Name, mailing address, and telephone numbers (voice and fax) of additional professionals who are authorized to submit additional materials on behalf of the application. Additional professionals may include, but are not limited to: NH Certified Soil Scientist, Wetlands Scientist, Surveyor, Engineer, Attorney, or other Real Estate Professional. etc.

Horizons Engineering, Inc. (Michael Sievert)
5 Railroad Street Newmarket, NH 03857
603-659-4979

Woodburn & Co. Landscape Architecture, LLC
103 Kent Place
Newmarket, NH 03857
603-659-5949

Henry Stebbins, Attorney
Stebbins, Lazos & Van DerBeken, P.A.
889 Elm Street, 6th Fl Manchester, NH 03101
603-627-3700

Visible Light
24 Stickney Terrace, Ste. 6
Hampton, NH 03842
603-926-6049

Adam Morrill
c/o CC Railroad Street
P.O. Box 571 Greenland, NH 03840

10. Abutters:

The Application must include a completed and executed copy of Town of Newmarket –Abutter Notification Form. Include Map and Lot numbers of all abutters adjacent to the property. The legal definition for an abutter can be found at NH RSA 672:3, as amended; for purposes of notification, all parties in RSA 6764(I)(d), as amended:

APPLICATION FEES

In accordance with RSA 676:4,I(g), the applicant shall pay the following fees to compensate the Town for its expenses in processing, noticing and reviewing each application, one or more may apply, however, only one notice fee is required:

SUBDIVISION OF LAND

(A) Administration:

(1) Lot Line Adjustment: $70

(2) Subdivision: $500.00 plus $175/lot

(3) Minor Subdivision: $250.00 plus $75/lot

(B) Public Notice:

(1) $75.00 per notice; plus

(2) $7.00 per abutter or other party notified.

(C) Other costs incurred by the Board in reviewing the application (such as engineering, legal, and planner review), as limited in RSA 676:4 and the Newmarket Subdivision Regulations, shall be passed through to the applicant by the Board unless specifically waived.

(D) SEPARATE CHECK MADE OUT TO ROCKINGHAM COUNTY REGISTRY OF DEEDS - $26.00 per sheet. Recording: *No sheets will be recorded until this and all other fees are paid.*

(E) SEPARATE CHECK MADE OUT TO ROCKINGHAM COUNTY REGISTRY OF DEEDS - $25 for State LCHIP (Land & Community Heritage Investment Program) surcharge.

Each Lot/Parcel or Dwelling Unit _____

Public Notice Fee _____

Abutter Notification [____(# of abutters) x $7] _____

Total **$** _____

SITE PLAN REVIEW

(A) Administration:

(1) Minor Review: $125.00

(2) Major Review, one or more of the following shall apply:

(a)	Residential Base Fee	*$250*		250.00
	Per Unit	*$125* x 41		5,125.00
(b)	Commercial Base Fee	*$250*		
	Plus per square foot of floor space-			
	0-1,000	*$0.12 per sq. ft.*		
	1,001-5,000	*$0.10 per sq. ft.*	x 2,276	227.60
	5,001-10,000	*$0.08 per sq. ft.*		
	10,001+	*$0.05 per sq. ft.*		
(c)	Industrial Base Fee	*$250*		
	Plus per square foot of floor space-			
	0-1,000	*$0.06 per sq. ft.*		
	1,001-5,000	*$0.05 per sq. ft.*		
	5,001-10,000	*$0.04 per sq. ft.*		
	10,001+	*$0.03 per sq. ft.*		

(B) Public Notice:

(1)	$75.00 per notice; plus		75.00
(2)	$7.00 per abutter or other party notified.	x 14	98.00

(C) Other costs incurred by the Board in reviewing the application (such as engineering, legal, and planner review), as limited in RSA 676:4 and the Newmarket Subdivision Regulations, shall be passed through to the applicant by the Board unless specifically waived.

(D) SEPARATE CHECK MADE OUT TO ROCKINGHAM COUNTY REGISTRY OF DEEDS - $26.00 per sheet. Recording: *No sheets will be recorded until this and all other fees are paid.*

(E) EPARATE CHECK MADE OUT TO ROCKINGHAM COUNTY REGISTRY OF DEEDS -- $25 for State LCHIP (Land & Community Heritage Investment Program) surcharge.

Administration Fee	5,602.60
Public Notice Fee	75.00
Abutter Notification [14 (# of abutters) x $7]	98.00
Total	$ 5,775.60

IMPACT FEE WAIVER or SPECIAL USE PERMIT

(A) Public Notice:

(1) $75.00 per notice; plus

(2) $7.00 per abutter or other party notified.

(B) Other costs incurred by the Board in reviewing the application (such as engineering, legal, and planner review), as limited in RSA 676:4 and the Newmarket Subdivision Regulations, shall be passed through to the applicant by the Board unless specifically waived.

(C) SEPARATE CHECK MADE OUT TO ROCKINGHAM COUNTY REGISTRY OF DEEDS - $26.00 per sheet. Recording: *No sheets will be recorded until this and all other fees are paid.*

Public Notice Fee _____

Abutter Notification [____(# of abutters) x $7] _____

Total **$** _____

Verification & Signature Pages

1. The applicant and/or owner and/or agent, certifies that this application is correctly completed with all required attachments and requirements and that any additional reasonable costs for engineering or professional services incurred by the Planning Board or the Town of Newmarket in the final subdivision process of this property shall be borne by the following party:

   Applicant _____ Owner ___X_____ Agent_____

   ** Failure to indicate a responsible party for fees and associated costs will result in the denial of the application without a public hearing in accordance with RSA 676:4.

2. The owner/agent hereby authorizes the Newmarket Planning Board and its agents to access the subject land for the purpose of reviewing this subdivision plan, performing road inspections and any other inspections deemed necessary by the Board or its agents, to insure conformance of the on-site improvements with the approved plan and all Town of Newmarket ordinances and regulations.

3. The undersigned owner/agent hereby submits to the Newmarket Planning Board a Completed Application Package and respectfully requests its approval of said plat. In considerations for approval and the privileges occurring thereto, the owner hereby agrees, as applicable:

   - To carry out the improvements agreed upon and as shown and intended by said plat, including any work made necessary by unforeseen conditions which become apparent during construction.
   - To provide and install standard street signs as approved by the Town for all street intersections.
   - To give the Town on demand, proper deeds for land or rights of ways reserved on the plat for streets, drainage or other purposes as agreed upon.
   - To save the Town harmless from any obligation it may incur, or repairs it may make, because of my failure to carry out any of the foregoing provisions.
   - To make no changes whatsoever in the Final Plat as approved by the Board unless a revised plan or a plat or new application is submitted and approved by the Board.

- To construct improvements or post the Planning Board's Performance Guarantee to insure completion of the improvements shown on the plat and related drawings.

- There are no known violations of the Town of Newmarket Zoning Ordinance or Newmarket Planning Board Regulations present on the property that have not been disclosed as part of this application.

- To insure proper boundary monumentation at the project's completion in accordance with the Town of Newmarket Subdivision Regulations.

Authorization to Act as Agent

Mr./Ms. Michael Sievert/Ryan Hudock of Horizons Engineering, Inc.

is hereby designated as the person whom is authorized to act as my agent in securing any and all permits necessary from the Newmarket Planning Board for the development of my property, all communications to the owner may be addressed to the agent or applicant on the agent's behalf.

Signed: _____

Dated: 10/23/23

Witness: _____

Owner Address: P.O. Box 571
Greenland, NH 03840

By _____
Owner/President or Treasurer if a Corporation

TOWN OF NEWMARKET
ABUTTER NOTIFICATION FORM

Instructions:

1. List the map, parcel, name and mailing address of the property owner and all abutters as shown in Town records not more than 5 days prior to submittal, per RSA 676:4,I(b). This may be typed on a separate sheet. If using another sheet or multiple sheets, please indicate the date of preparation and sign your name on each sheet.

2. As applicable, list the name, mailing address, daytime phone number and fax number of: the Applicant's Authorized Agent; and any surveyor, engineer, architect or soil scientist whose stamp and signature appear in the application materials. Other required abutters are detailed in RSA 676:4(I)(b).

3. Please attach three adhesive mailing labels for each entry on the list. Label size must not exceed 1" tall by 2.75" long. Labels must be legibly filled out with names & mailing addresses of all parties on abutters list.

4. **The determination of abutters is the responsibility of the applicant, this list will not be reviewed for compliance with statutory requirements.**

Map	Parcel	Owner	Mailing Address
			SEE ATTACHED

Date of preparation: 10-23-23

I hereby certify that all information presented on this form is, to the best of my knowledge, correct.

Signature of preparer: *Janice Bell*

LIST OF OWNERS OF ABUTTING PROPERTY

(This includes property directly across the street or streams from the land under consideration. **List must also include any and all preparers of plans, studies, etc…**)

PLEASE PROVIDE NAME & MAILING ADDRESS

PROPERTY OWNER: 3 Railroad Street MAP U3/LOT 138A, 138 5 Railroad Street MAP U4/LOT 16 CC RAILROAD STREET NEWMARKET, LLC P.O. BOX 571 GREENLAND, NH 03840	**AGENT:** HORIZONS ENGINEERING, INC. 5 RAILROAD STREET NEWMARKET, NH 03857
MAP U4/LOTS 25,24,23 Parking Lot 2 Railroad Street 4 Railroad Street TOWN OF NEWMARKET 186 MAIN STREET NEWMARKET, NH 03857-1838	**ATTORNEY:** HENRY STEBBINS, ATTORNEY STEBBINS, LAZOS & VAN DERBEKEN, P.A. 889 ELM STREET 6TH FL. MANCHESTER, NH 03101
MAP U3/LOT 138-1 0 Railroad ROW BOSTON & MAINE RAILROAD C/O GUILFORD TRANS INDUST IRON HORSE PARK HIGH STREET NO. BILLERICA, MA 01862-1698	**ARCHITECT:** ADAM MORRILL c/o CC RAILROAD STREET NEWMARKET, LLC P.O. BOX 571 GREENLAND, NH 03840
MAP U4/LOT 19 11 Railroad Street JOYCE BEAUBIEN, TRUSTEE BEAUBIEN FAMILY TRUST 11 RAILROAD STREET NEWMARKET, NH 03857-1807	**LANDSCAPE ARCHITECT:** WOODBURN & CO. LANDSCAPE ARCHITECTURE, LLC 103 KENT PLACE NEWMARKET, NH 03857
MAP U4/LOT 22 10 Railroad Street BRETT R. NELSON 10 RAILROAD STREET NEWMARKET, NH 03857	**LIGHTING DESIGN:** VISIBLE LIGHT 24 STICKNEY TERRACE, STE. 6 HAMPTON, NH 03842
MAP U4/LOT 17 7 Railroad Street LYNN ALAN ARQUETTE, TRUSTEE LYNN A. ARQUETTE REVOCABLE TRUST 94 DAME ROAD NEWMARKET, NH 03857-1300	MAP U4/LOT 20A 13 Railroad Street KURT JACKSON, TRUSTEE KURT JACKSON REVOCABLE TRUST 761 WASHINGTON ROAD RYE, NH 03870-2318
MAP U4/LOT 119 196 South Main Street WHAT'S NEXT, LLC C/O JOHN SHEEHAN 130 ALDRICH ST. PORTSMOUTH, NH 03801	MAP U4/LOT 15 50 Exeter Road CHENEY PROPERTY MANAGEMENT 50 EXETER ROAD NEWMARKET, NH 03857-1906

Date of Preparation: 10-23-23

I hereby certify that all information presented on this form is, to the best of my knowledge, correct.

Signature of Preparer: >'¡ uim#, m}}

CC RAILROAD STREET
NEWMARKET, LLC
P.O. BOX 571
GREENLAND, NH 03840

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NEWMARKET, NH 03857

HENRY STEBBINS, ATTORNEY
STEBBINS, LAZOS & VAN DERBEKEN, PA
889 ELM STREET, 6TH FL.
MANCHESTER, NH

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P.O. BOX 571
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GREENLAND, NH 03840

WOODBURN & CO. LANDSCAPE
ARCHITECTURE, LLC
103 KENT PLACE
NEWMARKET, NH 03857

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103 KENT PLACE
NEWMARKET, NH 03857

WOODBURN & CO. LANDSCAPE
ARCHITECTURE, LLC
103 KENT PLACE
NEWMARKET, NH 03857

VISIBLE LIGHT
24 STICKNEY TERRACE, STE. 6
HAMPTON, NH 03842

VISIBLE LIGHT
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24 STICKNEY TERRACE, STE. 6
HAMPTON, NH 03842

TOWN OF NEWMARKET
186 MAIN STREET
NEWMARKET, NH 03857-1838

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TOWN OF NEWMARKET
186 MAIN STREET
NEWMARKET, NH 03857-1838

BOSTON & MAINE RAILROAD
C/O GUILFORD TRANS INDUST
IRON HORSE PARK, HIGH STREET
NO. BILLERICA, MA 01862-1698

BOSTON & MAINE RAILROAD
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IRON HORSE PARK, HIGH STREET
NO. BILLERICA, MA 01862-1698

JOYCE BEAUBIEN, TRUSTEE
BEAUBIEN FAMILY TRUST
11 RAILROAD STREET
NEWMARKET, NH 03857-1807

JOYCE BEAUBIEN, TRUSTEE
BEAUBIEN FAMILY TRUST
11 RAILROAD STREET
NEWMARKET, NH 03857-1807

JOYCE BEAUBIEN, TRUSTEE
BEAUBIEN FAMILY TRUST
11 RAILROAD STREET
NEWMARKET, NH 03857-1807

BRETT R. NELSON
10 RAILROAD STREET
NEWMARKET, NH 03857

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10 RAILROAD STREET
NEWMARKET, NH 03857

LYNN ALAN ARQUETTE, TRUSTEE
LYNN A. ARQUETTE REV TRUST
94 DAME ROAD
NEWMARKET, NH 03857-1300

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LYNN A. ARQUETTE REV TRUST
94 DAME ROAD
NEWMARKET, NH 03857-1300

WHAT'S NEXT, LLC
C/O JOHN SHEEHAN
130 ALDRICH ST.
PORTSMOUTH, NH 03801

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130 ALDRICH ST.
PORTSMOUTH, NH 03801

KURT JACKSON, TRUSTEE
KURT JACKSON REVOCABLE TRUST
761 WASHINGTON ROAD
RYE, NH 03870-2318

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761 WASHINGTON ROAD
RYE, NH 03870-2318

CHENEY PROPERTY MANAGEMENT
50 EXETER ROAD
NEWMARKET, NH 03857

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NEWMARKET, NH 03857

CHENEY PROPERTY MANAGEMENT
50 EXETER ROAD
NEWMARKET, NH 03857

horizons Engineering

5 Railroad Street, Newmarket, NH 03857 • Ph 603-659-4979 • Fax 603-659-4627 • www.horizonsengineering.com

Letter of Intent – Site Plan Review
For
Condor Capital, LLC.
Mixed-Use Development
Tax Map U3 / Lot 138A
Tax Map U4 / Lot 16

November 13, 2023

The Subject Property

The subject property is located at 3 Railroad Street and is comprised of two parcels being Tax Map U3, Lot 138A, and Tax Map U4, Lot 16. The subject property is accessed from Railroad Street and is bordered by S. Main Steet to the north, the railroad to the east, and mixed use residential and commercial to the south and west. Lot 138A is 0.18 acres and Lot 16 is 0.94 acres, resulting in a total project area of 1.12 acres. The subject property contains one existing historical brick building, one office building, historical railroad tracks, gravel area, and native vegetation. The property is serviced by municipal water, sewer and there is a closed drainage system within the Railroad St., but this lot does not drain to that system. Overhead utilities are also currently provided to the site from Railroad Street. The subject property has a gentle downgradient slope from west to east, and contains steeper slopes on the northern portion up to South Main Street.

The Site Development Proposal

The proposal is to construct a 3-story mixed used building with a 11,100+/- SF footprint comprised of 41 residential apartment units including a 2,276 SF office space on the first floor. The improvements also include the construction of a parking area containing 62 parking spaces including. The proposed building will connect to municipal water and sewer mains located on Railroad Street via a new 6" water service and 8" sewer service. The site will be accessed by a new 24' wide drive approach onto Railroad Street. Other improvements include green space and sidewalks, both internally and along the Railroad Street frontage. The site development details and architectural building plans are included herein. Additionally, a stormwater narrative and analysis has been provided, to demonstrate adequate stormwater management. All existing structures within the subject property will be demolished and removed as part of this development. It should be noted that a previously approved zoning variance allows the proposed uses and parking spaces. A copy of the approved variance is enclosed.

Approvals Being Requested from the Planning Board

The Site Plan Review Regulations (S.P.R.R.) will require the following approvals based on the current proposed development scope of work.

1. Planning Board Approvals:
    a. Site Plan Approval per Site Plan Review Regulations pursuant to Section 1.05 C and RSA 674:43.
    b. Special Use Permits per the Zoning Ordinance pursuant to Section 32-46A (b) (2).

Department Approvals

a. Public Works & Water and Wastewater Department relative to water and sewer connections, drainage, and other design considerations.
b. Fire & Police Departments relative to safety, fire protection, and other design considerations.
c. Building department relative to building codes and ADA requirements.

Pursuant to the special use permit under section 32-46A (b)(2), we believe the permit should be granted for the multifamily residential units because the project meets the purpose of the district, and is a suitable location because the project is providing residential apartments within walking distance of the downtown area. The parcel is on the edge of the M2A and R2 district, so the proposal fits with the neighborhood. The approval of the special use permit will not cause any adverse impact because the parcel is setback from the road, and is adjacent to a residential neighborhood, including a multi-unit apartment building at the end of Railroad Street. In addition, the application meets the requirements of section (b)(2)a through f, as described below:

(a) The Planning Board shall require a Fiscal Impact Study be completed by a consultant selected by the town, paid for by the applicant, that shows the multifamily residential or mixed use project with 3 units or more residential units will not have a negative fiscal impact on the town.

A Fiscal Impact Study has been included herein, which demonstrates that the project will have a positive fiscal impact on the town.

(b) The Planning Board shall require a Market Analysis be completed by a consultant selected by the town, paid for by the applicant, that demonstrates the or mixed use project with three units or more residential units will not have a negative impact on the town's housing market.

A Market Analysis has been included herein, which demonstrates that the project will have a positive fiscal impact on the town's housing market.

(c) The project shall have at least two (2) on-site parking spaces per residential unit.

As outlined in the approved variance from August 2023, relief has been granted from Section 32-46A(b)(2)c M2A Permitted Uses of the Municipal Code of the Town of Newmarket to permit 62 on-site parking spaces instead of the required 2 on-site parking spaces per residential unit.

(d) Multifamily residential use, with no commercial use within the building, shall be limited to no greater than four residential units within a single building.

As outlined in the approved variance from August 2023, relief has been granted from Section 32-89 Dimensions Table of the Municipal Code of the Town of Newmarket to permit a total of 41 residential units with 35 residential units in the M2A Zoning District and 6 residential units in the R2 Zoning District.

(e) No residential units shall be located in the street level space if the building has frontage on North Main Street, Main Street, South Main Street, or Exeter Road. (from Section 5.08 (C) (1) and (2).)

No residential units are located on street level space that fronts the above-listed roads.

f. Multifamily residential condominium unit in this zone shall not exceed 1,200 square feet and not have more than two bedrooms. Residential apartments in this zone shall not exceed 1,000 square feet and not have more than two bedrooms.

As shown on the architectural plans, the residential apartments are all one-bedroom units with a maximum floor area of 679 square feet.

Request for Site Plan Approval

In accordance with the site plan review regulations, this submission package includes the site plan application and supporting documentation, site plan review regulations checklist for major review, and the following plans:

1. Cover Sheet
2. Existing Conditions Plan
3. Site & Utility Plan
4. Site Grading & Erosion Control Plan
5. Civil Details
6. Landscape Plan
7. Architectural Plans
8. Photometric Lighting Plan

If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Michael J. Sievert PE
VP Structural Engineering

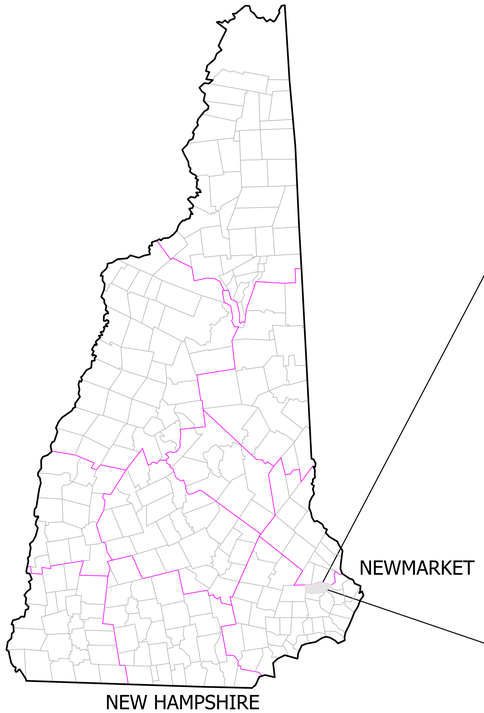
CONDOR CAPITAL LLC

SITE PLAN

3 RAILROAD STREET

NEWMARKET, NEW HAMPSHIRE

OCTOBER 2023



LOCATION PLAN

SHEET INDEX

horizons Engineering
Civil and Structural Engineering
Land Surveying and Environmental Consulting
MAINE • NEW HAMPSHIRE • VERMONT
www.horizonsengineering.com

CONDOR CAPITAL, LLC

3 RAIL ROAD STREET

NEWMARKET, NH 03857

COVER

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

FOR REVIEW
NOT FOR CONSTRUCTION

DATE OF PRINT
OCTOBER 24 2023
HORIZONS ENGINEERING

DATE: 10.17.23	PROJECT #: 230750
ENGIN'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H-___

COVER

GENERAL NOTES:

1. OWNER OF RECORD
   CONDOR CAPITAL LLC
   PO BOX 571
   GREENLAND, NH 03840

2. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY.

3. THE INTENT OF THIS PLAN IS TO SHOW EXISTING CONDITIONS ON PARCEL U4-16 AND U3-138A.

4. THE BEARINGS SHOWN ON THIS PLAN REFER TO GRID NORTH, NH STATE PLANE (NAD83), BASED ON A RTK GPS OBSERVATION TAKEN WITH A LEICA GS-16 ON 11/06/19. DISTANCE SHOWN ARE GROUND DISTANCES.

5. THE STATE OF NEW HAMPSHIRE HAS AN EASEMENT WITH A WIDTH OF FORTY NINE AND A HALF FEET (49.5') ON EITHER SIDE OF THE BASELINE OF THE WESTERN PORTLAND BRANCH LINE. SEE THE RETURN OF LAYOUT, THE BOSTON AND MAINE CORPORATION TO THE STATE OF NEW HAMPSHIRE, OFFICE OF THE SECRETARY OF STATE, DATED NOVEMBER 9TH, 1891. SEE VOLUME 4, PAGES 177 THROUGH 179 AT THE STATE OF NEW HAMPSHIRE ARCHIVES.

6. PARCELS U4-16 & U3-138A LIE WITHIN ZONE M-2A. A PORTION OF PARCEL U4-16 IS IN ZONE R2.

7. MINIMUM LOT SIZE: ZONE M-2A (0.25 ACRES), ZONE R2 (0.5 ACRES)

8. MINIMUM FRONTAGE: ZONE M-2A (50 FEET), ZONE R2 (100 FEET)

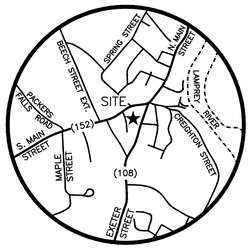
9. BUILDING SETBACKS:
   ZONE M-2A: FY. = 5', SY. = 10', RY. = 10' MFY: = 10'
   ZONE R2: FY. = 25', SY. = 15', RY. = 15' MFY: = N/A

10. LOTS U4-16 & U3-138A ARE SERVICED BY THE MUNICIPAL WATER AND SEWER SYSTEM.

11. LOTS U3-138A & U4-16 DO NOT LIE WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON THE FLOOD INSURANCE RATE MAP DATED 05/17/2005 COMMUNITY - PANEL 33015C0230E

REFERENCE PLANS:

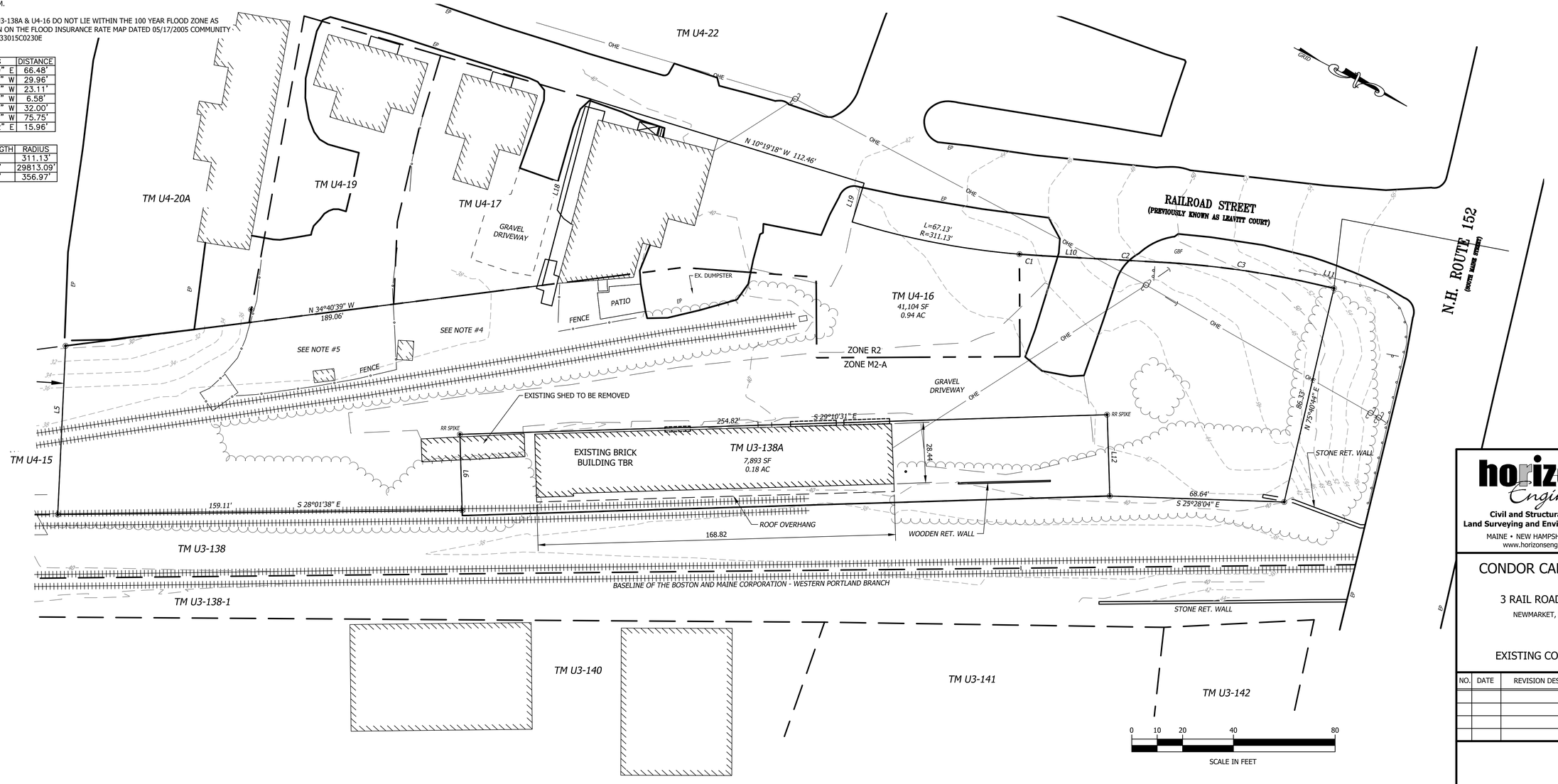
BOUNDARY LINE ADJUSTMENT PLAN RAILROAD STREET, SOUTH MAIN STREET, AND EXETER ROAD. NEWMARKET, ROCKINGHAM COUNTY, NEW HAMPSHIRE
FOR: THE BOSTON AND MAINE CORPORATION, CHENY PROPERTY MANAGEMENT, AND FIVE RAILROAD STREET, LLC
DATED: JANUARY 2020
BY: NORWAY PLAINS ASSOCIATES



LOCUS
N.T.S

LINE	BEARING	DISTANCE
L5	N 65°13'09" E	66.48'
L6	S 60°49'29" W	29.96'
L10	N 24°19'23" W	23.11'
L11	N 14°19'31" W	6.58'
L12	S 60°49'29" W	32.00'
L18	S 77°10'30" W	75.75'
L19	N 79°39'12" E	15.96'

CURVE	ARC LENGTH	RADIUS
C1	8.86'	311.13'
C2	23.84'	29813.09'
C3	62.31'	356.97'



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CONDOR CAPITAL, LLC

3 RAIL ROAD STREET
NEWMARKET, NH 03857

EXISTING CONDITIONS

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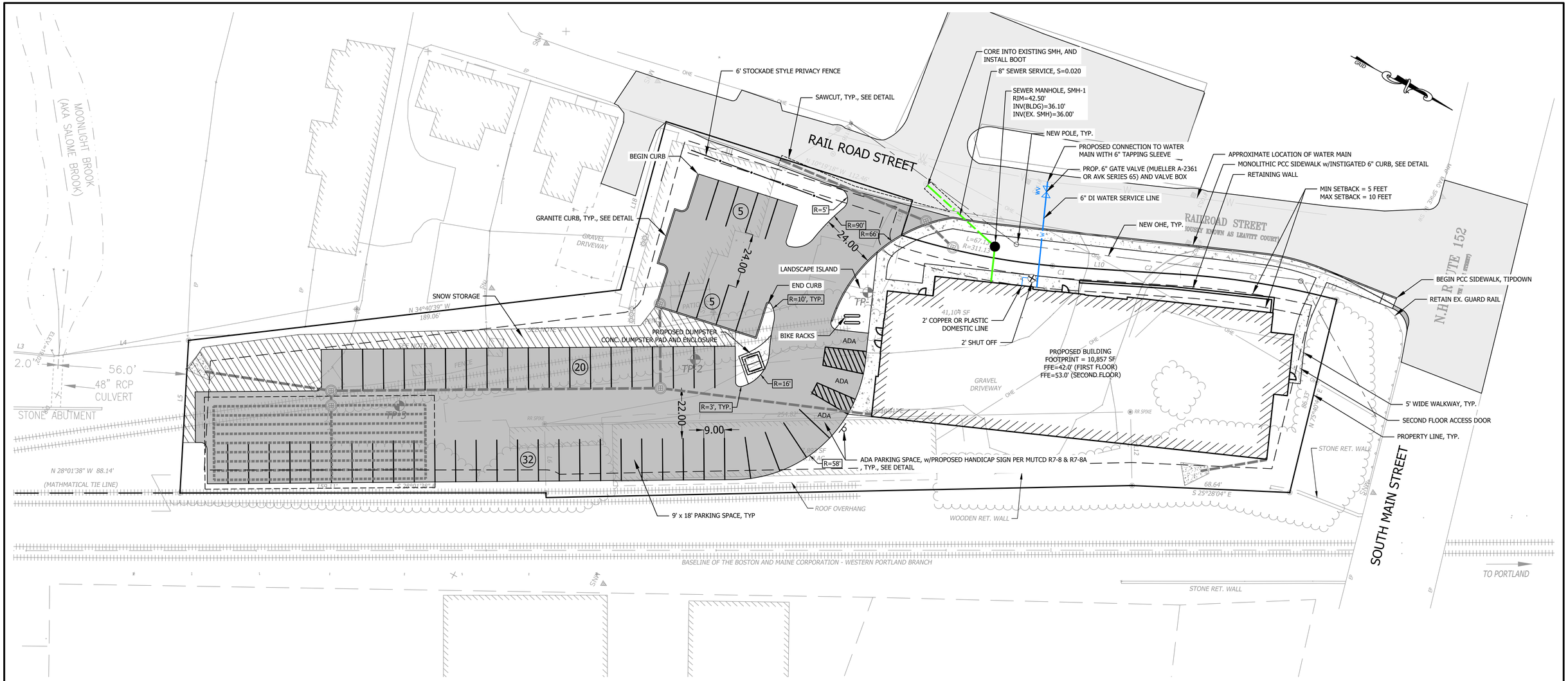

GENERAL NOTES:

1. OWNER OF RECORD
   CONDOR CAPITAL, LLC
   PO BOX 571
   GREENLAND, NH 03840
2. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY.
3. THE INTENT OF THIS PLAN IS TO SHOW PROPOSED CONDITIONS FOR THE CONSTRUCTION OF AN 41-UNIT APARTMENT BUILDING WITH COMMERCIAL SPACE ON THE FIRST FLOOR.
6. PARCELS U4-16 & U3-138A LIE WITHIN ZONE M-2A. A PORTION OF PARCEL U4-16 IS IN ZONE R2.
7. MINIMUM LOT SIZE:
   MAP U4-16: 0.94 ACRES
   MAP U3-138A: 0.18 ACRES
8. THE FIELD SURVEY WAS COMPLETED BY NORWAY PLAINS ASSOCIATES AND HORIZONS ENGINEERING, INC.
9. VERTICAL DATUM BASED ON NAD83.
10. THERE ARE NO WETLANDS ON THIS PROPERTY.
11. MAP U3-138A HAS NO FRONTAGE BUT HAS AN ACCESS EASEMENT ACROSS LOT 16.
12. IMPERVIOUS LOT COVERAGE0:

	PRE	POST
LOT 138A:	67.2%	62.1%
LOT 16:	32.4%	25.7%

13. AUTOMOBILE PARKING CALCULATIONS
    62 PARKING SPACER PER APPROVED VARIANCE

GENERAL NOTES CINTINUED:

14. THE TOTAL AREA DISTURBED FOR THIS DEVELOPMENT IS 47,000 Sq.Ft.
15. THE PROJECT IS SUBJECT TO THE FOLLOWING RELIEF FROM THE NEWMARKET ZONING AND SITE PLAN REGULATIONS:
    - VARIANCE: RELIEF FROM SECTION 32-56 *PERMITTED USES* OF THE MUNICIPAL CODE OF THE TOWN OF NEWMARKET TO PERMIT A MIXED-USE DEVELOPMENT IN THE R2 ZONING DISTRICT.
    - VARIANCE: RELIEF FROM SECTION 32-46A(B)(2)E *M2A PERMITTED USES* OF THE MUNICIPAL CODE OF THE TOWN OF NEWMARKET TO PERMIT A RESIDENTIAL UNITS ON THE FIRST FLOOR OF A MIXED USE BUILDING WITH FRONTAGE ON SOUTH MAIN STREET IN THE M2A ZONING DISTRICT.
    - VARIANCE: RELIEF FROM SECTION 32-89 *DIMENSIONS TABLE* OF THE MUNICIPAL CODE OF THE TOWN OF NEWMARKET TO PERMIT A TOTAL OF 41 RESIDENTIAL UNITS WITH 35 RESIDENTIAL UNITES IN THE M2A ZONING DISTRICT AND 6 RESIDENTIAL UNITS IN THE R2 ZONING DISTRICT.
    - VARIANCE: RELIEF FROM SECTION 32-46A(B)(2)C M2A *PERMITTED USES* OF THE MUNICIPAL CODE OF THE TOWN OF NEWMARKET TO PERMIT 62 ON-SITE PARKING SPACES INSTEAD OF THE REQUIRED 2 ON-SITE PARKING SPACES PER RESIDENTIAL UNIT.
16. ZONE: M-2A
    DIMENSIONAL REQUIREMENTS:

	REQUIRED	PROVIDED
MIN. LOT AREA	0.25 AC	0.18 AC*
MIN. FRONTAGE	50 FT	N/A*
MIN. ROAD SETBACK	5 FT	89.2 FT*
MAX. ROAD SETBACK	10 FT	89.2 FT*
MIN. SIDE/REAR SETBACK	10 FT	41.7 FT / 6.8 FT
MAX. BUILDING HEIGHT	35 FT	30.6 FT

*EXISTING NONCONFORMING

ZONE: R-2
DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA	0.50 AC
MIN. FRONTAGE	100 FT
MIN. ROAD SETBACK	25 FT
MAX. ROAD SETBACK	N/A
MIN. SIDE/REAR SETBACK	15 FT
MAX. BUILDING HEIGHT	35 FT

ZONING INFORMATION IS BASED ON THE TOWN OF NEWMARKET ZONING ORDINANCE DATED 8/7/13.

GENERAL NOTES CINTINUED:

17. PARKING REQUIREMENTS:
    62 SPACES PER APPROVED VARIANCE
18. IF CONTAMINATED SOILS ARE FOUND TO EXIST ON THE LOT, THEY MUST BE PROPERLY HANDLED AND DISPOSED OF IN ACCORDANCE WITH ALL STATE AND FEDERAL REGULATIONS. SOIL BELOW EXISTING RR IS SUSPECTED TO BE CONTAMINATED WITH CREOSOTE.
19. SITE IMPROVEMENTS ON LOT 16 THAT WILL BE USED BY THE SUBJECT PROPERTY (LOT 138A):
    19.1. AN EASEMENT TO CONSTRUCT, MAINTAIN AND USE A "5' WIDE BRICK PAVER WALKWAY" AS SHOWN ON THE PLAN;
    19.2. A NONEXCLUSIVE EASEMENT TO PAVE AND/OR REPAVE, USE AND MAINTAIN THE EXISTING DRIVEWAYS FROM RAILROAD STREET AND TO PLACE OVER OR UNDER SUCH EXISTING DRIVEWAYS UTILITY LINES SERVING THE 3 RAILROAD PROPERTY;
    19.3. A NONEXCLUSIVE EASEMENT FOR ACCESS TO AND USE OF THE AREA ON THE PLAN SHOWN AS "PROPOSED DUMPSTER TO REPLACE EXISTING DUMPSTER AND SERVICE PROPOSED RESIDENTIAL UNITS AND EXISTING COMMERCIAL USE" AND FOR THE PLACEMENT, USE AND MAINTENANCE OF SUCH DUMPSTER.
    19.4. AN EASEMENT TO CONSTRUCT AND MAINTAIN A "ROOF OVERHANG ABOVE ENTRY" AS SHOWN ON THE PLAN.
    19.5. A NONEXCLUSIVE EASEMENT FOR ACCESS TO AND USE OF THE AREA SHOWN ON THE PLAN AS "SNOW STORAGE" FOR SNOW STORAGE.
    19.6. AN EASEMENT TO CONSTRUCT, MAINTAIN AND USE THE "PADS" OUTSIDE OF THE GARAGE DOOR AS SHOWN ON THE PLAN.
    19.7. AN EASEMENT 10 FEET WIDE ALONG THE NORTHWESTERLY BOUNDARY LINE OF THE PROPOSED BUILDING ON THE LOT IN WHICH NO STRUCTURES MAY BE CONSTRUCTED. [THIS NEEDS TO BE ADDED TO THE PLAN].
    19.8. AN EASEMENT FOR ACCESS TO AND TO CONSTRUCT, USE AND MAINTAIN THE "TWO BICYCLE STANDS" SHOWN ON THE PLAN.
20. ALL PROPOSED AND FUTURE LIGHTING FIXTURES ON THE LOT SHALL BE DARK SKY COMPLIANT.

REFERENCE PLANS:

BOUNDARY LINE ADJUSTMENT PLAN RAILROAD STREET, SOUTH MAIN STREET, AND EXETER ROAD. NEWMARKET, ROCKINGHAM COUNTY, NEW HAMPSHIRE
FOR: THE BOSTON AND MAINE CORPORATION, CHENY PROPERTY MANAGEMENT, AND FIVE RAILROAD STREET, LLC
DATED: JANUARY 2020
BY: NORWAY PLAINS ASSOCIATES

CONSTRUCTION PHASING:

THE SUBJECT PROPERTY WILL BE DEVELOPED AS TWO PRIMARY PHASES:

- PHASE 1 INCLUDES THE SITE PREPARATION AND CONSTRUCTION FOR THE PROPOSED BUILDING ONLY. THE THE EXISTING HISTORIC BRICK BUILDING LOCATED ALONG THE RAILROAD TRACKS WILL BE REMOVED AS PART OF PHASE 1. EARTHWORK WILL ONLY BE CONDUCTED ON THE NORTHERN PORTION OF THE SUBJECT PROPERTY IN THE VICINITY OF THE PROPOSED BUILDING. PHASE 1 STORMWATER CONTROL BMPS WILL BE IMPLEMENTED ACCORDINGLY, WHICH INCLUDED A CONSTRUCTION ENTRANCE ALONG RAILROAD STREET AND SILT FENCE ALONG THE DOWNGRADIENT PERIMETER OF THE PROPOSED BUILDING. THE BMPS WILL REMAIN IN PLACE UNTIL VERTICAL CONSTRUCTION IS COMPLETE. PHASE 1 ALSO INCLUDES THE PROPOSED WATER AND SEWER UTILITY CONNECTIONS.
-
- PHASE 2 INCLUDES THE CONSTRUCTION OF THE PARKING AREA, SIDEWALK, STORMWATER INFRASTRUCTURE LOCATED AT THE SOUTHERN AND WESTERN PORTION OF THE PROPERTY. THE EXISTING OFFICE BUILDING AND HISTORIC RAILROAD TRACKS WILL BE REMOVED AS PART OF PHASE 2. PHASE 2 STORMWATER CONTROL BMPS WILL BE IMPLEMENTED ACCORDINGLY, WHICH INCLUDED A CONSTRUCTION ENTRANCE ALONG PARKING LOT ENTRANCE AND SILT FENCE ALONG THE PERIMETER OF THE PROPOSED PARKING AREA. THE BMPS WILL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE SITE ACHIEVES FINAL STABILIZATION.

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SITE & UTILITY PLAN

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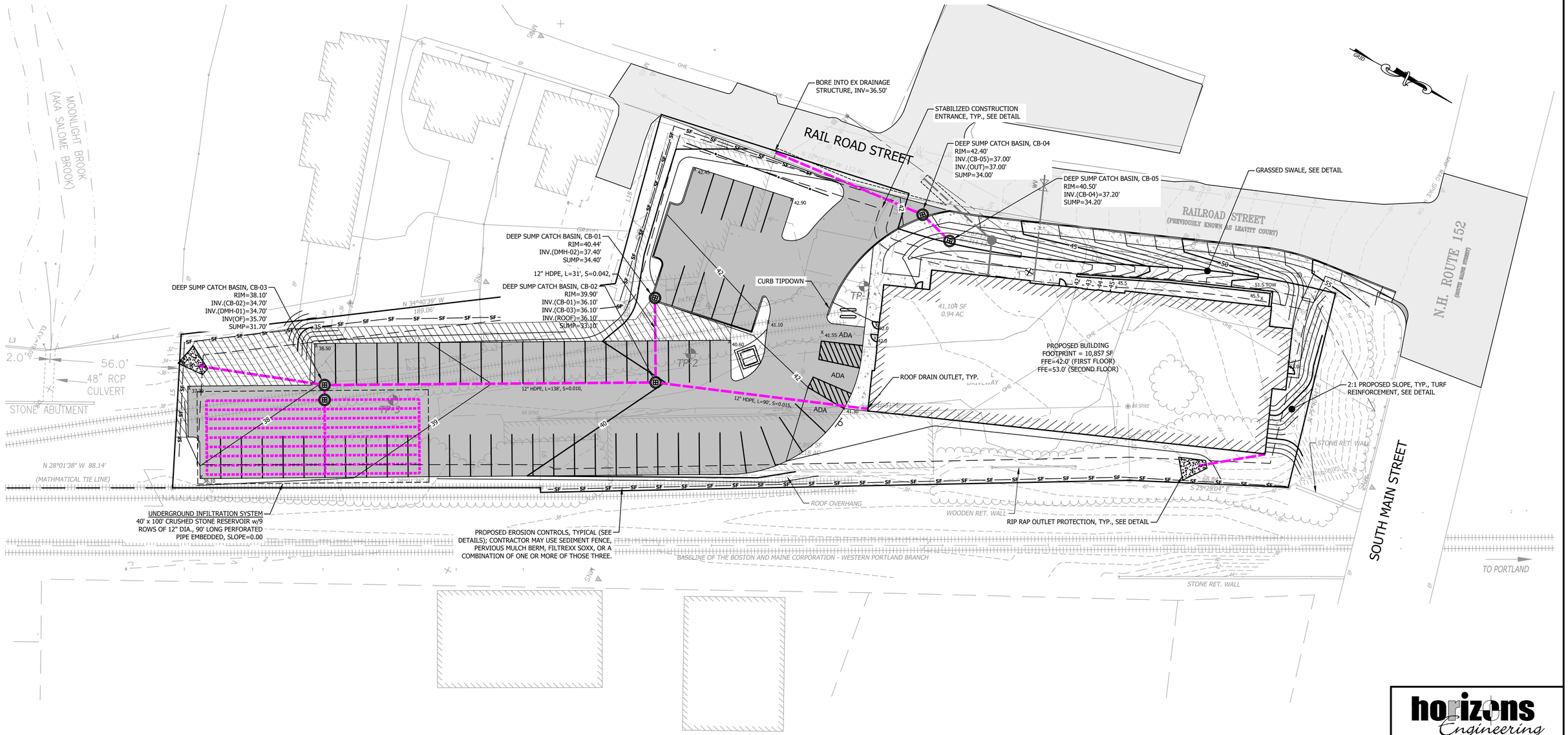

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CONDOR CAPITAL

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GRADING & EROSION AND SEDIMENTATION CONTROL PLAN

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SEEDING RECOMMENDATIONS

1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

2. SEEDBED PREPARATION

A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.

B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME THOROUGHLY INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

3. ESTABLISHING VEGETATION

A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:

-AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ. FT.
-NITROGEN (N), 50 LBS., PER ACRE OR 1.1 LBS. PER 1,000 SQ. FT.
-PHOSPHATE (P_2O_5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
-POTASH (K_2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.

(NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10).

B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

C. SEEDING GUIDE:

USE	SEEDING MIXTURE (SEE 3D)	SOIL TYPE: DROUGHTY	WELL DRAINED	MOD. WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILL-WAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR

D. SEEDING RATES:

	MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL:	42	0.95
B	TALL FESCUE	15	0.35
	CREEPING RED FESCUE	10	0.25
	CROWN VETCH **OR**	15 **OR**	0.35 **OR**
	FLATPEA	30	0.75
	TOTAL:	40 **OR** 55	0.95 **OR** 1.35
C	TALL FESCUE	20	0.45
	FLATPEA	30	0.75
	TOTAL:	50	1.20

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO SEPTEMBER 15. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.

F. TEMPORARY SEEDING RATES:

SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.	REMARKS
WINTER RYE	112	2.5	BEST FOR FALL SEEDING. SEED FROM AUGUST TO SEPTEMBER 5TH FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	80	2.0	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15TH FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40	1.0	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE NOT IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30	0.7	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1ST AND JUNE 1ST AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

4. MULCH

A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.

B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING.

5. MAINTENANCE TO ESTABLISH A STAND

A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON SITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.

C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM

1. CONSIDER FITTING THE BUILDING AND DRIVEWAY TO THE NATURAL TOPOGRAPHY. THIS REDUCES THE NEED FOR CUTS AND FILLS. AVOID EXTENSIVE GRADING THAT WOULD ALTER DRAINAGE PATTERNS OR CREATE VERY STEEP SLOPES.
2. EXPOSE AREAS OF BARE SOIL TO EROSIVE ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
3. SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
4. LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
5. AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES

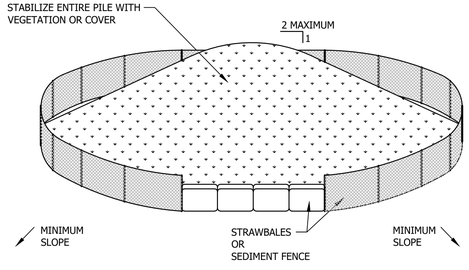
1. STOCKPILE TOPSOIL REMOVED FROM CONSTRUCTION AREA AND SPREAD OVER ANY DISTURBED AREAS PRIOR TO REVEGETATION. TOPSOIL STOCKPILES MUST BE PROTECTED FROM EROSION.
2. PROTECT BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH TEMPORARY VEGETATION OR MULCHES.
3. USE SEDIMENT BASINS TO TRAP DEBRIS AND SEDIMENT WHICH WILL PREVENT THESE MATERIALS FROM MOVING OFF SITE.
4. USE DIVERSIONS TO DIRECT WATER AROUND THE CONSTRUCTION AREA AND AWAY FROM EROSION PRONE AREAS TO POINTS OF SAFE DISPOSAL.
5. USE TEMPORARY CULVERTS OR BRIDGES WHEN CROSSING STREAMS WITH EQUIPMENT.
6. PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS AWAY FROM DRAINAGE WAYS.

