Tighe&Bond

E5071-001
October 23, 2024

Mr. Peter Britz, Director of Planning & Sustainability
City of Portsmouth Planning & Sustainability Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Request for Site Plan Review & Conditional Use Permits Review**
100 Durgin Lane – Proposed Redevelopment

Dear Peter:

On behalf of 100 Durgin Lane Owner, LLC (applicant) we are pleased to submit one (1) set of hard copies and one electronic file (.pdf) of the following information to support a request for a Site Review Permit, Lot Line Revision Permit, Development Site Conditional Use Permit, Highway Noise Overlay District Conditional Use Permit, and a Wetland Conditional Use Permit for the above referenced project.

Updated documents for the attention of the Technical Advisory Committee:

- One (1) 22x34 & one (1) 11x17 copy of the Site Plan Set, last revised October 23, 2024;
- TAC Comment Response Letter, dated October 23, 2024;
- Response to Comments – Traffic Peer Review, dated October 16, 2024;
- Impervious Surface Exhibit; last revised October 23, 2024;
- Wetland Buffer Exhibit, last revised October 23, 2024;
- Wetland Buffer Comparison Exhibit, last revised October 23, 2024;
- Grade Plane Exhibits (2), last revised October 23, 2024;
- Fire Truck Turning Exhibits (3), last revised October 23, 2024;
- Location of Motor Vehicle Parking Exhibit, last revised October 23, 2024;
- Front Building Setback Exhibit, last revised October 23, 2024;
- Development Block Standard Exhibit, last revised October 23, 2024;
- Lot Line Revision Exhibit, last revised October 23, 2024;
- Existing Easement Exhibit, dated October 14, 2024;
- Schematic Water Main Replacement Exhibits (2), dated October 2, 2024;
- Schematic 10' Multi-Use Path Exhibits (2), dated October 4, 2024
- Rendered Plan, dated October 23, 2024;
- Community Space Exhibit, dated October 23, 2024;
- Planting Irrigation / Hydrozone Diagram, dated October 23, 2024;
- Wayfinding Diagram, dated October 23, 2024;
- Highway Noise Overlay District Analysis, dated October 23, 2024;
- Green Building Statement, dated October 23, 2024;
- Site Signage Plan, dated October 24, 2024
- Amenity Building Zoning Compliance Diagram, dated October 23, 2024;

Documents unchanged from the September 18, 2024 TAC submission:

- 4-Story Building Zoning Compliance Diagram, dated June 14, 2024;

- Drainage Analysis, last revised September 18, 2024;
- Long-Term Operation & Maintenance Plan, last revised September 18, 2024;
- Water & Wastewater Demand Analysis, dated August 26, 2024;
- Wetland Delineation Report, dated May 8, 2024;
- Traffic Impact Study, dated May 16, 2024;
- Site Review Checklist, dated June 17, 2024;
- Subdivision Review Checklist, dated June 17, 2024;
- Eversource Will-Serve Letter, dated May 21, 2024;
- Lighting Cut Sheets
- Application Fee Calculation Form;
- Authorization Form

PROJECT SUMMARY

Existing Conditions

The proposed project is located at 100 Durgin Lane and includes lots identified as Map 239 Lots 13-2, 16 & 18 on the City of Portsmouth Tax Maps. The site was previously home to Christmas Tree Shops and Bed, Bath and Beyond locations which are no longer in operation. The properties are a combined 26.2 acres of land and are located in the Gateway District (G1) and also lies within the Highway Noise Overlay District. The property is bound to the west by Route 16, to the north by the Motel 6 property and Gosling Road, to the south by the Hampton Inn and Home Depot properties, and to the east by an Eversource easement, Pep Boys and Durgin Plaza.

Proposed Redevelopment

The proposed project consists of the demolition of the existing Christmas Tree Shops and Bed, Bath and Beyond building and the construction of approximately 360 rental housing units in a mix of seventeen (17) 3-story and 4-story buildings. One of these buildings, centrally located, is proposed to contain first and second-floor amenities for the use of residents. Site improvements include parking, pedestrian access, community spaces, utilities, stormwater management, lighting, and landscaping. The proposed project also includes a reduction in overall impervious surface on the development lot.

The proposed project will be providing 10% community space as required under the Development Site Conditional Use Permit for having more than one principal building on a single lot. Based on the lot area the required community spaces will exceed 2 acres and includes a public dog park, recreation areas, community walking paths, and open/green space.

Open Space & Buffer Enhancement

The proposed project results in work within the 100-foot wetland buffer and therefore is a Conditional Use Permit is required for demolition and construction activities. The 100-foot wetland buffer within the development area includes impervious parking surfaces, drive aisles, and roadways. The project will provide an overall improvement by reducing impervious cover within the 100-foot wetland buffer. The impervious surface impacts from the proposed project are shown in Table 1. In addition to the summary in Table 1 below, detailed calculations of the impervious surfaces within the buffer for the existing and proposed condition are depicted in the enclosed Wetland Buffer Impervious Surface Exhibit.

The project's landscape design proposes to replace existing impervious areas removed from the wetland buffer with a native grass mix and native trees in an effort to enhance the previously disturbed wetlands buffer.

Table 1. 100 Durgin Lane, Wetland Buffer Impervious Surfaces

Buffer Segment	Existing Impervious (SF)	Final Impervious (SF)
0-25 feet	3,114	2,467
25-50 feet	12,156	8,526
50-100 feet	45,975	33,333
Total	61,245	44,326
Net Impervious Surface	**-16,919 sf**	

Section 10.1017.24 of the Zoning Ordinance which indicates "Where feasible, the application shall include removal of impervious surfaces at least equal in area to the area of impervious surface impact. The intent of this provision is that the project will not result in a net loss of pervious surface within a jurisdictional wetland buffer." As shown in Table 1, the proposed project exceeds this requirement by providing an 16,919 SF reduction in impervious surface.

LAND USE PERMIT APPLICATIONS

Local Permitting Timeline

The proposed project will require the following site related approvals from the Planning Board:

- Site Plan Review Permit
- Lot Line Revision Permit
- Development Site Conditional Use Permit
- Highway Noise Overlay District Conditional Use Permit
- Wetland Conditional Use Permit

To date the applicant has attended the following meetings with the local land-use boards related to the Site Plan:

- February 15, 2024 – Planning Board Conceptual Consultation
- March 12, 2024 – Technical Advisory Committee Work Session
- April 8, 2024 – Conservation Commission Site Walk
- April 10, 2024 – Conservation Commission Work Session
- May 7, 2024 – Technical Advisory Committee Meeting
- June 12, 2024 – Conservation Commission Meeting
- July 10, 2024 – Conservation Commission Meeting
- July 2, 2024 – Technical Advisory Committee Meeting
- August 6, 2024 – Technical Advisory Committee Meeting
- August 14, 2024 – Conservation Commission Meeting
- September 11, 2024 – Conservation Commission Meeting
    - Recommendation for Approval from the Conservation Commission received
- October 1, 2024 – Technical Advisory Committee Meeting

The project will also require the following approvals from the New Hampshire Department of Environmental Services (NHDES):

- Alteration of Terrain Permit
- Sewer Connection Permit

Site Plan Review Permit

The project will require a Site Plan Review Permit for the site improvements described above in the project summary. The project has previously met with the Planning Board for Conceptual Consultation, as well as the Technical Advisory Committee (TAC) and Conservation Commission (CC) for work sessions and review meetings.

Zoning Compliance

The enclosed plans have been designed to comply with the City of Portsmouth Zoning Ordinance and specifically Article 5B – Gateway Neighborhood Mixed Use Districts. Exhibits have been prepared and included in this submission package demonstrating compliance with sections in the ordinance. Enclosed exhibits demonstrate compliance with Section 10.5B23 Façade Composition Standards and Section 10.5B83 Location of Motor Vehicle Parking Facilities.

The applicant is also requesting that the Planning Board allow an increase of building setback from the front lot line. As allowed by Section 10.5B41.60 "the Planning Board may require an increase in the building setback from lot lines where adjacent land uses may be incompatible. The enclosed figure demonstrates that the land uses along the boundary of the development site (wetland, wetland buffer & overhead utility easement) are incompatible with the required building setback from the lot line.

Lot Line Revision

The proposed redevelopment parcels located at 100 Durgin Lane consist of properties identified as Map 239 Lots 13-2, 16 & 18. The existing internal lot lines separating these three lots, are proposed to be relocated to better align the parcels for the proposed building footprints.

CONDITIONAL USE PERMITS

Development Site Conditional Use Permit

Under Section 10.5B41.10 Development Site Standards are "allowed by Conditional Use Permit (CUP) approval from the Planning Board, a development site is any lot or group of contiguous lots owned or controlled by the same person or entity, assembled for the purpose of a single development and including more than one principal building or building type". As the proposed development includes more than one principal building, a CUP to allow the use of the Development Site Standards is being requested for this proposed project.

Additionally, per Section 10.5B41.60 the "Planning Board may require landscaping, fencing, or an increase in the building setback from lot lines where adjacent land uses may be incompatible". As the land uses along the boundary of the development site (wetland, wetland buffer & overhead utility easement) are incompatible with the required building setback from the lot line, the applicant is requesting the planning board to allow an increase of building setback from the front lot line to 239.6' for an apartment building.

Community Space

As required under the Development Site Conditional Use Permit the project is required to provide a minimum of 10% community space. Based on the total lot area of 26.2 acres the project is required to provide a minimum of 2.62 acres of community space. The enclosed Community Space exhibit depicts how the project is meeting this requirement. The community space will be located throughout the development and include a variety of community space types as permitted by the Zoning Ordinance. The community space calculation is depicted in the enclosed Community Space Exhibit.

Development Site Conditional Use Permit Criteria

Based on the above described and enclosed materials, the following addresses how the Project warrants the granting of a Conditional Use Permit for a Development Site by satisfying the following four (4) criteria for approval in Section 10.5B43.10 of the Zoning Ordinance:

(1) The development project is consistent with the Portsmouth Master Plan.

The Project is consistent with several goals identified in the Master Plan.

- *Goal 1.2 is to encourage walkable mixed-use development along existing commercial corridors.* The proposed project has been designed to promote alternative modes of transportation such as walking and bicycling by incorporating bicycle storage spaces as well as maintaining a sidewalk connection to the existing sidewalks along Durgin Lane.
- *Goal 2.1 is to ensure that new development complements and enhances its surroundings.* The proposed residential buildings will further enhance the continued success of the adjacent commercial, retail, and restaurants located in the adjacent Durgin Plaza and surrounding parcels.

(2) The development project has been designed to allow uses that are appropriate for its context and consistent with City's planning goals and objectives for the area.

The Project has been designed to be complementary to the abutting uses. Residential buildings are an allowed use within the zone and the addition of public access is consistent with goals laid out in the City's Master Plan as described in criteria item 1.

(3) The project includes measures to mitigate or eliminate anticipated impacts on traffic safety and circulation, demand on municipal services, stormwater runoff, natural resources, and adjacent neighborhood character.

As described in the attached Traffic Impact Study, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed residential development is not expected to have a significant impact to traffic operations within the study area as compared to the current vacant site condition. Overall, the proposed condition represents a significant reduction in net trips compared to both the prior retail use and to potential re-leasing of the parcel for retail use.

The development site has been designed to mitigate stormwater runoff with the use of detention and filtration stormwater treatment practices. The proposed project is a significant improvement over existing conditions as there is minimal stormwater treatment on site.

The Project as designed will be complementary to the abutting commercial uses.

(4) The project is consistent with the purpose and intent set forth in Section 10.5B11.

Section 10.5B11.10 states that *"The purpose of Article 5B is to implement and support the goals of the City's Master Plan and Housing Policy to encourage walkable mixed-use development and continued economic vitality in the City's primary gateway areas, ensure that new development complements and enhances its surroundings, provide housing stock that is suited for changing demographics, and accommodate the housing needs of the City's current and future workforce."*

As described in Criteria 1 – 3 the Project is consistent with *the goals of the City's Master Plan including* Goal 1.2 and Goal 2.1.

The Project will also provide additional and much needed housing stock to the City in an area outside of the downtown core, with easy access to abutting retail and commercial areas, and public transportation.

Highway Noise Overlay District Conditional Use Permit

The project site is located within the Highway Noise Overlay District (HNOD) as defined in Section 10.613.60. The proposed residential land use qualifies as a "noise sensitive land use" and therefore requires a conditional use permit. A noise analysis prepared in compliance with Section 10.675 is included with this application for a conditional use permit.

Wetland Conditional Use Permit

Jurisdictional wetland areas, including forest, dense early successional shrub growth, and emergent wetland are present on site. A Conditional Use Permit for Wetland Buffer Impact will be required for the project for work within the 100 ft wetland buffer.

At the September 11th, 2024 meeting, the Conservation Commission voted to recommend the project for approval.

Wetland Conditional Use Permit Criteria

Based on the above described and enclosed materials, the following addresses how the proposed project warrants the granting of a Wetland Conditional Use Permit by satisfying the following six (6) criteria for approval in Section 10.1017.50 of the Zoning Ordinance:

(1) The land is reasonably suited to the use, activity or alteration.

The land is currently a previously disturbed site that was previously home to Christmas Tree Shops and Bed, Bath and Beyond building. The proposed project design is an allowed use within the Gateway Neighborhood Mixed Use District. Additionally, the proposed project site consists of a previously disturbed wetland buffer area which has historically been used as a commercial area. The proposed project will result in impervious surface reduction in the buffer, buffer enhancement, and will provide public access to the site.

(2) There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.

The placement of the proposed buildings and parking areas were sited in a way to reduce the areas of impervious surface within the 25-, 50-, and 100-foot wetland buffers. The proposed project design reduces the impervious surface within the 25-, 50-, and 100' buffers and proposes to replace existing impacted areas with native plants including trees, shrubs, and grasses.

(3) There will be no adverse impact on the wetland functional values of the site or surrounding properties;

There will be no adverse impact on the wetland functional values of the site as the existing condition is previously disturbed and consisting of parking areas, drive aisles, and accessways. There is no real functional wetland buffer area on the project site. The proposed project intends to reduce impervious surfaces from the wetland buffer area. The buffer will be enhanced by the removal of invasive species and enhance the existing vegetation with native vegetation. The proposed site and landscape designs site enhance the previously disturbed wetland buffer area from its existing condition and provide added value by creating public open space for recreation on the site and along the buffer.

(4) Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals; and

The proposed project design proposes minimal alteration to the natural woodland to the greatest extent practical. The areas impacted consist primarily of impervious surfaces and previously disturbed areas. Any temporary disturbances of the wetland buffer will be restored following construction.

(5) The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this Section.

The proposed project design is not an adverse impact to the site as it would enhance the buffer by reducing overall impervious surface on the site, improve water quality through stormwater treatment and provide public access to the site. In addition, the proposed project will reduce the impervious surface within the 25, 50, and 100-foot wetland buffers. The alternative to maintain the existing retail use presents greater impacts to the areas and environments under the jurisdiction of this Section.

(6) Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.

The proposed work within the vegetated buffer strip is limited to the removal of impervious areas and repaving of the existing access road to the north. The proposed project will collect and treat the onsite impervious surfaces prior to discharging to the onsite wetlands. Implementing these treatment measures will help improve the water quality discharged from the property. Areas temporarily disturbed for the removal of paved areas within the vegetated buffer strip will be restored following construction. The landscape plan proposes replacing the existing disturbed areas within the 25-foot wetland buffer with a native grass mix, mown as required to avoid incursions of invasive species, and the addition of several native trees and shrubs within the previously disturb buffer area.

CONCLUSION

As shown in the enclosed information, the proposed project is expected to create a vibrant, authentic, diverse, and connected development that provides high quality housing to a variety of income ranges and meaningful community spaces.

We respectfully request to be placed on the TAC meeting agenda for November 5th, 2024. If you have any questions or need any additional information, please contact me by phone at (603) 294-9213 or by email at NAHansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

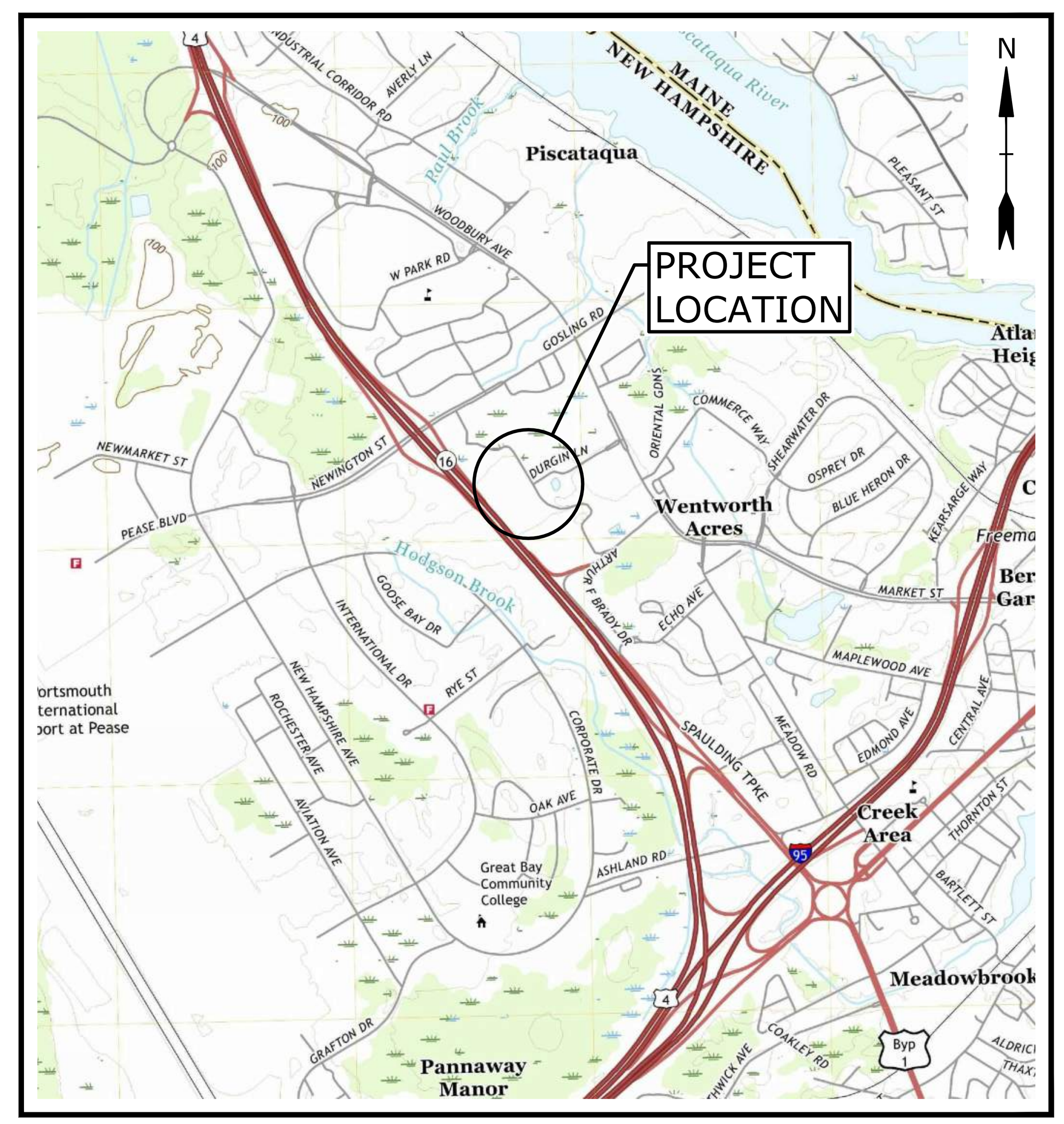
Enclosures
Copy: 100 Durgin Lane Owner, LLC
John K. Bosen, Bosen & Associates
Utile, Inc Architects
Aceto Landscape Architecture

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE
APRIL 22, 2024
LAST REVISED:
OCTOBER 23, 2024

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
-	COVER SHEET	10/23/2024
1 OF 4	TOPOGRAPHIC SURVEY NOTES	2/29/2024
2 OF 4	TOPOGRAPHIC SURVEY	2/29/2024
3 OF 4	TOPOGRAPHIC SURVEY	2/29/2024
4 OF 4	TOPOGRAPHIC SURVEY	2/29/2024
C-101	GENERAL NOTES AND LEGEND	10/23/2024
C-201	DEMOLITION PLAN	10/23/2024
C-202	DEMOLITION PLAN	10/23/2024
C-300	OVERALL SITE PLAN	10/23/2024
C-301	SITE PLAN	10/23/2024
C-302	SITE PLAN	10/23/2024
C-401	GRADING, DRAINAGE, AND EROSION CONTROL PLAN	10/23/2024
C-402	GRADING, DRAINAGE, AND EROSION CONTROL PLAN	10/23/2024
C-501	UTILITIES PLAN	10/23/2024
C-502	UTILITIES PLAN	10/23/2024
C-600	ABUTTERS' ACCESS EASEMENT PLAN	10/23/2024
C-601	ABUTTERS' UTILITY, DRAINAGE, AND GRADING EASEMENT PLAN	10/23/2024
C-602	COMMUNITY SPACE EASEMENT PLAN	10/23/2024
C-603	DEVELOPMENT SITE ACCESS EASEMENTS	10/23/2024
C-604	DEVELOPMENT SITE UTILITY & DRAINAGE EASEMENTS	10/23/2024
C-801	EROSION CONTROL NOTES AND DETAILS SHEET	10/23/2024
C-802	DETAILS SHEET	10/23/2024
C-803	DETAILS SHEET	10/23/2024
C-804	DETAILS SHEET	10/23/2024
C-805	DETAILS SHEET	10/23/2024
C-806	DETAILS SHEET	10/23/2024
C-807	DETAILS SHEET	10/23/2024
C-808	DETAILS SHEET	10/23/2024
C-809	DETAILS SHEET	10/23/2024
L0-01	LANDSCAPE NOTES	10/23/2024
L2-00	LAYOUT AND MATERIALS PLAN	10/23/2024
L3-00	PLANTING PLAN	10/23/2024
L4-00	PHOTOMETRIC PLAN	10/23/2024
L5-00	SITE DETAILS	10/23/2024
L5-01	SITE DETAILS	10/23/2024
L5-02	SITE DETAILS	10/23/2024
L5-03	SITE DETAILS	10/23/2024
L5-04	PLANTING DETAILS	10/23/2024
1 OF 15	4-STORY ELEVATOR BUILDING (AMENITY) ELEVATIONS	10/23/2024
2 OF 15	3-STORY WALK-UP BUILDING (SQUARE) ELEVATIONS	7/24/2024
3 OF 15	3-STORY WALK-UP BUILDING (SQUARES AGGREGATED) ELEVATIONS	7/24/2024
4 OF 15	3-STORY WALK-UP BUILDING (SHIFTED) ELEVATIONS	7/24/2024
5 OF 15	3-STORY WALK-UP BUILDING (SHIFTED AGGREGATED) ELEVATIONS	7/24/2024
6 OF 15	3-STORY WALK-UP BUILDING (SHIFTED AGGREGATED) ELEVATIONS	7/24/2024
7 OF 15	4-STORY BUILDING ELEVATIONS	7/24/2024
8 OF 15	4-STORY ELEVATOR BUILDING (AMENITY) FLOOR PLANS	10/23/2024
9 OF 15	4-STORY ELEVATOR BUILDING (AMENITY) FLOOR PLANS	10/23/2024
10 OF 15	3-STORY WALK-UP BUILDING (SQUARE) FLOOR PLANS	8/21/2024
11 OF 15	3-STORY WALK-UP BUILDING (SQUARES AGGREGATED) FLOOR PLANS	8/21/2024
12 OF 15	3-STORY WALK-UP BUILDING (SHIFTED) FLOOR PLANS	8/21/2024
13 OF 15	3-STORY WALK-UP BUILDING (SHIFTED AGGREGATED) FLOOR PLANS	8/21/2024
14 OF 15	4-STORY ELEVATOR BUILDING FLOOR PLANS	8/21/2024
15 OF 15	MAINTENANCE AREA PLAN & ELEVATIONS	10/23/2024

LIST OF PERMITS		
LOCAL	STATUS	DATE
SITE PLAN REVIEW PERMIT	PENDING	
LOT LINE REVISION PERMIT	PENDING	
CONDITIONAL USE PERMIT - DEVELOPMENT SITE	PENDING	
CONDITIONAL USE PERMIT - WETLAND BUFFER	PENDING	
CONDITIONAL USE PERMIT - HIGHWAY NOISE OVERLAY DISTRICT	PENDING	
STATE		
NHDES - SEWER CONNECTION PERMIT	NOT SUBMITTED	
NHDES - ALTERATION OF TERRAIN PERMIT	NOT SUBMITTED	
FEDERAL		
NPDES - CONSTRUCTION GENERAL PERMIT	NOT SUBMITTED	



LOCATION MAP
SCALE: 1" = 2000'

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

PREPARED BY:
Tighe&Bond
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE 03801
603-433-8818

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

OWNER/APPLICANT:
100 Durgin Lane Owner LLC
ONE MARINA PARK DRIVE, SUITE 1500
BOSTON, MA 02210

SURVEYOR:
HOLDEN ENGINEERING & SURVEYING, INC.
56 OLD SUNCOOK ROAD, PO BOX 480
CONCORD, NH 03302

ARCHITECT:
UTILE
115 KINGSTON STREET
BOSTON, MA 02111

LANDSCAPE ARCHITECT:
ACETO LANDSCAPE ARCHITECTS
424 FORE STREET #3B
PORTLAND, ME 04101

TAC SUBMISSION
COMPLETE SET (53) SHEETS

Last Saved: 10/22/2024
Plotted On:Oct 22, 2024-4:03pm By: BCurcio
Tighe & Bond: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-COVER.dwg

ITEMS CORRESPONDING TO SCHEDULE B:

9 Rights and easements in favor of the United States of America relating to electric power transmission lines as described in the Judgment on Declaration of Taking dated October 20, 1952 and recorded at Book 1263, Page 201; Order Amending Judgment on Declaration of Taking recorded November 26, 1954, at Book 1337, Page 277; Order of Court Amending Judgment on the Declaration of Taking, as Amended dated June 29, 1954, and recorded at Book 1340, Page 437 on December 29, 1954; Final Judgment of Condemnation for Tracts dated February 25, 1955, at Book 1370, Page 335; and Certification dated December 8, 1955, and recorded at Book 1379, Page 216. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

10 Rights and easements granted to Public Service Company of New Hampshire by instrument recorded at Book 1350, Page 186; agreement and consent to joint use between Public Service Company of New Hampshire and Costco Wholesale Corporation dated October 21, 1992, and recorded at Book 2965, Page 2892; rights and easements granted by Costco Wholesale Corporation to Public Service Company of New Hampshire and New England Telephone and Telegraph Company (NET&T) dated February 10, 1993, and recorded at Book 2972, Page 1422; and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

11 Right of way granted by Shaw's Realty Co. to Gilbert E. and Dorothy Soucy dated July 30, 1992, and recorded at Book 2965, Page 548. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

12 Rights and easements granted to New England Telephone and Telegraph Company dated April 12, 1957, and recorded at Book 1430, Page 375. MAY AFFECT THE SUBJECT PROPETY – VAGUE DESCRIPTION – NOT PLOTTABLE.

13 Rights, easements, terms and obligations set forth in the Agreement between Gilbert E. Soucy and Dorothy Soucy and Costco Wholesale Corporation dated November 3, 1992, and recorded at Book 2956, Page 2200. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

14 Rights and easements granted to Gilbert E. and Dorothy Soucy for vehicular and pedestrian ingress and egress and for electric, telephone and cable television transmission lines as more fully described in the Grant of Right–of–Way from Costco Wholesale Corporation recorded at Book 2966, Page 754. MAY AFFECT THE SUBJECT PROPERTY – DOCUMENT DOES NOT DESCRIBE LOCATION – NOT PLOTTABLE.

15 Rights and easements to lay, construct, operate, inspect, repair, maintain, renew, replace and remove underground sanitary sewer mains through a trip of land 20 feet in width as more fully described in the Sewer Easement from Costco Wholesale Corporation to Robert D. Haverty and Kathleen M. Haverty, Trustees of SFL Realty Trust, and Saturn Realty LLC dated June 9, 1994, and recorded at Book 3102, Page 379 and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY (LOT 239–18) – SHOWN ON PLAN.

16 Rights and easements granted by Costco Wholesale Corporation to Saturn Realty LLC by Access Easement dated June 9, 1994, and recorded at Book 3102, Page 381, and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

17 Rights and easements for ingress and egress as more fully described in the Access Easement from Costco Wholesale Corporation to Robert D. Haverty and Kathleen M. Haverty, Trustees of SFL Realty Trust, dated June 9, 1994, and recorded at Book 3102, Page 391. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

18 Use limitations and general maintenance obligations as more fully set forth in the Real Estate Operation Agreement between the Trustees of SFL, Realty Trust and Costco Wholesale Corporation dated as of June 9, 1994, and recorded at Book 3114, Page 601. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

19 Rights and easements for access and utilizes as described in the Easement Deed from Costco Wholesale Corporation to Gilbert E. Soucy and Dorothy Soucy dated November 11, 1992, and recorded at Book 2956, Page 2205; and Access Easement Deed dated June 12, 1996, from Costco Wholesale Corporation to Gilbert E. Soucy and Dorothy Soucy recorded at Book 3160, Page 2035, as affected by Amended Access Easement Deed between MIC PNH, LLC and Bed Bath & Beyond, Inc. dated November 21, 2013, and recorded at Book 5505, Page 683. See also Plan of Supplemental Access Easement recorded as Plan D–35346 and Amended Access Easement dated November 19, 2013, and recorded at Book 5498, Page 2502; and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

20 Rights and easement for utilizes in the Utility Easement Deed from Costco Wholesale Corporation to Gilbert E. Soucy and Dorothy Soucy dated June 12, 1996, and recorded at Book 3160, Page 2039; and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

21 Rights and easements in favor of the City of Portsmouth as described in the Access Easement Deed from Costco Wholesale Corporation dated June 12, 1996 and recorded at Book 3160, Page 2042. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

22 Rights and easements granted by Costco Wholesale Corporation to Gilbert E. Soucy and Dorothy Soucy as more fully described in the Slope and Landscape Easement Deed dated June 12, 1996, and recorded at Book 3160, Page 2045. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

23 Rights and easements in favor of Gilbert E. Soucy and Dorothy Soucy as set forth in the Drainage Easement Deed from Costco Wholesale Corporation dated June 12, 1996, and recorded at Book 3160, Page 2051; and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

24 Rights and easements for ingress and egress as more fully described in the Access Easement granted by SFL, LLC to Gilbert Soucy and Dorothy Soucy dated June 13, 1996, and recorded at Book 3160, Page 2033. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

ITEMS CORRESPONDING TO SCHEDULE B:

25 Terms and provisions set forth in the Conservation Easement from SFL L.L.C. to the City of Portsmouth dated November 21, 1996 and recorded at Book 3192, Page 282. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

26 Terms and conditions of the Operation and Maintenance Agreement between SFL, LLC and During [sic.] Lane Hotel Corp. dated as of June 21, 1996 and recorded at Book 3165, Page 1545. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

27 Rights and easements for access, parking, utilities and signage as more fully described in the Access, Parking Signage and Utility Easement granted by Robert D. Haverty and Kathleen M. Haverty, Trustees of SFL Realty Trust, to Saturn Realty LLC dated June 9, 1994, and recorded at Book 3102, Page 397, as affected by the Quitclaim Deed and Release to Home Depot USA, Inc. from Saturn Realty LLC dated March 6, 1997 recorded in the Registry at Book 3202, Page 2465. DOES AFFECT THE SUBJECT PROPERTY (LOT 239–13–2) – SHOWN ON PLAN.

28 Rights and easements for access, parking, utilities and signage as more fully described in the instrument granted by Saturn Realty LLC to Robert D. Haverty and Kathleen M. Haverty, Trustees of SFL Realty Trust, dated June 9, 1994, and recorded at Book 3102, Page 400, as affected by deed from Home Depot U.S.A., Inc. to Saturn Realty, LLC recorded March 10, 1997, at Book 3202, Page 2462. DOES AFFECT THE SUBJECT PROPERTY (LOT 239–13–1) – SHOWN ON PLAN.

29 Terms and conditions set forth in the Mutual Access Easement between Home Depot U.S.A., Inc. and Thomas J. Flatley recorded September 14, 2006, at Book 4707, Page 1682, as may be affected by that certain Site Plan prepared by Appledore Engineering, Inc. recorded as Plan No. D–34142 on September 14, 2006. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

30 Rights and easements set forth in the Grant of Right–of–Way from Durgin Square Limited Partnership Louis L. Dow, Sr. et al. dated July 28, 1992, and recorded at Book 2939, Page 504; and as shown on the 2019 ALTA Survey described herein. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

31 Such state of facts and matters as shown on ALTA/NSPS Land Title Survey prepared by CDS Commercial Due Diligence Services bearing Field Date November 18, 2019, Project Address 100 Durgin Lane, Portsmouth NH; Project Name: BBBY Portfolio; CDS Project Number: 19–09–0671:011, Approved CDS Surveyor, Holden Engineering & Surveying, Inc. (the "2019 ALTA Survey") including the following: REFERENCES PRIOR VERSION OF CURRENT PLAN – NO ADDITIONAL MATTERS TO PLOT.

(a) encroachment of headwall extending 9.9+/– feet onto the Land;
(b) parking spaces and pavement located within easements described herein, to the extent the easement is in full force and effect;
(c) overhead and underground utility lines;
(d) utility poles and guy wires;
(e) landscaping, berms and medians traversing the boundary lines of the Land;
(f) City of Portsmouth site restrictions, building setbacks, and parking requirements;
(g) catch basins and drain manholes;
(h) water shut–offs and hydrants;
(i) sewer manholes;
(j) electric and gas meters; and
(k) signage.

32 Rights, easements and obligations pertaining to ingress and egress as more fully described in the Access Easement Agreement between Home Depot U.S.A., Inc. and OCW Retail–Portsmouth, LLC dated as of December 27, 2007, and recorded on January 3, 2008, at Book 4875, Page 1438. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

33 Covenants and restrictions set forth in the Declaration of Use Restriction between Bed Bath & Beyond, Inc. and Home Depot U.S.A., Inc. dated as of December 27, 2007, and recorded on January 3, 2008, at Book 4875, Page 1464. DOES AFFECT THE SUBJECT PROPERTY – NOT SURVEY RELATED – NOT PLOTTABLE.

34 Rights and easements relating to signage as more fully described in the Directional Signage Easement between Home Depot U.S.A., Inc., OCW Retail–Portsmouth, LLC and Bed Bath & Beyond, Inc. dated as of December 27, 2007, and recorded at Book 4875, Page 1477 on January 3, 2008. DOES AFFECT THE SUBJECT PROPERTY – BLANKET DESCRIPTION – NOT PLOTTABLE.

35 Such state of facts and matters as shown on the plan entitled "Easement Plan Hampton Inn, Tax Map 239 Lots 15 & 18, Property of MIC PNH, LLC & Bed Bath & Beyond, Inc., 99 & 100 Durgin Lane, County of Rockingham, Portsmouth, New Hampshire", prepared by MSC Civil Engineers & Land Surveyors, Inc., dated February 20, 2013, revised through April 2, 2013, and recorded December 2, 2013, as Plan No. D–38033. DOES AFFECT THE SUBJECT PROPERTY – SHOWN ON PLAN.

36 INTENTIONALLY DELETED.

37 INTENTIONALLY DELETED.

38 Subject to Subordination, Non–Disturbance and Attornment Agreement, recorded on January 6, 2022, in Book 6372, Page 839. DOES AFFECT THE SUBJECT PROPERTY – NOT SURVEY RELATED – NOT PLOTTABLE.

39 Subject to Conditions, Etc. contained in Quitclaim Deed, recorded on December 27, 2021, in Book 6369, Page 422 and re–recorded on December 30, 2021, in Book 6370, Page 340. NO DOCUMENT PROVIDED.

40 Subject to Easements contained in Quitclaim Deed, recorded on December 27, 2021, in Book 6369, Page 422 and re–recorded on December 30, 2021, in Book 6370, Page 340. NO DOCUMENT PROVIDED.

TITLE INFORMATION:

THE TITLE DESCRIPTION AND SCHEDULE B ITEMS HEREON ARE FROM FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. OAK ST INVEST DURGIN LANE WITH AN EFFECTIVE DATE OF NOVEMBER 9, 2023 AT 12:00 PM.

BASIS OF BEARINGS:

BEARINGS BASED ON PLAN D–35346 AND SHOWN ON PLAN AS N 59° 39' 24" E.

FLOOD NOTE:

Said described property is located within an area having a Zone Designation X by the Federal Emergency Management Agency (FEMA), on Flood Insurance Rate Map No. 33015C0260E, with a date of identification of May 17, 2005, for Community Panel No. 0260, in Rockingham County, State of New Hampshire, which is the current Flood Insurance Rate Map for the community in which said property is situated.

Zone "X" Denotes Areas of minimal flood hazard (No Shading)

The subject property IS NOT in a Special Flood Hazard Area

PARKING INFORMATION:

616 REGULAR SPACES
16 HANDICAPPED ACCESSIBLE SPACES

632 TOTAL PARKING SPACES

NOTES:

1. THE OWNER OF RECORD IS OAK STREET INVESTMENT GRADE NET LEASE FUND SERIES 2021–2 LLC, 30 N. LA SALLE ST. SUITE 4140, CHICAGO, IL 60602.

2. REFERENCE THE SUBJECT PROPERTIES AS TAX MAP 239 LOTS 16, 18, AND 13–2, PER THE CITY OF PORTSMOUTH, NH ASSESSORS MAPS.

3. DEED REFERENCE FOR THE SUBJECT PARCEL IS BOOK 6370, PAGE 340, AS RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

4. TOTAL AREA OF SUBJECT PARCEL IS 1,138,161 SQUARE FEET, OR 25.15 ACRES.

5. TABLE A ITEM 16– THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

6. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE PREMISES; THERE ARE NO VISIBLE ENCROACHMENTS ON THE SUBJECT PROPERTY OR UPON ADJACENT LAND ABUTTING SAID PROPERTY EXCEPT AS SHOWN HEREON AND WAS MADE IN ACCORDANCE WITH LAWS AND/ OR MINIMUM STANDARDS OF THE STATE OF NEW HAMPSHIRE.

7. THE PROPERTY HAS DIRECT ACCESS TO DURGIN LANE A PUBLIC WAY AND INDIRECT ACCESS TO GOSLING ROAD A PUBLIC WAY.

8. THE INTERNAL CONTIGUITY OF THE SUBJECT PROPERTY HAS NO OVERLAPS, GAPS, OR GORES.

9. THE PROPERTY DESCRIBED HEREON HAS THE STREET ADDRESS AS FOLLOWS: 100 DURGIN LANE, PORTSMOUTH, NH

10. SAID PREMISES IS A SEPARATELY SUBDIVIDED TRACT.

11. ANY OFFSITE EASEMENTS OR SERVITUDES BENEFITTING THE SURVEYED PROPERTY AND DISCLOSED IN RECORD DOCUMENTS ARE DEPICTED HEREON.

12. "ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, PARKING, EASEMENTS SERVITUDES, AND ENCROACHMENTS ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON" IS NOT NOTED.

13. THE SUBJECT PROPERTY DOES NOT FALL WITHIN A WETLANDS AREA.

14. THERE WERE NO PARTY WALLS OBSERVED AT THE TIME OF SURVEY.

15. THERE IS NO VISIBLE EVENDENCE OF A CEMETERY ON THE SUBJECT PROPERTY AT THE TIME OF THE SURVEY.

16. HORIZONTAL DIMENSIONS ARE BASED ON THE 1983 NORTH AMERICAN DATUM (NAD 83) AND ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

STATEMENT OF ENCROACHMENTS

A HEADWALL EXTENDS ONTO SUBJECT PROPERTY 9.9' +/–

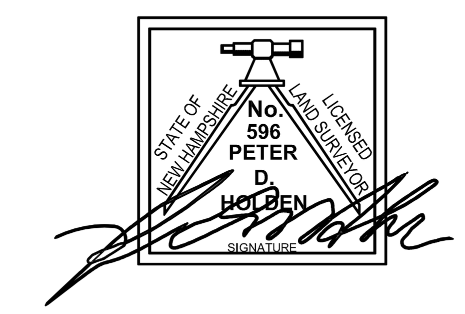
SURVEYOR'S CERTIFICATE:

To: Stebbins, Lazos & Van Der Beken PLLC; First American Title Insurance Company; and 100 Durgin Lane Owner LLC.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 13, 14, 16, and 21(a) (Graphically depict in relation to the subject tract or property any offsite easements or servitudes benefitting the surveyed property and disclosed in Record Documents provided to the surveyor as part of the Schedule "A") of Table A thereof.

The field work was completed on August, 22, 2023

Peter D. Holden
Surveyor No. 596
In The State Of New Hampshire



ZONING INFORMATION:

ZONING INFORMATION TAKEN FROM THE REPORT PREPARED BY THE PLANNING & ZONING RESOURCE COMPANY, PZR SITE NUMBER 167869–1, DATED SEPTEMBER 12, 2023.

ZONE IS "G1" GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR

SITE RESTRICTIONS:
MINIMUM LOT SIZE = NOT SPECIFIED
MINIMUM LOT FRONTAGE = 100 FEET
MINIMUM LOT WIDTH = NOT SPECIFIED
MINIMUM LOT DEPTH = NOT SPECIFIED
MAXIMUM BUILDING HEIGHT = 4 STORIES/50 FEET
MAXIMUM LOT COVERAGE = 70%

SETBACKS:
FRONT = 0 FEET MINIMUM/ 50 FEET MAXIMUM
SIDE = 15 FEET
REAR = 15 FEET

PARKING:
ALL RETAIL TRADE USES: 1 SPACE PER 300 SQ. FT. OF GROSS FLOOR AREA
(78,317 / 300 = 261) 261 TOTAL PARKING SPACES REQUIRED.

THE CURRENT USE IS PERMITTED IN THIS DISTRICT.

THE ABOVE RESTRICTIONS WERE OBTAINED FROM THE TOWN OF PORTSMOUTH, NH ZONING CODE

WETLAND NOTES:

The delineation work was performed on November 11, 2023 by Brendan Quigley, CWS #249 utilizing the following standards:

1. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, (Version 2.0) January 2012, U.S. Army Corps of Engineers.

2. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.2. United States Department of Agriculture (2018).

3. New England Hydric Soils Technical Committee. 2019 Version 4, Field Indicators for Identifying Hydric Soils in New England. New England Interstate Water Pollution Control Commission, Lowell, MA.

4. U.S. Army Corps of Engineers National Wetland Plant List, version 3.5. (2020)

HOLDEN ENGINEERING & SURVEYING, inc.

■ 56 Old Suncook Road
PO Box 480 Concord, NH 03302
(603) 225-6449

□ 9 Constitution Drive
Bedford, NH 03110
(603) 472-2078

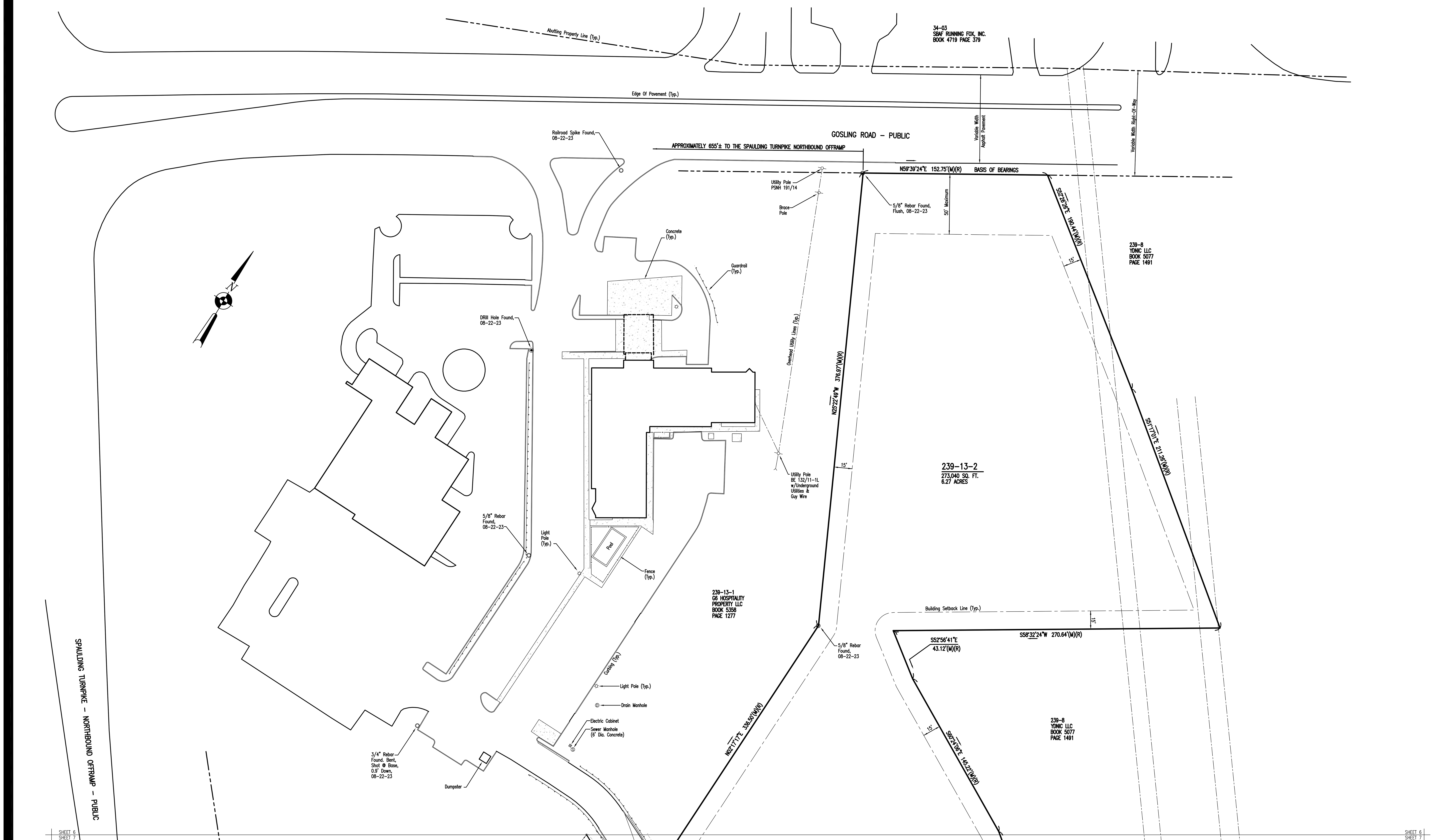
ALTA / NSPS LAND TITLE SURVEY PREPARED FOR
100 DURGIN LANE OWNER LLC
100 DURGIN LANE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE

Revisions

	Date:	Description	Dr. By	Chk. By
1.	11-10-23	REVISED PER CLIENT COMMENTS	DS	LR
2.	02-13-24	MINOR UTILITY EDITS	DS	PH
3.	02-29-24	UPDATE TITLE COMMITMENT	DS	LR
4.				
5.				

Book	Page

Date: 08-10-23
Scale: NONE
Dr. By: DS Ck By: LR
Job No. 2320547
Sheet no 1 of 8



LEGEND:

- ABUTTING PROPERTY LINE
- TREELINE
- UNDERGROUND ELECTRIC (Paint)
- SEWER LINE (Paint)
- 10 FOOT CONTOUR
- 2 FOOT CONTOUR
- CURBING
- EDGE OF PAVEMENT
- FENCE
- GUARDRAIL
- PROPERTY LINE
- FORMER LOT LINE
- BUILDING SETBACK LINE
- OVERHEAD UTILITY LINES
- EASEMENT
- STONEWALL
- FLAGGED WETLAND
- SWALE
- GAS LINE (Paint)
- CONCRETE
- CATCH BASIN
- DRAIN MANHOLE
- ELECTRIC BOX
- LIGHT POLE
- REBAR OR RAILROAD SPIKE
- DRILL HOLE
- POST
- SIGN
- SEWER MANHOLE
- UTILITY POLE OR BRACE POLE
- WATER SHUT-OFF
- HYDRANT
- ELECTRIC METER
- GAS METER
- FLAG POLE
- GAS SHUT-OFF
- BORING
- WETLAND FLAG LOCATION
- BOLLARD
- TREE

I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND HAS A MAX. ERROR OF CLOSURE OF 1:10,000 ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 596 PETER D. HOLDEN SIGNATURE

SCALE: 1" = 40'

40 0 40 80 120

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9 Constitution Drive
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TOPOGRAPHIC SURVEY PREPARED FOR
100 DURGAN LANE OWNER LLC
100 DURGIN LANE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE

	Date:	Revisions Description	Dr. By	Chk. By
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4.				
5.				

Book | Page

Date: 08-10-23
Scale: 1"=40'
Dr. By: DS Ck By: LR
Job No. 2320547
Sheet no 6 of 8

SHEETS-6-7-8

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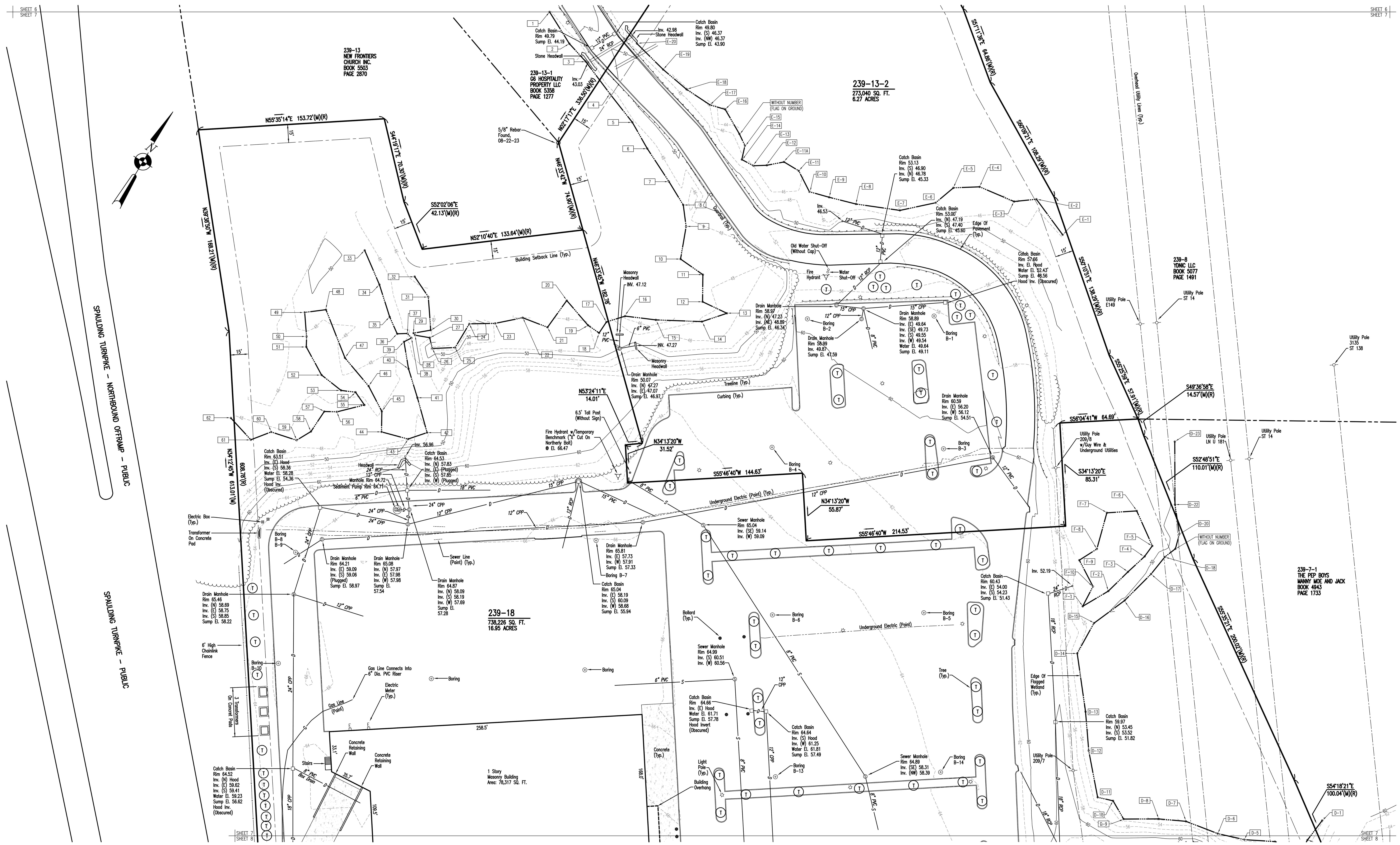

LEGEND:

- ABUTTING PROPERTY LINE
- TREELINE
- UNDERGROUND ELECTRIC (Point)
- SEWER LINE (Point)
- 10 FOOT CONTOUR
- 2 FOOT CONTOUR
- CURBING
- EDGE OF PAVEMENT
- FENCE
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40 0 40 80 120

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100 DURGAN LANE OWNER LLC
100 DURGIN LANE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE

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Sheet no 6 of 8

SHEETS-6-7-8

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I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND HAS A MAX. ERROR OF CLOSURE OF 1:10,000 ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE
No. 596
PETER D. HOLDEN
LICENSED LAND SURVEYOR

HOLDEN ENGINEERING & SURVEYING, inc.

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TOPOGRAPHIC SURVEY PREPARED FOR

100 DURGAN LANE OWNER LLC

100 DURGIN LANE, PORTSMOUTH, ROCKINGHAM COUNTY, NEW HAMPSHIRE

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Sheet no 6 of 8

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GENERAL NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH.
3. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED LAND SURVEYOR TO DETERMINE ALL LINES AND GRADES.
4. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES AND COMPLY WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR AND COMPLY WITH ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES AND SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES & SPECIFICATIONS.
9. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS AND WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION", CURRENT EDITION.
10. CONTRACTOR TO SUBMIT AS-BUILT PLANS IN DIGITAL FORMAT (.DWG AND .PDF FILES) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR.
11. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.
13. APPLICANT SHALL SUBMIT, AS PART OF THE FINAL POST APPROVAL PROCEDURES, RELEVANT PTAP INFORMATION USING THE MOST RECENT ONLINE DATA PORTAL CURRENTLY MANAGED BY THE UNH STORMWATER CENTER. THE PLANNING DEPARTMENT SHALL BE NOTIFIED AND COPIED OF THE PTAP DATA SUBMITTAL.

DEMOLITION NOTES:

1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
2. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
3. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
4. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
7. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY AND CITY OF PORTSMOUTH STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE, AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
9. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
10. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CURBS, LIGHTING, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, STAIRS, SIGNS, FENCES, RAMPS, WALLS, BOLLARDS, BUILDING SLABS, FOUNDATION, TREES AND LANDSCAPING.
11. REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
12. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
13. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS/CURB INLETS WITHIN CONSTRUCTION LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
14. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
15. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
16. THE CONTRACTOR SHALL REMOVE AND SALVAGE EXISTING GRANITE CURB FOR REUSE.

SITE NOTES:

1. PAVEMENT MARKINGS SHALL BE INSTALLED AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, ADA SYMBOLS, PAINTED ISLANDS, FIRE LANES, CROSS WALKS, ARROWS, LEGENDS AND CENTERLINES. ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE PAVEMENT MARKINGS. ALL THERMOPLASTIC PAVEMENT MARKINGS INCLUDING LEGENDS, ARROWS, CROSSWALKS AND STOP BARS SHALL MEET THE REQUIREMENTS OF AASHTO M249. ALL PAINTED PAVEMENT MARKINGS INCLUDING CENTERLINES, LANE LINES AND PAINTED MEDIANS SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F".
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PAVEMENT MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. STOP BARS SHALL BE EIGHTEEN (18) INCHES WIDE, WHITE THERMOPLASTIC AND CONFORM TO CURRENT MUTCD STANDARDS.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.

9. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION AT CURB LINE AFTER CONCRETE FORMS FOR SIDEWALKS AND PADS HAVE BEEN STRIPPED. COORDINATE WITH BUILDING CONTRACTOR.
10. ALL LIGHT POLE BASES NOT PROTECTED BY A RAISED CURB SHALL BE PAINTED YELLOW.
11. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING RETAINING WALL DESIGN FROM STRUCTURAL ENGINEER AND/OR WALL MANUFACTURER. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO CONSTRUCT WALL IN ACCORDANCE WITH DESIGN APPROVED BY THE ENGINEER. RETAINING WALL SHALL BE SEGMENTAL BLOCK WALL SYSTEM AS OUTLINED IN THE DETAILS.
13. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
14. THE APPLICANT SHALL HAVE A SITE SURVEY CONDUCTED BY A RADIO COMMUNICATIONS CARRIER APPROVED BY THE CITY'S COMMUNICATIONS DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE POLICE AND RADIO CONFIGURATION. IF THE SITE SURVEY INDICATES IT IS NECESSARY TO INSTALL A SIGNAL REPEATER EITHER ON OR NEAR THE PROPOSED PROJECT, THOSE COSTS SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR THE CITY.
15. THE PROPERTY OWNER WILL BE RESPONSIBLE FOR TIMELY SNOW REMOVAL FROM ALL PRIVATE SIDEWALKS, DRIVEWAYS, AND PARKING AREAS. ALL SNOW REMOVAL SHALL BE HAULED OFF-SITE AND LEGALLY DISPOSED OF AS NECESSARY WHEN STORAGE AREAS HAVE REACHED CAPACITY.

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL), UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND LOADING DOCK AREAS ADJACENT TO THE BUILDING.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
6. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
7. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

EROSION CONTROL NOTES:

1. SEE SHEET C-801 FOR GENERAL EROSION CONTROL NOTES AND DETAILS.

UTILITY NOTES:

1. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - NATURAL GAS - UNITIL
   - WATER - CITY OF PORTSMOUTH
   - SEWER - CITY OF PORTSMOUTH
   - ELECTRIC - EVERSOURCE
   - COMMUNICATIONS - CONSOLIDATED COMM/FAIRPOINT/COMCAST
2. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, CEMENT LINED DUCTILE IRON PIPE.
3. ALL WATER MAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF PORTSMOUTH WATER DEPARTMENT.
4. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
5. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
6. CONNECTION TO EXISTING WATER MAIN SHALL BE CONSTRUCTED TO CITY OF PORTSMOUTH STANDARDS.
7. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
8. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
9. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
10. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
12. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
13. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
14. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
15. HYDRANTS, GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
16. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
17. ALL SEWER PIPE WITH LESS THAN 6' OF COVER IN PAVED AREAS OR LESS THAT 4' OF COVER IN UNPAVED AREAS SHALL BE INSULATED.
18. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
19. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER.
20. FINAL FIRE & DOMESTIC SERVICE CONNECTION SIZES TO BE DETERMINED BY PROJECT PLUMBING ENGINEER PRIOR TO CONSTRUCTION.
21. CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.

EXISTING CONDITIONS PLAN NOTES:

1. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY HOLDEN ENGINEERING AND SURVEYING, INC. DATED 8/10/2023, LAST REVISED 2/13/2024.
2. WETLAND DELINEATION BY BRENDAN QUIGLEY, CWS #243 OF GOVE ENVIRONMENTAL SERVICES, INC., ON 11/11/2023, AND FIELD LOCATED BY HOLDEN ENGINEERING AND SURVEYING AT A FUTURE DATE.

LEGEND

APPROXIMATE LIMIT OF SAWCUT
APPROXIMATE LIMIT OF WORK
APPROXIMATE LIMIT OF PAVEMENT TO BE REMOVED
EXISTING TREES TO BE REMOVED
EXISTING BUILDING TO BE REMOVED
LOCATION OF PROPOSED BUILDING
PROPOSED PAVEMENT SECTION
PROPERTY LINE
EXISTING EASEMENT
PROPOSED GUARDRAIL
EXISTING GUARDRAIL
FLAGGED WETLAND
PROPOSED EDGE OF PAVEMENT
PROPOSED CURB
60 PROPOSED MAJOR CONTOUR LINE
61 PROPOSED MINOR CONTOUR LINE
PROPOSED SILT SOCK
CATCH BASIN
DRAIN MANHOLE
ELECTRIC BOX
LIGHT POLE
POST
SIGN
SEWER MANHOLE
UTILITY POLE OR BRACE POLE
WATER SHUT-OFF
HYDRANT
E ELECTRIC METER
G GAS METER
GAS SHUT-OFF
PROPOSED DRAIN MANHOLE
PROPOSED CATCH BASIN
PROPOSED YARD DRAIN
PROPOSED RAIN GUARDIAN TURRET
PROPOSED FLARED END SECTION
PROPOSED CONTECH JELLYFISH FILTER UNIT
PROPOSED OUTLET CONTROL STRUCTURE
PROPOSED INLET PROTECTION BARRIER
PROPOSED DRAINLINE
PROPOSED SEWER MANHOLE
PS PROPOSED SEWER LINE
PG PROPOSED GAS LINE
PW PROPOSED WATER LINE
SFM PROPOSED SEWER FORCE MAIN
SFM APPROXIMATE EXISTING SEWER FORCE MAIN
XW APPROXIMATE WATER LINE
WV PROPOSED WATER VALVE
PROPOSED THRUST BLOCK
PE PROPOSED UNDERGROUND ELECTRIC LINE
PC&T PROPOSED UNDERGROUND TELECOMS
T PROPOSED TRANSFORMER
100' WETLAND BUFFER
50' LIMITED CUT BUFFER
25' VEGETATIVE BUFFER

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AC	ACRES
ADA	AMERICANS WITH DISABILITIES ACT
AGGR	AGGREGATE
BLDG	BUILDING
BC	BOTTOM OF CURB
CB	CATCH BASIN
CONST	CONSTRUCT
COORD	COORDINATE
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
DWG	DRAWING
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EV	ELECTRIC VEHICLE
FF	FINISHED FLOOR
FGC	FLUSH GRANITE CURB
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
L	LENGTH
LF	LINEAR FEET
MAX	MAXIMUM
MIN	MINIMUM
OC	ON CENTER
PCB	PROPOSED CATCH BASIN
PDMH	PROPOSED DRAINAGE MANHOLE
POCS	PROPOSED OUTLET STRUCTURE
PROP	PROPOSED
PSMH	PROPOSED SEWER MANHOLE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SGC	SLOPED GRANITE CURB
SF	SQUARE FEET
STD	STANDARD
TBR	TO BE REMOVED
TC	TOP OF CURB
TYP	TYPICAL
UD	UNDERDRAIN
VGC	VERTICAL GRANITE CURB
VIF	VERIFY IN FIELD
W/	WITH
PYD	PROPOSED YARD DRAIN

Tighe&Bond

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

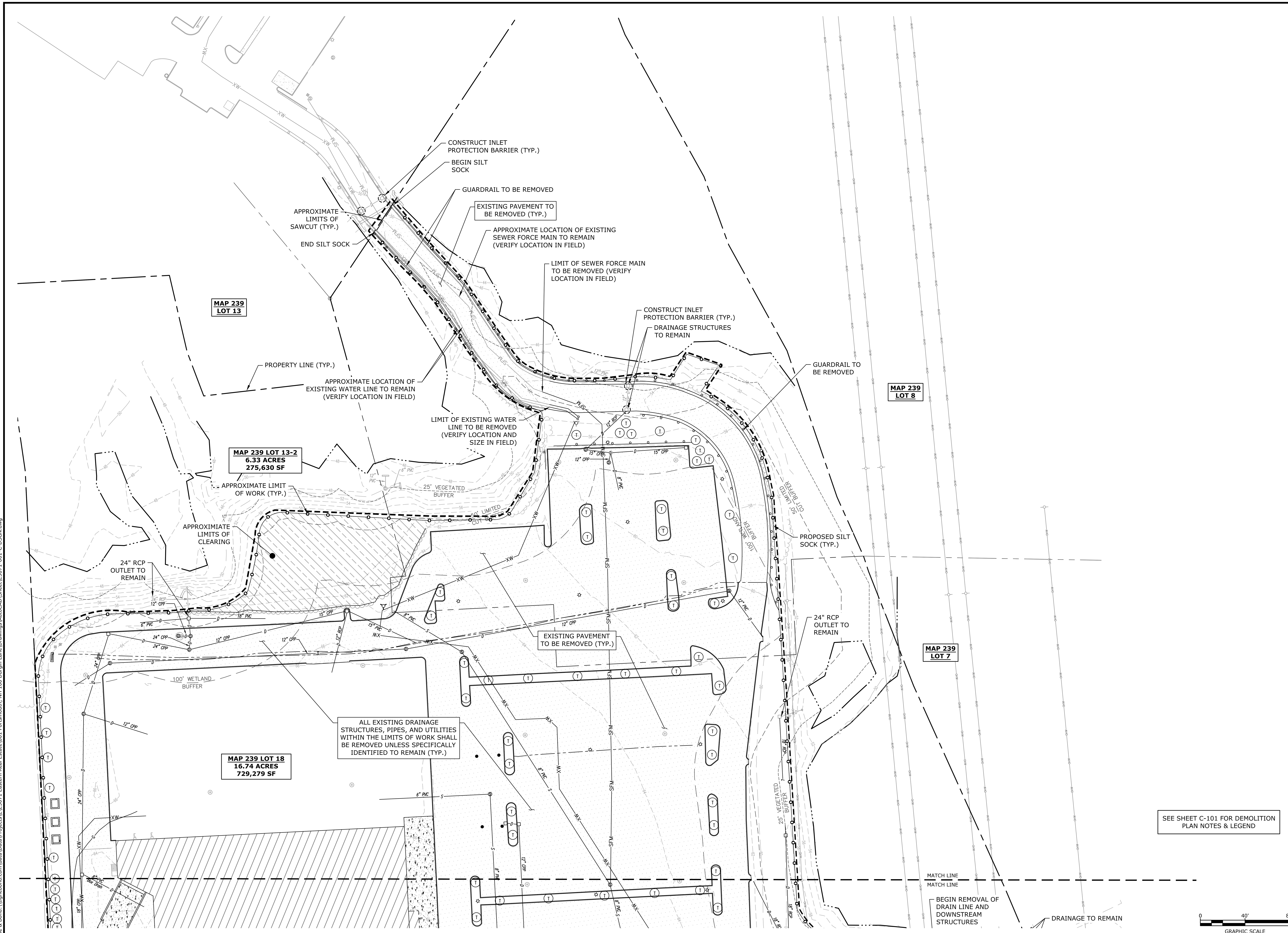
MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

GENERAL NOTES AND LEGENDS

SCALE: AS SHOWN

C-101



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Tighe&Bond

STATE OF NEW HAMPSHIRE
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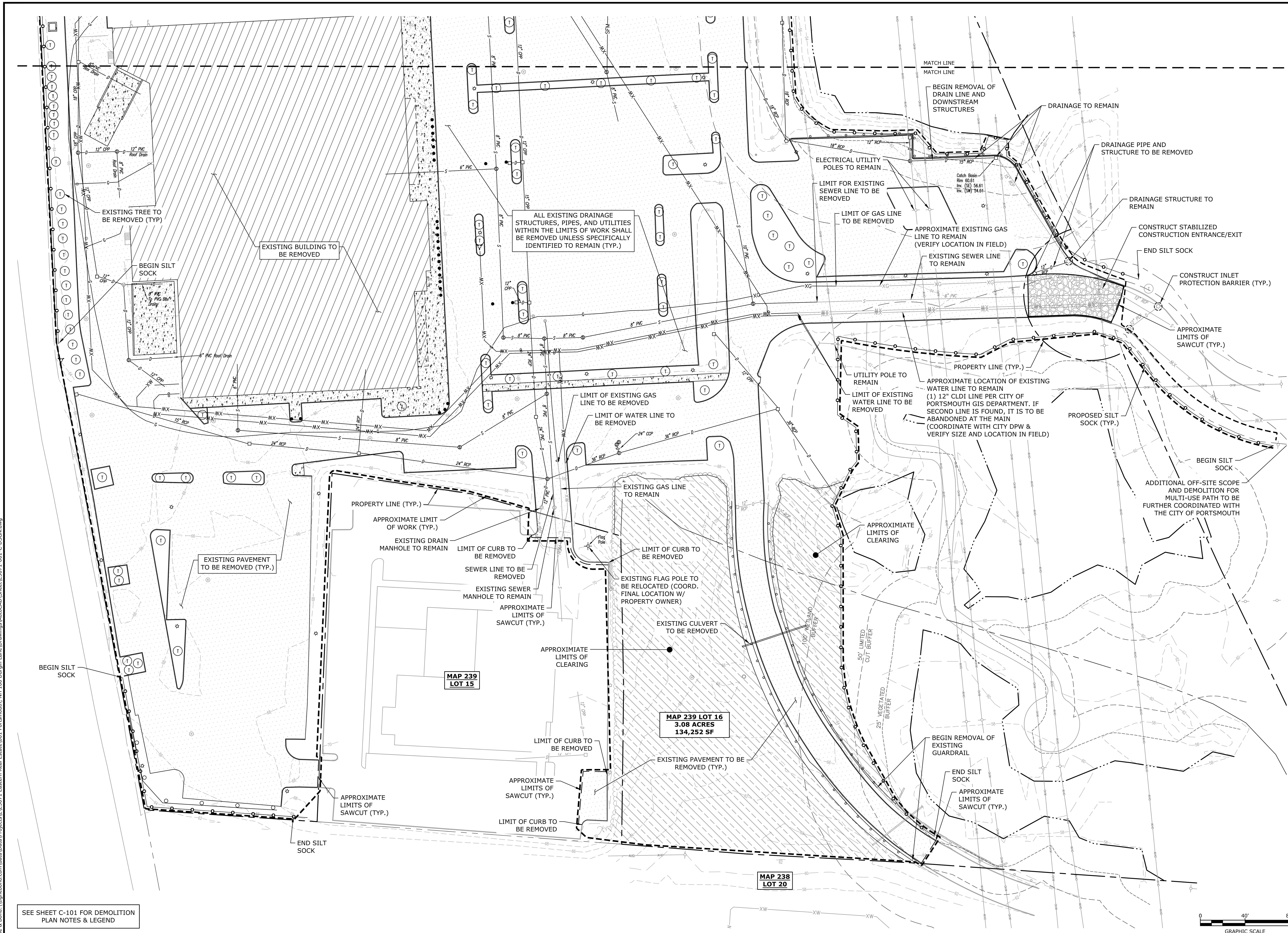
DEMOLITION PLAN

SCALE: AS SHOWN

C-201



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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

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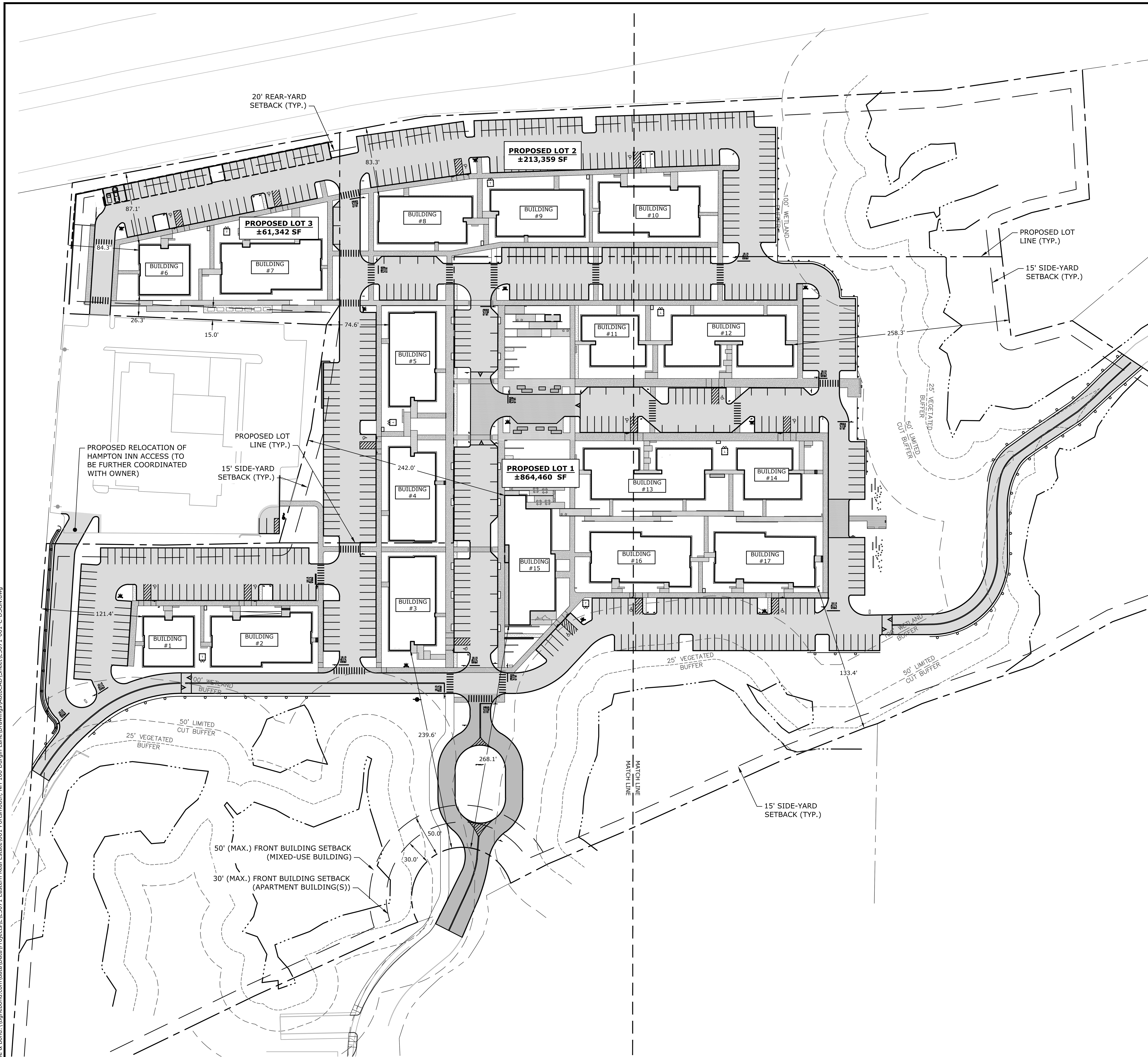
DEMOLITION PLAN

SCALE: AS SHOWN

C-202



SITE DATA:

LOCATION: TAX MAP 239, LOT 13-2, MAP 239 LOT 16, MAP 239 LOT 18
OWNER: 100 DURGIN LANE OWNER LLC
ONE MARINA PARK DRIVE, SUITE 1500
BOSTON, MA 02210

ZONING DISTRICT: GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR (G1)
HIGHWAY NOISE OVERLAY DISTRICT

PROPOSED USE: MULTI-FAMILY RESIDENTIAL DEVELOPMENT
EXISTING LOT SIZE: ±1,139,161 SF / 26.15 ACRES (MAP 239 LOT 13-2, LOT 16, LOT 18)

DEVELOPMENT STANDARDS

GENERAL RESIDENTIAL DEVELOPMENT (10.5B42.30)	REQUIRED	PROPOSED
MINIMUM SITE DEVELOPMENT AREA:	10,000 SF	±1,139,161 SF
MINIMUM SITE WIDTH:	75 FT	>75 FT
MINIMUM SITE LENGTH:	100 FT	>100 FT
MINIMUM PERIMETER BUFFER:	N/A	-
MAXIMUM DEVELOPMENT BLOCK DIMS:		
BLOCK LENGTH:	500 FT	442 FT
BLOCK PERIMETER:	1,500 FT	1,266 FT
MAXIMUM BUILDING COVERAGE:	50%	8.8%
MINIMUM OPEN SPACE COVERAGE:	20%	63.4%

APARTMENT BUILDING (10.5B34.40)	REQUIRED	PROPOSED
MINIMUM LOT DEPTH:	NR	-
MINIMUM STREET FRONTAGE:	50 FT	200.6 FT
FRONT YARD SETBACK:	10-30 FT	239.6 FT(1)
MIN. SIDE YARD SETBACK	15 FT	26.3 FT
MIN. REAR YARD SETBACK	20 FT	84.3 FT
DWELLING UNITS PER BUILDING	4-24	VARIES (24 MAX.)
MAXIMUM DWELLING UNIT SIZE	NR	-
MAXIMUM BUILDING HEIGHT	4 STORIES OR 50 FT	<50 FT
MINIMUM STREET-FACING FACADE HEIGHT	24 FT	>24 FT
MAX. FINISH FLOOR ABOVE SIDEWALK	36"	VARIES
MAXIMUM BUILDING COVERAGE	50%	8.1%
MAXIMUM BUILDING FOOTPRINT	NR	-
MAXIMUM FACADE MODULATION LENGTH	50 FT	<50 FT
MINIMUM STREET FACING FACADE GLAZING	20% GROUND FLOOR	>20%
MAXIMUM STREET FACING ENTRANCE SPACING	NR	-
ALLOWED ROOF TYPES	ALL	FLAT
ALLOWED FACADE TYPES		
FORECOURT, RECESSED, ENTRY, DOORYARD, STEP, PORCH		FORECOURT, RECESSED

MIXED-USE BUILDING (10.5B34.80)	REQUIRED	PROPOSED
MINIMUM LOT DEPTH:	NR	-
MINIMUM STREET FRONTAGE:	50 FT	200.6 FT
FRONT YARD SETBACK:	0-50 FT	268.1 FT(1)
MIN. SIDE YARD SETBACK	15 FT	242.0 FT
MIN. REAR YARD SETBACK	20 FT	453.0 FT
MAXIMUM DWELLING UNITS PER BUILDING	24	VARIES (24 MAX.)
MAXIMUM DWELLING UNIT SIZE	NR	-
MAXIMUM BUILDING HEIGHT	4 STORIES OR 50 FT	<50 FT
MINIMUM STREET-FACING FACADE HEIGHT	18 FT	47.5 FT
MAX. FINISH FLOOR ABOVE SIDEWALK	24"	VARIES
MAXIMUM BUILDING COVERAGE	60%	<1%
MAXIMUM BUILDING FOOTPRINT	20,000 SF	7,370 SF
MAXIMUM FACADE MODULATION LENGTH	100 FT	<100 FT
MINIMUM STREET FACING FACADE GLAZING	50% GROUND FLOOR	>50%
MAXIMUM STREET FACING ENTRANCE SPACING	NR	-
ALLOWED ROOF TYPES	ALL	FLAT
ALLOWED FACADE TYPES		
FORECOURT, RECESSED ENTRY, PORCH, OFFICEFRONT, SHOPFRONT, TERRACE, GALLERY, ARCADE		FORECOURT, RECESSED

(1) - THE APPLICANT IS REQUESTING THE PLANNING BOARD TO ALLOW AN INCREASE OF BUILDING SETBACK FROM THE FRONT LOT LINE AS ALLOWED BY SECTION 10.5B41.60.

COMMUNITY SPACE:	REQUIRED	PROPOSED
	10%	10.6%
	113,916 SF	120,818 SF

PARKING REQUIREMENTS

RESIDENTIAL UNITS (<750 SF)	209 UNITS X 1.0 SPACES	209 SPACES
RESIDENTIAL UNITS (>750 SF)	151 UNITS X 1.3 SPACES	197 SPACES
VISITOR SPACES	1 SPACE / 5 UNITS	82 SPACES
TOTAL MINIMUM PARKING SPACES REQUIRED =		488 SPACES

PARKING SPACES	REQUIRED	PROPOSED
	488 SPACES	573 SPACES

ADA PARKING SPACES	REQUIRED(2)	PROPOSED
	12 SPACES	14 SPACES

(2) - PER THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS, LATEST EDITION.

PARKING SPACE DIMENSIONAL REQUIREMENTS:		
STANDARD 90° STALL :		
WIDTH	8.5 FT MIN	8.5 FT
LENGTH	19 FT MIN	19 FT
STANDARD 0° STALL :		
WIDTH	8.5 FT MIN	8.5 FT
LENGTH	20 FT MIN	20 FT
DRIVE AISLE WIDTH:		
90° (2-WAY TRAFFIC)	24 FT	24 FT
0° (2-WAY TRAFFIC)	24 FT	24 FT

BICYCLE SPACES	REQUIRED	PROPOSED
1 BICYCLE SPACE / 10 PARKING SPACES:	30 SPACES (MAX.)	>30 SPACES

(INDOOR BIKE STORAGE WILL BE PROVIDED THAT MEETS OR EXCEEDS REQUIRED.)
(ADDITIONAL EXTERIOR BIKE RACKS ARE PROPOSED.)

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

SITE RECORDING NOTES:

1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
3. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
4. THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH.

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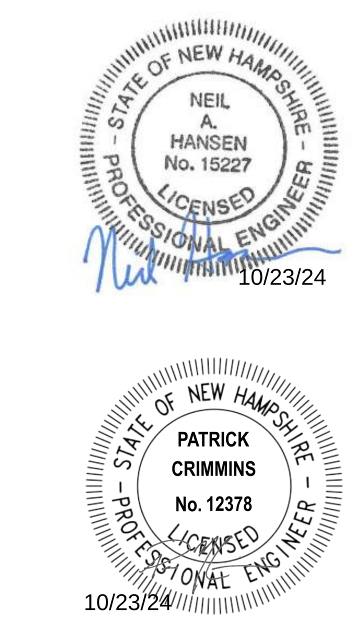

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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OVERALL SITE PLAN

SCALE: AS SHOWN

C-300

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-9:21am By: BCurcio
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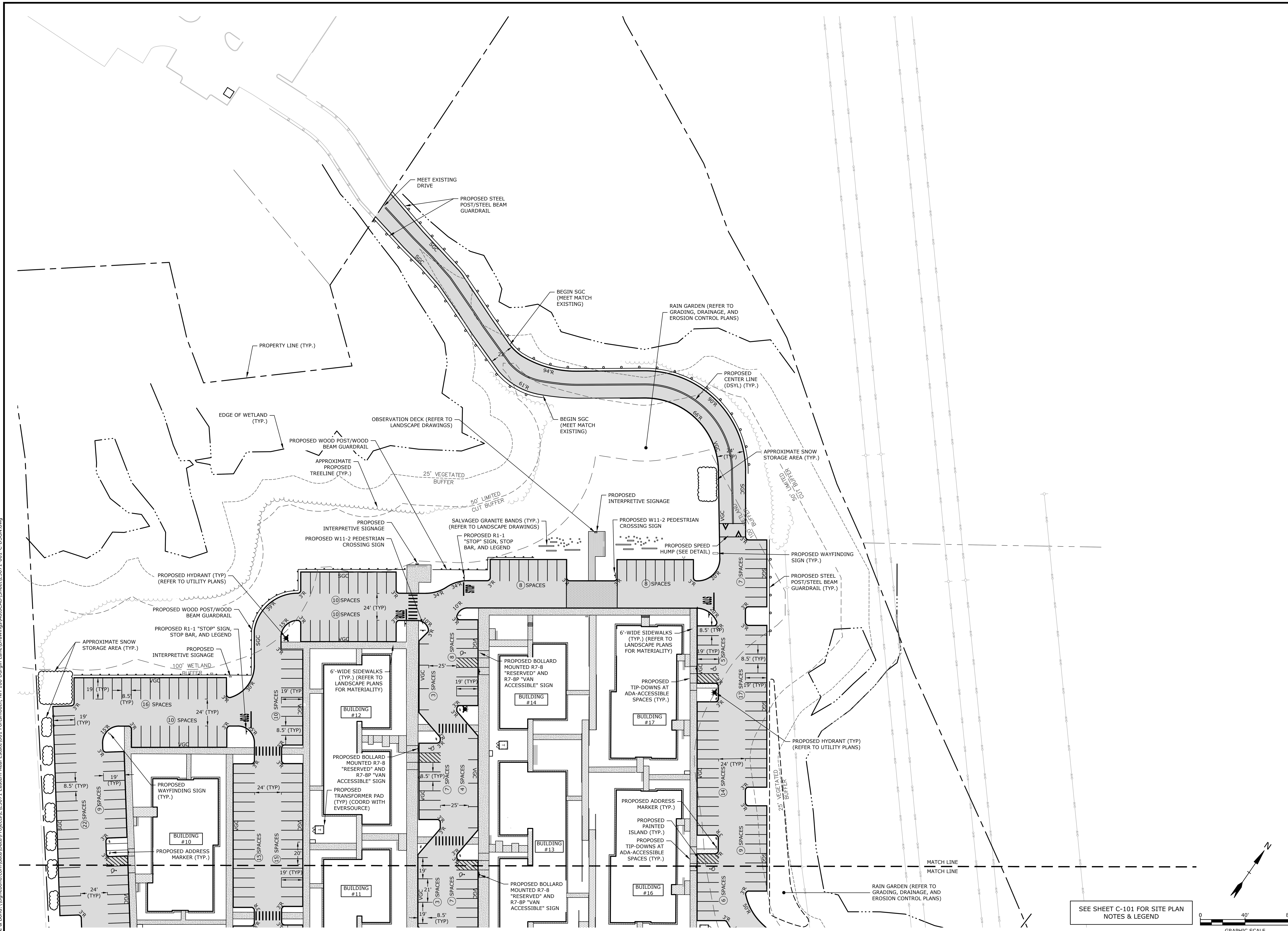


Tighe&Bond

NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 10/23/24

PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

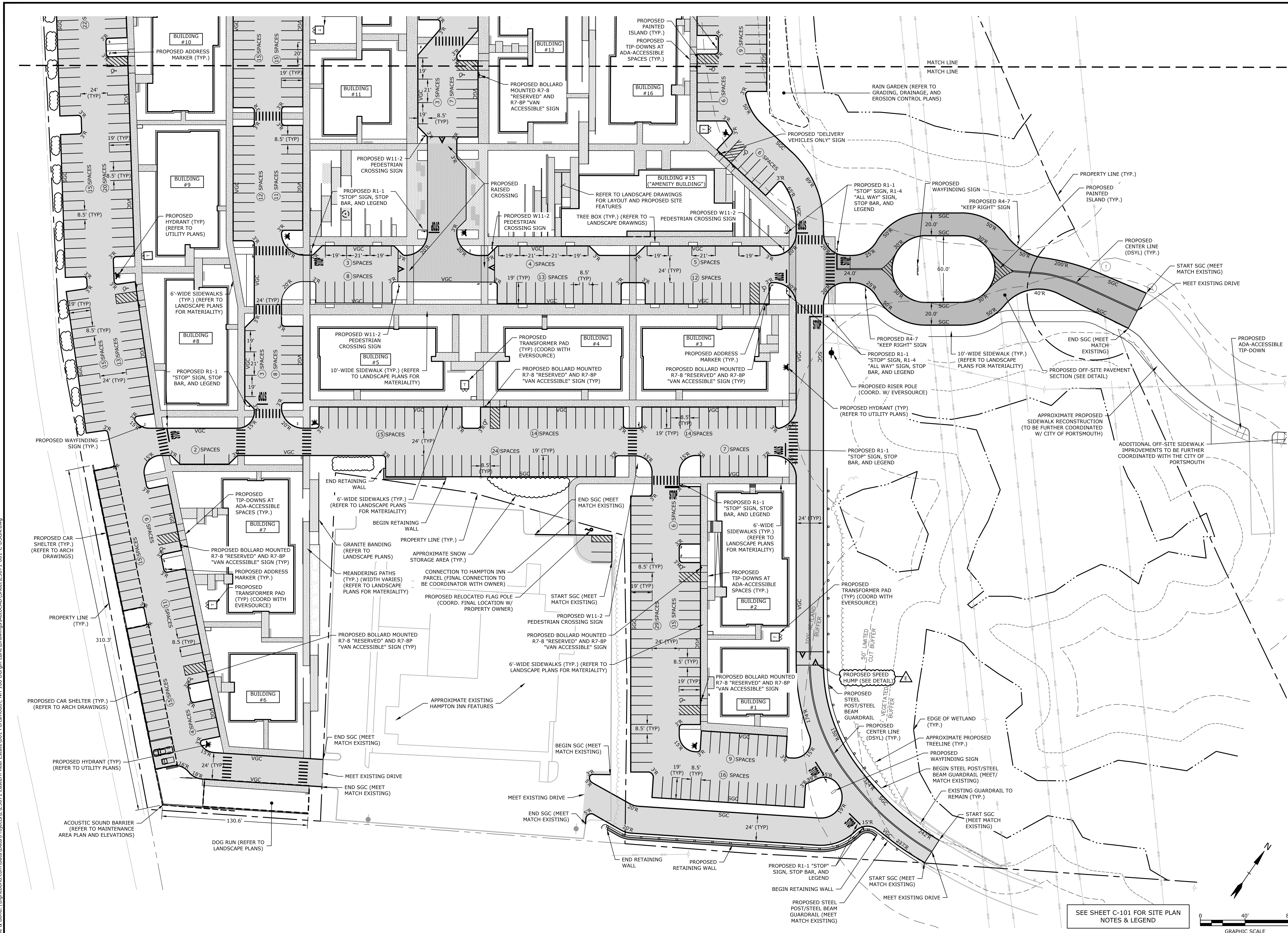
MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

SITE PLAN

SCALE: AS SHOWN

C-301



Tighe&Bond

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

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DATE:	4/22/2024
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DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

SITE PLAN

SCALE: AS SHOWN

C-302

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-9:27am By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg

SEE SHEET C-101 FOR GRADING & DRAINAGE PLAN NOTES & LEGEND

0 40' 80'

GRAPHIC SCALE

STORM SEWER STRUCTURE TABLE			
STRUCTURE	RIM	INV. IN	INV. OUT
PCB1	64.60	60.00 SW 60.00 NE	60.00 SE
PCB2	64.00	60.30 NW	60.30 SW
PCB3	64.00		60.55 SE
PCB4	64.60	60.10 NW	60.10 NE
PCB5	64.80	60.50 SW	60.50 SE
PCB6	64.75	61.00 SW	61.00 NE
PCB7	64.75	61.30 SW	61.30 NE
PCB8	65.35	61.65 N	61.65 NE
PCB9	65.25		62.00 S
PCB10	64.65	60.15 NE	60.05 NW
PCB11	64.65		60.30 SW
PCB12	65.25	60.35 SE	60.25 NW
PCB13	65.75	60.60 SE	60.50 NW
PCB14	66.95	61.15 SE 61.60 NE	61.05 NW
PCB15	67.00	61.80 SE 61.60 NE	61.70 NW
PCB16	66.50	62.60 SE	62.60 SW
PCB17	66.50	62.95 SE	62.95 NW
PCB18	66.50		63.05 NW
PCB19	65.25		61.00 NW
PCB20	65.00		61.50 NE
PCB21	64.50		59.35 SE
PCB22	64.50		59.35 NE
PCB23	65.00	60.20 SE	60.10 N
PCB24	65.00		60.35 NW
PCB25	64.70	60.95 SE	60.85 N
PCB26	64.80		61.10 NW
PCB27	66.70	62.05 SE 61.90 N	61.90 SW
PCB28	66.50	62.10 NE	62.10 S
PCB29	66.00	62.75 SE	62.65 SW
PCB30	67.15	62.35 SE	62.35 NW
PCB31	67.00	62.70 SE 62.70 NE	62.70 NW
PCB32	66.90	63.10 SE	63.10 NW
PCB33	66.75	63.30 NE	63.20 NW
PCB34	57.75		53.85 SW
PCB35	61.00	55.25 NE	55.15 SW
PCB35A	62.75		57.50 NE
PCB36	59.50	55.85 SE	55.75 SW
PCB37	61.00		56.25 NW
PCB38	62.90	57.00 SE 58.00 SW 58.00 NE	56.90 NW
PCB39	64.90	57.35 SE 57.35 W	57.25 NE
PCB40	65.00	58.20 SE 60.00 NE	58.10 NW
PCB41	65.50	61.25 NE 58.75 SE	58.65 NW
PCB42	65.60	60.65 SW	59.35 NW
PCB43	65.60	60.85 SW	60.85 NE
PCB44	65.20	61.25 SW	61.25 NE
PCB45	65.50	62.00 NE	62.00 N

STORM SEWER STRUCTURE TABLE			
STRUCTURE	RIM	INV. IN	INV. OUT
PCB46	65.00	57.85 SW	57.75 E
PCB47	65.00	58.35 SE	58.25 NE
PCB48	65.85	58.80 SE	58.70 NW
PCB49	66.00	59.35 SE 60.50 NE	59.25 NW
PCB50	65.20	59.90 SE	59.80 NW
PCB51	65.40		60.65 NW
PCB52	63.75	59.35 S	59.25 NW
PCDS1	66.10	58.60 SW	58.50 NW
PCDS2	65.50	59.30 SW	59.20 SE
PCDS3	62.25	54.50 E	54.00 NE
PDMH1	64.35	58.80 NW	58.80 SE
PDMH2	65.50	59.00 NE 60.15 NW	58.90 SE
PDMH3	65.50	59.45 SW 59.45 NW	59.35 NE 60.50 SE
PDMH4	65.50	59.70 SW 59.80 SE	59.60 NE
PDMH5	65.50	60.20 SW 60.20 SE 60.20 NW	60.10 NE
PDMH6	67.50	62.20 NE	62.10 NW
PDMH7	65.60	60.85 SW 60.85 NW 60.85 SE	60.75 NE
PDMH8	65.75	61.10 SW 62.20 SE	61.00 NE
PDMH9	64.00	57.85 SE	
PDMH10	65.90	59.75 SE 58.30 NE	58.20 NW
PDMH11	66.00	58.65 SW	58.65 NE 60.00 NW
PDMH12	64.75	59.10 SE 59.20 SW 59.20 NW	59.10 NE
PDMH13	65.50	59.85 SE 59.95 NE 59.95 S	59.85 NW
PDMH14	65.20	60.60 NE 60.60 S 60.50 SE	60.50 NW
PDMH15	66.25	61.25 NE 61.15 SE	61.15 NW
PDMH16	67.15	61.70 NE	61.70 NW
PDMH17	67.75	63.00 NW 63.00 SE 63.00 NE	62.90 SW
PDMH18	67.60	63.70 N	63.60 SW
PDMH19	62.05	53.85 SW 55.50 SE	53.00 NW
PDMH20	62.00	55.00 S 54.75 NE 57.00 SW	54.65 W 56.00 NW
PDMH21	63.50	56.70 SW 56.70 SE	56.60 N
PDMH22	65.90	61.50 S	61.50 NE
PDMH23	65.20	60.35 SE 61.00 NE	60.25 NW
PDMH24	65.00	59.75 SW	59.65 N
PDMH25	60.15	56.60 E	56.50 NW
PJFF1	66.00	58.45 SE	58.35 SW
PJFF2	65.50	59.15 NW	59.05 SW
POCS1	54.00		46.50 N
POCS2	60.50		54.50 NE
PYD1	66.75		63.25 NW
PYD2	66.75		63.25 SW
PYD3	66.75		63.90 S
PYD4	63.90	58.20 NE 58.20 SE	58.10 NW
PYD5	64.25	58.75 NE	58.65 NW
PYD6	63.00		59.25 SW

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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
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C	8/28/2024	CC SUBMISSION
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A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

SCALE: AS SHOWN

C-401

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-9:33am By: BCurcio
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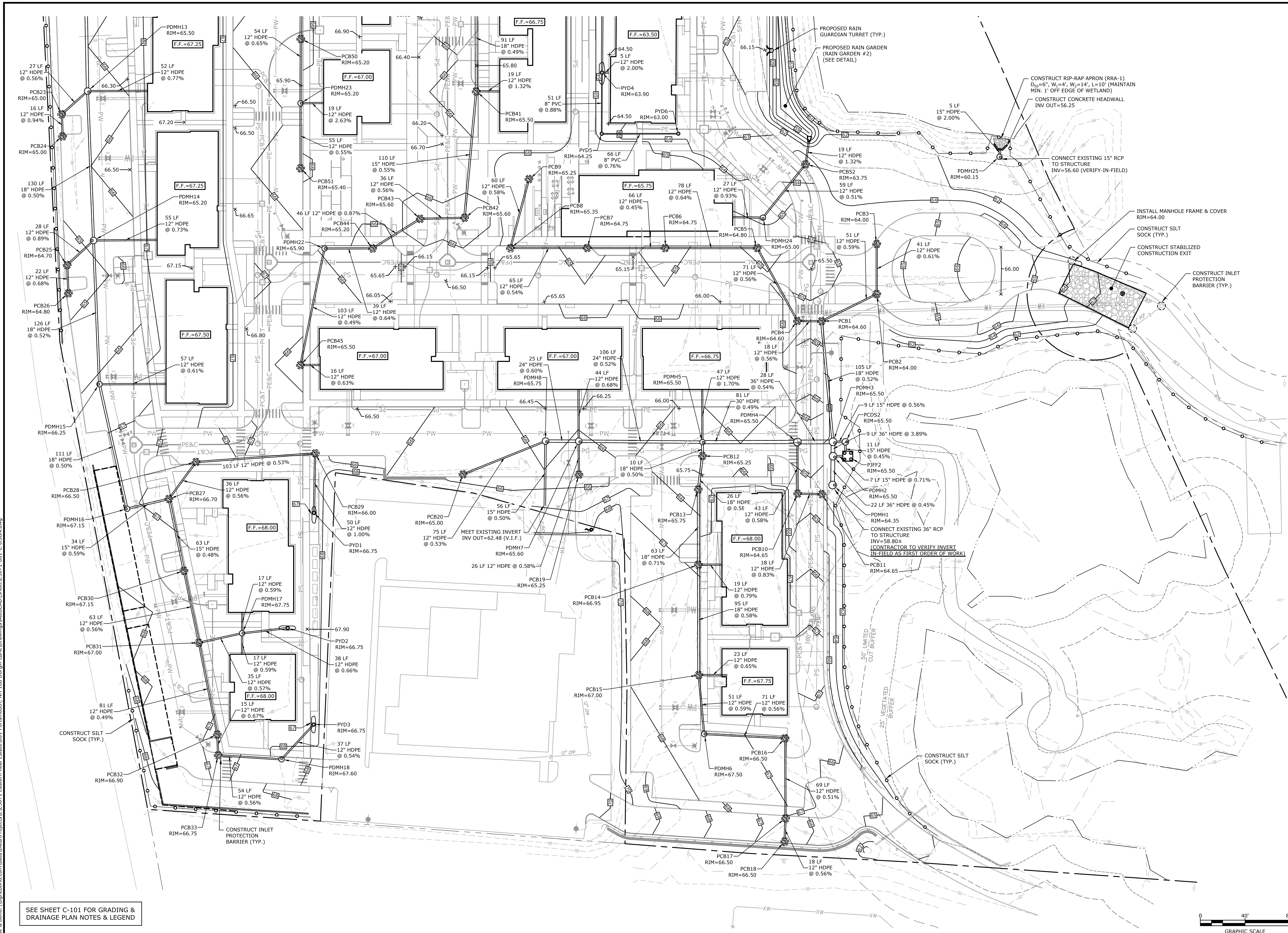

SEE SHEET C-101 FOR GRADING & DRAINAGE PLAN NOTES & LEGEND

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Plotted On:Oct 22, 2024-9:37am By: BCurcio
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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

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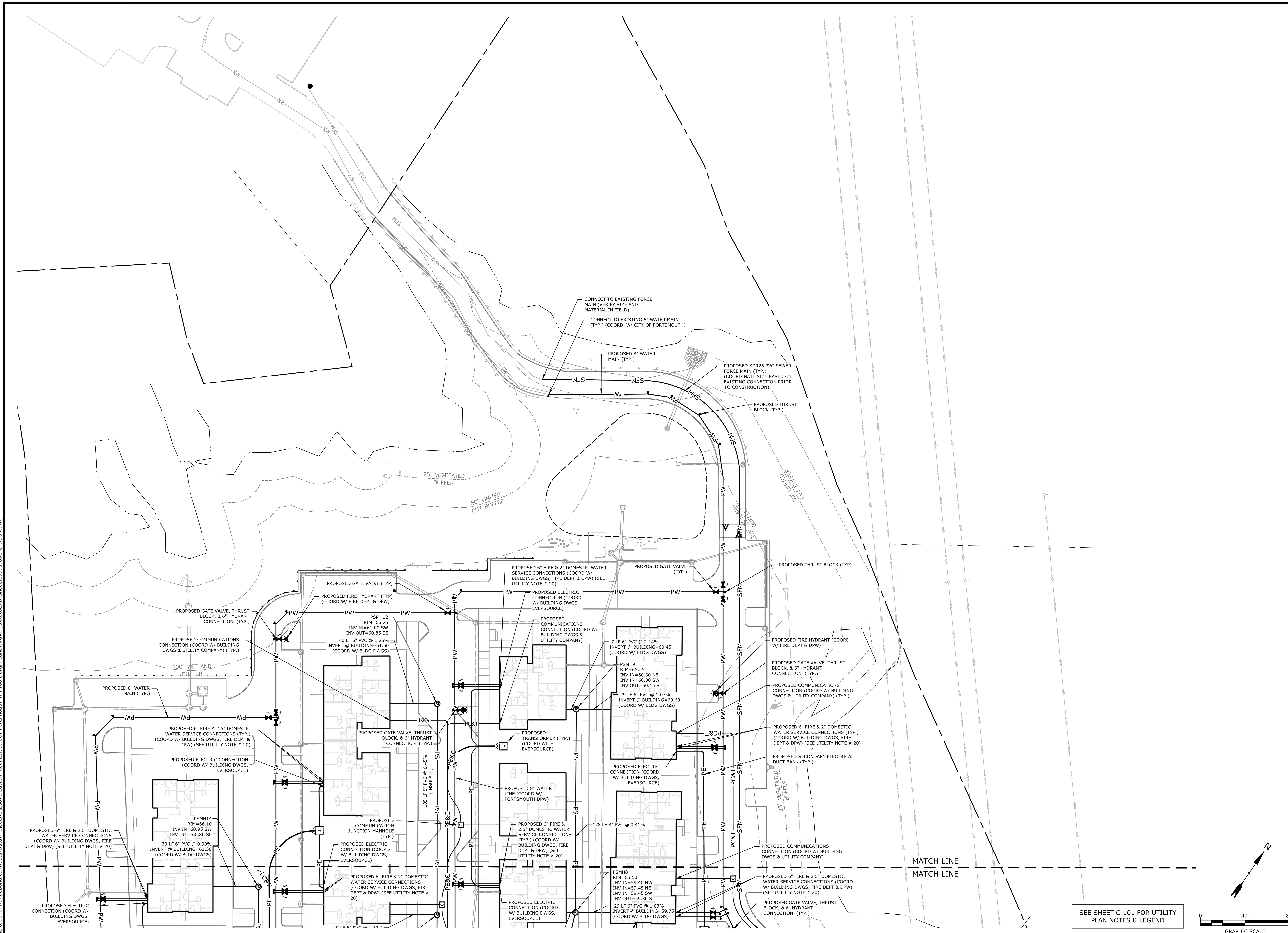
PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

SCALE: AS SHOWN

C-402



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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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A	4/22/2024	TAC SUBMISSION

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DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

UTILITIES PLAN

SCALE: AS SHOWN

C-501

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-9:42am By: BCurcio
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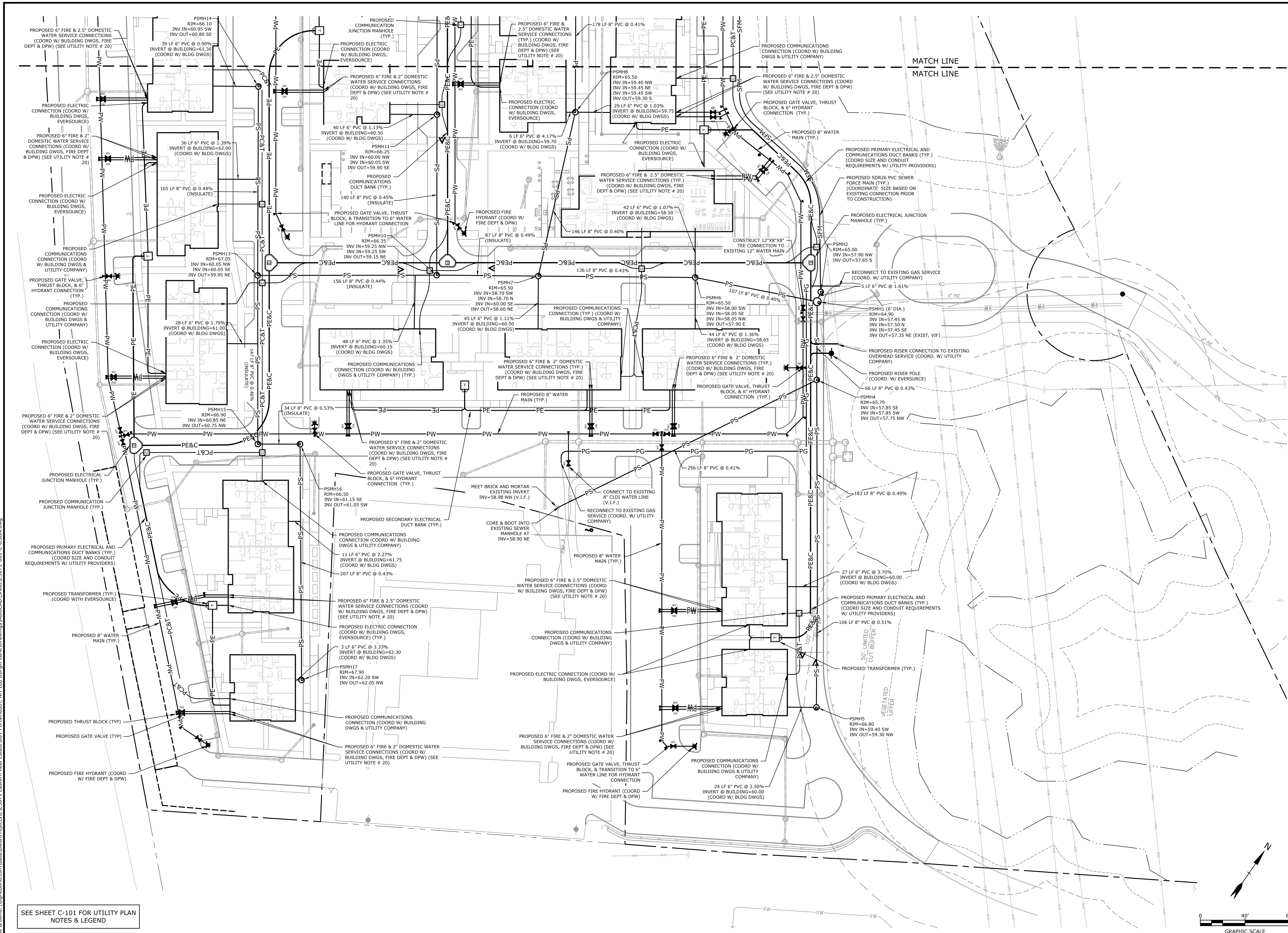

SEE SHEET C-101 FOR UTILITY PLAN NOTES & LEGEND

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-9:40am By: BCurcio
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PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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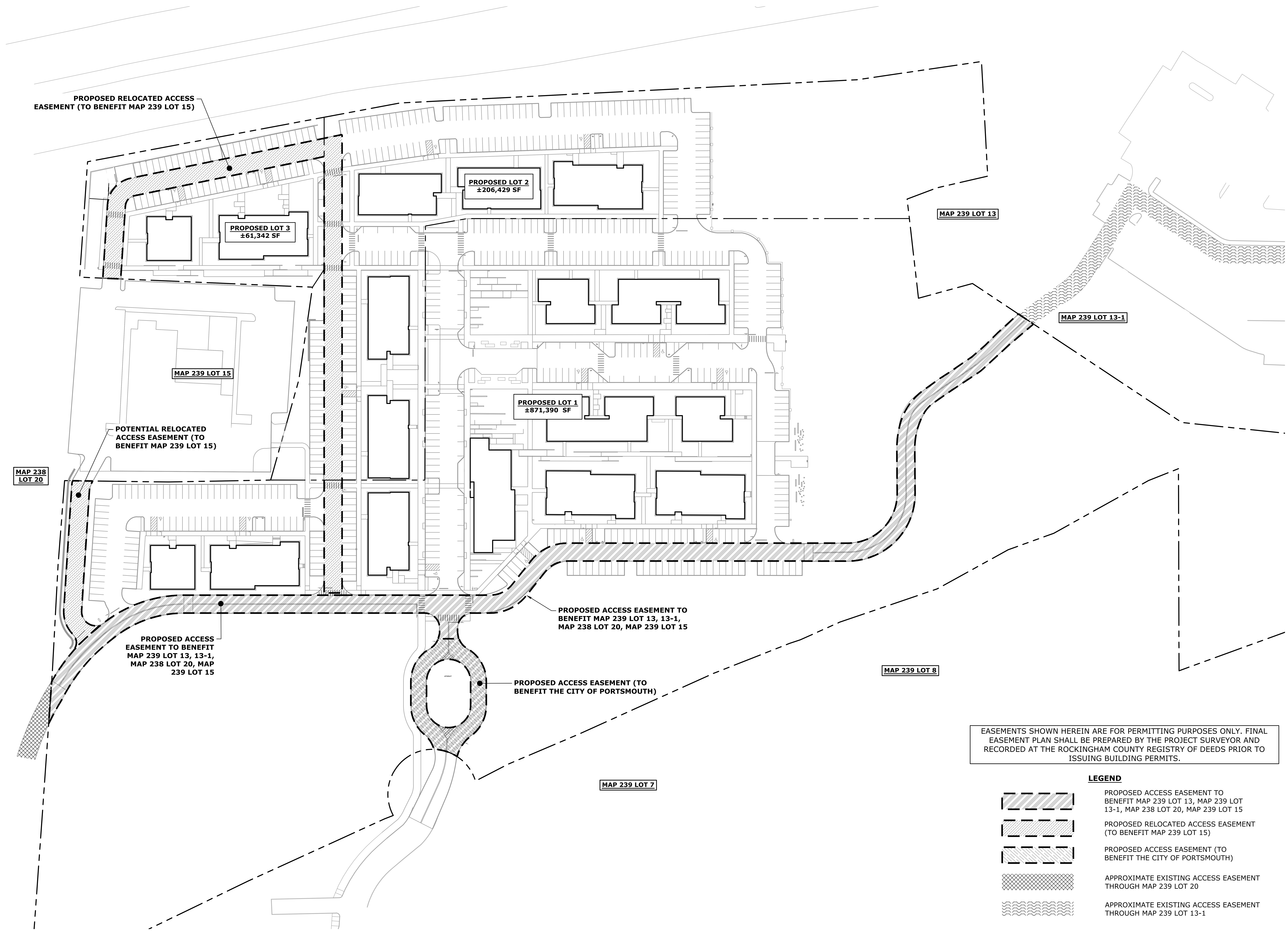
PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

UTILITIES PLAN

SCALE: AS SHOWN

C-502



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N

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-FIGS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

ABUTTERS' ACCESS EASEMENT PLAN

SCALE: AS SHOWN

C-600

Last Saved: 10/21/2024
Plotted On:Oct 21, 2024-6:29pm By: BCurcio
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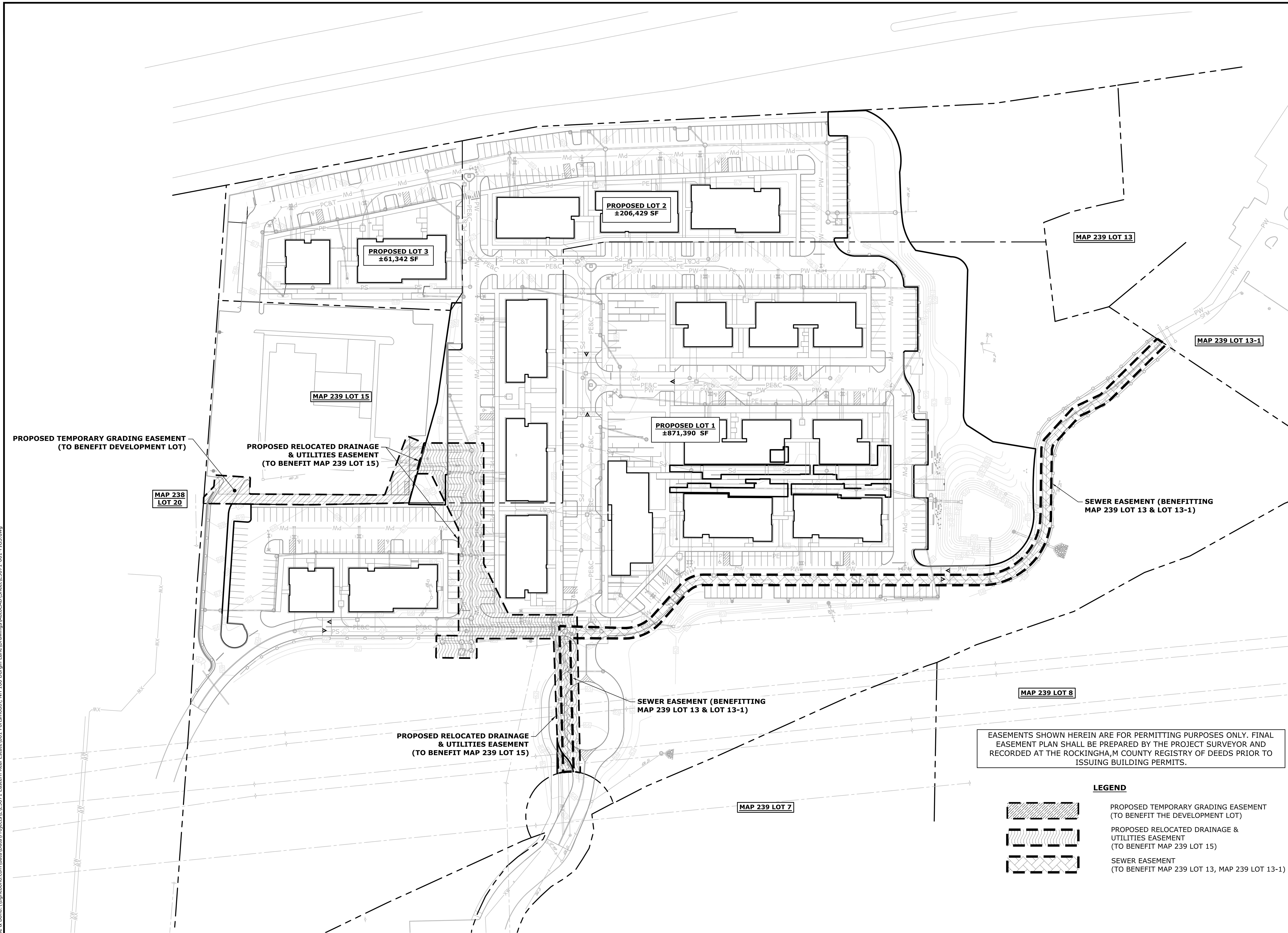

EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHA,M COUNTY REGISTRY OF DEEDS PRIOR TO ISSUING BUILDING PERMITS.

LEGEND

- PROPOSED TEMPORARY GRADING EASEMENT (TO BENEFIT THE DEVELOPMENT LOT)
- PROPOSED RELOCATED DRAINAGE & UTILITIES EASEMENT (TO BENEFIT MAP 239 LOT 15)
- SEWER EASEMENT (TO BENEFIT MAP 239 LOT 13, MAP 239 LOT 13-1)

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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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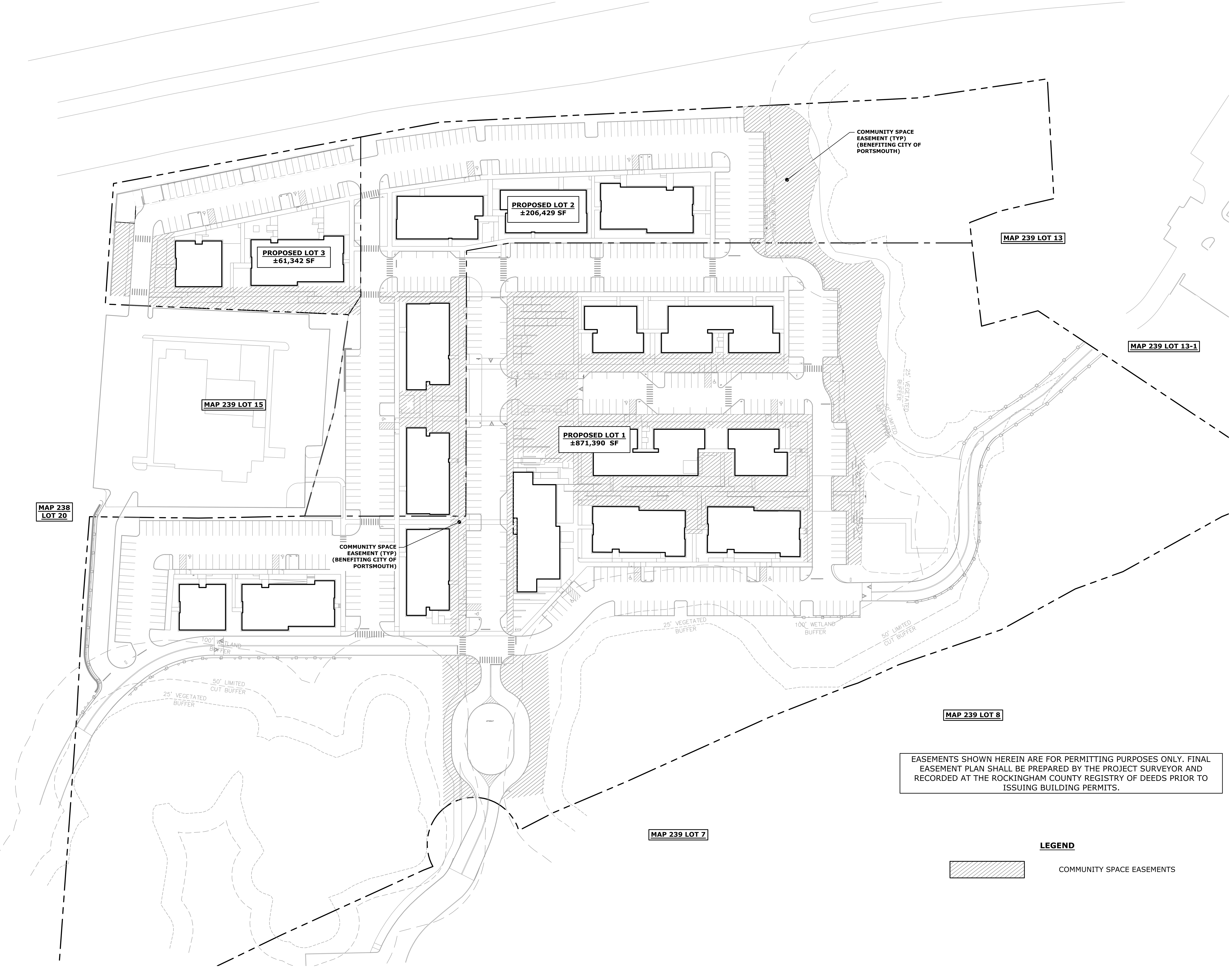
PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-FIGS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

ABUTTERS' UTILITY, DRAINAGE, AND GRADING EASEMENT PLAN

SCALE: AS SHOWN

C-601

Last Saved: 10/21/2024
Plotted On:Oct 21, 2024-6:31pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg



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LEGEND

COMMUNITY SPACE EASEMENTS

Tighe&Bond

STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

0 60' 120'
GRAPHIC SCALE

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-FIGS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

COMMUNITY SPACE EASEMENT PLAN

SCALE: AS SHOWN

C-602

Last Saved: 10/21/2024
Plotted On:Oct 21, 2024-6:34pm By: BCurcio
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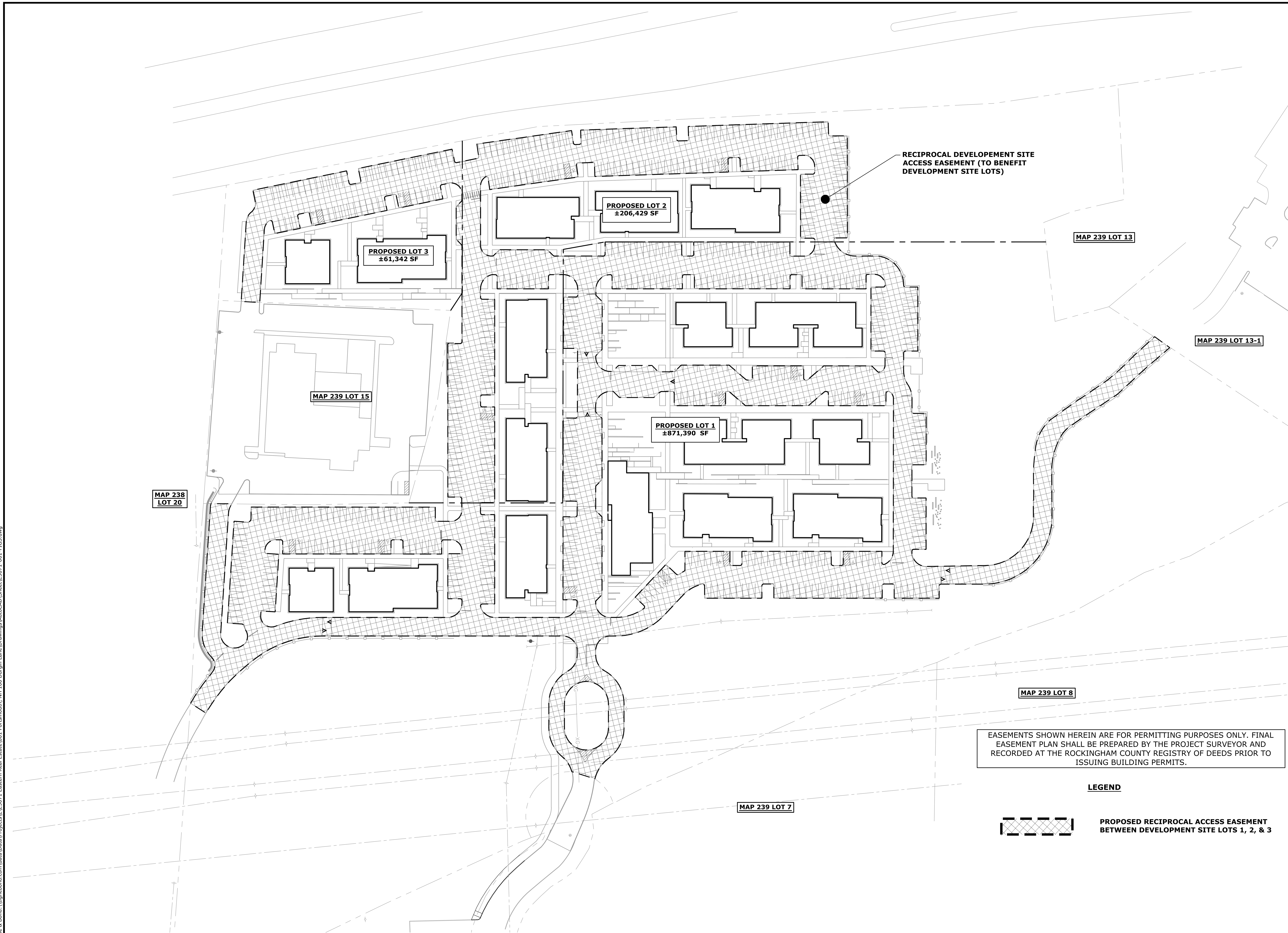

EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PRIOR TO ISSUING BUILDING PERMITS.

LEGEND

PROPOSED RECIPROCAL ACCESS EASEMENT BETWEEN DEVELOPMENT SITE LOTS 1, 2, & 3

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STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-FIGS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DEVELOPMENT SITE ACCESS EASEMENTS

SCALE: AS SHOWN

C-603

Last Saved: 10/21/2024
Plotted On:Oct 21, 2024-6:36pm By: BCurcio
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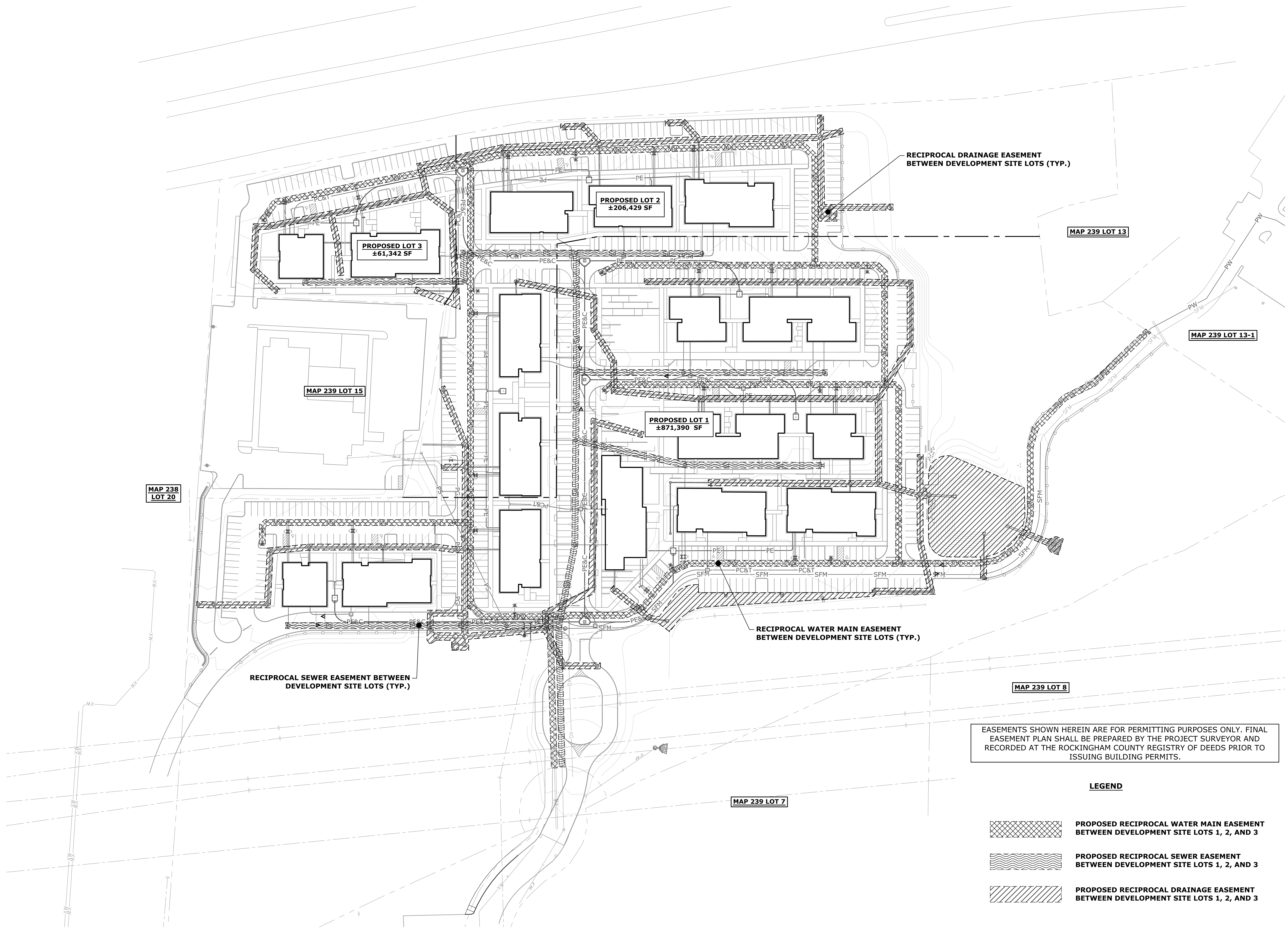

EASEMENTS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL EASEMENT PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS PRIOR TO ISSUING BUILDING PERMITS.

LEGEND

PROPOSED RECIPROCAL WATER MAIN EASEMENT BETWEEN DEVELOPMENT SITE LOTS 1, 2, AND 3

PROPOSED RECIPROCAL SEWER EASEMENT BETWEEN DEVELOPMENT SITE LOTS 1, 2, AND 3

PROPOSED RECIPROCAL DRAINAGE EASEMENT BETWEEN DEVELOPMENT SITE LOTS 1, 2, AND 3

Tighe&Bond

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

0 60' 120'
GRAPHIC SCALE

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

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PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-FIGS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DEVELOPMENT UTILITY & DRAINAGE EASEMENTS

SCALE: AS SHOWN

C-604

Last Saved: 10/21/2024
Plotted On:Oct 21, 2024-6:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg

GENERAL PROJECT INFORMATION
PROJECT APPLICANT: 100 DURGIN LANE OWNER, LLC

PROJECT NAME: PROPOSED MIXED USE DEVELOPMENT
PROJECT MAP / LOT: MAP 239 / LOT 18
MAP 239 / LOT 16
MAP 239 / LOT 13-2
PROJECT ADDRESS: DURGIN LANE
PORTSMOUTH, NH 03801
PROJECT LATITUDE: 43°-04'-43" N
PROJECT LONGITUDE: 70°-45'-41" W

PROJECT DESCRIPTION
THE PROJECT CONSISTS OF THE CONSTRUCTION OF AN 360 RESIDENTIAL UNITS IN A MIX OF 3 AND 4 STORY BUILDINGS.

DISTURBED AREA
THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 15.0 ACRES.

SOIL CHARACTERISTICS
BASED ON THE SITE SPECIFIC SOIL SURVEY, THE SOILS ON SITE PRIMARILY CONSIST OF UDORTHENTS SOILS WHICH ARE WELL DRAINED SOILS WITH A HYDROLOGIC SOIL GROUP RATING OF B.

NAME OF RECEIVING WATERS
THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA A CLOSED DRAINAGE SYSTEM TO AN UNNAMED ON SITE WETLANDS WHICH ULTIMATELY FLOW TO THE PISCATAQUA RIVER.

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

SPECIAL CONSTRUCTION NOTES:
1. THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE. THE AREA OF DISTURBANCE SHALL NOT EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED UNLESS FURTHER APPROVAL IS RECEIVED FROM THE NEW HAMPSHIRE LAND RESOURCES MANAGEMENT BUREAU.
2. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

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

STABILIZATION:
1. AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.;
   E. IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF NHDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM 304.2 HAVE BEEN INSTALLED.
2. WINTER STABILIZATION PRACTICES:
   A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;
   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
   C. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT;
3. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
   A. TEMPORARY SEEDING;
   B. MULCHING.
4. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
5. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
6. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH SILT FENCES, MULCH BERMS, HAY BALE BARRIERS, OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY OCTOBER 15.

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

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

OFF SITE VEHICLE TRACKING:
1. THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

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

SEED MIX	APPLICATION RATE
CREEPING RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
REDTOP	2 LBS/ACRE

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE (1) PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. SEEDING SHALL BE DONE NO LATER THAN SEPTEMBER 15. IN NO CASE SHALL SEEDING TAKE PLACE OVER SNOW.

3. DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL):
   A. FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

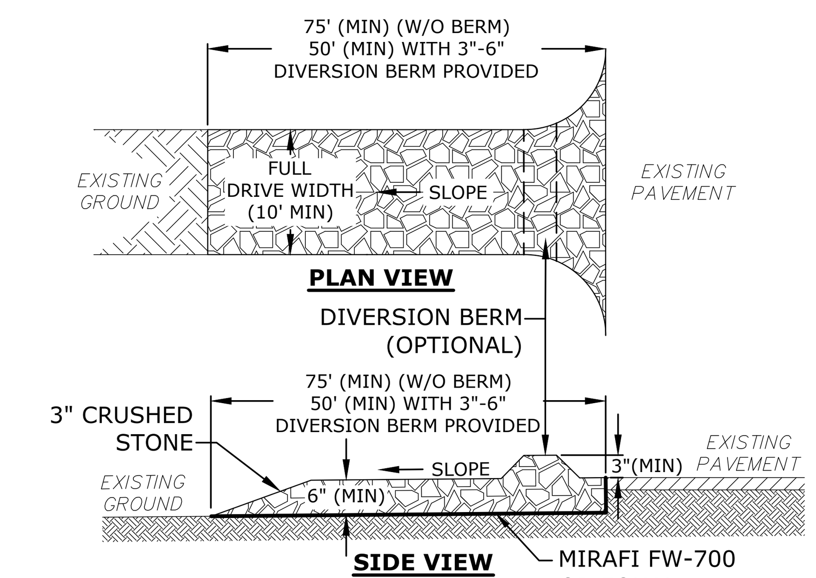
CONCRETE WASHOUT AREA:
1. THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE:
   A. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY;
   B. IF IT IS NECESSARY, SITE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

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

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

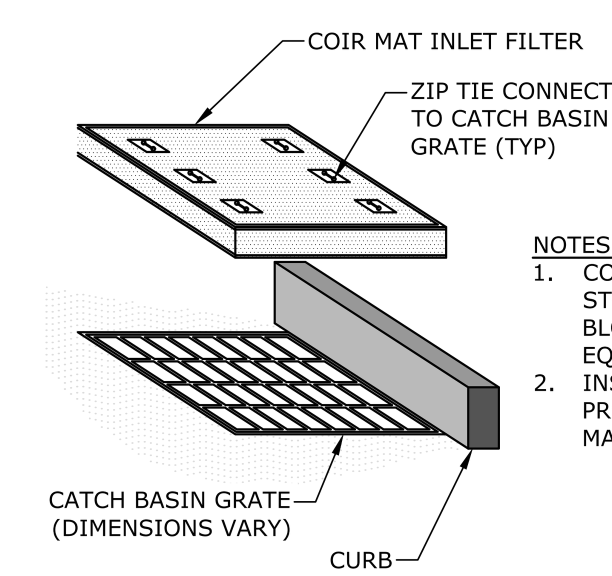
SPILL PREVENTION:
1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED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

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



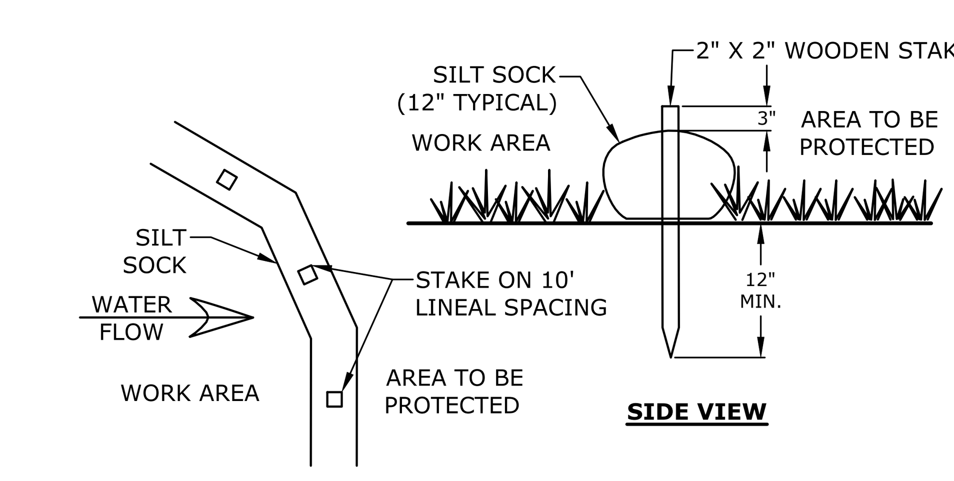
NOTE:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT
NO SCALE



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

INLET PROTECTION BARRIER
NO SCALE



NOTES:
1. SILT SOCK SHALL BE SILT SOXX BY FILTREXX OR APPROVED EQUAL.
2. INSTALL SILT SOCK IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SILT SOCK
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

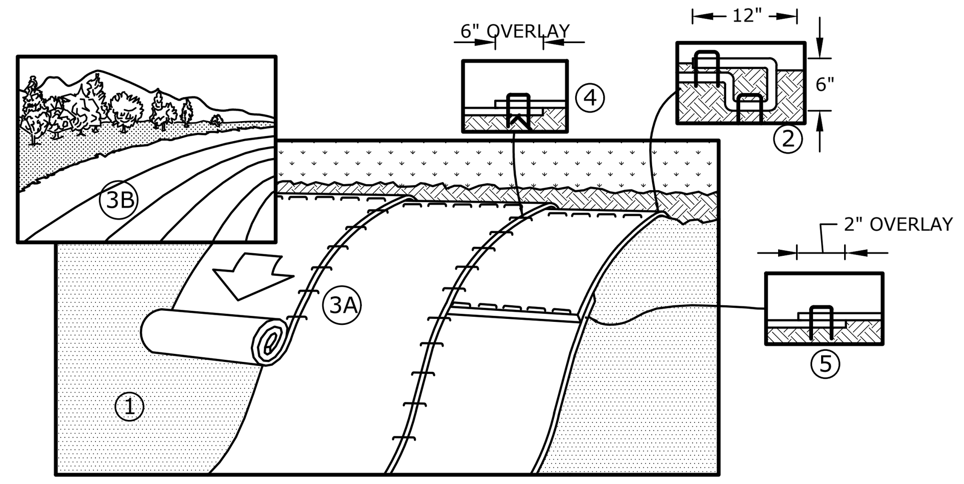
PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DTLS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

EROSION CONTROL NOTES AND DETAILS SHEET

SCALE: AS SHOWN

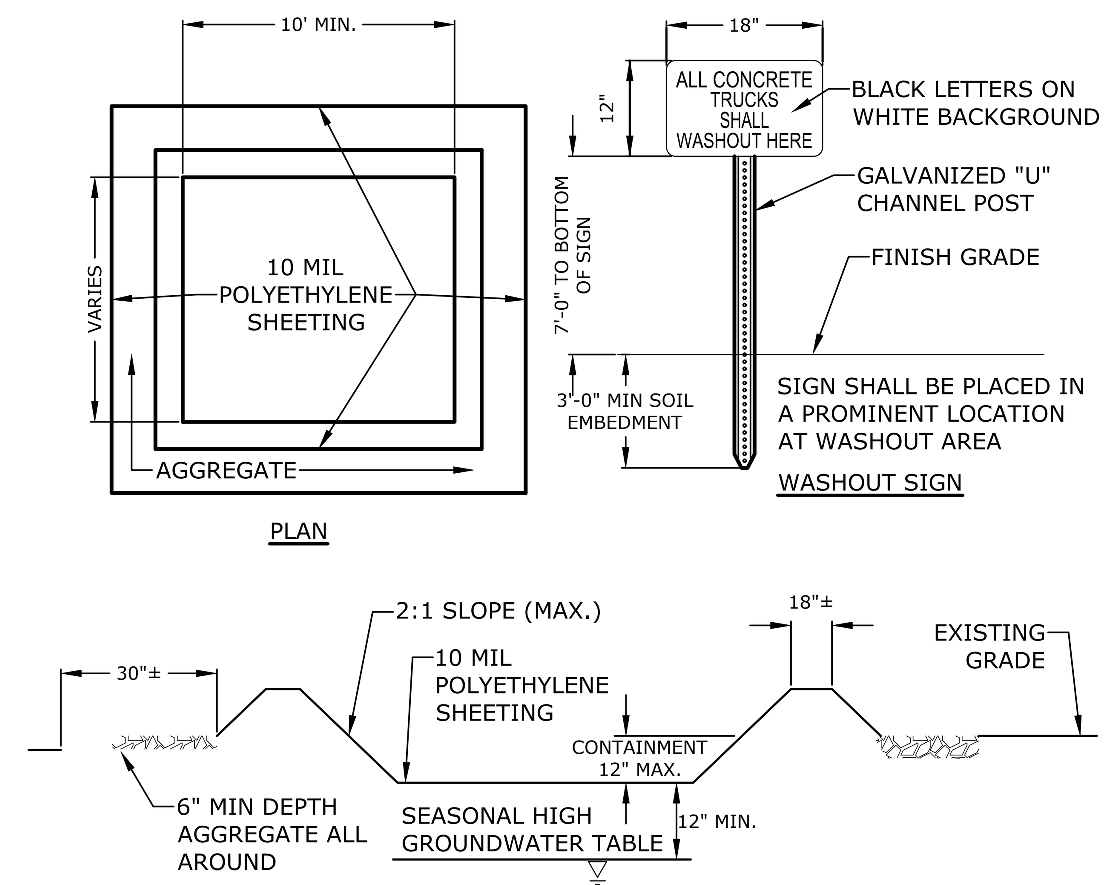
C-801

Last Saved: 10/17/2024
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg



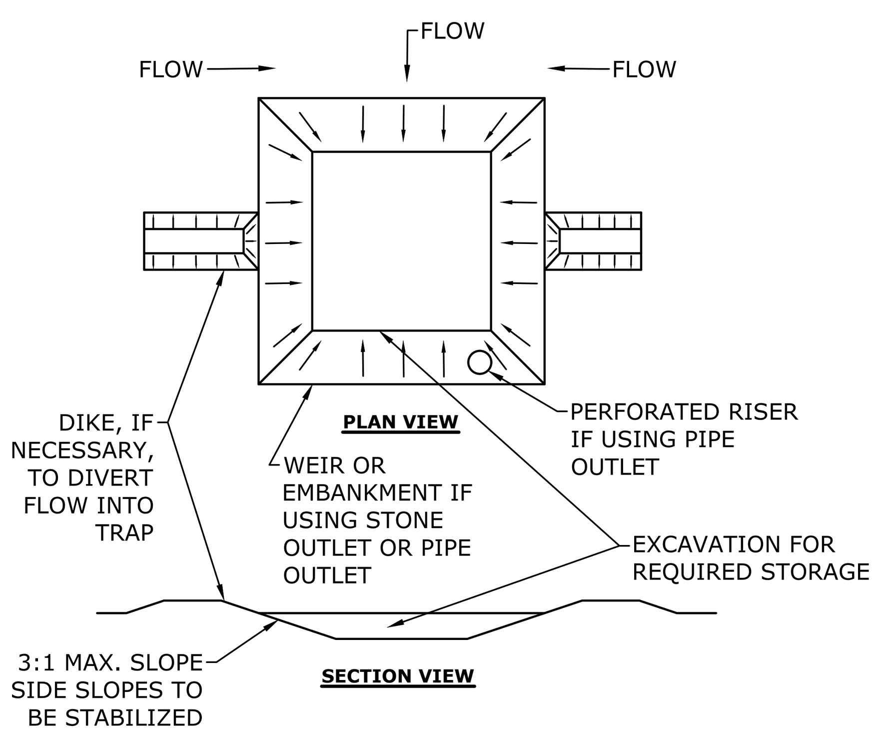
NOTES:
1. EROSION CONTROL BLANKET SHALL BE AN ALL NATURAL PRODUCT WITH NO PHOTO DEGRADABLE COMPONENTS, NORTH AMERICAN GREEN SC150BN OR APPROVED EQUAL.
2. STAKES SHALL BE BIODEGRADABLE BIOSTAKES OR ALL NATURAL WOOD ECOSTAKES OR APPROVED EQUAL. THE LENGTH OF STAKES SHALL BE BASED OFF OF THE MANUFACTURERS RECOMMENDATION.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, COMPOST AND SEED.
4. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAKES IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAKING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAKES ACROSS THE WIDTH OF THE BLANKET.
5. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAKES IN APPROPRIATE LOCATIONS AS SHOWN ON THE MANUFACTURERS PATTERN GUIDE.
6. THERE SHALL BE NO PLASTIC, OR MULTI-FILAMENT OR MULTI-FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED.