C. PROTECT AREA AFTER CONSTRUCTION.

1. ESTABLISH GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA. FINAL GRADES SHALL BE SEEDED WITHIN 72 HOURS. STABILIZATION SHALL BE DEFINED AS 85% VEGETATIVE COVER.
2. MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
3. MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
4. DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
5. IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.

D. INVASIVE SPECIES AND FUGITIVE DUST

1. THE PROJECT SHALL NOT CONTRIBUTE TO THE SPREAD OF INVASIVE SPECIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EVALUATE WORK AREAS FOR THE PRESENCE OF INVASIVE SPECIES, AND IF FOUND SHALL TAKE NECESSARY MEASURES TO PREVENT THEIR SPREAD IN ACCORDANCE WITH RSA 430:51-57 AND AGR 3800. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES BY INSPECTING AND CLEANING ALL EQUIPMENT ARRIVING ON SITE.
2. FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.



SOIL STOCKPILING IS TO BE USED WHERE TOPSOIL IS NECESSARY FOR REGRADING AND VEGETATING DISTURBED AREAS.

TEMPORARY STOCKPILE STABILIZATION MEASURES INCLUDE VEGETATIVE COVERS, MULCH, NON-VEGETATIVE COVERS, AND PERIPHERAL SEDIMENT TRAPPING BARRIERS. THE STABILIZATION MEASURE(S) SELECTED SHOULD BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND REQUIRED PERIOD OF USE.

INSTALLATION NOTES:

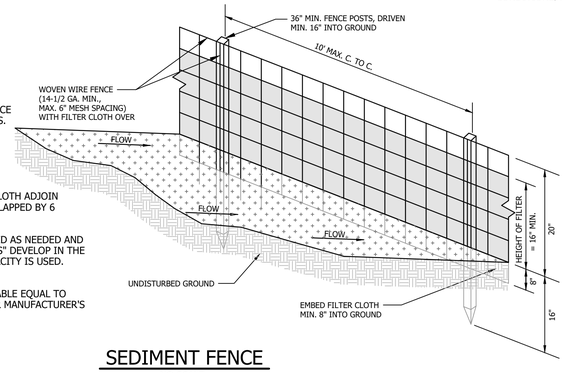
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES AND THEN STABILIZED WITH VEGETATION OR COVERED.

SOIL STOCKPILING DETAIL

NOT TO SCALE

CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
5. 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



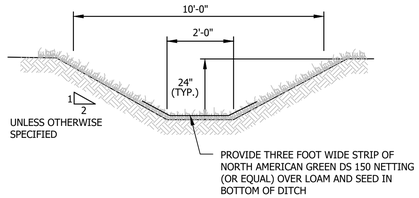
SEDIMENT FENCE

NO SCALE

COLD WEATHER SITE STABILIZATION REQUIREMENTS

TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING ADDITIONAL STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1:

1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE, SECURED WITH ANCHORED NETTING OR TACKIFIER, OR 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
3. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH PROPERLY INSTALLED AND ANCHORED EROSION CONTROL MATTING OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H), SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
5. INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
6. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH NOTES 2 OR 3 ABOVE, SHALL BE COMPLETED WITHIN 1 DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
7. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% 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, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
8. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM NO. 304.1 OR 304.2.



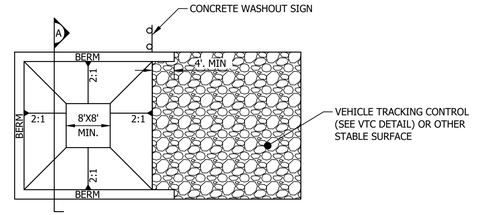
GRASS LINED DITCH DETAIL

NOT TO SCALE

CONSTRUCTION SEQUENCE

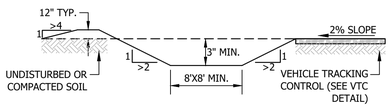
1. INSTALL CONSTRUCTION ENTRANCE, SEE DETAIL.
2. CUT AND CLEAR TREES WITHIN THE CLEARING LIMITS.
3. INSTALL SEDIMENT FENCES, ROCK CHECK DAMS, AND OTHER APPROPRIATE EROSION CONTROL MEASURES AT LOCATIONS SHOWN ON THE PLANS AND AS NEEDED.
4. GRUB SITE WITHIN GRADING LIMITS.
5. STRIP AND STOCKPILE TOPSOIL AND INSTALL EROSION CONTROL MEASURES.
6. INSTALL/ADJUST SEDIMENT FENCE, CHECK DAMS, AND HAYBALES, AS REQUIRED.
7. PROCEED WITH WORK, LIMITING THE DURATION OF DISTURBANCE. THE MAXIMUM OF UNCOVERED DISTURBED EARTH AT ANY ONE TIME IS FIVE ACRES. THE MAXIMUM LENGTH OF TIME THAT DISTURBED EARTH MAY BE LEFT UNSTABILIZED IS 45 DAYS.
8. BEGIN SEEDING AND MULCHING IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED WITH APPROVED METHODS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

   AN AREA SHALL BE CONSIDERED STABLE IF 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; OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
9. INSPECT ALL EROSION CONTROL MEASURES ON A DAILY BASIS AND AFTER EVERY 0.5 INCHES OF PRECIPITATION. MAINTAIN SEDIMENT FENCE, SEDIMENT TRAPS, HAY BALES, ETC., AS NECESSARY.
10. PAVE DRIVEWAY AND PARKING AREAS.
11. PLACE TOPSOIL, SEED AND MULCH.
12. COMPLETE ALL REMAINING PERMANENT EROSION CONTROL STRUCTURES.



CONCRETE WASHOUT AREA PLAN

NOT TO SCALE

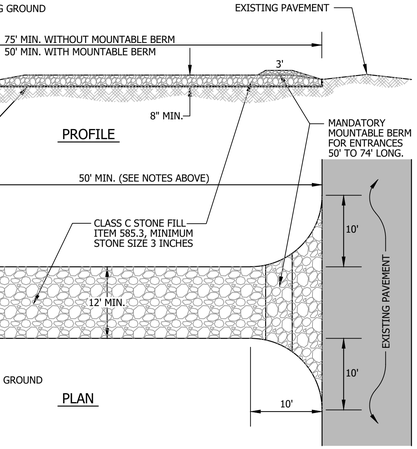


SECTION A

NOT TO SCALE

INSTALLATION NOTES:

1. SEE PLAN FOR CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE TO BE USED.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'. SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 2:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.



STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

MAINTENANCE NOTES:

1. INSPECT BMPs EACH WORKDAY AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NO REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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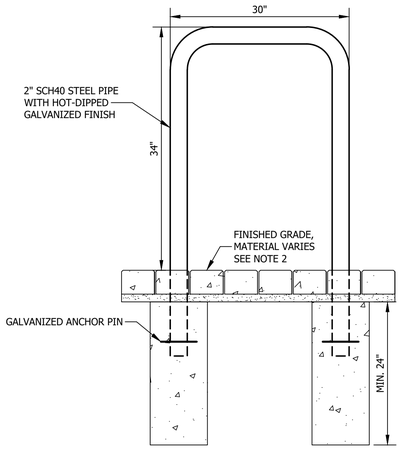
EROSION AND SEDIMENT CONTROL DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 10.17.23	PROJECT #: 230750
ENG'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H-___

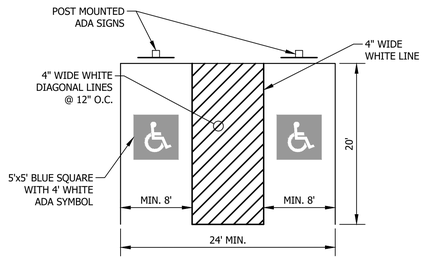
C501



NOTES:
1. ALL BICYCLE STANDS MUST BE MADRAX UX238-IG-G OR UX238-SF-G, OR APPROVED EQUAL.
2. ALL BICYCLE STANDS MUST BE IN-GROUND MOUNTED UNLESS THEY WILL BE MOUNTED TO AN EXISTING CONCRETE SLAB THAT MEETS MADRAX REQUIREMENTS FOR SURFACE MOUNTING.

SHEFFIELD BICYCLE STAND DETAIL

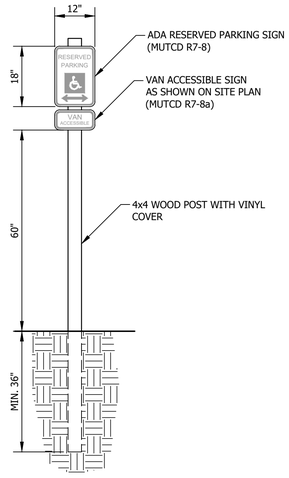
NOT TO SCALE



NOTES:
1. SEE SITE PLAN FOR STRIPING LAYOUT

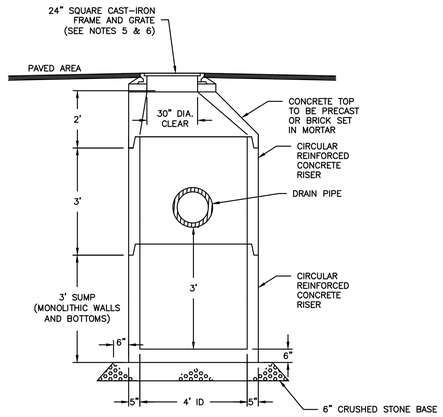
PAVEMENT MARKINGS:

1. STRIPE PARKING AREAS AND DRIVES AS SHOWN, INCLUDING PARKING SPACES, HANDICAP SYMBOLS, AND PAINTED ISLANDS. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) AND AASHTO M248 TYPE "F". MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
2. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGN AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
3. PAINTED ISLANDS SHALL BE 4 INCH WIDE DIAGONAL LINES SPACED AT 3 FT. O.C. BORDERED BY 4 INCH WIDE LINES.
4. MAXIMUM SLOPE OF ADA PARKING IS 2%



ADA PARKING AND SIGNAGE DETAIL

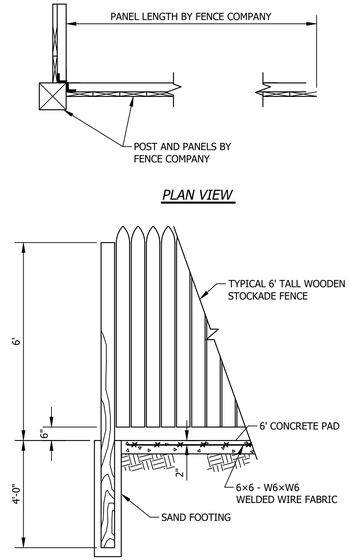
NOT TO SCALE



TYPICAL DEEP SUMP CATCH BASIN DETAIL

N.T.S

DRAINAGE STRUCTURE NOTES:
1. DRAINAGE STRUCTURE MATERIALS SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 600, SECTION 604.
2. SITE CONTRACTOR SHALL BACKFILL AROUND DRAINAGE STRUCTURES IN 6 TO 8 INCH LIFTS, ATTAINING 95% MAXIMUM PROCTOR DENSITY FOR EACH LIFT.
3. PIPE OPENINGS SHALL BE FULLY MORTARED ON OUTSIDE PRIOR TO BACK FILLING. INSIDE OF PIPE OPENINGS SHALL BE MORTARED AND ALLOWED TO CURE PER MANUFACTURERS REQUIREMENTS PRIOR TO RECEIVING RUNOFF.
4. JOINTS BETWEEN ADJACENT RISERS SHALL BE FULLY SEALED WITH ELASTOMERIC SEALANT PER MANUFACTURERS REQUIREMENTS.
5. WHEN FRAME/GRATE ARE LOCATED IN A PAVED AREA, THEY SHALL BE BROUGHT TO FINISH GRADE AFTER BINDER COURSE PAVEMENT IS PLACED. THE EXCAVATION REQUIRED AROUND THE GRATE AND FRAME SHALL BE BACKFILLED FLUSH WITH THE TOP OF BINDER COURSE WITH NHDOT CLASS B CONCRETE.
6. FRAME AND GRATE:
   CATCH BASINS:
   NEENAH LIFTMATE OR PAMREX



ELEVATION VIEW

DUMPSTER ENCLOSURE

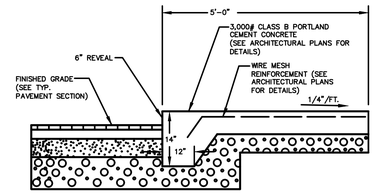
NOT TO SCALE

ITEM NO.	SIGN SIZE HEIGHT	SIGN SIZE WIDTH	TEXT	NO. SIGNS REQ'D
R7-8	18"	12"	RESERVED PARKING	1
R7-8a	9"	18"	VAN ACCESSIBLE	1

NOTES:
1. ALL SIGNS SHALL BE PER "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
2. ALL FREE STANDING SIGNS TO BE MOUNTED AT A MINIMUM HEIGHT OF 7' FROM THE EXISTING GRADE TO THE BOTTOM OF THE SIGN

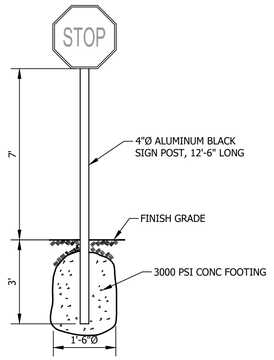
SIGN SCHEDULE

NOT TO SCALE



PCC SIDEWALK DETAIL

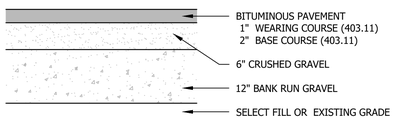
NOT TO SCALE



NOTES:
1. SEE PLANS FOR SIGN PLACEMENT.

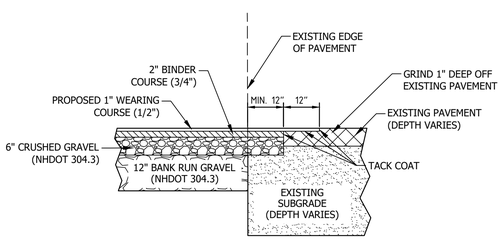
TYPICAL POLE MOUNTED SIGN DETAIL

NOT TO SCALE



TYPICAL PAVEMENT SECTION

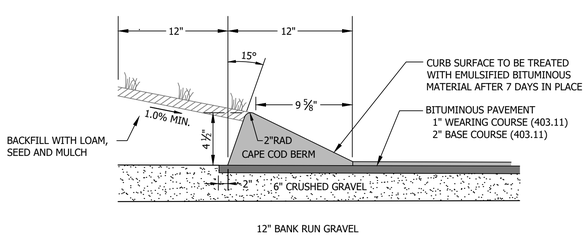
NOT TO SCALE



NOTES:
1. SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED BY NHDOT.
2. INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
3. PLACE BINDER COURSE.
4. GRIND EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
5. TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.

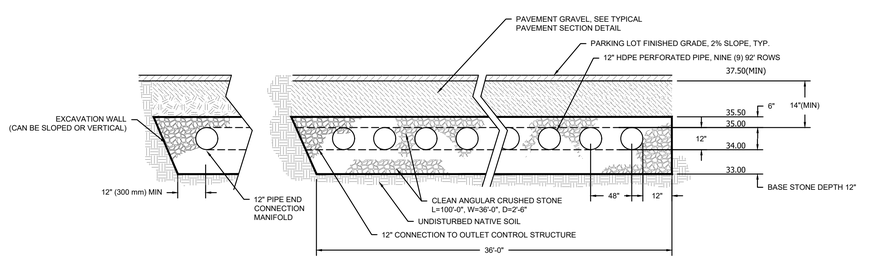
TYPICAL PAVEMENT SAWCUT DETAIL

NOT TO SCALE



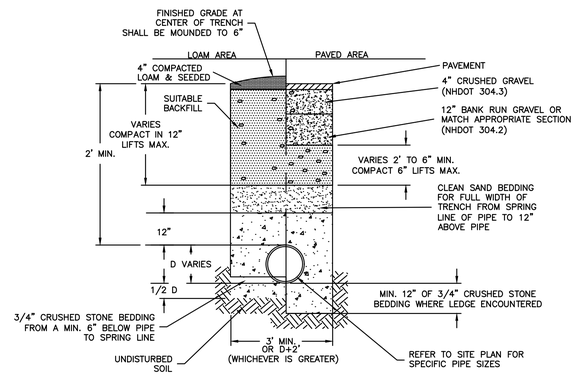
TYPICAL CAPE COD BERM SECTION

NOT TO SCALE



UNDERGROUND INFILTRATION SYSTEM

NOT TO SCALE



STANDARD DRAINAGE PIPE TRENCH

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CONSTRUCTION DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 10.17.23	PROJECT #: 230750
ENG'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H-___

C502

SEWER NOTES

1. GENERAL

   CONSTRUCTION OF ALL COMPONENTS OF THE SANITARY SEWER SYSTEM SHALL CONFORM TO THE MOST CURRENT VERSION OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES ENV-WQ 700 AND ARTICLE III OF THE *MUNICIPAL CODE OF THE TOWN OF NEWMARKET, NEW HAMPSHIRE*.

2. TYPES OF SEWERS

   A. THERE SHALL BE NO CONNECTION BETWEEN SANITARY SEWERS AND STORM SEWERS.
   B. RUNOFF FROM ROOFS, STREETS, AND OTHER AREAS AND GROUNDWATER FROM FOUNDATION DRAINS, SUMP PUMPS, OR OTHER SUBSURFACE DRAINS SHALL BE EXCLUDED FROM SANITARY SEWERS.

3. SEWER SIZE AND COVER

   A. MINIMUM PIPE SIZE FOR GRAVITY SEWER MAINS SHALL BE 8 INCHES.
   B. MINIMUM PIPE SIZE FOR GRAVITY SEWER SERVICES SHALL BE 4 INCHES.
   C. MINIMUM PIPE SIZE FOR FORCE MAIN SEWER SERVICES SHALL BE 2 INCHES.
   D. SANITARY SEWERS SHALL HAVE 6 FEET MINIMUM COVER IN ALL ROADWAY LOCATIONS AND 4 FEET MINIMUM COVER IN ALL CROSS-COUNTRY LOCATIONS.

4. PIPE AND FITTING MATERIALS:

A. DUCTILE IRON PIPE

   DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION:
   (1) AWWA C151 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND LINED MOLDS, FOR WATER OR OTHER LIQUIDS;
   (2) AWWA C150 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A 536 IRON CASTINGS; AND
   (3) JOINTS SHALL BE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL-AND-SOCKET TYPE;

B. PVC (POLY VINYL CHLORIDE) PIPE

   PVC PIPE AND FITTINGS SHALL BE APPROVED FOR SEWAGE SERVICE AND CONFORM TO THE FOLLOWING:
   (1) PVC PIPE USED FOR GRAVITY SEWERS SHALL BE TYPE SDR 35 CONFORMING TO ASTM D3034;
   (2) PVC PIPE USED FOR FORCE MAINS SHALL BE TYPE SDR 26 CONFORMING TO ASTM D2241 OR ASTM D1785;
   (3) JOINTS SHALL BE PUSH-ON, BELL-AND-SPIGOT TYPE HAVING OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212.

5. BEDDING

   PIPE BEDDING SHALL BE SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67. BEDDING SHALL EXTEND FROM THE SPRING LINE OF THE PIPE TO A MINIMUM DEPTH OF 6" BELOW THE BOTTOM OF THE PIPE OUTSIDE SURFACE.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

6. MANHOLES

   A. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
   B. MANHOLES SHALL BE DESIGNED FOR H-20 LOADING.
   C. HORIZONTAL JOINTS BETWEEN BARREL SECTIONS SHALL BE OF AN OVERLAPPING TYPE WHICH SHALL DEPEND UPON A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT FOR WATER TIGHTNESS.
   D. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
      (1) ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
      (2) CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
      (3) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
      (4) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
   E. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.

7. PROTECTION OF WATER SUPPLIES

   A. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.

   B. NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.

   C. SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.

   D. A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (B) OR (C) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.06.

   E. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
      (1) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
      (2) SEWER PIPE JOINTS SHALL BE LOCATED AT LEASE 6 FEET HORIZONTALLY FROM THE WATER MAIN.

STANDARD TRENCH NOTES - SEWER

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.

2. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A ½ INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.

4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED FROM THE TRENCH DURING THE COURSE OF CONSTRUCTION, AFTER EXCLUDING DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL NOT APPROVED BY THE ENGINEER.

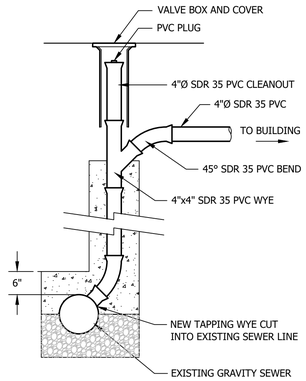
   TRENCH BACKFILL IN CROSS-COUNTRY LOCATIONS SHALL BE SUITABLE MATERIAL AS DESCRIBED ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK, OR PEAT MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE STABLE AND ACCESS TO THE PIPE FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED. BACKFILL SHALL BE MOUNDED TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE

5. BASE COURSE FOR TRENCH REPAIR SHALL MEET THE REQUIREMENTS OF SECTION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

6. SHEETING: ALL TRENCH SUPPORTS SHALL CONFORM TO OSHA STANDARDS. CONTRACTOR IS RESPONSIBLE FOR OSHA COMPLIANCE AND WORKER SAFETY THROUGHOUT CONSTRUCTION.

7. TRENCH DIMENSIONS: W = MAXIMUM ALLOWABLE TRENCH WIDTH MEASURED 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER (D) OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS THE PIPE OUTSIDE DIAMETER. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. THE MAXIMUM ALLOWABLE TRENCH PAVEMENT PAYMENT WIDTH SHALL BE 8 FEET CENTERED OVER PIPE.

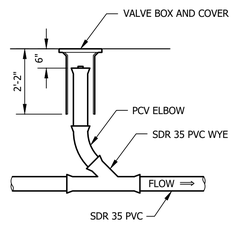
8. PIPE INSULATION AT STORM DRAIN CROSSING: INSTALL 2" THICK RIGID FOAM INSULATION OVER SEWER AT STORM DRAIN CROSSINGS, EXTEND INSULATION 4 FEET EITHER SIDE OF STORM DRAIN ALONG SEWER.



IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED AT THE CONNECTION.

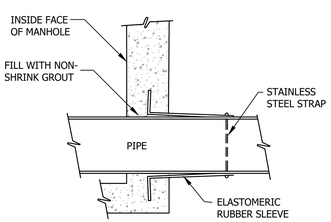
CHIMNEY AT NEW SEWER CONNECTION

NOT TO SCALE

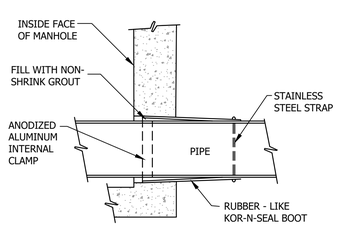


SEWER CLEANOUT DETAIL

NOT TO SCALE



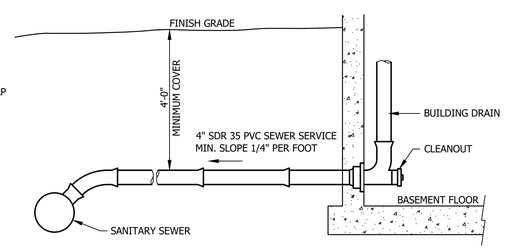
LOCK-JOINT FLEXIBLE MANHOLE SLEEVE



KOR-N-SEAL JOINT SLEEVE

JOINTING DETAILS

NOT TO SCALE



SEWER SERVICE DETAIL

NOT TO SCALE

STANDARD TRENCH NOTES - WATER

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.

2. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A ½ INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.

4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED FROM THE TRENCH DURING THE COURSE OF CONSTRUCTION, AFTER EXCLUDING DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL IN CROSS-COUNTRY LOCATIONS SHALL BE SUITABLE MATERIAL AS DESCRIBED ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK, OR PEAT MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE STABLE AND ACCESS TO THE PIPE FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED. BACKFILL SHALL BE MOUNDED TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE

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7. TRENCH DIMENSIONS: W = MAXIMUM ALLOWABLE TRENCH WIDTH MEASURED 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER (D) OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS THE PIPE OUTSIDE DIAMETER. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. THE MAXIMUM ALLOWABLE TRENCH PAVEMENT PAYMENT WIDTH SHALL BE 8 FEET CENTERED OVER PIPE.

8. WATER/SEWER SEPARATION: WATER MAINS SHALL BE SEPARATED FROM SANITARY SEWER BY A MINIMUM OF 10 FEET HORIZONTALLY AND A MINIMUM OF 18 INCHES VERTICALLY, WITH THE WATER MAIN ABOVE THE SEWER.

9. PIPE COVER:
   COVER OVER WATER SHALL BE 6 FEET MINIMUM IN ALL LOCATIONS.

WATER SUPPLY NOTES

1. GENERAL

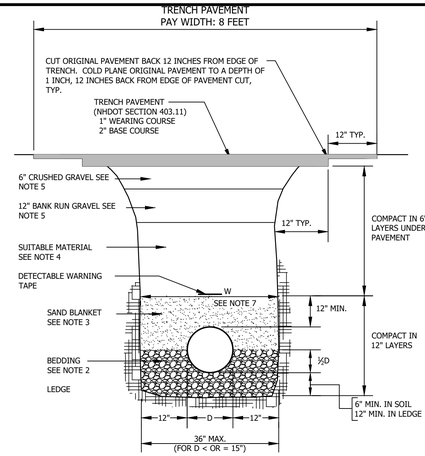
   BUILD THE WATER SUPPLY SYSTEM IN CONFORMANCE WITH THE MOST CURRENT VERSION OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES, NEWMARKET'S *WATER USE RULES, REGULATIONS AND CONSTRUCTION SPECIFICATIONS,* AND CHAPTER 31 OF THE *MUNICIPAL CODE OF THE TOWN OF NEWMARKET, NEW HAMPSHIRE*.

2. PIPE AND FITTING MATERIALS:
   PIPES WITH DIAMETERS GREATER THAN 2 INCHES MUST BE PVC OR PVCO COMPLYING WITH AWWA C900 OR C909 RESPECTIVELY. ALL PIPES MUST HAVE A PRESSURE RATING OF 200 PSI OR GREATER.

3. JOINT RESTRAINT: USE MECHANICALLY RESTRAINED JOINTS FOR THE ENTIRE LENGTH OF THE NEW 4" PVC FIRE SERVICE LINE.

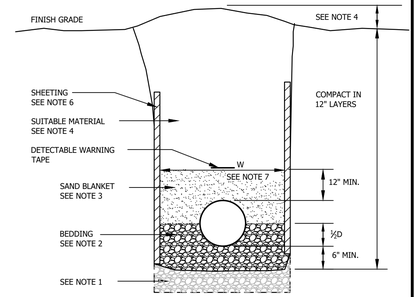
4. PRESSURE TESTING: PRESSURE TEST IN ACCORDANCE WITH NEWMARKET DPW REQUIREMENTS OR ANSI/AWWA C600 IF AHJ DOES NOT HAVE A PREFFERED METHOD OF TESTING. MINIMUM TEST PRESSURE IS 1.5 × MAXIMUM SYSTEM PRESSURE OR 100 PSI, WHICHEVER IS GREATER.

5. DISINFECTION: DISINFECT WATER MAIN AND DOMESTIC SERVICES IN ACCORDANCE WITH NEWMARKET REQUIREMENTS AND ANSI/AWWA C651.



NOTE:
MINIMUM BEDDING DEPTH AND MAXIMUM PAYMENT LIMIT FOR LEDGE EXCAVATION = ½D (12" MINIMUM)

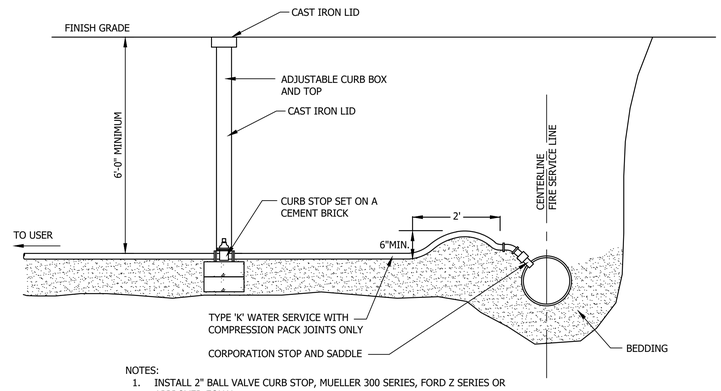
LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION WITH OR WITHOUT SHEETING

STANDARD TRENCH SECTIONS

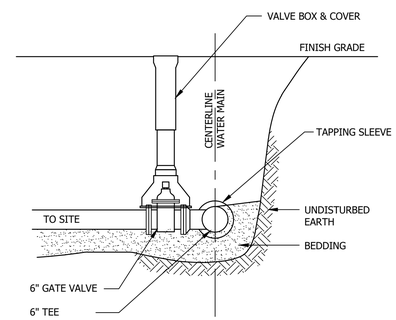
NOT TO SCALE



NOTES:
1. INSTALL 2" BALL VALVE CURB STOP, MUELLER 300 SERIES, FORD Z SERIES OR APPROVED EQUAL.
2. CURB BOX MUST BE INSTALLED PLUMB AND FLUSH WITH FINAL GRADE.
3. DO NOT PLACE ANY OBSTRUCTION WITHIN 4 FEET OF THE CURB BOX THAT WOULD OBSTRUCT USE OF THE VALVE.

DOMESTIC WATER SERVICE CONNECTION

NOT TO SCALE



NOTES:
1. ALL CONNECTIONS MUST USE FULLY RESTRAINED MECHANICAL JOINTS
2. DO NOT REDUCE SIZE OF WATER PIPE FROM 6" TO 4" UNTIL OUTSIDE OF PAVED ROAD.

WATER MAIN TAPPING DETAIL

NOT TO SCALE

horizons Engineering
Civil and Structural Engineering
Land Surveying and Environmental Consulting
MAINE • NEW HAMPSHIRE • VERMONT
www.horizonsengineering.com

CONDOR CAPITAL, LLC

3 RAIL ROAD STREET

NEWMARKET, NH 03857

UTILITY DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

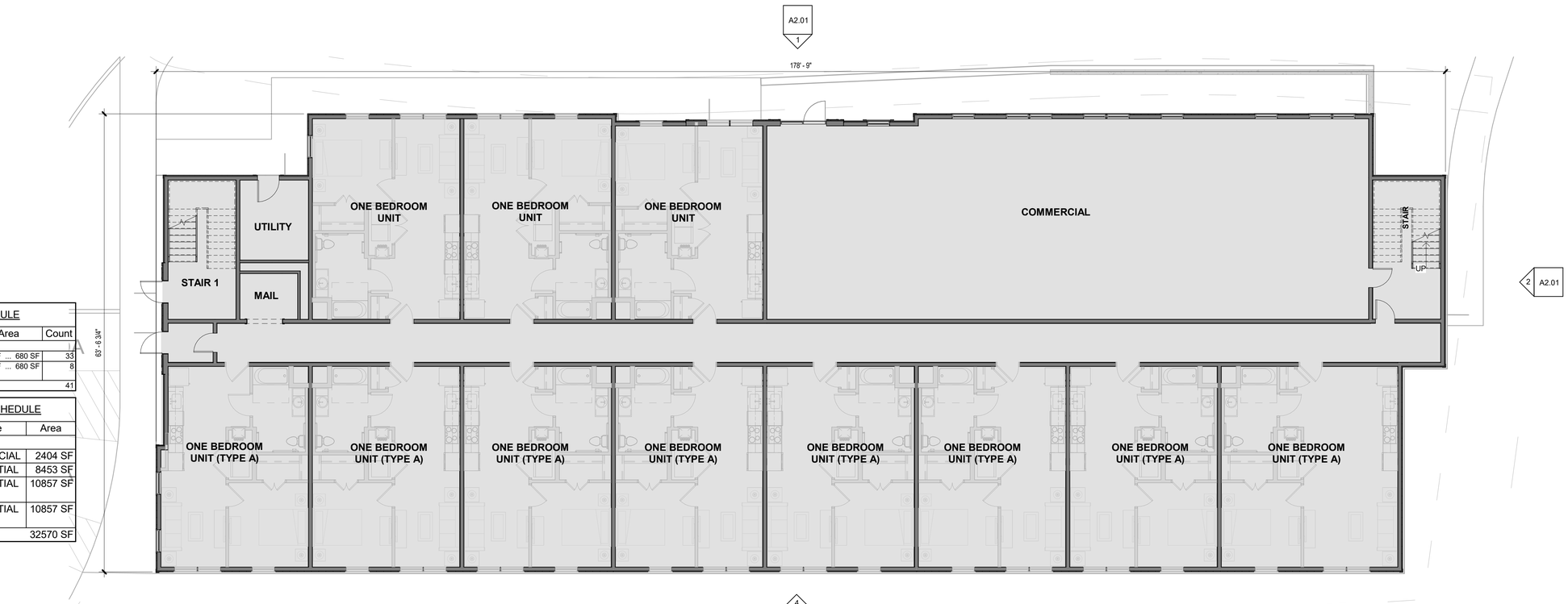
DATE: 10.17.23	PROJECT #: 230750
ENG'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H-___

C503

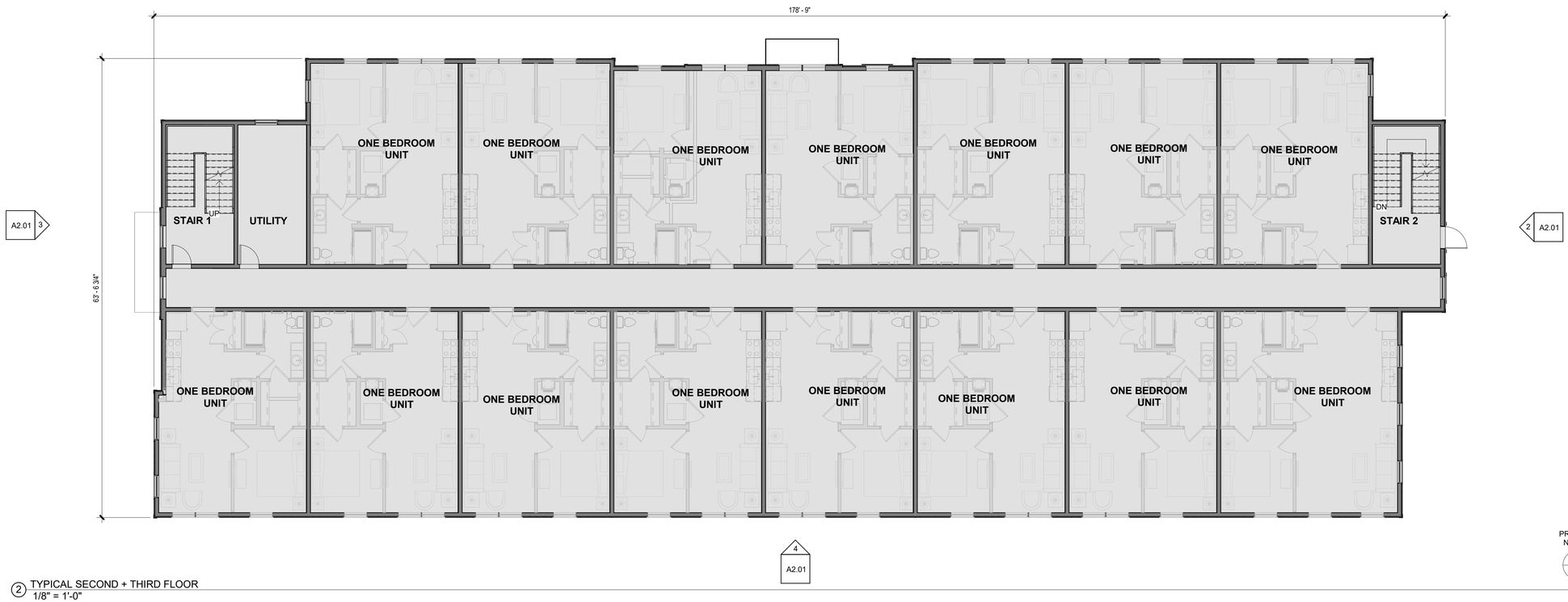
10/23/2023 2:49:08 PM

UNIT SCHEDULE		
Name	Area	Count
ONE BEDROOM UNIT	547 SF ... 680 SF	33
ONE BEDROOM UNIT (TYPE A)	553 SF ... 680 SF	8
TOTAL UNIT COUNT		41

GROSS AREA SCHEDULE		
Level	Name	Area
1ST FLOOR	COMMERCIAL	2404 SF
1ST FLOOR	RESIDENTIAL	8453 SF
SECOND FLOOR	RESIDENTIAL	10857 SF
THIRD FLOOR	RESIDENTIAL	10857 SF
GRAND TOTAL		32570 SF



1 OVERALL FIRST FLOOR PLAN W/ SITE
1/8" = 1'-0"



2 TYPICAL SECOND + THIRD FLOOR
1/8" = 1'-0"

PROJECT NORTH
TRUE NORTH

RAILROAD STREET MIXED-USE

RAILROAD STREET
NEWMARKET, NH

PROJECT:

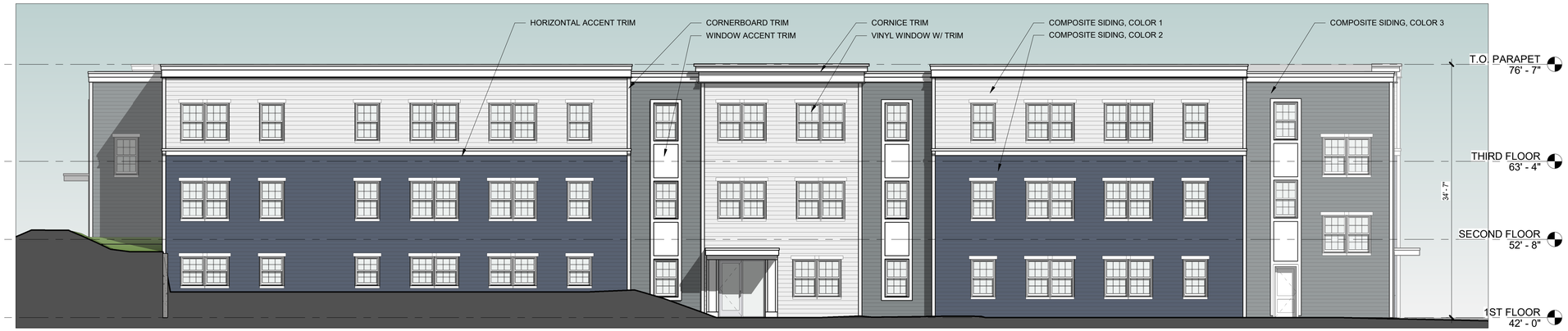
Date	Issue Description
10/24/2023	PLANNING BOARD

Drawn By: ANM
Project No.: 2020001

Drawing Sheet
OVERALL FLOOR PLANS

Drawing Sheet
A1.01

10/23/2023 2:49:14 PM



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

2 NORHT ELEVATION
1/8" = 1'-0"

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

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

RAILROAD STREET MIXED-USE

RAILROAD STREET
NEWMARKET, NH

PROJECT:

Date	Issue Description
10/24/2023	PLANNING BOARD

Drawn By: ANM
Project No.: 2020001

Drawing Sheet
ELEVATIONS

Drawing Sheet
A2.01

10/23/2023 2:49:15 PM

RAILROAD STREET MIXED-USE

RAILROAD STREET
NEWMARKET, NH

PROJECT:

Date	Issue Description
10/24/2023	PLANNING BOARD

Drawn By: ANM

Project No.: 2020001

Drawing Sheet

PERSPECTIVES

Drawing Sheet

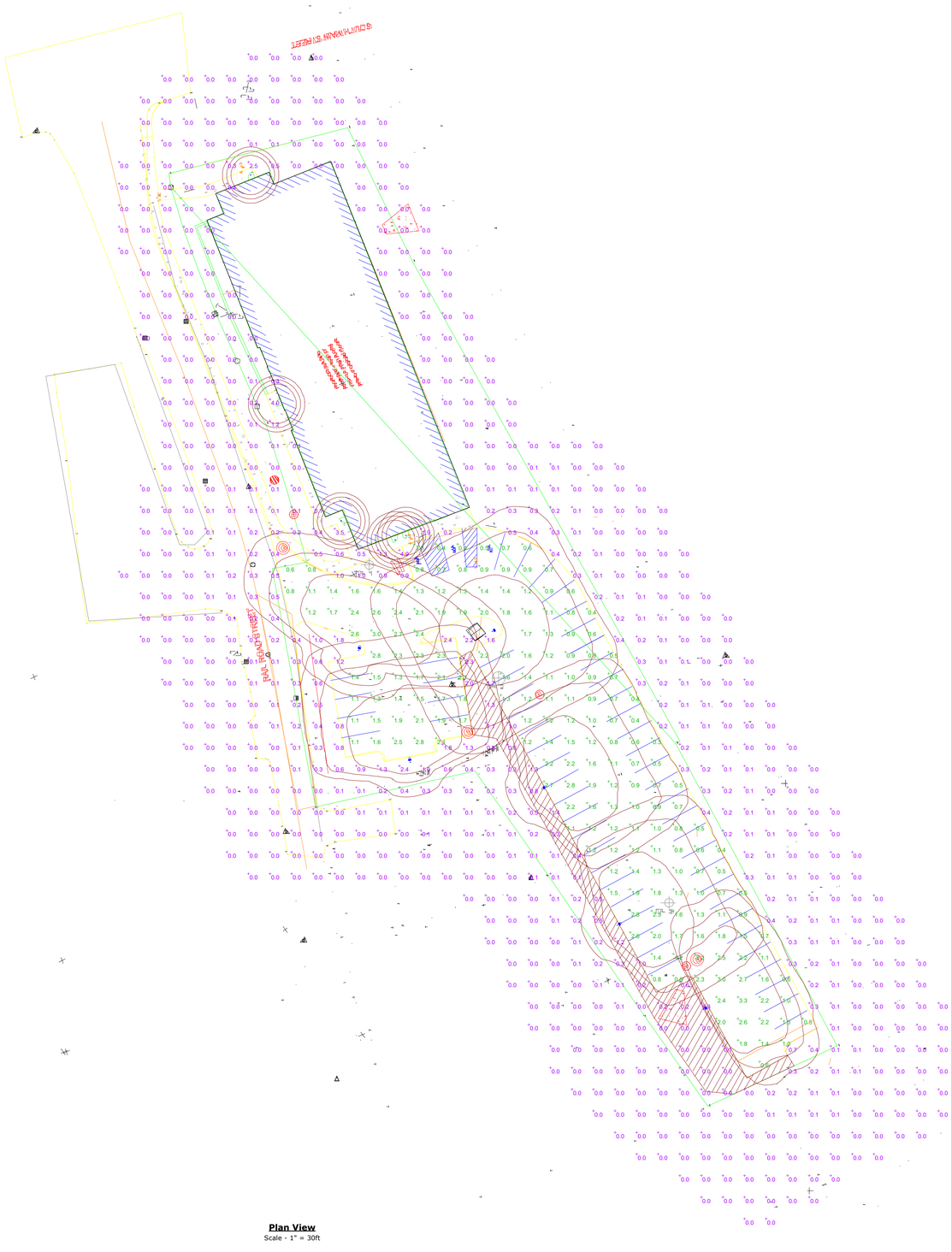
A8.01

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Outside of Parking Lot	+	0.1 fc	4.9 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.4 fc	3.8 fc	0.3 fc	12.7:1	4.7:1

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribution	Polar Plot
	D	5	Juno Lighting	JPDZ4 DB 1000LM 3000K 90CRI WWH	Juno Podz 4in LED Downlight; mounted at 10ft	LED	JPDZ4_DB_1000LM_3000K_90CRI_WWH.ies	1027	0.9	13.6	DIRECT, SC-0=1.12, SC-90=1.12	Max: 616cd
	S3	1	Lithonia Lighting	DSX0 LED P3 30K 80CRI T3M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P3_30K_80CRI_T3M.ies	7661	0.9	68.95	TYPE IV, MEDIUM, BUG RATING: B1 - U0 - G3	Max: 6412cd
	S3-B	1	Lithonia Lighting	DSX0 LED P3 30K 80CRI BLC3 MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture with Extreme Backlight Control; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P3_30K_80CRI_BLC3.ies	5573	0.9	68.95	TYPE III, SHORT, BUG RATING: B0 - U0 - G2	Max: 5723cd
	S4-B	3	Lithonia Lighting	DSX0 LED P3 30K 80CRI TFTM HS MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture with Houseside Shield; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P3_30K_80CRI_TFTM_HS.ies	6566	0.9	68.95	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2	Max: 6377cd
	S5	1	Lithonia Lighting	DSX0 LED P3 30K 80CRI T5M MVOLT SPA DDBXD with SSS 14 4C DM19AS DDBXD	D-Series Size 0 Area Fixture; mounted at 16ft (14ft pole on 2ft base)	LED	DSX0_LED_P3_30K_80CRI_T5M.ies	8000	0.9	68.95	TYPE VS, BUG RATING: B3 - U0 - G2	Max: 4389cd



Plan View
Scale - 1" = 30ft

VISUAL

RAILROAD ST - NEWMARKET
Site Lighting Layout

Designer
Heidi G. Connors
Visible Light, Inc.
24 Stickney Terrace
Suite 6
Hampton, NH 03842
Date
10/24/2023
Scale
1"=30'
Drawing No.

Summary

Barton
&Loguidice

TRAFFIC IMPACT STUDY

FOR PROPOSED

Condor Capital, LLC.

Residential & Commercial Development

RAILROAD STREET, NEWMARKET, NH

Prepared For: Horizons Engineering, Inc.

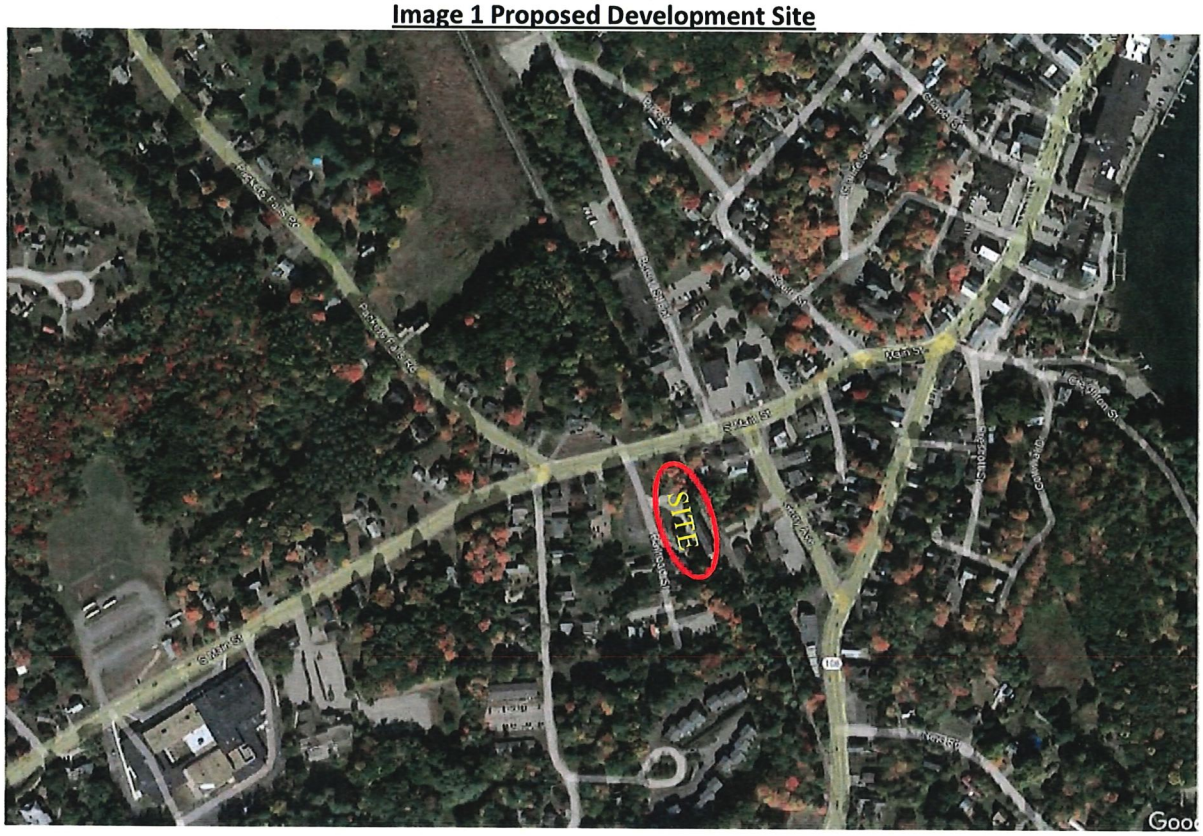
Prepared By: Barton & Loguidice
November 2023

Introduction

Condor Capital, LLC. is proposing development of a mixed-use building which contains forty-one (41) one-bedroom multi-family dwelling units and approximately 2,500 square-foot (sf) of office space. The proposed development is located on the eastern side of Railroad Street (refer to Image 1 for location of proposed development) and access to the development will be provided via a single full-access driveway entrance located just south and opposite of the City's Railroad Street parking lot. As part of the proposed development, the existing and occupied 2,000 sf office building located on the parcel, will be demolished.