EROSION CONTROL BLANKET
NO SCALE



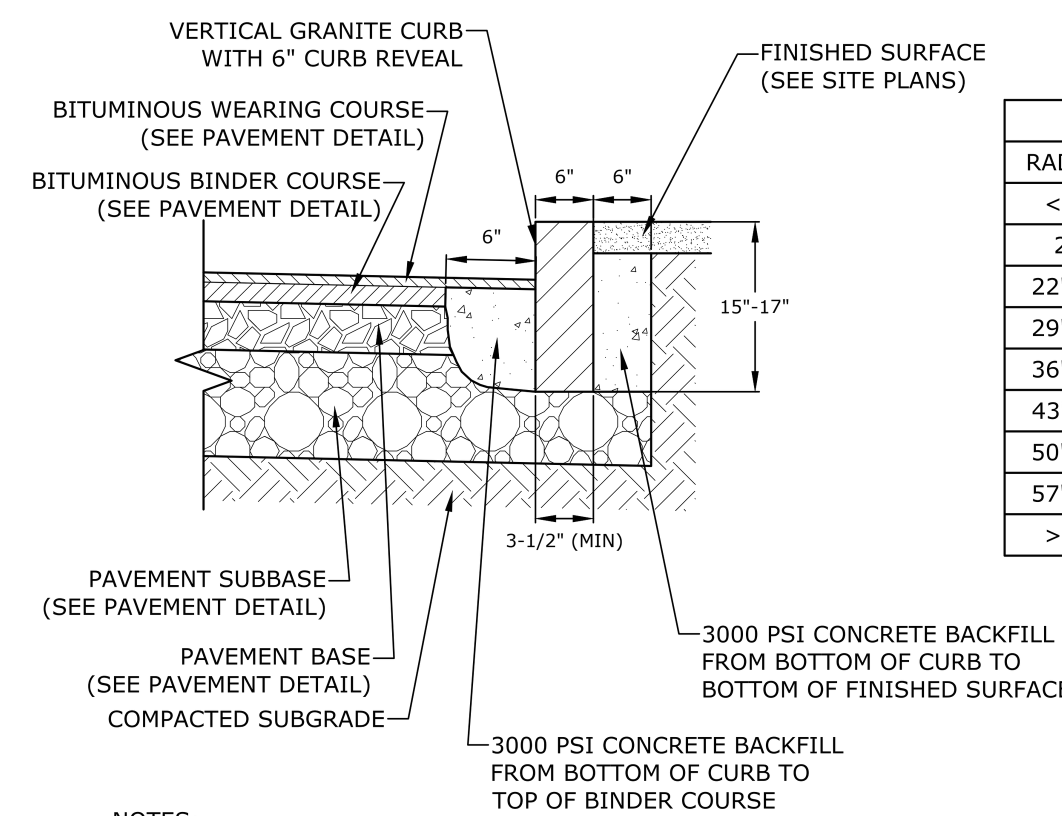
NOTES:
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT AREA
NO SCALE



NOTES:
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING AREA TO A SINGLE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. TRAP OUTLET SHALL BE MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP.
5. TRAP SHALL DISCHARGE TO A STABILIZED AREA.
6. TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
8. SEDIMENT TRAPS MUST BE USED AS NEEDED TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.

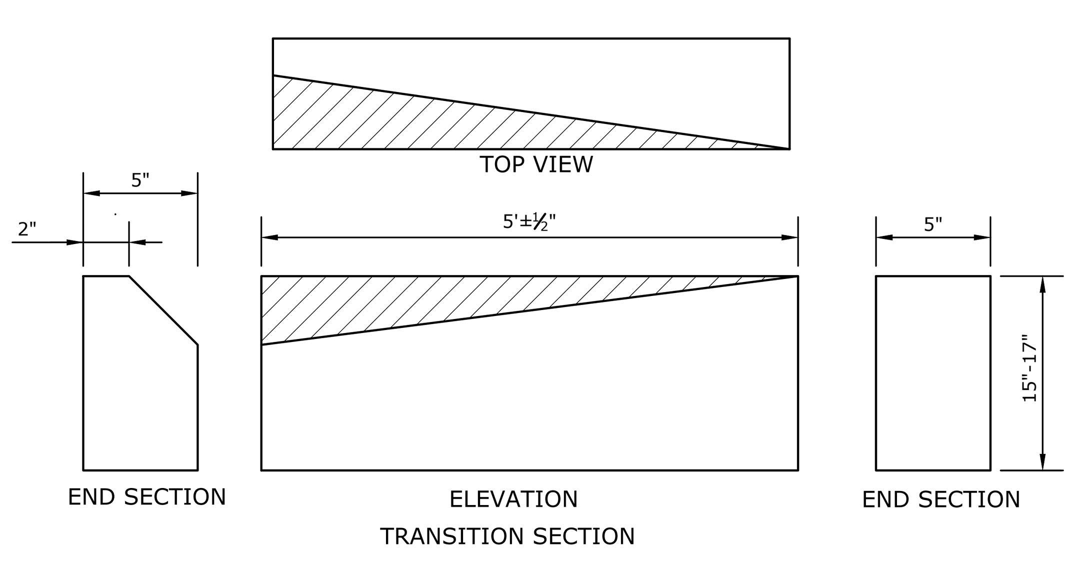
SEDIMENT TRAP
NO SCALE



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

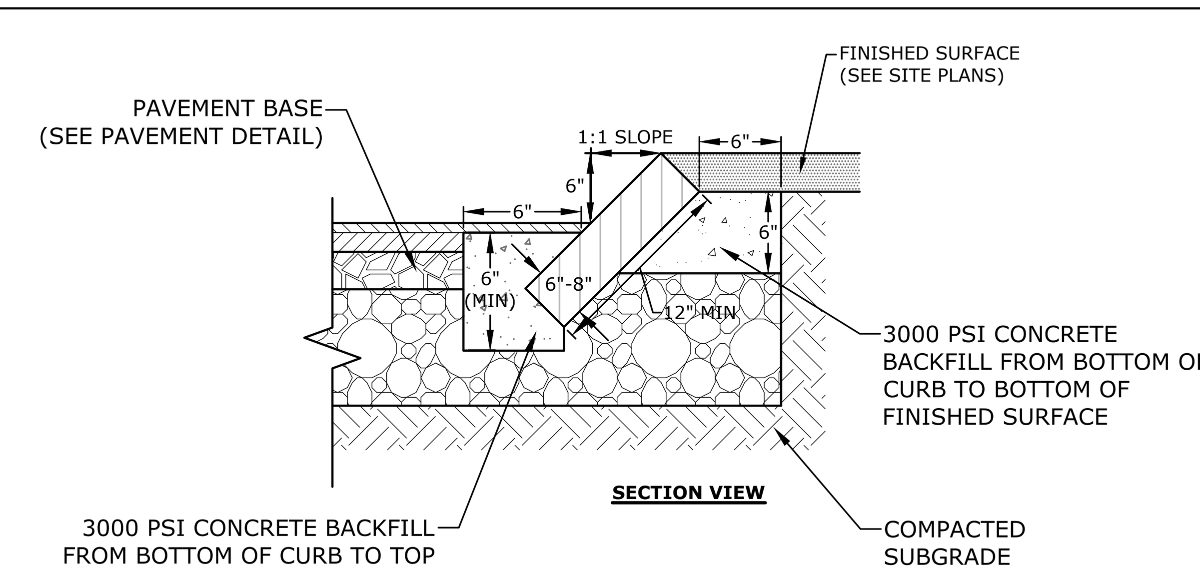
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 3'
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE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

VERTICAL GRANITE CURB
NO SCALE



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

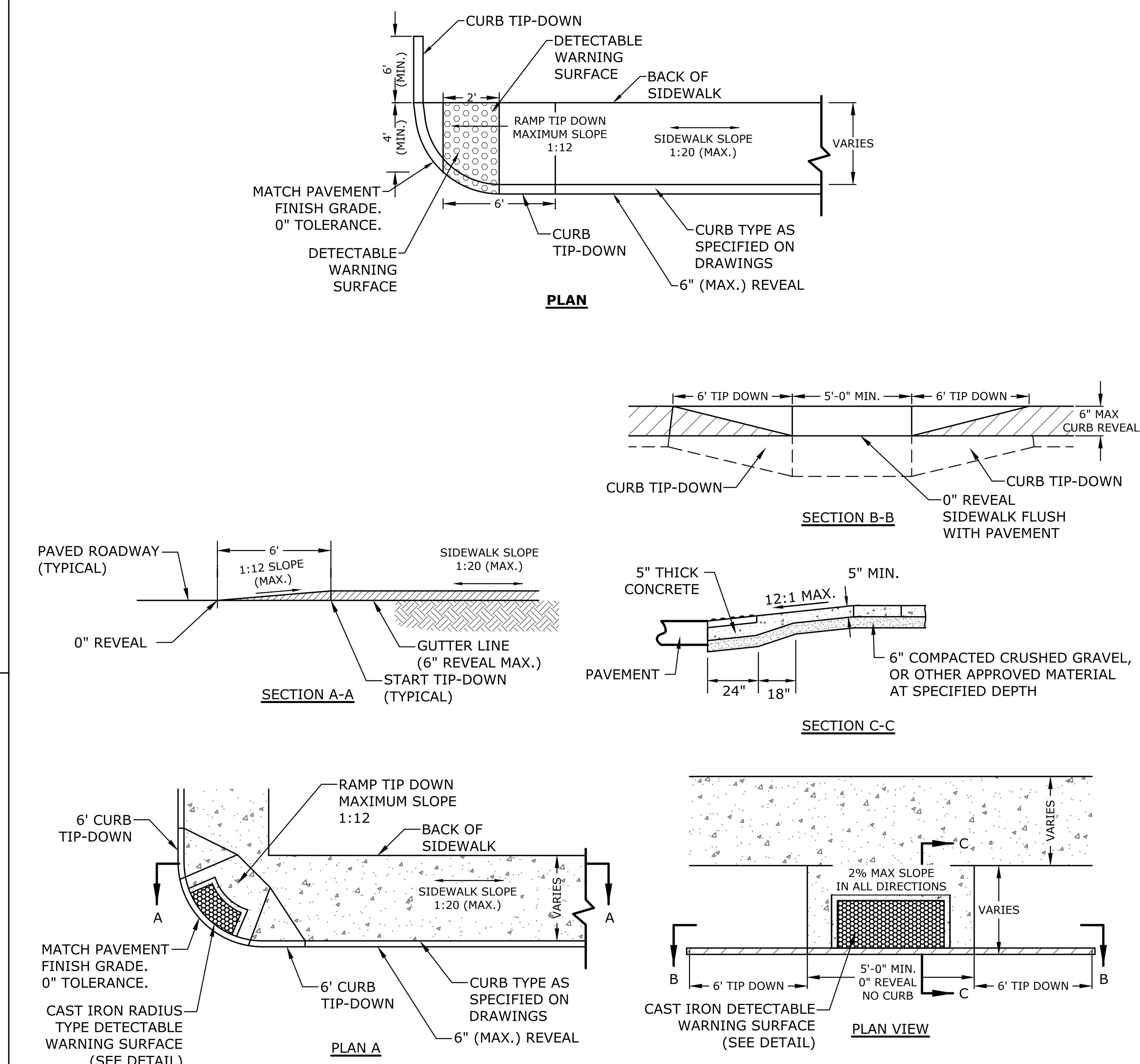
CURB TRANSITION
NO SCALE



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

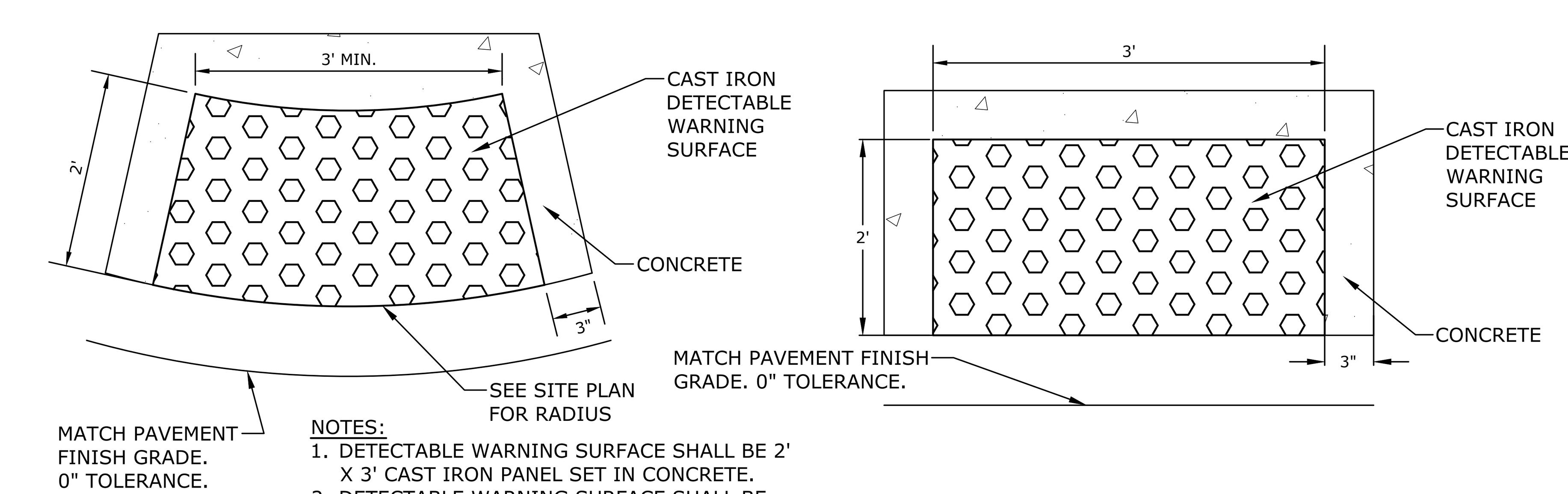
NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF SLOPED GRANITE CURB (SGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).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

SLOPED GRANITE CURB
NO SCALE



NOTES:
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
2. A 6" COMPACTED CRUSHED GRAVEL BASE (NHDOT ITEM No. 304.3) SHALL BE PROVIDED BENEATH RAMPS.
3. DETECTABLE WARNING PANEL SHALL BE CAST IRON SET IN CONCRETE (SEE DETAIL.)
4. LOCATE THE DETECTABLE WARNING SURFACES AT THE BACK OF THE CURB ALONG THE EDGE OF THE LANDING.
5. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
6. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURBLINE.
7. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
8. DETECTABLE WARNING PANELS SHALL BE A MINIMUM OF 2 FEET IN DEPTH. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP, BLENDED TRANSITION, OR LANDING AND THE STREET.
9. THE TEXTURE OF THE DETECTABLE WARNING FEATURE MUST CONTRAST VISUALLY WITH THE SURROUNDING SURFACES (EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT).

CONCRETE WHEELCHAIR ACCESSIBLE RAMP
NO SCALE



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

CAST IRON DETECTABLE WARNING SURFACE
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
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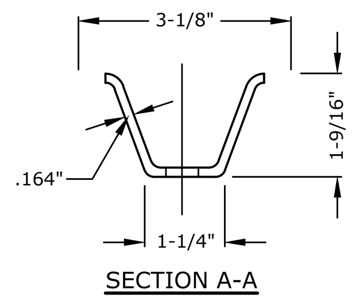
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

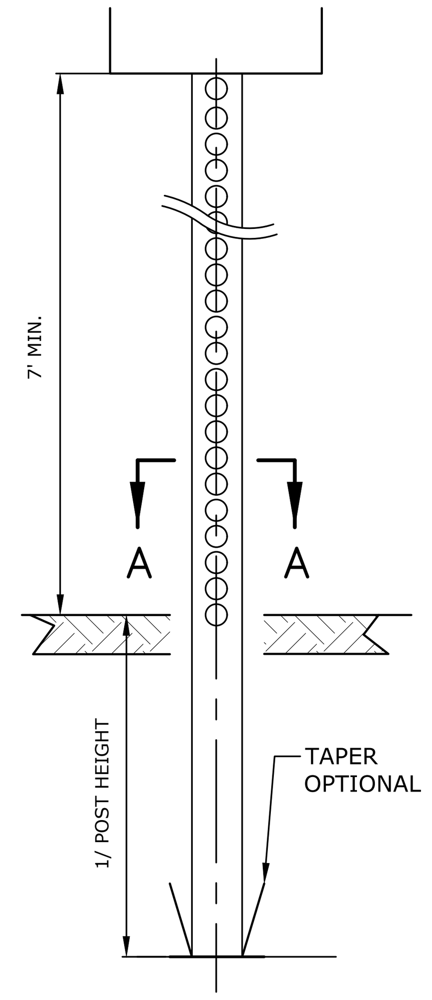
DETAILS SHEET

SCALE: AS SHOWN

C-802

Last Saved: 10/17/2024
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg





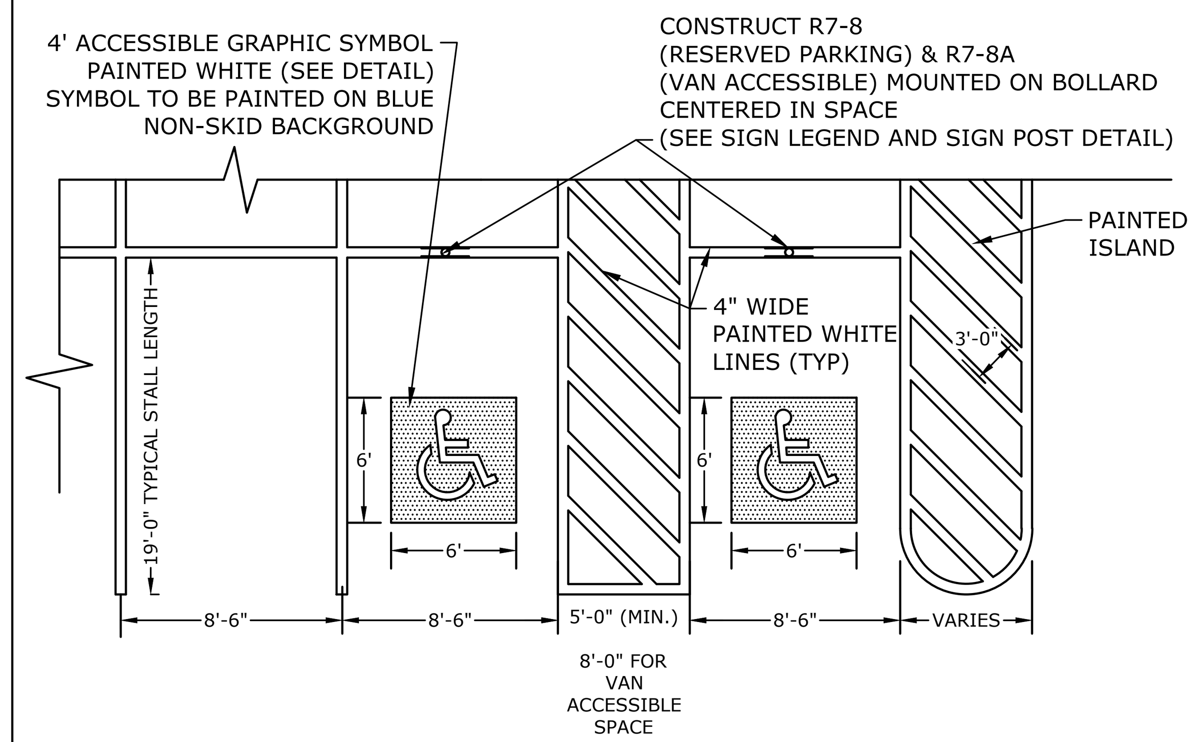
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASSTM A-576 (GRADE 1070 - 1080)

* IN LEDGE DRILL & GROUT TO A MIN OF 2'

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED BLACK BAKED ON OR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

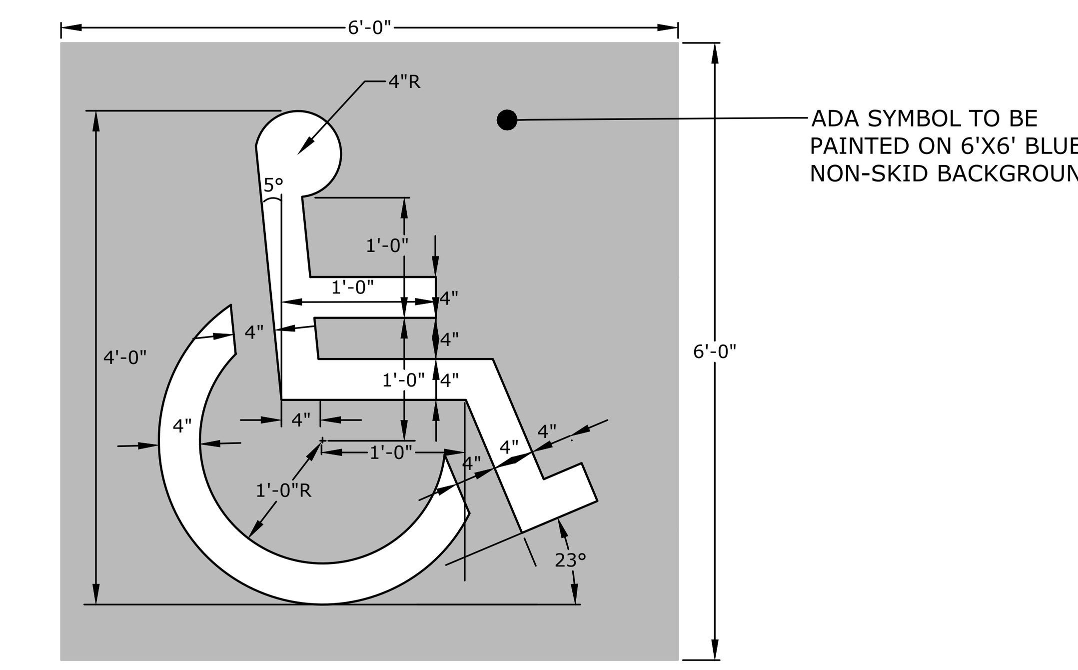
NOTE:
ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

SIGN LEGEND AND SIGN POST
NO SCALE



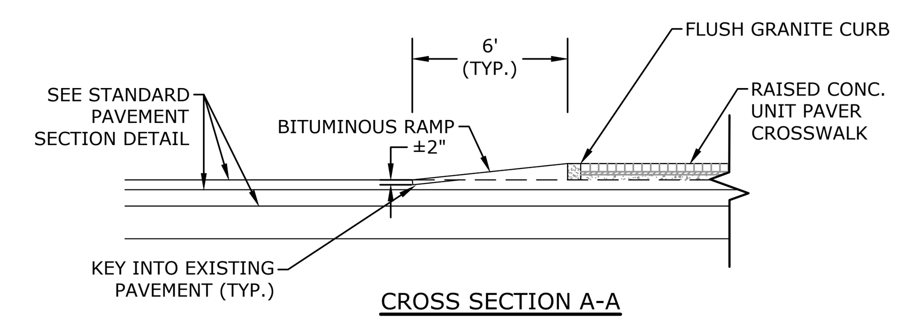
NOTES:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
3. FINISH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

PARKING STALL/PAINTED ISLAND STRIPING
NO SCALE

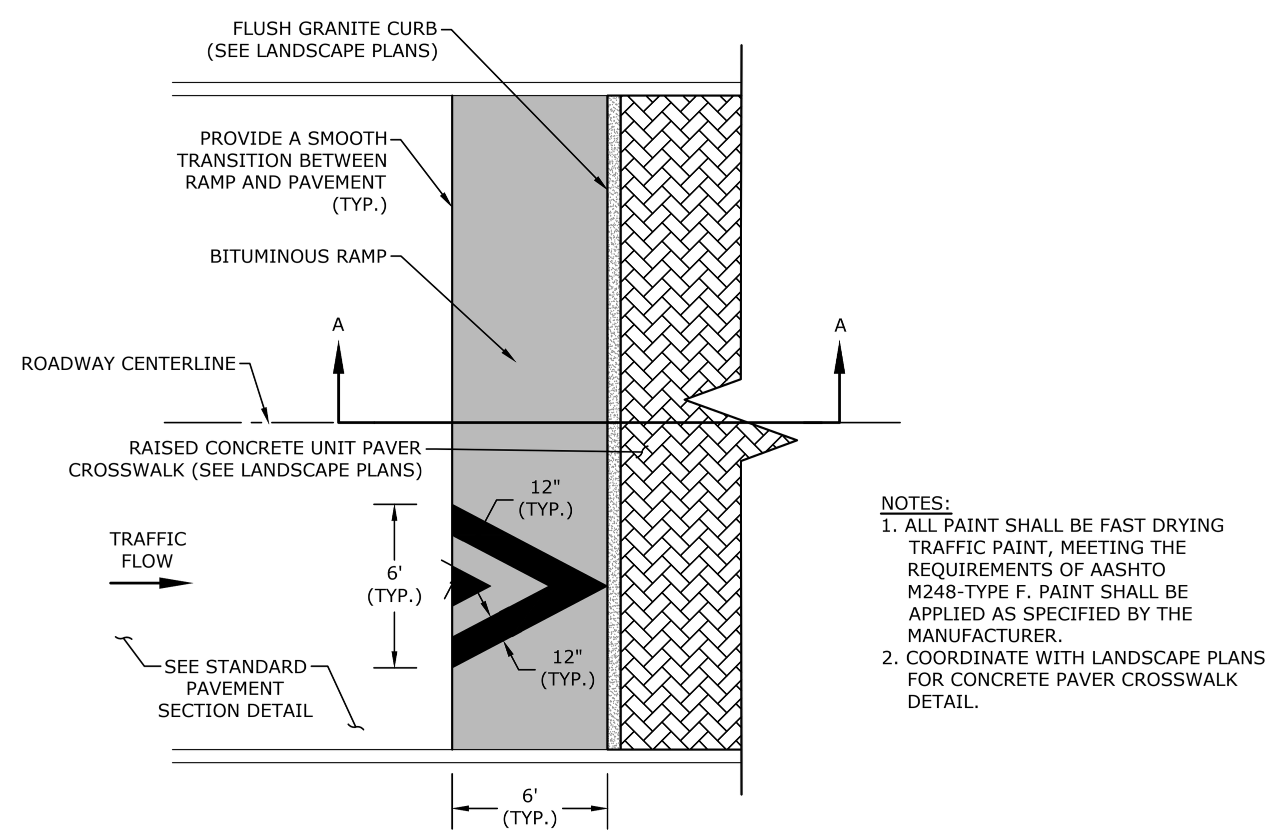


NOTES:
1. SYMBOL SHALL BE CONSTRUCTED IN ALL ACCESSIBLE SPACES USING FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOL SHALL BE CONSTRUCTED TO THE LATEST ADA, STATE AND LOCAL REQUIREMENTS.

ACCESSIBLE SYMBOL
NO SCALE



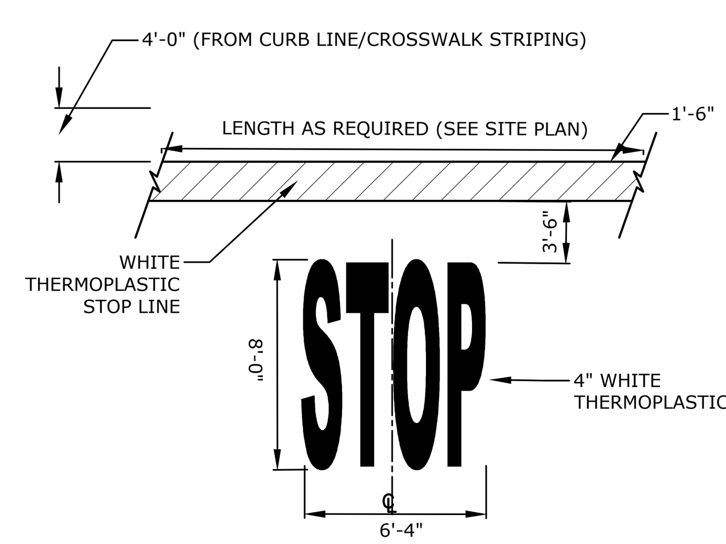
CROSS SECTION A-A



PLAN VIEW

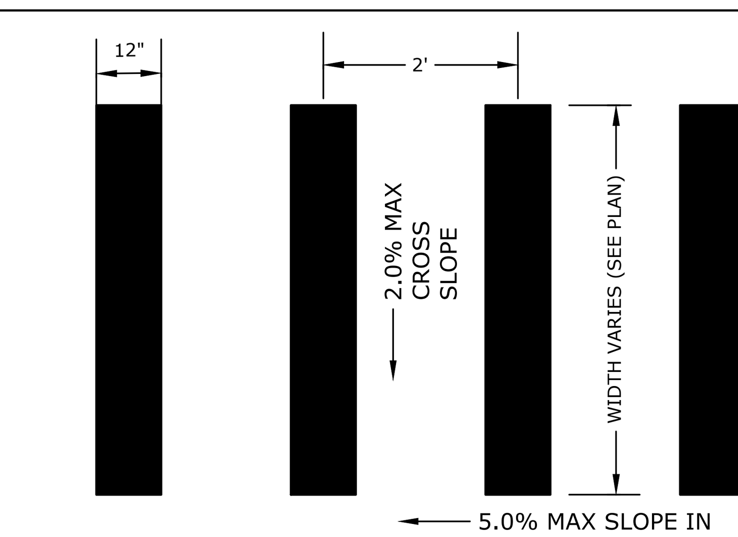
NOTES:
1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY THE MANUFACTURER.
2. COORDINATE WITH LANDSCAPE PLANS FOR CONCRETE PAVER CROSSWALK DETAIL.

RAISED CROSSING TRANSITION SECTION
NO SCALE



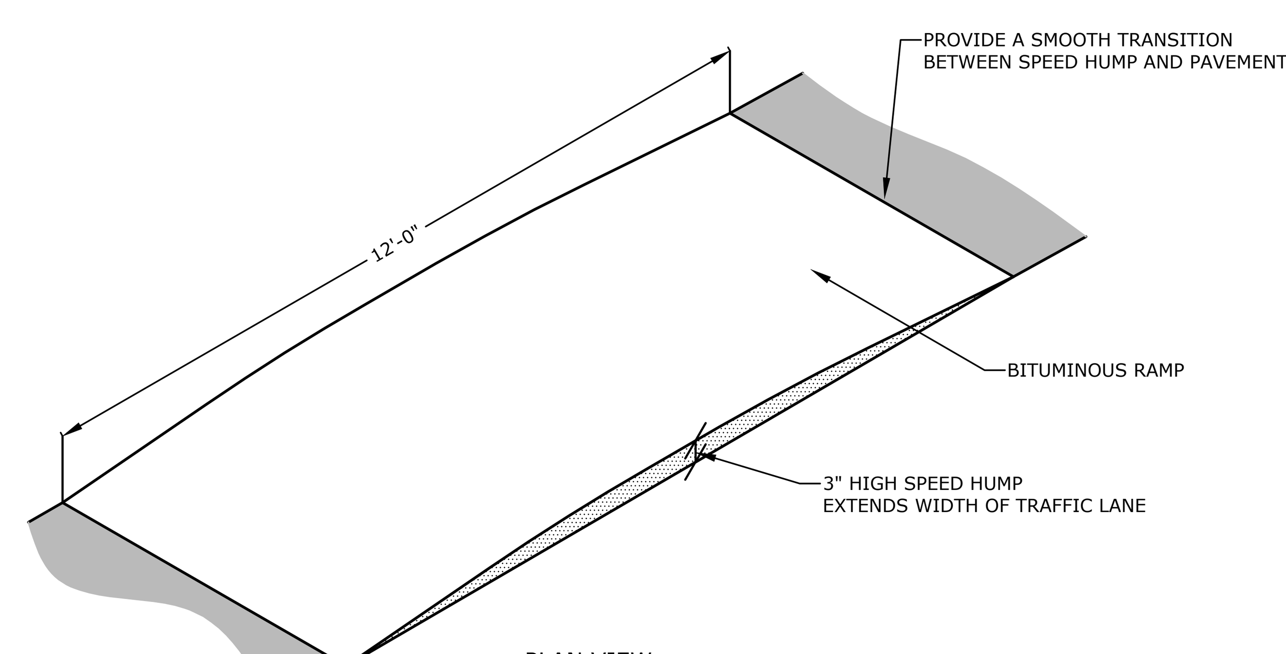
NOTE:
1. PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS AS SHOWN ON SITE PLAN.
2. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

STOP BAR AND LEGEND
NO SCALE

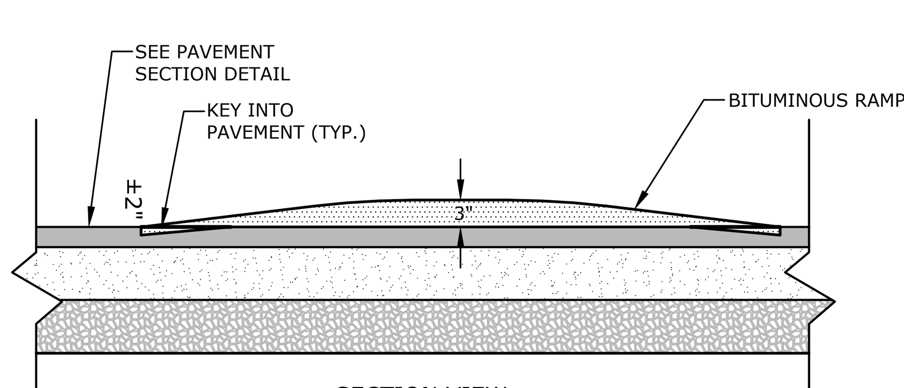


NOTE:
1. STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVEMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

CROSSWALK STRIPING
NO SCALE

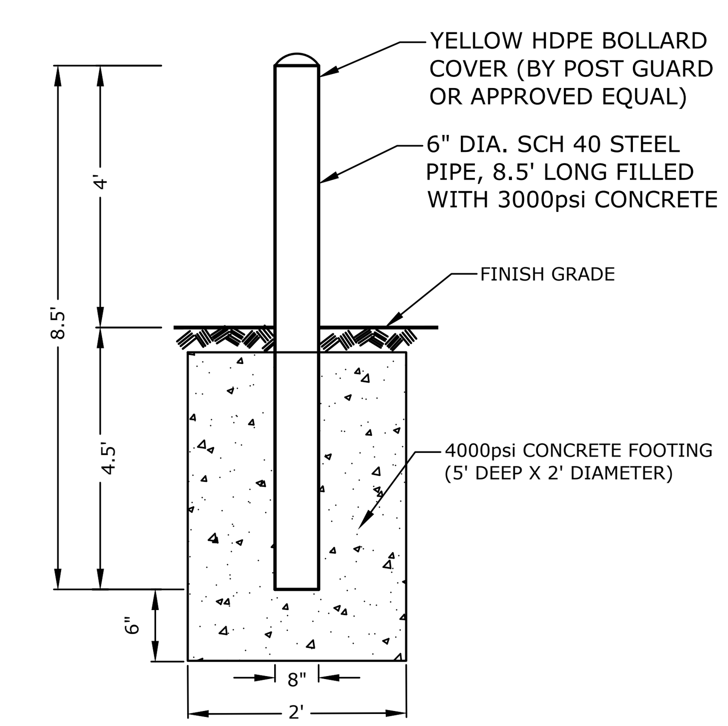


PLAN VIEW



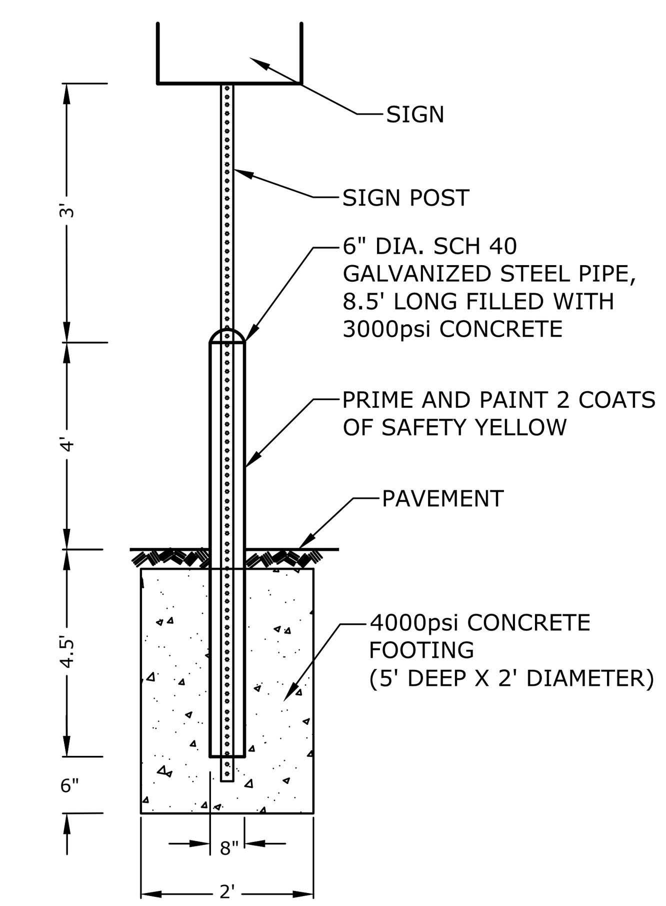
SECTION VIEW

SPEED HUMP
NO SCALE

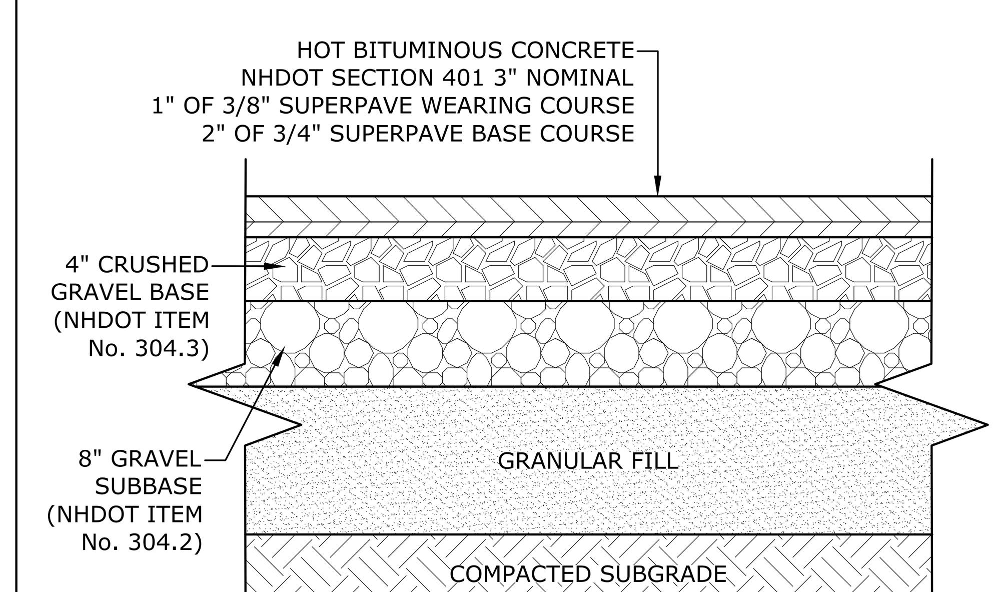


NOTE:
1. COORDINATE WITH EVERSOURCE TO VERIFY THAT BOLLARD, FOOTING, AND BOLLARD COVER MEET EVERSOURCE REQUIREMENTS.

BOLLARD DETAIL
NO SCALE

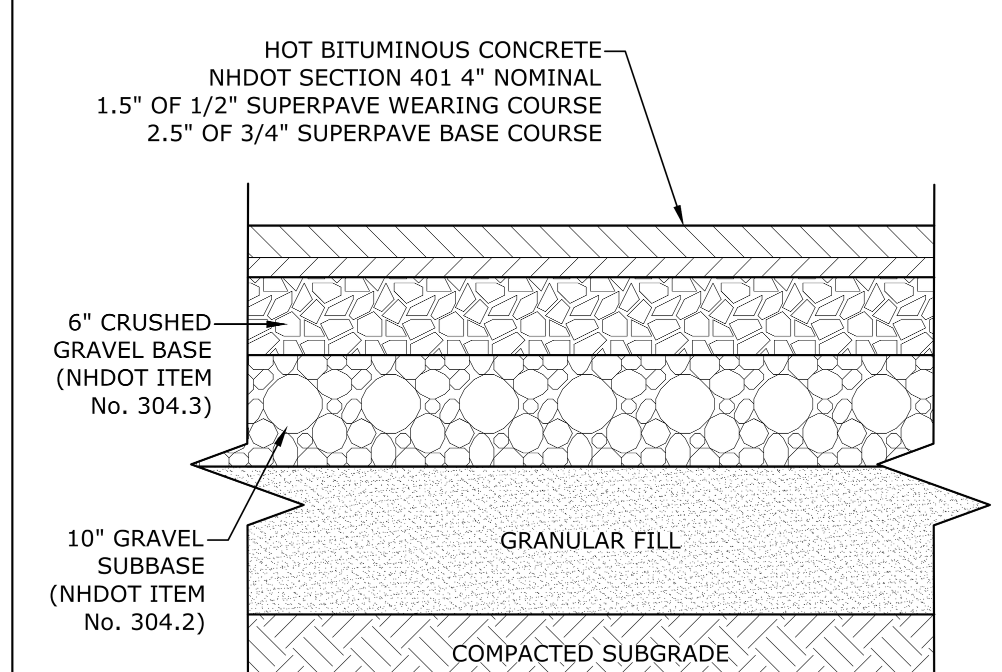


BOLLARD MOUNTED SIGN DETAIL
NO SCALE



NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.

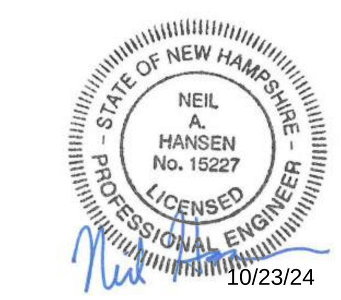
ON-SITE PAVEMENT SECTION
NO SCALE

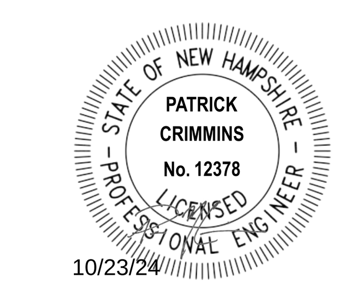


NOTES:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.

OFF-SITE PAVEMENT SECTION
NO SCALE

Tighe&Bond





PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
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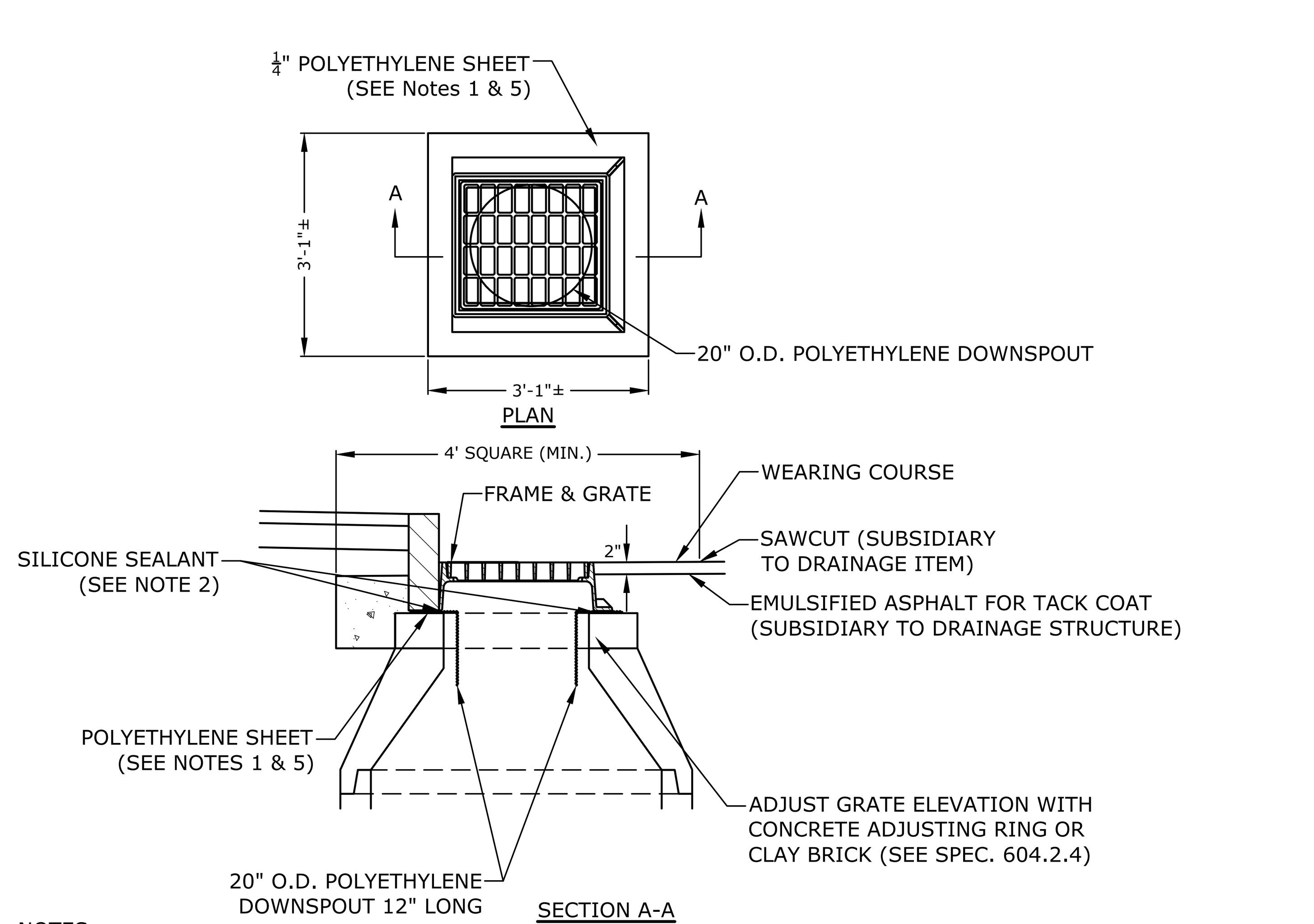
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DETAILS SHEET

SCALE: AS SHOWN

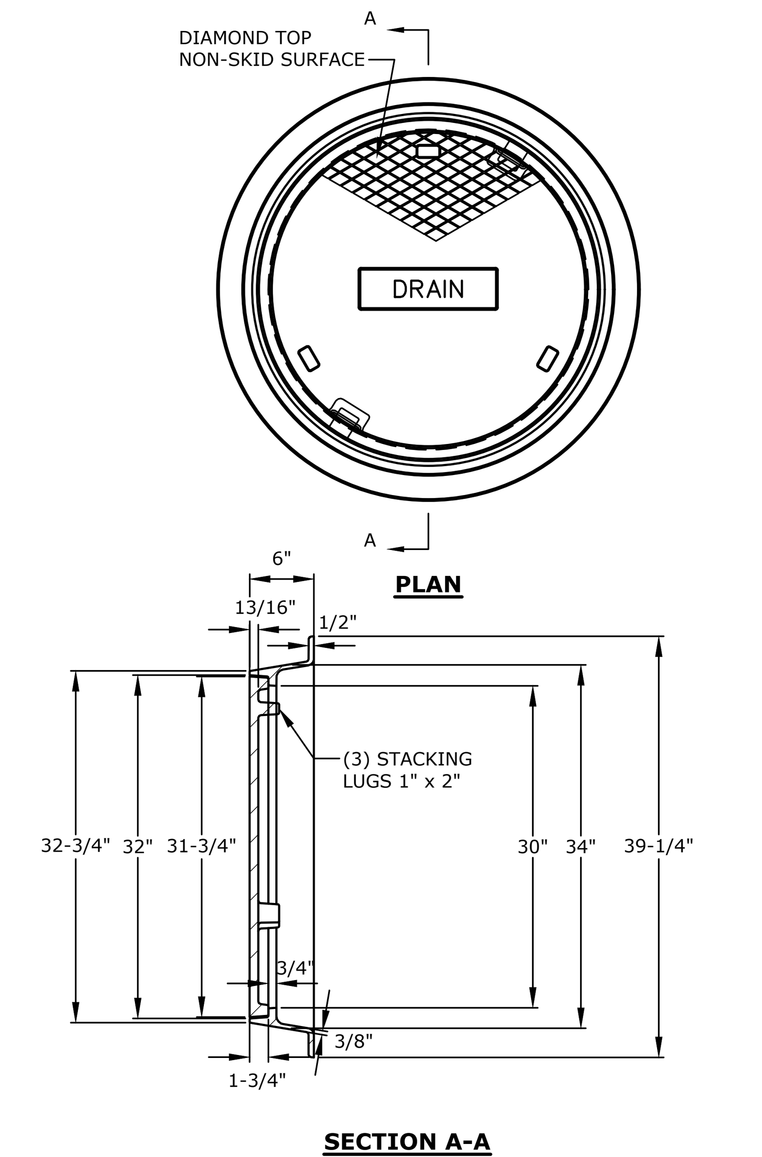
C-803

Last Saved: 10/21/2024
Plotted On:Oct 22, 2024-10:32am By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg



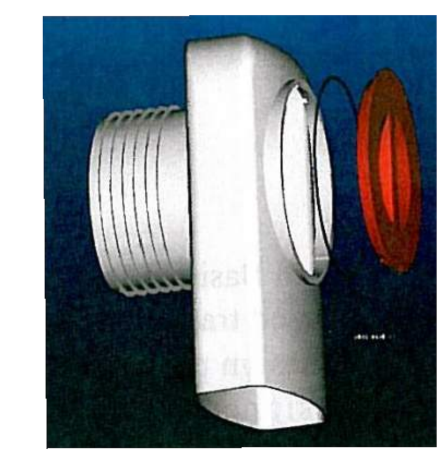
NOTES:
1. POLYETHYLENE LINER SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET.
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE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

POLYETHYLENE LINER
NO SCALE



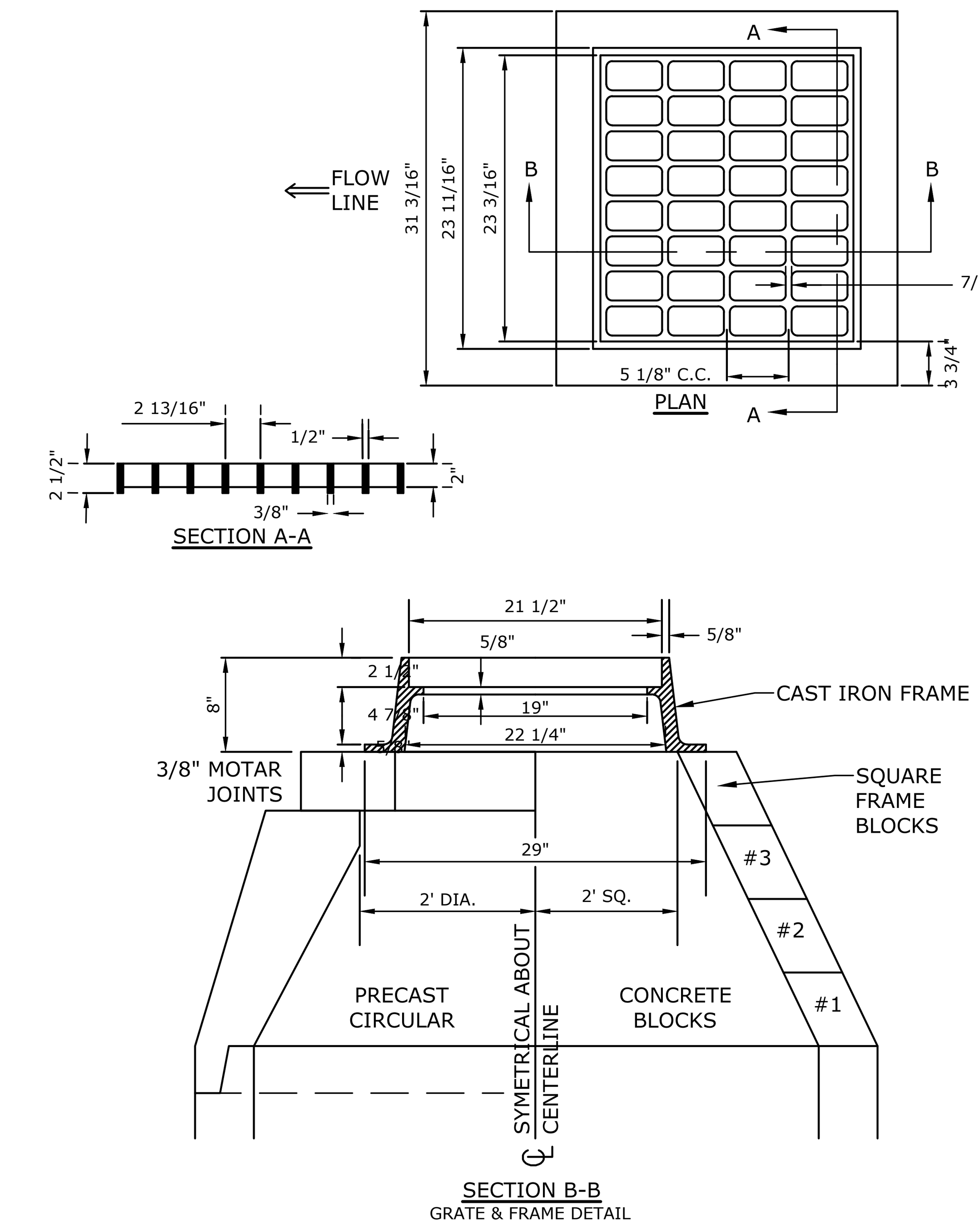
NOTES:
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS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

DRAIN MANHOLE FRAME & COVER
NO SCALE



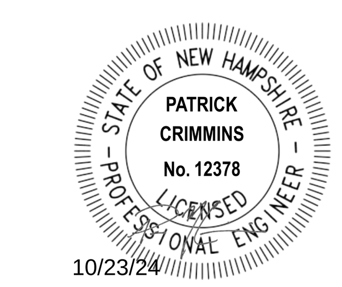
NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)
2. INSTALL DEBRIS TRAP TIGHT TO INSIDE OF STRUCTURE.
3. 1/4" HOLE SHALL BE DRILLED IN TOP OF DEBRIS TRAP

"ELIMINATOR" OIL FLOATING DEBRIS TRAP



NOTE:
1. GRATE TO BE CAST IRON (NHDOT TYPE B ALTERNATE 1)
2. FRAME AND GRATE TO BE MANUFACTURED IN THE USA

CATCH BASIN FRAME & GRATE
NO SCALE

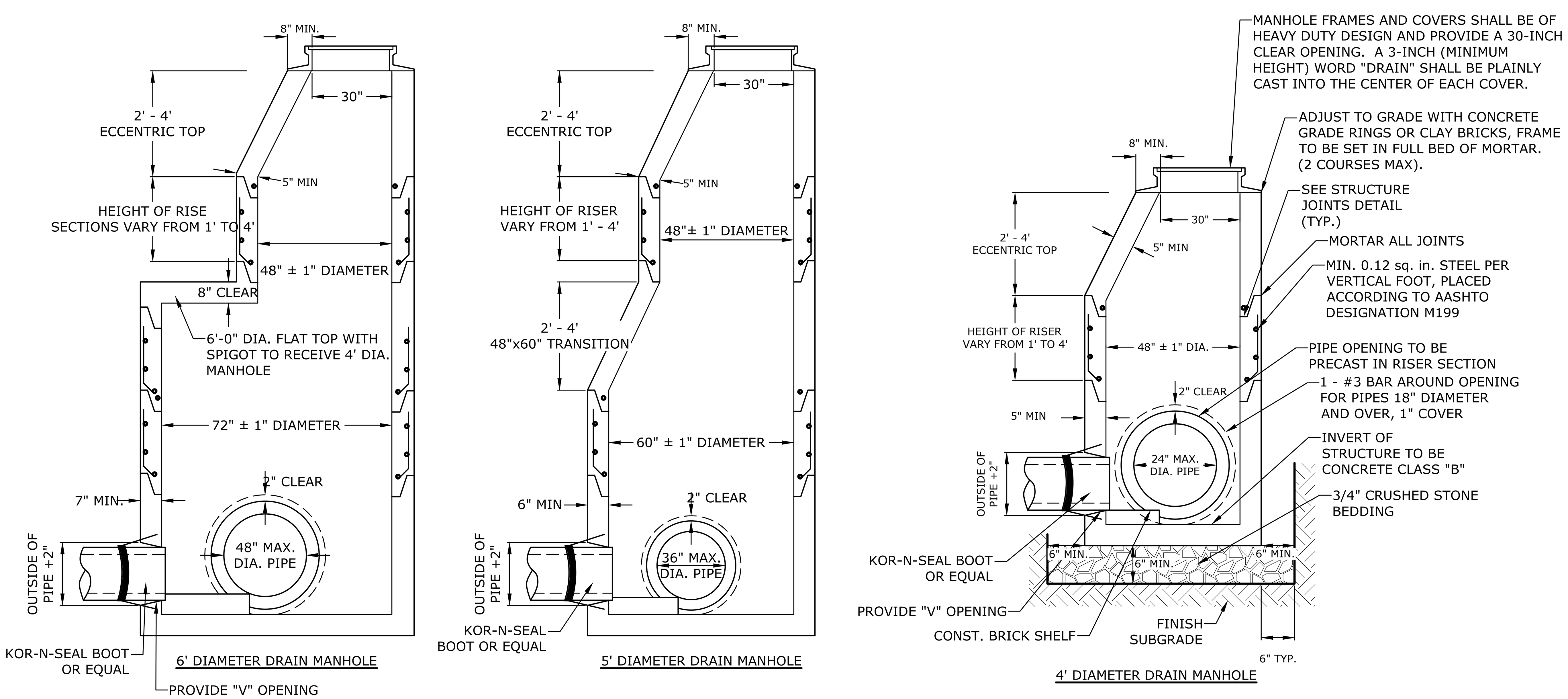



Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

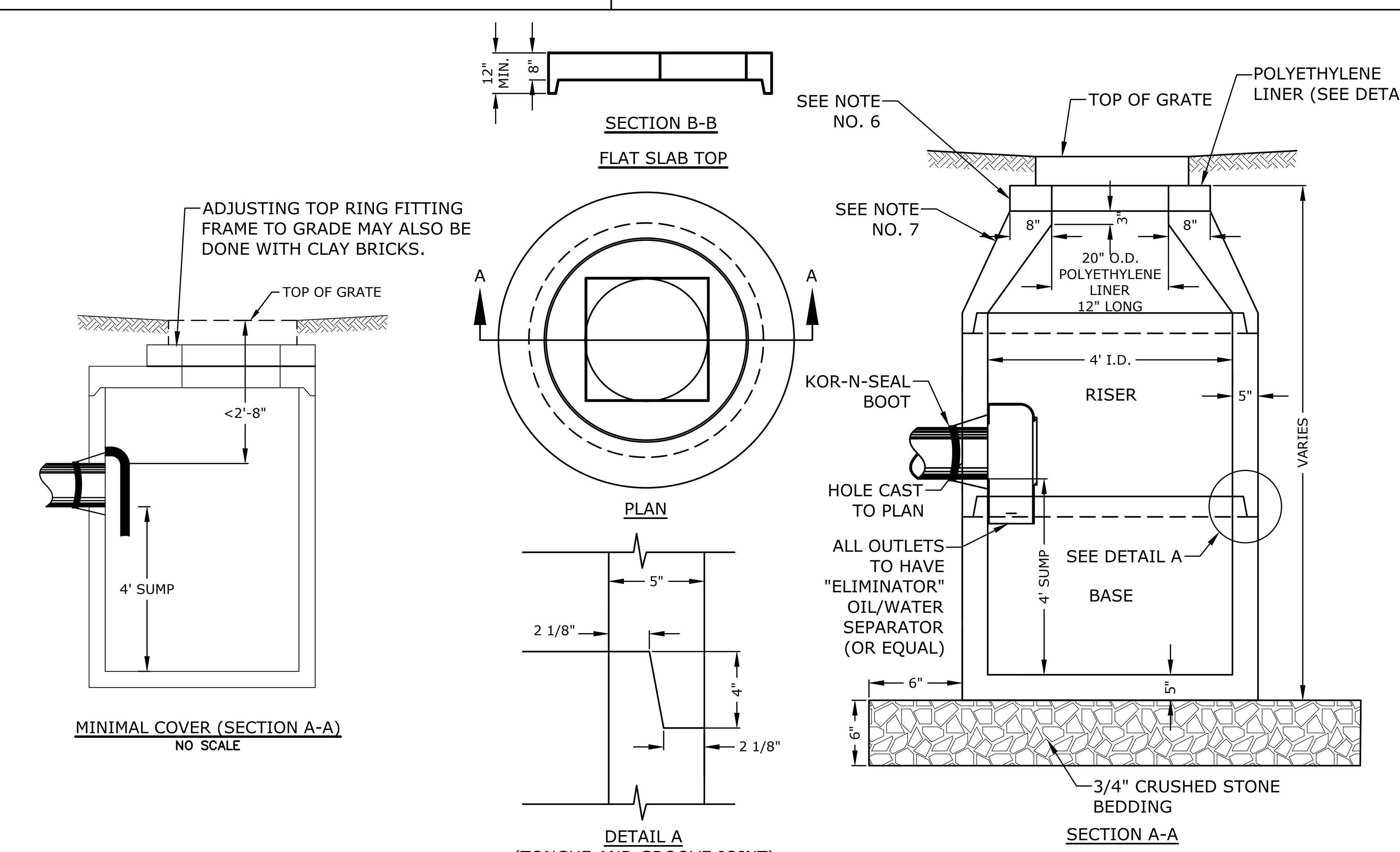
100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE



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

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"
9'	11"	10"

DRAIN MANHOLES
NO SCALE



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

4' DIAMETER CATCHBASIN
NO SCALE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DTLS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

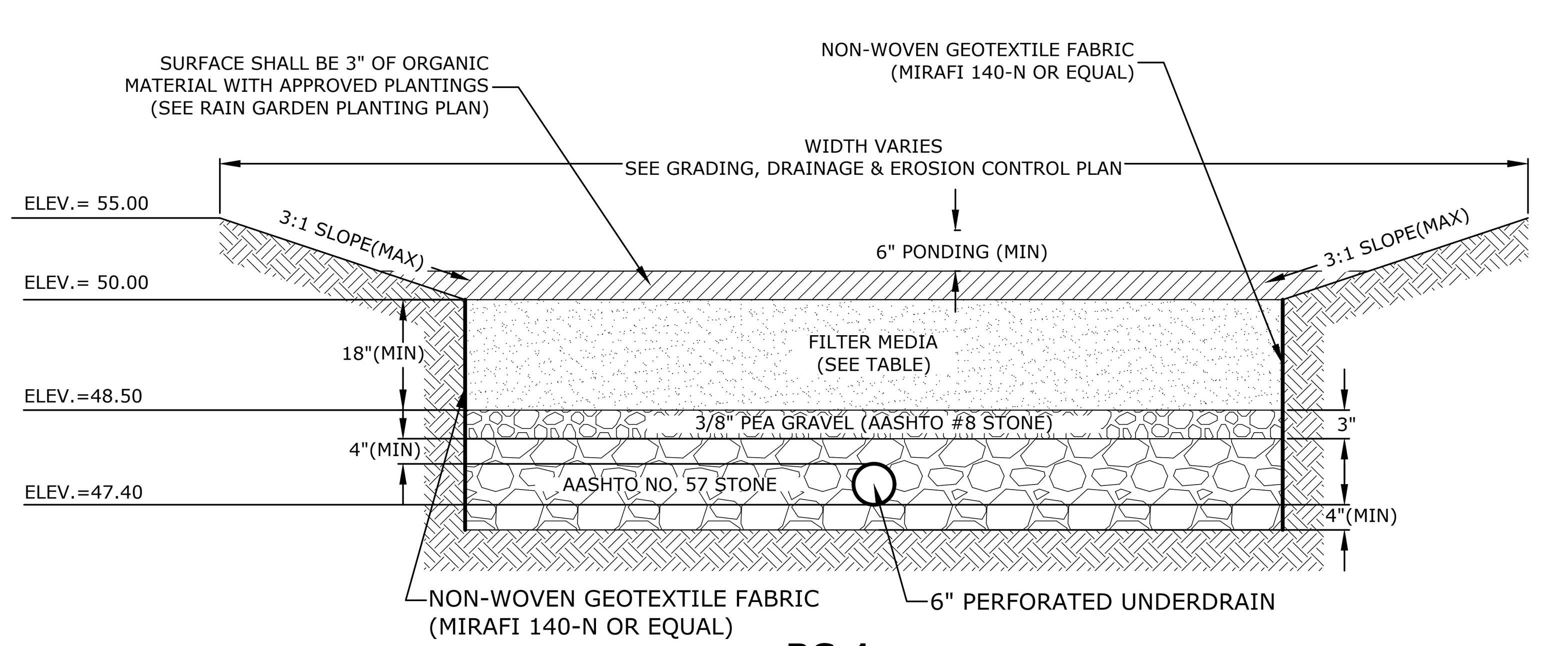
DETAILS SHEET

SCALE: AS SHOWN

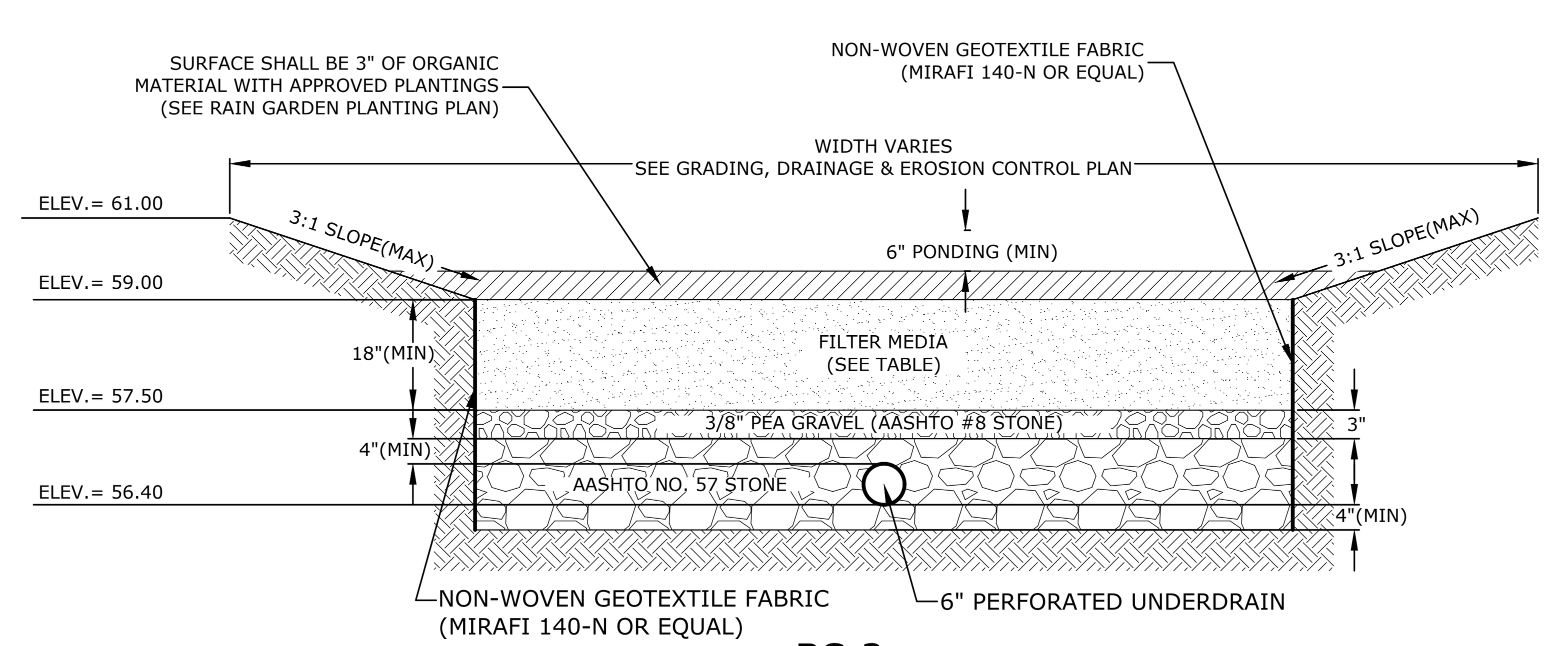
C-804

Last Saved: 10/17/2024
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg

RAIN GARDENS



RG-1
NO SCALE



RG-2
NO SCALE

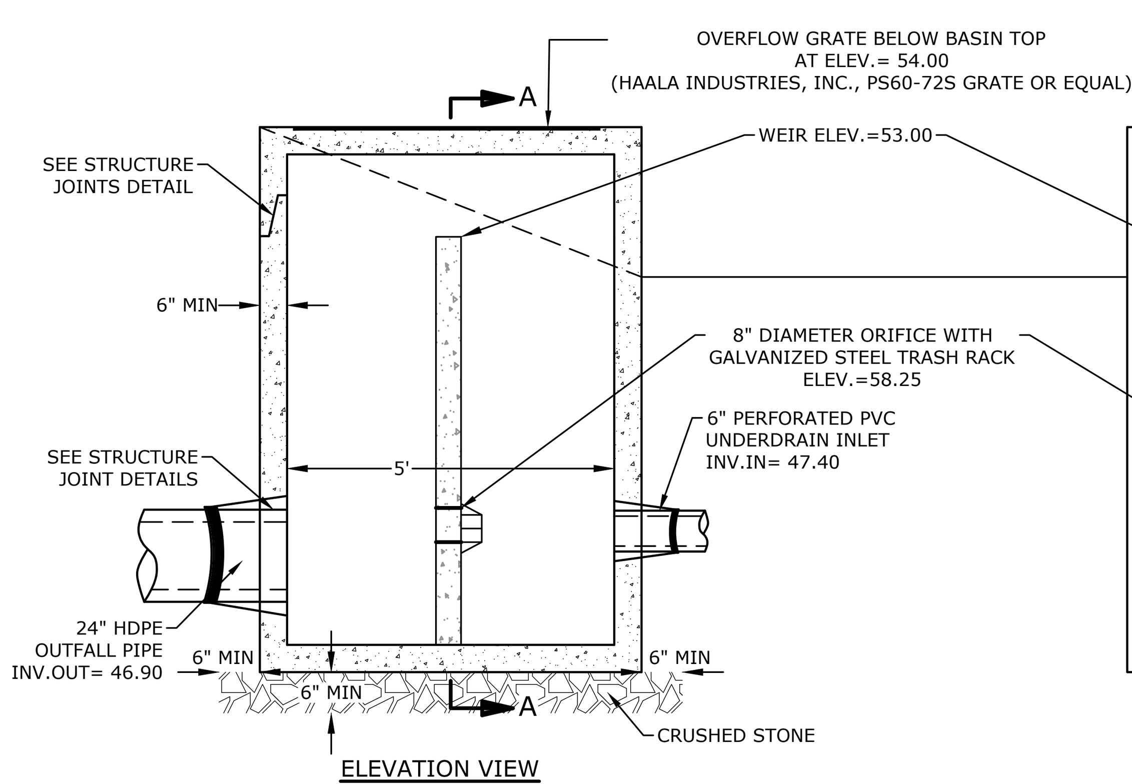
NOTES:
1. BARK MULCH SHALL BE AGED A MINIMUM OF 12 MONTHS AND SHALL NOT FLOAT.
2. RAIN GARDENS SHALL NOT BE PLACED INTO SERVICE UNTIL THE PRACTICE HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
3. DO NOT TRAFFIC EXPOSED SOIL SURFACES WITH CONSTRUCTION EQUIPMENT. CONTRACTOR SHALL KEEP ALL EXCAVATION EQUIPMENT OUTSIDE OF THE LIMIT OF THE RAIN GARDEN.
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR LOCATIONS, LAYOUTS, AND ELEVATIONS.
5. THE SAND PORTION OF THE FILTER MEDIA SHALL MEET THE FOLLOWING GRADATION (ASTM C-33):

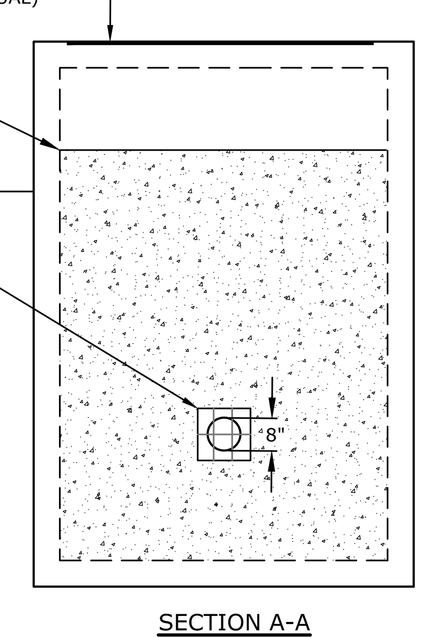
SIEVE SIZE	PERCENT PASSING
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	5-30
#100	0-10

FILTER MEDIA COMPOSITION:

COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL SIEVE NO.	PERCENT PASSING
ASTM C-33 CONCRETE SAND	50-55	SEE NOTE #5	
LOAMY SAND TOPSOIL	20-30	200	15-25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH	20-30	200	5 MAX

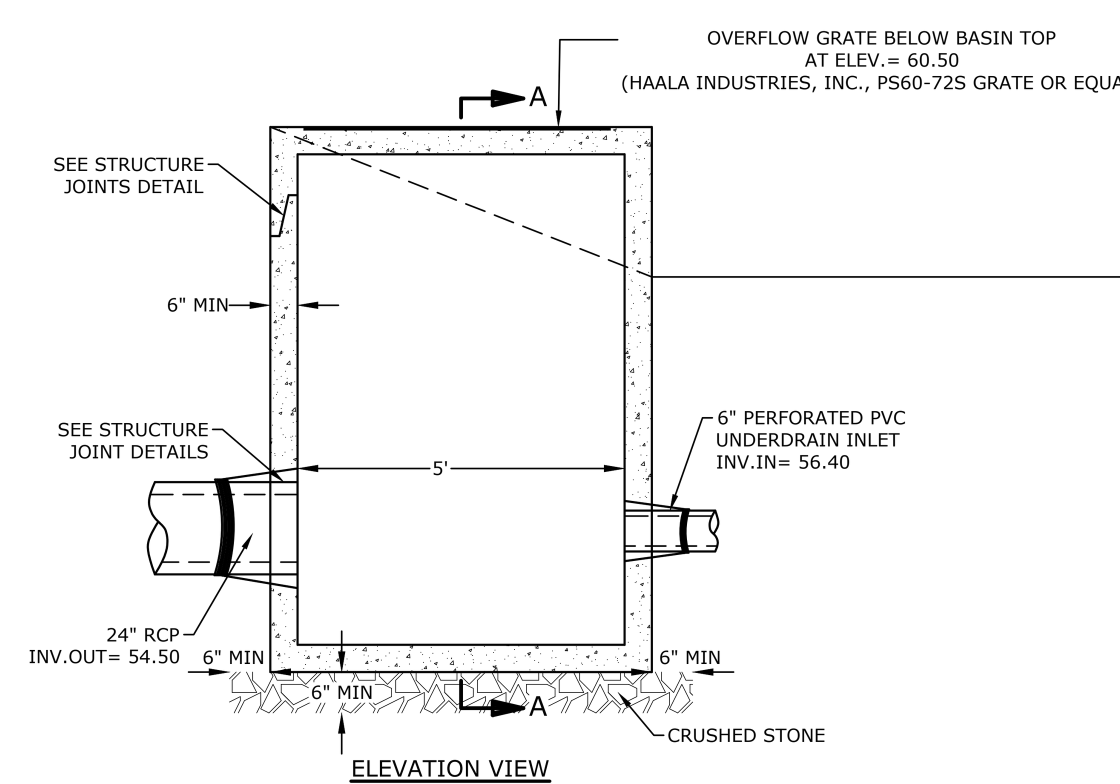
RAIN GARDENS
NO SCALE

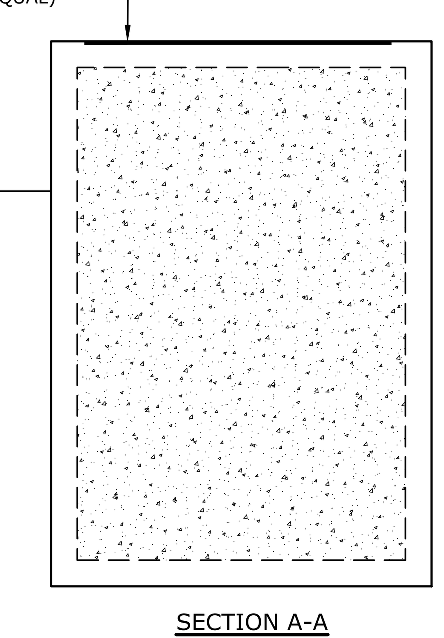




NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.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

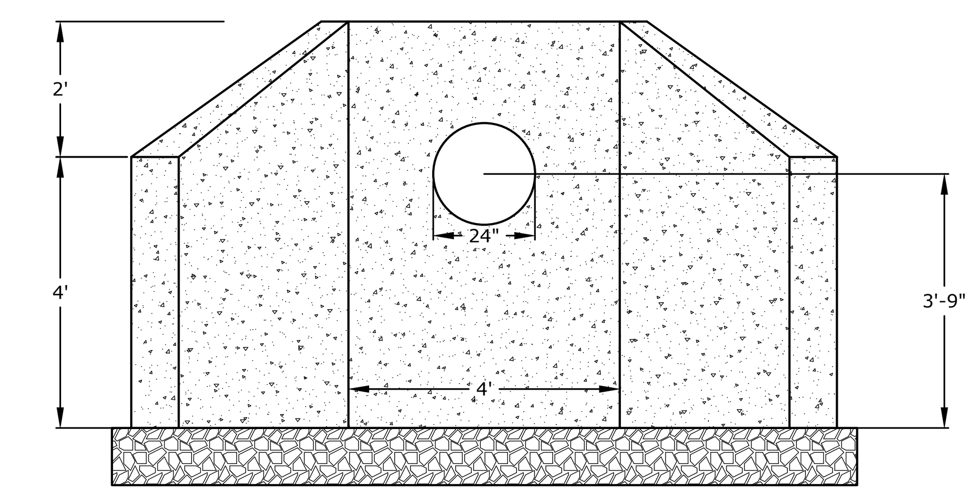
RAIN GARDEN OUTLET STRUCTURE (POCS1)
NO SCALE



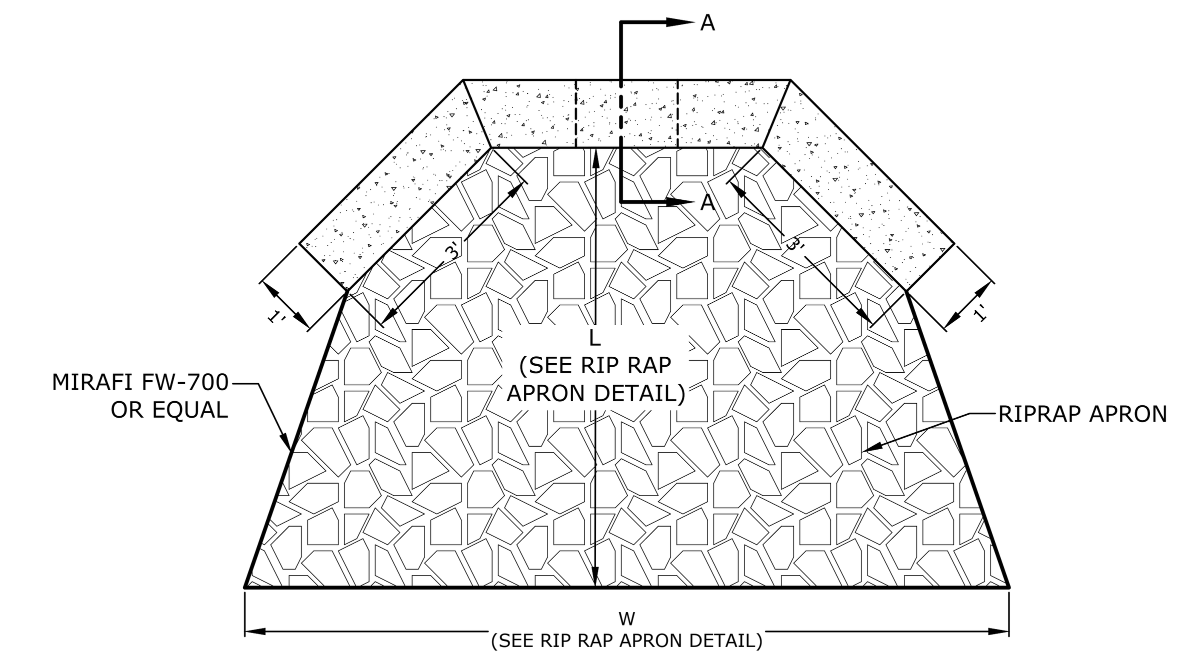


NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.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

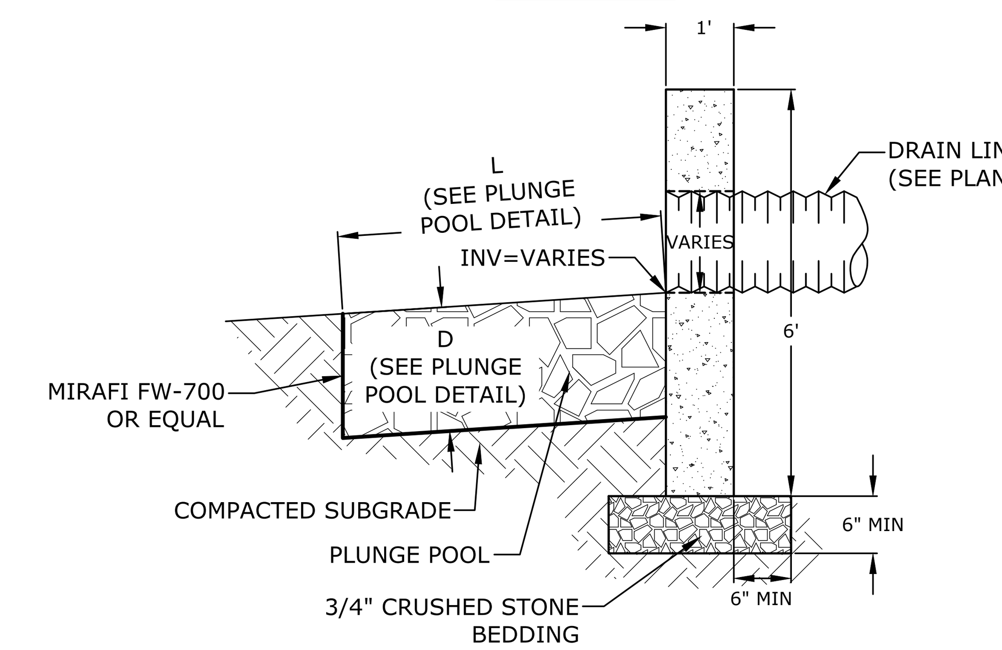
RAIN GARDEN OUTLET STRUCTURE (POCS2)
NO SCALE



ELEVATION VIEW



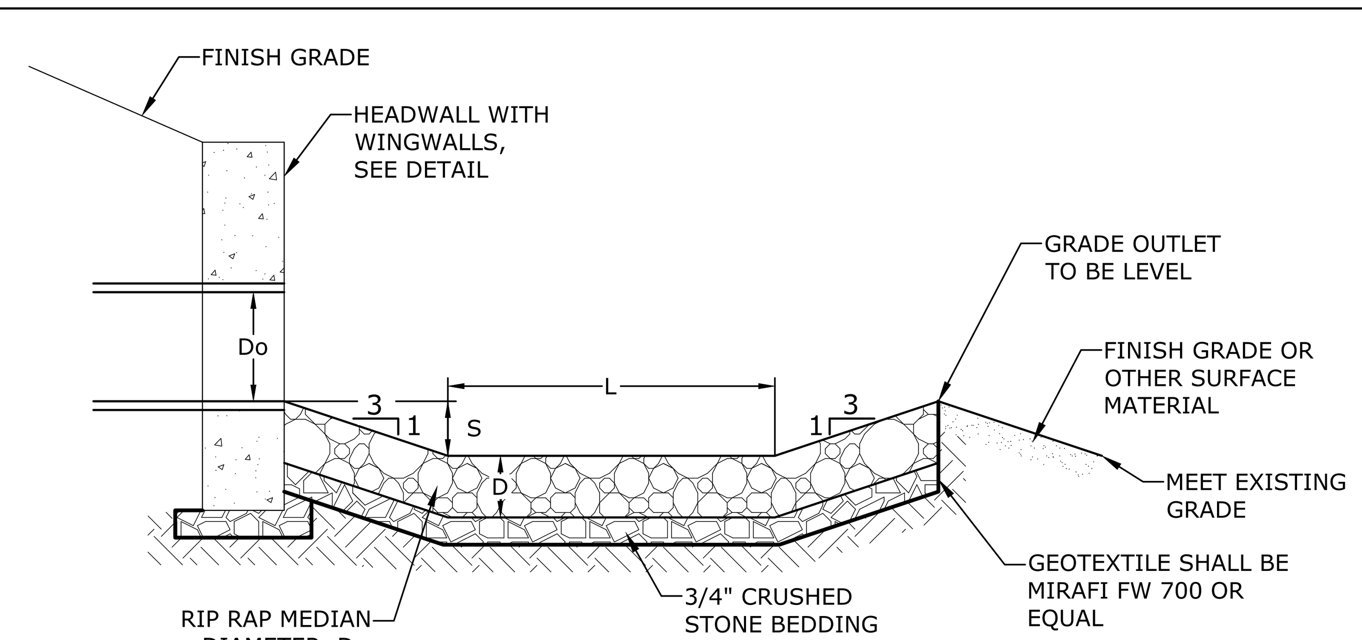
PLAN VIEW



SECTION A-A

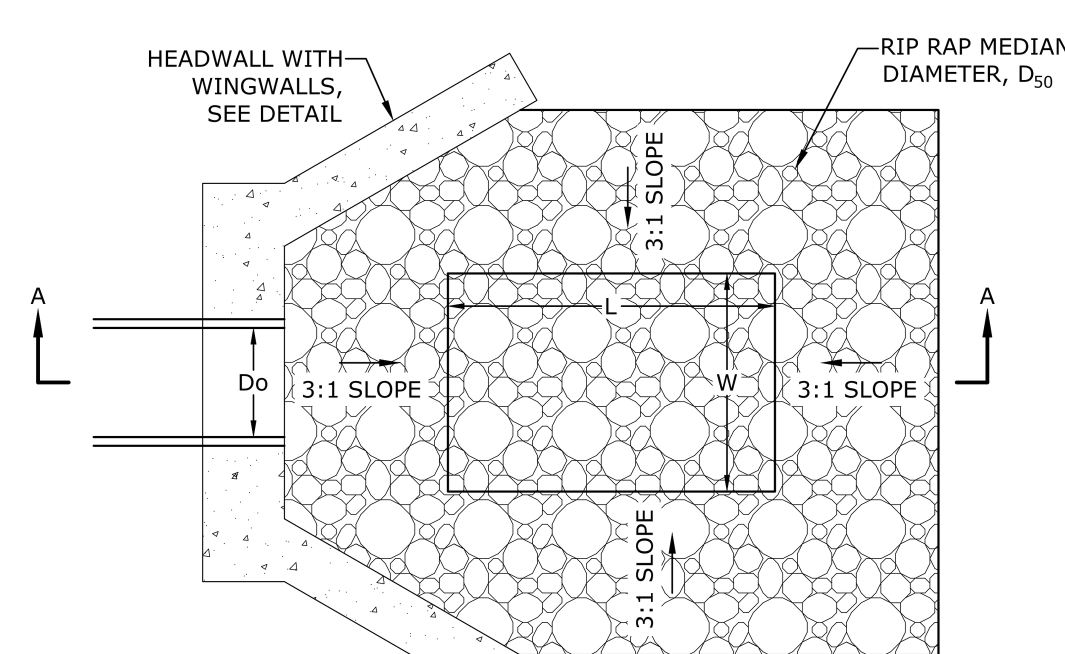
NOTES:
1. HEADWALL SHALL BE 5,000 PSI CONCRETE.
2. HEADWALL REINFORCEMENT SHALL BE 0.18 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. SEE GRADING, DRAINAGE, & EROSION CONTROL PLAN FOR STONE SIZE AND APRON DIMENSIONS.
4. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
5. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

PRECAST CONCRETE HEADWALL WITH WING WALLS
NO SCALE



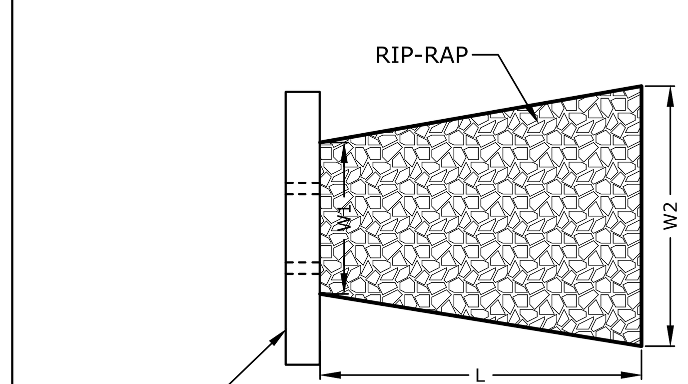
SECTION A-A

OUTLET PLUNGE POOL SIZING						
	Do	S	W	L	D_{50}	D
HW1	24"	2.0'	4.0'	6.0'	6"	1.13'

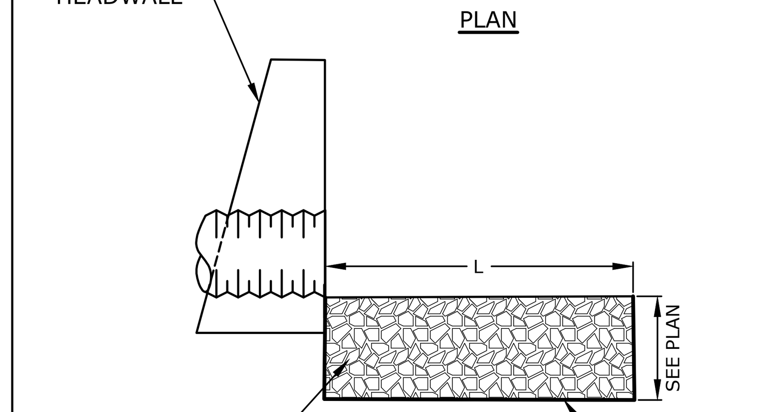


PLAN

OUTLET PLUNGE POOL
NO SCALE



PLAN



SECTION

NOTES:
1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

RIP-RAP APRON DETAIL
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DTLS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

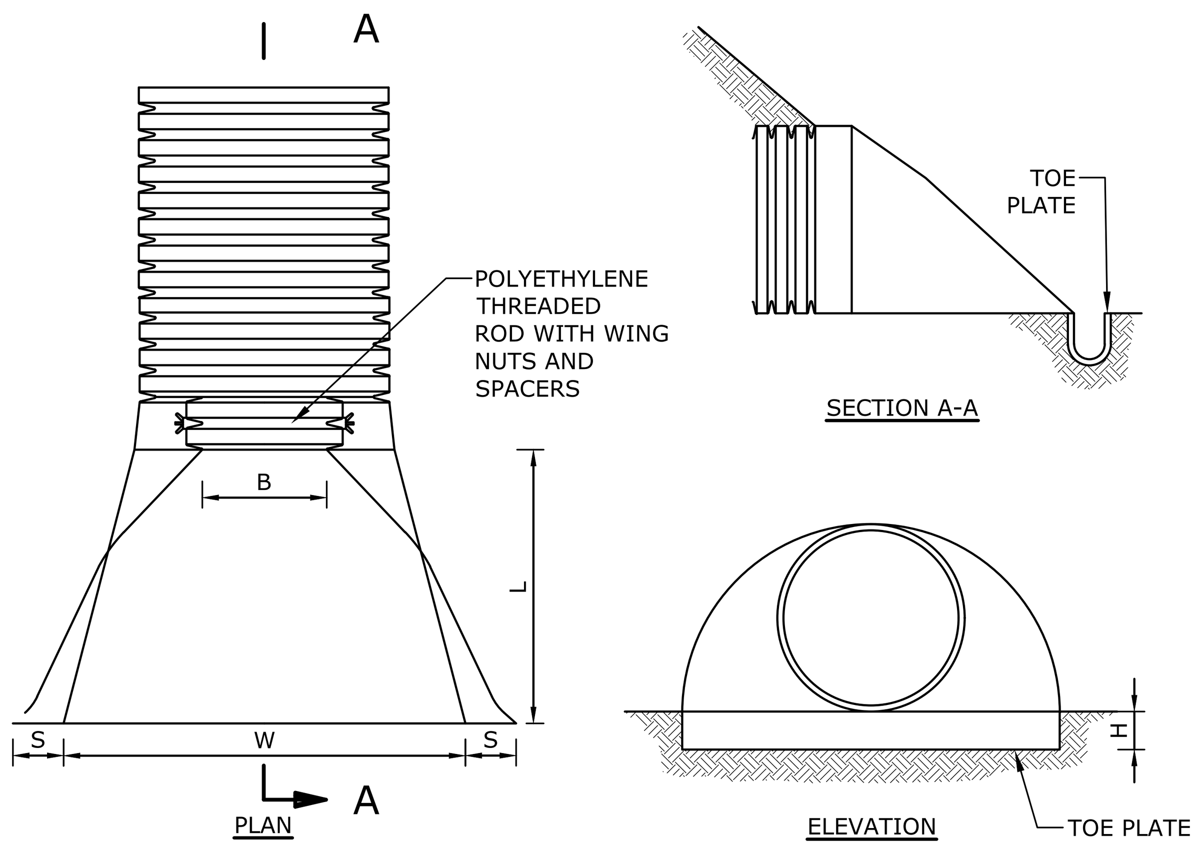
DETAILS SHEET

SCALE: AS SHOWN

C-805

Last Saved: 10/17/2024
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg

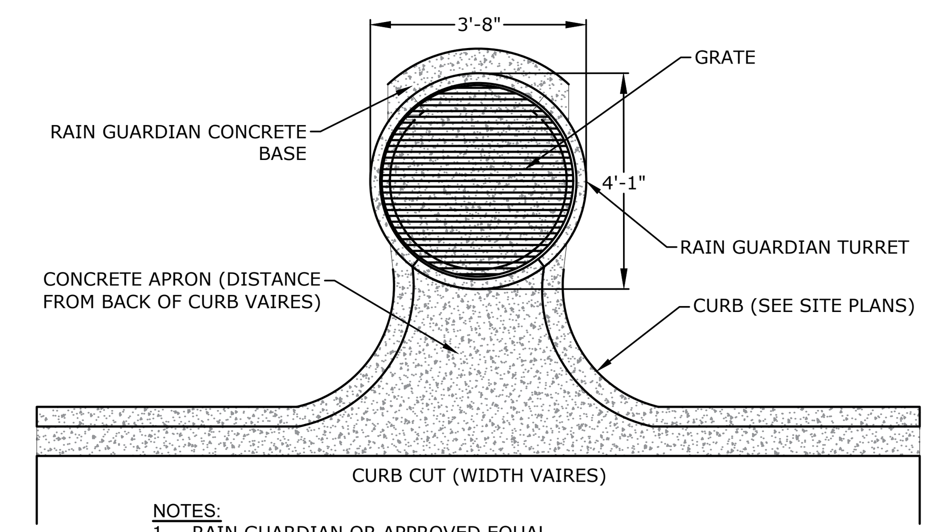
Tighe&Bond



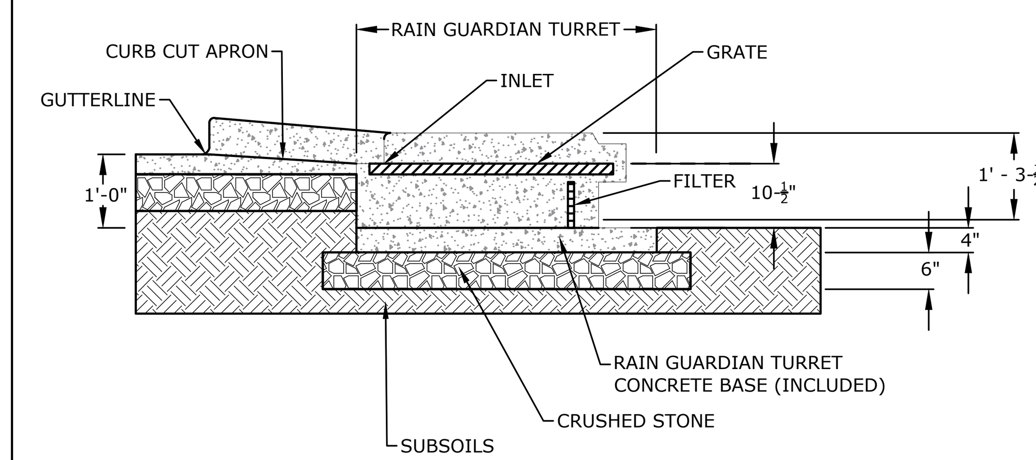
PIPE DIA.	S	B	H	L	W
12"	6.5"	10"	6.5"	25"	29"
15"	6.5"	10"	6.5"	25"	29"
18"	7.5"	15"	6.5"	32"	35"
24"	7.5"	18"	6.5"	36"	45"
30"	7.5"	12"	8.6"	58"	63"
36"	7.5"	25"	8.6"	58"	63"

NOTE:
1. END SECTIONS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, COLUMBUS, OHIO. END SECTIONS TO BE WELDED TO PIPE AS PER MANUFACTURER'S RECOMMENDATIONS.

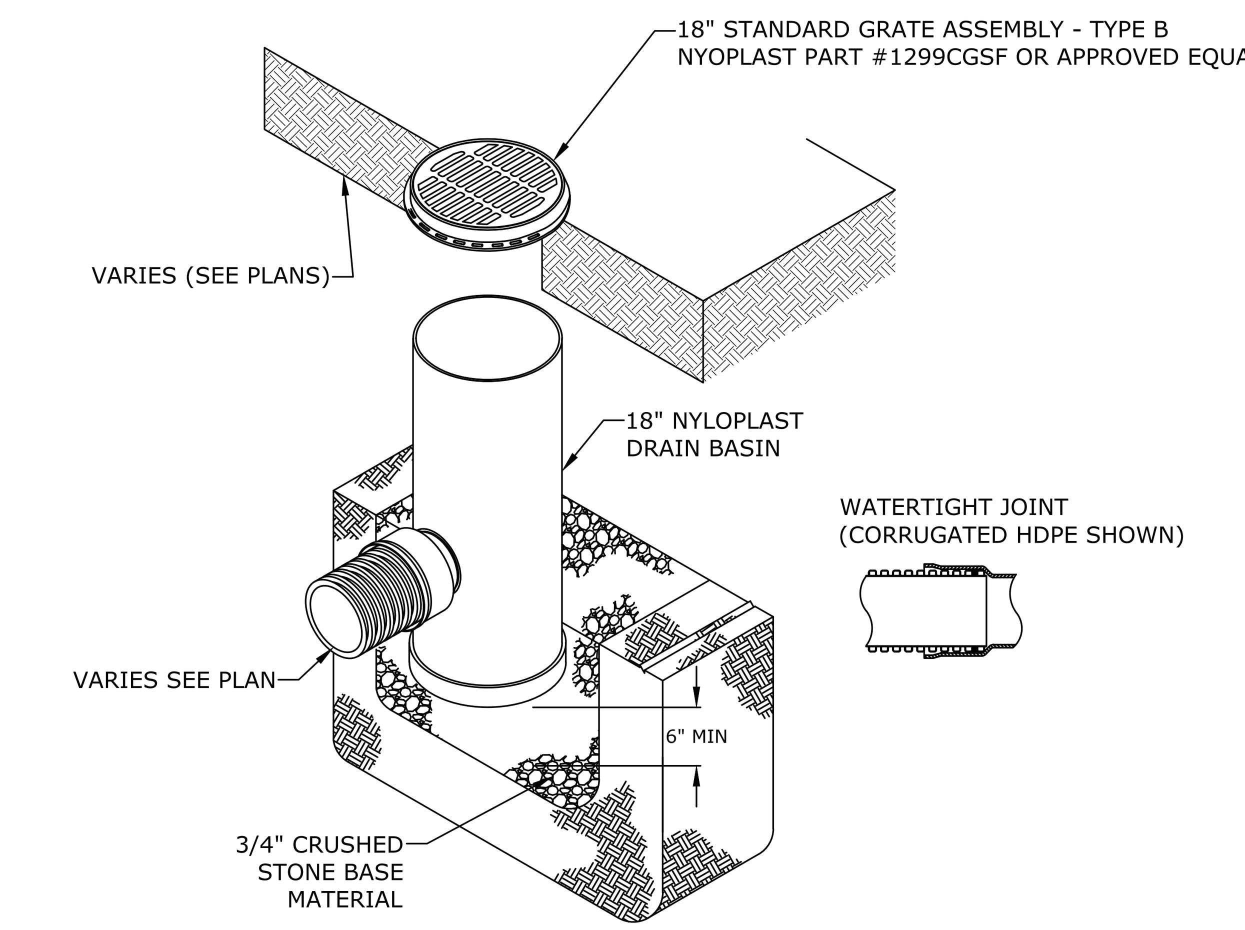
HDPE FLARED END SECTION
NO SCALE



NOTES:
1. RAIN GUARDIAN OR APPROVED EQUAL.
2. CURB INLET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURE RECOMMENDATION.

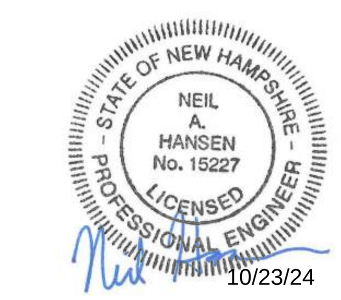


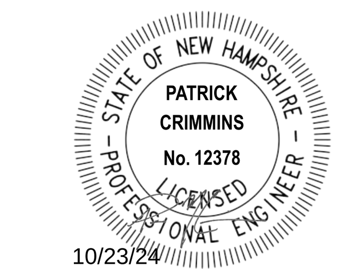
RAIN GUARDIAN TURRET
NO SCALE

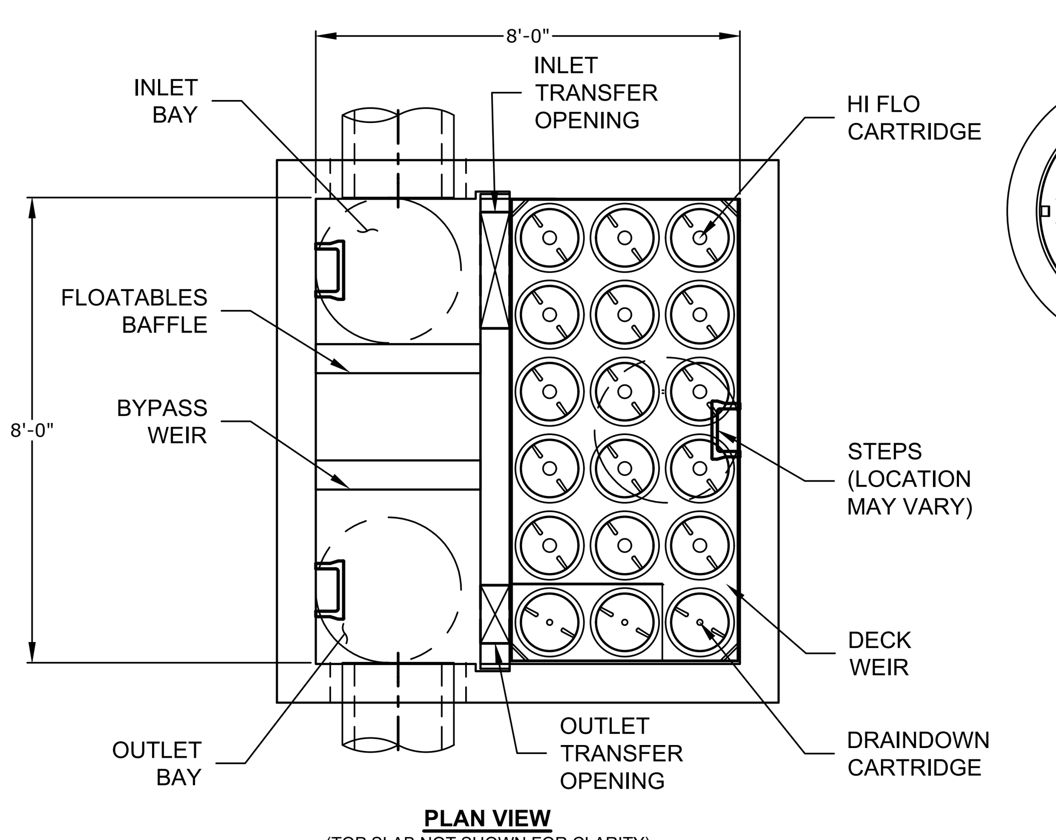


NOTES:
1. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. SEE GRADING, DRAINAGE, AND EROSION CONTROL PLAN FOR LOCATIONS.

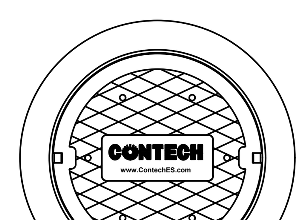
YARD DRAIN
NO SCALE



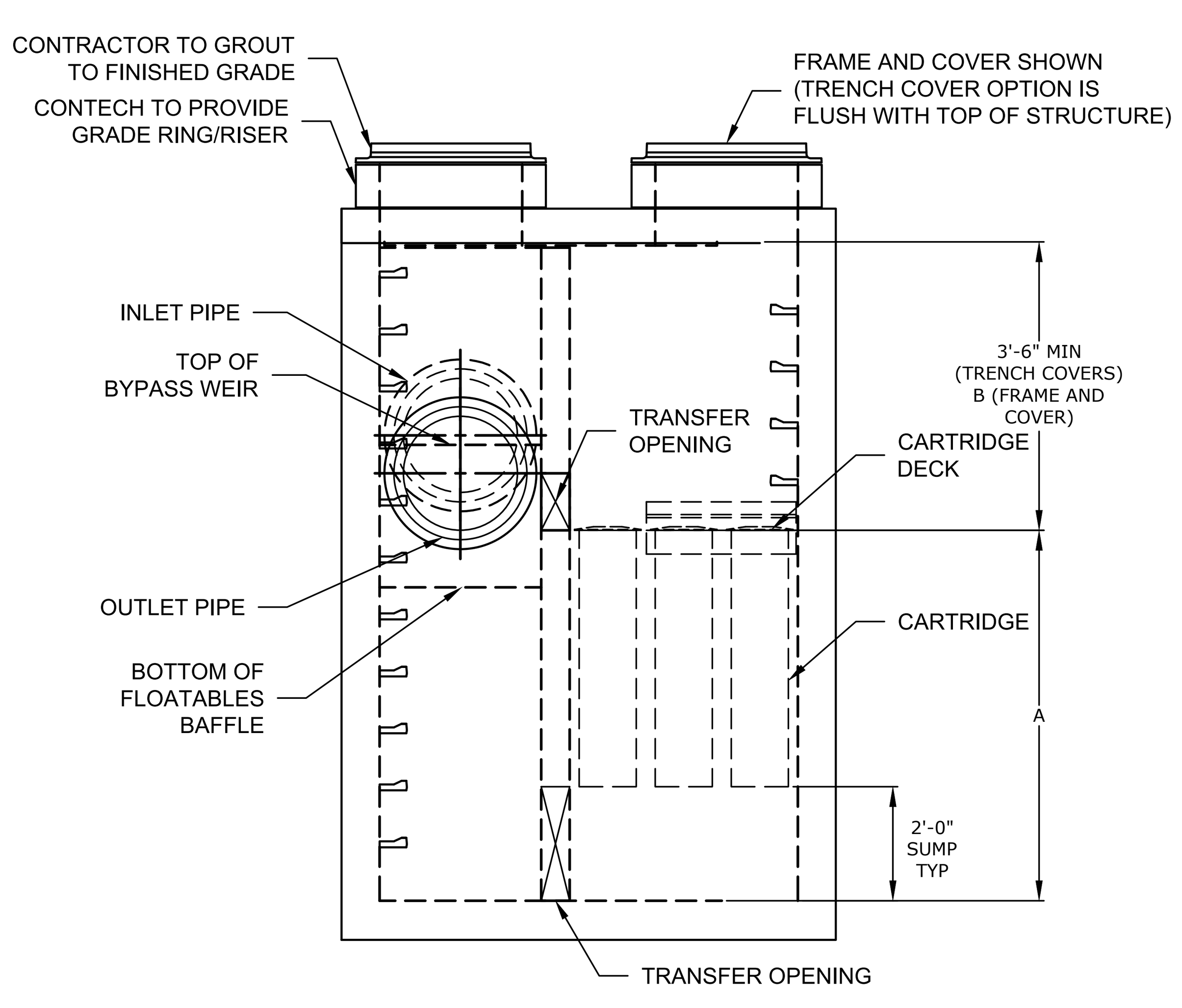




PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



PROPOSED CDS STRUCTURE SCHEDULE	
STRUCTURE ID#	JFF TYPE
PJFF1	JFPD0808-12-3
PJFF2	JFPD0808-15-3



ELEVATION VIEW

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

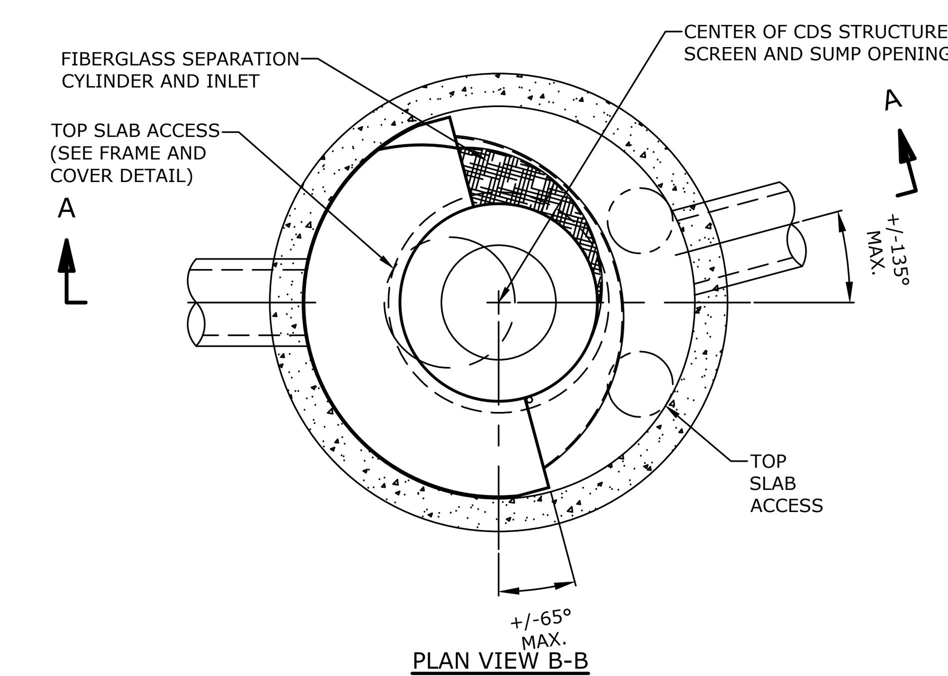
NOTE:
1. A QUALIFIED ENGINEER SHALL PROVIDE SUFFICIENT INSPECTION TO CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS PER THE REQUIREMENTS OF THE ALTERATION OF TERRAIN PERMIT. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE CONSTRUCTION OF THE UNDERGROUND FILTRATION UNITS.

Jellyfish Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,726; 8,221,618 & US 8,123,935; OTHER INTERNATIONAL PATENTS PENDING

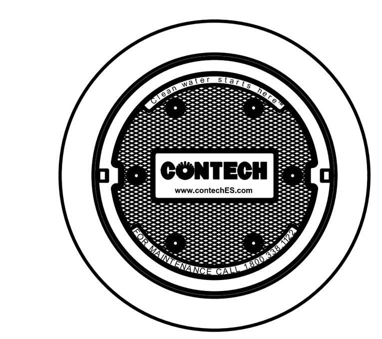
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH JELLYFISH STORMWATER FILTER (JFPD0808)
NO SCALE

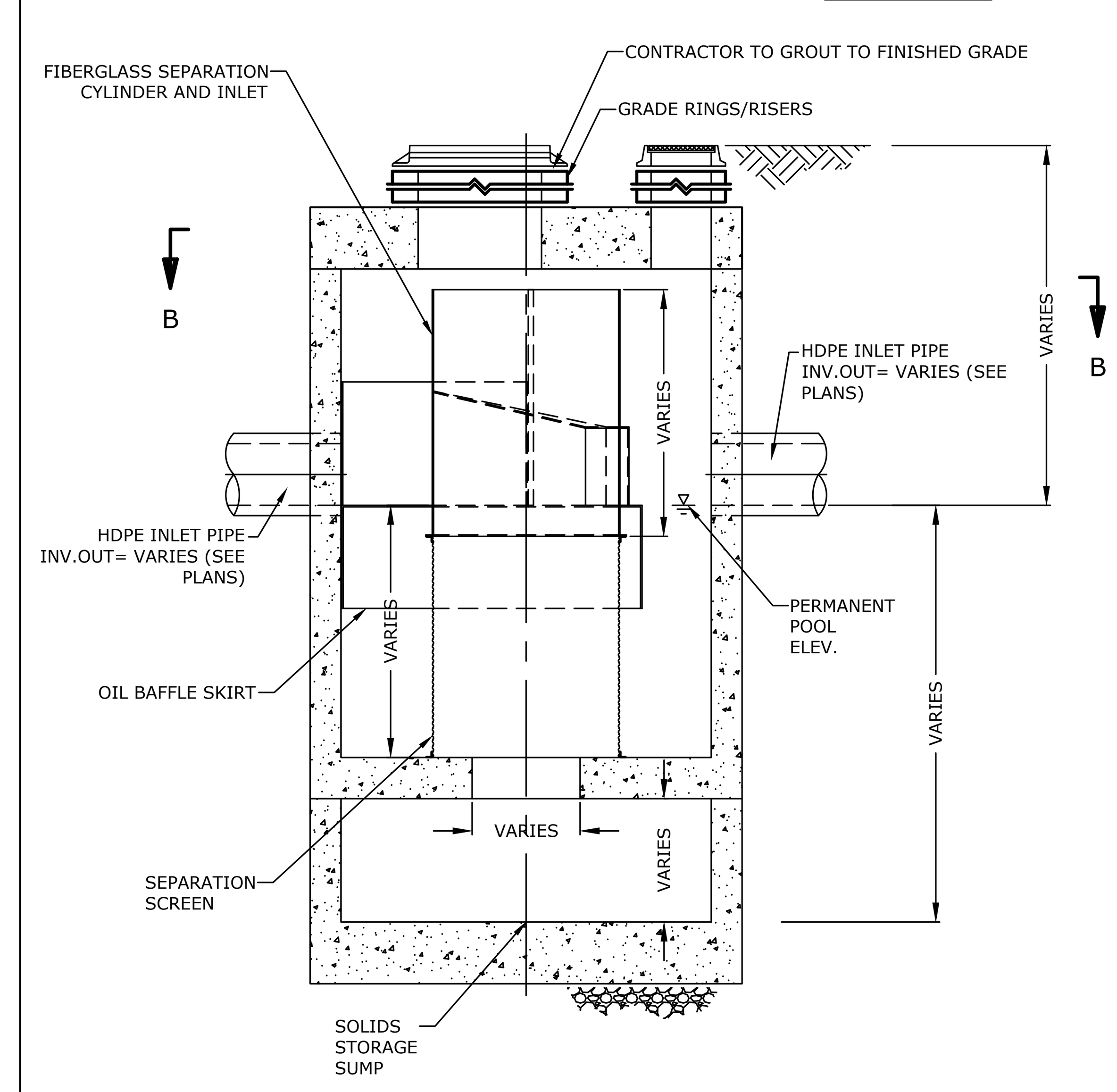
PROPOSED CDS STRUCTURE SCHEDULE	
STRUCTURE ID#	JFF TYPE
PCDS1	CDS 6-3025
PCDS2	CDS 6-3030
PCDS3	CDS 6-3030



PLAN VIEW B-B



FRAME AND COVER
(DIAMETER VARIES)
NO SCALE



ELEVATION A-A

GENERAL NOTES:
1. CONTECH TO PROVIDE FINAL DIMENSIONS BASED ON APPROVED FLOWS AND ALL MATERIALS UNLESS NOTED OTHERWISE.
2. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
3. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
4. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES:
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN ON GRADING PLAN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH CDS UNIT
NO SCALE

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
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PROJECT NO:	E5071-001
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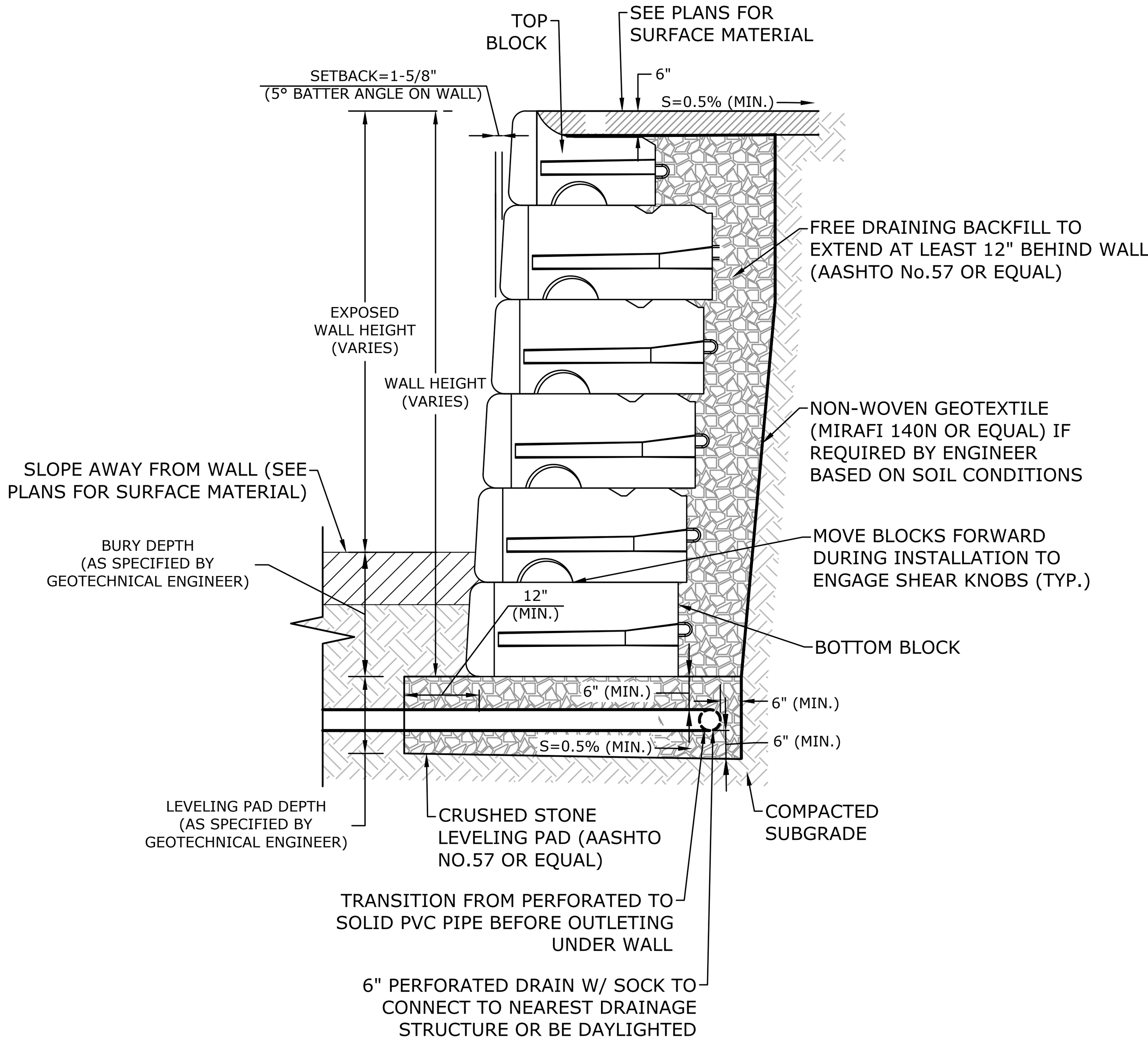
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DETAILS SHEET

SCALE: AS SHOWN

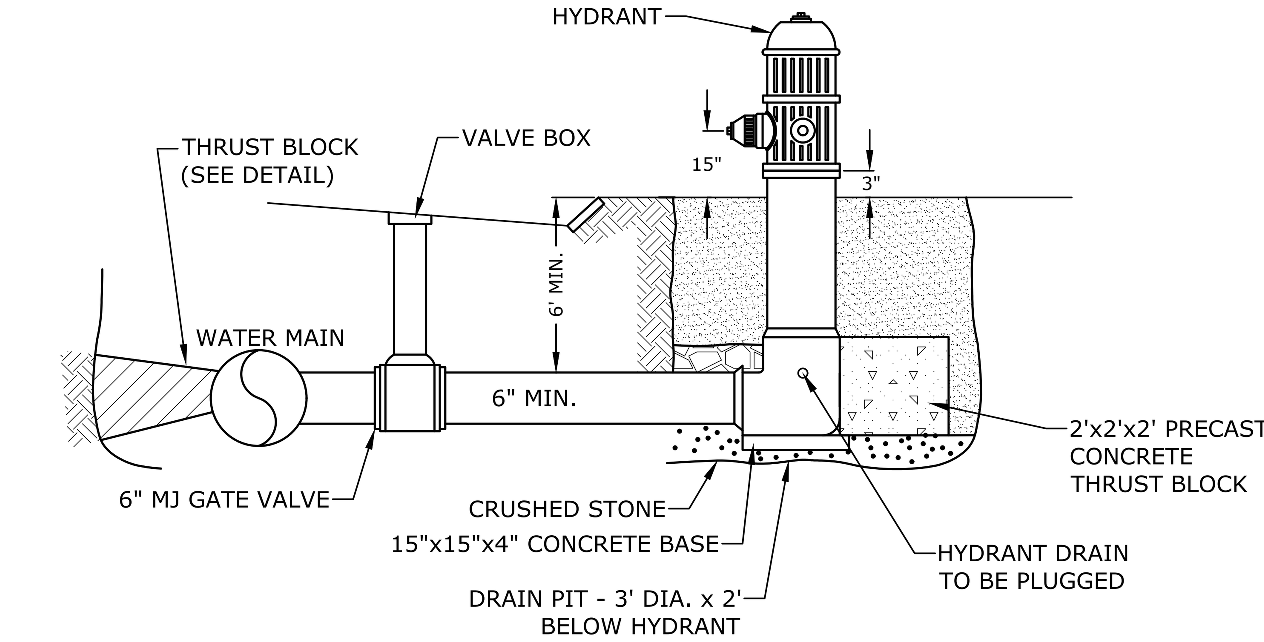
C-806

Last Saved: 10/17/2024
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg



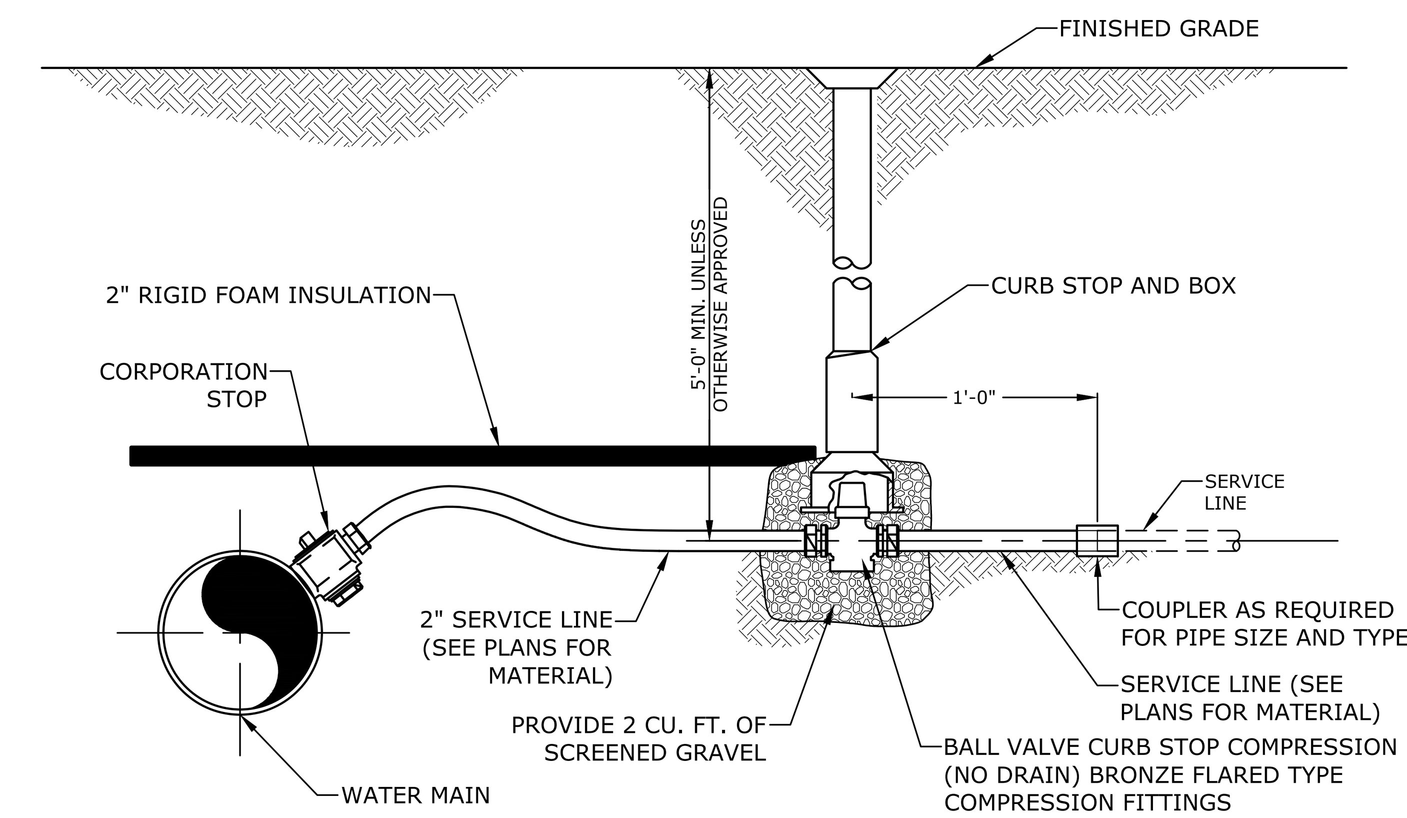
NOTES:
1. RETAINING WALL SHALL BE BY REDI ROCK LEDGESTONE OR APPROVED EQUAL.
2. THE CONTRACTOR SHALL SUBMIT DESIGN AND CALCULATIONS FOR THE RETAINING WALL THAT SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. CALCULATIONS SHALL INCLUDE A GLOBAL STABILITY ANALYSIS.
3. MINIMUM DESIGN PARAMETERS:
   - GLOBAL STABILITY FACTOR OF SAFETY = 1.3
   - OVERTURNING FACTOR OF SAFETY = 2.0
   - SLIDING FACTOR OF SAFETY = 1.5
   - GEOGRID PULLOUT FACTOR OF SAFETY = 1.5
   - SEISMIC FACTOR OF SAFETY = 1.1
4. WALL DESIGNS SHALL CONSIDER EFFECTS OF SLOPE, TRAFFIC LOADS, BUILDING LOADS, GUARDRAIL AND/OR FENCING AS REQUIRED.
5. WALL DESIGN ENGINEER SHALL CONSIDER HEIGHT AND SPECIFY SAFETY RAIL WHERE REQUIRED
6. ALL INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION MANUAL AND THE WALL DESIGN ENGINEER'S DESIGN PLANS AND SPECIFICATIONS.
7. THE WALL DESIGN ENGINEER SHALL COMPLETE SUFFICIENT INSPECTIONS DURING CONSTRUCTION TO CERTIFY WORK IS COMPLETED IN ACCORDANCE WITH DESIGN.
8. CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS OF WALL WITH WALL DESIGNER'S CERTIFICATION TO OWNER.
9. CONTRACTOR SHALL DIRECT SURFACE RUNOFF AWAY FROM THE WALL DURING CONSTRUCTION.
10. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT OR OTHER SURFACE TREATMENT SHALL BE INSTALLED IN THE AREA OF THE WALL IMMEDIATELY AFTER THE WALL IS COMPLETE OR OTHER MEASURES SHALL BE TAKEN TO PROTECT THE WALL FROM RUNOFF.
11. CONTRACTOR SHALL SUPPLY SAMPLE TO THE OWNER FOR APPROVAL PRIOR TO WALL CONSTRUCTION.

TYPICAL BLOCK RETAINING WALL SECTION
NO SCALE



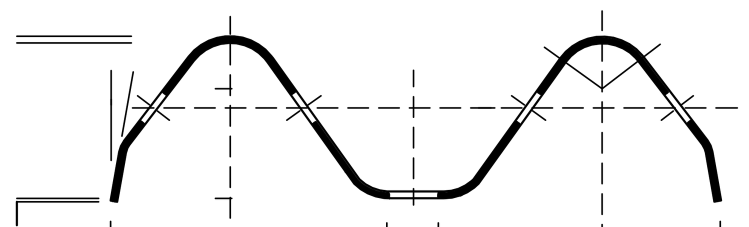
NOTES:
1. HYDRANT TO BE KENNEDY TYPE K-81, RIGHT OPEN (NO EQUAL). COORDINATE WITH CITY OF PORTSMOUTH WATER DEPARTMENT AND CITY OF PORTSMOUTH FIRE DEPARTMENT.
2. PAINT HYDRANT IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS AFTER INSTALLATION AND TESTING.

FIRE HYDRANT
NO SCALE

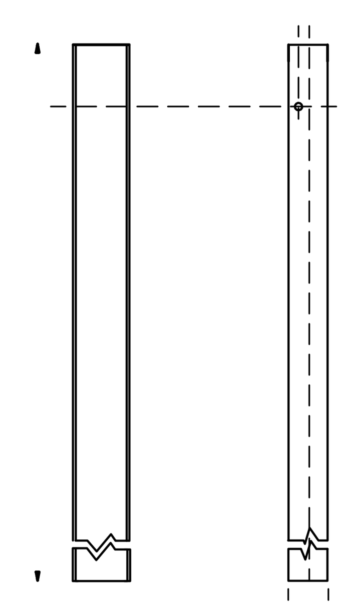


NOTE: ALL WATER SERVICE CONNECTIONS SHALL CONFORM TO CITY OF PORTSMOUTH STANDARDS.

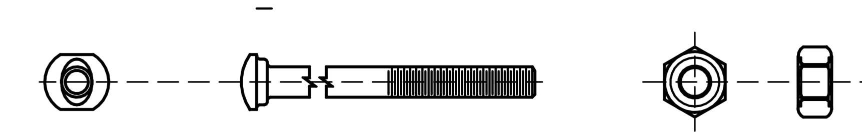
WATER SERVICE CONNECTION
NO SCALE



SECTION THRU RAIL ELEMENT
[4 SPACE W-BEAM GUARDRAIL DESIGNATED RWM04a (NOMINALLY 12'-6")]
[8 SPACE W-BEAM GUARDRAIL UNDESIGNATED AT THIS TIME (NOMINALLY 25'-0")]



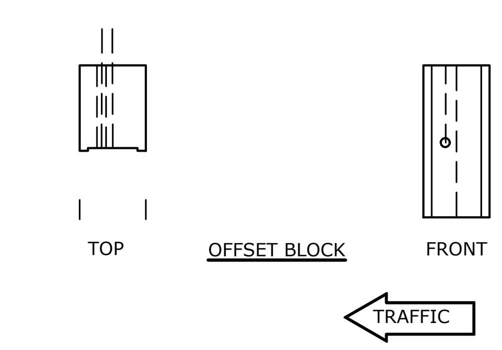
STRUCTURAL SHAPE
STEEL POST



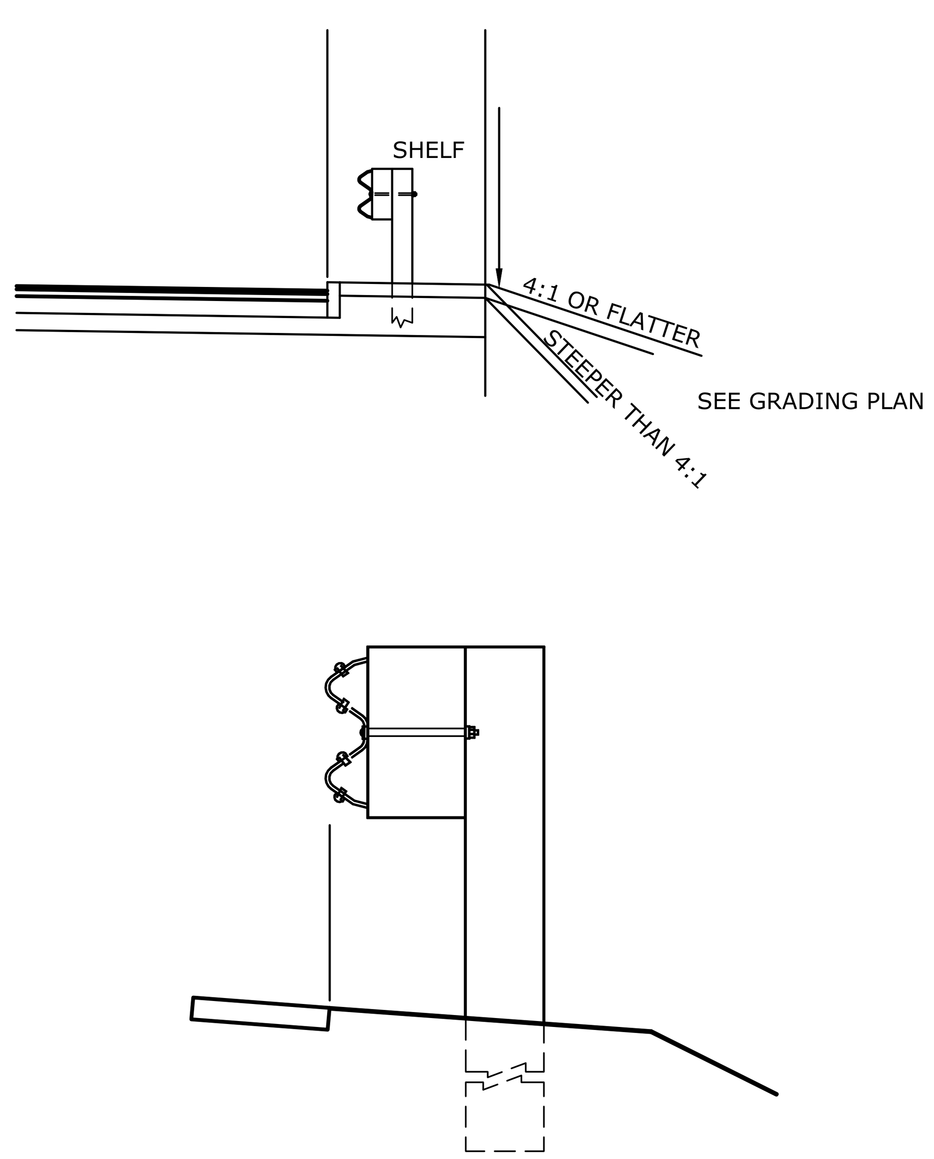
DESIGNATOR	L	T	INTENDED USE
FBB01	1 ½"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 ½" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	9 ½"	4" MIN. THREAD LENGTH	POST BOLT

⅝" BUTTON HEAD BOLT AND RECESSED NUT
[FBBO1-03]

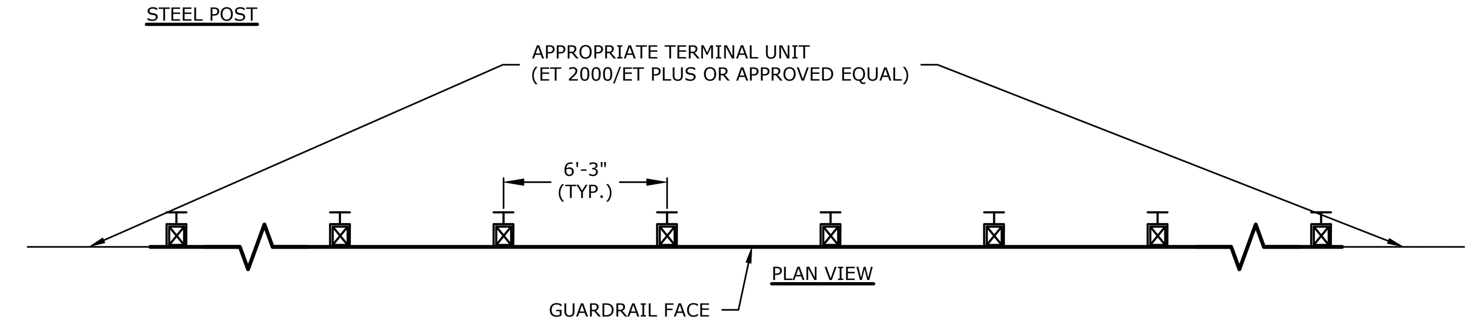
PLACE OFFSET BLOCK INDENTATION AGAINST THE FACT OF THE POST



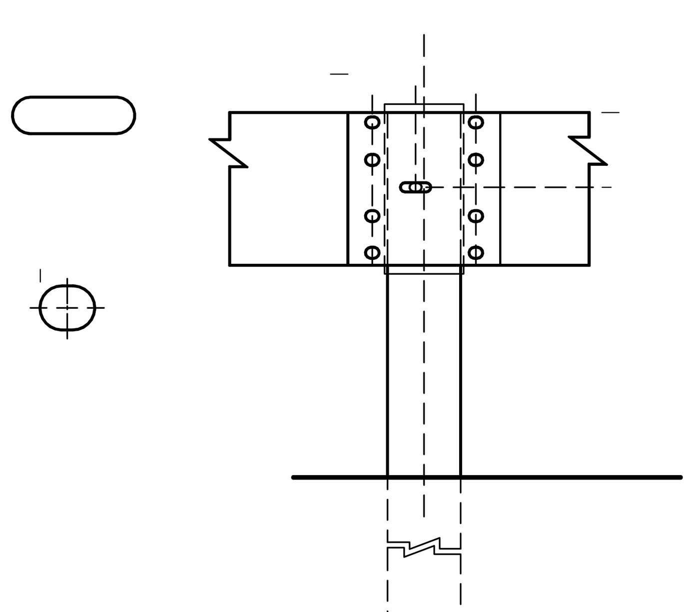
OFFSET BLOCK



SEE GRADING PLAN



PLAN VIEW



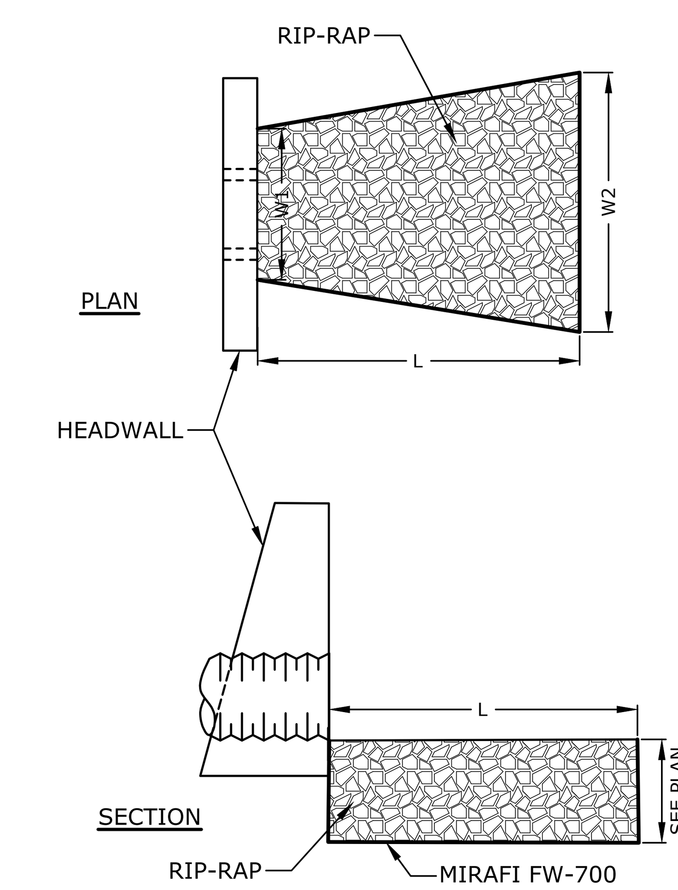
LINE POST ELEVATION VIEW
AT BEAM SPLICE
(SHOWN WITHOUT FASTENERS)

TYPICAL SIDE VIEW
(SHOWN WITH FASTENERS)

NOTES:
1. SEE SITE PLAN FOR LIMITS OF GUARDRAIL.
2. THE LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE "ROADSIDE DESIGN GUIDE" - AASHTO (1989).
3. DESIGNATION PROVIDED IN BRACKETS ( ) REFERENCE STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" (1979) - AASHTO - AGC - ARTBA JOINT COOPERATIVE COMMITTEE.
4. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 100' RAIL RADIUS.
5. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
6. ESTABLISH RAIL HEIGHT AS FOLLOWS:
   - 6.a. SET THE HEIGHT OF RAIL FROM THE EDGE OF THE PAVEMENT (EP) WHEN THE FACE OF RAIL IS AT THE EDGE OF PAVEMENT.
   - 6.b. SET THE HEIGHT OF RAIL FROM THE GROUND AT THE FACE OF RAIL WHEN:
     - 6.b.1. THE FACE OF RAIL IS OFFSET FROM THE EP AND THE CROSS SLOPE FROM THE EP TO THE FACE OF RAIL IS 10:1 OR FLATTER OR
     - 6.b.2. THE FACE OF RAIL IS AT THE BACK OF A CURBED SIDEWALK AND THE CURB IS AT THE EDGE OF PAVEMENT.
   - 6.c. WHEN SITUATIONS OTHER THAN THOSE DESCRIBED IN 5.1 OR 5.2 ABOVE ARE ENCOUNTERED, ESTABLISH RAIL HEIGHT THROUGH AN ENGINEERING REVIEW TO ENSURE APPROPRIATE SYSTEM PERFORMANCE.
7. USE 6'-0" LONG POSTS WHEN FILL SLOPE IS 4:1 OR FLATTER AND/OR WHEN FIELD CONDITIONS DICTATE (e.g., LEDGE FILLS), AS DETERMINED BY THE ENGINEER.
8. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CLOSED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB. THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
9. SEE MOST RECENT NHDOT "BEAM GUARDRAIL STANDARD SECTION" (GR-2) FOR ADDITIONAL DETAILS

STEEL POST/STEEL BEAM GUARDRAIL
NO SCALE

NOTES:
1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.