The purpose of this traffic impact study is to examine existing and proposed traffic conditions in the general vicinity of the proposed project, estimate the total number of site trips generated by the project, and make a determination as to whether the existing transportation system can safely accommodate the added traffic generated by the project.

Image 1 Proposed Development Site



Study Area

A study area for performance of the traffic impact study has been established which is composed of: **1)** the unsignalized intersection of South Main Street (Route 152), Packers Fall Road and Maple Street, **2)** the unsignalized intersection of South Main Street and Railroad Street, and **3)** the unsignalized and offset intersection of South Main Street, Beech Street Extension and Gerry Avenue.

Existing Traffic Conditions

Manual turning movement traffic counts were conducted at each of the study intersections during both the weekday morning and evening peak hours. The morning and evening peak hour traffic data was collected on October 17th, 2023. All vehicular traffic entering the study intersections were recorded in 15-minute intervals between the hours of 7:00 AM and 9:00 AM, and then again between the hours of 3:00 PM and 6:00 PM. From a summary of the traffic data, intersection peak hour times were established for the *"peak"* commuter travel periods. During the morning peak hour, the peak at the intersections of South Main Street at Packers Fall Road/Maple Street and South Main Street at Railroad Street begins at 7:00 AM, while the peak at the offset intersection of South Main Street at Gerry Avenue/Beech Street Extension begins 30-minutes later at 7:30. During the evening peak hour the traffic data reports that the peak at the intersections of South Main Street at Packers Fall Road/Maple Street and South Main Street at Railroad Street begins at 3:30 PM, while the peak hour at the intersection of South Main Street at Gerry Avenue/Beech Street Extension begins 30-minutes earlier at 3:00 PM. The recorded turning movement counts have been included within the Appendix for reference.

Figure 1, attached in the Appendix illustrates the collected peak hour traffic volumes.

Seasonal Adjustments

Traffic data collected during the month of October requires an adjustment to reflect "*peak*" travel conditions found during the summer months of July and August. NHDOT provides adjustment factors used for adjusting traffic volumes collected outside of the peak months.

South Main Street and Gerry Avenue, within the vicinity of the site, are classified as Urban Collectors (Group 4), requiring a seasonal adjustment of **1.05**. To be conservative in this study we have applied the adjustment factor to all collected traffic volumes.

Future Traffic Growth

This traffic study has been prepared based upon a projected build-out year of 2024. To adjust the recorded traffic volumes to the projected build year, we reviewed the volume trend data at the station on South Main Street just west of Packers Falls Road for the three-year period between 2017 and 2019. The volume data shows that there is approximately a -0.0014% annual growth rate during the reviewed time frame. To be conservative in this study we have applied a growth rate of **0.5%** (factor of 1.05) to all recorded turning movement counts.

Site Trip Generation

Daily and peak hour trip generation estimates for the proposed project was determined based upon trip tables presented within the Eleventh Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (TGM). The ITE publication provides numerous land use codes (LUC) and the average volume of trips generated by each LUC.

Site trip estimates for both the existing and proposed office space is based upon LUC #712 – Small Office Building, described in the TGM as: *an office building with less than or equal to 10,000 square-feet of gross floor area. The building typically houses a single tenant.* Site trip estimates for the proposed 41 residential units are based upon LUC #220 – Multifamily Housing (Low-Rise), described as: *apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors.*

Site Trip Distribution: Vehicle Trips generated by the proposed project were assigned to/from the proposed project based upon the entering/exiting distribution presented in the ITE TGM for LUC #220 and LUC #712.

Existing Trip Generation: Because there is an existing on-site use which will be displaced by the proposed project, within this traffic study we will be taking credit for the trips produced by the existing 2,000sf office and determine the net new trips produced by the site. The net new trips are trips that are new to the roadway system, and they will be calculated by subtracting the existing and displaced trips from the sites total proposed trips. The existing trip generation estimates are shown below in Table 1.1:

Table 1.1
ITE Trip Generation Calculations

Land Use	General Office Building - LUC 710					
Time Period	Sq. Footage (1k)	Avg. Trip Generation Rate (Trips Per 1k Sf)	Trips Generated	Distribution Entering / Exiting	Enter	Exit
Weekday	2	10.84	22	50% / 50%	11	11
AM Weekday Peak Hour (Street)	2	1.52	3	88% / 12%	3	0
PM Weekday Peak Hour (Street)	2	1.44	3	17% / 83%	1	2
AM Weekday Peak Hour (Generator)*	2	1.52	3	88% / 12%	3	0
PM Weekday Peak Hour (Generator)*	2	1.44	3	17% / 83%	1	2

*ITE does not provide trip generation rates for the Peak Hours of the generator. Assumed similar to peak hours of street.

As shown above in the preceding table, the existing office is a low trip generator, generating 3 trips in the AM peak hour and 3 trips in the PM peak hour.

Proposed Trip Generation: The proposed projects site trip generation estimates for the proposed 2,500sf of office space and 41 residential dwelling units are shown below in the following tables:

Table 1.2
ITE Trip Generation Calculations

Land Use	General Office Building - LUC 710					
Time Period	Sq. Footage (1k)	Avg. Trip Generation Rate (Trips Per 1k Sf)	Trips Generated	Distribution Entering / Exiting	Enter	Exit
Weekday	2.5	10.84	27	50% / 50%	14	13
AM Weekday Peak Hour (Street)	2.5	1.52	4	88% / 12%	4	0
PM Weekday Peak Hour (Street)	2.5	1.44	4	17% / 83%	1	3
AM Weekday Peak Hour (Generator)*	2.5	1.52	4	88% / 12%	4	0
PM Weekday Peak Hour (Generator)*	2.5	1.44	4	17% / 83%	1	3

*ITE does not provide trip generation rates for the Peak Hours of the generator. Assumed similar to peak hours of street.

Table 1.2 shows that the forecast trip generation estimates for the proposed office space within the multi-use building is a slightly higher trip generator than the existing office building, generating 4 trips in both the AM and PM peak hour time periods.

B &L

Table 1.3, below, shows the trip generation calculations for the proposed 41 residential dwelling units.

Table 1.3
ITE Trip Generation Calculations

Land Use	Multifamily Housing (Low-Rise) Not Close to Rail Transit - LUC 220					
Time Period	**Dwelling Units**	**Trip Generation Rate Trips/Dwelling Units**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
Weekday	41	6.74	276	50% / 50%	138	138
AM Weekday Peak Hour (Street)	41	0.40	16	24% / 76%	4	12
PM Weekday Peak Hour (Street)	41	0.51	21	63% / 37%	13	8
AM Weekday Peak Hour (Generator)	41	0.47	19	24% / 76%	5	14
PM Weekday Peak Hour (Generator)	41	0.57	23	62% / 38%	14	9

The preceding table shows that the proposed 41 dwelling units within the proposed multi-use building are forecast to generate 16 trips during the AM peak hour and 21 trips during the PM peak hour.

Table 1.4, following, summarizes the proposed trip generation estimates.

Table 1.4
ITE Trip Generation Summary

Time Period	Proposed Trip Generation	Enter	Exit
Weekday	303	152	151
AM Weekday Peak Hour (Street)	20	8	12
PM Weekday Peak Hour (Street)	25	14	11
AM Weekday Peak Hour (Generator)	23	9	14
PM Weekday Peak Hour (Generator)	27	15	12

The prior table shows that the proposed multi-use building will generate 20 trips during the morning peak hour, and 25 trips during the PM peak hour.

Net New Trips: Table 1.5, below, presents the net new trips calculations for the proposed development.

Table 1.5
ITE Trip Generation Calculations

Land Use	Proposed Trip Generation	Existing Trip Generation	Net New Trips		
Time Period			**Total**	**Enter**	**Exit**
Weekday	303	-22	**281**	**141**	**140**
AM Weekday Peak Hour (Street)	20	-3	**17**	**5**	**12**
PM Weekday Peak Hour (Street)	25	-3	**22**	**13**	**9**
AM Weekday Peak Hour (Generator)	23	-3	**20**	**6**	**14**
PM Weekday Peak Hour (Generator)	27	-3	**24**	**14**	**10**

B&L

The preceding table shows that the proposed development will produce 17 net new trips in the morning peak hour and 22 net new trips during the PM peak hour. Of the 17 net new AM trips, 5 will enter the site and 12 will exit the site. From the 22 total PM peak hour net new trips 13 will enter the site and 9 will exit the site. Moving forward in the analysis we will be using the AM and PM peak hour of the adjacent (street) net new trips.

Site Trip Assignment

Peak hour site trips generated by the proposed project were assigned through the study intersections following the recorded existing trip distribution patterns shown in Figure 1. The peak hour site trip assignment is shown in Figure 3, attached in the Appendix.

2024 Pre-Development Traffic

Other Development Traffic: Traffic generated by projects that have been approved by the planning department, yet are not opened, must be included within the pre-development traffic estimates. Based upon conversations with the Newmarket Director of Planning & Community Development, there is one project that has been approved, and one project which is in the final stages of review.

The first project, located at 50-56 Exeter Road is a multi-use building which has been approved for the following trips during the AM and PM peak hour time periods (the approved trip generation have been included within the Appendix):

AM Peak Hour

Entering = 14 vph
Exiting = 11 vph

PM Peak Hour

Entering = 21 vph
Exiting = 27 vph

Since the traffic study, prepared by Stephen G. Pernaw & Company, Inc., for the approved 50-56 Exeter Road (Route 108) development, located just south of the intersection at South Main Street, does not provide a trip assignment, we have assigned the trips to South Main Street and the study intersections via Gerry Avenue using the turning movement counts recorded for this Traffic Impact Study. The other development trip assignment for 50-56 Exeter Road Development is included on Figure 4, attached in the Appendix.

The second project is located at 242 South Main Street, just west of Packers Falls Road, is a 32-unit multifamily age restricted apartment building. The traffic study prepared by Vanasse & Associates Inc. assigns the proposed site trips to and from South Main Street. The trip assignment figure prepared by Vanasse & Associates Inc. has been included within the Appendix. Using the collected traffic volumes we have assigned the other development trips through the study intersections and included them within Figure 4, attached in the Appendix.

Figure 4 assigns the other development trips through the study intersections and is attached in the Appendix.

2024 Pre-Development Traffic: The 2024 design hour traffic volumes presented in Figure 2 were combined with the other development trips shown in Figure 4 for an estimate of the 2024 pre-

development traffic conditions. Figure 5, attached in the Appendix, presents the 2024 pre-development traffic conditions.

2024 Post-Development Traffic

2024 post-development traffic estimates were prepared for the study intersection by combining the 2024 pre-development traffic volumes, shown in Figure 5, with the site generated trips, shown in Figure 3. Figure 6, attached in the Appendix, presents the 2024 post-development traffic forecast at the study intersections.

Turn Lane Warrant Analysis

The National Cooperative Highway Research Program (NCHRP) report 457 provides a process to determine if projected traffic conditions at an intersection warrant a dedicated left-turn lane or right-turn lane from the major street to the lower volume roadway. In the analysis we will be reviewing the turn lane warrants at the intersection of South Main Street at Railroad Street.

The NCHRP process for the left-turn lane warrant uses four traffic inputs in determining if a dedicated left-turn lane is warranted: **1)** posted speed limit; **2)** advancing volume of traffic; **3)** opposing volume of through traffic and **4)** percent of left-turns in the advancing volume. Similarly, the NCHRP process for the right-turn lane warrant uses the following three traffic inputs in determining if a dedicated right-turn lane is warranted: **1)** posted speed limit; **2)** advancing volume of traffic (both left-turn and through volumes), and **3)** right-turn volume.

The NCHRP report stipulates that where applicable the traffic volumes used for the analysis represent "*average*" travel conditions. The 2024 design hour through traffic volumes on both South Main Street approaches at the proposed driveway entrance were adjusted accordingly by applying NHDOT's seasonal adjustment factor (0.96), and the unadjusted Other Development trips depicted in Figure 4 were added to the adjusted volumes. The South Main Street right-turn and left-turn volumes at Railroad Street, used in this analyses, represent the 2024 post-development turning conditions; without adjustment, as depicted in Figure 6. The following tables, Table 2.1 and 2.2, summarize the inputs and outputs of the NCHRP analyses.

Table 2.1
NCHRP Report 457 Analysis - Left Turn Lane Warrant

Time Period	Advancing Volume (Va)	Opposing Volume (Vo)	Percent Left-Turns	Warrant Met (Yes/No)
Weekday AM Peak Hour	317	300	1%	No
Weekday PM Peak Hour	283	367	2%	No

Table 2.2
NCHRP Report 457 Analysis - Right Turn Lane Warrant

Time Period	Advancing Volume (Va)	Right-Turn Volume	Warrant Met (Yes/No)
Weekday AM Peak Hour	300	4	No
Weekday PM Peak Hour	367	8	No

B&L

As shown in the preceding tables, at this time neither a left-turn lane nor a right-turn lane are warranted on South Main Street at Railroad Street. The summary sheets produced by the NCHRP tool are attached in the Appendix for reference.

Capacity Analysis

A Capacity analysis of both the 2024 Pre- and Post-development traffic conditions was performed at the three study intersections: South Main Street at Packers Falls Road and Maple Street, South Main Street at Railroad Street, and South Main Street at Gerry Avenue and Beech Street Extension.

Levels of Service rankings are similar to the academic grading system, where an "A" is very good with little delay and "F" represents very poor conditions.

The following tables present the relationship between delay and Level of Service for unsignalized intersections:

Level of Service Criteria for Unsignalized Intersections

Level of Service	Total Control Delay (sec/veh)
A	Up to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

Table 3.1, following, summarize the results of the capacity analysis completed at the three study intersections. The table compares the results determined for both the AM and PM peak hour time periods based upon the 2024 pre- and post-development travel conditions. The capacity analysis was performed using Synchro inputs and SimTraffic outputs. The results are based upon 7 SimTraffic runs, averaging 5 runs with the lowest and highest run removed. The Synchro reports are attached in the Appendix for reference.

Table 3.1 - Level of Service Summary
2024 Pre- and Post-Development Conditions

	2024 Pre-Development				2024 Post-Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection/Approach	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1. Route 152 (S. Main Street) at Packers Falls Road and Maple Street								
- Route 152 EB Left	2.5	A	3.1	A	2.6	A	3.1	A
- Route 152 EB Thru	0.4	A	0.5	A	0.3	A	0.6	A
- Route 152 EB Right	0.0	A	0.0	A	0.0	A	0.0	A
- Route 152 WB Left	2.2	A	2.5	A	2.1	A	2.5	A
- Route 152 WB Thru	0.2	A	0.7	A	0.3	A	0.6	A
- Route 152 WB Right	0.1	A	0.2	A	0.1	A	0.2	A
- Maple Street NB Left	0.0	A	13.7	B	0.0	A	4.8	A
- Maple Street NB Thru	0.0	A	11.9	B	0.0	A	9.8	A
- Maple Street NB Right	2.5	A	3.5	A	3.2	A	3.7	A
- Packers Falls Rd SB Left	7.6	A	9.3	A	8.0	A	9.1	A
- Packers Falls Rd SB Thru	3.8	A	8.3	A	0.0	A	8.6	A
- Packers Falls Rd SB Right	0.0	A	4.2	A	3.8	A	3.6	A
- Overall Intersection	1.0	A	1.4	A	1.0	A	1.3	A
2. Route 152 at Railroad Street								
- Route 152 EB Thru	0.3	A	0.4	A	0.3	A	0.4	A
- Route 152 EB Right	0.0	A	0.3	A	0.1	A	0.2	A
- Route 152 WB Left	2.1	A	5.4	A	3.4	A	3.5	A
- Route 152 WB Thru	0.6	A	0.7	A	0.7	A	0.7	A
- Railroad St NB Left	0.0	A	10.5	B	7.6	A	9.6	A
- Railroad Street NB Right	2.5	A	3.5	A	4.0	A	3.6	A
- Overall Intersection	0.5	A	0.6	A	0.6	A	0.7	A
3. Route 152 at Gerry Avenue and Beech Street Extension								
- Route 152 EB Left	2.2	A	2.5	A	2.5	A	2.6	A
- Route 152 EB Thru	2.0	A	1.4	A	2.0	A	1.4	A
- Route 152 EB Right	0.6	A	0.6	A	0.6	A	0.7	A
- Route 152 WB Left	4.3	A	4.2	A	4.9	A	4.5	A
- Route 152 WB Thru	0.9	A	0.6	A	1.0	A	0.7	A
- Route 152 WB Right	0.7	A	0.1	A	0.6	A	0.1	A
- Gerry Ave NB Left	12.4	B	16.4	C	14.3	B	17.4	C
- Gerry Ave NB Thru	10.6	B	16.2	C	11.3	B	16.5	C
- Gerry Ave NB Right	7.0	A	12.3	B	7.2	A	11.9	B
- Beech St Ext. SB Left	11.0	B	19.8	C	8.1	A	7.8	A
- Beech St Ext. SB Thru	16.2	C	18.7	C	15.0	B	18.2	C
- Beech St Ext. SB Right	6.0	A	6.6	A	6.8	A	7.1	A
- Overall intersection	4.9	A	6.9	A	5.3	A	7.1	A

As shown in the preceding table, the intersection capacity analysis of both 2024 pre- and post-development traffic conditions indicates that the proposed development does not have a significant impact on traffic operations at the three unsignalized study intersections. At the three unsignalized intersections within the study area, the overall intersection Level of Service (LOS) continues to operate at a LOS A under the post-development conditions.

Queue Analysis: As part of our capacity analysis, we utilized the SimTraffic reporting to evaluate the lengths of the queues at the three study intersections: South Main Street at Packers Falls Road and

Maple Street, South Main Street at Railroad Street, and South Main Street at Gerry Avenue and Beech Street Extension.

The following table, Table 3.2, compares the morning and evening queue lengths between the pre-development, and the post-development condition.

Table 3.2 - Queue Summary
2024 Pre- and Post-Development Conditions

	2024 Pre-Development		2024 Post-Development	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Intersection/Approach	Queue (ft)	Queue (ft)	Queue (ft)	Queue (ft)
1. Route 152 (S. Main Street) at Packers Falls Road and Maple Street				
- Route 152 EB Left/Thru/Right	17	35	18	37
- Route 152 WB Left/Thru/Right	6	26	5	21
- Maple St NB Left/Thru/Right	21	25	19	24
- Packers Falls Rd SB Left/Thru/Right	57	52	55	54
2. Route 152 at Railroad Street				
- Route 152 WB Thru/Right	4	11	11	17
- Railroad St Left/Thru/Right	11	26	37	36
3. Route 152 at Gerry Avenue and Beech Street Extension				
- Route 152 EB Left/Thru/Right	24	21	20	26
- Route 152 WB Left/Thru/Right	20	10	16	10
- Gerry Ave Left/Thru/Right	93	151	107	162
- Beech St Ext. Left/Thru/Right	70	67	70	66

Similarly to what was shown in the unsignalized intersection delay and LOS analysis, during the post-development condition there is minimal increase in queue lengths at each of the study intersections.

Vehicle Sight Distance

AASHTO requires the following sight distances for roadways based upon the posted speed limit:

Sight Distance Standards

Speed Limit	Sight Distance
25 mph	**200 feet**
30 mph	250 feet
35 mph	305 feet
40 mph	360 feet
45 mph	425 feet
50 mph	495 feet

The section of South Main Street fronting Railroad Street is posted at 30mph, requiring an unobstructed sight distance of 250-feet.

The sight distance measurements were recorded using the following procedures: *"Sight distance was measured to and from the point on the centerline of the proposed access that is located 10-feet from the edge of traveled way. The height of the hypothetical person's view is considered to be 3½ feet above the pavement and the height of the object being viewed is considered to be 4¼ feet above the pavement."*

Our field measurements looking both left and right onto South Main Street from the Railroad Street approach indicate that sight distance exceeds the minimum requirements. Looking left we measured an unobstructed sight distance of 465-feet. Looking right a sight distance measurement of 390-feet was recorded. Refer to Images below.

Looking Left from Railroad Street

Looking Right from Railroad Street

Based on our field reviews and measurements, the existing Railroad Street approach at the intersection with South Main Street provides satisfactory sight distances for safe traffic operations into and out of the proposed site.

Summary

1. The proposed site trip generation includes; 20 trips in the AM peak hour, 25 trips in the PM peak hour, and 303 trips during the typical weekday. When taking into account the existing and occupied office building that will be removed by construction of the proposed development, the site is forecast to generate 17 net new trips in the AM peak hour, 22 net new trips during the PM peak hour, and 281 net new trips during the typical weekday. Overall, the proposed development is a low trip generator with the site generating a maximum number of 22 net new trips.

2. Both a left-turn lane and a right-turn lane warrant analysis was completed for the AM and PM peak hour time periods for the left- and right-turn movements from South Main Street onto Railroad Street. The analysis was conducted using the National Cooperative Highway Research Program (NCHRP) report 457, and it shows that neither a dedicated left-turn lane nor a dedicated right-turn lane are warranted at this time based upon the projected 2024 post-development traffic volumes.

3. A capacity analysis was performed for each of the three study intersections: South Main Street at Packers Falls Road and Maple Street, South Main Street at Railroad Street, and South Main Street at Gerry Avenue and Beech Street Extension. The capacity analysis indicates that the proposed

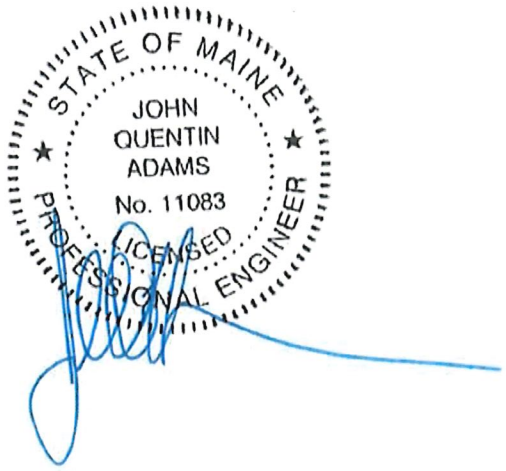
development does not have a major impact on traffic operations at the three study intersections, with each intersection projected to continue to operate at an overall Level of Service 'A".

4. As part of the capacity analysis, queue lengths were evaluated at the three study intersections. The analysis shows that during the post-development condition the study intersections experience only minor increases in queue lengths at each intersection.

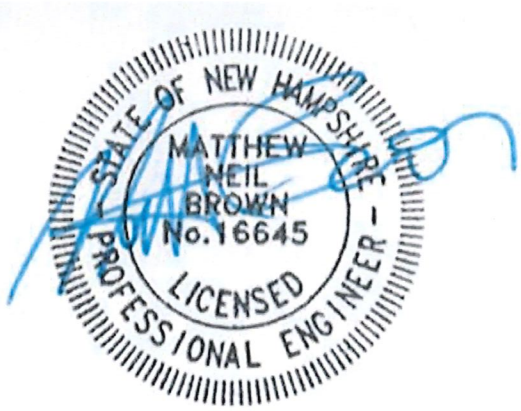
5. Sight distance measurements were field recorded looking both left and right directionally onto South Main Street from the existing Railroad Street approach. The measurements indicate that for a posted speed limit of 30mph, the existing Railroad Street approach provides satisfactory sight distance for safe traffic operations.

6. Overall, it is our opinion that traffic operations within the defined study area shall continue to operate at a satisfactory level with the addition of the proposed developments traffic volumes.

7. Historical Uses – In the past the property was used for other uses including the New England Barricade Company, which was on the site for about 30 years. This company made construction signage, barricades, and safety products etc. and was a pretty busy place. In the past there was also tractor trailer deliveries to the site three to four days a week, with trucks backing into the facility from Railroad Street.



John Q. Adams, PE, PTOE
Date: 11/13/2023



Mathew N. Brown, P.E.
Date: 11/13/20233

B&L

APPENDIX

Appendix A – Figures/Traffic Counts

Appendix B – Other Development Traffic Information

Appendix C – Auxiliary Lane Warrant Analysis

Appendix D – Capacity Analysis

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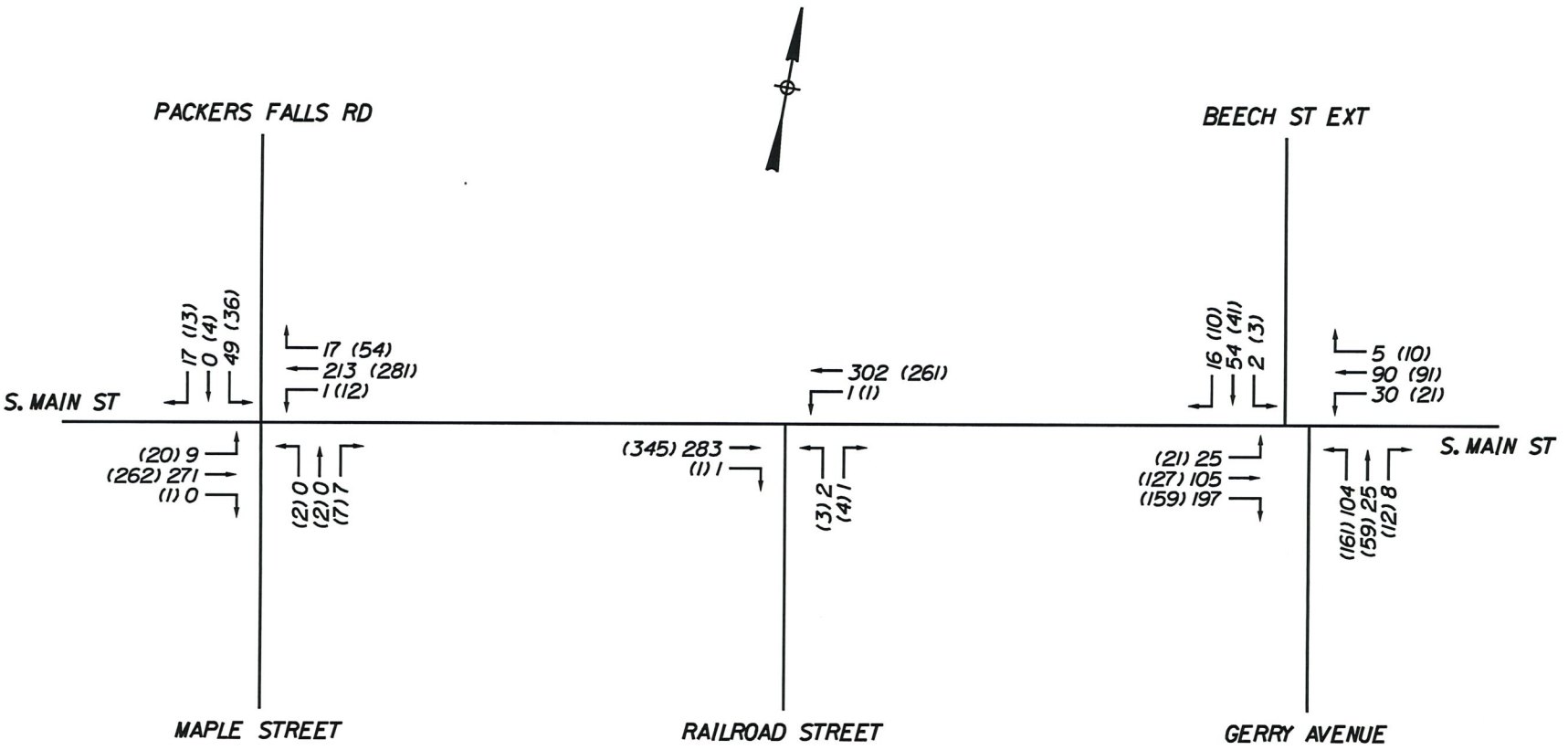
APPENDIX A

Figures/Traffic Counts



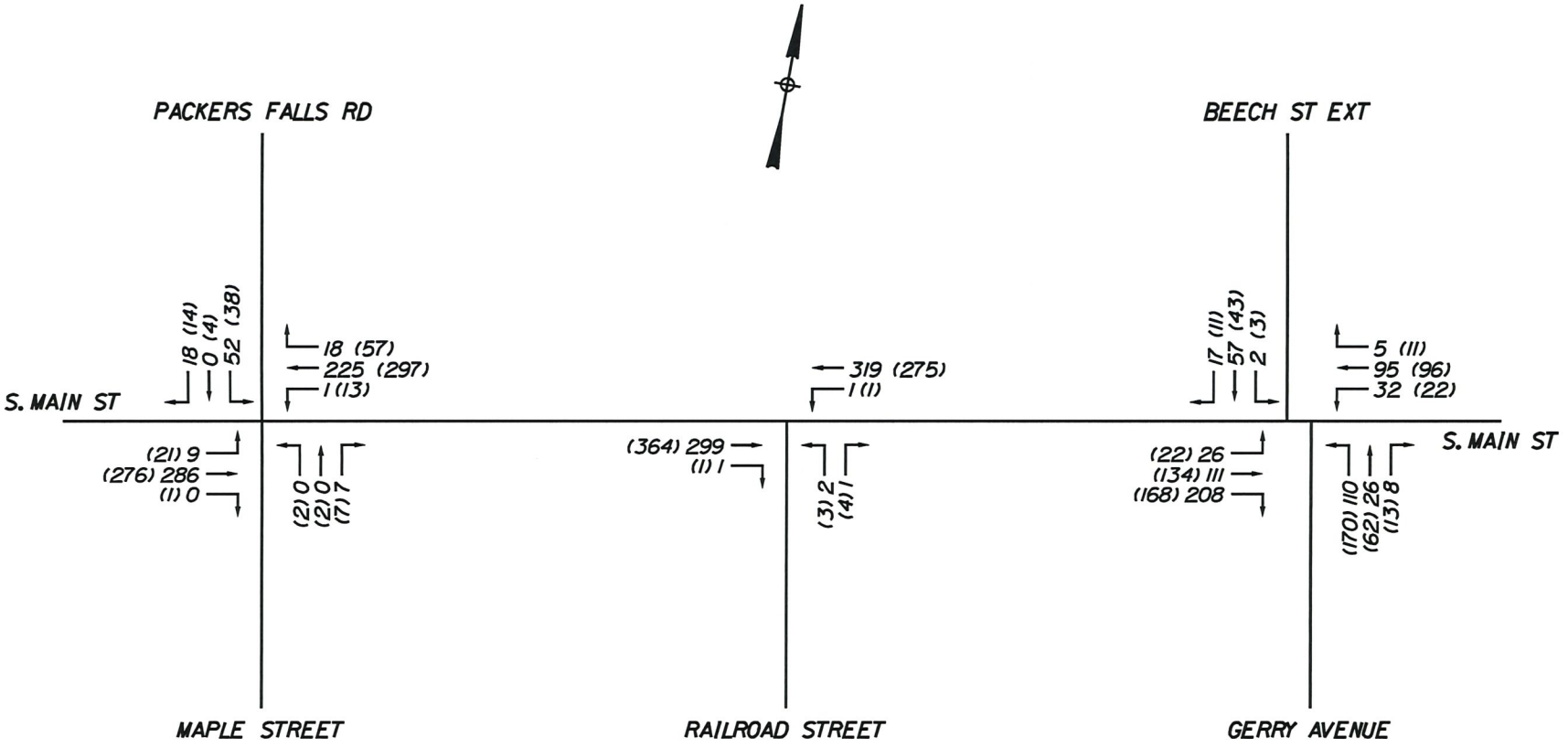
2023 TRAFFIC VOLUMES

FIGURE 1

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

Barton & Loguidice



2024 DESIGN HOUR TRAFFIC VOLUMES

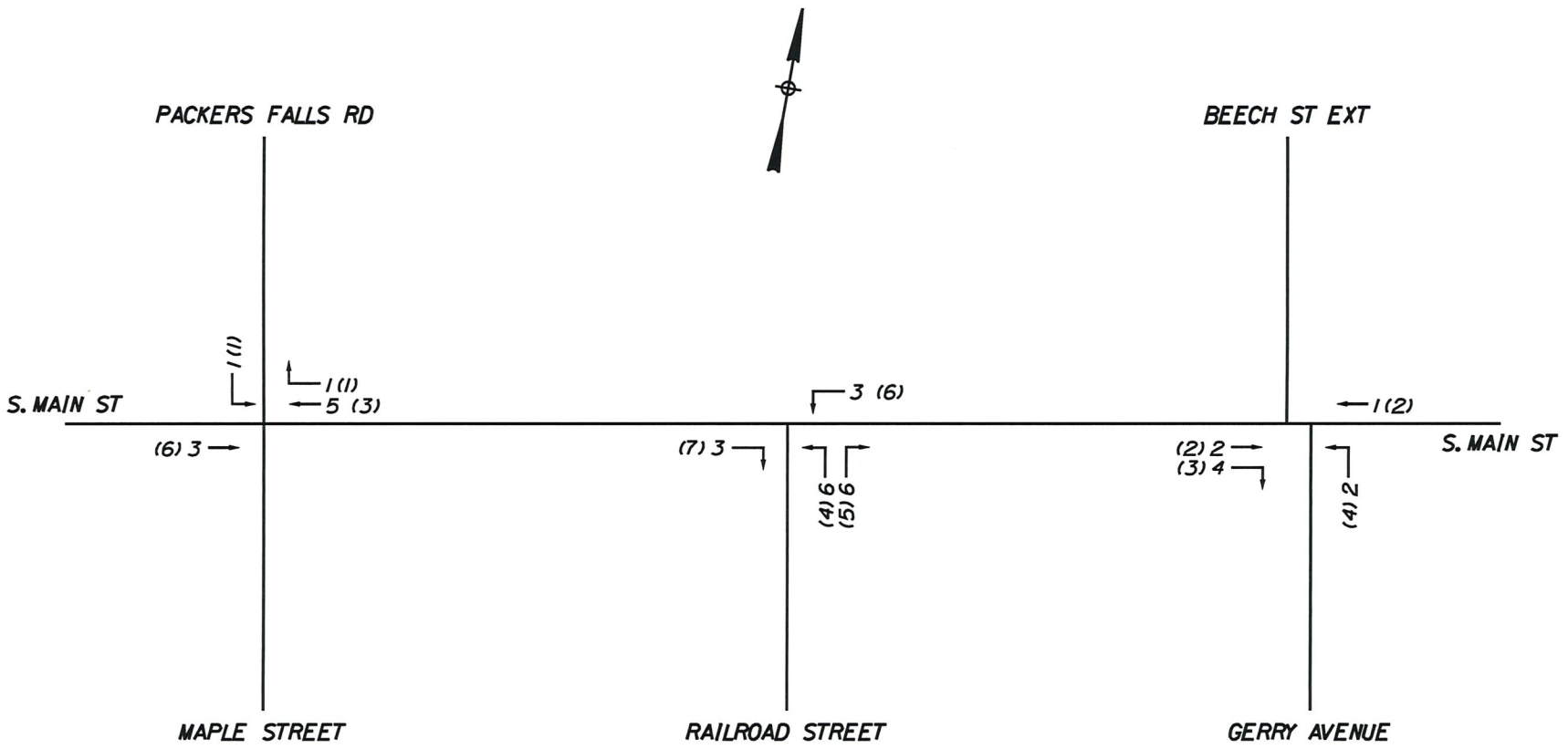
FIGURE 2

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

SEASONAL ADJUSTMENT TO PEAK = 1.05
ANNUAL ADJUSTMENT = -0.5%

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

Barton & Loguidice



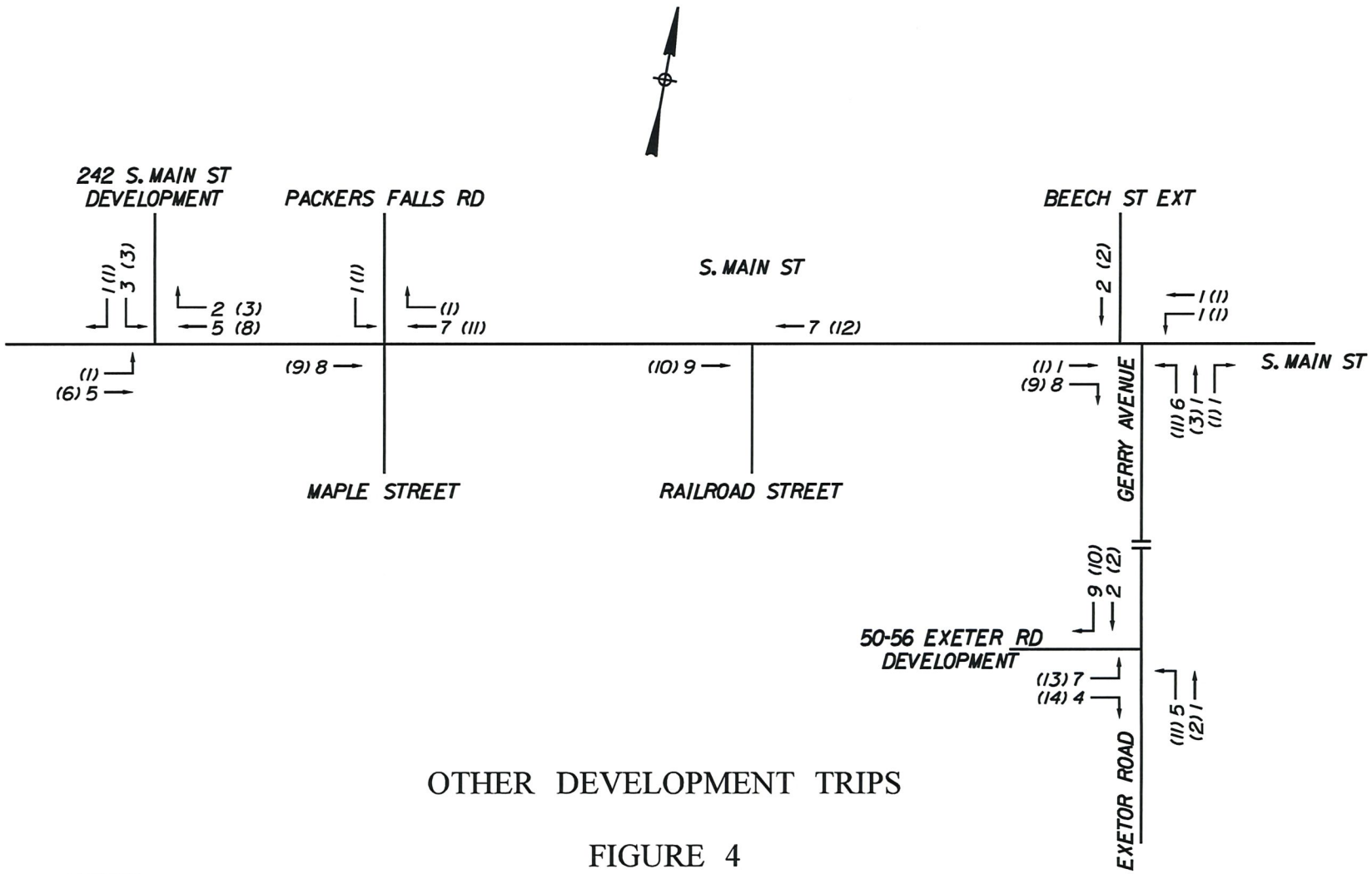
SITE TRIP ASSIGNMENT

FIGURE 3

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

Barton & Loguidice



OTHER DEVELOPMENT TRIPS

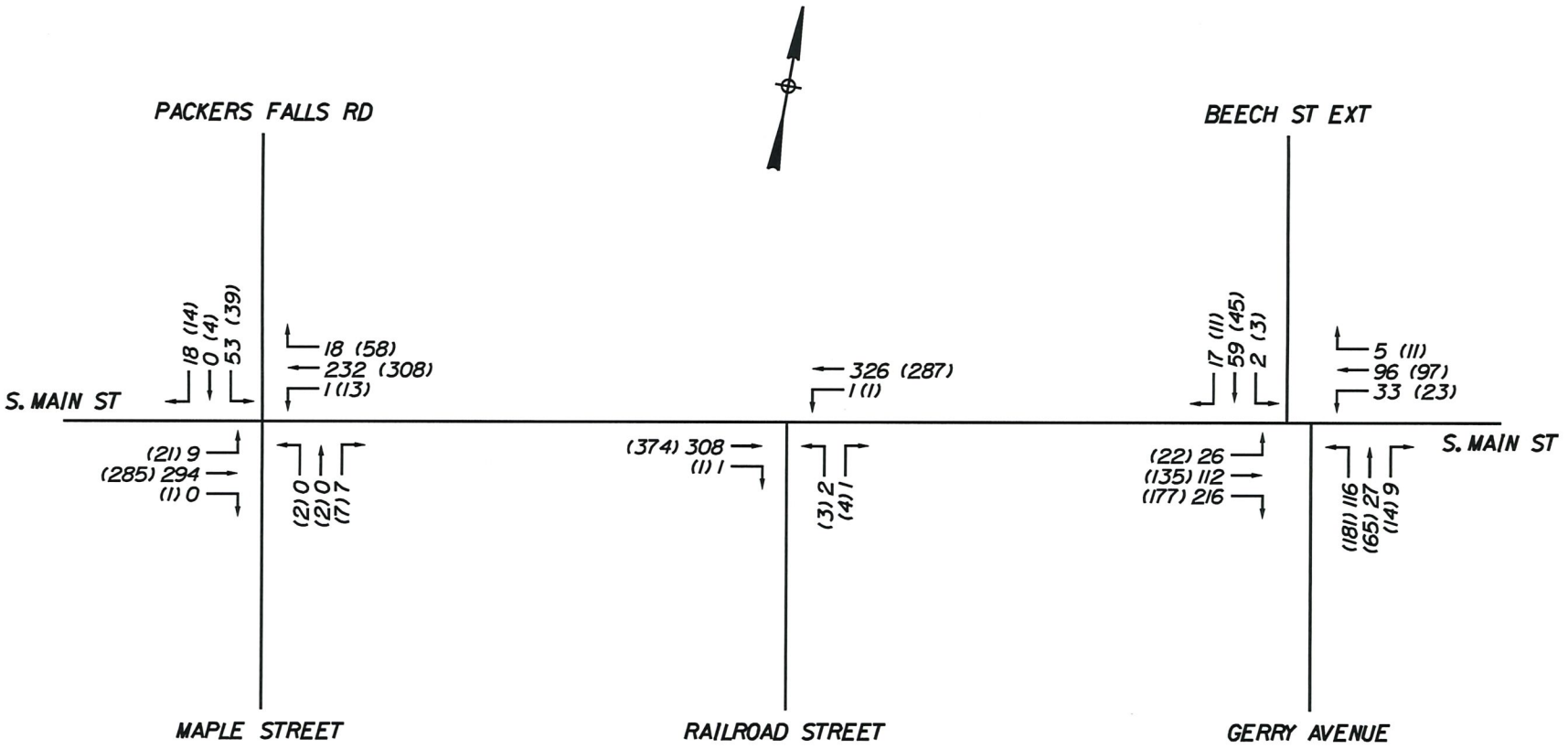
FIGURE 4

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

OTHER DEVELOPMENT TRIPS GENERATED BY:
50-56 EXETER ROAD AND 242 SOUTH MAIN STREET DEVELOPMENTS

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

Barton & Loguidice



2024 PRE-DEVELOPMENT TRAFFIC VOLUMES

FIGURE 5

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

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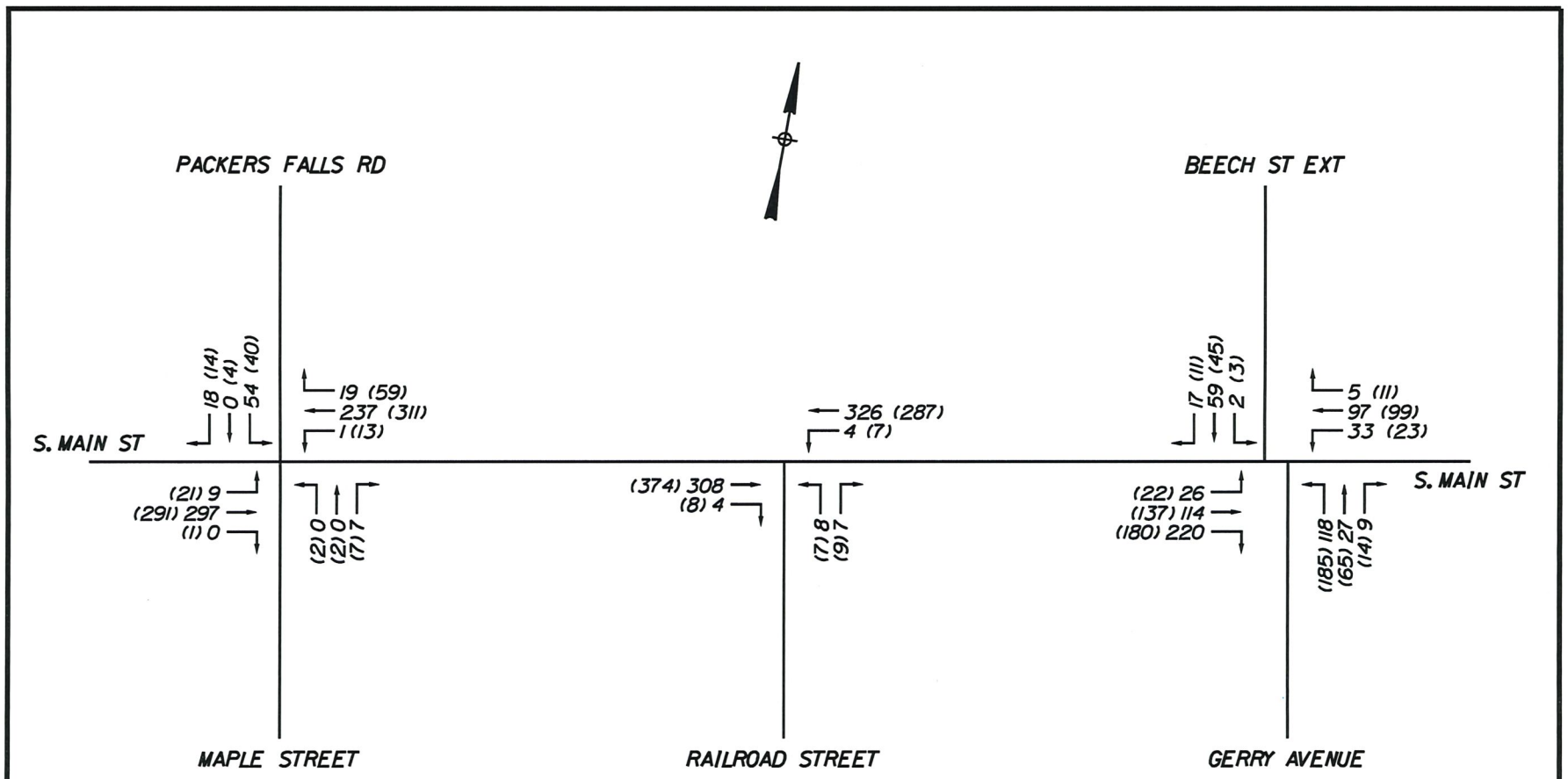


2024 POST-DEVELOPMENT TRAFFIC VOLUMES

FIGURE 6

LEGEND:
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

RAILROAD STREET DEVELOPMENT
NEWMARKET, NEW HAMPSHIRE
DATE: NOV., 2023

Barton & Loguidice

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

Newmarktet,S Main Maple Packers Falls Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
October 17, 2023 AM Site Code : 01017231
60 Degrees Start Date : 10/17/2023
Miovision/ K. Tillson Page No : 1