RIP-RAP APRON DETAIL
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE
NEIL A. HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
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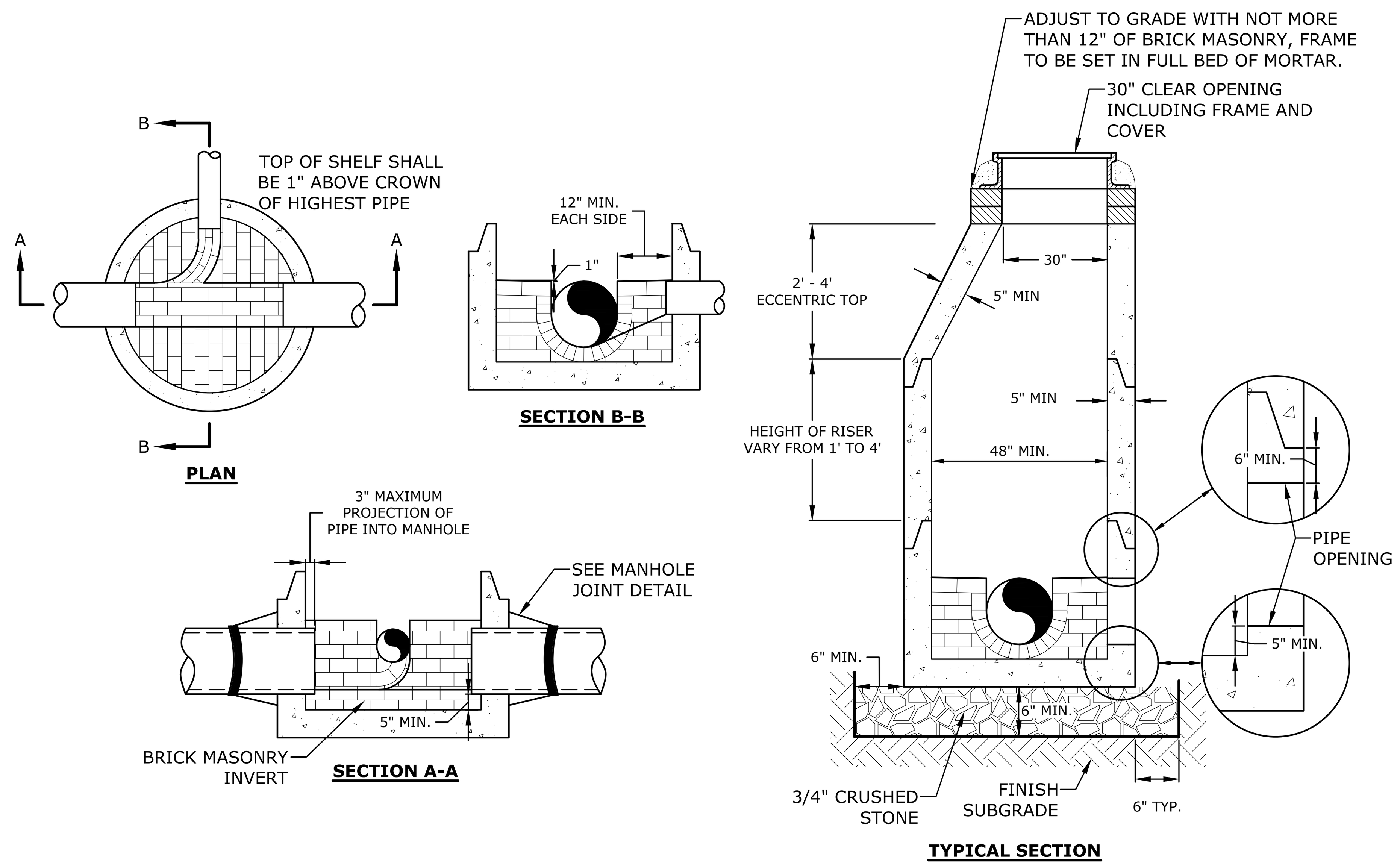
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DETAILS SHEET

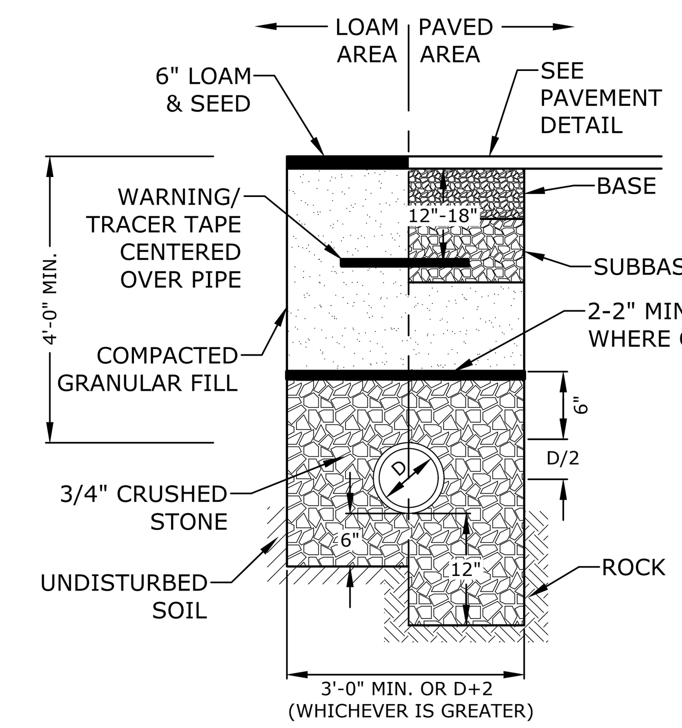
SCALE: AS SHOWN

C-807



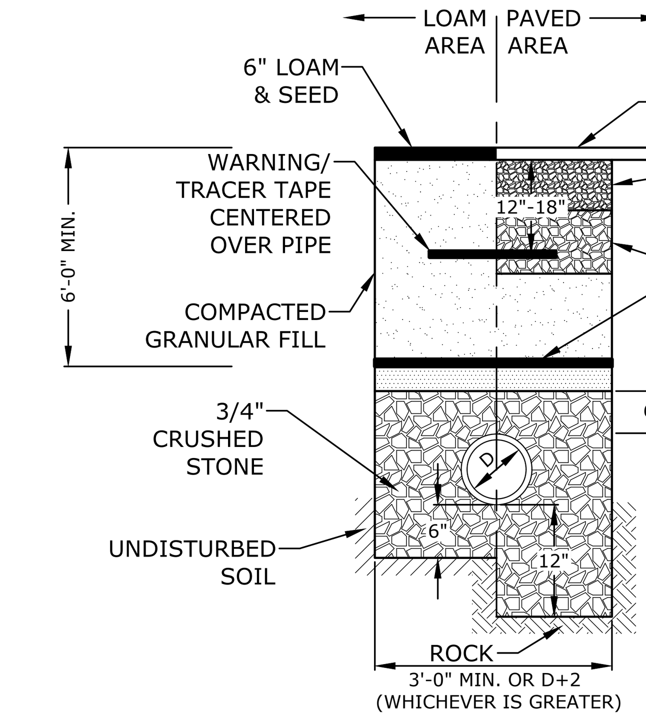
NOTES:
1. ALL SEWER MANHOLES SHALL BE CONSTRUCTED TO CITY AND STATE STANDARDS.
2. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
3. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
4. INVERT BRICKS SHALL BE LAID ON EDGE.
5. TWO (2) COATS OF BITUMINOUS WATERPROOF COATING SHALL BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
6. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS WITHIN CITY RIGHT OF WAY SHALL BE CITY STANDARD HINGE COVERS MANUFACTURED BY EJ. FRAMES AND COVERS WILL BE PURCHASED FROM THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS. ALL OTHER MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
7. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.
8. BARREL AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE DESIGNED FOR H20 LOADING, AND CONFORMING TO ASTM C478-06.

SEWER MANHOLE
NO SCALE



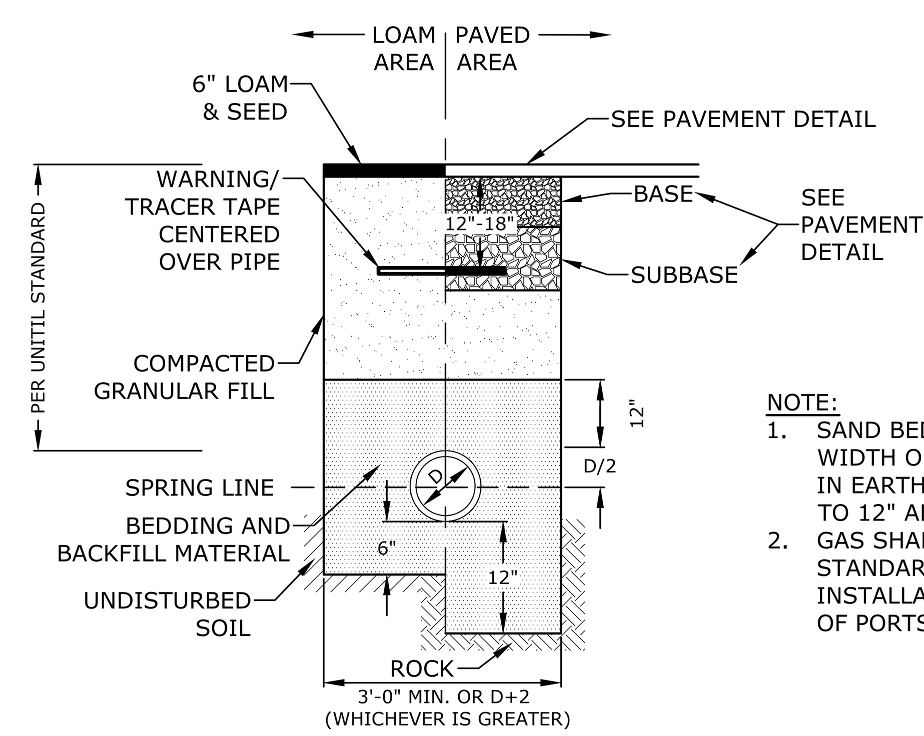
NOTES:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES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

STORM DRAIN TRENCH
NO SCALE



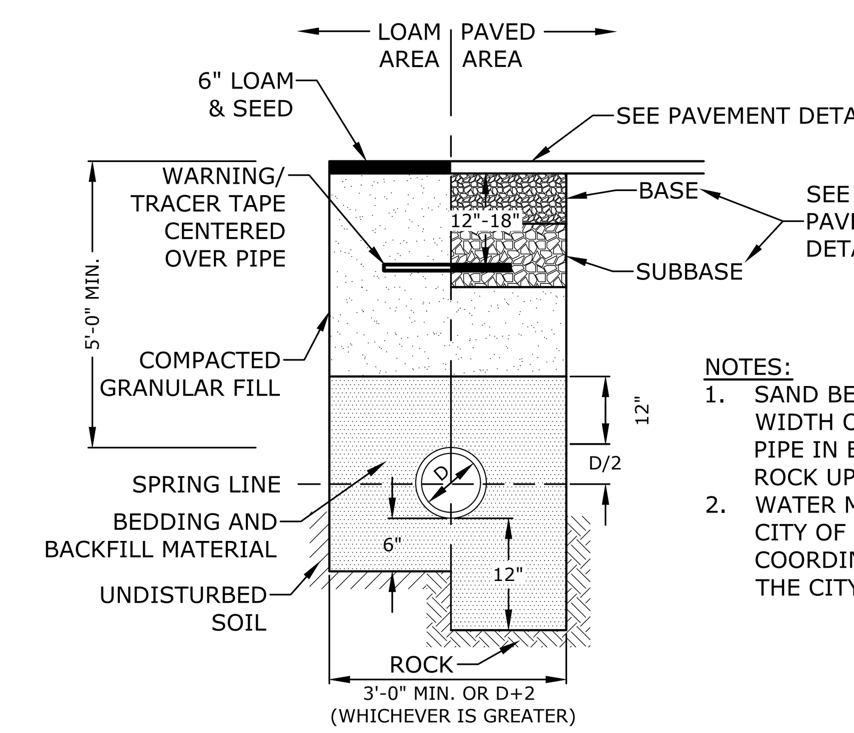
NOTES:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK. CRUSHED STONE SHALL ALSO COMPLETELY ENCASE THE PIPE AND COVER THE PIPE TO A GRADE 6" OVER THE TOP OF THE PIPE FOR THE ENTIRE WIDTH OF THE TRENCH.
2. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH STANDARDS.

SEWER SERVICE TRENCH
NO SCALE



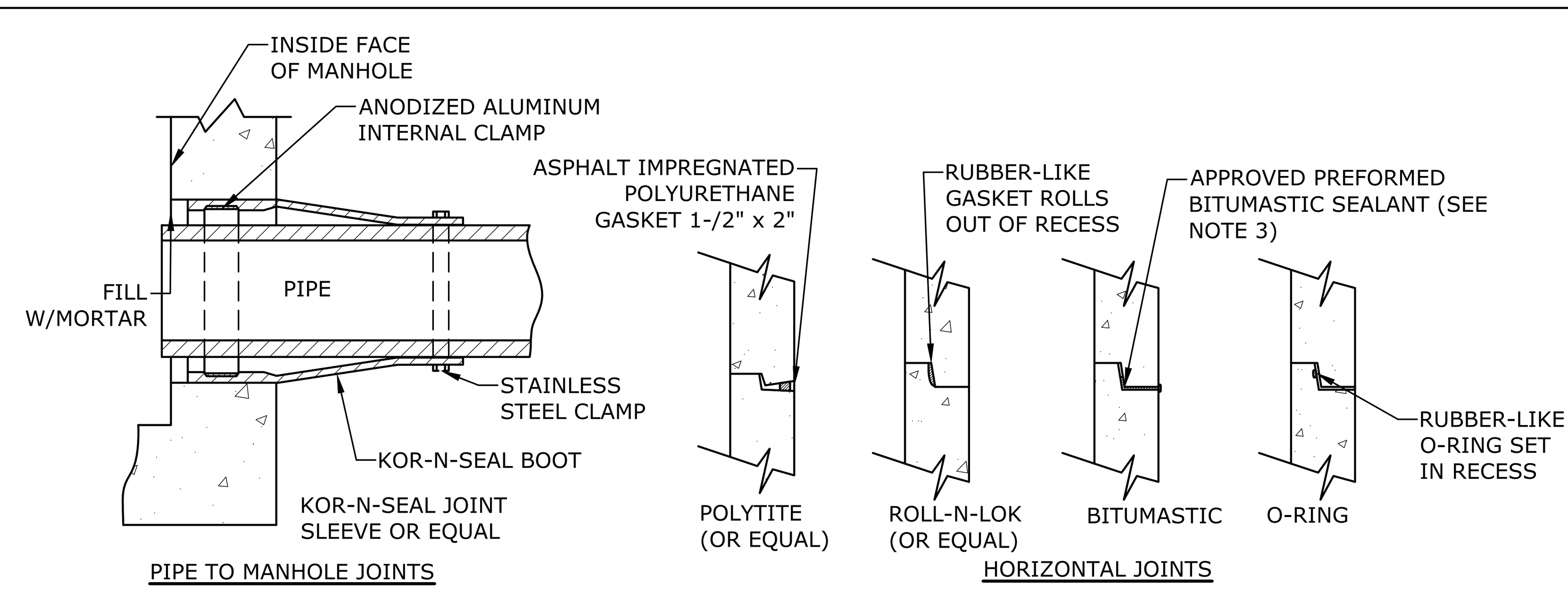
NOTE:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. GAS SHALL BE INSTALLED PER UNITIL STANDARDS. COORDINATE ALL INSTALLATIONS WITH UNITIL AND THE CITY OF PORTSMOUTH.

GAS TRENCH
NO SCALE



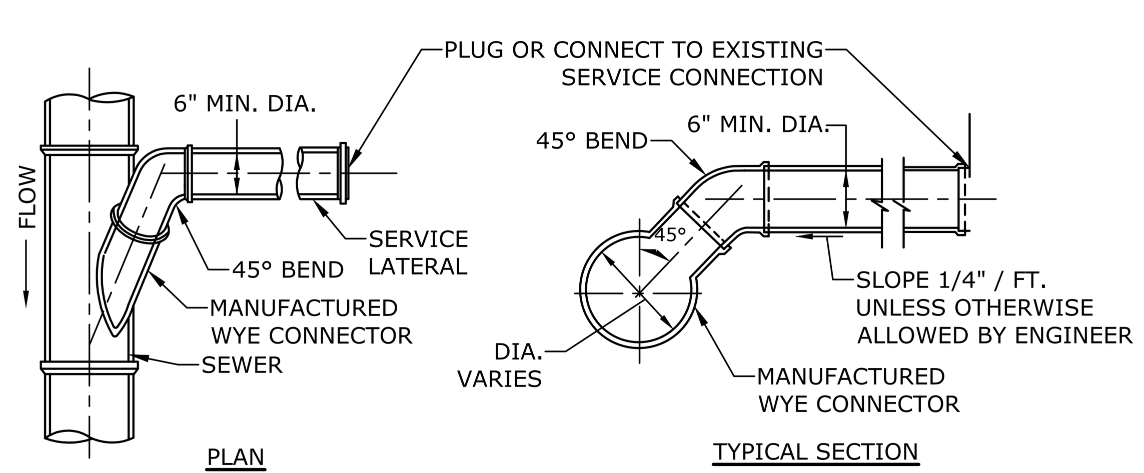
NOTES:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.
2. WATER MAIN SHALL BE INSTALLED PER CITY OF PORTSMOUTH STANDARDS. COORDINATE ALL INSTALLATIONS WITH THE CITY OF PORTSMOUTH.

WATER TRENCH
NO SCALE

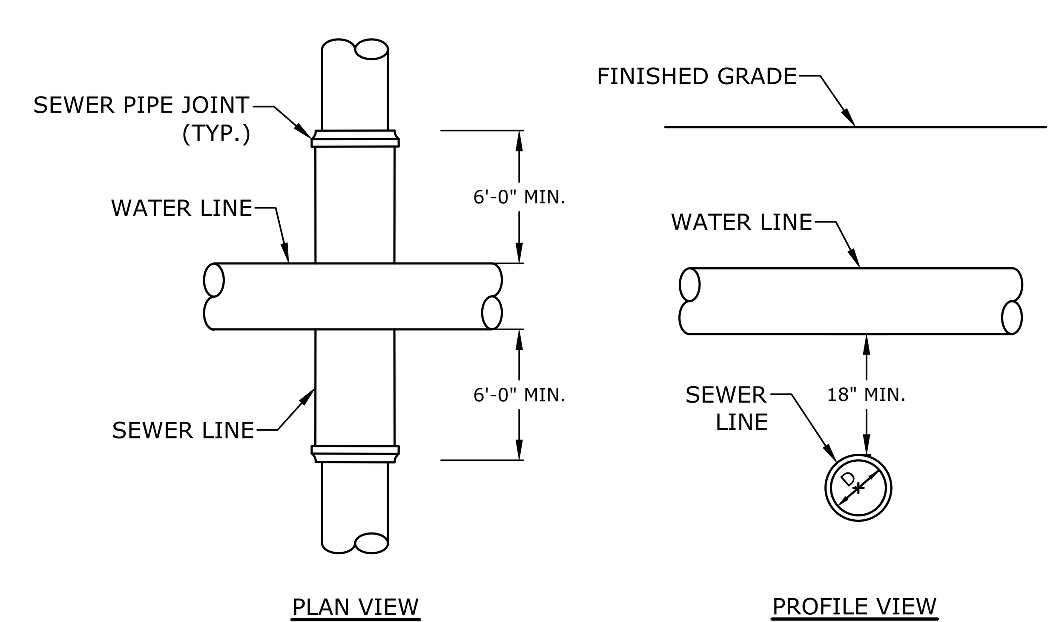


NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER CITY OF PORTSMOUTH DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER CITY OF PORTSMOUTH STANDARD.
3. FOR BITUMASTIC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

MANHOLE JOINTS
NO SCALE

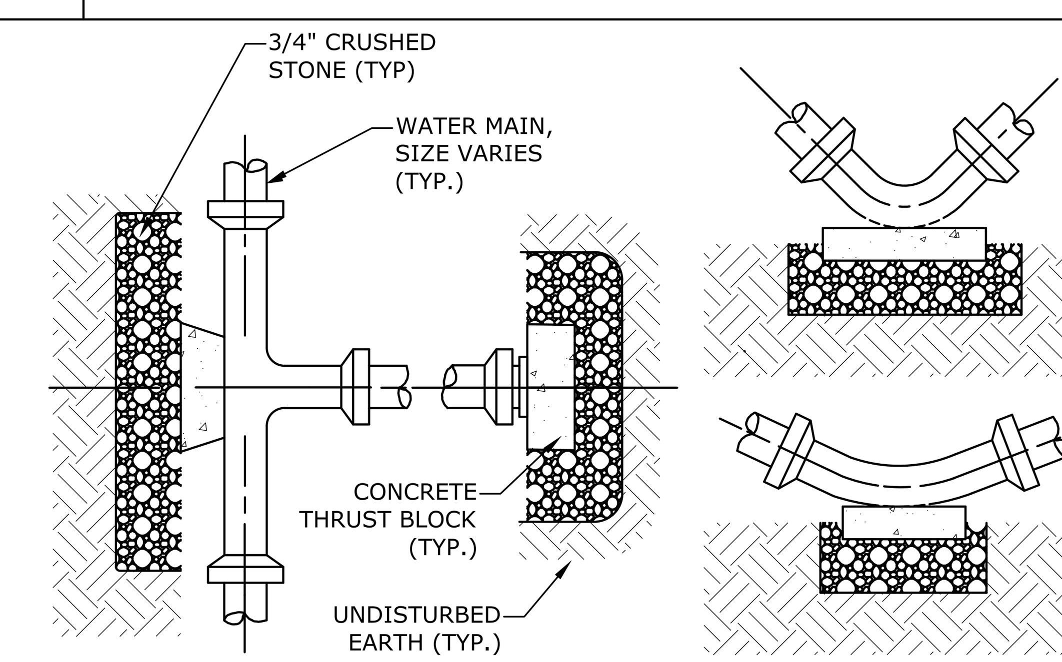


STANDARD SERVICE LATERAL CONNECTION
NO SCALE



NOTES:
1. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED FROM ANY EXISTING OR PROPOSED WATER LINE.
2. AN 18" MINIMUM EDGE TO EDGE VERTICAL SEPARATION SHALL BE PROVIDED, WITH WATER ABOVE SEWER, AT ALL CROSSINGS.
3. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
4. WHERE AN 18" VERTICAL SEPARATION CANNOT BE PROVIDED, SEWER PIPE SHALL BE CONSTRUCTED USING A SDR 26 PVC PIPE MEETING THE REQUIREMENTS OF SEWER FORCE MAIN STANDARDS. THE SDR26 PIPE SHALL BE USED FOR THE ENTIRE RUN BETWEEN MANHOLES ON EITHER SIDE OF CROSSING.
5. CROSSINGS SHALL CONFORM TO THE CITY OF PORTSMOUTH STANDARDS AND SPECIFICATIONS.
6. ALL FUTURE SEWER CONNECTIONS SHALL MEET THE ABOVE REQUIREMENTS.

WATER & SEWER CROSSING
NO SCALE



SQUARE FEET OF MINIMUM BEARING AREA							
NOMINAL DIA. (in)	PIPE SIZE						
	4"	6"	8"	10"	12"	16"	
PIPE FITTINGS	*	*	5.18	7.96	11.43	20.29	
A 90°	*	4.11	7.33	11.26	16.17	28.69	
C 45°	*	*	*	6.10	8.75	15.53	
D 22-1/2°	*	*	*	*	4.46	7.92	
E 11-1/4°	*	*	*	*	*	*	
*SEE NOTE 2	SYSTEM PRESSURE: 125 psi SAFETY FACTOR: 1.5 SOIL BEARING CAPACITY: 2,000 psf						

NOTES:
1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4 SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
6. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
7. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
8. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
9. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
10. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE WITH CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS.

THRUST BLOCKING DETAIL
NO SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE NEIL A. HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
10/23/24

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
10/23/24

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

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SCALE: AS SHOWN

C-808

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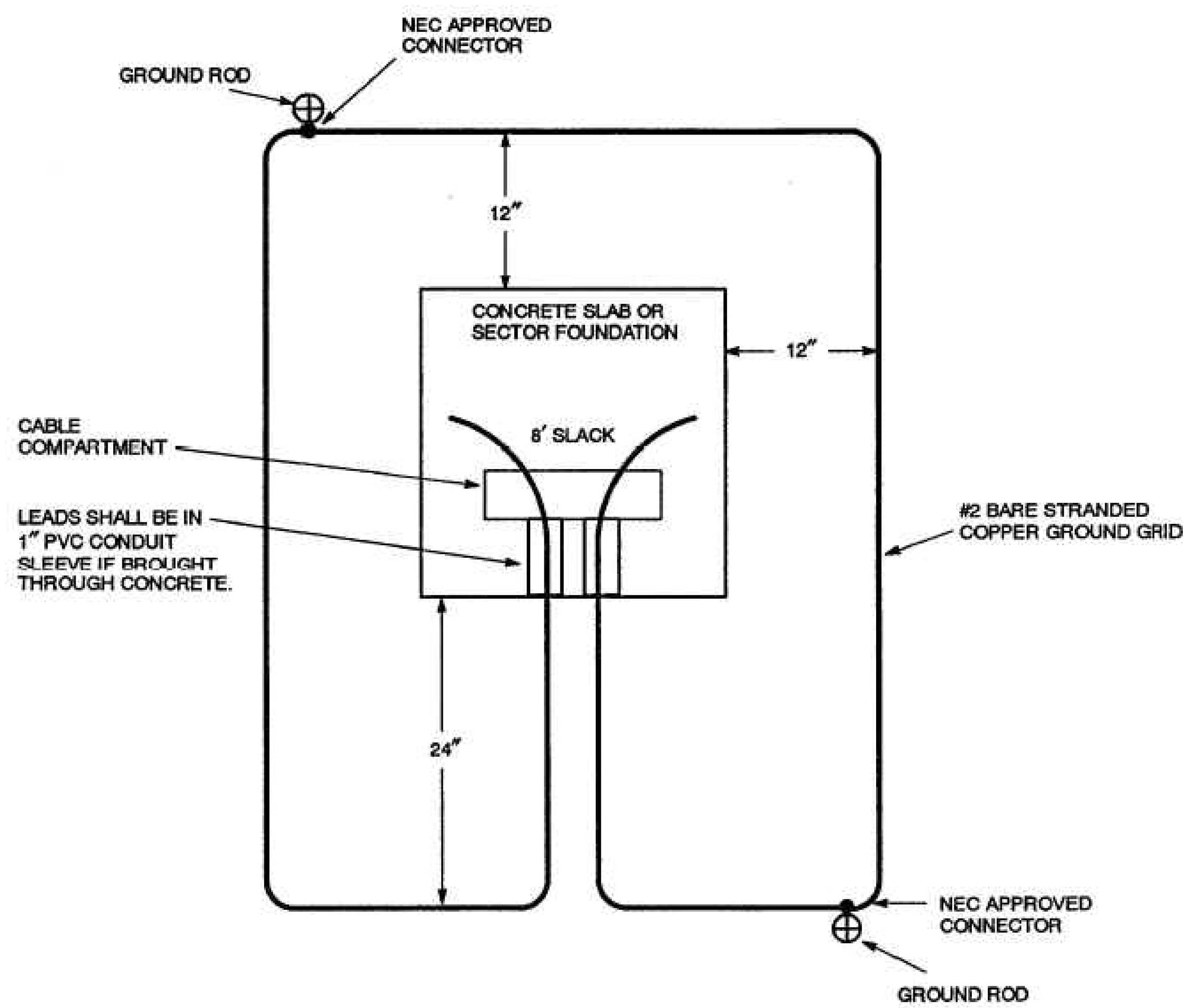
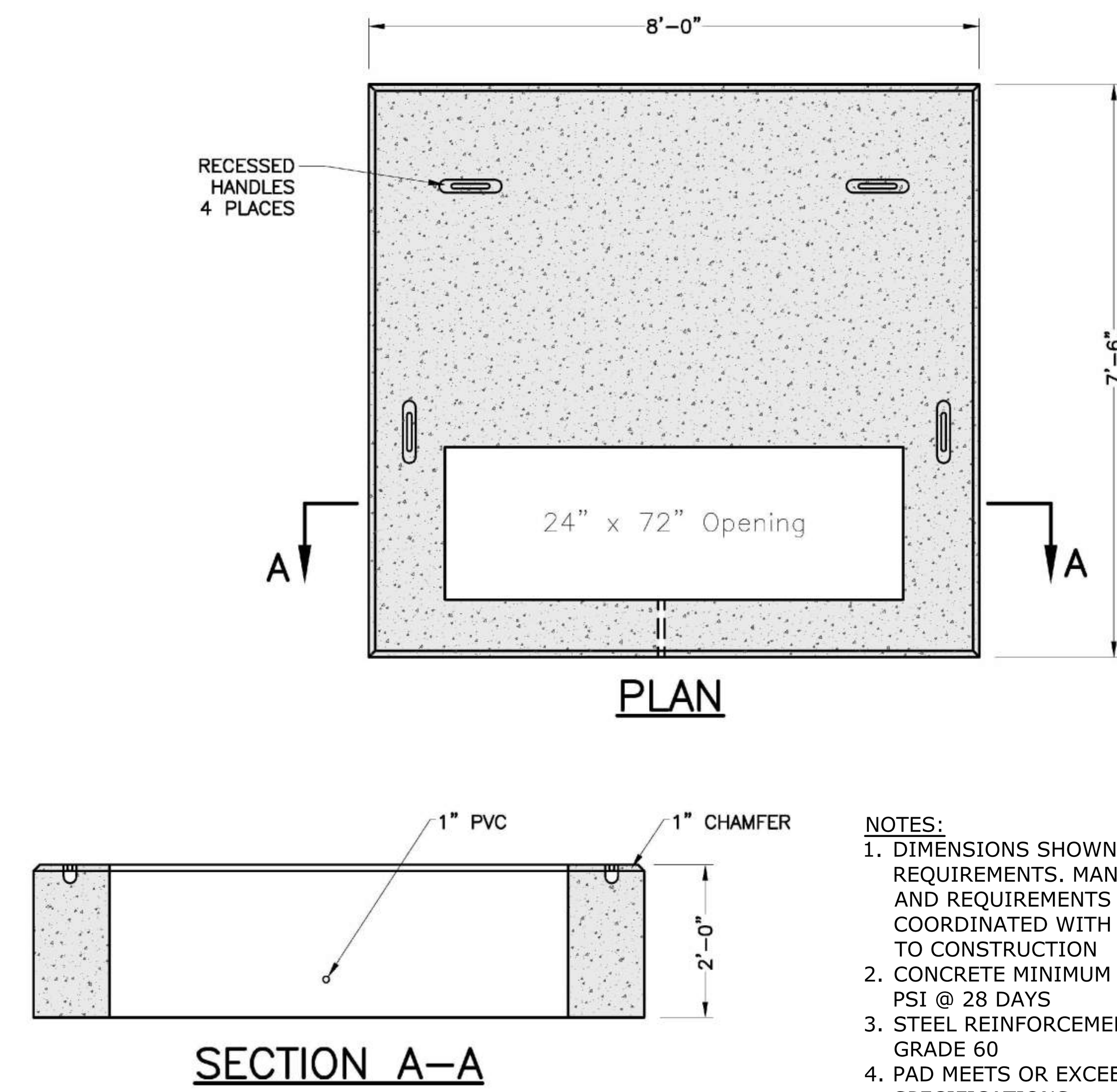
Plotted On:Oct 21, 2024-4:38pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DTLS.dwg



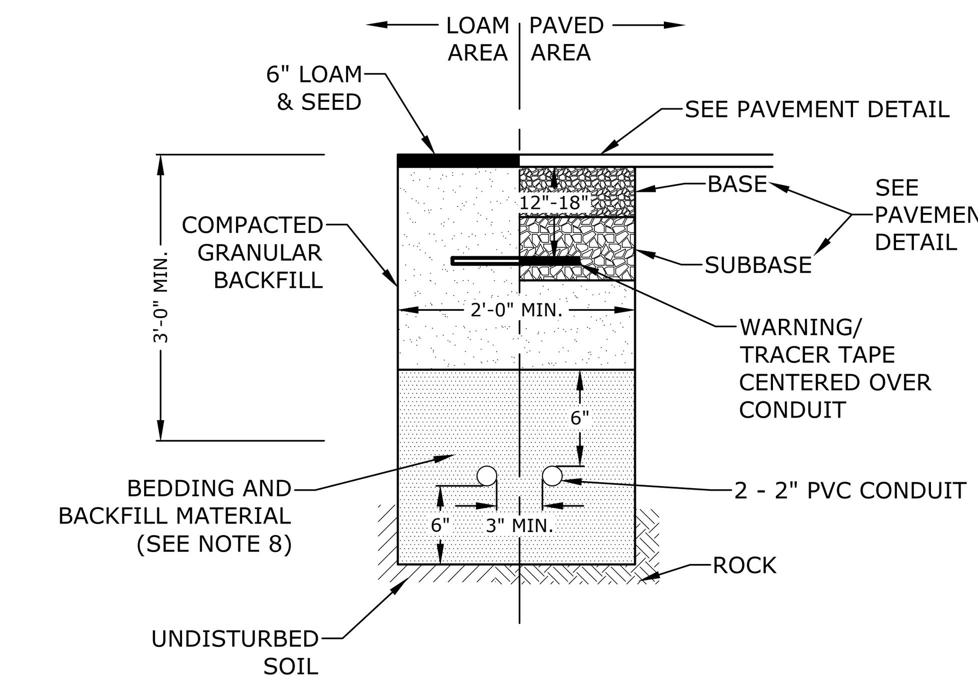
NOTES:
THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AND IS TO BE BURIED AT LEAST 12 INCHES BELOW GRADE. EIGHT FEET OF EXTRA WIRE FOR EACH GROUND GRID LEG SHALL BE LEFT EXPOSED IN THE CABLE COMPARTMENT TO ALLOW FOR THE CONNECTION TO THE TRANSFORMER. THE TWO 8-FOOT GROUND RODS MAY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

PAD-MOUNTED EQUIPMENT GROUNDING GRID DETAIL
NO SCALE



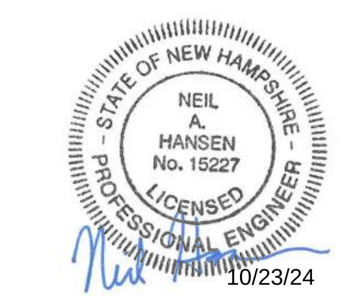
NOTES:
1. DIMENSIONS SHOWN REPRESENT TYPICAL REQUIREMENTS. MANHOLE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED WITH EVERSOURCE PRIOR TO CONSTRUCTION
2. CONCRETE MINIMUM STRENGTH - 4,000 PSI @ 28 DAYS
3. STEEL REINFORCEMENT - ASTM A615, GRADE 60
4. PAD MEETS OR EXCEEDS EVERSOURCE SPECIFICATIONS

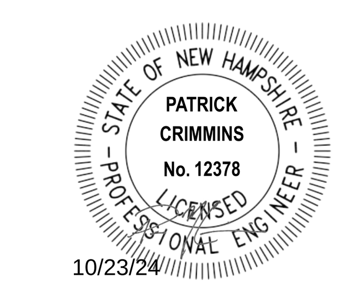
3-PHASE TRANSFORMER PAD
NO SCALE

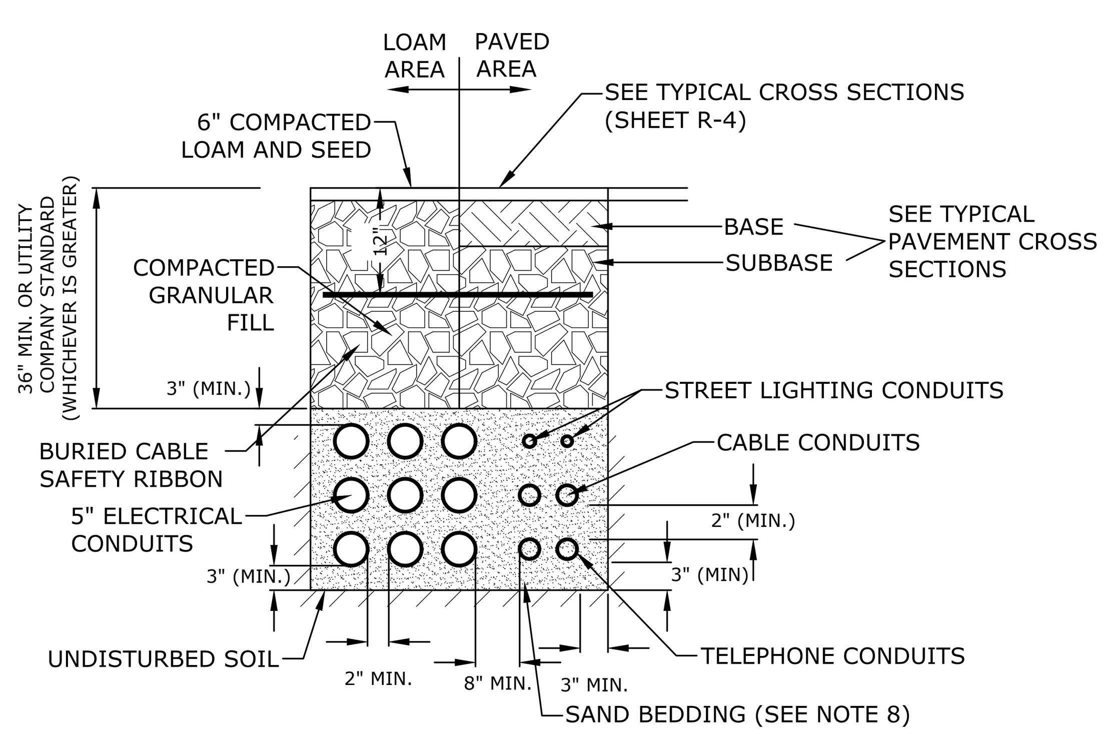


NOTES:
1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY TO BUILDING.
2. DIMENSIONS SHOWN REPRESENT MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT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

LIGHTING CONDUIT TRENCH
NO SCALE







NOTES:
1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL UTILITY OR AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY TO BUILDING.
2. DIMENSIONS SHOWN REPRESENT OWNERS MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT SHALL NOT BE LESS THAN THOSE SHOWN.
3. NO CONDUIT RUN SHALL EXCEED 360 DEGREES IN TOTAL BENDS.
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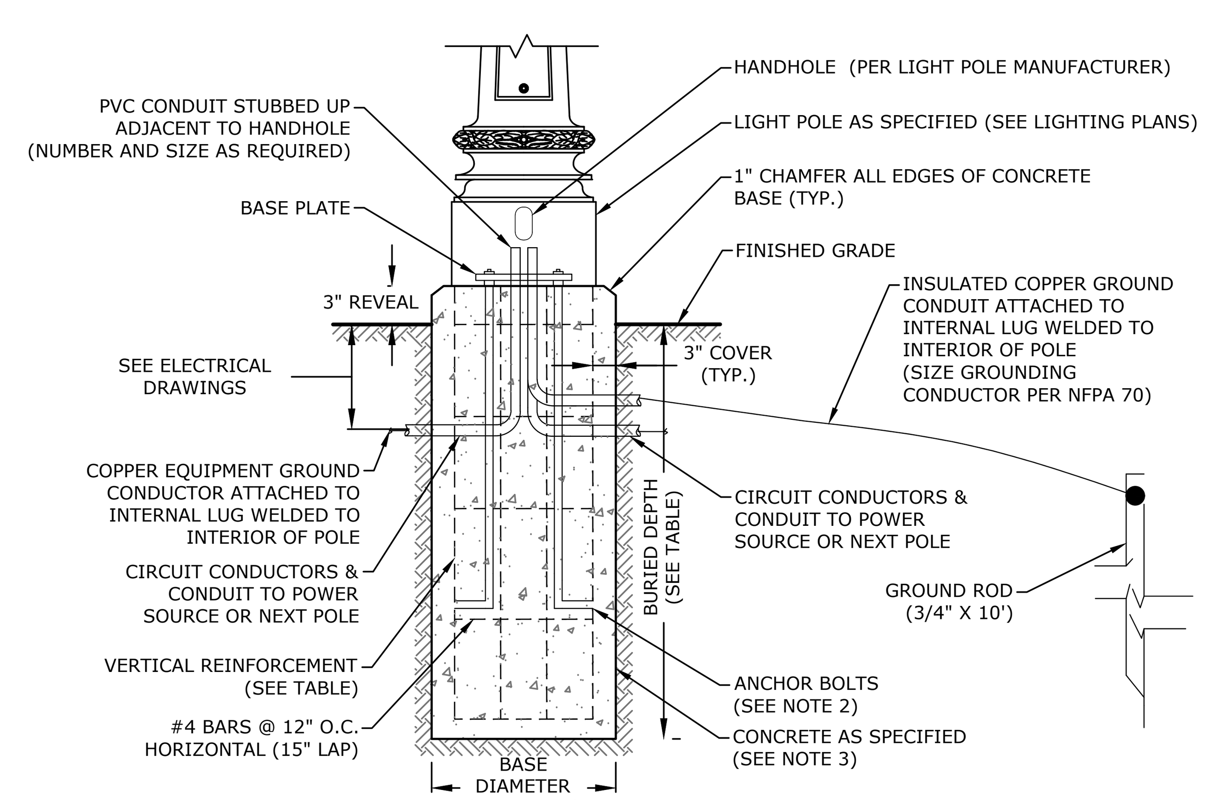
6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND, WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.
7. ALL 90° SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL. SWEEPS WITH A 36 TO 48 INCH RADIUS.
8. SAND BEDDING TO BE REPLACED WITH CONCRETE ENCASEMENT WHERE COVER IS LESS THAN 3 FEET, WHEN LOCATED BELOW PAVEMENT, OR WHERE SHOWN ON THE UTILITIES PLAN.

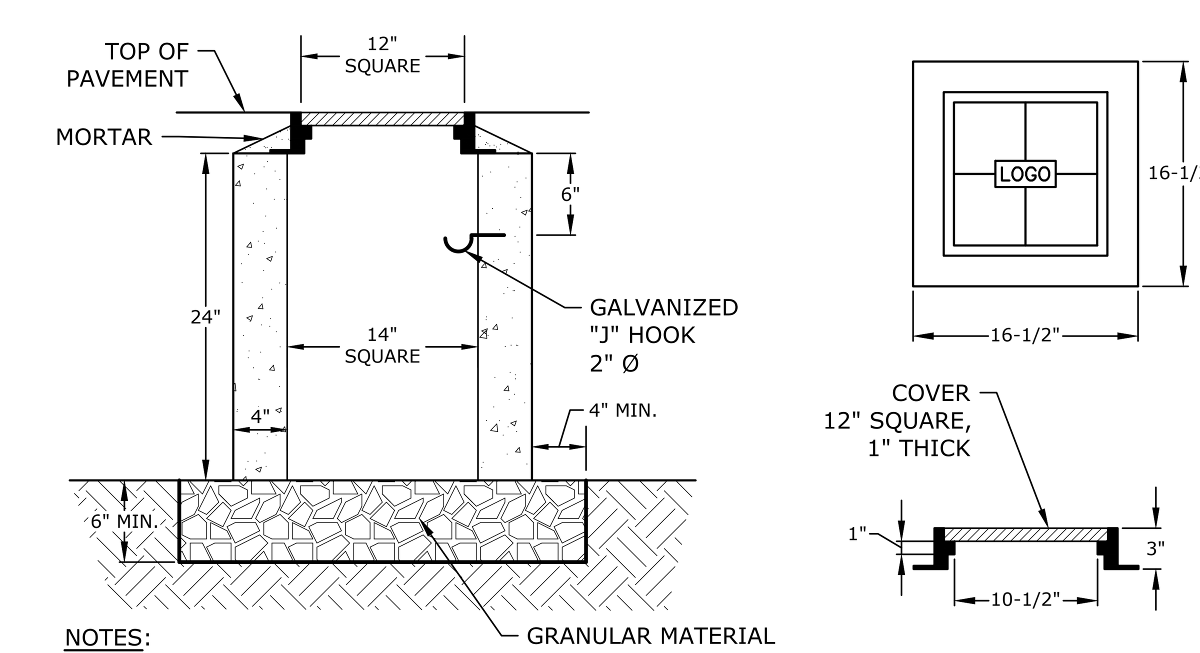
ELECTRICAL AND COMMUNICATION CONDUIT
NO SCALE



POLE HEIGHT	DEPTH (BURIED)	BASE DIAMETER	VERTICAL REINFORCEMENT
<16'	72" (MIN.)	18"	6 - #6
>16'	72" (MIN.)	24"	6 - #8

NOTES:
1. ALL LIGHT POLES, LUMINARIES AND WIRE TO BE FURNISHED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED.
2. CONTRACTOR SHALL VERIFY BOLT TEMPLATE AND ANCHOR BOLT SIZE WITH POLE MANUFACTURER PRIOR TO CONSTRUCTION.
3. CONCRETE SHALL BE 4,000 PSI CLASS A, PRE-CAST CONCRETE.
4. REINFORCEMENT SHALL BE ASTM A615, GRADE 60.
5. FOR LIGHT POLES GREATER THAN 20' IN HEIGHT, THE LIGHT POLE BASE SHALL BE DESIGNED AND STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.

TYPICAL LIGHT POLE BASE
NO SCALE



NOTES:
1. 14" X 14" CONCRETE PULL BOX, NHDOT ITEM 614.511

CONCRETE PULL BOX
NO SCALE

Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
E	10/23/2024	TAC SUBMISSION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DTLS.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DETAILS SHEET

SCALE: AS SHOWN

C-809

LAYOUT AND MATERIALS NOTES

1. REVIEW CONTRACT DOCUMENTS AND FIELD CONDITIONS BEFORE COMMENCING WORK. REPORT ERRORS, OMISSIONS, OR INCONSISTENCIES PROMPTLY TO THE LANDSCAPE ARCHITECT.
2. CONTACT UTILITY COMPANIES AS REQUIRED BY STATE AND LOCAL REGULATIONS BEFORE DIGGING. LOCATE AND MARK EXISTING UTILITIES.
3. THE CONTRACTOR SHALL OBTAIN ALL PERMITS WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK.
4. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
5. DIMENSIONS REFERRED TO AS "EQUAL" INDICATE SPACING WHICH IS EQUIDISTANT MEASURED TO THE CENTERLINES.
6. MEASUREMENTS ARE TO THE FINISHED FACE OF BUILDINGS, WALLS, OR OTHER FIXED SITE IMPROVEMENTS. DIMENSIONS TO CENTERLINES ARE IDENTIFIED.
7. INSTALL INTERSECTING ELEMENTS AT 90-DEGREE ANGLES, UNLESS OTHERWISE NOTED.
8. PROVIDE EXPANSION JOINTS WHERE FLATWORK MEETS VERTICAL STRUCTURES, SUCH AS WALLS, CURBS, STEPS, AND OTHER HARDSCAPE.
9. CONTROL JOINTS SHOULD BE SPACED NO GREATER THAN TEN (10) LINEAR FEET MAXIMUM, UNLESS OTHERWISE SPECIFIED.
10. CONTROL JOINT RECOMMENDATIONS TO MINIMIZE CRACKING SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL.
11. ALL TOP OF WALLS AND FENCES ARE TO BE HELD LEVEL, UNLESS OTHERWISE SPECIFIED.
12. SAMPLES OF SPECIFIED MATERIALS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
13. THE CONTRACTOR SHALL PROVIDE A FULL-SCALE MOCKUP AND RECEIVE APPROVAL FROM THE LANDSCAPE ARCHITECT BEFORE BEGINNING CONSTRUCTION OF PAVEMENT.
14. ALL SITE FURNITURE LOCATIONS ARE TO BE STAKED BY CONTRACTOR AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

PLANTING NOTES

1. CONTACT UTILITY COMPANIES AS REQUIRED BY STATE AND LOCAL REGULATIONS BEFORE DIGGING. LOCATE AND MARK EXISTING UTILITIES.
2. REFER TO CIVIL ENGINEER'S GRADING PLANS FOR FINAL GRADING AND UTILITY LOCATIONS.
3. THE CONTRACTOR SHALL OBTAIN ALL PERMITS WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK.
4. LANDSCAPE ARCHITECT TO REVIEW PLANT MATERIALS AT SOURCE OR BY PHOTOGRAPHS PRIOR TO DIGGING OR SHIPPING OF PLANT MATERIAL.
5. CONTRACTOR IS TO VERIFY ALL QUANTITIES. IF QUANTITIES ON PLANT LIST DIFFER FROM GRAPHIC INDICATIONS, GRAPHICS SHALL PREVAIL.
6. EXACT LOCATIONS OF TREES AND B&B SHRUBS ARE TO BE STAKED BY THE CONTRACTOR FOR LANDSCAPE ARCHITECT REVIEW AND APPROVAL PRIOR TO INSTALLATION. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATION IN THE FIELD.
7. PLANT MATERIAL NOT MEETING THE STANDARDS CONTAINED WITHIN CONTRACT DOCUMENTS SHALL BE REPLACED AT NO COST TO THE OWNER.
8. PROVIDE MATCHING SIZES AND FORMS FOR EACH PLANT OF THE SAME SPECIES DESIGNATED ON THE DRAWINGS UNLESS OTHERWISE INDICATED.
9. ALL PLANT MATERIAL IS TO BE INSTALLED PLUMB/PER THE SPECIFICATIONS CONTAINED WITHIN THE CONTRACT DOCUMENTS.
10. PRUNE EXISTING AND/OR NEWLY PLANTED TREES ONLY AS DIRECTED BY THE LANDSCAPE ARCHITECT.
11. PLANT MATERIAL SHALL HAVE ALL WIRE, TWINE, BASKETS, BURLAP, AND ALL OTHER NON-BIODEGRADABLE CONTAINMENT MATERIAL REMOVED FROM THE TRUNK AND/OR ROOT BALL OF THE PLANT PRIOR TO PLANTING. ROOT BALLS SHALL BE FREE OF WEEDS.
12. FINISH GRADE OF PLANTING BEDS SHALL BE ONE (1) INCH BELOW ADJACENT PAVER OR HEADER, UNLESS OTHERWISE SPECIFIED.
13. MULCH OR PLANTING BED DRESSING SHALL BE PLACED IN ALL PLANTING AREAS AS SPECIFIED. MULCH OR PLANTING BED DRESSING SHALL NOT BE PLACED WITHIN SIX (6) INCHES OF TREE TRUNKS. MULCHING SHOULD BE REPEATED ANNUALLY DURING THE AUTUMN TO A 3" DEPTH, SOIL PEP MULCH SHALL BE USED UNLESS OTHERWISE SPECIFIED..
14. ALL PLANT MATERIAL SHOULD RECEIVE AN ORGANIC FERTILIZER IN LIMITED APPLICATION FOLLOWING INSTALLATION. TYPE AND APPLICATION RATE AND METHOD OF APPLICATION TO BE SPECIFIED BY THE CONTRACTOR & APPROVED BY THE LANDSCAPE ARCHITECT.
15. STOCKPILED PLANT MATERIAL TO BE PLACED IN THE SHADE AND PROPERLY HAND-WATERED UNTIL PLANTED.
16. PRESERVE & PROTECT ALL EXISTING VEGETATION INDICATED TO REMAIN AT ALL TIMES.
17. TO THE GREATEST EXTENT POSSIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION SHALL BE STOCKPILED FOR LATER USE IN AREAS REQUIRING REVEGETATION/PLANTING.
18. ALL MATERIALS USED SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
19. ALL DISTURBED AREAS ARE TO BE REVEGETATED

SEEDING NOTES

1. REVEGETATED AREAS ARE TO BE HYRO-SEEDED, FOLLOWED BY THE APPLICATION OF STRAW MULCH.
2. APPLY STRAW MULCH AT A MINIMUM RATE OF 1.5 TONS PER ACRE OF AIR DRY MATERIAL. SPREAD STRAW MULCH UNIFORMLY OVER THE AREA WITH MECHANICAL MULCH SPREADER/CRIMPER. DO NOT MULCH WHEN WIND VELOCITY EXCEEDS 10 MPH.
3. IMMEDIATELY UPON COMPLETION OF THE MULCHING AND BINDING OPERATION, THE SEEDED AREAS SHALL BE IRRIGATED, KEEPING THE TOP 2 INCHES OF SOIL EVENLY MOIST UNTIL SEED HAS UNIFORMLY GERMINATED AND GROWN TO A HEIGHT OF 2 INCHES.
4. WATERING APPLICATION SHALL BE DONE IN A MANNER WHICH WILL PROVIDE UNIFORM COVERAGE BUT WHICH WILL NOT CAUSE EROSION, MOVEMENT, OR DAMAGE TO THE FINISHED SURFACE.

GRADING AND DRAINAGE NOTES

1. MATERIALS/WASTE CREATED BY REMOVAL PROCEDURES SHALL BE LEGALLY DISPOSED OF AWAY FROM THE JOB SITE.
2. NOTIFY LOCAL UNDERGROUND SERVICE COMPANIES FOR UTILITY FINDS 48 HOURS PRIOR TO ANY EXCAVATION.
3. THE CONTRACTOR IS TO REVIEW ARCHITECTURAL DRAWINGS FOR THE VERIFICATION OF CONNECTIONS TO DRAINS OVER STRUCTURE.
4. THE CONTRACTOR IS TO REVIEW ARCHITECTURAL DRAWINGS FOR THE VERIFICATION OF WATERPROOFING OF SLAB PENETRATIONS.
5. THE CONTRACTOR IS TO REVIEW CIVIL ENGINEER'S DRAWINGS FOR THE VERIFICATION OF CONNECTIONS TO DRAINS.
6. GRADING AND EXCAVATION WORK SHALL BE COMPLETED DURING DRY AND NON-FREEZING CONDITIONS.
7. POSITIVE DRAINAGE SHALL BE PROVIDED AWAY FROM ALL STRUCTURES.
8. SOIL COMPACTION SHALL BE 95% PROCTOR DENSITY MINIMUM BENEATH PAVEMENTS, STEPS, WALLS AND LIGHT FOUNDATIONS, UNLESS OTHERWISE SPECIFIED.

ABBREVIATIONS TABLE

APPROX	APPROXIMATE
ARCH	ARCHITECT
AVG	AVERAGE
B+B	BALED AND BURLAPPED
BF	BOTTOM OF FOOTING
BLDG	BUILDING
BM	BENCHMARK
BOC	BACK OF CURB
BR	BOTTOM OF RAMP
BS	BOTTOM OF STEP
BW	BOTTOM OF WAL
CAL	CALIPER
CAP	CAPACITY
CF	CUBIC FEET
CHAM	CHAMFER
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEARANCE
CM	CENTIMETER
CO	CLEAN OUT
COMP	COMPACTED
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CU	CUBIC
CY	CUBIC YARD
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DTL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
E.W.	EACH WAY
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH
FL	FLOW LINE
FOW	FACE OF WAL
FT	FOOT (FEET)
FTG	FOOTING
GA	GAUGE
GAL	GALVANIZED
GEN	GENERAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INV	INVERT ELEVATION
IN	INCH(ES)
INCL	INCLUDE(D)
IRR	IRRIGATION
JT	JOINT
LIN	LINEAR
LF	LINEAR FEET
LP	LOW POINT
LT	LIGHT
MATL	MATERIAL
MAX	MAXIMUM
MEMB	MEMBRANE
MD	MAIN DISCONNECT SWITCH

MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
PAR	PARALLEL
PC	POINT OF CURVATURE
PE	POLYURETHANE
PERF	PERFORATED
PED	PEDESTRIAN
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PT	POINT, POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PVR	PAVER
QTY	QUANTITY
R	RADIUS
REF	REFERENCE
REINF	REINFORCE(D)
REQ'D	REQUIRED
REV	REVISION, REVISED
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
SS	SANITARY SEWER
SCH	SCHEDULE
SD	STORM DRAIN
SEC	SECTION
SF	SQUARE FOOT (FEET)
SHT	SHEET
SIM	SIMILAR
SNT	SEALANT
SPECS	SPECIFICATIONS
SQ	SQUARE
ST	STORM SEWER
SY	SQUARE YARD
STA	STATION
STD	STANDARD
STL	STEEL
STRL	STRUCTURAL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
TBC	TOP OF BACK CURB
TC	TOP OF CURB
TF	TOP OF FOOTING
TRANS	ELECTRIC TRANSFORMER
TOC	TOP OF CONCRETE
TOPO	TOPOGRAPHY
TSL	TOP OF SLAB
TR	TOP OF RAMP
TS	TOP OF STEP
TW	TOP OF WAL
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
VEH	VEHICLE
VOL	VOLUME
W/	WITH
W/O	WITHOUT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD
@	AT

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ACETO LANDSCAPE ARCHITECTS
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SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS | DATE

ISSUE DATE

October 23, 2024

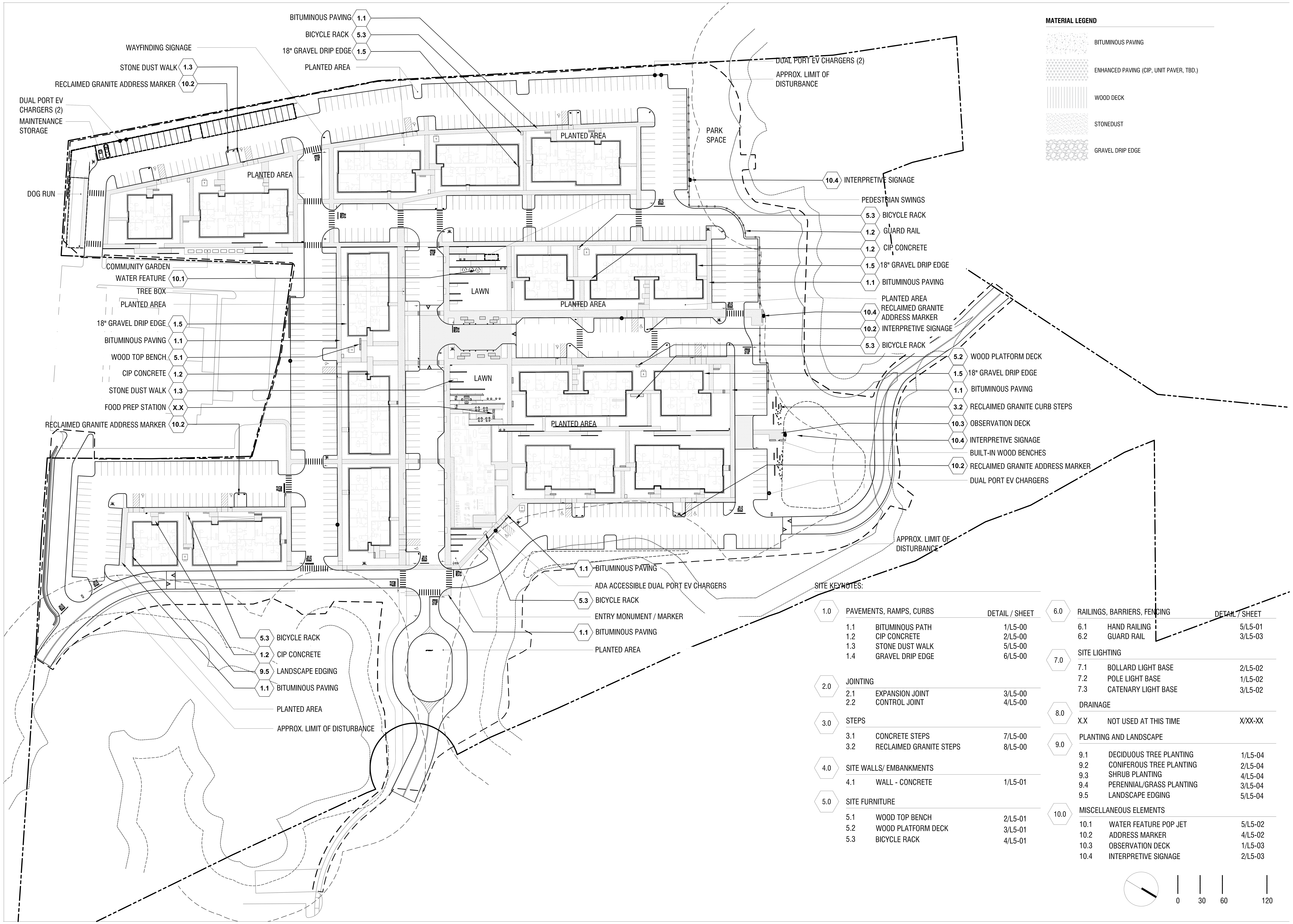
SHEET TITLE

NOTES

SHEET INFORMATION

L0-01

NOT FOR CONSTRUCTION



MATERIAL LEGEND

- BITUMINOUS PAVING
- ENHANCED PAVING (CIP, UNIT PAVER, TBD.)
- WOOD DECK
- STONEDUST
- GRAVEL DRIP EDGE

SITE KEYNOTES:

		DETAIL / SHEET
1.0	PAVEMENTS, RAMPS, CURBS	
1.1	BITUMINOUS PATH	1/L5-00
1.2	CIP CONCRETE	2/L5-00
1.3	STONE DUST WALK	5/L5-00
1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING	
2.1	EXPANSION JOINT	3/L5-00
2.2	CONTROL JOINT	4/L5-00
3.0	STEPS	
3.1	CONCRETE STEPS	7/L5-00
3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS	
4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE	
5.1	WOOD TOP BENCH	2/L5-01
5.2	WOOD PLATFORM DECK	3/L5-01
5.3	BICYCLE RACK	4/L5-01

		DETAIL / SHEET
6.0	RAILINGS, BARRIERS, FENCING	
6.1	HAND RAILING	5/L5-01
6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING	
7.1	BOLLARD LIGHT BASE	2/L5-02
7.2	POLE LIGHT BASE	1/L5-02
7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE	
X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE	
9.1	DECIDUOUS TREE PLANTING	1/L5-04
9.2	CONIFEROUS TREE PLANTING	2/L5-04
9.3	SHRUB PLANTING	4/L5-04
9.4	PERENNIAL/GRASS PLANTING	3/L5-04
9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS	
10.1	WATER FEATURE POP JET	5/L5-02
10.2	ADDRESS MARKER	4/L5-02
10.3	OBSERVATION DECK	1/L5-03
10.4	INTERPRETIVE SIGNAGE	2/L5-03

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SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS DATE

ISSUE DATE

October 23, 2024

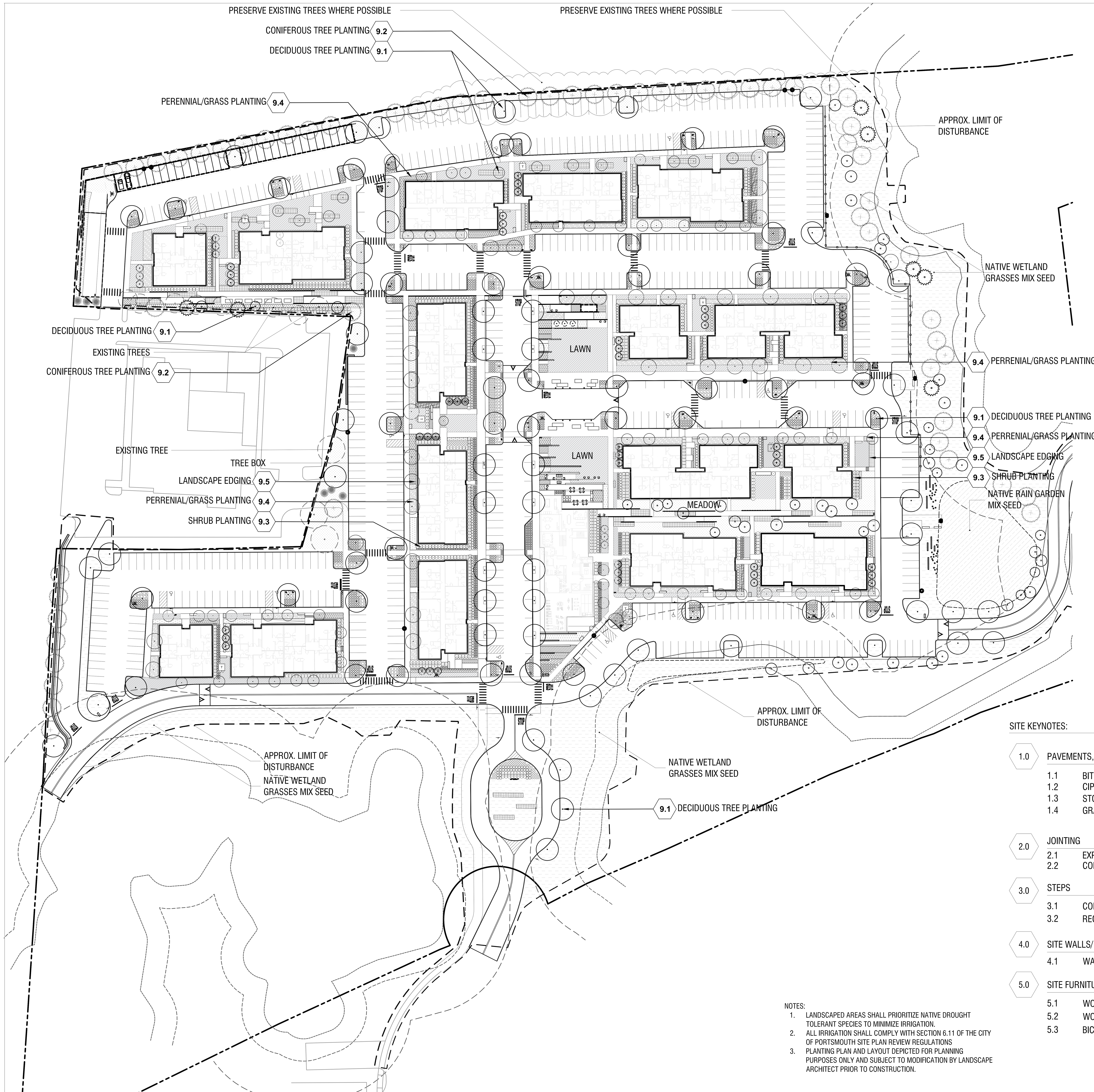
SHEET TITLE

LAYOUT AND MATERIALS PLAN

SHEET INFORMATION

L2-00

NOT FOR CONSTRUCTION



POTENTIAL PLANT SCHEDULE

SYMB.	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	MATURE SIZE	SPACING
TREES						
QP	QUERCUS PALUSTRIS	PIN OAK	96	3" CAL. MIN.	30' W , 70' T	PER PLAN
AR	ACER RUBRUM 'BOWHALL'	BOWHALL MAPLE	70	3" CAL. MIN.	15' W , 45' T	PER PLAN
QR	QUERCUS ROBUR X BICOLOR 'LONG'	REGAL PRINCE OAK	31	3" CAL. MIN.	15' W , 40' T	PER PLAN
AS	ACER SACCHARUM	SUGAR MAPLE	12	3" CAL. MIN.	40' W , 60' T	PER PLAN
BP	BETULA PAPYRIFERA	PAPER BIRCH (SINGLE-STEM)	34	3" CAL. MIN.	20' W , 35' T	PER PLAN
AC	AMELANCHIER CANADENSIS	SERVICEBERRY (MULTI-STEM)	53	8' HT. B&B	15' W , 25' T	PER PLAN
TREES - EVERGREEN						
AB	ABIES BALSAMEA 'COOKS'	BALSAM FIR 'COOKS'	56	7-8'	25' W , 75' T	PER PLAN
TC	TSUGA CANADENSIS	EASTERN HEMLOCK	7	7-8'	35' W , 70' T	PER PLAN
TO	THUJA OCCIDENTALIS	ARBORVITAE	7	7-8'	10' W , 40' T	PER PLAN
SHRUBS						
MP	MYRICA PENSYLVANICA	BAYBERRY	921	#5	6-8' W , 6-8' T	PER PLAN
CA	CLETHRA ALNIFOLIA	SUMMER SWEET	341	#2	4-6' W , 5-8' T	PER PLAN
VA	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	1,045	#2	2-4' W , 3-6' T	PER PLAN
RA	RHUS AROMATICA	LOW-GRO SUMAC	1,229	#2	5-6' W , 2' T	PER PLAN
MG	MYRICA GALE	SWEETGALE	298	#2	3-6' W , 2-5' T	PER PLAN
JH	JUNIPERUS HORIZONTALIS	CREEPING JUNIPER	581	#2	6-8' W , 1.5' T	PER PLAN
PERENNIALS, ORNAMENTAL GRASSES AND GROUNDCOVER						
AU	TIARELLA CORDIFOLIA	FOAMFLOWER	445	#1	1-2' W , 1' T	12" O.C.
N	NEPETA	CATMINT	325	#1	1-2' W , 1-2' T	12" O.C.
SY	SALVIA YANGII	RUSSIAN SAGE	368	#1	2-4' W , 3-5' T	18" O.C.
SS	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1,964	#1	2-3' W , 2-3' T	18" O.C.
CAC	CALAMAGROSTIS X ACUTIFLORA	KARL FOERSTER GRASS	2,818	#1	2-3' W , 3-5' T	24" O.C.
BG	BOUTELOUA GRACILIS	BLUE GRAMA	1,079	#1	2-3' W , 1-1.5' T	18" O.C.
P	PANICUM	SWITCHGRASS	2,112	#1	2-3' W , 4-5' T	18" O.C.
CP	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	190	#1	1' W , 1' T	12" O.C.
PA	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	1,449	#1	1-2' W , 1-2' T	12" O.C.
SP	SITOBOLIUM PUNCTILOBULUM	HAY SCENTED FERN	373	#1	3' W , 2' T	24" O.C.

LAWN & SEEDING

LOAM & SEED	29,241 SF	TURF GRASS MIX PER PLAN, SEE SEED SUPPLIER SPEC. FOR APPLICATION RATE
NATIVE WETLAND GRASSES MIX SEED FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRIS), HOP SEDGE (CAREX LUPULINA), GREEN BULRUSH (SCIRPUS ATROVIRENS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEFLAG (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), SQUARE STEMMED MONKEY FLOWER (MIMULUS RINGENS)	101,503 SF	NATIVE GRASS MIX PER PLAN, SEE SEED SUPPLIER SPEC. FOR APPLICATION RATE
NATIVE MEADOW MIX SEED VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).	23,801 SF	MEADOW MIX PER PLAN, SEE SEED SUPPLIER SPEC. FOR APPLICATION RATE

SITE KEYNOTES:

		DETAIL / SHEET
1.0	**PAVEMENTS, RAMPS, CURBS**	
1.1	BITUMINOUS PATH	1/L5-00
1.2	CIP CONCRETE	2/L5-00
1.3	STONE DUST WALK	5/L5-00
1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	**JOINTING**	
2.1	EXPANSION JOINT	3/L5-00
2.2	CONTROL JOINT	4/L5-00
3.0	**STEPS**	
3.1	CONCRETE STEPS	7/L5-00
3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	**SITE WALLS/ EMBANKMENTS**	
4.1	WALL - CONCRETE	1/L5-01
5.0	**SITE FURNITURE**	
5.1	WOOD TOP BENCH	2/L5-01
5.2	WOOD PLATFORM DECK	3/L5-01
5.3	BICYCLE RACK	4/L5-01
6.0	**RAILINGS, BARRIERS, FENCING**	
6.1	HAND RAILING	5/L5-01
6.2	GUARD RAIL	3/L5-03
7.0	**SITE LIGHTING**	
7.1	BOLLARD LIGHT BASE	2/L5-02
7.2	POLE LIGHT BASE	1/L5-02
7.3	CATENARY LIGHT BASE	3/L5-02
8.0	**DRAINAGE**	
X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	**PLANTING AND LANDSCAPE**	
9.1	DECIDUOUS TREE PLANTING	1/L5-04
9.2	CONIFEROUS TREE PLANTING	2/L5-04
9.3	SHRUB PLANTING	4/L5-04
9.4	PERENNIAL/GRASS PLANTING	3/L5-04
9.5	LANDSCAPE EDGING	5/L5-04
10.0	**MISCELLANEOUS ELEMENTS**	
10.1	WATER FEATURE POP JET	5/L5-02
10.2	ADDRESS MARKER	4/L5-02
10.3	OBSERVATION DECK	1/L5-03
10.4	INTERPRETIVE SIGNAGE	2/L5-03

NOTES:
1. LANDSCAPED AREAS SHALL PRIORITIZE NATIVE DROUGHT TOLERANT SPECIES TO MINIMIZE IRRIGATION.
2. ALL IRRIGATION SHALL COMPLY WITH SECTION 6.11 OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS
3. PLANTING PLAN AND LAYOUT DEPICTED FOR PLANNING PURPOSES ONLY AND SUBJECT TO MODIFICATION BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

0 30 60 120

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SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS	DATE

ISSUE DATE

October 23, 2024

SHEET TITLE

PLANTING PLAN

SHEET INFORMATION

L-3-00

NOT FOR CONSTRUCTION

NOTE: ALL SITE LIGHTING FIXTURES ARE DARK SKY COMPLIANT.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	16	B3	Single	NLS: TBL-42-T3-16L-40-30K7-UNV-AB-CXX		1.000	2151	18	288
	4	G2A	Single	COOPER: GALN-SA1C-730-U-SL2-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	6467	57	228
	2	G3	Single	COOPER: GALN-SA2C-730-U-SL3-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	12762	108	216
	19	G4-HSS	Single	COOPER: GALN-SA2D-730-U-T4FT-CXX-HSS	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	10202	125	2375
	6	G4W-2	2 @ 90 degrees	COOPER: GALN-SA2A-730-U-T4W-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D5-FP-COOPER CXX-FBC-AB	0.900	8381	63	756
	2	G4W-HSS	Single	COOPER: GALN-SA2D-730-U-T4W-CXX-HSS	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	10249	125	250
	1	G5A	Single	COOPER: GALN-SA2A-730-U-5MQ-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	8784	63	63
	1	G5A-2	Back-Back	COOPER: GALN-SA2A-730-U-5MQ-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D2-FP-COOPER CXX-FBC-AB	0.900	8784	63	126
	2	G5B	Single	COOPER: GALN-SA2B-730-U-5MQ-CXX	MOUNTED ON 20' VALMONT POLE: DS330-400Q200-D1-FP-COOPER CXX-FBC-AB	0.900	10930	82	164
	11	P3	Single	NLS: TRC-2-T3-16L-7-30K7-UNV-SGL-CXX-16	MOUNTED ON 16' POLE, INCLUDED WITH FIXTURE	0.900	4410	36	396
	150	T1	Single	TIVOLI: LSL2-B-18-S-30-F-12 // POWER AND LEAD WIRES // MOUNTING POLE	(5) 44' RUNS, GLOBES SPACED 18 IN // CONTRACTOR TO CONFIRM LENGTH // MOUNTED 10' AFF	0.900	5	0.2	30
	57	W1	Single	WAC: WS-W220208-30-CXX	WALL MTD 6' AFG	0.900	282	5.77914	329.411

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
ENTIRE AREA	Fc	0.28	35.3	0.0	N.A.	N.A.
EAST CENTRAL PARKING	Fc	1.23	3.4	0.3	4.10	11.33
MAIN STREET	Fc	1.19	4.7	0.3	3.97	15.67
NORTH PARKING	Fc	1.41	2.9	0.1	14.10	29.00
NORTHEAST PARKING	Fc	1.21	3.5	0.3	4.03	11.67
SOUTHEAST PARKING	Fc	1.27	4.2	0.3	4.23	14.00
SOUTHWEST PARKING	Fc	1.17	3.8	0.3	3.90	12.67
WEST CENTRAL PARKING	Fc	1.11	3.7	0.1	11.10	37.00

CHARRON
REFLEX LIGHTING

0 30 60 120

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SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS DATE

ISSUE DATE

October 23, 2024

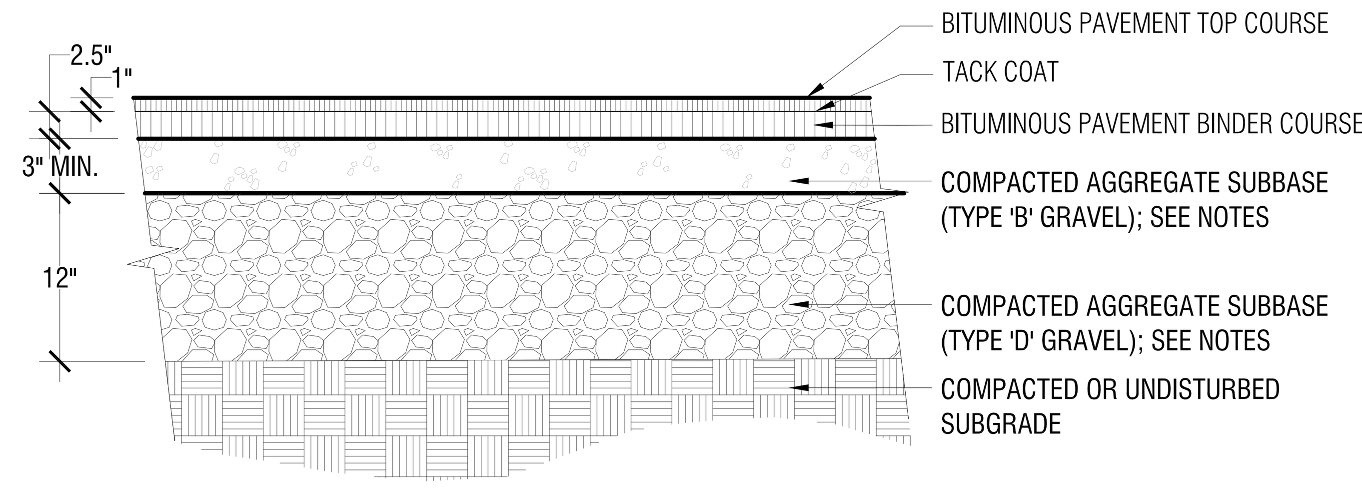
SHEET TITLE

PHOTOMETRIC PLAN

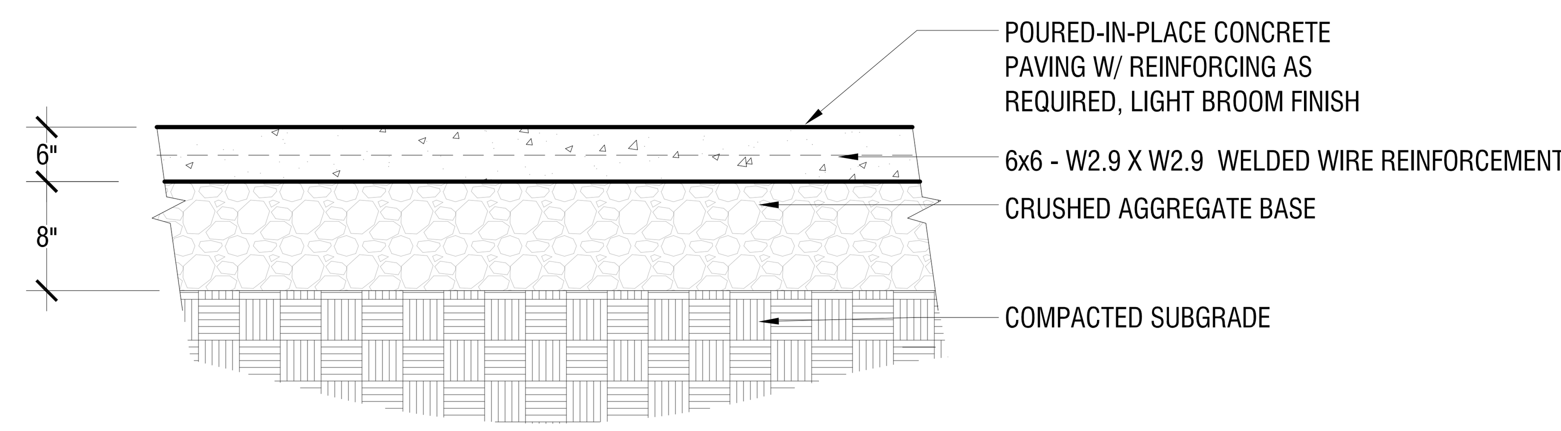
SHEET INFORMATION

L-4-00

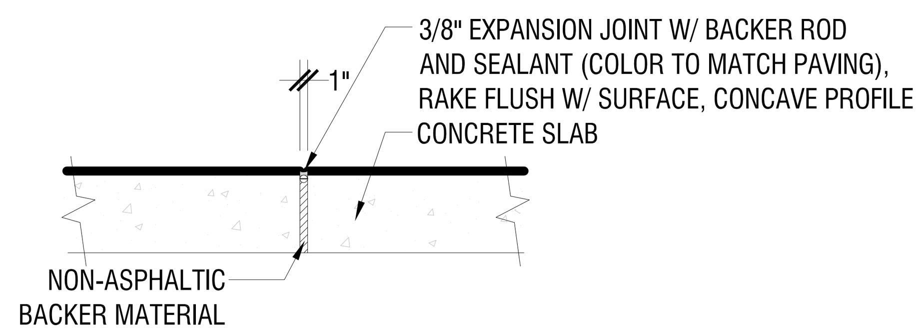
NOT FOR CONSTRUCTION



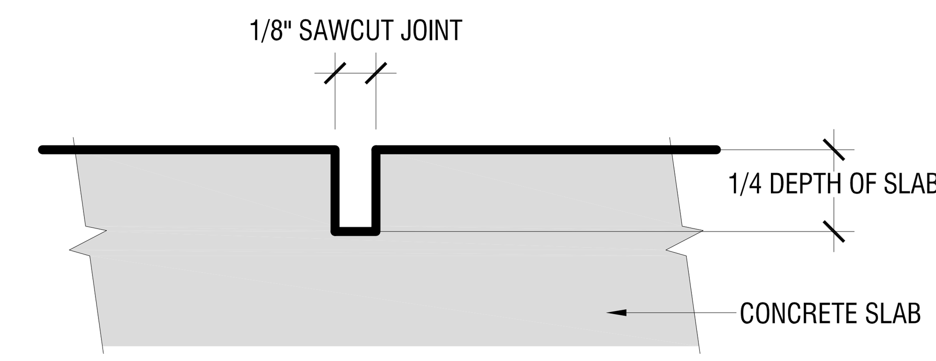
1 Bituminous Paving
1":1'-0"
1.1



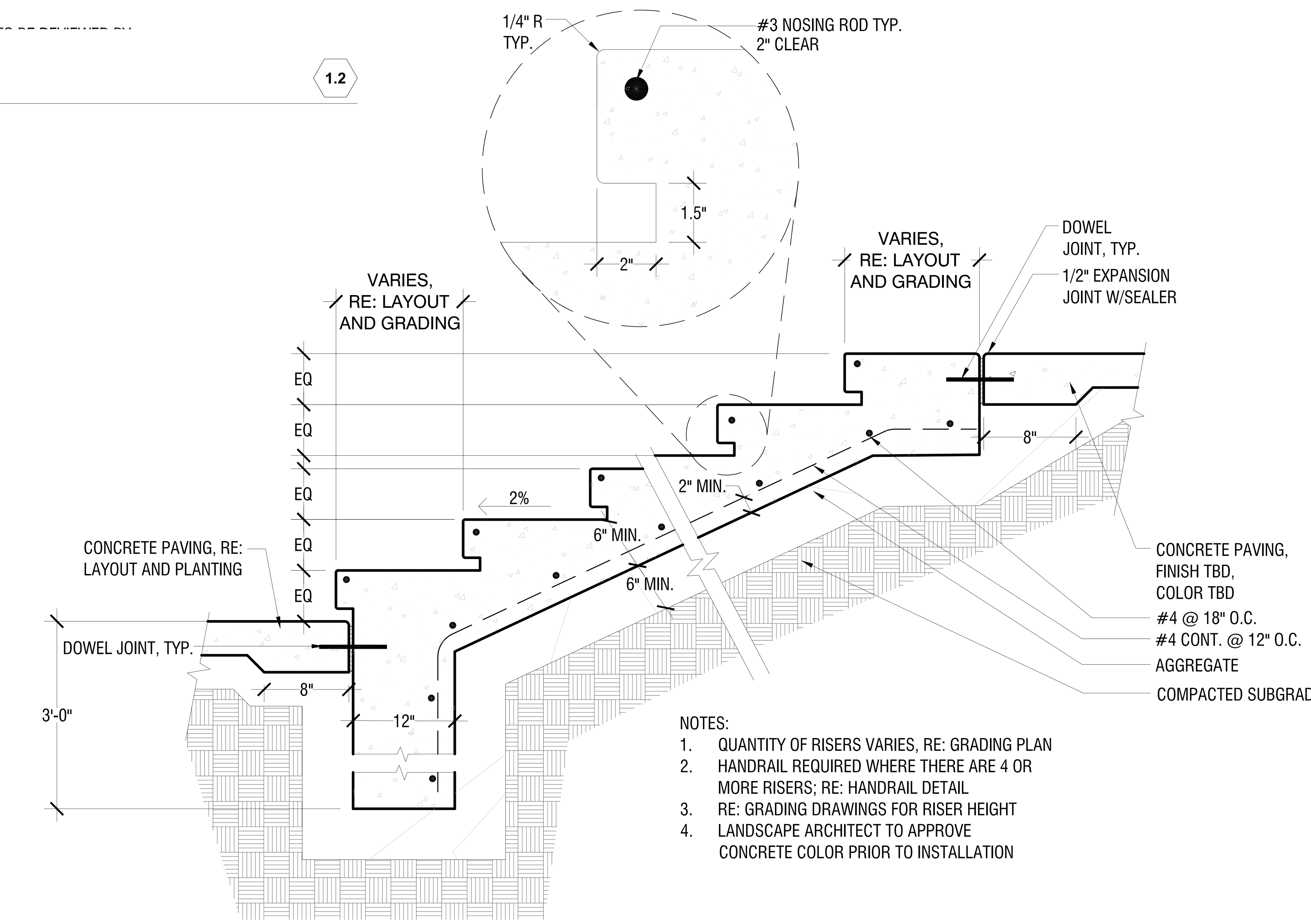
2 CIP Concrete
1":1'-0"
1.2



3 Expansion Joint
NTS
2.1

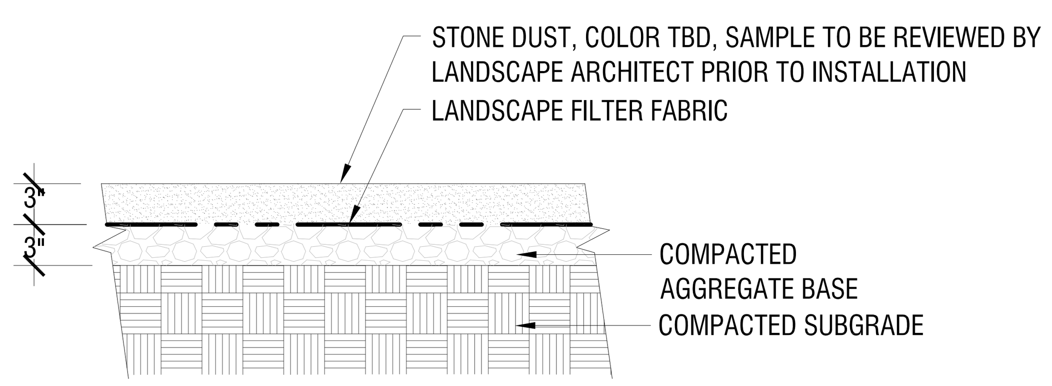


4 Control Joint
NTS
2.2

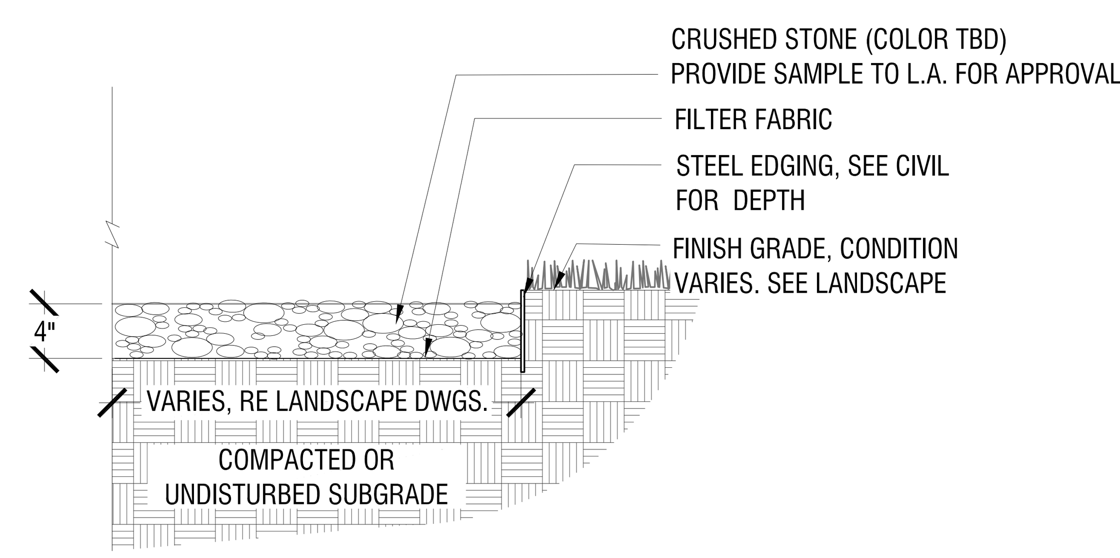


NOTES:
1. QUANTITY OF RISERS VARIES, RE: GRADING PLAN
2. HANDRAIL REQUIRED WHERE THERE ARE 4 OR MORE RISERS; RE: HANDRAIL DETAIL
3. RE: GRADING DRAWINGS FOR RISER HEIGHT
4. LANDSCAPE ARCHITECT TO APPROVE CONCRETE COLOR PRIOR TO INSTALLATION

7 Concrete Steps
1":2'-0"
3.1



5 Stone Dust
1":1'-0"
1.3

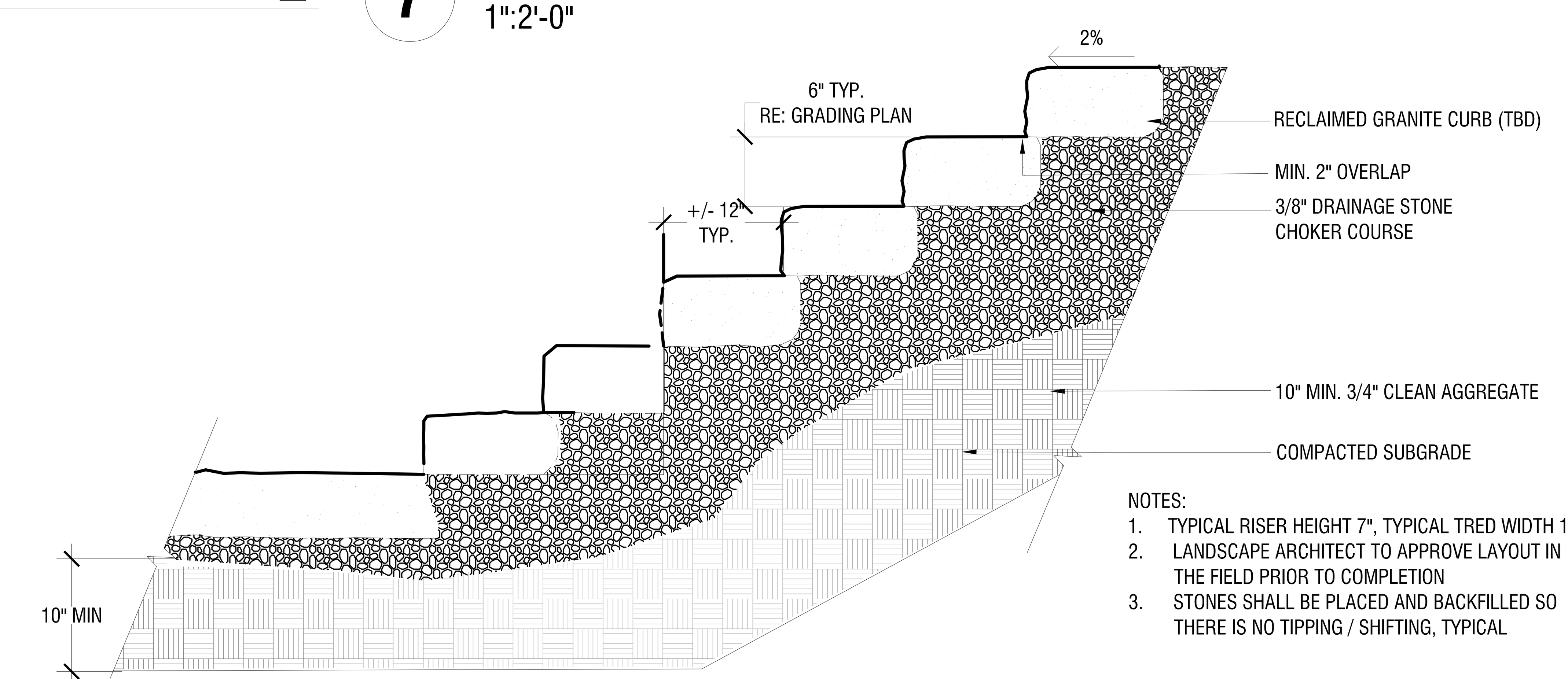


6 Gravel Drip Edge
1":1'-0"
1.4

SITE KEYNOTES:

1.0	PAVEMENTS, RAMPS, CURBS		DETAIL / SHEET
	1.1	BITUMINOUS PATH	1/L5-00
	1.2	CIP CONCRETE	2/L5-00
	1.3	STONE DUST WALK	5/L5-00
	1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING		
	2.1	EXPANSION JOINT	3/L5-00
	2.2	CONTROL JOINT	4/L5-00
3.0	STEPS		
	3.1	CONCRETE STEPS	7/L5-00
	3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS		
	4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE		
	5.1	WOOD TOP BENCH	2/L5-01
	5.2	WOOD PLATFORM DECK	3/L5-01
	5.3	BICYCLE RACK	4/L5-01

6.0	RAILINGS, BARRIERS, FENCING		DETAIL / SHEET
	6.1	HAND RAILING	5/L5-01
	6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING		
	7.1	BOLLARD LIGHT BASE	2/L5-02
	7.2	POLE LIGHT BASE	1/L5-02
	7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE		
	X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE		
	9.1	DECIDUOUS TREE PLANTING	1/L5-04
	9.2	CONIFEROUS TREE PLANTING	2/L5-04
	9.3	SHRUB PLANTING	4/L5-04
	9.4	PERENNIAL/GRASS PLANTING	3/L5-04
	9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS		
	10.1	WATER FEATURE POP JET	5/L5-02
	10.2	ADDRESS MARKER	4/L5-02
	10.3	OBSERVATION DECK	1/L5-03
	10.4	INTERPRETIVE SIGNAGE	2/L5-03



NOTES:
1. TYPICAL RISER HEIGHT 7", TYPICAL TRED WIDTH 12"
2. LANDSCAPE ARCHITECT TO APPROVE LAYOUT IN THE FIELD PRIOR TO COMPLETION
3. STONES SHALL BE PLACED AND BACKFILLED SO THERE IS NO TIPPING / SHIFTING, TYPICAL

8 Reclaimed Granite Steps
1":2'-0"
3.2

NOTES:
1. DETAILS AND SPECIFICATIONS DEPICTED TO CONVEY DESIGN INTENT. FINAL DESIGN AND SPECIFICATION SUBJECT TO CHANGE PRIOR TO CONSTRUCTION AT LANDSCAPE ARCHITECT'S DISCRETION.

ALA
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SEAL

PROJECT TITLE
100 Durgin Ln

PREPARED FOR
100 DURGIN LANE OWNER, LLC
100 DURGIN LANE
PORTSMOUTH, NH

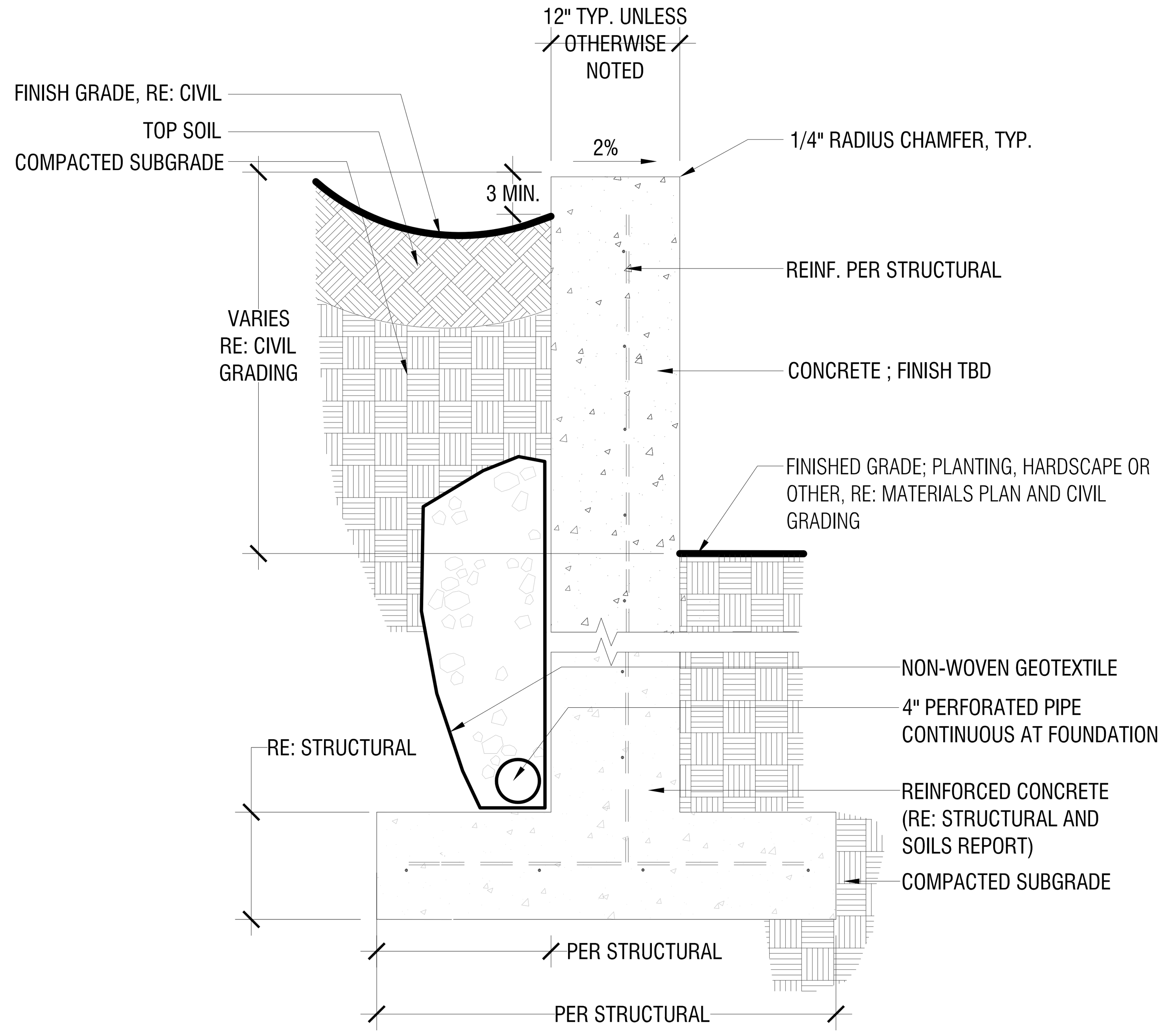
REVISIONS | DATE

ISSUE DATE
October 23, 2024

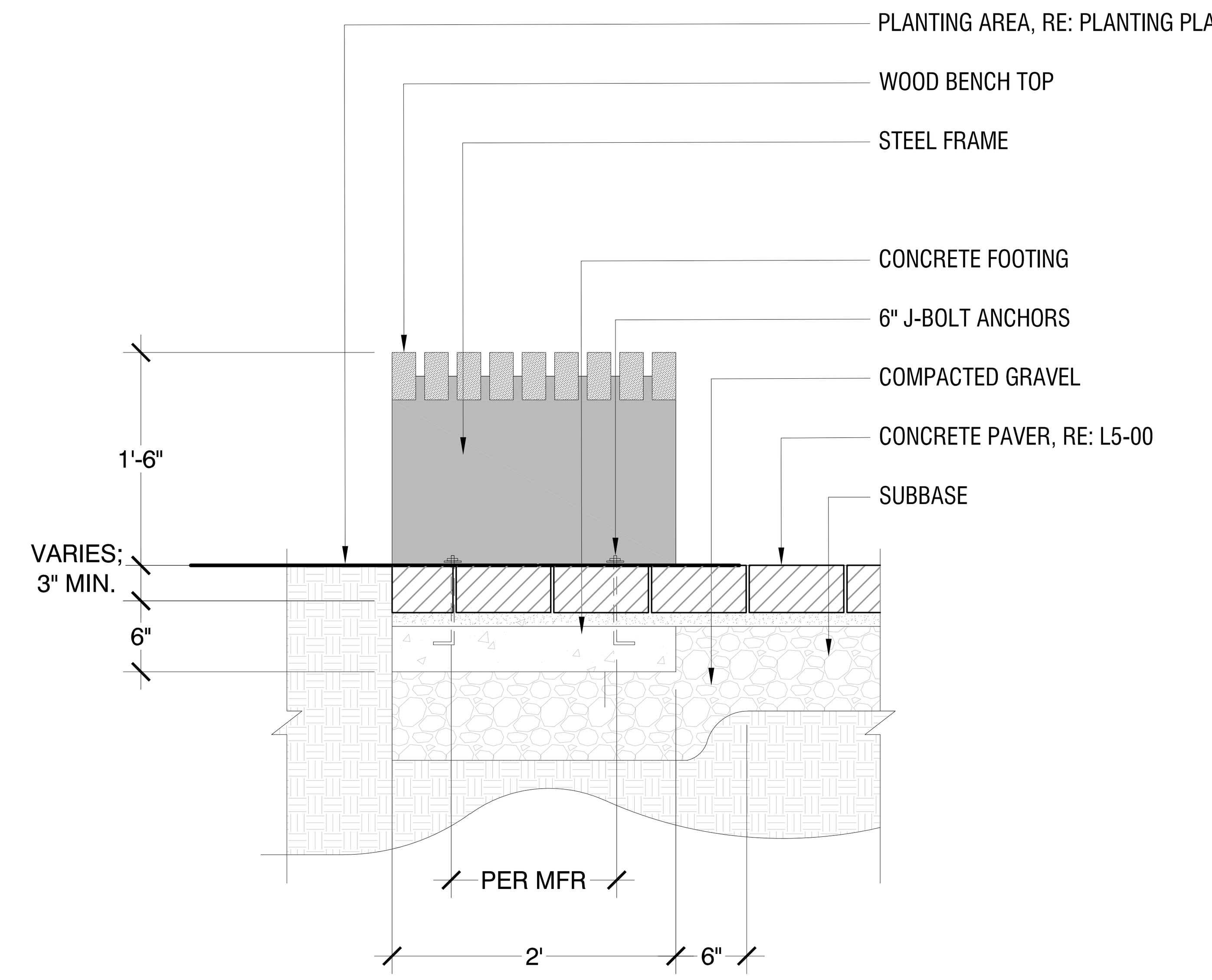
SHEET TITLE
SITE DETAILS

SHEET INFORMATION
L 5-00

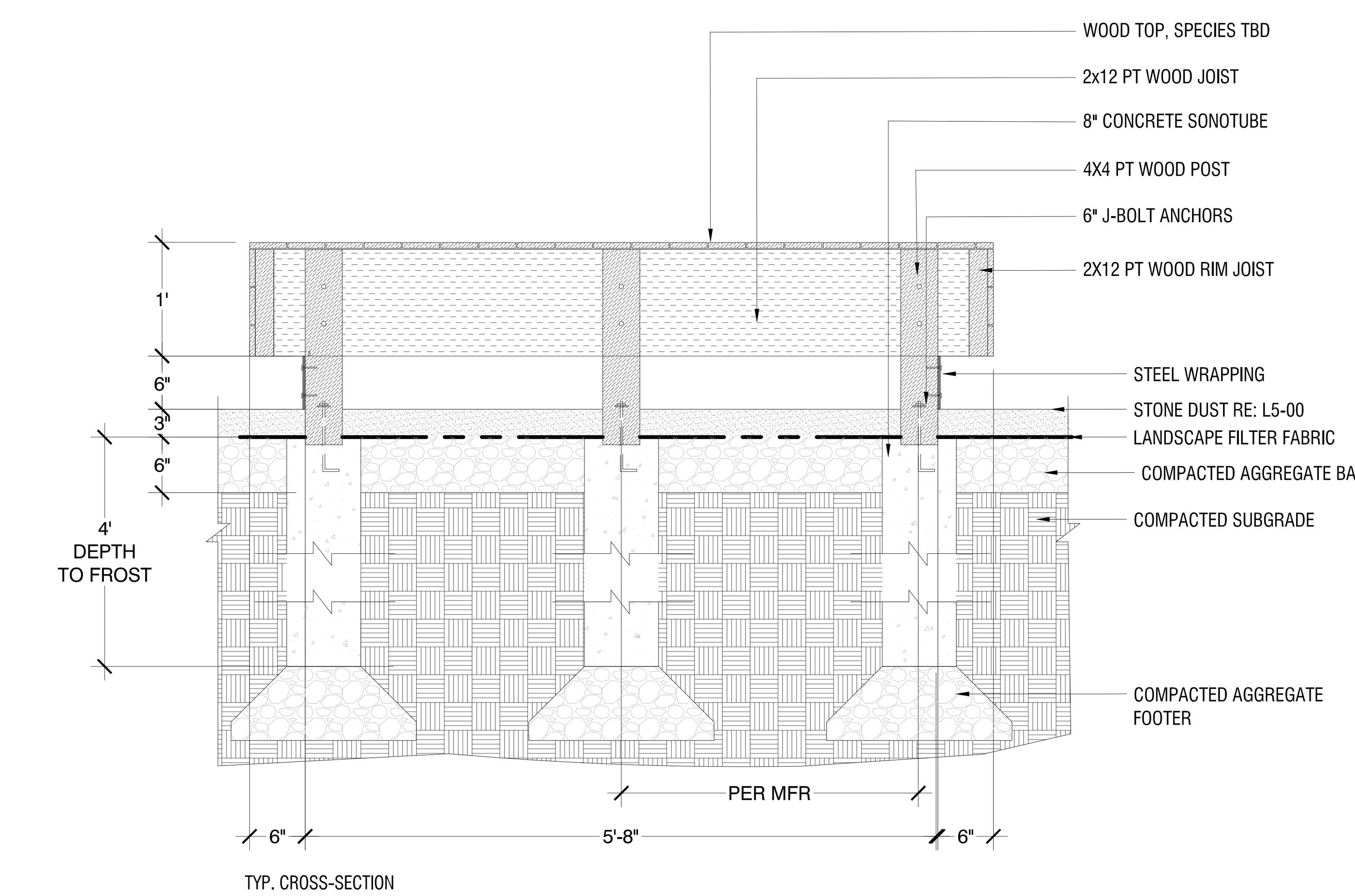
NOT FOR CONSTRUCTION



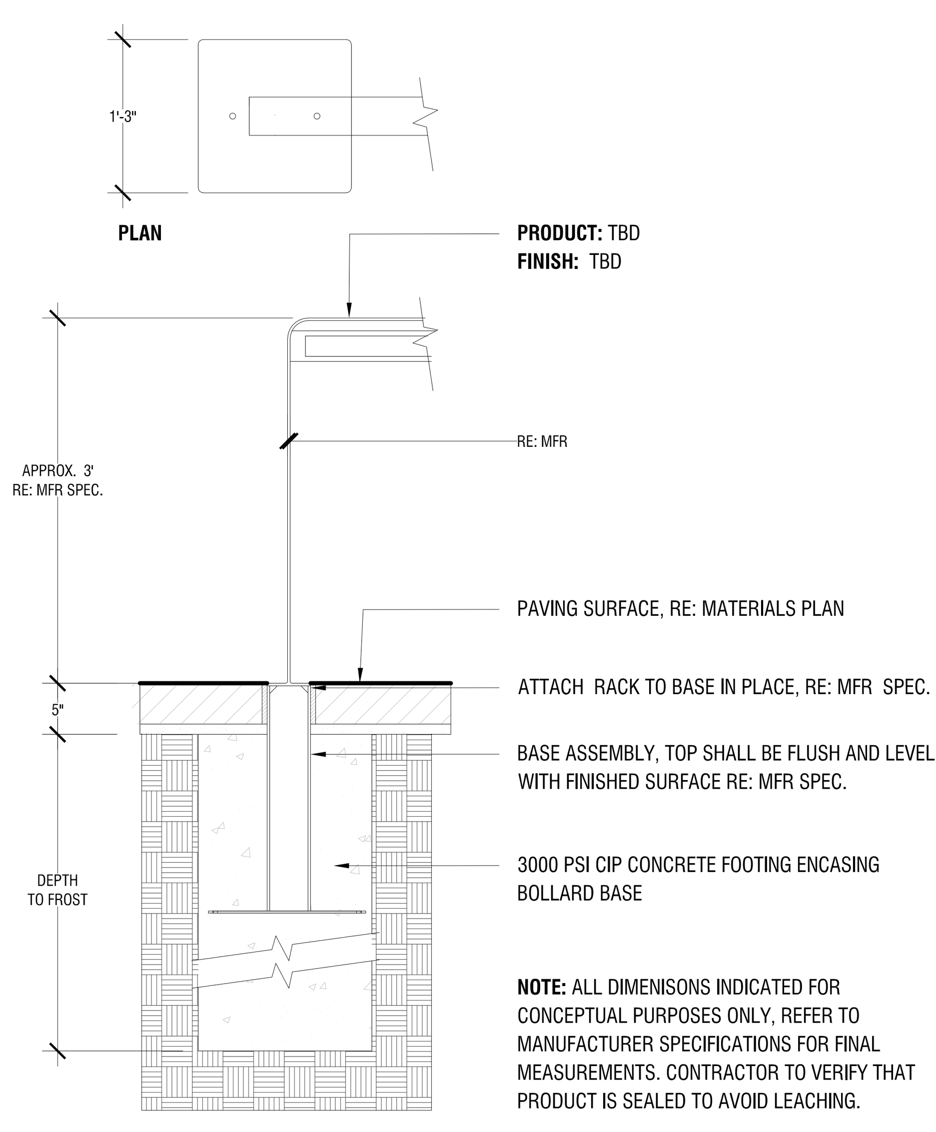
1 Wall - Concrete
1":1'-0"
4.1



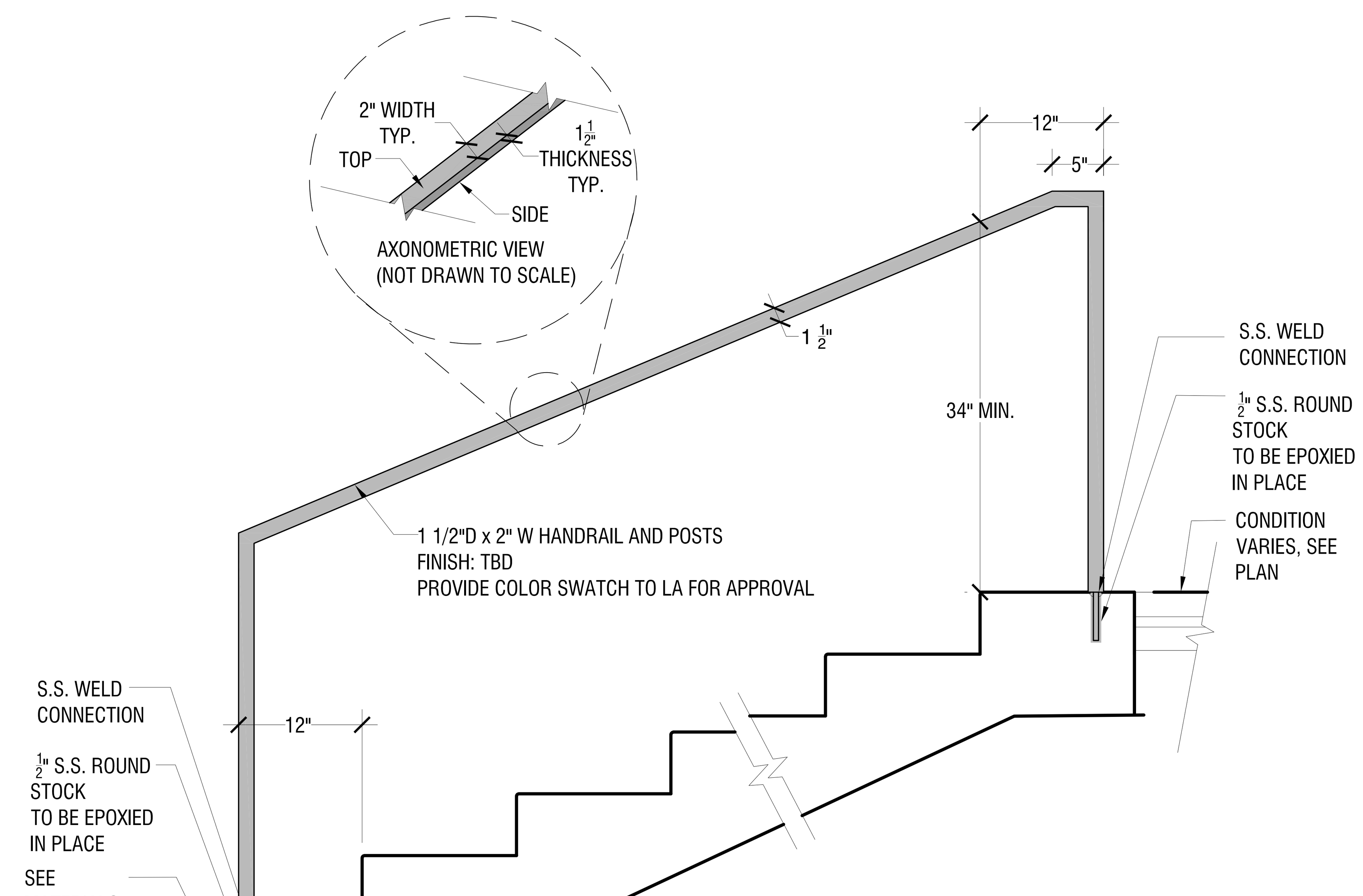
2 Wood Top Bench
1":1'-0"
5.1



3 Wood Platform Deck
3/4":1'-0"
5.2



4 Bicycle Rack
3/4":1'-0"
5.3



NOTES:
1. HANDRAIL REQUIRED WHERE THERE ARE 4 OR MORE RISERS
2. ALL HANDRAIL EDGES TO HAVE A MINIMUM RADIUS OF .01 INCH (.25MM)
3. HANDRAIL TO MEET CURRENT CODE REQUIREMENTS
4. RE: CIVIL DRAWINGS FOR RISER HEIGHT
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR LA APPROVAL PRIOR TO FABRICATION
6. FINAL SPEC, INCLUDING FINISH TBD BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION

5 Hand Railing
1/2":1'-0"
6.1

SITE KEYNOTES:

			DETAIL / SHEET
1.0	PAVEMENTS, RAMPS, CURBS		
	1.1	BITUMINOUS PATH	1/L5-00
	1.2	CIP CONCRETE	2/L5-00
	1.3	STONE DUST WALK	5/L5-00
	1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING		
	2.1	EXPANSION JOINT	3/L5-00
	2.2	CONTROL JOINT	4/L5-00
3.0	STEPS		
	3.1	CONCRETE STEPS	7/L5-00
	3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS		
	4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE		
	5.1	WOOD TOP BENCH	2/L5-01
	5.2	WOOD PLATFORM DECK	3/L5-01
	5.3	BICYCLE RACK	4/L5-01

			DETAIL / SHEET
6.0	RAILINGS, BARRIERS, FENCING		
	6.1	HAND RAILING	5/L5-01
	6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING		
	7.1	BOLLARD LIGHT BASE	2/L5-02
	7.2	POLE LIGHT BASE	1/L5-02
	7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE		
	X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE		
	9.1	DECIDUOUS TREE PLANTING	1/L5-04
	9.2	CONIFEROUS TREE PLANTING	2/L5-04
	9.3	SHRUB PLANTING	4/L5-04
	9.4	PERENNIAL/GRASS PLANTING	3/L5-04
	9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS		
	10.1	WATER FEATURE POP JET	5/L5-02
	10.2	ADDRESS MARKER	4/L5-02
	10.3	OBSERVATION DECK	1/L5-03
	10.4	INTERPRETIVE SIGNAGE	2/L5-03

NOTES:
1. DETAILS AND SPECIFICATIONS DEPICTED TO CONVEY DESIGN INTENT. FINAL DESIGN AND SPECIFICATION SUBJECT TO CHANGE PRIOR TO CONSTRUCTION AT LANDSCAPE ARCHITECT'S DISCRETION.

ALA
ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE
100 Durgin Ln

PREPARED FOR
100 DURGIN LANE OWNER, LLC
100 DURGIN LANE
PORTSMOUTH, NH

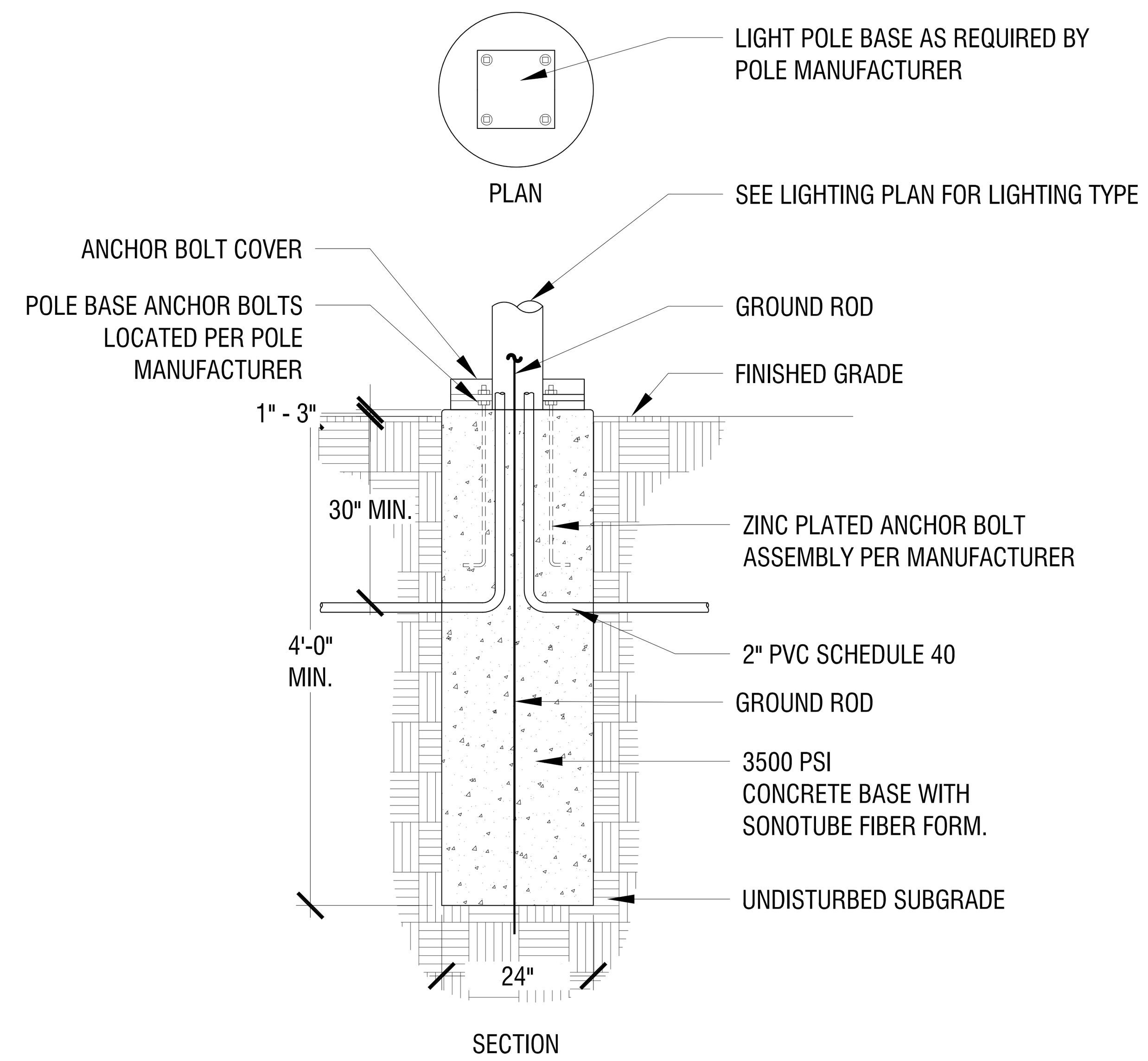
REVISIONS DATE

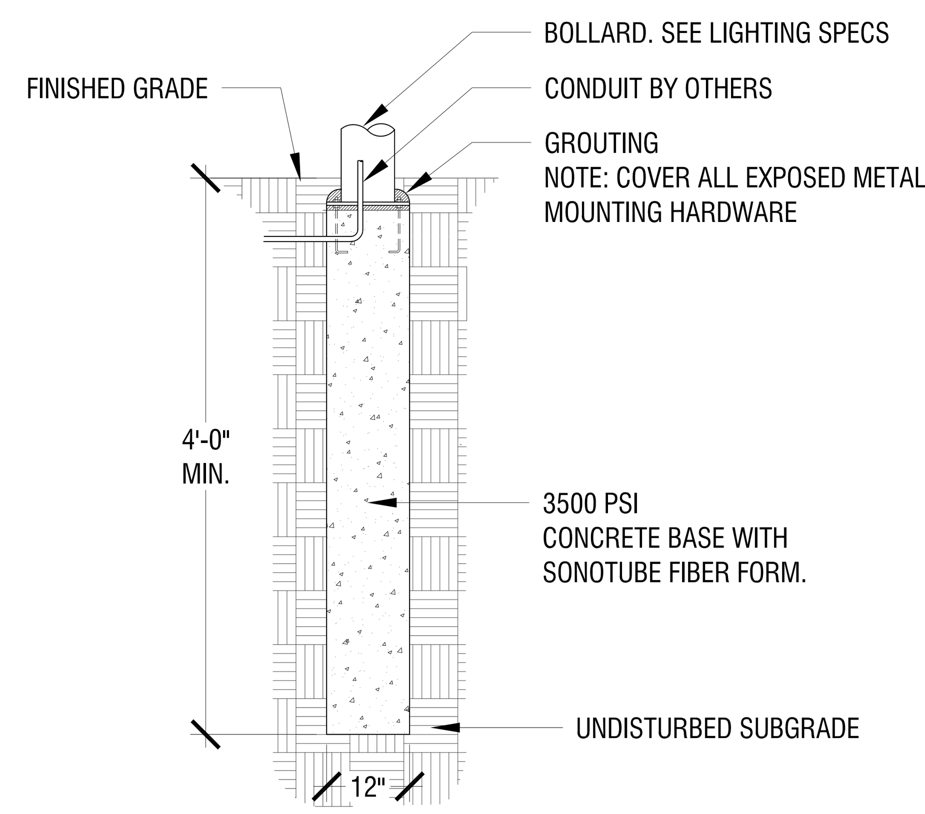
ISSUE DATE
October 23, 2024

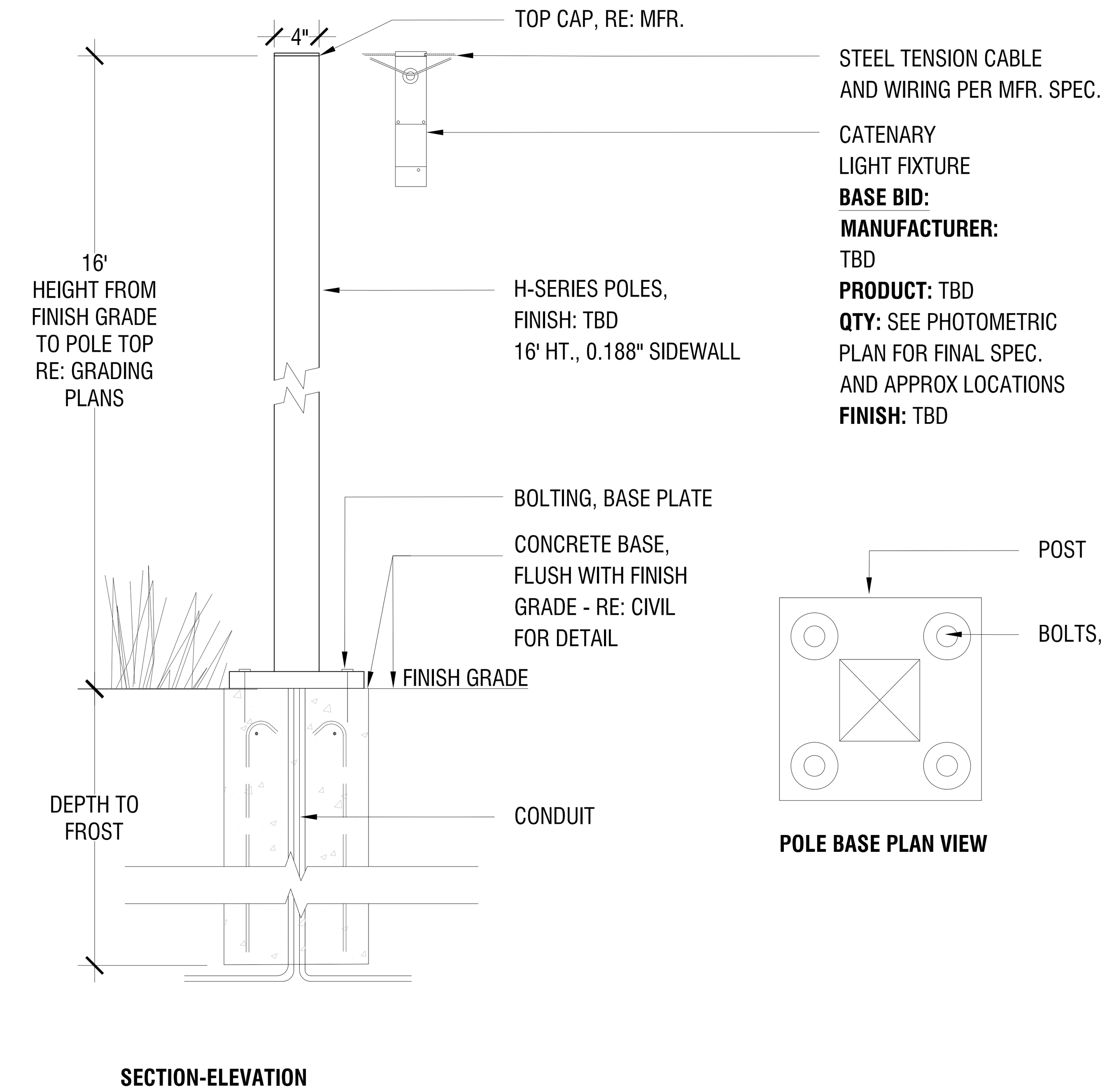
SHEET TITLE
SITE DETAILS

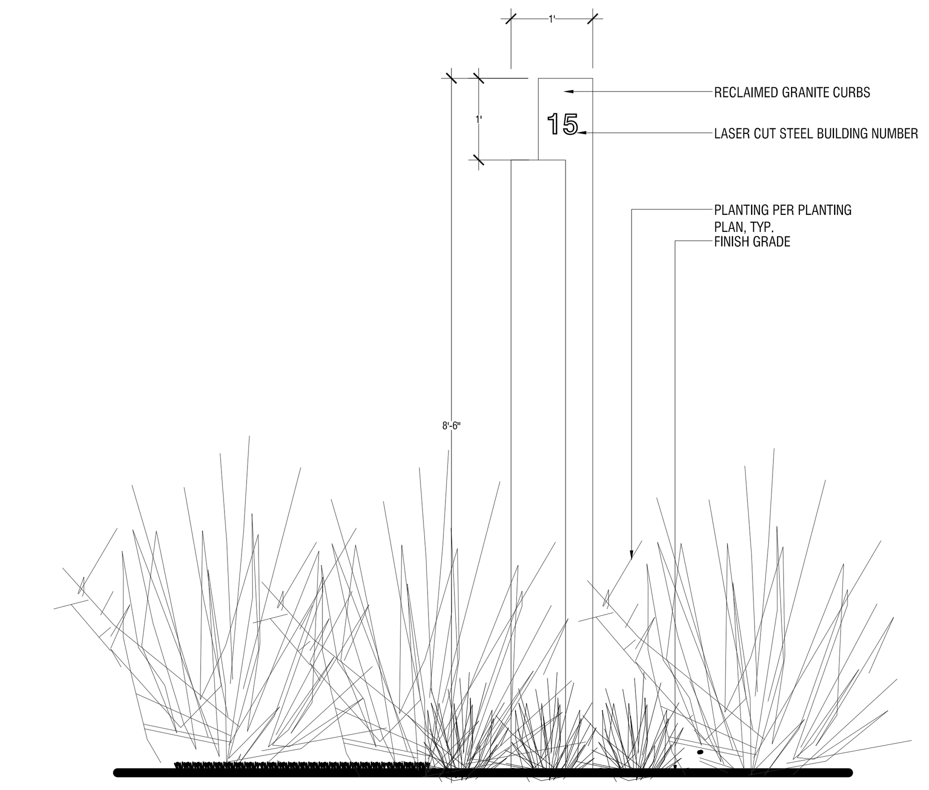
SHEET INFORMATION
L 5-01

NOT FOR CONSTRUCTION







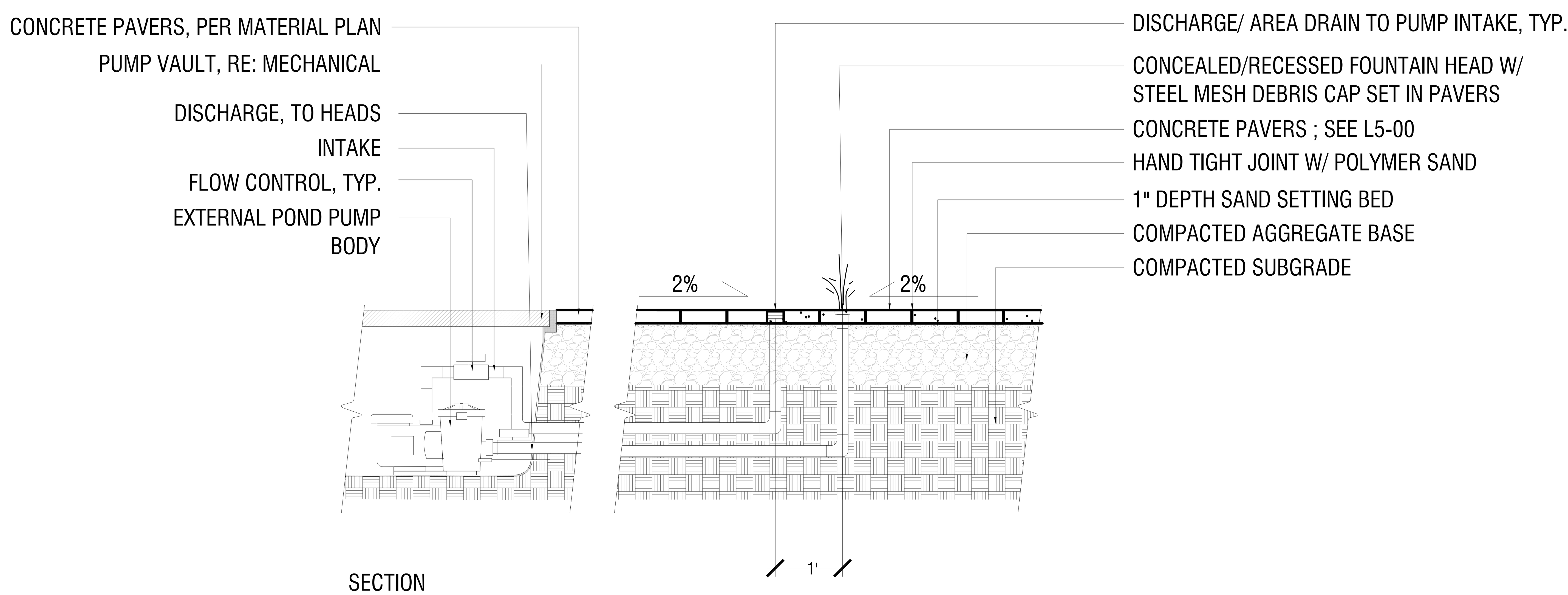


1 Pole Light Base 7.2
1/2":1'-0"

2 Bollard Light Base 7.1
1/2":1'-0"

3 Catenary Light Base 7.3
1":1'-0"

4 Address Marker 10.2
1":2'-0"



SECTION

NOTE:
1. LOCATIONS AND QUANTITIES PER LAYOUT PLAN ; SEE L 1-00
2. MECHANICAL VAULT LOCATION TBD
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF SPECIFICATION AND ASSEMBLY FOR LANDSCAPE ARCHITECT REVIEW

5 Water Feature Pop Jets 10.1
1":1'-0"

SITE KEYNOTES:

			DETAIL / SHEET
1.0	PAVEMENTS, RAMPS, CURBS		
	1.1	BITUMINOUS PATH	1/L5-00
	1.2	CIP CONCRETE	2/L5-00
	1.3	STONE DUST WALK	5/L5-00
	1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING		
	2.1	EXPANSION JOINT	3/L5-00
	2.2	CONTROL JOINT	4/L5-00
3.0	STEPS		
	3.1	CONCRETE STEPS	7/L5-00
	3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS		
	4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE		
	5.1	WOOD TOP BENCH	2/L5-01
	5.2	WOOD PLATFORM DECK	3/L5-01
	5.3	BICYCLE RACK	4/L5-01

			DETAIL / SHEET
6.0	RAILINGS, BARRIERS, FENCING		
	6.1	HAND RAILING	5/L5-01
	6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING		
	7.1	BOLLARD LIGHT BASE	2/L5-02
	7.2	POLE LIGHT BASE	1/L5-02
	7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE		
	X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE		
	9.1	DECIDUOUS TREE PLANTING	1/L5-04
	9.2	CONIFEROUS TREE PLANTING	2/L5-04
	9.3	SHRUB PLANTING	4/L5-04
	9.4	PERENNIAL/GRASS PLANTING	3/L5-04
	9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS		
	10.1	WATER FEATURE POP JET	5/L5-02
	10.2	ADDRESS MARKER	4/L5-02
	10.3	OBSERVATION DECK	1/L5-03
	10.4	INTERPRETIVE SIGNAGE	2/L5-03

NOTES:
1. DETAILS AND SPECIFICATIONS DEPICTED TO CONVEY DESIGN INTENT. FINAL DESIGN AND SPECIFICATION SUBJECT TO CHANGE PRIOR TO CONSTRUCTION AT LANDSCAPE ARCHITECT'S DISCRETION.

ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS DATE

ISSUE DATE

October 23, 2024

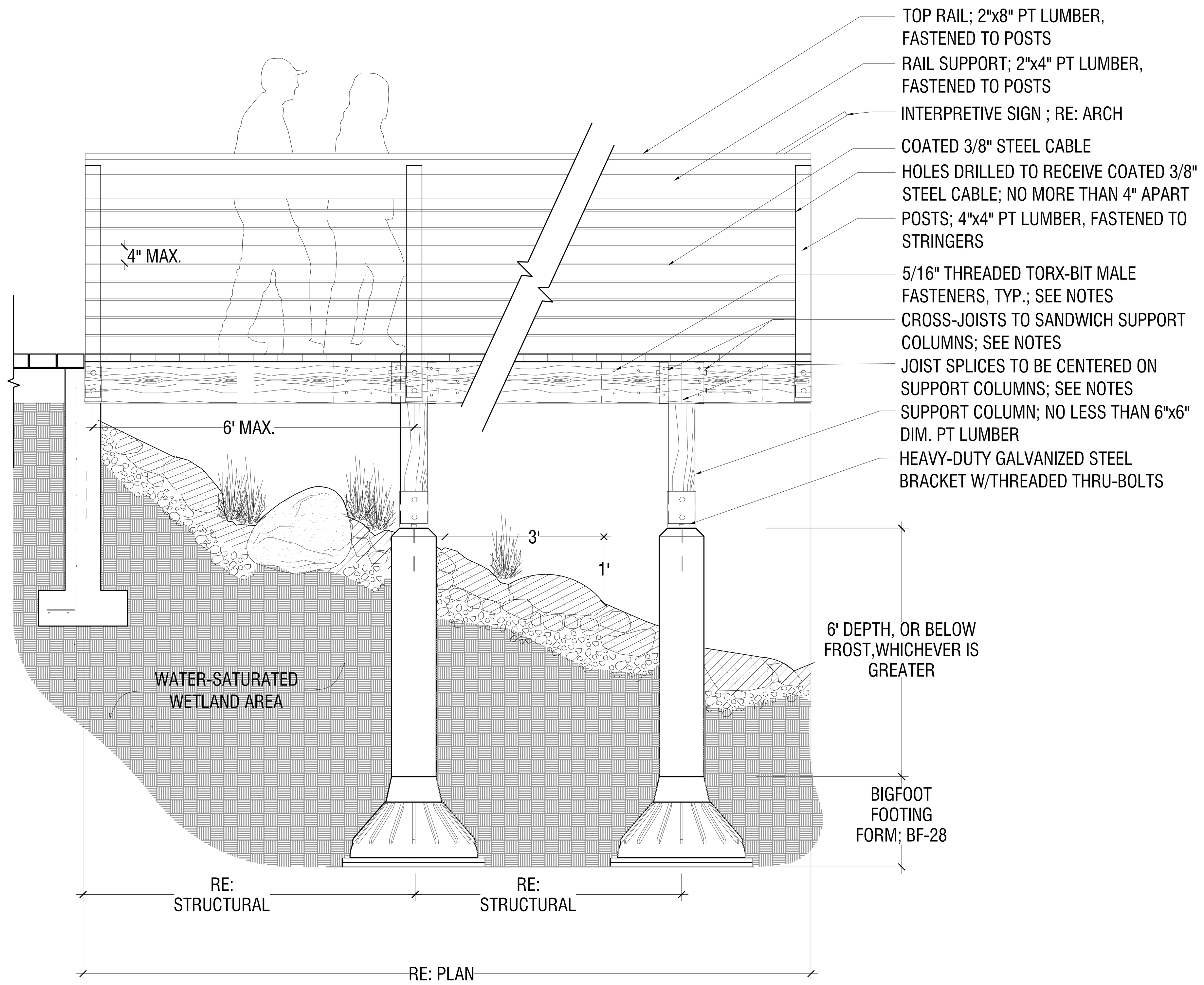
SHEET TITLE

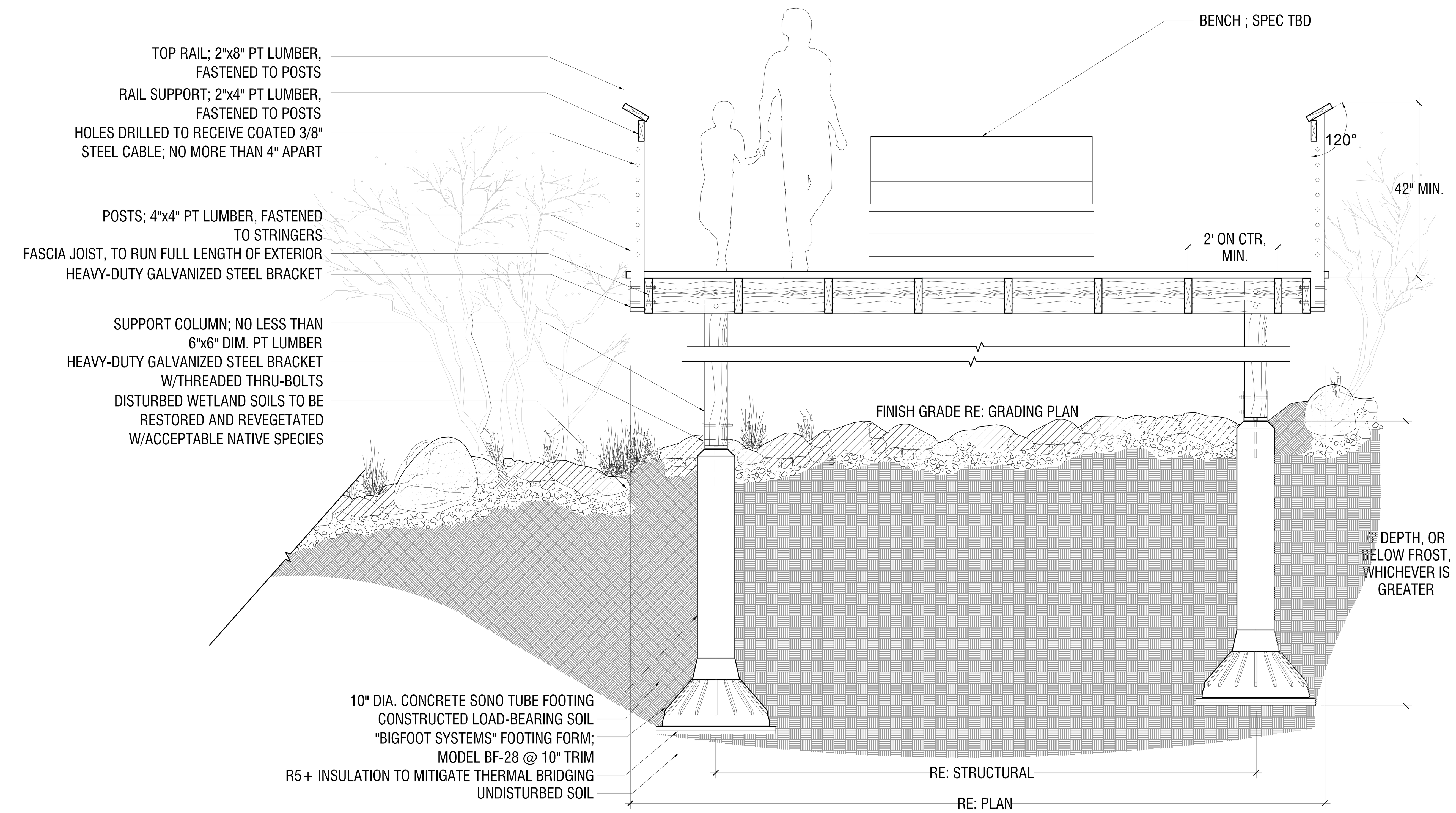
SITE DETAILS

SHEET INFORMATION

L 5-02

NOT FOR CONSTRUCTION



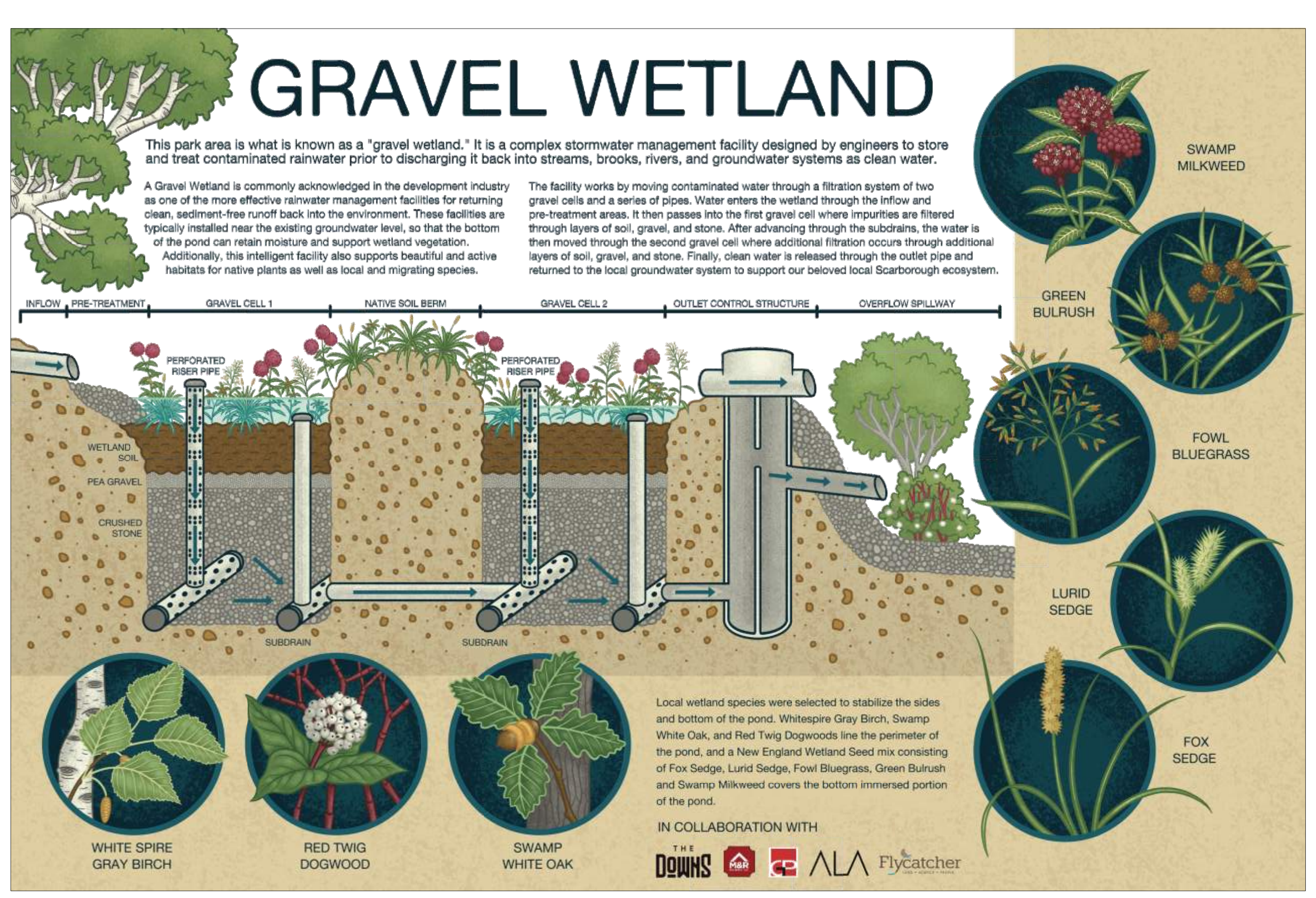


NOTES:

1. CROSS-JOISTS ARE TO FASTEN ON BOTH SIDES OF SUPPORT COLUMNS W/NUTTED THRU-BOLTS
2. SPLICES OF FASCIA JOISTS ARE TO BE CENTERED ON SUPPORT COLUMNS AND BE BACKED BY AN OVERLAP OF 18" EITHER SIDE OF JOINT, FASTENED ACCORDINGLY
3. DECKING FASTENERS SHALL HAVE A COUNTER-SINK HEAD AND BE FLUSH WITH FINISH SURFACE OF DECKING, TO MITIGATE SPLINTERING AND TRIPPING
4. ALL THREADED FASTENERS ARE TO HAVE A WEATHERPROOF FINISH
5. ALL FRAMING DIMENSIONS SUBJECT TO CHANGE BASED ON STRUCTURAL REVIEW PRIOR TO CONSTRUCTION. ALL DIMENSIONS INDICATED FOR CONCEPTUAL PURPOSES.

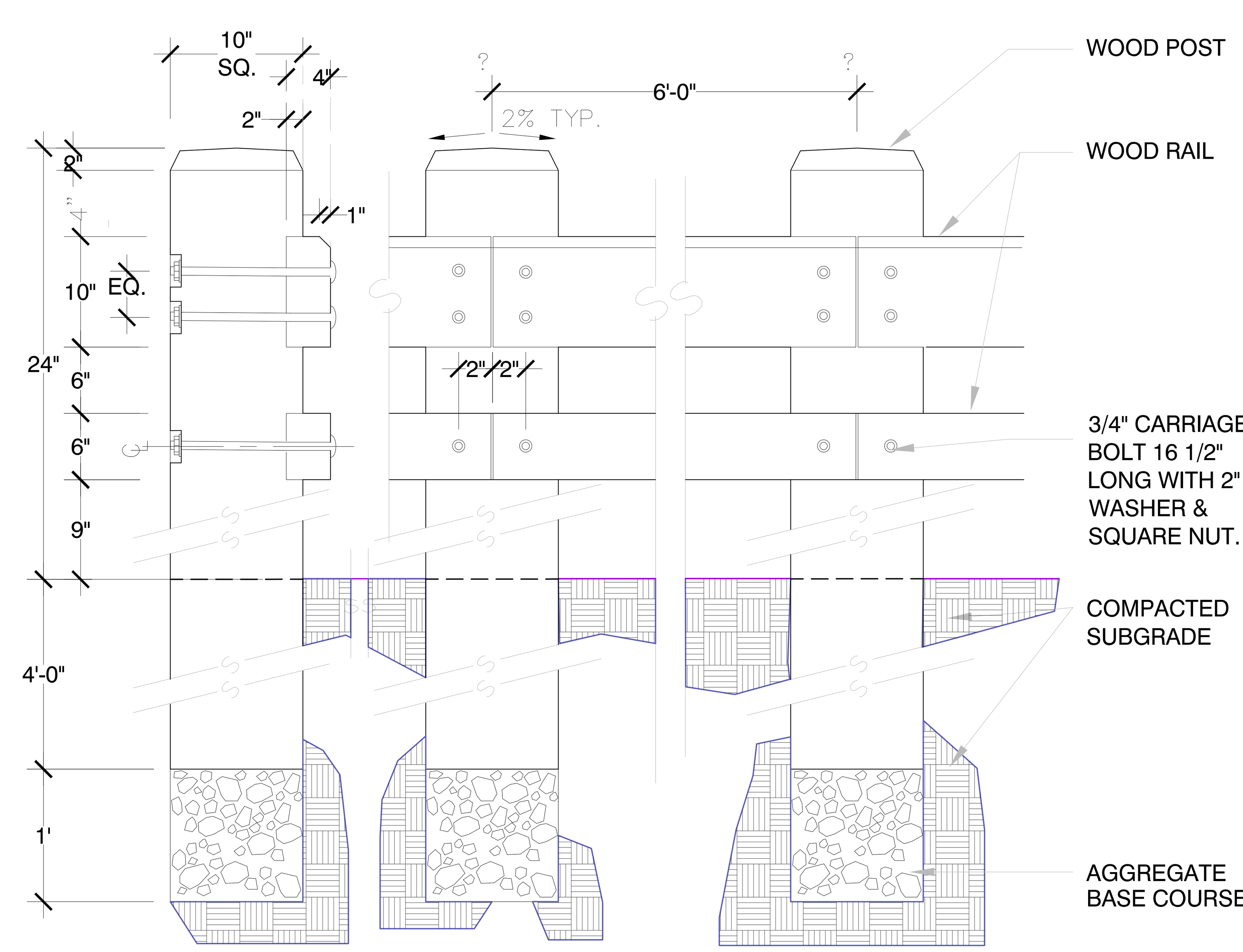
10.3

1 Observation Deck
1":3'-0"



10.4

2 Interpretive Signage Example
N.T.S.



6.2

3 Guard Rail
N.T.S.

SITE KEYNOTES:

			DETAIL / SHEET
1.0	PAVEMENTS, RAMPS, CURBS		DETAIL / SHEET
	1.1	BITUMINOUS PATH	1/L5-00
	1.2	CIP CONCRETE	2/L5-00
	1.3	STONE DUST WALK	5/L5-00
	1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING		
	2.1	EXPANSION JOINT	3/L5-00
	2.2	CONTROL JOINT	4/L5-00
3.0	STEPS		
	3.1	CONCRETE STEPS	7/L5-00
	3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS		
	4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE		
	5.1	WOOD TOP BENCH	2/L5-01
	5.2	WOOD PLATFORM DECK	3/L5-01
	5.3	BICYCLE RACK	4/L5-01
6.0	RAILINGS, BARRIERS, FENCING		DETAIL / SHEET
	6.1	HAND RAILING	5/L5-01
	6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING		
	7.1	BOLLARD LIGHT BASE	2/L5-02
	7.2	POLE LIGHT BASE	1/L5-02
	7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE		
	X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE		
	9.1	DECIDUOUS TREE PLANTING	1/L5-04
	9.2	CONIFEROUS TREE PLANTING	2/L5-04
	9.3	SHRUB PLANTING	4/L5-04
	9.4	PERENNIAL/GRASS PLANTING	3/L5-04
	9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS		
	10.1	WATER FEATURE POP JET	5/L5-02
	10.2	ADDRESS MARKER	4/L5-02
	10.3	OBSERVATION DECK	1/L5-03
	10.4	INTERPRETIVE SIGNAGE	2/L5-03

NOTES:

1. DETAILS AND SPECIFICATIONS DEPICTED TO CONVEY DESIGN INTENT. FINAL DESIGN AND SPECIFICATION SUBJECT TO CHANGE PRIOR TO CONSTRUCTION AT LANDSCAPE ARCHITECT'S DISCRETION.

ALA
ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS DATE

ISSUE DATE

October 23, 2024

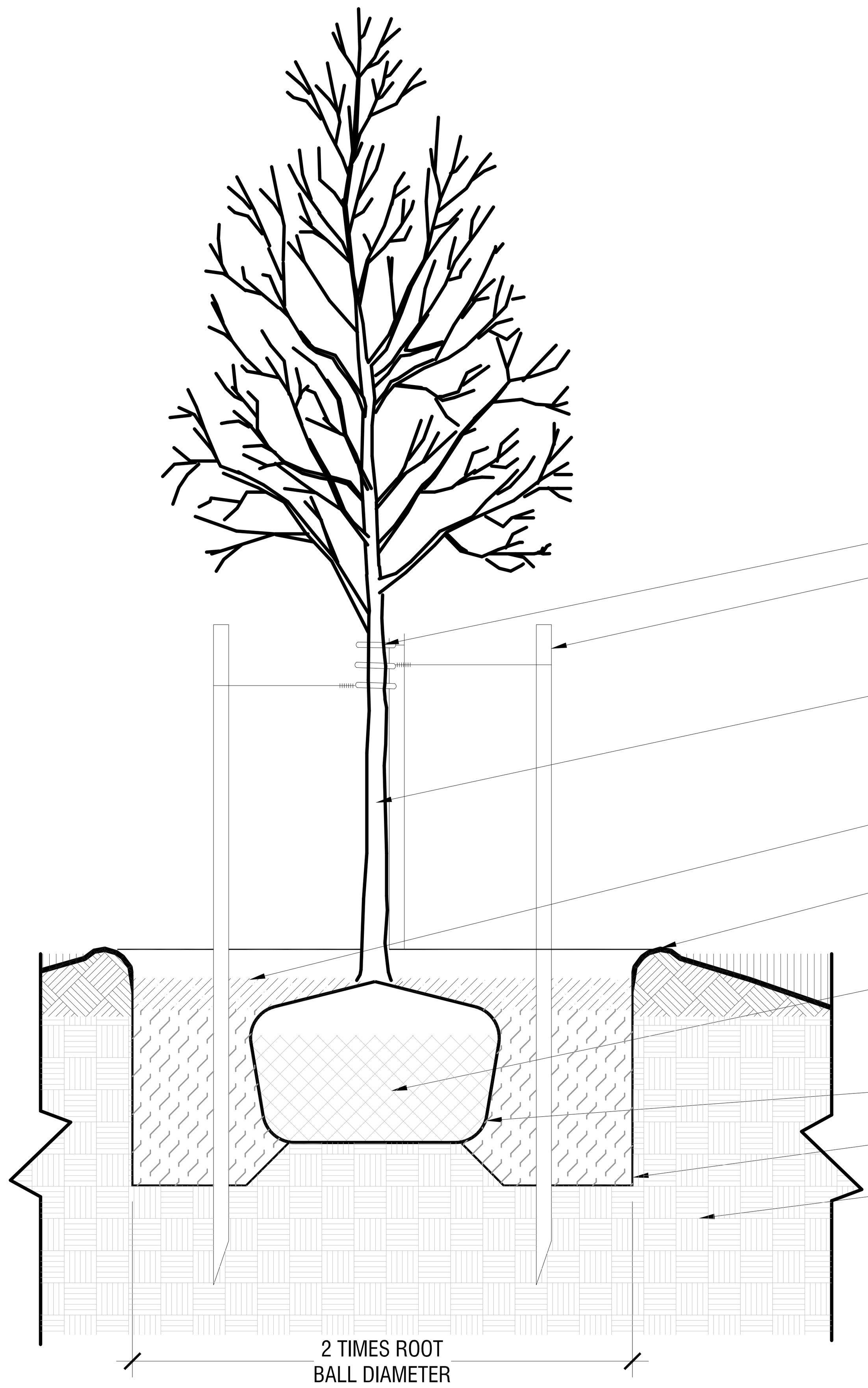
SHEET TITLE

SITE DETAILS

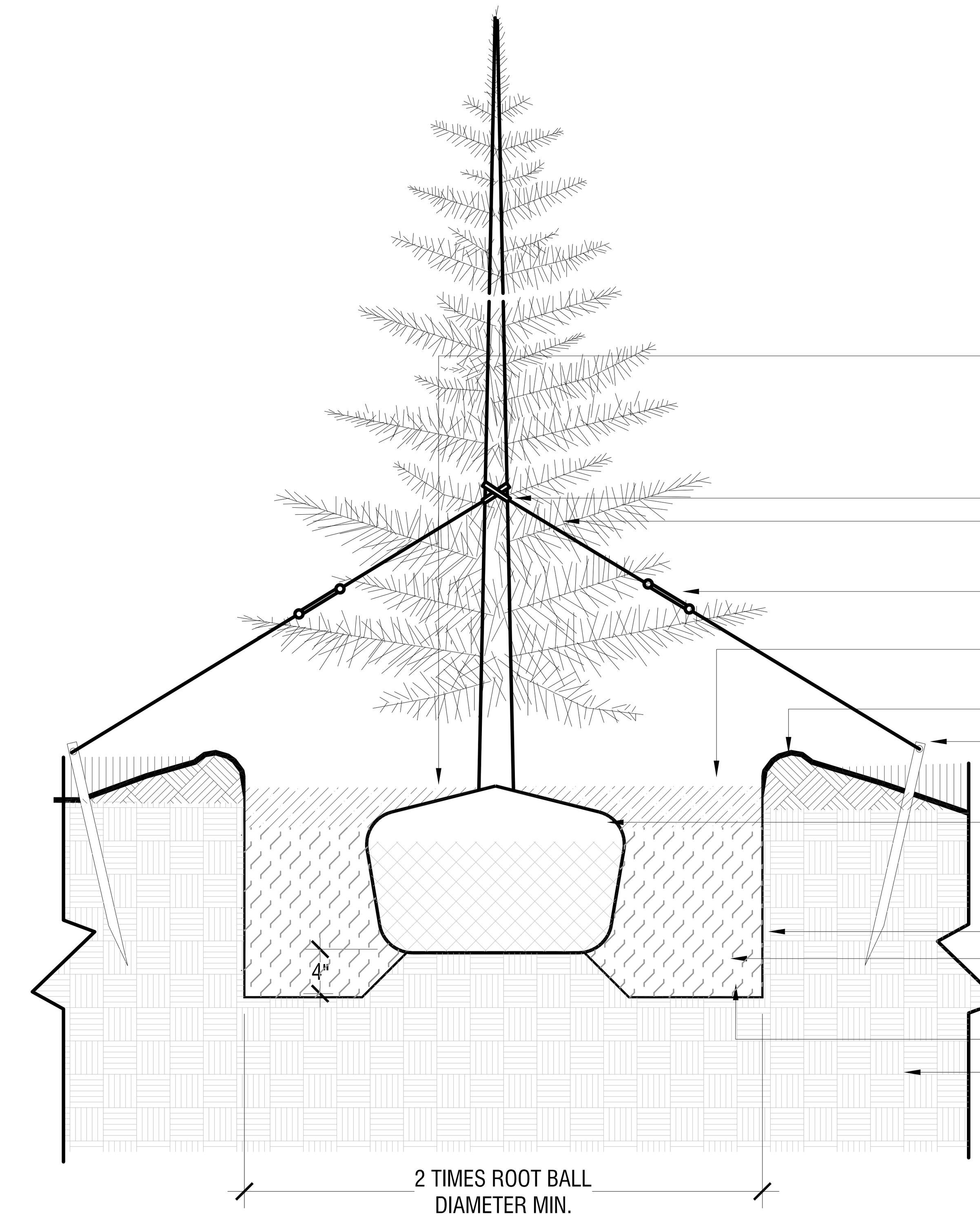
SHEET INFORMATION

L 5-03

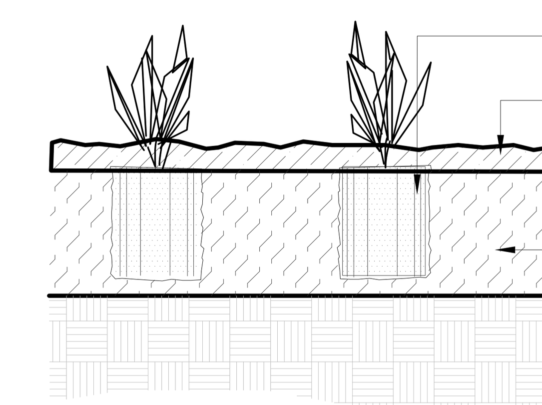
NOT FOR CONSTRUCTION



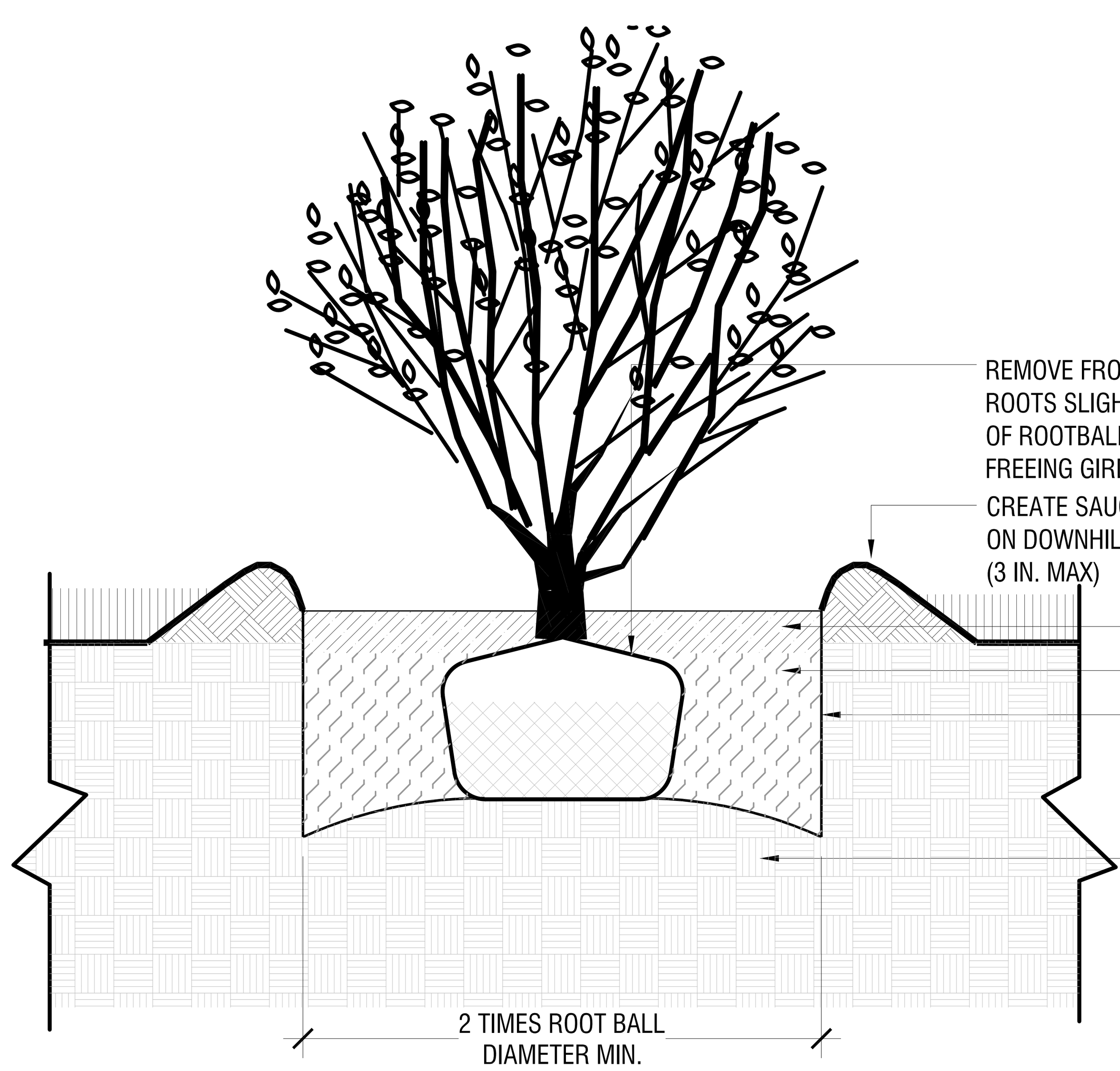
1 Deciduous Tree Planting 9.1
1":1'-0"



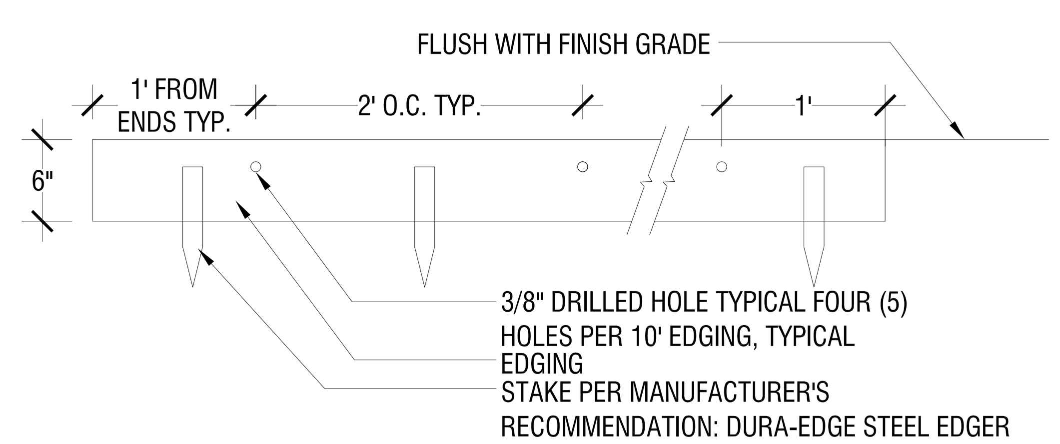
2 Conifer Tree Planting 9.2
1":1'-0"



3 Perennial / Ornamental Grass Planting 9.4
1":1'-0"



4 Shrub Planting 9.3
1":1'-0"



5 Steel Edging 9.5
1":1'-0"

SITE KEYNOTES:

			DETAIL / SHEET
1.0	PAVEMENTS, RAMPS, CURBS		
	1.1	BITUMINOUS PATH	1/L5-00
	1.2	CIP CONCRETE	2/L5-00
	1.3	STONE DUST WALK	5/L5-00
	1.4	GRAVEL DRIP EDGE	6/L5-00
2.0	JOINTING		
	2.1	EXPANSION JOINT	3/L5-00
	2.2	CONTROL JOINT	4/L5-00
3.0	STEPS		
	3.1	CONCRETE STEPS	7/L5-00
	3.2	RECLAIMED GRANITE STEPS	8/L5-00
4.0	SITE WALLS/ EMBANKMENTS		
	4.1	WALL - CONCRETE	1/L5-01
5.0	SITE FURNITURE		
	5.1	WOOD TOP BENCH	2/L5-01
	5.2	WOOD PLATFORM DECK	3/L5-01
	5.3	BICYCLE RACK	4/L5-01

			DETAIL / SHEET
6.0	RAILINGS, BARRIERS, FENCING		
	6.1	HAND RAILING	5/L5-01
	6.2	GUARD RAIL	3/L5-03
7.0	SITE LIGHTING		
	7.1	BOLLARD LIGHT BASE	2/L5-02
	7.2	POLE LIGHT BASE	1/L5-02
	7.3	CATENARY LIGHT BASE	3/L5-02
8.0	DRAINAGE		
	X.X	NOT USED AT THIS TIME	X/XX-XX
9.0	PLANTING AND LANDSCAPE		
	9.1	DECIDUOUS TREE PLANTING	1/L5-04
	9.2	CONIFEROUS TREE PLANTING	2/L5-04
	9.3	SHRUB PLANTING	4/L5-04
	9.4	PERENNIAL/GRASS PLANTING	3/L5-04
	9.5	LANDSCAPE EDGING	5/L5-04
10.0	MISCELLANEOUS ELEMENTS		
	10.1	WATER FEATURE POP JET	5/L5-02
	10.2	ADDRESS MARKER	4/L5-02
	10.3	OBSERVATION DECK	1/L5-03
	10.4	INTERPRETIVE SIGNAGE	2/L5-03

NOTES:
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ALA
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207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE
100 Durgin Ln

PREPARED FOR
100 DURGIN LANE OWNER, LLC
100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS DATE

ISSUE DATE
October 23, 2024

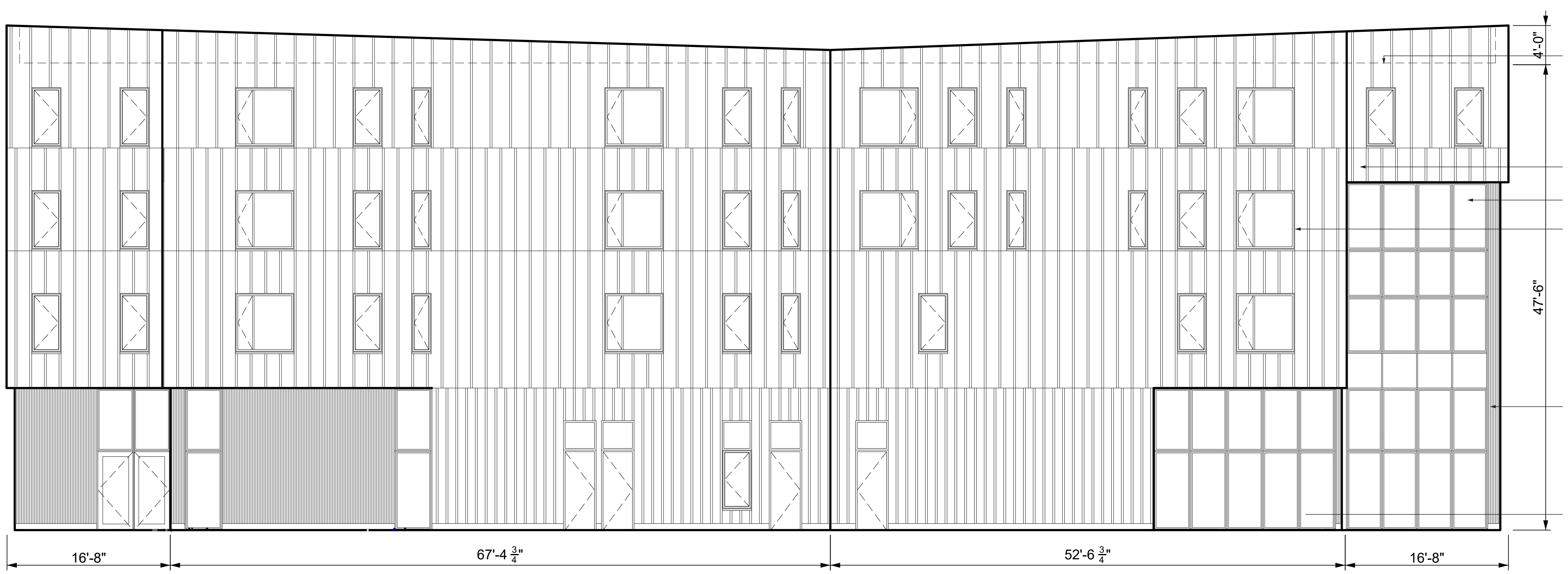
SHEET TITLE
PLANTING DETAILS

SHEET INFORMATION
L 5-04

NOT FOR CONSTRUCTION

SOUTH ELEVATION

WEST ELEVATION



NORTH ELEVATION

EAST ELEVATION

DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5' 10' 20'

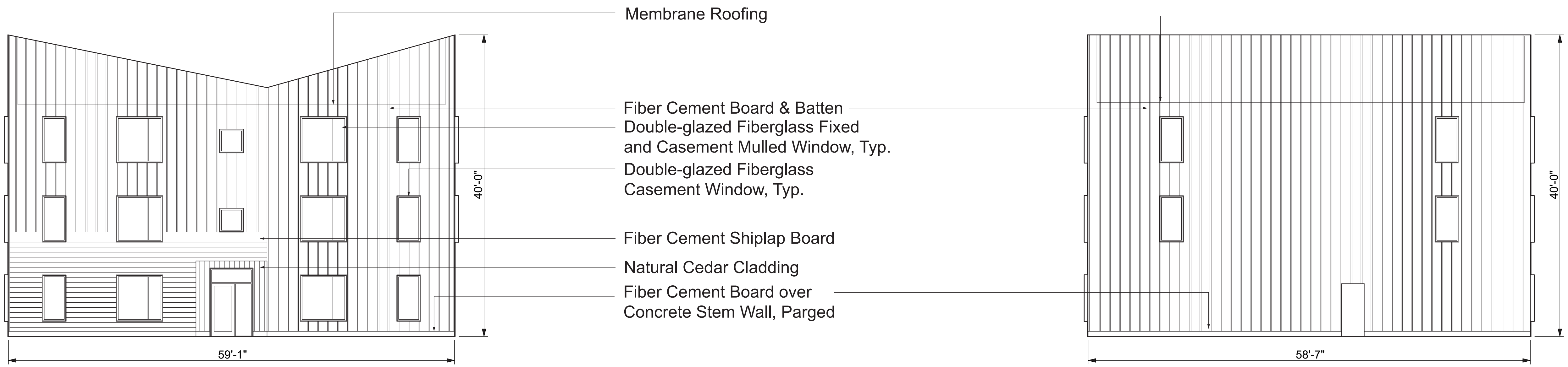
100 Durgin Lane
Portsmouth, NH

Amenity Building Elevations
October 23, 2024

Scale: 1/16" = 1'-0"

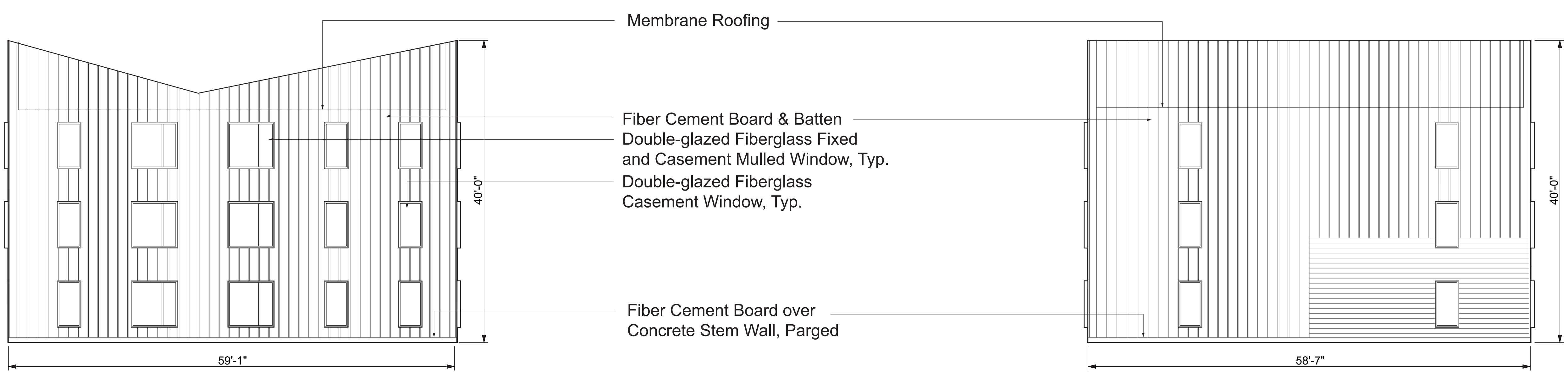
Architecture
& Planning

utile



FRONT SIDE

RIGHT SIDE



BACK SIDE

LEFT SIDE

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0 5' 10' 20'

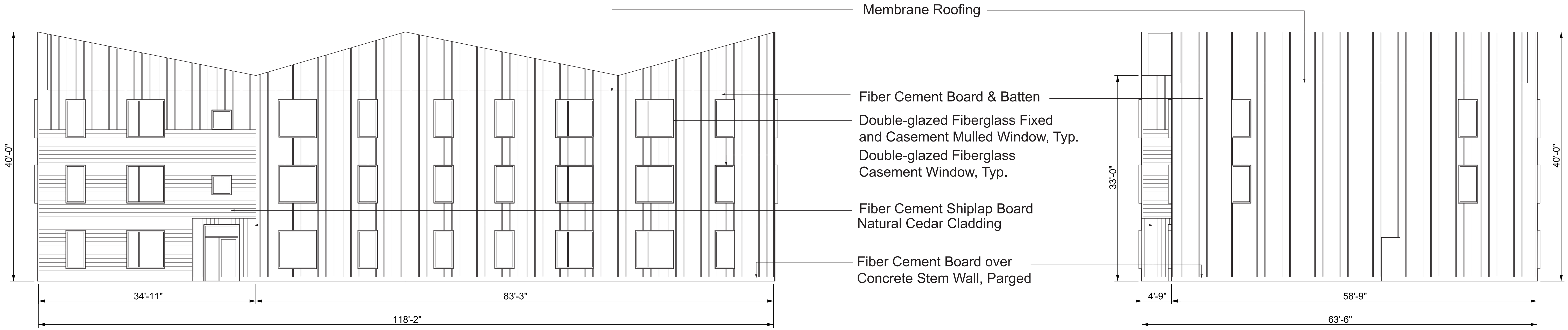
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Square) Elevations
July 24, 2024

Scale: 1/16" = 1'-0"

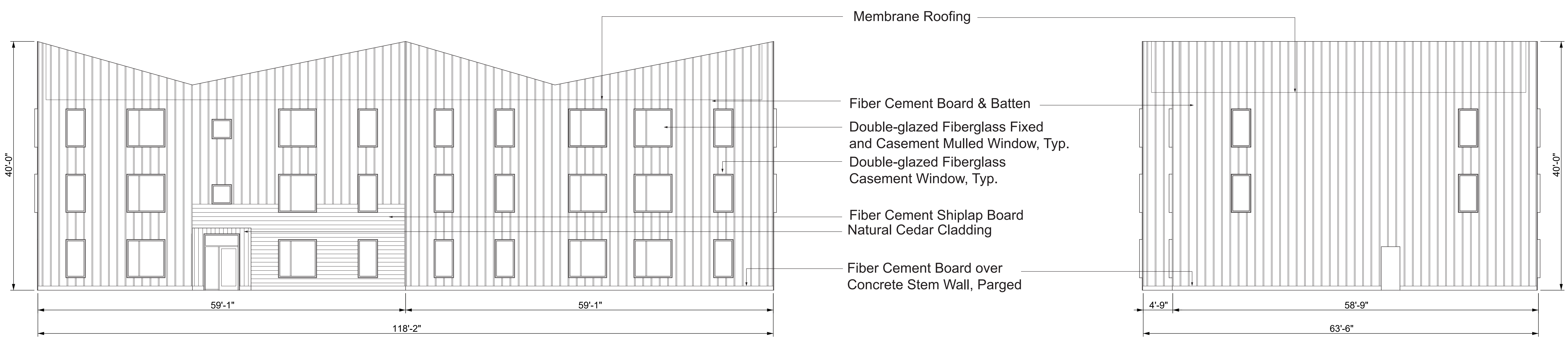
Architecture
& Planning

utile



FRONT SIDE

RIGHT SIDE



BACK SIDE

LEFT SIDE

0 5' 10' 20'

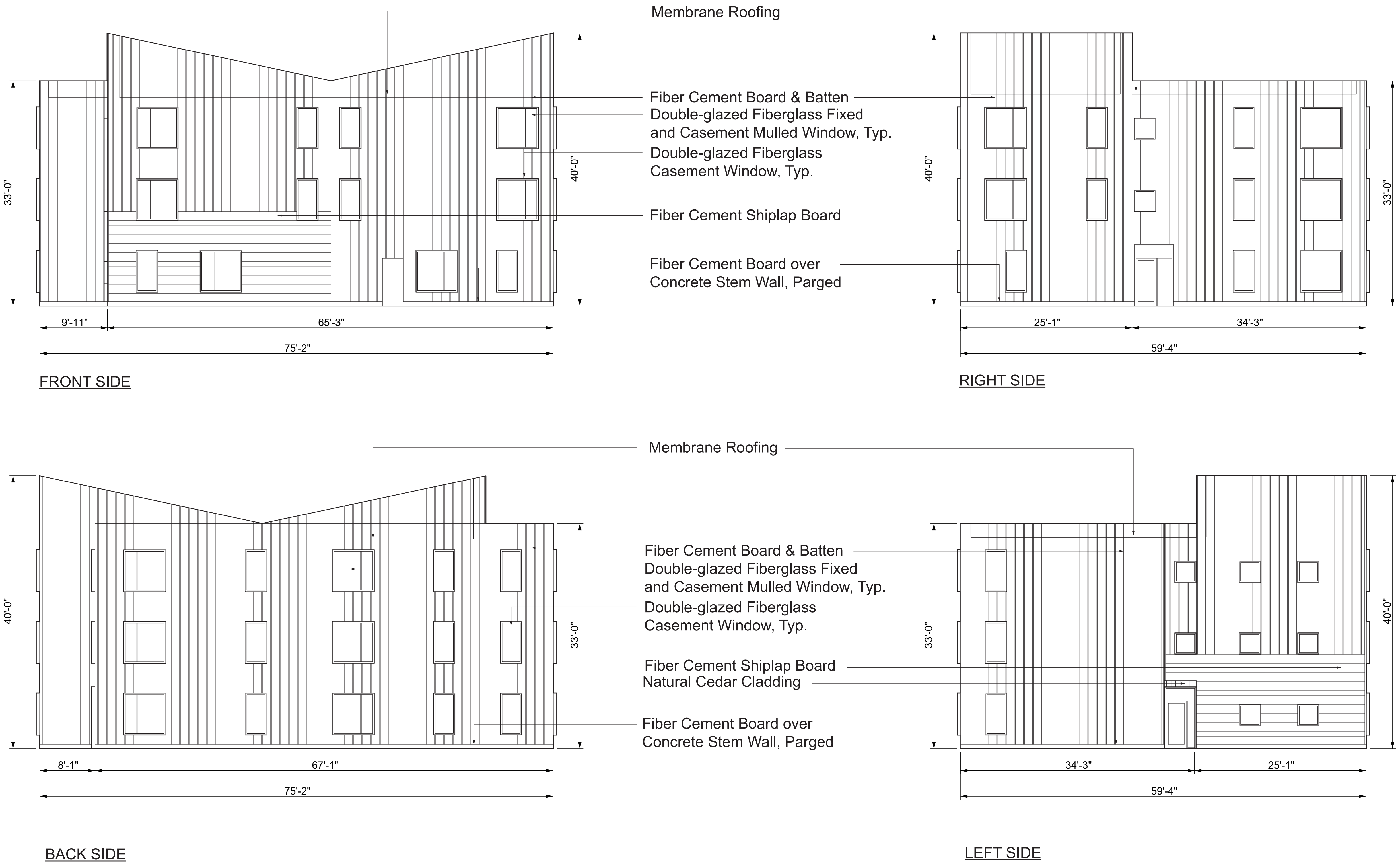
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Squares Aggregated) Elevations
July 24, 2024

Scale: 1/16" = 1'-0"

Architecture
& Planning

utile



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0 5' 10' 20'

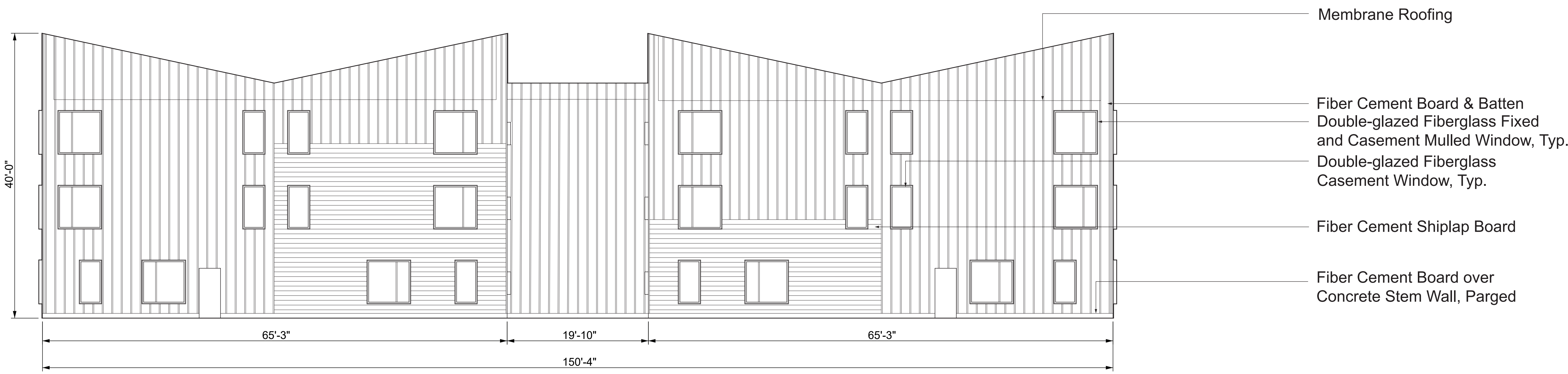
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Shifted) Elevations
July 24, 2024

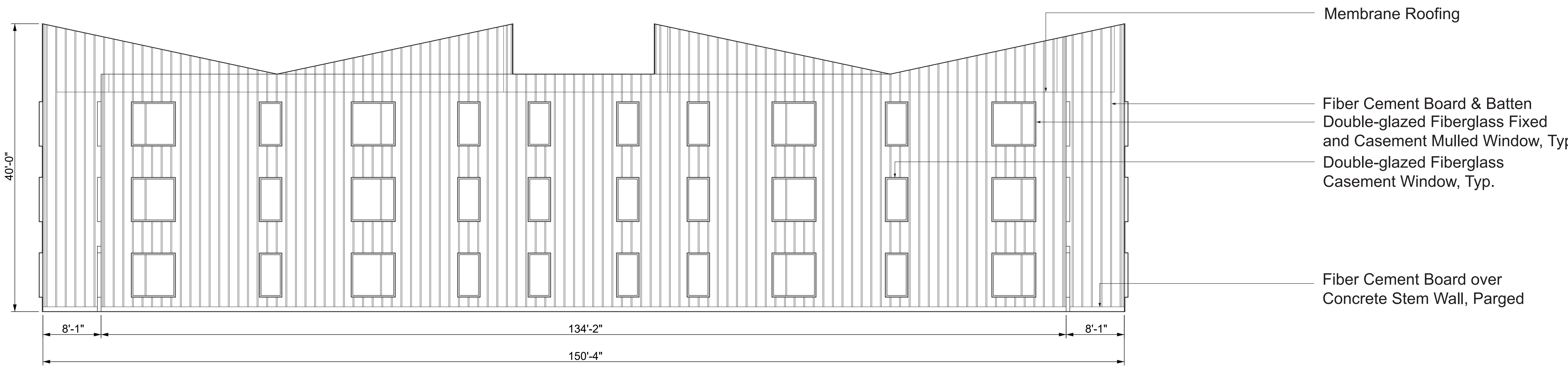
Scale: 1/16" = 1'-0"

Architecture
& Planning

utile



FRONT SIDE



BACK SIDE

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0 5' 10' 20'

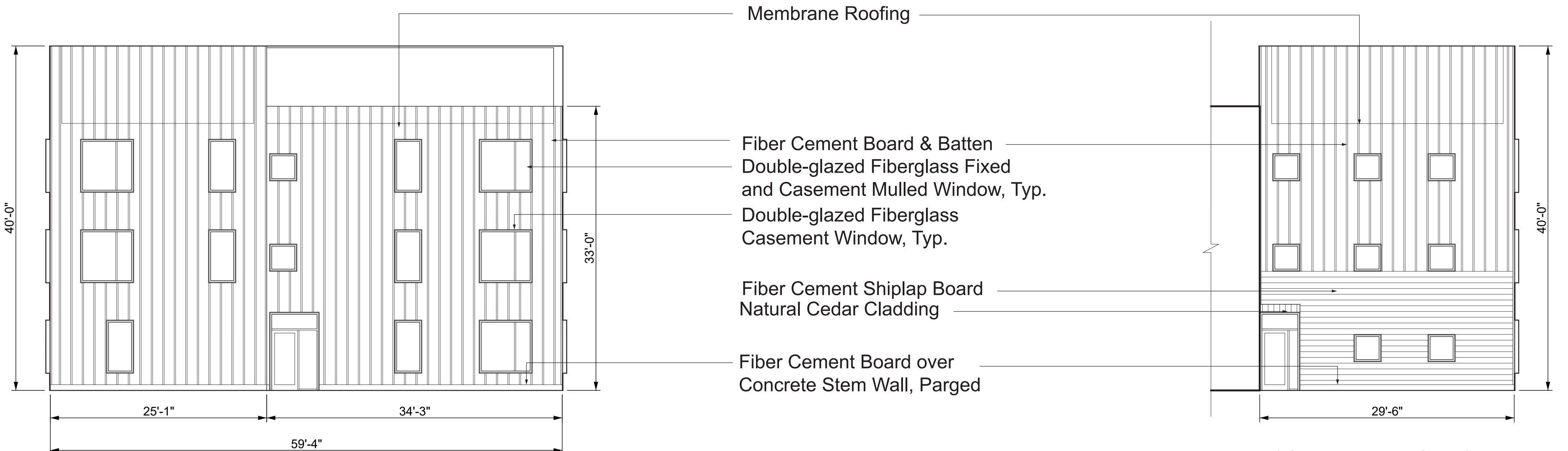
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Shifted Aggregated) Elevations
July 24, 2024

Scale: 1/16" = 1'-0"

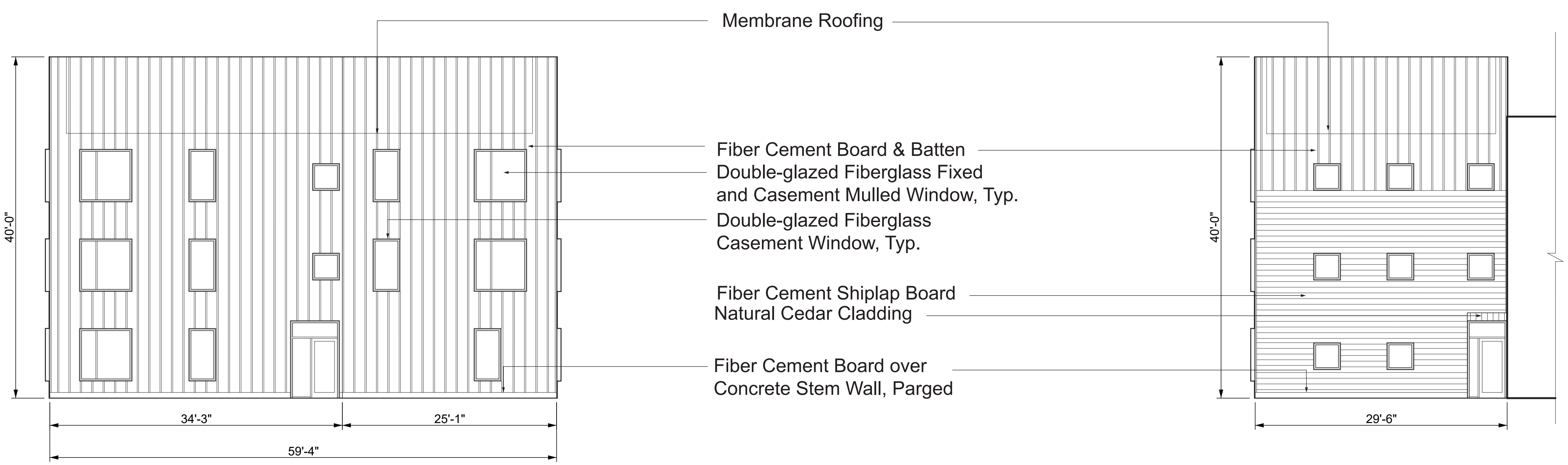
Architecture & Planning

utile



RIGHT SIDE

COURTYARD RIGHT SIDE



LEFT SIDE

COURTYARD LEFT SIDE

DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5' 10' 20'

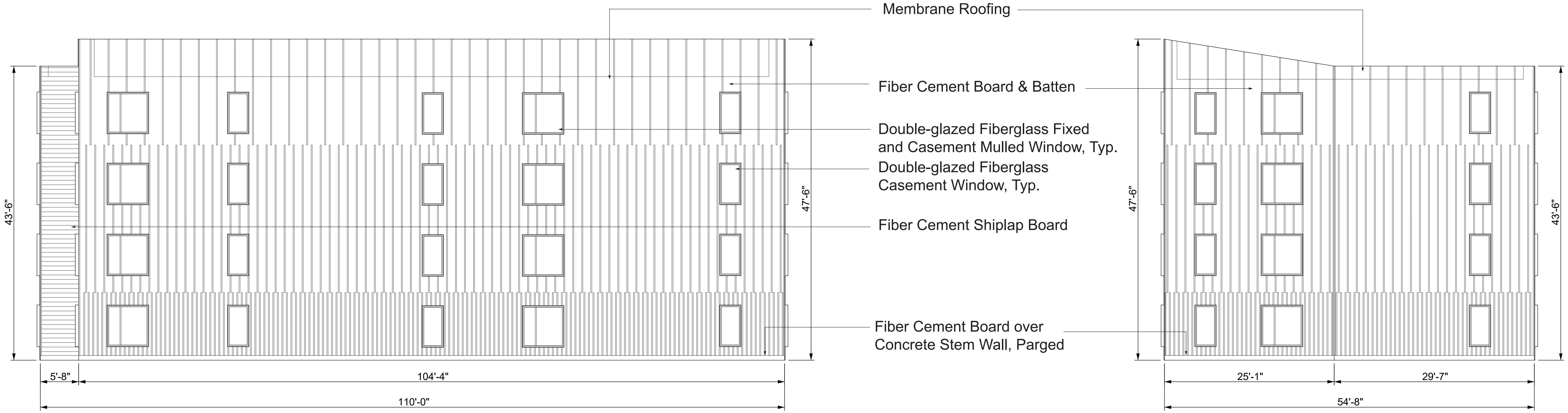
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Shifted Aggregated) Elevations
July 24, 2024

Scale: 1/16" = 1'-0"

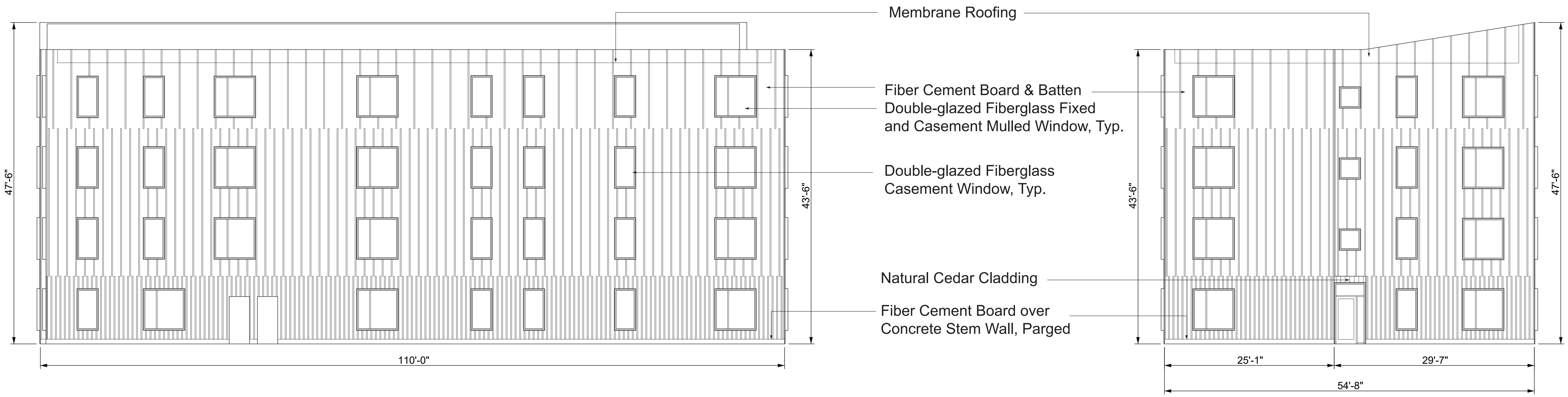
Architecture
& Planning

utile



FRONT SIDE

RIGHT SIDE



BACK SIDE

LEFT SIDE

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0 5' 10' 20'

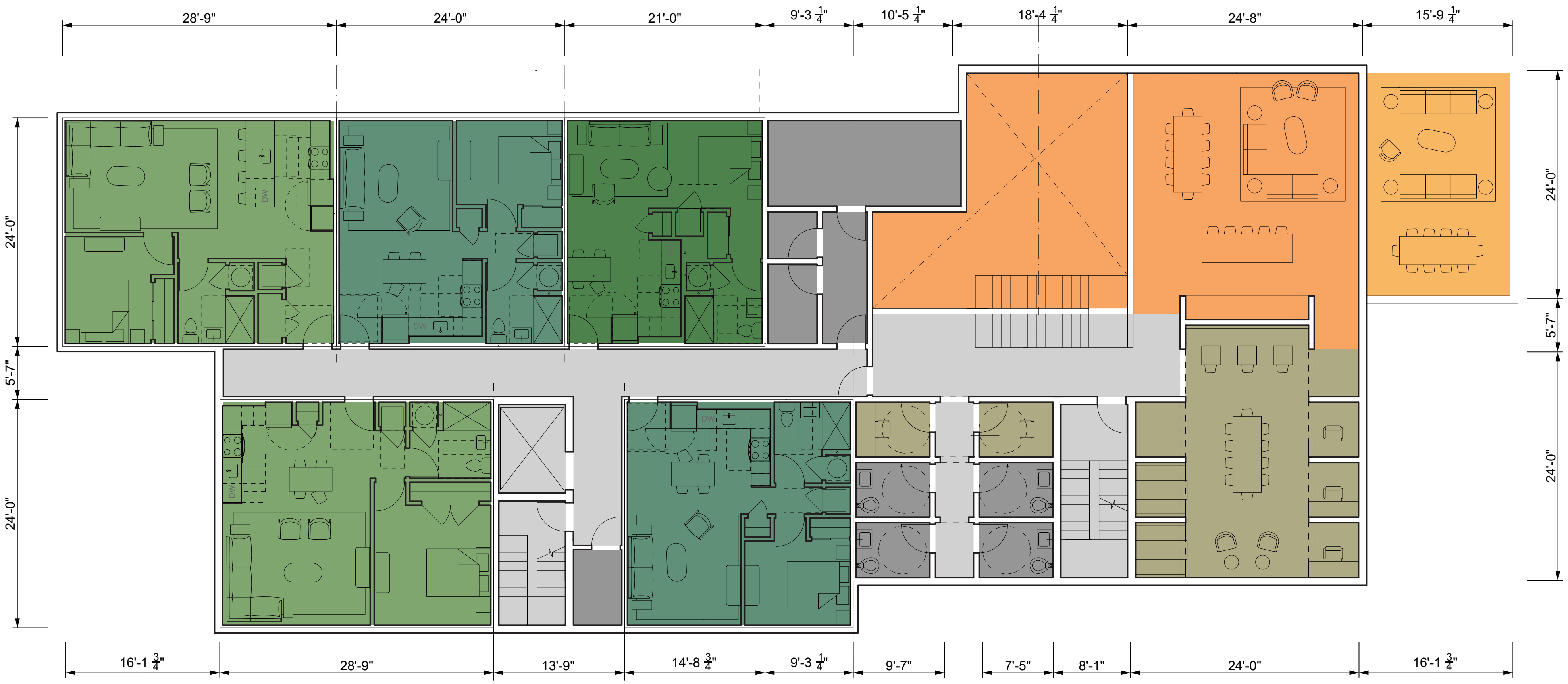
100 Durgin Lane
Portsmouth, NH

4 Story Elevator Building Elevations
July 24, 2024

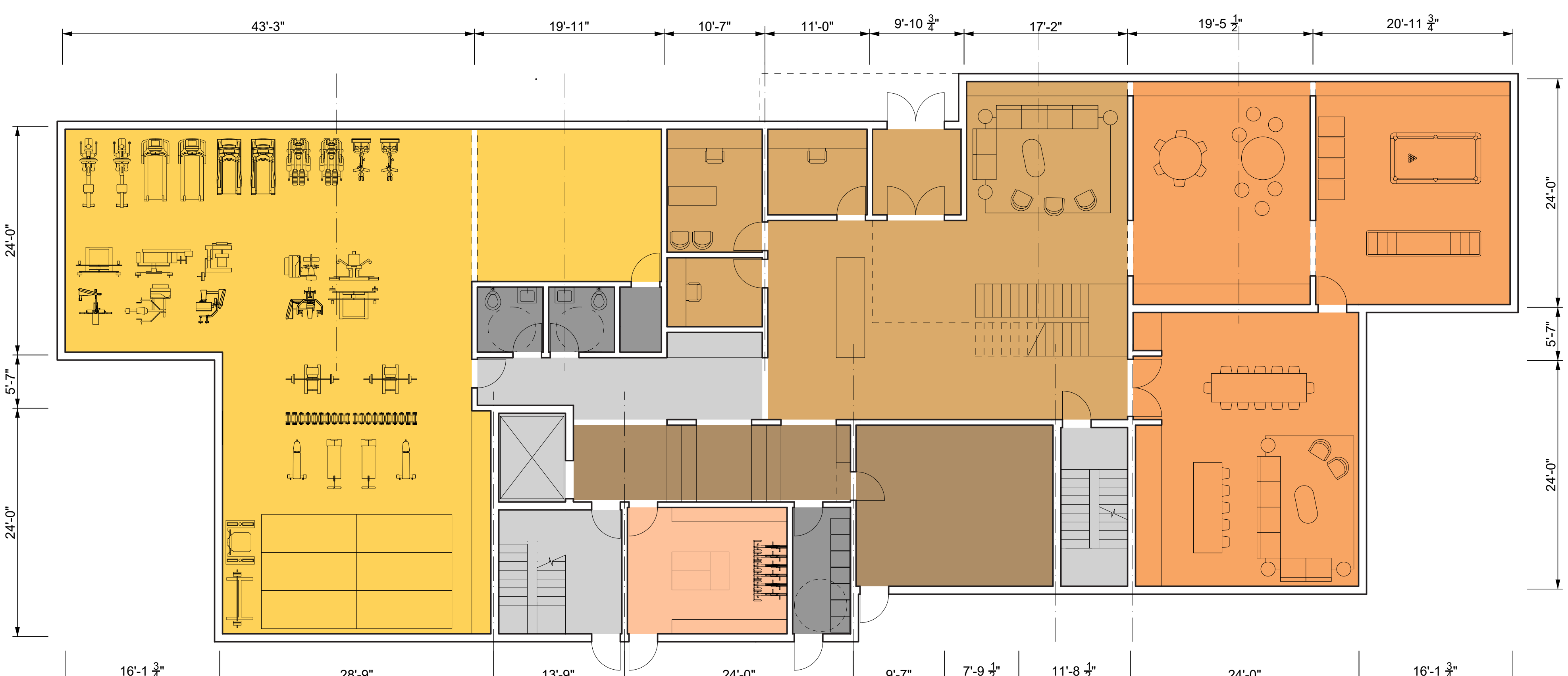
Scale: 1/16" = 1'-0"

Architecture
& Planning

utile



LEVEL 2
6,942 GSF



LEVEL 1
7,474 GSF

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0 5' 10' 20'

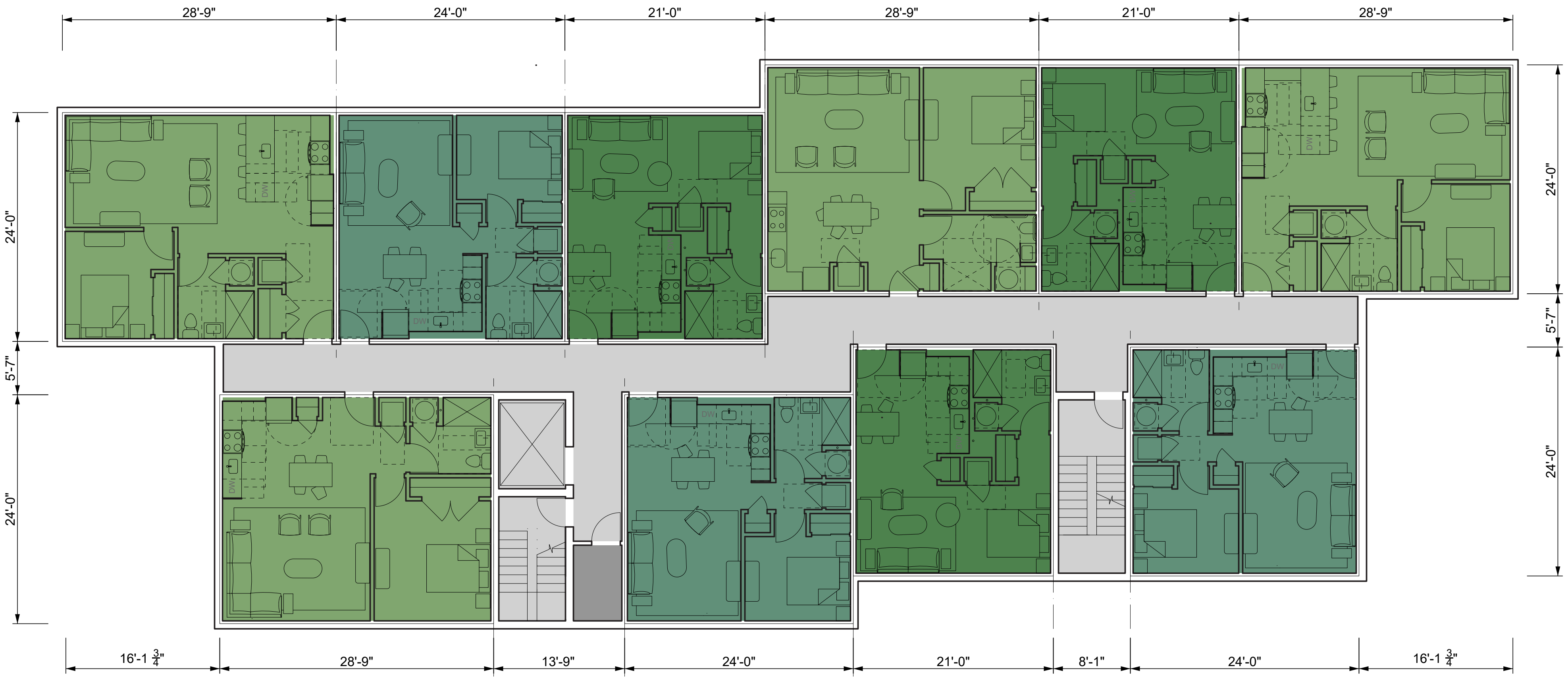
100 Durgin Lane
Portsmouth, NH

4 Story Elevator Building (Amenity)
October 23, 2024

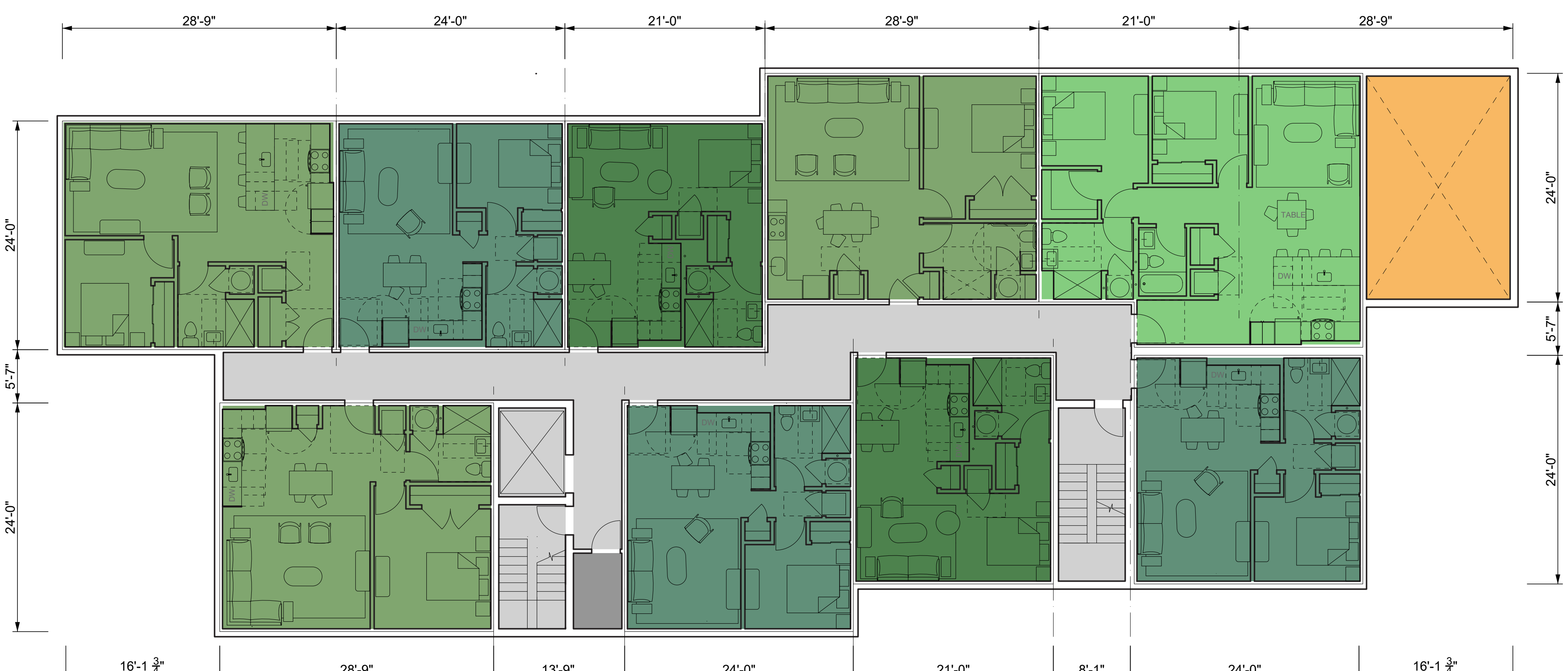
Scale: 1/16" = 1'-0"

Architecture
& Planning

utile



LEVEL 4
7,474 GSF



LEVEL 3
7,074 GSF

DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5' 10' 20'

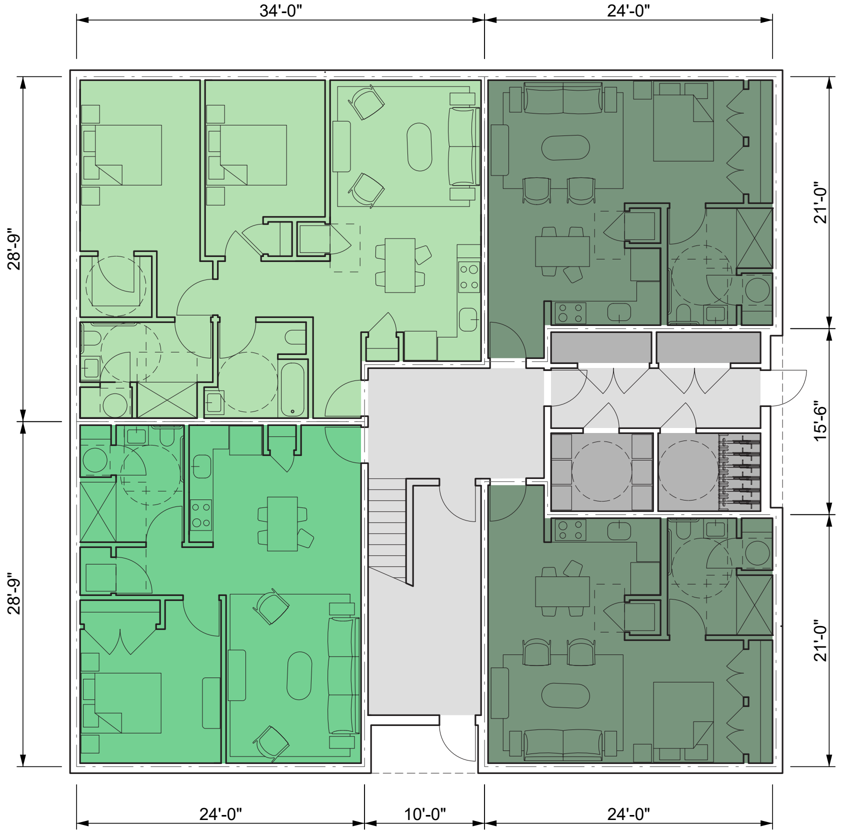
100 Durgin Lane
Portsmouth, NH

4 Story Elevator Building (Amenity)
October 23, 2024

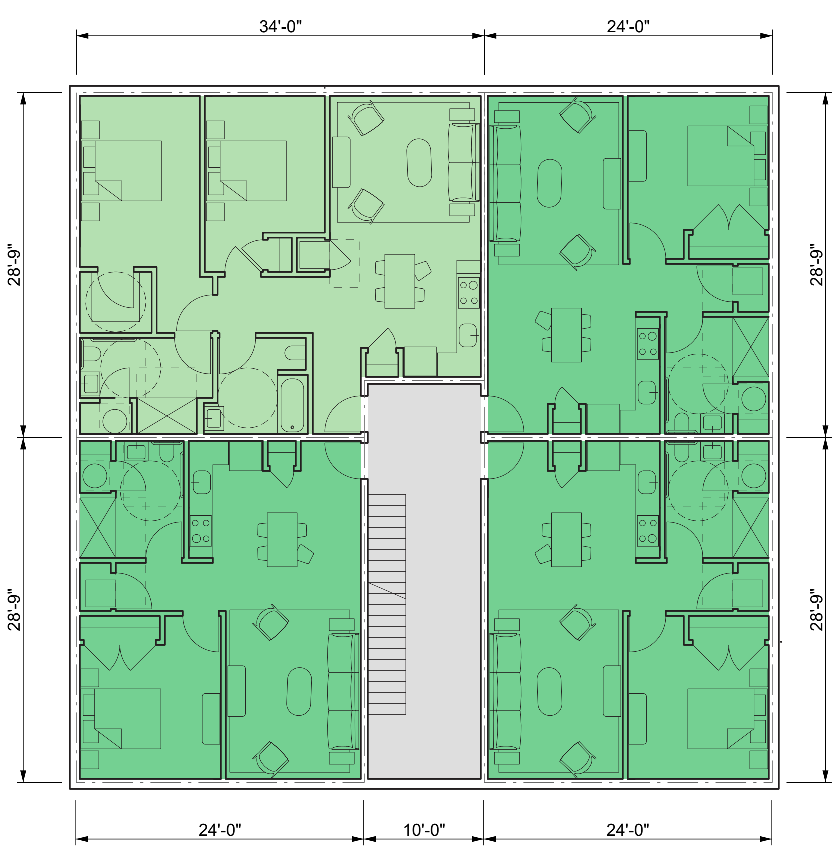
Scale: 1/16" = 1'-0"

Architecture
& Planning

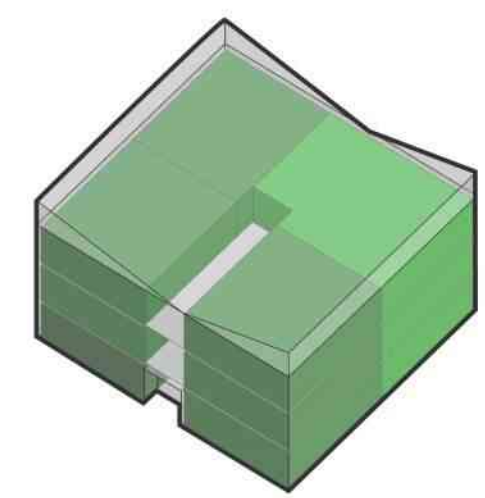
utile



GROUND FLOOR
3,428 GSF



TYPICAL FLOOR
3,460 GSF



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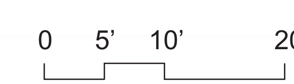


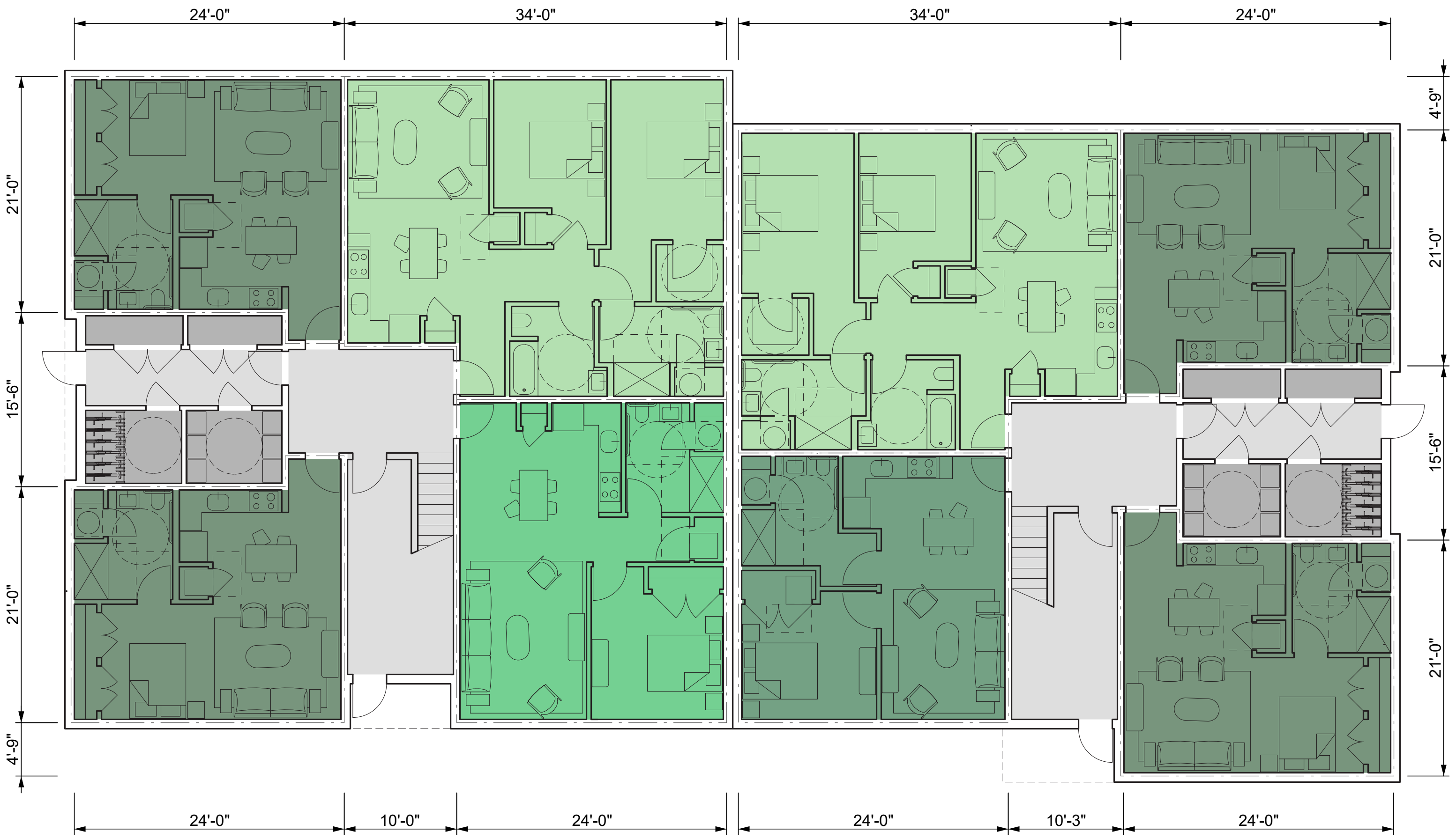
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Square)
August 21, 2024

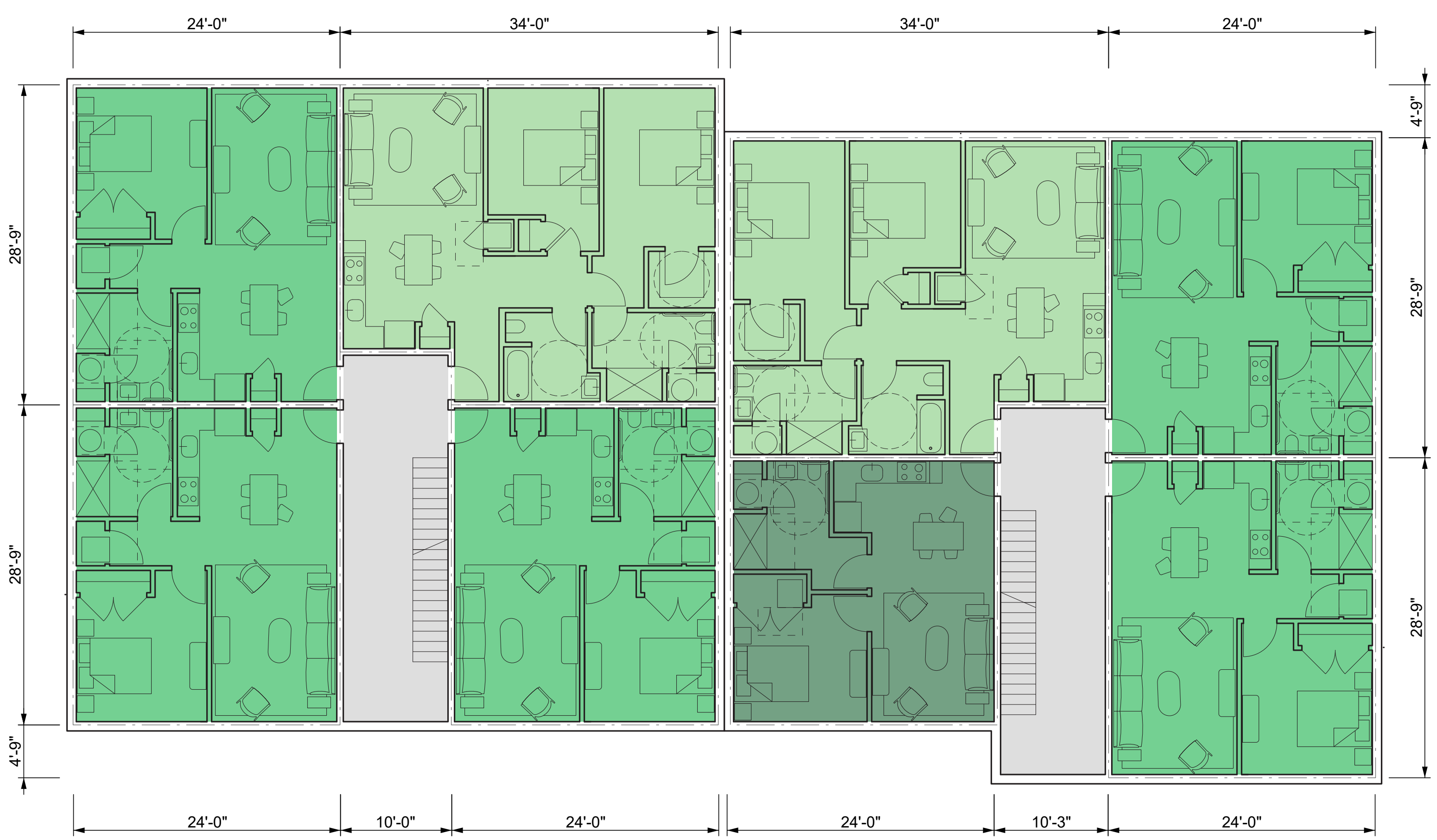
Scale: 1/32" = 1'-0"

Architecture
& Planning

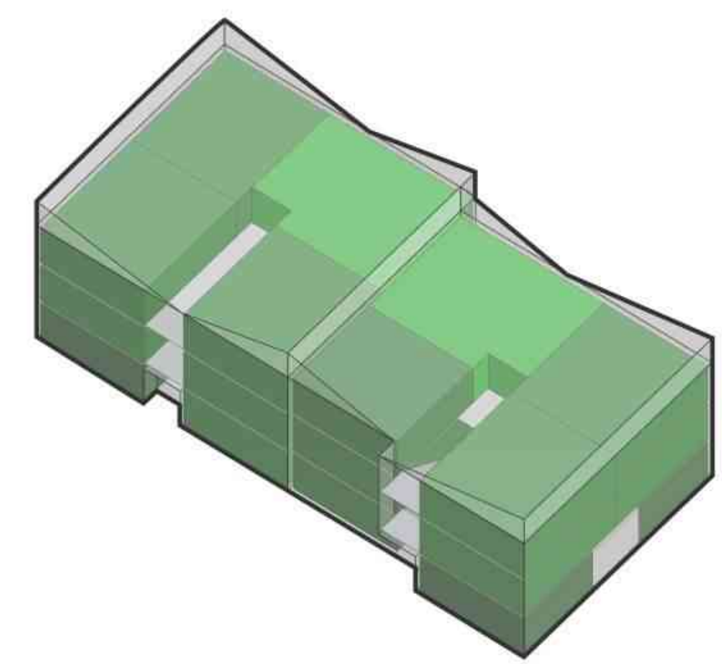
utile



GROUND FLOOR
6,743 GSF



TYPICAL FLOOR
6,808 GSF



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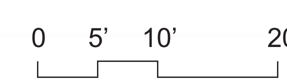


100 Durgin Lane
Portsmouth, NH

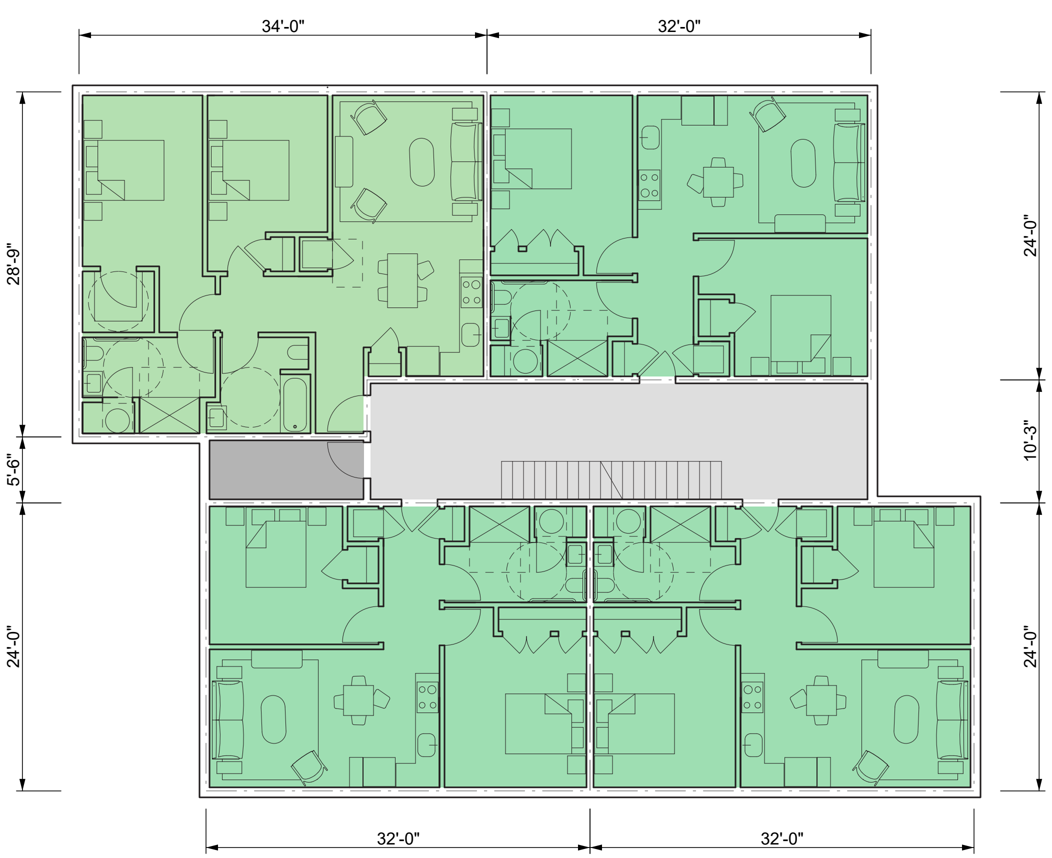
3 Story Walk-Up Building (Squares Aggregated)
August 21, 2024

Scale: 1/32" = 1'-0"

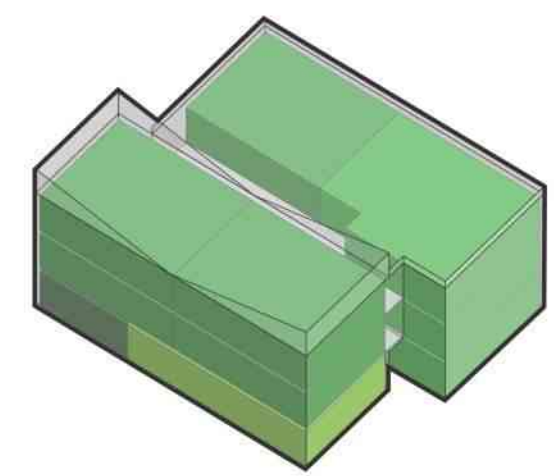
Architecture
& Planning

utile

GROUND FLOOR
3,857 GSF



TYPICAL FLOOR
3,876 GSF



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0 5' 10' 20'

100 Durgin Lane
Portsmouth, NH

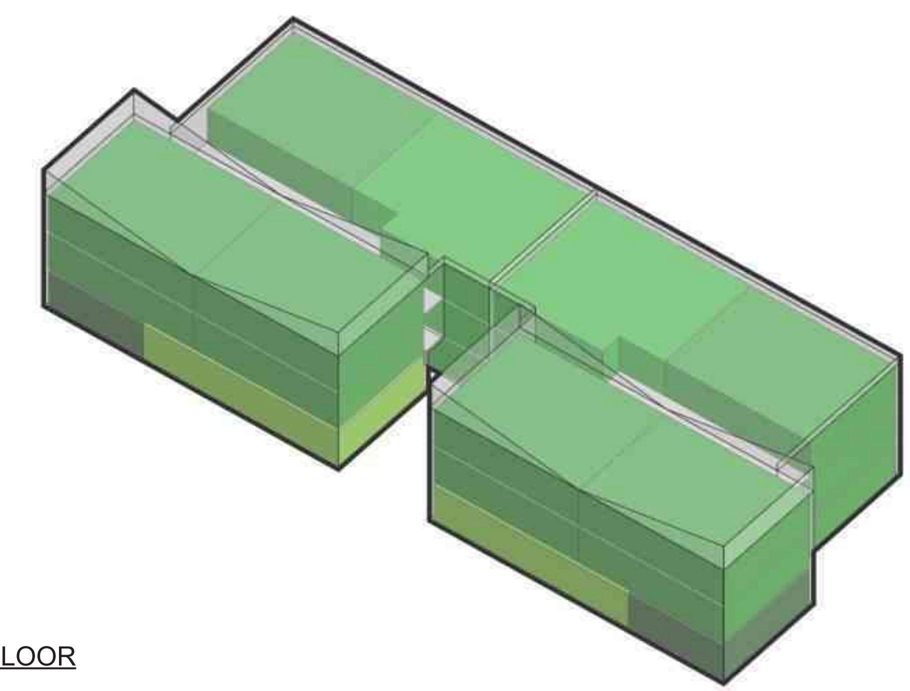
3 Story Walk-Up Building (Shifted)
August 21, 2024

Scale: 1/32" = 1'-0"

Architecture
& Planning

utile

GROUND FLOOR
7,715 GSF



TYPICAL FLOOR
7,753 GSF

DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5' 10' 20'

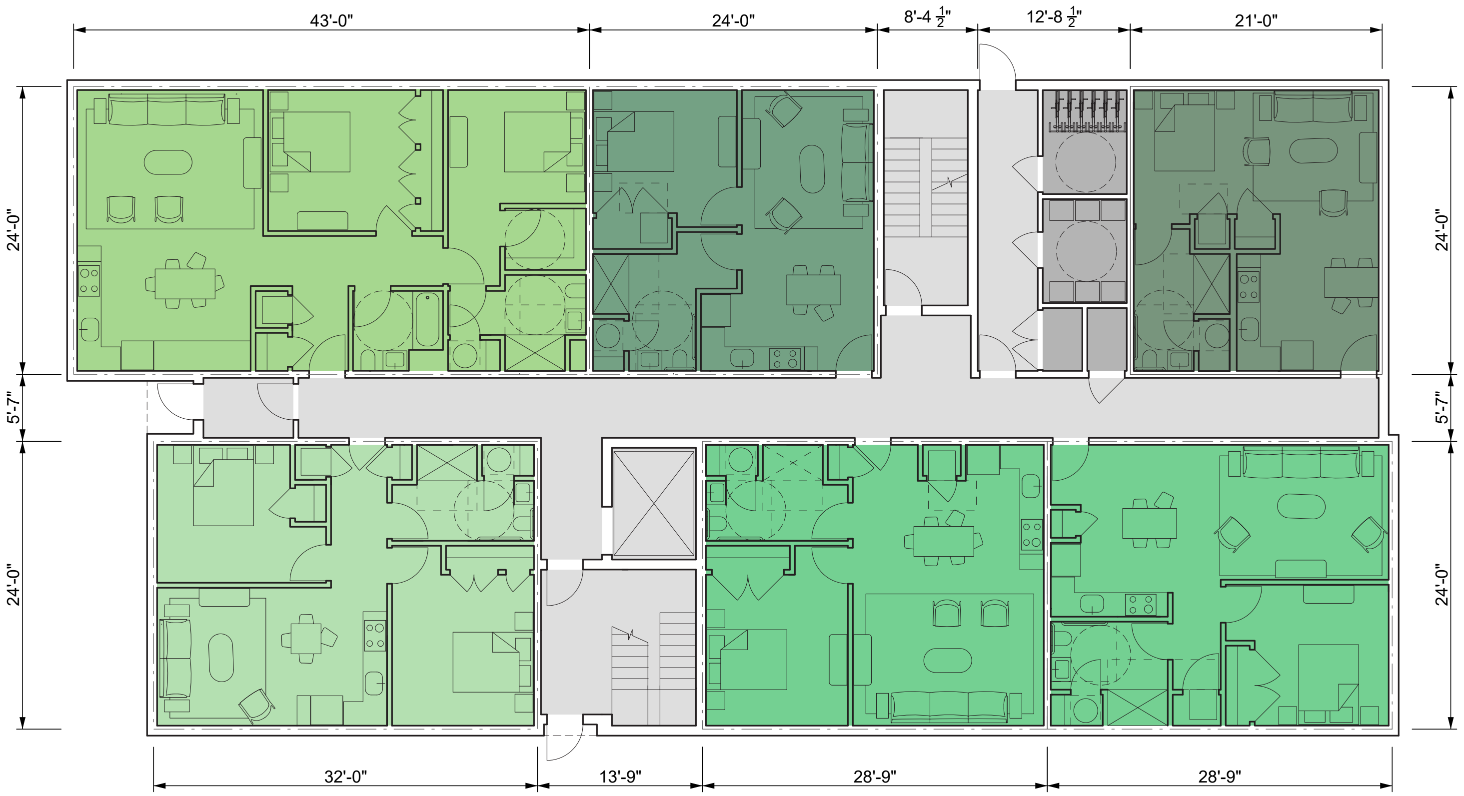
100 Durgin Lane
Portsmouth, NH

3 Story Walk-Up Building (Shifted Aggregated)
August 21, 2024

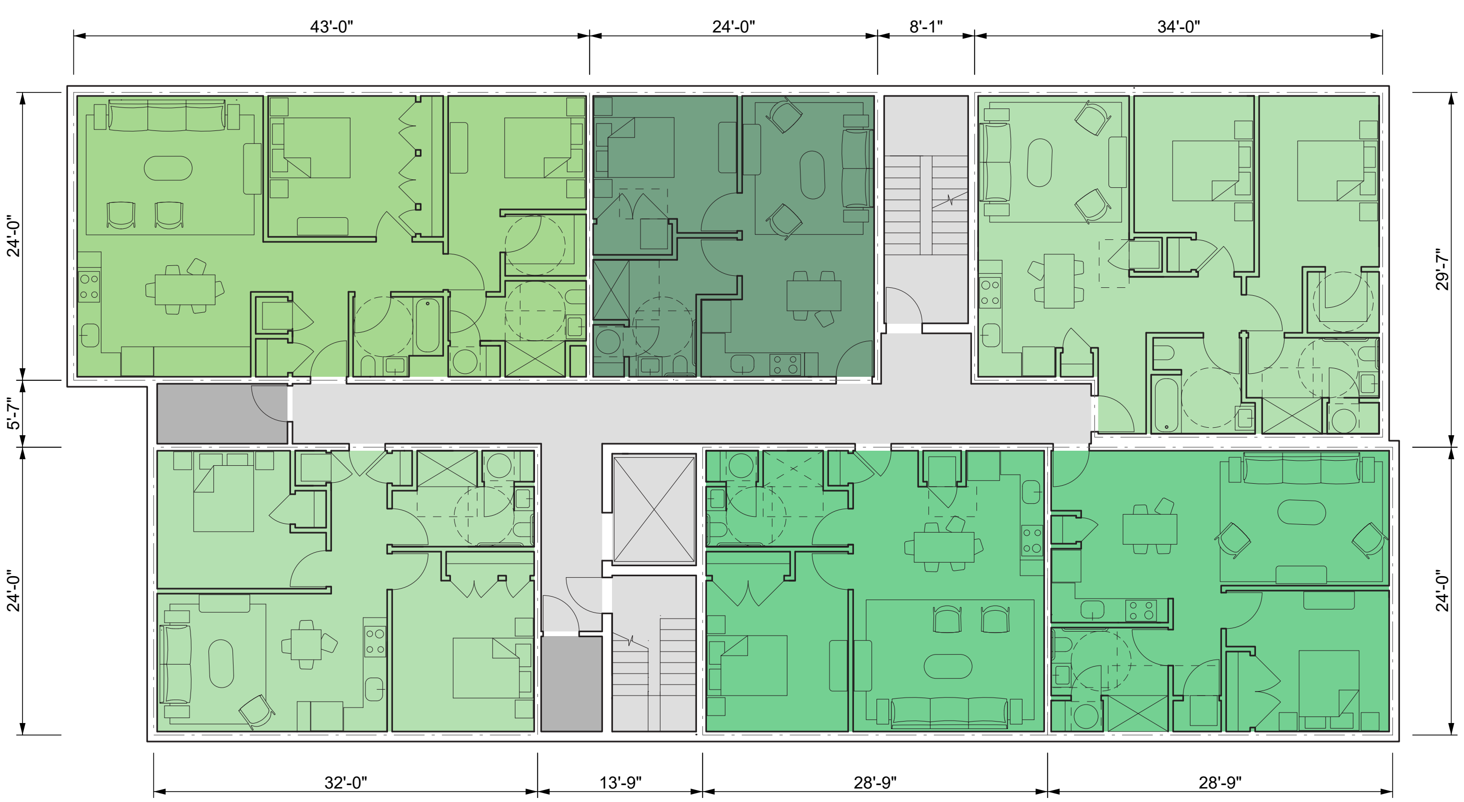
Scale: 1/32" = 1'-0"

Architecture
& Planning

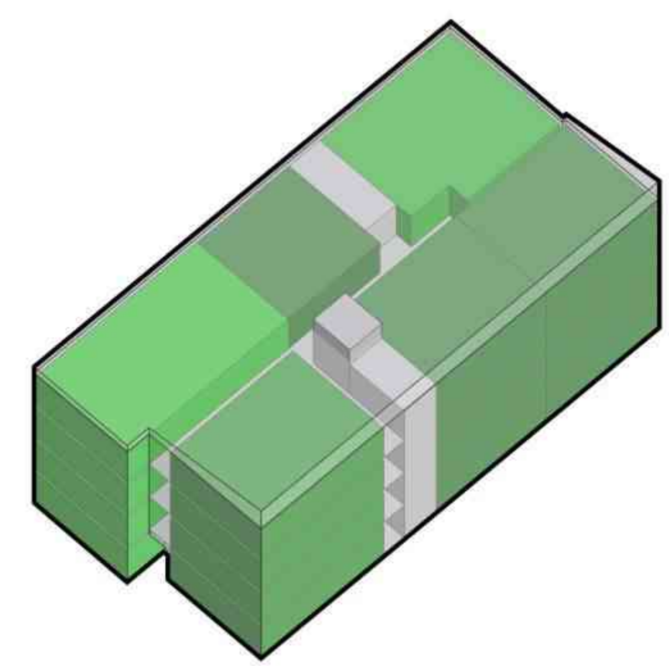
utile



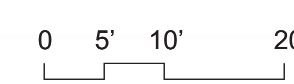
GROUND FLOOR
5,820 GSF



TYPICAL FLOOR
5,846 GSF



DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.



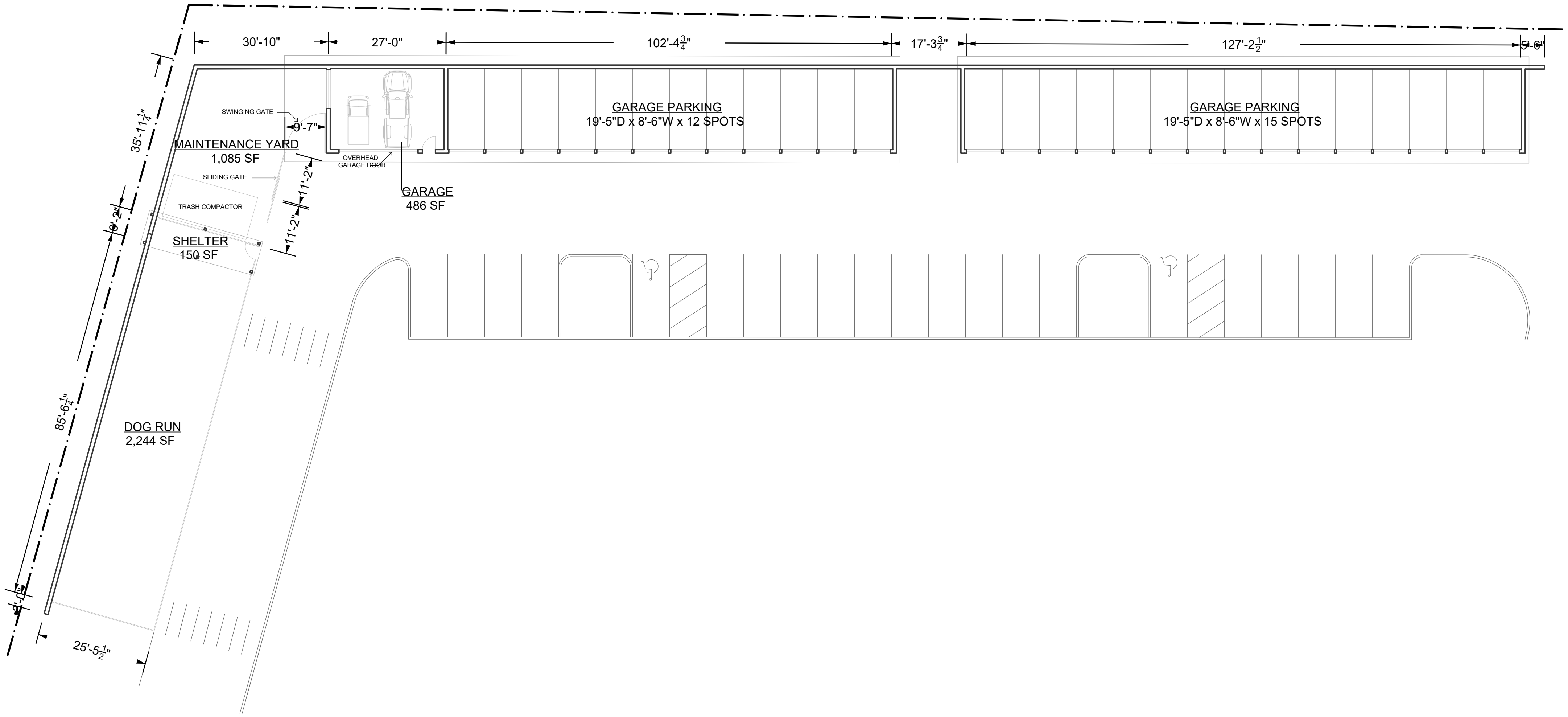
100 Durgin Lane
Portsmouth, NH

4 Story Elevator Building
August 21, 2024

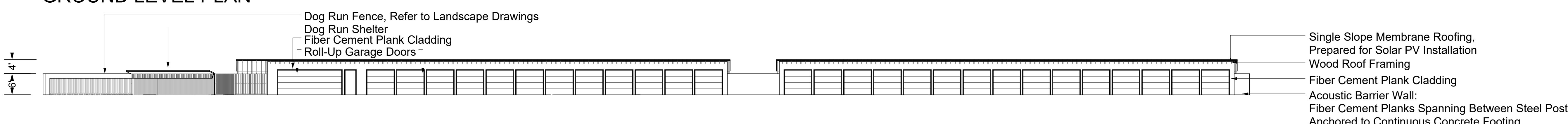
Scale: 1/32" = 1'-0"

Architecture
& Planning

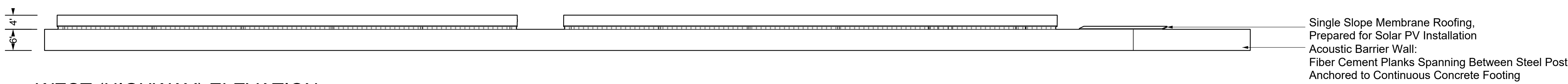
utile



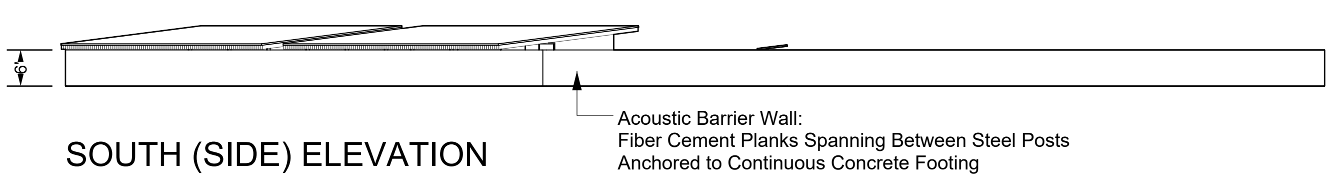
GROUND LEVEL PLAN



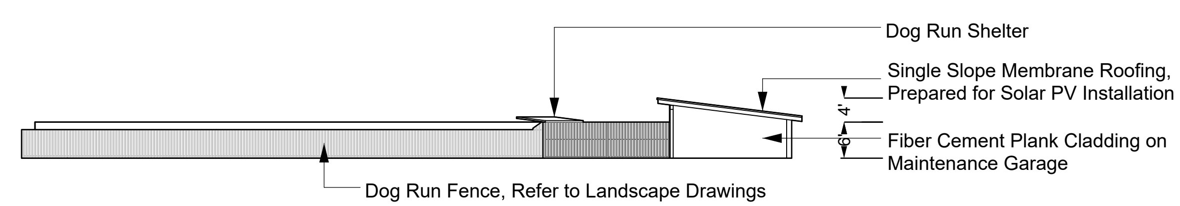
EAST (FRONT) ELEVATION



WEST (HIGHWAY) ELEVATION

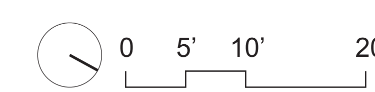


SOUTH (SIDE) ELEVATION



NORTH (SIDE) ELEVATION

DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.



100 Durgin Lane
Portsmouth, NH

Maintenance Area Plan & Elevations
October 23, 2024

Scale: 1/16" = 1'-0"

Architecture
& Planning

utile

100 Durgin Lane - Site Plan Review - TAC COMMENTS (10/1/2024) RESPONSE

100 Durgin Lane
Portsmouth, New Hampshire
October 23, 2024

Prepared by: NAH/BKC
Project # E5071-001

	TAC Comment	Response	Corresponding Plan Sheet #
1	For proposed lots 2 and 3, the applicant needs to demonstrate utilities and access to public rights of way. Applicant must demonstrate parcels operate as independent units.	Additional easement plans have been included with this submission to demonstrate the proposed easements from Develpoment Site Lots to public rights of way. An existing easements exhibit is also included with the submission per previous request from the City.	C-603 & C-604
2	The noise study indicates a sound barrier will be constructed. Please include the barrier and dimensions on site plan.	The barrier location is shown on the site plan. The sound barrier as currently shown is 130.6’ long along the southern property line, 310.3’ long along the western property line and 6’ tall.	C-302
3	Existing force sewer main from Hotel/Saturn dealership on Gosling Rd is not shown on existing features plan.	The approximate existing sewer force main is shown on the Demolition plan and based off record drawings. Final location to be verified in field prior to construction.	C-201
4	6” water line in this same area should also be shown here.	The approximate existing location of the water line from the abutting New Frontier/Hotel 6 lot is shown on the Demolition Plan and is based off record drawings. This line is also noted to be verified in field as the location varies from the City’s GIS.	C-201
5	The water main in Woodbury Ave needs replacing from Ocean State Job lots to Gosling road. It currently is 6” cast iron located about 20’ behind the sidewalk from the days when the road was in a different spot. Water model shows that upsizing to a 12” main will be sufficient.	The Applicant acknowledges the City's position that the cost of these upgrades shall be borne by the Applicant. An exhibit has been included to schematically show the proposed improvements. The Applicant is studying the implications of these improvements and anticipates coordination with the City to refine based on findings of the Third Party Review.	Woodbury Ave Water Line Replacement (1 of 2)
6	The water model also needs to determine if the 6” DI water line that goes up the service driveway that comes from Gosling needs to be upsized as well.	Comment acknowledged. The Applicant will review the findings of the Third Party Review once available. An exhibit has been included to schematically show these potential improvements if they are required.	6" Water Line Replacement (2 of 2)
7	The development will be required to maintain the sections of the service road (that are on their lot) both towards Home Depot and toward Gosling to an acceptable condition. This road has a tendency to fall into disrepair quite often.	The Applicant agrees.	N/A
8	The guard rails on the access roads need to be replaced completely to the steel post/steel rail standard (the detail is incorrect). If wood rail is desired in the private area, a separate detail should be shown with the caveat that it is not to be used in access road or easement regulated areas.	The guard rail along the access road on the development site will be replaced as requested. The detail for the guardrails along access roads will be modified to steel post/steel rail with the limits to be replaced within the plans. A separate detail for wooden guardrails is shown on L5-03. Wooden guardrails are to be implemented along the northern edge of the development per the request of the Conservation Commission to delineate passive community spaces within the 100’ wetland buffer.	C-301, C-302, C-807, L5-03
9	The development will need a private hydrant agreement and the standard leak detection and metering/valve easement.	Comment acknowledged.	N/A
10	PSMH1 needs to be 6’ diameter to accommodate these flows all congregating in one space. Also, the force main should enter a new adjacent structure first so that all flows are entering PSMH1 as gravity.	PSMH1 has been modified on the utility plan to be a 6’ diameter structure. The force main now enters an adjacent structure (PSMH2) to then flow into PSMH1 by gravity.	C-502
11	There are several manholes shown with incorrect inverts. Remember to match pipe crowns when changing pipe sizes and at an absolute minimum, there should be 0.1’ of drop inside all structures.	Sewer pipe inverts have been revised to match pipe crowns when changing pipe sizes at structures. Proposed sewer alignments and manhole locations have been revised to ensure there is at least 0.1' of drop inside all structures.	C-501 & C-502
12	The City wants the developer to narrow Durgin lane a little to construct a 10’ wide multi use trail out to Woodbury holding the back side of the existing sidewalk in the same location as to not interfere with established lights and landscaping of other Durgin businesses.	The Applicant acknowledges the City's position that the cost of these upgrades shall be borne by the Applicant. Schematic design exhibits have been included with this submission. The Applicant is studying the implications of these improvements and anticipates coordination with the City.	10' Multi-Use Sidewalk Exhibits (2)

13	Based on the locations of the valves near the existing hydrant on the access road, the 6" water line shown on the demolition plan is not depicted accurately.	The approximate location of the existing water line has been revised to match the existing location.	C-201
14	Please explain why there are two water mains being shown coming from Durgin Lane. If one of them was for domestic water for the existing plaza, that main needs to be abandoned at the main in Durgin and not just truncated in a random spot.	Record design drawings from Christmas Tree/BBB project show separate fire and domestic water lines from the Durgin Lane ROW onto the site. Demolition plan notes that City GIS shows one 12" waterline connecting to the ROW, with a note to verify size and location prior to construction. Note has been revised to state that if second line is found it will be abandoned at the main in coordination with City DPW.	C-202
15	Show how the proposed new water main will connect with the existing 12" main on Durgin. Preferred method is to cut in a new Tee. City does not want a tapping sleeve.	The new water main will connect to the existing main with a new tee.	C-502
16	An interim plan for feeding the Hampton Inn with water, draining their stormwater and sewer systems and connecting them to the access road is needed as part of the demo sequence as those tasks will need to happen first. Also, the sewer force main for Gosling properties will need a similar plan.	General note #7 on C-101 describes the requirements for the Contractor to phase demolition and construction as required to provide continuous service to existing businesses and homes throughout the construction period. Additionally, existing easements in place require utility and access to be maintained at all times. CM and site work contractor will be responsible for developing phasing plans to meet this requirement and coordinate with the Hampton Inn and other abutters during construction.	C-101
17	Connection to existing sewer for Hampton Inn shall have a rigid connection. Include detail.	The realigned sewer for Hampton Inn will connect to an existing structure with a booted connection.	N/A
18	Asphalt mix stone size specified x 3 is minimum thickness for pavement layering. Also, anywhere where easements are present should be at least 4" thick with a 16" select gravel base.	On-site pavement sections will be revised to match the project geotechnical engineer's recommendations. A separate detail for pavement sections within the area around the Durgin Lane turnaround and areas subject to an access easement has been included to specify 4" of bituminous pavement and 16" of base materials.	C-302 & C-803
19	Please amend the sewer manhole detail to include "construct to City and State standards".	The sewer manhole detail has been updated to include "construct to City and State Standards".	C-808
20	Stormwater maintenance plan including yearly cleaning reports.	A stormwater Long-Term Operation and Maintenance Plan is included with the submission.	N/A
21	Highly recommend all minimal cover CB's get CB liners. Required on all basins in easement areas.	A detail for catch basin polyethylene liners in included. Catch basins within the Durgin Lane turnaround (subject to an access easement with the City) are specified to have such liners.	C-804
22	Label pipe sizes.	Water line pipe sizes have been specified on the plans based on preliminary sizing requirements.	C-501 & C-502
23	Moving the driveway into the hotel will require changes to their parking layout that are not shown currently. For instance, the location of the proposed walkway is likely going to want to be a parking space.	Potential modifications to the Hampton Inn property are shown on the drawings. The Applicant will work with the abutter to agree upon the final layout of driveway and sidewalk connections to their site and any additional required modifications on their property.	C-302
24	Parallel parking spaces should be 21 or 22' long. End spaces can be shorter (18-19') because they are easier to enter. The opposite is currently shown.	Dimensions of parallel parking stalls are consistent with the minimum requirements of the City of Portsmouth's Site Development Standards (20' minimum per Section 10.1114.20). Parallel parking stall dimensions have been revised as noted to be at least 21' or 22' long within "interior spaces" and at least 18' or 19' within "end spaces".	C-301, C-302
25	Loading spaces should be added at building 15 for mail and package drop off.	A loading space adjacent to the amenity building for mail and package drop off has been added.	C-302
26	Traffic study recommends altering the access road to a one-way road, inbound towards the proposed development. This will allow for safer pedestrian access to the sidewalks on Gosling Road.	Existing access easements that encumber the parcel are all for ingress and egress, so the applicant would not be able to agree to a condition to limit access to ingress only without violating the easement rights of the abutters. Copies of these easements were provided to the City Traffic Engineer via email on 9/27. On 9/30, the City Traffic Engineer concurred it is not possible to alter the connector roadway to one-way flow based on the existing easements.	N/A
27	The catch basins (currently unlabeled) on the access road should be rerouted into the rain garden for treatment.	Existing drain lines are approximately 3' deeper than the required tie-in elevation at the rain garden, therefore connection for treatment is not feasible. In the existing condition, drainage to those structures is untreated.	N/A

28	Third party construction oversite of utilities will be required.	Acknowledged	N/A
29	Water meters, fire suppression, etc. shall be in a room in each building with keys given to the DPW for access.	The Applicant agrees to grant keyed access to DPW to the water room in each building.	N/A
30	Water booster pumps may be necessary for upper floors or fire protection.	Comment acknowledged. Building plumbing and fire protection design will implement booster pumps if deemed necessary.	N/A
31	Is irrigation planned for the site? Separate irrigation meters will be required and need to be placed in the same location as domestic water meter, fire suppression, etc.	Irrigation is planned for the site. The Applicant acknowledges that separate irrigation meters will be required.	N/A

E5071-001
October 16, 2024

Mr. Peter Britz, Director of Planning & Sustainability
City of Portsmouth Planning & Sustainability Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: **Response to Comments – Traffic Peer Review – Letter 2**
100 Durgin Lane – Proposed Redevelopment

Dear Peter:

Tighe & Bond has prepared this letter in response to peer review comments on the subject project received from TEC, Inc. (TEC) in a letter dated September 25, 2024. The 100 Durgin Lane Multi-Family Development Traffic Impact Study, dated May 16, 2024, was submitted to the City in June 2024. For ease of review, TEC comments are repeated herein in *italics*, followed by our response in **bold** for each.

Traffic Impact Study

7. *Original TEC Comment from 8/28/2024: The TIA included a distribution analysis for the new trips that was based on U.S. Census Journey-to-Work data. This is reasonable and appropriate. However, TEC has the following comments related to potential variations in route selection for the future residents of the Project:*

   a. *T&B did not assign any exiting trips to the Motel 6 driveway - TEC concurs that the Project will invite a significant volume of entering traffic via the Gosling Road / Motel 6 access point. The Applicant and City should review the potential to use the northerly driveway as a one-way entrance only connection to limit traffic conflicts within the Motel.*

   Applicant Response 9/18/2024: Site generated trips are not expected to exit via the Motel driveway, as stated in the TIS. Existing exiting traffic volumes from the Motel 6/ northern site driveway at Gosling Road are 13, 30, and 52 vehicles in the weekday morning, weekday afternoon, and Saturday midday peak periods, respectively. Based on the project site being currently vacant, it is assumed that many of these existing vehicle trips may originate from the New Frontier Church or Motel 6. Therefore, based on the minimal existing exiting traffic volumes and no estimated site traffic exiting via this driveway, converting the portion of the site driveway to one-way entrance only may not significantly reduce potential conflicts between driveway traffic and adjacent parking areas.

   In addition, existing access easements along the driveway and the location of a portion of the driveway outside of the project parcel may preclude the conversion of the driveway to enter only. The Applicant has however proposed several traffic calming measures on site to limit speeds and potential cut-through traffic as described in further detail in response to Comment 13.

   TEC Follow-up Comment 9/25/2024: TEC believes that the Applicant needs to provide additional information to justify the retention of the current two-way flow. The Applicant should provide copies of any potential deed restrictions and evidence of discussions/coordination with the abutting property owner prior to the Board rendering *a decision on this important aspect of the project. Without the conversion to one-way traffic, it does not appear that a reasonable or safe multi-modal connection can be provided on the Applicant's property for walking and biking trips to the Gosling Road corridor. Unless the Fire Department expresses a need for two-way flow here, TEC recommends that the City requires additional evidence from the Applicant's team.*

Applicant Response 10/11/2024: Copies of the relevant easements are included with this response and were provided to the City Traffic Engineer via email on 9/27/24. On 9/30/24, the City Traffic Engineer concurred it is not possible to alter the connector roadway to one-way flow based on the existing easements.

12. *Original TEC Comment from 8/28/2024: As discussed in Comment #7a above, the Applicant should consider one-way entering traffic from the Motel 6 site to reduce conflict points in the parking area adjacent to Motel 6. It would meanwhile afford an opportunity to use the extra roadway cross-section to create buffered bicycle accommodations for any bicycle trips that may originate at Pease Tradeport or the retail areas to the north.*

    Applicant Response 9/18/2024: The existing roadway connecting the subject parcel and the Motel 6 parcel is covered under an existing shared access easement which may preclude the conversion of the driveway to enter only without consent of both parties. The Applicant is not the Owner of the Motel 6 parcel, and therefore does not have control over adjustments to the site layout on their property.

    TEC Follow-up Comment 9/25/2024: See TEC's follow-up comment to #7a above.

    Applicant Response 10/11/2024: Copies of the relevant easements are included with this response and were provided to the City Traffic Engineer via email on 9/27/24. On 9/30/24, the City Traffic Engineer concurred it is not possible to alter the connector roadway to one-way flow based on the existing easements.

13. *Original TEC Comment from 8/28/2024: The Applicant should consider speed humps or other traffic calming devices along the main access aisles from the north. TEC observed considerable cut-through traffic with seemingly higher operating speeds. Given the nature of the residential redevelopment, the speed characteristics should be reviewed and mitigated.*

    Applicant Response 9/18/2024: Speed bumps have been added at north and south entrances of the north-south access way, in addition to centerline pavement markings. Once within the center of the development, the presence of head-in parking and landscaped islands on both sides of the access ways will promote additional traffic calming, as well as a safety buffer between moving vehicles and pedestrians. The four-way stop-controlled intersection at the center of the site will provide additional speed mitigation.

    TEC Follow-up Comment 9/25/2024: TEC recommends that the Applicant replaces the current speed bump detail with a speed hump detail that is more closely aligned with current industry guidance, such as the 2007 publication from the Institute of Transportation Engineers (ITE) entitled, "Guidelines for the Design and Application of Speed Humps." This should provide a traffic calming feature that manages vehicle speeds to a reasonable level while also providing more appropriate accommodations for emergency vehicles.

<u>Applicant Response 10/11/2024</u>: The "Speed Bump" detail has been replaced with a "Speed Hump" detail in accordance with the 2007 publication from the Institute of Transportation Engineers (ITE) entitled, "Guidelines for the Design and Application of Speed Humps." The site plans have been updated to show the revised limits of the speed hump.

24. <u>Original TEC Comment from 8/28/2024:</u> The Applicant should review on-site opportunities for package delivery services near the central mail/delivery room; and a potential future bus stop(s) along the main north-south access aisle near Durgin Lane.

<u>Applicant Response 9/18/2024:</u> A central package delivery room is currently planned to be located at the northern corner of ground floor of the "Amenity Building". Deliveries of packages to room will be achieved using one of the nearby parking spaces. The Applicant previously met with COAST in March 2024 to discuss the feasibility of adding bus service to the proposed development. COAST conducted testing and determined that adding service to the site would require service elsewhere to be eliminated to maintain current headways, and therefore was not viable at this time.

<u>TEC Follow-up Comment 9/25/2024:</u> Given the frequency of delivery trips to a facility of this size, TEC continues to recommend a dedicated area for delivery vehicles that is signed as 'No Parking' adjacent to the proposed amenity building (assumed to be Building #15). The next set of plans should provide clear labels for the location/designation of the amenity building on Sheets C-301 and C-302.

<u>Applicant Response 10/11/2024</u>: A parking space for delivery vehicles has been identified on the plans with associated signage adjacent to the Amenity Building. The Amenity Building has been clearly identified on the plans.

If you have any questions or need any additional information, please contact Patrick Crimmins or Neil Hansen by phone at (603) 433-8818 or by email at pmcrimmins@tighebond.com / nahansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

Copy: Eastern Real Estate (via email)

B3160 P2033

ACCESS EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That **SFL, LLC**, a New Hampshire Limited Liability Company, with a principal place of business at 22 Heritage Drive, Woburn, County of Middlesex and Commonwealth of Massachusetts for and in consideration of One ($1.00) Dollar and other valuable consideration does hereby grant to **GILBERT SOUCY and DOROTHY SOUCY, their heirs, successors and assigns, both of 323 Portsmouth Avenue in Stratham, County of Rockingham and State of New Hampshire,** an easement for the purpose of ingress and egress over and upon land of the Grantor, situate at Gosling Road, Portsmouth, County of Rockingham and State of New Hampshire, more particularly bounded and described as follows:

PORTSMOUTH, NEW HAMPSHIRE

A right to pass and repass over and across the parking area and 24 foot paved drive on land of the within Grantor shown as Lot #2 on Plan entitled "Overall Site Plan for H.B.I., Gosling Road, County of Rockingham, Portsmouth, New Hampshire", prepared by Richard P. Millette and Associates, dated 1-17-94, revised 4-13-94.

Said Plan recorded at the Rockingham County Registry of Deeds, as Plan D-24125.

The within granted Easement is subject to the terms and conditions of a certain Operation and Maintenance Agreement of even date to be recorded herewith.

WITNESS my hand and seal this 13th day of June, 1996.

SFL, LLC

Witness

By: ROBERT D. HAVERTY
Duly Authorized

LAW OFFICES OF
WHOLEY & PELECH
55 CONGRESS STREET
P. O. BOX 395
PORTSMOUTH, N H
03802-0395

B3160 P2034

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM, SS.

June 13, 1996

Personally appeared the above-named ROBERT D. HAVERTY, duly authorized on behalf of SFL, LLC, known to me, or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

Before me,

~~Notary Public~~\Justice of the Peace

Commission expires:

NH

STATE OF NEW HAMPSHIRE

DEPARTMENT OF REVENUE ADMINISTRATION

REAL ESTATE TRANSFER TAX

X THOUSAND X HUNDRED AND 40 DOLLARS

061496 226095 $ 40.00

VOID IF ALTERED

LAW OFFICES OF
WHOLEY & PELECH
55 CONGRESS STREET
P O BOX 395
PORTSMOUTH, N H
03802-0395

\hotel pro\acas sfl.aou

ACCESS - PARKING - UTILITY - SIGNAGE EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That **SATURN REALTY LLC** of 1 Gosling Road in Portsmouth, County of Rockingham and State of New Hampshire (mailing address: Post Office Box 3310, Portsmouth, NH 03802) (the "Grantor"), for consideration paid hereby grants to **ROBERT D. HAVERTY and KATHLEEN M. HAVERTY, Trustees of SFL REALTY TRUST**, under Declaration of Trust dated June 1, 1994, (the "Grantee") of 22 Heritage Drive in Woburn, County of Middlesex and Commonwealth of Massachusetts, its successors, heirs and assigns, without covenants, the perpetual right and easement to lay, construct, inspect, repair, maintain, renew, replace and remove any and all utilities, whether underground or above ground including but not limited to sewer mains, water mains, gas lines, electrical lines, telephone lines, aligns, pipes, conduits, and cables for any and all other utilities of any type and nature as may be required by the Grantee over, across and through land of the Grantor as hereinafter described in Exhibit "A" attached hereto.

Grantor, on behalf of its self, its successors and assigns, for consideration paid hereby grants to the Grantee, without covenants, a perpetual, non-exclusive right and easement to the Grantee, their successors, assigns, customers, guests, licensees, invitees, sub-tenants, employees and agents, in common with the Grantor its customers, guests, licensees, invitees, sub-tenants, employees and agents, over and across land of the Grantor, more particularly described in Exhibit "A" attached hereto for purposes of vehicular and pedestrian ingress and egress over and across any and all driveways, traffic lanes, parking areas, and roadways, and further for the purpose of the parking of motor vehicles, including, without limitation, service vehicles.

Grantor further conveys to Grantee, its successors, assigns and tenants, without covenants a perpetual easement over and upon the premises described in Exhibit "A" attached hereto, for the purpose of erecting signage to benefit Grantee it's successors, assigns and tenants, provided, however, that any signage erected be approved by Grantor and the City of Portsmouth as to location, size, height and illumination.

The actual location of all utilities, access ways, parking areas and sign locations are as shown on plans entitled "Site Plan for H.B.I., Gosling Road, County of Rockingham, Portsmouth, New Hampshire, dated 1-17-94, revised 4-13-94, 4-18-94 - Sheets 3 of 11 and 4 of 11 - " prepared by Richard P. Millette and Associates, to be recorded herewith, and any further amendments thereto.

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P O BOX 395
PORTSMOUTH, N H
03802-0395

PORTSMOUTH, NEW HAMPSHIRE

Beginning at a point at the northwesterly corner of within described premises on the southerly side of Gosling Road at land now or formerly of the State of New Hampshire, at a New Hampshire Highway bound, thence running N 75° 20' 35" E along the southerly sideline of Gosling Road a distance of 200.00 feet to a point at other land of the within Grantor; thence turning and running S 11° 12' 58" W by other land of the Grantor a distance of 166.55 feet to a point; thence turning and running S 14° 34' 24" E by other land of the Grantor a distance of 170.03 feet to a point; thence turning and running S 17° 53' 36" W by other land of the Grantor a distance of 169.08 feet to a point; thence turning and running S 51° 58' 44" E by other land of the Grantor a distance of 247.14 feet to a point; thence turning and running S 30° 52' 30" E by other land of the Grantor a distance of 257.67 feet to a point at land now or formerly of Costco Wholesale Corp.; thence turning and running S 69° 05' 25" W by land of said Costco Wholesale Corp. a distance of 137.94 feet to a found hub and tack in a stone wall at other land of Costco Wholesale Corp.; thence turning and running N 26° 30' 05" W by said stone wall and land of Costco Wholesale Corp. a distance of 121.94 feet to a point; thence turning and running N 36° 21' 05" W along said stone wall by land of Costco Wholesale Corp. a distance of 100.02 feet to a point; thence turning and running N 28° 38' 05" W along said stone wall and land of Costco Wholesale Corp. a distance of 70.30 feet to a point; thence turning and running S 71° 16' 25" W along land of said Costco Wholesale Corp. a distance of 153.50 feet; thence turning and running N 23° 58' 32" W by land of the State of New Hampshire a distance of 311.71 feet to a point; thence turning and running N 17° 40' 15" E by land of the State of New Hampshire a distance of 168.00 feet to a point; thence turning and running along the arc of a curve to the left, having a radius of 244.00 feet and a central angle 25° 27' 30" along land now or formerly of State of New Hampshire, a distance of 108.42 feet to a point; thence turning and running N 07° 47' 15" W along land nor or formerly of State of New Hampshire, a distance of 101.60 feet to a point on the southerly sideline of Gosling Road; thence turning and running N 72° 48' 15" E along the southerly sideline of Gosling Road a distance of 22.60 feet to a point; thence turning and running S 14° 53' 47" E a distance of 2.73 feet to the point of beginning.

Meaning and intending to describe Lot #1 as shown on "Subdivision Plan of Land for HBI, Gosling Road, County of Rockingham, Portsmouth, N.H.", dated December 27, 1993, prepared by Richard P. Millette and Associates, said Lot #1 containing 4.0785 acres. Plan to be recorded herewith.

Being a portion of the premises conveyed to Lawrence E. and Beatrice Carkin by deed recorded in Rockingham County Registry of Deeds, at Book #1356, Page #0416.

See also Consolidation Quitclaim Deed, dated December 17, 1993, recorded in the Rockingham County Registry of Deeds, at Book #3027, Page #1142.

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P O BOX 395
PORTSMOUTH N H
03802 0395

Witness its hand and seal this 9th day of June, 1994.

SATURN REALTY LLC

Kathye Pantanella
Witness

By: Stephen P. Lannan Jr.
Duly Authorized

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS.

June 9th, 1994

Personally appeared the above-named Stephen P. Lannan Jr., a duly authorized officer of the corporation, SATURN REALTY LLC, known to me, or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

Before me,

Kathye Pantanella
NOTARY PUBLIC / ~~JUSTICE OF THE PEACE~~

My Commission expires: KATHYE PANTANELLA, Notary Public
My Commission Expires June 23, 1998

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
XX THOUSAND XX HUNDRED AND 40 DOLLARS

MO. DAY YR.		AMOUNT
053095	183017	$40.00

VOID IF ALTERED

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P O BOX 395
PORTSMOUTH N H
03802 0395

ACCESS - PARKING - UTILITY - SIGNAGE EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That **ROBERT D. HAVERTY and KATHLEEN M. HAVERTY, Trustees of SFL REALTY TRUST**, under Declaration of Trust dated June 1, 1994, (the "Grantor") of 22 Heritage Drive in Woburn, County of Middlesex and Commonwealth of Massachusetts, for consideration paid hereby grants to **SATURN REALTY LLC**, (the "Grantee") of 1 Gosling Road in Portsmouth, County of Rockingham and State of New Hampshire (mailing address: Post Office Box 3310, Portsmouth, NH 03802), its successors, heirs and assigns, without covenants, the perpetual right and easement to lay, construct, inspect, repair, maintain, renew, replace and remove any and all utilities, whether underground or above ground including but not limited to sewer mains, water mains, gas lines, electrical lines, telephone lines, aligns, pipes, conduits, and cables for any and all other utilities of any type and nature as may be required by the Grantee over, across and through land of the Grantor as hereinafter described in Exhibit "A" attached hereto.

Grantor, on behalf of its self, its successors and assigns, for consideration paid hereby grants to the Grantee, without covenants, a perpetual, non-exclusive right and easement to the Grantee, their successors, assigns, customers, guests, licensees, invitees, sub-tenants, employees and agents, in common with the Grantor its customers, guests, licensees, invitees, sub-tenants, employees and agents, over and across land of the Grantor, more particularly described in Exhibit "A" attached hereto for purposes of vehicular and pedestrian ingress and egress over and across any and all driveways, traffic lanes, parking areas, and roadways, and further for the purpose of the parking of motor vehicles, including, without limitation, service vehicles.

Grantor further conveys to Grantee, its successors, assigns and tenants, without covenant a perpetual easement over and upon the premises described in Exhibit "A" attached hereto for the purpose of erecting signage to benefit Grantee, its successors, assigns and tenants, provided, however, that any signage erected be approved by Grantor and the City of Portsmouth as to location, size, height and illumination.

The actual location of all utilities, access ways, parking areas and sign locations areas shown on plans entitled"Site Plan for H.B.I., Gosling Road, County of Rockingham, Portsmouth, New Hampshire, dated 1-17-94, revised 4-13-94, 4-18-94 - Sheets 3 of 11 and 4 of 11 - " prepared by Richard P. Millette and Associates, to be recorded herewith, and any future amendments thereto.

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P O BOX 395
PORTSMOUTH N H
03802 0395

Exhibit "A"

PORTSMOUTH, NEW HAMPSHIRE

A certain tract or parcel of land situate on Gosling Road in the City of Portsmouth, County of Rockingham and State of New Hampshire, known as Lot #2, and being more particularly bounded and described as follows:

Beginning at the northwesterly corner of within described premises at a point on the southerly side of Gosling Road thence running by the southerly sideline of said Gosling Road N 75° 20' 35" E a distance of 352.75 feet to a point at land now or formerly of Kentucky Fried Chicken; thence turning and running S 36° 45' 15" E by land of said Kentucky Fried Chicken a distance of 190.44 feet to a point; thence turning and running S 35° 35' 50" E by land of said Kentucky Fried Chicken a distance of 211.26 feet to a metal post; thence turning and running S 74° 13' 35" W along land of said Kentucky Fried Chicken a distance of 270.64 feet to a tree at the end of a wire fence; thence turning and running S 37° 15' 30" E along land of said Kentucky Fried Chicken a distance of 43.12 feet to a point; thence turning and running S 44° 42' 55" E along land of said Kentucky Fried Chicken a distance of 145.22 feet to a six (6") hickory tree with wire; thence turning and running S 35° 30' 25" E along land of said Kentucky Fried Chicken a distance of 64.86 feet to a stump with wire; thence turning and running S 44° 28' 10" E along land of said Kentucky Fried Chicken a distance of 108.29 feet to a tack in an eight (8") inch hickory tree with wire; thence turning and running S 34° 29' 40" E along land of said Kentucky Fried Chicken a distance of 138.29 feet to a stump with a wire; thence turning and running S 39° 44' 45" E along land of said Kentucky Fried Chicken a distance of 57.91 feet to a point; thence turning and running S 71° 45' 55" W along land now or formerly of Costco Wholesale Corp. a distance of 158.98 feet to a point; thence turning and running S 74° 49' 25" W along land of said Costco Wholesale Corp. a distance of 89.45 feet to a point; thence turning and running S 71° 09' 55" W along land of said Costco Wholesale Corp. a distance of 100.00 feet to a point; thence turning and running S 69° 05' 25" W by land of said Costco Wholesale Corp. a distance of 61.63 feet to a point; thence turning and running N 30° 52' 30" W by other land of the within Grantor a distance of 257.67 feet to a point; thence turning and running N 51° 58' 44" W by other land of the within Grantor a distance of 247.14 feet; thence turning and running N 17° 53' 36" E by other land of the within Grantor a distance of 169.08 feet to a point; thence turning and running N 14° 34' 24" W by other land of the within Grantor a distance of 170.03 feet to a point; thence turning and running N 11° 12' 58" E by other land of the within Grantor a distance of 166.55 feet to the point of beginning.

Meaning and intending to describe Lot #2 as shown on plan entitled "Subdivision Plan of Land for HBI, Gosling Road, County of Rockingham, Portsmouth, N.H.", dated December 27, 1993, prepared by Richard P. Millette and Associates, said Lot #2 containing 9.0050 acres. Plan to be recorded herewith.

Being a portion of the premises conveyed to Lawrence E. and Beatrice Carkin by deed recorded in Rockingham County Registry of Deeds, at Book #1356, Page #0416.

See also Consolidation Quitclaim Deed, dated December 17, 1993, recorded in the Rockingham County Registry of Deeds, at Book #3027, Page #1142.

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P.O. BOX 395
PORTSMOUTH N.H.
03802 0395

WITNESS its hand and seal this 9th day of June, 1994.

SFL REALTY TRUST

Witness

By Trustee

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS.

June 9th, 1994

Personally appeared the above-named Robert D. Haverty, a duly authorized Trustee of SFL REALTY TRUST, known to me, or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

Before me,

NOTARY PUBLIC / ~~JUSTICE OF THE PEACE~~

My Commission expires:

KATHYE PANTANELLA, Notary Public
My Commission Expires June 23, 1998

NH Transfer Tax Amount
STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
XX THOUSAND XX HUNDRED AND 40 DOLLARS

MO. DAY YR.		AMOUNT
053095	183016	$ 40.00

VOID IF ALTERED

LAW OFFICES OF
WHOLEY & PELECH
224 STATE STREET
P O BOX 395
PORTSMOUTH, N H
03802-0395

ACCESS EASEMENT

KNOW ALL MEN BY THESE PRESENTS, That **COSTCO WHOLESALE CORPORATION** of 10809 120 Avenue, Kirkland, County of King and State of Washington,for and in consideration of One ($1.00) Dollar and other valuable consideration does hereby grant to **ROBERT D. HAVERTY and KATHLEEN M. HAVERTY, Trustees of SFL REALTY TRUST**, under Declaration of Trust dated June 1, 1994, of 22 Heritage Drive, Woburn, County of Middlesex and Commonwealth of Massachusetts, an easement for the purpose of ingress and egress over and upon land of the Grantor, situate at Gosling Road, Portsmouth, County of Rockingham and State of New Hampshire, more particularly bounded and described as follows:

PORTSMOUTH, NEW HAMPSHIRE

Beginning at a point on the westerly side of a cul-de-sac at the terminus of Durgin Lane, thence running S 73° 57' 23" W a distance of 253.97 feet by land of the within Grantor to a point; thence turning and running N 17° 21' 16" W by land of the Grantor a distance of 383.60 feet to a point; thence turning and running N 05° 45' 02" E a distance of 44.70 feet to a point in the southerly sideline of property of the within Grantee; thence turning and running by land of the within Grantee N 72° 38' 12" E a distance of 32.62 feet to a point; thence turning and running S 05° 45' 02" W by land of the Grantor a distance of 51.37 feet to a point; thence turning and running S 17° 21' 16" E by land of the Grantor a distance of 348.14 feet to a point; thence turning and running N 73° 57' 23" E by land of the Grantor a distance of 224.65 feet to a point on a cul-de-sac representing the westerly terminus of Durgin Lane; thence turning and running by an arc of a curve to the left, having a radius of 60.00 feet, and a central angle of 28° 57' 18", a distance of 30.32 feet to the point of beginning.

Being a portion of the premises conveyed to the Grantor by deeds of Louis L. Dow and Beverly Dow recorded in the Rockingham County Registry of Deeds at Book 2071, Page 223: Robert S. Farrington, recorded in said registry at Book 2811, Page 1701; Barbara F. (Lane) Leroux, recorded in said registry at Book 2071, Page 219 and Book 2023, Page 157.

The within Access Easement is shown on Plan entitled "Cross Easement Plan for Costco Wholesale Corporation and SFL Realty Trust", by Richard P. Millette and Associates, dated February 10, 1994, revised June 1, 1994, to be recorded herewith.

WITNESS its hand and seal this 9th day of June, 1994.