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

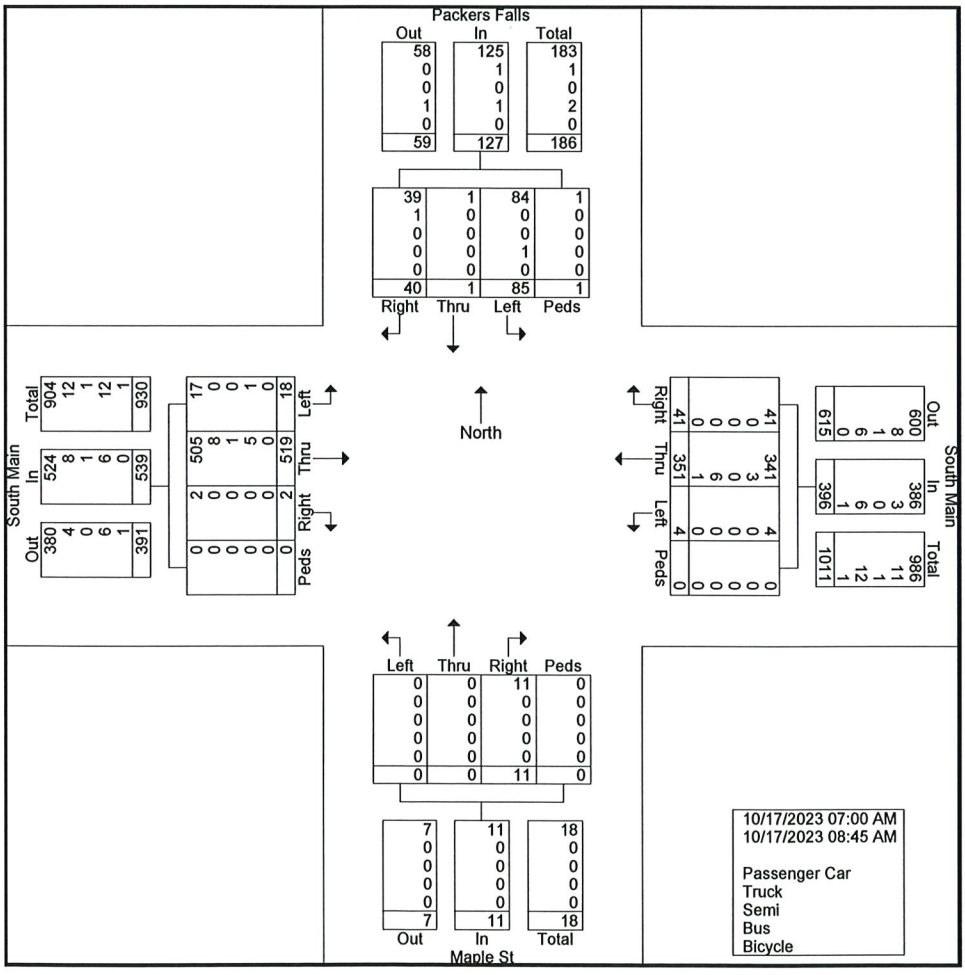
	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	0	10	0	17	1	44	0	0	45	3	0	0	0	3	0	63	3	0	66	131
07:15 AM	5	0	11	1	17	5	81	1	0	87	1	0	0	0	1	0	84	3	0	87	192
07:30 AM	3	0	9	0	12	7	46	0	0	53	2	0	0	0	2	0	77	2	0	79	146
07:45 AM	2	0	19	0	21	4	42	0	0	46	1	0	0	0	1	0	47	1	0	48	116
Total	17	0	49	1	67	17	213	1	0	231	7	0	0	0	7	0	271	9	0	280	585
08:00 AM	7	1	6	0	14	8	31	1	0	40	1	0	0	0	1	1	59	1	0	61	116
08:15 AM	6	0	10	0	16	3	49	0	0	52	2	0	0	0	2	0	77	4	0	81	151
08:30 AM	4	0	9	0	13	4	21	0	0	25	1	0	0	0	1	0	65	2	0	67	106
08:45 AM	6	0	11	0	17	9	37	2	0	48	0	0	0	0	0	1	47	2	0	50	115
Total	23	1	36	0	60	24	138	3	0	165	4	0	0	0	4	2	248	9	0	259	488

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023

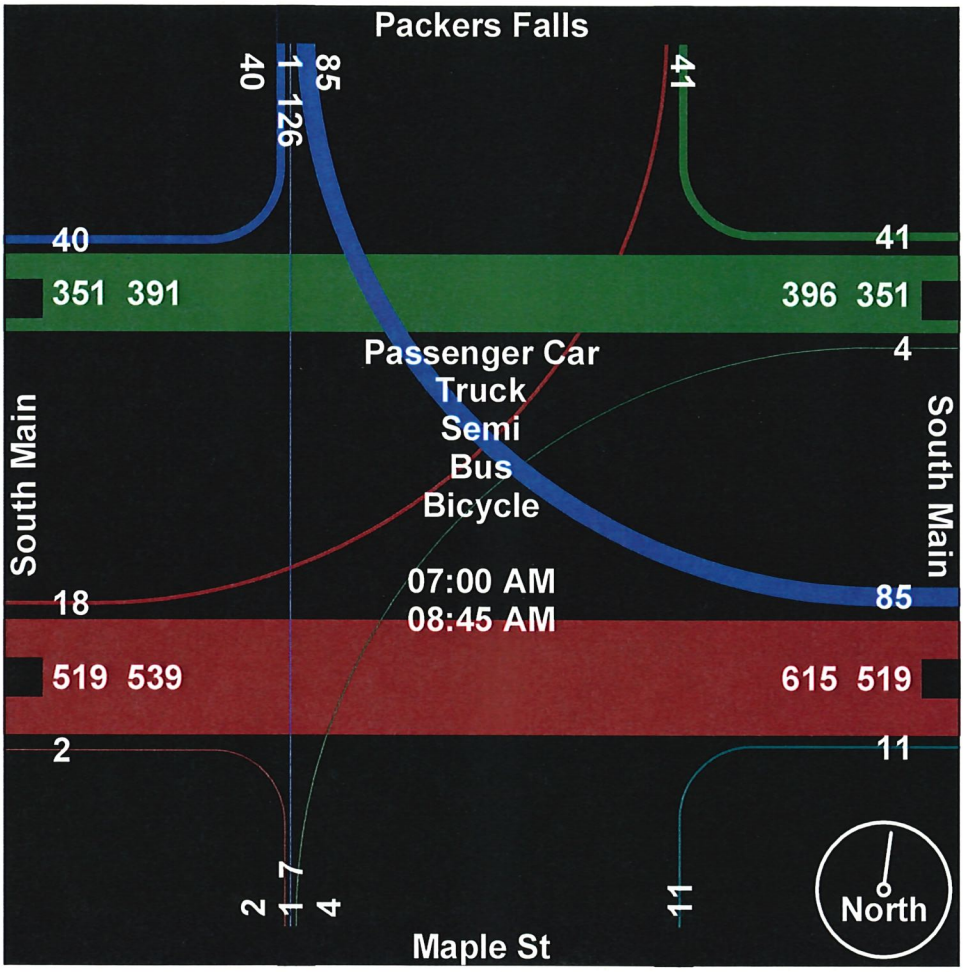
Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	40	1	85	1	127	41	351	4	0	396	11	0	0	0	11	2	519	18	0	539	1073
Apprch %	31.5	0.8	66.9	0.8		10.4	88.6	1	0		100	0	0	0		0.4	96.3	3.3	0		
Total %	3.7	0.1	7.9	0.1	11.8	3.8	32.7	0.4	0	36.9	1	0	0	0	1	0.2	48.4	1.7	0	50.2	
Passenger Car	39	1	84	1	125	41	341	4	0	386	11	0	0	0	11	2	505	17	0	524	1046
% Passenger Car	97.5	100	98.8	100	98.4	100	97.2	100	0	97.5	100	0	0	0	100	100	97.3	94.4	0	97.2	97.5
Truck	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	12
% Truck	2.5	0	0	0	0.8	0	0.9	0	0	0.8	0	0	0	0	0	0	1.5	0	0	1.5	1.1
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0.1
Bus	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	0	5	1	0	6	13
% Bus	0	0	1.2	0	0.8	0	1.7	0	0	1.5	0	0	0	0	0	0	1	5.6	0	1.1	1.2
Bicycle	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bicycle	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.1



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

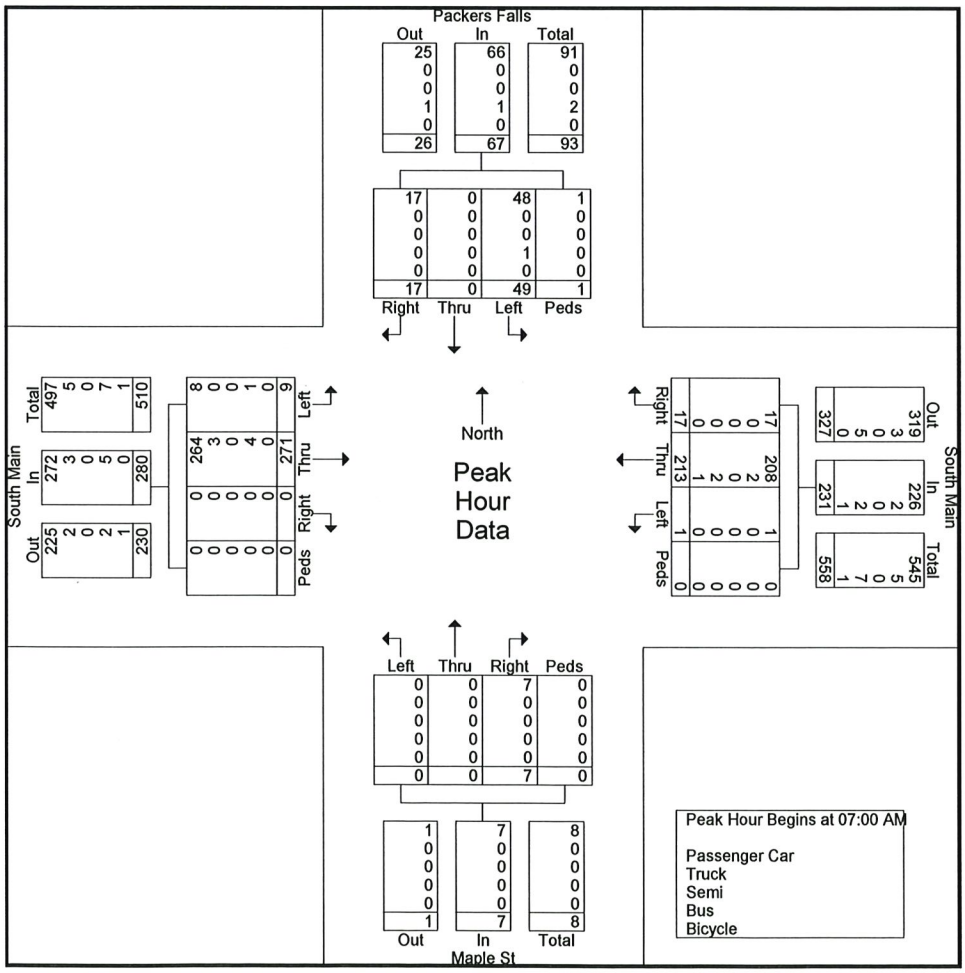
File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 3



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 4

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**7**	0	10	0	17	1	44	0	0	45	**3**	0	0	0	**3**	0	63	**3**	0	66	131
07:15 AM	5	0	11	**1**	17	5	**81**	**1**	0	**87**	1	0	0	0	1	0	**84**	3	0	**87**	**192**
07:30 AM	3	0	9	0	12	**7**	46	0	0	53	2	0	0	0	2	0	77	2	0	79	146
07:45 AM	2	0	**19**	0	**21**	4	42	0	0	46	1	0	0	0	1	0	47	1	0	48	116
Total Volume	17	0	49	1	67	17	213	1	0	231	7	0	0	0	7	0	271	9	0	280	585
% App. Total	25.4	0	73.1	1.5		7.4	92.2	0.4	0		100	0	0	0		0	96.8	3.2	0		
PHF	.607	.000	.645	.250	.798	.607	.657	.250	.000	.664	.583	.000	.000	.000	.583	.000	.807	.750	.000	.805	.762
Passenger Car	17	0	48	1	66	17	208	1	0	226	7	0	0	0	7	0	264	8	0	272	571
% Passenger Car	100	0	98.0	100	98.5	100	97.7	100	0	97.8	100	0	0	0	100	0	97.4	88.9	0	97.1	97.6
Truck	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
% Truck	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	1.1	0	0	1.1	0.9
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	8
% Bus	0	0	2.0	0	1.5	0	0.9	0	0	0.9	0	0	0	0	0	0	1.5	11.1	0	1.8	1.4
Bicycle	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bicycle	0	0	0	0	0	0	0.5	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0.2



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 5

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00 AM					07:00 AM					07:00 AM					07:00 AM					
+0 mins.	**7**	0	10	0	17	1	44	0	0	45	**3**	0	0	0	**3**	0	63	**3**	0	66	
+15 mins.	5	0	11	**1**	17	5	**81**	**1**	0	**87**	1	0	0	0	1	0	**84**	3	0	**87**	
+30 mins.	3	0	9	0	12	**7**	46	0	0	53	2	0	0	0	2	0	77	2	0	79	
+45 mins.	2	0	**19**	0	**21**	4	42	0	0	46	1	0	0	0	1	0	47	1	0	48	
Total Volume	17	0	49	1	67	17	213	1	0	231	7	0	0	0	7	0	271	9	0	280	
% App. Total	25.4	0	73.1	1.5		7.4	92.2	0.4	0		100	0	0	0		0	96.8	3.2	0		
PHF	.607	.000	.645	.250	.798	.607	.657	.250	.000	.664	.583	.000	.000	.000	.583	.000	.807	.750	.000	.805	
Passenger Car	17	0	48	1	66	17	208	1	0	226	7	0	0	0	7	0	264	8	0	272	
% Passenger Car	100	0	98	100	98.5	100	97.7	100	0	97.8	100	0	0	0	100	0	97.4	88.9	0	97.1	
Truck	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	
% Truck	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	1.1	0	0	1.1	
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bus	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	
% Bus	0	0	2	0	1.5	0	0.9	0	0	0.9	0	0	0	0	0	0	1.5	11.1	0	1.8	
Bicycle	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	
% Bicycle	0	0	0	0	0	0	0.5	0	0	0.4	0	0	0	0	0	0	0	0	0	0	

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
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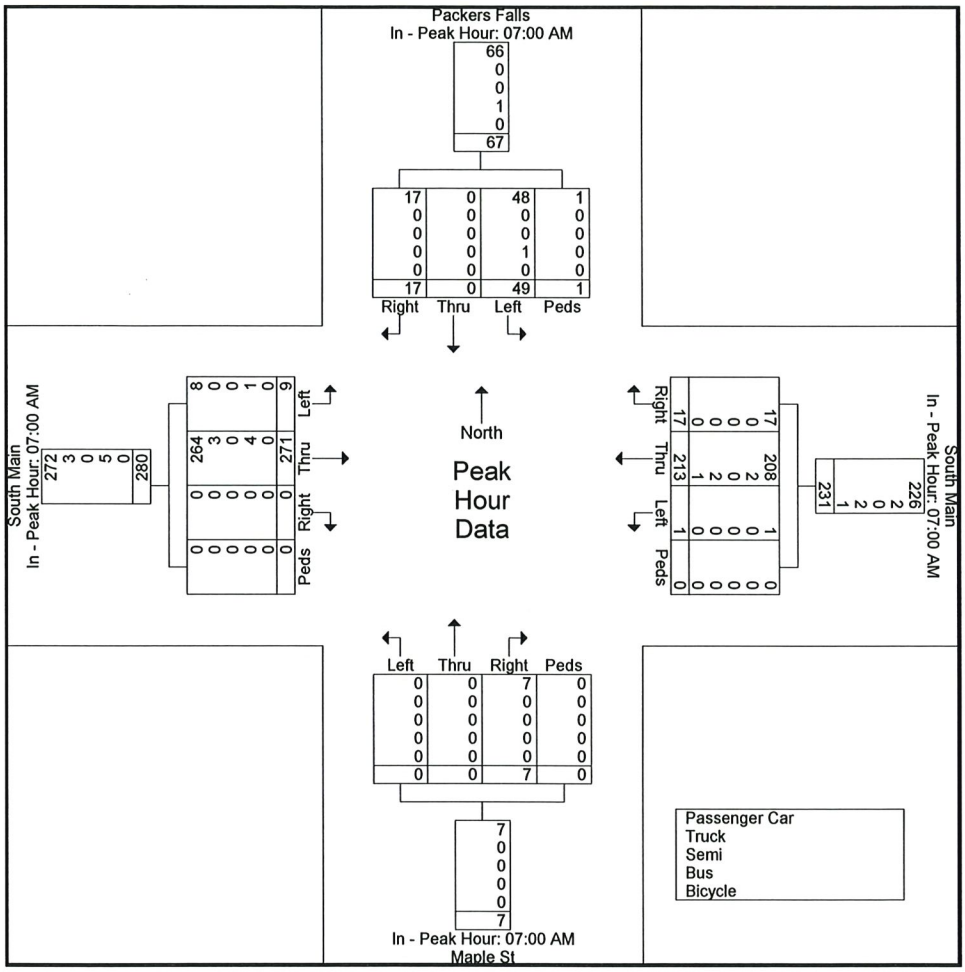

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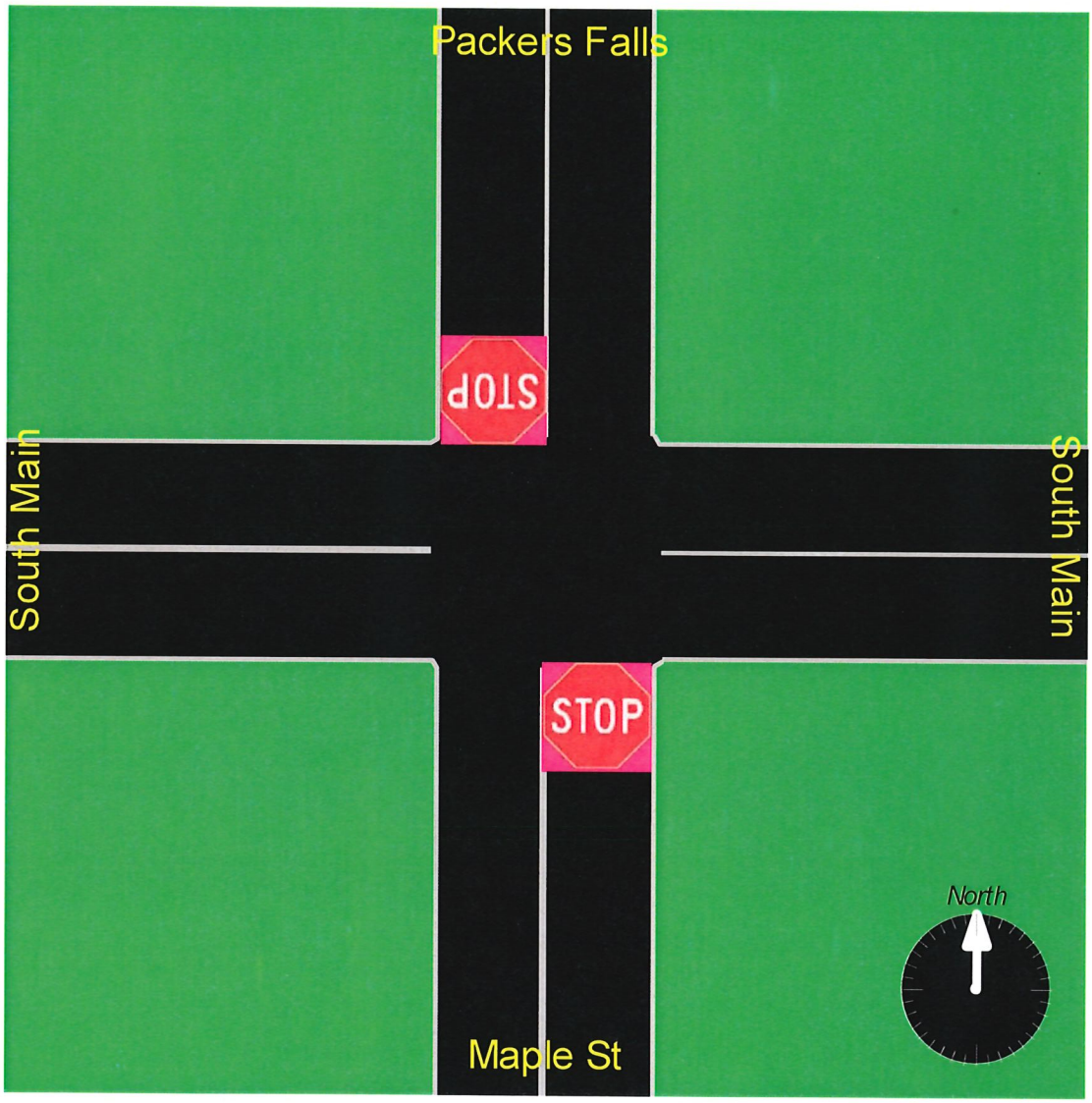
File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 7



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Gorham, ME 04038

Newmarket NH S Main Maple Packers Falls — File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
October 17, 2023 PM — Site Code : 01017232
60 Degrees — Start Date : 10/17/2023
Miovision/ K Tillson — Page No : 1

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
01:30 PM	3	0	2	0	5	10	31	0	0	41	2	0	0	0	2	1	22	1	0	24	72
01:45 PM	5	0	10	1	16	9	46	0	0	55	0	0	0	0	0	0	39	1	1	41	112
Total	8	0	12	1	21	19	77	0	0	96	2	0	0	0	2	1	61	2	1	65	184
02:00 PM	1	2	13	0	16	9	60	1	0	70	0	0	0	0	0	0	34	1	1	36	122
02:15 PM	5	0	11	1	17	15	47	2	0	64	0	0	0	0	0	1	63	3	0	67	148
02:30 PM	8	0	14	0	22	11	56	2	0	69	2	0	0	0	2	0	61	3	10	74	167
02:45 PM	2	0	6	0	8	11	47	1	0	59	2	0	0	0	2	1	61	3	1	66	135
Total	16	2	44	1	63	46	210	6	0	262	4	0	0	0	4	2	219	10	12	243	572
03:00 PM	4	0	7	0	11	13	49	2	0	64	0	0	0	0	0	0	83	5	1	89	164
03:15 PM	6	0	12	0	18	11	49	1	0	61	0	0	1	0	1	1	65	1	1	68	148
03:30 PM	1	0	6	1	8	11	69	0	0	80	0	0	0	0	0	0	63	5	3	71	159
03:45 PM	5	0	9	0	14	14	65	5	0	84	2	1	1	0	4	1	64	5	0	70	172
Total	16	0	34	1	51	49	232	8	0	289	2	1	2	0	5	2	275	16	5	298	643
04:00 PM	2	2	12	0	16	13	78	3	0	94	1	1	1	0	3	0	66	6	1	73	186
04:15 PM	5	2	9	0	16	16	69	4	0	89	4	0	0	0	4	0	69	4	0	73	182
04:30 PM	5	1	12	0	18	10	53	1	0	64	0	0	0	0	0	0	65	8	0	73	155
04:45 PM	6	0	5	0	11	29	67	4	0	100	1	0	0	0	1	1	46	1	0	48	160
Total	18	5	38	0	61	68	267	12	0	347	6	1	1	0	8	1	246	19	1	267	683
05:00 PM	2	1	10	0	13	20	72	3	0	95	2	0	0	0	2	1	58	3	0	62	172
05:15 PM	4	0	10	0	14	18	72	2	0	92	1	0	0	0	1	0	50	4	1	55	162
05:30 PM	6	0	7	0	13	14	74	3	0	91	1	0	0	0	1	1	41	6	1	49	154
05:45 PM	1	0	8	0	9	14	46	1	0	61	2	0	0	0	2	0	41	3	0	44	116
Total	13	1	35	0	49	66	264	9	0	339	6	0	0	0	6	2	190	16	2	210	604

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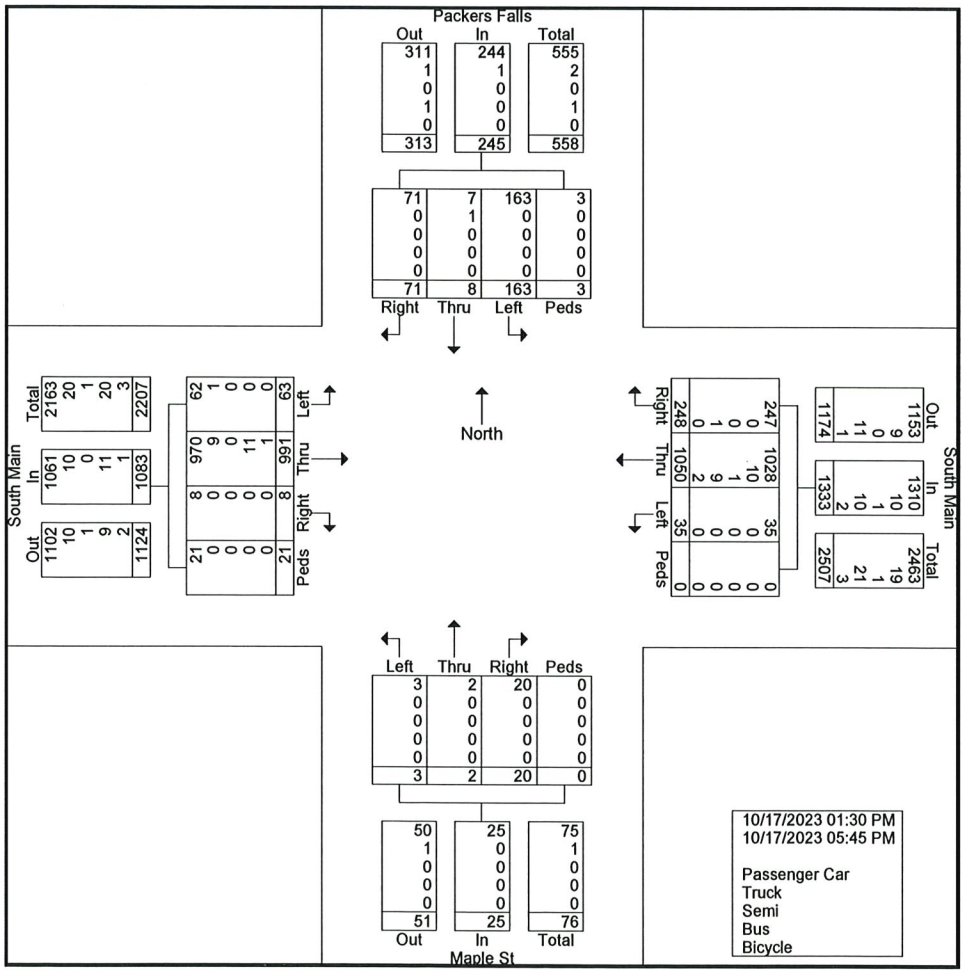
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	71	8	163	3	245	248	1050	35	0	1333	20	2	3	0	25	8	991	63	21	1083	2686
Apprch %	29	3.3	66.5	1.2		18.6	78.8	2.6	0		80	8	12	0		0.7	91.5	5.8	1.9		
Total %	2.6	0.3	6.1	0.1	9.1	9.2	39.1	1.3	0	49.6	0.7	0.1	0.1	0	0.9	0.3	36.9	2.3	0.8	40.3	
Passenger Car	71	7	163	3	244	247	1028	35	0	1310	20	2	3	0	25	8	970	62	21	1061	2640
% Passenger Car	100	87.5	100	100	99.6	99.6	97.9	100	0	98.3	100	100	100	0	100	100	97.9	98.4	100	98	98.3
Truck	0	1	0	0	1	0	10	0	0	10	0	0	0	0	0	0	9	1	0	10	21
% Truck	0	12.5	0	0	0.4	0	1	0	0	0.8	0	0	0	0	0	0	0.9	1.6	0	0.9	0.8
Semi	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Semi	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
Bus	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	0	11	0	0	11	21
% Bus	0	0	0	0	0	0.4	0.9	0	0	0.8	0	0	0	0	0	0	1.1	0	0	1	0.8
Bicycle	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% Bicycle	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.1	0	0	0.1	0.1



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
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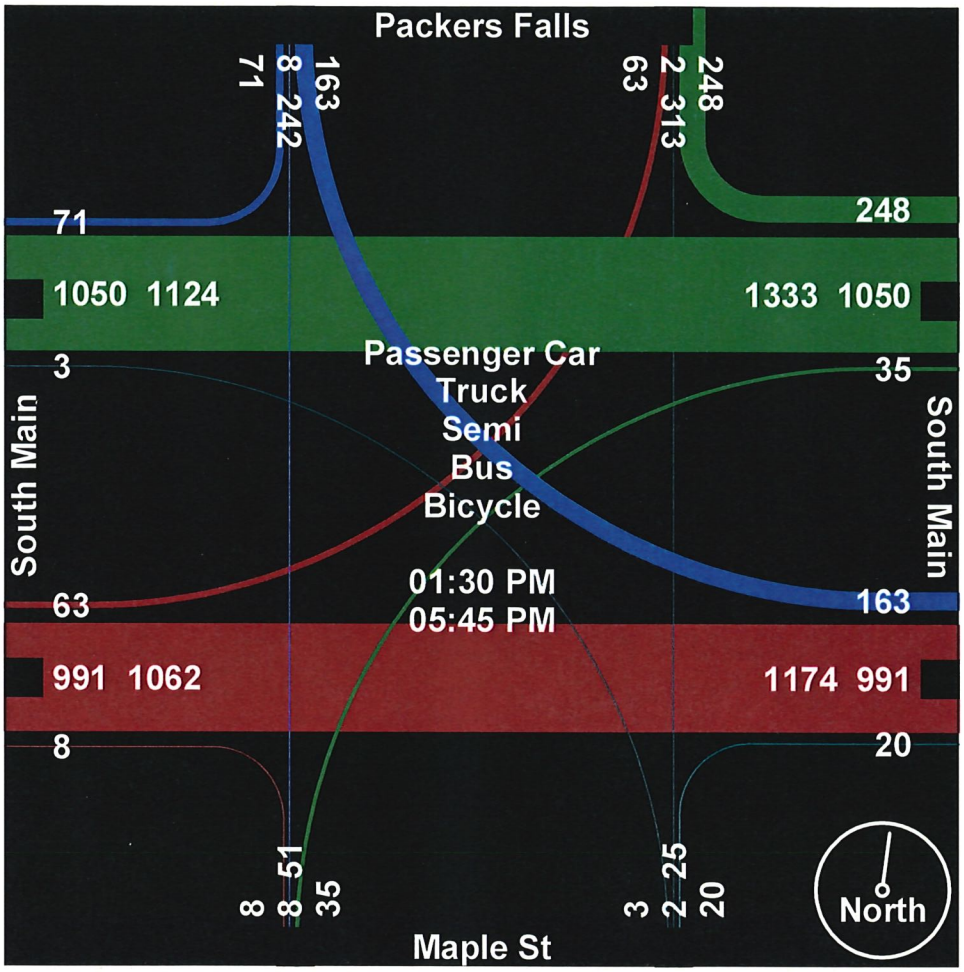

Traffic Solutions
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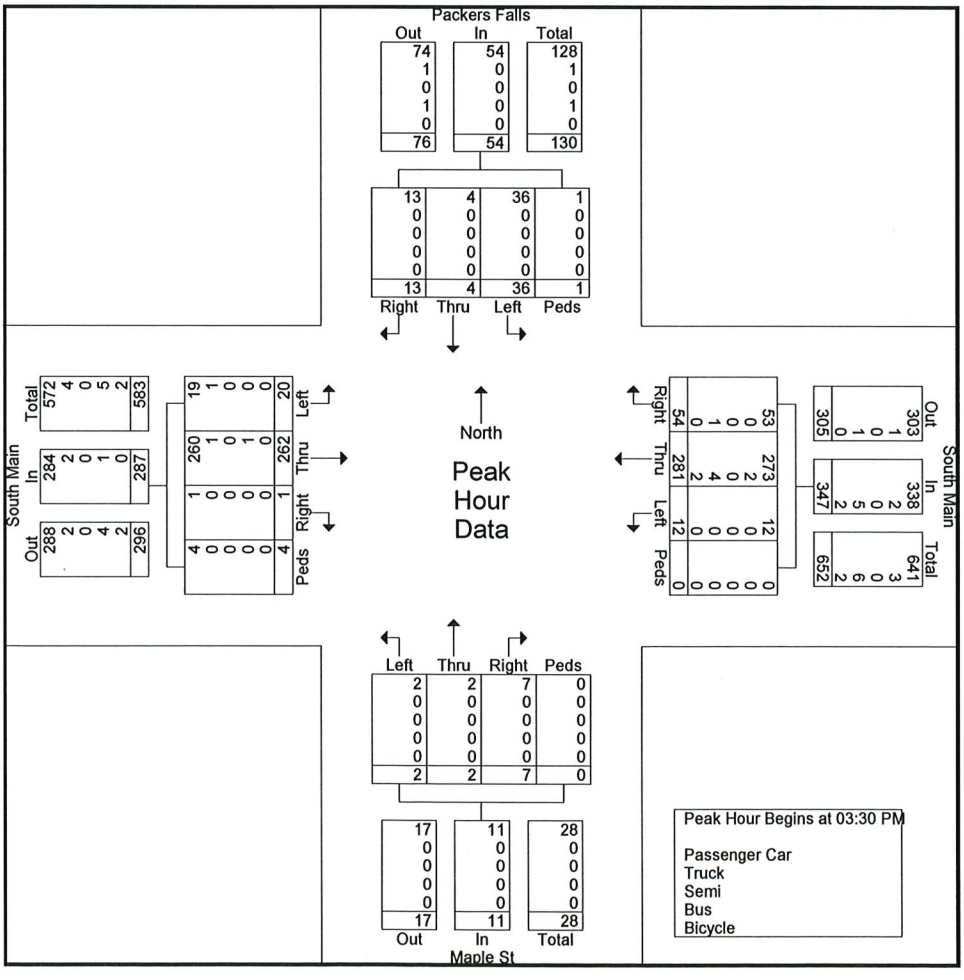
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
Page No : 4

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	1	0	6	**1**	8	11	69	0	0	80	0	0	0	0	0	0	63	5	**3**	71	159
03:45 PM	**5**	0	9	0	14	14	65	**5**	0	84	2	**1**	**1**	0	**4**	**1**	64	5	0	70	172
04:00 PM	2	**2**	**12**	0	**16**	13	**78**	3	0	**94**	1	1	1	0	3	0	66	**6**	1	**73**	**186**
04:15 PM	5	2	9	0	16	**16**	69	4	0	89	**4**	0	0	0	4	0	**69**	4	0	73	182
Total Volume	13	4	36	1	54	54	281	12	0	347	7	2	2	0	11	1	262	20	4	287	699
% App. Total	24.1	7.4	66.7	1.9		15.6	81	3.5	0		63.6	18.2	18.2	0		0.3	91.3	7	1.4		
PHF	.650	.500	.750	.250	.844	.844	.901	.600	.000	.923	.438	.500	.500	.000	.688	.250	.949	.833	.333	.983	.940
Passenger Car	13	4	36	1	54	53	273	12	0	338	7	2	2	0	11	1	260	19	4	284	687
% Passenger Car	100	100	100	100	100	98.1	97.2	100	0	97.4	100	100	100	0	100	100	99.2	95.0	100	99.0	98.3
Truck	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	4
% Truck	0	0	0	0	0	0	0.7	0	0	0.6	0	0	0	0	0	0	0.4	5.0	0	0.7	0.6
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	1	0	0	1	6
% Bus	0	0	0	0	0	1.9	1.4	0	0	1.4	0	0	0	0	0	0	0.4	0	0	0.3	0.9
Bicycle	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Bicycle	0	0	0	0	0	0	0.7	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0.3



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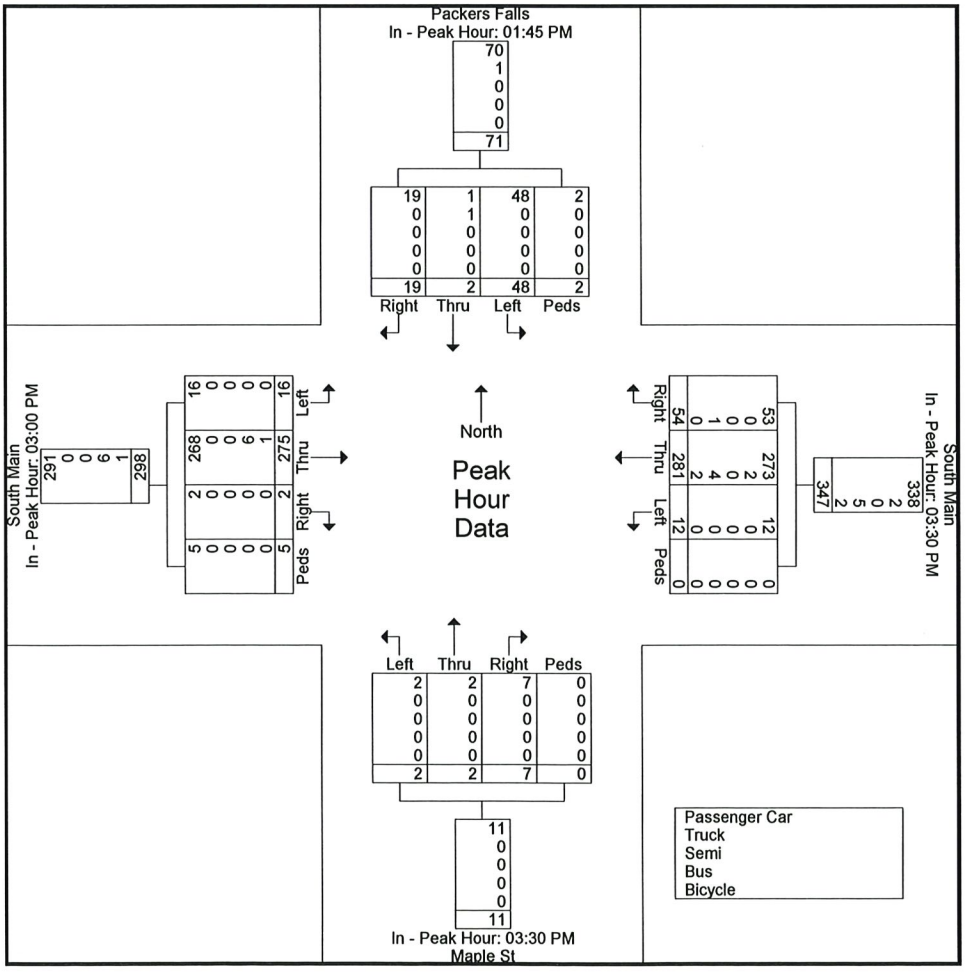
Gorham, ME 04038

File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
Page No : 5

	Packers Falls From North					South Main From East					Maple St From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	01:45 PM					03:30 PM					03:30 PM					03:00 PM					
+0 mins.	5	0	10	**1**	16	11	69	0	0	80	0	0	0	0	0	0	**83**	**5**	1	**89**	
+15 mins.	1	**2**	13	0	16	14	65	**5**	0	84	2	**1**	**1**	0	**4**	**1**	65	1	1	68	
+30 mins.	5	0	11	1	17	13	**78**	3	0	**94**	1	1	1	0	3	0	63	5	**3**	71	
+45 mins.	**8**	0	**14**	0	**22**	**16**	69	4	0	89	**4**	0	0	0	4	1	64	5	0	70	
Total Volume	19	2	48	2	71	54	281	12	0	347	7	2	2	0	11	2	275	16	5	298	
% App. Total	26.8	2.8	67.6	2.8		15.6	81	3.5	0		63.6	18.2	18.2	0		0.7	92.3	5.4	1.7		
PHF	.594	.250	.857	.500	.807	.844	.901	.600	.000	.923	.438	.500	.500	.000	.688	.500	.828	.800	.417	.837	
Passenger Car	19	1	48	2	70	53	273	12	0	338	7	2	2	0	11	2	268	16	5	291	
% Passenger Car	100	50	100	100	98.6	98.1	97.2	100	0	97.4	100	100	100	0	100	100	97.5	100	100	97.7	
Truck	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	
% Truck	0	50	0	0	1.4	0	0.7	0	0	0.6	0	0	0	0	0	0	0	0	0	0	
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bus	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	6	0	0	6	
% Bus	0	0	0	0	0	1.9	1.4	0	0	1.4	0	0	0	0	0	0	2.2	0	0	2	
Bicycle	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	
% Bicycle	0	0	0	0	0	0	0.7	0	0	0.6	0	0	0	0	0	0	0.4	0	0	0.3	



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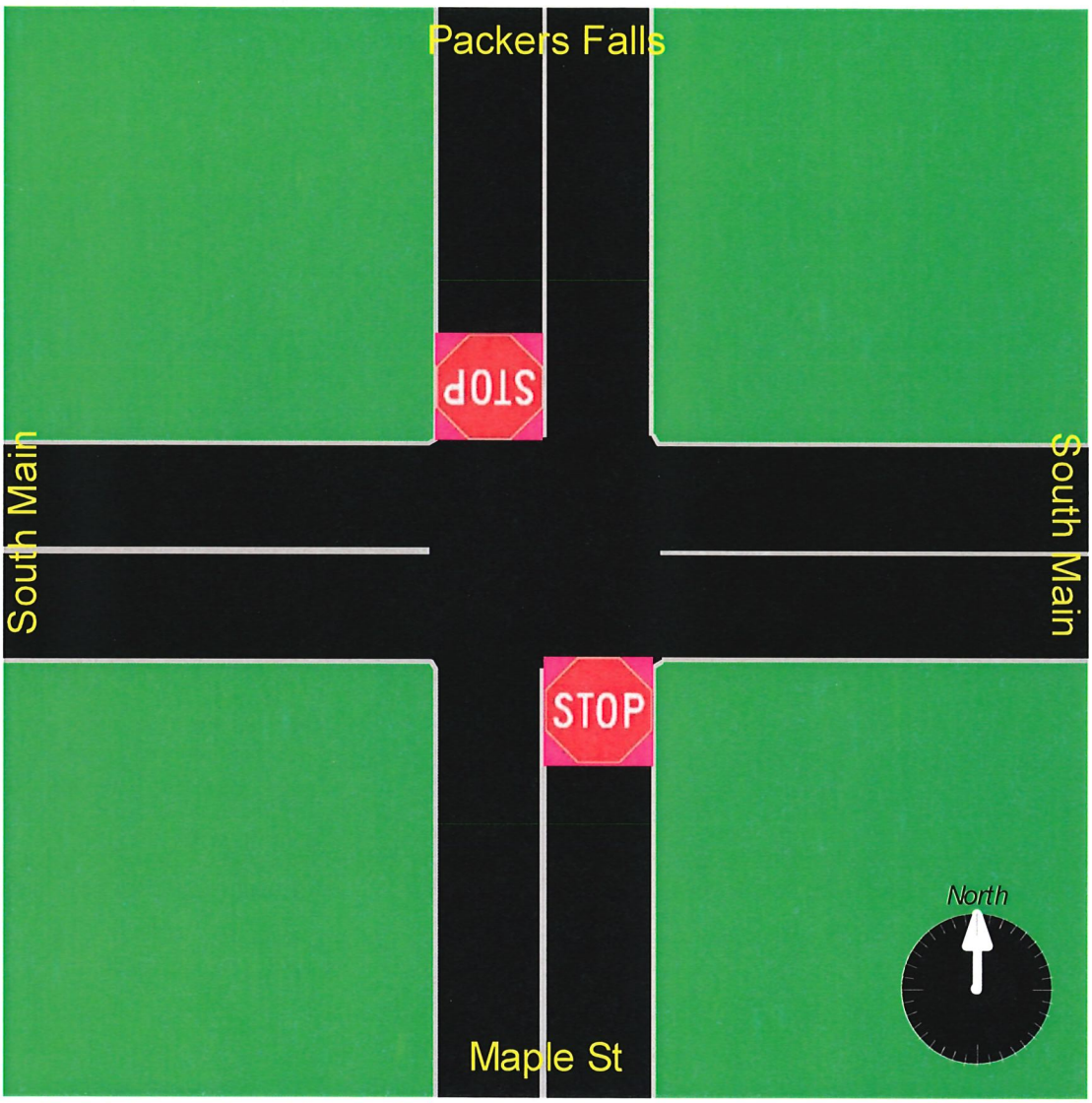
File Name : Newmarket South Main, Packers Fall, Maple, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
Page No : 6



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

Newmarket, NH S. Main, Railroad
October 17, 2023 AM
60 Degrees
Miovision/ K. Tillson

File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

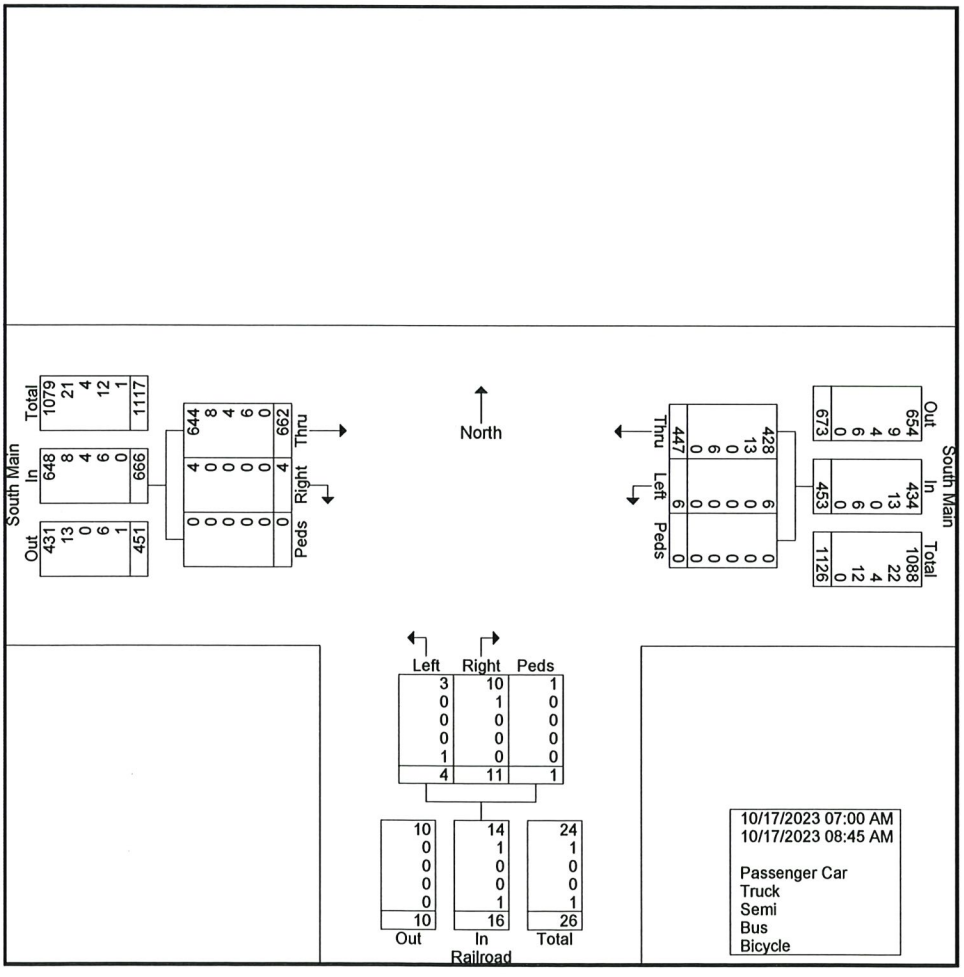
	South Main From East				Railroad From South				South Main From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	54	0	0	54	1	1	0	2	0	77	0	77	133
07:15 AM	96	0	0	96	1	2	1	4	1	94	0	95	195
07:30 AM	60	1	0	61	0	0	0	0	0	106	0	106	167
07:45 AM	51	0	0	51	2	0	0	2	0	68	0	68	121
Total	261	1	0	262	4	3	1	8	1	345	0	346	616
08:00 AM	39	2	0	41	0	0	0	0	1	70	0	71	112
08:15 AM	60	1	0	61	4	1	0	5	2	92	0	94	160
08:30 AM	40	1	0	41	3	0	0	3	0	87	0	87	131
08:45 AM	47	1	0	48	0	0	0	0	0	68	0	68	116
Total	186	5	0	191	7	1	0	8	3	317	0	320	519