COSTCO WHOLESALE CORPORATION

Witness:

By its duly authorized officer

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS

June 9, 1994

Personally appeared the above-named, Franz E. Lazarus Executive Vice President, a duly authorized officer of the corporation, Costco Wholesale Corporation, known to me, or satisfactorily proven, to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

Before me,

Notary Public
Justice of the Peace

NOTARY PUBLIC

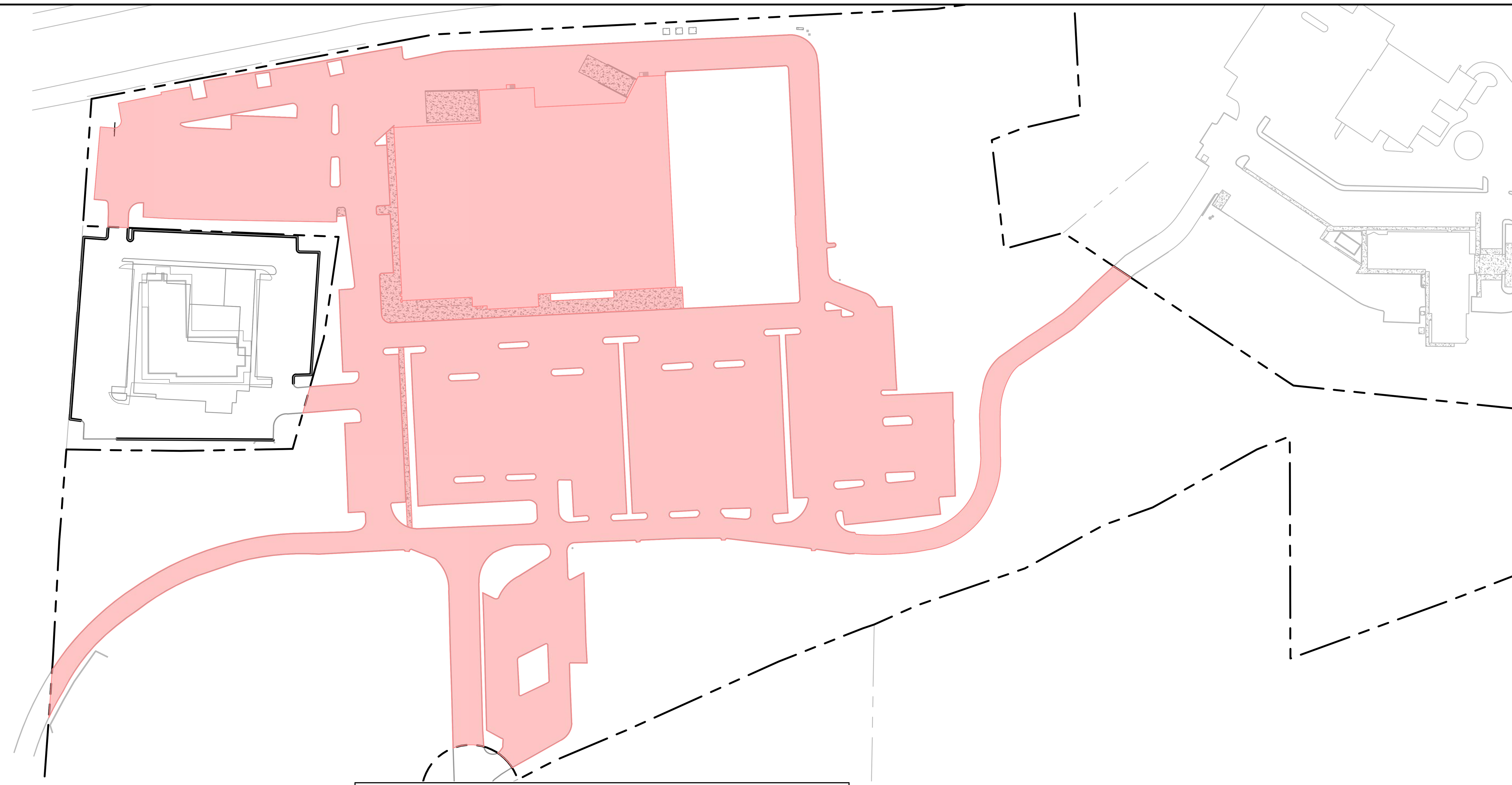
My Commission expires:

NOTARY PUBLIC
STATE OF MASS. AT LARGE
MY COMMISSION EXPIRES
NOV. 7TH 1997

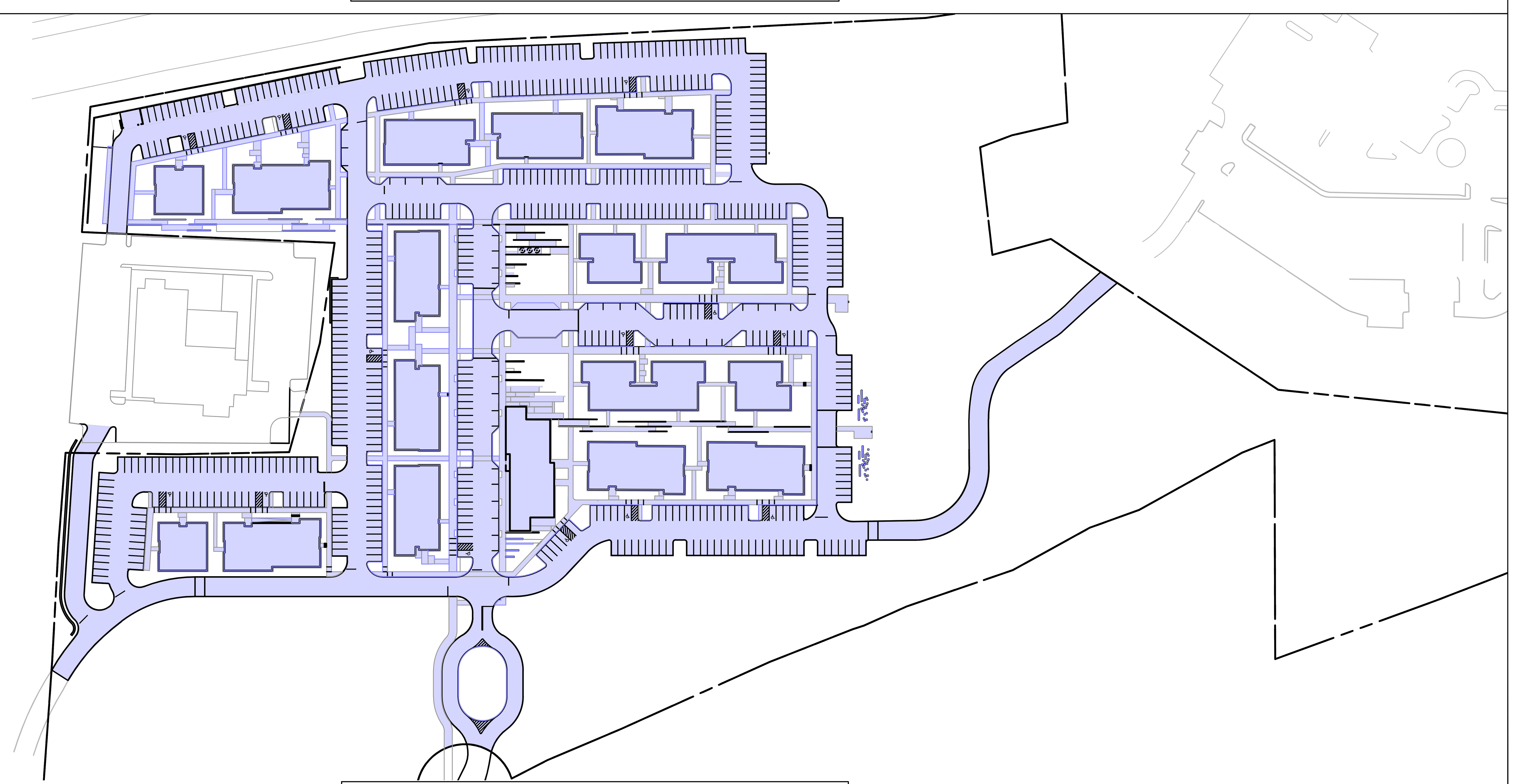
\hb1\cos-sfl.acc

PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

IMPERVIOUS SURFACE REDUCTION EXHIBIT



EXISTING IMPERVIOUS SURFACES
SCALE 1" = 100'



PROPOSED IMPERVIOUS SURFACES
SCALE 1" = 100'

Impervious Surface Within Site	
Existing Conditions	434,787 sf
Proposed Development	416,950 sf
Net Impervious Cover	-17,837 sf

N

0 100' 200'
GRAPHIC SCALE

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 5:12 PM By: BCURCIO
Plot Date: Monday, October 21, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: IMPERV-COMP

PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

WETLAND BUFFER IMPERVIOUS SURFACE EXHIBIT

EXISTING WETLAND BUFFER IMPERVIOUS SURFACE
SCALE 1" = 100'

PROPOSED WETLAND BUFFER IMPERVIOUS SURFACE
SCALE 1" = 100'

Impervious Surface Within Buffer Area		
Local Wetland Buffer Setback	**Impervious Surface**	
	Existing Condition	**Proposed Development**
0 - 25 FT	3,114 SF	2,467 SF
25 - 50 FT	12,156 SF	8,526 SF
50 - 100 FT	45,975 SF	33,333 SF
Total Impervious Surface	**61,245 SF**	**44,326 SF**
Net Impervious Surface	**-16,919 SF**	

0 100' 200'
GRAPHIC SCALE

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

WETLAND BUFFER IMPERVIOUS COMPARISON EXHIBIT

Wetland Buffer Impervious Surface Comparsion	
Impervious Surface Removed	30,865 SF
Impervious Surface Added	13,946 SF
Net Impervious Surface	-16,919 SF

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 5:12 PM By: BCURCIO
Plot Date: Monday, October 21, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: BUFFER COMP

PROPOSED MULTI-FAMILY DEVELOPMENT
100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

GRADE PLANE EXHIBIT 1

BUILDING 1 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
66.66	116.66'	107.75'	50.00'	40.00

BUILDING 2 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
66.16	116.16'	108.00'	50.00'	40.00

BUILDING 3 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
6.51	116.51'	114.25'	50.00'	47.50'

BUILDING 4 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.79	115.79'	114.50'	50.00'	47.50'

BUILDING 5 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.99	115.99'	114.50'	50.00'	47.50'

BUILDING 6 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
66.57	116.57'	108.00'	50.00'	40.00'

BUILDING 7 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
67.97	117.97'	108.00'	50.00'	40.00'

BUILDING 8 ELEVATION AND HEIGHT

GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.63'	115.63'	115.00'	50.00'	47.50'

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OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 6:57 PM By: BCURCIO
Plot Date: Tuesday, October 22, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: GRADE PLANE 1

BUILDING 9 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.87'	115.87'	114.75'	50.00'	47.50'

BUILDING 10 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.73'	115.73'	107.25'	50.00'	40.00'

BUILDING 11 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.99'	115.99'	107.00'	50.00'	40.00'

BUILDING 12 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.98'	115.98'	107.00'	50.00'	40.00'

BUILDING 13 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
65.14'	115.14'	106.75'	50.00'	40.00'

BUILDING 14 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
64.46	114.46'	106.25'	50.00'	40.00'

BUILDING 15 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
64.51'	114.51'	113.25'	50.00'	47.50'

BUILDING 16 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
64.12'	114.12'	103.50'	50.00'	40.00'

BUILDING 17 ELEVATION AND HEIGHT				
GRADE PLANE ELEVATION	BUILDING ELEVATION		BUILDING HEIGHT	
	ALLOWED	PROPOSED	ALLOWED	PROPOSED
63.03'	113.03'	103.50'	50.00'	40.00'

PROPOSED MULTI-FAMILY DEVELOPMENT
100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

GRADE PLANE EXHIBIT 2

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OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 6:57 PM By: BCURCIO
Plot Date: Tuesday, October 22, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: GRADE PLANE 2

PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

FIRE TRUCK TURNING EXHIBIT 1

Portsmouth Fire Truck

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

LEGEND

FORWARD VEHICLE WHEEL BASE

FORWARD VEHICLE OVERHANG

0 50' 100'
GRAPHIC SCALE

N

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 5:12 PM By: BCURCIO
Plot Date: Monday, October 21, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: FIRE 1

PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

FIRE TRUCK TURNING EXHIBIT 2

LEGEND

FORWARD VEHICLE WHEEL BASE

FORWARD VEHICLE OVERHANG

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

0 50' 100'
GRAPHIC SCALE

N

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 5:12 PM By: BCURCIO
Plot Date: Monday, October 21, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: FIRE 2

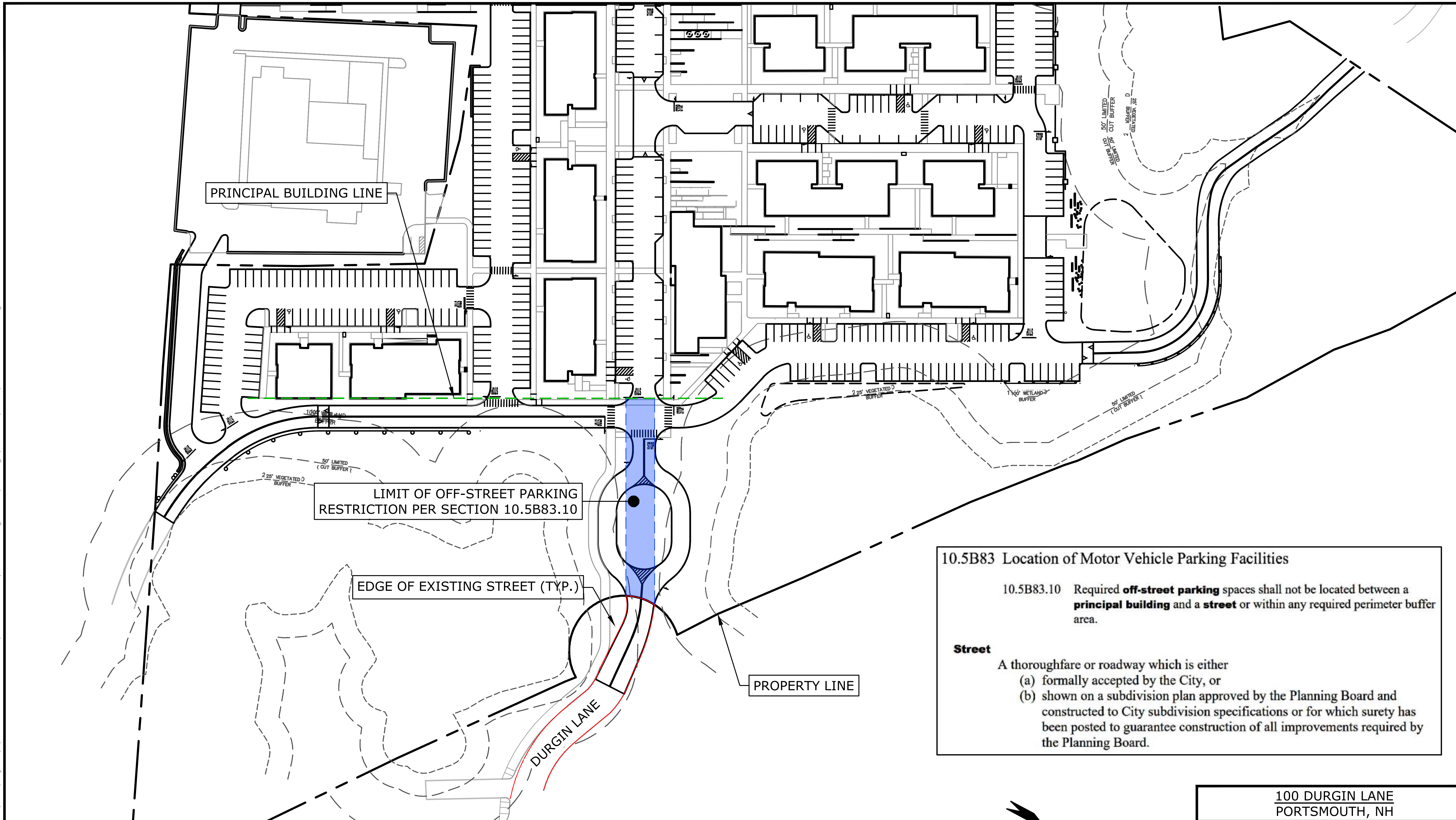
PROPOSED MULTI-FAMILY DEVELOPMENT
DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

FIRE TRUCK TURNING EXHIBIT 3

Tighe&Bond

OCTOBER 23, 2024
E5071-001-FIGS.dwg

Last Save Date: October 21, 2024 5:12 PM By: BCURCIO
Plot Date: Monday, October 21, 2024 Plotted By: Benjamin Curcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg Layout Tab: FIRE 3



10.5B83 Location of Motor Vehicle Parking Facilities

10.5B83.10 Required **off-street parking** spaces shall not be located between a **principal building** and a **street** or within any required perimeter buffer area.

Street

A thoroughfare or roadway which is either
(a) formally accepted by the City, or
(b) shown on a subdivision plan approved by the Planning Board and constructed to City subdivision specifications or for which surety has been posted to guarantee construction of all improvements required by the Planning Board.

LEGEND

(red line)	EXISTING STREET
(green dashed line)	PRINCIPAL BUILDING LINE
(blue dashed box)	LIMIT OF OFF-STREET PARKING RESTRICTION PER 10.5B83.10

NOTE: THE INTENT OF THIS FIGURE IS TO DEMONSTRATE COMPLIANCE WITH SECTION 10.5B83.10 OF THE CITY OF PORTSMOUTH ZONING ORDINANCE ("LOCATION OF MOTOR VEHICLE PARKING FACILITIES")

100 DURGIN LANE
PORTSMOUTH, NH

ZONING EXHIBITS

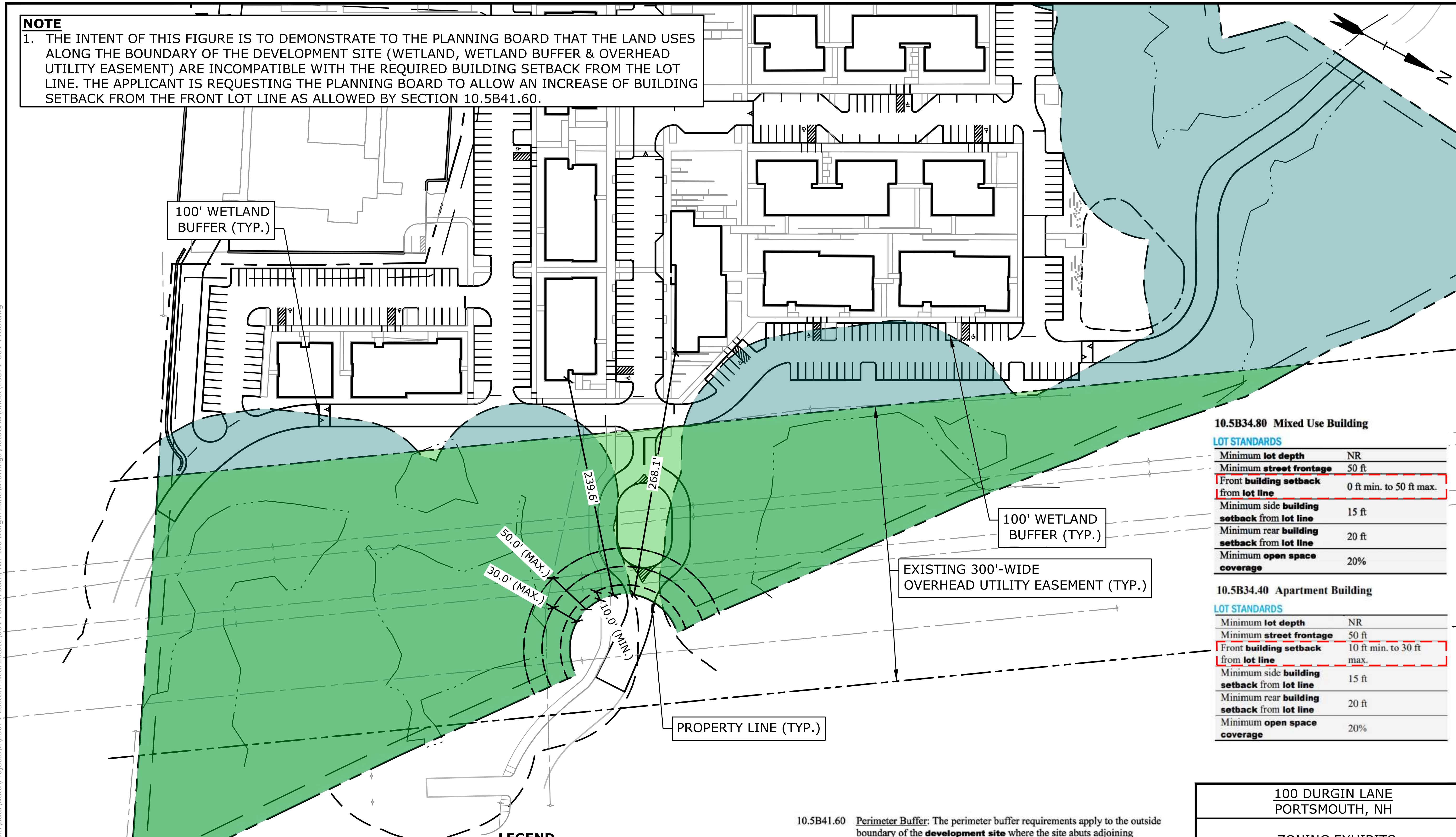
LOCATION OF MOTOR VEHICLE PARKING FACILITIES

DATE: 10/23/2024
SCALE: AS SHOWN
FIGURE: 1 OF 1

Tighe&Bond

NOTE

1. THE INTENT OF THIS FIGURE IS TO DEMONSTRATE TO THE PLANNING BOARD THAT THE LAND USES ALONG THE BOUNDARY OF THE DEVELOPMENT SITE (WETLAND, WETLAND BUFFER & OVERHEAD UTILITY EASEMENT) ARE INCOMPATIBLE WITH THE REQUIRED BUILDING SETBACK FROM THE LOT LINE. THE APPLICANT IS REQUESTING THE PLANNING BOARD TO ALLOW AN INCREASE OF BUILDING SETBACK FROM THE FRONT LOT LINE AS ALLOWED BY SECTION 10.5B41.60.



10.5B34.80 Mixed Use Building

LOT STANDARDS

Minimum **lot depth**	NR
Minimum **street frontage**	50 ft
Front **building setback** from **lot line**	0 ft min. to 50 ft max.
Minimum side **building setback** from **lot line**	15 ft
Minimum rear **building setback** from **lot line**	20 ft
Minimum **open space coverage**	20%

10.5B34.40 Apartment Building

LOT STANDARDS

Minimum **lot depth**	NR
Minimum **street frontage**	50 ft
Front **building setback** from **lot line**	10 ft min. to 30 ft max.
Minimum side **building setback** from **lot line**	15 ft
Minimum rear **building setback** from **lot line**	20 ft
Minimum **open space coverage**	20%

LEGEND

WETLAND BUFFER AREA

OVERHEAD UTILITY EASEMENT AREA

10.5B41.60 Perimeter Buffer: The perimeter buffer requirements apply to the outside boundary of the **development site** where the site abuts adjoining properties that are not part of the **development site**, but not along the primary **street frontage**. In addition to the minimum perimeter buffer required, the Planning Board may require **landscaping**, fencing, or an increase in the **building setback** from **lot lines** where adjacent land **uses** may be incompatible. Perimeter buffer requirements supersede **parking setback** requirements and **building setbacks** from **lot lines** requirements for individual **building** types.

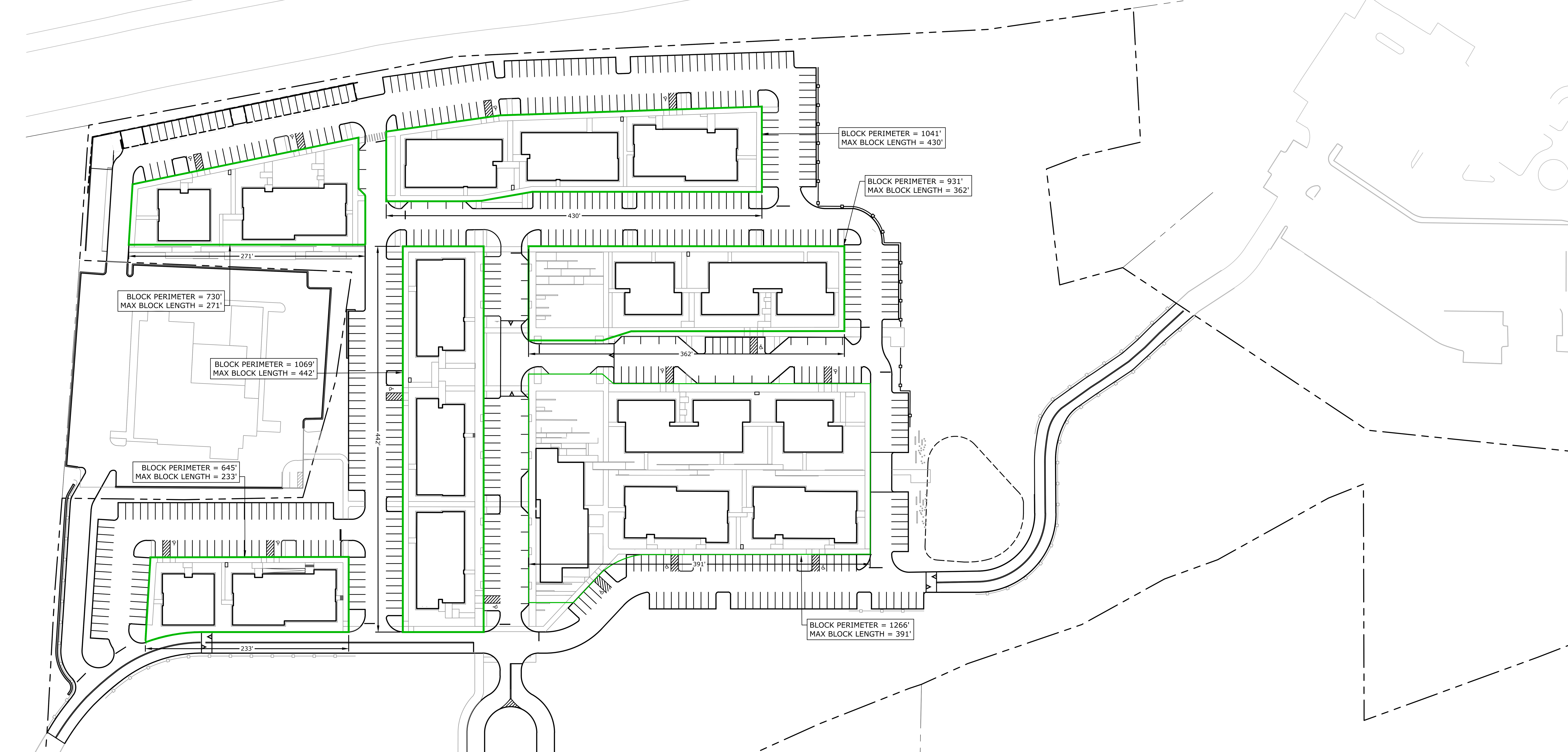
100 DURGIN LANE
PORTSMOUTH, NH

ZONING EXHIBITS

FRONT BUILDING SETBACK

DATE: 10/23/2024
SCALE: AS SHOWN
FIGURE: 1 OF 1

Tighe&Bond



DEVELOPMENT STANDARDS

Minimum **development site area**	10,000 sf
Minimum site width	75 ft
Minimum site depth	100 ft
Minimum perimeter buffer	75 ft from a Residential District, Mixed Residential District, or Character District 4-L1
Maximum **development block** dimensions	**block** length 500 ft; **block** perimeter 1,500 linear ft
Maximum **building coverage**	50%
Minimum **open space coverage**	20%
Community space types	**greenway, park, pocket park, playground, recreation field or court, common or green, community garden, square, plaza**

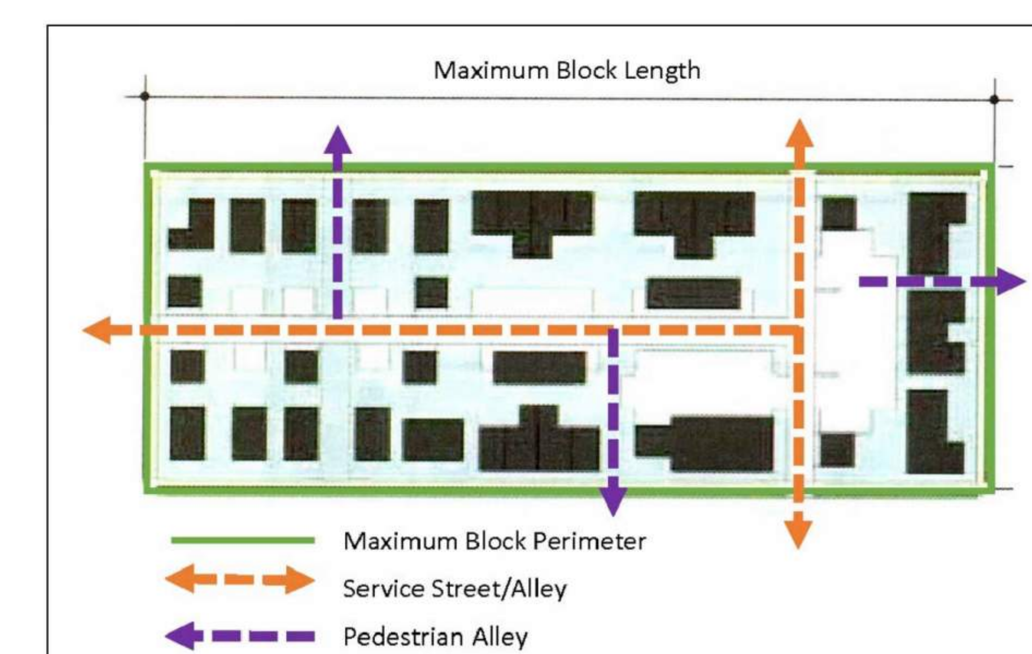


Figure 10.541.70 – Development Block Diagram

NOTE: THE INTENT OF THIS FIGURE IS TO DEMONSTRATE COMPLIANCE WITH THE MAXIMUM DEVELOPMENT BLOCK DIMENSIONS OF SECTION 10.5B41.70 OF THE CITY OF PORTSMOUTH ZONING ORDINANCE ("DEVELOPMENT BLOCK STANDARDS").

BLOCK PERIMETER

Tighe&Bond
www.tighebond.com
177 Corporate Drive
Portsmouth, NH 03801
(603) 433-8818

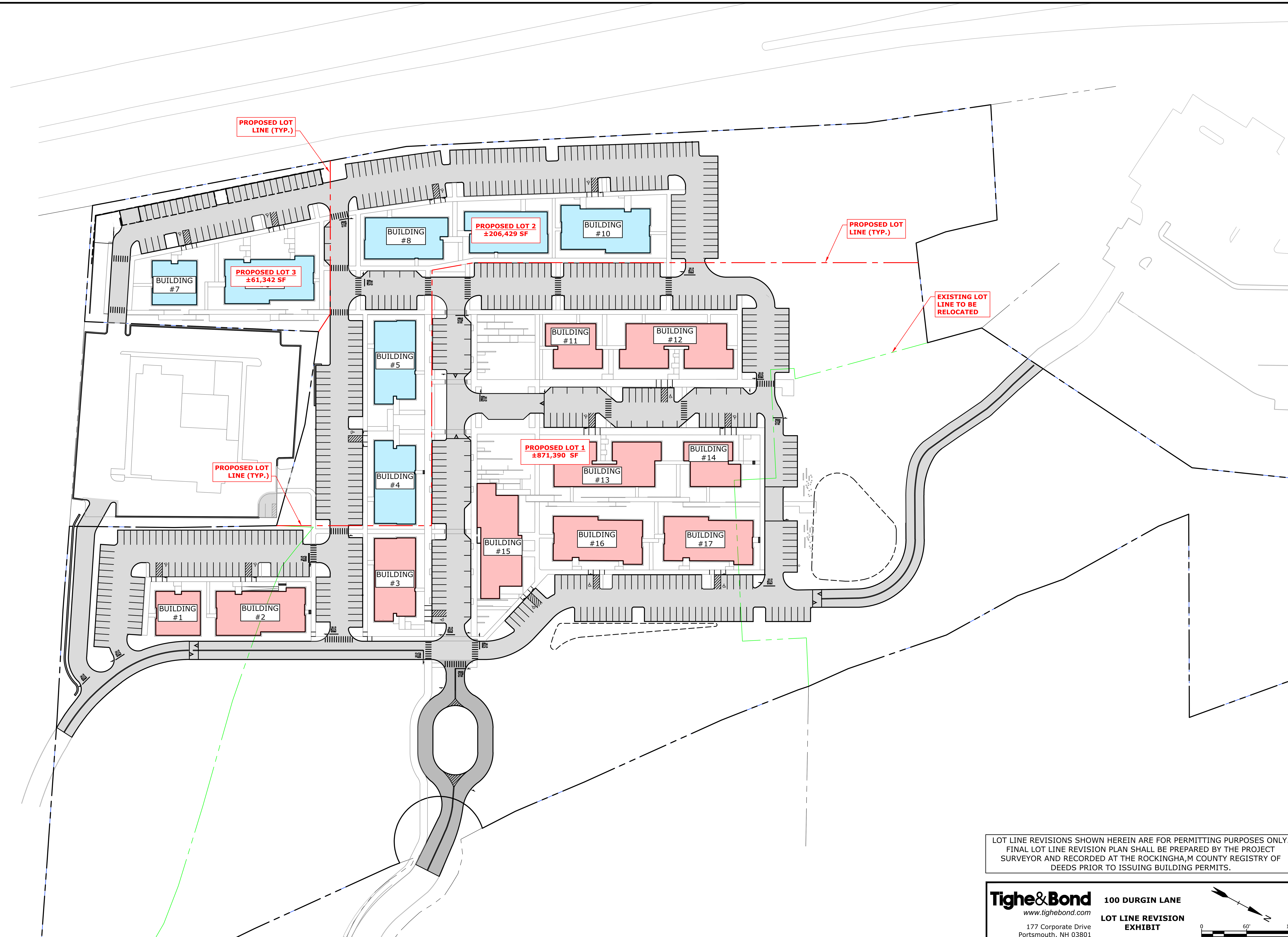
100 DURGIN LANE

DEVELOPMENT BLOCK STANDARDS EXHIBIT

DATE: 10/23/2024

0 60' 120'
GRAPHIC SCALE

Last Saved Date: 10/21/2024
Plotted On:Oct 21, 2024-6:40pm By: BCurcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg



LOT LINE REVISIONS SHOWN HEREIN ARE FOR PERMITTING PURPOSES ONLY. FINAL LOT LINE REVISION PLAN SHALL BE PREPARED BY THE PROJECT SURVEYOR AND RECORDED AT THE ROCKINGHA,M COUNTY REGISTRY OF DEEDS PRIOR TO ISSUING BUILDING PERMITS.

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www.tighebond.com
177 Corporate Drive
Portsmouth, NH 03801
(603) 433-8818

100 DURGIN LANE

LOT LINE REVISION EXHIBIT

DATE: 10/23/2024

0 60' 120'
GRAPHIC SCALE

Last Saved Date: 10/21/2024
Plotted On:Oct 21, 2024-6:26pm By: BCurcio
T&B File Location: \\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-FIGS.dwg

LEGEND

EXISTING ACCESS EASEMENT 1 BOOK 5498, PAGE 2502	EXISTING ACCESS, PARKING, UTILITY, SIGNAGE EASEMENT (APPROXIMATE) BOOK 3102, PAGE 397 | BOOK 3102, PAGE 400 | BOOK 3202 PAGE 2462
EXISTING ACCESS EASEMENT 2 BOOK 5498, PAGE 2502	EXISTING ACCESS EASEMENT THROUGH MAP 238 LOT 20 (APPROXIMATE) BOOK 4707, PAGE 1682 | BOOK 4875, PAGE 1439
EXISTING ACCESS EASEMENT 3 BOOK 3102, PAGE 381 | BOOK 3160, PAGE 2033	EXISTING SEWER EASEMENT BOOK 3102, PAGE 379
EXISTING SLOPE AND LANDSCAPE EASEMENT BOOK 3160, PAGE 2046	EXISTING REAL ESTATE OPERATION AGREEMENT EASEMENT BOOK 3114, PAGE 601
EXISTING UTILITY EASEMENT 1 BOOK 3160, 2039	EXISTING CONSERVATION EASEMENT BOOK 3192, PAGE 282
EXISTING ACCESS, DRAINAGE, & UTILITY EASEMENT 1 BOOK 2956, PAGE 2205 | BOOK 3160, PAGE 2051	EXISTING 300'-WIDE UTILITY EASEMENT BOOK 2972, PAGE 1422
EXISTING UTILITY AND DRAINAGE EASEMENT 1 BOOK 2956, PAGE 2205 | BOOK 3160, PAGE 2051	

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100 DURGIN LANE

EXISTING EASEMENT EXHIBIT

DATE: 10/16/2024

N

0 60' 120'
GRAPHIC SCALE

Last Saved Date: 6/25/2024
Plotted On:Jun 27, 2024-11:16am By: BCurcio
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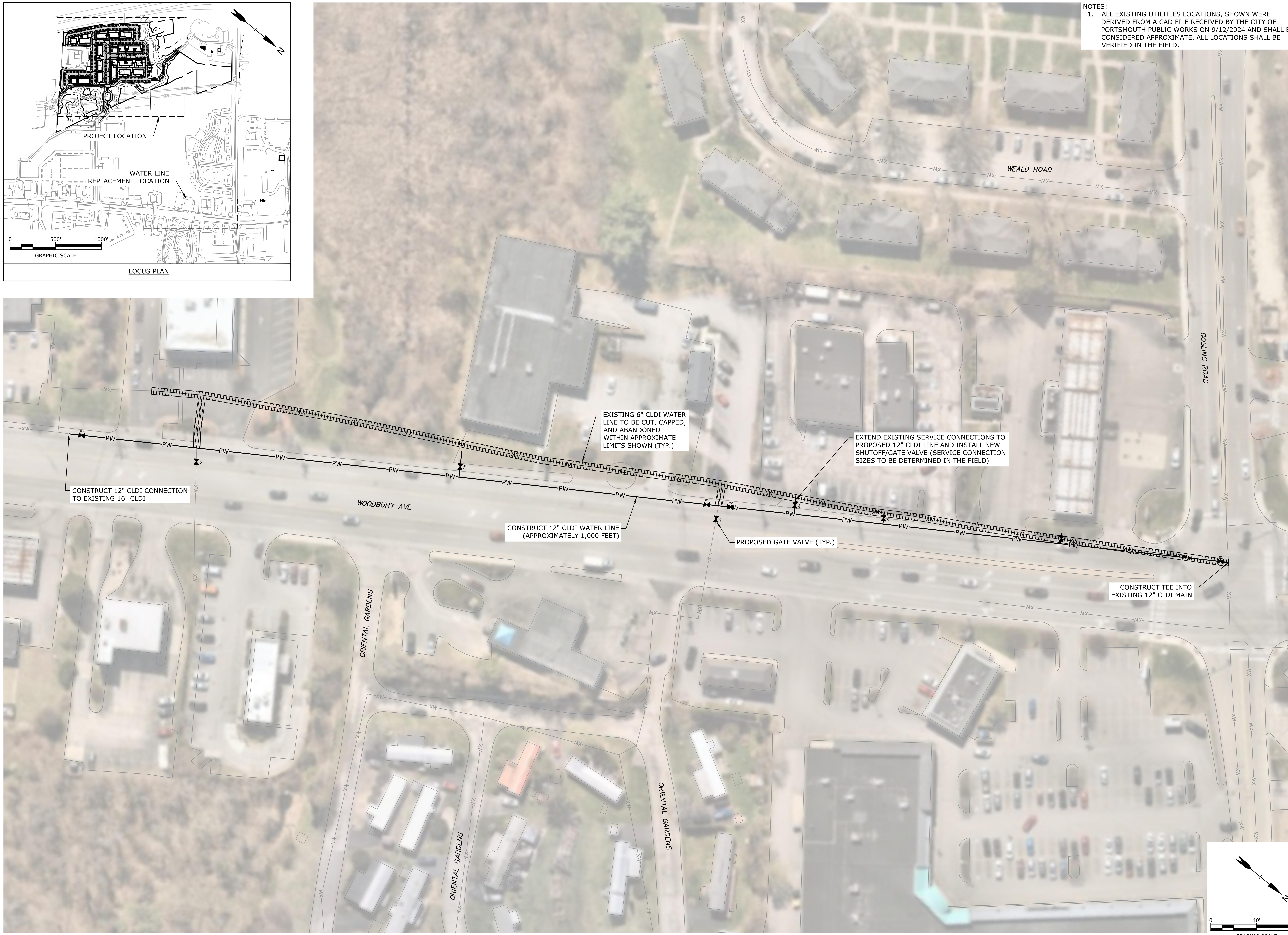
NOTES:
1. ALL EXISTING UTILITIES LOCATIONS, SHOWN WERE DERIVED FROM A CAD FILE RECEIVED BY THE CITY OF PORTSMOUTH PUBLIC WORKS ON 9/12/2024 AND SHALL BE CONSIDERED APPROXIMATE. ALL LOCATIONS SHALL BE VERIFIED IN THE FIELD.



Tighe&Bond

SCHEMATIC DRAWINGS

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

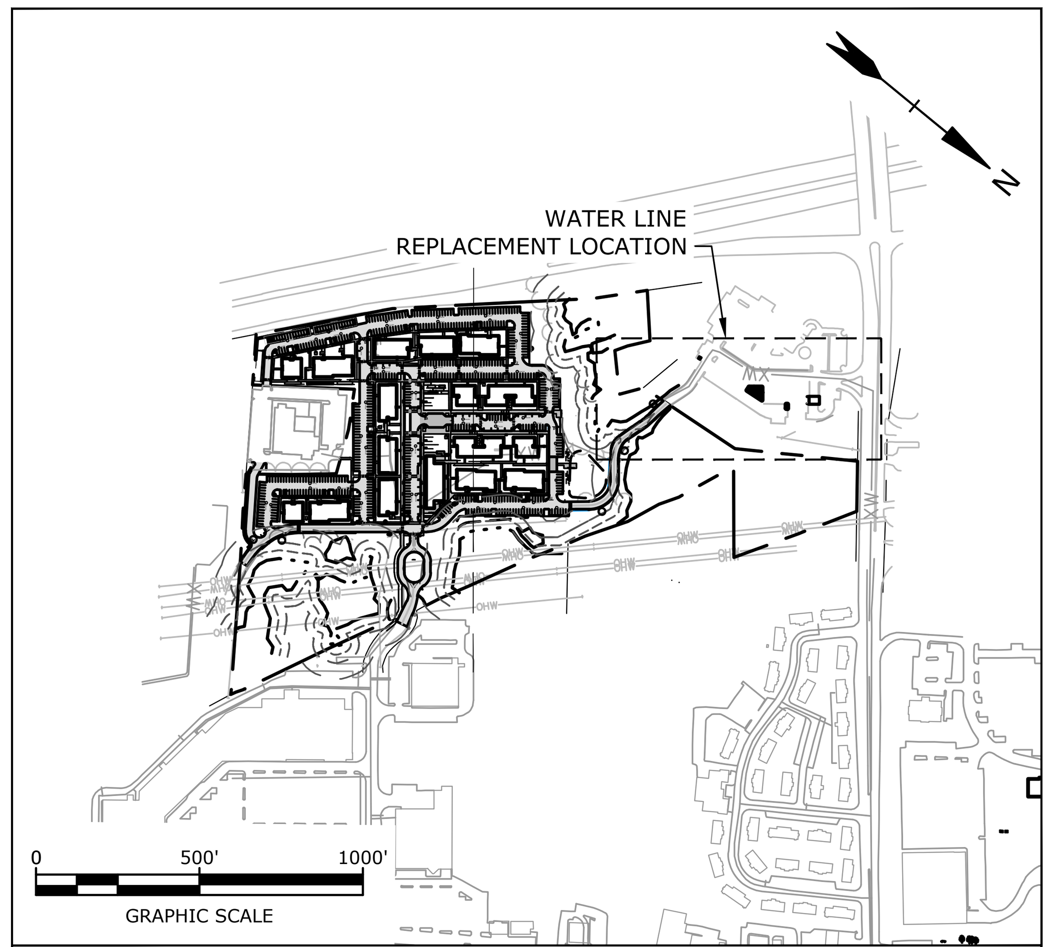
PROJECT NO:	E5071-001
DATE:	10/3/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

WOODBURY AVE
WATER LINE REPLACEMENT

SCALE: AS SHOWN

1 OF 2

Last Saved: 10/2/2024
Plotted On:Oct 02, 2024-2:58pm By: NWilcox
Tighe & Bond:F:\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg



LOCUS PLAN

NOTES:

1. ALL EXISTING UTILITIES LOCATIONS, SHOWN WERE DERIVED FROM A CAD FILE RECEIVED BY THE CITY OF PORTSMOUTH PUBLIC WORKS ON 9/12/2024 AND SHALL BE CONSIDERED APPROXIMATE. ALL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

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SCHEMATIC DRAWINGS

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

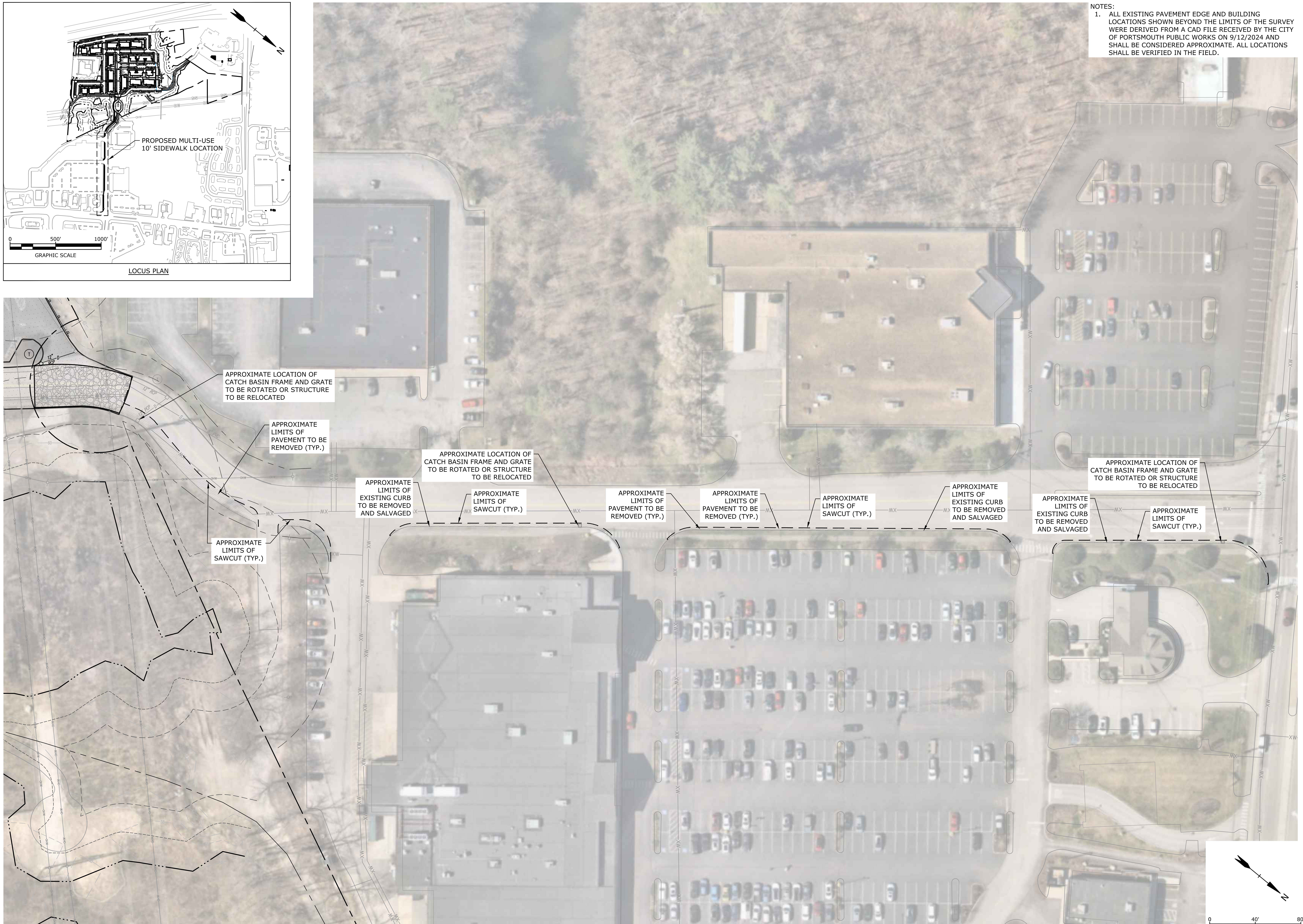
100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

PROJECT NO:	E5071-001
DATE:	10/3/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

6" WATER LINE REPLACEMENT

SCALE: AS SHOWN

Last Saved: 10/2/2024
Plotted On:Oct 02, 2024-4:52pm By: NWilcox
Tighe & Bond:F:\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg



NOTES:
1. ALL EXISTING PAVEMENT EDGE AND BUILDING LOCATIONS SHOWN BEYOND THE LIMITS OF THE SURVEY WERE DERIVED FROM A CAD FILE RECEIVED BY THE CITY OF PORTSMOUTH PUBLIC WORKS ON 9/12/2024 AND SHALL BE CONSIDERED APPROXIMATE. ALL LOCATIONS SHALL BE VERIFIED IN THE FIELD.

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SCHEMATIC DRAWINGS

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

PROJECT NO:	E5071-001
DATE:	10/4/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

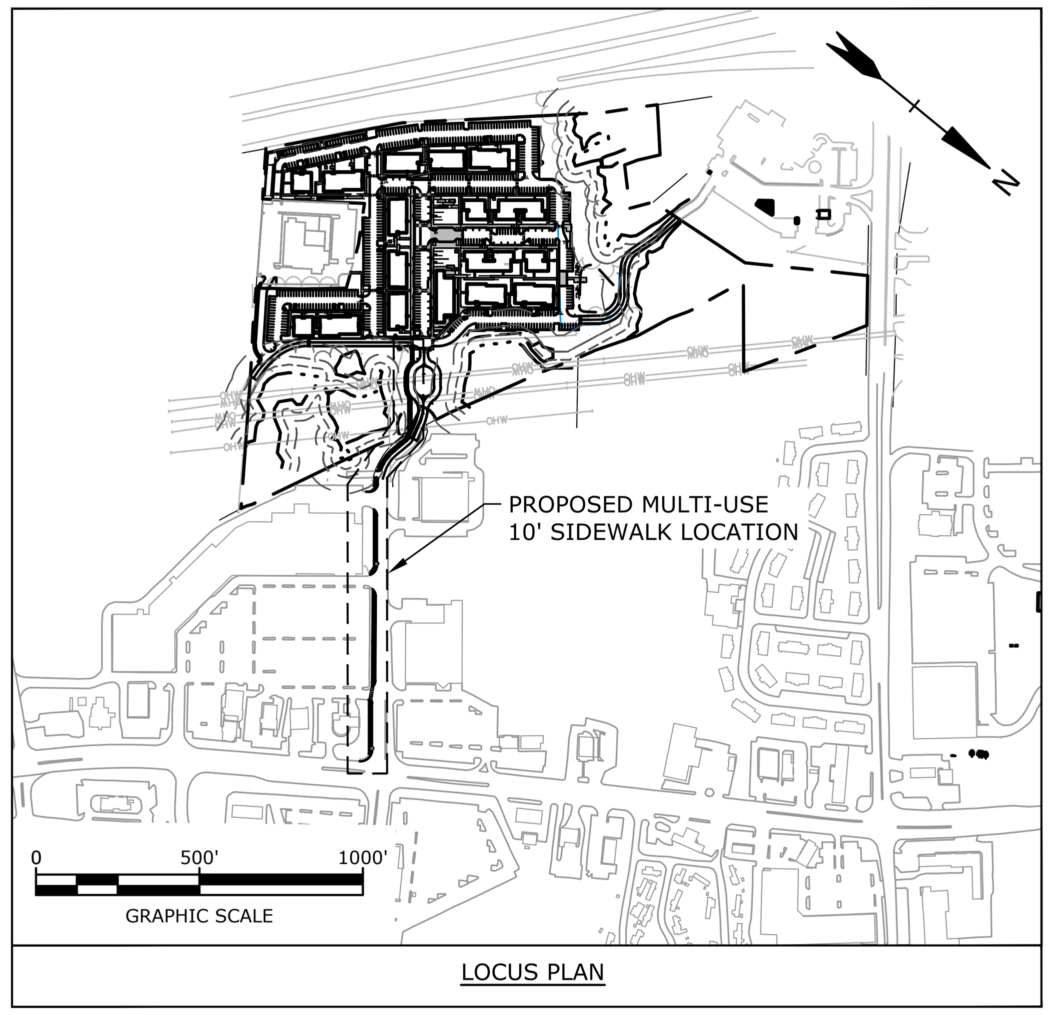
10' MULTI-USE SIDEWALK DEMO PLAN

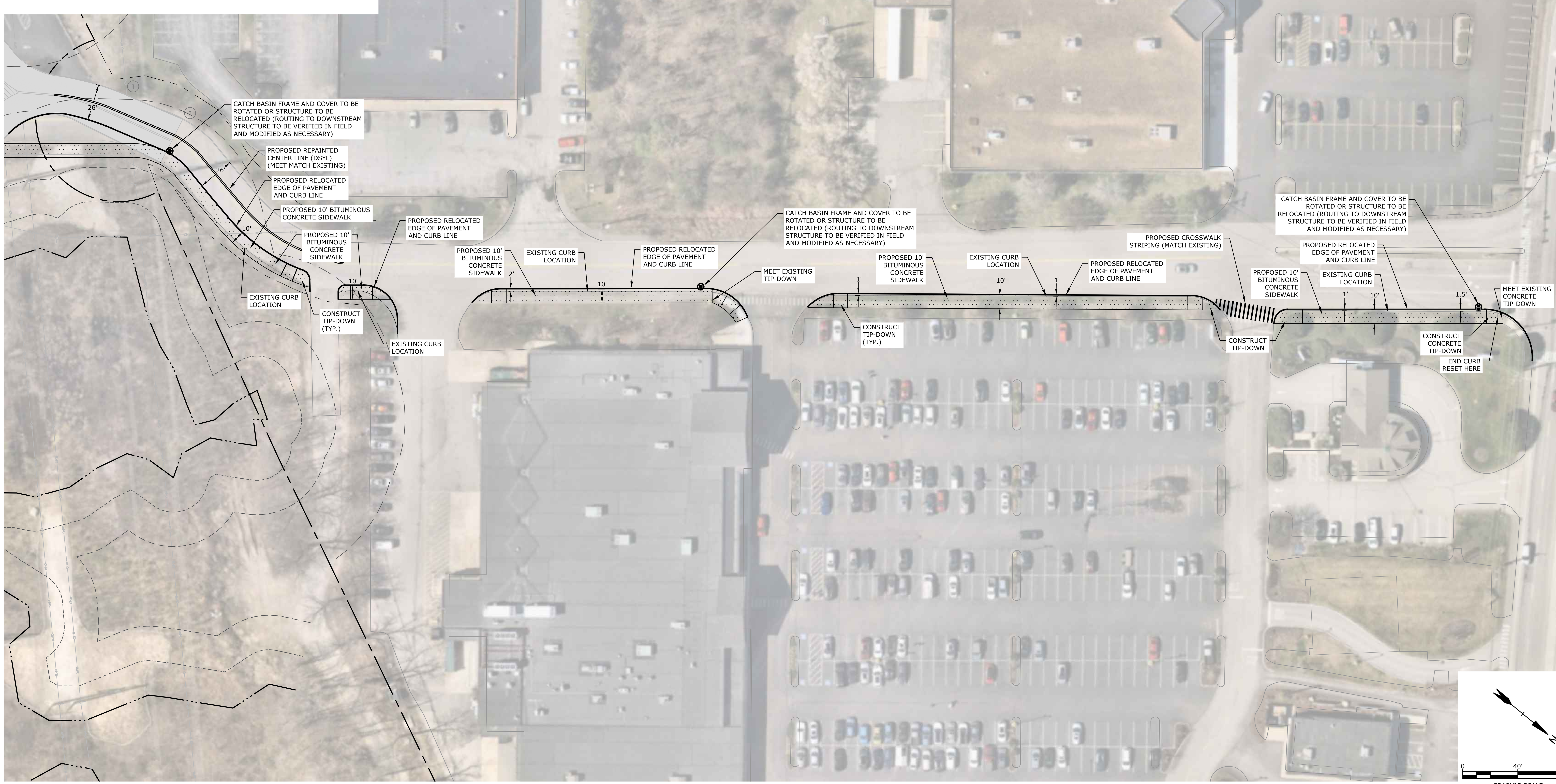
SCALE: AS SHOWN

EXHIBIT 1

Last Saved: 10/4/2024
Plotted On:Oct 04, 2024-10:53am By: NWilcox
Tighe & Bond:F:\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg

NOTES:
1. ALL EXISTING PAVEMENT EDGE AND BUILDING LOCATIONS SHOWN BEYOND THE LIMITS OF THE SURVEY WERE DERIVED FROM A CAD FILE RECEIVED BY THE CITY OF PORTSMOUTH PUBLIC WORKS ON 9/12/2024 AND SHALL BE CONSIDERED APPROXIMATE. ALL LOCATIONS SHALL BE VERIFIED IN THE FIELD.





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SCHEMATIC DRAWINGS

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

PROJECT NO:	E5071-001
DATE:	10/4/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

10' MULTI-USE SIDEWALK SITE PLAN

SCALE: AS SHOWN

EXHIBIT 2

Last Saved: 10/4/2024
Plotted On:Oct 04, 2024-10:53am By: NWilcox
Tighe & Bond:F:\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg

ALA
ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS	DATE

ISSUE DATE

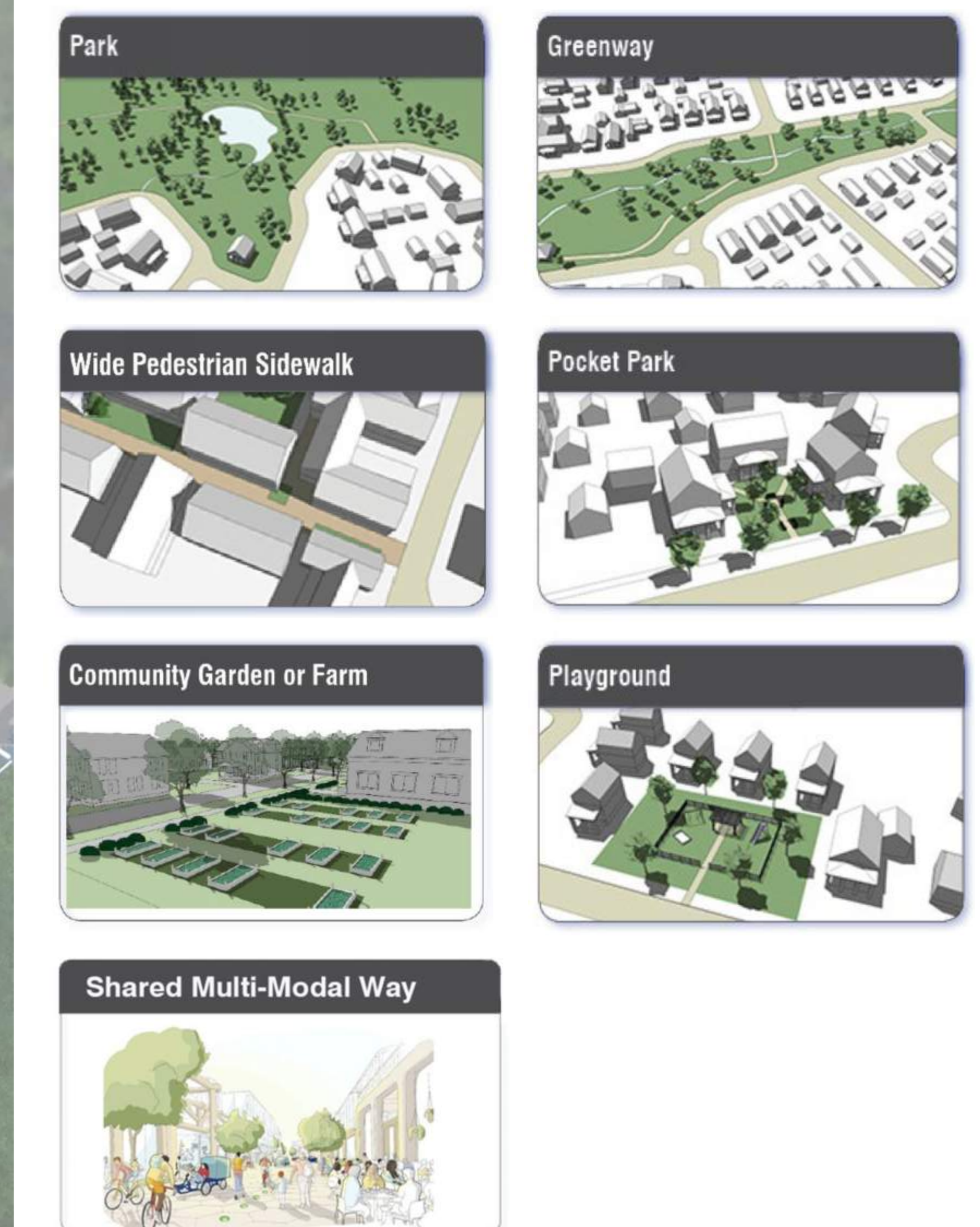
October 23, 2024

SHEET TITLE

RENDERED PLAN

SHEET INFORMATION

POTENTIAL COMMUNITY SPACE



PROPOSED COMMUNITY SPACE

		REQUIRED	PROVIDED
	POTENTIAL RESIDENT SOCIAL SPACES		
	POTENTIAL COMMUNITY SPACE (ACTIVE)	113,915 SF (10%) (2.62 ACRES)	120,818 SF (10.6%) (2.77 ACRES)
	POTENTIAL COMMUNITY SPACE (PASSIVE)		
	TOTAL DEVELOPMENT LOT 1,139,156 SF (26.15 ACRES)		
	COMMUNITY SPACE CONNECTOR		
	WETLAND BUFFER: 50'-100'		
	WETLAND BUFFER: 25'-50'		
	WETLAND BUFFER: 0'-25'		

0 30 60 120

ALA
ACETO LANDSCAPE ARCHITECTS
207 221 3390 | ACETOLA.COM

SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS	DATE

ISSUE DATE

October 23, 2024

SHEET TITLE

COMMUNITY SPACE EXHIBIT

SHEET INFORMATION

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PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS	DATE

ISSUE DATE

October 23, 2024

SHEET TITLE

PLANTING IRRIGATION / HYDROZONE DIAGRAM

SHEET INFORMATION

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SEAL

PROJECT TITLE

100 Durgin Ln

PREPARED FOR

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NH

REVISIONS	DATE

ISSUE DATE

October 23, 2024

SHEET TITLE

WAYFINDING DIAGRAM

SHEET INFORMATION

intertek
Total Quality. Assured.

50 Summer Street
Boston, Massachusetts 02110

Tel 857-523-6576
intertek.com/building

Intertek Project No. R2107.01

October 23, 2024

Brett Bentson, AIA, LEED AP
Principal
Utile
115 Kingston Street
Boston, MA 02111

RE: Highway Noise Overlay District Analysis
100 Durgin Lane
Portsmouth, New Hampshire

Dear Brett:

We have completed a noise analysis of the 100 Durgin Lane development per the requirements of *Section 10.670 of Highway Noise Overlay District (HNOD) within the City of Portsmouth Zoning Ordinance*[1]. This report provides the results of the analysis as listed in *Section 10.675*.

Project Understanding

The project consists of a 26-acre redevelopment with about half of the new development planned to be housing with approximately 10,000 sq. ft. of amenity space within one of the buildings, parking, and open space. The housing will consist of 17 4-story elevator-serviced and 3-story walk-up buildings with a total of 360 market-rate rental apartments. The buildings are planned to be a standard wood-framed construction.

The 100 Durgin Lane development also includes common outdoor areas for the people to enjoy the outdoors. A layout of the development is shown in *Figure 1*.

The project will be adjacent to State Route 4, which is a multi-lane highway, directly west of the site. The Zoning Ordinance for the City of Portsmouth includes a Highway Noise Overlay District. The requirements of this ordinance will apply to this project and are discussed below.

Applicable Criteria

The City of Portsmouth Highway Noise Overlay District includes sound level limits for Noise Sensitive Land Uses within *Section 10.673. These Standards are summarized in Table 1*.

TABLE 1. CITY OF PORTSMOUTH HIGHWAY NOISE OVERLAY DISTRICT STANDARDS (SECTION 10.673)	
Structures and Uses	**Loudest Traffic Hour Sound Level**
Interior of dwelling, institutional residence or residential care facility, hospital or lodging establishment	45 dBA
Interior of other Noise Sensitive Use	55 dBA

[1] City of Portsmouth, New Hampshire Zoning Ordinance, Adopted by Portsmouth City Council December 21, 2009, effective date January 1, 2010, as amended through August 7, 2023.

Uses with outdoor activity areas measured at edge of the active use area closest to the highway	65 dBA

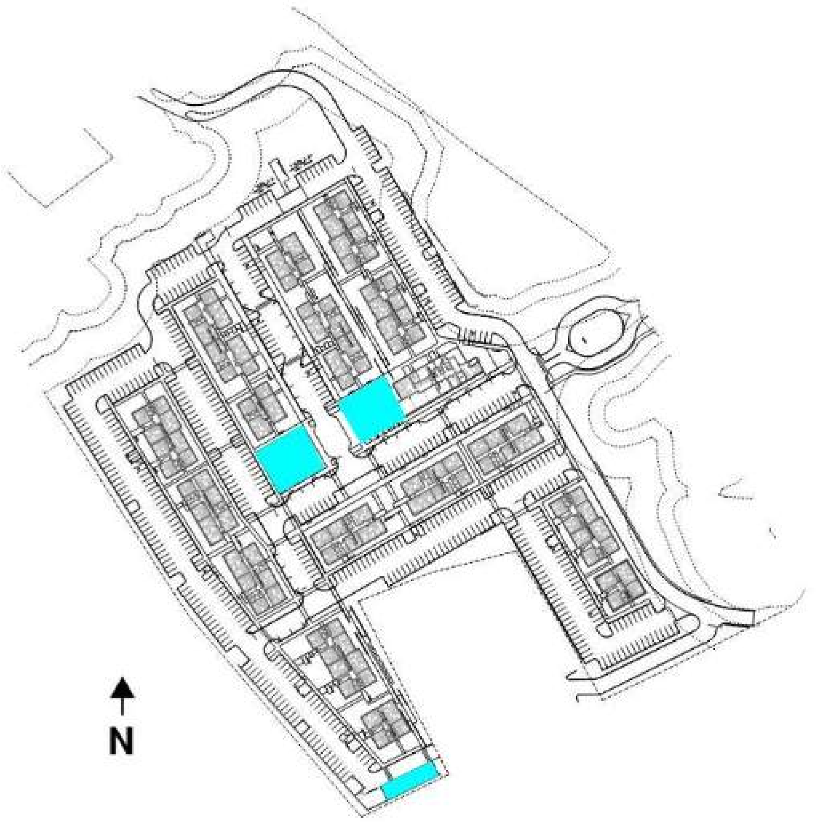

Figure 1. The proposed layout of 100 Durgin Lane with common outdoor areas (highlighted in blue). State Route 4 is southwest of the site.

The 100 Durgin Lane project will need to achieve 45 dBA within the residential dwellings and 65 dBA for outdoor activity areas. To compare the exterior sound predictions with the interior sound level goal for the residential dwellings, we note that residential buildings have historically been assumed to provide a sound level reduction of 20 dBA, meaning that the allowable exterior sound level would also be 65 dBA without requiring noise mitigation.

Noise Analysis

In accordance with the Highway Noise Overlay District requirements, we conducted a noise analysis of the proposed project using Federal Highway Administration (FHWA) Transportation Noise Model (TNM) Version 2.5 computer software. The following describes the methodology of the modeling, results, and mitigation.

METHOD

The TNM software included three-dimensional geographical representation of roadways within the vicinity, topography, ground types, tree zones, existing buildings on neighboring land uses, and the future project buildings.

Table 2 lists the roadways included in the analysis, along with Annual Average Daily Traffic (AADT) acquired from the New Hampshire Department of Transportation website[2]. Using guidelines from the U.S. Department of Housing and Urban Development (HUD)[3], we assumed 85% of the AADT is related to daytime traffic between the hours of 7:00 a.m. and 10:00 p.m. (15 hours total) to obtain traffic volumes for a single hour to enter into the analysis.

TABLE 2. ROADWAYS AND ANNUAL AVERAGE DAILY TRAFFIC (AADT) COUNTS INCLUDED IN THE NOISE ANALYSIS

North/South Roadways	Year Data Collected	NB Personal Automobiles	NB Heavy Trucks	SB Personal Automobiles	SB Heavy Trucks
Highway 4	2022	32,430	2,180	29,299	1,971
AF Brady Off Ramp	2022	1,897	127	-	-
AF Brady On Ramp	2022	1,547	104	-	-
Newington Street / Gosling Road Off Ramp	2022	6,006	404	4,263	286
Newington St / Gosling Road On Ramp	2022	3,739	252	4,972	335
East/West Roadways	**Year Data Collected**	**EB Personal Automobiles**	**EB Heavy Trucks**	**WB Personal Automobiles**	**WB Heavy Trucks**
Newington Street	2022	503*	34*	503*	34*
Gosling Road	2022	528	36	463	31

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
*Directional AADT were not available, so the total AADT was divided evenly between the two directions.

Figure 2 is a graphical representation of the noise analysis model in plan view. In TNM, rows of buildings are typically modeled as "building rows" where the input is the average height of the buildings and the percentage of blockage provided by the buildings (typically anywhere from 20% to 80%) is included. For our analysis, we modeled the first row of buildings at 100 Durgin Lane with individual barriers representing each building to get a more detailed assessment of the noise exposure over the façades of the buildings and vicinity. Barriers were also used to represent the following buildings on other land use properties:

- South of 100 Durgin Lane
    - Home Depot
    - Hampton Inn
- North of 100 Durgin Lane
    - New Frontier Church
    - Motel 6

Building rows were used to represent the buildings at the Gosling Meadows development north of the site.

The model included a 6-foot high sound barrier proposed in the southwest corner of the project with portions along the west side that were 7 feet tall, representing the combined mitigation of the sound barrier and the car ports.

[2] https://nhdot.public.ms2soft.com/tcds/tsearch.asp?loc=Nhdot&mod=TCDS
[3] "The Noise Guidebook," U.S. Department of Housing and Urban Development, March 2009.

The default ground type was "lawn" while ground zones were included in the model to represent paved parking lots and driveways on the future site, as well as parking lots and driveways on properties in the vicinity, represented by the black enclosed areas within Figure 2.

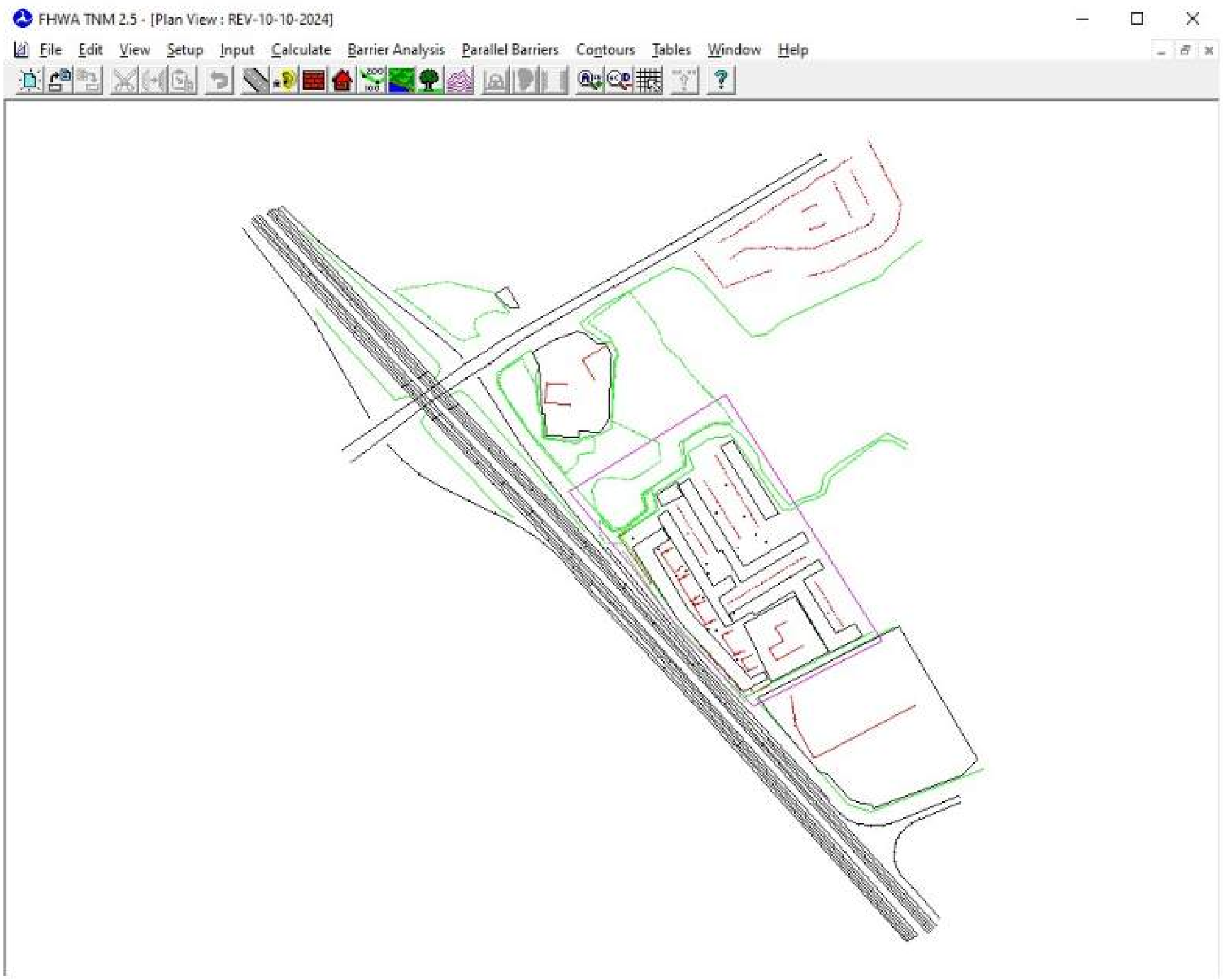

Figure 2. Graphical representation of the TNM Noise Model for 100 Durgin Lane.

RESULTS

Noise levels from the Route 4 traffic to the proposed development were calculated at twenty-six individual receiver locations located throughout the Project site, as numbered in Figure 3. The locations were selected to represent the noise exposure at the future Project buildings. Receiver numbers 1, 10, 13, 19, 23 and 26 were located within the planned open common areas. Calculations were made for all receivers at a height of five feet above the local grade. It is not uncommon for upper floors to have higher noise levels than lower floors due to increased exposure to the roadways at those higher elevations. Therefore, additional calculations were made at the mid-level elevations of the top floors of the buildings. The calculated noise levels at all receivers are listed in Table 3.

Figure 3. Receivers, numbered 1 through 26, included in the noise analysis.

TABLE 3. PREDICTED UNADJUSTED NOISE LEVELS FOR INDIVIDUAL RECEIVERS AT 100 DURGIN LANE.			
Prediction Location (Description)	**HNOD dBA Goal***	**dBA @ 5 ft Above Grade**	**dBA @ Mid-level of Top Floor**
Receiver 01 (Building A2)	65	67	72
Receiver 02 (Between Building A2&B4)	65	66	72
Receiver 03 (Between Buildings B4&E4)	65	65	71
Receiver 04 (Building E4)	65	67	72
Receiver 05 (Between Buildings E4&E5 Front)	65	67	71
Receiver 06 (Between Buildings E4&E5 Back)	65	58	63
Receiver 07 (Between Buildings E5&B5 Front)	65	67	70
Receiver 08 (Between Buildings E5&B5 Back)	65	60	65
Receiver 09 (Building B5)	65	67	70
Receiver 10 (not used in study)	-	-	-
Receiver 11 (Building C2)	65	54	61
Receiver 12 (Building D2)	65	59	64
Receiver 13 (Front Center Common Area)	65	51	-
Receiver 14 (Building E3)	65	56	63
Receiver 15 (Building E2)	65	55	59
Receiver 16 (Building E1)	65	53	57
Receiver 17 (Building D1)	65	52	57
Receiver 18 (Building C1)	65	52	58
Receiver 19 (Rear Center Common Area)	65	52	-
Receiver 20 (Between Buildings F&B2)	65	50	56
Receiver 21 (Building B2)	65	48	56
Receiver 22 (Building B3)	65	49	59
Receiver 23 (Building F, Common Building)	65	49	-
Receiver 24 (Building A1)	65	56	60
Receiver 25 (Building B1)	65	55	59
Receiver 26 (Dog Run)	65	65	-

*Exterior noise levels only

60, 65, and 70 dBA Noise Contours

Unadjusted 60, 65, and 70 dBA noise contours (without any mitigation) for the loudest traffic hour sound levels are overlayed upon the site diagram in Figure 4. The contours in the figure are based upon sound pressure levels calculated at an elevation of 5 feet, which is representative of noise impacts for receivers and building floors at the ground level. Based upon the results for individual receivers discussed above, the sound pressure levels of the contours can be assumed to increase approximately 1 dBA per building floor to represent the noise impacts at subsequent floor levels above the ground level floor.

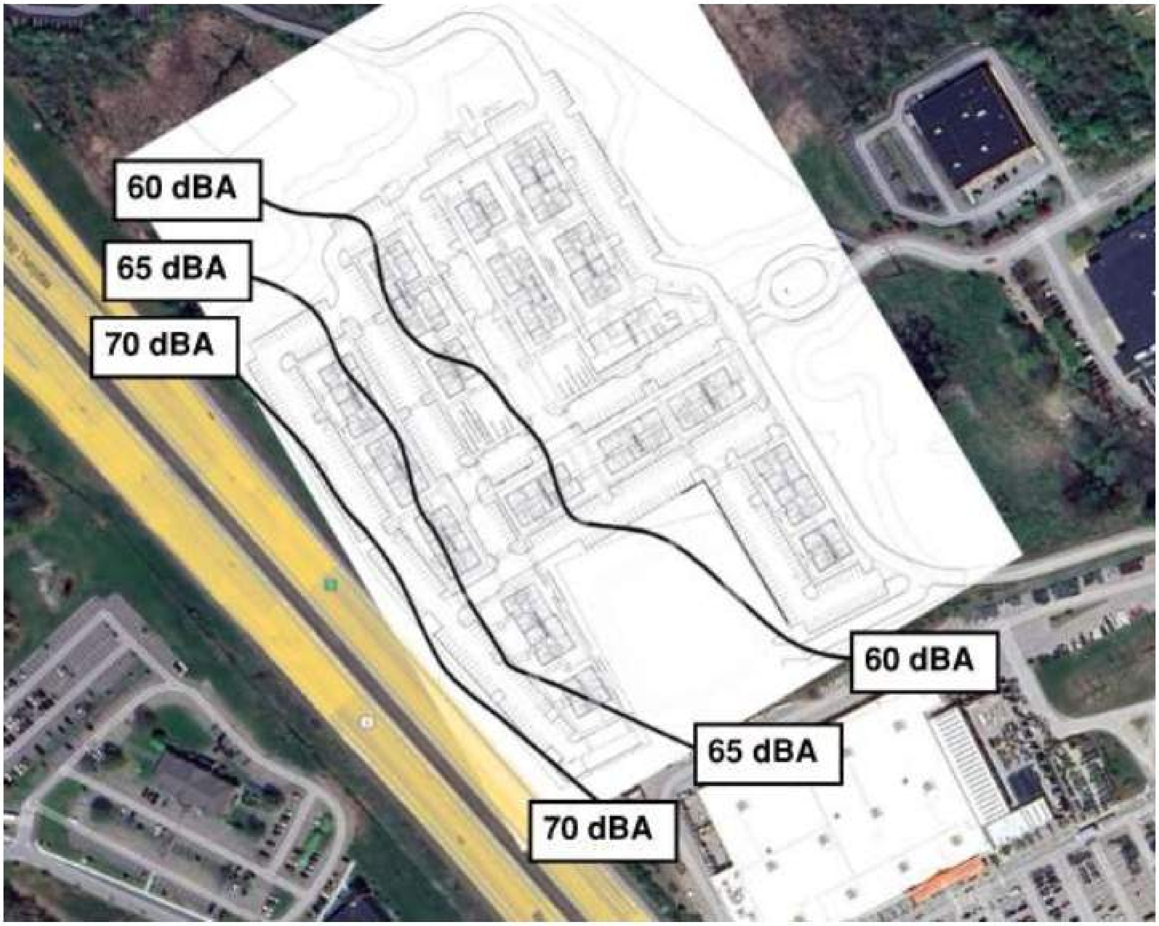

Figure 4. Unadjusted 60, 65, and 70 dBA noise contours (5 ft elevation) overlayed upon the Project site diagram based upon Year 2022 traffic data.

IMPACTS AND MITIGATION

The predicted sound pressure levels reported in Table 3 and the contours shown in Figure 4 are reported for the exterior sound exposure at the designated locations. The following sections discuss the noise impacts and mitigation for the outdoor activity areas and the residential dwellings.

Outdoor Activity Areas

The City of Portsmouth Zoning Ordinance defines Outdoor Activity Areas as "residential yards, gardens, patios, pools, etc.; private and public play areas." The 100 Durgin Lane development is planning to provide several common outdoor areas for the community as shown in Figure 1. The sound pressure level goal for these outdoor areas is 65 dBA.

The TNM predictions for individual receivers, as listed in Table 3, and the noise contours, shown in Figure 4, indicate that the central common outdoor areas will have sound levels that are less than 65 dBA at the edge closest to the highway and therefore do not require mitigation to meet the goal of 65 dBA for those areas.

The TNM prediction for an individual receiver at the edge of the Dog Run closest to the highway, listed in Table 3, indicates a sound level of 65 dBA while the noise contours in Figure 4 indicate a level that is greater than 65 dBA but less than 70 dBA. The contours provided by the TNM software lack sufficient detail to accurately indicate sound pressure levels for the Dog Run which is in close proximity to the car ports and the 6-foot sound barrier included at the southwest end of the project. Therefore, we find that the 65 dBA sound pressure level predicted at the individual receiver more accurately represents the sound pressure level at that area per the requirements of the Highway Overlay District. As a result, we conclude that no additional mitigation is required to meet the goal of 65 dBA for that area.

Residential Dwellings

The residential buildings of the 100 Durgin Lane development are predicted to have a range of sound level exposures from State Route 4. Most of the residential buildings (Locations 11 through 25) are predicted to have exterior sound level exposures of 64 dBA or less, whereas residences along the southwestern edge of the development are predicted to be exposed to a range of exterior sound levels from 60 to 72 dBA. As a reminder, the interior sound pressure level goal for residences is 45 dBA.

As discussed earlier in this report, residential buildings have historically been expected to provide 20 dBA of noise reduction, prior to modern building practices that focus on energy efficiency. This 20 dBA reduction is the value used by the various federal agencies, including FHWA and the FAA. This means that the predicted exterior sound levels of 65 dBA or less would result in interior sound levels that meet the 45 dBA interior sound level goal for the HNOD inside residential dwellings. Based on the sound level predictions, most of the residential buildings are exposed to sound levels that do not require any noise mitigation to meet the Highway Noise Overlay District interior sound level goal.

The anticipated exterior wall and window assemblies of the project and the higher range of sound exposures are discussed below.

Project Exterior Wall Assembly

The project is expecting to use an exterior wall assembly that consists of the following components (from exterior to interior):

- Fiber cement board and batten siding
- Drainage mat (cedar breather or similar)
- 7/16-inch Zip sheathing
- 2x8 wood stud framing
- Fiberglass batt insulation (R-30) in stud cavity
- 5/8-inch gypsum wallboard

Based on these components, we estimate this assembly will provide approximately OITC 30, which would provide a sound level reduction of approximately 28 dBA.

Project Window Assembly

The project is expecting that the exterior window assemblies will be a casement vent model Pella Impervia. Pella's product data indicates that this product has a range of OITC values from 24 to 32 depending on the glazing that is chosen.

Project Composite Exterior Envelope Assembly

The sound reduction provided by the exterior envelope for the residential dwellings will be proportional to the areas and the performance of exterior wall and window systems. This combined performance is referred to as the "composite" sound insulation. For this calculation, we have estimated that the windows make up no more than about 20% of the exterior envelope area. Using window glazing with a rating of

OITC 24 and the OITC 28 wall assembly, we calculate the composite exterior envelope rating to be OITC 27, which equates to a sound level reduction of 27 dBA.

Buildings with Predicted Sound Exposure above 65 dBA

Based on the OITC 27 composite exterior envelope performance, sound level exposures of up to 72 dBA are estimated to achieve the interior goal of 45 dBA.

With these planned constructions for this project, we find that the modern building envelope that this project is planning suffices for the "superinsulated" construction that the HNOD document suggests is needed to achieve the interior sound level of 45 dBA. We find that no further mitigation is needed to meet the requirements of the Highway Noise Overlay District.

We trust this provides the information that you need at this time. Please feel free to contact us by email or phone (James.Phillips@intertek.com, 510-697-9437 or Jeffrey.Fullerton@intertek.com, 857-523-6576) should you have any questions or require further information.

Sincerely,

Architectural Testing, Inc., an Intertek company

Digitally Signed by: James Phillips

Digitally signed by James E. Phillips
DN: C=US, E=james.phillips@intertek.com, O=Intertek-ATI, CN=James E. Phillips
Reason: I am the author of this document
Date: 2024.10.23 10:21:22-07'00'

Digitally Signed for: Jeffrey Fullerton by Michelle Swanson

James Phillips, MS, FASA
Senior Consultant
Building Science Solutions

Jeffrey Fullerton, INCE Bd. Cert., LEED AP BD+C
Department Manager, Acoustics
Building Science Solutions

JP/JF/mds

October 23rd, 2024

Portsmouth Planning Board

100 Durgin Lane
Portsmouth, NH

utile

Green Building Statement

Site / Landscape: This project is a redevelopment of an existing large chain "big box" retail use and associated parking lot, in proximity to additional shops and services along Durgin Lane and Woodbury Ave. The site design features footpaths and bike connections to and through the project to facilitate alternative transportation and provides distributed surface vehicle parking and indoor bike parking that meets the Portsmouth zoning code requirements.

Currently the site is predominantly impervious surface parking and building footprint. The proposed site plan reduces the impervious surface by approximately 17,323 SF, and distributes the required parking into smaller parcels separated by vegetated buffers. Stormwater will be managed by localized rain gardens near each parking zone. The landscape plan will be supportive of the existing ecosystem, utilizing swaths of low/no irrigation grasses and regionally appropriate shade and shrub trees. Additionally the project provides two acres of publicly accessible community green space.

Exterior Wall Systems: Although the final specifications of the exterior wall systems are still being developed, it will meet or exceed the 2021 IECC standards for energy efficiency utilizing either a continuous applied weather barrier or integral system with taped seams to provide excellent air sealing capabilities. The exterior cladding will be a mix of cement board panel and board and batten siding with portions of clear finish wood siding installed over a drainage mat in a ventilated rain screen system.

Window Systems: All window systems in the project will meet or exceed 2021 IECC standards for u-value, shading coefficient and solar heat gain coefficient, carefully selected and sized to provide ample daylight to the residents.

Roofing Systems: The roofing will primarily be a light colored, low-slope TPO membrane roofing system over continuous exterior insulation that meets or exceeds the code requirements.

General Systems: The proposed project will be an entirely electric project with no fossil fuels on site. Infrastructure will be provided for future electric vehicle charging and the project team will continue studying if some of these elements can be delivered "Day 1."

HVAC Systems: The dwelling units will be provided with individualized split electric heat pump systems for space heating and cooling which will be supplemented with individualized ERVs to provide filtered, pre-conditioned makeup air for improved indoor air quality.

Architecture & Planning
115 Kingston St. Boston, MA 02111
110 Union St. Providence, RI 02903
(617) 423-7200 utiledesign.com

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Plumbing Systems: Domestic hot water heating will be provided by electric domestic water heaters. The project will utilize low-flow plumbing fixtures.

Lighting Systems: Interior lighting systems will use LED fixtures and Occupancy sensors where required. Exterior lighting will be selected and located to minimize light trespass onto adjacent properties and will be energy efficient LED fixtures.

Appliances: All appliances for the project will be EnergyStar rated whenever possible.

Sincerely,

Brett Benston, AIA
Principal
Utile, Inc.

Site Signage Plan

A **Project Monument Sign**
Property Entrance

B **Vehicular Wayfinding** | Landmarks
Project Name
Hampton Inn
Gosling Road
Arthur F. Brady Drive
Woodbury Avenue

C **Vehicular Wayfinding** | Streets & Community Spaces
Project Streets A, B, C
Central Green
Leasing Office
Mail/ Deliveries

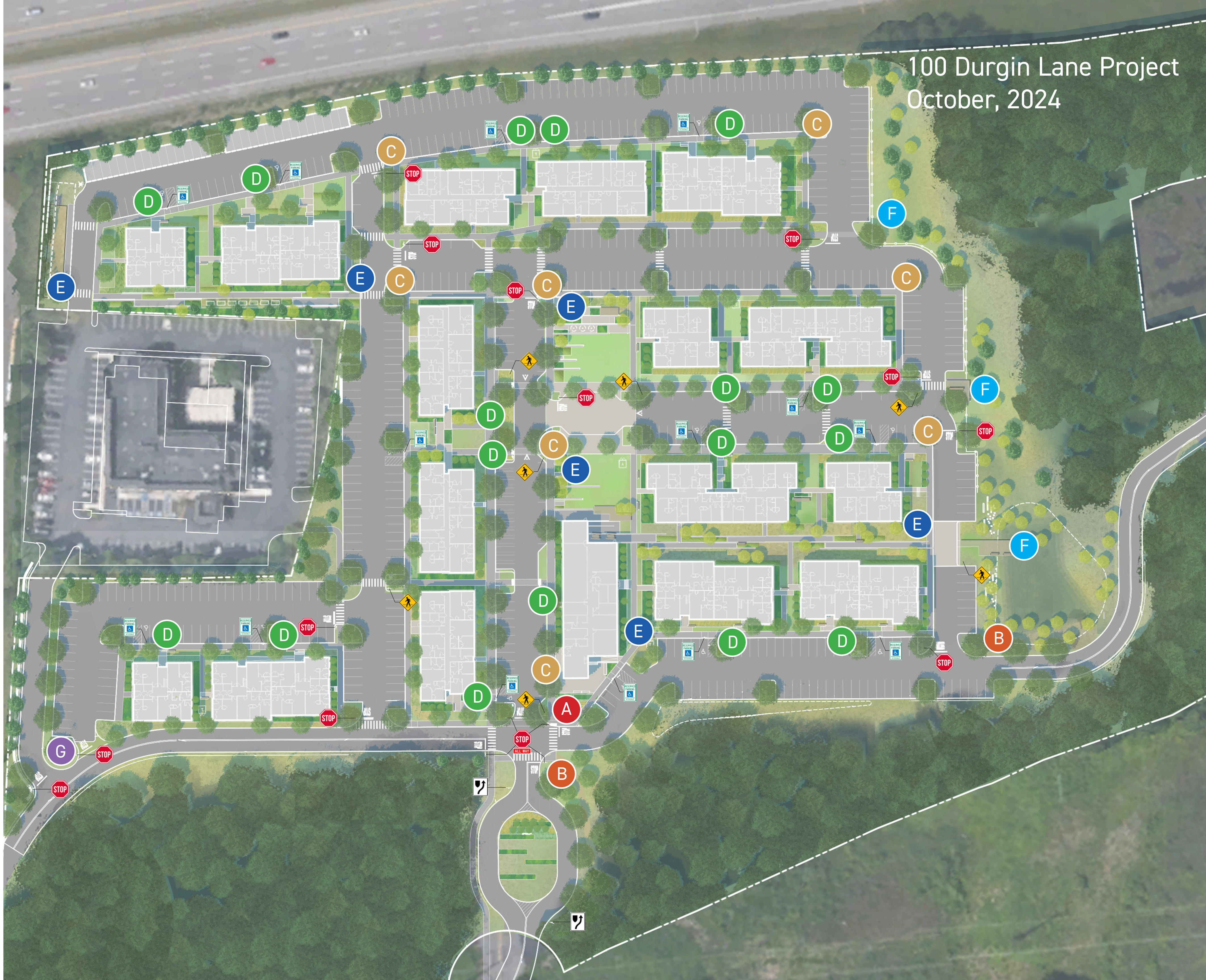
D **Building Markers**
Project Structures
Freestanding or Building Mounted

E **Park Markers**
Pedestrian Directional

F **Interpretive Markers**
Wetland Informational Plaques

G **Hampton Inn Entrance**
8 ft. height
Illuminated

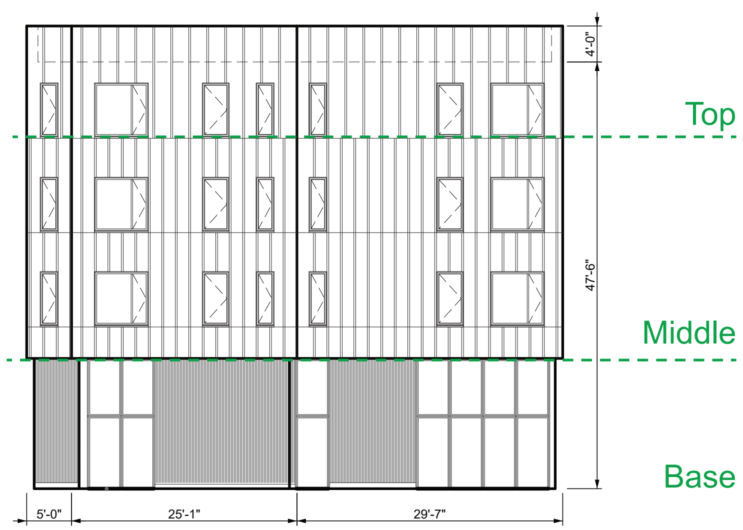
Regulatory Signage
Cross Walks
Stop & All Way
Keep Right
Accessible Parking



Facade Height
Minimum street facing facade height = 18 ft
Building height 47’-6” (51’-6” w/ parapet)

Facade Glazing
Minimum street facing facade glazing = 30%
33.6% glazing provided

Roof Shapes and Rooflines
Flat Roofs: Buildings with flat roofs shall be capped by an articulated parapet wall design that acts as a structural expression of the building facade and its materials, visible from all sides of the building.
Parapet wall provided above low-slope roofing surface. See below.

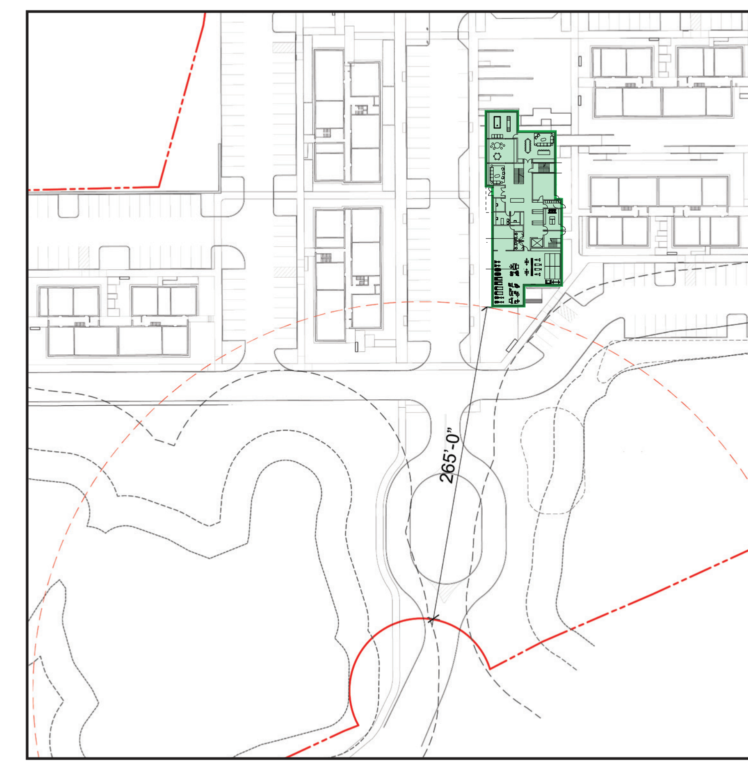


EAST ELEVATION

SOUTH ELEVATION

Horizontal Articulation and Massing Elements
Building facades shall be horizontally articulated with a clearly defined base, middle, and top.
See below; base: water table, wood siding, tight-spaced batten fiber cement board, middle: medium-spaced batten fiber cement board, top: wide-spaced batten fiber cement board, parapet

Facade Orientation
The primary facade of a principal building must be parallel to front lot line or to the tangent of a curved front lot line
Parallel or tangent conditions were difficult to achieve given radius and offset of front lot line. Building stepped massing aims to address - to the extent possible - the curved front lot line, orienting the building towards the street and public realm.



DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5’ 10’ 20’

Facade Glazing

Minimum street-facing ground floor facade glazing = 20%

>20% glazing provided

Street Facing Entrance Required

Building entrance located on east elevation, facing front lot line.

Roof Shapes and Rooflines

Flat Roofs: Buildings with flat roofs shall be capped by an articulated parapet wall design that acts as a structural expression of the building facade and its materials, visible from all sides of the building.

Parapet wall provided above low-slope roofing surface.

See below.

Horizontal Articulation and Massing Elements

Building facades shall be horizontally articulated with a clearly defined base, middle, and top.

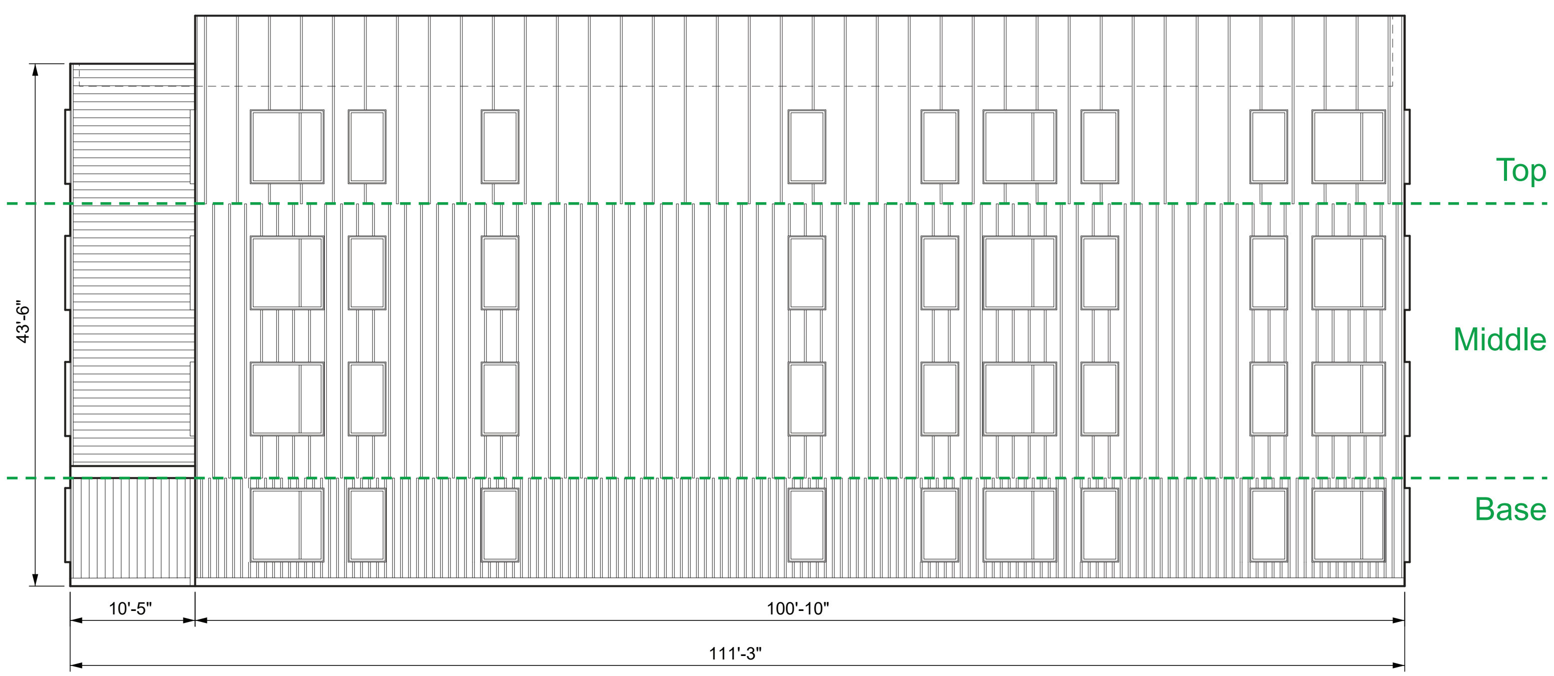
See below; fiber cement board and batten spacing modulated to establish base, middle, and top.

Facade Orientation

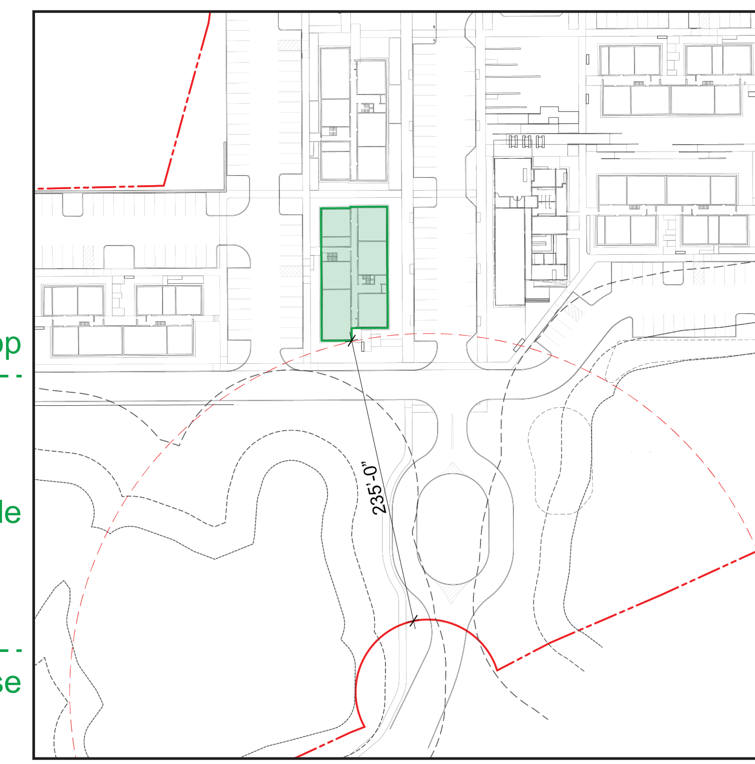
The primary facade of a principal building must be parallel to front lot line or to the tangent of a curved front lot line

Parallel or tangent conditions were difficult to achieve given radius and offset of front lot line. Building stepped massing aims to address - to the extent possible - the curved front lot line, orienting the building towards the street and public realm.

SIDE ELEVATION



FRONT ELEVATION



DISCLAIMER: These plans are conceptual only. They have not been subject to a comprehensive code and regulatory review, nor have they been tested against any as-built surveys. Discoveries in such an analysis may result in fundamental changes to the original concept.

0 5' 10' 20'

100 Durgin Lane
Portsmouth, NH

4-Story Building Zoning Compliance Diagram
June 14, 2024

Scale: 1/16" = 1'-0"

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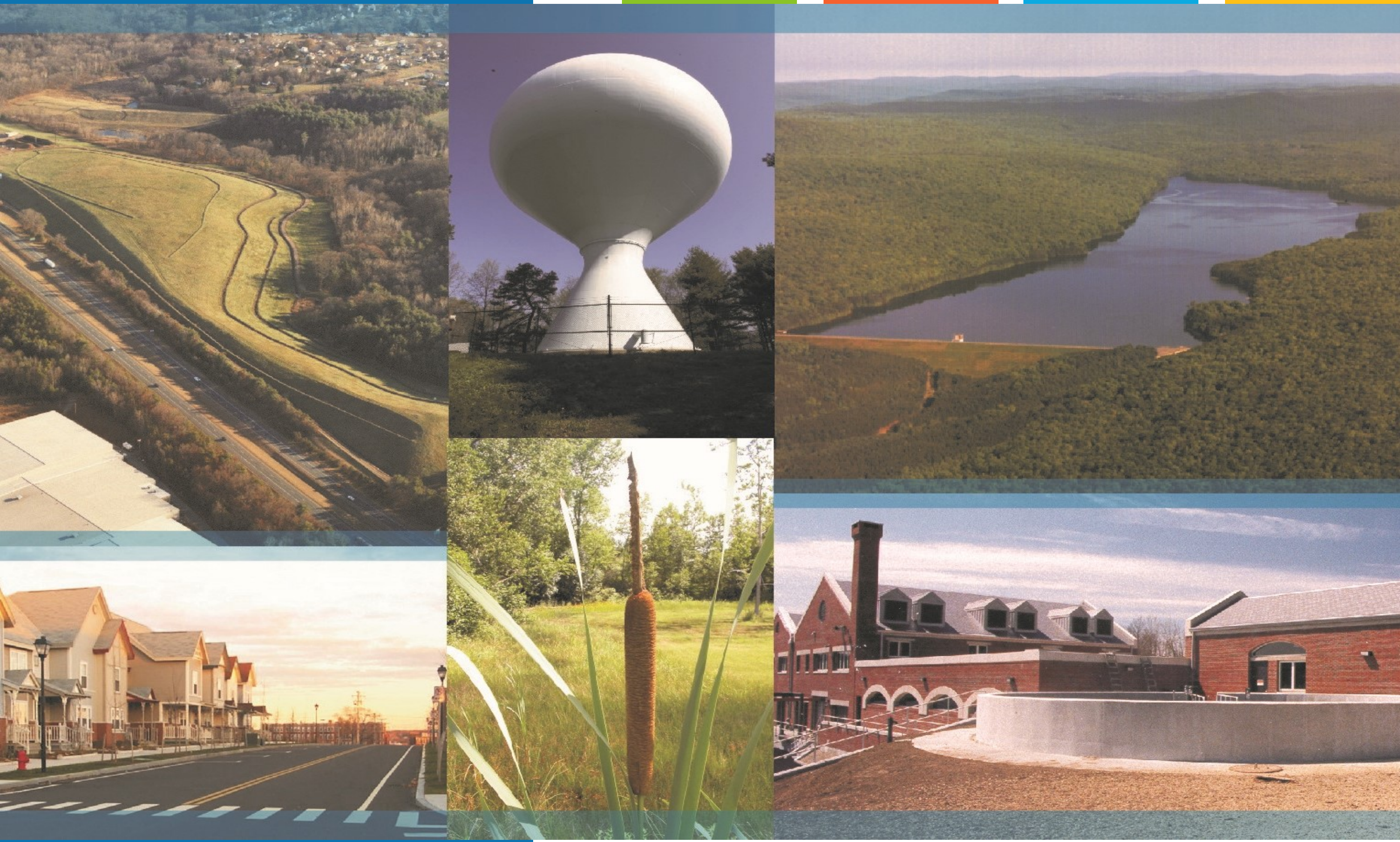

Proposed Multi-Family Development
100 Durgin Lane
Portsmouth, NH

Drainage Analysis

100 Durgin Lane Owner, LLC

September 18, 2024

STATE OF NEW HAMPSHIRE
PATRICK CRIMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
9/18/24

STATE OF NEW HAMPSHIRE
NEIL A HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
09/18/2024

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Section 1 Project Description

Section 2 Pre-Development Conditions

Section 3 Post-Development Conditions

Section 4 Peak Rate Comparison

Section 5 Mitigation Description

Section 6 BMP Worksheets

Section 7 Groundwater Recharge Volume Calculations

Appendices

Section 1
Project Description

The proposed project is located at 100 Durgin Lane and includes lots identified as Map 239 Lots 13-2, 16 & 18 on the City of Portsmouth Tax Maps. The site was previously home to Christmas Tree Shops and Bed, Bath and Beyond locations which are no longer in operation. The properties are a combined 26.1 acres of land and are bound to the west by Route 16, to the north by the Motel 6 property and Gosling Road, to the south by the Hampton Inn and Home Depot properties, and to the east by an Eversource easement, Pep Boys and Durgin Plaza.

The proposed project consists of the demolition of the existing Christmas Tree Shops and Bed, Bath and Beyond building and the construction of approximately 360 rental housing units in a mix of seventeen (17) 3-story and 4-story buildings. One of these buildings, centrally located, is proposed to contain first and second-floor amenities for the use of residents. Site improvements include parking, pedestrian access, community spaces, utilities, stormwater management, lighting, and landscaping. The proposed project also includes a reduction in overall impervious surface on the development lot.

1.1 On-Site Soil Description

Based on the site-specific soil survey completed by Gove Environmental Services, Inc (attached as Appendix B), the site is largely composed of Udorthents and Canton soils with a Hydrologic Soil Group (HSG) rating of HSG B. Additionally, wetland areas are defined as Scitico soils with a HSG C rating (to remain untouched). The ground cover within the area of study consists mostly of paved surfaces, building, and landscaped islands. There are two (2) wetland systems that drain into two (2) separate unnamed brooks that eventually join together before flowing into the Piscataqua River. The site slopes generally from the center of the parcel to either the eastern or western wetlands.

Infiltration testing was completed where feasible, limited by accessibility of ideal testing locations that did not impact existing paved areas of the site. Soil infiltration testing (included under Appendix B) shows that soils may allow for some level of infiltration, however to remain conservative in the site design, infiltration was not claimed in the drainage model.

1.2 Pre- and Post-Development Comparison

The pre-development and post-development watershed areas have been analyzed at five (5) distinct points of analysis (PA-1 through PA-5). While the points of analysis have remained unchanged, the contributing sub-catchment areas varied between pre-development and post-development conditions. These adjustments were made to reflect the differences in drainage patterns between the existing and proposed conditions. The overall area analyzed as part of this drainage analysis was held constant.

Point of Analysis 1 (PA-1) is located to the northwest end of the site, and assesses flows discharging to an existing wetland adjacent to NH Route 16. **Point of Analysis 2 (PA-2)** is located to the northeast end of the site, and assesses flows to another delineated wetland on the other side of the access road connecting the subject property to its northwesterly neighboring abutter. **Point of Analysis 3 (PA-3)** is located along the eastern corner of the site, and assesses flows to an existing wetland located on the south side of Durgin Lane. **Point of Analysis 4 (PA-4)** is located at the southern corner of the site, and assesses flows that discharge down a slope to an abutting property. **Point of Analysis 5 (PA-5)** is located along the southeastern edge of the site, a smaller point of analysis to assess flows exiting the property down the access road connecting to the neighboring abutter.

The peak discharge rates at these points of analysis were determined by analyzing Type III, 24-hour storm events. The rainfall data for these storm events were obtained from the data published by the Northeast Regional Climate Center at Cornell University, which can be found in Appendix B.

Furthermore, the site is located within a Coastal and Great Bay Community, therefore an added factor of safety of 15% was included as required by Env-Wq 1503.08(l).

1.3 Calculation Methods

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

The time of concentration was computed using the TR-55 Method, which provides a means of determining the time for an entire watershed to contribute runoff to a specific location via sheet flows, shallow concentrated flow, and channel flow. Runoff curve numbers were calculated by estimating the coverage areas and then summing the curve number for the coverage area as a percent of the entire watershed.

<u>References:</u>

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

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

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

Section 2
Pre-Development Conditions

To analyze the pre-development condition, the site has been modeled utilizing the five (5) distinct points of analysis described in Section 1. These points of analysis and watersheds are depicted on the plan entitled "Pre-Development Watershed Plan", Sheet C-801.

The point of analysis and its contributing watershed areas under the *pre-development conditions* are described below:

Point of Analysis 1 (PA-1)

Point of Analysis One (PA-1) is comprised of a single subcatchment area (PRE-1.0) that consists of runoff from the existing retail building roof, as well as a combination of impervious loading areas behind the building and grassed and wooded areas to the north. Runoff generally discharges through an existing 24" drainage outlet to an unnamed wetland after flowing through a water quality unit ("Downstream Defender" hydrodynamic separator, capable of meeting contemporary pre-treatment standards only).

Point of Analysis 2 (PA-2)

Point of Analysis Two (PA-2) is composed of two (2) subcatchment areas (PRE-2.0 and PRE-2.1). PRE-2.0 is comprised primarily of paved parking and access areas, in addition to some vegetated slopes and wooded areas within the limits of analysis. A portion of this subcatchment area directs primarily impervious runoff through underground closed drainage to a water quality unit ("Downstream Defender" hydrodynamic separator, capable of meeting contemporary pre-treatment standards only) prior to discharge to the adjacent wetland. Remaining portions of this subcatchment include the access road extension off of Durgin Lane, adjacent parking lot to the east, and the access road at the north end of the side that discharge directly to the wetlands without treatment.

PRE-2.1 is comprised exclusively of paved parking areas and small landscaped islands. Flows from this subcatchment travel via overland flow to a bioretention cell (RG-1) located along the eastern edge of the site. Curb returns and small rip-rap aprons inlet flows into the cell for a level of treatment prior to discharging to the adjacent wetland via a 24" reinforced concrete pipe outlet.

Point of Analysis 3 (PA-3)

Point of Analysis Three (PA-3) is composed of three (3) subcatchment areas (PRE-3.0, PRE-3.1, and PRE-3.10).

PRE-3.0 is comprised primarily of paved parking and access areas, in addition to some vegetated slopes and wooded areas within the limits of analysis. A large portion of impervious runoff within this watershed are conveyed via closed drainage to a water quality unit ("Downstream Defender" hydrodynamic separator, capable of meeting contemporary pre-treatment standards only) prior to discharge to the adjacent wetland through a 36" reinforced concrete outlet pipe. The water quality unit is shared with and receives flows from an abutting property (Hampton Inn).

PRE-3.1 is comprised exclusively of parking areas and small landscaped islands. Flows from this subcatchment travel via overland flow to a bioretention cell (RG-2) tucked into the eastern corner of the primary parking lot. A curb return and small rip-rap apron inlets flows into the cell for a level of treatment prior to connecting to the same 36” outlet pipe described under PRE-3.0.

PRE-3.10 represents an off-site subcatchment area on an abutting property whose drainage connects upstream of the water quality unity described under PRE-3.0. This subcatchment area is comprised mostly of paved parking and building roof areas, with a small amount of pervious vegetated and wooded areas along the edges and corners of its respective lot.

Point of Analysis 4 (PA-4)

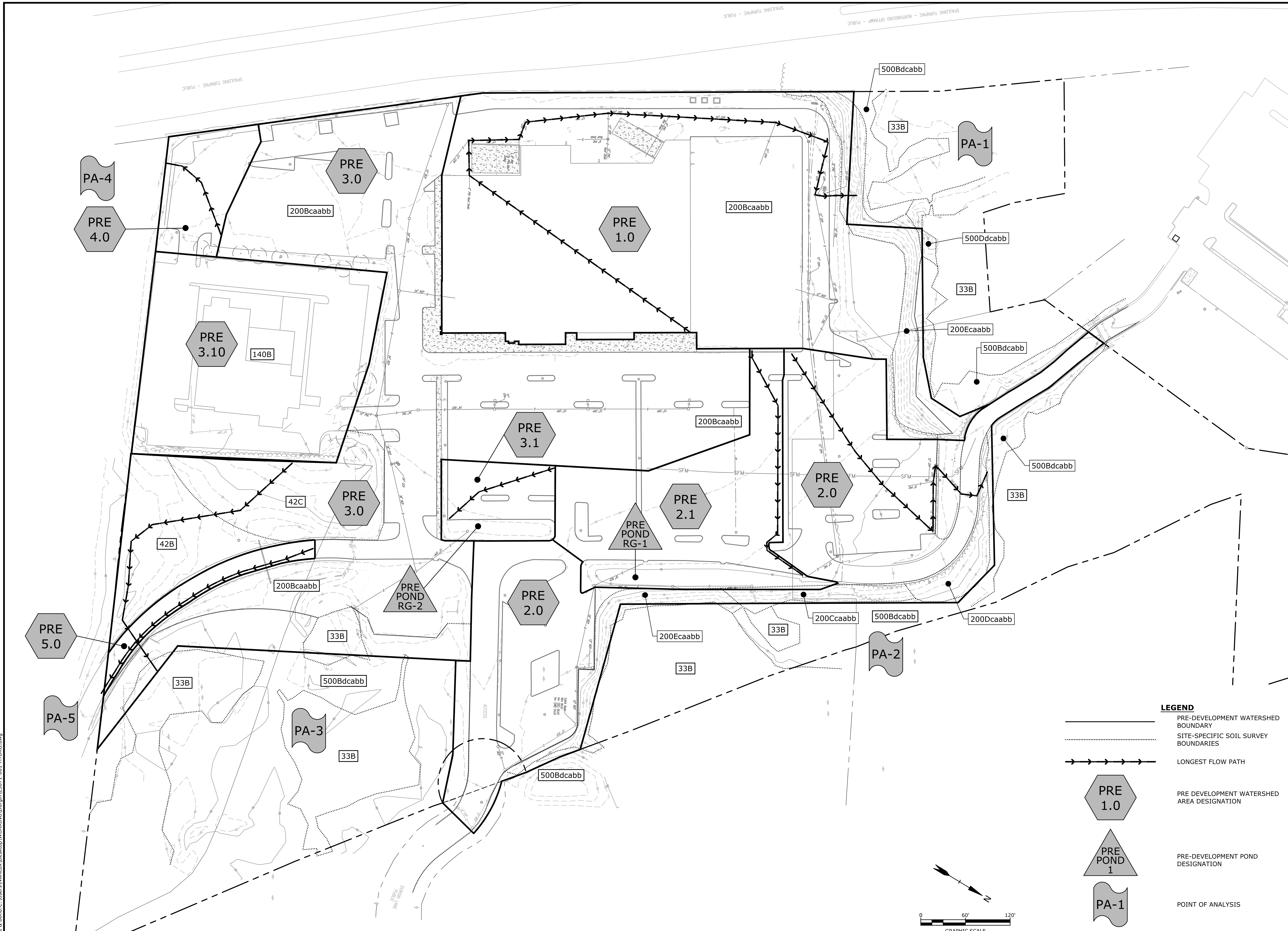
Point of Analysis Four (PA-4) is composed of a single subcatchment area (PRE-4.0, comprised of mostly paved parking surfaces. Flows from this watershed travel via overland flow off the edge of pavement and down the adjacent slopes to an abutting property without treatment.

Point of Analysis 5 (PA-5)

Point of Analysis Five (PA-5) is composed of a single subcatchment area (PRE-5.0), representative of impervious runoff from the southern access road that flows downhill to a couple of off-site catch basins, and ultimately to a separate closed off-site drainage system.

2.1 Pre-Development Watershed Plan

2.2 Pre-Development Calculations



Last Saved: 9/13/2024
Plotted On:Sep 16, 2024-4:36pm By: NWilcox
Tighe & Bond:C:\Users\NWilcox\Desktop\WORKING\Durgin\E5071-001-HYDRO.dwg

Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

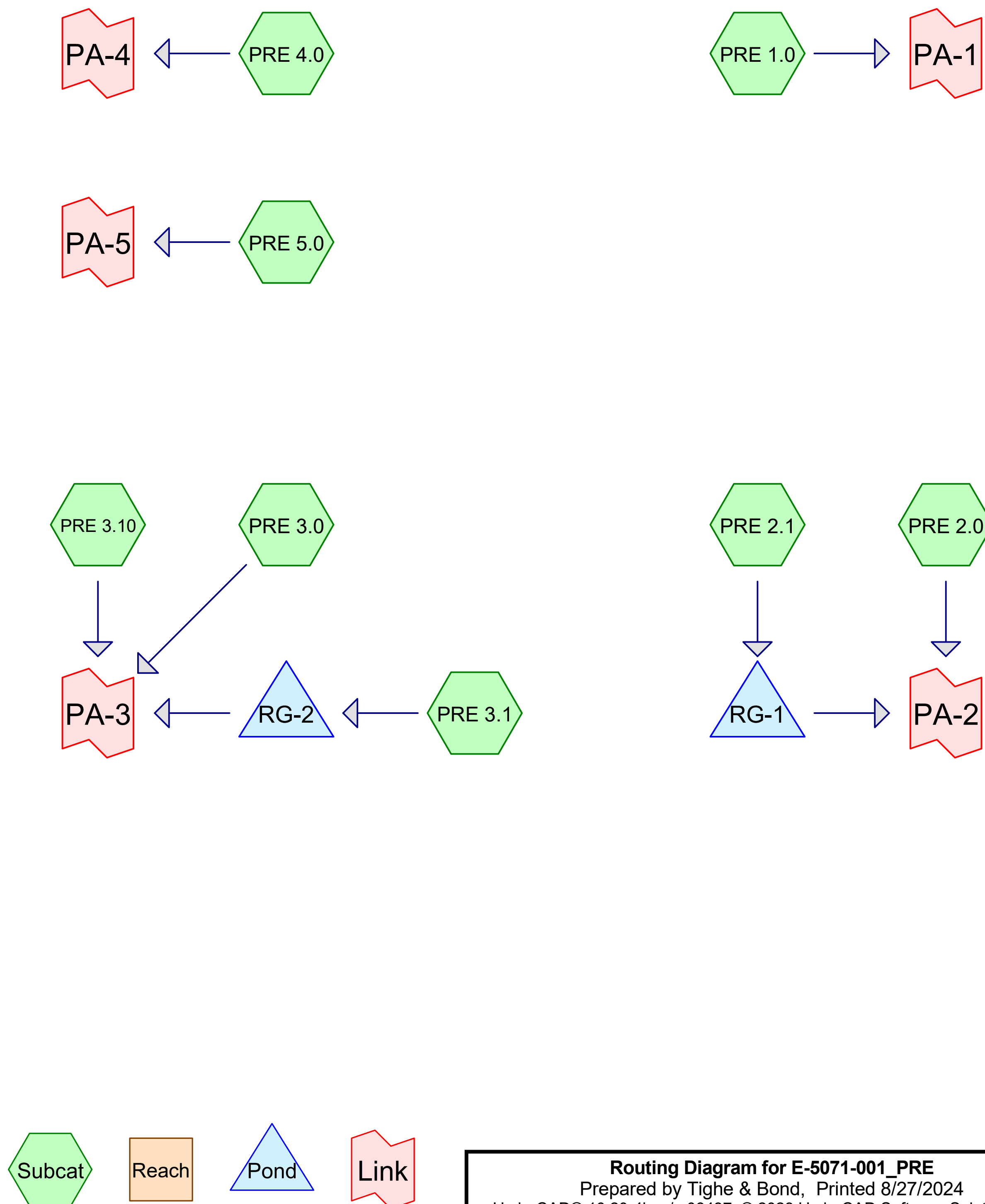
MARK	DATE	DESCRIPTION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-HYDRO.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

PRE-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-801



Routing Diagram for E-5071-001_PRE
Prepared by Tighe & Bond, Printed 8/27/2024
HydroCAD® 10.20-4b s/n 03437 © 2023 HydroCAD Software Solutions LLC

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

Subcatchment PRE 1.0: Runoff Area=207,577 sf 57.69% Impervious Runoff Depth>1.42"
Flow Length=999' Tc=6.8 min CN=82 Runoff=7.56 cfs 24,508 cf

Subcatchment PRE 2.0: Runoff Area=143,416 sf 69.16% Impervious Runoff Depth>1.70"
Flow Length=500' Tc=5.0 min CN=86 Runoff=6.59 cfs 20,368 cf

Subcatchment PRE 2.1: Runoff Area=58,945 sf 77.01% Impervious Runoff Depth>1.94"
Flow Length=360' Slope=0.0150 '/' Tc=5.0 min CN=89 Runoff=3.07 cfs 9,548 cf

Subcatchment PRE 3.0: Runoff Area=267,552 sf 54.51% Impervious Runoff Depth>1.29"
Flow Length=405' Tc=9.7 min CN=80 Runoff=7.95 cfs 28,654 cf

Subcatchment PRE 3.1: Runoff Area=16,036 sf 66.20% Impervious Runoff Depth>1.63"
Flow Length=155' Slope=0.0150 '/' Tc=5.0 min CN=85 Runoff=0.70 cfs 2,177 cf

Subcatchment PRE 3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>2.21"
Tc=5.0 min CN=92 Runoff=4.66 cfs 14,627 cf

Subcatchment PRE 4.0: Runoff Area=16,868 sf 71.31% Impervious Runoff Depth>1.78"
Flow Length=115' Tc=5.0 min CN=87 Runoff=0.81 cfs 2,504 cf

Subcatchment PRE 5.0: Runoff Area=8,392 sf 100.00% Impervious Runoff Depth>2.82"
Flow Length=355' Slope=0.0170 '/' Tc=5.0 min CN=98 Runoff=0.57 cfs 1,970 cf

Pond RG-1: Peak Elev=60.03' Storage=1,883 cf Inflow=3.07 cfs 9,548 cf
Outflow=1.38 cfs 9,450 cf

Pond RG-2: Peak Elev=62.15' Storage=347 cf Inflow=0.70 cfs 2,177 cf
Outflow=0.47 cfs 2,140 cf

Link PA-1: Inflow=7.56 cfs 24,508 cf
Primary=7.56 cfs 24,508 cf

Link PA-2: Inflow=7.74 cfs 29,818 cf
Primary=7.74 cfs 29,818 cf

Link PA-3: Inflow=12.32 cfs 45,421 cf
Primary=12.32 cfs 45,421 cf

Link PA-4: Inflow=0.81 cfs 2,504 cf
Primary=0.81 cfs 2,504 cf

Link PA-5: Inflow=0.57 cfs 1,970 cf
Primary=0.57 cfs 1,970 cf

Total Runoff Area = 798,313 sf Runoff Volume = 104,356 cf Average Runoff Depth = 1.57"
36.33% Pervious = 289,995 sf 63.67% Impervious = 508,318 sf

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

Subcatchment PRE 1.0: Runoff Area=207,577 sf 57.69% Impervious Runoff Depth>1.93"
Flow Length=999' Tc=6.8 min CN=82 Runoff=10.36 cfs 33,388 cf

Subcatchment PRE 2.0: Runoff Area=143,416 sf 69.16% Impervious Runoff Depth>2.26"
Flow Length=500' Tc=5.0 min CN=86 Runoff=8.69 cfs 26,973 cf

Subcatchment PRE 2.1: Runoff Area=58,945 sf 77.01% Impervious Runoff Depth>2.52"
Flow Length=360' Slope=0.0150 '/' Tc=5.0 min CN=89 Runoff=3.98 cfs 12,391 cf

Subcatchment PRE 3.0: Runoff Area=267,552 sf 54.51% Impervious Runoff Depth>1.78"
Flow Length=405' Tc=9.7 min CN=80 Runoff=11.11 cfs 39,624 cf

Subcatchment PRE 3.1: Runoff Area=16,036 sf 66.20% Impervious Runoff Depth>2.17"
Flow Length=155' Slope=0.0150 '/' Tc=5.0 min CN=85 Runoff=0.94 cfs 2,903 cf

Subcatchment PRE 3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>2.81"
Tc=5.0 min CN=92 Runoff=5.86 cfs 18,608 cf

Subcatchment PRE 4.0: Runoff Area=16,868 sf 71.31% Impervious Runoff Depth>2.34"
Flow Length=115' Tc=5.0 min CN=87 Runoff=1.06 cfs 3,294 cf

Subcatchment PRE 5.0: Runoff Area=8,392 sf 100.00% Impervious Runoff Depth>3.44"
Flow Length=355' Slope=0.0170 '/' Tc=5.0 min CN=98 Runoff=0.69 cfs 2,409 cf

Pond RG-1: Peak Elev=60.33' Storage=2,678 cf Inflow=3.98 cfs 12,391 cf
Outflow=1.47 cfs 12,282 cf

Pond RG-2: Peak Elev=62.29' Storage=449 cf Inflow=0.94 cfs 2,903 cf
Outflow=0.59 cfs 2,862 cf

Link PA-1: Inflow=10.36 cfs 33,388 cf
Primary=10.36 cfs 33,388 cf

Link PA-2: Inflow=10.04 cfs 39,255 cf
Primary=10.04 cfs 39,255 cf

Link PA-3: Inflow=16.62 cfs 61,093 cf
Primary=16.62 cfs 61,093 cf

Link PA-4: Inflow=1.06 cfs 3,294 cf
Primary=1.06 cfs 3,294 cf

Link PA-5: Inflow=0.69 cfs 2,409 cf
Primary=0.69 cfs 2,409 cf

Total Runoff Area = 798,313 sf Runoff Volume = 139,589 cf Average Runoff Depth = 2.10"
36.33% Pervious = 289,995 sf 63.67% Impervious = 508,318 sf

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

Subcatchment PRE 1.0: Runoff Area=207,577 sf 57.69% Impervious Runoff Depth>3.60"
Flow Length=999' Tc=6.8 min CN=82 Runoff=19.19 cfs 62,259 cf

Subcatchment PRE 2.0: Runoff Area=143,416 sf 69.16% Impervious Runoff Depth>4.01"
Flow Length=500' Tc=5.0 min CN=86 Runoff=15.27 cfs 47,915 cf

Subcatchment PRE 2.1: Runoff Area=58,945 sf 77.01% Impervious Runoff Depth>4.33"
Flow Length=360' Slope=0.0150 '/' Tc=5.0 min CN=89 Runoff=6.66 cfs 21,255 cf

Subcatchment PRE 3.0: Runoff Area=267,552 sf 54.51% Impervious Runoff Depth>3.40"
Flow Length=405' Tc=9.7 min CN=80 Runoff=21.28 cfs 75,789 cf

Subcatchment PRE 3.1: Runoff Area=16,036 sf 66.20% Impervious Runoff Depth>3.91"
Flow Length=155' Slope=0.0150 '/' Tc=5.0 min CN=85 Runoff=1.67 cfs 5,219 cf

Subcatchment PRE 3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>4.65"
Tc=5.0 min CN=92 Runoff=9.45 cfs 30,847 cf

Subcatchment PRE 4.0: Runoff Area=16,868 sf 71.31% Impervious Runoff Depth>4.11"
Flow Length=115' Tc=5.0 min CN=87 Runoff=1.83 cfs 5,783 cf

Subcatchment PRE 5.0: Runoff Area=8,392 sf 100.00% Impervious Runoff Depth>5.34"
Flow Length=355' Slope=0.0170 '/' Tc=5.0 min CN=98 Runoff=1.06 cfs 3,734 cf

Pond RG-1: Peak Elev=61.22' Storage=5,022 cf Inflow=6.66 cfs 21,255 cf
Outflow=4.01 cfs 21,117 cf

Pond RG-2: Peak Elev=62.92' Storage=815 cf Inflow=1.67 cfs 5,219 cf
Outflow=0.96 cfs 5,166 cf

Link PA-1: Inflow=19.19 cfs 62,259 cf
Primary=19.19 cfs 62,259 cf

Link PA-2: Inflow=16.81 cfs 69,032 cf
Primary=16.81 cfs 69,032 cf

Link PA-3: Inflow=30.22 cfs 111,802 cf
Primary=30.22 cfs 111,802 cf

Link PA-4: Inflow=1.83 cfs 5,783 cf
Primary=1.83 cfs 5,783 cf

Link PA-5: Inflow=1.06 cfs 3,734 cf
Primary=1.06 cfs 3,734 cf

Total Runoff Area = 798,313 sf Runoff Volume = 252,801 cf Average Runoff Depth = 3.80"
36.33% Pervious = 289,995 sf 63.67% Impervious = 508,318 sf

Summary for Subcatchment PRE 1.0:

[47] Hint: Peak is 703% of capacity of segment #3

Runoff = 19.19 cfs @ 12.10 hrs, Volume= 62,259 cf, Depth> 3.60"
Routed to Link PA-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

	Area (sf)	CN	Description
	59,833	61	>75% Grass cover, Good, HSG B
	40,628	98	Paved parking, HSG B
	27,983	55	Woods, Good, HSG B
	79,133	98	Unconnected roofs, HSG B
	0	74	>75% Grass cover, Good, HSG C
	0	98	Paved parking, HSG C
*	0	98	Roofs, HGC C
	0	70	Woods, Good, HSG C
	0	80	>75% Grass cover, Good, HSG D
	0	98	Paved parking, HSG D
	0	77	Woods, Good, HSG D
	207,577	82	Weighted Average
	87,816		42.31% Pervious Area
	119,761		57.69% Impervious Area
	79,133		66.08% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0050	0.85		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.5	220	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.3	679	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
6.8	999	Total			

Summary for Subcatchment PRE 2.0:

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 606% of capacity of segment #3

Runoff = 15.27 cfs @ 12.07 hrs, Volume= 47,915 cf, Depth> 4.01"
Routed to Link PA-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
36,387	61	>75% Grass cover, Good, HSG B
99,191	98	Paved parking, HSG B
7,775	55	Woods, Good, HSG B
63	74	>75% Grass cover, Good, HSG C
143,416	86	Weighted Average
44,225		30.84% Pervious Area
99,191		69.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.48		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.2	200	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.0	200	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.3	500	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 2.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.66 cfs @ 12.07 hrs, Volume= 21,255 cf, Depth> 4.33"
Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
13,550	61	>75% Grass cover, Good, HSG B
45,395	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
58,945	89	Weighted Average
13,550		22.99% Pervious Area
45,395		77.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0150	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
1.7	260	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.0	360	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 3.0:

[47] Hint: Peak is 845% of capacity of segment #3

Runoff = 21.28 cfs @ 12.14 hrs, Volume= 75,789 cf, Depth> 3.40"
Routed to Link PA-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
49,876	61	>75% Grass cover, Good, HSG B
145,833	98	Paved parking, HSG B
66,755	55	Woods, Good, HSG B
5,088	70	Woods, Good, HSG C
267,552	80	Weighted Average
121,719		45.49% Pervious Area
145,833		54.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	25	0.1000	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.68"
4.7	300	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	55	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.2	25	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.7	405	Total			

Summary for Subcatchment PRE 3.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.67 cfs @ 12.07 hrs, Volume= 5,219 cf, Depth> 3.91"
Routed to Pond RG-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
5,420	61	>75% Grass cover, Good, HSG B
10,616	98	Paved parking, HSG B
16,036	85	Weighted Average
5,420		33.80% Pervious Area
10,616		66.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0150	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.4	55	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	155	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 3.10:

*Web Soil Survey data used for off-site analysis.

[49] Hint: Tc<2dt may require smaller dt

Runoff = 9.45 cfs @ 12.07 hrs, Volume= 30,847 cf, Depth> 4.65"
Routed to Link PA-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
12,426	61	>75% Grass cover, Good, HSG B
52,558	98	Paved parking, HSG B
14,543	98	Unconnected roofs, HSG B
79,527	92	Weighted Average
12,426		15.62% Pervious Area
67,101		84.38% Impervious Area
14,543		21.67% Unconnected

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

Summary for Subcatchment PRE 4.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.83 cfs @ 12.07 hrs, Volume= 5,783 cf, Depth> 4.11"
Routed to Link PA-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
4,839	61	>75% Grass cover, Good, HSG B
12,029	98	Paved parking, HSG B
16,868	87	Weighted Average
4,839		28.69% Pervious Area
12,029		71.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0270	1.66		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.68"
0.1	15	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	115	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment PRE 5.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.06 cfs @ 12.07 hrs, Volume= 3,734 cf, Depth> 5.34"
Routed to Link PA-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
0	61	>75% Grass cover, Good, HSG B
8,392	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
8,392	98	Weighted Average
8,392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0170	1.38		**Sheet Flow, SHEET** Smooth surfaces n= 0.011 P2= 3.68"
1.6	255	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	355	Total, Increased to minimum Tc = 5.0 min			

Summary for Pond RG-1:

[92] Warning: Device #3 is above defined storage
[93] Warning: Storage range exceeded by 0.22'
[58] Hint: Peaked 0.79' above defined flood level

Inflow Area = 58,945 sf, 77.01% Impervious, Inflow Depth > 4.33" for 10-Yr event
Inflow = 6.66 cfs @ 12.07 hrs, Volume= 21,255 cf
Outflow = 4.01 cfs @ 12.25 hrs, Volume= 21,117 cf, Atten= 40%, Lag= 10.7 min
Primary = 4.01 cfs @ 12.25 hrs, Volume= 21,117 cf
Routed to Link PA-2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 61.22' @ 12.25 hrs Surf.Area= 4,110 sf Storage= 5,022 cf
Flood Elev= 60.43' Surf.Area= 3,078 sf Storage= 2,973 cf

Plug-Flow detention time= 28.5 min calculated for 21,073 cf (99% of inflow)

Center-of-Mass det. time= 24.5 min (813.8 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	57.65'	5,022 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
57.65	2,300	0.0	0	0
58.50	2,300	40.0	782	782
60.00	2,300	30.0	1,035	1,817
61.00	4,110	100.0	3,205	5,022

Device	Routing	Invert	Outlet Devices
#1	Primary	54.00'	**24.0" Round Culvert** L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 54.00' / 52.19' S= 0.0953 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	57.65'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	61.15'	**4.5" x 2.5" Horiz. Orifice/Grate X 4.00 columns** X 8 rows C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.00 cfs @ 12.25 hrs HW=61.22' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 4.00 cfs of 37.73 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.72 cfs @ 8.77 fps)
3=Orifice/Grate (Weir Controls 2.28 cfs @ 0.87 fps)

Summary for Pond RG-2:

Inflow Area = 16,036 sf, 66.20% Impervious, Inflow Depth > 3.91" for 10-Yr event
Inflow = 1.67 cfs @ 12.07 hrs, Volume= 5,219 cf
Outflow = 0.96 cfs @ 12.19 hrs, Volume= 5,166 cf, Atten= 43%, Lag= 7.2 min
Primary = 0.96 cfs @ 12.19 hrs, Volume= 5,166 cf
Routed to Link PA-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 62.92' @ 12.19 hrs Surf.Area= 1,745 sf Storage= 815 cf
Flood Elev= 64.25' Surf.Area= 2,000 sf Storage= 1,847 cf

Plug-Flow detention time= 21.2 min calculated for 5,155 cf (99% of inflow)
Center-of-Mass det. time= 15.0 min (817.1 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	61.65'	1,847 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.65	1,745	0.0	0	0
62.50	1,745	40.0	593	593
64.00	1,745	30.0	785	1,379
64.25	2,000	100.0	468	1,847

Device	Routing	Invert	Outlet Devices
#1	Primary	61.60'	**12.0" Round Culvert** L= 130.0' Ke= 0.500 Inlet / Outlet Invert= 61.60' / 61.00' S= 0.0046 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	61.65'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	63.95'	**4.5" x 2.5" Horiz. Orifice/Grate X 4.00 columns** X 8 rows C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.96 cfs @ 12.19 hrs HW=62.92' TW=0.00' (Dynamic Tailwater)
1=Culvert (Passes 0.96 cfs of 2.80 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.96 cfs @ 4.86 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Summary for Link PA-1:

Inflow Area = 207,577 sf, 57.69% Impervious, Inflow Depth > 3.60" for 10-Yr event
Inflow = 19.19 cfs @ 12.10 hrs, Volume= 62,259 cf
Primary = 19.19 cfs @ 12.10 hrs, Volume= 62,259 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-2:

Inflow Area = 202,361 sf, 71.45% Impervious, Inflow Depth > 4.09" for 10-Yr event
Inflow = 16.81 cfs @ 12.07 hrs, Volume= 69,032 cf
Primary = 16.81 cfs @ 12.07 hrs, Volume= 69,032 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-3:

Inflow Area = 363,115 sf, 61.56% Impervious, Inflow Depth > 3.69" for 10-Yr event
Inflow = 30.22 cfs @ 12.11 hrs, Volume= 111,802 cf
Primary = 30.22 cfs @ 12.11 hrs, Volume= 111,802 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-4:

Inflow Area = 16,868 sf, 71.31% Impervious, Inflow Depth > 4.11" for 10-Yr event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 5,783 cf
Primary = 1.83 cfs @ 12.07 hrs, Volume= 5,783 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-5:

Inflow Area =	8,392 sf,100.00% Impervious,	Inflow Depth > 5.34"	for 10-Yr event	
Inflow =	1.06 cfs @	12.07 hrs, Volume=	3,734 cf	
Primary =	1.06 cfs @	12.07 hrs, Volume=	3,734 cf,	Atten= 0%, Lag= 0.0 min

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

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

Subcatchment PRE 1.0: Runoff Area=207,577 sf 57.69% Impervious Runoff Depth>4.98"
Flow Length=999' Tc=6.8 min CN=82 Runoff=26.26 cfs 86,097 cf

Subcatchment PRE 2.0: Runoff Area=143,416 sf 69.16% Impervious Runoff Depth>5.43"
Flow Length=500' Tc=5.0 min CN=86 Runoff=20.40 cfs 64,896 cf

Subcatchment PRE 2.1: Runoff Area=58,945 sf 77.01% Impervious Runoff Depth>5.77"
Flow Length=360' Slope=0.0150 '/' Tc=5.0 min CN=89 Runoff=8.75 cfs 28,359 cf

Subcatchment PRE 3.0: Runoff Area=267,552 sf 54.51% Impervious Runoff Depth>4.75"
Flow Length=405' Tc=9.7 min CN=80 Runoff=29.52 cfs 105,952 cf

Subcatchment PRE 3.1: Runoff Area=16,036 sf 66.20% Impervious Runoff Depth>5.32"
Flow Length=155' Slope=0.0150 '/' Tc=5.0 min CN=85 Runoff=2.24 cfs 7,105 cf

Subcatchment PRE 3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>6.12"
Tc=5.0 min CN=92 Runoff=12.23 cfs 40,564 cf

Subcatchment PRE 4.0: Runoff Area=16,868 sf 71.31% Impervious Runoff Depth>5.54"
Flow Length=115' Tc=5.0 min CN=87 Runoff=2.44 cfs 7,793 cf

Subcatchment PRE 5.0: Runoff Area=8,392 sf 100.00% Impervious Runoff Depth>6.83"
Flow Length=355' Slope=0.0170 '/' Tc=5.0 min CN=98 Runoff=1.35 cfs 4,775 cf

Pond RG-1: Peak Elev=61.45' Storage=5,022 cf Inflow=8.75 cfs 28,359 cf
Outflow=8.56 cfs 28,202 cf

Pond RG-2: Peak Elev=63.54' Storage=1,140 cf Inflow=2.24 cfs 7,105 cf
Outflow=1.21 cfs 7,044 cf

Link PA-1: Inflow=26.26 cfs 86,097 cf
Primary=26.26 cfs 86,097 cf

Link PA-2: Inflow=25.58 cfs 93,097 cf
Primary=25.58 cfs 93,097 cf

Link PA-3: Inflow=41.10 cfs 153,561 cf
Primary=41.10 cfs 153,561 cf

Link PA-4: Inflow=2.44 cfs 7,793 cf
Primary=2.44 cfs 7,793 cf

Link PA-5: Inflow=1.35 cfs 4,775 cf
Primary=1.35 cfs 4,775 cf

Total Runoff Area = 798,313 sf Runoff Volume = 345,540 cf Average Runoff Depth = 5.19"
36.33% Pervious = 289,995 sf 63.67% Impervious = 508,318 sf

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

Subcatchment PRE 1.0: Runoff Area=207,577 sf 57.69% Impervious Runoff Depth>6.29"
Flow Length=999' Tc=6.8 min CN=82 Runoff=32.86 cfs 108,839 cf

Subcatchment PRE 2.0: Runoff Area=143,416 sf 69.16% Impervious Runoff Depth>6.77"
Flow Length=500' Tc=5.0 min CN=86 Runoff=25.15 cfs 80,962 cf

Subcatchment PRE 2.1: Runoff Area=58,945 sf 77.01% Impervious Runoff Depth>7.13"
Flow Length=360' Slope=0.0150 '/' Tc=5.0 min CN=89 Runoff=10.69 cfs 35,047 cf

Subcatchment PRE 3.0: Runoff Area=267,552 sf 54.51% Impervious Runoff Depth>6.05"
Flow Length=405' Tc=9.7 min CN=80 Runoff=37.26 cfs 134,867 cf

Subcatchment PRE 3.1: Runoff Area=16,036 sf 66.20% Impervious Runoff Depth>6.65"
Flow Length=155' Slope=0.0150 '/' Tc=5.0 min CN=85 Runoff=2.78 cfs 8,892 cf

Subcatchment PRE 3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>7.50"
Tc=5.0 min CN=92 Runoff=14.81 cfs 49,674 cf

Subcatchment PRE 4.0: Runoff Area=16,868 sf 71.31% Impervious Runoff Depth>6.89"
Flow Length=115' Tc=5.0 min CN=87 Runoff=2.99 cfs 9,691 cf

Subcatchment PRE 5.0: Runoff Area=8,392 sf 100.00% Impervious Runoff Depth>8.22"
Flow Length=355' Slope=0.0170 '/' Tc=5.0 min CN=98 Runoff=1.61 cfs 5,746 cf

Pond RG-1: Peak Elev=62.14' Storage=5,022 cf Inflow=10.69 cfs 35,047 cf
Outflow=14.00 cfs 34,873 cf

Pond RG-2: Peak Elev=64.00' Storage=1,382 cf Inflow=2.78 cfs 8,892 cf
Outflow=1.95 cfs 8,826 cf

Link PA-1: Inflow=32.86 cfs 108,839 cf
Primary=32.86 cfs 108,839 cf

Link PA-2: Inflow=38.42 cfs 115,835 cf
Primary=38.42 cfs 115,835 cf

Link PA-3: Inflow=51.37 cfs 193,367 cf
Primary=51.37 cfs 193,367 cf

Link PA-4: Inflow=2.99 cfs 9,691 cf
Primary=2.99 cfs 9,691 cf

Link PA-5: Inflow=1.61 cfs 5,746 cf
Primary=1.61 cfs 5,746 cf

Total Runoff Area = 798,313 sf Runoff Volume = 433,718 cf Average Runoff Depth = 6.52"
36.33% Pervious = 289,995 sf 63.67% Impervious = 508,318 sf

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
182,331	61	>75% Grass cover, Good, HSG B (PRE 1.0, PRE 2.0, PRE 2.1, PRE 3.0, PRE 3.1, PRE 3.10, PRE 4.0)
63	74	>75% Grass cover, Good, HSG C (PRE 2.0)
414,642	98	Paved parking, HSG B (PRE 1.0, PRE 2.0, PRE 2.1, PRE 3.0, PRE 3.1, PRE 3.10, PRE 4.0, PRE 5.0)
93,676	98	Unconnected roofs, HSG B (PRE 1.0, PRE 3.10)
102,513	55	Woods, Good, HSG B (PRE 1.0, PRE 2.0, PRE 3.0)
5,088	70	Woods, Good, HSG C (PRE 3.0)
798,313	**84**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
793,162	HSG B	PRE 1.0, PRE 2.0, PRE 2.1, PRE 3.0, PRE 3.1, PRE 3.10, PRE 4.0, PRE 5.0
5,151	HSG C	PRE 2.0, PRE 3.0
0	HSG D	
0	Other	
798,313		**TOTAL AREA**

Section 3
Post-Development Conditions

To analyze the post-development condition, the site has been modeled utilizing the same five (5) distinct points of analysis as the Pre-Development condition with revised watershed areas to reflect the post-construction conditions.

The points of analysis and their sub-catchment areas are depicted on the plan entitled "Post-Development Watershed Plan," Sheet C-802.

Point of Analysis 1 (PA-1)

Point of Analysis One (PA-1) is comprised of two (2) subcatchment areas (POST-1.0 and POST-1.1).

POST-1.0 is composed of paved parking areas, sidewalks, roof, and landscaped area runoff that is collected via a proposed closed drainage system and conveyed to a treatment train (Contech CDS unit for pre-treatment, Contech Jellyfish Filter unit for treatment) prior to connecting to the existing 24" RCP outlet. Additional previously untreated area from the pre-development condition of PA-4 is conveyed through this watershed for treatment.

POST-1.1 is composed of pervious grassed and wooded areas outside of the impervious site improvements along the northwestern edge of the site. Runoff from these areas travels via overland flow to the adjacent wetland.

Point of Analysis 2 (PA-2)

Point of Analysis Two (PA-2) is comprised of three (3) subcatchment areas (POST-2.1, POST-2.2, & POST-2.3).

POST-2.1 is a large watershed composed of paved parking areas, sidewalks, roof, and landscaped area runoff within the redevelopment area that is collected via a proposed closed drainage system and conveyed to a large rain garden (RG-1) at the north end of the site. Flows are pre-treated by a Contech CDS unit. Effluent from this rain garden is metered by an outlet control structure and discharged via a proposed 24" outlet to the adjacent wetland. A plunge pool is proposed to mitigate erosion from flows under larger storm events.

POST-2.2 is composed of paved parking areas, sidewalks, roof, landscaped area runoff within the redevelopment area that is conveyed via overland flow to a series of Rain Guardian Turrets (for pre-treatment) built into the curbline along the edge of a proposed rain garden (RG-2). This rain garden effectively aims to reconstruct the existing rain garden in this location to the extent practical, taking advantage of the same 24" existing outlet pipe but with a revised outlet control structure to ensure sufficient treatment and storage in accordance with contemporary standards for the revised post-development subcatchment area.

POST-2.3 is composed of planted, grassed, buffer areas and a small amount of impervious surfaces generally located outside the limits of the proposed site improvements. Additionally, a small amount of existing off-site untreated runoff from Durgin Lane is proposed to be rerouted to a proposed headwall outlet along the northeastern edge of the site. Runoff from these areas travels via overland flow or closed drainage (for existing impervious areas to remain) to the adjacent wetland.

Point of Analysis 3 (PA-3)

Point of Analysis Three (PA-3) is comprised of three (3) subcatchment areas (POST-3.0, POST-3.1, and POST-3.10).

POST-3.0 is composed of paved parking areas, sidewalks, roofs, and landscaped area runoff that is collected via a proposed closed drainage system and conveyed to a treatment train (Contech CDS unit for pre-treatment, Contech Jellyfish Filter unit for treatment) prior to connecting to the existing 36” RCP outlet.

POST-3.1 is composed of pervious grassed and wooded areas outside of the impervious site improvements along the southern edge of the site. Runoff from these areas travels via overland flow to the adjacent wetland.

POST-3.2 is a small subcatchment area composed of pervious grassed areas below the retaining wall proposed along the southeastern edge of the site. Runoff from this subcatchment is conveyed through an existing 12” culvert under the adjacent access road to the wetland (PA-3).

POST-3.10 represents the same off-site subcatchment area on the abutting Hampton Inn property as described under the pre-development condition of PRE-3.10. Drainage from this lot is proposed to be reconnected to the revised closed drainage system on the subject property, for conveyance to the same treatment train (Contech CDS unit for pre-treatment, Contech Jellyfish Filter unit for treatment) described under POST-3.0.

Point of Analysis 4 (PA-4)

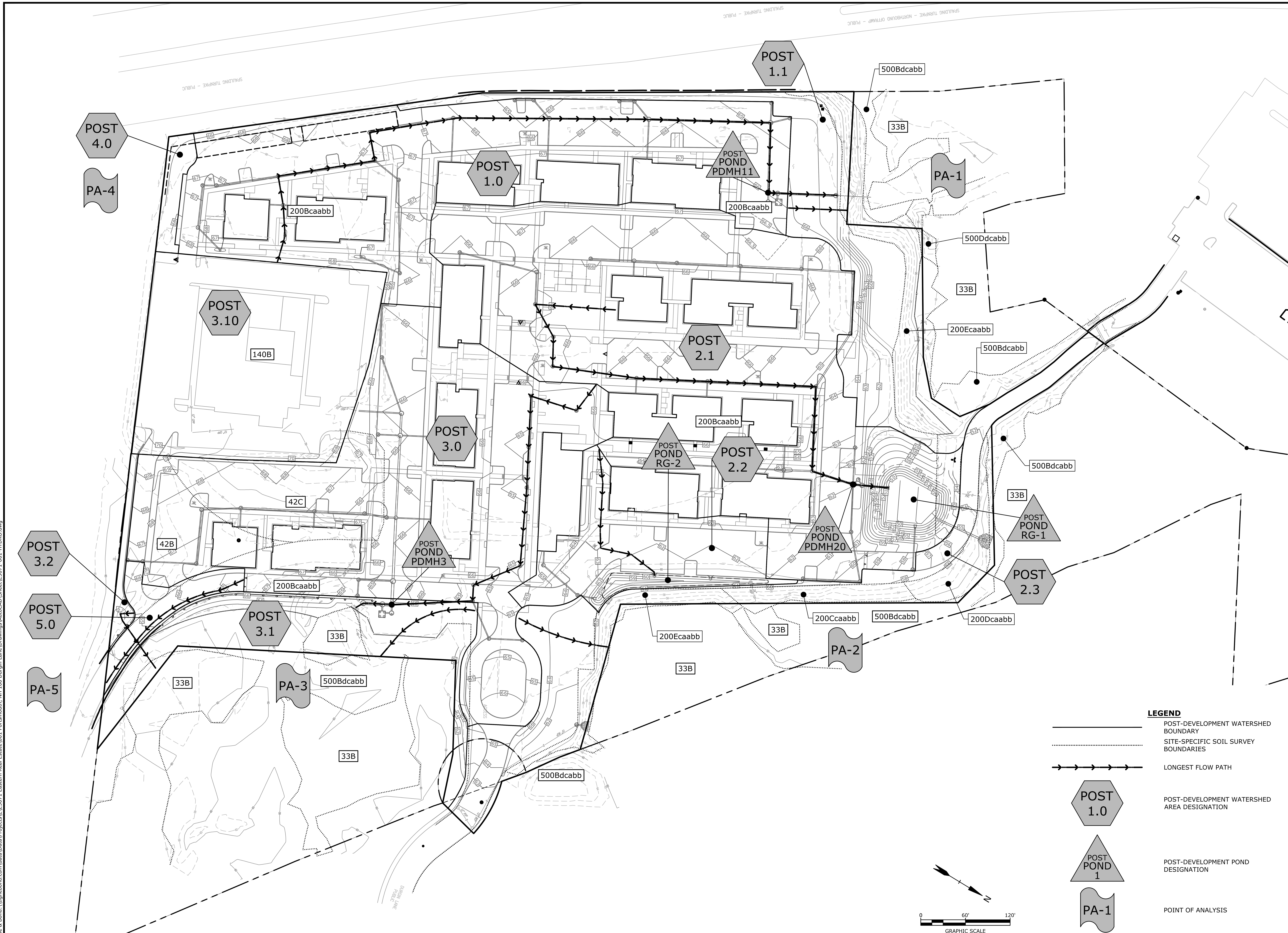
The watershed area in the post-development condition (POST-4.0) to Point of Analysis 4 (PA-4) is proposed to be reduced, as to ultimately reduce off-site flows to the abutter to the extent practical. There are no impervious areas proposed within this watershed in the post-development condition, and all revised impervious areas in this general vicinity are proposed to be directed to the subject property’s closed drainage system for proper treatment.

Point of Analysis 5 (PA-5)

The watershed area in the post-development condition (POST-5.0) to Point of Analysis 5 (PA-5) is proposed to be reduced, as to ensure that the revised access road alignment and grading does not increase off-site flows down the road in comparison to the pre-development condition.

3.1 Post-Development Watershed Plan

3.2 Post-Development Calculations



Last Saved: 9/13/2024
Plotted On:Sep 17, 2024-7:02pm By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-HYDRO.dwg

Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

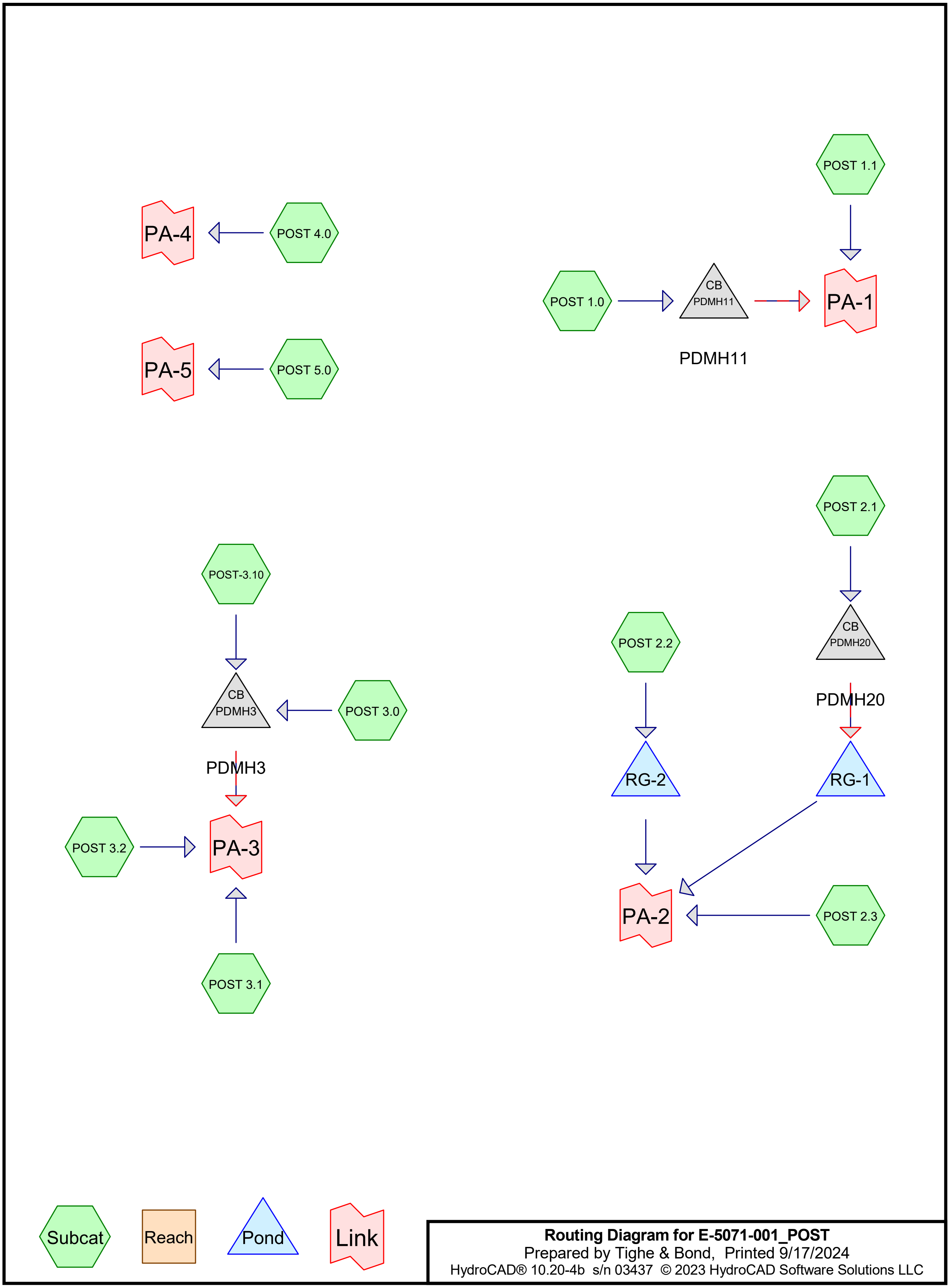
MARK	DATE	DESCRIPTION
D	9/18/2024	TAC SUBMISSION
C	8/28/2024	CC SUBMISSION
B	6/17/2024	TAC SUBMISSION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-HYDRO.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

POST-DEVELOPMENT WATERSHED PLAN

SCALE: AS SHOWN

C-802



Routing Diagram for E-5071-001_POST
Prepared by Tighe & Bond, Printed 9/17/2024
HydroCAD® 10.20-4b s/n 03437 © 2023 HydroCAD Software Solutions LLC

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

Subcatchment POST 1.0: Runoff Area=138,301 sf 75.24% Impervious Runoff Depth>1.94"
Flow Length=1,005' Tc=8.4 min CN=89 Runoff=6.55 cfs 22,389 cf

Subcatchment POST 1.1: Runoff Area=53,855 sf 0.99% Impervious Runoff Depth>0.35"
Flow Length=75' Slope=0.0350 '/' Tc=5.0 min CN=60 Runoff=0.26 cfs 1,575 cf

Subcatchment POST 2.1: Runoff Area=211,170 sf 68.33% Impervious Runoff Depth>1.70"
Flow Length=745' Tc=9.2 min CN=86 Runoff=8.53 cfs 29,964 cf

Subcatchment POST 2.2: Runoff Area=42,134 sf 69.19% Impervious Runoff Depth>1.78"
Flow Length=215' Tc=6.2 min CN=87 Runoff=1.97 cfs 6,254 cf

Subcatchment POST 2.3: Runoff Area=58,185 sf 9.83% Impervious Runoff Depth>0.49"
Flow Length=115' Slope=0.0200 '/' Tc=6.3 min CN=64 Runoff=0.53 cfs 2,376 cf

Subcatchment POST 3.0: Runoff Area=158,759 sf 73.04% Impervious Runoff Depth>1.86"
Flow Length=635' Slope=0.0150 '/' Tc=7.2 min CN=88 Runoff=7.52 cfs 24,617 cf

Subcatchment POST 3.1: Runoff Area=39,638 sf 0.00% Impervious Runoff Depth>0.38"
Flow Length=150' Tc=5.7 min CN=61 Runoff=0.23 cfs 1,267 cf

Subcatchment POST 3.2: Runoff Area=3,338 sf 0.00% Impervious Runoff Depth>0.38"
Flow Length=115' Tc=5.0 min CN=61 Runoff=0.02 cfs 107 cf

Subcatchment POST 4.0: Runoff Area=4,581 sf 0.00% Impervious Runoff Depth>0.38"
Tc=5.0 min CN=61 Runoff=0.03 cfs 146 cf

Subcatchment POST 5.0: Runoff Area=8,825 sf 89.09% Impervious Runoff Depth>2.40"
Flow Length=230' Slope=0.0200 '/' Tc=6.2 min CN=94 Runoff=0.53 cfs 1,763 cf

Subcatchment POST-3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>2.21"
Tc=5.0 min CN=92 Runoff=4.66 cfs 14,627 cf

Pond PDMH11: PDMH11 Peak Elev=60.40' Inflow=6.55 cfs 22,389 cf
Primary=5.60 cfs 22,008 cf Secondary=0.95 cfs 381 cf Outflow=6.55 cfs 22,389 cf

Pond PDMH20: PDMH20 Peak Elev=56.81' Inflow=8.53 cfs 29,964 cf
Primary=4.87 cfs 27,387 cf Secondary=3.66 cfs 2,578 cf Outflow=8.53 cfs 29,964 cf

Pond PDMH3: PDMH3 Peak Elev=61.41' Inflow=11.99 cfs 39,244 cf
Primary=7.00 cfs 35,492 cf Secondary=4.99 cfs 3,751 cf Outflow=11.99 cfs 39,244 cf

Pond RG-1: Peak Elev=50.99' Storage=7,309 cf Inflow=8.53 cfs 29,964 cf
Outflow=2.75 cfs 29,742 cf

Pond RG-2: Peak Elev=58.32' Storage=535 cf Inflow=1.97 cfs 6,254 cf
Outflow=1.40 cfs 6,254 cf

Link PA-1: Inflow=6.82 cfs 23,964 cf
Primary=6.82 cfs 23,964 cf

Link PA-2: Inflow=4.37 cfs 38,372 cf
Primary=4.37 cfs 38,372 cf

Link PA-3: Inflow=12.23 cfs 40,618 cf
Primary=12.23 cfs 40,618 cf

Link PA-4: Inflow=0.03 cfs 146 cf
Primary=0.03 cfs 146 cf

Link PA-5: Inflow=0.53 cfs 1,763 cf
Primary=0.53 cfs 1,763 cf

Total Runoff Area = 798,313 sf Runoff Volume = 105,085 cf Average Runoff Depth = 1.58"
40.54% Pervious = 323,634 sf 59.46% Impervious = 474,679 sf

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

Subcatchment POST 1.0: Runoff Area=138,301 sf 75.24% Impervious Runoff Depth>2.52"
Flow Length=1,005' Tc=8.4 min CN=89 Runoff=8.44 cfs 29,054 cf

Subcatchment POST 1.1: Runoff Area=53,855 sf 0.99% Impervious Runoff Depth>0.61"
Flow Length=75' Slope=0.0350 '/' Tc=5.0 min CN=60 Runoff=0.66 cfs 2,739 cf

Subcatchment POST 2.1: Runoff Area=211,170 sf 68.33% Impervious Runoff Depth>2.26"
Flow Length=745' Tc=9.2 min CN=86 Runoff=11.27 cfs 39,684 cf

Subcatchment POST 2.2: Runoff Area=42,134 sf 69.19% Impervious Runoff Depth>2.34"
Flow Length=215' Tc=6.2 min CN=87 Runoff=2.58 cfs 8,226 cf

Subcatchment POST 2.3: Runoff Area=58,185 sf 9.83% Impervious Runoff Depth>0.80"
Flow Length=115' Slope=0.0200 '/' Tc=6.3 min CN=64 Runoff=1.02 cfs 3,864 cf

Subcatchment POST 3.0: Runoff Area=158,759 sf 73.04% Impervious Runoff Depth>2.43"
Flow Length=635' Slope=0.0150 '/' Tc=7.2 min CN=88 Runoff=9.77 cfs 32,161 cf

Subcatchment POST 3.1: Runoff Area=39,638 sf 0.00% Impervious Runoff Depth>0.65"
Flow Length=150' Tc=5.7 min CN=61 Runoff=0.53 cfs 2,163 cf

Subcatchment POST 3.2: Runoff Area=3,338 sf 0.00% Impervious Runoff Depth>0.65"
Flow Length=115' Tc=5.0 min CN=61 Runoff=0.05 cfs 182 cf

Subcatchment POST 4.0: Runoff Area=4,581 sf 0.00% Impervious Runoff Depth>0.65"
Tc=5.0 min CN=61 Runoff=0.06 cfs 250 cf

Subcatchment POST 5.0: Runoff Area=8,825 sf 89.09% Impervious Runoff Depth>3.01"
Flow Length=230' Slope=0.0200 '/' Tc=6.2 min CN=94 Runoff=0.66 cfs 2,213 cf

Subcatchment POST-3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>2.81"
Tc=5.0 min CN=92 Runoff=5.86 cfs 18,608 cf

Pond PDMH11: PDMH11 Peak Elev=60.58' Inflow=8.44 cfs 29,054 cf
Primary=6.50 cfs 28,011 cf Secondary=1.94 cfs 1,043 cf Outflow=8.44 cfs 29,054 cf

Pond PDMH20: PDMH20 Peak Elev=57.07' Inflow=11.27 cfs 39,684 cf
Primary=5.24 cfs 34,511 cf Secondary=6.03 cfs 5,174 cf Outflow=11.27 cfs 39,684 cf

Pond PDMH3: PDMH3 Peak Elev=61.67' Inflow=15.39 cfs 50,768 cf
Primary=7.70 cfs 44,233 cf Secondary=7.69 cfs 6,536 cf Outflow=15.39 cfs 50,768 cf

Pond RG-1: Peak Elev=51.74' Storage=10,881 cf Inflow=11.27 cfs 39,684 cf
Outflow=3.07 cfs 39,437 cf

Pond RG-2: Peak Elev=59.12' Storage=792 cf Inflow=2.58 cfs 8,226 cf
Outflow=1.69 cfs 8,225 cf

Link PA-1: Inflow=9.09 cfs 31,793 cf
Primary=9.09 cfs 31,793 cf

Link PA-2: Inflow=5.28 cfs 51,526 cf
Primary=5.28 cfs 51,526 cf

Link PA-3: Inflow=15.96 cfs 53,113 cf
Primary=15.96 cfs 53,113 cf

Link PA-4: Inflow=0.06 cfs 250 cf
Primary=0.06 cfs 250 cf

Link PA-5: Inflow=0.66 cfs 2,213 cf
Primary=0.66 cfs 2,213 cf

Total Runoff Area = 798,313 sf Runoff Volume = 139,143 cf Average Runoff Depth = 2.09"
40.54% Pervious = 323,634 sf 59.46% Impervious = 474,679 sf

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

Subcatchment POST 1.0: Runoff Area=138,301 sf 75.24% Impervious Runoff Depth>4.32"
Flow Length=1,005' Tc=8.4 min CN=89 Runoff=14.15 cfs 49,841 cf

Subcatchment POST 1.1: Runoff Area=53,855 sf 0.99% Impervious Runoff Depth>1.65"
Flow Length=75' Slope=0.0350 '/' Tc=5.0 min CN=60 Runoff=2.24 cfs 7,409 cf

Subcatchment POST 2.1: Runoff Area=211,170 sf 68.33% Impervious Runoff Depth>4.01"
Flow Length=745' Tc=9.2 min CN=86 Runoff=19.69 cfs 70,500 cf

Subcatchment POST 2.2: Runoff Area=42,134 sf 69.19% Impervious Runoff Depth>4.11"
Flow Length=215' Tc=6.2 min CN=87 Runoff=4.43 cfs 14,442 cf

Subcatchment POST 2.3: Runoff Area=58,185 sf 9.83% Impervious Runoff Depth>1.97"
Flow Length=115' Slope=0.0200 '/' Tc=6.3 min CN=64 Runoff=2.89 cfs 9,535 cf

Subcatchment POST 3.0: Runoff Area=158,759 sf 73.04% Impervious Runoff Depth>4.22"
Flow Length=635' Slope=0.0150 '/' Tc=7.2 min CN=88 Runoff=16.59 cfs 55,809 cf

Subcatchment POST 3.1: Runoff Area=39,638 sf 0.00% Impervious Runoff Depth>1.73"
Flow Length=150' Tc=5.7 min CN=61 Runoff=1.72 cfs 5,708 cf

Subcatchment POST 3.2: Runoff Area=3,338 sf 0.00% Impervious Runoff Depth>1.73"
Flow Length=115' Tc=5.0 min CN=61 Runoff=0.15 cfs 481 cf

Subcatchment POST 4.0: Runoff Area=4,581 sf 0.00% Impervious Runoff Depth>1.73"
Tc=5.0 min CN=61 Runoff=0.20 cfs 660 cf

Subcatchment POST 5.0: Runoff Area=8,825 sf 89.09% Impervious Runoff Depth>4.88"
Flow Length=230' Slope=0.0200 '/' Tc=6.2 min CN=94 Runoff=1.04 cfs 3,587 cf

Subcatchment POST-3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>4.65"
Tc=5.0 min CN=92 Runoff=9.45 cfs 30,847 cf

Pond PDMH11: PDMH11 Peak Elev=61.16' Inflow=14.15 cfs 49,841 cf
Primary=8.11 cfs 45,205 cf Secondary=6.04 cfs 4,636 cf Outflow=14.15 cfs 49,841 cf

Pond PDMH20: PDMH20 Peak Elev=57.79' Inflow=19.69 cfs 70,500 cf
Primary=6.15 cfs 54,903 cf Secondary=13.55 cfs 15,598 cf Outflow=19.69 cfs 70,500 cf

Pond PDMH3: PDMH3 Peak Elev=62.34' Inflow=25.65 cfs 86,656 cf
Primary=9.09 cfs 69,426 cf Secondary=16.56 cfs 17,230 cf Outflow=25.65 cfs 86,656 cf

Pond RG-1: Peak Elev=53.43' Storage=20,520 cf Inflow=19.69 cfs 70,500 cf
Outflow=7.39 cfs 70,190 cf

Pond RG-2: Peak Elev=59.98' Storage=1,977 cf Inflow=4.43 cfs 14,442 cf
Outflow=2.15 cfs 14,442 cf

Link PA-1: Inflow=16.31 cfs 57,250 cf
Primary=16.31 cfs 57,250 cf

Link PA-2: Inflow=10.55 cfs 94,167 cf
Primary=10.55 cfs 94,167 cf

Link PA-3: Inflow=27.51 cfs 92,845 cf
Primary=27.51 cfs 92,845 cf

Link PA-4: Inflow=0.20 cfs 660 cf
Primary=0.20 cfs 660 cf

Link PA-5: Inflow=1.04 cfs 3,587 cf
Primary=1.04 cfs 3,587 cf

Total Runoff Area = 798,313 sf Runoff Volume = 248,820 cf Average Runoff Depth = 3.74"
40.54% Pervious = 323,634 sf 59.46% Impervious = 474,679 sf

Summary for Subcatchment POST 1.0:

[47] Hint: Peak is 562% of capacity of segment #2

Runoff = 14.15 cfs @ 12.12 hrs, Volume= 49,841 cf, Depth> 4.32"
Routed to Pond PDMH11 : PDMH11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
34,247	61	>75% Grass cover, Good, HSG B
75,627	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
28,427	98	Roofs, HSG B
138,301	89	Weighted Average
34,247		24.76% Pervious Area
104,054		75.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	35	0.0300	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
5.0	970	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
8.4	1,005	Total			

Summary for Subcatchment POST 1.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.24 cfs @ 12.09 hrs, Volume= 7,409 cf, Depth> 1.65"
Routed to Link PA-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

	Area (sf)	CN	Description
	36,910	61	>75% Grass cover, Good, HSG B
	535	98	Paved parking, HSG B
	16,410	55	Woods, Good, HSG B
	0	98	Unconnected roofs, HSG B
	0	74	>75% Grass cover, Good, HSG C
	0	98	Paved parking, HSG C
*	0	98	Roofs, HGC C
	0	70	Woods, Good, HSG C
	0	80	>75% Grass cover, Good, HSG D
	0	98	Paved parking, HSG D
	0	77	Woods, Good, HSG D
	53,855	60	Weighted Average
	53,320		99.01% Pervious Area
	535		0.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.0350	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
0.3	25	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	75	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 2.1:

[47] Hint: Peak is 782% of capacity of segment #3

Runoff = 19.69 cfs @ 12.13 hrs, Volume= 70,500 cf, Depth> 4.01"
Routed to Pond PDMH20 : PDMH20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
66,876	61	>75% Grass cover, Good, HSG B
101,862	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
42,432	98	Roofs, HSG B
211,170	86	Weighted Average
66,876		31.67% Pervious Area
144,294		68.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
0.6	35	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	660	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.2	745	Total			

Summary for Subcatchment POST 2.2:

Runoff = 4.43 cfs @ 12.09 hrs, Volume= 14,442 cf, Depth> 4.11"
Routed to Pond RG-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
12,981	61	>75% Grass cover, Good, HSG B
21,766	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
7,387	98	Roofs, HSG B
42,134	87	Weighted Average
12,981		30.81% Pervious Area
29,153		69.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
1.7	85	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	80	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.2	215	Total			

Summary for Subcatchment POST 2.3:

Runoff = 2.89 cfs @ 12.10 hrs, Volume= 9,535 cf, Depth> 1.97"
Routed to Link PA-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
44,627	61	>75% Grass cover, Good, HSG B
5,720	98	Paved parking, HSG B
7,775	55	Woods, Good, HSG B
0	98	Unconnected roofs, HSG B
63	74	>75% Grass cover, Good, HSG C
58,185	64	Weighted Average
52,465		90.17% Pervious Area
5,720		9.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
1.1	65	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.3	115	Total			

Summary for Subcatchment POST 3.0:

[47] Hint: Peak is 380% of capacity of segment #2

Runoff = 16.59 cfs @ 12.10 hrs, Volume= 55,809 cf, Depth> 4.22"
Routed to Pond PDMH3 : PDMH3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
42,799	61	>75% Grass cover, Good, HSG B
94,275	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
21,685	98	Roofs, HSG B
158,759	88	Weighted Average
42,799		26.96% Pervious Area
115,960		73.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	45	0.0150	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
1.8	590	0.0150	5.56	4.36	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
7.2	635	Total			

Summary for Subcatchment POST 3.1:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.72 cfs @ 12.10 hrs, Volume= 5,708 cf, Depth> 1.73"
Routed to Link PA-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
24,506	61	>75% Grass cover, Good, HSG B
0	98	Paved parking, HSG B
10,044	55	Woods, Good, HSG B
0	98	Roofs, HSG B
5,088	70	Woods, Good, HSG C
39,638	61	Weighted Average
39,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.0350	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.7	150	Total			

Summary for Subcatchment POST 3.2:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 481 cf, Depth> 1.73"
Routed to Link PA-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
3,338	61	>75% Grass cover, Good, HSG B
0	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
0	98	Roofs, HSG B
3,338	61	Weighted Average
3,338		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.3000	3.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
1.9	40	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	115	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 4.0:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 660 cf, Depth> 1.73"
Routed to Link PA-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
4,581	61	>75% Grass cover, Good, HSG B
0	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
0	98	Unconnected roofs, HSG B
4,581	61	Weighted Average
4,581		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					**Direct Entry,**
1.0	0	Total, Increased to minimum Tc = 5.0 min			

Summary for Subcatchment POST 5.0:

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 3,587 cf, Depth> 4.88"
Routed to Link PA-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
963	61	>75% Grass cover, Good, HSG B
7,862	98	Paved parking, HSG B
0	55	Woods, Good, HSG B
0	98	Unconnected roofs, HSG B
8,825	94	Weighted Average
963		10.91% Pervious Area
7,862		89.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.68"
1.0	180	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.2	230	Total			

Summary for Subcatchment POST-3.10:

*Web Soil Survey data used for off-site analysis.

[49] Hint: Tc<2dt may require smaller dt

Runoff = 9.45 cfs @ 12.07 hrs, Volume= 30,847 cf, Depth> 4.65"
Routed to Pond PDMH3 : PDMH3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Rainfall=5.58"

Area (sf)	CN	Description
12,426	61	>75% Grass cover, Good, HSG B
52,558	98	Paved parking, HSG B
14,543	98	Unconnected roofs, HSG B
79,527	92	Weighted Average
12,426		15.62% Pervious Area
67,101		84.38% Impervious Area
14,543		21.67% Unconnected

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

Summary for Pond PDMH11: PDMH11

Inflow Area = 138,301 sf, 75.24% Impervious, Inflow Depth > 4.32" for 10-Yr event
Inflow = 14.15 cfs @ 12.12 hrs, Volume= 49,841 cf
Outflow = 14.15 cfs @ 12.12 hrs, Volume= 49,841 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.11 cfs @ 12.12 hrs, Volume= 45,205 cf
Routed to Link PA-1 :
Secondary = 6.04 cfs @ 12.12 hrs, Volume= 4,636 cf
Routed to Link PA-1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 61.16' @ 12.12 hrs
Flood Elev= 65.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	58.65'	**15.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 58.65' / 58.60' S= 0.0062 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	60.00'	**24.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 60.00' / 59.75' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=8.02 cfs @ 12.12 hrs HW=61.12' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.02 cfs @ 6.54 fps)

Secondary OutFlow Max=5.75 cfs @ 12.12 hrs HW=61.12' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Barrel Controls 5.75 cfs @ 4.59 fps)

Summary for Pond PDMH20: PDMH20

Inflow Area = 211,170 sf, 68.33% Impervious, Inflow Depth > 4.01" for 10-Yr event
Inflow = 19.69 cfs @ 12.13 hrs, Volume= 70,500 cf
Outflow = 19.69 cfs @ 12.13 hrs, Volume= 70,500 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.15 cfs @ 12.13 hrs, Volume= 54,903 cf
Routed to Pond RG-1 :
Secondary = 13.55 cfs @ 12.13 hrs, Volume= 15,598 cf
Routed to Pond RG-1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 57.79' @ 12.13 hrs
Flood Elev= 62.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.65'	**12.0" Round Culvert** L= 6.0' Ke= 0.500 Inlet / Outlet Invert= 54.65' / 54.50' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	56.00'	**24.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 56.00' / 55.50' S= 0.0625 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=6.10 cfs @ 12.13 hrs HW=57.75' TW=51.98' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 6.10 cfs @ 7.77 fps)

Secondary OutFlow Max=13.18 cfs @ 12.13 hrs HW=57.75' TW=51.98' (Dynamic Tailwater)
└─**2=Culvert** (Inlet Controls 13.18 cfs @ 4.51 fps)

Summary for Pond PDMH3: PDMH3

Inflow Area = 238,286 sf, 76.82% Impervious, Inflow Depth > 4.36" for 10-Yr event
Inflow = 25.65 cfs @ 12.09 hrs, Volume= 86,656 cf
Outflow = 25.65 cfs @ 12.09 hrs, Volume= 86,656 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.09 cfs @ 12.09 hrs, Volume= 69,426 cf
Routed to Link PA-3 :
Secondary = 16.56 cfs @ 12.09 hrs, Volume= 17,230 cf
Routed to Link PA-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 62.34' @ 12.09 hrs
Flood Elev= 65.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.35'	**15.0" Round Culvert** L= 9.0' Ke= 0.500 Inlet / Outlet Invert= 59.35' / 59.30' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Secondary	60.50'	**36.0" Round Culvert** L= 8.0' Ke= 0.500 Inlet / Outlet Invert= 60.50' / 60.30' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=9.03 cfs @ 12.09 hrs HW=62.31' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.03 cfs @ 7.36 fps)

Secondary OutFlow Max=16.17 cfs @ 12.09 hrs HW=62.31' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Barrel Controls 16.17 cfs @ 5.19 fps)

Summary for Pond RG-1:

Inflow Area = 211,170 sf, 68.33% Impervious, Inflow Depth > 4.01" for 10-Yr event
Inflow = 19.69 cfs @ 12.13 hrs, Volume= 70,500 cf
Outflow = 7.39 cfs @ 12.44 hrs, Volume= 70,190 cf, Atten= 62%, Lag= 18.8 min
Primary = 7.39 cfs @ 12.44 hrs, Volume= 70,190 cf
Routed to Link PA-2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.43' @ 12.44 hrs Surf.Area= 6,437 sf Storage= 20,520 cf
Flood Elev= 55.00' Surf.Area= 7,897 sf Storage= 31,749 cf

Plug-Flow detention time= 42.2 min calculated for 70,044 cf (99% of inflow)
Center-of-Mass det. time= 39.4 min (841.9 - 802.5)

Volume	Invert	Avail.Storage	Storage Description
#1	47.40'	31,749 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.40	3,709	0.0	0	0
48.50	3,709	40.0	1,632	1,632
50.00	3,709	30.0	1,669	3,301
51.00	4,433	100.0	4,071	7,372
52.00	5,214	100.0	4,824	12,196
53.00	6,052	100.0	5,633	17,829
54.00	6,946	100.0	6,499	24,328
55.00	7,897	100.0	7,422	31,749

Device	Routing	Invert	Outlet Devices
#1	Primary	47.40'	**24.0" Round Culvert** L= 65.0' Ke= 0.500 Inlet / Outlet Invert= 47.40' / 47.00' S= 0.0062 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	47.40'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	47.40'	**10.000 in/hr Exfiltration over Surface area**
#4	Device 1	53.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#5	Device 1	54.00'	**1.0" x 1.0" Horiz. Orifice/Grate** X 114 rows C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.36 cfs @ 12.44 hrs HW=53.43' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 7.36 cfs of 33.92 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.27 cfs @ 11.58 fps)
  ├─**3=Exfiltration** (Exfiltration Controls 1.49 cfs)
  ├─**4=Sharp-Crested Rectangular Weir** (Weir Controls 3.60 cfs @ 2.14 fps)
  └─**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond RG-2:

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=81)

Inflow Area = 42,134 sf, 69.19% Impervious, Inflow Depth > 4.11" for 10-Yr event
Inflow = 4.43 cfs @ 12.09 hrs, Volume= 14,442 cf
Outflow = 2.15 cfs @ 12.26 hrs, Volume= 14,442 cf, Atten= 51%, Lag= 10.2 min
Primary = 2.15 cfs @ 12.26 hrs, Volume= 14,442 cf
Routed to Link PA-2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 59.98' @ 12.26 hrs Surf.Area= 1,843 sf Storage= 1,977 cf
Flood Elev= 61.00' Surf.Area= 3,341 sf Storage= 4,618 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.9 min (802.8 - 796.9)

Volume	Invert	Avail.Storage	Storage Description
#1	56.40'	4,618 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.40	779	0.0	0	0
57.50	779	40.0	343	343
59.00	779	30.0	351	693
60.00	1,865	100.0	1,322	2,015
61.00	3,341	100.0	2,603	4,618

Device	Routing	Invert	Outlet Devices
#1	Primary	54.50'	**24.0" Round Culvert** L= 4.0' Ke= 0.500 Inlet / Outlet Invert= 54.50' / 54.00' S= 0.1250 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	56.40'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	56.40'	**10.000 in/hr Exfiltration over Surface area**

#4	Device 1	60.50'	**1.0" x 1.0" Horiz. Orifice/Grate** X 114 rows C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.15 cfs @ 12.26 hrs HW=59.98' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.15 cfs of 32.00 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.72 cfs @ 8.78 fps)
  ├─**3=Exfiltration** (Exfiltration Controls 0.43 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA-1:

Inflow Area = 192,156 sf, 54.43% Impervious, Inflow Depth > 3.58" for 10-Yr event
Inflow = 16.31 cfs @ 12.11 hrs, Volume= 57,250 cf
Primary = 16.31 cfs @ 12.11 hrs, Volume= 57,250 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-2:

Inflow Area = 311,489 sf, 57.52% Impervious, Inflow Depth > 3.63" for 10-Yr event
Inflow = 10.55 cfs @ 12.42 hrs, Volume= 94,167 cf
Primary = 10.55 cfs @ 12.42 hrs, Volume= 94,167 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-3:

Inflow Area = 281,262 sf, 65.09% Impervious, Inflow Depth > 3.96" for 10-Yr event
Inflow = 27.51 cfs @ 12.09 hrs, Volume= 92,845 cf
Primary = 27.51 cfs @ 12.09 hrs, Volume= 92,845 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-4:

Inflow Area = 4,581 sf, 0.00% Impervious, Inflow Depth > 1.73" for 10-Yr event
Inflow = 0.20 cfs @ 12.09 hrs, Volume= 660 cf
Primary = 0.20 cfs @ 12.09 hrs, Volume= 660 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA-5:

Inflow Area = 8,825 sf, 89.09% Impervious, Inflow Depth > 4.88" for 10-Yr event
Inflow = 1.04 cfs @ 12.09 hrs, Volume= 3,587 cf
Primary = 1.04 cfs @ 12.09 hrs, Volume= 3,587 cf, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment POST 1.0: Runoff Area=138,301 sf 75.24% Impervious Runoff Depth>5.77"
Flow Length=1,005' Tc=8.4 min CN=89 Runoff=18.59 cfs 66,502 cf

Subcatchment POST 1.1: Runoff Area=53,855 sf 0.99% Impervious Runoff Depth>2.65"
Flow Length=75' Slope=0.0350 '/' Tc=5.0 min CN=60 Runoff=3.76 cfs 11,898 cf

Subcatchment POST 2.1: Runoff Area=211,170 sf 68.33% Impervious Runoff Depth>5.43"
Flow Length=745' Tc=9.2 min CN=86 Runoff=26.31 cfs 95,487 cf

Subcatchment POST 2.2: Runoff Area=42,134 sf 69.19% Impervious Runoff Depth>5.54"
Flow Length=215' Tc=6.2 min CN=87 Runoff=5.89 cfs 19,462 cf

Subcatchment POST 2.3: Runoff Area=58,185 sf 9.83% Impervious Runoff Depth>3.05"
Flow Length=115' Slope=0.0200 '/' Tc=6.3 min CN=64 Runoff=4.61 cfs 14,795 cf

Subcatchment POST 3.0: Runoff Area=158,759 sf 73.04% Impervious Runoff Depth>5.66"
Flow Length=635' Slope=0.0150 '/' Tc=7.2 min CN=88 Runoff=21.91 cfs 74,834 cf

Subcatchment POST 3.1: Runoff Area=39,638 sf 0.00% Impervious Runoff Depth>2.75"
Flow Length=150' Tc=5.7 min CN=61 Runoff=2.84 cfs 9,083 cf

Subcatchment POST 3.2: Runoff Area=3,338 sf 0.00% Impervious Runoff Depth>2.75"
Flow Length=115' Tc=5.0 min CN=61 Runoff=0.24 cfs 765 cf

Subcatchment POST 4.0: Runoff Area=4,581 sf 0.00% Impervious Runoff Depth>2.75"
Tc=5.0 min CN=61 Runoff=0.33 cfs 1,050 cf

Subcatchment POST 5.0: Runoff Area=8,825 sf 89.09% Impervious Runoff Depth>6.35"
Flow Length=230' Slope=0.0200 '/' Tc=6.2 min CN=94 Runoff=1.34 cfs 4,672 cf

Subcatchment POST-3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>6.12"
Tc=5.0 min CN=92 Runoff=12.23 cfs 40,564 cf

Pond PDMH11: PDMH11 Peak Elev=61.56' Inflow=18.59 cfs 66,502 cf
Primary=8.92 cfs 57,836 cf Secondary=9.67 cfs 8,666 cf Outflow=18.59 cfs 66,502 cf

Pond PDMH20: PDMH20 Peak Elev=58.61' Inflow=26.31 cfs 95,487 cf
Primary=7.04 cfs 70,527 cf Secondary=19.27 cfs 24,960 cf Outflow=26.31 cfs 95,487 cf

Pond PDMH3: PDMH3 Peak Elev=62.79' Inflow=33.64 cfs 115,398 cf
Primary=9.92 cfs 88,385 cf Secondary=23.72 cfs 27,012 cf Outflow=33.64 cfs 115,398 cf

Pond RG-1: Peak Elev=53.91' Storage=23,726 cf Inflow=26.31 cfs 95,487 cf
Outflow=14.84 cfs 95,136 cf

Pond RG-2: Peak Elev=60.51' Storage=3,150 cf Inflow=5.89 cfs 19,462 cf
Outflow=2.53 cfs 19,462 cf

Link PA-1: Inflow=22.18 cfs 78,400 cf
Primary=22.18 cfs 78,400 cf

Link PA-2: Inflow=19.61 cfs 129,393 cf
Primary=19.61 cfs 129,393 cf

Link PA-3: Inflow=36.72 cfs 125,246 cf
Primary=36.72 cfs 125,246 cf

Link PA-4: Inflow=0.33 cfs 1,050 cf
Primary=0.33 cfs 1,050 cf

Link PA-5: Inflow=1.34 cfs 4,672 cf
Primary=1.34 cfs 4,672 cf

Total Runoff Area = 798,313 sf Runoff Volume = 339,112 cf Average Runoff Depth = 5.10"
40.54% Pervious = 323,634 sf 59.46% Impervious = 474,679 sf

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

Subcatchment POST 1.0: Runoff Area=138,301 sf 75.24% Impervious Runoff Depth>7.13"
Flow Length=1,005' Tc=8.4 min CN=89 Runoff=22.71 cfs 82,186 cf

Subcatchment POST 1.1: Runoff Area=53,855 sf 0.99% Impervious Runoff Depth>3.68"
Flow Length=75' Slope=0.0350 '/' Tc=5.0 min CN=60 Runoff=5.29 cfs 16,512 cf

Subcatchment POST 2.1: Runoff Area=211,170 sf 68.33% Impervious Runoff Depth>6.77"
Flow Length=745' Tc=9.2 min CN=86 Runoff=32.44 cfs 119,130 cf

Subcatchment POST 2.2: Runoff Area=42,134 sf 69.19% Impervious Runoff Depth>6.89"
Flow Length=215' Tc=6.2 min CN=87 Runoff=7.23 cfs 24,203 cf

Subcatchment POST 2.3: Runoff Area=58,185 sf 9.83% Impervious Runoff Depth>4.15"
Flow Length=115' Slope=0.0200 '/' Tc=6.3 min CN=64 Runoff=6.31 cfs 20,108 cf

Subcatchment POST 3.0: Runoff Area=158,759 sf 73.04% Impervious Runoff Depth>7.01"
Flow Length=635' Slope=0.0150 '/' Tc=7.2 min CN=88 Runoff=26.83 cfs 92,771 cf

Subcatchment POST 3.1: Runoff Area=39,638 sf 0.00% Impervious Runoff Depth>3.80"
Flow Length=150' Tc=5.7 min CN=61 Runoff=3.97 cfs 12,537 cf

Subcatchment POST 3.2: Runoff Area=3,338 sf 0.00% Impervious Runoff Depth>3.80"
Flow Length=115' Tc=5.0 min CN=61 Runoff=0.34 cfs 1,056 cf

Subcatchment POST 4.0: Runoff Area=4,581 sf 0.00% Impervious Runoff Depth>3.80"
Tc=5.0 min CN=61 Runoff=0.47 cfs 1,449 cf

Subcatchment POST 5.0: Runoff Area=8,825 sf 89.09% Impervious Runoff Depth>7.73"
Flow Length=230' Slope=0.0200 '/' Tc=6.2 min CN=94 Runoff=1.61 cfs 5,688 cf

Subcatchment POST-3.10: Runoff Area=79,527 sf 84.38% Impervious Runoff Depth>7.50"
Tc=5.0 min CN=92 Runoff=14.81 cfs 49,674 cf

Pond PDMH11: PDMH11 Peak Elev=61.91' Inflow=22.71 cfs 82,186 cf
Primary=9.59 cfs 69,225 cf Secondary=13.11 cfs 12,961 cf Outflow=22.71 cfs 82,186 cf

Pond PDMH20: PDMH20 Peak Elev=59.60' Inflow=32.44 cfs 119,130 cf
Primary=7.99 cfs 84,905 cf Secondary=24.46 cfs 34,225 cf Outflow=32.44 cfs 119,130 cf

Pond PDMH3: PDMH3 Peak Elev=63.19' Inflow=41.03 cfs 142,444 cf
Primary=10.59 cfs 105,329 cf Secondary=30.44 cfs 37,116 cf Outflow=41.03 cfs 142,444 cf

Pond RG-1: Peak Elev=54.26' Storage=26,148 cf Inflow=32.44 cfs 119,130 cf
Outflow=23.32 cfs 118,744 cf

Pond RG-2: Peak Elev=60.70' Storage=3,674 cf Inflow=7.23 cfs 24,203 cf
Outflow=4.27 cfs 24,203 cf

Link PA-1: Inflow=27.75 cfs 98,698 cf
Primary=27.75 cfs 98,698 cf

Link PA-2: Inflow=31.62 cfs 163,056 cf
Primary=31.62 cfs 163,056 cf

Link PA-3: Inflow=45.35 cfs 156,038 cf
Primary=45.35 cfs 156,038 cf

Link PA-4: Inflow=0.47 cfs 1,449 cf
Primary=0.47 cfs 1,449 cf

Link PA-5: Inflow=1.61 cfs 5,688 cf
Primary=1.61 cfs 5,688 cf

Total Runoff Area = 798,313 sf Runoff Volume = 425,314 cf Average Runoff Depth = 6.39"
40.54% Pervious = 323,634 sf 59.46% Impervious = 474,679 sf

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
284,254	61	>75% Grass cover, Good, HSG B (POST 1.0, POST 1.1, POST 2.1, POST 2.2, POST 2.3, POST 3.0, POST 3.1, POST 3.2, POST 4.0, POST 5.0, POST-3.10)
63	74	>75% Grass cover, Good, HSG C (POST 2.3)
360,205	98	Paved parking, HSG B (POST 1.0, POST 1.1, POST 2.1, POST 2.2, POST 2.3, POST 3.0, POST 5.0, POST-3.10)
99,931	98	Roofs, HSG B (POST 1.0, POST 2.1, POST 2.2, POST 3.0)
14,543	98	Unconnected roofs, HSG B (POST-3.10)
34,229	55	Woods, Good, HSG B (POST 1.1, POST 2.3, POST 3.1)
5,088	70	Woods, Good, HSG C (POST 3.1)
798,313	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
793,162	HSG B	POST 1.0, POST 1.1, POST 2.1, POST 2.2, POST 2.3, POST 3.0, POST 3.1, POST 3.2, POST 4.0, POST 5.0, POST-3.10
5,151	HSG C	POST 2.3, POST 3.1
0	HSG D	
0	Other	
798,313		**TOTAL AREA**

Section 4
Peak Rate Comparison

The following table summarizes and compares the pre- and post-development peak runoff rates from the 2-year, 10-year, 25-year and 50-year storm events at the point of analysis. The 1-year event has been included in order to demonstrate compliance with the Channel Protection requirements of Env-Wq 1507.05 for select points of analysis.

Table 4.1
Comparison of Pre- and Post-Development Flows (CFS)

	1-Year Storm	2-Year Storm	10-Year Storm	25-Year Storm	50-Year Storm
Pre-Development Watershed					
PA-1	7.56	10.36	19.19	26.26	32.86
PA-2	7.74	10.04	16.81	25.58	38.42
PA-3	12.32	16.62	30.22	41.10	51.37
PA-4	0.81	1.06	1.83	2.44	2.99
PA-5	0.57	0.69	1.06	1.35	1.61
Post-Development Watershed					
PA-1	6.82	9.09	16.31	22.18	27.75
PA-2	4.37	5.28	10.55	19.61	31.62
PA-3	12.23	15.96	27.51	36.72	45.35
PA-4	0.03	0.06	0.20	0.33	0.47
PA-5	0.53	0.66	1.04	1.34	1.61

Each of the points of analysis meets the channel protection requirements of Env-Wq 105.05 as follows:

<u>PA-1:</u> The 2-year, 24-hour post-development runoff volume (31,793 cf) has not increased over the 2-year, 24 hour pre-development runoff volume (33,388 cf)by more than 0.1 ac-ft (or 4,356 cf).

<u>PA-2:</u> The 2-year, 24-hour post-development peak flow rate (5.28 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flow rate (7.74 cfs).

<u>PA-3:</u> The 2-year, 24-hour post-development runoff volume (53,113 cf) has not increased over the 2-year, 24 hour pre-development runoff volume (61,093 cf) by more than 0.1 ac-ft (or 4,356 cf).

<u>PA-4:</u> The 2-year, 24-hour post-development peak flow rate (0.06 cfs) is less than or equal to the 1-year, 24-hour pre-development peak flow rate (0.81 cfs).

<u>PA-5:</u> The 2-year, 24-hour post-development runoff volume (2,213 cf) has not increased over the 2-year, 24 hour pre-development runoff volume (2,409 cf) by more than 0.1 ac-ft (or 4,356 cf).

Section 5
Mitigation Description

The stormwater management system has been designed to provide stormwater treatment as required by the City of Portsmouth Site Review Regulations and NHDES AoT Regulations (Env-Wq 1500).

5.1 Pre-Treatment Methods for Protecting Water Quality

Pre-treatment for the stormwater filtration systems consists of off-line deep sump catch basins, sediment forebays, Rain Guardian turrets, and Contech CDS units.

5.2 Treatment Methods for Protecting Water Quality.

The runoff from proposed impervious areas will be treated by Contech Jellyfish stormwater filtration systems as well as a Rain Garden bioretention systems. These Jellyfish and Rain Garden systems are sized to treat the Water Quality Flow of their respective sub catchment areas. The BMP worksheets for the treatment practices have been included in Section 6 of this report.

The proposed stormwater management system is required to remove 80% of the annual Total Suspended Soils (TSS) loads and 50% of the annual Total Nitrogen (TN) loads per the City of Portsmouth's Site Plan regulations, Section 7.6.2.1.a.i. As shown in Table 5.1 the pollutant removal efficiencies for the proposed treatment systems exceed the City of Portsmouth's removal requirements.

Table 5.1 – Pollutant Removal Efficiencies

BMP	Total Suspended Solids	Total Nitrogen	Total Phosphorus
Jellyfish Filter w/Pretreatment[1]	85%	50%	55%
Rain Garden w/ Pretreatment[2]	90%	65%	65%

1. Pollutant removal efficiencies from Contech Engineered Solutions, Jellyfish Filter Stormwater Treatment standard performance specifications. Pre-treatment upstream of the unit is assumed to be accounted for.
2. Pollutant removal efficiencies from NH Stormwater Manual Volume 2, Appendix E. Per the descriptions listed in the Appendix, pre-treatment is already accounted for in the efficiencies cited.

Section 6
BMP Worksheets

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **RG-1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
4.85	ac	A = Area draining to the practice	
3.31	ac	A_I = Impervious area draining to the practice	
0.68	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.66	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
3.22	ac-in	WQV= 1" x Rv x A	
11,694	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
2,924	cf	25% x WQV (check calc for sediment forebay volume)	
8,771	cf	75% x WQV (check calc for surface sand filter volume)	
CDS Unit		Method of Pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
52.25	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
3.28	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
1.98	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
48.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
47.40	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
See Notes	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
See Notes	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.10	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
54.26	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
55.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
16,197	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	**mod. 304.1 (see spec)**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Limited test pit information available due to existing site test pit access and location constraints, as described in the test pit data and logs included under Appendix B. Rain garden is proposed to be underdrained by a 6" perforated PVC, and no exfiltration to subgrade soils has been carried in the drainage design or model.

Stage-Area-Storage for Pond RG-1:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	3,709	0	50.00	3,709	3,301
47.45	3,709	74	50.05	3,745	3,487
47.50	3,709	148	50.10	3,781	3,676
47.55	3,709	223	50.15	3,818	3,866
47.60	3,709	297	50.20	3,854	4,057
47.65	3,709	371	50.25	3,890	4,251
47.70	3,709	445	50.30	3,926	4,446
47.75	3,709	519	50.35	3,962	4,644
47.80	3,709	593	50.40	3,999	4,843
47.85	3,709	668	50.45	4,035	5,043
47.90	3,709	742	50.50	4,071	5,246
47.95	3,709	816	50.55	4,107	5,450
48.00	3,709	890	50.60	4,143	5,657
48.05	3,709	964	50.65	4,180	5,865
48.10	3,709	1,039	50.70	4,216	6,075
48.15	3,709	1,113	50.75	4,252	6,286
48.20	3,709	1,187	50.80	4,288	6,500
48.25	3,709	1,261	50.85	4,324	6,715
48.30	3,709	1,335	50.90	4,361	6,932
48.35	3,709	1,409	50.95	4,397	7,151
48.40	3,709	1,484	51.00	4,433	7,372
48.45	3,709	1,558	51.05	4,472	7,595
48.50	3,709	1,632	51.10	4,511	7,819
48.55	3,709	1,688	51.15	4,550	8,046
48.60	3,709	1,743	51.20	4,589	8,274
48.65	3,709	1,799	51.25	4,628	8,505
48.70	3,709	1,854	51.30	4,667	8,737
48.75	3,709	1,910	51.35	4,706	8,971
48.80	3,709	1,966	51.40	4,745	9,208
48.85	3,709	2,021	51.45	4,784	9,446
48.90	3,709	2,077	51.50	4,824	9,686
48.95	3,709	2,133	51.55	4,863	9,928
49.00	3,709	2,188	51.60	4,902	10,172
49.05	3,709	2,244	51.65	4,941	10,418
49.10	3,709	2,300	51.70	4,980	10,666
49.15	3,709	2,355	51.75	5,019	10,916
49.20	3,709	2,411	51.80	5,058	11,168
49.25	3,709	2,466	51.85	5,097	11,422
49.30	3,709	2,522	51.90	5,136	11,678
49.35	3,709	2,578	51.95	5,175	11,936
49.40	3,709	2,633	52.00	5,214	12,196
49.45	3,709	2,689	52.05	5,256	12,457
49.50	3,709	2,745	52.10	5,298	12,721
49.55	3,709	2,800	52.15	5,340	12,987
49.60	3,709	2,856	52.20	5,382	13,255
49.65	3,709	2,912	52.25	5,424	13,525
49.70	3,709	2,967	52.30	5,465	13,797
49.75	3,709	3,023	52.35	5,507	14,072
49.80	3,709	3,078	52.40	5,549	14,348
49.85	3,709	3,134	52.45	5,591	14,627
49.90	3,709	3,190	52.50	5,633	14,907
49.95	3,709	3,245	52.55	5,675	15,190

Bottom of Filter Course

Ewqv (excluding volume below filter course

Stage-Area-Storage for Pond RG-1: (continued)

First Outlet

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
52.60	5,717	15,475
52.65	5,759	15,762
52.70	5,801	16,051
52.75	5,843	16,342
52.80	5,884	16,635
52.85	5,926	16,930
52.90	5,968	17,227
52.95	6,010	17,527
53.00	6,052	17,829
53.05	6,097	18,132
53.10	6,141	18,438
53.15	6,186	18,746
53.20	6,231	19,057
53.25	6,276	19,369
53.30	6,320	19,684
53.35	6,365	20,001
53.40	6,410	20,321
53.45	6,454	20,642
53.50	6,499	20,966
53.55	6,544	21,292
53.60	6,588	21,621
53.65	6,633	21,951
53.70	6,678	22,284
53.75	6,723	22,619
53.80	6,767	22,956
53.85	6,812	23,296
53.90	6,857	23,637
53.95	6,901	23,981
54.00	6,946	24,328
54.05	6,994	24,676
54.10	7,041	25,027
54.15	7,089	25,380
54.20	7,136	25,736
54.25	7,184	26,094
54.30	7,231	26,454
54.35	7,279	26,817
54.40	7,326	27,182
54.45	7,374	27,549
54.50	7,422	27,919
54.55	7,469	28,292
54.60	7,517	28,666
54.65	7,564	29,043
54.70	7,612	29,423
54.75	7,659	29,804
54.80	7,707	30,189
54.85	7,754	30,575
54.90	7,802	30,964
54.95	7,849	31,355
55.00	**7,897**	**31,749**

Stage-Discharge for Pond RG-1:

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.40	0.00	50.00	2.31	52.60	3.43
47.45	0.01	50.05	2.33	52.65	3.45
47.50	0.05	50.10	2.36	52.70	3.47
47.55	0.11	50.15	2.38	52.75	3.49
47.60	0.21	50.20	2.40	52.80	3.51
47.65	0.33	50.25	2.42	52.85	3.53
47.70	0.47	50.30	2.45	52.90	3.55
47.75	0.64	50.35	2.47	52.95	3.57
47.80	0.83	50.40	2.49	53.00	3.59
47.85	1.04	50.45	2.52	53.05	3.75
47.90	1.27	50.50	2.54	53.10	4.04
47.95	1.38	50.55	2.56	53.15	4.40
48.00	1.42	50.60	2.58	53.20	4.83
48.05	1.46	50.65	2.61	53.25	5.30
48.10	1.49	50.70	2.63	53.30	5.83
48.15	1.53	50.75	2.65	53.35	6.39
48.20	1.56	50.80	2.67	53.40	6.99
48.25	1.59	50.85	2.69	53.45	7.63
48.30	1.62	50.90	2.71	53.50	8.30
48.35	1.65	50.95	2.74	53.55	9.00
48.40	1.68	51.00	2.76	53.60	9.73
48.45	1.70	51.05	2.78	53.65	10.48
48.50	1.73	51.10	2.80	53.70	11.26
48.55	1.76	51.15	2.82	53.75	12.07
48.60	1.78	51.20	2.84	53.80	12.90
48.65	1.80	51.25	2.87	53.85	13.75
48.70	1.83	51.30	2.89	53.90	14.62
48.75	1.85	51.35	2.91	53.95	15.51
48.80	1.87	51.40	2.93	54.00	16.42
48.85	1.89	51.45	2.95	54.05	18.20
48.90	1.92	51.50	2.97	54.10	19.50
48.95	1.94	51.55	2.99	54.15	20.73
49.00	1.96	51.60	3.01	54.20	21.94
49.05	1.98	51.65	3.03	54.25	23.14
49.10	2.00	51.70	3.06	54.30	24.33
49.15	2.02	51.75	3.08	54.35	25.52
49.20	2.04	51.80	3.10	54.40	26.71
49.25	2.05	51.85	3.12	54.45	27.91
49.30	2.07	51.90	3.14	54.50	29.12
49.35	2.09	51.95	3.16	54.55	30.32
49.40	2.11	52.00	3.18	54.60	31.54
49.45	2.13	52.05	3.20	54.65	32.76
49.50	2.14	52.10	3.22	54.70	33.99
49.55	2.16	52.15	3.24	54.75	35.22
49.60	2.18	52.20	3.26	54.80	36.47
49.65	2.20	52.25	3.28	54.85	37.71
49.70	2.21	52.30	3.30	54.90	38.57
49.75	2.23	52.35	3.32	54.95	38.71
49.80	2.24	52.40	3.35	55.00	**38.86**
49.85	2.26	52.45	3.37		
49.90	2.28	52.50	3.39		
49.95	2.29	52.55	3.41		

Discharge @ Ewqv

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

4.85	ac	A = Area draining to the practice
3.30	ac	A_I = Impervious area draining to the practice
0.68	decimal	I = Percent impervious area draining to the practice, in decimal form
0.66	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
3.21	ac-in	WQV= 1" x Rv x A
11,661	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.66	inches	Q = Water quality depth. Q = WQV/A
96	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.4	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.074	inches	Ia = Initial abstraction. Ia = 0.2S
9.2	minutes	T_c = Time of Concentration
600.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
3.012	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: POST-2.1 WATERSHED
CDS-3
Proprietary Pretreatment device located upstream of underground detention.
Pretreatment Device - Contech CDS Model 3030-6 (designed to treat maximum 3.0 cfs)

Upstream bypass pipe invert set to at least elevation of WQF (refer to stage-storage table)

CDS ESTIMATED NET ANNUAL TSS REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD

100 DURGIN LANE
PORTSMOUTH, NH
for SYSTEM: CDS 3

Area	4.85	acres	CDS Model	3030	
Weighted C	0.71		PSD	110	microns
Tc	6	minutes			

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Treated Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.0%	13.0%	0.07	0.07	100.0	13.0
0.04	12.2%	25.2%	0.14	0.14	100.0	12.2
0.06	11.2%	36.4%	0.21	0.21	99.7	11.2
0.08	10.0%	46.4%	0.28	0.28	99.2	9.9
0.10	8.2%	54.6%	0.34	0.34	98.7	8.1
0.12	5.8%	60.4%	0.41	0.41	98.1	5.7
0.14	6.5%	66.9%	0.48	0.48	97.6	6.3
0.16	4.6%	71.5%	0.55	0.55	97.0	4.5
0.18	3.7%	75.2%	0.62	0.62	96.5	3.5
0.20	3.3%	78.5%	0.69	0.69	95.9	3.2
0.25	6.7%	85.2%	0.86	0.86	94.6	6.3
0.30	3.7%	88.9%	1.03	1.03	93.2	3.4
0.35	2.4%	91.3%	1.21	1.21	91.8	2.2
0.40	1.8%	93.1%	1.38	1.38	90.5	1.7
0.45	1.9%	95.0%	1.55	1.55	89.1	1.7
0.50	1.1%	96.1%	1.72	1.72	87.7	0.9
0.75	2.6%	98.7%	2.58	2.58	80.9	2.1
1.00	0.9%	99.6%	3.44	3.00	67.6	0.6
1.50	0.4%	100.0%	5.17	3.00	45.1	0.2
2.00	0.0%	100.0%	6.89	3.00	33.8	0.0
						96.8
					Removal Efficiency Adjustment[2] =	6.5%
					Predicted % Annual Rainfall Treated =	93.3%
					Predicted Net Annual Load Removal Efficiency =	**90.3%**

1 - Based on 10 years of hourly precipitation data from NCDC 1683, Concord WSO Airport, Merrimack County, NH
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Stage-Discharge for Pond PDMH20: PDMH20

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
54.65	0.00	0.00	0.00	57.25	13.34	5.48	7.86
54.70	0.01	0.01	0.00	57.30	13.94	5.55	8.39
54.75	0.04	0.04	0.00	57.35	14.53	5.61	8.93
54.80	0.10	0.10	0.00	57.40	15.14	5.67	9.46
54.85	0.17	0.17	0.00	57.45	15.74	5.74	10.00
54.90	0.26	0.26	0.00	57.50	16.34	5.80	10.54
54.95	0.36	0.36	0.00	57.55	16.93	5.86	11.07
55.00	0.47	0.47	0.00	57.60	17.52	5.92	11.60
55.05	0.59	0.59	0.00	57.65	18.10	5.98	12.12
55.10	0.72	0.72	0.00	57.70	18.67	6.04	12.63
55.15	0.86	0.86	0.00	57.75	19.23	6.10	13.13
55.20	1.00	1.00	0.00	57.80	19.76	6.16	13.60
55.25	1.15	1.15	0.00	57.85	20.27	6.21	14.05
55.30	1.31	1.31	0.00	57.90	20.74	6.27	14.47
55.35	1.47	1.47	0.00	57.95	21.16	6.33	14.84
55.40	1.64	1.64	0.00	58.00	21.51	6.38	15.13
55.45	1.81	1.81	0.00	58.05	21.94	6.44	15.50
55.50	1.98	1.98	0.00	58.10	22.36	6.50	15.87
55.55	2.16	2.16	0.00	58.15	22.77	6.55	16.22
55.60	2.33	2.33	0.00	58.20	23.17	6.60	16.57
55.65	2.50	2.50	0.00	58.25	23.57	6.66	16.91
55.70	2.67	2.67	0.00	58.30	23.96	6.71	17.25
55.75	2.83	2.83	0.00	58.35	24.34	6.76	17.58
55.80	2.98	2.98	0.00	58.40	24.72	6.82	17.90
55.85	3.12	3.12	0.00	58.45	25.08	6.87	18.21
55.90	3.25	3.25	0.00	58.50	25.45	6.92	18.53
55.95	3.34	3.34	0.00	58.55	25.81	6.97	18.83
56.00	3.43	3.43	0.00	58.60	26.16	7.02	19.13
56.05	3.60	3.59	0.02	58.65	26.51	7.07	19.43
56.10	3.75	3.69	0.06	58.70	26.85	7.13	19.72
56.15	3.92	3.78	0.14	58.75	27.19	7.18	20.01
56.20	4.12	3.88	0.25	58.80	27.52	7.22	20.29
56.25	4.35	3.97	0.39	58.85	27.85	7.27	20.57
56.30	4.61	4.06	0.55	58.90	28.17	7.32	20.85
56.35	4.89	4.14	0.74	58.95	28.50	7.37	21.12
56.40	5.19	4.23	0.96	59.00	28.81	7.42	21.39
56.45	5.52	4.31	1.21	59.05	29.13	7.47	21.66
56.50	5.87	4.39	1.48	59.10	29.44	7.52	21.92
56.55	6.25	4.47	1.77	59.15	29.74	7.56	22.18
56.60	6.64	4.55	2.09	59.20	30.05	7.61	22.44
56.65	7.06	4.63	2.43	59.25	30.35	7.66	22.69
56.70	7.50	4.71	2.79	59.30	30.64	7.70	22.94
56.75	7.96	4.78	3.17	59.35	30.94	7.75	23.19
56.80	8.43	4.86	3.57	59.40	31.23	7.80	23.43
56.85	8.92	4.93	3.99	59.45	31.52	7.84	23.68
56.90	9.43	5.00	4.43	59.50	31.80	7.89	23.92
56.95	9.95	5.07	4.88	59.55	32.09	7.93	24.16
57.00	10.49	5.14	5.35	59.60	32.37	7.98	24.39
57.05	11.04	5.21	5.83	59.65	32.65	8.02	24.62
57.10	11.60	5.28	6.32	59.70	32.92	8.07	24.86
57.15	12.17	5.35	6.83	59.75	33.20	8.11	25.08
57.20	12.75	5.41	7.34	59.80	33.47	8.15	25.31

Bypass @ Primary > WQF

Stage-Discharge for Pond PDMH20: PDMH20 (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
59.85	33.74	8.20	25.54
59.90	34.00	8.24	25.76
59.95	34.27	8.29	25.98
60.00	34.53	8.33	26.20
60.05	34.79	8.37	26.42
60.10	35.05	8.41	26.63
60.15	35.30	8.46	26.85
60.20	35.56	8.50	27.06
60.25	35.81	8.54	27.27
60.30	36.06	8.58	27.48
60.35	36.31	8.62	27.69
60.40	36.56	8.66	27.89
60.45	36.80	8.71	28.10
60.50	37.05	8.75	28.30
60.55	37.29	8.79	28.50
60.60	37.53	8.83	28.70
60.65	37.77	8.87	28.90
60.70	38.01	8.91	29.10
60.75	38.24	8.95	29.29
60.80	38.48	8.99	29.49
60.85	38.71	9.03	29.68
60.90	38.94	9.07	29.87
60.95	39.17	9.11	30.06
61.00	39.40	9.15	30.25
61.05	39.63	9.19	30.44
61.10	39.85	9.22	30.63
61.15	40.08	9.26	30.82
61.20	40.30	9.30	31.00
61.25	40.52	9.34	31.18
61.30	40.75	9.38	31.37
61.35	40.97	9.42	31.55
61.40	41.18	9.45	31.73
61.45	41.40	9.49	31.91
61.50	41.62	9.53	32.09
61.55	41.83	9.57	32.27
61.60	42.05	9.60	32.44
61.65	42.26	9.64	32.62
61.70	42.47	9.68	32.79
61.75	42.68	9.72	32.97
61.80	42.89	9.75	33.14
61.85	43.10	9.79	33.31
61.90	43.31	9.83	33.48
61.95	43.52	9.86	33.65
62.00	43.72	9.90	33.82
62.05	**43.93**	**9.93**	**33.99**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **RG-2**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).
0.97	ac	A = Area draining to the practice
0.67	ac	A_I = Impervious area draining to the practice
0.69	decimal	I = Percent impervious area draining to the practice, in decimal form
0.67	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.65	ac-in	WQV= 1" x Rv x A
2,365	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")
591	cf	25% x WQV (check calc for sediment forebay volume)
1,774	cf	75% x WQV (check calc for surface sand filter volume)
Rain Guardian Turret		Method of Pretreatment? (not required for clean or roof runoff)
N/A	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**$\geq$ 25%WQV**
Calculate time to drain if system IS NOT underdrained:		
	sf	A_{SA} = Surface area of the practice
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]
	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**$\leq$ 72-hrs**
Calculate time to drain if system IS underdrained:		
60.35	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)
2.37	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)
0.55	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**$\leq$ 72-hrs**
57.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]
56.40	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable
See Notes	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)
See Notes	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)
1.10	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**$\geq$ 1'**
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**$\geq$ 1'**
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**$\geq$ 1'**
60.70	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)
61.00	ft	Elevation of the top of the practice
YES		50 peak elevation $\leq$ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:		
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**$\geq$ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	← yes
2,789	cf	V = Volume of storage[3] (attach a stage-storage table)	≥ WQV
18.0	inches	D_{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	≥ 3:1
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D_{FC} = Filter course thickness	12", or 18" if within GPA
Sheet		Note what sheet in the plan set contains the filter course spec.	mod. 304.1 (see spec)

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Limited test pit information available due to existing site test pit access and location constraints, as described in the test pit data and logs included under Appendix B. Rain garden is proposed to be underdrained by a 6" perforated PVC, and no exfiltration to subgrade soils has been carried in the drainage design or model.

Stage-Area-Storage for Pond RG-2:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
56.40	779	0
56.45	779	16
56.50	779	31
56.55	779	47
56.60	779	62
56.65	779	78
56.70	779	93
56.75	779	109
56.80	779	125
56.85	779	140
56.90	779	156
56.95	779	171
57.00	779	187
57.05	779	203
57.10	779	218
57.15	779	234
57.20	779	249
57.25	779	265
57.30	779	280
57.35	779	296
57.40	779	312
57.45	779	327
57.50	779	343
57.55	779	354
57.60	779	366
57.65	779	378
57.70	779	389
57.75	779	401
57.80	779	413
57.85	779	425
57.90	779	436
57.95	779	448
58.00	779	460
58.05	779	471
58.10	779	483
58.15	779	495
58.20	779	506
58.25	779	518
58.30	779	530
58.35	779	541
58.40	779	553
58.45	779	565
58.50	779	576
58.55	779	588
58.60	779	600
58.65	779	612
58.70	779	623
58.75	779	635
58.80	779	647
58.85	779	658
58.90	779	670
58.95	779	682
59.00	779	693
59.05	833	734
59.10	888	777
59.15	942	822
59.20	996	871
59.25	1,051	922
59.30	1,105	976
59.35	1,159	1,032
59.40	1,213	1,092
59.45	1,268	1,154
59.50	1,322	1,219
59.55	1,376	1,286
59.60	1,431	1,356
59.65	1,485	1,429
59.70	1,539	1,505
59.75	1,594	1,583
59.80	1,648	1,664
59.85	1,702	1,748
59.90	1,756	1,834
59.95	1,811	1,923
60.00	1,865	2,015
60.05	1,939	2,110
60.10	2,013	2,209
60.15	2,086	2,312
60.20	2,160	2,418
60.25	2,234	2,528
60.30	2,308	2,641
60.35	2,382	2,758
60.40	2,455	2,879
60.45	2,529	3,004
60.50	2,603	3,132
60.55	2,677	3,264
60.60	2,751	3,400
60.65	2,824	3,539
60.70	2,898	3,682
60.75	2,972	3,829
60.80	3,046	3,980
60.85	3,120	4,134
60.90	3,193	4,292
60.95	3,267	4,453
61.00	**3,341**	**4,618**

Bottom of Filter Course (57.50)

Ewqv (excluding volume below filter course (60.35)

First Outlet (60.50)

Stage-Discharge for Pond RG-2:

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
56.40	0.00	59.00	1.63
56.45	0.19	59.05	1.66
56.50	0.21	59.10	1.69
56.55	0.25	59.15	1.71
56.60	0.29	59.20	1.74
56.65	0.35	59.25	1.77
56.70	0.41	59.30	1.79
56.75	0.48	59.35	1.82
56.80	0.54	59.40	1.85
56.85	0.61	59.45	1.88
56.90	0.65	59.50	1.90
56.95	0.70	59.55	1.93
57.00	0.74	59.60	1.95
57.05	0.78	59.65	1.98
57.10	0.81	59.70	2.01
57.15	0.85	59.75	2.03
57.20	0.88	59.80	2.06
57.25	0.91	59.85	2.09
57.30	0.94	59.90	2.11
57.35	0.97	59.95	2.14
57.40	1.00	60.00	2.16
57.45	1.03	60.05	2.19
57.50	1.05	60.10	2.22
57.55	1.08	60.15	2.25
57.60	1.10	60.20	2.28
57.65	1.13	60.25	2.31
57.70	1.15	60.30	2.34
57.75	1.17	60.35	2.37
57.80	1.19	60.40	2.40
57.85	1.22	60.45	2.43
57.90	1.24	60.50	2.46
57.95	1.26	60.55	3.34
58.00	1.28	60.60	3.72
58.05	1.30	60.65	4.02
58.10	1.32	60.70	4.28
58.15	1.34	60.75	4.51
58.20	1.36	60.80	4.72
58.25	1.38	60.85	4.91
58.30	1.39	60.90	5.10
58.35	1.41	60.95	5.27
58.40	1.43	61.00	**5.44**
58.45	1.45		
58.50	1.47		
58.55	1.48		
58.60	1.50		
58.65	1.52		
58.70	1.53		
58.75	1.55		
58.80	1.57		
58.85	1.58		
58.90	1.60		
58.95	1.61		

Discharge @ Ewqv

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

3.17	ac	A = Area draining to the practice
2.39	ac	A_I = Impervious area draining to the practice
0.75	decimal	I = Percent impervious area draining to the practice, in decimal form
0.73	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
2.31	ac-in	WQV= 1" x Rv x A
8,383	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.73	inches	Q = Water quality depth. Q = WQV/A
97	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.3	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.056	inches	Ia = Initial abstraction. Ia = 0.2S
8.4	minutes	T_c = Time of Concentration
620.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
2.237	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: POST 1.0 WATERSHED

JFF-1 and CDS-1

Proprietary Pretreatment device located upstream of underground detention.

Pretreatment Device - Contech CDS Model 3025-6 (designed to treat maximum 2.4 cfs)

Treatment Device - Contech Jellyfish Filter Model JFPD080812-3 (designed to treat maximum 2.41 cfs)

Upstream bypass pipe invert set to at least elevation of WQF (refer to stage-storage table)

CDS ESTIMATED NET ANNUAL TSS REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD

CONTECH ENGINEERED SOLUTIONS

100 DURGIN LANE
PORTSMOUTH, NH
for SYSTEM: CDS 1

Area	3.17	acres	CDS Model	3025	
Weighted C	0.75		PSD	110	microns
Tc	6	minutes			

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Treated Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.0%	13.0%	0.05	0.05	100.0	13.0
0.04	12.2%	25.2%	0.10	0.10	100.0	12.2
0.06	11.2%	36.4%	0.14	0.14	100.0	11.2
0.08	10.0%	46.4%	0.19	0.19	99.5	9.9
0.10	8.2%	54.6%	0.24	0.24	99.1	8.2
0.12	5.8%	60.4%	0.29	0.29	98.6	5.7
0.14	6.5%	66.9%	0.33	0.33	98.1	6.4
0.16	4.6%	71.5%	0.38	0.38	97.7	4.5
0.18	3.7%	75.2%	0.43	0.43	97.2	3.6
0.20	3.3%	78.5%	0.48	0.48	96.7	3.2
0.25	6.7%	85.2%	0.59	0.59	95.6	6.4
0.30	3.7%	88.9%	0.71	0.71	94.4	3.5
0.35	2.4%	91.3%	0.83	0.83	93.2	2.2
0.40	1.8%	93.1%	0.95	0.95	92.1	1.7
0.45	1.9%	95.0%	1.07	1.07	90.9	1.8
0.50	1.1%	96.1%	1.19	1.19	89.8	1.0
0.75	2.6%	98.7%	1.78	1.78	83.9	2.2
1.00	0.9%	99.6%	2.38	2.38	78.1	0.7
1.50	0.4%	100.0%	3.57	2.43	52.9	0.2
2.00	0.0%	100.0%	4.76	2.43	39.7	0.0
						97.5

Removal Efficiency Adjustment[2] =	6.5%
Predicted % Annual Rainfall Treated =	93.4%
Predicted Net Annual Load Removal Efficiency =	**91.0%**

1 - Based on 10 years of hourly precipitation data from NCDC 1683, Concord WSO Airport, Merrimack County, NH
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Jellyfish Filter Design Calculation

Contech Engineered Solutions, LLC Engineer:	DRA
Date Prepared:	**9/9/2024**

Site Information

Project Name	**100 Durgin Lane**	
Project City	**Portsmouth**	
Project State	**NH**	
Site Designation	**JF 1**	
Total Drainage Area, Ad	**3.17**	ac
Post Development Impervious Area, Ai	**2.39**	ac
Pervious Area, Ap	**0.78**	ac
% Impervious	**75%**	
Runoff Coefficient, Rc	**0.73**	
Upstream pretreatment credit	**50%**	

Mass Loading Calculations

Mean Annual Rainfall, P	**48**	in
Agency Required % Removal	**80%**	
Percent Runoff Capture	**90%**	
Mean Annual Runoff, Vt	**362,167**	ft^3
Event Mean Concentration of Pollutant, EMC	**70**	mg/l
Annual Mass Load, M total	**1,582**	lbs

Filter System

Filtration Brand	**Jellyfish**	
Cartridge Length	**54**	in

Jellyfish Sizing

Mass removed by pretreatment system	**791**	lbs
Mass load to filters after pretreatment	**791**	lbs
Mass to be Captured by System	**633**	lbs
Water Quality Flow	**2.237**	cfs

Method to Use **FLOW BASED**

Summary			
	Treatment Flow Rate	2.41	cfs
Flow	Required Size	**JFPD0808-12-3**	
	Mass Capture provided	1,689	lbs

Stage-Discharge for Pond PDHM19: PDMH19

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
58.65	0.00	0.00	0.00	61.25	15.17	8.30	6.87
58.70	0.01	0.01	0.00	61.30	15.72	8.41	7.31
58.75	0.03	0.03	0.00	61.35	16.27	8.51	7.76
58.80	0.08	0.08	0.00	61.40	16.84	8.61	8.22
58.85	0.14	0.14	0.00	61.45	17.40	8.71	8.69
58.90	0.21	0.21	0.00	61.50	17.97	8.81	9.16
58.95	0.30	0.30	0.00	61.55	18.54	8.91	9.63
59.00	0.40	0.40	0.00	61.60	19.12	9.01	10.11
59.05	0.51	0.51	0.00	61.65	19.70	9.11	10.59
59.10	0.64	0.64	0.00	61.70	20.28	9.20	11.08
59.15	0.77	0.77	0.00	61.75	20.86	9.30	11.56
59.20	0.92	0.92	0.00	61.80	21.44	9.39	12.05
59.25	1.08	1.08	0.00	61.85	22.02	9.48	12.54
59.30	1.24	1.24	0.00	61.90	22.59	9.57	13.02
59.35	1.42	1.42	0.00	61.95	23.17	9.66	13.50
59.40	1.60	1.60	0.00	62.00	23.74	9.75	13.98
59.45	1.80	1.80	0.00	62.05	24.30	9.84	14.46
59.50	1.99	1.99	0.00	62.10	24.86	9.93	14.93
59.55	2.20	2.20	0.00	62.15	25.41	10.02	15.39
59.60	2.41	2.41	0.00	62.20	25.95	10.11	15.85
59.65	2.62	2.62	0.00	62.25	26.48	10.19	16.29
59.70	2.84	2.84	0.00	62.30	27.00	10.28	16.72
59.75	3.06	3.06	0.00	62.35	27.50	10.36	17.14
59.80	3.28	3.28	0.00	62.40	27.98	10.45	17.54
59.85	3.50	3.50	0.00	62.45	28.44	10.53	17.91
59.90	3.72	3.72	0.00	62.50	28.87	10.61	18.26
59.95	3.94	3.94	0.00	62.55	29.28	10.69	18.58
60.00	4.15	4.15	0.00	62.60	29.63	10.77	18.86
60.05	4.37	4.36	0.02	62.65	29.92	10.86	19.06
60.10	4.62	4.55	0.06	62.70	30.36	10.94	19.43
60.15	4.88	4.74	0.14	62.75	30.95	11.01	19.93
60.20	5.16	4.91	0.25	62.80	31.39	11.09	20.29
60.25	5.45	5.06	0.39	62.85	31.75	11.17	20.57
60.30	5.72	5.17	0.55	62.90	32.10	11.25	20.85
60.35	6.11	5.36	0.74	62.95	32.45	11.33	21.12
60.40	6.59	5.62	0.96	63.00	32.80	11.40	21.39
60.45	7.08	5.87	1.21	63.05	33.14	11.48	21.66
60.50	7.59	6.11	1.48	63.10	33.48	11.56	21.92
60.55	8.11	6.34	1.76	63.15	33.81	11.63	22.18
60.60	8.61	6.57	2.04	63.20	34.14	11.71	22.44
60.65	9.12	6.78	2.34	63.25	34.47	11.78	22.69
60.70	9.64	6.99	2.65	63.30	34.80	11.85	22.94
60.75	10.15	7.18	2.97	63.35	35.12	11.93	23.19
60.80	10.60	7.30	3.31	63.40	35.44	12.00	23.43
60.85	11.07	7.42	3.66	63.45	35.75	12.07	23.68
60.90	11.55	7.53	4.02	63.50	36.06	12.15	23.92
60.95	12.04	7.65	4.40	63.55	36.37	12.22	24.16
61.00	12.54	7.76	4.78	63.60	36.68	12.29	24.39
61.05	13.05	7.87	5.18	63.65	36.98	12.36	24.62
61.10	13.57	7.98	5.59	63.70	37.29	12.43	24.86
61.15	14.10	8.09	6.01	63.75	37.58	12.50	25.08
61.20	14.63	8.20	6.43	63.80	37.88	12.57	25.31

Bypass @ Primary > WQF

Stage-Discharge for Pond PDHM19: PDMH19 (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
63.85	38.18	12.64	25.54
63.90	38.47	12.71	25.76
63.95	38.76	12.78	25.98
64.00	39.04	12.84	26.20
64.05	39.33	12.91	26.42
64.10	39.61	12.98	26.63
64.15	39.89	13.05	26.85
64.20	40.17	13.11	27.06
64.25	40.45	13.18	27.27
64.30	40.72	13.25	27.48
64.35	41.00	13.31	27.69
64.40	41.27	13.38	27.89
64.45	41.54	13.44	28.10
64.50	41.81	13.51	28.30
64.55	42.07	13.57	28.50
64.60	42.34	13.64	28.70
64.65	42.60	13.70	28.90
64.70	42.86	13.76	29.10
64.75	43.12	13.83	29.29
64.80	43.38	13.89	29.49
64.85	43.63	13.95	29.68
64.90	43.89	14.01	29.87
64.95	44.14	14.08	30.06
65.00	44.39	14.14	30.25
65.05	44.64	14.20	30.44
65.10	44.89	14.26	30.63
65.15	45.14	14.32	30.82
65.20	45.38	14.38	31.00
65.25	45.63	14.44	31.18
65.30	45.87	14.50	31.37
65.35	46.11	14.56	31.55
65.40	46.35	14.62	31.73
65.45	46.59	14.68	31.91
65.50	46.83	14.74	32.09
65.55	**47.07**	**14.80**	**32.27**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

GENERAL CALCULATIONS - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP **that does not fit into one of the specific worksheets already provided** (i.e. for a technology which is not a stormwater wetland, infiltration practice, etc.)

Water Quality Volume (WQV)

4.14	ac	A = Area draining to the practice
3.07	ac	A_I = Impervious area draining to the practice
0.74	decimal	I = Percent impervious area draining to the practice, in decimal form
0.72	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
2.97	ac-in	WQV= 1" x Rv x A
10,781	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = Amount of rainfall. For WQF in NH, P = 1".
0.72	inches	Q = Water quality depth. Q = WQV/A
97	unitless	CN = Unit peak discharge curve number. CN =1000/(10+5P+10Q–10*[Q^2 + 1.25*Q*P] $^{0.5}$)
0.3	inches	S = Potential maximum retention. S = (1000/CN) - 10
0.059	inches	Ia = Initial abstraction. Ia = 0.2S
7.2	minutes	T_c = Time of Concentration
630.0	cfs/mi^2/in	q_u is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III.
2.924	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac.

Designer's Notes: POST 3.0 WATERSHED + POST 3.10 WATERSHED
PJFF-2 AND PCDS-2

Pretreatment Device - Contech CDS Model 3030-6 (designed to treat maximum 3.0 cfs)

Treatment Device - Contech Jellyfish Filter Model JFPD0808-15-3 (designed to treat maximum 2.94 cfs)
Upstream bypass pipe invert set to at least elevation of WQF (refer to stage-storage table)

**NOTE: POST 3.10 Watershed represents an abutting lot (the Hampton Inn).
Pre-development, the drainage from this watershed connects to a shared water quality unit
on the subject property. That water quality unit does not provide sufficient treatment to contemporary
standards. Post-development, the drainage from this abutter is proposed to reconnect to the revised
and upgraded stormwater system for sufficient treatment. However, the watershed area of POST 3.10
has been reduced to 30% of the total (for the sake of calculating applicable WQF only)
as it represents an existing off-site area that meets the general "redevelopment"
criteria listed under sections Env-Wq 1502.53 and Env-Wq 1507.03 (i)(1).

CDS ESTIMATED NET ANNUAL TSS REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD

100 DURGIN LANE
PORTSMOUTH, NH
for SYSTEM: CDS 2

Area	4.14	acres	CDS Model	3030	
Weighted C	0.74		PSD	110	microns
Tc	6	minutes			

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Treated Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.0%	13.0%	0.06	0.06	100.0	13.0
0.04	12.2%	25.2%	0.12	0.12	100.0	12.2
0.06	11.2%	36.4%	0.18	0.18	99.9	11.2
0.08	10.0%	46.4%	0.25	0.25	99.4	9.9
0.10	8.2%	54.6%	0.31	0.31	99.0	8.2
0.12	5.8%	60.4%	0.37	0.37	98.5	5.7
0.14	6.5%	66.9%	0.43	0.43	98.0	6.4
0.16	4.6%	71.5%	0.49	0.49	97.5	4.5
0.18	3.7%	75.2%	0.55	0.55	97.0	3.6
0.20	3.3%	78.5%	0.61	0.61	96.5	3.2
0.25	6.7%	85.2%	0.77	0.77	95.3	6.4
0.30	3.7%	88.9%	0.92	0.92	94.1	3.5
0.35	2.4%	91.3%	1.07	1.07	92.9	2.2
0.40	1.8%	93.1%	1.23	1.23	91.7	1.7
0.45	1.9%	95.0%	1.38	1.38	90.5	1.8
0.50	1.1%	96.1%	1.53	1.53	89.3	1.0
0.75	2.6%	98.7%	2.30	2.30	83.2	2.2
1.00	0.9%	99.6%	3.06	3.00	76.0	0.7
1.50	0.4%	100.0%	4.60	3.00	50.7	0.2
2.00	0.0%	100.0%	6.13	3.00	38.0	0.0
						97.3
					Removal Efficiency Adjustment[2] =	6.5%
					Predicted % Annual Rainfall Treated =	93.4%
					Predicted Net Annual Load Removal Efficiency =	**90.8%**

1 - Based on 10 years of hourly precipitation data from NCDC 1683, Concord WSO Airport, Merrimack County, NH
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Jellyfish Filter Design Calculation

Contech Engineered Solutions, LLC Engineer:	DRA
Date Prepared:	**9/9/2024**

Site Information

Project Name	**100 Durgin Lane**	
Project City	**Portsmouth**	
Project State	**NH**	
Site Designation	**JF 2**	
Total Drainage Area, Ad	**4.14**	ac
Post Development Impervious Area, Ai	**3.07**	ac
Pervious Area, Ap	**1.07**	ac
% Impervious	**74%**	
Runoff Coefficient, Rc	**0.72**	
Upstream pretreatment credit	**50%**	

Mass Loading Calculations

Mean Annual Rainfall, P	**48**	in
Agency Required % Removal	**80%**	
Percent Runoff Capture	**90%**	
Mean Annual Runoff, Vt	**465,744**	ft^3
Event Mean Concentration of Pollutant, EMC	**70**	mg/l
Annual Mass Load, M total	**2,034**	lbs

Filter System

Filtration Brand	**Jellyfish**	
Cartridge Length	**54**	in

Jellyfish Sizing

Mass removed by pretreatment system	**1,017**	lbs
Mass load to filters after pretreatment	**1,017**	lbs
Mass to be Captured by System	**814**	lbs
Water Quality Flow	**2.924**	cfs

Method to Use **FLOW BASED**

Summary			
	Treatment Flow Rate	2.94	cfs
Flow	Required Size	**JFPD0808-15-3**	
	Mass Capture provided	2,064	lbs

Stage-Discharge for Pond PDMH3: PDMH3

Bypass @ Primary > WQF

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
59.35	0.00	0.00	0.00	61.95	19.38	8.30	11.08
59.40	0.01	0.01	0.00	62.00	20.14	8.41	11.74
59.45	0.03	0.03	0.00	62.05	20.92	8.51	12.41
59.50	0.08	0.08	0.00	62.10	21.71	8.61	13.09
59.55	0.13	0.13	0.00	62.15	22.51	8.71	13.79
59.60	0.21	0.21	0.00	62.20	23.32	8.81	14.50
59.65	0.29	0.29	0.00	62.25	24.14	8.91	15.23
59.70	0.39	0.39	0.00	62.30	24.97	9.01	15.96
59.75	0.50	0.50	0.00	62.35	25.81	9.11	16.71
59.80	0.63	0.63	0.00	62.40	26.67	9.20	17.47
59.85	0.76	0.76	0.00	62.45	27.53	9.30	18.23
59.90	0.91	0.91	0.00	62.50	28.40	9.39	19.01
59.95	1.07	1.07	0.00	62.55	29.28	9.48	19.80
60.00	1.23	1.23	0.00	62.60	30.17	9.57	20.59
60.05	1.41	1.41	0.00	62.65	31.06	9.66	21.40
60.10	1.59	1.59	0.00	62.70	31.96	9.75	22.21
60.15	1.78	1.78	0.00	62.75	32.87	9.84	23.03
60.20	1.98	1.98	0.00	62.80	33.79	9.93	23.86
60.25	2.18	2.18	0.00	62.85	34.71	10.02	24.69
60.30	2.39	2.39	0.00	62.90	35.63	10.11	25.53
60.35	2.61	2.61	0.00	62.95	36.56	10.19	26.37
60.40	2.82	2.82	0.00	63.00	37.49	10.28	27.22
60.45	3.04	3.04	0.00	63.05	38.43	10.36	28.07
60.50	3.26	3.26	0.00	63.10	39.37	10.45	28.92
60.55	3.50	3.48	0.02	63.15	40.31	10.53	29.78
60.60	3.78	3.70	0.08	63.20	41.25	10.61	30.64
60.65	4.09	3.91	0.17	63.25	42.19	10.69	31.50
60.70	4.43	4.13	0.31	63.30	43.13	10.77	32.36
60.75	4.81	4.33	0.48	63.35	44.07	10.86	33.22
60.80	5.22	4.53	0.69	63.40	45.01	10.94	34.07
60.85	5.64	4.72	0.93	63.45	45.94	11.01	34.93
60.90	6.07	4.88	1.19	63.50	46.88	11.09	35.78
60.95	6.49	5.03	1.46	63.55	47.80	11.17	36.63
61.00	6.89	5.14	1.75	63.60	48.72	11.25	37.47
61.05	7.40	5.33	2.07	63.65	49.64	11.33	38.31
61.10	7.99	5.59	2.41	63.70	50.55	11.40	39.14
61.15	8.60	5.83	2.77	63.75	51.44	11.48	39.96
61.20	9.22	6.07	3.15	63.80	52.33	11.56	40.78
61.25	9.85	6.30	3.55	63.85	53.21	11.63	41.58
61.30	10.49	6.52	3.97	63.90	54.07	11.71	42.37
61.35	11.15	6.74	4.41	63.95	54.92	11.78	43.14
61.40	11.82	6.94	4.87	64.00	55.75	11.85	43.90
61.45	12.50	7.14	5.35	64.05	56.57	11.93	44.64
61.50	13.14	7.30	5.85	64.10	57.36	12.00	45.36
61.55	13.78	7.42	6.36	64.15	58.13	12.07	46.06
61.60	14.43	7.53	6.89	64.20	58.87	12.15	46.73
61.65	15.09	7.65	7.44	64.25	59.58	12.22	47.37
61.70	15.77	7.76	8.01	64.30	60.26	12.29	47.97
61.75	16.46	7.87	8.59	64.35	60.89	12.36	48.53
61.80	17.17	7.98	9.19	64.40	61.48	12.43	49.05
61.85	17.90	8.09	9.80	64.45	61.99	12.50	49.49
61.90	18.63	8.20	10.43	64.50	62.35	12.57	49.78

Stage-Discharge for Pond PDMH3: PDMH3 (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
64.55	63.45	12.64	50.81
64.60	64.52	12.71	51.81
64.65	65.58	12.78	52.80
64.70	66.61	12.84	53.77
64.75	67.63	12.91	54.72
64.80	68.64	12.98	55.66
64.85	69.62	13.05	56.58
64.90	70.60	13.11	57.48
64.95	71.55	13.18	58.37
65.00	72.20	13.25	58.95
65.05	72.75	13.31	59.44
65.10	73.30	13.38	59.92
65.15	73.85	13.44	60.41
65.20	74.39	13.51	60.88
65.25	74.93	13.57	61.36
65.30	75.46	13.64	61.83
65.35	75.99	13.70	62.29
65.40	76.52	13.76	62.76
65.45	77.04	13.83	63.22
65.50	**77.56**	**13.89**	**63.67**

Section 7
Groundwater Recharge Volume Calculations

As described in the following Groundwater Recharge Volume (GRV) worksheet, additional GRV is not required for this site per Env-Wq 1504.12 as impervious surfaces are reduced within a common hydrologic soil group (HSG). However, soil infiltration testing (included under Appendix B) within the areas proximate to each proposed rain garden shows that soils may allow for some level of infiltration. To remain conservative in the site design, infiltration was not claimed in the drainage model.

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION
(Env-Wq 1507.04)

-	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
-	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
-	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
-	inches	Rd = Weighted groundwater recharge depth	
-	ac-in	GRV = AI * Rd	
-	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

There is an overall net reduction in impervious area in the post-development condition compared to the pre-development condition (Ai <0), and all disturbances to site occur within one hydrologic soil group, therefore no additional groundwater recharge volume is required.

APPENDIX A

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

April 4, 2024

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.

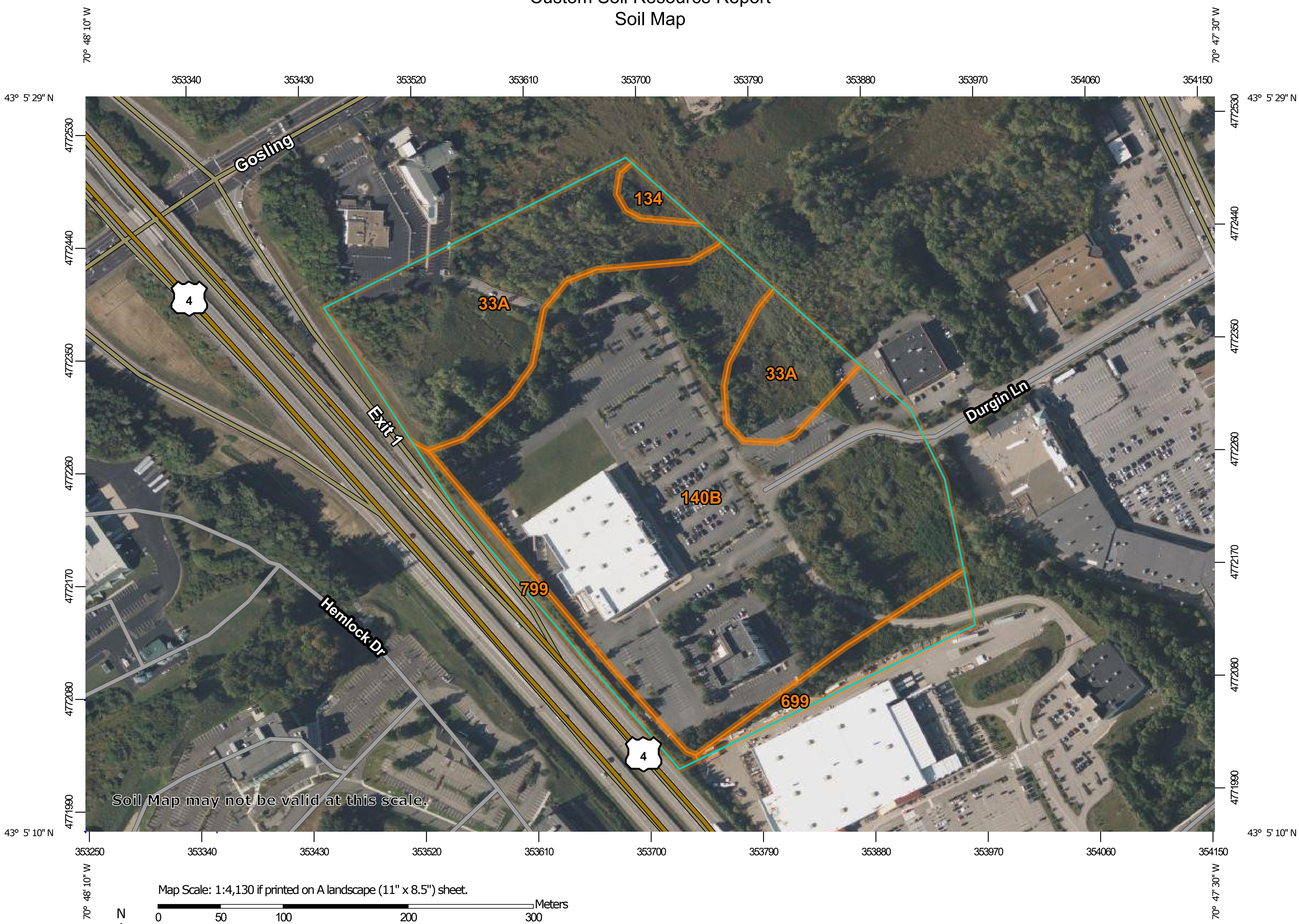
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,130 if printed on A landscape (11" x 8.5") sheet.

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

N

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
33A	Scitico silt loam, 0 to 5 percent slopes	8.9	25.6%
134	Maybid silt loam	0.4	1.1%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	23.0	66.0%
699	Urban land	1.6	4.5%
799	Urban land-Canton complex, 3 to 15 percent slopes	1.0	2.9%
Totals for Area of Interest		**34.9**	**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

33A—Scitico silt loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 9cn6
Elevation: 0 to 180 feet
Mean annual precipitation: 47 to 49 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Farmland of local importance

Map Unit Composition

Scitico and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scitico

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 12 inches: silty clay loam
H3 - 12 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: F144AY019NH - Wet Lake Plain
Hydric soil rating: Yes

Minor Components

Maybid

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces

Hydric soil rating: Yes

Boxford

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

134—Maybid silt loam

Map Unit Setting

National map unit symbol: 9cmg
Elevation: 0 to 180 feet
Mean annual precipitation: 47 to 50 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Maybid and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maybid

Setting

Landform: Marine terraces
Parent material: Silty and clayey marine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 26 inches: silty clay loam
H3 - 26 to 63 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Ecological site: F144AY020MA - Very Wet Coastal Lake Plain
Hydric soil rating: Yes

Minor Components

Ossipee

Percent of map unit: 10 percent
Landform: Swamps
Hydric soil rating: Yes

Scitico

Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

Not named wet

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82m
Elevation: 380 to 1,070 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: 0 to 8 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 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: 0 to 8 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

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: 0 to 8 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

Minor Components

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

Newfields, very stony

Percent of map unit: 5 percent
Landform: Moraines, hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope

Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Walpole, very stony

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

Rock outcrop

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

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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX B

GOVE ENVIRONMENTAL SERVICES, INC

SITE-SPECIFIC SOIL SURVEY REPORT
For
100 Durgin Lane, Portsmouth, NH
By
GES, Inc.
Project # 2023156
Date:

STATE OF NEW HAMPSHIRE
JAMES P. GOVE
No. 004
CERTIFIED SOIL SCIENTIST
5-6-2024

1. MAPPING STANDARDS

Site-Specific Soil Mapping Standards for New Hampshire and Vermont. SSSNNE Special Publication No. 3, Version 7.0, July, 2021.

This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for infiltration requirements by the NH DES Alteration of Terrain Bureau. The soil map was produced by a professional soil scientist and is not a product of the USDA Natural Resources Conservation Service. This report accompanies the soil map.

The site-specific soil map (SSSM) was produced 05-06-24; prepared by JP Gove, CSS #004, GES, Inc.

Soils were identified with the New Hampshire State-wide Numerical Soils Legend, USDA NRCS, Durham, NH. Issue # 10, January 2011.

Hydrologic Soil Group was determined using SSSNNE Special Publication No. 5, Ksat Values for New Hampshire Soils, September 2009.

High Intensity Soil Map symbols, based upon SSSNNE Special Publication 1, December 2017, were added to the Soil Legend.

Scale of soil map: Approximately 1” = 40’.

Contours Interval: 2 feet

2. LANDFORMS & EXISTING CONDITIONS:

The site is located on a flat commercial site covered with buildings and pavement, or previous surfaces are fill with the exception of the wetlands and one glacial till hill. The purpose of this soil survey is to characterize the soil conditions that lay below the pavement or buildings. A combination of test pits and borings were used to prepare the subsurface soil map.

3. DATE SOIL MAP PRODUCED

Date(s) of on-site field work: 3-22-24 and 4-30-24

Date(s) of test pits: 4-30-24 (test pits) and November-December of 2023 (borings)

Test pits recorded by: Test pits recorded by James Gove and boring by S. W. Cole Engineering, Inc.

4. GEOGRAPHIC LOCATION AND SIZE OF SITE

City or town where soil mapping was conducted: Portsmouth

Location: 100 Durgin Lane

Size of area: Approximately 23 acres

Was the map for the entire lot? No

If no, where was the mapping conducted on the parcel: The area of proposed redevelopment

5. PURPOSE OF THE SOIL MAP

Was the map prepared to meet the requirement of Alteration of Terrain? Yes

If no, what was the purpose of the map? N/A

Who was the map prepared for? Tighe & Bond

6. SOIL IDENTIFICATION LEGEND

Map Unit Symbol	Map Unit Name	HISS Symbol	Hydrologic Soil Group
42	Canton fine sandy loam	221	B
33	Scitico silt loam	353	C
299caabb	Udorthents, smoothed	261	B
	c=well drained, a=no natural soil within 60”, a=no restrictive layer, b=moderate Ksat, b=Group B		
500dcabb	Udorthents, loamy	361	B
	d=moderately well drained, c=glacial till, a=no restrictive layer, b=moderate Ksat, b=Group B		

SLOPE PHASE:

0-8%	B	8-15%	C	15-25%	D
25%-50%	E	50%+	F		

7. NARRATIVE MAP UNIT DESCRIPTIONS

SITE-SPECIFIC MAP UNIT: 42

CORRELATED SOIL SERIES: Canton fine sandy loam

LANDSCAPE SETTING: Glacial till hill

CHARACTERISTIC SURFACE FEATURES: Forested and gently sloping

DRAINAGE CLASS: Well drained

PARENT MATERIAL: Loose glacial till

NATURE OF DISSIMILAR INCLUSIONS: Moderately well drained and grading.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

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SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

A, 0-10”, fine sandy loam, 10YR3/2, granular, friable, 10% gravel.

B, 10-36”, fine sandy loam, 10YR4/6, granular, friable, 10% gravel.

C, 36-48”, loamy sand, 2.5Y5/4, massive, friable, 10% gravel. No observed ESHWT, no observed OBSWT, kind of water table not determined, no lithic contact.

SITE-SPECIFIC MAP UNIT: 299caabb

CORRELATED SOIL SERIES: Udorthents, smoothed

LANDSCAPE SETTING: Under pavement or buildings

CHARACTERISTIC SURFACE FEATURES: Flat impervious or pervious graded edges

DRAINAGE CLASS: Well drained

PARENT MATERIAL: No natural soils in 60”, but material is glacial till

NATURE OF DISSIMILAR INCLUSIONS: Sloping areas, bedrock, and created basins

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 10%

SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

Fill, 0-48, gravelly loamy sand, 10YR4/6, massive, friable, 20% gravel and stones, no ESHWT and no OBSWT, no kind of water table determined, no lithic.

SITE-SPECIFIC MAP UNIT: 500dcabb

CORRELATED SOIL SERIES: Udorthents, loamy

LANDSCAPE SETTING: Transition from pavement to wetlands.

CHARACTERISTIC SURFACE FEATURES: Forested or fields, and gently sloping

DRAINAGE CLASS: Moderately well drained

PARENT MATERIAL: Glacial till, graded and filled

NATURE OF DISSIMILAR INCLUSIONS: Well drained and natural.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

Fill 1, 0-36", gravelly loamy sand, 10YR4/6, massive, friable, 20% gravel.

Fill 2, 36-48", gravelly loamy sand, 10YR4/6, 2.5Y5/3 redox, massive, friable, 20% gravel. 36" ESHWT, no OBSWT, kind of water table is perched, no lithic contact.

8. <u>RESPONSIBLE SOIL SCIENTIST</u>

Name: James Gove

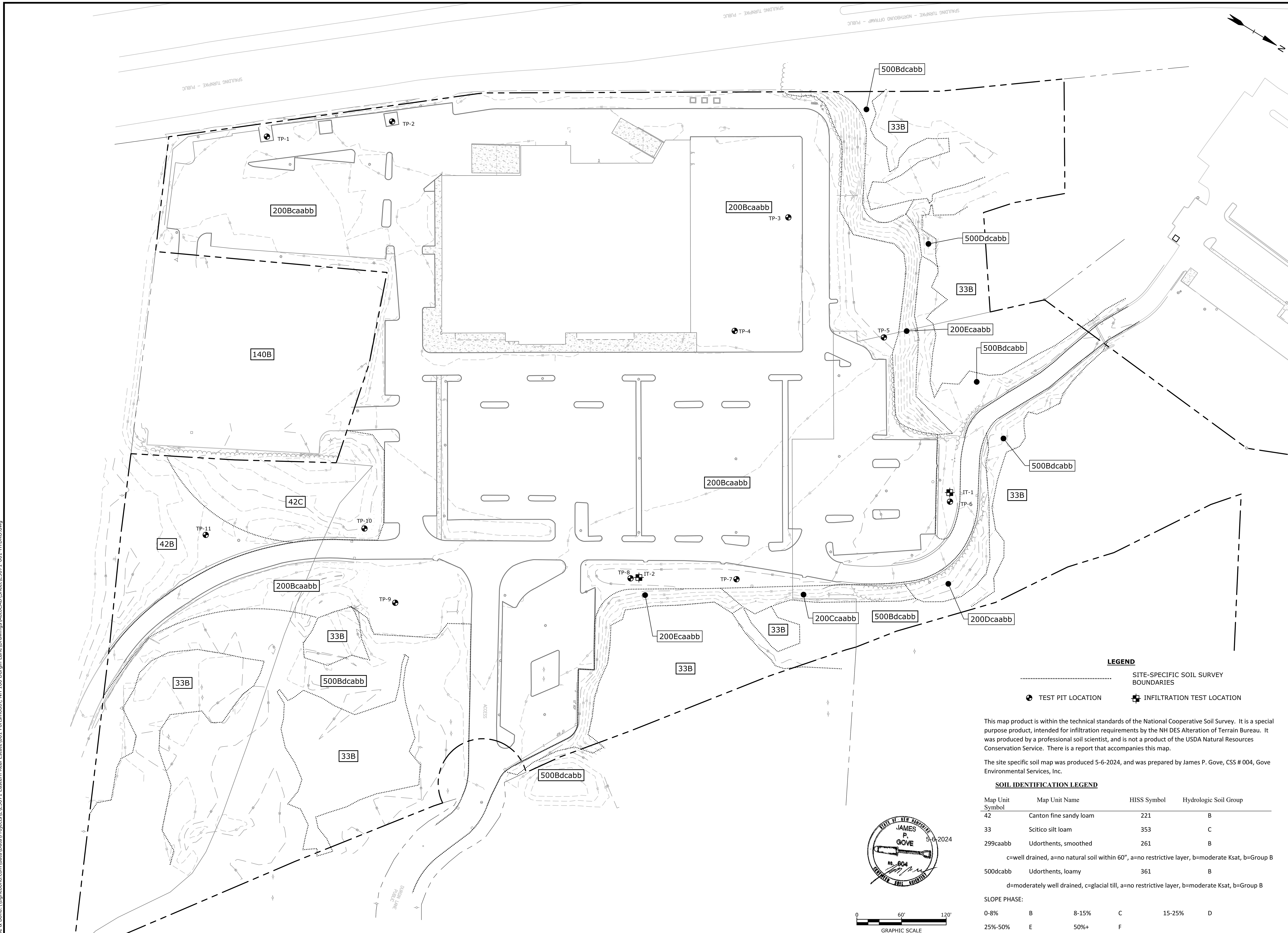
Certified Soil Scientist Number: 004

9. <u>OTHER DISTINGUISHING FEATURES OF SITE</u>

Is the site in a natural condition? Virtually none

If no, what is the nature of the disturbance? Filled, leveled, graded and paved.

Tighe&Bond



LEGEND

SITE-SPECIFIC SOIL SURVEY BOUNDARIES

TEST PIT LOCATION

INFILTRATION TEST LOCATION

This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for infiltration requirements by the NH DES Alteration of Terrain Bureau. It was produced by a professional soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a report that accompanies this map.

The site specific soil map was produced 5-6-2024, and was prepared by James P. Gove, CSS # 004, Gove Environmental Services, Inc.

SOIL IDENTIFICATION LEGEND

Map Unit Symbol	Map Unit Name	HISS Symbol	Hydrologic Soil Group
42	Canton fine sandy loam	221	B
33	Scitico silt loam	353	C
299caabb	Udorthents, smoothed	261	B
c=well drained, a=no natural soil within 60”, a=no restrictive layer, b=moderate Ksat, b=Group B			
500dcabb	Udorthents, loamy	361	B
d=moderately well drained, c=glacial till, a=no restrictive layer, b=moderate Ksat, b=Group B			

SLOPE PHASE:

0-8%	B	8-15%	C	15-25%	D
25%-50%	E	50%+	F		

STATE OF NEW HAMPSHIRE JAMES P. GOVE NO. 004 CERTIFIED SOIL SCIENTIST

5-6-2024

0 60' 120'

GRAPHIC SCALE

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION

PROJECT NO:	E5071-001
DATE:	5/6/2024
FILE:	E5071-001-HYDRO.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

SITE-SPECIFIC
SOIL SURVEY PLAN

SCALE: AS SHOWN

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project 100 Durgin Lane, Portsmouth, NH
Client Eastern
GES Project No. 2023156
MM/DD/YY Staff 04-30-2024 James Gove, CSS#004

Test Pit No.	**1**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	40"	Slope:	Flat
Refusal:	40"	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-40"	10YR4/4	rocky loamy sand	massive-friable-none

Dark shale bedrock at 40". Would be similar to the Chatfield soil series.

Test Pit No.	**2**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	45"	Slope:	Flat
Refusal:	45"	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-45"	10YR4/3	rocky loamy sand	massive-friable-none

Shale bedrock at 45". White pipe was exposed but no broken. Would be similar to thee Chatfield soil series.

STATE OF NEW HAMPSHIRE
JAMES P. GOVE
No. 004
CERTIFIED SOIL SCIENTIST
4-30-2024

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Test pit #2

Test Pit No.	**3**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	48"	Slope:	Flat
Refusal:	None	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-48"	10YR4/6	rocky loamy sand	massive-friable-none

Typical staging area of all fill from the rest of the site. Compacted surface. Buried construction debris. Rocks were angular, as if blasted during bedrock removal. Similar to the soil series Canton.

Test pit # 3.

Test Pit No.	**4**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	48”	Slope:	Flat
Refusal:	None	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F1 0-24”	10YR4/6	rocky loamy sand	massive-friable-none
F2 24-48”	2.5Y5/4	gravelly sand	massive- friable- none

Typical staging area. Bricks and pipe buried in profile. Similar to a Canton soil series.

Test Pit No.	**5**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	48”	Slope:	Flat
Refusal:	None	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F1 0-16”	10YR3/2	rocky loamy sand	massive-friable-none
F2 16-48”	10YR4/6	rocky sandy loam	massive-friable-none

Many angular rocks, as if blasted during bedrock removal. Some boulders. Would be similar to the Canton soil series.

Test pit #6 was not accessible. Too close to guard rail and fire hydrant.

Test Pit No.	**7**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	30”	Slope:	Flat
Refusal:	None	Parent Material:	Sandy fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-6”	10YR3/2	gravelly loamy sand	massive-friable-none
F2 6-18”	10YR5/6	gravelly loamy sand	massive-friable-none
F3 18-30”	10YR5/6	gravelly sand	massive-friable-none

In created detention basin/gravel wetland. Stopped at fabric that was covering drainpipe. Drainpipe was perforated and surrounded by gravelly sand.

Test pit # 7

Test Pit No.	**8**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	36”	Slope:	Flat
Refusal:	None	Parent Material:	Sandy fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-4”	10YR3/2	sandy loam	massive-friable-none
F2 4-24”	10YR5/6	gravelly loamy sand	massive- friable- none
F3 24-36”	10YR4/6	gravelly sand	massive-friable-none

Detention basin/gravel wetland. Stopped at perforated drainpipe.

Test Pit No.	**9**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	48"	Slope:	Flat
Refusal:	None	Parent Material:	Rocky and sandy fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-6"	10YR3/3	gravelly sand	massive-friable-none
F2 6-24"	10YR5/6	sand	massive-friable- none
F3 24-48"	10YR4/4	rocky loamy sand	massive-friable-none

Sandy rock-free fill placed over very rocky loamy sand fill.

Test Pit No.	**10**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Commercial site
Termination @	48"	Slope:	Flat
Refusal:	None	Parent Material:	Rocky fill
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
F 0-48"	10YR4/4	rocky loamy sand	massive-friable-none

Dark shale angular rocks throughout. Buried pavement. Would be similar to the Canton soil series.

Test Pit No.	**11**	Soils Series:	Canton
ESHWT::	None	Landscape:	Forested area
Termination @	48"	Slope:	Gently sloping
Refusal:	None	Parent Material:	Glacial till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-10"	10YR3/2	fine sandy loam	granular-friable-none
B 10-36"	10YR5/6	fine sandy loam	granular-fraible- none
C 36-48"	2.5Y5/4	gravelly loamy sand	massive-friable- none

Only natural soil recorded.

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project Durgin Lane, Portsmouth, NH
Client Eastern Location: Proposed western detention area.
GES Project No. 2023156
MM/DD/YY Staff 05-22024 James Gove, CSS#004

Test Pit No.	**Detention 1**	Soils Series:	Udorthents (made land)
ESHWT::	None	Landscape:	Slope off pavement
Termination @	67”	Slope:	D
Refusal:	no	Parent Material:	Fill over glacial till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
^A 0-48”	10YR4/2	sandy loam	massive-friable-none
C 48-67”	10YR4/6	channery sandy loam	massive-friable-none

C soil layer is from the Pennichuck soil series. Topsoil and subsoil was removed and replaced with fill (^A). Pennichuck is derived from a schist glacial till.

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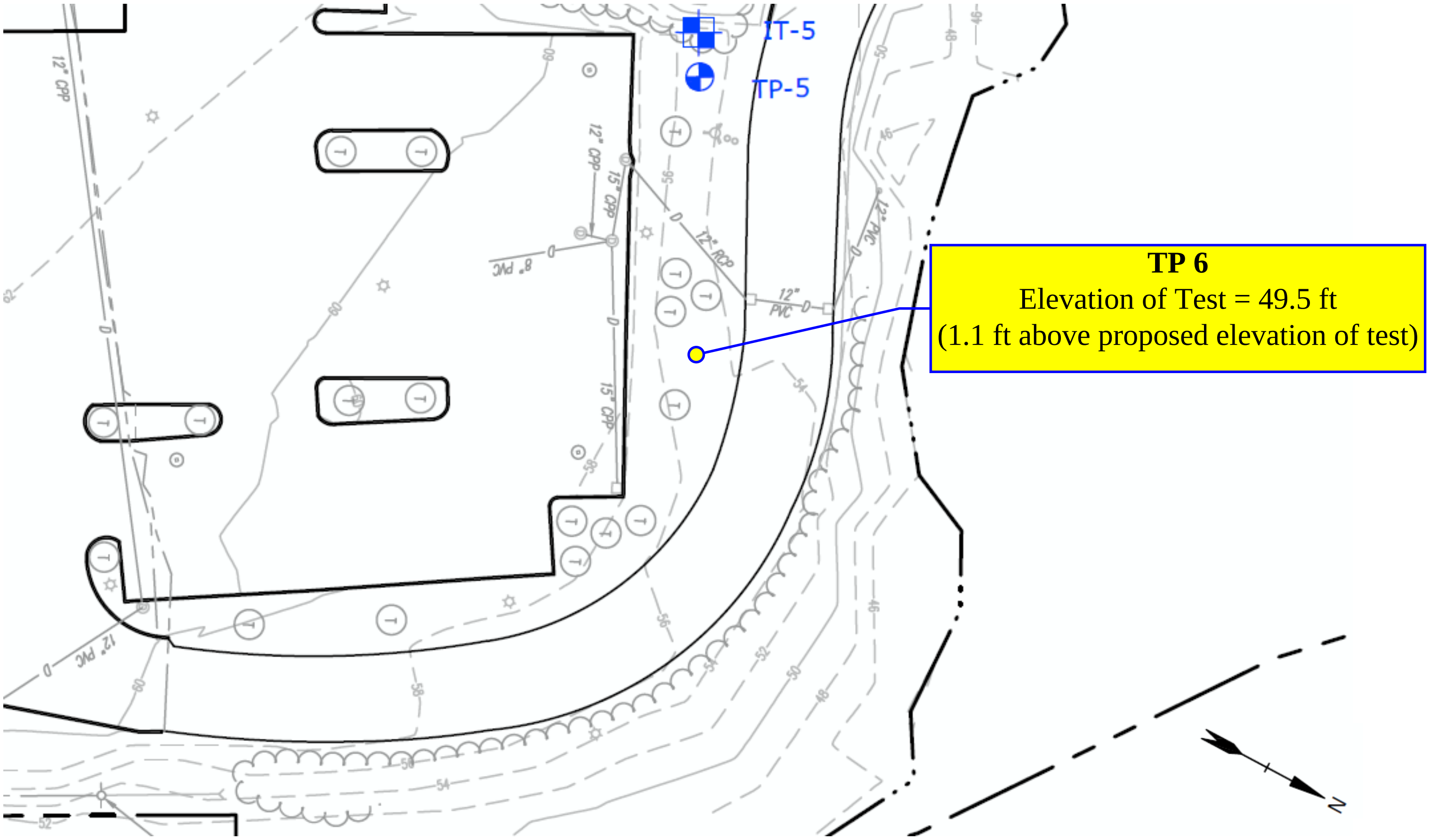
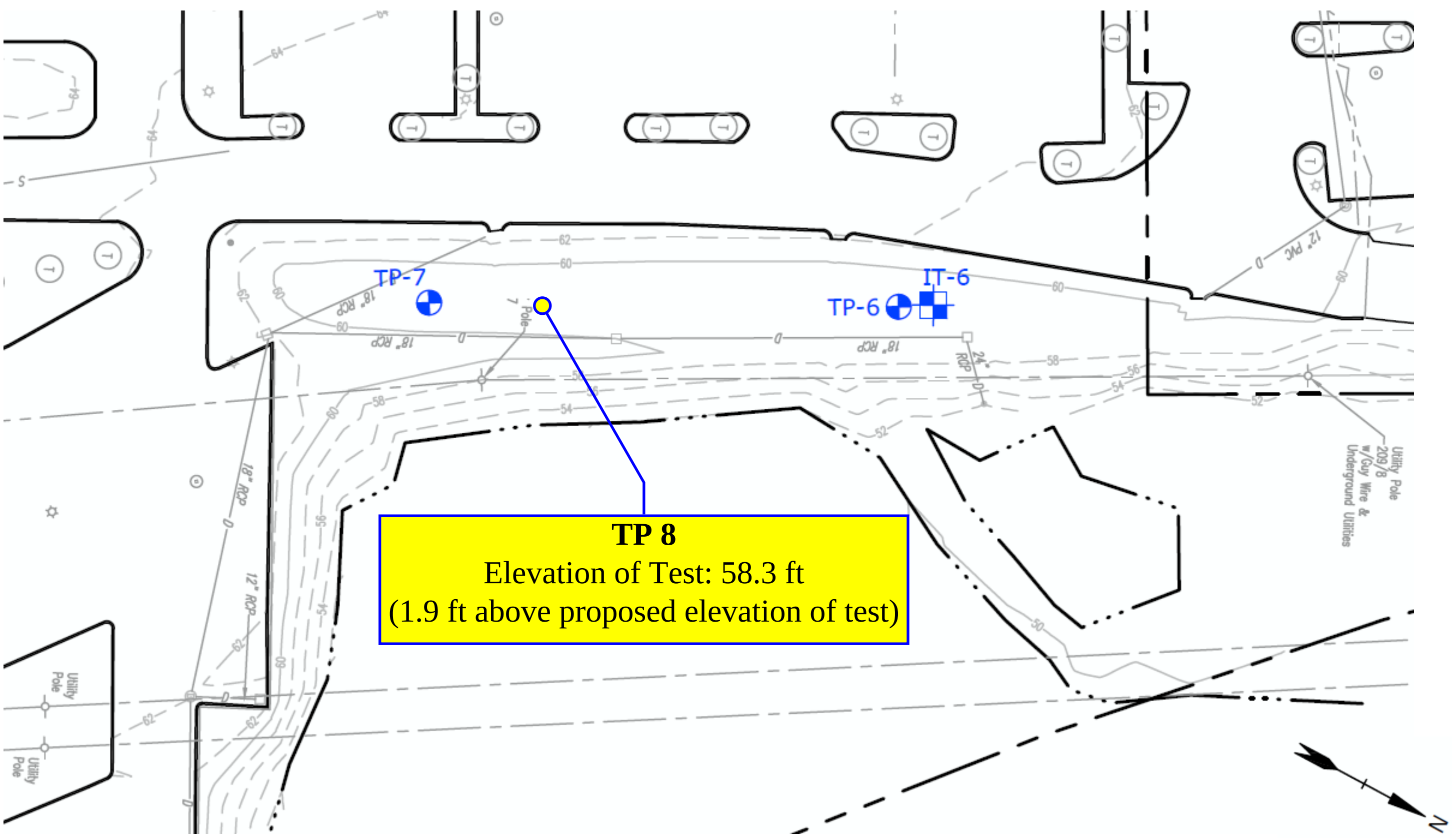


Notes: TP 6 tests were completed 1.1 ft above the proposed depth due to large stones/ fragmented fill and could not auger the proper hole needed to complete the test at the proposed depth.



Notes: TP 8 tests were completed **ABOVE** the crushed gravel. Could not go any deeper as there was crushed gravel at 24-36in. Below the gravel was large stones/fragmented fill and could not auger the proper hole needed to complete the test at the proposed depth.

INFILTRATION TEST LOCATIONS

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 74°F

Project #: 2023156

Water Source: tap water

Date: 5/29/24

Soil Moisture Content %:

Water Depth in Hole (cm)

Preformed By: BQ/MM

Initial: 15 cm

Horizon: Fill

Final: 11 cm

Soil Series: Udorthents (made land)

* 15cm @ 4min

Test Location: TP 6-1

Outflow Chamber(s): Small (1on)___ (20.0cm^2) Both (2on) X (105.0cm^2)

TP 6-1								
Time Elapsed (min)	Water Leval Change (cm)	Chamber Volume (cm3)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)
1	1.6	105	0.0166667	10080	15	0.001056	10.64448	4.19074
2	2.5	105	0.0166667	15750	15	0.001056	16.632	6.548031
3	2.4	105	0.0166667	15120	15	0.001056	15.96672	6.28611
4	2.1	105	0.0166667	13230	15	0.001056	13.97088	5.500346
5	3.2	105	0.0166667	20160	15	0.001056	21.28896	8.38148
						Mean Ksat	15.70061	6.181342
						Std Deviation	3.896292	1.533973

Notes: Between minute 4 and 5: water in hole washes out between rocks and drops out

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 74°F

Project #: 2023156

Water Source: tap water

Date: 5/29/24

Soil Moisture Content %:

Water Depth in Hole (cm)

Preformed By: BQ/MM

Initial: 15.0 cm

Horizon: Fill

Final: 15.0 cm

Soil Series: Udorthents (made land)

Test Location: TP 6-2

Outflow Chamber(s): Small (1on)___ (20.0cm^2) Both (2on) X (105.0cm^2)

6-2
1min

TP 6-2								
Time Elapsed (min)	**Water Leval Change (cm)**	**Chamber Volume (cm3)**	**min/hr**	**Q**	**H (cm)**	**A**	**Ksat (cm/hr)**	**Ksat (in/hr)**
1	0.7	105	0.0166667	4410	15	0.001056	4.65696	1.833449
2	0.7	105	0.0166667	4410	15	0.001056	4.65696	1.833449
3	0.7	105	0.0166667	4410	15	0.001056	4.65696	1.833449
4	0.7	105	0.0166667	4410	15	0.001056	4.65696	1.833449
5	0.7	105	0.0166667	4410	15	0.001056	4.65696	1.833449
						Mean Ksat	4.65696	1.833449
						Std Deviation	0	2.48E-16

Notes:

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 74°F

Project #: 2023156

Water Source: tap water

Date: 5/29/24

Soil Moisture Content %: ______

Water Depth in Hole (cm)

Initial: 15 cm

Final: 16 cm

Preformed By: BQ/MM

Horizon: Fill

Soil Series: Udorthents (made land)

Test Location: TP 6-3

Outflow Chamber(s): Small (1on)___ (20.0cm²) Both (2on) X (105.0cm²)

6-3
1min

TP 6-3								
Time Elapsed (min)	Water Leval Change (cm)	Chamber Volume (cm3)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)
1	0.4	105	0.0166667	2520	15	0.001056	2.66112	1.047685
2	0.3	105	0.0166667	1890	15	0.001056	1.99584	0.785764
3	0.3	105	0.0166667	1890	15	0.001056	1.99584	0.785764
4	0.3	105	0.0166667	1890	15	0.001056	1.99584	0.785764
5	0.3	105	0.0166667	1890	15	0.001056	1.99584	0.785764
6	0.3	105	0.0166667	1890	15	0.001056	1.99584	0.785764
7	0.4	105	0.0166667	2520	16	0.000961	2.42172	0.953433
						Mean Ksat	2.10672	0.829417
						Std Deviation	0.271599	0.106929

Notes:

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 66 °F

Project #: 2023156

Water Source: tap water

Date: 5/31/24

Soil Moisture Content %: ________

Water Depth in Hole (cm)

Preformed By: BQ/MM

Initial: 15.0 cm

Horizon: Fill

Final: 15.0 cm

Soil Series: Udorthents (made land)

Test Location: TP 8-1

Outflow Chamber(s): Small (1on) ___ (20.0cm^2) Both (2on) X (105.0cm^2)

8-1
1 min

TP 8-1								
Time Elapsed (min)	Water Leval Change (cm)	Chamber Volume (cm3)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)
1	1	105	0.0166667	6300	15	0.001056	6.6528	2.6192
2	1.1	105	0.0166667	6930	15	0.001056	7.3181	2.8811
3	0.9	105	0.0166667	5670	15	0.001056	5.9875	2.3573
4	1	105	0.0166667	6300	15	0.001056	6.6528	2.6192
5	0.9	105	0.0166667	5670	15	0.001056	5.9875	2.3573
						Mean Ksat	6.5197	2.5668
						Std Deviation	0.5566	0.2191

Notes:

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 66 °F

Project #: 2023156

Water Source: tap water

Date: 5/31/24

Soil Moisture Content %:

Water Depth in Hole (cm)

Preformed By: BQ/MM

Initial: 15.0 cm

Horizon: Fill

Final: 15.0 cm

Soil Series: Udorthents (made land)

Test Location: TP 8-2

Outflow Chamber(s): Small (1on) ___ (20.0cm^2) Both (2on) X (105.0cm^2)

8-2
1min

TP 8-2								
Time Elapsed (min)	Water Leval Change (cm)	Chamber Volume (cm3)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)
1	1.4	105	0.0166667	8820	15	0.001056	9.3139	3.6669
2	1.4	105	0.0166667	8820	15	0.001056	9.3139	3.6669
3	1.4	105	0.0166667	8820	15	0.001056	9.3139	3.6669
4	1.4	105	0.0166667	8820	15	0.001056	9.3139	3.6669
5	1.3	105	0.0166667	8190	15	0.001056	8.6486	3.4050
						Mean Ksat	9.1809	3.614513
						Std Deviation	0.2975	0.1171

Notes:

GOVE ENVIRONMENTAL SERVICES, INC.

Amoozemeter Data Sheet

Site: 100 Durgan Lane Portsmouth

Air Temp: 66°F

Project #: 2023156

Water Source: tap water

Date: 5/31/24

Soil Moisture Content %:

Water Depth in Hole (cm)

Preformed By: BQ /MM

Initial: 15.0 cm

Horizon: Fill

Final: 15.2 cm

Soil Series: Udorthents (made land)

Test Location: TP 8-3

Outflow Chamber(s): Small (1on)___ ($20.0cm^2$)   Both (2on) X ($105.0cm^2$)

TP 8-3								
Time Elapsed (min)	Water Leval Change (cm)	Chamber Volume (cm3)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)
1	2.2	105	0.0166667	13860	15	0.001056	14.6362	5.7623
2	2.5	105	0.0166667	15750	15	0.001056	16.6320	6.5480
3	2.2	105	0.0166667	13860	15	0.001056	14.6362	5.7623
4	2.2	105	0.0166667	13860	15	0.001056	14.6362	5.7623
5	2.3	105	0.0166667	14490	15.2	0.001056	15.3014	6.0242
						Mean Ksat	15.1684	5.9718
						Std Deviation	0.8674	0.3415

8-3
1 min

Notes:

APPENDIX C

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	Rockingham County, New Hampshire, United States
Latitude	43.088 degrees North
Longitude	70.798 degrees West
Elevation	10 feet
Date/Time	Tue Mar 05 2024 16:41:17 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.02	2.65	2.91	**1yr**	2.35	2.80
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.51	1.93	2.48	3.20	3.55	**2yr**	2.83	3.42
5yr	0.37	0.58	0.73	0.97	1.24	1.60	**5yr**	1.07	1.46	1.88	2.42	3.13	4.05	4.56	**5yr**	3.59	4.38
10yr	0.41	0.64	0.81	1.11	1.44	1.88	**10yr**	1.24	1.72	2.22	2.88	3.73	4.85	5.50	**10yr**	4.29	5.29
25yr	0.47	0.75	0.96	1.32	1.76	2.32	**25yr**	1.52	2.13	2.75	3.61	4.71	6.15	7.07	**25yr**	5.44	6.80
50yr	0.53	0.85	1.09	1.52	2.05	2.73	**50yr**	1.77	2.51	3.26	4.29	5.63	7.36	8.54	**50yr**	6.52	8.22
100yr	0.59	0.95	1.23	1.75	2.39	3.22	**100yr**	2.06	2.95	3.86	5.11	6.73	8.82	10.33	**100yr**	7.80	9.94
200yr	0.66	1.08	1.40	2.01	2.78	3.78	**200yr**	2.40	3.48	4.56	6.07	8.03	10.57	12.50	**200yr**	9.35	12.02
500yr	0.78	1.29	1.68	2.44	3.42	4.69	**500yr**	2.95	4.33	5.68	7.62	10.14	13.43	16.08	**500yr**	11.88	15.46

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.23	0.36	0.44	0.59	0.73	0.89	**1yr**	0.63	0.87	0.92	1.32	1.66	2.22	2.49	**1yr**	1.97	2.40
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.44	**2yr**	2.70	3.31
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.13	2.74	3.78	4.18	**5yr**	3.34	4.02
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.81	2.40	3.07	4.36	4.85	**10yr**	3.86	4.67
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.34	1.86	2.10	2.78	3.56	4.68	5.89	**25yr**	4.14	5.66
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.10	3.97	5.29	6.80	**50yr**	4.68	6.54
100yr	0.53	0.81	1.01	1.46	2.01	2.47	**100yr**	1.73	2.42	2.63	3.45	4.40	5.94	7.86	**100yr**	5.25	7.56
200yr	0.59	0.89	1.13	1.63	2.27	2.82	**200yr**	1.96	2.75	2.93	3.84	4.86	6.65	9.08	**200yr**	5.88	8.73
500yr	0.68	1.02	1.31	1.90	2.71	3.37	**500yr**	2.34	3.29	3.40	4.40	5.56	7.72	10.98	**500yr**	6.83	10.55

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.76	1.06	1.25	1.75	2.21	2.99	3.14	**1yr**	2.64	3.02
2yr	0.33	0.52	0.64	0.86	1.06	1.26	**2yr**	0.92	1.24	1.48	1.96	2.51	3.42	3.68	**2yr**	3.02	3.54
5yr	0.40	0.61	0.76	1.04	1.33	1.61	**5yr**	1.15	1.58	1.88	2.53	3.24	4.32	4.93	**5yr**	3.82	4.74
10yr	0.46	0.71	0.88	1.24	1.60	1.96	**10yr**	1.38	1.92	2.27	3.10	3.93	5.32	6.16	**10yr**	4.71	5.92
25yr	0.57	0.87	1.08	1.54	2.02	2.55	**25yr**	1.75	2.49	2.94	4.05	5.11	7.75	8.27	**25yr**	6.86	7.95
50yr	0.66	1.01	1.26	1.80	2.43	3.09	**50yr**	2.10	3.02	3.57	4.97	6.25	9.70	10.36	**50yr**	8.58	9.96
100yr	0.78	1.17	1.47	2.13	2.91	3.76	**100yr**	2.52	3.67	4.34	6.11	7.66	12.13	12.98	**100yr**	10.74	12.48
200yr	0.91	1.37	1.73	2.50	3.49	4.58	**200yr**	3.01	4.48	5.29	7.51	9.38	15.21	16.28	**200yr**	13.46	15.65
500yr	1.12	1.67	2.15	3.12	4.44	5.93	**500yr**	3.83	5.80	6.86	9.91	12.30	20.54	21.96	**500yr**	18.18	21.11

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Northeast Regional Climate Center

APPENDIX D

Coastal and Great Bay Region Precipitation Increase		
	24-hr Storm Event (in.)	24-hr Storm Event + 15% (in.)
1 Year	2.65	3.05
2 Year	3.20	3.68
10 Year	4.85	5.58
25 Year	6.15	7.07
50 Year	7.36	8.46
100 Year	8.82	10.14

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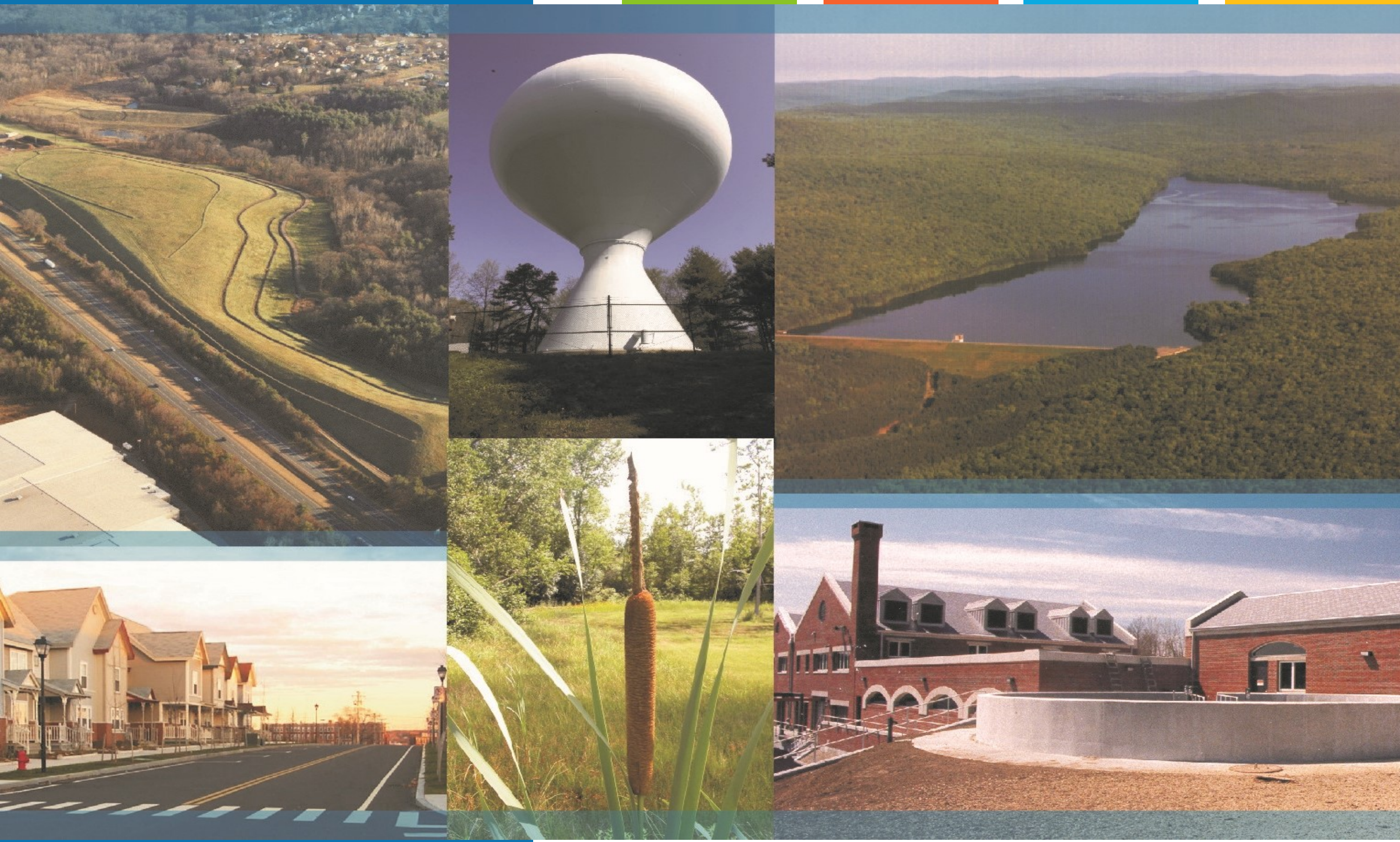

Proposed Multi-Family Development
100 Durgin Lane
Portsmouth, NH

Long-Term Operation & Maintenance Plan

100 Durgin Lane Owner, LLC

SEPTEMBER 18, 2024

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Section 1
Long-Term Operation & Maintenance Plan

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high-quality stormwater runoff.

1.1 Contact/Responsible Party

100 Durgin Lane Owner, LLC
1 Marina Park Drive, Suite 1500
Boston, MA 02210

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

1.2 Maintenance Items

Maintenance of the following items shall be recorded:

- Litter/Debris Removal
- Landscaping
- Catchbasin Cleaning
- Pavement Sweeping
- Rain Gardens
- Contech Jellyfish Filtration System
- Contech CDS Units
- Rip Rap Outlets

The following maintenance items and schedule represent the minimum action required. Periodic site inspections shall be conducted, and all measures must be maintained in effective operating condition. The following items shall be observed during site inspection and maintenance:

- Inspect vegetated areas, particularly slopes and embankments for areas of erosion. Replant and restore as necessary
- Inspect catch basins for sediment buildup
- Inspect site for trash and debris

1.3 Overall Site Operation & Maintenance Schedule

Maintenance Item	Frequency of Maintenance
Litter/Debris Removal	Weekly
Pavement Sweeping - Sweep impervious areas to remove sand and litter.	Annually
Landscaping - Landscaped islands to be maintained and mulched.	Maintained as required and mulched each Spring
Catch Basin (CB) Cleaning - CB to be cleaned of solids and oils.	Annually
Rain Gardens - Trash and debris to be removed. - Any required maintenance shall be addressed.	Two (2) times annually After any rainfall event exceeding 2.5” in a 24-hr period
Contech Jelly Fish Units	In accordance with Manufacturer’s Recommendations
Contech CDS Units®	In accordance with Manufacturer’s Recommendations

1.3.1 Disposal Requirements

Disposal of debris, trash, sediment and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

1.4 Rain Garden Maintenance Requirements

Rain Garden Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Monitor to ensure that Rain Gardens function effectively after storms	Two (2) times annually and after any rainfall event exceeding 2.5" in a 24-hr period	- Trash and debris to be removed - Any required maintenance shall be addressed
Inspect Vegetation	Annually	- Inspect the condition of all Rain Garden vegetation - Prune back overgrowth - Replace dead vegetation - Remove any invasive species
Inspect Drawdown Time - The system shall drawdown within 48-hours following a rainfall event.	Annually	- Assess the condition of the facility to determine measures required to restore the filtration function, including but not limited to removal of accumulated sediments or reconstruction of the filter.

1.5 Contech Jellyfish Filter System Maintenance Requirements

Contech Jellyfish Filter System Inspection/Maintenance Requirements

Inspection/ Maintenance	Frequency	Action
Inspect vault for sediment build up, static water, plugged media and bypass condition	One (1) time annually and after any rainfall event exceeding 2.5” in a 24-hr period	Maintenance required for any of the following: - >4” of sediment on the vault floor - >1/4” of sediment on top of the cartridge - .4” of static water above the cartridge bottom more than 24 hours after a rain event - If pore space between media is absent. - If vault is in bypass condition during an average rainfall event.
Replace Cartridges	As required by inspection, 1–5 years.	- Remove filter cartridges per manufacturer methods. - Vacuum sediment from vault. - Install new cartridges per manufacturer methods

1.6 Contech CDS Unit Maintenance Requirements

Contech Cascade Separator® Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Visual Inspection	Twice per year at a minimum (spring and fall)	-Visually inspect for blockages or obstruction in the inlet chamber, flumes or outlet channel - Sediment removal once 50% of maximum storage has been reached

1.7 Rip Rap Maintenance Requirements

Rip Rap Inspection/Maintenance Requirements		
Inspection/ Maintenance	**Frequency**	**Action**
Visual Inspection	Annually	- Visually inspect for damage and deterioration - Repair damages immediately

1.8 Snow & Ice Management for Standard Asphalt and Walkways

Snow storage areas shall be located such that no direct untreated discharges are possible to receiving waters from the storage site (snow storage areas have been shown on the Site Plan). Salt storage areas shall be covered or located such that no direct untreated discharges are possible to receiving waters from the storage site. Salt and sand shall be used to the minimum extent practical (refer to the attached for de-icing application rate guideline from the New Hampshire Stormwater Management Manual, Volume 2,).

Deicing Application Rate Guidelines

24' of pavement (typcial two-lane road)

These rates are not fixed values, but rather the middle of a range to be selected and adjusted by an agency according to its local conditions and experience.

			Pounds per two-lane mile			
Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Salt Prewetted / Pretreated with Salt Brine	Salt Prewetted / Pretreated with Other Blends	Dry Salt*	Winter Sand (abrasives)
> 30° ↑	Snow	Plow, treat intersections only	80	70	100*	Not recommended
	Freezing Rain	Apply Chemical	80 - 160	70 - 140	100 - 200*	Not recommended
30° ↓	Snow	Plow and apply chemical	80 - 160	70 - 140	100 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↑	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	150 - 200	130 - 180	180 - 240*	Not recommended
25° - 30° ↓	Snow	Plow and apply chemical	120 - 160	100 - 140	150 - 200*	Not recommended
	Freezing Rain	Apply Chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↑	Snow or Freezing Rain	Plow and apply chemical	160 - 240	140 - 210	200 - 300*	400
20° - 25° ↓	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↑	Snow	Plow and apply chemical	200 - 280	175 - 250	250 - 350*	Not recommended
	Freezing Rain	Apply Chemical	240 - 320	210 - 280	300 - 400*	400
15° - 20° ↓	Snow or Freezing Rain	Plow and apply chemical	240 - 320	210 - 280	300 - 400*	500 for freezing rain
0° - 15° ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	300 - 400	Not recommended	500 - 750 spot treatment as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	400 - 600**	Not recommended	500 - 750 spot treatment as needed

* Dry salt is not recommended. It is likely to blow off the road before it melts ice.

** A blend of 6 - 8 gal/ton $MgCl_2$ or $CaCl_2$ added to NaCl can melt ice as low as -10°.

Anti-icing Route Data Form				
Truck Station:				
Date:				
Air Temperature	Pavement Temperature	Relative Humidity	Dew Point	Sky
Reason for applying:				
Route:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				
Name:				

Section 2
Chloride Management Plan

Winter Operational Guidelines

The following Chloride Management Plan is for the 100 Durgin Lane - Multifamily Development in Portsmouth, New Hampshire. The Plan includes operational guidelines including: winter operator certification requirements, weather monitoring, equipment calibration requirements, mechanical removal, and salt usage evaluation and monitoring. Due to the evolving nature of chloride management efforts, the Chloride Management Plan will be reviewed annually, in advance of the winter season, to reflect the current management standards.