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023
Page No : 2

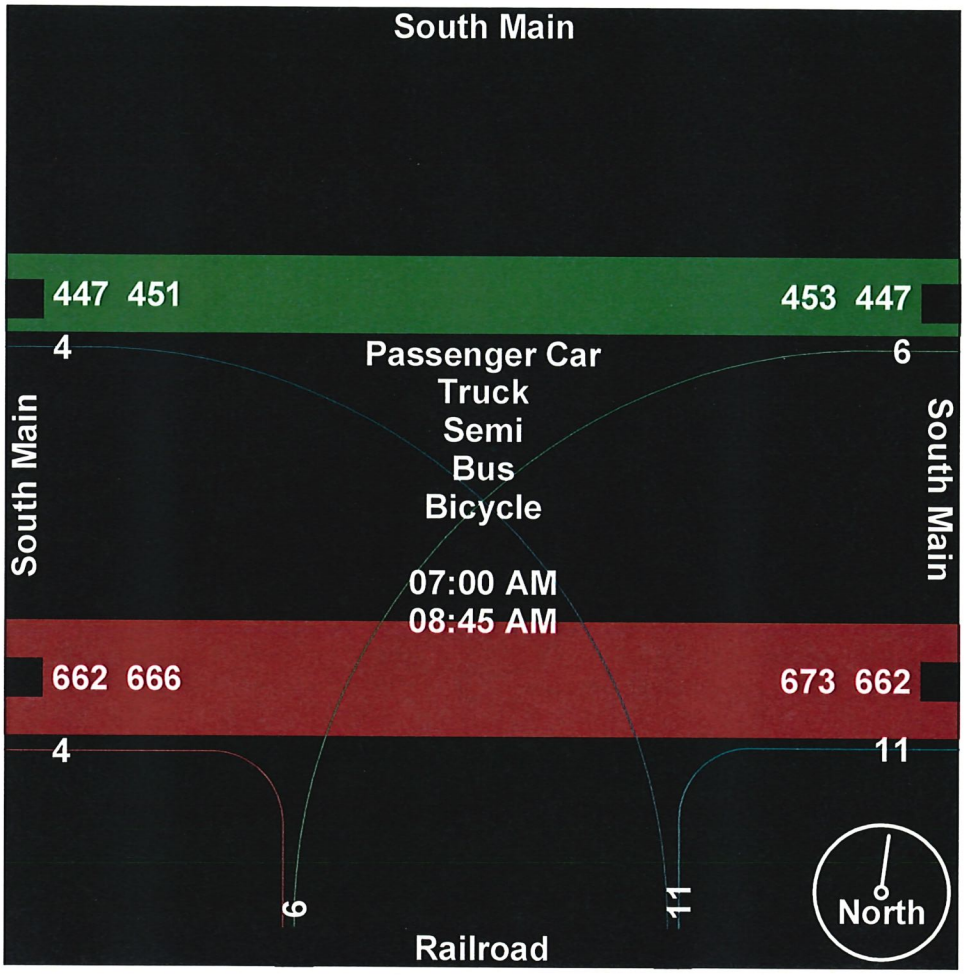
Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	South Main From East				Railroad From South				South Main From West				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Grand Total	447	6	0	453	11	4	1	16	4	662	0	666	1135
Apprch %	98.7	1.3	0		68.8	25	6.2		0.6	99.4	0		
Total %	39.4	0.5	0	39.9	1	0.4	0.1	1.4	0.4	58.3	0	58.7	
Passenger Car	428	6	0	434	10	3	1	14	4	644	0	648	1096
% Passenger Car	95.7	100	0	95.8	90.9	75	100	87.5	100	97.3	0	97.3	96.6
Truck	13	0	0	13	1	0	0	1	0	8	0	8	22
% Truck	2.9	0	0	2.9	9.1	0	0	6.2	0	1.2	0	1.2	1.9
Semi	0	0	0	0	0	0	0	0	0	4	0	4	4
% Semi	0	0	0	0	0	0	0	0	0	0.6	0	0.6	0.4
Bus	6	0	0	6	0	0	0	0	0	6	0	6	12
% Bus	1.3	0	0	1.3	0	0	0	0	0	0.9	0	0.9	1.1
Bicycle	0	0	0	0	0	1	0	1	0	0	0	0	1
% Bicycle	0	0	0	0	0	25	0	6.2	0	0	0	0	0.1



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

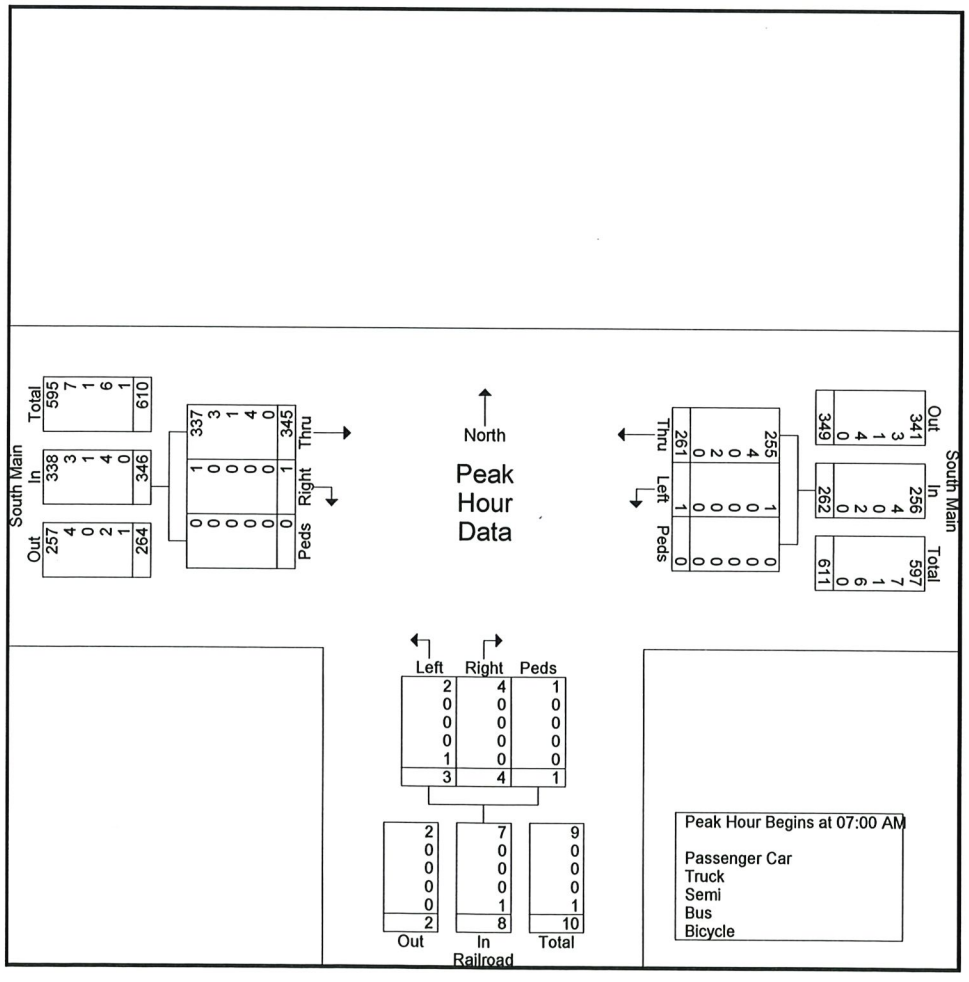
File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023
Page No : 4

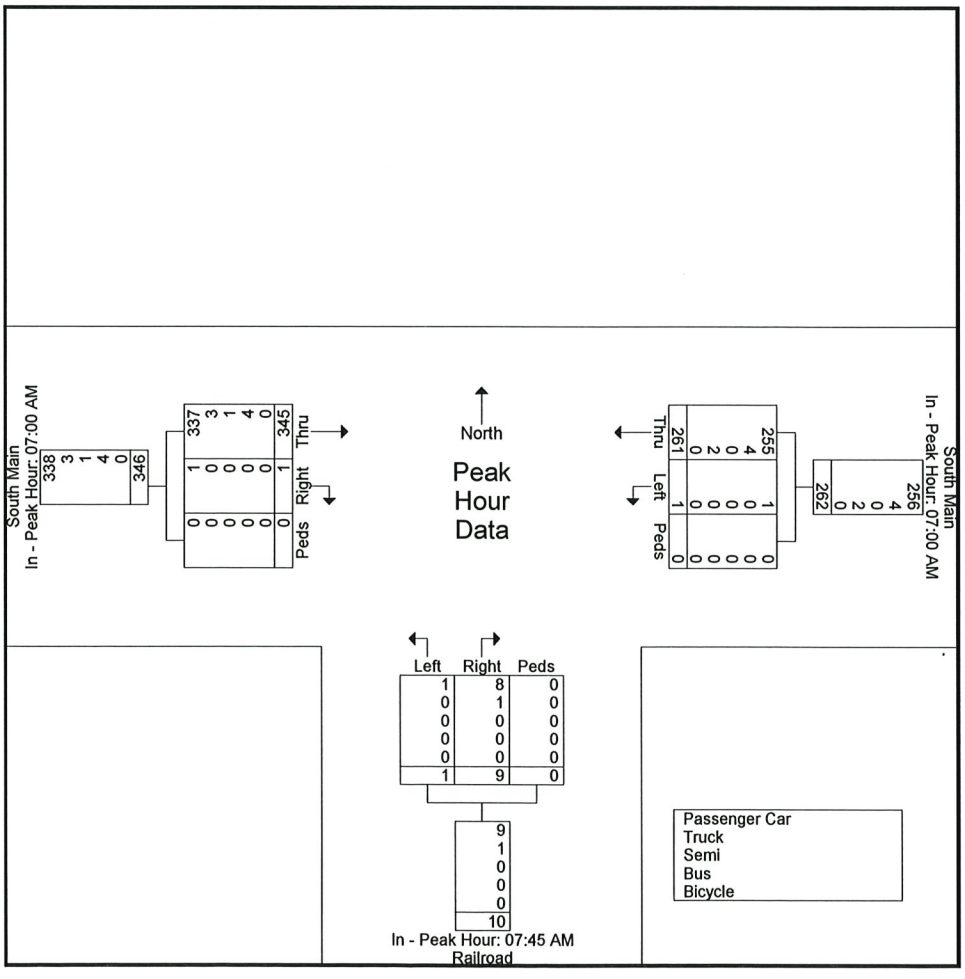
	South Main From East				Railroad From South				South Main From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	54	0	0	54	1	1	0	2	0	77	0	77	133
07:15 AM	**96**	0	0	**96**	1	**2**	**1**	**4**	**1**	94	0	95	**195**
07:30 AM	60	**1**	0	61	0	0	0	0	0	**106**	0	**106**	167
07:45 AM	51	0	0	51	**2**	0	0	2	0	68	0	68	121
Total Volume	261	1	0	262	4	3	1	8	1	345	0	346	616
% App. Total	99.6	0.4	0		50	37.5	12.5		0.3	99.7	0		
PHF	.680	.250	.000	.682	.500	.375	.250	.500	.250	.814	.000	.816	.790
Passenger Car	255	1	0	256	4	2	1	7	1	337	0	338	601
% Passenger Car	97.7	100	0	97.7	100	66.7	100	87.5	100	97.7	0	97.7	97.6
Truck	4	0	0	4	0	0	0	0	0	3	0	3	7
% Truck	1.5	0	0	1.5	0	0	0	0	0	0.9	0	0.9	1.1
Semi	0	0	0	0	0	0	0	0	0	1	0	1	1
% Semi	0	0	0	0	0	0	0	0	0	0.3	0	0.3	0.2
Bus	2	0	0	2	0	0	0	0	0	4	0	4	6
% Bus	0.8	0	0	0.8	0	0	0	0	0	1.2	0	1.2	1.0
Bicycle	0	0	0	0	0	1	0	1	0	0	0	0	1
% Bicycle	0	0	0	0	0	33.3	0	12.5	0	0	0	0	0.2



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

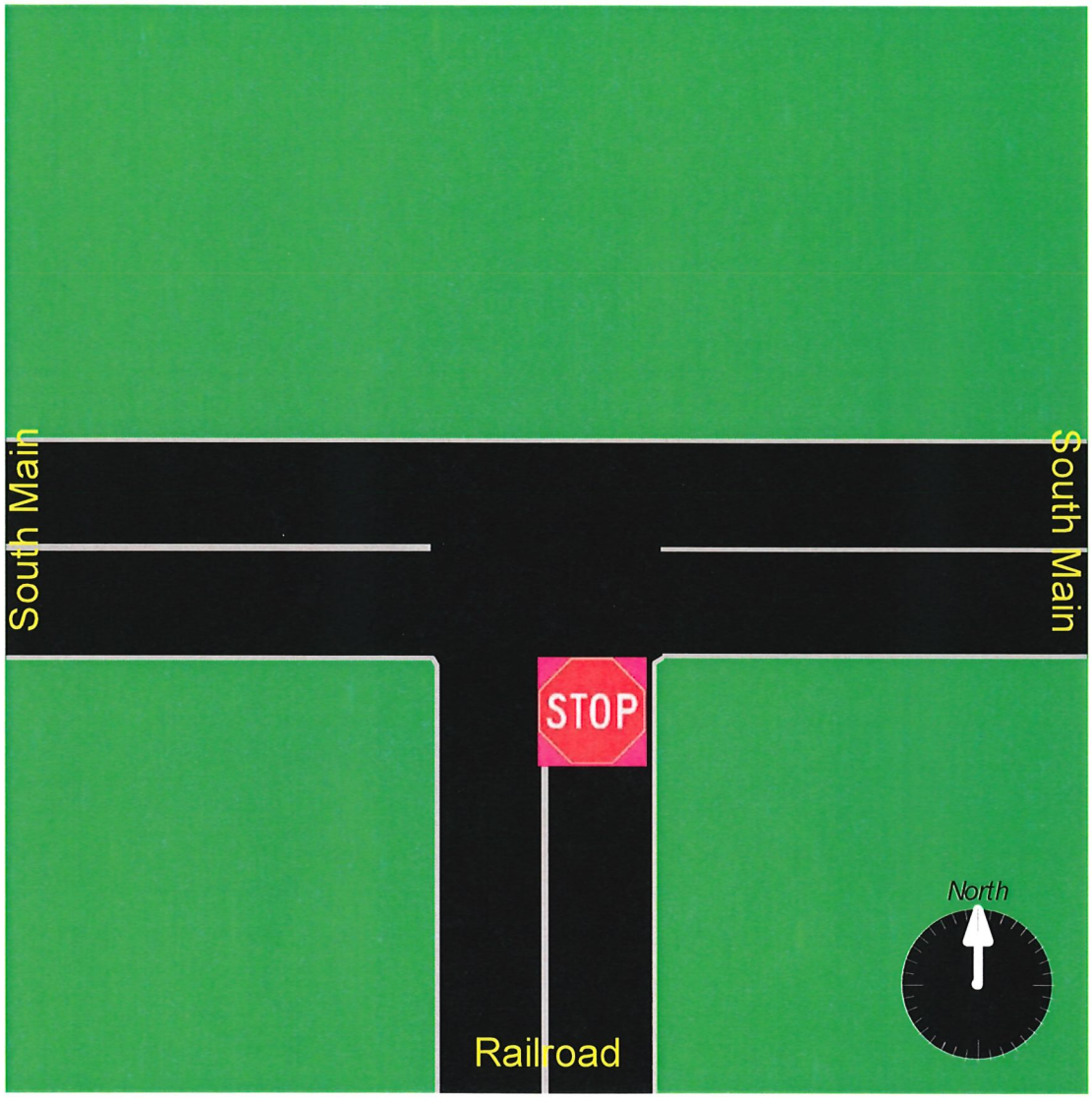
File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023
Page No : 5

	South Main From East				Railroad From South				South Main From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:00 AM				07:45 AM				07:00 AM				
+0 mins.	54	0	0	54	2	0	0	2	0	77	0	77	
+15 mins.	**96**	0	0	**96**	0	0	0	0	**1**	94	0	95	
+30 mins.	60	**1**	0	61	**4**	**1**	0	**5**	0	**106**	0	**106**	
+45 mins.	51	0	0	51	3	0	0	3	0	68	0	68	
Total Volume	261	1	0	262	9	1	0	10	1	345	0	346	
% App. Total	99.6	0.4	0		90	10	0		0.3	99.7	0		
PHF	.680	.250	.000	.682	.563	.250	.000	.500	.250	.814	.000	.816	
Passenger Car	255	1	0	256	8	1	0	9	1	337	0	338	
% Passenger Car	97.7	100	0	97.7	88.9	100	0	90	100	97.7	0	97.7	
Truck	4	0	0	4	1	0	0	1	0	3	0	3	
% Truck	1.5	0	0	1.5	11.1	0	0	10	0	0.9	0	0.9	
Semi	0	0	0	0	0	0	0	0	0	1	0	1	
% Semi	0	0	0	0	0	0	0	0	0	0.3	0	0.3	
Bus	2	0	0	2	0	0	0	0	0	4	0	4	
% Bus	0.8	0	0	0.8	0	0	0	0	0	1.2	0	1.2	
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 AM
Site Code : 10172311
Start Date : 10/17/2023
Page No : 6



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

Newmarket, NH S. Main & Railroad
October 17, 2023 PM
60 Degrees
Miovision/ K. Tillson

File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

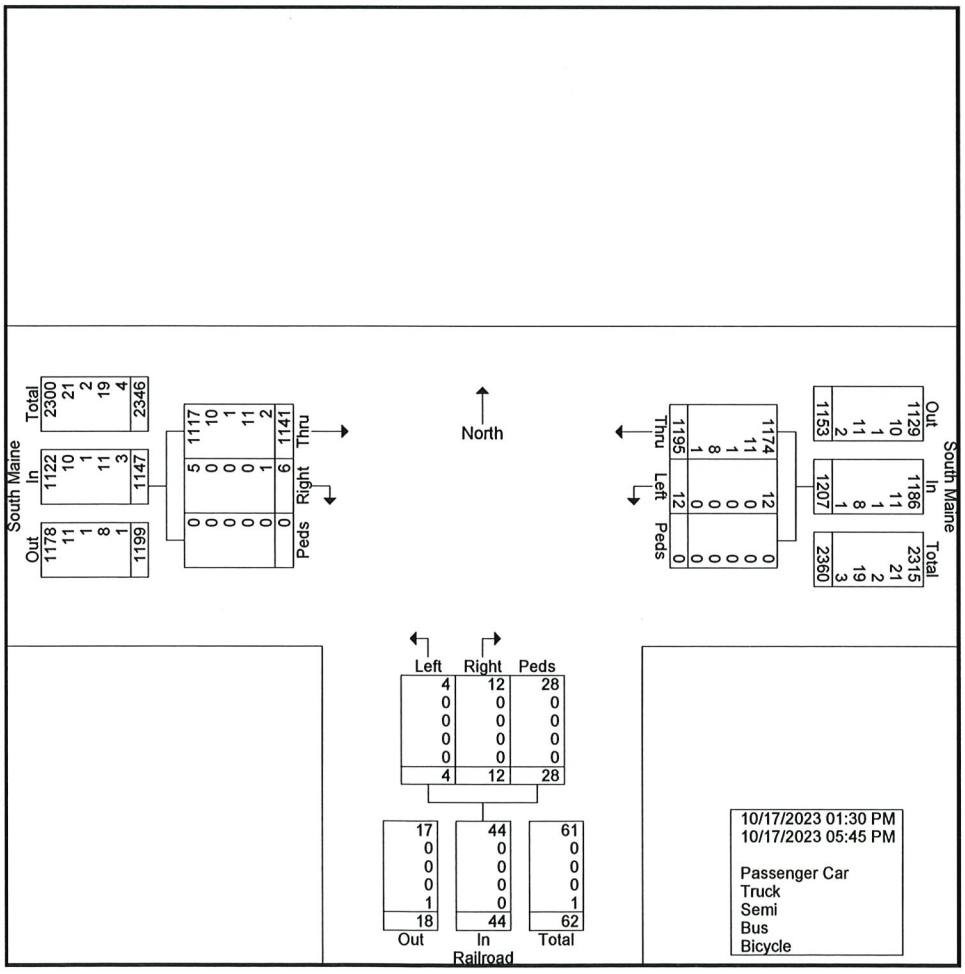
	South Maine From East				Railroad From South				South Maine From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
01:30 PM	39	0	0	39	1	0	0	1	0	25	0	25	65
01:45 PM	51	0	0	51	0	0	3	3	1	42	0	43	97
Total	90	0	0	90	1	0	3	4	1	67	0	68	162
02:00 PM	68	0	0	68	1	0	1	2	0	45	0	45	115
02:15 PM	57	1	0	58	4	0	0	4	1	72	0	73	135
02:30 PM	64	1	0	65	0	0	8	8	1	75	0	76	149
02:45 PM	46	1	0	47	1	0	1	2	0	68	0	68	117
Total	235	3	0	238	6	0	10	16	2	260	0	262	516
03:00 PM	53	0	0	53	0	0	1	1	0	83	0	83	137
03:15 PM	56	1	0	57	0	0	0	0	0	75	0	75	132
03:30 PM	70	0	0	70	1	0	2	3	0	66	0	66	139
03:45 PM	68	0	0	68	0	0	0	0	0	70	0	70	138
Total	247	1	0	248	1	0	3	4	0	294	0	294	546
04:00 PM	80	0	0	80	0	2	1	3	1	74	0	75	158
04:15 PM	84	1	0	85	0	0	1	1	0	73	0	73	159
04:30 PM	57	2	0	59	1	0	0	1	0	72	0	72	132
04:45 PM	88	1	0	89	1	0	0	1	1	50	0	51	141
Total	309	4	0	313	2	2	2	6	2	269	0	271	590
05:00 PM	83	0	0	83	1	1	4	6	1	71	0	72	161
05:15 PM	86	0	0	86	0	0	5	5	0	62	0	62	153
05:30 PM	82	2	0	84	1	0	0	1	0	55	0	55	140
05:45 PM	63	2	0	65	0	1	1	2	0	63	0	63	130
Total	314	4	0	318	2	2	10	14	1	251	0	252	584

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023
Page No : 2

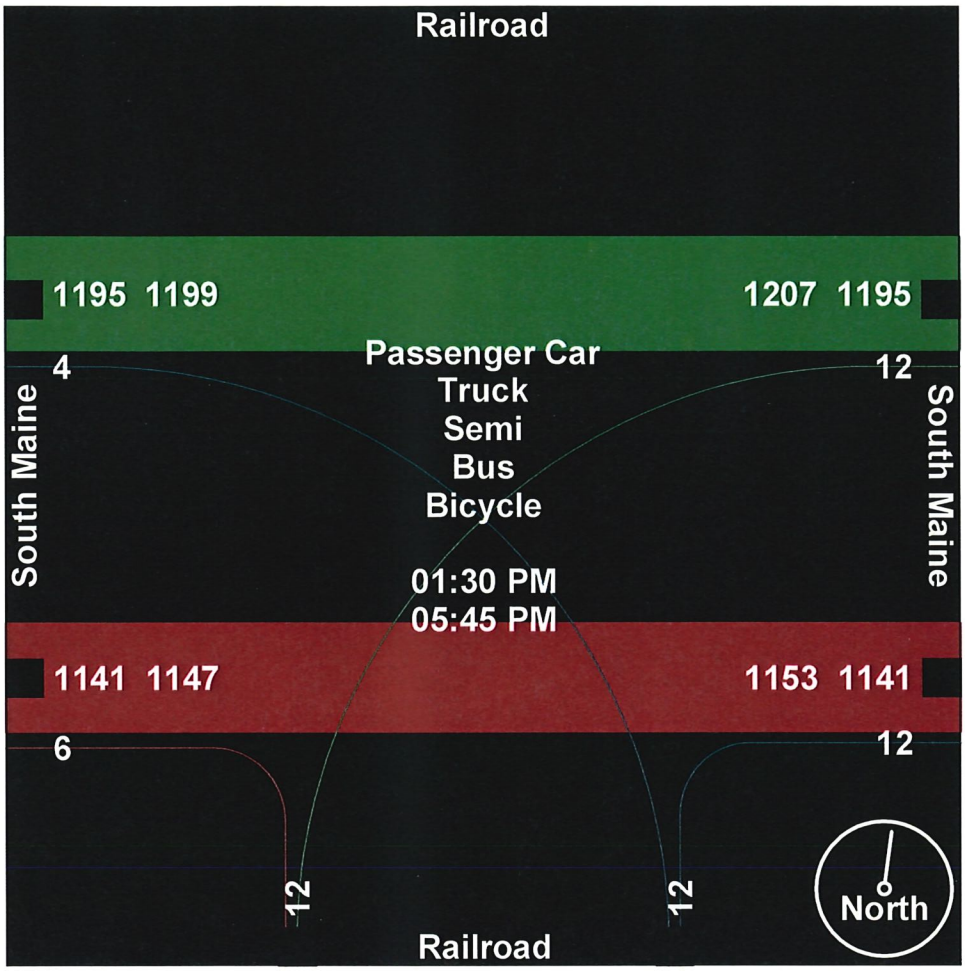
Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	South Maine From East				Railroad From South				South Maine From West				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Grand Total	1195	12	0	1207	12	4	28	44	6	1141	0	1147	2398
Apprch %	99	1	0		27.3	9.1	63.6		0.5	99.5	0		
Total %	49.8	0.5	0	50.3	0.5	0.2	1.2	1.8	0.3	47.6	0	47.8	
Passenger Car	1174	12	0	1186	12	4	28	44	5	1117	0	1122	2352
% Passenger Car	98.2	100	0	98.3	100	100	100	100	83.3	97.9	0	97.8	98.1
Truck	11	0	0	11	0	0	0	0	0	10	0	10	21
% Truck	0.9	0	0	0.9	0	0	0	0	0	0.9	0	0.9	0.9
Semi	1	0	0	1	0	0	0	0	0	1	0	1	2
% Semi	0.1	0	0	0.1	0	0	0	0	0	0.1	0	0.1	0.1
Bus	8	0	0	8	0	0	0	0	0	11	0	11	19
% Bus	0.7	0	0	0.7	0	0	0	0	0	1	0	1	0.8
Bicycle	1	0	0	1	0	0	0	0	1	2	0	3	4
% Bicycle	0.1	0	0	0.1	0	0	0	0	16.7	0.2	0	0.3	0.2



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

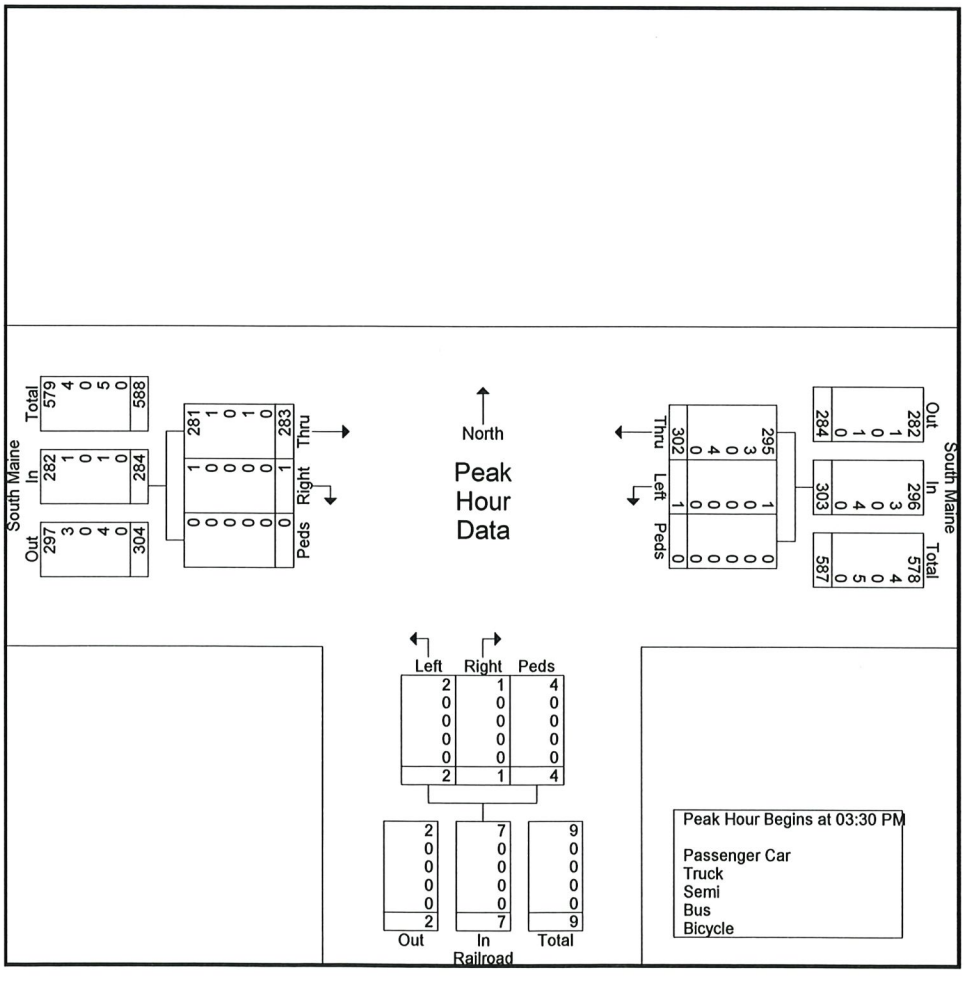
File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023
Page No : 3



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023
Page No : 4

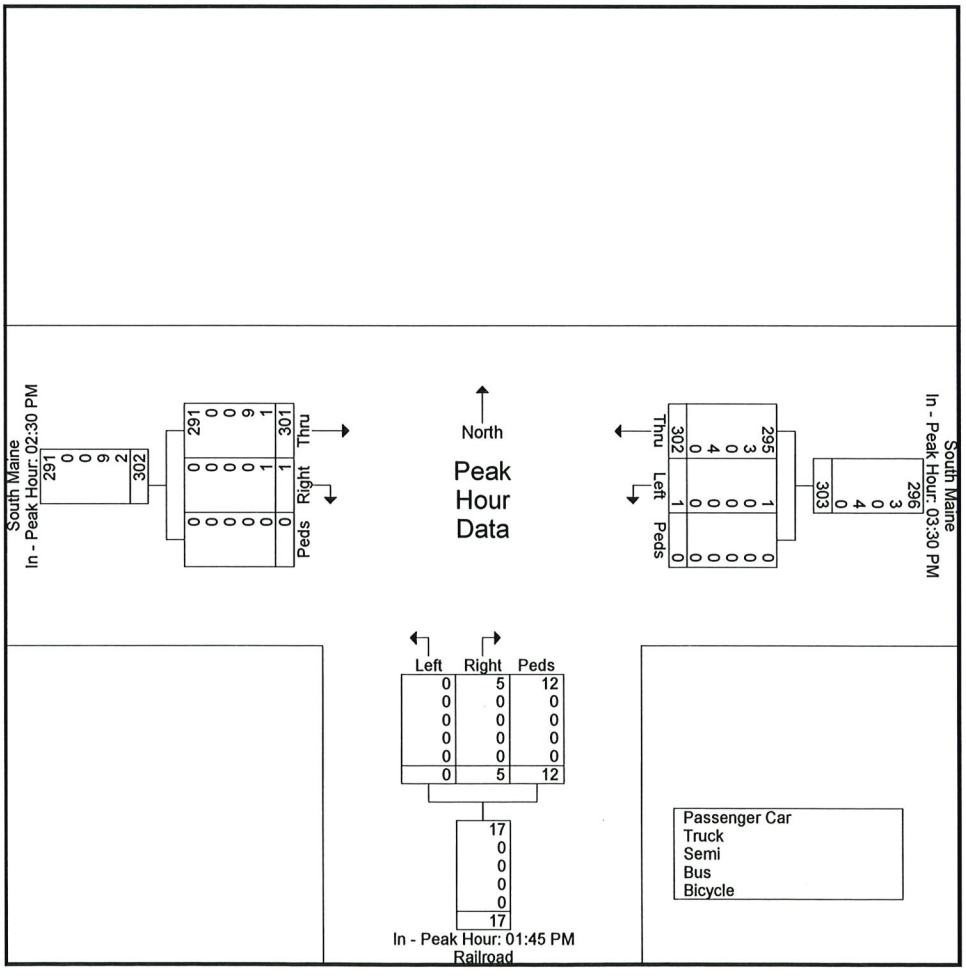
	South Maine From East				Railroad From South				South Maine From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	70	0	0	70	**1**	0	**2**	**3**	0	66	0	66	139
03:45 PM	68	0	0	68	0	0	0	0	0	70	0	70	138
04:00 PM	80	0	0	80	0	**2**	1	3	**1**	**74**	0	**75**	158
04:15 PM	**84**	**1**	0	**85**	0	0	1	1	0	73	0	73	**159**
Total Volume	302	1	0	303	1	2	4	7	1	283	0	284	594
% App. Total	99.7	0.3	0		14.3	28.6	57.1		0.4	99.6	0		
PHF	.899	.250	.000	.891	.250	.250	.500	.583	.250	.956	.000	.947	.934
Passenger Car	295	1	0	296	1	2	4	7	1	281	0	282	585
% Passenger Car	97.7	100	0	97.7	100	100	100	100	100	99.3	0	99.3	98.5
Truck	3	0	0	3	0	0	0	0	0	1	0	1	4
% Truck	1.0	0	0	1.0	0	0	0	0	0	0.4	0	0.4	0.7
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	4	0	0	4	0	0	0	0	0	1	0	1	5
% Bus	1.3	0	0	1.3	0	0	0	0	0	0.4	0	0.4	0.8
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023
Page No : 5

	South Maine From East				Railroad From South				South Maine From West				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	03:30 PM				01:45 PM				02:30 PM				
+0 mins.	70	0	0	70	0	0	3	3	**1**	75	0	76	
+15 mins.	68	0	0	68	1	0	1	2	0	68	0	68	
+30 mins.	80	0	0	80	**4**	0	0	4	0	**83**	0	**83**	
+45 mins.	**84**	**1**	0	**85**	0	0	**8**	**8**	0	75	0	75	
Total Volume	302	1	0	303	5	0	12	17	1	301	0	302	
% App. Total	99.7	0.3	0		29.4	0	70.6		0.3	99.7	0		
PHF	.899	.250	.000	.891	.313	.000	.375	.531	.250	.907	.000	.910	
Passenger Car	295	1	0	296	5	0	12	17	0	291	0	291	
% Passenger Car	97.7	100	0	97.7	100	0	100	100	0	96.7	0	96.4	
Truck	3	0	0	3	0	0	0	0	0	0	0	0	
% Truck	1	0	0	1	0	0	0	0	0	0	0	0	
Semi	0	0	0	0	0	0	0	0	0	0	0	0	
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	
Bus	4	0	0	4	0	0	0	0	0	9	0	9	
% Bus	1.3	0	0	1.3	0	0	0	0	0	3	0	3	
Bicycle	0	0	0	0	0	0	0	0	1	1	0	2	
% Bicycle	0	0	0	0	0	0	0	0	100	0.3	0	0.7	



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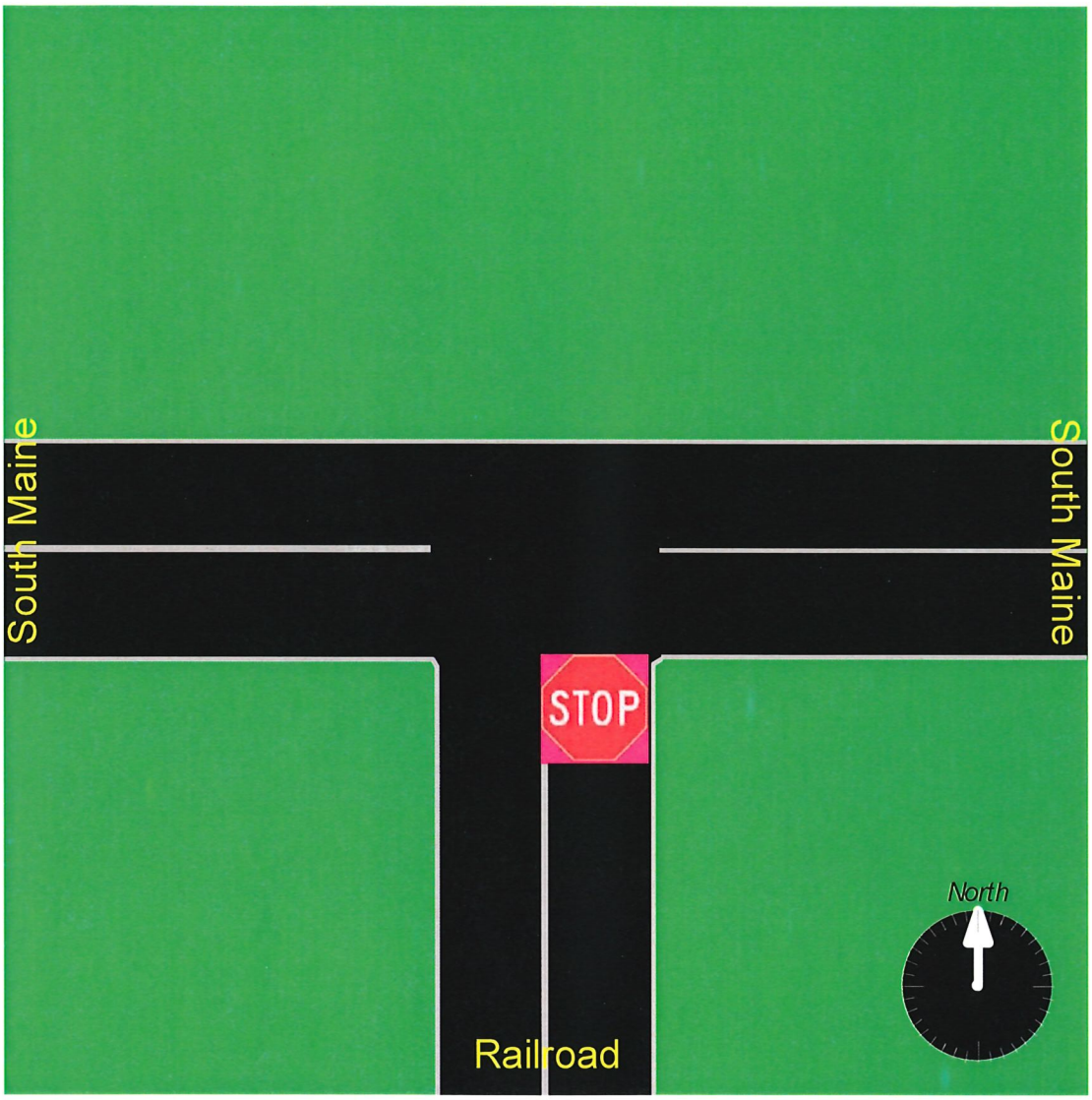
Gorham, ME 04038

File Name : Newmarket South Main, Railroad, 10-17-2023 PM
Site Code : 10172322
Start Date : 10/17/2023
Page No : 6



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

Newmarket, NH S Main Beach Gerry
October 17, 2023 AM
55 Degrees
Miovision/ K Tillson

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 1

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

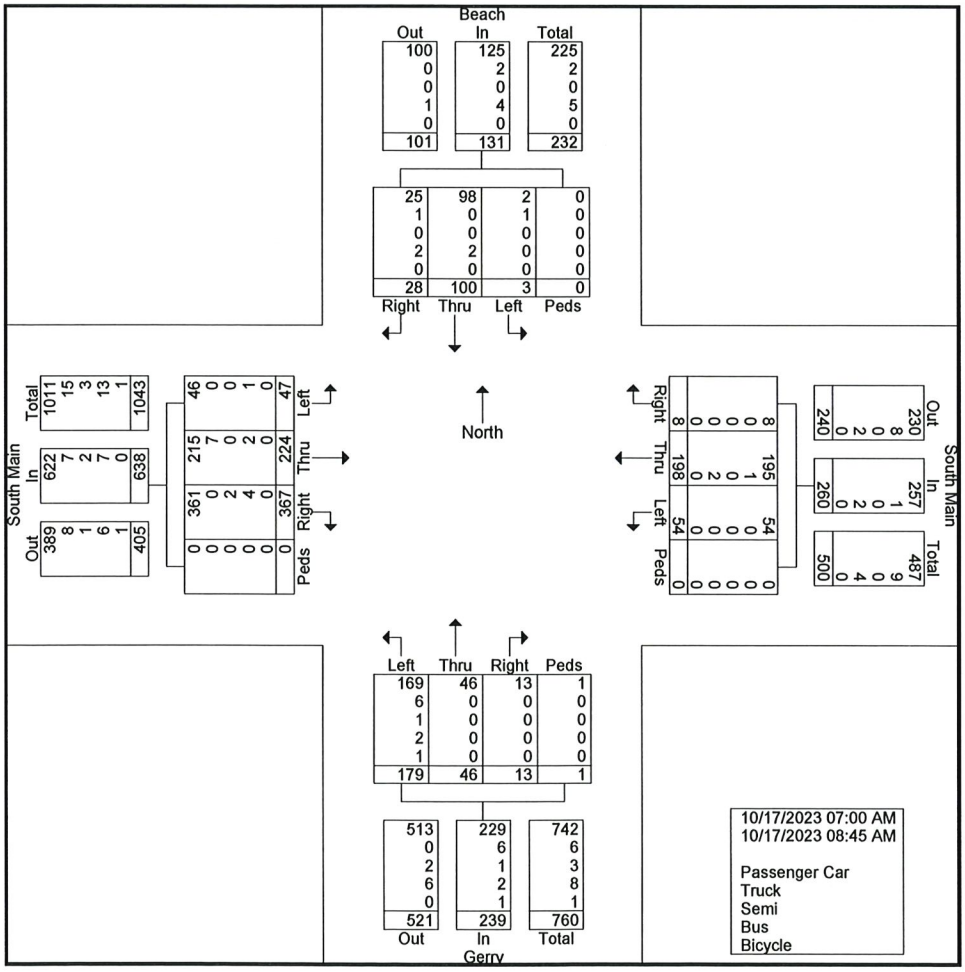
	Beach From North					South Main From East					Gerry From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	4	7	0	0	11	0	26	8	0	34	0	4	13	0	17	41	29	6	0	76	138
07:15 AM	5	21	1	0	27	1	36	6	0	43	1	3	28	0	32	57	32	5	0	94	196
07:30 AM	2	7	0	0	9	1	26	7	0	34	1	4	18	1	24	55	31	4	0	90	157
07:45 AM	4	22	0	0	26	1	18	13	0	32	1	5	29	0	35	51	18	1	0	70	163
Total	15	57	1	0	73	3	106	34	0	143	3	16	88	1	108	204	110	16	0	330	654
08:00 AM	1	11	0	0	12	0	15	4	0	19	5	5	30	0	40	37	26	6	0	69	140
08:15 AM	9	14	2	0	25	3	31	6	0	40	1	11	27	0	39	54	30	14	0	98	202
08:30 AM	0	8	0	0	8	1	23	7	0	31	1	6	16	0	23	36	46	6	0	88	150
08:45 AM	3	10	0	0	13	1	23	3	0	27	3	8	18	0	29	36	12	5	0	53	122
Total	13	43	2	0	58	5	92	20	0	117	10	30	91	0	131	163	114	31	0	308	614

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
Page No : 2

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Beach From North					South Main From East					Gerry From South					South Main From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	28	100	3	0	131	8	198	54	0	260	13	46	179	1	239	367	224	47	0	638	1268
Apprch %	21.4	76.3	2.3	0		3.1	76.2	20.8	0		5.4	19.2	74.9	0.4		57.5	35.1	7.4	0		
Total %	2.2	7.9	0.2	0	10.3	0.6	15.6	4.3	0	20.5	1	3.6	14.1	0.1	18.8	28.9	17.7	3.7	0	50.3	
Passenger Car	25	98	2	0	125	8	195	54	0	257	13	46	169	1	229	361	215	46	0	622	1233
% Passenger Car	89.3	98	66.7	0	95.4	100	98.5	100	0	98.8	100	100	94.4	100	95.8	98.4	96	97.9	0	97.5	97.2
Truck	1	0	1	0	2	0	1	0	0	1	0	0	6	0	6	0	7	0	0	7	16
% Truck	3.6	0	33.3	0	1.5	0	0.5	0	0	0.4	0	0	3.4	0	2.5	0	3.1	0	0	1.1	1.3
Semi	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0.4	0.5	0	0	0	0.3	0.2
Bus	2	2	0	0	4	0	2	0	0	2	0	0	2	0	2	4	2	1	0	7	15
% Bus	7.1	2	0	0	3.1	0	1	0	0	0.8	0	0	1.1	0	0.8	1.1	0.9	2.1	0	1.1	1.2
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0.4	0	0	0	0	0	0.1



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
Site Code : 01017231
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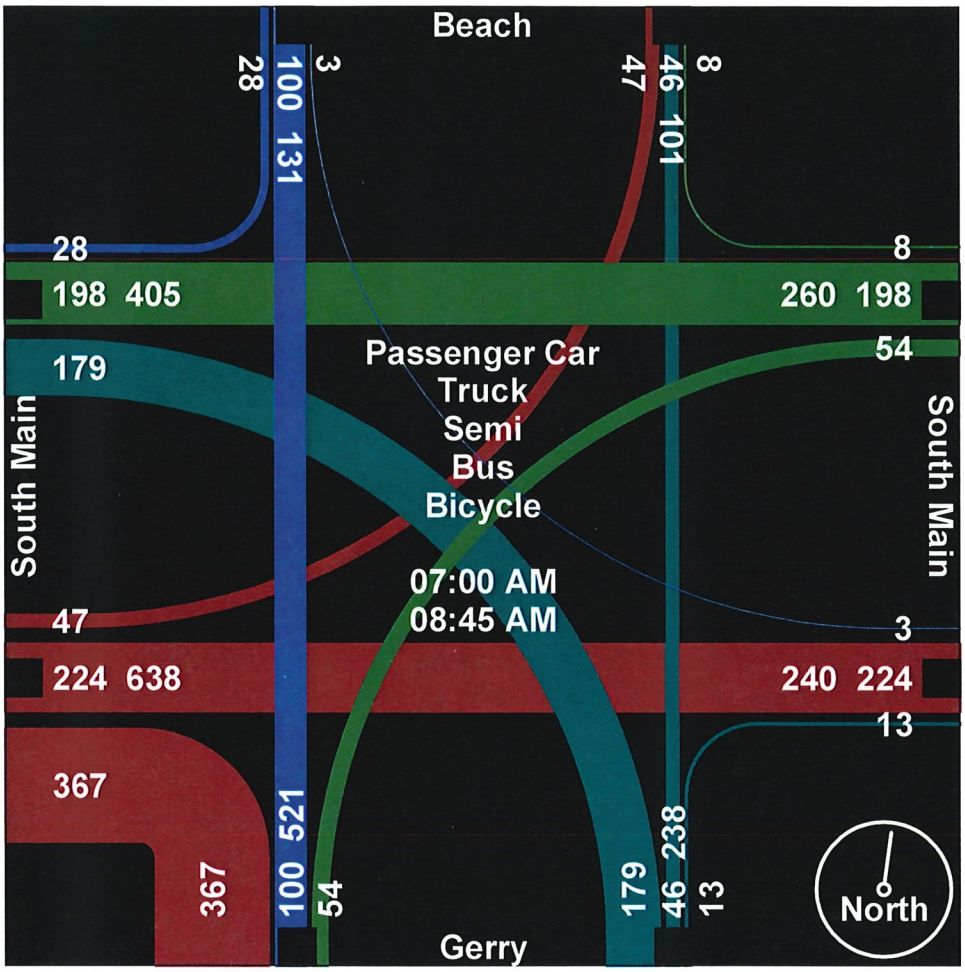

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
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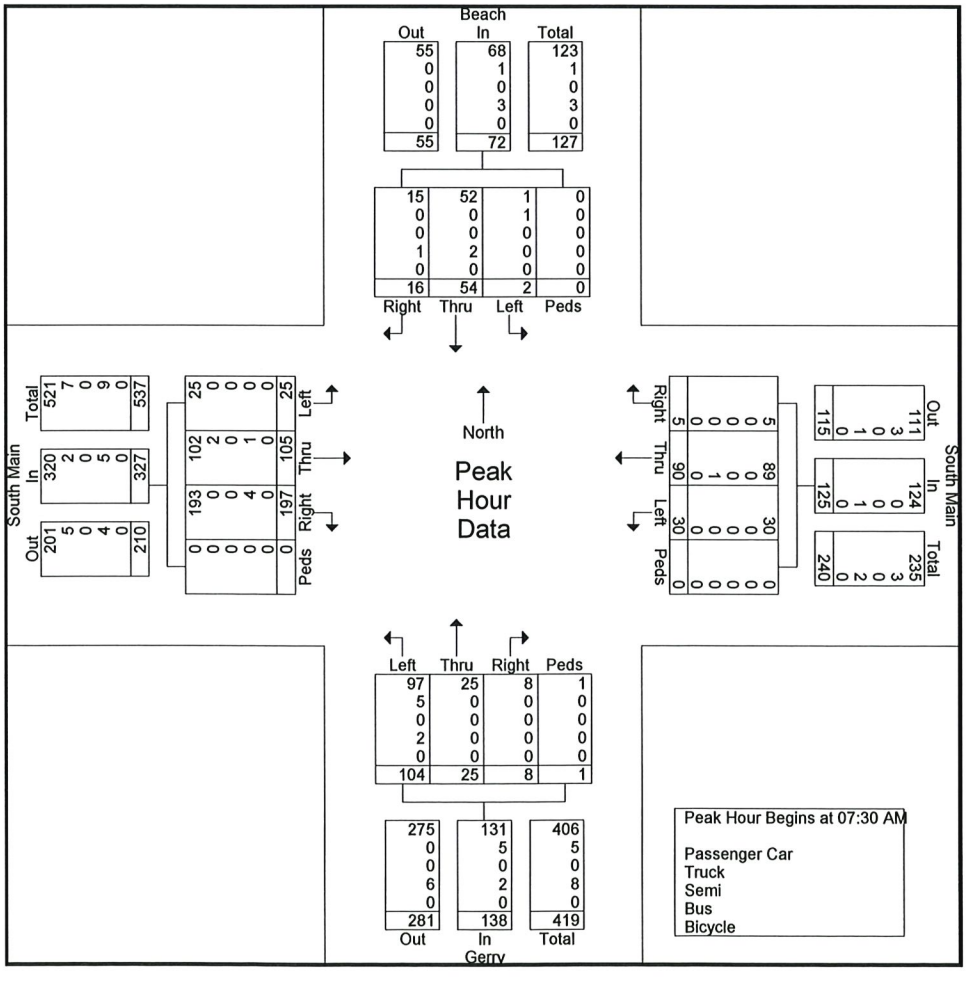
	Beach From North					South Main From East					Gerry From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	7	0	0	9	1	26	7	0	34	1	4	18	**1**	24	**55**	**31**	4	0	90	157
07:45 AM	4	**22**	0	0	**26**	1	18	**13**	0	32	1	5	29	0	35	51	18	1	0	70	163
08:00 AM	1	11	0	0	12	0	15	4	0	19	**5**	5	**30**	0	**40**	37	26	6	0	69	140
08:15 AM	**9**	14	**2**	0	25	**3**	**31**	6	0	**40**	1	**11**	27	0	39	54	30	**14**	0	**98**	**202**
Total Volume	16	54	2	0	72	5	90	30	0	125	8	25	104	1	138	197	105	25	0	327	662
% App. Total	22.2	75	2.8	0		4	72	24	0		5.8	18.1	75.4	0.7		60.2	32.1	7.6	0		
PHF	.444	.614	.250	.000	.692	.417	.726	.577	.000	.781	.400	.568	.867	.250	.863	.895	.847	.446	.000	.834	.819
Passenger Car	15	52	1	0	68	5	89	30	0	124	8	25	97	1	131	193	102	25	0	320	643
% Passenger Car	93.8	96.3	50.0	0	94.4	100	98.9	100	0	99.2	100	100	93.3	100	94.9	98.0	97.1	100	0	97.9	97.1
Truck	0	0	1	0	1	0	0	0	0	0	0	0	5	0	5	0	2	0	0	2	8
% Truck	0	0	50.0	0	1.4	0	0	0	0	0	0	0	4.8	0	3.6	0	1.9	0	0	0.6	1.2
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	1	2	0	0	3	0	1	0	0	1	0	0	2	0	2	4	1	0	0	5	11
% Bus	6.3	3.7	0	0	4.2	0	1.1	0	0	0.8	0	0	1.9	0	1.4	2.0	1.0	0	0	1.5	1.7
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Solutions
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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
Site Code : 01017231
Start Date : 10/17/2023
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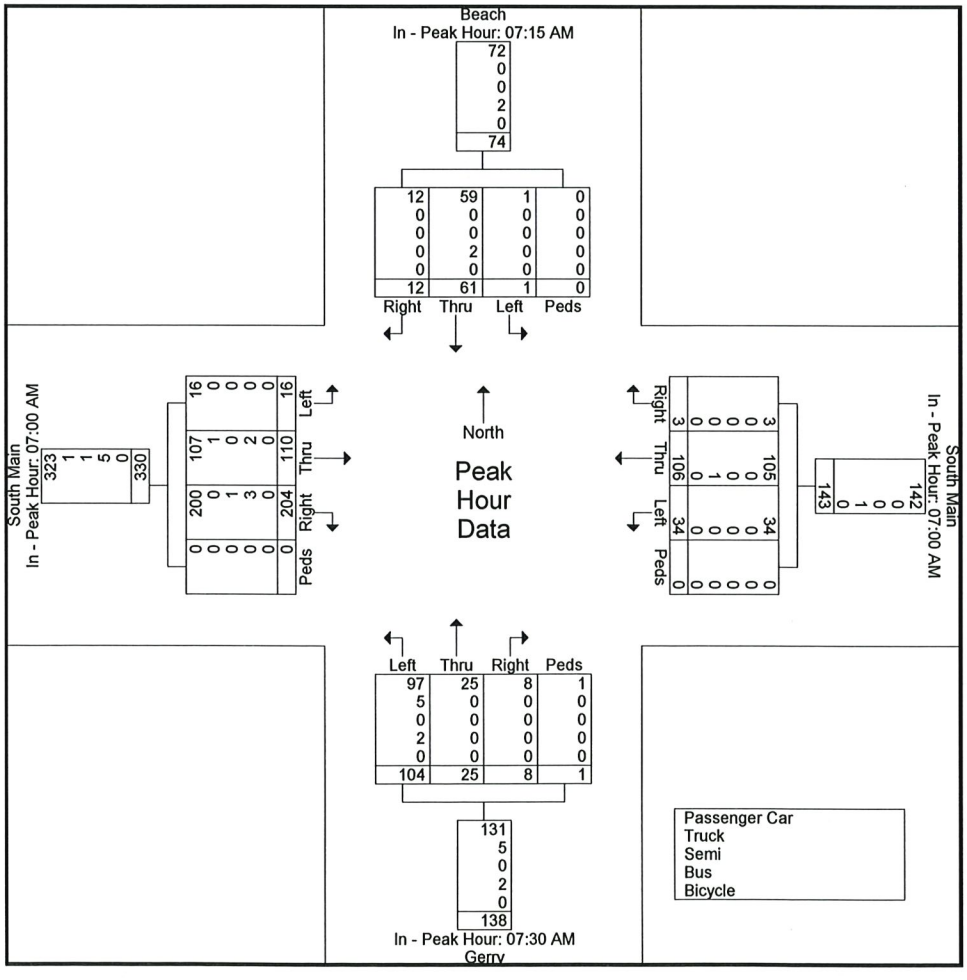
	Beach From North					South Main From East					Gerry From South					South Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:15 AM					07:00 AM					07:30 AM					07:00 AM					
+0 mins.	**5**	21	**1**	0	**27**	0	26	8	0	34	1	4	18	**1**	24	41	29	**6**	0	76	
+15 mins.	2	7	0	0	9	**1**	**36**	6	0	**43**	1	5	29	0	35	**57**	**32**	5	0	**94**	
+30 mins.	4	**22**	0	0	26	1	26	7	0	34	**5**	5	**30**	0	**40**	55	31	4	0	90	
+45 mins.	1	11	0	0	12	1	18	**13**	0	32	1	**11**	27	0	39	51	18	1	0	70	
Total Volume	12	61	1	0	74	3	106	34	0	143	8	25	104	1	138	204	110	16	0	330	
% App. Total	16.2	82.4	1.4	0		2.1	74.1	23.8	0		5.8	18.1	75.4	0.7		61.8	33.3	4.8	0		
PHF	.600	.693	.250	.000	.685	.750	.736	.654	.000	.831	.400	.568	.867	.250	.863	.895	.859	.667	.000	.878	
Passenger Car	12	59	1	0	72	3	105	34	0	142	8	25	97	1	131	200	107	16	0	323	
% Passenger Car	100	96.7	100	0	97.3	100	99.1	100	0	99.3	100	100	93.3	100	94.9	98	97.3	100	0	97.9	
Truck	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0	1	0	0	1	
% Truck	0	0	0	0	0	0	0	0	0	0	0	0	4.8	0	3.6	0	0.9	0	0	0.3	
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.3	
Bus	0	2	0	0	2	0	1	0	0	1	0	0	2	0	2	3	2	0	0	5	
% Bus	0	3.3	0	0	2.7	0	0.9	0	0	0.7	0	0	1.9	0	1.4	1.5	1.8	0	0	1.5	
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 AM
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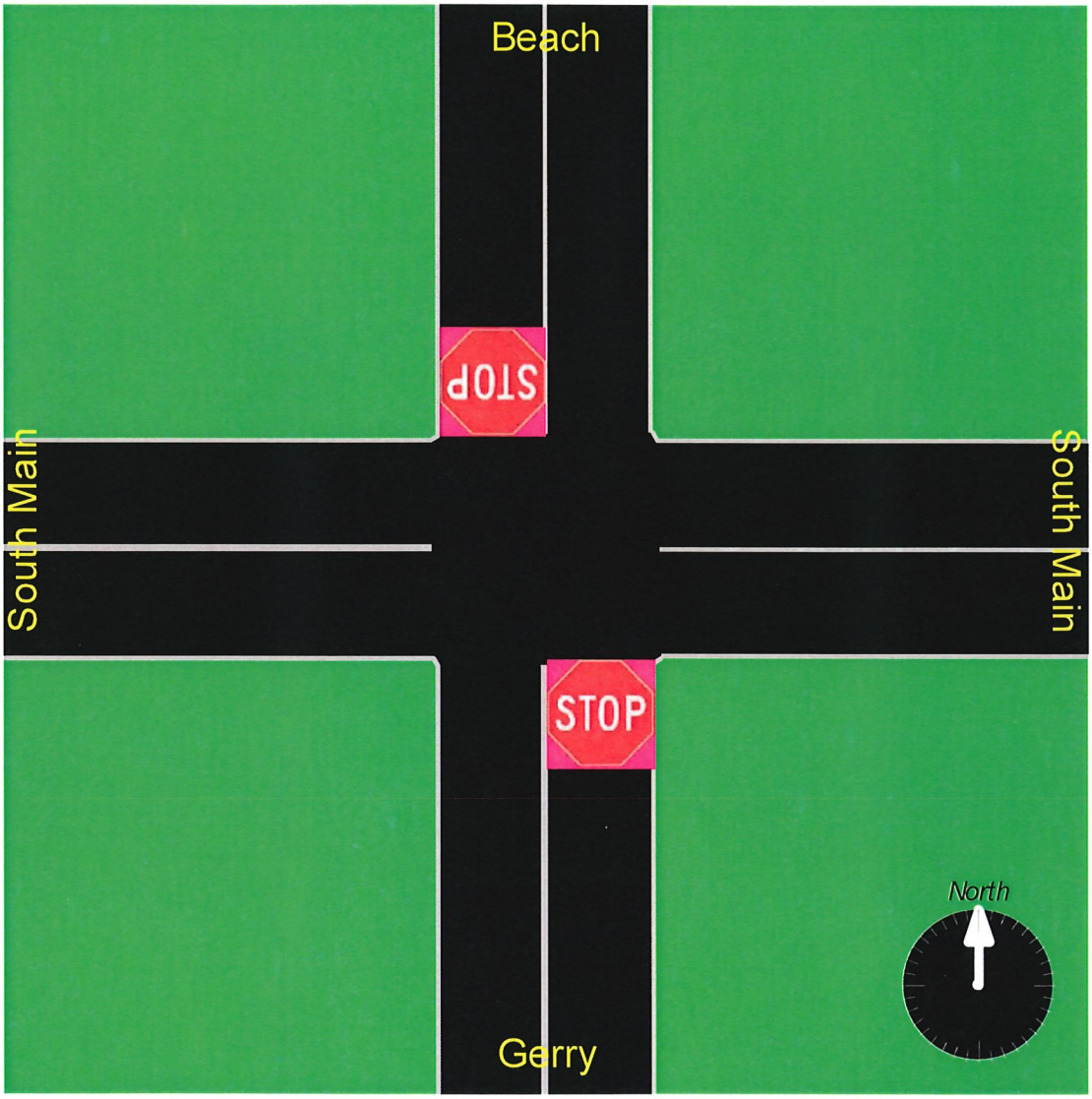

Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

Newmarket, NH S. Main Beach Gerry
October 17, 2023 PM
55 Degrees
Miovision/ K. Tillson

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
Page No : 1

Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Beach From North					S. Main From East					Gerry From South					S. Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
01:30 PM	4	6	1	0	11	5	15	3	0	23	2	6	26	0	34	14	9	3	0	26	94
01:45 PM	6	8	1	0	15	1	16	3	0	20	1	5	33	0	39	23	17	4	0	44	118
Total	10	14	2	0	26	6	31	6	0	43	3	11	59	0	73	37	26	7	0	70	212
02:00 PM	2	8	0	0	10	2	28	3	3	36	6	8	33	2	49	28	13	4	0	45	140
02:15 PM	5	12	0	0	17	0	22	9	0	31	2	12	34	0	48	38	36	6	0	80	176
02:30 PM	7	9	0	1	17	2	19	1	0	22	4	10	44	1	59	48	20	12	1	81	179
02:45 PM	4	7	0	0	11	1	23	3	0	27	4	5	29	0	38	31	28	8	0	67	143
Total	18	36	0	1	55	5	92	16	3	116	16	35	140	3	194	145	97	30	1	273	638
03:00 PM	3	5	0	0	8	2	14	5	0	21	3	14	49	3	69	48	36	8	0	92	190
03:15 PM	2	20	2	0	24	0	21	4	0	25	5	16	36	0	57	41	30	5	0	76	182
03:30 PM	3	11	0	1	15	3	31	6	0	40	2	12	33	0	47	32	29	6	0	67	169
03:45 PM	2	5	1	0	8	5	25	6	0	36	2	17	43	1	63	38	32	2	0	72	179
Total	10	41	3	1	55	10	91	21	0	122	12	59	161	4	236	159	127	21	0	307	720
04:00 PM	3	3	0	1	7	1	28	6	0	35	5	14	33	1	53	35	25	5	0	65	160
04:15 PM	4	6	0	2	12	1	26	6	0	33	4	20	37	0	61	30	18	8	0	56	162
04:30 PM	4	13	1	4	22	0	21	7	0	28	10	17	37	0	64	37	31	9	1	78	192
04:45 PM	1	7	1	0	9	1	31	7	0	39	5	23	55	0	83	18	30	3	0	51	182
Total	12	29	2	7	50	3	106	26	0	135	24	74	162	1	261	120	104	25	1	250	696
05:00 PM	3	11	2	0	16	2	28	3	0	33	7	18	51	0	76	39	27	8	0	74	199
05:15 PM	2	15	0	2	19	3	38	6	0	47	7	17	47	0	71	22	33	9	0	64	201
05:30 PM	3	7	0	0	10	1	28	6	0	35	8	21	44	0	73	29	17	5	0	51	169
05:45 PM	7	8	1	0	16	6	25	4	0	35	6	15	28	0	49	29	25	2	0	56	156
Total	15	41	3	2	61	12	119	19	0	150	28	71	170	0	269	119	102	24	0	245	725

Traffic Solutions
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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
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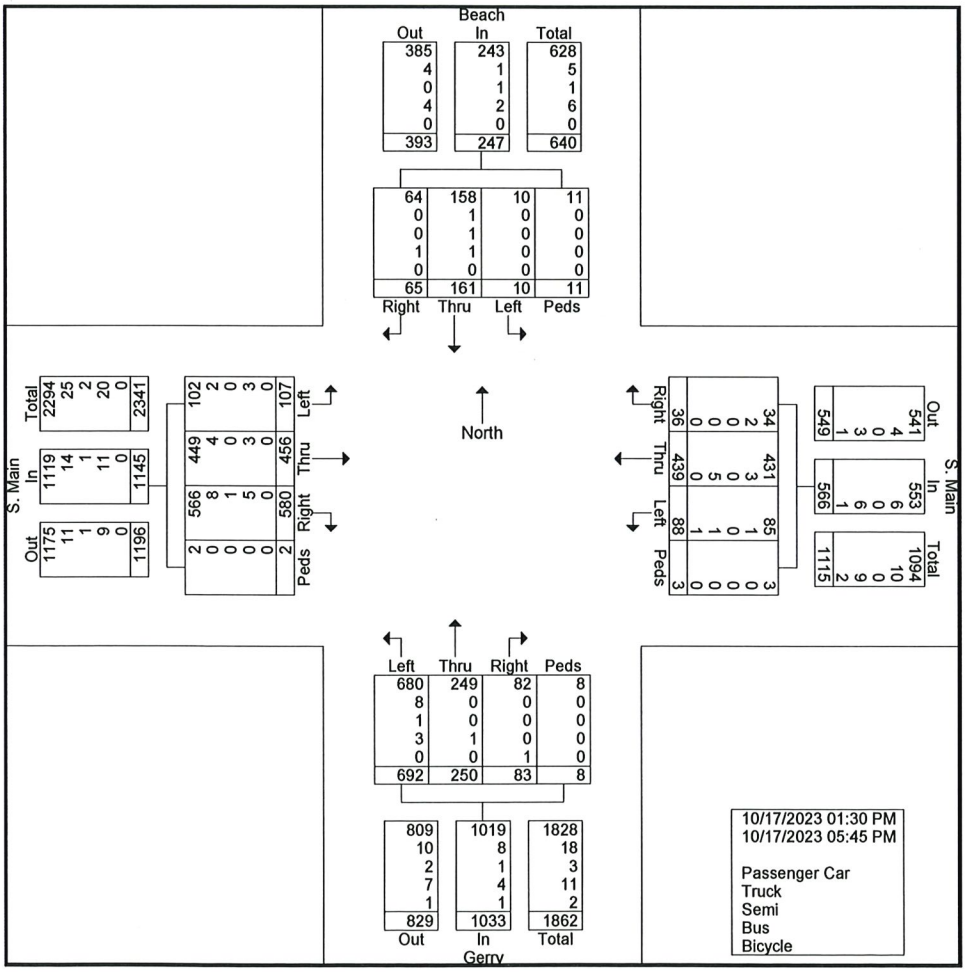
Groups Printed- Passenger Car - Truck - Semi - Bus - Bicycle

	Beach From North					S. Main From East					Gerry From South					S. Main From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Grand Total	65	161	10	11	247	36	439	88	3	566	83	250	692	8	1033	580	456	107	2	1145	2991
Apprch %	26.3	65.2	4	4.5		6.4	77.6	15.5	0.5		8	24.2	67	0.8		50.7	39.8	9.3	0.2		
Total %	2.2	5.4	0.3	0.4	8.3	1.2	14.7	2.9	0.1	18.9	2.8	8.4	23.1	0.3	34.5	19.4	15.2	3.6	0.1	38.3	
Passenger Car	64	158	10	11	243	34	431	85	3	553	82	249	680	8	1019	566	449	102	2	1119	2934
% Passenger Car	98.5	98.1	100	100	98.4	94.4	98.2	96.6	100	97.7	98.8	99.6	98.3	100	98.6	97.6	98.5	95.3	100	97.7	98.1
Truck	0	1	0	0	1	2	3	1	0	6	0	0	8	0	8	8	4	2	0	14	29
% Truck	0	0.6	0	0	0.4	5.6	0.7	1.1	0	1.1	0	0	1.2	0	0.8	1.4	0.9	1.9	0	1.2	1
Semi	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
% Semi	0	0.6	0	0	0.4	0	0	0	0	0	0	0	0.1	0	0.1	0.2	0	0	0	0.1	0.1
Bus	1	1	0	0	2	0	5	1	0	6	0	1	3	0	4	5	3	3	0	11	23
% Bus	1.5	0.6	0	0	0.8	0	1.1	1.1	0	1.1	0	0.4	0.4	0	0.4	0.9	0.7	2.8	0	1	0.8
Bicycle	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
% Bicycle	0	0	0	0	0	0	0	1.1	0	0.2	1.2	0	0	0	0.1	0	0	0	0	0	0.1



Traffic Solutions
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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
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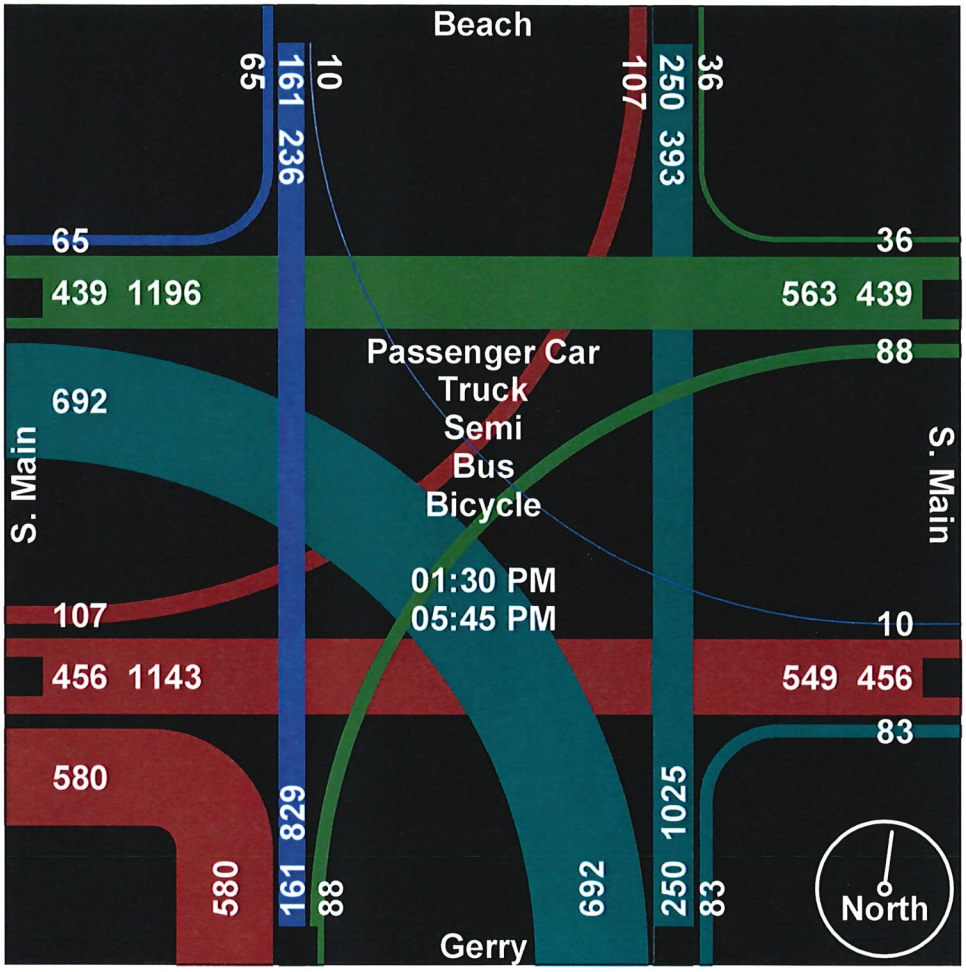

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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
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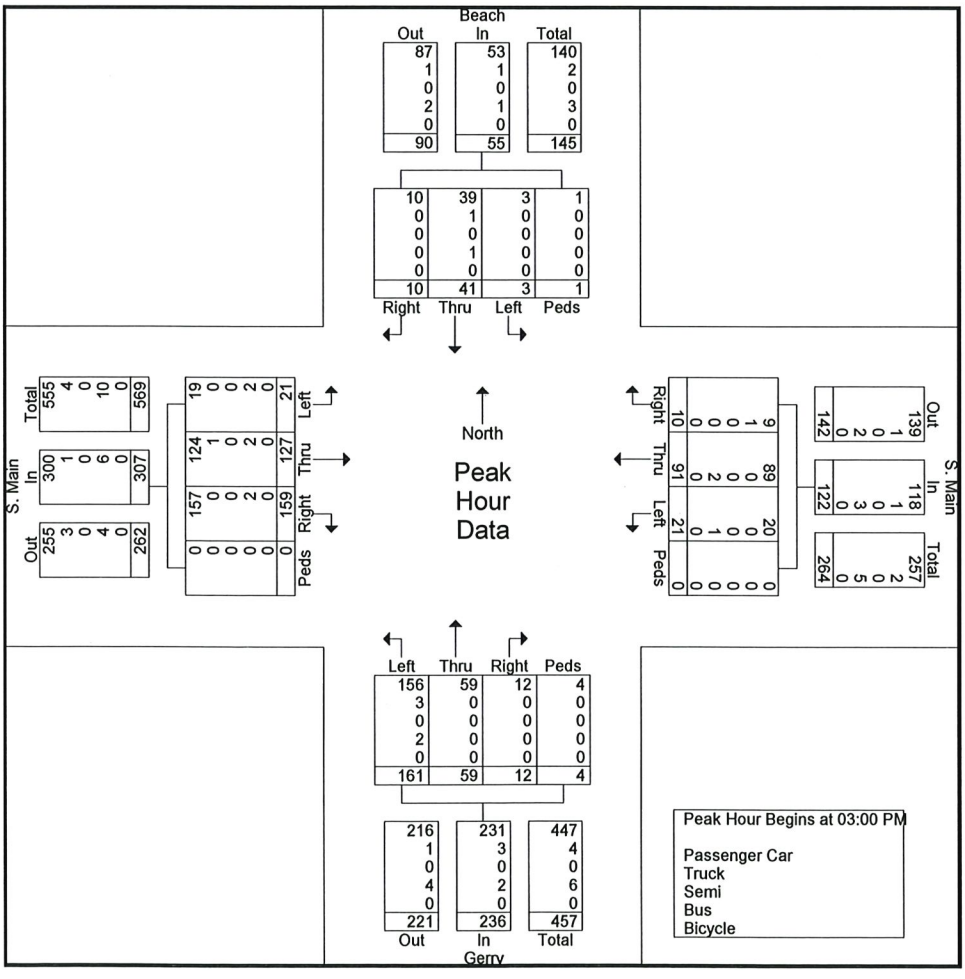
	Beach From North					S. Main From East					Gerry From South					S. Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	**3**	5	0	0	8	2	14	5	0	21	3	14	**49**	**3**	**69**	**48**	**36**	**8**	0	**92**	**190**
03:15 PM	2	**20**	**2**	0	**24**	0	21	4	0	25	**5**	16	36	0	57	41	30	5	0	76	182
03:30 PM	3	11	0	**1**	15	3	**31**	**6**	0	**40**	2	12	33	0	47	32	29	6	0	67	169
03:45 PM	2	5	1	0	8	**5**	25	6	0	36	2	**17**	43	1	63	38	32	2	0	72	179
Total Volume	10	41	3	1	55	10	91	21	0	122	12	59	161	4	236	159	127	21	0	307	720
% App. Total	18.2	74.5	5.5	1.8		8.2	74.6	17.2	0		5.1	25	68.2	1.7		51.8	41.4	6.8	0		
PHF	.833	.513	.375	.250	.573	.500	.734	.875	.000	.763	.600	.868	.821	.333	.855	.828	.882	.656	.000	.834	.947
Passenger Car	10	39	3	1	53	9	89	20	0	118	12	59	156	4	231	157	124	19	0	300	702
% Passenger Car	100	95.1	100	100	96.4	90.0	97.8	95.2	0	96.7	100	100	96.9	100	97.9	98.7	97.6	90.5	0	97.7	97.5
Truck	0	1	0	0	1	1	0	0	0	1	0	0	3	0	3	0	1	0	0	1	6
% Truck	0	2.4	0	0	1.8	10.0	0	0	0	0.8	0	0	1.9	0	1.3	0	0.8	0	0	0.3	0.8
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	0	1	0	0	1	0	2	1	0	3	0	0	2	0	2	2	2	2	0	6	12
% Bus	0	2.4	0	0	1.8	0	2.2	4.8	0	2.5	0	0	1.2	0	0.8	1.3	1.6	9.5	0	2.0	1.7
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
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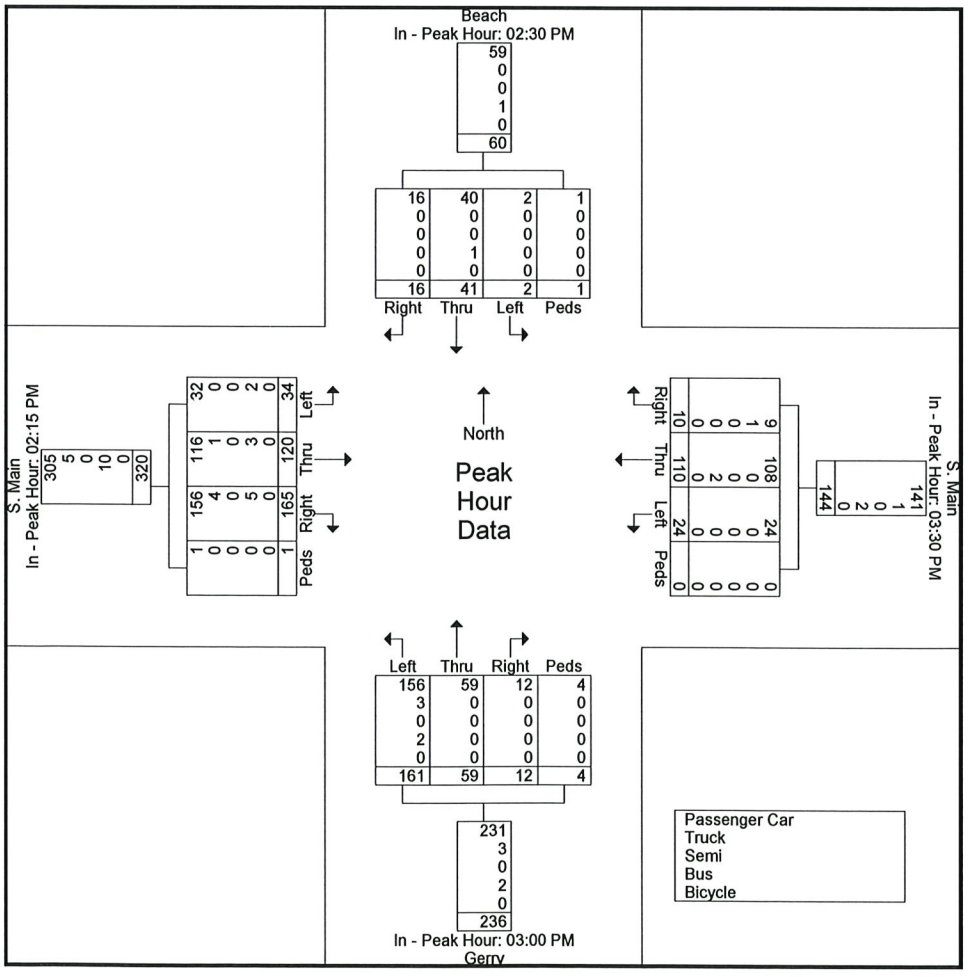
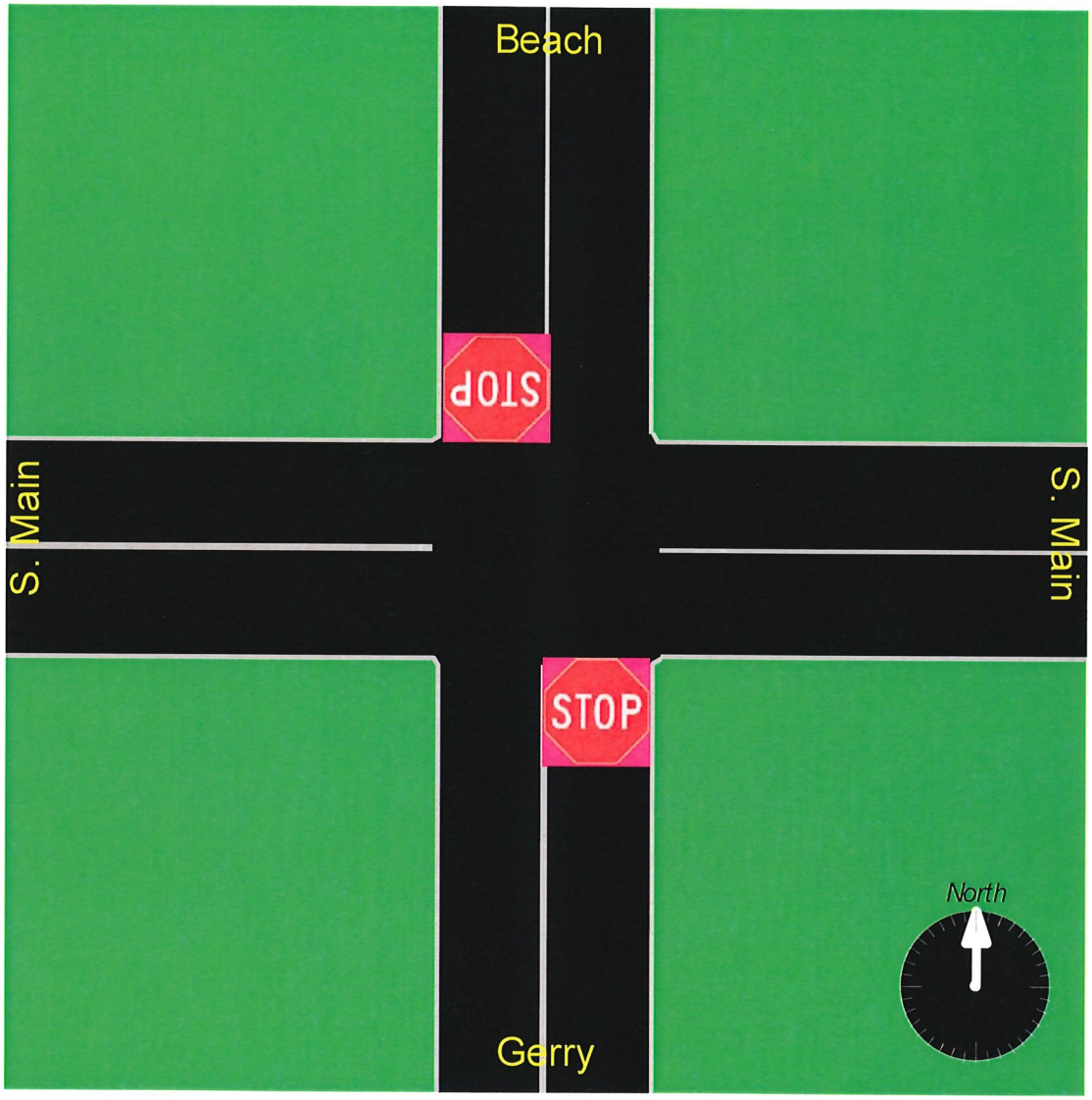
	Beach From North					S. Main From East					Gerry From South					S. Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:30 PM to 04:15 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	02:30 PM					03:30 PM					03:00 PM					02:15 PM					
+0 mins.	**7**	9	0	**1**	17	3	**31**	**6**	0	**40**	3	14	**49**	**3**	**69**	38	**36**	6	0	80	
+15 mins.	4	7	0	0	11	**5**	25	6	0	36	**5**	16	36	0	57	**48**	20	**12**	**1**	81	
+30 mins.	3	5	0	0	8	1	28	6	0	35	2	12	33	0	47	31	28	8	0	67	
+45 mins.	2	**20**	**2**	0	**24**	1	26	6	0	33	2	**17**	43	1	63	48	36	8	0	**92**	
Total Volume	16	41	2	1	60	10	110	24	0	144	12	59	161	4	236	165	120	34	1	320	
% App. Total	26.7	68.3	3.3	1.7		6.9	76.4	16.7	0		5.1	25	68.2	1.7		51.6	37.5	10.6	0.3		
PHF	.571	.513	.250	.250	.625	.500	.887	1.000	.000	.900	.600	.868	.821	.333	.855	.859	.833	.708	.250	.870	
Passenger Car	16	40	2	1	59	9	108	24	0	141	12	59	156	4	231	156	116	32	1	305	
% Passenger Car	100	97.6	100	100	98.3	90	98.2	100	0	97.9	100	100	96.9	100	97.9	94.5	96.7	94.1	100	95.3	
Truck	0	0	0	0	0	1	0	0	0	1	0	0	3	0	3	4	1	0	0	5	
% Truck	0	0	0	0	0	10	0	0	0	0.7	0	0	1.9	0	1.3	2.4	0.8	0	0	1.6	
Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Semi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bus	0	1	0	0	1	0	2	0	0	2	0	0	2	0	2	5	3	2	0	10	
% Bus	0	2.4	0	0	1.7	0	1.8	0	0	1.4	0	0	1.2	0	0.8	3	2.5	5.9	0	3.1	
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Traffic Solutions
17 Mount View Dr
Gorham, ME 04038

File Name : Newmarket South Main, Beach, Gerry, 10-17-2023 PM
Site Code : 01017232
Start Date : 10/17/2023
Page No : 6



APPENDIX B

Other Development Traffic Information

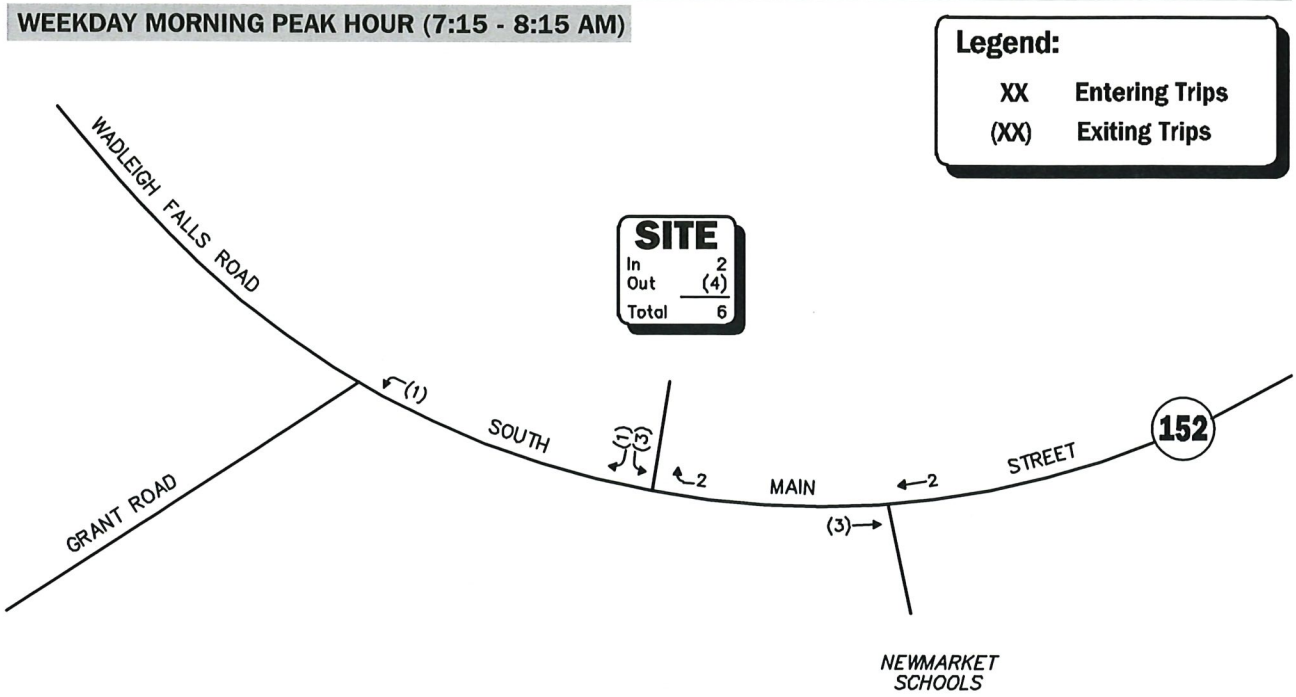
Stephen G. Pernaw & Company, Inc.

Table 1 — Trip Generation Summary

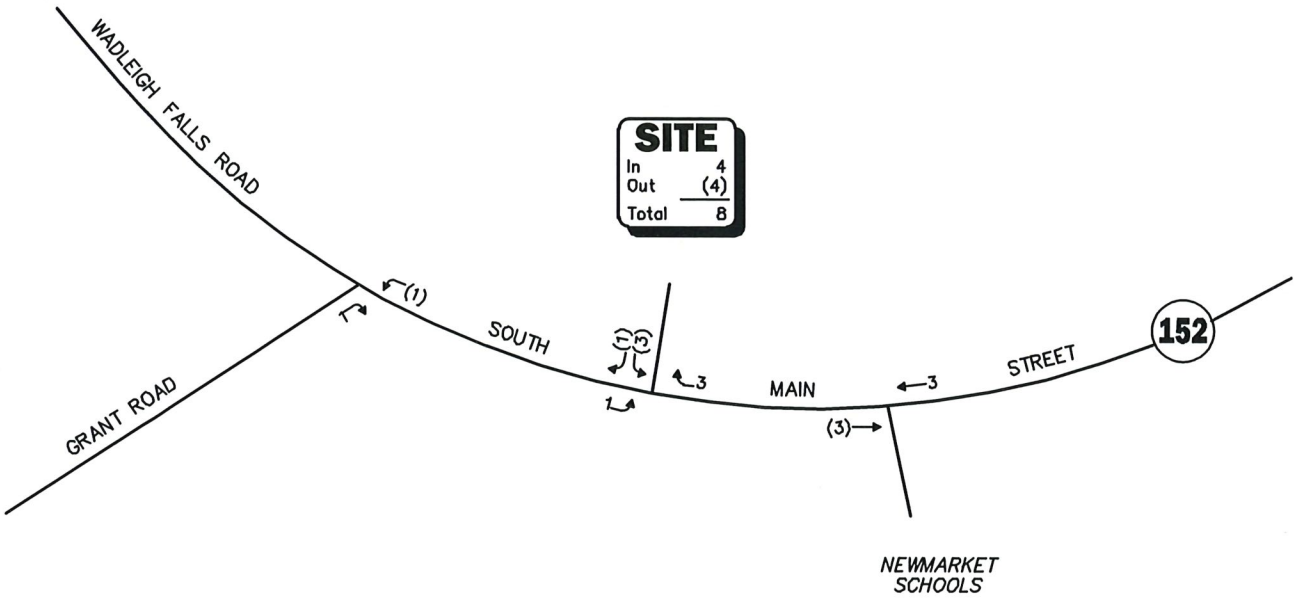
		First Floor Office [1]	First Floor Retail [2]	Apartments [3]	Total	Previous Estimate [4]	Net Change
Weekday Total							
	Entering	40 veh	131 veh	76 veh	247 veh	218 veh	29 veh
	Exiting	40 veh	131 veh	76 veh	247 veh	218 veh	29 veh
	Total	80 trips	262 trips	152 trips	494 trips	436 trips	58 trips
Weekday AM Peak Hour							
	Entering	7 veh	4 veh	3 veh	14 veh	15 veh	-1 veh
	Exiting	1 veh	3 veh	7 veh	11 veh	8 veh	3 veh
	Total	8 trips	7 trips	10 trips	25 trips	23 trips	2 trips
Weekday PM Peak Hour							
	Entering	1 veh	12 veh	8 veh	21 veh	19 veh	2 veh
	Exiting	8 veh	14 veh	5 veh	27 veh	23 veh	4 veh
	Total	9 trips	26 trips	13 trips	48 trips	42 trips	6 trips

[1] ITE Land Use Code 710 - General Office Building (6,942 sf)
[2] ITE Land Use Code 820 - Shopping Center (6,942 sf)
[3] ITE Land Use Code 221 - Multifamily Housing (Mid-Rise) - 28 units
[4] SGP Memo dated 2/15/15

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY AFTERNOON PEAK HOUR (2:30 - 3:30 PM)



Not To Scale

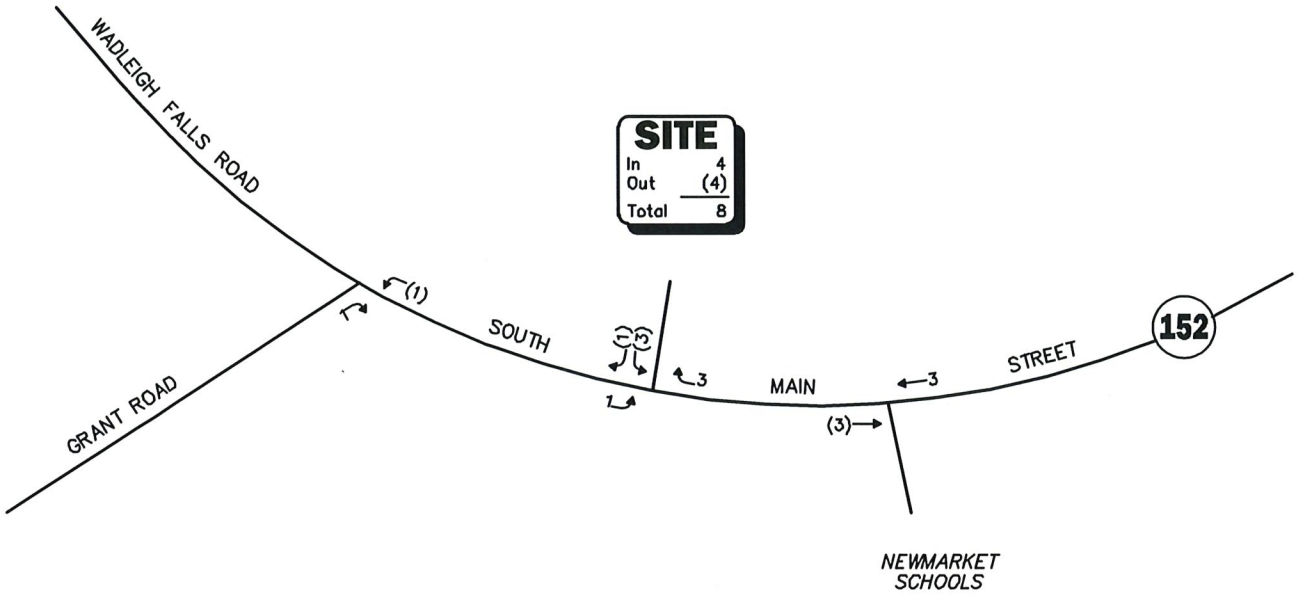
Figure 6A

Project-Generated Peak-Hour Traffic Volumes

Vanasse & Associates inc

Legend:

XX	Entering Trips
(XX)	Exiting Trips



Not To Scale

Figure 6B

Project-Generated Weekday Evening (4:45 - 5:45 PM) Peak-Hour Traffic Volumes

Vanasse & Associates inc

APPENDIX C

Auxiliary Lane Warrant Analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

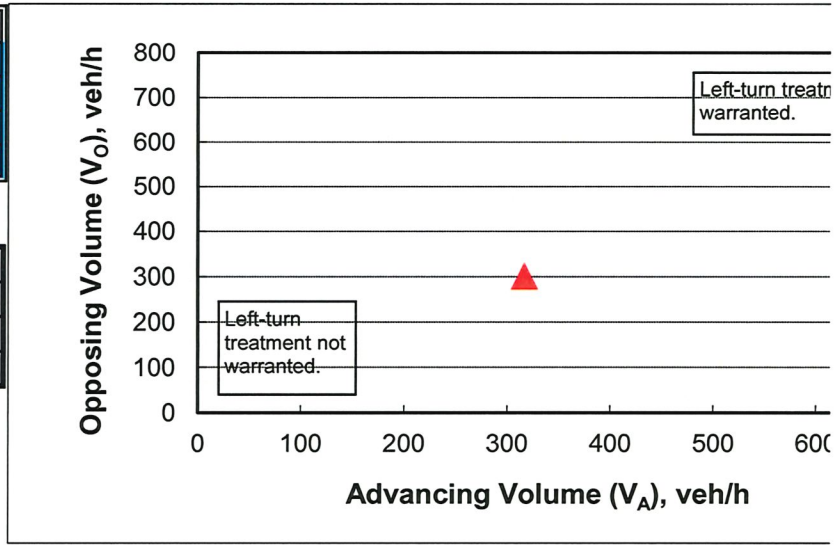
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	317
Opposing volume (V_O), veh/h:	300

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1231
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

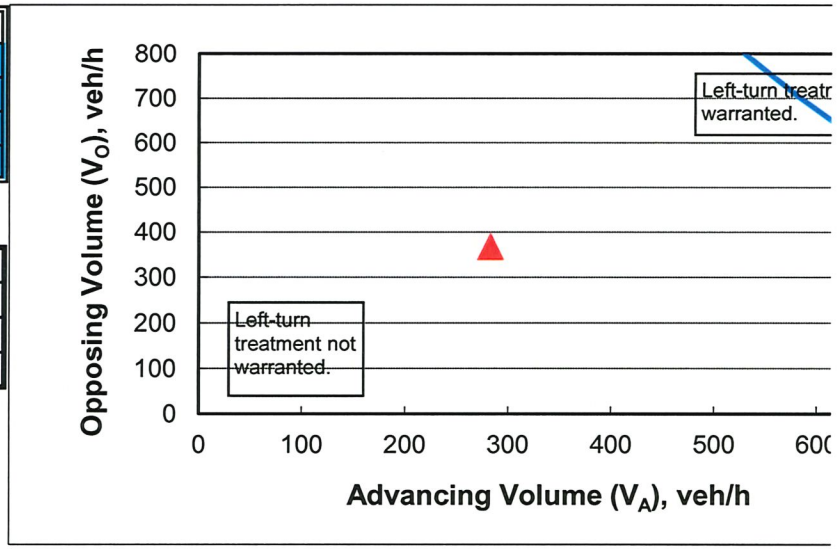
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	2%
Advancing volume (V_A), veh/h:	283
Opposing volume (V_O), veh/h:	367

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	823
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	300
Right-turn volume, veh/h:	4

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	6466
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