2.1 Background Information

The 100 Durgin Lane - Multifamily Development located within the Upper Hodgson Brook Watershed in Newington and Portsmouth, New Hampshire. The Upper Hodgson Brook is identified as a chloride-impaired waterbody.

2.2 Operational Guidelines – Chloride Management

All 100 Durgin Lane Owner LLC private contractors engaged at the 100 Durgin Lane premises for the purposes of winter operational snow removal and surface maintenance, are responsible for assisting in meeting compliance for the following protocols. 100 Durgin Lane Owner LLC private contractors are expected to minimize the effects of the use of de-icing, anti-icing and pretreatment materials by adhering to the strict guidelines outlined below.

The 100 Durgin Lane Owner LLC winter operational de-icing, anti-icing and pretreatment materials will adhere to the following protocols:

2.2.1 Winter Operator Certification Requirements

All private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance must be current UNHT2 Green SnowPro Certified operators or equivalent and will use only pre-approved methods for spreading abrasives on private roadways and parking lots. All private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance shall provide to 100 Durgin Lane Owner LLC management two copies of the annual UNHT2 Green SnowPro certificate or equivalent for each operator utilized on the 100 Durgin Lane premises. The annual UNHT2 Green SnowPro certificate or equivalent for each operator will be available on file in the 100 Durgin Lane Facilities Management office and be present in the vehicle/carrier at all times.

2.2.2 Improved Weather Monitoring

100 Durgin Lane Owner LLC will coordinate weather information for use by winter maintenance contractors. This information in conjunction with site specific air/ground surface temperature monitoring will ensure that private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance will make more informed decisions as to when and to what extent de-icing, anti-icing and pretreatment materials are applied to private roadways, sidewalks, and parking lots.

2.2.3 Equipment Calibration Requirements

All equipment utilized on the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance will conform to the following calibration requirements.

2.2.3.1 Annual Calibration Requirements

All private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance shall provide two copies of the annual calibration report for each piece of equipment utilized on the 100 Durgin Lane premises. Each calibration report shall include the vehicle/carrier VIN number and the serial numbers for each component including, but not limited to, spreader control units, salt aggregate spreader equipment, brining/pre-wetting equipment, ground speed orientation unit, and air/ground surface temperature monitor. Annual calibration reports will be available on file in the 100 Durgin Lane Facilities Management office and be present in the vehicle/carrier at all times.

Prior to each use, each vehicle/carrier operator will perform a systems check to verify that unit settings remain within the guidelines established by the 100 Durgin Lane Owner LLC Management Team in order to accurately dispense material. All private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance will be subject to spot inspections by members of the 100 Durgin Lane Owner LLC Management Team to ensure that each vehicle/carrier is operating in a manner consistent with the guidelines set herein or State and Municipal regulations. All units will be recalibrated, and the updated calibration reports will be provided each time repairs or maintenance procedures affect the hydraulic system of the vehicle/carrier.

2.2.4 Increased Mechanical Removal Capabilities

All private contractors engaged at the 100 Durgin Lane premises will endeavor to use mechanical removal means on a more frequent basis for roadways, parking lots and sidewalks. Dedicating more manpower and equipment to increase snow removal frequencies prevents the buildup of snow and the corresponding need for de-icing, anti-icing and pretreatment materials. Shortened maintenance routes, with shorter service intervals, will be used to stay ahead of snowfall. Minimized snow and ice packing will reduce the need for abrasives, salt aggregates, and/or brining solution to restore surfaces back to bare surface states after winter precipitation events.

After storm events the 100 Durgin Lane Owner LLC management team will be responsible for having the streets swept to recapture un-melted de-icing materials, when practical.

2.3 Salt Usage Evaluation and Monitoring

All private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance shall provide two copies of a storm report, which includes detailed information regarding treatment areas and the use of de-icing, anti- icing and pretreatment materials applied for the removal of snow and surface maintenance on the 100 Durgin Lane premises. 100 Durgin Lane Owner LLC will maintain copies of Summary Documents, including copies of the Storm Reports, operator certifications, equipment used for roadway and sidewalk winter maintenance, calibration reports and amount of de-icing materials used.

2.4 Summary

The above-described methodologies are incorporated into the 100 Durgin Lane Operational Manual and are to be used to qualify and retain all private contractors engaged at the 100 Durgin Lane premises for the purpose of winter operational snow removal and surface maintenance. This section of the Manual, is intended to be an adaptive management document that is modified as required based on experience gained from past practices and technological advancements that reflect chloride BMP standards. All 100 Durgin Lane Owner LLC employees directly involved with winter operational activities are required to review this document and the current standard Best Management Practices published by the UNH Technology Transfer (T2) program annually. All 100 Durgin Lane Owner LLC employees directly involved with winter operational activities, and all private contractors engaged at the 100 Durgin Lane premises for the purposes of winter operational snow removal and surface maintenance, must be current UNHT2 Green SnowPro Certified operators or equivalent and undergo the necessary requirements to maintain this certification annually.

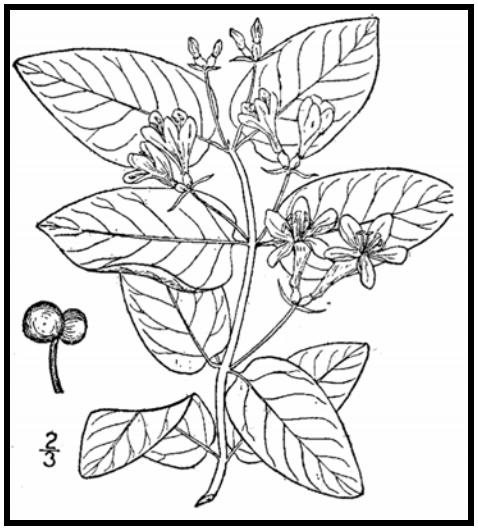
Section 3
Invasive Species

With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem is classified as an invasive species. Refer to the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plants for recommended methods to dispose of invasive plant species.

UNIVERSITY *of* NEW HAMPSHIRE COOPERATIVE EXTENSION

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions.* Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

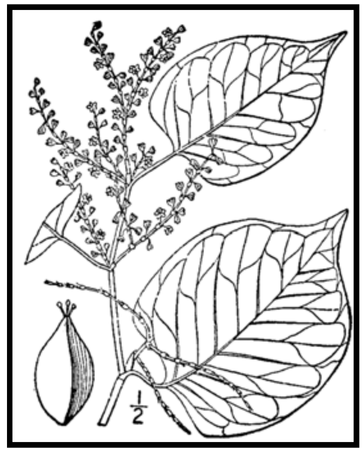
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions.* Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

Woody Plants	Method of Reproducing	Methods of Disposal
Norway maple *(Acer platanoides)* European barberry *(Berberis vulgaris)* Japanese barberry *(Berberis thunbergii)* autumn olive *(Elaeagnus umbellata)* burning bush *(Euonymus alatus)* Morrow's honeysuckle *(Lonicera morrowii)* Tatarian honeysuckle *(Lonicera tatarica)* showy bush honeysuckle *(Lonicera x bella)* common buckthorn *(Rhamnus cathartica)* glossy buckthorn *(Frangula alnus)*	**Fruit and Seeds**	**Prior to fruit/seed ripening** Seedlings and small plants ▪ Pull or cut and leave on site with roots exposed. No special care needed. Larger plants ▪ Use as firewood. ▪ Make a brush pile. ▪ Chip. ▪ Burn.
		After fruit/seed is ripe Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip once all fruit has dropped from branches. ▪ Leave resulting chips on site and monitor.
oriental bittersweet *(Celastrus orbiculatus)* multiflora rose *(Rosa multiflora)*	**Fruits, Seeds, Plant Fragments**	**Prior to fruit/seed ripening** Seedlings and small plants ▪ Pull or cut and leave on site with roots exposed. No special care needed. Larger plants ▪ Make a brush pile. ▪ Burn.
		After fruit/seed is ripe Don't remove from site. ▪ Burn. ▪ Make a covered brush pile. ▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">garlic mustard
(Alliaria petiolata)
spotted knapweed
(Centaurea maculosa)
▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling.
black swallow-wort
(Cynanchum nigrum)
▪ May cause skin rash. Wear gloves and long sleeves when handling.
pale swallow-wort
(Cynanchum rossicum)
giant hogweed
(Heracleum mantegazzianum)
▪ Can cause major skin rash. Wear gloves and long sleeves when handling.
dame’s rocket
(Hesperis matronalis)
perennial pepperweed
(Lepidium latifolium)
purple loosestrife
(Lythrum salicaria)
Japanese stilt grass
(Microstegium vimineum)
mile-a-minute weed
(Polygonum perfoliatum)</td><td rowspan="2">Fruits and Seeds</td><td>Prior to flowering
Depends on scale of infestation
Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>During and following flowering
Do nothing until the following year or remove flowering heads and bag and let rot.

Small infestation
▪ Pull or cut plant and leave on site with roots exposed.

Large infestation
▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting).
▪ Monitor. Remove any re-sprouting material.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>Fruits, Seeds, Plant Fragments
Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn’t materially influence disposal activities.</td><td>Small infestation
▪ Bag all plant material and let rot.
▪ Never pile and use resulting material as compost.
▪ Burn.

Large infestation
▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile.
▪ Monitor and remove any sprouting material.
▪ Pile, let dry, and burn.</td></tr>
</table>

January 2010

Managing Invasive Plants

Methods of Control

by Christopher Mattrick

They're out there. The problem of invasive plants is as close as your own backyard.

Maybe a favorite dogwood tree is struggling in the clutches of an Oriental bittersweet vine. Clawlike canes of multiflora rose are scratching at the side of your house. That handsome burning bush you planted few years ago has become a whole clump in practically no time … but what happened to the azalea that used to grow right next to it?

If you think controlling or managing invasive plants on your property is a daunting task, you're not alone. Though this topic is getting lots of attention from federal, state, and local government agencies, as well as the media, the basic question for most homeowners is simply, "How do I get rid of the invasive plants in my own landscape?" Fortunately, the best place to begin to tackle this complex issue is in our own backyards and on local conservation lands. We hope the information provided here will help you take back your yard. We won't kid you—there's some work involved, but the payoff in beauty, wildlife habitat, and peace of mind makes it all worthwhile.

PLAN OF ATTACK

Three broad categories cover most invasive plant control: mechanical, chemical, and biological. Mechanical control means physically removing plants from the environment through cutting or pulling. Chemical control uses herbicides to kill plants and inhibit regrowth. Techniques and chemicals used will vary depending on the species. Biological controls use plant diseases or insect predators, typically from the targeted species' home range. Several techniques may be effective in controlling a single species, but there is usually one preferred method—the one that is most resource efficient with minimal impact on non-target species and the environment.

Spraying chemicals to control invasive plants.

MECHANICAL CONTROL METHODS

Mechanical treatments are usually the first ones to look at when evaluating an invasive plant removal project. These procedures do not require special licensing or introduce chemicals into the environment. They do require permits in some situations, such as wetland zones. [See sidebar on page 23.] Mechanical removal is highly labor intensive and creates a significant amount of site disturbance, which can lead to rapid reinvasion if not handled properly.

Pulling and digging

Many herbaceous plants and some woody species (up to about one inch in diameter), if present in limited quantities, can be pulled out or dug up. It's important to remove as much of the root system as possible; even a small portion can restart the infestation. Pull plants by hand or use a digging fork, as shovels can shear off portions of the root system, allowing for regrowth. To remove larger woody stems (up to about three inches in diameter), use a Weed Wrench™, Root Jack, or Root Talon. These tools, available from several manufacturers, are designed to remove the aboveground portion of the plant as well as the entire root system. It's easiest to undertake this type of control in the spring or early summer when soils are moist and plants come out more easily.

Using tools to remove woody stems.

Volunteers hand pulling invasive plants.

Suffocation

Try suffocating small seedlings and herbaceous plants. Place double or triple layers of thick UV-stabilized plastic sheeting, either clear or black (personally I like clear), over the infestation and secure the plastic with stakes or weights. Make sure the plastic extends at least five feet past the edge of infestation on all sides. Leave the plastic in place for at least two years. This technique will kill everything beneath the plastic—invasive and non-invasive plants alike. Once the plastic is removed, sow a cover crop such as annual rye to prevent new invasions.

Cutting or mowing

This technique is best suited for locations you can visit and treat often. To be effective, you will need to mow or cut infested areas three or four times a year for up to five years. The goal is to interrupt the plant's ability to photosynthesize by removing as much leafy material as possible. Cut the plants at ground level and remove all resulting debris from the site. With this treatment, the infestation may actually appear to get worse at first, so you will need to be as persistent as the invasive plants themselves. Each time you cut the plants back, the root system gets slightly larger, but must also rely on its energy reserves to push up new growth. Eventually, you will exhaust these reserves and the plants will die. This may take many years, so you have to remain committed to this process once you start; otherwise the treatment can backfire, making the problem worse.

CHEMICAL CONTROL METHODS

Herbicides are among the most effective and resource-efficient tools to treat invasive species. Most of the commonly known invasive plants can be treated using only two herbicides—glyphosate (the active ingredient in Roundup™ and Rodeo™) and triclopyr (the active ingredient in Brush-B-Gone™ and Garlon™). Glyphosate is non-selective, meaning it kills everything it contacts. Triclopyr is selective and does not injure monocots (grasses, orchids, lilies, etc.). Please read labels and follow directions precisely for both environmental and personal safety. These are relatively benign herbicides, but improperly used they can still cause both short- and long-term health and environmental problems. Special aquatic formulations are required when working in wetland zones. You are required to have a state-issued pesticide applicator license when applying these chemicals on land you do not own. To learn more about the pesticide regulations in your state, visit or call your state's pesticide control division, usually part of the state's Department of Agriculture. In wetland areas, additional permits are usually required by the Wetlands Protection Act. [See sidebar on page 23.]

Foliar applications

When problems are on a small scale, this type of treatment is usually applied with a backpack sprayer or even a small handheld spray bottle. It is an excellent way to treat large monocultures of herbaceous plants, or to spot-treat individual plants that are difficult to remove mechanically, such as goutweed, swallowwort, or purple loosestrife. It is also an effective treatment for some woody species, such as Japanese barberry, multiflora rose, Japanese honeysuckle, and Oriental bittersweet that grow in dense masses or large numbers over many acres. The herbicide mixture should contain no more than five percent of the active ingredient, but it is important to follow the instructions on the product label. This treatment is most effective when the plants are actively growing, ideally when they are flowering or beginning to form fruit. It has been shown that plants are often more susceptible to this type of treatment if the existing stems are cut off and the regrowth is treated. This is especially true for Japanese knotweed. The target plants should be thoroughly wetted with the herbicide on a day when there is no rain in the forecast for the next 24 to 48 hours.

Cut stem treatments

There are several different types of cut stem treatments, but here we will review only the one most commonly used. All treatments of this type require a higher concentration of the active ingredient than is used in foliar applications. A 25 to 35 percent solution of the active ingredient should be used for cut stem treatments, but read and follow all label instructions. In most cases, the appropriate herbicide is glyphosate, except for Oriental bittersweet, on which triclopyr should be used. This treatment can be used on all woody stems, as well as phragmites and Japanese knotweed.

For woody stems, treatments are most effective when applied in the late summer and autumn—between late August and November. Stems should be cut close to the ground, but not so close that you will lose track of them. Apply herbicide directly to the cut surface as soon as possible after cutting. Delaying the application will reduce the effectiveness of the treatment. The herbicide can be applied with a sponge, paintbrush, or spray bottle.

Cut stem treatment tools.

For phragmites and Japanese knotweed, treatment is the same, but the timing and equipment are different. Plants should be treated anytime from mid-July through September, but the hottest, most humid days of the summer are best for this method. Cut the stems halfway between two leaf nodes at a comfortable height. Inject (or squirt) herbicide into the exposed hollow stem. All stems in an infestation should be treated. A wash bottle is the most effective application tool, but you can also use an eyedropper, spray bottle, or one of the recently developed high-tech injection systems.

It is helpful to mix a dye in with the herbicide solution. The dye will stain the treated surface and mark the areas that have been treated, preventing unnecessary reapplication. You can buy a specially formulated herbicide dye, or use food coloring or laundry dye.

There is not enough space in this article to describe all the possible ways to control invasive plants. You can find other treatments, along with more details on the above-described methods, and species-specific recommendations on The Nature Conservancy Web site (tncweeds.ucdavis.edu). An upcoming posting on the Invasive Plant Atlas of New England (www.ipane.org) and the New England Wild Flower Society (www.newfs.org) Web sites will also provide further details.

Hollow stem injection tools.

Biological controls—still on the horizon

Biological controls are moving into the forefront of control methodology, but currently the only widely available and applied biocontrol relates to purple loosestrife. More information on purple loosestrife and other biological control projects can be found at www.invasiveplants.net.

DISPOSAL OF INVASIVE PLANTS

Proper disposal of removed invasive plant material is critical to the control process. Leftover plant material can cause new infestations or reinfest the existing project area. There are many appropriate ways to dispose of invasive plant debris. I've listed them here in order of preference.

1. **Burn it**—Make a brush pile and burn the material following local safety regulations and restrictions, or haul it to your town's landfill and place it in their burn pile.

2. **Pile it**—Make a pile of the woody debris. This technique will provide shelter for wildlife as well.

3. **Compost it**—Place all your herbaceous invasive plant debris in a pile and process as compost. Watch the pile closely for resprouts and remove as necessary. Do not use the resulting compost in your garden. The pile is for invasive plants only.

Injecting herbicide into the hollow stem of phragmites.

4. **Dry it/cook it**—Place woody debris out on your driveway or any asphalt surface and let it dry out for a month. Place herbaceous material in a doubled-up black trash bag and let it cook in the sun for one month. At the end of the month, the material should be non-viable and you can dump it or dispose of it with the trash. The method assumes there is no viable seed mixed in with the removed material.

Care should be taken in the disposal of all invasive plants, but several species need extra attention. These are the ones that have the ability to sprout vigorously from plant fragments and should ideally be burned or dried prior to disposal: Oriental bittersweet, multiflora rose, Japanese honeysuckle, phragmites, and Japanese knotweed.

Christopher Mattrick is the former Senior Conservation Programs Manager for New England Wild Flower Society, where he managed conservation volunteer and invasive and rare plant management programs. Today, Chris and his family work and play in the White Mountains of New Hampshire, where he is the Forest Botanist and Invasive Species Coordinator for the White Mountain National Forest.

Controlling Invasive Plants in Wetlands

Special concerns; special precautions

Control of invasive plants in or around wetlands or bodies of water requires a unique set of considerations. Removal projects in wetland zones can be legal and effective if handled appropriately. In many cases, herbicides may be the least disruptive tools with which to remove invasive plants. You will need a state-issued pesticide license to apply herbicide on someone else's property, but all projects in wetland or aquatic systems fall under the jurisdiction of the Wetlands Protection Act and therefore require a permit. ***Yes, even hand-pulling that colony of glossy buckthorn plants from your own swampland requires a permit.*** Getting a permit for legal removal is fairly painless if you plan your project carefully.

1. Investigate and understand the required permits and learn how to obtain them. The entity charged with the enforcement of the Wetlands Protection Act varies from state to state. For more information in your state, contact:

   ME: Department of Environmental Protection www.state.me.us/dep/blwq/docstand/nrpapage.htm

   NH: Department of Environmental Services www.des.state.nh.us/wetlands/

   VT: Department of Environmental Conservation www.anr.state.vt.us/dec/waterq/permits/htm/pm_cud.htm

   MA: Consult your local town conservation commission

   RI: Department of Environmental Management www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm

   CT: Consult your local town Inland Wetland and Conservation Commission

2. Consult an individual or organization with experience in this area. Firsthand experience in conducting projects in wetland zones and navigating the permitting process is priceless. Most states have wetland scientist societies whose members are experienced in working in wetlands and navigating the regulations affecting them. A simple Web search will reveal the contact point for these societies. Additionally, most environmental consulting firms and some nonprofit organizations have skills in this area.

3. Develop a well-written and thorough project plan. You are more likely to be successful in obtaining a permit for your project if you submit a project plan along with your permit application. The plan should include the reasons for the project, your objectives in completing the project, how you plan to reach those objectives, and how you will monitor the outcome.

4. Ensure that the herbicides you plan to use are approved for aquatic use. Experts consider most herbicides harmful to water quality or aquatic organisms, but rate some formulations as safe for aquatic use. Do the research and select an approved herbicide, and then closely follow the instructions on the label.

5. If you are unsure—research, study, and most of all, ask for help. Follow the rules. The damage caused to aquatic systems by the use of an inappropriate herbicide or the misapplication of an appropriate herbicide not only damages the environment, but also may reduce public support for safe, well-planned projects.

Section 4
Annual Updates and Log Requirements

The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site including NHDES.

Copies of the Stormwater Maintenance report shall be submitted to the City of Portsmouth on an annual basis.

Stormwater Management Report						
Multifamily Development	**100 Durgin Lane**					
BMP Description	**Date of Inspection**	**Inspector**	**BMP Installed and Operating Properly?**	**Cleaning / Corrective Action Needed**	**Date of Cleaning / Repair**	**Performed By**
Deep Sump CB's			❑Yes ❑No			
Jellyfish Filter 1			❑Yes ❑No			
Jellyfish Filter 2			❑Yes ❑No			
CDS Unit 1			❑Yes ❑No			
CDS Unit 2			❑Yes ❑No			
CDS Unit 3			❑Yes ❑No			
Rain Garden 1			❑Yes ❑No			
Rain Garden 2			❑Yes ❑No			

Jellyfish® Filter Owner's Manual

Jellyfish® Filter

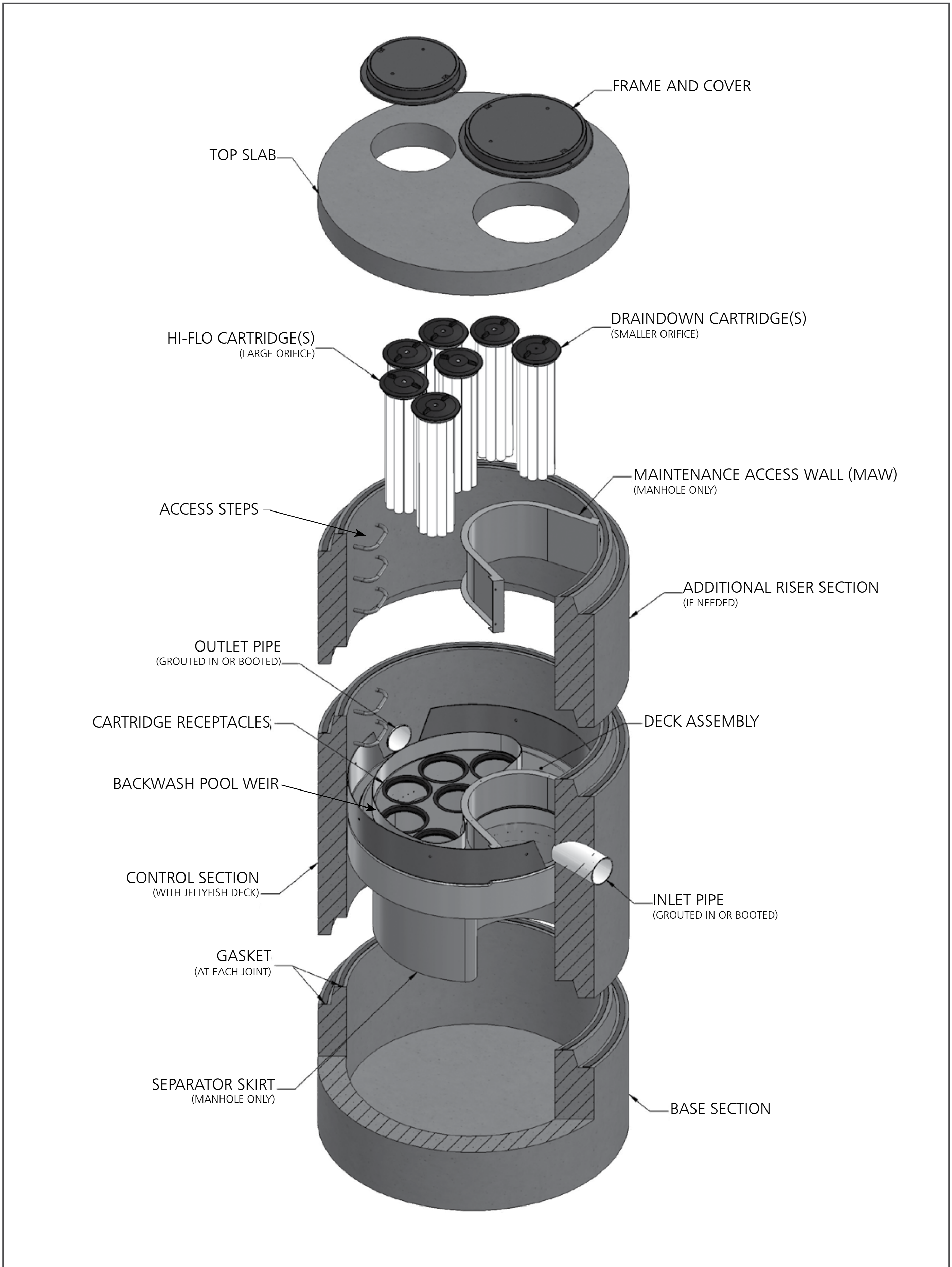
Table of Contents

THANK YOU FOR PURCHASING THE JELLYFISH® FILTER!

Contech Engineered Solutions would like to thank you for selecting the Jellyfish Filter to meet your project's stormwater treatment needs. With proper inspection and maintenance, the Jellyfish Filter is designed to deliver ongoing, high levels of stormwater pollutant removal.

If you have any questions, please feel free to call us or e-mail us:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 | West Chester, OH 45069
513-645-7000 | 800-338-1122
www.ContechES.com
info@conteches.com


FRAME AND COVER
TOP SLAB
HI-FLO CARTRIDGE(S)
(LARGE ORIFICE)
DRAINDOWN CARTRIDGE(S)
(SMALLER ORIFICE)
MAINTENANCE ACCESS WALL (MAW)
(MANHOLE ONLY)
ACCESS STEPS
ADDITIONAL RISER SECTION
(IF NEEDED)
OUTLET PIPE
(GROUTED IN OR BOOTED)
CARTRIDGE RECEPTACLES
DECK ASSEMBLY
BACKWASH POOL WEIR
CONTROL SECTION
(WITH JELLYFISH DECK)
INLET PIPE
(GROUTED IN OR BOOTED)
GASKET
(AT EACH JOINT)
SEPARATOR SKIRT
(MANHOLE ONLY)
BASE SECTION

WARNINGS / CAUTION

1. FALL PROTECTION may be required.
2. WATCH YOUR STEP if standing on the Jellyfish Filter Deck at any time; Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck. Attentive care must be taken while standing on the Jellyfish Filter Deck at all times to prevent stepping onto a lid, into or through a cartridge hole or slipping on the deck.
3. The Jellyfish Filter Deck can be SLIPPERY WHEN WET.
4. If the Top Slab, Covers or Hatches have not yet been installed, or are removed for any reason, great care must be taken to NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK. The Jellyfish Filter Deck and Cartridge Receptacle Rings can be damaged under high impact loads. This type of activity voids all warranties. All damaged items to be replaced at owner's expense.
5. Maximum deck load 2 persons, total weight 450 lbs.

Safety Notice

Jobsite safety is a topic and practice addressed comprehensively by others. The inclusions here are intended to be reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and perform all training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment as necessary. Make sure all equipment is staffed with trained and/or certified personnel, and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Eye protection
- Safety boots
- Ear protection
- Gloves
- Ventilation and respiratory protection
- Hard hat
- Maintenance and protection of traffic plan

Chapter 1

1.0 – Owner Specific Jellyfish Filter Product Information

Below you will find a reference page that can be filled out according to your Jellyfish Filter specification to help you easily inspect, maintain and order parts for your system.

Owner Name:	
Phone Number:	
Site Address:	
Site GPS Coordinates/unit location:	
Unit Location Description:	
Jellyfish Filter Model No.:	
Contech Project & Sequence Number	
No. of Hi-Flo Cartridges	
No. of Cartridges:	
Length of Draindown Cartridges:	
No. of Blank Cartridge Lids:	
Bypass Configuration (Online/Offline):	

Notes:

Chapter 2

2.0 – Jellyfish Filter System Operations and Functions

The Jellyfish Filter is an engineered stormwater quality treatment technology that removes a high level and wide variety of stormwater pollutants. Each Jellyfish Filter cartridge consists of eleven membrane - encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide a large filtration surface area, resulting in high flow and high pollutant removal capacity.

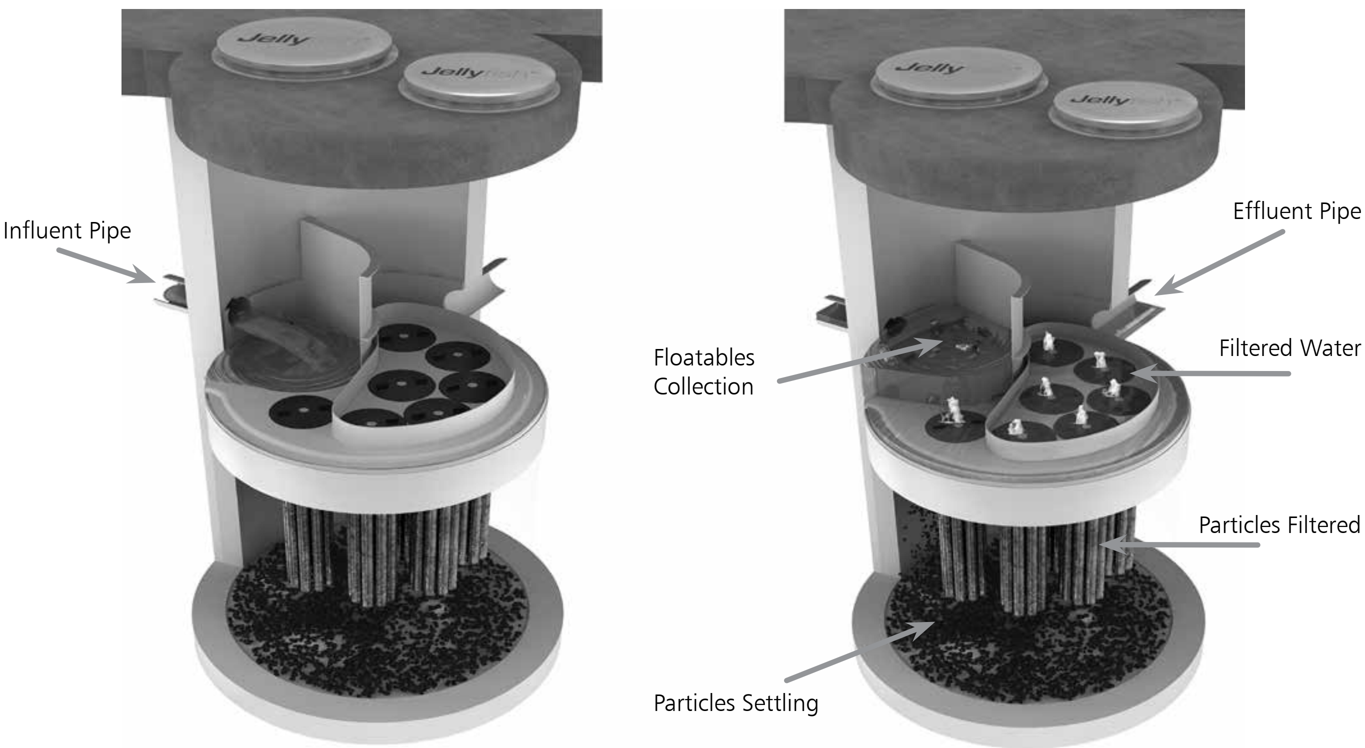
The Jellyfish Filter functions are depicted in Figure 1 below.

FIGURE 1

Jellyfish Filter Treatment Functions

Membrane Filtration

Section View with Maintenance Access Wall (MAW) Cutaway



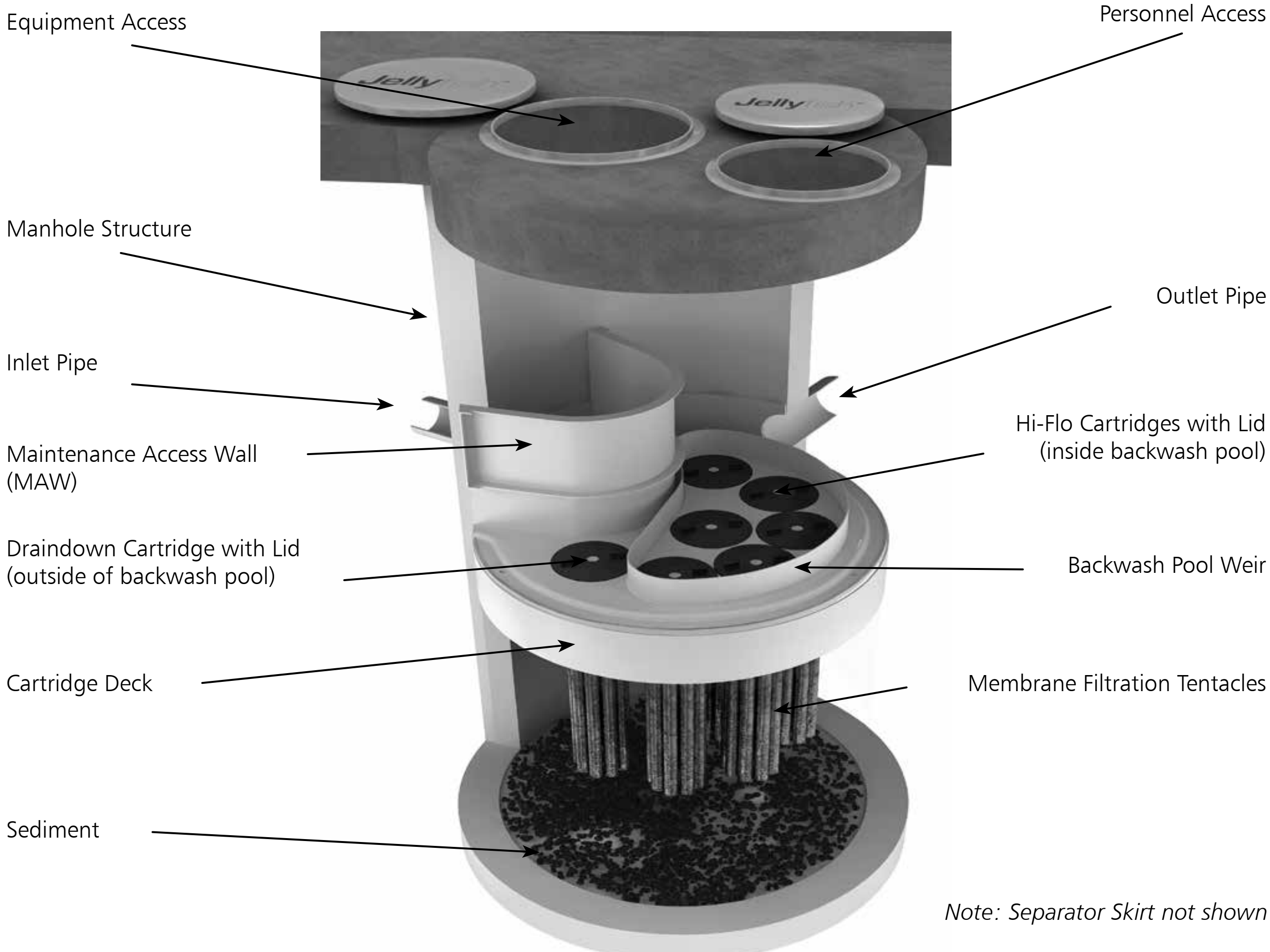
Jellyfish Filter cartridges are backwashed after each peak storm event, which removes accumulated sediment from the membranes. This backwash process extends the service life of the cartridges and increases the time between maintenance events.

For additional details on the operation and pollutant capabilities of the Jellyfish Filter please refer to additional details on our website at www.ContechES.com.

2.1 – Components and Cartridges

The Jellyfish Filter and components are depicted in Figure 2 below.

FIGURE 2 **Jellyfish Filter Components**



Tentacles are available in various lengths as depicted in Table 1 below.

Table 1 – Cartridge Lengths / Weights and Cartridge Lid Orifice Diameters

Cartridge Lengths	Dry Weight	Hi-Flo Orifice Diameter	Draindown Orifice Diameter
15 inches (381 mm)	10 lbs (4.5 kg)	35 mm	20 mm
27 inches (686 mm)	14.5 lbs (6.6 kg)	45 mm	25 mm
40 inches (1,016 mm)	19.5 lbs (8.9 kg)	55 mm	30 mm
54 inches (1,372 mm)	25 lbs (11.4 kg)	70 mm	35 mm

2.2 – Jellyfish Membrane Filtration Cartridge Assembly

The Jellyfish Filter utilizes multiple membrane filtration cartridges. Each cartridge consists of removable cylindrical filtration “tentacles” attached to a cartridge head plate. Each filtration tentacle has a threaded pipe nipple and o-ring. To attach, insert the top pipe nipples with the o-ring through the head plate holes and secure with locking nuts. Hex nuts to be hand tightened and checked with a wrench as shown below.

2.3 – Jellyfish Membrane Filtration Cartridge Installation

- Cartridge installation will be performed by trained individuals and coordinated with the installing site Contractor. Flow diversion devices are required to be in place until the site is stabilized (final paving and landscaping in place). Failure to address this step completely will reduce the time between required maintenance.
- Descend to the cartridge deck (see Safety Notice and page 3).
- Refer to Contech's submittal drawings to determine proper quantity and placement of Hi-Flo, Draindown and Blank cartridges with appropriate lids. Lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. It is possible that not all cartridge receptacles will be filled with a filter cartridge. In that case, a blank headplate and blank cartridge lid (no orifice) would be installed.

Cartridge Assembly

Do not force the tentacles down into the cartridge receptacle, as this may damage the membranes. Apply downward pressure on the cartridge head plate to seat the lubricated rim gasket (thick circular gasket surrounding the circumference of the head plate) into the cartridge receptacle. (See Figure 3 for details on approved lubricants for use with rim gasket.)

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice, and no orifice.
  - Lids with a <u>small orifice</u> are to be inserted into the <u>Draindown cartridge receptacles</u>, outside of the backwash pool weir.
  - Lids with a <u>large orifice</u> are to be inserted into the <u>Hi-Flo cartridge receptacles</u> within the backwash pool weir.
  - Lids with <u>no orifice</u> (blank cartridge lids) and a <u>blank headplate</u> are to be inserted into unoccupied cartridge receptacles.
- To install a cartridge lid, align both cartridge lid male threads with the cartridge receptacle female threads before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation.

3.0 Inspection and Maintenance Overview

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

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

Inspection activities are typically conducted from surface observations and include:

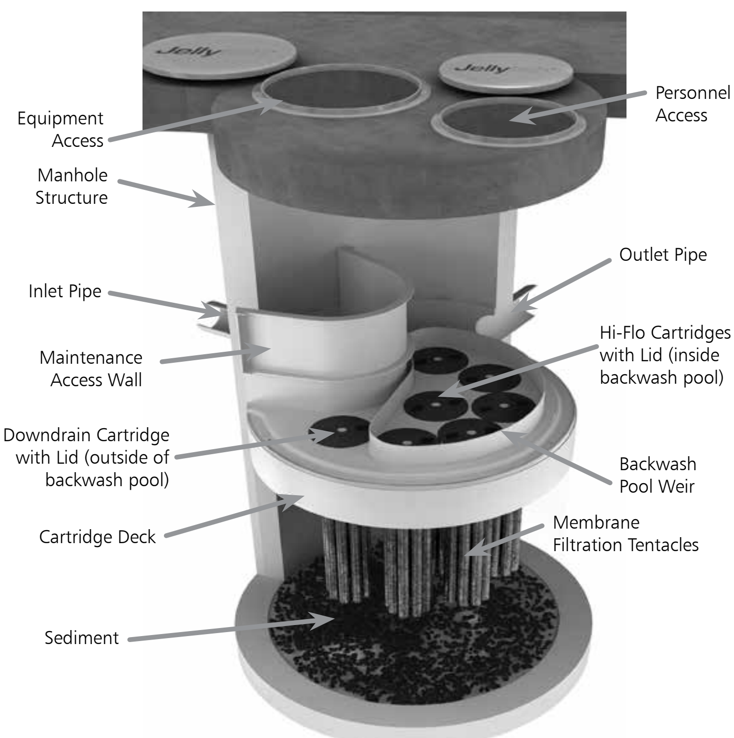
- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

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

4.0 Inspection Timing

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



Note: Separator Skirt not shown

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

5.0 Inspection Procedure

The following procedure is recommended when performing inspections:

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

5.1 Dry weather inspections

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

Inspection Utilizing Sediment Probe

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

5.2 Wet weather inspections

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

6.0 Maintenance Requirements

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

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

7.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

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

7.1 Filter Cartridge Removal

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

7.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.
2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.

Cartridge Removal & Lifting Device

3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. *Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.
4. Collected rinse water is typically removed by vacuum hose.

5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

7.3 Sediment and Flotables Extraction

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

Rinsing Cartridge with Contech Rinse Tool

sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.
6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some

Vacuuming Sump Through MAW

vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

7.4 Filter Cartridge Reinstallation and Replacement

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

7.5 Chemical Spills

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

7.6 Material Disposal

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

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

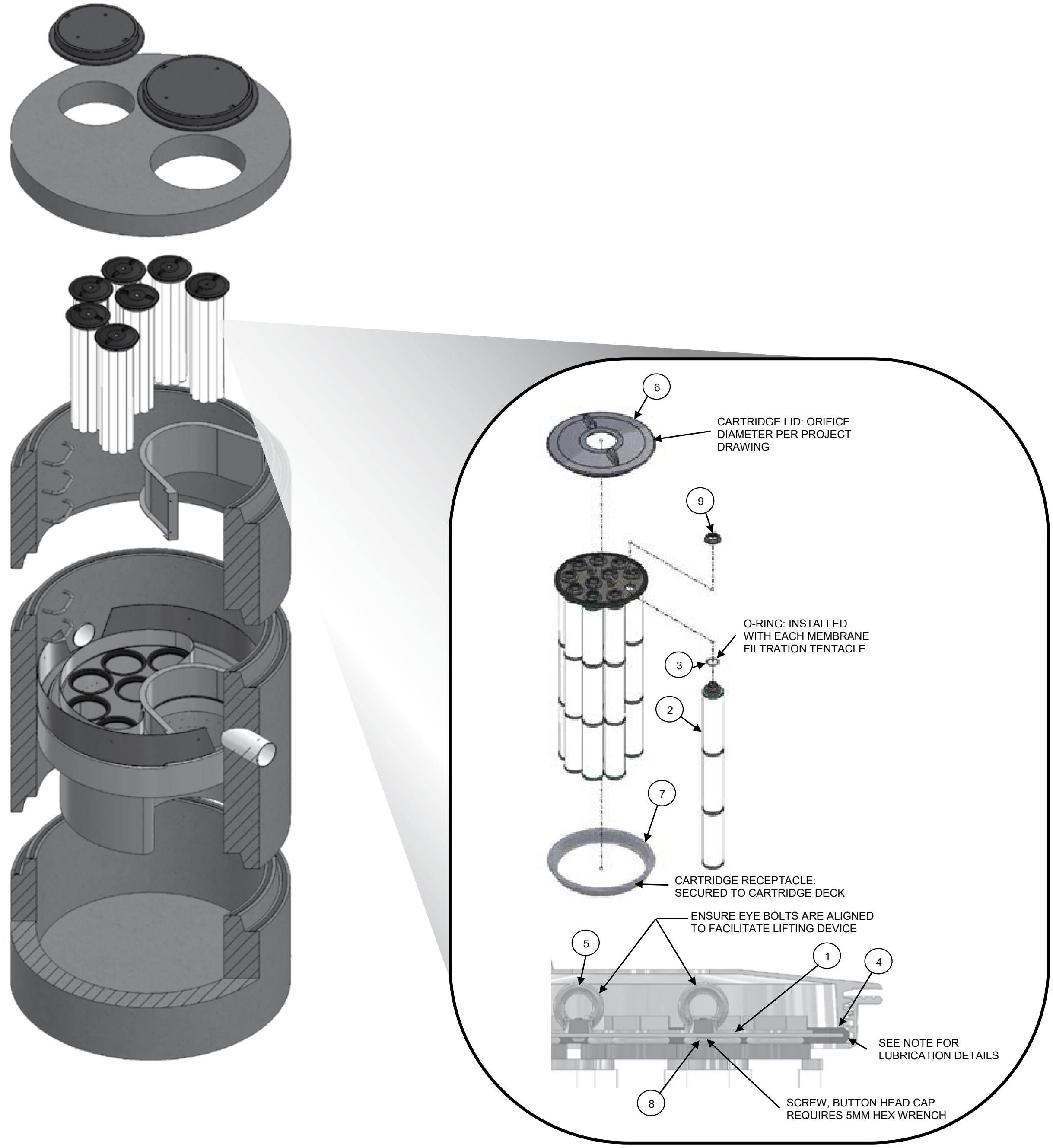


TABLE 1: BOM

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

TABLE 2: APPROVED GASKET LUBRICANTS

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

NOTES:

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

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

Jellyfish Filter Inspection and Maintenance Log

Owner: ______________________________________ Jellyfish Model No.:____________________________

Location: ____________________________________ GPS Coordinates: _____________________________

Land Use: Commercial:______ Industrial: ______ Service Station:______

Road/Highway:____ Airport: ________ Residential: _________ Parking Lot:______

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

CONTECH®
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CDS® Inspection and Maintenance Guide

CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122

The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

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CDS Inspection & Maintenance Log

CDS Model: ______________________________ Location: ______________________________

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

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100 Durgin Lane Multi-family Redevelopment
Preliminary Water and Wastewater Demand Analysis

TO: City of Portsmouth, Technical Advisory Committee
FROM: Neil A. Hansen, PE
Patrick M. Crimmins, PE
COPY: 100 Durgin Lane Owner, LLC
DATE: August 26, 2024

The following memo is to provide an estimate of the average daily water and wastewater flows anticipated for the above-mentioned project for the purpose of allowing city staff to review capacity of the existing system. The flows have been calculated as a total development area.

The proposed project is located at 100 Durgin Lane and includes lots identified as Map 239 Lots 16, 16 & 18 on the City of Portsmouth Tax Maps. The site was previously home to Christmas Tree Shops and Bed, Bath and Beyond locations which are no longer in operation. The proposed project consists of the demolition of the existing Christmas Tree Shops and Bed, Bath and Beyond building and the construction of approximately 360 rental housing units in a mix of 3-story and 4-story buildings. The proposed sewer connection will be connected to the existing sewer manhole in Durgin Lane which has a 10" PVC outlet pipe.

As depicted in the table below, the average daily flow in gallons per day (GPD) has been calculated for the proposed project in accordance with Table 3-3: of Metcalf and Eddy, "Wastewater Engineering Treatment and Resource Reuse" as required under NHDES Env-Wq 700.

Overall Net Proposed Peak Gal/Day Design

Use	Design Unit	Unit Design Flow (GPD)	Design Flow
Proposed:			
Studio Apartment	49 Units	120 GPD/Bdrm	5,880 GPD
1 Bdrm Apartment	160 Units	120 GPD/Bdrm	19,200 GPD
2 Bdrm Apartment	140 Units	120 GPD/Bdrm	33,600 GPD
3 Bdrm Apartment	11 Units	120 GPD/Bdrm	3,960 GPD
Amenity Building	10,880 SF	5 GPD/100 SF	544 GPD
	11 Employees	10 GPD/Employee	110 GPD
		Total Proposed:	**63,294 GPD**
Existing, To Be Removed:			
Shopping Center	632 Parking Spaces	2 GPD/Parking Space	1,264 GPD
	70 Employees	10 GPD/Employee	700 GPD
		Total, To Be Removed	**1,964 GPD**
		Total Net Flow	**61,330 GPD**

WETLAND DELINEATION REPORT

100 Durgin Lane
Portsmouth, NH
May 8, 2024

As requested, I am pleased to provide the following report documenting the wetland delineation performed by Gove Environmental Services, Inc. in connection with the above referenced property. This is an update to my February 28th report which includs a functional assessment of the identified wetland areas. The work was conducted on three lots, referenced on the City of Portsmouth assessors' maps as lots 239-13-2, 239-16, and 239-18 which together total approximately 26.15 acres (the Site). The resource areas discussed in this report are depicted on the enclosed sketch.

WETLAND DELINEATION

The delineation work was performed on November 11, 2023 by Brendan Quigley utilizing the following standards:

1. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region,* (Version 2.0) January 2012, U.S. Army Corps of Engineers.
2. *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils*, Version 8.2. United States Department of Agriculture (2018).
3. *New England Hydric Soils Technical Committee. 2019 Version 4, Field Indicators for Identifying Hydric Soils in New England.* New England Interstate Water Pollution Control Commission, Lowell, MA.
4. *U.S. Army Corps of Engineers National Wetland Plant List, version 3.5.* (2020)

The central part of the Site is a developed commercial property consisting of a large retail building, associated parking areas, and a connector road running between Gosling Road and Arthur Brady Drive. The developed portions of the Site are generally well defined from the surrounding vegetated areas which are a mix of forest, dense early successional shrub growth, and emergent wetland. Wetlands were identified in three main areas east and north of the developed portion of the Site. These were demarcated with seven (7) series of consecutively numbered pink "WETLAND DELINEATION" flagging as shown on the attached sketch. The following table provides a description of each wetland area.

Table 1—Wetland Descriptions

Wetland ID	Cowardin Class[1]	Description/Notes
A and C	PSS1B	These two wetlands occupy the area under the power lines in the southeast corner of the Site. They are scrub shrub wetlands with a saturated hydrology, dominated by silky dogwood, willow, and glossy buckthorn. The wetlands are isolated from one another and surrounded by development or roadway. At the time of the delineation timber mats and stabilized access had been installed in and adjacent to the wetlands for power line maintenance activities.
B	PSS1Kh	This small wetland occupies a portion of a constructed stormwater basin. It is otherwise similar to Wetlands A and C.
#1-62	PSS1E/PFO1E PEM1/5E	This wetland lies on the west side of the connector road north of the existing development. Much of the wetland lies off-site and is predominantly a cattail/phragmites marsh. The edges of this emergent wetland that lie on the Site are a mix of scrub shrub and forested wetland dominated by speckled alder, common and glossy buckthorn, and red maple. Hydrology of the wetland is seasonally flooded /saturated. The wetland also contains a shallow pond and an old weir structure that appear to be components of legacy drainage system, now nearly indistinguishable from the larger wetland. The wetland drains into Wetland E via a culvert under the connector road.
D & E	PSS1E/PFO1E PEM1/5E	These two series of flags define two on-site portions of a larger wetland situated under the power lines and extending off-site to the north and east. Like the wetland defined by flags #1-62, to which this area is connected, this is predominantly a cattail and Phragmites marsh with a limited forested and scrub shrub edge.
F	PEM1/5B	This small wetland is essentially the same as D&E but appears to have been purposely separated from the main wetland by construction of a dyke and weir like the one contained in the #1-62 wetland. Though its intended function is not clear this is also likely part of a legacy drainage system.

[1] *Classification of Wetlands and Deepwater Habitats of the United States*. USFW Manual FWS/OBS–79/31 (1979)

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OTHER REGULATED WETLAND RESOURCES

The NHDES' web-based Wetlands Permit and Planning Tool (WPPT) was used to identify the presence of other regulated wetland resources such as protected shoreland, prime wetland, and other Priority Resource Areas as defined by NH Administrative Rule Env-Wt 103.66. The planning tool indicates that no such areas are present on the property. A copy of the WPPT map is attached.

The field work for the delineation was conducted in late fall so no formal vernal pool survey was conducted. The large cattail and phragmites marsh wetland (D, E, F, 1-62) that constitutes most of the wetlands on the site is not typically suitable vernal pool habitat. The smaller scrub-shrub wetland (A, B, & C) do not appear to have the topography to maintain a pool. Furthermore, all the wetland on the site exist in a highly developed area with very minimal supporting upland habitat necessary to support vernal pool species. It is therefore very unlikely that any of the wetlands identified on the Site contain vernal pools. This should be verified during the vernal pool breeding season.

PORTSMOUTH WETLAND PROTECTION ORDINANCE

Section 10.1010 of the Portsmouth Zoning Ordinance regulates wetland resource areas including vegetated wetlands, vernal pools, tidal areas, streams, other surface water, and specific buffers to these resources. The Site only contains inland freshwater wetlands which are regulated under the Ordinance if they are 10,000 square feet in size or greater[2]. Wetlands B and F are 4,594 square feet and 2,442 square feet respectively, so these two small wetlands are not regulated under the Ordinance. Note, however, that these areas are still jurisdictional wetlands subject to state and federal regulation. All other wetlands identified on the Site, and a 100-foot buffer from these areas, are regulated under the Ordinance.

WETLAND FUNCTION & VALUE ASSESSMENT

A wetland function and value assessment was conducted using the US Army Corps Highway Methodology guidelines. Functions are self-sustaining properties of wetlands, which exist in the absence of human involvement. Values refers to the benefits gained by society from a given wetland or ecosystem and their inherent functions. Functions and values identified as "primary" have been determined to be significant features of the wetland being evaluated. An important distinction is that the primary functions and values of a particular wetland does not necessarily indicate the wetland supports them at a significant *level* in comparison to other wetlands in the region or even near the site.

[2] Section 10.1013.10

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The Highway Methodology considers 13 functions and values:

1. **Groundwater recharge/discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where ground water can be discharged to the surface.
2. **Floodflow Alteration:** This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
3. **Fish and Shellfish Habitat:** This function considers the effectiveness of seasonal or permanent water bodies associated with the wetland in question for fish and shellfish habitat.
4. **Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.
5. **Nutrient Removal/Retention/Transformation:** This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.
6. **Production Export:** This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.
7. **Sediment/Shoreline Stabilization:** This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.
8. **Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and or migrating species must be considered.
9. **Recreation:** This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.
10. **Educational/Scientific Value:** This value considers the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.
11. **Uniqueness/Heritage:** This value relates to the effectiveness of the wetland or its associated water bodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.
12. **Visual Quality/Aesthetics:** This value relates to the visual and aesthetic qualities of the wetland.
13. **Threatened or Endangered Species Habitat:** This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species.

The collection of individually flagged wetlands on the Site were evaluated in two groups based on their proximity to one another, type, and connectivity. The A and C series wetlands located in the southeast corner of the site were evaluated as one since they lie directly adjacent to one another and share the same characteristics. The D and E series were grouped together with the wetland numbered 1-65 since these three areas are part of a larger wetland extending off-site to the east and separated only by an access driveway. Wetlands B and F are stormwater management features which are too small to be regulated under the Portsmouth Wetlands Protection Ordinance and were not evaluated.

Due to the character of the wetlands and the densely developed setting, several of the functions and values listed above are clearly not supported or are supported to a very limited extent. The lack of permanent or any significant surface water is the most obvious limiting factor. Functions such as fish habitat and shoreline stabilization, which require close association with surface water are not supported in these wetlands. Wetland supported recreation is also strongly linked with surface water for activities such as boating and fishing. Recreational value of this type is not supported but other more passive forms of recreation may be supported to a limited degree depending on how broadly recreation is defined. Aesthetic value is even more subjective, as is value for scientific or educational pursuits. These are traditionally associated with more diverse, unique, and accessible wetlands than those present in this area. In the context of the densely developed area, however, these wetlands provide notable value by providing readily viewable green space amongst developed areas. They may also offer unique educational or scientific opportunities for the study of wetlands in a developed landscape. These values have therefore been considered secondary values supported by all the wetlands on the Site.

The densely developed setting also highlights the importance of certain wetland functions and strongly influences the *Principal Functions* of the wetlands. The most important function of the larger interconnected wetland system (#1-62/D/E) is protection of water quality. This area receives significant runoff from the surrounding developed areas and drains through dense emergent wetlands and restricted outlets. This arrangement provides both sediment trapping, retention, and nutrient transformation function. This is also likely to provide an important flood attenuation function, not as a floodplain, but by intercepting and storing runoff. The smaller wetland areas (A/C) supports these functions to a much lesser degree or not at all due to their limited connectivity.

The long-term effects of performing these water quality functions and overall fragmentation of the wetland in this area does degrade their ecological integrity and suitability for functions as wildlife habitat. However, considering the limited habitat in this developed landscape and the fact that some of the wetlands are quite large, they function as important habitat islands. These areas are likely to be used by numerous avian species and small mammals with limited habitat requirements. The wetter areas in the larger wetlands (#1-62/D/E) may also provide habitat for amphibian and retile species but this is limited by general lack of permanent water.

The table below summarizes all the identified principle and secondary functions of the two groups of wetlands evaluated. The Highway Methodology data forms are attached.

Table 2—Wetland Function & Value Summary

Wetland ID	Principle Functions/Values	Secondary Functions/Values	Justification/Discussion
A & C	Export/Production Wildlife Habitat	Sediment Retention Nutrient Removal Educational/Scientific Aesthetic	Principle Function is that of a habitat island in the context of a developed landscape. Production for wildlife food sources is enhanced by the dense cover of berry producing shrubs and nectar producing herbaceous vegetation. Water quality has been considered secondary due to lack of connectivity and lack of emergent wetland. Limited Educational/Scientific and Aesthetic value supported in the context of densely developed area.
	Wildlife Habitat Sediment Retention Nutrient Removal Floodflow Alteration	Groundwater Educational/Scientific Aesthetic	Principal water quality function is based on significant urban runoff and diffuse and constricted flow through dense mostly emergent vegetation. Floodflow attenuation by way of storage is derived in a similar way. Principal Wildlife habitat functions is as a habitat island in context of developed landscape. Production for wildlife food sources is considered secondary due to significant areas of invasive or uniform vegetation (Phragmites and Cattail). Limited groundwater interaction in wettest areas but not located in aquafer area. Limited Educational/Scientific and Aesthetic value supported in the context of densely developed area.

Tighe&Bond

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER 4/22/24

STATE OF NEW HAMPSHIRE NEIL A HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER 04/22/2024

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

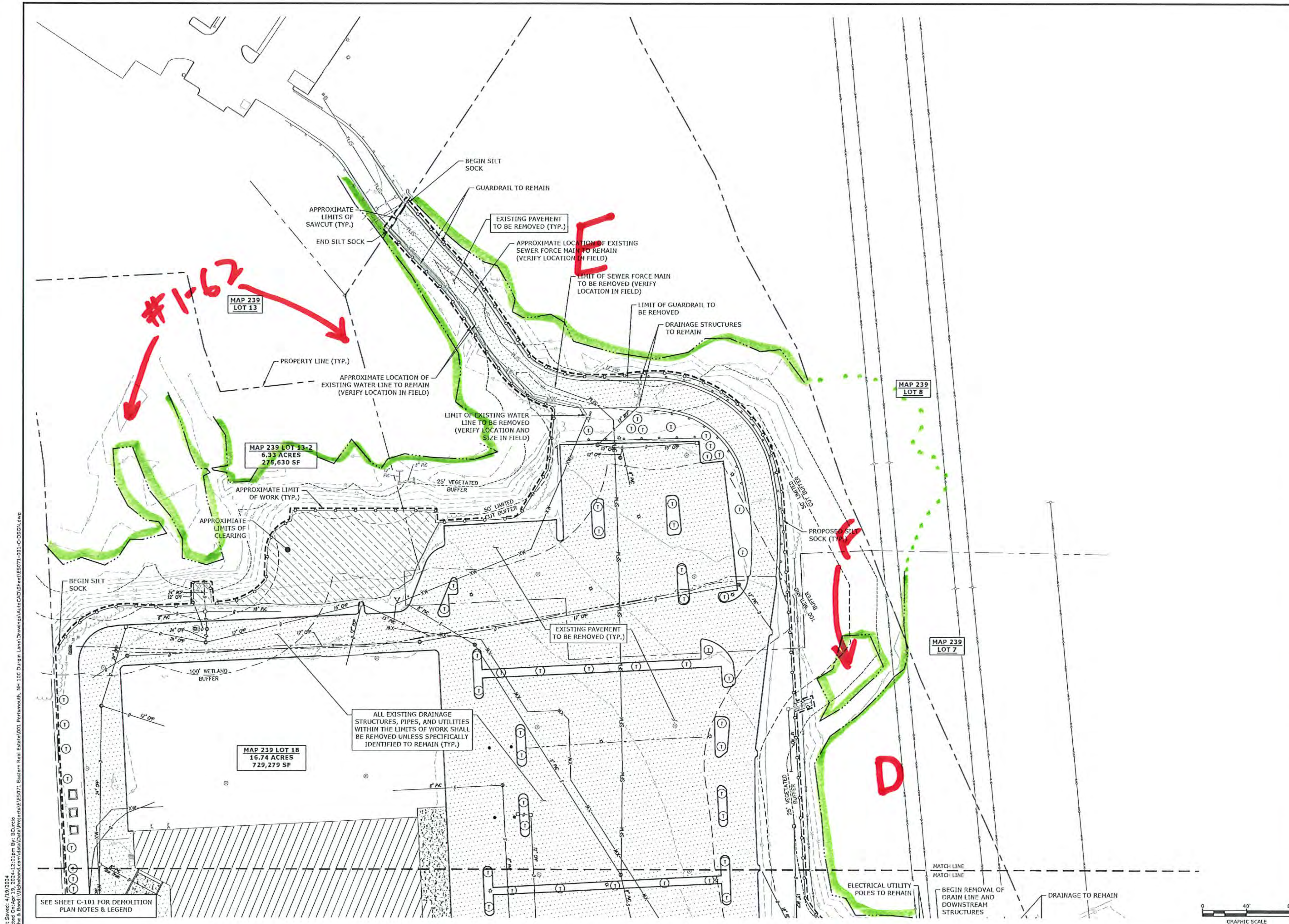
MARK	DATE	DESCRIPTION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DEMOLITION PLAN

SCALE: AS SHOWN

C-202



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STATE OF NEW HAMPSHIRE
PATRICK CRUMMINS
No. 12378
LICENSED
PROFESSIONAL ENGINEER
4/22/24

STATE OF NEW HAMPSHIRE
NEIL A HANSEN
No. 15227
LICENSED
PROFESSIONAL ENGINEER
04/22/2024

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
A	4/22/2024	TAC SUBMISSION

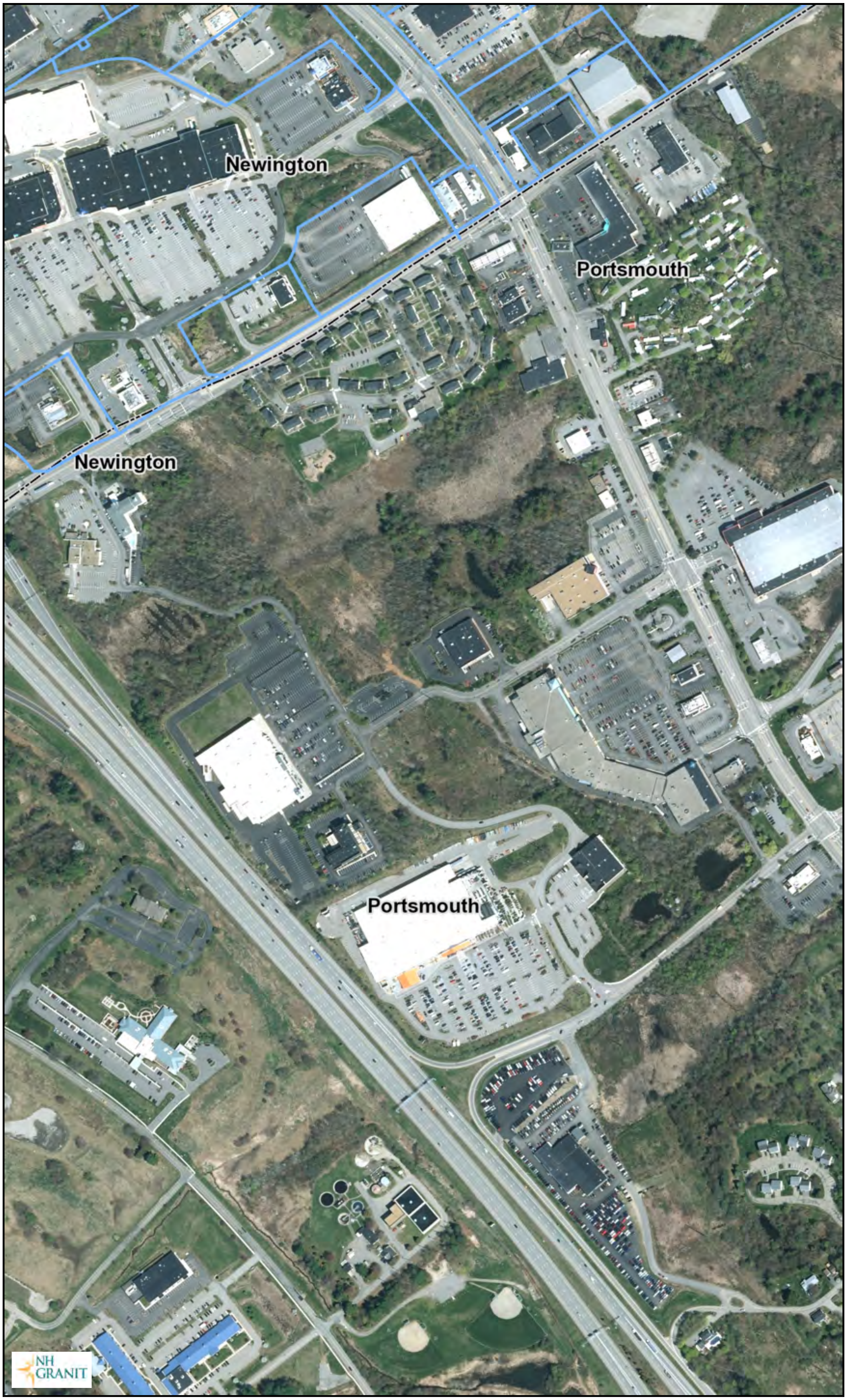
PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

DEMOLITION PLAN

SCALE: AS SHOWN

C-201

Durgin Lane
WPPT



Legend

- Additional Lines
- City/Town
- Prime Wetlands
- Prime Wetlands with 100
- Peatland
- Flood Plain Wetlands Adja
- Marsh-Scrub / Shrub Wet
- Dunes
  - backdune
  - foredune
  - interdune
  - other

Map Scale

1: 6,494

Map Generated: 2/29/2024

Notes

Wetland Function-Value Evaluation Form

Total area of wetland ~1.1 ac Human made? No Is wetland part of a wildlife corridor? NO or a "habitat island"? YES

Adjacent land use Commercial Development, Elec. Transmission Distance to nearest roadway or other development >100 ft

Dominant wetland systems present PSS1B Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? ______

How many tributaries contribute to the wetland? isolated Wildlife & vegetation diversity/abundance (see wetland report)

Wetland I.D. A & C
Latitude see report Longitude ______
Prepared by: BJQ Date 5/2/24
Wetland Impact:
Type Buffer Area see plans

Evaluation based on:
Office Yes Field Yes
Corps manual wetland delineation completed? Y x N ______

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			wetland is characteristic of perched GW
Floodflow Alteration	N			isolated
Fish and Shellfish Habitat	N	N/A		No permanent surface water
Sediment/Toxicant Retention	Y	1,2,5		potential sources but limited connectivity, minimal function
Nutrient Removal	Y	3,4,8,9		potential sources but limited connectivity, minimal function
Production Export	Y	1,7,12	X	wildlife food sources in dense berry bearing shrubs and nectar prod. species
Sediment/Shoreline Stabilization	N			not associated with surface water
Wildlife Habitat	Y	8,19,21	X	limited habitat island for songbirds and small mammal
Recreation	N			Common wetland, subject to transmission line maintenance; low diversity
Educational/Scientific Value	Y			limited potential for study of fragmentation and development
Uniqueness/Heritage	N			Common wetland, subject to transmission line maintenance; low diversity
Visual Quality/Aesthetics	Y			minimal, open space in context of developed landscape
ES Endangered Species Habitat	N			None identified
Other		N/A		N/A

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland ~20 ac Human made? No Is wetland part of a wildlife corridor? NO or a "habitat island"? YES

Adjacent land use Commercial Development, Elec. Transmission Distance to nearest roadway or other development >100 ft

Dominant wetland systems present PEM1/5E/PSS1E Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? LOW

How many tributaries contribute to the wetland? UNK Wildlife & vegetation diversity/abundance (see wetland report)

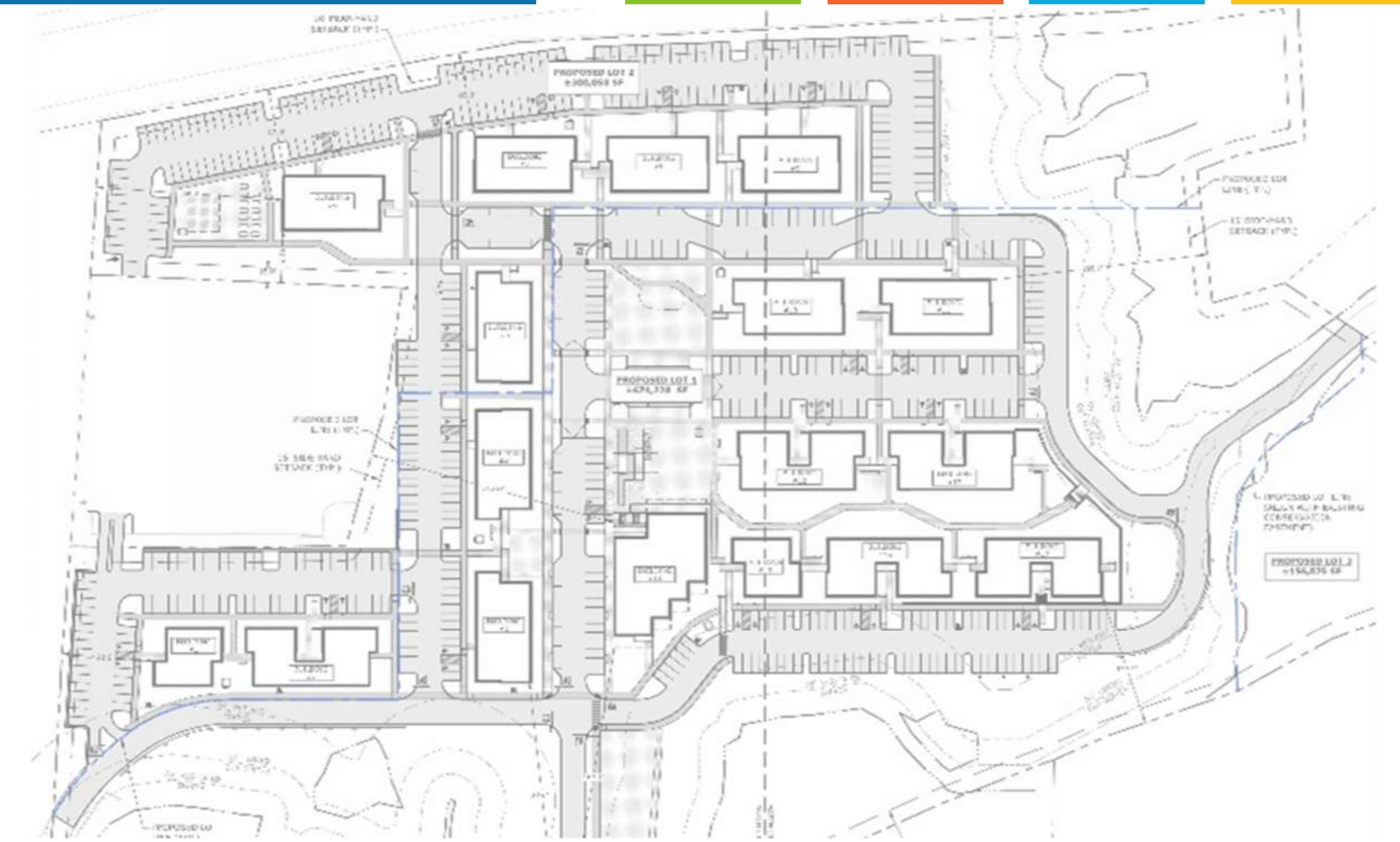
Wetland I.D. #1-62/E/D
Latitude see report Longitude
Prepared by: BJQ Date 5/2/24
Wetland Impact:
Type none Area see plans

Evaluation based on:
Office Yes Field Yes
Corps manual wetland delineation completed? Y x N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y			some potential in very poorly drained areas
Floodflow Alteration	Y	4,5,6,7,15	X	significant urban runoff, constricted outlet, large area of storage relative to its watershed
Fish and Shellfish Habitat	N	N/A		No permanent surface water
Sediment/Toxicant Retention	Y	1,2,3,4,5,10,12,14,16	X	Significant sources, diffuse flow though dense vegetation
Nutrient Removal	Y	1,3,5,6,7,8,9,11,13,14,15	X	Significant sources, diffuse flow, long retention time, dense emergent vegetation
Production Export	Y	1,2,7,12,14		high production but limited export, berry and nectar wildlife food sources, low divertsity
Sediment/Shoreline Stabilization	N			not associated with surface water
Wildlife Habitat	Y	8,19,21	X	part of a larger habitat island for songbirds and small sp. tolerant of proximate devel.
Recreation	N			disturbed wetland, densely developed area
Educational/Scientific Value	Y			limited potential for study of fragmentation and development
Uniqueness/Heritage	N			disturbed wetland, densely developed area
Visual Quality/Aesthetics	Y			minimal, open space in context of developed landscape
ES Endangered Species Habitat	N			None identified
Other		N/A		N/A

Notes:

* Refer to backup list of numbered considerations.



100 Durgin Lane Multi-Family Development
Portsmouth, NH

TRAFFIC IMPACT STUDY

100 Durgin Lane Owner, LLC

May 16, 2024

Tighe&Bond

100% Recyclable

Technical Appendices (Available Upon Request Under Separate Cover)

Section 1
Study Overview

This Traffic Impact Study (TIS) evaluates the potential traffic impact of the proposed residential development located at 100 Durgin Lane, in the City of Portsmouth, New Hampshire. The site is bounded by US Route 4 (Spauling Turnpike) to the west, Hampton Inn and the Home Depot shopping plaza to the south, Motel 6 to the north, and wetlands and Durgin Square shopping plaza to the east. Figure 1 shows the Site location relative to the surrounding roadway network.

The project proposes to demolish the currently vacant retail building, which formerly housed Bed Bath and Beyond and The Christmas Tree Shops, and construct 144 residential units spread across seven three-story buildings and 216 units spread across nine four-story buildings, for a total of 360 units. On-site parking will be provided by surface parking lots on site. Site access will continue to be provided via the three existing full-access driveways: the northern driveway to Gosling Road via the Motel 6 parking lot, the eastern driveway to Durgin Lane, and the southern driveway to Arthur F Brady Drive via the Home Depot shopping plaza driveway. The project is expected to be completed in 2026.

Based on the analyses conducted, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed residential development is not expected to have a significant impact to traffic operations within the study area as compared to the current vacant site condition. Overall, it represents a significant reduction in net trips compared to both the prior retail use and to potential re-leasing of the parcel for retail use.

Section 2
Existing Conditions

The Project site is bounded by US Route 4 (Spauling Turnpike) to the west, commercial uses to the north and south, and existing wetlands to the east. The property is currently accessible via three full-access driveways. The northern driveway runs adjacent the Motel 6 parking lot to provide an unsignalized access at Gosling Road; the eastern driveway, which becomes Durgin Lane, forms a signalized intersection at Woodbury Avenue; and the southern driveway connects to Arthur F Brady Drive via the Home Depot shopping plaza driveway. The following sections provide details on the adjacent roadways within the study area.

2.1 Roadways

2.1.1 Woodbury Avenue

Woodbury Avenue is classified as an urban minor arterial from Market Street to Gosling Road and is maintained by the City of Portsmouth. South of the Market Street intersection, Woodbury Road is classified as an urban major collector. The roadway is located east of the site location and primarily runs north-south in the study area. Woodbury Avenue runs from the Spaulding Turnpike interchange in Newington to the north and terminates at an intersection with Bartlett Street in the south.

Within the study area, northbound and southbound traffic are divided by an approximately 10-foot wide raised concrete median. Woodbury Avenue typically provides two travel lanes in each direction with two- to four-foot wide marked shoulders, widening at intersections to provide additional turning lanes. An approximately five- to seven-foot sidewalk is provided along both sides of Woodbury Avenue throughout the entire study area. Woodbury Avenue has a posted speed limit of 30 mph in both directions in the vicinity of Durgin Lane.

2.1.2 Gosling Road

Gosling Road is classified as an urban major collector west of Woodbury Avenue and a local road east of Woodbury Avenue and is maintained by the City of Portsmouth. The roadway is located north of the site location and runs primarily in the east-west direction connecting US Route 4 (Spaulding Turnpike) on/off ramps to the west and the Granite Shore Power facilities along the Piscataqua River to the east. Eastbound and westbound traffic on Gosling Road is divided by a six-foot wide raised concrete median between the US Route 4 Southbound ramps and Woodbury Avenue; the median opens at The Crossings shopping plaza driveway and Winsor Road to allow for turns.

In the eastbound direction, the roadway begins east of the US Route 4 overpass with four 11-foot travel lanes, with two left turn lanes to the southbound on-ramp and two through lanes. The westbound approach widens from two travel lanes to three lanes with two dedicated through lanes and one shared through and right turn lane. Gosling Road carries two lanes eastbound through the intersection and widens to a four-lane section with two left turn lanes and two through lanes at signalized intersection at The Crossings shopping plaza. East of The Crossings intersection, Gosling has two 11-foot lanes in both the eastbound and westbound directions. East of Woodbury Avenue, Gosling Road provides one 14-foot lane in each direction.

A five-foot sidewalk is provided on the north side of the roadway between the US Route 4 ramps and the Longhorn Steakhouse driveway. A five-foot sidewalk is provided on the south side of the roadway between the Motel 6 driveway and Woodbury Avenue. Marked crosswalks are provided at Wedgewood Road, Winsor Road, and Weald Road. A wide 12-foot paved shoulder is provided for the Gosling Road at Gosling Meadows eastbound bus stop, and a 10-foot wide unpaved shoulder is used for the westbound bus stop.

2.1.3 Arthur F Brady Drive

Arthur F Brady Drive is classified as local roadway and is maintained by the City of Portsmouth. The roadway runs east-west, providing access to and from US Route 4 Northbound (Spaulding Turnpike) at the roadway's western terminus and access to Woodbury Avenue to the east. The roadway generally provides one 15-foot travel lane with a one-to two-foot shoulder in each direction. The eastbound and westbound travel lanes split as they approach US Route 4 and opens to provide a dedicated right turn at the intersection with Woodbury Avenue. An approximately six-foot wide sidewalk is provided on the north side of the roadway between the Woodbury Avenue intersection to the South Site Driveway.

2.1.4 Durgin Lane

Durgin Lane is classified as a local roadway and is maintained by the City of Portsmouth. The roadway runs east-west, beginning at the subject project parcel and ending at a signalized intersection with Woodbury Avenue. The roadway provides one approximately 17' wide travel lane in each direction, widening at the Woodbury Avenue intersection to provide additional turn lanes. Durgin Lane is striped with a painted centerline and no marked shoulders. An approximately five-foot wide sidewalk with a six- to eight-foot grass buffer is provided along the south side of the roadway between the rear entrance of the Durgin Square shopping plaza and Woodbury Avenue.

2.2 Study Area Intersections

2.2.1 Pease Boulevard at US Route 4 Southbound Ramps

Pease Boulevard intersects the US Route 4 Southbound Ramps to the west of the US Route 4 (Spaulding Turnpike) overpass at a signalized intersection, with the southbound off-ramp approaching from the north and the southbound on-ramp departing to the south. The Pease Boulevard westbound approach provides four lanes, with two left-turn lanes and two through travel lanes. The Pease Boulevard eastbound approach consists of five lanes, with four through lanes and one exclusive right-turn lane. The two left-most eastbound through lanes align with the left-turn lanes at the downstream northbound ramp intersection. The southbound off-ramp approach provides four lanes, with two left-turn lanes and two right-turn lanes. Left turn movements from Pease Boulevard westbound and from the southbound off-ramp are controlled with exclusive signal phases. The southbound on-ramp provides two lanes departing from the intersection. As previously described, a sidewalk is provided on the north side of Pease Boulevard through the intersection, with a crosswalk across the southbound off-ramp. A concurrent pedestrian traffic signal phase is provided for this crosswalk. Marked edge lines are provided on all approaches with a 1-to-2-foot offset from the curb or edge of roadway.

2.2.2 Gosling Road at US Route 4 Northbound Ramps

Gosling Road intersects the US Route 4 Northbound Ramps to the east of the US Route 4 (Spaulding Turnpike) overpass at a signalized intersection, with the northbound off-ramp approaching from the south and the northbound on-ramp departing to the north. The Gosling Road eastbound approach provides four lanes, with two left-turn lanes and two through travel lanes. The Gosling Road westbound approach consists of three lanes, with two through lanes and one shared through/right-turn lane. The left-most westbound through lane aligns with a left-turn lane at the downstream southbound ramp intersection. The northbound off-ramp approach provides four lanes, with two left-turn lanes and two right-turn lanes. Left turn movements from Gosling Road eastbound and from the northbound off-ramp are controlled with exclusive signal phases. The northbound on-ramp provides two lanes departing from the intersection. As previously described, a sidewalk is provided on the north side of Gosling Road through the intersection, with a crosswalk across the northbound on-ramp. A concurrent pedestrian traffic signal phase is provided for this crosswalk. Marked edge lines are provided on all approaches with a 1-to-2-foot offset from the curb or edge of roadway.

2.2.3 Gosling Road at Woodbury Avenue

Gosling Road intersects Woodbury Avenue from the east and west to form a four-way signalized intersection. The eastbound approach provides a dedicated right turn lane and a shared through and left turn lane. The westbound approach provides one all-purpose lane. The northbound approach provides dual left turn lanes, one through lane, and a shared through and right turn lane. The southbound approach provides dedicated right and left turn lanes and two through lanes. The north, south, and west legs are divided by a raised concrete median. Protected only left turn phasing is provided on the northbound and southbound approaches. The eastbound and westbound approaches operate under split phasing. A right turn overlap is provided on the eastbound and southbound approaches.

Sidewalks are provided at all four intersection corners and marked crosswalks are provided across all intersection legs. An exclusive pedestrian phase is provided for the intersection.

2.2.4 Woodbury Avenue at Durgin Lane

Woodbury Avenue runs north-south and is intersected by Durgin Lane to the west and BJ’s Driveway from the east to form a four-way signalized intersection. The eastbound and westbound approaches each provide a dedicated right turn lane, shared through and left turn lane, and a dedicated left turn lane. The northbound and southbound approaches both provide a dedicated right turn lane, two through lanes, and a dedicated left turn lane. Marked edge lines are provided only on the southbound and westbound approaches with a 1-to-2-foot offset from the curb. All intersection legs are divided by a raised concrete median. Protected only left turn phasing is provided on the northbound and southbound approaches. The eastbound and westbound approaches operate under split phasing. A right turn overlap is provided on all approaches.

Sidewalks are provided at all four intersection corners and marked crosswalks are provided across all intersection legs. An exclusive pedestrian phase is provided for the intersection.

2.2.5 Woodbury Avenue at Market Street

Woodbury Avenue becomes Market Street at its intersection with the Market Basket driveway, while Woodbury Avenue turns to the south, all meeting to form a four-way signalized intersection. Woodbury Avenue forms the north and west legs, Market Street forms the south leg, and the Market Basket driveway forms the east leg. The southbound approach provides a dedicated right turn lane, two through lanes, and a dedicated left turn lane. The eastbound approach provides a shared right turn and through lane and two dedicated left turn lanes. The northbound approach provides a shared through and right turn lane, a through lane, and a dedicated left turn lane. The westbound approach provides a shared right and through lane and a dedicated left turn lane. The north, south, and west legs are divided by a raised concrete median while the east leg is divided by a raised median with landscaping. Marked edge lines are provided on all approaches with a 1-to-2-foot offset from the curb. Protected only left turn phasing is provided on the eastbound and westbound approaches. A right turn overlap is provided on the eastbound approach. The northbound and southbound approaches operate under split phasing.

Sidewalks are provided at all four intersection corners with marked crosswalks provided across all intersection legs. An exclusive pedestrian phase is provided for the intersection.

2.2.6 Gosling Road at Motel 6/North Site Driveway

The north site driveway provides primary access to Motel 6 and New Frontiers Church while also extending to the existing retail uses on site. The driveway intersects Gosling Road from the south, with a raised median prohibiting turns to and from Gosling Road westbound to provide right-in/ right-out access only. Gosling Road eastbound provides four lanes of through traffic at the driveway. The driveway approach provides a separate channelized entrance and exit lane separated by a raised landscaped island. No signage is provided on the driveway approach. However, the driveway presumably operates under stop/ yield control. A sidewalk is provided along the north side of Gosling Road and on the south side of Gosling Road, beginning at the Motel 6/North Site Driveway and continuing east. No sidewalk is provided along the site driveway.

2.2.7 Arthur F Brady Drive at South Site Driveway

Arthur F Brady Drive runs primarily east-west and is intersected by the existing Home Depot/ South Site Driveway from the north to form a three-way intersection with the driveway operating under stop control.

Arthur F Brady Drive provides an all-purpose travel lane in both the eastbound and westbound directions. A channelized right turn lane under yield control is provided on the westbound approach. Westbound vehicles entering the site must yield to vehicles entering the site from the Spaulding Turnpike off-ramp. The South Site Driveway provides a dedicated left turn lane and a dedicated right turn lane. There is a marked crosswalk across the south leg of the intersection on both the stop controlled and channelized leg of the intersection which connects the sidewalk on the north side of Arthur F Brady Drive to the sidewalk located along the west side of the South Site Driveway.

2.3 Traffic Volumes

Turning movement counts (TMC) were collected at the study area intersections on Wednesday, March 20, 2024, during the weekday morning (7:00 AM to 9:00 AM) and weekday afternoon peak periods (4:00 PM to 6:00 PM) and on Saturday, March 23, 2024, during the Saturday midday peak period (11:00 AM to 2:00 PM). Automatic Traffic Recorder (ATR) counts were collected on Woodbury Avenue between the intersection with Gosling Road and Durgin Lane during a 48-hour period from Wednesday, March 20, 2024, thru Thursday, March 21, 2024, concurrently with the TMC to record hourly traffic volumes and vehicular speeds.

Based on current NHDOT guidance, 2024 traffic volumes were compared to 2019 traffic volumes to determine if adjustments to the collected traffic volumes should be made to account for pandemic-related impacts to daily traffic volumes. The City of Portsmouth provided continuous TMC data for the intersection of Lafayette Road and South Street, which is located approximately 2.5 miles southeast of the Project study area. Localized data from a commercial corridor on Lafayette Road was determined to be more applicable to the study area as compared to permanent count station data maintained by NHDOT on I-95 and Spaulding Turnpike.

The average peak hour traffic volumes from Tuesday to Thursday during the same week in March 2019 and March 2024 were used as a basis for comparison for weekday morning and weekday afternoon peak periods; Saturday traffic volumes during the same day in March 2019 and March 2024 was used as a basis of comparison for the Saturday midday peak period. The review shows weekday morning traffic volumes in March 2024 were 1% higher on average as compared to the same period in March 2019. A review of the afternoon peak hour traffic volumes indicates March 2024 traffic volumes were on average 9% lower as compared to 2019 traffic volumes. The Saturday midday peak hour traffic volumes were approximately 33% lower in March 2024 as compared to March 2019. Based on the traffic volume comparison, no pandemic-related adjustment was made to the weekday morning peak period. However, because the weekday afternoon and Saturday midday peak periods traffic volumes were found to be lower in March 2024 as compared to March 2019, the existing traffic volume volumes were adjusted upward by 9% and 33%, respectively.

The ATR data from Woodbury Avenue indicated average daily traffic (ADT) of approximately 7,000 vehicles per day in the northbound direction and 9,100 vehicles per day in the southbound direction. The measured 85th percentile speeds, also known as the operating speed of the roadway, were approximately 35 mph and 33 mph in the northbound and southbound directions, respectively, slightly exceeding the posted 30 mph limit

The weekday morning, weekday afternoon, and Saturday midday turning movement counts were seasonally adjusted to a peak month per NHDOT guidelines. A seasonal adjustment factor of 1.15 was applied to the traffic volumes based on Group 4 Averages: Urban Highways for the month of March. The adjusted 2024 existing traffic volumes for the weekday morning, weekday afternoon, and Saturday midday peak hours are shown in Figure 2. The raw TMC data and ATR data are provided in Appendix A. The NHDOT seasonal adjustment factors are enclosed in Appendix B. The traffic volume adjustment factor calculation and City of Portsmouth traffic volume data is provided in Appendix C.

2.4 Capacity and Queue Analyses - Existing Condition

Capacity and queue analyses were performed for the study intersections for the 2024 Existing Conditions during the weekday morning, weekday afternoon, and Saturday midday peak hours. Analyses were conducted using Trafficware Synchro Studio 11 software, which conducts the analysis based on *Highway Capacity Manual (HCM)* methodology. Consistent with NHDOT guidelines, analyses for signalized intersections were conducted using methods of the 2000 HCM, while analysis for unsignalized intersections utilized the HCM 6th Edition methodology. The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix D. The queue analysis results are summarized based upon the length of vehicle queueing on an intersection approach. For unsignalized intersections, queues are quantified for 95th percentile (design queues). For signalized intersections, queues are quantified by 95th percentile (design) and 50th percentile (average) queues. Tables 1 and 2 in Section 7 summarize the capacity and queue analyses results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

As shown in Table 1, all of the overall intersections and a majority of the individual intersection approaches operate at acceptable at LOS D or better during the peak hours with the following exceptions:

- **Gosling Road at Woodbury Avenue**
    - The southbound left turn movement onto Gosling Road operates at LOS E during the weekday morning and afternoon peak hour.
    - The eastbound shared through and left turn movement operates at LOS F during the weekday afternoon peak hour.
- **Woodbury Avenue at Market Street**
    - The eastbound shared through and right turn movement operates at LOS E during the weekday afternoon peak.

A review of the queueing results in Table 2 shows design queues on all study intersection movements are accommodated within the available storage within turn bays and between intersections during each peak period.

2.5 Collision History

Vehicle collision data between January 2021 and December 2023 was obtained from the Portsmouth Police Department at the study intersections. Table 3 provides a summary of the reported collisions within the study area including type, severity, day and time, and location. Appendix J includes detailed collision summaries for each of the study intersections with reported collisions.

As shown in Table 3, there were 24 motor vehicle collisions reported in the study area during the three-year period analyzed. Crashes most frequently occurred at the Woodbury Avenue and Gosling Road intersection with eight total collisions and accounting for about 33% of the reported total. The Woodbury Avenue and Durgin Lane intersection and the Woodbury Avenue and Market Street intersection are tied for the next highest number of collisions, with five collisions representing about 20% of the total crashes each. The intersections of Pease Boulevard at US Route 4 Southbound Ramps and Gosling Road at US Route 4 Northbound Ramps had the remaining crashes with two and four crashes, respectively. Both the North Site Driveway and South Site Driveway intersections experienced zero reported collisions in the time period analyzed.

The most frequent type of collision was angle, accounting for about 38% of total collisions within the study area. The second most frequent type was rear-end which made up about 33% of the total collisions. The third most frequent type of collision was sideswipe, same direction making up about 17% of total collisions. The remainder of collisions were single vehicle crashes and fixed object crashes. Three of the 24 collisions resulted in personal injury.

About 71% of the collisions occurred on weekdays, with a majority occurring outside of the study peak hour time periods. Weather and roadway conditions at the time of the collisions were not able to be determined from the police reports.

The collision data indicates no reported fatalities and three collisions with suspected minor injuries. The remaining crashes resulted in property damage only. There were no reported fatalities.

TABLE 3
Study Area Crash History Summary

COLLISION TYPE

	2021	2022	2023	Total	Percent
Angle	3	1	5	**9**	**37.5%**
Rear-End	3	3	2	**8**	**33.3%**
Sideswipe, Same Direction	0	1	3	**4**	**16.7%**
Fixed Object	0	2	0	**2**	**8.3%**
Single Vehicle Crash	1	0	0	**1**	**4.2%**
TOTAL	**7**	**7**	**10**	**24**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Personal Injury	0	1	2	**3**	**12.5%**
Property Damage Only (PDO)	7	6	8	**21**	**87.5%**
TOTAL	**7**	**7**	**10**	**24**	**100%**

DAY & TIME

	2021	2022	2023	Total	Percent
Weekday Off-Peak	2	3	7	**12**	**50.0%**
Weekend Off-Peak	2	2	0	**4**	**16.7%**
Weekday 3-6 P.M.	1	1	1	**3**	**12.5%**
Saturday 11 A.M. - 2 P.M.	2	0	1	**3**	**12.5%**
Weekday 6-9 A.M.	0	1	1	**2**	**8.3%**
TOTAL	**7**	**7**	**10**	**24**	**100%**

CRASHES BY STUDY AREA INTERSECTION

	2021	2022	2023	Total	Percent
Woodbury Avenue at Gosling Road	0	4	4	**8**	**33.3%**
Woodbury Avenue at Durgin Lane	2	2	1	**5**	**20.8%**
Woodbury Avenue at Market Street	1	0	4	**5**	**20.8%**
Gosling Road at US Route 4 NB Ramps	2	1	1	**4**	**16.7%**
Pease Boulevard at US Route 4 SB Ramps	2	0	0	**2**	**8.3%**
TOTAL	**7**	**7**	**10**	**24**	**100%**

2.6 Alternative Travel Modes

The study area is in a moderately densely developed setting in the City of Portsmouth where many multimodal travel options are available. The following summarizes the details of various alternative travel modes supported within the study area.

Pedestrian facilities are present intermittently throughout the study area. Existing sidewalks are present on both sides of Woodbury Avenue and Market Street within the study area. There is a sidewalk on the north side of Gosling Road from the study area limit at between the US Route 4 Southbound Ramps and the Longhorn Steakhouse driveway and on the south side of Gosling Road from the Motel 6/North Site Driveway east until the Woodbury Avenue intersection. A marked crosswalk is provided across the US Route 4 Southbound Off-Ramp and the US Route 4 Northbound On-Ramp and serviced by a concurrent pedestrian phase. Marked crosswalks are provided across all legs of the Woodbury Avenue/Gosling Road, Woodbury Avenue/Durgin Lane, and Woodbury Avenue/Market Street intersections, each providing an exclusive pedestrian phase. A sidewalk is provided on the south side of Durgin Lane between Woodbury Avenue and the Whole Foods shopping plaza.

The Cooperative Alliance for Seacoast Transportation (COAST) provides transit service within the study area. Bus Route 43 is the primary bus route in the study area with stops along Woodbury Avenue and Gosling Road between Hanover Station to the south and Fox Run Mall to the north. Two existing bus stops are located within the project study area: one stop is located at Gosling Meadows approximately 800 feet west of the Woodbury Avenue/Gosling Road intersection; the other stop is located at Starbucks along Woodbury Avenue approximately 800 feet south of the Woodbury Avenue/Gosling Road intersection. The route operates from 6:30 AM to 8:57 PM Monday through Saturday. The Route 43 map and schedule are included in Appendix F.

The University of New Hampshire (UNH) operates Wildcat Transit which provides transit service in the area for UNH students. Bus Route 4 runs from UNH Durham Campus to Portsmouth Market Square and utilizes COAST Bus Route 43 stops previously described. The route operates from 6:40 AM to 10:49 PM on weekdays and from 11:35 AM to 10:33 PM on weekends during the school semester. During school breaks, the bus operates on a reduced service schedule with the route operating from 6:40 AM to 5:53 PM on weekdays only. The Route 4 map and schedules are included in Appendix F.

Section 3
No-Build Conditions

The No-Build Condition represents the projection of traffic volumes and operating conditions without the anticipated additional site generated traffic. Consistent with NHDOT guidelines, the study area is analyzed for an Opening Year (2026) and Design Year (2036). This section describes the growth and development considerations included in the 2026 and 2036 No-Build traffic volumes.

3.1 Traffic Growth

To develop the traffic volumes for the 2026 and 2036 No-Build Conditions, the 2024 Existing traffic volumes were grown by one percent per year to represent the general growth of traffic on the study area roadways. This growth rate is consistent with the average growth rate in NHDOT Region E - Southeast, the region in which Portsmouth is located. Background NHDOT growth data is included in Appendix B.

NHDOT, the City of Portsmouth, and the Pease Development Authority were contacted about other planned/approved developments in the area that may add new traffic to the study area prior to 2026. The following developments were identified:

- **100 New Hampshire Avenue:** The project proposes to construct a 100,000+/- square foot distribution facility in the Pease Tradeport area. The project has been approved and is anticipated to be occupied in 2024. Estimated site traffic volumes outlined in the project’s Traffic Impact Assessment are included in the development of the 2026 and 2036 No-Build traffic volumes.

- **70 & 80 Corporate Drive (Lonza Biologics):** The project proposes to construct an approximately 800,000+/- square foot industrial facility on Corporate Drive in the Pease Tradeport area. The project is estimated to be complete and occupied in 2025. Estimated site traffic volumes outlined in the project’s TIA are included in the 2026 and 2036 No-Build traffic volumes.

It is assumed that other smaller developments or small vacancies in existing developments are also captured by the background traffic growth rate. The 2026 and 2036 No-Build traffic volumes for the weekday morning, weekday afternoon, and Saturday midday peak hours are shown in Figures 3 and 4, respectively.

3.2 Capacity and Queue Analyses – No-Build Conditions

Capacity and queue analyses were conducted for the 2026 and 2036 No-Build Conditions traffic volumes for all peak periods using the methodology described in Section 2.4. Tables 1 and 2 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

The increase in expected future traffic based on the one percent per year compounded growth rate and background development traffic volumes that were added to the existing 2024 traffic volumes resulted in some degradation in LOS of operations when compared to existing conditions for the 2026 No-Build Condition. The following intersections showed degradation in level of service when comparing the 2026 No-Build Condition from the existing conditions:

- **Pease Boulevard at US Route 4 Southbound Ramps**
    - The southbound right turn movement onto Pease Boulevard degrades from LOS D to LOS E during the weekday morning peak hour in 2026.

The 2036 No-Build Condition resulted in more substantial increases in degradation of level of service and increases in delay when compared to the 2026 No-Build Condition due to the addition of ten years of compounded annual growth. The following intersections showed additional degradation of operations from the 2026 to 2036 No-Build Condition:

- **Pease Boulevard at US Route 4 Southbound Ramps**
    - The southbound right turn movement onto Pease Boulevard degrades from LOS E to LOS F during the weekday morning peak hour in 2036.
- **Gosling Road at US Route 4 Northbound Ramps**
    - The northbound left turn movement onto Gosling Road degrades from LOS D to LOS E during the weekday morning peak hour in 2036.
- **Woodbury Avenue at Market Street**
    - The eastbound shared through and right turn movement degrades from LOS E to LOS F during the weekday afternoon peak hour in 2036.
    - The southbound left turn movement from Woodbury Avenue into the Market Basket driveway degrades from LOS D to LOS E during the Saturday midday peak hour in 2036.

Design queues continue to be accommodated within available storage in the 2026 No-Build condition. A majority of design queues increased by two vehicle lengths or less at all intersection approaches or less between the existing and 2026 No-Build conditions. While some intersections experience increases in design queue length of greater than two vehicle lengths in 2036 due to the compounded annual growth rate and approved developments in the area, design queues in 2036 are predicted to remain within available storage as shown in Table 2.

Section 4 Proposed Conditions

The project proposes to demolish the currently vacant retail building, which formerly housed Bed Bath and Beyond and The Christmas Tree Shops, and construct 144 residential units spread across seven three-story buildings and 216 units spread across nine four-story buildings, for a total of 360 units. On-site parking will be provided by surface parking lots on site with approximately 567 spaces. The proposed development is expected to be complete and occupied in 2026. The Site Plan is presented in Appendix H.

4.1 Site Access

Site access will continue to be provided via the three existing full-access driveways: the northern driveway to Gosling Road via the Motel 6 parking lot, the eastern driveway to Durgin Lane, and the southern driveway to Arthur F Brady Drive via the Home Depot shopping plaza driveway. Four separate access points within the site will provide access to the existing driveway running north to south between Gosling Road and Arthur F Brady Drive that will remain as part of the project. One new site access point opposite Durgin Lane will intersect the existing north-south driveway to create a four-way intersection controlled by an all-way stop. The remaining three access driveways will be controlled on the minor site driveway access under stop control. Each driveway is positioned to maximize sight lines. Internal driveways will allow access to the various buildings and parking areas throughout the site.

4.2 Trip Generation

Trips expected to be generated by the proposed development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021. Multifamily Housing (Low-Rise) (LUC-220) and Multifamily Housing (Mid-Rise) (LUC-221) were used to estimate vehicle trips based on the current development program, which proposes 144 units in seven three-story buildings and 216 units in nine four-story buildings.

Based on the ITE data, the proposed development is estimated to generate 151 trips (35 entering, 116 exiting) during the weekday morning peak hour, 167 trips (104 entering, 63 exiting) during the weekday afternoon peak hour, and 146 trips (74 entering, 72 exiting) during the Saturday midday peak hour. Table 4 provides a detailed summary of the trip generation.

While the study evaluates new trips to the study area network because the retail building to be demolished was vacant at the time of the existing data collection for the study, the overall impact on the study area should consider the prior site use to determine the net increase on trips experienced over the study area. Bed Bath and Beyond and Christmas Tree Shops ceased operations on site in May 2023 and July 2023, respectively. Trips assumed to be generated by the prior use were estimated using ITE LUC 821 (Shopping Plaza) and compared to new trips estimated to be generated by the residential redevelopment. Based on the ITE data, the net impact on the site is a slight increase in trips in the weekday morning peak hour, a decrease in trips in the weekday afternoon and Saturday midday peak hours, and an overall decrease in weekday and Saturday daily trips. The net new trips are 16 trips (decrease of 49 entering, increase of

65 exiting) during the weekday morning peak hour, a decrease of 239 trips (95 entering, 144 exiting) during the weekday afternoon peak hour, and a decrease of 341 trips (179 entering, 162 exiting) during the Saturday midday peak hour. Table 5 provides a comparison of net site trips to be generated. Both the prior use and re-leasing of the currently vacant parcel for retail use would have greater impact on the study area network than the proposed residential use.

4.3 Arrival and Departure Distribution

The distribution of the proposed site-generated traffic entering and exiting the Site was applied to the roadway network based on existing traffic patterns within the study area as well as a review of US Census Journey-to-Work data which is included in Appendix G. The following arrival/departure distributions are anticipated:

- 30% to/ from the South to Portsmouth Center via Market Street/ Woodbury Avenue
- 25% to/ from the South via US Route 1 Bypass
- 20% to/ from the North via US Route 4 (Spaulding Turnpike)
- 20% to/ from the South to I-95 South
- 5% to/ from the North to I-95 North

Based on the regional distribution and surrounding roadway network, it is estimated that that half (10%) of departing vehicles destined for I-95 South will exit the site via the Durgin Lane driveway to access Spaulding Turnpike via Woodbury Avenue and Gosling Road, while the remaining 10% will travel to I-95 South via Woodbury Avenue. In addition, it is estimated the exiting site traffic destined for US Route 1 Bypass and I-95 South will utilize Woodbury Avenue when departing the site, while traffic arriving to the site is estimated to enter directly from Spaulding Turnpike via Arthur F Brady Drive for traffic originating from US Route 1 Bypass, and via the off-ramp at Gosling Road for traffic originating from I-95 to the south.

Figure 5 presents the arrival and departure distributions of the traffic through the study area by intersection movement. Figure 6 shows the proposed site generated traffic distributed to the study area roadways for the weekday morning, weekday afternoon peak periods, and Saturday midday peak periods.

4.4 Multi-Modal Accommodations

Pedestrian, bicycle, and transit facilities are provided on site and to connect to the surrounding networks. Internal sidewalks are proposed adjacent to all parking areas and buildings on site. Sidewalks are proposed along the north side of Durgin Lane to ultimately connect via a midblock crossing to the existing sidewalk located along the south side of the roadway. The existing and proposed sidewalk network will provide a continuous network to the existing bus stops located on Woodbury Avenue. In addition, indoor bicycle storage will be provided on site.

Section 5
Build Conditions

The anticipated site generated traffic volumes associated with the proposed development were added to the 2026 and 2036 No-Build Conditions traffic volumes to develop the 2026 and 2036 Build Conditions traffic volumes, which are presented in Figures 7 and 8, respectively.

5.1 Capacity and Queue Analyses - Build Condition

Capacity and queue analyses were conducted for the 2026 and 2036 Build Conditions for the peak hours using the methodology described in Section 2.4. Tables 1 and 2 in Section 7 summarize the capacity and queue results, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix E.

All the study area intersections and a majority of the individual intersection approaches continue to operate at acceptable LOS D or better during the peak hours in the 2026 and 2036 Build Conditions. All study area intersections that were identified in Section 2.4 and 3.2 to operate at LOS E or LOS F in the 2026 No-Build Conditions continue to operate at the same LOS under 2026 Build Conditions. The study area intersections identified to operate at LOS E or LOS F in the 2036 No-Build Conditions continue to operate at the same LOS under the 2036 Build Conditions, with the exception of the following:

- **Gosling Road and US Route 4 Northbound Ramps**
    - The eastbound left turn movement from Gosling Road is predicted to degrade from LOS D to LOS E during the weekday afternoon peak hour.

Design queues on all intersection approaches for the Build Conditions increased by less than two vehicle lengths or experience increases in design queues that are accommodated within available storage when compared to 2026 and 2036 No-Build Conditions with the exception of the following:

- **Gosling Road and Woodbury Avenue**
    - The northbound left turn is predicted to exceed the available storage by approximately one vehicle length during the weekday afternoon peak hour. This is an increase of less than one vehicle length compared to the 2036 No-Build Condition.

Section 6
Conclusions & Recommendations

1. The project proposes to construct 360 residential units spread over a mix of 16 three- and four-story buildings. Surface parking lots will be provided throughout the Site, totaling approximately 567 parking spaces. The development is expected to be complete and occupied in 2026.

2. Access to the site will be provided via the three existing driveways on Gosling Road (unsignalized), Durgin Lane (signalized), and Arthur F Brady Drive (unsignalized). A series of internal driveways will provide access to buildings and parking areas within the development.

3. Overall, the proposed redevelopment represents a significant reduction in net trips compared to the prior retail use. Based on the previous retail use on site, which was occupied by Bed Bath and Beyond and Christmas Tree Shops until mid-2023, the net impact on the site compared to the prior use (or compared to re-leasing the parcel for retail use) is a slight increase in trips in the weekday morning peak hour, a decrease in trips in the weekday afternoon and Saturday midday peak hours, and an overall decrease in weekday and Saturday daily trips. The net new trips are 16 trips (decrease of 49 entering, increase of 65 exiting) during the weekday morning peak hour, a decrease of 239 trips (95 entering, 144 exiting) during the weekday afternoon peak hour, and a decrease of 341 trips (179 entering, 162 exiting) during the Saturday midday peak hour.

4. In comparison of the proposed project compared to the current vacant building and based on the ITE data, the project is expected to generate 151 trips (35 entering, 116 exiting) during the weekday morning peak hour, 167 trips (104 entering, 63 exiting) during the weekday afternoon peak hour, and 146 trips (74 entering, 72 exiting) during the Saturday midday peak hour.

5. The project proposes internal sidewalk connections throughout the site as well as a new connection to the existing sidewalk along Durgin Lane to promote a pedestrian connection to the areas that are anticipated to generate pedestrians.

6. Vehicle collision history, compiled from local police reports, do not indicate a significant or notable pattern of collisions in the study area.

7. Consistent with NHDOT guidelines, existing traffic volumes have been seasonally adjusted to the peak month condition. A review of 2024 and 2019 data provided by the City of Portsmouth revealed stagnant volumes during the weekday morning peak hour in 2024 and lower traffic volumes in 2024 as compared to 2019 in the weekday afternoon and Saturday midday peak periods; therefore, the weekday afternoon and Saturday midday peak periods were adjusted to reflect a pre-pandemic condition. As such, the existing weekday afternoon and Saturday midday traffic volumes represent a conservative estimate, by increasing volumes collected under actual 2024 conditions to an assumed pre-pandemic peak.

8. The capacity analyses show that the study area intersections will generally continue to operate at the same LOS under Build Conditions as compared to the No-Build Conditions for both the 2026 opening year and 2036 design year, except for the

Gosling Road and US Route 4 Northbound ramp intersection which experiences a degradation in LOS from D to E in 2036 during the weekday afternoon peak period, but only an increase in delay of one second. A review of design queues indicates minor increases of two vehicles of less in the 2026 and 2036 Build Conditions compared to the corresponding No Build Conditions with the exception of the Gosling Road intersection which see design queues exceed available storage by one vehicle length in 2036 during the weekday afternoon peak hour, but only an increase in design queue length of one vehicle length compared to the 2036 No-Build Condition.

9. The recent vacancy of the former retail uses on site coupled with the recent traffic signal upgrades at the study intersections along Woodbury Avenue provide adequate capacity at the Woodbury Avenue study intersections under Existing, No-Build, and Build Conditions.

10. Based on the results of the foregoing analysis, it is the professional opinion of Tighe & Bond that the addition of site-generated traffic is expected to have a negligible effect on traffic operations within the study area as compared to the current vacant site condition. Overall, it represents a significant reduction in net trips compared to both the prior retail use and to potential re-leasing of the parcel for retail use.

Section 7
Tables

TABLE 1
Intersection Operation Summary - Capacity

		Weekday Morning Peak Hour														
	Lane Use	2024 Existing			2026 No-Build			2026 Build			2036 No-Build			2036 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps																
Overall		**C**	**26.7**	**0.76**	**C**	**34.2**	**0.97**	**C**	**34.5**	**0.97**	**D**	**51.4**	**1.14**	**D**	**51.7**	**1.14**
Pease Boulevard	EBT	C	25.3	0.12	C	25.2	0.15	C	25.1	0.15	C	25.3	0.16	C	25.2	0.16
	EBR	C	24.9	0.06	C	24.7	0.07	C	24.6	0.07	C	24.7	0.08	C	24.7	0.08
	WBL	C	23.4	0.12	C	24.1	0.13	C	24.7	0.14	C	24.1	0.14	C	24.8	0.16
	WBT	B	16.7	0.46	B	16.8	0.50	B	16.5	0.50	B	17.4	0.54	B	17.2	0.54
US Route 4 Southbound Off Ramp	SBL	C	31.2	0.51	C	32.6	0.53	C	33.0	0.54	C	34.7	0.60	D	35.2	0.61
	SBT	C	31.2	0.51	C	32.6	0.53	C	33.0	0.55	C	34.7	0.60	D	35.3	0.61
	SBR	D	37.1	0.76	E	60.5	0.97	E	61.6	0.97	F	114.4	1.14	F	115.7	1.14
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps																
Overall		**C**	**32.1**	**0.78**	**C**	**33.3**	**0.86**	**C**	**33.3**	**0.86**	**D**	**38.6**	**0.95**	**D**	**38.8**	**0.95**
Gosling Road	EBL	C	21.0	0.08	C	20.2	0.12	C	20.1	0.12	B	17.6	0.12	B	17.5	0.12
	EBT	D	38.7	0.57	D	36.7	0.57	D	36.8	0.58	D	38.2	0.62	D	38.4	0.63
	WBTR	B	18.3	0.16	B	18.2	0.18	B	18.2	0.19	C	20.4	0.22	C	20.4	0.22
US Route 4 Northbound Off Ramp	NBL	D	37.0	0.78	D	42.5	0.86	D	42.8	0.86	E	55.2	0.95	E	55.9	0.95
	NBT	C	26.1	0.09	C	27.0	0.10	C	27.2	0.10	C	27.6	0.11	C	27.8	0.11
	NBR	C	26.1	0.09	C	27.0	0.10	C	27.2	0.10	C	27.6	0.11	C	27.8	0.11
Traffic Signal - Gosling Road at Woodbury Avenue																
Overall		**C**	**24.6**	**0.66**	**C**	**24.3**	**0.67**	**C**	**24.4**	**0.68**	**C**	**25.3**	**0.75**	**C**	**25.6**	**0.77**
Gosling Road	EBTL	D	37.7	0.66	D	38.4	0.67	D	38.7	0.68	D	45.6	0.75	D	47.1	0.77
	EBR	C	20.8	0.28	C	20.1	0.30	C	20.0	0.30	C	20.5	0.33	C	20.6	0.33
	WB	D	35.2	0.43	D	35.5	0.45	D	35.6	0.45	D	36.7	0.49	D	36.6	0.49
Woodbury Avenue	NBL	C	28.3	0.42	C	27.7	0.46	C	27.7	0.48	C	28.0	0.48	C	28.1	0.50
	NBTR	B	15.5	0.17	B	16.8	0.19	B	16.7	0.19	B	16.7	0.20	B	16.7	0.20
	SBL	E	56.8	0.65	D	35.5	0.40	D	35.6	0.40	D	36.7	0.45	D	36.7	0.44
	SBT	C	23.1	0.39	C	24.3	0.42	C	24.5	0.43	C	24.8	0.46	C	25.0	0.46
	SBR	B	10.9	0.01	B	11.6	0.01	B	11.7	0.01	B	11.8	0.01	B	12.0	0.01
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway																
Overall		**B**	**18.1**	**0.48**	**B**	**18.1**	**0.50**	**C**	**21.4**	**0.59**	**B**	**18.3**	**0.53**	**C**	**21.6**	**0.61**
Durgin Lane	EBL	C	31.2	0.14	C	31.6	0.15	C	31.0	0.15	C	32.6	0.17	C	32.2	0.17
	EBT	C	31.2	0.14	C	31.5	0.14	C	31.0	0.16	C	32.6	0.16	C	32.2	0.17
	EBR	C	27.5	0.02	C	27.8	0.02	C	25.0	0.09	C	28.8	0.02	C	26.1	0.09
BJ's Driveway	WBL	C	30.8	0.16	C	31.2	0.17	C	32.1	0.16	C	32.2	0.18	C	33.3	0.17
	WBT	C	30.8	0.16	C	31.2	0.17	C	32.1	0.16	C	32.2	0.18	C	33.3	0.18
	WBR	C	25.3	0.19	C	25.7	0.20	C	26.4	0.19	C	26.7	0.22	C	27.5	0.22
Woodbury Avenue	NBL	C	33.1	0.15	C	33.5	0.15	C	31.6	0.17	C	34.7	0.17	C	32.9	0.18
	NBT	B	16.7	0.30	B	16.9	0.33	B	18.6	0.35	B	16.8	0.35	B	18.4	0.36
	NBR	B	11.7	0.03	B	11.5	0.03	B	12.7	0.03	B	11.4	0.03	B	12.4	0.03
	SBL	C	30.6	0.28	C	31.1	0.29	C	32.0	0.28	C	32.3	0.32	C	33.4	0.32
	SBT	B	16.4	0.48	B	16.4	0.50	C	21.0	0.59	B	16.6	0.53	C	21.1	0.61
	SBR	A	7.4	0.03	A	7.3	0.03	A	8.9	0.03	A	7.2	0.04	A	8.7	0.04
Traffic Signal - Woodbury Avenue at Market Street/ Market Basket Driveway																
Overall		**B**	**19.2**	**0.49**	**B**	**19.5**	**0.49**	**B**	**19.3**	**0.49**	**C**	**20.2**	**0.53**	**B**	**20.0**	**0.54**
Woodbury Avenue	EBL	C	25.3	0.26	C	25.1	0.30	C	25.4	0.31	C	25.7	0.32	C	26.2	0.33
	EBTR	C	26.3	0.36	C	26.0	0.36	C	26.2	0.36	C	26.8	0.40	C	27.2	0.40
Market Basket Driveway	WBL	C	26.6	0.03	C	26.4	0.03	C	26.8	0.03	C	27.0	0.03	C	27.5	0.03
	WBTR	C	28.9	0.39	C	28.8	0.40	C	29.3	0.40	C	29.8	0.45	C	30.4	0.46
Market Street	NBL	C	29.4	0.49	C	29.3	0.49	C	29.6	0.49	C	31.1	0.53	C	31.7	0.54
	NBTR	B	16.0	0.38	B	16.5	0.42	B	16.5	0.42	B	17.2	0.46	B	17.0	0.46
Woodbury Avenue	SBL	C	33.1	0.09	C	33.0	0.09	C	33.4	0.09	C	34.1	0.09	C	34.6	0.09
	SBT	B	19.4	0.29	B	19.9	0.32	C	20.1	0.35	C	20.6	0.35	C	20.6	0.37
	SBR	A	8.8	0.13	A	8.9	0.14	A	9.0	0.17	A	9.1	0.15	A	9.2	0.18
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway																
Motel 6 Driveway/North Site Access Driveway	NB	A	9.7	0.04	A	9.8	0.04	A	9.8	0.04	A	10.0	0.04	B	10.0	0.04
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway																
Arthur F Brady Drive	EB	A	7.5	0.04	A	7.5	0.04	A	7.5	0.05	A	7.5	0.04	A	7.6	0.05
South Site Driveway	SBL	B	11.4	0.15	B	11.5	0.16	B	11.8	0.16	B	12.0	0.18	B	12.3	0.18
	SBR	A	8.9	0.06	A	9.0	0.06	A	9.1	0.09	A	9.0	0.07	A	9.2	0.10

Legend
LOS - Level of Service
Delay - average delay per vehicle in seconds
V/C - volume to capacity ratio

TABLE 1 (CONTINUED)
Intersection Operation Summary - Capacity

		Weekday Afternoon Peak Hour														
	Lane Use	2024 Existing			2026 No-Build			2026 Build			2036 No-Build			2036 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps																
Overall		**C**	**26.2**	**0.68**	**C**	**27.0**	**0.68**	**C**	**27.7**	**0.68**	**C**	**29.9**	**0.73**	**C**	**30.4**	**0.73**
Pease Boulevard	EBT	C	22.7	0.54	C	24.0	0.60	C	24.7	0.61	C	26.7	0.68	C	27.1	0.69
	EBR	C	22.9	0.48	C	25.1	0.58	C	25.9	0.58	C	31.2	0.71	C	31.6	0.72
	WBL	D	47.8	0.68	D	47.6	0.68	D	48.3	0.68	D	49.6	0.73	D	50.4	0.73
	WBT	A	6.9	0.15	A	7.2	0.16	A	7.3	0.16	A	7.9	0.18	A	8.0	0.18
US Route 4 Southbound Off Ramp	SBL	C	32.9	0.35	C	33.6	0.36	C	33.7	0.38	C	34.0	0.38	C	34.3	0.40
	SBT	C	33.0	0.35	C	33.7	0.36	C	33.8	0.38	C	34.1	0.38	C	34.3	0.40
	SBR	C	29.7	0.04	C	30.3	0.04	C	30.1	0.04	C	30.4	0.05	C	30.3	0.05
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps																
Overall		**C**	**23.6**	**0.73**	**C**	**26.9**	**0.82**	**C**	**27.3**	**0.83**	**C**	**31.6**	**0.91**	**C**	**32.0**	**0.91**
Gosling Road	EBL	C	31.0	0.73	D	41.8	0.82	D	42.6	0.83	D	54.6	0.91	E	55.5	0.91
	EBT	B	11.4	0.56	B	11.5	0.59	B	12.3	0.62	B	13.7	0.67	B	14.5	0.70
	WBTR	C	22.0	0.48	C	23.3	0.51	C	23.8	0.52	C	26.7	0.61	C	27.2	0.61
US Route 4 Northbound Off Ramp	NBL	C	31.0	0.21	C	31.7	0.22	C	31.5	0.21	C	31.9	0.23	C	31.8	0.23
	NBT	C	31.1	0.18	C	31.7	0.18	C	31.6	0.19	C	32.1	0.20	C	32.0	0.21
	NBR	C	31.1	0.18	C	31.7	0.18	C	31.6	0.19	C	32.1	0.20	C	32.0	0.21
Traffic Signal - Gosling Road at Woodbury Avenue																
Overall		**D**	**35.2**	**1.01**	**D**	**36.1**	**1.03**	**D**	**36.2**	**1.03**	**D**	**40.3**	**1.15**	**D**	**40.4**	**1.15**
Gosling Road	EBTL	F	112.8	1.01	F	120.2	1.03	F	120.2	1.03	F	157.9	1.15	F	157.9	1.15
	EBR	C	28.0	0.30	C	28.7	0.33	C	28.7	0.33	C	29.2	0.37	C	29.2	0.37
	WB	D	40.8	0.67	D	41.5	0.67	D	41.5	0.67	D	43.0	0.71	D	43.0	0.71
Woodbury Avenue	NBL	D	39.0	0.67	D	41.1	0.71	D	41.6	0.72	D	45.4	0.79	D	46.2	0.81
	NBTR	C	20.7	0.40	C	20.8	0.40	C	20.8	0.40	C	23.3	0.48	C	23.3	0.48
	SBL	E	60.8	0.60	E	59.5	0.59	E	59.5	0.59	D	44.7	0.40	D	44.7	0.40
	SBT	C	30.3	0.56	C	30.3	0.56	C	30.3	0.56	C	32.1	0.64	C	32.1	0.64
	SBR	B	16.3	0.08	B	16.2	0.08	B	16.2	0.08	B	16.7	0.09	B	16.7	0.09
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway																
Overall		**C**	**21.6**	**0.69**	**C**	**21.8**	**0.70**	**C**	**22.8**	**0.73**	**C**	**22.6**	**0.72**	**C**	**23.6**	**0.75**
Durgin Lane	EBL	C	31.7	0.44	C	32.2	0.45	C	31.6	0.46	C	34.6	0.51	C	33.9	0.51
	EBT	C	31.7	0.44	C	32.1	0.44	C	31.5	0.45	C	34.5	0.50	C	34.2	0.52
	EBR	C	24.8	0.05	C	25.2	0.05	C	23.7	0.09	C	26.9	0.06	C	25.4	0.09
BJ's Driveway	WBL	C	31.1	0.41	C	31.7	0.42	C	30.9	0.42	C	34.0	0.48	C	33.2	0.47
	WBT	C	31.0	0.40	C	31.7	0.42	C	30.9	0.41	C	33.9	0.47	C	33.1	0.46
	WBR	B	18.4	0.24	B	18.9	0.25	B	18.2	0.24	C	20.5	0.28	B	19.8	0.27
Woodbury Avenue	NBL	C	33.5	0.29	C	34.1	0.31	D	35.2	0.53	D	36.6	0.36	D	39.6	0.58
	NBT	C	22.6	0.69	C	22.8	0.70	C	23.7	0.73	C	23.3	0.72	C	24.1	0.75
	NBR	B	11.5	0.06	B	11.4	0.07	B	11.6	0.07	B	11.2	0.07	B	11.4	0.07
	SBL	C	29.7	0.36	C	30.2	0.38	C	29.5	0.37	C	32.3	0.42	C	31.5	0.41
	SBT	B	17.3	0.52	B	17.6	0.55	B	19.2	0.59	B	17.6	0.57	B	19.2	0.61
	SBR	A	6.5	0.02	A	6.4	0.02	A	7.1	0.02	A	6.2	0.02	A	6.8	0.02
Traffic Signal - Woodbury Avenue at Market Street/ Market Basket Driveway																
Overall		**C**	**32.8**	**0.79**	**C**	**33.6**	**0.82**	**C**	**33.9**	**0.83**	**D**	**38.0**	**0.96**	**D**	**38.4**	**0.96**
Woodbury Avenue	EBL	D	43.7	0.61	D	46.0	0.65	D	48.5	0.70	D	51.0	0.73	D	54.2	0.78
	EBTR	E	61.3	0.79	E	67.4	0.82	E	68.3	0.83	F	98.6	0.96	F	98.6	0.96
Market Basket Driveway	WBL	D	47.9	0.73	D	49.7	0.74	D	50.4	0.75	D	52.8	0.78	D	52.8	0.78
	WBTR	D	37.9	0.38	D	38.5	0.39	D	38.9	0.39	D	39.0	0.40	D	39.0	0.40
Market Street	NBL	D	46.5	0.60	D	48.1	0.62	D	48.6	0.62	D	51.7	0.67	D	51.7	0.67
	NBTR	C	23.9	0.52	C	23.9	0.53	C	24.0	0.54	C	25.3	0.58	C	25.7	0.60
Woodbury Avenue	SBL	D	52.0	0.39	D	52.8	0.40	D	53.5	0.41	D	54.4	0.43	D	54.4	0.43
	SBT	C	32.0	0.68	C	32.3	0.69	C	32.4	0.70	D	35.4	0.77	D	36.2	0.79
	SBR	B	15.3	0.26	B	15.4	0.28	B	15.5	0.29	B	16.3	0.30	B	16.5	0.32
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway																
Motel 6 Driveway/North Site Access Driveway	NB	B	10.7	0.06	B	10.9	0.07	B	11.1	0.07	B	11.2	0.08	B	11.5	0.08
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway																
Arthur F Brady Drive	EB	A	8.0	0.05	A	8.0	0.05	A	8.1	0.08	A	8.1	0.06	A	8.2	0.08
South Site Driveway	SBL	C	17.5	0.34	C	18.1	0.35	C	20.3	0.39	C	21.2	0.43	C	24.3	0.48
	SBR	B	10.5	0.12	B	10.6	0.12	B	10.7	0.15	B	10.9	0.14	B	11.1	0.17

Legend
LOS - Level of Service
Delay - average delay per vehicle in seconds
V/C - volume to capacity ratio

TABLE 1 (CONTINUED)
Intersection Operation Summary - Capacity

		Saturday Midday Peak Hour														
	Lane Use	2024 Existing			2026 No-Build			2026 Build			2036 No-Build			2036 Build		
		LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps																
Overall		**C**	**26.9**	**0.61**	**C**	**27.2**	**0.61**	**C**	**27.8**	**0.62**	**C**	**29.4**	**0.66**	**C**	**29.9**	**0.67**
Pease Boulevard	EBT	C	20.4	0.17	C	20.6	0.17	C	20.7	0.17	C	21.4	0.18	C	21.5	0.18
	EBR	B	19.6	0.05	B	19.8	0.05	B	19.9	0.05	C	20.4	0.05	C	20.6	0.05
	WBL	D	44.1	0.61	D	44.6	0.61	D	45.4	0.62	D	48.7	0.66	D	49.6	0.67
	WBT	A	5.7	0.11	A	5.6	0.11	A	5.5	0.11	A	5.5	0.12	A	5.5	0.12
US Route 4 Southbound Off Ramp	SBL	C	28.1	0.43	C	28.4	0.43	C	29.2	0.46	C	31.2	0.49	C	31.7	0.51
	SBT	C	28.2	0.43	C	28.5	0.44	C	29.2	0.46	C	31.2	0.49	C	31.7	0.51
	SBR	C	24.0	0.02	C	24.2	0.02	C	24.5	0.02	C	26.0	0.02	C	26.2	0.02
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps																
Overall		**C**	**22.6**	**0.51**	**C**	**22.9**	**0.52**	**C**	**23.2**	**0.53**	**C**	**24.1**	**0.56**	**C**	**24.5**	**0.57**
Gosling Road	EBL	B	14.0	0.09	B	14.3	0.10	B	14.5	0.10	B	14.7	0.11	B	14.9	0.11
	EBT	C	24.9	0.51	C	25.3	0.52	C	26.1	0.53	C	27.1	0.56	C	27.9	0.57
	WBTR	B	18.4	0.33	B	18.5	0.34	B	18.4	0.34	B	18.4	0.35	B	18.5	0.36
US Route 4 Northbound Off Ramp	NBL	C	24.5	0.10	C	24.7	0.10	C	25.1	0.10	C	26.7	0.11	C	26.9	0.11
	NBT	C	26.0	0.23	C	26.2	0.23	C	26.6	0.24	C	28.3	0.26	C	28.6	0.26
	NBR	C	25.9	0.22	C	26.1	0.23	C	26.5	0.23	C	28.2	0.25	C	28.5	0.26
Traffic Signal - Gosling Road at Woodbury Avenue																
Overall		**C**	**28.6**	**0.63**	**C**	**28.8**	**0.65**	**C**	**28.9**	**0.65**	**C**	**30.4**	**0.73**	**C**	**30.5**	**0.73**
Gosling Road	EBTL	D	44.4	0.63	D	46.3	0.65	D	46.4	0.65	D	53.6	0.73	D	53.6	0.73
	EBR	C	25.7	0.23	C	26.0	0.24	C	26.0	0.24	C	26.6	0.26	C	26.6	0.26
	WB	D	36.6	0.53	D	37.2	0.54	D	37.3	0.54	D	38.3	0.58	D	38.3	0.58
Woodbury Avenue	NBL	D	35.7	0.60	D	36.2	0.61	D	36.2	0.62	D	38.2	0.67	D	38.6	0.69
	NBTR	C	20.2	0.35	C	20.1	0.35	C	20.1	0.35	C	20.8	0.39	C	20.8	0.39
	SBL	D	42.2	0.43	D	42.6	0.43	D	42.8	0.43	D	43.8	0.47	D	43.8	0.47
	SBT	C	28.6	0.57	C	28.6	0.57	C	28.7	0.57	C	30.3	0.63	C	30.3	0.63
	SBR	B	14.6	0.04	B	14.5	0.04	B	14.6	0.04	B	15.0	0.05	B	15.0	0.05
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway																
Overall		**C**	**20.8**	**0.69**	**C**	**20.8**	**0.69**	**C**	**21.2**	**0.69**	**C**	**21.5**	**0.68**	**C**	**22.6**	**0.73**
Durgin Lane	EBL	C	28.6	0.42	C	28.9	0.44	C	30.8	0.48	C	32.7	0.52	C	32.5	0.53
	EBT	C	28.6	0.43	C	28.8	0.43	C	30.9	0.48	C	32.6	0.52	C	32.8	0.54
	EBR	C	22.3	0.06	C	22.5	0.06	C	22.9	0.10	C	24.9	0.07	C	23.6	0.11
BJ's Driveway	WBL	C	28.0	0.35	C	28.3	0.36	C	29.7	0.37	C	31.4	0.42	C	30.8	0.41
	WBT	C	28.0	0.36	C	28.3	0.36	C	29.7	0.38	C	31.4	0.42	C	30.9	0.42
	WBR	B	16.7	0.13	B	16.9	0.13	B	17.9	0.14	B	17.6	0.14	B	17.1	0.14
Woodbury Avenue	NBL	C	30.6	0.24	C	30.8	0.24	C	31.9	0.39	C	33.7	0.28	C	33.1	0.43
	NBT	C	21.0	0.62	C	21.0	0.63	C	20.0	0.58	C	22.5	0.66	C	23.1	0.68
	NBR	B	11.4	0.07	B	11.3	0.07	B	11.0	0.07	B	11.9	0.08	B	12.1	0.08
	SBL	C	29.7	0.46	C	30.0	0.47	C	31.1	0.47	C	30.0	0.42	C	29.5	0.42
	SBT	C	20.7	0.69	C	20.8	0.69	C	21.1	0.69	B	19.8	0.68	C	22.1	0.73
	SBR	A	7.5	0.15	A	7.4	0.16	A	7.9	0.16	A	7.1	0.17	A	7.9	0.18
Traffic Signal - Woodbury Avenue at Market Street/ Market Basket Driveway																
Overall		**C**	**24.9**	**0.66**	**C**	**25.2**	**0.68**	**C**	**25.4**	**0.72**	**C**	**27.3**	**0.79**	**C**	**27.7**	**0.83**
Woodbury Avenue	EBL	D	35.9	0.66	D	37.0	0.68	D	38.7	0.72	D	44.7	0.79	D	47.8	0.83
	EBTR	C	34.5	0.55	D	35.3	0.56	D	35.7	0.57	D	41.2	0.65	D	41.5	0.66
Market Basket Driveway	WBL	C	34.1	0.58	C	34.4	0.59	C	34.9	0.59	D	36.4	0.62	D	36.7	0.63
	WBTR	C	30.9	0.36	C	31.1	0.37	C	31.4	0.37	C	32.1	0.39	C	32.3	0.39
Market Street	NBL	D	36.8	0.44	D	37.3	0.45	D	37.7	0.45	D	39.3	0.50	D	39.5	0.50
	NBTR	C	20.5	0.51	C	20.7	0.52	C	20.6	0.53	C	21.3	0.56	C	21.4	0.57
Woodbury Avenue	SBL	D	52.9	0.48	D	53.2	0.48	D	53.6	0.48	E	55.4	0.50	E	55.6	0.50
	SBT	C	24.9	0.56	C	25.0	0.56	C	25.0	0.57	C	25.8	0.60	C	25.9	0.61
	SBR	B	11.1	0.26	B	11.2	0.26	B	11.2	0.28	B	11.7	0.29	B	11.8	0.31
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway																
Motel 6 Driveway/North Site Access Driveway	NB	B	11.3	0.14	B	11.4	0.15	B	11.6	0.15	B	11.9	0.17	B	12.1	0.17
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway																
Arthur F Brady Drive	EB	A	7.7	0.07	A	7.7	0.08	A	7.8	0.09	A	7.8	0.08	A	7.8	0.10
South Site Driveway	SBL	C	17.8	0.37	C	18.4	0.39	C	19.9	0.41	C	21.8	0.47	C	24.2	0.51
	SBR	A	9.3	0.06	A	9.3	0.06	A	9.4	0.08	A	9.4	0.07	A	9.5	0.09

Legend
LOS - Level of Service
Delay - average delay per vehicle in seconds
V/C - volume to capacity ratio

TABLE 2
Intersection Operation Summary - Queues (In Feet)

	Lane Use	Available Storage	Weekday Morning Peak Hour 2024 Existing 50th	95th	2026 No-Build 50th	95th	2026 Build 50th	95th	2036 No-Build 50th	95th	2036 Build 50th	95th
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps												
Pease Boulevard	EBT	550	26	40	33	49	33	49	36	53	36	53
	EBR	550	0	32	0	37	0	37	0	38	0	38
	WBL	360	31	44	30	42	36	48	32	43	37	49
	WBT	360	236	298	261	320	261	316	297	332	295	328
US Route 4 Southbound Off Ramp	SBL	500	121	213	128	217	132	221	152	240	155	245
	SBT	500	122	213	128	217	133	222	152	240	156	245
	SBR	500	157	253	231	384	235	384	350	477	351	477
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps												
Gosling Road	EBL	370	18	36	25	45	25	46	28	45	28	43
	EBT	370	136	248	136	255	141	258	157	279	160	283
	WB	480	42	73	49	83	52	86	55	91	57	94
US Route 4 Northbound Off Ramp	NBL	450	197	325	223	364	227	364	268	420	269	420
	NBT	300	0	0	0	0	0	0	0	0	0	0
	NBR	300	0	0	0	0	0	0	0	0	0	0
Traffic Signal - Gosling Road at Woodbury Avenue												
Gosling Road	EBTL	500	50	256	53	262	53	262	61	291	61	291
	EBR	500	0	57	0	59	0	59	0	61	0	61
	WBT	575	15	71	16	72	17	72	19	78	19	78
Woodbury Avenue	NBL	300	37	113	45	133	48	140	51	145	54	154
	NBTR	415	23	101	35	103	35	103	39	114	39	114
	SBL	210	13	63	14	65	14	65	16	70	16	70
	SBT	440	55	161	58	164	59	164	67	182	67	182
	SBR	280	0	0	0	0	0	0	0	0	0	0
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway												
Durgin Lane	EBL	170	5	32	5	32	8	42	6	36	9	46
	EBT	170	5	32	5	32	8	44	6	36	9	46
	EBR	170	0	0	0	0	0	22	0	0	0	22
BJ's Driveway	WBL	100	7	30	7	31	7	31	8	33	8	33
	WBT	100	7	30	7	31	7	31	8	33	8	33
	WBR	100	12	27	13	28	13	28	15	33	15	33
Woodbury Avenue	NBL	400	4	26	4	26	9	45	4	28	9	48
	NBT	400	52	144	60	163	61	163	67	177	68	177
	NBR	200	0	0	0	0	0	0	0	0	0	0
	SBL	125	15	69	15	71	15	71	17	80	18	80
	SBT	350	106	284	112	296	114	296	128	330	130	330
	SBR	105	0	6	0	6	0	6	0	9	0	9
Traffic Signal - Woodbury Avenue at Market Street/Market Basket Driveway												
Woodbury Avenue	EBL	215	20	38	25	44	26	47	28	50	30	52
	EBTR	280	26	58	27	60	27	61	33	69	34	70
Market Basket Driveway	WBL	500	2	8	2	8	2	8	2	8	2	9
	WBTR	500	22	44	23	45	24	46	29	51	30	52
Market Street	NBL	270	30	63	31	64	31	65	36	71	37	73
	NBTR	600	54	104	60	113	62	115	71	126	73	128
Woodbury Avenue	SBL	200	1	7	1	7	1	7	1	7	1	8
	SBT	550	46	89	48	93	56	104	56	103	65	114
	SBR	200	0	35	0	36	0	39	0	38	0	40
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway												
Motel 6 Driveway/ North Site Access Driveway	NB	150	--	3	--	3	--	3	--	3	--	3
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway												
Arthur F Brady Drive	EB	420	--	3	--	3	--	3	--	3	--	5
South Site Access Driveway	SBL	325	--	13	--	13	--	15	--	15	--	18
	SBR	325	--	5	--	5	--	8	--	5	--	8

Legend

50th & 90th - 50th and 95th percentile queue lengths in feet

TABLE 2 (CONTINUED)
Intersection Operation Summary - Queues (In Feet)

			Weekday Afternoon Peak Hour									
	Lane Use	Available Storage	2024 Existing		2026 No-Build		2026 Build		2036 No-Build		2036 Build	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps												
Pease Boulevard	EBT	550	170	212	202	244	212	244	253	272	255	272
	EBR	550	24	93	50	150	53	151	120	242	123	243
	WBL	360	161	228	171	233	176	235	196	254	200	256
	WBT	360	29	43	32	46	32	46	36	50	36	50
US Route 4 Southbound Off Ramp	SBL	500	64	121	69	123	75	133	76	134	84	145
	SBT	500	65	123	70	125	76	134	77	135	85	146
	SBR	500	0	23	0	24	0	24	0	25	0	25
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps												
Gosling Road	EBL	370	179	248	226	294	235	294	286	354	289	357
	EBT	370	62	78	65	83	71	89	74	113	80	120
	WB	480	142	208	160	218	167	220	197	248	201	250
US Route 4 Northbound Off Ramp	NBL	450	37	65	40	67	40	67	45	73	45	73
	NBT	300	0	0	0	0	0	0	0	0	0	0
	NBR	300	0	0	0	0	0	0	0	0	0	0
Traffic Signal - Gosling Road at Woodbury Avenue												
Gosling Road	EBTL	500	78	339	81	345	81	345	99	384	99	384
	EBR	500	0	67	0	69	0	69	0	73	0	73
	WBT	575	84	197	86	200	86	200	98	220	98	220
Woodbury Avenue	NBL	300	80	261	87	281	88	288	98	319	100	326
	NBTR	415	74	290	75	303	75	303	124	365	124	365
	SBL	210	14	61	14	61	14	61	16	65	16	65
	SBT	440	105	320	108	332	108	332	124	382	124	382
	SBR	280	0	49	0	50	0	50	0	52	0	52
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway												
Durgin Lane	EBL	170	33	78	35	81	36	84	41	97	42	100
	EBT	170	34	78	35	81	36	84	41	93	44	105
	EBR	170	0	14	0	15	0	26	0	19	0	29
BJ's Driveway	WBL	100	33	68	34	71	34	71	41	80	41	80
	WBT	100	33	68	35	72	35	72	41	80	41	80
	WBR	100	38	72	40	74	40	74	47	85	47	85
Woodbury Avenue	NBL	400	13	41	14	42	33	90	17	47	36	101
	NBT	400	154	207	162	216	162	216	188	241	188	241
	NBR	200	0	10	0	10	0	10	0	10	0	10
	SBL	125	33	78	35	81	35	81	40	91	40	91
	SBT	350	129	177	141	191	141	191	159	212	159	212
	SBR	105	0	0	0	0	0	0	0	0	0	0
Traffic Signal - Woodbury Avenue at Market Street/Market Basket Driveway												
Woodbury Avenue	EBL	215	64	147	68	158	74	176	77	182	82	198
	EBTR	280	80	264	82	269	82	269	97	311	97	311
Market Basket Driveway	WBL	500	115	277	118	287	118	287	133	330	133	330
	WBTR	500	57	141	59	144	59	144	66	156	66	156
Market Street	NBL	270	60	150	62	158	62	158	70	182	70	182
	NBTR	600	117	305	123	317	129	331	144	381	150	401
Woodbury Avenue	SBL	200	10	38	10	39	10	39	11	41	11	41
	SBT	550	185	390	197	418	205	436	228	483	237	502
	SBR	200	0	65	0	67	0	69	0	71	0	73
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway												
Motel 6 Driveway/ North Site Access Driveway	NB	150	--	5	--	5	--	5	--	6	--	6
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway												
Arthur F Brady Drive	EB	420	--	5	--	5	--	5	--	5	--	8
South Site Access Driveway	SBL	325	--	38	--	40	--	45	--	53	--	63
	SBR	325	--	10	--	10	--		--	13	--	15

Legend

50th & 90th - 50th and 95th percentile queue lengths in feet

TABLE 2 (CONTINUED)
Intersection Operation Summary - Queues (In Feet)

	Lane Use	Available Storage	Saturday Midday Peak Hour									
			2024 Existing		2026 No-Build		2036 No-Build		2026 Build		2036 Build	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Traffic Signal - Pease Boulevard at US Route 4 Southbound Ramps												
Pease Boulevard	EBT	550	38	60	39	61	39	61	45	67	46	67
	EBR	550	0	20	0	21	0	21	0	26	0	26
	WBL	360	128	189	131	192	135	196	158	210	162	213
	WBT	360	19	29	20	30	20	29	22	32	22	32
US Route 4 Southbound Off Ramp	SBL	500	82	167	85	170	91	178	107	188	114	195
	SBT	500	83	168	86	171	92	178	108	188	115	196
	SBR	500	0	6	0	6	0	6	0	9	0	9
Traffic Signal - Gosling Road at US Route 4 Northbound Ramps												
Gosling Road	EBL	370	14	30	14	31	14	31	17	34	18	35
	EBT	370	105	154	108	157	114	164	128	273	135	281
	WB	480	88	141	91	144	93	146	104	163	105	164
US Route 4 Northbound Off Ramp	NBL	450	17	41	17	42	18	42	22	45	22	45
	NBT	300	1	77	1	77	1	78	1	83	1	84
	NBR	300	0	74	0	75	0	76	0	81	0	82
Traffic Signal - Gosling Road at Woodbury Avenue												
Gosling Road	EBTL	500	48	187	50	192	50	192	56	218	56	218
	EBR	500	0	41	0	41	0	41	0	42	0	42
	WBT	575	52	147	52	148	52	148	60	165	60	165
Woodbury Avenue	NBL	300	69	214	71	219	73	226	80	258	82	265
	NBTR	415	80	230	82	234	82	234	93	264	93	264
	SBL	210	17	67	17	67	17	67	19	74	19	74
	SBT	440	104	303	106	313	106	313	122	368	122	368
	SBR	280	0	24	0	25	0	25	0	32	0	32
Traffic Signal - Woodbury Avenue at Durgin Lane/BJ's Driveway												
Durgin Lane	EBL	170	34	77	35	80	37	83	42	97	44	102
	EBT	170	35	80	35	80	38	85	43	93	45	104
	EBR	170	0	20	0	20	0	25	0	23	0	27
BJ's Driveway	WBL	100	29	72	29	73	29	73	34	84	34	84
	WBT	100	29	74	30	75	30	75	35	85	35	85
	WBR	100	18	48	19	49	19	49	22	57	22	57
Woodbury Avenue	NBL	400	11	35	11	36	23	60	13	40	26	68
	NBT	400	124	177	127	180	127	180	147	200	147	200
	NBR	200	0	11	0	11	0	11	0	11	0	11
	SBL	125	34	79	34	80	34	80	40	92	40	92
	SBT	350	155	212	160	217	160	217	182	244	182	244
	SBR	105	16	42	17	42	17	42	20	47	20	47
Traffic Signal - Woodbury Avenue at Market Street/Market Basket Driveway												
Woodbury Avenue	EBL	215	75	114	78	117	84	124	94	141	100	150
	EBTR	280	59	112	60	114	62	114	74	136	75	136
Market Basket Driveway	WBL	500	82	135	84	137	86	137	99	151	101	151
	WBTR	500	49	90	50	92	52	92	60	101	61	101
Market Street	NBL	270	30	74	31	75	32	75	37	81	37	81
	NBTR	600	102	206	105	211	108	217	124	237	127	244
Woodbury Avenue	SBL	200	6	24	6	24	6	24	7	25	7	25
	SBT	550	127	197	131	202	137	211	153	226	159	235
	SBR	200	0	47	0	47	0	49	0	49	0	51
Unsignalized TWSC - Gosling Road at Motel 6 Driveway/North Site Access Driveway												
Motel 6 Driveway/ North Site Access Driveway	NB	150	--	12	--	13	--	13	--	15	--	15
Unsignalized TWSC - Arthur F Brady Drive at South Site Access Driveway												
Arthur F Brady Drive	EB	420	--	5	--	5	--	8	--	8	--	8
South Site Access Driveway	SBL	325	--	43	--	45	--	50	--	60	--	68
	SBR	325	--	5	--	5	--	8	--	5	--	8