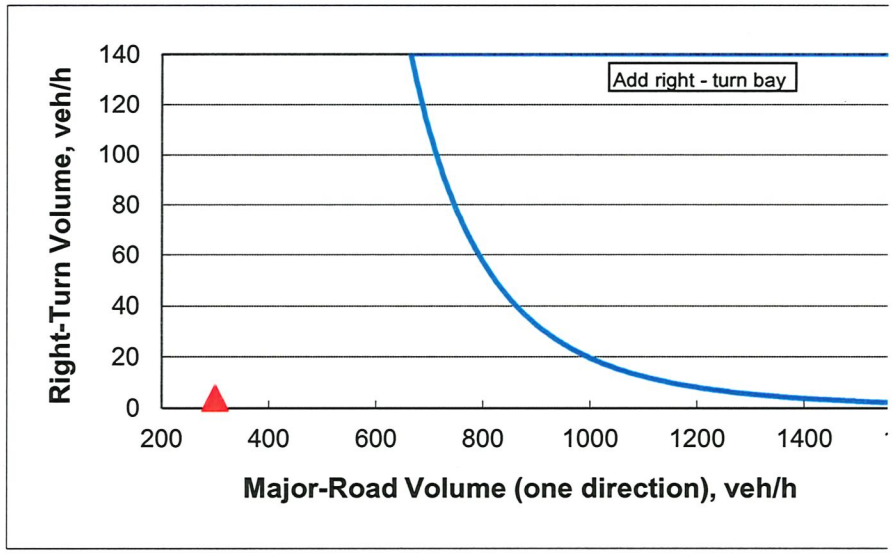


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

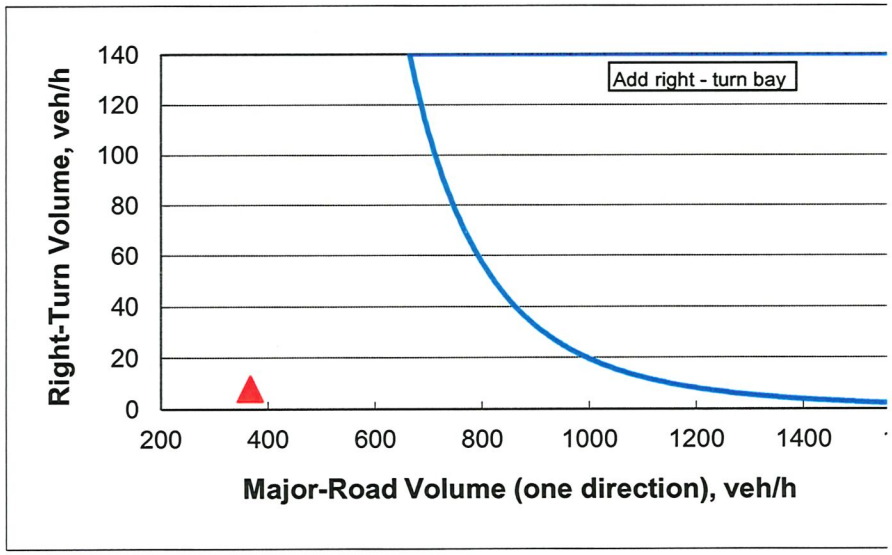
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	367
Right-turn volume, veh/h:	8

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	2448
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



APPENDIX D

Capacity Analysis

Summary of All Intervals

Run Number	2	3	5	6	7	Avg
Start Time	7:25	7:25	7:25	7:25	7:25	7:25
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	912	874	871	912	889	891
Vehs Exited	915	868	869	912	888	891
Starting Vehs	10	7	6	6	11	6
Ending Vehs	7	13	8	6	12	8
Travel Distance (mi)	199	192	188	198	193	194
Travel Time (hr)	9.1	8.9	8.6	9.0	8.8	8.9
Total Delay (hr)	1.5	1.5	1.4	1.4	1.5	1.5
Total Stops	343	345	331	328	358	342
Fuel Used (gal)	7.9	7.6	7.4	7.8	7.5	7.6

Interval #0 Information Seeding

Start Time	7:25
End Time	7:30
Total Time (min)	5

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	2	3	5	6	7	Avg
Vehs Entered	912	874	871	912	889	891
Vehs Exited	915	868	869	912	888	891
Starting Vehs	10	7	6	6	11	6
Ending Vehs	7	13	8	6	12	8
Travel Distance (mi)	199	192	188	198	193	194
Travel Time (hr)	9.1	8.9	8.6	9.0	8.8	8.9
Total Delay (hr)	1.5	1.5	1.4	1.4	1.5	1.5
Total Stops	343	345	331	328	358	342
Fuel Used (gal)	7.9	7.6	7.4	7.8	7.5	7.6

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.3	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	2.5	0.4	2.2	0.2	0.1	2.5	7.6	3.8	1.0

6: Railroad St & Rte 152 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1		0.1	0.0
Total Del/Veh (s)	0.3	0.0	2.1	0.6		2.5	0.5

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1
Total Del/Veh (s)	2.2	2.0	0.6	4.3	0.9	0.7	12.4	10.6	7.0	11.0	16.2	6.0

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	4.9

Total Network Performance

Denied Del/Veh (s)	0.2
Total Del/Veh (s)	5.7

Intersection: 3: Maple St/Packer Falls Rd & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	38	12	24	74
Average Queue (ft)	2	0	5	30
95th Queue (ft)	17	6	21	57
Link Distance (ft)	475	214	353	393
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Railroad St & Rte 152

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	24
Average Queue (ft)	0	1
95th Queue (ft)	4	11
Link Distance (ft)	237	296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Gerry Ave/Beech St Ext. & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	42	111	84
Average Queue (ft)	4	3	55	39
95th Queue (ft)	24	20	93	70
Link Distance (ft)	237	334	364	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	5	7	Avg
Start Time	4:25	4:25	4:25	4:25	4:25	4:25
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	950	965	992	973	967	971
Vehs Exited	950	970	983	972	962	966
Starting Vehs	11	11	8	7	14	10
Ending Vehs	11	6	17	8	19	9
Travel Distance (mi)	216	224	222	222	218	220
Travel Time (hr)	10.2	10.6	11.0	10.8	10.4	10.6
Total Delay (hr)	2.0	2.2	2.5	2.3	2.1	2.2
Total Stops	425	416	444	443	414	430
Fuel Used (gal)	8.7	9.0	9.0	8.9	8.8	8.9

Interval #0 Information Seeding

Start Time	4:25
End Time	4:30
Total Time (min)	5

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	5	7	Avg
Vehs Entered	950	965	992	973	967	971
Vehs Exited	950	970	983	972	962	966
Starting Vehs	11	11	8	7	14	10
Ending Vehs	11	6	17	8	19	9
Travel Distance (mi)	216	224	222	222	218	220
Travel Time (hr)	10.2	10.6	11.0	10.8	10.4	10.6
Total Delay (hr)	2.0	2.2	2.5	2.3	2.1	2.2
Total Stops	425	416	444	443	414	430
Fuel Used (gal)	8.7	9.0	9.0	8.9	8.8	8.9

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.1	0.5	0.0	2.5	0.7	0.2	13.7	11.9	3.5	9.3	8.3	4.2

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	1.4

6: Railroad St & Rte 152 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	0.4	0.3	5.4	0.7	10.5	3.5	0.6

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.1
Total Del/Veh (s)	2.5	1.4	0.6	4.2	0.6	0.1	16.4	16.2	12.3	19.8	18.7	6.6

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	6.9

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	8.0

Intersection: 3: Maple St/Packer Falls Rd & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	61	52	28	60
Average Queue (ft)	8	4	7	30
95th Queue (ft)	35	26	25	52
Link Distance (ft)	475	214	353	393
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Railroad St & Rte 152

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	22	31
Average Queue (ft)	1	6
95th Queue (ft)	11	26
Link Distance (ft)	237	296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Gerry Ave/Beech St Ext. & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	20	194	90
Average Queue (ft)	4	1	86	32
95th Queue (ft)	21	10	151	67
Link Distance (ft)	237	334	364	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	3	4	6	7	Avg
Start Time	7:25	7:25	7:25	7:25	7:25	7:25
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	894	875	920	936	889	905
Vehs Exited	893	870	923	935	889	902
Starting Vehs	5	8	10	6	12	6
Ending Vehs	6	13	7	7	12	7
Travel Distance (mi)	196	189	200	203	192	196
Travel Time (hr)	9.2	8.8	9.2	9.4	8.9	9.1
Total Delay (hr)	1.6	1.5	1.5	1.6	1.6	1.6
Total Stops	352	359	340	356	370	355
Fuel Used (gal)	7.7	7.5	7.9	8.1	7.5	7.8

Interval #0 Information Seeding

Start Time	7:25
End Time	7:30
Total Time (min)	5

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:30
End Time	8:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	3	4	6	7	Avg
Vehs Entered	894	875	920	936	889	905
Vehs Exited	893	870	923	935	889	902
Starting Vehs	5	8	10	6	12	6
Ending Vehs	6	13	7	7	12	7
Travel Distance (mi)	196	189	200	203	192	196
Travel Time (hr)	9.2	8.8	9.2	9.4	8.9	9.1
Total Delay (hr)	1.6	1.5	1.5	1.6	1.6	1.6
Total Stops	352	359	340	356	370	355
Fuel Used (gal)	7.7	7.5	7.9	8.1	7.5	7.8

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.2	0.1
Total Del/Veh (s)	2.6	0.3	2.1	0.3	0.1	3.2	8.0	3.8	1.0

6: Railroad St & Rte 152 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	0.3	0.1	3.4	0.7	7.6	4.0	0.6

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Total Del/Veh (s)	2.5	2.0	0.6	4.9	1.0	0.6	14.3	11.3	7.2	8.1	15.0	6.8

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	5.3

Total Network Performance

Denied Del/Veh (s)	0.2
Total Del/Veh (s)	6.0

Intersection: 3: Maple St/Packer Falls Rd & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	10	24	67
Average Queue (ft)	3	0	4	32
95th Queue (ft)	18	5	19	55
Link Distance (ft)	475	214	353	393
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Railroad St & Rte 152

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	23	35
Average Queue (ft)	1	12
95th Queue (ft)	11	37
Link Distance (ft)	237	296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Gerry Ave/Beech St Ext. & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	42	30	130	84
Average Queue (ft)	3	3	58	38
95th Queue (ft)	20	16	107	70
Link Distance (ft)	237	334	364	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	4	5	7	Avg
Start Time	4:25	4:25	4:25	4:25	4:25	4:25
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1004	993	994	961	969	982
Vehs Exited	1004	992	994	956	972	984
Starting Vehs	11	10	5	7	15	9
Ending Vehs	11	11	5	12	12	10
Travel Distance (mi)	231	229	224	216	220	224
Travel Time (hr)	11.2	11.2	10.9	10.6	10.4	10.9
Total Delay (hr)	2.4	2.5	2.4	2.3	2.1	2.3
Total Stops	448	456	434	456	424	443
Fuel Used (gal)	9.4	9.4	9.1	8.7	8.8	9.1

Interval #0 Information Seeding

Start Time	4:25
End Time	4:30
Total Time (min)	5

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	4:30
End Time	5:30
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	4	5	7	Avg
Vehs Entered	1004	993	994	961	969	982
Vehs Exited	1004	992	994	956	972	984
Starting Vehs	11	10	5	7	15	9
Ending Vehs	11	11	5	12	12	10
Travel Distance (mi)	231	229	224	216	220	224
Travel Time (hr)	11.2	11.2	10.9	10.6	10.4	10.9
Total Delay (hr)	2.4	2.5	2.4	2.3	2.1	2.3
Total Stops	448	456	434	456	424	443
Fuel Used (gal)	9.4	9.4	9.1	8.7	8.8	9.1

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.1	0.6		2.5	0.6	0.2	4.8	9.8	3.7	9.1	8.6	3.6

3: Maple St/Packer Falls Rd & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	1.3

6: Railroad St & Rte 152 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	0.4	0.2	3.5	0.7	9.6	3.6	0.7

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.1	0.1
Total Del/Veh (s)	2.6	1.4	0.7	4.5	0.7	0.1	17.4	16.5	11.9	7.8	18.2	7.1

8: Gerry Ave/Beech St Ext. & Rte 152 Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	7.1

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	8.2

Intersection: 3: Maple St/Packer Falls Rd & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	48	23	59
Average Queue (ft)	8	3	7	29
95th Queue (ft)	37	21	24	54
Link Distance (ft)	475	214	353	393
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Railroad St & Rte 152

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	35	40
Average Queue (ft)	2	11
95th Queue (ft)	17	36
Link Distance (ft)	237	296
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Gerry Ave/Beech St Ext. & Rte 152

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	21	216	87
Average Queue (ft)	4	1	86	34
95th Queue (ft)	26	10	162	66
Link Distance (ft)	237	334	364	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

STORMWATER MANAGEMENT NARRATIVE

for

CC Railroad Street Newmarket, LLC

Site Plan

Project Description

This proposed project site is located at the intersection of N.H. Route 152 and Railroad Street. The property address is 3 Railroad Street. The site contains an existing building with adjacent gravel parking and partially paved driveway. The driveway and some of the parking is on the adjacent parcel Tax Map U4 Lot 16, which has an easement for access. Both parcels are currently owned by the applicant.

Existing Site Conditions

In the construction area, slopes range from 1% to more than 5%, with most slopes in the construction area around less than 3%. The subject parcel, a combination of three lots is bound to the west by Railroad Street, to the north by South Main Street and to the east by the railroad tracks.

The soil types in the proposed disturbance area (per NRCS Web Soil Survey) are a Chatfield silt loam, designated with hydrologic ratings of soil Group B. These soils have a medium infiltration rate, with a Ksat value of 0.6 to 6.0 inches/hour. The site is mostly grass and woods, with the exception of the existing buildings and adjacent gravel access and parking areas.

Subsequent testing of the soil has revealed an infiltration rate from 3.5 to 7.5 inches per hour. Test pit data is attached to this report in the appendix.

Currently the subject parcel contains roughly 18,400 square feet of impervious cover between roofs, gravel surface and pavement.

Since the development includes a portion of the adjacent parcel, the site area is modeled using two subcatchments for the existing drainage analysis:

Proposed Site Conditions

In the proposed conditions, the size and shape of the subcatchment areas are altered due to the placement of new site features. Four subcatchment areas have been identified in the post development condition to allow for sizing of stormwater features. The two study points remain the same.

An underground infiltration system consists of a stone reservoir embedded with perforated pipe. This system collects the majority of the new driveway and parking area

and half of the new roof, equaling just more than 24,000 square feet of impervious surfaces. The underground system provides a level of detention along with treatment for the area that is collected, infiltrating a majority of the stormwater that is directed there.

Overall, the increase in impervious cover on the site from pre-development to post-Development is 12,850 square feet. The treatment system proposed provides treatment and detention for nearly double this increase.

Study Methodology

Runoff and routing calculations have been performed for the watershed areas affected by the proposed development. Times of concentration and runoff curve number calculations have been determined using the method described in the Natural Resource Conservation Service (NRCS) Technical Release 55, (TR-55). Time of concentration calculations have been amended where the values given by the TR-55 method is less than five minutes. In these cases a standard minimum value of five minutes has been used to keep this parameter within the acceptable working range of the model. Each Tc path and corresponding length and slope is identified in the pre and post development drainage area plan. The TR-20 based HydroCAD (version 10.0) modeling software has been utilized to perform the complex runoff and routing calculations.

Calculation Results

Preface

Existing-development and post-development calculations have been calculated for the 2-, 10-, 25-, and 50-year storm frequency in accordance with Town of Newmarket's Development Regulations. The SCS TR-20 method was used with a Type III 24-hour storm. The Time of Concentration (Tc) is calculated using the Lag Method. Two Study Points (**SP-1 AND SP-2**) were used for comparison of post-development runoff values with those from existing conditions.

Results

Peak Rate (cfs)

	2 Yr.	***10 Yr.***	***25 Yr.***	***50 Yr.***	***100 Yr.***
SP-1					
Existing	0.8	1.8	2.6	3.4	4.4
Proposed	0.5	1.0	1.5	2.0	4.0
SP-2					
Existing	0.5	1.2	1.9	2.6	3.5
Proposed	0.4	1.1	1.7	2.2	3.0

Volume (cf)

	2 Yr.	***10 Yr.***	***25 Yr.***	***50 Yr.***	***100 Yr.***
SP-1					
Existing	3,200	6,900	10,000	13,200	17,100
Proposed	1,600	3500	5,200	7,900	11,400
SP-2					
Existing	2,600	6,100	9,400	12,700	16,900
Proposed	2,300	5,400	8,100	10,900	14,500

Summary

There is a reduction in peak flow and volume of stormwater runoff at both analysis points for all the design storm events. This is due to the underground infiltration system.

Per Appendix B of the New Hampshire Stormwater Manual infiltration BMP's remove 90% TSS, 60% total nitrogen and 60% total phosphorous.

This will help reduce the runoff generated from the site, increase the groundwater recharge, and further protect the water quality of the downstream areas.

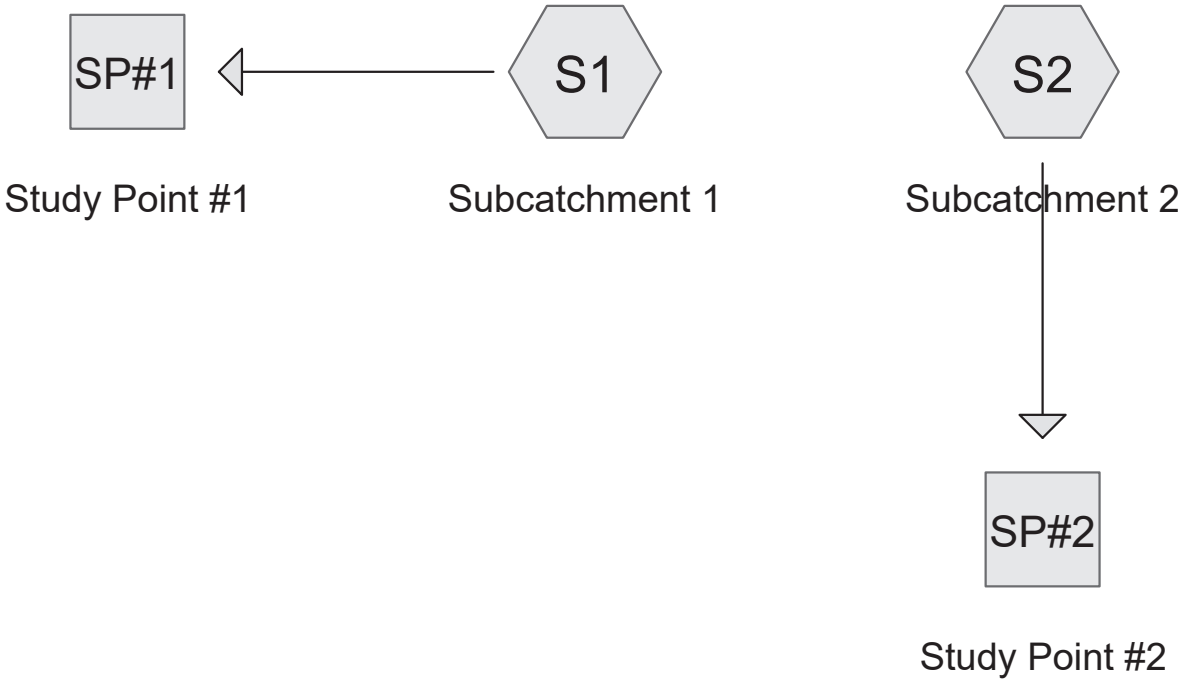
In addition to collecting and treating nearly double the amount of impervious cover than the increase on site all of the disturbed areas will be loamed and seeded along with new landscaping which will help retain stormwater on the non-impervious areas of the site.

PRE-DEVELOPMENT MODEL OUTPUT

for

CC Railroad Street Newmarket, LLC

Site Plan



Subcat Reach Pond Link

Routing Diagram for 02 230750_PRE_01
Prepared by Horizons Engineering, Printed 10/20/2023

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
29,539	61	>75% Grass cover, Good, HSG B (S1, S2)
5,852	96	Gravel surface, HSG B (S1)
14,870	98	Paved parking, HSG B (S1, S2)
6,563	98	Roofs, HSG B (S1, S2)
20,980	55	Woods, Good, HSG B (S1, S2)
77,804	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
77,804	HSG B	S1, S2
0	HSG C	
0	HSG D	
0	Other	
77,804		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	29,539	0	0	0	29,539	>75% Grass cover, Good	
0	5,852	0	0	0	5,852	Gravel surface	
0	14,870	0	0	0	14,870	Paved parking	
0	6,563	0	0	0	6,563	Roofs	
0	20,980	0	0	0	20,980	Woods, Good	
0	**77,804**	**0**	**0**	**0**	**77,804**	**TOTAL AREA**	

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS1: Subcatchment1 Runoff Area=36,517 sf 28.52% Impervious Runoff Depth=5.62"
Flow Length=408' Tc=12.5 min CN=75 Runoff=4.42 cfs 17,110 cf

SubcatchmentS2: Subcatchment2 Runoff Area=41,287 sf 26.69% Impervious Runoff Depth=4.90"
Flow Length=497' Slope=0.0100 '/' Tc=23.0 min CN=69 Runoff=3.46 cfs 16,854 cf

Reach SP#1: Study Point #1 Inflow=4.42 cfs 17,110 cf
Outflow=4.42 cfs 17,110 cf

Reach SP#2: Study Point #2 Inflow=3.46 cfs 16,854 cf
Outflow=3.46 cfs 16,854 cf

Total Runoff Area = 77,804 sf Runoff Volume = 33,964 cf Average Runoff Depth = 5.24"
72.45% Pervious = 56,371 sf 27.55% Impervious = 21,433 sf

Summary for Subcatchment S1: Subcatchment 1

Runoff = 4.42 cfs @ 12.17 hrs, Volume= 17,110 cf, Depth= 5.62"
Routed to Reach SP#1 : Study Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.64"

Area (sf)	CN	Description
5,903	98	Paved parking, HSG B
4,512	98	Roofs, HSG B
8,824	61	>75% Grass cover, Good, HSG B
11,426	55	Woods, Good, HSG B
5,852	96	Gravel surface, HSG B
36,517	75	Weighted Average
26,102		71.48% Pervious Area
10,415		28.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0300	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 2.93"
1.6	194	0.0100	2.03		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
1.3	53	0.0100	0.70		**Shallow Concentrated Flow, Segment 3** Short Grass Pasture Kv= 7.0 fps
0.9	61	0.0500	1.12		**Shallow Concentrated Flow, Segment 5** Woodland Kv= 5.0 fps
12.5	408	Total			

Summary for Subcatchment S2: Subcatchment 2

Runoff = 3.46 cfs @ 12.32 hrs, Volume= 16,854 cf, Depth= 4.90"
Routed to Reach SP#2 : Study Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.64"

Area (sf)	CN	Description
8,967	98	Paved parking, HSG B
2,051	98	Roofs, HSG B
20,715	61	>75% Grass cover, Good, HSG B
9,554	55	Woods, Good, HSG B
41,287	69	Weighted Average
30,269		73.31% Pervious Area
11,018		26.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 2.93"
9.5	397	0.0100	0.70		**Shallow Concentrated Flow, Segment 2** Short Grass Pasture Kv= 7.0 fps
23.0	497	Total			

Summary for Reach SP#1: Study Point #1

Inflow Area = 36,517 sf, 28.52% Impervious, Inflow Depth = 5.62" for 100 Year event
Inflow = 4.42 cfs @ 12.17 hrs, Volume= 17,110 cf
Outflow = 4.42 cfs @ 12.17 hrs, Volume= 17,110 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Summary for Reach SP#2: Study Point #2

Inflow Area = 41,287 sf, 26.69% Impervious, Inflow Depth = 4.90" for 100 Year event
Inflow = 3.46 cfs @ 12.32 hrs, Volume= 16,854 cf
Outflow = 3.46 cfs @ 12.32 hrs, Volume= 16,854 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 300R

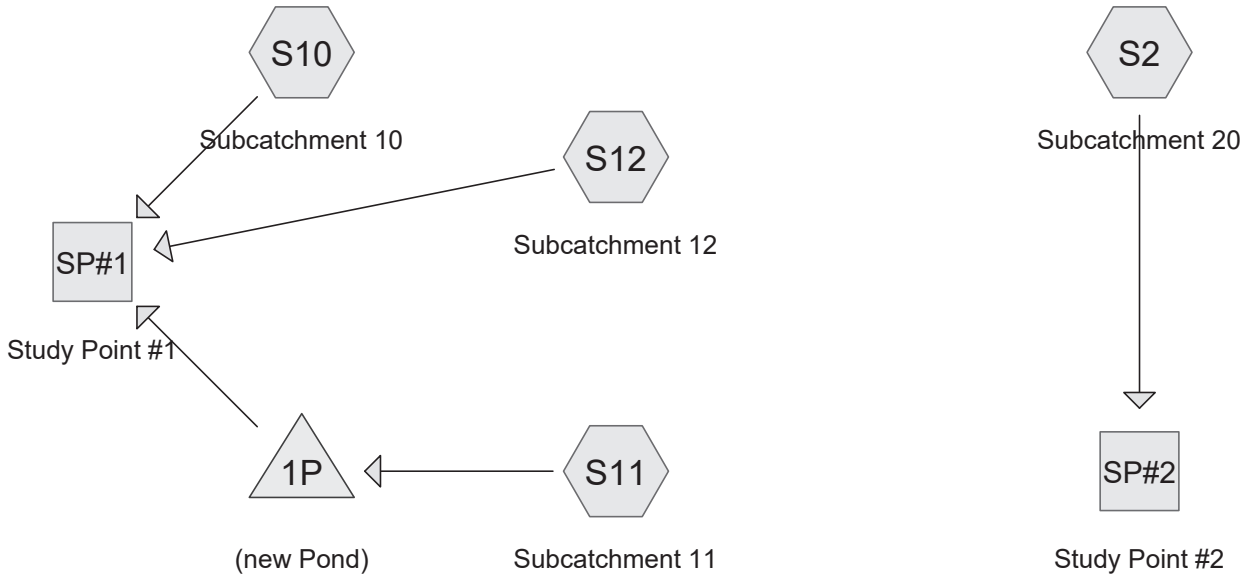
Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

POST-DEVELOPMENT MODEL OUTPUT

for

CC Railroad Street Newmarket, LLC

Site Plan



Subcat Reach Pond Link

Routing Diagram for 03 230750_POST_01
Prepared by Horizons Engineering, Printed 10/20/2023

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
33,872	61	>75% Grass cover, Good, HSG B (S10, S12, S2)
28,839	98	Paved parking, HSG B (S10, S11, S12, S2)
10,947	98	Roofs, HSG B (S11, S2)
4,174	55	Woods, Good, HSG B (S10, S2)
77,832	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
77,832	HSG B	S10, S11, S12, S2
0	HSG C	
0	HSG D	
0	Other	
77,832		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	33,872	0	0	0	33,872	>75% Grass cover, Good	
0	28,839	0	0	0	28,839	Paved parking	
0	10,947	0	0	0	10,947	Roofs	
0	4,174	0	0	0	4,174	Woods, Good	
0	**77,832**	**0**	**0**	**0**	**77,832**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	35.70	33.00	50.0	0.0540	0.012	0.0	12.0	0.0

Time span=0.00-28.00 hrs, dt=0.05 hrs, 561 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Subcatchment10 Runoff Area=11,920 sf 32.01% Impervious Runoff Depth=0.89"
Flow Length=100' Slope=0.0300 '/' Tc=8.7 min CN=72 Runoff=0.23 cfs 887 cf

SubcatchmentS11: Subcatchment11 Runoff Area=24,036 sf 100.00% Impervious Runoff Depth=2.91"
Tc=6.0 min CN=98 Runoff=1.64 cfs 5,824 cf

SubcatchmentS12: Subcatchment12 Runoff Area=7,332 sf 44.33% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=77 Runoff=0.22 cfs 714 cf

SubcatchmentS2: Subcatchment20 Runoff Area=34,544 sf 25.14% Impervious Runoff Depth=0.79"
Flow Length=497' Slope=0.0100 '/' Tc=23.0 min CN=70 Runoff=0.41 cfs 2,284 cf

Reach SP#1: Study Point #1 Inflow=0.45 cfs 1,601 cf
Outflow=0.45 cfs 1,601 cf

Reach SP#2: Study Point #2 Inflow=0.41 cfs 2,284 cf
Outflow=0.41 cfs 2,284 cf

Pond 1P: (new Pond) Peak Elev=34.28' Storage=1,404 cf Inflow=1.64 cfs 5,824 cf
Discarded=0.32 cfs 5,824 cf Primary=0.00 cfs 0 cf Outflow=0.32 cfs 5,824 cf

Total Runoff Area = 77,832 sf Runoff Volume = 9,709 cf Average Runoff Depth = 1.50"
48.88% Pervious = 38,046 sf 51.12% Impervious = 39,786 sf

Summary for Subcatchment S10: Subcatchment 10

Runoff = 0.23 cfs @ 12.14 hrs, Volume= 887 cf, Depth= 0.89"
Routed to Reach SP#1 : Study Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.14"

Area (sf)	CN	Description
3,815	98	Paved parking, HSG B
0	98	Roofs, HSG B
7,205	61	>75% Grass cover, Good, HSG B
900	55	Woods, Good, HSG B
0	96	Gravel surface, HSG B
11,920	72	Weighted Average
8,105		67.99% Pervious Area
3,815		32.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0300	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 2.93"

Summary for Subcatchment S11: Subcatchment 11

Runoff = 1.64 cfs @ 12.09 hrs, Volume= 5,824 cf, Depth= 2.91"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.14"

Area (sf)	CN	Description
18,163	98	Paved parking, HSG B
5,873	98	Roofs, HSG B
0	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
0	96	Gravel surface, HSG B
24,036	98	Weighted Average
24,036		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry**

Summary for Subcatchment S12: Subcatchment 12

Runoff = 0.22 cfs @ 12.10 hrs, Volume= 714 cf, Depth= 1.17"
Routed to Reach SP#1 : Study Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.14"

Area (sf)	CN	Description
3,250	98	Paved parking, HSG B
0	98	Roofs, HSG B
4,082	61	>75% Grass cover, Good, HSG B
0	55	Woods, Good, HSG B
0	96	Gravel surface, HSG B
7,332	77	Weighted Average
4,082		55.67% Pervious Area
3,250		44.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct Entry**

Summary for Subcatchment S2: Subcatchment 20

Runoff = 0.41 cfs @ 12.37 hrs, Volume= 2,284 cf, Depth= 0.79"
Routed to Reach SP#2 : Study Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.14"

Area (sf)	CN	Description
3,611	98	Paved parking, HSG B
5,074	98	Roofs, HSG B
22,585	61	>75% Grass cover, Good, HSG B
3,274	55	Woods, Good, HSG B
34,544	70	Weighted Average
25,859		74.86% Pervious Area
8,685		25.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0100	0.12		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 2.93"
9.5	397	0.0100	0.70		**Shallow Concentrated Flow, Segment 2** Short Grass Pasture Kv= 7.0 fps
23.0	497	Total			

Summary for Reach SP#1: Study Point #1

Inflow Area = 43,288 sf, 71.85% Impervious, Inflow Depth = 0.44" for 2 Year event
Inflow = 0.45 cfs @ 12.12 hrs, Volume= 1,601 cf
Outflow = 0.45 cfs @ 12.12 hrs, Volume= 1,601 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Summary for Reach SP#2: Study Point #2

Inflow Area = 34,544 sf, 25.14% Impervious, Inflow Depth = 0.79" for 2 Year event
Inflow = 0.41 cfs @ 12.37 hrs, Volume= 2,284 cf
Outflow = 0.41 cfs @ 12.37 hrs, Volume= 2,284 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 300R

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: (new Pond)

Inflow Area = 24,036 sf,100.00% Impervious, Inflow Depth = 2.91" for 2 Year event
Inflow = 1.64 cfs @ 12.09 hrs, Volume= 5,824 cf
Outflow = 0.32 cfs @ 11.75 hrs, Volume= 5,824 cf, Atten= 80%, Lag= 0.0 min
Discarded = 0.32 cfs @ 11.75 hrs, Volume= 5,824 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach SP#1 : Study Point #1

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.05 hrs
Peak Elev= 34.28' @ 12.52 hrs Surf.Area= 4,000 sf Storage= 1,404 cf

Plug-Flow detention time= 23.3 min calculated for 5,814 cf (100% of inflow)
Center-of-Mass det. time= 23.3 min (780.1 - 756.8)

Volume	Invert	Avail.Storage	Storage Description
#1	33.40'	4,480 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 11,200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.40	4,000	0	0
36.20	4,000	11,200	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**12.0" Round Culvert** L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.70' / 33.00' S= 0.0540 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Discarded	33.40'	**3.500 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.32 cfs @ 11.75 hrs HW=33.44' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.32 cfs)

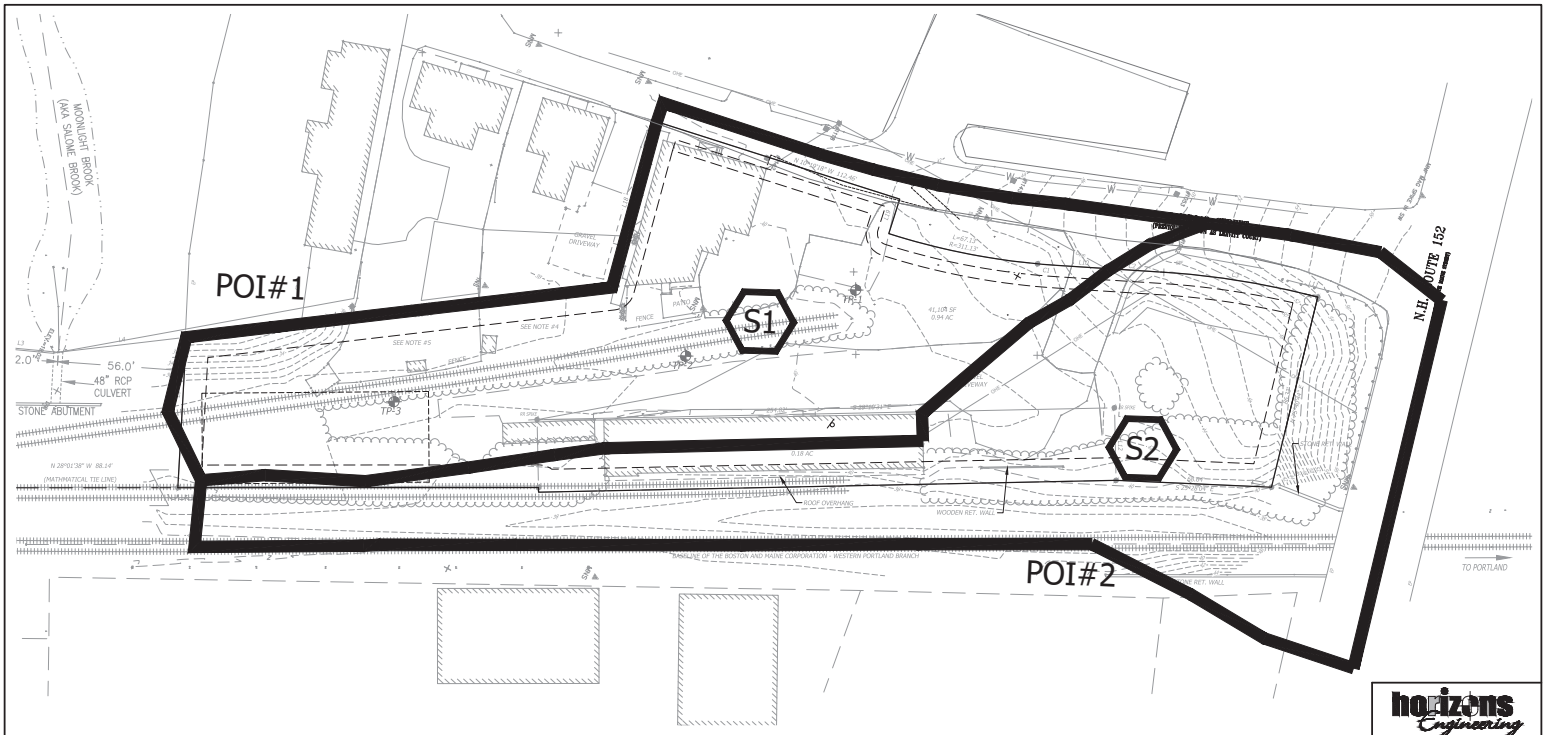
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.40' (Free Discharge)
↑—**1=Culvert** (Controls 0.00 cfs)

STORMWATER MANAGEMENT PLANS

for

CC Railroad Street Newmarket, LLC

Site Plan



LEGEND

S1 — SUBCATCHMENT ID

SUBCATCHMENT BOUNDARY

TIME OF CONCENTRATION (TC)

FOR REVIEW
NOT FOR CONSTRUCTION

DATE OF PRINT
OCTOBER 24 2023
HORIZONS ENGINEERING

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CONDOR CAPITAL

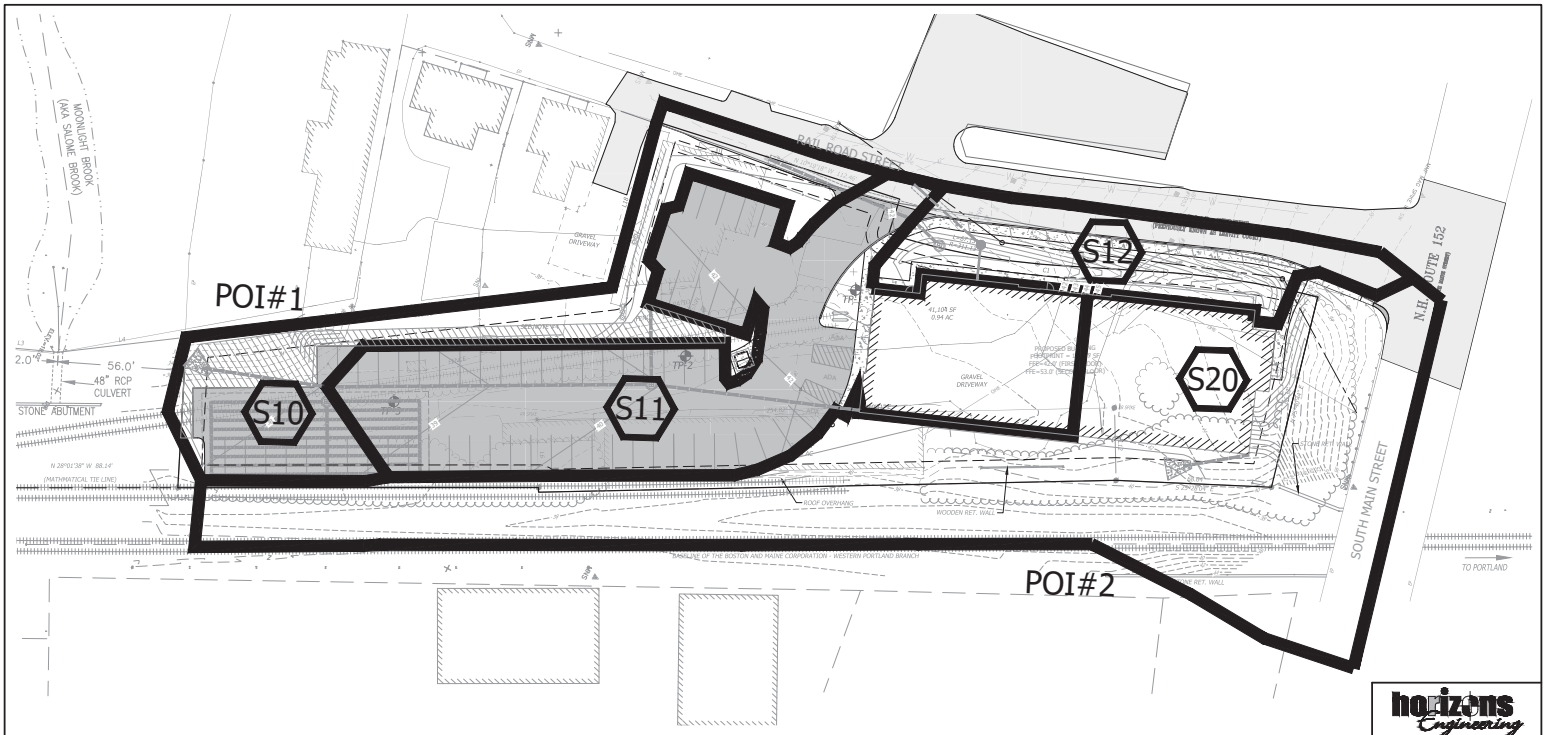
3 RAIL ROAD STREET
NEWMARKET, NH 03857

PRE-DEVELOPMENT
DRAINAGE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 10.17.23	PROJECT #: 230750
ENGIN'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H:___

D101



LEGEND

S10 — SUBCATCHMENT ID

SUBCATCHMENT BOUNDARY

TIME OF CONCENTRATION (TC)

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DATE OF PRINT
OCTOBER 24 2023
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CONDOR CAPITAL

3 RAIL ROAD STREET
NEWMARKET, NH 03857

POST-DEVELOPMENT
DRAINAGE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 10.17.23	PROJECT #: 230750
ENGIN'D BY: TAL	DRAWN BY: TAL
CHECK'D BY: MJS	ARCHIVE #: H:___

D102

SOILS REPORTS

for

CC Railroad Street Newmarket, LLC

Site Plan

3641A White Mountain Highway, North Conway, NH 03860 • Ph 603-447-2254 • Fax 603-444-1343 • www.horizonsengineering.com

TEST PITS - 10/16/2023
Job #: 230750 – CC Capital – Newmarket, NH
Observer: Elias Buzzell

Test Pit Report:
Test pits completed on 10/16/23. Site conditions were a mix of moderate rain and sun throughout the day. Test pits located on the site of a defunct train station, significant human transported material found throughout the test pits. A layer of coal dust and coal fragments was identified in every pit. Parent material on site appears to be dense clays which limit opportunities for infiltration. Infiltration tests were successful on test pit numbers 1 & 3, test pit 2 did not successfully infiltrate. Compacted gravel layer restricts infiltration on pit 3 and will need to be removed or bypassed to manage stormwater from the proposed parking structure.

Test Pit #1

0-6"	10YR 3/3	Dark Brown, Fine Sandy Loam, Granular, Loose, Clear Smooth Boundary, 20% Gravel
6-18"	10YR 5/6	Yellowish Brown, Fine Sandy Loam, Granular, Very Friable, Abrupt Wavy Boundary, 20% Gravel
18-30"	10YR 3/1	Very Dark Gray, Coal Fragments & Coal Dust, Blocky, Friable, Firm in Place, Clear Wavy Boundary, 20% Gravel, Red Mottles
30-43"	2.5YR 4/2	Dark Grayish Brown, Clay, Massive, Firm, Firm in Place, Gradual Smooth Boundary, Red Mottles
43-54"	5Y 3/1	Very Dark Gray, Clay, Massive, Friable, Firm in Place, Red Mottles

ESHWT: 22"
ROOTS: 21"
OBSERVED H20: N/O
RESTRICTIVE LAYER: 29”
TERMINATION: 54"
REFUSAL: N/O

Note:

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Test Pit #2

0-4"	10YR 2/1	Black, Fine Sandy Loam, Granular, Friable, Abrupt Smooth Boundary, 70% Gravel
4-7"	10YR 4/3	Olive Brown, Fine Sandy Loam, Massive, Friable Firm in Place, Abrupt Smooth Boundary, 70% Gravel, Red Mottles
7-12"	10YR 2/1	Black, Coal Fragments & Coal Dust, Massive, Friable, Firm in Place, Clear Smooth Boundary, 50% Gravel, Red Mottles
12-47"	5YR 4/2	Olive Gray, Clay, Massive, Firm Firm in Place, Red Mottles

ESHWT: 5" – Perched Water Table, Surface nearly impermeable.
ROOTS: 3"
OBSERVED H20: N/O
RESTRICTIVE LAYER: 12”
TERMINATION: 47"
REFUSAL: N/O

Note:
Impermeable surface to Clay layer.

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Test Pit #3

0-7"	10YR 3/1	Very Dark Gray, Sand & Gravel, Massive, Friable, Firm in Place, Abrupt Smooth Boundary, 70% Gravel
7-11"	10YR 2/1	Black, Fine Sandy Loam, Massive, Friable, Firm in Place, Abrupt Wavy Boundary, 50% Gravel
11-16"	10YR 3/4	Dark Yellowish Brown, Fine Sandy Loam, Massive, Friable, Firm in Place, Abrupt Wavy Boundary, 50% Gravel
16-26"	10YR 2/1	Black, Fine Sandy Loam & Coal Dust, Blocky, Friable, Firm in Place, Clear Wavy Boundary, 10% Gravel
26-35"	5Y 4/2	Olive Gray, Fine Sandy Loam, Single Grain, Very Friable, Gradual Smooth Boundary
35-65"	2.5Y 4/3	Olive Brown, Fine Sand, Single Grain, Loose,

ESHWT: N/O to Depth, Perched Water Table @ 15”
ROOTS: 4”
OBSERVED H20: N/O
RESTRICTIVE LAYER: N/O
TERMINATION: 65”
REFUSAL: N/O

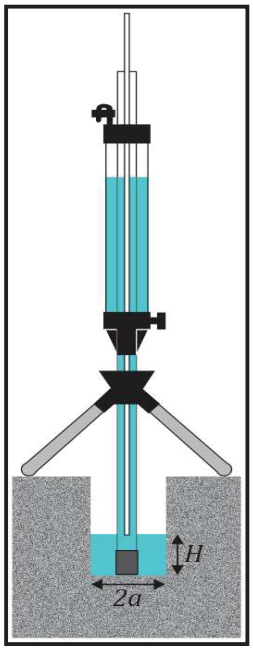
Note:
No original ground located, pit is 100% human transported material.

HEI Project Name:	**CC Capital - Newmarket**
HEI Project Number:	**230750**
Test Location:	**Test Pit 1**
Test Date:	**10/16/2023**
Performed by:	**Elias Buzzell**

Guleph Permeameter Single Head Test Results

Depth of Practice:	**14"**	
Reservoir Cross-sectional area in cm^2		
(enter "35.22" for Combined and "2.16" for Inner reservoir):	**35.22**	
Enter water Head Height ("H" in cm):	**5**	
Enter the Borehole Radius ("a" in cm):	**3**	*Standard (3)*
Soil Texture Category	**3**	

1. Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.
2. Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.
3. Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.
4. Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macropors, etc



Res Type	35.22
H	5
a	3
H/a	1.666667
a*	0.12
C0.01	0.809485
C0.04	0.842059
C0.12	0.803154
C0.36	0.803154
C	0.803154
R	2.500
Q	1.4675
pi	3.1415

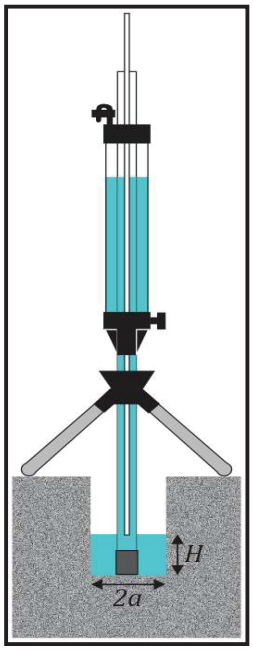
RATE OF CHANGE:	**2.5000**	
α^*=	**0.12**	***cm^{-1}***
C =	**0.803154257**	
Q =	**1.4675**	
K_{fs} =	**0.0027**	***cm/sec***
	0.1601	***cm/min***
	0.0000	***m/sec***
	0.0631	***inch/min***
	3.7830	***inch/hr***
Φ_m =	**0.0222**	***cm^2/min***

HEI Project Name:	**CC Capital - Newmarket**
HEI Project Number:	**230750**
Test Location:	**Test Pit 3**
Test Date:	**10/16/2023**
Performed by:	**Elias Buzzell**

Guleph Permeameter Single Head Test Results

Depth of Practice:	**46"**	
Reservoir Cross-sectional area in cm^2		
(enter "35.22" for Combined and "2.16" for Inner reservoir):	**35.22**	
Enter water Head Height ("H" in cm):	**5**	
Enter the Borehole Radius ("a" in cm):	**3**	*Standard (3)*
Soil Texture Category	**4**	

1. Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.
2. Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.
3. Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.
4. Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macropors, etc



Res Type	35.22
H	5
a	3
H/a	1.666667
a*	0.36
C0.01	0.809485
C0.04	0.842059
C0.12	0.803154
C0.36	0.803154
C	0.803154
R	3.000
Q	1.761
pi	3.1415

	3.0000	
α*=	**0.36**	***cm^{-1}***
C =	**0.803154257**	
Q =	**1.761**	
K_{fs} =	**0.0053**	***cm/sec***
	0.3178	***cm/min***
	0.0001	***m/sec***
	0.1251	***inch/min***
	7.5065	***inch/hr***
Φ_m =	**0.0147**	***cm^2/min***

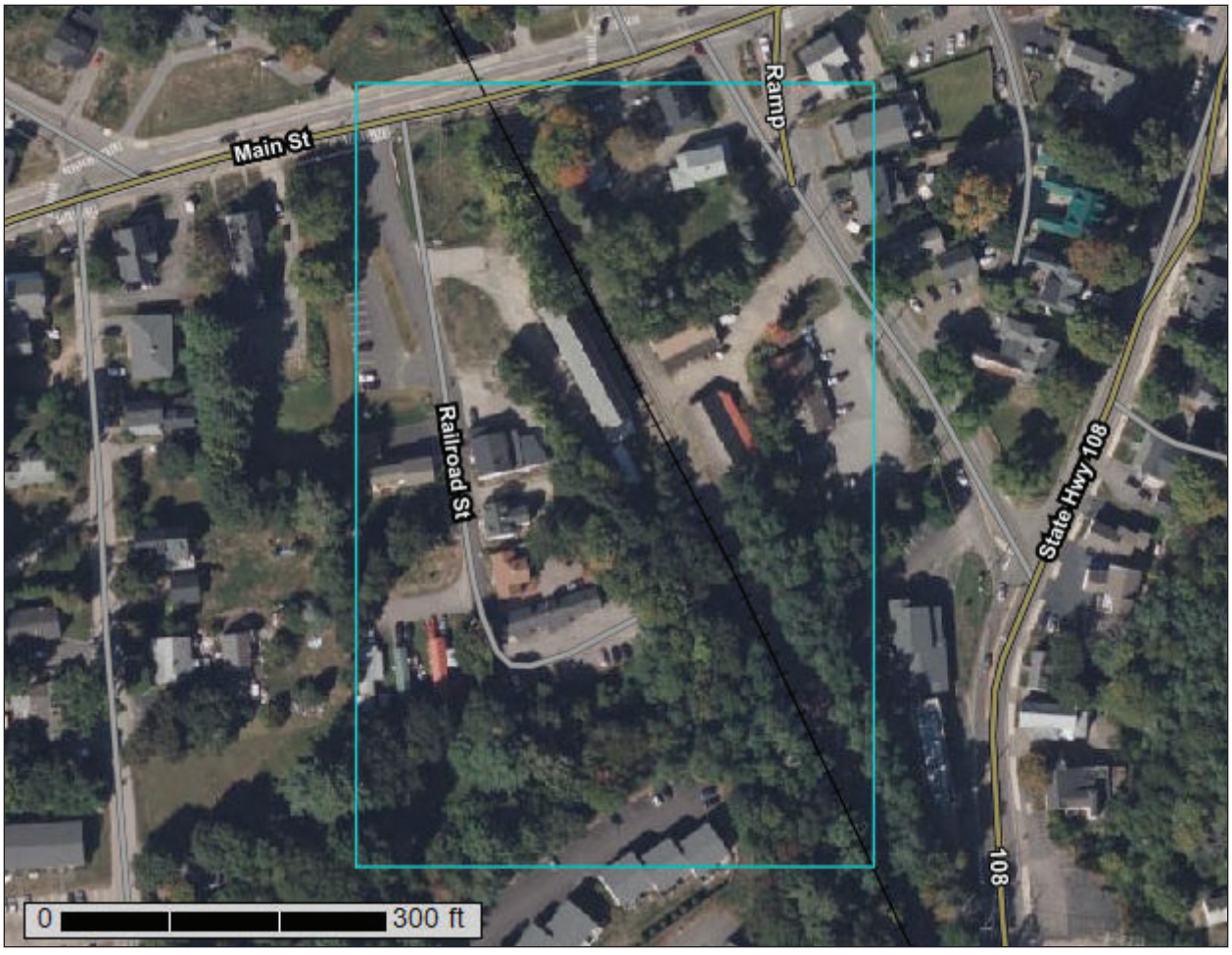
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



October 20, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:1,280 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 26, Aug 22, 2023

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	0.6	7.4%
305	Lim-Pootatuck complex	0.2	2.3%
699	Urban land	5.1	64.4%
799	Urban land-Canton complex, 3 to 15 percent slopes	2.0	25.9%
Totals for Area of Interest		**7.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

140C—Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82s
Elevation: 0 to 980 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, hills, moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Newfields, very stony

Percent of map unit: 5 percent
Landform: Hills, ground moraines, moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Freetown

Percent of map unit: 5 percent
Landform: Swamps, kettles, bogs, depressions, marshes
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro, very stony

Percent of map unit: 3 percent
Landform: Outwash deltas, drainageways, outwash terraces, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent
Landform: Hills, ridges
Hydric soil rating: Unranked

305—Lim-Pootatuck complex

Map Unit Setting

National map unit symbol: 9cmx
Elevation: 0 to 740 feet
Mean annual precipitation: 46 to 49 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

Lim and similar soils: 45 percent
Pootatuck and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lim

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: very fine sandy loam
H2 - 8 to 38 inches: very fine sandy loam
H3 - 38 to 44 inches: fine sandy loam
H4 - 44 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F144AY015NY - Wet Silty Low Floodplain
Hydric soil rating: Yes

Description of Pootatuck

Setting

Parent material: Sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist

Typical profile

H1 - 0 to 4 inches: very fine sandy loam
H2 - 4 to 26 inches: very fine sandy loam
H3 - 26 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F144AY015NY - Wet Silty Low Floodplain
Hydric soil rating: No

Minor Components

Not named wet

Percent of map unit: 15 percent
Landform: Flood plains
Hydric soil rating: Yes

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

799—Urban land-Canton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cq0
Elevation: 0 to 1,000 feet
Mean annual precipitation: 42 to 46 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Canton and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Parent material: Till

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 21 inches: gravelly fine sandy loam
H3 - 21 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Boxford and eldridge

Percent of map unit: 4 percent

Hydric soil rating: No

Squamscott and scitico

Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scituate and newfields

Percent of map unit: 4 percent
Hydric soil rating: No

Chatfield

Percent of map unit: 4 percent
Hydric soil rating: No

Walpole

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

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D-Series Size 0
LED Area Luminaire

Catalog Number

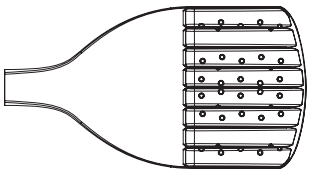
Notes

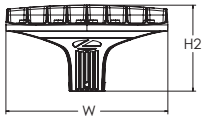
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)





Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature[2]	Color Rendering Index[2]	Distribution		Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[3] T4M Type IV medium T4LG Type IV low glare[3] TFTM Forward throw medium	T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[3] BLC4 Type IV backlight control[3] LCCO Left corner cutoff[3] RCCO Right corner cutoff[3]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[5,6] XVOLT (277V-480V)[7,8] 120[16,24] 208[16,24] 240[16,24] 277[16,24] 347[16,24] 480[16,24]	**Shipped included** SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling. 3" min. SQ pole)[9] RPA5 Round pole mounting (#5 drilling, 3" min. RND pole)[9] SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket[10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options

Shipped installed

NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[11,12,18,19]
PIR	High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc[13,18,19]
PER	NEMA twist-lock receptacle only (controls ordered separate)[14]
PER5	Five-pin receptacle only (controls ordered separate)[14,19]
PER7	Seven-pin receptacle only (controls ordered separate)[14,19]
FAO	Field adjustable output[15,19]
BL30	Bi-level switched dimming, 30%[16,19]
BL50	Bi-level switched dimming, 50%[16,19]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]

Other options

Shipped installed

HS	Houseside shield (black finish standard)[20]
L90	Left rotated optics[1]
R90	Right rotated optics[1]
CCE	Coastal Construction[21]
HA	50°C ambient operation[22]
BAA	Buy America(n) Act Compliant
SF	Single fuse (120, 277, 347V)[24]
DF	Double fuse (208, 240, 480V)[24]

Shipped separately

EGSR	External Glare Shield (reversible, field install required, matches housing finish)
BSDB	Bird Spikes (field install required)

Finish *(required)*

DDBXD	Dark Bronze
DBLXD	Black
DNAXD	Natural Aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

Ordering Information

Accessories

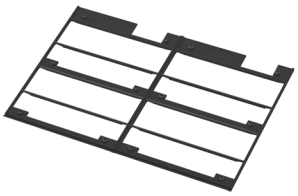
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [23]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [23]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [23]
DSHORT SBK	Shorting cap [23]
DSX0HS P#	House-side shield (enter package number P1-7, P10-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGSR (FINISH)	External glare shield (specify finish)
DSX0BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

NOTES
1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT. NLTAIR2 PIRHN not available with P1 using MVOLT.
13 PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT. PIR not available with P1 using MVOLT.
14 PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
18 Reference Motion Sensor Default Settings table on page 4 to see functionality.
19 Reference Controls Options table on page 4.
20 Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
21 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
22 Option HA not available with performance packages P6, P7, P12 and P13.
23 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
24 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories

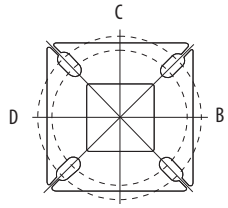
External Glare Shield (EGSR)

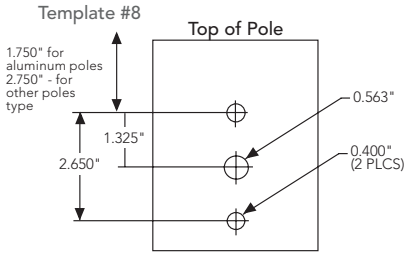


House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION
(from top of pole)





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Minimum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

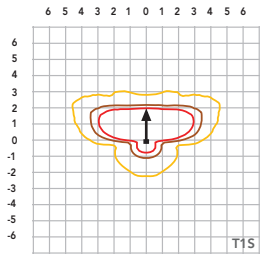
Photometric Diagrams

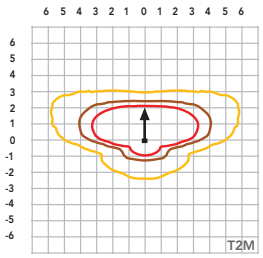
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

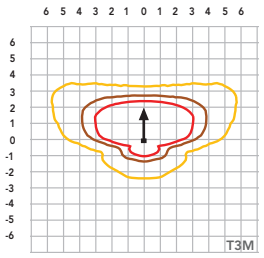
Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').

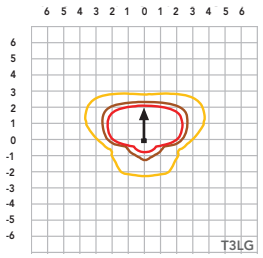
LEGEND

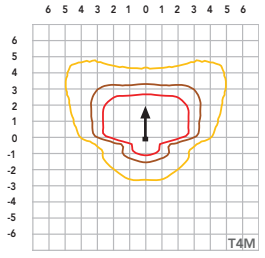
- 0.1 fc
- 0.5 fc
- 1.0 fc

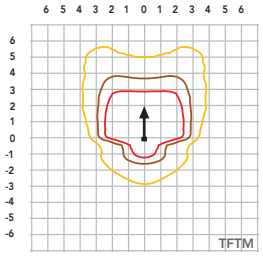


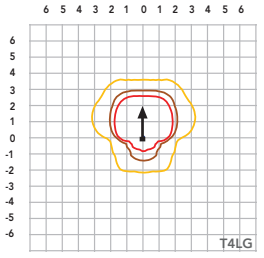


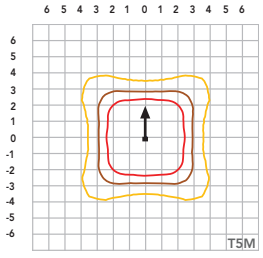


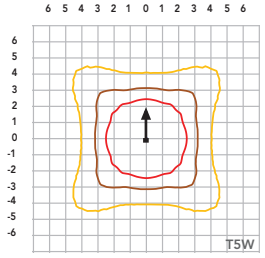


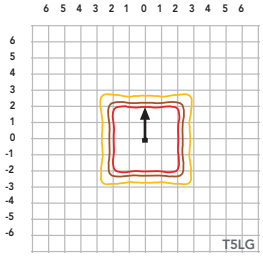


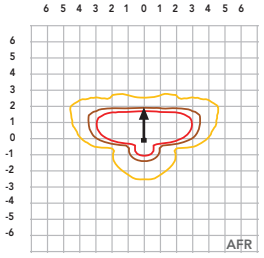


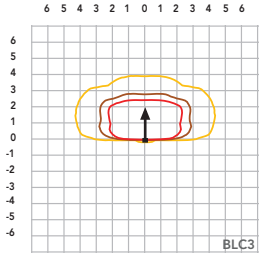


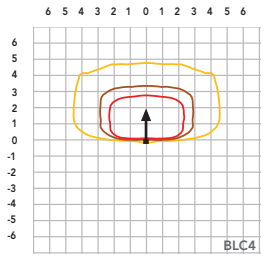


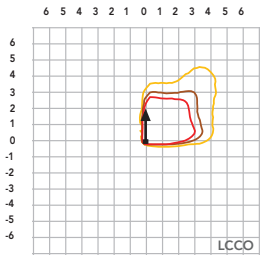


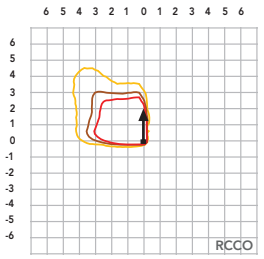












Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°C**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current (mA)	Wattage	120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	33W	20	530	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
P2	45W	20	700	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146
				T5W	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148
				T5LG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
P3	69W	20	1050	T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
				T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
P4	93W	20	1400	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
				T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	10,136	1	0	2	109
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125
				T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127
				T5W	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129
				T5LG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	90W	40	700	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
				T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				T5LG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
P6	137W	40	1050	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				T5M	17,168	4	0	2	125	17,893	5	0	3	131	18,241	5	0	3	133
				T5W	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				T5LG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
P7	171W	40	1300	T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

Performance Data

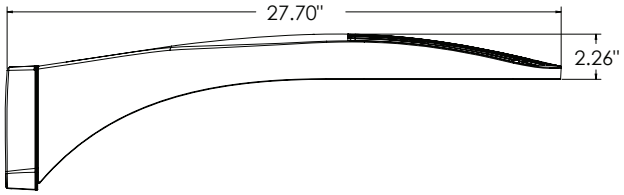
Lumen Output

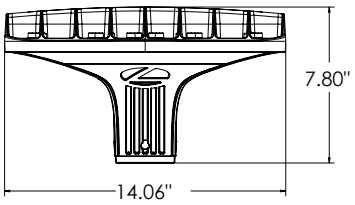
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Rotated Optics

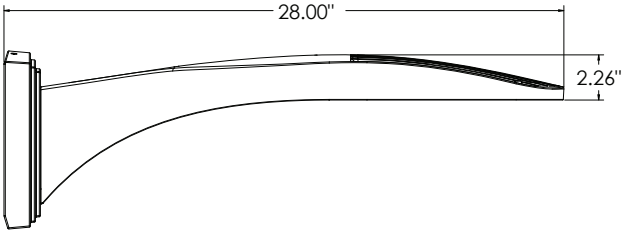
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	51W	30	530	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
P11	68W	30	700	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				T5W	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				T5LG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	3	0	3	98	6,777	3	0	3	100
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
P12	103W	30	1050	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
P13	129W	30	1300	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				T5M	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				T5W	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				T5LG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

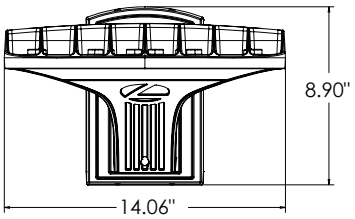
Dimensions



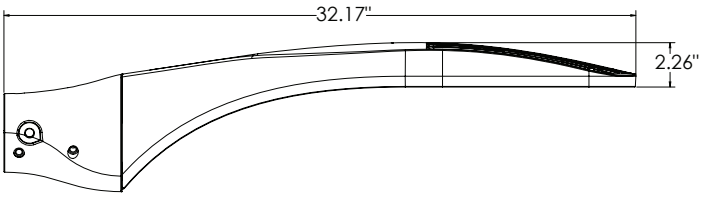


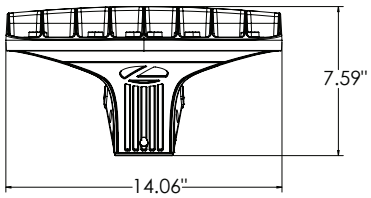
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs





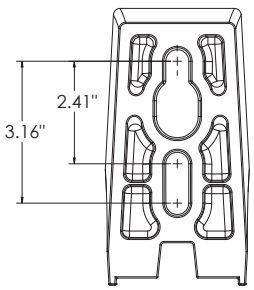
DSX0 with WBA mount
Weight: 27 lb



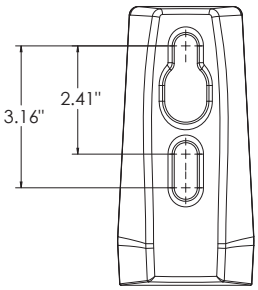


DSX0 with MA mount
Weight: 28 lbs

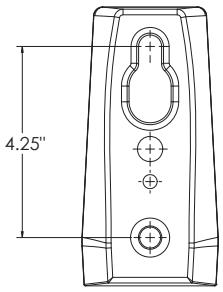
SPA (STANDARD ARM)



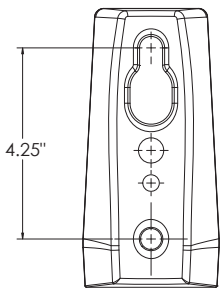
RPA



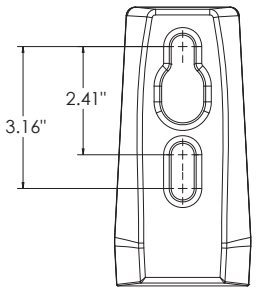
SPA5



RPA5



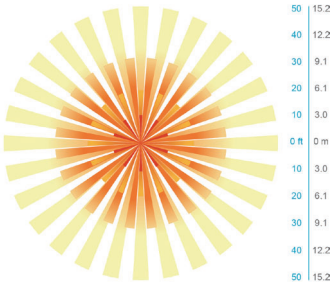
SPA8N



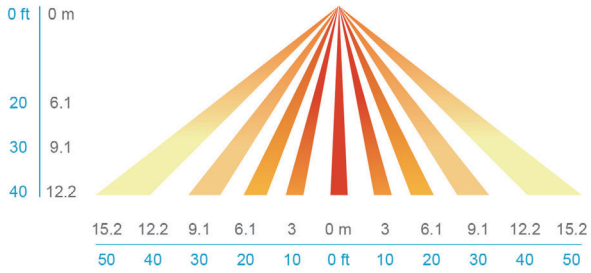
nLight Control - Sensor Coverage and Settings

nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



Top



Side

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN ACT

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

WDGE1 LED
Architectural Wall Sconce

Buy American

Catalog Number

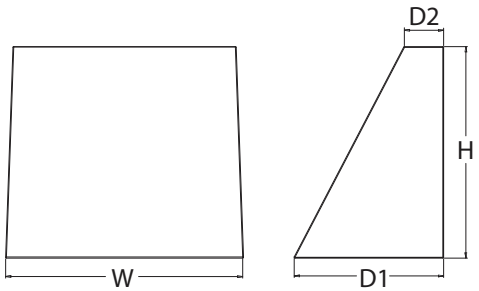
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth (D1): 5.5"
Depth (D2): 1.5"
Height: 8"
Width: 9"
Weight: (without options) 9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P1	27K 2700K	80CRI	VF Visual comfort forward throw	MVOLT	**Shipped included**
	P2	30K 3000K	90CRI	VW Visual comfort wide	347[2]	SRM Surface mounting bracket
		35K 3500K				ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only)[5]
		40K 4000K				**Shipped separately**
		50K[1] 5000K				AWS 3/8inch Architectural wall spacer
						PBBW Surface-mounted back box (top, left, right conduit entry) Use when there is no junction box available.

Options

E4WH[3]	Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)
PE[4]	Photocell, Button Type
DS	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.
BAA	Buy America(n) Act Compliant

Finish

DDBXD	Dark bronze	DDBTXD	Textured dark bronze
DBLXD	Black	DBLBXD	Textured black
DNAXD	Natural aluminum	DNATXD	Textured natural aluminum
DWHXD	White	DWHGXD	Textured white
DSSXD	Sandstone	DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE1PBBW DDBXD U	WDGE1 surface-mounted back box (specify finish)

NOTES

1. 50K not available in 90CRI.
2. 347V not available with E4WH, DS or PE.
3. E4WH not available with PE or DS.
4. PE not available with DS.
5. Not qualified for DLC. Not available with E4WH.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					35K (3500K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P1	10W	VF	1,120	112	0	0	0	1,161	116	0	0	0	1,194	119	0	0	0	1,227	123	0	0	0	1,235	123	0	0	0
		VW	1,122	112	0	0	0	1,163	116	0	0	0	1,196	120	0	0	0	1,229	123	0	0	0	1,237	124	0	0	0
P2	15W	VF	1,806	120	1	0	0	1,872	125	1	0	0	1,925	128	1	0	0	1,978	132	1	0	0	1,992	133	1	0	0
		VW	1,809	120	1	0	0	1,876	125	1	0	0	1,929	128	1	0	0	1,982	132	1	0	0	1,996	133	1	0	0

Electrical Load

Performance Package	System Watts	Current (A)				
		120V	208V	240V	277V	347V
P1	10W	0.082	0.049	0.043	0.038	--
	13W	--	--	--	--	0.046
P2	15W	0.132	0.081	0.072	0.064	--
	18W	--	--	--	--	0.056

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Output in Emergency Mode (4000K, 80 CRI)

Option	Dist. Type	Lumens
E4WH	VF	646
	VW	647

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

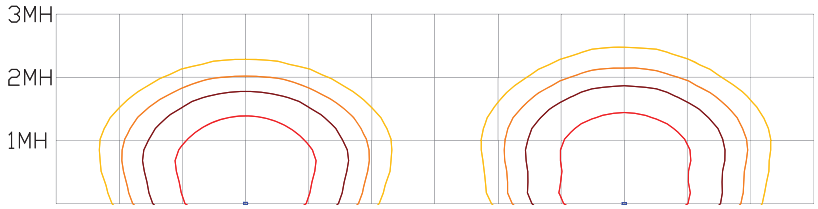
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND

- 0.25 fc
- 0.5 fc
- 1.0 fc
- 3.0 fc

MH = 8ft
Grid = 8ft x 8ft



WDGE1 LED P2 40K 80CRI VW

WDGE1 LED P2 40K 80CRI VF

Emergency Egress Options

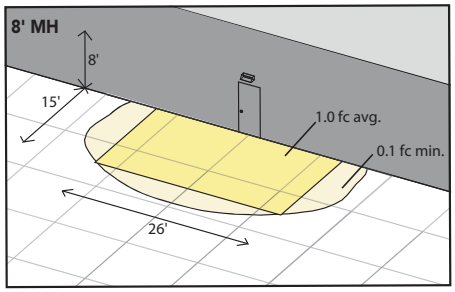
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The example below shows illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E4WH and VF distribution.

Grid = 10ft x 10ft

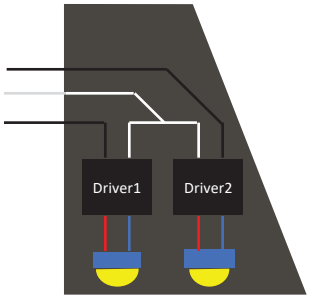


WDGE1 LED xx 40K 80CRI VF MVOLT E4WH

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Mounting, Options & Accessories

E4WH – 4W Emergency Battery Backup

D = 5.5"

H = 8"

W = 9"

PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"

H = 8"

W = 9"

AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting only.

BUY AMERICAN
Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

JUNO

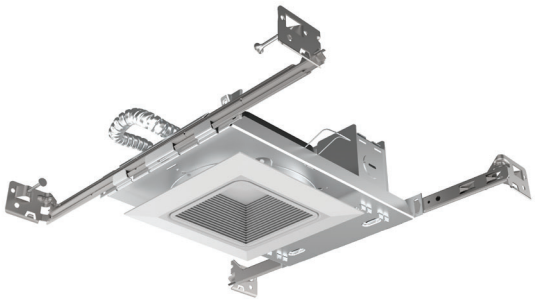
Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

Project:
Fixture Type:
Location:
Contact/Phone:

JPDZ4 Series

Complete remodel fixture shown

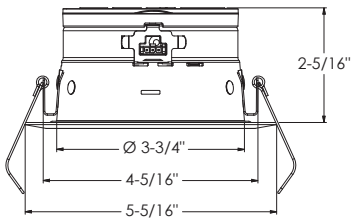


Complete new construction fixture shown

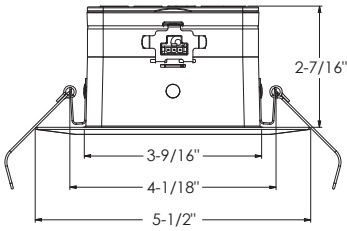
WarmDim®

Dimensions

4" Round



4" Square



Product Features

Canless low profile 4" LED recessed downlight with deeply regressed light source and technology rich features offers performance up to 1200L and installation solutions for both new construction and remodel applications.

Patented color temperature and intensity configurable lighting fixture (US Patent No. 11,259,377 B2)

- Integrated light engine offers switchable LED color temperature and adjustable lumen output directly on module for easy switching
- Advanced color mixing technology provides consistent color rendering on the black body curve at all LED color temperatures while maintaining a high 90+ CRI
- Warmdim™ setting provides performance similar to incandescent light sources and warms the LED color temperature over the dimming range from 2850K to 1900K

Installation flexibility and ease

- Low profile integrated LED downlight less than 3" in height fits virtually anywhere
- Installs directly into the plenum - eliminates need for typical recessed housing
- Installs into new construction or remodel applications

Applications

- Ideal for a breadth of residential and commercial applications
- Shallow plenum installations
- IC rated - for direct contact with insulation
- Wet location listed - for use in shower and outdoor covered ceiling applications

Performance

Switchable Delivered Lumens	700L, 1000L, 1200L
Switchable LED Color Temperature	27K, 30K, 35K, 40K, 50K
WarmDim Included as standard	2850K - 1900K over dimming range
CRI	90+
Voltage	Dedicated 120V or MVOLT (120-277V)
Dimming	Forward/Reverse Phase or 0-10V Dimming range from 100% to 5%

Application Flexibility - Remodel

Shape	+	Mounting Style	=	Complete Fixture
Round Module		Remodel		

Application Flexibility - New Construction

Shape	+	Mounting Style	=	Complete Fixture
Square Module		New Construction		

Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

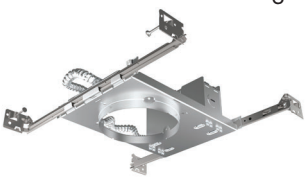
ORDERING INFORMATION

Two ways to order Podz:

1. Ship separate trim module and mounting

Trim Module

Mounting Option



or

Example: JPDZ4 DC ALO10 SWW5WD 90CRI JPDZRMJBX 120 FRPC WWH, **Ships as example:** Trim module: JPDZ4 DC ALO10 SWW5WD 90CRI 120 FRPC WWH M6, Mounting: JPDZRMJBX 120 FRPC M6

Series		Trim Type		Lumens		Color Temperature		CRI	
JPDZ4	Juno Podz 4" LED Downlights	**DB**	Round Downlight Baffle	**ALO10**	Adjustable Lumen Output 700L, 1000L, and 1200L	**SWW5WD**	Switchable White 2700K, 3000K, 3500K, 4000K, 5000K, + WarmDim (2850K-1900K)	**90CRI**	90+CRI
		DC	Round Downlight Cone						
		SQDB	Square Downlight Baffle						
		SQDC	Square Downlight Reflector						

Mounting (Required for complete fixture)		Voltage/Driver		Finish	
REMODEL:		**120 FRPC**	120V Forward/Reverse Phase Cut, 5% dim	**WWH** [1]	White, White Trim Ring
JPDZRMJBX [4]	Juno Podz universal remodel junction box (for 4", 5", 6")	**MVOLT ZT10**	Multi-Volt (120-277), 0-10V, 10% dim	**BWH** [2]	Black, White Trim Ring
				CWH [3]	Clear, White Trim Ring
NEW CONSTRUCTION:				**HZWH** [3]	Haze, White Trim Ring
JPDZ4RDNCMF	Juno Podz 4IN Round New Construction Mounting Frame			**WHZWH** [3]	Wheat Haze, White Trim Ring
JPDZ4SQNCMF	Juno Podz 4IN Square New Construction Mounting Frame				

NOTES
1 WWH is available with DB, SQDB, DC and SQDC.
2 BWH only available with DB and SQDB.
3 CWH, HZWH and WHZWH only available with DC and SQDC.
4 Not for use in an existing housing.

2. All-in-one box remodel downlight

Series		Trim Type/Voltage		Finish	
JPDZ4JB	Juno Podz 4" Trim and Remodel Junction Box	**RDB1**	Round Downlight Baffle 120V	**WWH**	White, White Trim Ring
		RDC1	Round Downlight Cone 120V		

EMERGENCY OPERATION OPTION	
For use in Non-IC applications where insulation is spaced at least 3" away. If installing from below the ceiling, minimum plenum depths required: IIS 25 = 15 7/8" for JPDZ4 RD and 14 3/4" for JPDZ4 SQ IIS 50 = 20 1/8" for JPDZ4 RD and 18 5/8" for JPDZ4 SQ	
Iota IIS 25 I	25W Emergency Micro-Inverter
Iota IIS 50 I	50W Emergency Micro-Inverter

ACCESSORIES	
Trim inserts are interchangeable and field installable to easily change the aesthetic of the Podz luminiare	
RK3JPDZ4 DB BWH BFL	4" Round Baffle Black Trim Insert
RK3JPDZ4 DB WWH BFL	4" Round Baffle White Trim Insert
RK3JPDZ4 DC CWH RFL	4" Round Cone Clear Trim Insert
RK3JPDZ4 DC HZWH RFL	4" Round Cone Haze Trim Insert
RK3JPDZ4 DC WHZWH RFL	4" Round Cone Wheat Haze Trim Insert
RK3JPDZ4 DC WWH RFL	4" Round Cone White Trim Insert
RK3JPDZ4 SQDB BWH BFL	4" Square Baffle Black Trim Insert
RK3JPDZ4 SQDB WWH BFL	4" Square Baffle White Trim Insert
RK3JPDZ4 SQDC CWH RFL	4" Square Cone Clear Trim Insert
RK3JPDZ4 SQDC HZWH RFL	4" Square Cone Haze Trim Insert
RK3JPDZ4 SQDC WHZWH RFL	4" Square Cone Wheat Haze Trim Insert
RK3JPDZ4 SQDC WWH RFL	4" Square Cone White Trim Insert

JUNO

Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

Specifications

LED Light Engine

Patented color temperature and intensity configurable lighting fixture (US Patent No. 11,259,377 B2) with integrated light engine that mounts directly to aluminum housing providing superior heat transfer to ensure long life of the electronics • Switchable LED color temperature and adjustable lumen output directly on module for easy switching • Advanced color mixing technology provides consistent color rendering on the black body curve at all LED color temperatures • LED color temperature settings include 2700K, 3000K, 3500K, 4000K and 5000K; factory set at 3000K • Three lumen switching options include 700L, 1000L and 1200L; factory set at 1000L • Dedicated WarmDim setting provides performance similar to incandescent light sources and warms the LED color temperature over the dimming range from 2850K to 1900K • 90CRI minimum

LED Driver

Choice of dedicated 120 volt (120) driver or universal voltage (MVOLT) drivers that accommodate input voltages from 120-277 volts AC at 50/60Hz • Power factor > 0.9 at 120V input • 120 volt only driver is dimmable with the use of most incandescent, magnetic low voltage and electronic low voltage wall box dimmers • Universal voltage drivers are dimmable with the use of most 0-10V wall box dimmers • For a list of compatible dimmers, see JUNOICLED-DIM

Optical System

Computer-optimized reflector design with high reflectance white finish coupled with a high transmission diffusing lens conceals the LEDS and produces uniform aperture luminance • Deep regression of lens produces a low glare, efficient system typical of a standard 4" downlight medium flood distribution providing even illumination for general downlighting applications.

Certifications

ENERGY STAR® Certified • Can be used to comply with 2019 Title 24, Part 6, JA8 high efficacy LED light source requirements • UL listed for U.S. and Canada through-branch wiring, damp locations and for wet location (indoor and outdoor covered ceiling) • UL and cUL • NOM certified.

Testing All reports are based on published industry procedures; field performance may differ from laboratory performance.

Trim Module Construction

Low profile, < 3" aluminum housing with integral white flange • Designed for installation directly into the plenum in IC (insulated ceiling) or non-IC construction • Provided with spring clips for ease of installation • Accommodates up to a 1 1/2"ceiling thickness

Trim Finishes

Choice of baffle or cone trims in a selection of finishes ship installed in trim • Optional field installable trim inserts available.

Remodel Junction Box Construction

22-gauge die-formed galvanized steel junction box • Conduit cable with quick connect electrical plug pre-wired on junction box and allows for easy electrical connection with the trim module• Junction box provided with (5) ½" and (1) ¾" knockouts, (4) integrated wire traps for 12/2 or 12/3 NM cable UL listed and cUL listed for through-branch wiring, maximum of 4 #12 branch circuit

New Construction Mounting Frame

22-gauge die-formed galvanized steel mounting frame • Rough-in section (junction box, mounting frame and bar hangers) fully assembled for ease of installation • Pre-installed Air-Loc gasket applied to frame • Conduit cable with quick connect electrical plug pre-wired on junction box and allows for easy electrical connection with the trim module • Junction box provided with (5) ½" and (1) ¾" knockouts, (4) knockouts for 12/2 or 12/3 NM cable and ground wire • UL listed and cUL listed for through-branch wiring, maximum of 6 #12 branch circuit conductors • Junction box provided with removable access plates • Knock-outs equipped with pryout slots

Includes Patented (US Patent D552,969) Real Nail® 3 bar hangers: telescoping system permits quick placement of housing any where within 24" O.C. joists or suspended ceilings • Includes removable nail for repositioning of fixture in wood joist construction • Integral T-bar notch and clip for suspended ceilings.

LED housing is designed to provide 50,000 hours of life • 5 year limited warranty on LED components.

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Control the LED color temperature and lumen output in your space with the switchable LED color temperature and adjustable lumen output switches accessible directly on the Podz trim.

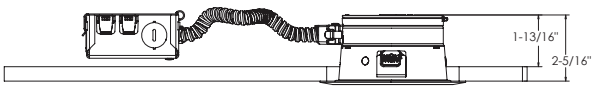
Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

TECHNICAL DATA

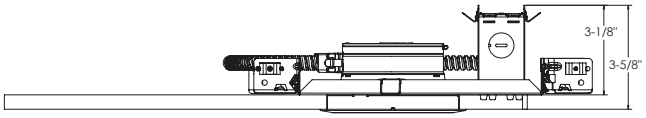
Dimensional Data and Electrical Data

Remodel - Round



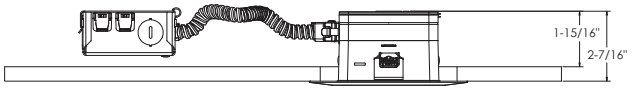
4 1/2" CEILING CUTOUT

New Construction - Round



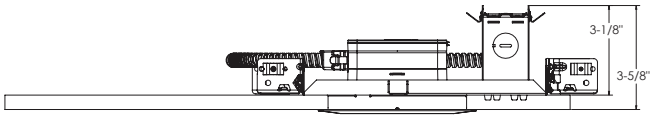
4 1/2" CEILING CUTOUT

Remodel - Square



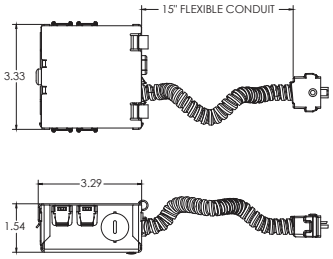
4 3/4" ROUND CEILING CUTOUT

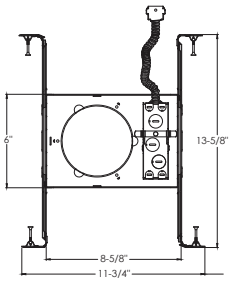
New Construction - Square



4 3/4" ROUND CEILING CUTOUT

Note: For ease of installation, a larger sized round cutout is used for the 4" square mounting frame.





ELECTRICAL DATA

Dedicated 120V Only Driver Option (120 FRPC)

	700L	1000L	1200L
Input Power	8.1W (+/-5%)	13.6W (+/-5%)	15W (+/-5%)
Input Current	0.07A	0.11A	0.13A
Frequency	50/60Hz	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)
Minimum starting temp	-20°C	-20°C	-20°C

ELECTRICAL DATA

Universal Voltage

	MVOLT ZT10					
	700L		1000L		1200L	
	120V	277V	120V	277V	120V	277V
Input Power	8.1W (+/-5%)	8.1W (+/-5%)	13.6W (+/-5%)	13.6W (+/-5%)	15W (+/-5%)	15W (+/-5%)
Input Current	0.07A	0.03A	0.11A	0.05A	0.13A	0.06A
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)	FCC Title 47 CFR, Part 15, Class B (residential)
Minimum starting temp	-20°C	-20°C	-20°C	-20°C	-20°C	-20°C

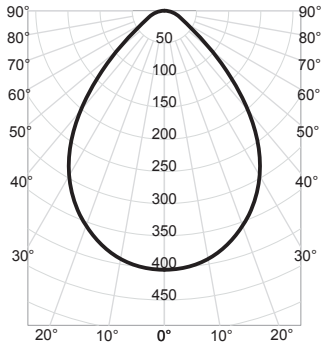
Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

PHOTOMETRICS

Distribution Curve | Distribution Data | Output Data | Coefficient of Utilization | Illuminance Data at 30" Above Floor for a Single Luminaire

JPDZ4 DB 07LM 30K 90CRI WWH, Input Watts: 8.1, Delivered Lumens: 672, LPW: 83.0, S/MH: 1.11, Test No: 20-973-1



CP Summary

0°	403
5°	400
15°	377
25°	330
35°	254
45°	145
55°	59
65°	29
75°	17
85°	5
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	295	44%
0° - 40°	452	67%
0° - 60°	619	92%
0° - 90°	672	100%
90° - 180°	0	0%
0° - 180°	672	100%

Coefficients of Utilization

ρf	ρc	ρw	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
		0	119	119	119	116	116	116	111	111	111
		1	108	104	101	105	102	100	101	99	97
		2	97	92	87	95	90	86	92	88	84
		3	88	81	76	86	80	75	84	78	74
		4	80	73	67	79	72	67	76	71	66
		5	73	65	60	72	65	60	70	64	59
		6	67	59	54	66	59	54	64	58	53
		7	62	54	49	61	54	49	59	53	48
		8	57	50	44	56	49	44	55	49	44
		9	53	46	41	52	45	41	51	45	41
		10	49	42	38	49	42	37	48	42	37

Cone of Light

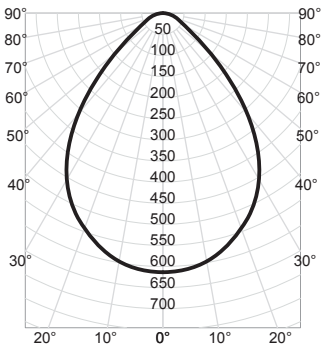
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	11.2	10.1
8.0	6.3	13.5
10.0	4.0	16.8
12.0	2.8	20.2
14.0	2.1	23.6

Beam Angle: 80.2°
Field Angle: 119.3°

Luminance (cd/sq.m)

Average Luminance	
0°	65,673
45°	33,417
55°	16,678
65°	11,259
75°	10,515
85°	8,975

JPDZ4 DB 10LM 30K 90CRI WWH, Input Watts: 13.6, Delivered Lumens: 1028, LPW: 75.6, S/MH: 1.12, Test No: 20-973-2



CP Summary

0°	614
5°	610
15°	574
25°	506
35°	390
45°	223
55°	90
65°	45
75°	26
85°	7
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	451	44%
0° - 40°	692	67%
0° - 60°	948	92%
0° - 90°	1,028	100%
90° - 180°	0	0%
0° - 180°	1,028	100%

Coefficients of Utilization

ρf	ρc	ρw	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
		0	119	119	119	116	116	116	111	111	111
		1	108	104	101	105	102	100	101	99	97
		2	97	92	87	95	90	86	92	88	84
		3	88	81	76	86	80	75	84	78	74
		4	80	73	67	79	72	67	76	71	66
		5	73	65	60	72	65	60	70	64	59
		6	67	59	54	66	59	54	64	58	53
		7	62	54	49	61	54	49	59	53	48
		8	57	50	44	56	49	44	55	49	44
		9	53	46	41	52	45	41	51	45	40
		10	49	42	37	49	42	37	48	42	37

Cone of Light

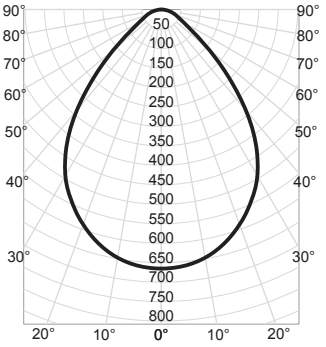
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	17.0	10.1
8.0	9.6	13.5
10.0	6.1	16.9
12.0	4.3	20.3
14.0	3.1	23.7

Beam Angle: 80.4°
Field Angle: 119.4°

Luminance (cd/sq.m)

Average Luminance	
0°	99,993
45°	51,301
55°	25,656
65°	17,198
75°	16,056
85°	13,649

JPDZ4 DB 12LM 30K 90CRI WWH, Input Watts: 15.0, Delivered Lumens: 1116, LPW: 74.4, S/MH: 1.12, Test No: 20-973-3



CP Summary

0°	665
5°	661
15°	622
25°	544
35°	424
45°	242
55°	98
65°	49
75°	28
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	488	44%
0° - 40°	750	67%
0° - 60°	1,029	92%
0° - 90°	1,116	100%
90° - 180°	0	0%
0° - 180°	1,116	100%

Coefficients of Utilization

ρf	ρc	ρw	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
		0	119	119	119	116	116	116	111	111	111
		1	108	104	101	105	102	100	101	99	97
		2	97	92	87	95	90	86	92	88	84
		3	88	81	76	86	80	75	84	78	74
		4	80	73	67	79	72	67	76	70	66
		5	73	65	60	72	65	60	70	64	59
		6	67	59	54	66	59	54	64	58	53
		7	62	54	49	61	54	49	59	53	48
		8	57	50	44	56	49	44	55	49	44
		9	53	46	41	52	45	41	51	45	40
		10	49	42	37	49	42	37	48	42	37

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	18.5	10.2
8.0	10.4	13.5
10.0	6.7	16.9
12.0	4.6	20.3
14.0	3.4	23.7

Beam Angle: 80.5°
Field Angle: 119.5°

Luminance (cd/sq.m)

Average Luminance	
0°	108,434
45°	55,818
55°	27,928
65°	18,702
75°	17,441
85°	14,771

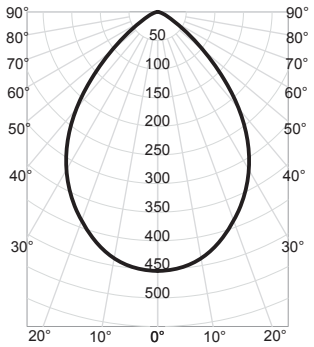
Podz™ LED Downlight Series

4" Canless Round and Square LED Downlight
New Construction or Remodel

PHOTOMETRICS

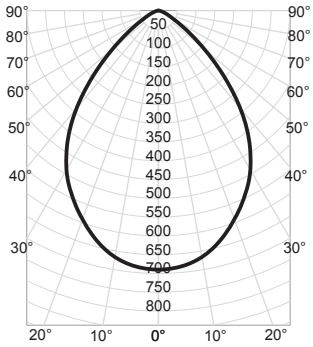
Distribution Curve | Distribution Data | Output Data | Coefficient of Utilization | Illuminance Data at 30" Above Floor for a Single Luminaire

JPDZ4 DC 07LM 30K 90CRI HZWH, Input Watts: 8.1, Delivered Lumens: 699, LPW: 86.3, S/MH: 1.07, Test No: 20-973-4



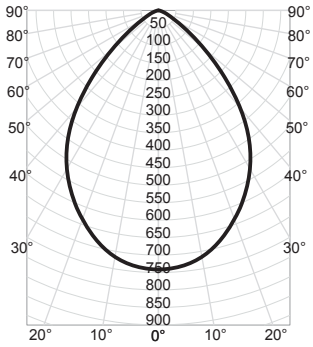
CP Summary		Zonal Lumen Summary			Coefficients of Utilization										Cone of Light			Luminance (cd/sq.m)	
					ρf			20%							Mounting Height	Initial FC Center Beam	Beam Diameter		
	0°	Zone	Lumens	% Fixture	ρc	80%			70%			50%							Average Luminance
0°	453	0° - 30°	323	46%	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	6.0	12.6	9.9	0°	73,789
5°	449	0° - 40°	493	70%	1	109	106	103	106	104	101	102	100	98	8.0	7.1	13.2	45°	36,874
15°	417	0° - 60°	672	96%	2	99	94	89	97	92	88	94	90	86	10.0	4.5	16.5	55°	17,047
25°	357	0° - 90°	699	100%	3	90	84	79	88	83	78	86	81	77	12.0	3.1	19.8	65°	7,404
35°	274	90° - 180°	0	0%	4	82	75	70	81	74	69	78	73	68	14.0	2.3	23.1	75°	3,463
45°	160	0° - 180°	699	100%	5	75	68	62	74	67	62	72	66	62				85°	1,309
55°	60				6	69	62	56	68	61	56	66	60	56	Beam Angle: 78.9°				
65°	19				7	63	56	51	63	56	51	61	55	51	Field Angle: 114.9°				
75°	6				8	59	52	47	58	51	46	57	51	46					
85°	1				9	55	47	43	54	47	43	53	47	42					
90°	0				10	51	44	39	50	44	39	49	43	39					

JPDZ4 DC 10LM 30K 90CRI HZWH, Input Watts: 13.6, Delivered Lumens: 1070, LPW: 78.7, S/MH: 1.07, Test No: 20-973-5



CP Summary		Zonal Lumen Summary			Coefficients of Utilization										Cone of Light			Luminance (cd/sq.m)	
					ρf			20%							Mounting Height	Initial FC Center Beam	Beam Diameter		
	0°	Zone	Lumens	% Fixture	ρc	80%			70%			50%							Average Luminance
0°	690	0° - 30°	493	46%	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	6.0	19.2	9.9	0°	112,427
5°	684	0° - 40°	754	70%	1	109	106	103	106	104	101	102	100	98	8.0	10.8	13.2	45°	56,624
15°	635	0° - 60°	1,029	96%	2	99	94	89	97	92	88	94	90	86	10.0	6.9	16.6	55°	26,224
25°	543	0° - 90°	1,070	100%	3	90	84	79	88	83	78	85	81	77	12.0	4.8	19.9	65°	11,298
35°	421	90° - 180°	0	0%	4	82	75	70	81	74	69	78	73	68	14.0	3.5	23.2	75°	5,289
45°	246	0° - 180°	1,070	100%	5	75	68	62	74	67	62	72	66	61				85°	2,057
55°	92				6	69	61	56	68	61	56	66	60	56	Beam Angle: 79.3°				
65°	29				7	63	56	51	63	56	51	61	55	50	Field Angle: 114.9°				
75°	8				8	59	51	46	58	51	46	57	51	46					
85°	1				9	54	47	43	54	47	43	53	47	42					
90°	0				10	51	44	39	50	44	39	49	43	39					

JPDZ4 DC 12LM 30K 90CRI HZWH, Input Watts: 15.0, Delivered Lumens: 1149, LPW: 76.6, S/MH: 1.07, Test No: 20-973-6



CP Summary		Zonal Lumen Summary			Coefficients of Utilization										Cone of Light			Luminance (cd/sq.m)	
					ρf			20%							Mounting Height	Initial FC Center Beam	Beam Diameter		
	0°	Zone	Lumens	% Fixture	ρc	80%			70%			50%							Average Luminance
0°	741	0° - 30°	529	46%	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	6.0	20.6	9.9	0°	120,819
5°	735	0° - 40°	809	70%	1	109	106	103	106	104	101	102	100	98	8.0	11.6	13.2	45°	60,796
15°	682	0° - 60°	1,104	96%	2	99	94	89	97	92	88	94	90	86	10.0	7.4	16.6	55°	28,127
25°	584	0° - 90°	1,149	100%	3	90	84	79	88	83	78	86	81	77	12.0	5.1	19.9	65°	12,146
35°	452	90° - 180°	0	0%	4	82	75	70	81	74	69	78	73	68	14.0	3.8	23.2	75°	5,667
45°	264	0° - 180°	1,149	100%	5	75	68	62	74	67	62	72	66	61				85°	2,244
55°	99				6	69	61	56	68	61	56	66	60	56	Beam Angle: 79.2°				
65°	32				7	63	56	51	63	56	51	61	55	50	Field Angle: 114.9°				
75°	9				8	59	51	46	58	51	46	57	51	46					
85°	1				9	54	47	43	54	47	43	53	47	42					
90°	0				10	51	44	39	50	44	39	49	43	39					

4" LUMEN OUTPUT MULTIPLIERS

CCT	DB WWH	DB BWH	DC WWH	DC CWH	DC WHZWH	DC HZWH
2700K	1.01	0.78	1.07	1.11	1.03	1.01
3000K	1.00	0.77	1.06	1.09	1.01	1.00
3500K	1.00	0.77	1.07	1.10	1.02	1.00
4000K	1.01	0.78	1.07	1.11	1.02	1.01
5000K	1.00	0.77	1.06	1.09	1.01	1.00
Warm Dim	0.92	0.71	0.98	1.01	0.93	0.92