Legend

50th & 90th - 50th and 95th percentile queue lengths in feet

TABLE 4
Proposed Site-Generated Traffic Summary

Proposed - 144 Units Residential **Peak Hour Period**	**Enter**	**Exit**	**LUC 220** **Total**
Weekday Morning	16	51	67
Weekday Afternoon	52	30	82
Saturday Midday	30	29	59
Weekday	499	499	998
Saturday	328	327	655

Proposed - 216 Units Residential **Peak Hour Period**	**Enter**	**Exit**	**LUC 221** **Total**
Weekday Morning	19	64	83
Weekday Afternoon	52	33	85
Saturday Midday	44	43	87
Weekday	491	490	981
Saturday	494	493	987

Total Proposed **Peak Hour Period**	**Enter**	**Exit**	**Total**
Weekday Morning	**35**	**116**	**151**
Weekday Afternoon	**104**	**63**	**167**
Saturday Midday	**74**	**72**	**146**
Weekday	**990**	**989**	**1,979**
Saturday	**822**	**820**	**1,642**

Source: Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021
Land Use - 220 [Residential - Multifamily Housing (Low-Rise)]
Land Use - 221 [Residential - Multifamily Housing (Mid-Rise)]

TABLE 5
Net Site-Generated Traffic Summary

Existing - 78,317 SF Retail Space			**LUC 821**
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	84	51	135
Weekday Afternoon	199	207	406
Saturday Midday	253	234	487
Weekday	2,644	2,644	5,288
Saturday	3,175	3,174	6,349

Proposed - 360 Units Residential			**LUC 220 & 221**
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	35	116	151
Weekday Afternoon	104	63	167
Saturday Midday	74	72	146
Weekday	990	989	1,979
Saturday	822	820	1,642

Net Vehicular Trips (Proposed minus Existing Occupied Demand)			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	**-49**	**65**	**16**
Weekday Afternoon	**-95**	**-144**	**-239**
Saturday Midday	**-179**	**-162**	**-341**
Weekday	**-1,654**	**-1,655**	**-3,309**
Saturday	**-2,353**	**-2,354**	**-4,707**

Source: Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021
Land Use - 220 [Residential - Multifamily Housing (Low-Rise)]
Land Use - 221 [Residential - Multifamily Housing (Mid-Rise)]
Land Use - 821 [Shopping Plaza (40-150k)]

Section 8
Figures

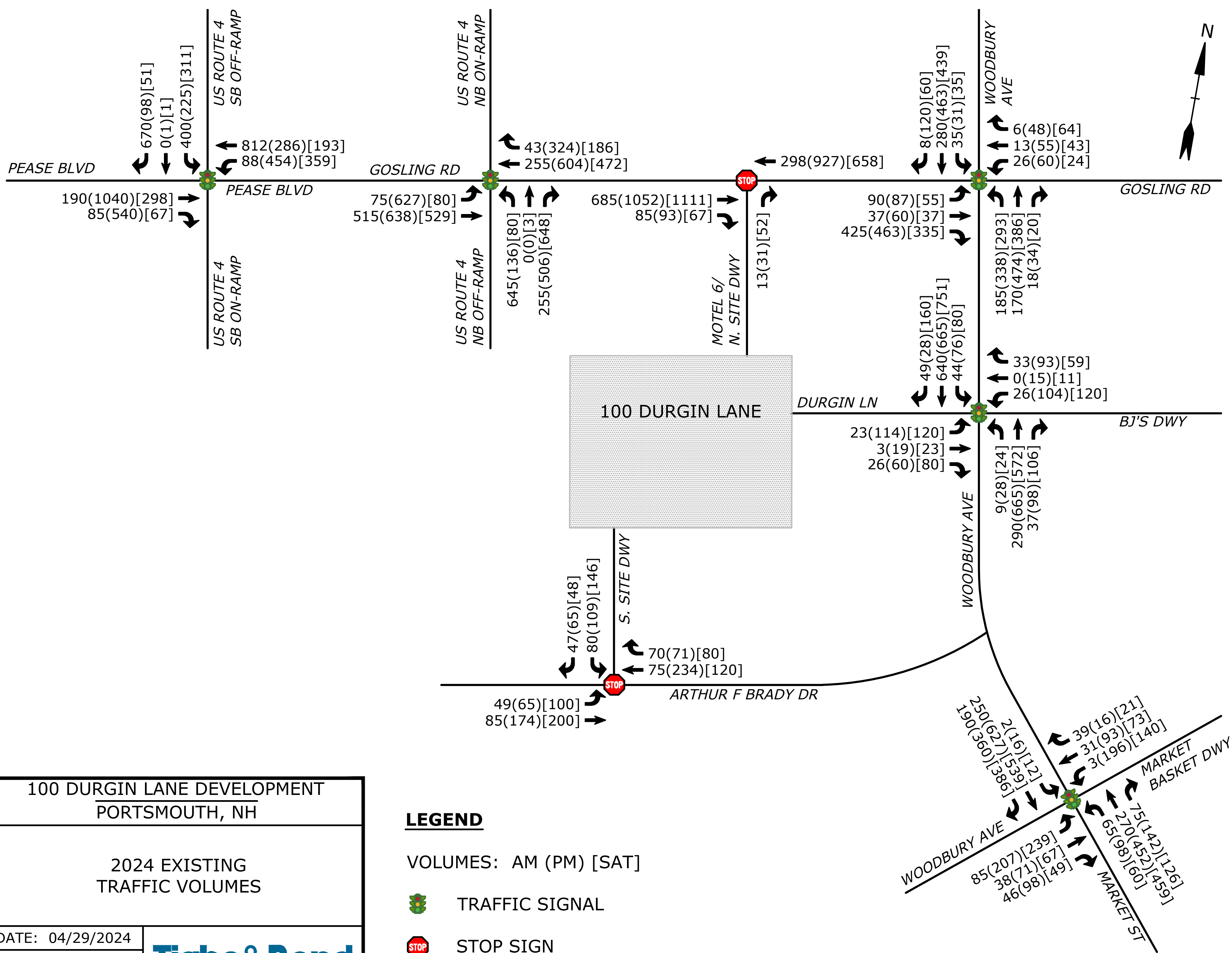
100 DURGIN LANE
PORTSMOUTH, NH

STUDY AREA

DATE:	4/16/2024
SCALE:	1" = 1000'
FIGURE:	1

Tighe&Bond

Apr 22, 2024-10:40am Plotted By: MBlair
Tighe & Bond, Inc. J:\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Figures\E5071-001 Traffic Study Area Figure.dwg



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

2024 EXISTING
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 2

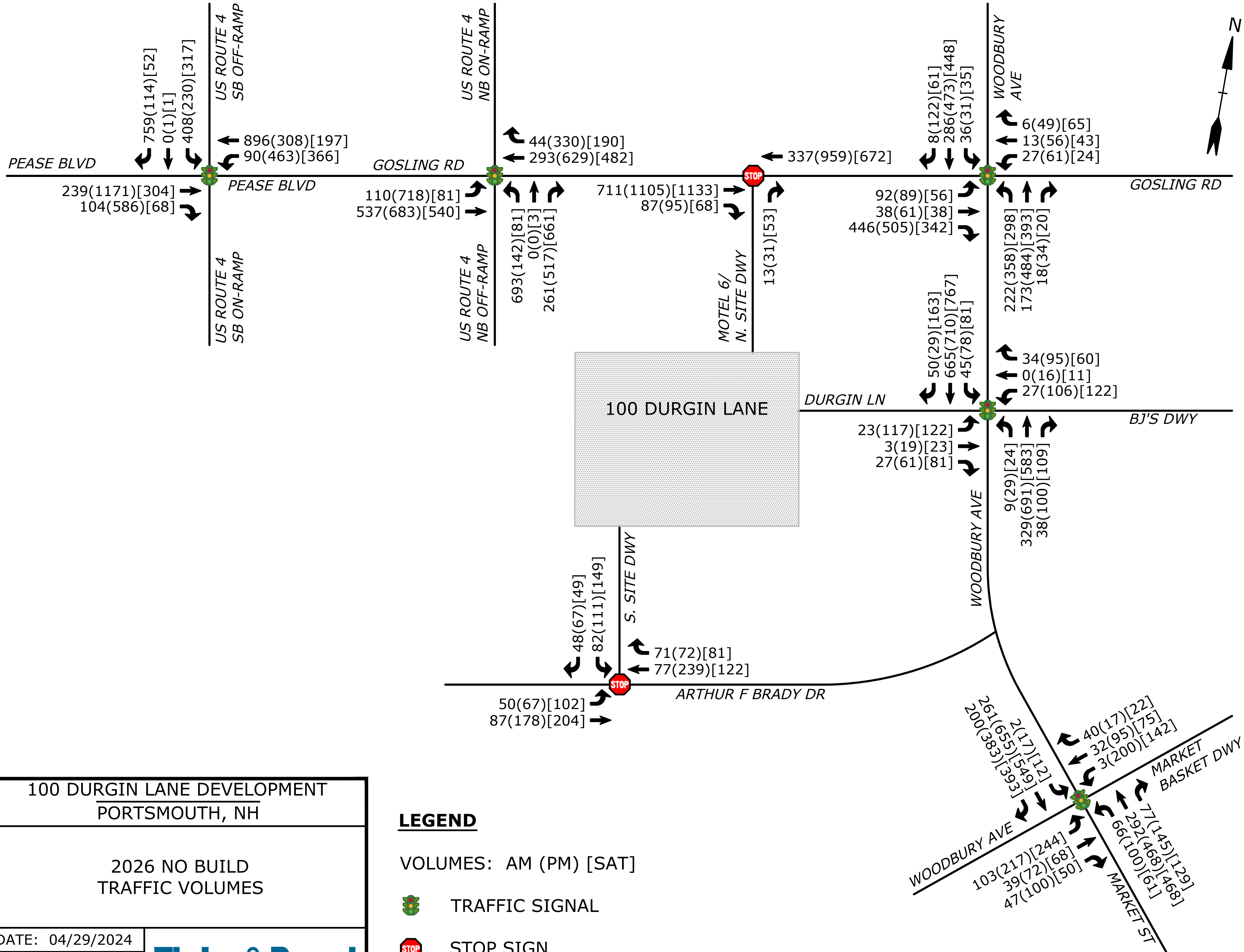
Tighe&Bond

LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

2026 NO BUILD
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 3

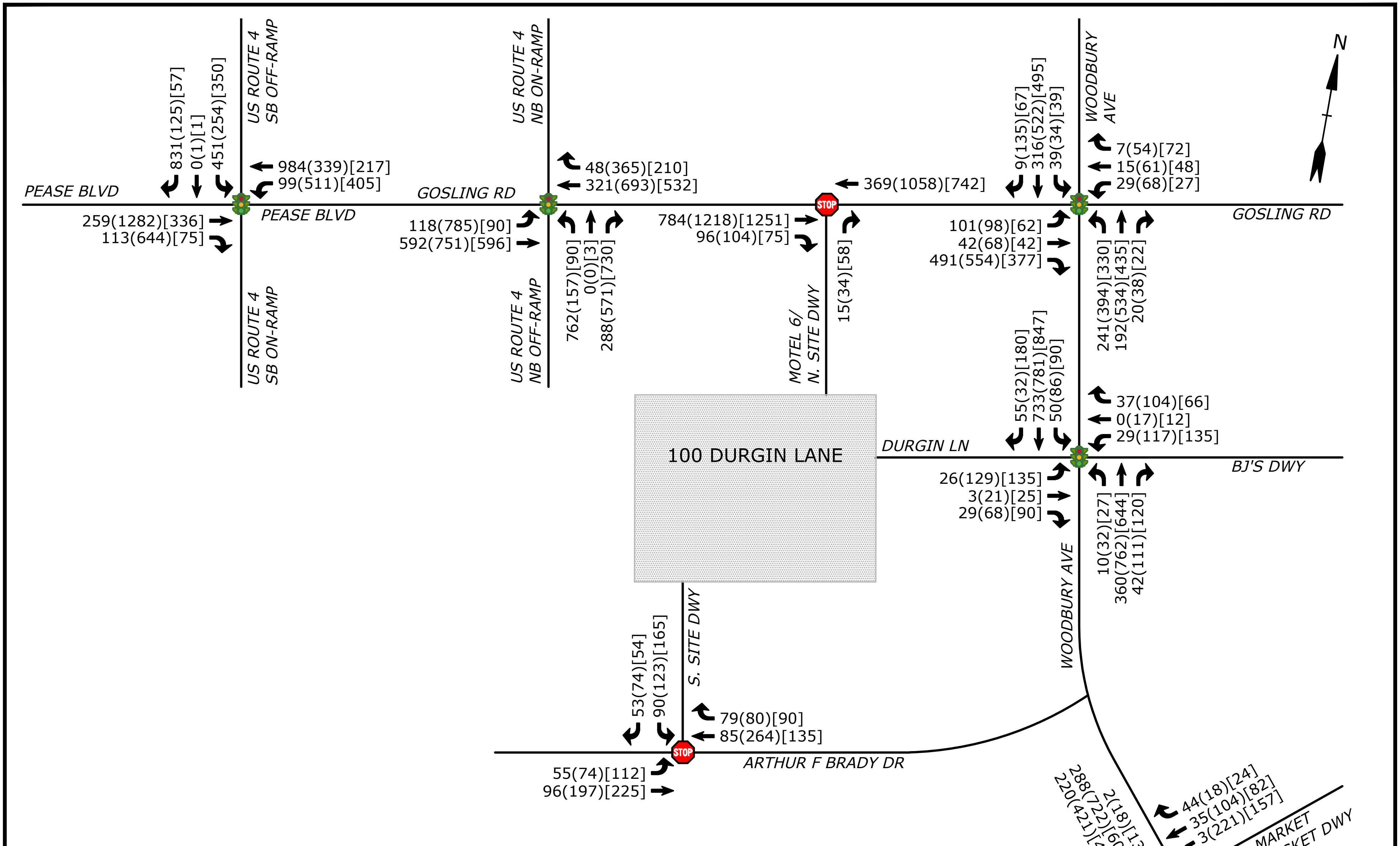
Tighe&Bond

LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

2036 NO BUILD
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 4

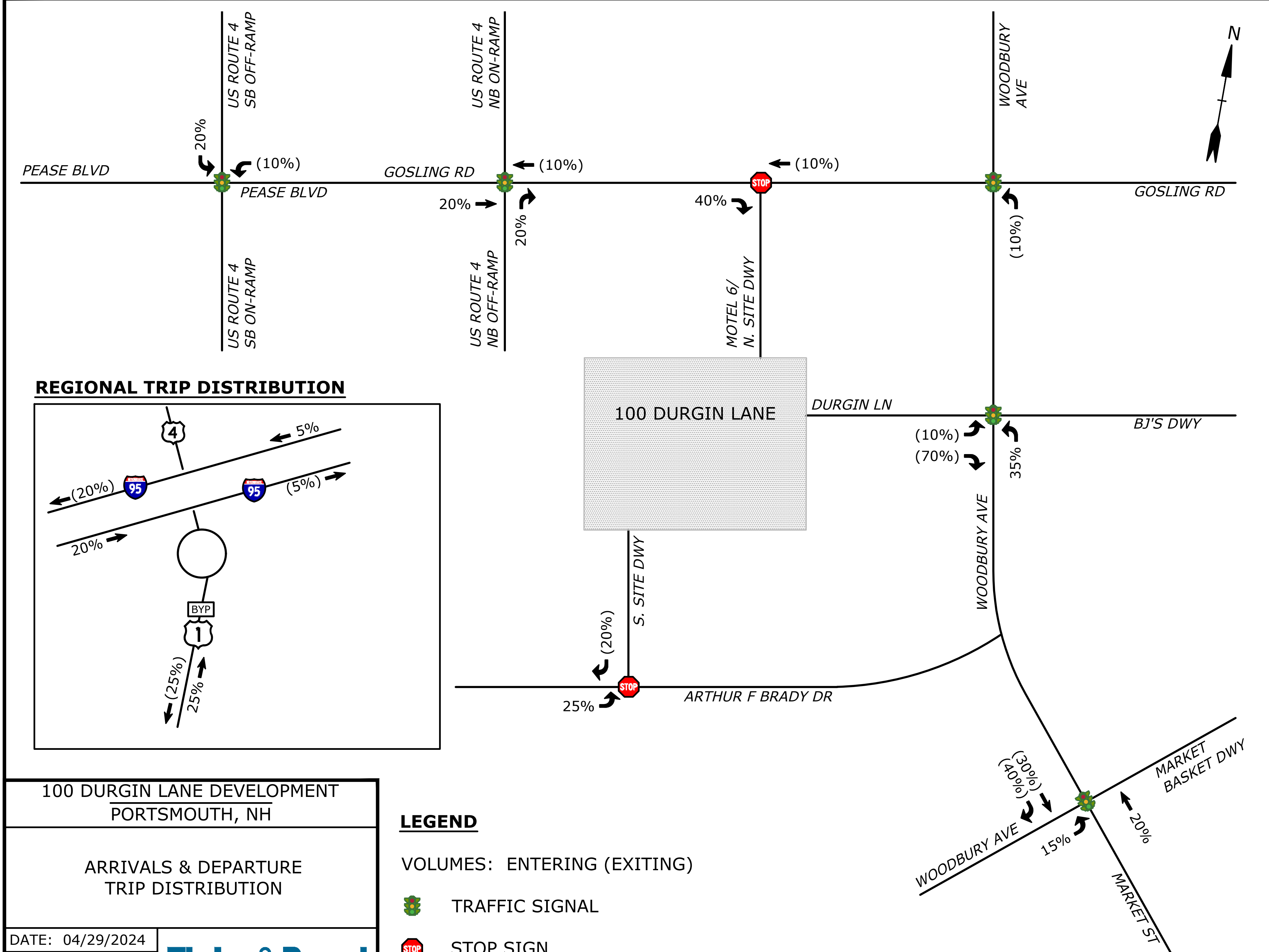
Tighe&Bond

LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN



LEGEND

VOLUMES: ENTERING (EXITING)

TRAFFIC SIGNAL

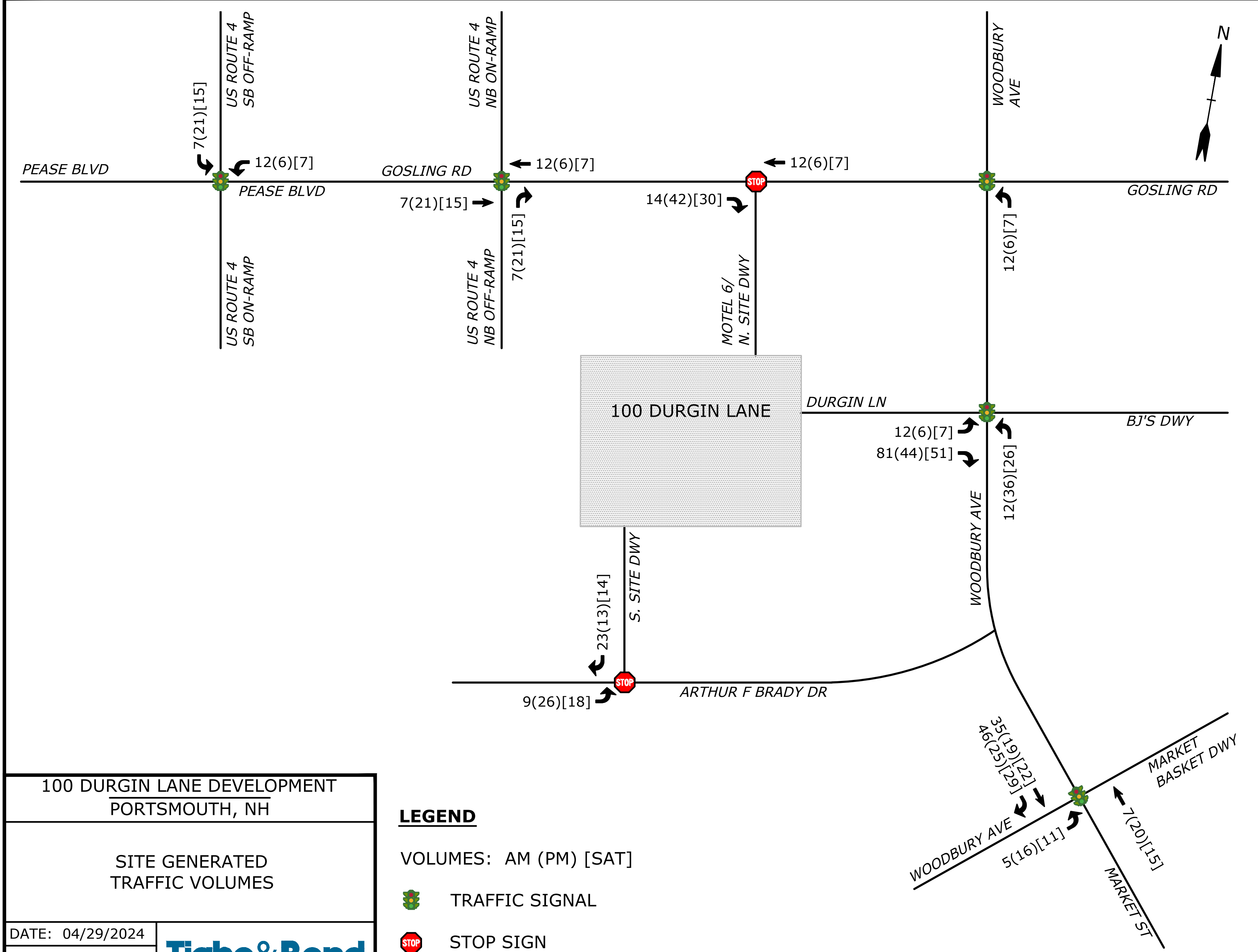
STOP SIGN

100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

ARRIVALS & DEPARTURE
TRIP DISTRIBUTION

DATE: 04/29/2024
SCALE: NTS
FIGURE 5

Tighe&Bond



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

SITE GENERATED
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 6

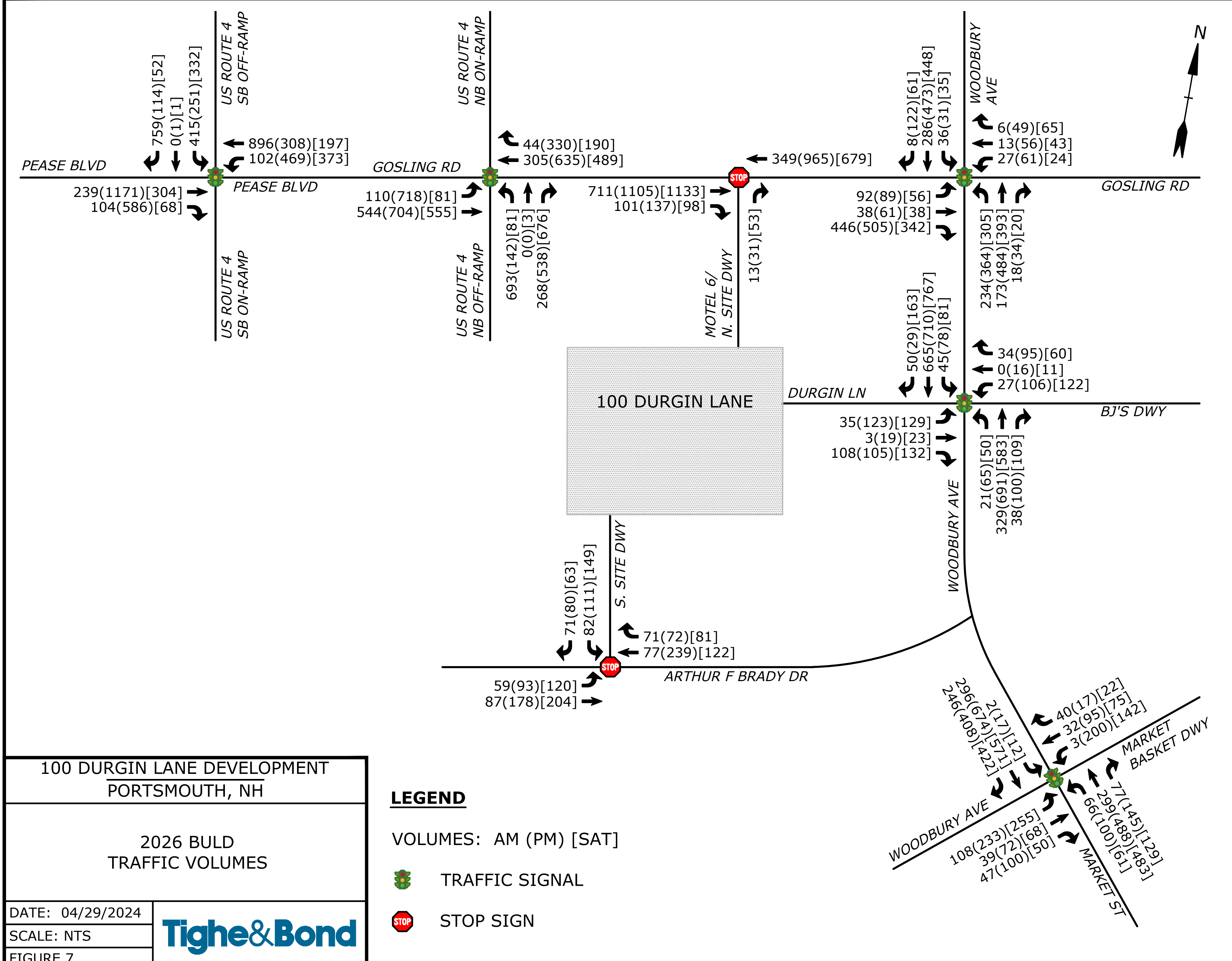
Tighe&Bond

LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

2026 BULD
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 7

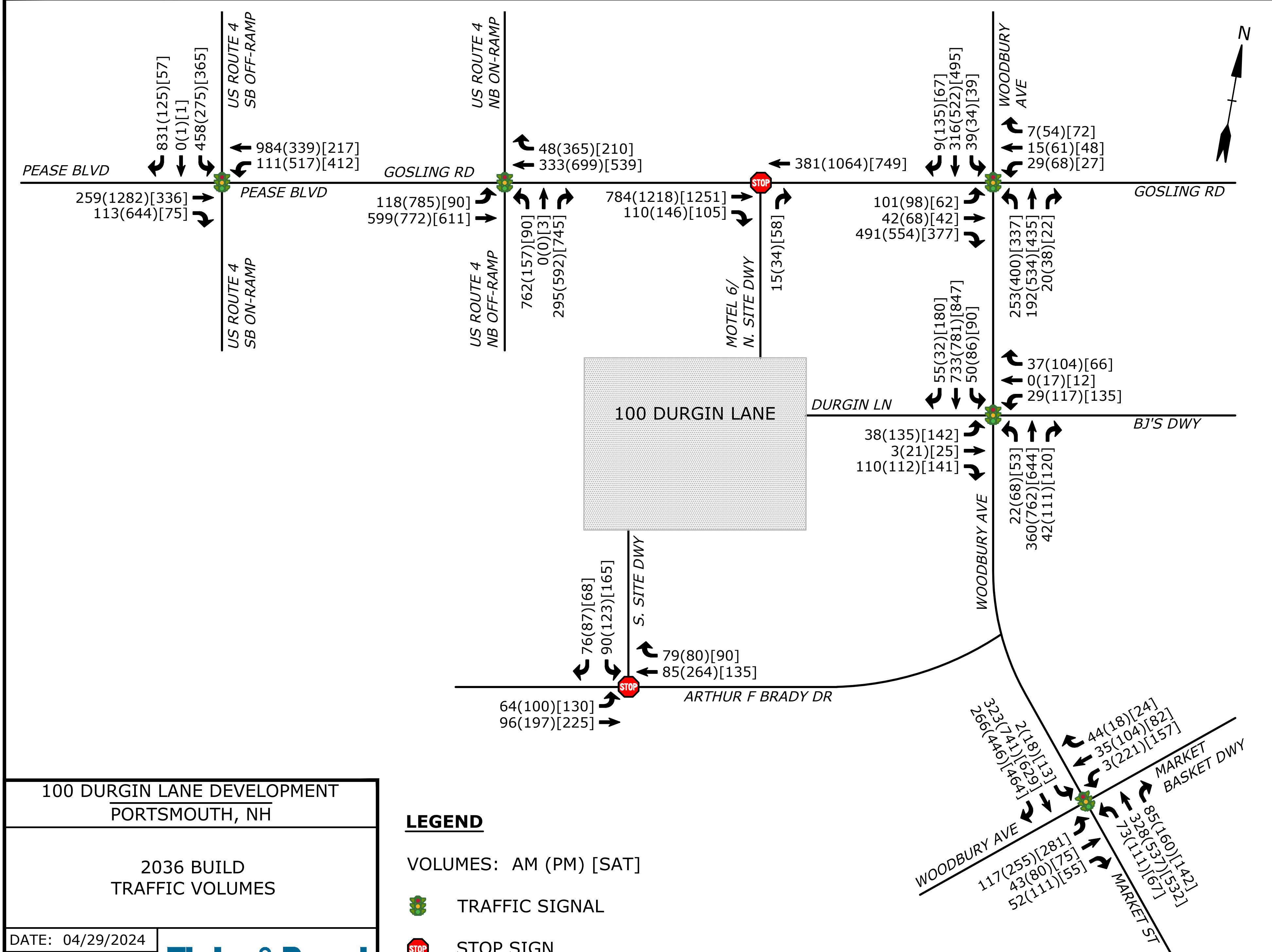
Tighe&Bond

LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN



100 DURGIN LANE DEVELOPMENT
PORTSMOUTH, NH

2036 BUILD
TRAFFIC VOLUMES

DATE: 04/29/2024
SCALE: NTS
FIGURE 8

Tighe&Bond

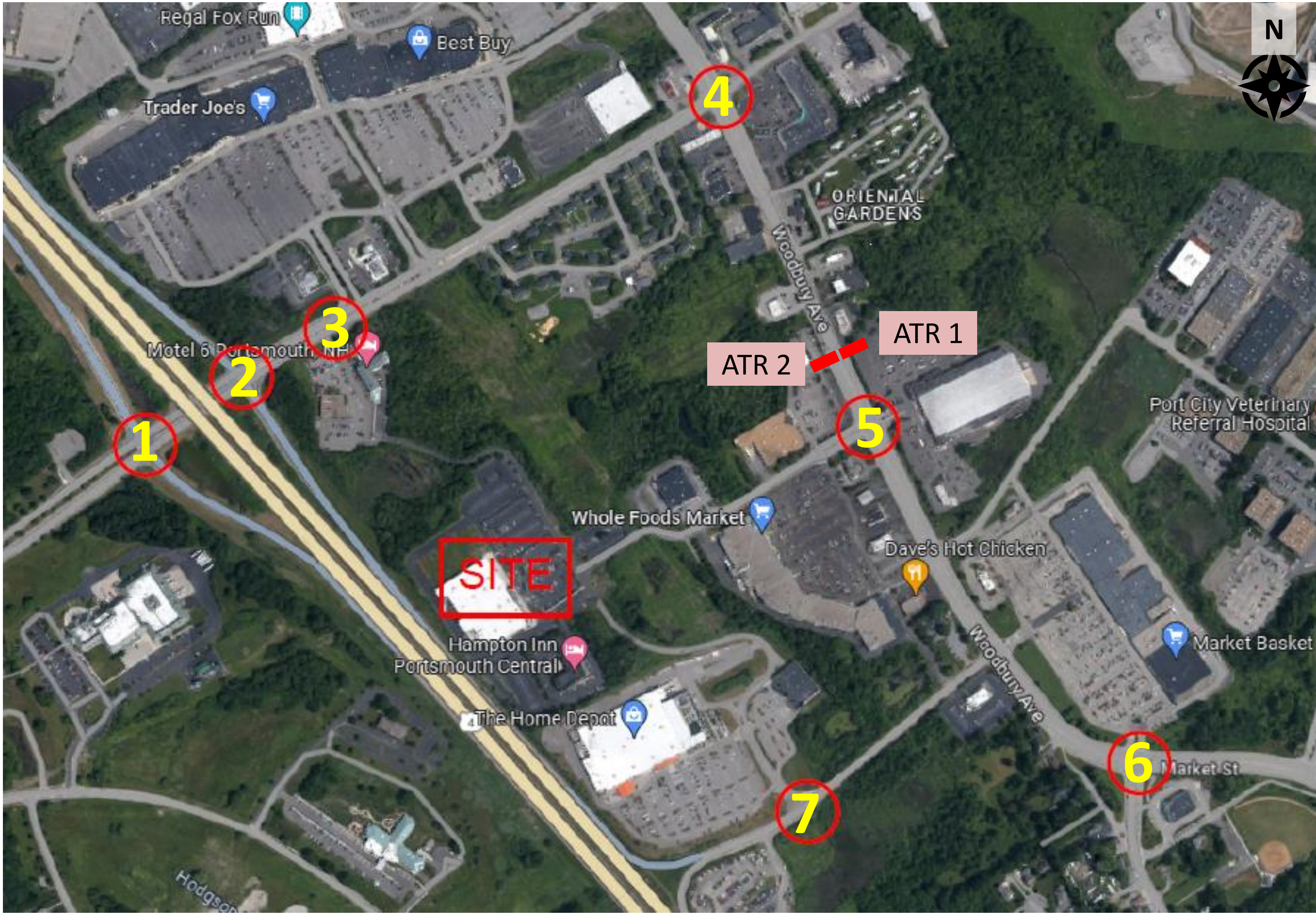
LEGEND

VOLUMES: AM (PM) [SAT]

TRAFFIC SIGNAL

STOP SIGN

APPENDIX A
Traffic Count Data



BOSTON TRAFFIC DATA	BTD ID: 1486_4_TB	Portsmouth, NH	# of TMC's: 07	Client: Tighe & Bond
		Collected on March 20-21&23, 2024	# of ATR's: 02	Contact: Matthew Stoutz, PE, PTOE, RSP1

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 1
Location: Portsmouth, NH
Street 1: Newington Street
Street 2: US Route 4 Southbound Ramps
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	38	0	100	0	0	37	13	0	17	97	0
7:15 AM	0	0	0	0	0	48	0	122	0	0	21	10	0	17	101	0
7:30 AM	0	0	0	0	0	68	0	130	0	0	45	13	0	16	130	0
7:45 AM	0	0	0	0	0	97	0	175	0	0	43	19	0	21	203	0
8:00 AM	0	0	0	0	0	78	0	159	1	0	34	19	1	16	177	0
8:15 AM	0	0	0	0	0	97	0	126	0	0	41	19	0	26	170	0
8:30 AM	0	0	0	0	0	77	0	123	0	0	46	19	0	23	142	0
8:45 AM	0	0	0	0	0	61	0	111	0	0	59	23	1	21	133	0

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	51	0	15	0	0	194	111	0	74	60	0
4:15 PM	0	0	0	0	0	53	0	18	0	0	171	109	0	77	80	0
4:30 PM	0	0	0	0	0	39	0	32	0	0	190	113	0	84	83	0
4:45 PM	0	0	0	0	0	47	0	15	0	0	194	93	1	77	62	0
5:00 PM	0	0	0	0	0	46	0	17	0	0	241	128	0	118	47	0
5:15 PM	0	0	0	0	0	46	1	16	0	0	193	95	1	79	36	0
5:30 PM	0	0	0	0	0	42	0	16	0	0	153	70	0	78	53	0
5:45 PM	0	0	0	0	0	44	0	19	0	0	80	47	1	80	53	0

AM PEAK HOUR 7:45 AM to 8:45 AM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**349**	**0**	**583**	**1**	**0**	**164**	**76**	**1**	**86**	**692**	**0**
PHF	**0.00**				**0.86**				**0.93**				**0.87**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**	**2.4%**	**5.3%**	**0.0%**	**12.8%**	**1.3%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**185**	**0**	**82**	**0**	**0**	**796**	**443**	**1**	**356**	**272**	**0**
PHF	**0.00**				**0.94**				**0.84**				**0.94**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.7%**	**0.0%**	**1.1%**	**0.7%**	**0.0%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 1
Location: Portsmouth, NH
Street 1: Newington Street
Street 2: US Route 4 Southbound Ramps
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

BOSTON
TRAFFIC DATA
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www.BostonTrafficData.com

HEAVY VEHICLES

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	2	0	0	0	2	0	4	2	0
7:30 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	2	2	0
7:45 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	3	2	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	3	0	2	3	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0
8:30 AM	0	0	0	0	0	1	0	4	0	0	2	1	0	2	3	0
8:45 AM	0	0	0	0	0	2	0	0	0	0	3	1	0	3	1	0

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	3	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**0**	**6**	**5**	**0**	**11**	**8**	**0**
PHF	**0.00**				**0.40**				**0.69**				**0.95**			

PM PEAK HOUR 4:30 PM to 5:30 PM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**6**	**2**	**0**
PHF	**0.00**				**0.25**				**0.63**				**0.67**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	US Route 4 Southbound Ramps
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

BOSTON TRAFFIC DATA
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PEDESTRIANS & BICYCLES

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
7:45 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1]	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
4:15 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	US Route 4 Southbound Ramps
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	42	1	9	0	0	26	10	0	40	29	0
11:15 AM	0	0	0	0	0	40	3	7	0	0	38	13	1	54	31	0
11:30 AM	0	0	0	0	0	48	0	13	0	0	48	11	1	56	31	0
11:45 AM	0	0	0	0	0	52	0	13	0	0	54	20	2	45	32	0
12:00 PM	0	0	0	0	0	59	1	8	0	0	51	17	1	54	31	0
12:15 PM	0	0	0	0	0	46	0	2	0	0	47	6	1	77	29	0
12:30 PM	0	0	0	0	0	43	0	10	0	0	40	2	0	57	33	0
12:45 PM	0	0	0	0	0	56	0	8	0	0	41	3	0	72	32	0
1:00 PM	0	0	0	0	0	53	1	3	0	0	48	9	1	76	38	0
1:15 PM	0	0	0	0	0	42	0	7	1	0	42	10	2	62	33	0
1:30 PM	0	0	0	0	0	64	0	5	1	0	39	5	1	78	29	0
1:45 PM	0	0	0	0	0	55	0	9	0	0	48	10	1	74	27	0

MID PEAK HOUR 1:00 PM to 2:00 PM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**214**	**1**	**24**	**2**	**0**	**177**	**34**	**5**	**290**	**127**	**0**
PHF	**0.00**				**0.87**				**0.92**				**0.92**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.7%**	**0.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	US Route 4 Southbound Ramps
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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HEAVY VEHICLES

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
11:45 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	2	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
1:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**1**	**3**	**3**	**0**	**0**	**1**	**3**	**0**	**3**	**3**	**0**
PHF	**0.00**				**0.58**				**0.33**				**0.75**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 1
Location:	Portsmouth, NH
Street 1:	Newington Street
Street 2:	US Route 4 Southbound Ramps
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PEDESTRIANS & BICYCLES

	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 1:00 PM to 2:00 PM	US Route 4 Southbound On Ramp Northbound				US Route 4 Southbound Off Ramp Southbound				Newington Street Eastbound				Newington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 2
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: US Route 4 Northbound Ramps
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	69	0	43	0	0	0	0	0	24	50	0	0	0	39	7
7:15 AM	0	74	0	44	0	0	0	0	0	6	64	0	0	0	47	11
7:30 AM	0	100	0	52	0	0	0	0	0	24	88	0	0	0	41	8
7:45 AM	0	163	0	50	0	0	0	0	0	16	122	0	0	0	66	6
8:00 AM	0	136	0	65	0	0	0	0	0	11	105	0	0	0	56	10
8:15 AM	0	148	0	53	0	0	0	0	0	16	121	0	0	0	50	8
8:30 AM	0	114	0	50	0	0	0	0	0	22	102	0	0	0	48	13
8:45 AM	0	103	0	54	0	0	0	0	0	20	101	0	0	0	54	5

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	24	0	83	0	0	0	0	0	131	114	0	0	0	110	58
4:15 PM	0	42	0	94	0	0	0	0	0	107	117	0	0	0	114	65
4:30 PM	0	32	0	105	0	0	0	0	0	121	105	0	0	0	131	58
4:45 PM	0	25	0	93	0	0	0	0	0	117	133	0	0	0	123	81
5:00 PM	0	32	0	93	0	0	0	0	0	144	138	0	0	0	129	70
5:15 PM	0	20	0	108	0	0	0	0	0	120	127	0	0	0	96	49
5:30 PM	0	21	1	85	0	0	0	0	0	77	111	0	0	0	103	76
5:45 PM	0	28	1	93	0	0	0	0	0	41	84	0	1	0	113	48

AM PEAK HOUR 7:45 AM to 8:45 AM	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**561**	**0**	**218**	**0**	**0**	**0**	**0**	**0**	**65**	**450**	**0**	**0**	**0**	**220**	**37**
PHF	**0.91**				**0.00**				**0.93**				**0.89**			
HV %	**0.0%**	**1.6%**	**0.0%**	**6.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.1%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**5.5%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**131**	**0**	**385**	**0**	**0**	**0**	**0**	**0**	**489**	**493**	**0**	**0**	**0**	**497**	**274**
PHF	**0.94**				**0.00**				**0.87**				**0.94**			
HV %	**0.0%**	**1.5%**	**0.0%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Gosling Road
Street 2:	US Route 4 Northbound Ramps
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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HEAVY VEHICLES

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0	0
7:15 AM	0	2	0	7	0	0	0	0	0	0	1	0	0	0	5	0
7:30 AM	0	2	0	3	0	0	0	0	0	1	1	0	0	0	1	1
7:45 AM	0	2	0	2	0	0	0	0	0	0	1	0	0	0	3	0
8:00 AM	0	2	0	5	0	0	0	0	0	0	1	0	0	0	4	0
8:15 AM	0	2	0	5	0	0	0	0	0	0	0	0	0	0	3	0
8:30 AM	0	3	0	2	0	0	0	0	0	2	1	0	0	0	2	0
8:45 AM	0	1	0	1	0	0	0	0	0	1	4	0	0	0	2	0

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0
4:30 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	1	0	1	0	0	0	0	0	1	1	0	0	0	2	0
5:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0

AM PEAK HOUR 7:15 AM to 8:15 AM	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**8**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**13**	**1**
PHF	**0.69**				**0.00**				**0.63**				**0.70**			

PM PEAK HOUR 4:15 PM to 5:15 PM	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**2**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**4**	**0**
PHF	**0.75**				**0.00**				**0.38**				**0.50**			

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 2
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: US Route 4 Northbound Ramps
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

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PEDESTRIANS & BICYCLES

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
7:45 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1]	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
4:15 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 2
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: US Route 4 Northbound Ramps
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	15	0	86	0	0	0	0	0	5	63	0	0	0	54	21
11:15 AM	0	16	3	68	0	0	0	0	0	9	68	0	1	0	72	24
11:30 AM	0	15	1	91	0	0	0	0	0	14	85	0	0	0	70	24
11:45 AM	0	13	0	102	0	0	0	0	0	17	90	0	0	0	68	33
12:00 PM	0	14	0	97	0	0	0	0	0	12	99	0	0	0	69	25
12:15 PM	0	9	2	116	0	0	0	0	1	18	74	0	0	0	97	34
12:30 PM	0	16	0	107	0	0	0	0	0	7	80	0	1	0	75	30
12:45 PM	0	5	0	81	0	0	0	0	0	4	92	0	0	0	104	23
1:00 PM	0	19	0	93	0	0	0	0	0	16	84	0	0	0	93	44
1:15 PM	0	10	0	91	0	0	0	0	0	5	81	0	0	0	90	49
1:30 PM	0	10	0	98	0	0	0	0	0	7	99	0	1	0	96	27
1:45 PM	0	8	0	100	0	0	0	0	0	8	95	0	0	0	92	37

MID PEAK HOUR 1:00 PM to 2:00 PM	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**47**	**0**	**382**	**0**	**0**	**0**	**0**	**0**	**36**	**359**	**0**	**1**	**0**	**371**	**157**
PHF	**0.96**				**0.00**				**0.93**				**0.95**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.8%**	**0.8%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Gosling Road
Street 2:	US Route 4 Northbound Ramps
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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HEAVY VEHICLES

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
11:15 AM	0	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0
11:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
11:45 AM	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
12:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

MID PEAK HOUR	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
11:00 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
12:00 PM	**0**	**3**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**3**
PHF	**0.56**				**0.00**				**0.25**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 2
Location:	Portsmouth, NH
Street 1:	Gosling Road
Street 2:	US Route 4 Northbound Ramps
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PEDESTRIANS & BICYCLES

	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	US Route 4 Northbound Off Ramp Northbound				US Route 4 Northbound On Ramp Southbound				Gosling Road Eastbound				Gosling Road Westbound			
1:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 3
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: Motel 6/North site access drive
Count Date: 3/20/2024
Day of Week: Thursday
Weather: Clouds & Sun, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	5	0	0	0	0	0	0	83	7	0	0	47	0
7:15 AM	0	0	0	2	0	0	0	0	0	0	104	7	0	0	58	0
7:30 AM	0	0	0	5	0	0	0	0	0	0	130	5	0	0	51	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	148	26	0	0	72	0
8:00 AM	0	0	0	6	0	0	0	0	0	0	156	14	0	0	62	0
8:15 AM	0	0	0	2	0	0	0	0	0	0	159	15	0	0	58	0
8:30 AM	0	0	0	2	0	0	0	0	0	0	133	21	0	0	64	0
8:45 AM	0	0	0	2	0	0	0	0	0	0	141	15	0	0	57	0

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	4	0	0	0	0	0	0	179	18	0	0	169	0
4:15 PM	0	0	0	5	0	0	0	0	0	0	186	22	0	0	181	0
4:30 PM	0	0	0	6	0	0	0	0	0	0	193	19	0	0	198	0
4:45 PM	0	0	0	4	0	0	0	0	0	0	211	16	0	0	195	0
5:00 PM	0	0	0	8	0	0	0	0	0	0	212	21	0	0	194	0
5:15 PM	0	0	0	6	0	0	0	0	0	0	221	16	0	0	151	0
5:30 PM	0	0	0	4	0	0	0	0	0	0	167	25	0	0	174	0
5:45 PM	0	0	0	3	0	0	0	0	0	0	168	10	0	0	162	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**596**	**76**	**0**	**0**	**256**	**0**
PHF	**0.46**				**0.00**				**0.97**				**0.89**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.7%**	**1.3%**	**0.0%**	**0.0%**	**4.7%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**802**	**78**	**0**	**0**	**768**	**0**
PHF	**0.72**				**0.00**				**0.94**				**0.97**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 3
Location:	Portsmouth, NH
Street 1:	Gosling Road
Street 2:	Motel 6/North site access drive
Count Date:	3/20/2024
Day of Week:	Thursday
Weather:	Clouds & Sun, 50°F

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HEAVY VEHICLES

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	6	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	5	1	0	0	4	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**1**	**0**	**0**	**14**	**0**
PHF	**0.00**				**0.00**				**0.66**				**0.58**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**4**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.50**			

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 3
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: Motel 6/North site access drive
Count Date: 3/20/2024
Day of Week: Thursday
Weather: Clouds & Sun, 50°F

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PEDESTRIANS & BICYCLES

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
7:45 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR[1]	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
4:15 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 3
Location:	Portsmouth, NH
Street 1:	Gosling Road
Street 2:	Motel 6/North site access drive
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	4	0	0	0	0	0	0	142	9	0	0	78	0
11:15 AM	0	0	0	8	0	0	0	0	0	0	129	13	0	0	97	0
11:30 AM	0	0	0	4	0	0	0	0	0	0	157	14	0	0	94	0
11:45 AM	0	0	0	15	0	0	0	0	0	0	189	9	0	0	98	0
12:00 PM	0	0	0	5	0	0	0	0	0	0	181	12	0	0	95	0
12:15 PM	0	0	0	7	0	0	0	0	0	0	174	15	0	0	131	0
12:30 PM	0	0	0	7	0	0	0	0	0	0	181	8	0	0	107	0
12:45 PM	0	0	0	3	0	0	0	0	0	0	157	15	0	0	127	0
1:00 PM	0	0	0	11	0	0	0	0	0	0	162	15	0	0	136	0
1:15 PM	0	0	0	2	0	0	0	0	0	0	163	9	0	0	139	0
1:30 PM	0	0	0	3	0	0	0	0	0	0	183	15	0	0	124	0
1:45 PM	0	0	0	8	0	0	0	0	0	0	185	8	0	0	130	0

MID PEAK HOUR 1:00 PM to 2:00 PM	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**693**	**47**	**0**	**0**	**529**	**0**
PHF	**0.55**				**0.00**				**0.93**				**0.95**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.4%**	**0.0%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 3
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: Motel 6/North site access drive
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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HEAVY VEHICLES

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
11:00 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**
PHF	**0.00**				**0.00**				**0.42**				**0.50**			

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 3
Location: Portsmouth, NH
Street 1: Gosling Road
Street 2: Motel 6/North site access drive
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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PEDESTRIANS & BICYCLES

	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Motel 6/North site access drive Northbound				Southbound				Gosling Road Eastbound				Gosling Road Westbound			
1:00 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Gosling Road
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	24	17	2	0	1	52	9	0	19	6	39	0	3	1	2
7:15 AM	0	39	39	2	0	1	55	8	0	26	8	51	0	1	4	2
7:30 AM	0	39	40	1	0	2	49	6	0	20	6	83	0	2	4	2
7:45 AM	1	49	43	3	1	2	57	7	3	25	6	101	0	8	3	0
8:00 AM	0	39	34	2	0	2	54	8	0	24	6	90	0	4	5	0
8:15 AM	0	32	33	7	1	2	61	9	1	18	6	91	0	3	2	4
8:30 AM	0	40	37	4	0	1	73	6	3	13	14	89	0	8	1	1
8:45 AM	0	33	49	7	0	4	56	6	0	15	4	60	0	6	3	5

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	2	50	103	9	0	9	103	29	2	13	8	85	0	11	16	8
4:15 PM	1	65	83	6	1	8	84	20	1	17	10	90	0	16	12	9
4:30 PM	1	86	82	5	0	6	89	29	0	16	14	83	0	12	14	15
4:45 PM	0	69	101	6	0	3	90	20	1	17	7	103	0	13	10	8
5:00 PM	1	58	97	9	1	3	92	30	0	18	13	83	0	10	12	8
5:15 PM	1	56	98	7	0	12	97	17	2	19	13	102	0	14	9	7
5:30 PM	1	59	95	8	0	5	78	22	1	23	13	71	0	15	6	11
5:45 PM	1	56	78	12	1	6	71	13	0	8	18	68	0	16	16	6

AM PEAK HOUR 7:45 AM to 8:45 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	**160**	**147**	**16**	**2**	**7**	**245**	**30**	**7**	**80**	**32**	**371**	**0**	**23**	**11**	**5**
PHF	**0.84**				**0.89**				**0.91**				**0.89**			
HV %	**0.0%**	**1.9%**	**3.4%**	**0.0%**	**0.0%**	**14.3%**	**2.0%**	**20.0%**	**0.0%**	**7.5%**	**12.5%**	**1.9%**	**0.0%**	**8.7%**	**9.1%**	**40.0%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	3	**269**	**378**	**27**	**1**	**24**	**368**	**96**	**3**	**70**	**47**	**371**	**0**	**49**	**45**	**38**
PHF	**0.96**				**0.97**				**0.90**				**0.80**			
HV %	**0.0%**	**1.1%**	**0.5%**	**7.4%**	**0.0%**	**12.5%**	**0.3%**	**4.2%**	**0.0%**	**4.3%**	**2.1%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**7.9%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Gosling Road
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0
7:15 AM	0	3	1	1	0	0	3	0	0	5	1	2	0	0	2	0
7:30 AM	0	1	2	0	0	0	2	0	0	2	1	4	0	0	1	0
7:45 AM	0	1	0	0	0	0	0	1	0	2	0	1	0	2	0	0
8:00 AM	0	1	2	0	0	0	0	3	0	1	0	2	0	0	0	0
8:15 AM	0	0	3	0	0	0	1	1	0	2	1	2	0	0	0	1
8:30 AM	0	1	0	0	0	1	4	1	0	1	3	2	0	0	1	1
8:45 AM	0	1	0	0	0	0	2	1	0	0	1	1	0	1	0	2

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	3
4:30 PM	0	1	0	1	0	0	1	1	0	0	1	3	0	0	0	3
4:45 PM	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0
5:00 PM	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0
5:15 PM	0	1	0	1	0	3	0	1	0	1	0	1	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	4
5:45 PM	0	1	1	0	0	0	2	0	0	1	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**6**	**5**	**1**	**0**	**0**	**5**	**4**	**0**	**10**	**2**	**9**	**0**	**2**	**3**	**0**
PHF	**0.60**				**0.75**				**0.66**				**0.63**			

PM PEAK HOUR 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**2**	**2**	**0**	**3**	**1**	**4**	**0**	**3**	**1**	**5**	**0**	**0**	**0**	**3**
PHF	**0.88**				**0.50**				**0.56**				**0.25**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Gosling Road
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
4:30 PM	0	1	0	2	0	0	0	0	1	0	0	2	0	0	0	0
4:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	2	0	1	0	0	0	0	0	2	0	0	0	0

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	2	0	7	0	0	0	1	1	0	0	2	0	0	1	1

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 4
Location: Portsmouth, NH
Street 1: Woodbury Avenue
Street 2: Gosling Road
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	1	51	41	4	0	5	41	9	1	10	10	55	0	7	4	7
11:15 AM	2	33	51	2	0	1	60	6	1	5	6	55	0	15	9	7
11:30 AM	3	42	63	1	0	7	61	12	2	12	6	61	0	10	4	3
11:45 AM	0	38	54	2	0	3	63	6	0	16	7	76	0	10	3	2
12:00 PM	1	51	66	3	2	6	67	10	0	9	6	68	0	9	9	5
12:15 PM	2	61	59	3	0	7	81	10	0	15	9	63	0	9	8	5
12:30 PM	1	42	73	5	0	7	74	13	2	7	10	84	0	14	8	4
12:45 PM	1	49	80	3	1	5	73	14	1	5	9	70	0	9	4	5
1:00 PM	2	59	61	3	0	4	85	13	0	10	6	70	0	15	11	1
1:15 PM	1	43	79	3	0	2	103	11	0	8	7	71	0	14	5	6
1:30 PM	1	35	61	1	0	8	95	21	0	15	7	86	0	14	6	2
1:45 PM	0	53	59	3	0	6	81	17	1	9	13	59	0	7	8	2

MID PEAK HOUR 12:45 PM to 1:45 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	5	**186**	**281**	**10**	**1**	**19**	**356**	**59**	**1**	**38**	**29**	**297**	**0**	**52**	**26**	**14**
PHF	**0.91**				**0.88**				**0.84**				**0.85**			
HV %	**0.0%**	**1.1%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**	**3.4%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 4
Location: Portsmouth, NH
Street 1: Woodbury Avenue
Street 2: Gosling Road
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	1	3	0	0	1	1	0	0	0	0	1	0	0	0	0
11:15 AM	0	2	1	0	0	0	1	0	0	1	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	1	2	0	0	0	0	0	0	0	0	1	0	0	0	0
1:30 PM	0	0	2	0	0	0	0	1	0	0	1	3	0	0	0	0
1:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 11:00 AM to 12:00 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**3**	**4**	**0**	**0**	**1**	**3**	**1**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**
PHF	**0.44**				**0.63**				**1.00**				**0.00**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 4
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Gosling Road
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Gosling Road Eastbound				Gosling Road Westbound			
12:45 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Durgin Lane & BJ Drive
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	1	42	11	0	1	81	4	0	2	0	2	0	3	1	3
7:15 AM	0	1	55	8	0	3	95	3	0	6	1	4	0	1	0	6
7:30 AM	0	0	60	7	0	2	108	10	0	5	0	4	0	6	0	3
7:45 AM	0	3	80	3	0	6	149	8	0	3	1	4	0	4	0	4
8:00 AM	0	3	56	11	0	13	125	15	0	5	1	8	0	5	0	6
8:15 AM	0	1	53	5	0	12	145	5	0	8	1	5	0	13	0	7
8:30 AM	0	1	64	13	0	7	138	15	0	4	0	6	0	7	0	6
8:45 AM	0	8	69	17	0	9	104	16	0	11	2	4	0	7	4	5

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	9	123	24	0	19	133	34	0	26	2	13	0	22	4	14
4:15 PM	0	3	97	18	0	16	151	27	0	31	6	19	0	25	6	18
4:30 PM	0	5	132	16	0	14	162	22	0	28	7	7	0	17	2	11
4:45 PM	0	2	137	22	0	16	150	33	0	23	2	11	0	30	4	21
5:00 PM	0	11	144	26	0	14	169	25	0	20	2	8	0	17	2	23
5:15 PM	0	5	119	14	0	18	167	34	0	20	4	20	0	20	4	18
5:30 PM	0	3	125	13	0	14	133	16	0	22	3	13	0	21	4	15
5:45 PM	0	2	116	19	0	17	131	21	0	23	1	16	0	12	3	10

AM PEAK HOUR 7:45 AM to 8:45 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**8**	**253**	**32**	**0**	**38**	**557**	**43**	**0**	**20**	**3**	**23**	**0**	**29**	**0**	**23**
PHF	**0.85**				**0.98**				**0.82**				**0.65**			
HV %	**0.0%**	**0.0%**	**2.8%**	**9.4%**	**0.0%**	**2.6%**	**2.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**8.7%**	**0.0%**	**3.4%**	**0.0%**	**4.3%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**23**	**532**	**78**	**0**	**62**	**648**	**114**	**0**	**91**	**15**	**46**	**0**	**84**	**12**	**73**
PHF	**0.87**				**0.94**				**0.86**				**0.77**			
HV %	**0.0%**	**0.0%**	**1.5%**	**0.0%**	**0.0%**	**1.6%**	**0.9%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.2%**	**0.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Durgin Lane & BJ Drive
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	3	0	0	0	4	0	0	1	0	1	0	0	0	0
7:30 AM	0	0	1	0	0	0	6	0	0	1	0	0	0	0	0	0
7:45 AM	0	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	3	2	0	0	3	0	0	0	0	0	0	1	0	0
8:15 AM	0	0	2	0	0	0	1	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	1	0	0	5	0	0	0	0	1	0	0	0	0
8:45 AM	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	1

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	2	0	0	0	1	1	0	0	0	0	0	1	0	0
4:30 PM	0	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**9**	**2**	**0**	**1**	**16**	**0**	**0**	**2**	**0**	**1**	**0**	**1**	**0**	**0**
PHF	**0.55**				**0.71**				**0.38**				**0.25**			

PM PEAK HOUR 4:15 PM to 5:15 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**8**	**0**	**0**	**1**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**
PHF	**1.00**				**0.56**				**0.00**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Durgin Lane & BJ Drive
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	5	0	0	0	0	0	2	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 7:45 AM to 8:45 AM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	1	0	0	1	0	0	0	0	2	0	0	0	0

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0

[1] NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 5
Location: Portsmouth, NH
Street 1: Woodbury Avenue
Street 2: Durgin Lane & BJ Drive
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	3	85	12	0	9	76	17	0	11	1	18	0	18	2	14
11:15 AM	0	6	65	15	0	11	116	19	0	13	5	11	0	9	3	7
11:30 AM	0	4	90	25	1	7	91	24	0	15	3	13	0	18	2	14
11:45 AM	0	2	84	13	0	10	119	40	0	16	3	10	0	23	1	5
12:00 PM	0	4	96	21	0	16	108	19	0	16	4	17	0	11	3	11
12:15 PM	0	6	104	16	0	10	134	23	0	23	4	11	0	23	1	7
12:30 PM	0	4	89	20	0	17	130	24	0	23	4	13	0	21	2	15
12:45 PM	0	6	110	17	0	15	113	34	0	18	0	18	0	22	4	11
1:00 PM	0	4	89	18	0	10	138	21	0	19	5	19	0	20	1	15
1:15 PM	1	6	89	23	0	12	149	25	0	12	4	10	0	24	3	15
1:30 PM	0	8	74	11	0	16	143	31	0	28	4	16	0	18	2	9
1:45 PM	0	6	91	22	0	17	110	24	0	14	1	18	0	18	2	9

MID PEAK HOUR 12:30 PM to 1:30 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	**20**	**377**	**78**	**0**	**54**	**530**	**104**	**0**	**72**	**13**	**60**	**0**	**87**	**10**	**56**
PHF	**0.89**				**0.92**				**0.84**				**0.91**			
HV %	**0.0%**	**0.0%**	**0.8%**	**1.3%**	**0.0%**	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Durgin Lane & BJ Drive
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
11:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	1	0	0	0	3	0	0	1	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 12:45 PM to 1:45 PM	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**4**	**1**	**0**	**0**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.42**				**0.42**				**0.25**				**0.00**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 5
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Durgin Lane & BJ Drive
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Woodbury Avenue Northbound				Woodbury Avenue Southbound				Durgin Lane Eastbound				BJ Drive Westbound			
12:30 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Market Street
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	10	10	3	0	7	1	1	0	0	40	15	0	9	35	11
7:15 AM	0	8	4	13	0	4	10	2	0	0	51	23	0	5	52	9
7:30 AM	0	11	4	7	0	10	6	1	0	0	44	31	0	14	61	20
7:45 AM	0	14	13	8	0	8	5	1	1	0	46	41	0	15	67	8
8:00 AM	0	14	4	12	0	8	6	1	0	0	53	49	0	22	60	20
8:15 AM	0	16	10	8	0	12	9	0	0	1	60	35	0	11	50	21
8:30 AM	0	30	6	12	0	6	7	1	1	1	60	41	0	8	59	18
8:45 AM	0	14	6	8	0	18	12	1	1	1	56	46	1	25	90	18

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	43	14	6	0	34	12	4	0	1	114	78	0	15	78	29
4:15 PM	0	39	13	10	0	32	20	7	0	2	100	76	0	20	62	33
4:30 PM	0	33	6	15	0	38	15	3	1	4	123	64	0	20	82	34
4:45 PM	0	45	13	22	0	44	11	3	0	3	136	84	0	22	105	29
5:00 PM	0	47	20	16	0	39	24	4	0	5	104	66	0	17	77	26
5:15 PM	0	40	17	26	0	37	24	3	0	1	139	71	0	18	95	26
5:30 PM	0	41	15	11	0	40	20	5	0	1	109	62	0	15	79	22
5:45 PM	0	31	12	16	0	22	14	4	0	0	110	71	0	23	77	20

AM PEAK HOUR 8:00 AM to 9:00 AM	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**74**	**26**	**40**	**0**	**44**	**34**	**3**	**2**	**3**	**229**	**171**	**1**	**66**	**259**	**77**
PHF	**0.73**				**0.65**				**0.97**				**0.75**			
HV %	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**4.5%**	**0.0%**	**33.3%**	**0.0%**	**0.0%**	**4.8%**	**1.2%**	**0.0%**	**0.0%**	**2.7%**	**2.6%**

PM PEAK HOUR 4:30 PM to 5:30 PM	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**165**	**56**	**79**	**0**	**158**	**74**	**13**	**1**	**13**	**502**	**285**	**0**	**77**	**359**	**115**
PHF	**0.90**				**0.91**				**0.90**				**0.88**			
HV %	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.8%**	**0.4%**	**0.0%**	**0.0%**	**0.8%**	**0.0%**

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Market Street
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
7:15 AM	0	1	0	2	0	0	0	0	0	0	3	2	0	1	1	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	3	1	0	1	1	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	2	1	0	0	2	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:45 AM	0	0	0	0	0	2	0	0	0	0	3	0	0	0	1	1

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
7:15 AM to 8:15 AM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**0**	**11**	**4**	**0**	**2**	**5**	**1**
PHF	**0.25**				**0.75**				**0.75**				**0.67**			

PM PEAK HOUR	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
4:00 PM to 5:00 PM	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	**3**	**0**	**0**	**2**	**0**
PHF	**0.25**				**0.50**				**0.88**				**0.50**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Market Street
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

AM PEAK HOUR[1]	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
8:00 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
9:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0

PM PEAK HOUR[1]	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
4:30 PM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
5:30 PM	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 6
Location: Portsmouth, NH
Street 1: Woodbury Avenue
Street 2: Market Street
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	30	15	7	0	33	7	3	0	3	60	41	0	11	71	25
11:15 AM	0	51	8	17	0	24	16	5	0	4	74	52	0	6	54	25
11:30 AM	0	36	15	8	0	24	12	3	0	5	80	59	0	17	85	30
11:45 AM	0	35	10	5	0	23	12	2	1	1	88	63	0	6	69	20
12:00 PM	0	37	13	11	0	23	16	3	0	3	69	69	0	9	74	24
12:15 PM	0	42	9	7	0	25	10	6	0	0	101	64	0	13	69	17
12:30 PM	0	41	13	9	0	19	9	3	0	4	96	58	0	11	86	22
12:45 PM	0	38	14	17	0	34	13	3	0	0	79	71	0	11	68	26
1:00 PM	0	40	12	18	0	23	14	5	0	3	97	75	0	14	74	32
1:15 PM	0	36	11	6	0	29	16	1	0	3	90	94	0	8	88	27
1:30 PM	0	30	12	7	0	45	16	3	0	3	103	82	0	15	63	25
1:45 PM	0	23	13	7	0	31	15	2	0	5	106	80	0	9	69	31

MID PEAK HOUR 1:00 PM to 2:00 PM	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**129**	**48**	**38**	**0**	**128**	**61**	**11**	**0**	**14**	**396**	**331**	**0**	**46**	**294**	**115**
PHF	**0.77**				**0.78**				**0.97**				**0.92**			
HV %	**0.0%**	**1.6%**	**0.0%**	**2.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**2.2%**	**1.4%**	**0.0%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 6
Location: Portsmouth, NH
Street 1: Woodbury Avenue
Street 2: Market Street
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

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HEAVY VEHICLES

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
12:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
1:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

MID PEAK HOUR 12:30 PM to 1:30 PM	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**4**	**0**
PHF	**0.25**				**0.25**				**0.63**				**0.33**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 6
Location:	Portsmouth, NH
Street 1:	Woodbury Avenue
Street 2:	Market Street
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

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PEDESTRIANS & BICYCLES

	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 1:00 PM to 2:00 PM	Woodbury Avenue Northbound				Market Basket Drive Southbound				Market Street Eastbound				Market Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 7
Location: Portsmouth, NH
Street 1: Arthur F Brady Drive
Street 2: Home Depot/South site access drive
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

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PASSENGER CARS & HEAVY VEHICLES COMBINED

					Home Depot/South site access drive				Arthur F Brady Drive				Arthur F Brady Drive			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	8	0	7	0	8	12	0	0	0	10	7
7:15 AM	0	0	0	0	0	7	0	2	0	7	9	0	0	0	10	6
7:30 AM	0	0	0	0	0	10	0	7	0	8	13	0	0	0	19	11
7:45 AM	0	0	0	0	0	13	0	11	0	9	20	0	0	0	19	19
8:00 AM	0	0	0	0	0	19	0	6	0	5	17	0	0	0	13	16
8:15 AM	0	0	0	0	0	16	0	10	0	14	19	0	0	0	11	12
8:30 AM	0	0	0	0	0	20	0	14	0	15	16	0	0	0	22	14
8:45 AM	0	0	0	0	0	29	0	9	0	18	18	0	0	0	16	21

					Home Depot/South site access drive				Arthur F Brady Drive				Arthur F Brady Drive			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	16	0	9	0	11	32	0	0	0	39	12
4:15 PM	0	0	0	0	0	15	0	20	0	15	44	0	0	0	27	13
4:30 PM	0	0	0	0	0	28	0	7	0	7	39	0	0	0	38	16
4:45 PM	0	0	0	0	0	25	0	8	0	14	35	0	0	0	39	11
5:00 PM	0	0	0	0	0	23	0	24	0	15	32	0	0	0	51	13
5:15 PM	0	0	0	0	0	12	0	12	0	15	34	0	0	0	60	17
5:30 PM	0	0	0	0	0	20	0	17	0	14	21	0	0	0	44	9
5:45 PM	0	0	0	0	0	23	0	18	0	16	19	0	0	0	29	14

AM PEAK HOUR					Home Depot/South site access drive				Arthur F Brady Drive				Arthur F Brady Drive			
8:00 AM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
9:00 AM	**0**	**0**	**0**	**0**	**0**	**84**	**0**	**39**	**0**	**52**	**70**	**0**	**0**	**0**	**62**	**63**
PHF	**0.00**				**0.81**				**0.85**				**0.84**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.9%**	**5.7%**	**0.0%**	**0.0%**	**0.0%**	**3.2%**	**0.0%**

PM PEAK HOUR					Home Depot/South site access drive				Arthur F Brady Drive				Arthur F Brady Drive			
4:30 PM	Northbound				Southbound				Eastbound				Westbound			
to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
5:30 PM	**0**	**0**	**0**	**0**	**0**	**88**	**0**	**51**	**0**	**51**	**140**	**0**	**0**	**0**	**188**	**57**
PHF	**0.00**				**0.74**				**0.97**				**0.80**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 7
Location: Portsmouth, NH
Street 1: Arthur F Brady Drive
Street 2: Home Depot/South site access drive
Count Date: 3/20/2024
Day of Week: Wednesday
Weather: Cloudy, 40°F

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HEAVY VEHICLES

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**1**	**0**
PHF	**0.00**				**0.00**				**0.75**				**0.25**			

PM PEAK HOUR 4:00 PM to 5:00 PM	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
PHF	**0.00**				**0.25**				**0.25**				**0.00**			

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Arthur F Brady Drive
Street 2:	Home Depot/South site access drive
Count Date:	3/20/2024
Day of Week:	Wednesday
Weather:	Cloudy, 40°F

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PEDESTRIANS & BICYCLES

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR[1] 8:00 AM to 9:00 AM	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0

PM PEAK HOUR[1] 4:30 PM to 5:30 PM	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] *NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.*

Client:	Matthew Stoutz, PE, PTOE, RSP1
Project #:	1486_4_TB
BTD #:	Location 7
Location:	Portsmouth, NH
Street 1:	Arthur F Brady Drive
Street 2:	Home Depot/South site access drive
Count Date:	3/23/2024
Day of Week:	Saturday
Weather:	Rain, 50°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
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PASSENGER CARS & HEAVY VEHICLES COMBINED

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	16	0	7	1	11	30	0	0	0	12	14
11:15 AM	0	0	0	0	0	14	0	9	0	26	33	0	0	0	14	16
11:30 AM	0	0	0	0	0	20	0	10	0	16	39	0	0	0	22	19
11:45 AM	0	0	0	0	0	25	0	11	0	19	32	0	0	0	21	12
12:00 PM	0	0	0	0	0	27	0	6	0	17	34	0	0	0	17	9
12:15 PM	0	0	0	0	0	22	0	6	1	18	37	0	0	0	21	12
12:30 PM	0	0	0	0	0	23	0	8	0	11	28	0	0	0	18	21
12:45 PM	0	0	0	0	0	23	0	10	0	9	37	0	0	0	14	15
1:00 PM	0	0	0	0	0	17	0	12	0	13	29	0	0	0	24	10
1:15 PM	0	0	0	0	0	19	0	10	0	21	38	0	0	0	17	15
1:30 PM	0	0	0	0	0	24	0	12	0	19	36	0	0	0	15	8
1:45 PM	0	0	0	0	0	20	0	9	0	10	39	0	0	0	16	8

MID PEAK HOUR 11:30 AM to 12:30 PM	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**0**	**0**	**0**	**94**	**0**	**33**	**1**	**70**	**142**	**0**	**0**	**0**	**81**	**52**
PHF	**0.00**				**0.88**				**0.95**				**0.81**			
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.4%**	**0.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.8%**

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 7
Location: Portsmouth, NH
Street 1: Arthur F Brady Drive
Street 2: Home Depot/South site access drive
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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www.BostonTrafficData.com

HEAVY VEHICLES

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
11:15 AM to	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**1**
PHF	**0.00**				**0.25**				**0.42**				**0.25**			

Client: Matthew Stoutz, PE, PTOE, RSP1
Project #: 1486_4_TB
BTD #: Location 7
Location: Portsmouth, NH
Street 1: Arthur F Brady Drive
Street 2: Home Depot/South site access drive
Count Date: 3/23/2024
Day of Week: Saturday
Weather: Rain, 50°F

BOSTON TRAFFIC DATA
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PEDESTRIANS & BICYCLES

	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
Start Time	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
11:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR	Northbound				Home Depot/South site access drive Southbound				Arthur F Brady Drive Eastbound				Arthur F Brady Drive Westbound			
11:30 AM to	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Speed Report

Job 1486_4_TB_ATR 1
Area Portsmouth, NH
Location Woodbury Ave NB, approx. 250' north of Durgin Lane
Dir Northbound
Wednesday, March 20, 2024

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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Time	Total	Speed Bins (mph)															
		0 5	5 10	10 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 75	75 80
0000	7	0	0	0	0	0	1	4	1	1	0	0	0	0	0	0	0
0100	4	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0
0200	9	0	0	0	0	0	2	4	3	0	0	0	0	0	0	0	0
0300	9	0	0	0	0	0	3	3	1	2	0	0	0	0	0	0	0
0400	20	0	0	0	0	0	4	8	5	3	0	0	0	0	0	0	0
0500	86	0	0	0	5	3	7	39	27	4	1	0	0	0	0	0	0
0600	173	0	0	0	4	6	33	71	48	10	1	0	0	0	0	0	0
0700	262	0	1	0	4	6	48	131	56	14	2	0	0	0	0	0	0
0800	281	0	0	0	5	9	65	140	50	11	1	0	0	0	0	0	0
0900	393	0	0	0	6	6	185	154	40	2	0	0	0	0	0	0	0
1000	463	0	0	1	6	32	167	213	43	1	0	0	0	0	0	0	0
1100	598	0	0	1	4	30	229	248	78	8	0	0	0	0	0	0	0
1200	687	0	0	1	11	61	266	274	66	7	1	0	0	0	0	0	0
1300	626	0	0	2	5	41	290	236	48	4	0	0	0	0	0	0	0
1400	565	0	0	1	5	36	226	255	39	3	0	0	0	0	0	0	0
1500	545	0	1	1	7	23	202	241	63	5	2	0	0	0	0	0	0
1600	607	0	0	3	11	27	215	270	73	7	1	0	0	0	0	0	0
1700	616	0	0	2	15	47	203	266	75	8	0	0	0	0	0	0	0
1800	424	0	0	0	6	12	125	198	74	8	1	0	0	0	0	0	0
1900	297	0	0	1	4	6	86	153	37	10	0	0	0	0	0	0	0
2000	150	0	0	0	2	6	28	67	41	6	0	0	0	0	0	0	0
2100	82	0	0	0	1	2	19	44	11	5	0	0	0	0	0	0	0
2200	32	0	0	0	0	1	8	19	4	0	0	0	0	0	0	0	0
2300	16	0	0	1	0	1	2	8	3	1	0	0	0	0	0	0	0
Total	**6952**	**0**	**2**	**14**	**101**	**355**	**2415**	**3048**	**887**	**120**	**10**	**0**	**0**	**0**	**0**	**0**	**0**
	100.00%	**0.00%**	**0.03%**	**0.20%**	**1.45%**	**5.11%**	**34.74%**	**43.84%**	**12.76%**	**1.73%**	**0.14%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Maximum = 47.6 mph, Minimum = 7.0 mph, Mean = 30.8 mph
85% Speed = 34.90 mph, 95% Speed = 37.64 mph, Median = 30.81 mph
10 mph Pace = 26 - 36, Number in Pace = 5539 (79.67%)
Variance = 18.52, Standard Deviation = 4.30 mph

Speed Report

Job 1486_4_TB_ATR 1
Area Portsmouth, NH
Location Woodbury Ave NB, approx. 250' north of Durgin Lane
Dir Northbound
Thursday, March 21, 2024

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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Time	Total	Speed Bins (mph)															
		0 5	5 10	10 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 75	75 80
0000	9	0	0	0	0	0	3	3	2	1	0	0	0	0	0	0	0
0100	5	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0
0200	7	0	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0
0300	15	0	0	0	0	1	4	7	3	0	0	0	0	0	0	0	0
0400	31	0	0	0	1	0	2	14	10	4	0	0	0	0	0	0	0
0500	81	0	0	1	0	2	16	29	20	9	4	0	0	0	0	0	0
0600	176	0	0	0	2	3	27	91	41	10	2	0	0	0	0	0	0
0700	279	0	0	2	9	15	56	125	61	9	2	0	0	0	0	0	0
0800	323	0	0	1	3	19	108	143	45	4	0	0	0	0	0	0	0
0900	350	0	0	1	5	11	116	177	32	8	0	0	0	0	0	0	0
1000	456	0	0	1	4	24	184	200	39	3	1	0	0	0	0	0	0
1100	526	0	0	1	9	37	200	225	51	2	1	0	0	0	0	0	0
1200	687	0	0	1	11	61	286	263	58	7	0	0	0	0	0	0	0
1300	601	0	0	0	11	50	296	187	51	4	2	0	0	0	0	0	0
1400	609	0	0	2	8	41	234	263	59	2	0	0	0	0	0	0	0
1500	616	0	0	1	9	39	240	268	52	7	0	0	0	0	0	0	0
1600	630	0	0	0	9	33	231	286	65	5	1	0	0	0	0	0	0
1700	604	0	0	0	14	34	179	297	72	7	1	0	0	0	0	0	0
1800	441	0	0	4	9	18	143	199	64	3	1	0	0	0	0	0	0
1900	274	0	0	2	1	5	68	146	45	6	1	0	0	0	0	0	0
2000	167	0	0	0	3	3	43	82	31	5	0	0	0	0	0	0	0
2100	77	0	0	1	0	0	14	39	19	4	0	0	0	0	0	0	0
2200	37	0	0	0	0	0	8	20	7	2	0	0	0	0	0	0	0
2300	18	0	0	0	0	1	6	2	8	0	1	0	0	0	0	0	0
Total	**7019**	**0**	**0**	**18**	**108**	**397**	**2466**	**3071**	**839**	**103**	**17**	**0**	**0**	**0**	**0**	**0**	**0**
	100.00%	**0.00%**	**0.00%**	**0.26%**	**1.54%**	**5.66%**	**35.13%**	**43.75%**	**11.95%**	**1.47%**	**0.24%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Maximum = 48.2 mph, Minimum = 10.5 mph, Mean = 30.7 mph
85% Speed = 34.78 mph, 95% Speed = 37.41 mph, Median = 30.76 mph
10 mph Pace = 26 - 36, Number in Pace = 5625 (80.14%)
Variance = 18.91, Standard Deviation = 4.35 mph

Speed Report

Job 1486_4_TB_ATR 2
Area Portsmouth, NH
Location Woodbury Ave SB, approx. 250' north of Durgin Lane
Dir Southbound
Wednesday, March 20, 2024

Time	Total	Speed Bins (mph)															
		0 5	**5 10**	**10 15**	**15 20**	**20 25**	**25 30**	**30 35**	**35 40**	**40 45**	**45 50**	**50 55**	**55 60**	**60 65**	**65 70**	**70 75**	**75 80**
0000	19	0	0	0	0	1	6	11	0	1	0	0	0	0	0	0	0
0100	8	0	0	0	0	1	2	3	1	1	0	0	0	0	0	0	0
0200	14	0	0	0	0	1	5	5	3	0	0	0	0	0	0	0	0
0300	21	0	0	0	0	1	2	15	2	1	0	0	0	0	0	0	0
0400	47	0	0	0	0	1	9	23	12	1	1	0	0	0	0	0	0
0500	78	0	0	0	0	4	21	39	11	3	0	0	0	0	0	0	0
0600	192	0	1	1	1	10	49	98	29	3	0	0	0	0	0	0	0
0700	456	0	0	2	16	59	137	173	60	6	3	0	0	0	0	0	0
0800	584	0	0	7	22	94	209	182	62	7	1	0	0	0	0	0	0
0900	533	0	0	0	33	107	195	158	38	2	0	0	0	0	0	0	0
1000	561	0	2	17	65	157	209	92	17	2	0	0	0	0	0	0	0
1100	769	0	1	32	85	212	247	163	27	1	1	0	0	0	0	0	0
1200	896	4	13	59	119	248	291	138	21	2	1	0	0	0	0	0	0
1300	741	0	3	30	68	161	293	162	23	1	0	0	0	0	0	0	0
1400	692	0	4	27	100	180	227	128	25	1	0	0	0	0	0	0	0
1500	712	1	8	23	85	170	267	127	31	0	0	0	0	0	0	0	0
1600	728	1	4	27	96	186	251	136	27	0	0	0	0	0	0	0	0
1700	692	0	5	26	64	183	250	140	24	0	0	0	0	0	0	0	0
1800	511	0	1	3	24	153	197	111	22	0	0	0	0	0	0	0	0
1900	420	0	0	1	19	93	163	117	26	1	0	0	0	0	0	0	0
2000	213	0	0	0	5	23	80	88	16	1	0	0	0	0	0	0	0
2100	127	0	0	0	3	11	48	51	14	0	0	0	0	0	0	0	0
2200	69	0	0	0	0	1	15	39	14	0	0	0	0	0	0	0	0
2300	40	0	0	0	0	2	13	20	3	2	0	0	0	0	0	0	0
Total	**9123**	**6**	**42**	**255**	**805**	**2059**	**3186**	**2219**	**508**	**36**	**7**	**0**	**0**	**0**	**0**	**0**	**0**
	100.00%	**0.07%**	**0.46%**	**2.80%**	**8.82%**	**22.57%**	**34.92%**	**24.32%**	**5.57%**	**0.39%**	**0.08%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Maximum = 47.1 mph, Minimum = 2.9 mph, Mean = 26.8 mph
85% Speed = 32.66 mph, 95% Speed = 35.40 mph, Median = 27.18 mph
10 mph Pace = 23 - 33, Number in Pace = 5822 (63.82%)
Variance = 33.38, Standard Deviation = 5.78 mph

Speed Report

Job 1486_4_TB_ATR 2
Area Portsmouth, NH
Location Woodbury Ave SB, approx. 250’ north of Durgin Lane
Dir Southbound
Thursday, March 21, 2024

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
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Time	Total	Speed Bins (mph) 0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
0000	15	0	0	0	0	0	8	6	1	0	0	0	0	0	0	0	0
0100	11	0	0	0	0	1	3	5	2	0	0	0	0	0	0	0	0
0200	20	0	0	0	0	2	2	9	6	1	0	0	0	0	0	0	0
0300	17	0	0	0	1	3	4	7	2	0	0	0	0	0	0	0	0
0400	56	0	0	0	1	3	17	24	9	2	0	0	0	0	0	0	0
0500	97	0	0	1	1	9	38	42	6	0	0	0	0	0	0	0	0
0600	164	0	0	0	3	10	42	85	22	2	0	0	0	0	0	0	0
0700	460	0	0	2	5	37	131	197	76	12	0	0	0	0	0	0	0
0800	599	0	1	4	22	95	196	191	79	10	1	0	0	0	0	0	0
0900	511	0	1	8	30	115	170	150	33	3	1	0	0	0	0	0	0
1000	563	0	0	2	36	125	228	139	29	3	1	0	0	0	0	0	0
1100	743	0	5	23	81	184	267	148	34	1	0	0	0	0	0	0	0
1200	863	1	7	58	116	215	259	167	39	1	0	0	0	0	0	0	0
1300	726	1	1	30	88	172	232	181	19	2	0	0	0	0	0	0	0
1400	687	0	3	24	88	167	229	147	27	2	0	0	0	0	0	0	0
1500	747	0	3	22	70	184	241	196	31	0	0	0	0	0	0	0	0
1600	759	0	3	32	91	191	282	133	26	1	0	0	0	0	0	0	0
1700	648	0	4	26	73	131	201	175	33	5	0	0	0	0	0	0	0
1800	536	0	0	3	25	122	205	153	23	5	0	0	0	0	0	0	0
1900	416	0	0	4	22	76	175	120	19	0	0	0	0	0	0	0	0
2000	268	0	0	1	6	39	121	76	24	1	0	0	0	0	0	0	0
2100	121	0	0	0	1	8	33	57	20	1	1	0	0	0	0	0	0
2200	55	0	0	0	0	0	18	26	9	2	0	0	0	0	0	0	0
2300	41	0	0	0	0	0	7	27	7	0	0	0	0	0	0	0	0
Total	**9123**	**2**	**28**	**240**	**760**	**1889**	**3109**	**2461**	**576**	**54**	**4**	**0**	**0**	**0**	**0**	**0**	**0**
	100.00%	**0.02%**	**0.31%**	**2.63%**	**8.33%**	**20.71%**	**34.08%**	**26.98%**	**6.31%**	**0.59%**	**0.04%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Maximum = 46.8 mph, Minimum = 3.1 mph, Mean = 27.3 mph
85% Speed = 32.99 mph, 95% Speed = 35.79 mph, Median = 27.79 mph
10 mph Pace = 23 - 33, Number in Pace = 5794 (63.51%)
Variance = 33.43, Standard Deviation = 5.78 mph

Volume Report

Job 1486_4_TB_ATR 1
Area Portsmouth, NH
Location Woodbury Ave NB, approx. 250’ north of Durgin Lane

BOSTON TRAFFIC DATA
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www.BostonTrafficData.com

Wednesday, March 20, 2024

Time	Total		NB				Time	Total		NB			
0000	2		2		0		1200	165		165		0	
0015	1		1		0		1215	167		167		0	
0030	3		3		0		1230	187		187		0	
0045	1	7	1	7	0	0	1245	168	687	168	687	0	0
0100	0		0		0		1300	188		188		0	
0115	1		1		0		1315	149		149		0	
0130	1		1		0		1330	159		159		0	
0145	2	4	2	4	0	0	1345	130	626	130	626	0	0
0200	5		5		0		1400	146		146		0	
0215	1		1		0		1415	138		138		0	
0230	2		2		0		1430	143		143		0	
0245	1	9	1	9	0	0	1445	138	565	138	565	0	0
0300	1		1		0		1500	129		129		0	
0315	1		1		0		1515	148		148		0	
0330	4		4		0		1530	140		140		0	
0345	3	9	3	9	0	0	1545	128	545	128	545	0	0
0400	3		3		0		1600	143		143		0	
0415	3		3		0		1615	143		143		0	
0430	8		8		0		1630	158		158		0	
0445	6	20	6	20	0	0	1645	163	607	163	607	0	0
0500	9		9		0		1700	168		168		0	
0515	18		18		0		1715	150		150		0	
0530	31		31		0		1730	150		150		0	
0545	28	86	28	86	0	0	1745	148	616	148	616	0	0
0600	30		30		0		1800	102		102		0	
0615	38		38		0		1815	105		105		0	
0630	55		55		0		1830	125		125		0	
0645	50	173	50	173	0	0	1845	92	424	92	424	0	0
0700	48		48		0		1900	99		99		0	
0715	62		62		0		1915	81		81		0	
0730	66		66		0		1930	62		62		0	
0745	86	262	86	262	0	0	1945	55	297	55	297	0	0
0800	62		62		0		2000	50		50		0	
0815	63		63		0		2015	47		47		0	
0830	72		72		0		2030	36		36		0	
0845	84	281	84	281	0	0	2045	17	150	17	150	0	0
0900	95		95		0		2100	26		26		0	
0915	93		93		0		2115	24		24		0	
0930	89		89		0		2130	21		21		0	
0945	116	393	116	393	0	0	2145	11	82	11	82	0	0
1000	120		120		0		2200	16		16		0	
1015	106		106		0		2215	4		4		0	
1030	101		101		0		2230	4		4		0	
1045	136	463	136	463	0	0	2245	8	32	8	32	0	0
1100	151		151		0		2300	5		5		0	
1115	147		147		0		2315	5		5		0	
1130	150		150		0		2330	2		2		0	
1145	150	598	150	598	0	0	2345	4	16	4	16	0	0
							Total	**6952**		**6952**		**0**	

Volume Report

Job 1486_4_TB_ATR 1
Area Portsmouth, NH
Location Woodbury Ave NB, approx. 250’ north of Durgin Lane

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Thursday, March 21, 2024

Time	Total		NB				Time	Total		NB			
0000	3		3		0		1200	165		165		0	
0015	3		3		0		1215	172		172		0	
0030	2		2		0		1230	190		190		0	
0045	1	9	1	9	0	0	1245	160	687	160	687	0	0
0100	0		0		0		1300	161		161		0	
0115	0		0		0		1315	155		155		0	
0130	2		2		0		1330	144		144		0	
0145	3	5	3	5	0	0	1345	141	601	141	601	0	0
0200	5		5		0		1400	132		132		0	
0215	0		0		0		1415	161		161		0	
0230	1		1		0		1430	150		150		0	
0245	1	7	1	7	0	0	1445	166	609	166	609	0	0
0300	3		3		0		1500	142		142		0	
0315	4		4		0		1515	170		170		0	
0330	4		4		0		1530	153		153		0	
0345	4	15	4	15	0	0	1545	151	616	151	616	0	0
0400	5		5		0		1600	151		151		0	
0415	4		4		0		1615	144		144		0	
0430	10		10		0		1630	169		169		0	
0445	12	31	12	31	0	0	1645	166	630	166	630	0	0
0500	7		7		0		1700	173		173		0	
0515	15		15		0		1715	132		132		0	
0530	25		25		0		1730	162		162		0	
0545	34	81	34	81	0	0	1745	137	604	137	604	0	0
0600	28		28		0		1800	106		106		0	
0615	37		37		0		1815	100		100		0	
0630	57		57		0		1830	115		115		0	
0645	54	176	54	176	0	0	1845	120	441	120	441	0	0
0700	47		47		0		1900	103		103		0	
0715	61		61		0		1915	64		64		0	
0730	87		87		0		1930	54		54		0	
0745	84	279	84	279	0	0	1945	53	274	53	274	0	0
0800	67		67		0		2000	46		46		0	
0815	75		75		0		2015	52		52		0	
0830	93		93		0		2030	39		39		0	
0845	88	323	88	323	0	0	2045	30	167	30	167	0	0
0900	75		75		0		2100	28		28		0	
0915	91		91		0		2115	23		23		0	
0930	81		81		0		2130	15		15		0	
0945	103	350	103	350	0	0	2145	11	77	11	77	0	0
1000	102		102		0		2200	10		10		0	
1015	111		111		0		2215	8		8		0	
1030	115		115		0		2230	9		9		0	
1045	128	456	128	456	0	0	2245	10	37	10	37	0	0
1100	111		111		0		2300	7		7		0	
1115	132		132		0		2315	3		3		0	
1130	134		134		0		2330	4		4		0	
1145	149	526	149	526	0	0	2345	4	18	4	18	0	0
							Total	**7019**		**7019**		**0**	

Volume Report

Job 1486_4_TB_ATR 2
Area Portsmouth, NH
Location Woodbury Ave SB, approx. 250' north of Durgin Lane

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Wednesday, March 20, 2024

Time	Total		SB				Time	Total		SB			
0000	10		10		0		1200	231		231		0	
0015	4		4		0		1215	236		236		0	
0030	3		3		0		1230	214		214		0	
0045	2	19	2	19	0	0	1245	215	896	215	896	0	0
0100	4		4		0		1300	186		186		0	
0115	2		2		0		1315	168		168		0	
0130	1		1		0		1330	206		206		0	
0145	1	8	1	8	0	0	1345	181	741	181	741	0	0
0200	4		4		0		1400	167		167		0	
0215	2		2		0		1415	157		157		0	
0230	5		5		0		1430	186		186		0	
0245	3	14	3	14	0	0	1445	182	692	182	692	0	0
0300	2		2		0		1500	172		172		0	
0315	1		1		0		1515	174		174		0	
0330	6		6		0		1530	182		182		0	
0345	12	21	12	21	0	0	1545	184	712	184	712	0	0
0400	6		6		0		1600	185		185		0	
0415	10		10		0		1615	185		185		0	
0430	12		12		0		1630	167		167		0	
0445	19	47	19	47	0	0	1645	191	728	191	728	0	0
0500	18		18		0		1700	174		174		0	
0515	16		16		0		1715	205		205		0	
0530	20		20		0		1730	162		162		0	
0545	24	78	24	78	0	0	1745	151	692	151	692	0	0
0600	23		23		0		1800	151		151		0	
0615	38		38		0		1815	139		139		0	
0630	53		53		0		1830	107		107		0	
0645	78	192	78	192	0	0	1845	114	511	114	511	0	0
0700	81		81		0		1900	132		132		0	
0715	95		95		0		1915	100		100		0	
0730	118		118		0		1930	114		114		0	
0745	162	456	162	456	0	0	1945	74	420	74	420	0	0
0800	143		143		0		2000	74		74		0	
0815	154		154		0		2015	69		69		0	
0830	159		159		0		2030	35		35		0	
0845	128	584	128	584	0	0	2045	35	213	35	213	0	0
0900	123		123		0		2100	39		39		0	
0915	134		134		0		2115	41		41		0	
0930	129		129		0		2130	20		20		0	
0945	147	533	147	533	0	0	2145	27	127	27	127	0	0
1000	122		122		0		2200	25		25		0	
1015	135		135		0		2215	15		15		0	
1030	156		156		0		2230	13		13		0	
1045	148	561	148	561	0	0	2245	16	69	16	69	0	0
1100	158		158		0		2300	11		11		0	
1115	190		190		0		2315	9		9		0	
1130	204		204		0		2330	15		15		0	
1145	217	769	217	769	0	0	2345	5	40	5	40	0	0
							Total	**9123**		**9123**		**0**	

Volume Report

Job 1486_4_TB_ATR 2
Area Portsmouth, NH
Location Woodbury Ave SB, approx. 250’ north of Durgin Lane

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Thursday, March 21, 2024

Time	Total		SB				Time	Total		SB			
0000	8		8		0		1200	222		222		0	
0015	0		0		0		1215	221		221		0	
0030	3		3		0		1230	198		198		0	
0045	4	15	4	15	0	0	1245	222	863	222	863	0	0
0100	3		3		0		1300	208		208		0	
0115	2		2		0		1315	166		166		0	
0130	3		3		0		1330	190		190		0	
0145	3	11	3	11	0	0	1345	162	726	162	726	0	0
0200	8		8		0		1400	161		161		0	
0215	2		2		0		1415	174		174		0	
0230	4		4		0		1430	169		169		0	
0245	6	20	6	20	0	0	1445	183	687	183	687	0	0
0300	1		1		0		1500	196		196		0	
0315	4		4		0		1515	185		185		0	
0330	6		6		0		1530	187		187		0	
0345	6	17	6	17	0	0	1545	179	747	179	747	0	0
0400	11		11		0		1600	192		192		0	
0415	12		12		0		1615	201		201		0	
0430	22		22		0		1630	165		165		0	
0445	11	56	11	56	0	0	1645	201	759	201	759	0	0
0500	15		15		0		1700	181		181		0	
0515	16		16		0		1715	167		167		0	
0530	22		22		0		1730	147		147		0	
0545	44	97	44	97	0	0	1745	153	648	153	648	0	0
0600	20		20		0		1800	157		157		0	
0615	43		43		0		1815	124		124		0	
0630	52		52		0		1830	144		144		0	
0645	49	164	49	164	0	0	1845	111	536	111	536	0	0
0700	96		96		0		1900	133		133		0	
0715	98		98		0		1915	121		121		0	
0730	121		121		0		1930	88		88		0	
0745	145	460	145	460	0	0	1945	74	416	74	416	0	0
0800	140		140		0		2000	93		93		0	
0815	176		176		0		2015	65		65		0	
0830	146		146		0		2030	66		66		0	
0845	137	599	137	599	0	0	2045	44	268	44	268	0	0
0900	113		113		0		2100	44		44		0	
0915	125		125		0		2115	28		28		0	
0930	136		136		0		2130	19		19		0	
0945	137	511	137	511	0	0	2145	30	121	30	121	0	0
1000	136		136		0		2200	13		13		0	
1015	132		132		0		2215	14		14		0	
1030	131		131		0		2230	16		16		0	
1045	164	563	164	563	0	0	2245	12	55	12	55	0	0
1100	175		175		0		2300	16		16		0	
1115	188		188		0		2315	6		6		0	
1130	210		210		0		2330	7		7		0	
1145	170	743	170	743	0	0	2345	12	41	12	41	0	0
							Total	**9123**		**9123**		**0**	

APPENDIX B
NHDOT Traffic Data

Year 2019 Monthly Data

Group 4 Averages: Urban Highways

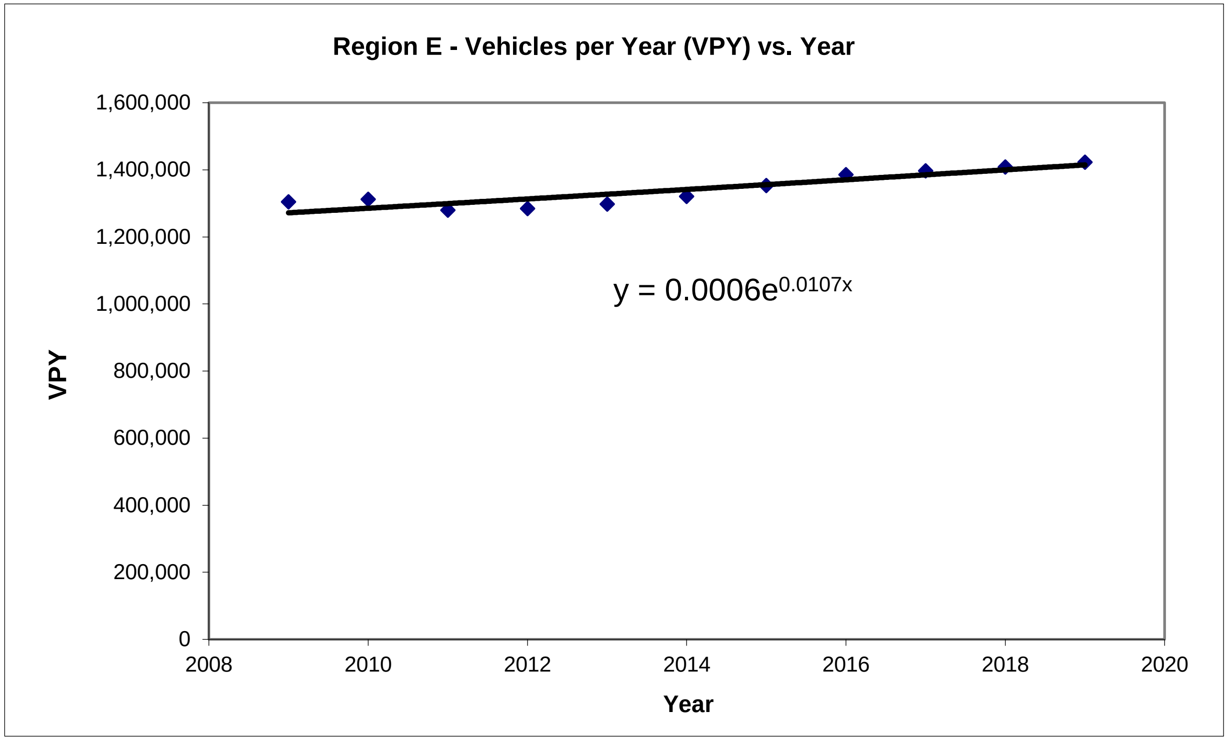
Month	ADT	Adjustment to Average	Adjustment to Peak
January	11,431	1.12	1.23
February	11,848	1.08	1.18
March	12,141	1.06	1.15
April	12,860	1.00	1.09
May	13,551	0.95	1.03
June	13,785	0.93	1.02
July	13,942	0.92	1.01
August	14,016	0.92	1.00
September	13,379	0.96	1.05
October	13,339	0.96	1.05
November	12,265	1.05	1.14
December	11,496	1.12	1.22

Average ADT: 12,838
Peak ADT: 14,016

GROUP	COUNTER	TOWN	LOCATION
04	02051003	BOW	NH 3A south of Robinson Rd
04	02089001	CHICHESTER	NH 28 (Suncook Valley Rd) north of Bear Hill Rd
04	02091001	CLAREMONT	NH 12/103 east of Vermont SL
04	62099056	CONCORD	NH 106 (Sheep Davis Rd) at Loudon TL (north of Ashby Rd)
04	72099278	CONCORD	US 3 (Fisherville Rd) north of Sewalls Falls Rd
04	02125001	DOVER	Dover Point Rd south of Thornwood Ln
04	02133021	DURHAM	US 4 east of NH 108
04	82197076	HAMPTON	US 1 (Lafayette Rd) south of Ramp to NH 101
04	*02229022*	*HUDSON**	*Circumferential Hwy east of Nashua TL*
04	02253025	LEBANON	NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
04	02255001	LEE	NH 125 (Calef Hwy) north of Pinkham Rd
04	02287001	MARLBOROUGH	NH 12 at Swanzey TL
04	02297001	MERRIMACK	US 3 (Daniel Webster Hwy) north of Hilton Dr
04	*02303001*	*MILFORD**	*NH 101A at Amherst TL (west of Overlook Dr)*
04	*02315051*	*NASHUA**	*NH 111 (Bridge / Ferry St) at Hudson TL*
04	02339001	NEWPORT	NH 10 1 mile south of Croydon TL (north of Corbin Rd)
04	02345001	NORTH HAMPTON	US 1 (Lafayette Rd) north of North Rd
04	*62387052*	*RINDGE**	*US 202 at Jaffrey TL (north of County Rd)*
04	02445001	TEMPLE	NH 101 at Wilton TL (west of Old County Farm Rd)
04	02489001	WINDHAM	NH 28 at Derry TL (north of Northland Rd)

** denotes counter that is not included in calculation*

Year	Total
2009	1303948
2010	1312251
2011	1279824
2012	1284314
2013	1298171
2014	1320862
2015	1353486
2016	1385361
2017	1396932
2018	1408237
2019	1422176
CAGR	0.87%
Exp	1.07%
Avg	0.97%



APPENDIX C

Traffic Volume Adjustment Calculation

Traffic Volume Adjustment Check

Time Period	City of Portsmouth(GRIDSMART Turning Movement Counts) - South & Lafayette 2019 Traffic Volumes						2024 Traffic Volumes						Comparison						
	Tues 3/19/2019	Wed 3/20/2019	Thurs 3/21/2019	Sat 3/23/2019	Average (Tues-Wed)	Average (Tues-Thurs)	Tues 3/19/2024	Wed 3/20/2024	Thurs 3/21/2024	Sat 3/23/2024	Average (Tues-Wed)	Average (Tues-Thurs)	Tues-Tues Comparison	Wed-Wed Comparison	Thurs-Thurs Comparison	Tues-Thurs Avg Comparison	Saturday Comparison	Average	Notes
Daily	15,492	15,909	15,884	13,216	15,701	15,125	14,450	14,338	14,179	8,951	12,980	12,980	***-6.7%***	***-9.9%***	***-10.7%***	***-14.2%***	-32.3%	--	--
Weekday AM Peak (8AM-9AM)	1,173	1,172	1,271	--	1,173	1,205	1,279	1,222	1,157	--	1,251	1,219				***1.2%***	--	--	***No adjustment necessary***
Weekday PM Peak (4PM-5PM)	1,255	1,268	1,317	--	1,262	1,280	1,175	1,178	1,183	--	1,177	1,179	*-6.4%*	*-7.1%*	*-10.2%*	***-7.9%***	--	-9%	***Volumes adjusted up by 9%***
Weekday PM Peak (5PM-6PM)	1,287	1,290	1,265	--	1,289	1,281	1,187	1,180	1,076	--	1,184	1,148				***-10.4%***	--		
Sat Midday Peak (11AM-12PM)	--	--	--	1,102	--	--	--	--	--	765	--	--	**--**	**--**	**--**	**--**	-30.6%	-33%	***Volumes adjusted up by 33%***
Sat Midday Peak (12PM-1PM)	--	--	--	1,161	--	--	--	--	--	743	--	--				**--**	-36.0%		

GRIDSMART

Turning Movement Counts

Intersection South & Lafayette
Date 3/19/2019

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	2	4	1		3	7	7		9	1			7	8
01:00	1	4	1		2	4	1		15				1	1
02:00	1	7			1	2	1	1	12					4
03:00	2	4							5	1			2	4
04:00	9	10	3		2	3			20				9	20
05:00	13	33	2		16	7		3	55			5	17	48
06:00	77	105	11		10	39	5	5	90	1		4	50	86
07:00	117	195	32		44	122	20	11	235	19		9	86	190
08:00	94	270	26		44	113	25	14	274	22		25	93	173
09:00	128	204	31		19	70	25	9	190	5		6	72	125
10:00	111	239	28		21	89	29	6	216	6		12	67	100
11:00	116	293	43	1	16	105	28	3	230	7	2	7	77	134
12:00	121	288	33		32	92	31	9	235	9		11	68	150
13:00	139	288	52	1	30	92	26	13	215	10		7	82	137
14:00	138	257	29		36	105	36	9	230	8		17	110	159
15:00	133	319	65		32	82	46	17	268	17		27	143	212
16:00	131	295	39		30	130	41	12	272	9		20	113	163
17:00	131	370	55		25	126	24	3	291	8		29	97	128
18:00	103	279	34		30	85	16	3	201	10		14	56	97
19:00	57	96	28		42	56	5	3	134	5		8	35	58
20:00	43	59	26		19	35	6	2	102	5		6	17	43
21:00	21	28	12		11	26	8	4	80	7		6	14	28
22:00	14	13	1		3	18	3	1	48	1		1	10	15
23:00	4	7	3		4	13	1		21	1		2	10	20
Total	**1706**	**3667**	**555**	**2**	**472**	**1421**	**384**	**128**	**3448**	**152**	**2**	**216**	**1236**	**2103**

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Turning Movement Counts

Intersection South & Lafayette
Date 3/20/2019

	Northbound				Eastbound			Southbound				Westbound			
	R	T	L	U	R	T	L	R	T	L	U	R	T	L	U
00:00	5	7			4	3	1	1	13				3	7	
01:00		3			1	2			16					4	
02:00	1	4				1			7				3	1	
03:00	1	9				1			8	1			1	9	
04:00	6	8			4	2			15				5	14	
05:00	9	32	2		7	6	1	2	50	1		4	11	48	
06:00	82	88	8		11	44	3	3	86	1		3	43	89	
07:00	114	189	27		50	125	12	8	242	25		14	87	193	
08:00	98	267	35		40	111	25	9	277	13		20	118	159	
09:00	105	231	37		18	83	24	9	192	5		10	71	126	
10:00	107	281	36		26	81	21	6	196	12		8	70	138	
11:00	136	293	42		20	100	36	11	228	8		15	76	150	
12:00	118	284	45	2	20	97	33	10	254	12	1	17	95	165	
13:00	131	296	44		27	88	30	13	282	16		13	89	148	1
14:00	165	261	33		27	107	36	7	219	11		16	108	173	
15:00	131	302	61		30	92	27	9	266	18		22	173	193	
16:00	130	295	39		34	128	55	7	300	15		20	109	136	
17:00	150	331	59		37	129	41	3	287	15		13	90	135	
18:00	107	289	37		28	109	19	2	196	10		8	55	102	1
19:00	47	87	16		34	48	14	3	136	5		9	58	84	
20:00	39	79	20		16	52	9	4	119	5		1	32	47	
21:00	29	34	11		13	31	3	4	78	3		13	28	33	
22:00	14	7	4		7	23	1		63	1			10	14	
23:00	7	10			2	15			34			1	14	28	
Total	**1732**	**3687**	**556**	**2**	**456**	**1478**	**391**	**111**	**3564**	**177**	**1**	**207**	**1349**	**2196**	**2**

Turning Movement Counts

Intersection South & Lafayette
Date 3/21/2019

	Northbound				Eastbound			Southbound			Westbound			
	R	T	L	U	R	T	L	R	T	L	R	T	L	U
00:00	2	6	2		3	5	4		7		2	4	8	
01:00	2	1			1	3		1	6		1	5	2	
02:00	1	5			3	2			8				3	
03:00		8			1			1	7		1	4	2	
04:00	6	8	1		1	1			12		1	7	9	
05:00	9	27	2		10	6	2	2	52	1	3	18	47	
06:00	68	107	10		8	44	4	2	88	1	4	45	77	
07:00	108	185	26		39	116	11	9	242	25	13	74	178	
08:00	93	280	51		42	119	13	12	311	17	19	114	200	
09:00	123	233	34		15	76	26	11	175	8	9	84	150	
10:00	118	220	33		21	88	27	5	190	3	7	81	135	1
11:00	137	306	30		29	87	35	9	229	10	7	66	128	
12:00	118	300	29	1	26	103	31	9	259	20	8	84	134	
13:00	114	287	50		22	86	33	4	259	11	13	98	152	
14:00	133	268	23		31	95	35	8	229	10	17	105	138	
15:00	131	325	72		38	103	33	12	259	16	26	120	205	
16:00	151	302	50		41	137	37	13	295	16	12	106	157	
17:00	134	352	54		23	123	44	4	275	15	19	85	137	
18:00	87	257	37		32	94	29	3	223	19	10	69	111	
19:00	54	98	38		36	72	12	5	156	6	16	42	82	
20:00	28	53	23		30	36	8	3	113	7	4	31	46	
21:00	23	51	8		20	30	6	6	95	9	4	25	28	
22:00	15	23	6		9	18	4	5	58	4	2	15	20	
23:00	10	21	7		5	15	1	2	31		1	11	24	
Total	**1665**	**3723**	**586**	**1**	**486**	**1459**	**395**	**126**	**3579**	**198**	**199**	**1293**	**2173**	**1**

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Turning Movement Counts

Intersection South & Lafayette
Date 3/23/2019

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00	7	18			4	15	1	3	37	1		1	13	16
01:00	3	12	2		2	9	1	1	42			2	1	6
02:00	7	9			1	2	1		14			2	3	2
03:00	3	5			1	1			9				4	7
04:00	5	6	2		3	1		1	6			1	4	9
05:00	3	8	4		3	4			18			2	8	12
06:00	41	36	4		5	20	1		34	1		1	18	30
07:00	43	91	6		8	23	4	2	91	1		1	33	86
08:00	53	173	23		15	46	6	2	158	1		7	32	92
09:00	96	246	16		12	49	16	5	191	6		7	74	130
10:00	99	279	29	1	28	66	25	7	220	9		9	54	127
11:00	112	311	37		41	75	35	2	244	12		12	71	150
12:00	103	347	34		22	114	28	11	256	14	1	15	75	141
13:00	113	329	34		14	91	35	8	217	14	1	10	59	125
14:00	131	324	27		20	127	33	5	255	16		12	80	150
15:00	120	301	29		27	91	30	8	212	13		8	60	112
16:00	83	289	24		30	93	24	7	229	9		6	74	115
17:00	77	258	28		23	92	31	6	184	12		10	76	115
18:00	71	238	24		15	66	14	8	177	7		13	49	105
19:00	40	123	12		30	30	7	4	146	11		3	35	80
20:00	45	55	12		19	35	6	7	111	10		6	26	39
21:00	32	50	6		10	34	3	3	117	7		3	42	57
22:00	19	28	4		10	21	3	6	86	3		3	19	45
23:00	13	28	4		4	15	2	2	46	1			15	40
Total	**1319**	**3564**	**361**	**1**	**347**	**1120**	**306**	**98**	**3100**	**148**	**2**	**134**	**925**	**1791**

Turning Movement Counts

Intersection South & Lafayette
Date 3/19/2024

	Northbound				Eastbound			Southbound			Westbound		
	R	T	L	U	R	T	L	R	T	L	R	T	L
00:00	1	10	1		1	4	2		6	1		3	3
01:00	1	5			3	4	2	1	10			3	4
02:00	1	2			1	2	1		5			2	
03:00		8							2			5	3
04:00	1	16	1		1	4		2	12	1		2	9
05:00	4	63	2		16	16	1		32	4		20	36
06:00	59	81	12		7	66	6	4	68	2	2	37	59
07:00	95	158	7	1	28	129	9	7	124	9	8	88	179
08:00	121	237	45		49	177	8	16	258	48	24	123	173
09:00	101	228	25		25	97	13	8	186	5	7	78	134
10:00	107	221	33	1	31	93	6	10	156	7	14	80	136
11:00	110	237	31		21	92	10	10	180	11	6	86	129
12:00	127	268	49		33	106	21	6	197	6	14	85	159
13:00	112	203	30		25	90	16	13	174	10	9	82	142
14:00	93	228	33		35	114	21	7	211	10	18	85	181
15:00	109	286	54		35	125	20	12	262	18	23	163	193
16:00	120	269	36		42	117	12	10	256	10	10	130	163
17:00	121	313	63		21	122	20	6	266	25	17	93	120
18:00	103	218	30		28	79	14	6	168	7	7	69	101
19:00	38	145	10		19	61	14	2	123	8	7	32	44
20:00	31	106	19		18	39	8	1	82	4	5	18	43
21:00	22	66	4		10	23	4	1	56	2	1	11	27
22:00	11	38	4		25	17	4	1	31	1		9	20
23:00	9	27			2	8			22			9	14
Total	**1497**	**3433**	**489**	**2**	**476**	**1585**	**212**	**123**	**2887**	**189**	**172**	**1313**	**2072**

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Turning Movement Counts

Intersection South & Lafayette
Date 3/20/2024

	Northbound				Eastbound			Southbound			Westbound		
	R	T	L	U	R	T	L	R	T	L	R	T	L
00:00		14			2	4	1		8	1		5	7
01:00	2	1	1		1	3			6			1	5
02:00	1	4				4	1	1	1		1	1	2
03:00	1	9				1			2		1	3	3
04:00		17			1	3			10	1	1	4	11
05:00	7	49	1		11	12	2	1	36	2	1	12	27
06:00	58	83	11		8	76	2	1	69	3	1	32	62
07:00	93	142	13	1	28	138	9	10	128	6	6	88	164
08:00	114	263	54		55	159	13	6	231	39	19	106	163
09:00	93	219	39		28	103	7	8	178	12	8	56	167
10:00	100	221	27		24	100	14	8	170	5	14	72	126
11:00	108	227	33		19	101	11	8	180	9	12	75	140
12:00	130	275	48		32	93	15	10	224	13	13	84	161
13:00	112	250	28		25	97	11	13	194	9	13	93	136
14:00	106	224	23		31	103	13	4	201	11	15	91	150
15:00	112	281	69		50	132	15	7	228	13	20	149	200
16:00	113	247	53		27	134	22	6	252	18	22	123	161
17:00	102	297	49		33	139	20	4	247	15	18	121	135
18:00	83	242	36		22	84	19	2	166	5	13	37	92
19:00	37	151	10		29	44	14	6	106	11	9	39	58
20:00	41	107	12		18	44	5	5	68	2	5	22	43
21:00	13	64	9		12	21	6	3	67	1	5	24	13
22:00	8	37	7		17	16	4	2	33			11	13
23:00	5	17	3		4	17	6	1	15	1		8	20
Total	**1439**	**3441**	**526**	**1**	**477**	**1628**	**210**	**106**	**2820**	**177**	**197**	**1257**	**2059**

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Turning Movement Counts

Intersection South & Lafayette
Date 3/21/2024

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
00:00	3	16			2	5				4			1	2	5
01:00						1				7				1	4
02:00	2	5				2				5	1				1
03:00		7			1	1			1	3			1	2	5
04:00		21	1			1	1			7	1		2	2	9
05:00	6	46	1		6	18	1		1	28	4			12	36
06:00	48	79	9		10	78	6		3	62	3		1	38	57
07:00	89	150	4		26	116	6		6	141	9		6	80	138
08:00	127	236	51		45	156	12		10	217	22		21	105	155
09:00	104	188	21		29	96	16		7	152	10		13	72	107
10:00	91	203	22		28	79	13	1	4	168	10		8	75	130
11:00	113	237	35		31	80	12		11	177	13		16	94	102
12:00	111	243	36		20	100	32		11	206	15		21	71	136
13:00	97	219	36		21	101	22		9	242	5	1	13	77	134
14:00	106	221	29		28	118	15		6	215	11	1	11	113	164
15:00	113	263	63		42	129	21		6	249	18		24	164	192
16:00	125	258	54		36	123	20		4	228	12		14	128	181
17:00	108	257	44	1	31	140	8		4	241	8		17	86	131
18:00	116	210	34		25	95	12		3	177	10		12	63	103
19:00	43	189	18		25	63	8		4	126	12		8	49	57
20:00	31	129	10		17	41	9		2	83	7		5	23	58
21:00	22	86	4		10	28	7		2	75	8		1	18	27
22:00	8	40	5		24	21	3		2	44	1			11	15
23:00	5	23			2	9	2		2	20	2			11	22
Total	**1468**	**3326**	**477**	**1**	**459**	**1601**	**226**	**1**	**98**	**2877**	**182**	**2**	**195**	**1297**	**1969**

Turning Movement Counts

Intersection South & Lafayette
Date 3/23/2024

	Northbound				Eastbound			Southbound			Westbound		
	R	T	L	U	R	T	L	R	T	L	R	T	L
00:00	5	21			4	8	1	1	21			7	11
01:00	2	11			3	1	1		28			3	2
02:00	2	12			2	8		1	10	2	1	3	2
03:00	2	5					1		6	1		3	6
04:00	1	5			1	1			3		1	2	2
05:00	6	14	10		6	4	2		14			4	8
06:00	24	33	2		2	10	1		24	2	3	9	14
07:00	26	60	2		4	15	2	3	53	2	4	30	45
08:00	32	100	7		21	24	4	3	98	1	3	25	62
09:00	35	147	13		16	36	7	3	109	4	7	35	90
10:00	54	178	19		25	50	4	6	142	9	11	55	101
11:00	71	222	22	3	28	70	15	4	163	10	8	57	92
12:00	70	210	26	1	22	81	11	7	150	6	9	38	112
13:00	68	215	25		17	64	9	5	158	8	14	45	82
14:00	80	207	19	1	19	88	16	4	128	5	16	59	101
15:00	78	176	16		10	69	11	4	134	12	11	57	130
16:00	71	185	24		19	52	9	2	145	10	5	40	81
17:00	71	163	21		16	63	11	6	181	7	11	40	73
18:00	69	157	20		10	58	6	1	96	8	7	40	53
19:00	17	124	10		16	31	5	2	86	7	3	37	49
20:00	11	93	14		10	21	6	1	75	6	5	28	25
21:00	9	59	4		7	19	2	2	56	2	1	27	43
22:00	9	57	4		21	20	2	1	55	4	3	15	25
23:00	3	33	2		3	10	3		32		3	17	29
Total	**816**	**2487**	**260**	**5**	**282**	**803**	**129**	**56**	**1967**	**106**	**126**	**676**	**1238**

APPENDIX D
Capacity Analysis Methodology

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[1] The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

[1] *Highway Capacity Manual, 6TH Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the movement is fully utilized and indicates a capacity failure. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**V/C Ratio >1.00[a]**
A	≤10	≤10	F
B	>10 and ≤20	>10 and ≤15	F
C	>20 and ≤35	>15 and ≤25	F
D	>35 and ≤55	>25 and ≤35	F
E	>55 and ≤80	>35 and ≤50	F
F	>80	>50	F

Note: [a]For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *Highway Capacity Manual, 6th Edition: A Guide for Multimodal Mobility Analysis.* Washington, D.C.: Transportation Research Board, 2016. Exhibit 19-8, Pg. 19-16.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

APPENDIX E
Capacity Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	190	85	88	812	0	0	0	0	400	0	670
Future Volume (vph)	0	190	85	88	812	0	0	0	0	400	0	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5923	1516	3173	3388					1698	1698	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5923	1516	3173	3388					1698	1698	2814
Peak-hour factor, PHF	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86
Adj. Flow (vph)	0	204	91	101	933	0	0	0	0	465	0	779
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	207
Lane Group Flow (vph)	0	204	25	101	933	0	0	0	0	232	233	572
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		26.3	26.3	24.6	56.9					25.1	25.1	25.1
Effective Green, g (s)		26.3	26.3	24.6	56.9					25.1	25.1	25.1
Actuated g/C Ratio		0.28	0.28	0.26	0.61					0.27	0.27	0.27
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1657	424	830	2050					453	453	751
v/s Ratio Prot		0.03	0.02	0.03	c0.28					0.14	0.14	c0.20
v/s Ratio Perm												
v/c Ratio		0.12	0.06	0.12	0.46					0.51	0.51	0.76
Uniform Delay, d1		25.2	24.8	26.5	10.1					29.3	29.3	31.7
Progression Factor		1.00	1.00	0.88	1.63					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.1	0.3					1.9	2.0	5.4
Delay (s)		25.3	24.9	23.4	16.7					31.2	31.2	37.1
Level of Service		C	C	C	B					C	C	D
Approach Delay (s)		25.2			17.4			0.0			34.9	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 4 NB Off-ramp/US Route 4 NB On-Ramp & Pease Blvd/Gosling Road
2024 Existing AM Peak Weekday AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	515	0	0	255	43	645	0	255	0	0	0
Future Volume (vph)	75	515	0	0	255	43	645	0	255	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.98		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4834		3400	1490	1490			
Flt Permitted	0.54	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1847	3455			4834		3400	1490	1490			
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	81	554	0	0	287	48	709	0	280	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	0	0	103	103	0	0	0
Lane Group Flow (vph)	81	554	0	0	315	0	709	37	37	0	0	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	39.8	26.3			37.4		25.1	25.1	25.1			
Effective Green, g (s)	39.8	26.3			37.4		25.1	25.1	25.1			
Actuated g/C Ratio	0.42	0.28			0.40		0.27	0.27	0.27			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	981	966			1923		907	397	397			
v/s Ratio Prot	c0.01	c0.16			c0.07		c0.21	0.03	0.03			
v/s Ratio Perm	0.02											
v/c Ratio	0.08	0.57			0.16		0.78	0.09	0.09			
Uniform Delay, d1	16.0	29.0			18.2		31.9	25.9	25.9			
Progression Factor	1.31	1.29			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.0	1.2			0.1		5.1	0.2	0.2			
Delay (s)	21.0	38.7			18.3		37.0	26.1	26.1			
Level of Service	C	D			B		D	C	C			
Approach Delay (s)		36.4			18.3			34.0			0.0	
Approach LOS		D			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	37	425	26	13	6	185	170	18	35	280	8
Future Volume (vph)	90	37	425	26	13	6	185	170	18	35	280	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1706	1656		1605		3400	3455		1678	3355	1501
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1706	1656		1605		3400	3455		1678	3355	1501
Peak-hour factor, PHF	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	99	41	467	29	15	7	220	202	21	39	315	9
RTOR Reduction (vph)	0	0	337	0	6	0	0	4	0	0	0	5
Lane Group Flow (vph)	0	140	130	0	45	0	220	219	0	39	315	4
Heavy Vehicles (%)	4%	4%	4%	13%	13%	13%	3%	3%	3%	4%	4%	4%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		9.0	20.1		4.8		11.1	26.6		2.6	17.6	32.6
Effective Green, g (s)		9.0	20.1		4.8		11.1	26.6		2.6	17.6	32.6
Actuated g/C Ratio		0.12	0.28		0.07		0.15	0.37		0.04	0.24	0.45
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		212	460		106		521	1271		60	816	676
v/s Ratio Prot		c0.08	0.08		c0.03		c0.06	0.06		0.02	c0.09	0.00
v/s Ratio Perm												
v/c Ratio		0.66	0.28		0.43		0.42	0.17		0.65	0.39	0.01
Uniform Delay, d1		30.2	20.4		32.4		27.7	15.4		34.4	22.8	10.9
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.5	0.3		2.8		0.6	0.1		22.4	0.3	0.0
Delay (s)		37.7	20.8		35.2		28.3	15.5		56.8	23.1	10.9
Level of Service		D	C		D		C	B		E	C	B
Approach Delay (s)		24.7			35.2			21.8			26.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	25.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	3	26	26	0	33	9	290	37	44	640	49
Future Volume (vph)	23	3	26	26	0	33	9	290	37	44	640	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1570	1593	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1570	1593	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Peak-hour factor, PHF	0.82	0.82	0.82	0.65	0.65	0.65	0.85	0.85	0.85	0.98	0.98	0.98
Adj. Flow (vph)	28	4	32	40	0	51	11	341	44	45	653	50
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	25	0	0	23
Lane Group Flow (vph)	16	16	4	20	20	51	11	341	19	45	653	27
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	5.0	5.0	8.2	5.5	5.5	12.0	3.2	24.5	30.0	6.5	27.3	38.3
Effective Green, g (s)	5.0	5.0	8.2	5.5	5.5	12.0	3.2	24.5	30.0	6.5	27.3	38.3
Actuated g/C Ratio	0.07	0.07	0.12	0.08	0.08	0.17	0.05	0.35	0.43	0.09	0.39	0.55
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	113	172	128	128	263	75	1152	740	160	1350	847
v/s Ratio Prot	c0.01	0.01	0.00	0.01	0.01	c0.03	0.01	0.10	0.01	c0.03	c0.19	0.02
v/s Ratio Perm												
v/c Ratio	0.14	0.14	0.02	0.16	0.16	0.19	0.15	0.30	0.03	0.28	0.48	0.03
Uniform Delay, d1	30.6	30.6	27.4	30.2	30.2	25.0	32.2	16.6	11.6	29.7	16.1	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.1	0.6	0.6	0.4	0.9	0.1	0.0	1.0	0.3	0.0
Delay (s)	31.2	31.2	27.5	30.8	30.8	25.3	33.1	16.7	11.7	30.6	16.4	7.4
Level of Service	C	C	C	C	C	C	C	B	B	C	B	A
Approach Delay (s)		29.3			27.7			16.6			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.2	Sum of lost time (s)	25.5
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

105: Market Street & Woodbury Avenue & Market Basket Driveway
2024 Existing AM Peak Weekday AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	38	46	3	31	39	65	270	75	2	250	190
Future Volume (vph)	85	38	46	3	31	39	65	270	75	2	250	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1615		1898	1831		1711	3295		1694	3388	1516
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1615		1898	1831		1711	3295		1694	3388	1516
Peak-hour factor, PHF	0.73	0.73	0.73	0.65	0.65	0.65	0.75	0.75	0.75	0.97	0.97	0.97
Adj. Flow (vph)	116	52	63	5	48	60	87	360	100	2	258	196
RTOR Reduction (vph)	0	34	0	0	40	0	0	18	0	0	0	98
Lane Group Flow (vph)	116	81	0	5	68	0	87	442	0	2	258	98
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.9	8.9		6.2	6.2		6.8	22.7		0.9	16.8	32.2
Effective Green, g (s)	8.9	8.9		6.2	6.2		6.8	22.7		0.9	16.8	32.2
Actuated g/C Ratio	0.14	0.14		0.10	0.10		0.11	0.35		0.01	0.26	0.50
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	449	222		181	175		179	1156		23	879	754
v/s Ratio Prot	0.04	c0.05		0.00	c0.04		c0.05	c0.13		0.00	0.08	0.06
v/s Ratio Perm												
v/c Ratio	0.26	0.36		0.03	0.39		0.49	0.38		0.09	0.29	0.13
Uniform Delay, d1	24.9	25.3		26.5	27.5		27.3	15.7		31.5	19.2	8.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0		0.1	1.4		2.1	0.2		1.6	0.2	0.1
Delay (s)	25.3	26.3		26.6	28.9		29.4	16.0		33.1	19.4	8.8
Level of Service	C	C		C	C		C	B		C	B	A
Approach Delay (s)		25.8			28.8			18.1			14.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	28.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	685	85	0	298	0	13
Future Volume (Veh/h)	685	85	0	298	0	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.46	0.46
Hourly flow rate (vph)	706	88	0	335	0	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			794		918	220
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			794		918	220
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			804		275	790

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	202	202	202	189	168	168	28
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	88	0	0	28
cSH	1700	1700	1700	1700	1700	1700	790
Volume to Capacity	0.12	0.12	0.12	0.11	0.10	0.10	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.7
Lane LOS							A
Approach Delay (s)	0.0				0.0		9.7
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	85	75	70	80	47
Future Vol, veh/h	49	85	75	70	80	47
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	84	84	81	81
Heavy Vehicles, %	4	4	2	2	0	0
Mvmt Flow	58	100	89	83	99	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	90	0	-	0	306	91
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1493	-	-	-	690	972
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1492	-	-	-	660	970
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1492	-	-	-	660	970
HCM Lane V/C Ratio	0.039	-	-	-	0.15	0.06
HCM Control Delay (s)	7.5	0	-	-	11.4	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1040	540	454	286	0	0	0	0	225	1	98
Future Volume (vph)	0	1040	540	454	286	0	0	0	0	225	1	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1703	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1703	2814
Peak-hour factor, PHF	0.84	0.84	0.84	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	1238	643	483	304	0	0	0	0	239	1	104
RTOR Reduction (vph)	0	0	359	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	1238	284	483	304	0	0	0	0	119	121	21
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		35.4	35.4	20.4	55.9					18.8	18.8	18.8
Effective Green, g (s)		35.4	35.4	20.4	55.9					18.8	18.8	18.8
Actuated g/C Ratio		0.38	0.38	0.22	0.60					0.20	0.20	0.20
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2309	591	712	2085					344	345	571
v/s Ratio Prot		c0.20	0.18	c0.15	0.09					0.07	c0.07	0.01
v/s Ratio Perm												
v/c Ratio		0.54	0.48	0.68	0.15					0.35	0.35	0.04
Uniform Delay, d1		22.2	21.6	33.1	8.0					31.6	31.7	29.6
Progression Factor		1.00	1.00	1.37	0.86					1.00	1.00	1.00
Incremental Delay, d2		0.4	1.3	2.6	0.1					1.3	1.3	0.1
Delay (s)		22.7	22.9	47.8	6.9					32.9	33.0	29.7
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		22.8			32.0			0.0			31.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	627	638	0	0	604	324	136	0	506	0	0	0
Future Volume (vph)	627	638	0	0	604	324	136	0	506	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.95		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4867		3433	1504	1504			
Flt Permitted	0.21	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	725	3455			4867		3433	1504	1504			
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	721	733	0	0	643	345	145	0	538	0	0	0
RTOR Reduction (vph)	0	0	0	0	88	0	0	214	214	0	0	0
Lane Group Flow (vph)	721	733	0	0	900	0	145	55	55	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	55.7	35.4			35.5		18.8	18.8	18.8			
Effective Green, g (s)	55.7	35.4			35.5		18.8	18.8	18.8			
Actuated g/C Ratio	0.60	0.38			0.38		0.20	0.20	0.20			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	986	1320			1865		696	305	305			
v/s Ratio Prot	c0.16	0.21			0.18		c0.04	0.04	0.04			
v/s Ratio Perm	c0.28											
v/c Ratio	0.73	0.56			0.48		0.21	0.18	0.18			
Uniform Delay, d1	11.0	22.4			21.6		30.7	30.5	30.5			
Progression Factor	2.57	0.48			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.7	0.8			0.4		0.3	0.6	0.6			
Delay (s)	31.0	11.4			22.0		31.0	31.1	31.1			
Level of Service	C	B			C		C	C	C			
Approach Delay (s)		21.1			22.0			31.1			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	60	463	60	55	48	338	474	34	31	463	120
Future Volume (vph)	87	60	463	60	55	48	338	474	34	31	463	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749	1689		1756		3467	3534		1711	3421	1531
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1749	1689		1756		3467	3534		1711	3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.96	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	97	67	514	75	69	60	352	494	35	32	477	124
RTOR Reduction (vph)	0	0	387	0	12	0	0	3	0	0	0	73
Lane Group Flow (vph)	0	164	127	0	192	0	352	526	0	32	477	51
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.1		14.8		13.7	33.7		2.8	22.3	36.7
Effective Green, g (s)		8.4	22.1		14.8		13.7	33.7		2.8	22.3	36.7
Actuated g/C Ratio		0.09	0.25		0.16		0.15	0.38		0.03	0.25	0.41
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163	416		289		529	1327		53	850	626
v/s Ratio Prot		c0.09	0.07		c0.11		c0.10	0.15		0.02	c0.14	0.03
v/s Ratio Perm												
v/c Ratio		1.01	0.30		0.67		0.67	0.40		0.60	0.56	0.08
Uniform Delay, d1		40.6	27.5		35.1		35.8	20.5		42.9	29.4	16.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		72.1	0.4		5.7		3.2	0.2		17.9	0.9	0.1
Delay (s)		112.8	28.0		40.8		39.0	20.7		60.8	30.3	16.3
Level of Service		F	C		D		D	C		E	C	B
Approach Delay (s)		48.5			40.8			28.0			29.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	25.5
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	19	60	104	15	93	28	665	98	76	665	28
Future Volume (vph)	114	19	60	104	15	93	28	665	98	76	665	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1659	1424	1682	1706	1584	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1659	1424	1682	1706	1584	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	133	22	70	135	19	121	32	764	113	81	707	30
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	63	0	0	13
Lane Group Flow (vph)	77	78	12	77	77	121	32	764	50	81	707	17
Heavy Vehicles (%)	0%	0%	8%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	7.8	7.8	12.5	8.1	8.1	22.8	4.7	23.8	31.9	9.2	27.8	41.6
Effective Green, g (s)	7.8	7.8	12.5	8.1	8.1	22.8	4.7	23.8	31.9	9.2	27.8	41.6
Actuated g/C Ratio	0.11	0.11	0.17	0.11	0.11	0.32	0.07	0.33	0.44	0.13	0.39	0.58
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	179	247	189	192	502	110	1115	783	224	1355	907
v/s Ratio Prot	c0.05	0.05	0.01	c0.05	0.05	0.08	0.02	c0.23	0.03	c0.05	c0.20	0.01
v/s Ratio Perm												
v/c Ratio	0.44	0.44	0.05	0.41	0.40	0.24	0.29	0.69	0.06	0.36	0.52	0.02
Uniform Delay, d1	30.0	30.0	24.7	29.7	29.6	18.2	32.0	20.8	11.5	28.7	16.9	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	1.7	0.1	1.4	1.4	0.3	1.5	1.8	0.0	1.0	0.4	0.0
Delay (s)	31.7	31.7	24.8	31.1	31.0	18.4	33.5	22.6	11.5	29.7	17.3	6.5
Level of Service	C	C	C	C	C	B	C	C	B	C	B	A
Approach Delay (s)		29.6			25.5			21.6			18.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	71	98	196	93	16	98	452	142	16	627	360
Future Volume (vph)	207	71	98	196	93	16	98	452	142	16	627	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1619		1954	2010		1728	3331		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1619		1954	2010		1728	3331		1728	3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Adj. Flow (vph)	230	79	109	215	102	18	111	514	161	18	697	400
RTOR Reduction (vph)	0	41	0	0	5	0	0	21	0	0	0	208
Lane Group Flow (vph)	230	147	0	215	115	0	111	654	0	18	697	192
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.3	11.3		14.8	14.8		10.5	36.8		2.6	28.9	46.7
Effective Green, g (s)	11.3	11.3		14.8	14.8		10.5	36.8		2.6	28.9	46.7
Actuated g/C Ratio	0.12	0.12		0.15	0.15		0.11	0.38		0.03	0.30	0.48
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	187		296	305		186	1258		46	1025	741
v/s Ratio Prot	0.07	c0.09		c0.11	0.06		c0.06	c0.20		0.01	c0.20	0.12
v/s Ratio Perm												
v/c Ratio	0.61	0.79		0.73	0.38		0.60	0.52		0.39	0.68	0.26
Uniform Delay, d1	40.9	41.9		39.4	37.2		41.4	23.5		46.6	30.2	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	19.4		8.6	0.8		5.1	0.4		5.4	1.9	0.2
Delay (s)	43.7	61.3		47.9	37.9		46.5	23.9		52.0	32.0	15.3
Level of Service	D	E		D	D		D	C		D	C	B
Approach Delay (s)		51.6			44.4			27.1			26.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	28.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1052	93	0	927	0	31
Future Volume (Veh/h)	1052	93	0	927	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.98	0.97	0.72	0.72
Hourly flow rate (vph)	1119	99	0	956	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1218		1646	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1218		1646	329
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			574		92	672

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	320	320	320	259	478	478	43
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	99	0	0	43
cSH	1700	1700	1700	1700	1700	1700	672
Volume to Capacity	0.19	0.19	0.19	0.15	0.28	0.28	0.06
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.7
Lane LOS							B
Approach Delay (s)	0.0				0.0		10.7
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	4.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	174	234	71	109	65
Future Vol, veh/h	65	174	234	71	109	65
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	80	80	74	74
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	67	179	293	89	147	88

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	294	0	-	0	607	295
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	313	-
Critical Hdwy	4.1	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1279	-	-	-	461	747
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	744	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1278	-	-	-	433	745
Mov Cap-2 Maneuver	-	-	-	-	433	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1278	-	-	-	433	745
HCM Lane V/C Ratio	0.052	-	-	-	0.34	0.118
HCM Control Delay (s)	8	0	-	-	17.5	10.5
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.5	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	298	67	359	193	0	0	0	0	311	1	51
Future Volume (vph)	0	298	67	359	193	0	0	0	0	311	1	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1702	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1702	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	0	324	73	422	227	0	0	0	0	357	1	59
RTOR Reduction (vph)	0	0	49	0	0	0	0	0	0	0	0	44
Lane Group Flow (vph)	0	324	24	422	227	0	0	0	0	178	180	15
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		27.2	27.2	18.1	50.5					20.7	20.7	20.7
Effective Green, g (s)		27.2	27.2	18.1	50.5					20.7	20.7	20.7
Actuated g/C Ratio		0.32	0.32	0.22	0.60					0.25	0.25	0.25
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1955	500	697	2077					418	419	693
v/s Ratio Prot		c0.05	0.02	c0.13	c0.07					0.10	c0.11	0.01
v/s Ratio Perm												
v/c Ratio		0.17	0.05	0.61	0.11					0.43	0.43	0.02
Uniform Delay, d1		20.3	19.5	29.7	7.1					26.6	26.7	24.0
Progression Factor		1.00	1.00	1.43	0.79					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	1.7	0.0					1.5	1.5	0.0
Delay (s)		20.4	19.6	44.1	5.7					28.1	28.2	24.0
Level of Service		C	B	D	A					C	C	C
Approach Delay (s)		20.2			30.6			0.0			27.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	529	0	0	472	186	80	3	648	0	0	0
Future Volume (vph)	80	529	0	0	472	186	80	3	648	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.96		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4918		3467	1521	1519			
Flt Permitted	0.38	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1283	3455			4918		3467	1521	1519			
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	86	569	0	0	497	196	83	3	675	0	0	0
RTOR Reduction (vph)	0	0	0	0	65	0	0	255	254	0	0	0
Lane Group Flow (vph)	86	569	0	0	629	0	83	86	83	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	40.1	27.2			32.4		20.7	20.7	20.7			
Effective Green, g (s)	40.1	27.2			32.4		20.7	20.7	20.7			
Actuated g/C Ratio	0.48	0.32			0.39		0.25	0.25	0.25			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	912	1118			1896		854	374	374			
v/s Ratio Prot	c0.01	c0.16			c0.13		0.02	c0.06	0.05			
v/s Ratio Perm	0.03											
v/c Ratio	0.09	0.51			0.33		0.10	0.23	0.22			
Uniform Delay, d1	11.8	23.0			18.2		24.4	25.3	25.2			
Progression Factor	1.19	1.05			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.8			0.2		0.1	0.7	0.6			
Delay (s)	14.0	24.9			18.4		24.5	26.0	25.9			
Level of Service	B	C			B		C	C	C			
Approach Delay (s)		23.5			18.4			25.8			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	37	335	24	43	64	293	386	20	35	439	60
Future Volume (vph)	55	37	335	24	43	64	293	386	20	35	439	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766	1706		1759		3467	3548		1728	3455	1546
Flt Permitted		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766	1706		1759		3467	3548		1728	3455	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	65	44	399	28	51	75	322	424	22	40	499	68
RTOR Reduction (vph)	0	0	298	0	29	0	0	3	0	0	0	39
Lane Group Flow (vph)	0	109	101	0	125	0	322	443	0	40	499	29
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	21.6		11.6		13.2	30.8		4.7	21.8	36.2
Effective Green, g (s)		8.4	21.6		11.6		13.2	30.8		4.7	21.8	36.2
Actuated g/C Ratio		0.10	0.25		0.14		0.15	0.36		0.05	0.25	0.42
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		173	430		238		534	1276		94	879	653
v/s Ratio Prot		c0.06	0.06		c0.07		c0.09	0.12		0.02	c0.14	0.02
v/s Ratio Perm												
v/c Ratio		0.63	0.23		0.53		0.60	0.35		0.43	0.57	0.04
Uniform Delay, d1		37.1	25.4		34.4		33.8	20.0		39.1	27.8	14.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		7.3	0.3		2.1		1.9	0.2		3.1	0.8	0.0
Delay (s)		44.4	25.7		36.6		35.7	20.2		42.2	28.6	14.6
Level of Service		D	C		D		D	C		D	C	B
Approach Delay (s)		29.7			36.6			26.7			28.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	25.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	23	80	120	11	59	24	572	106	80	751	160
Future Volume (vph)	120	23	80	120	11	59	24	572	106	80	751	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1662	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1662	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	143	27	95	132	12	65	27	643	119	87	816	174
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	68	0	0	41
Lane Group Flow (vph)	84	86	18	71	73	65	27	643	51	87	816	133
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	12.6	8.0	8.0	20.7	4.5	20.4	28.4	7.2	22.6	36.7
Effective Green, g (s)	8.1	8.1	12.6	8.0	8.0	20.7	4.5	20.4	28.4	7.2	22.6	36.7
Actuated g/C Ratio	0.12	0.12	0.19	0.12	0.12	0.31	0.07	0.31	0.43	0.11	0.34	0.55
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	198	201	290	203	205	496	113	1030	752	189	1188	863
v/s Ratio Prot	0.05	c0.05	0.01	0.04	c0.04	0.04	0.02	0.19	0.03	c0.05	c0.23	0.08
v/s Ratio Perm												
v/c Ratio	0.42	0.43	0.06	0.35	0.36	0.13	0.24	0.62	0.07	0.46	0.69	0.15
Uniform Delay, d1	27.1	27.2	22.2	27.0	27.0	16.5	29.5	19.9	11.3	27.9	19.0	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.5	0.1	1.0	1.1	0.1	1.1	1.2	0.0	1.8	1.7	0.1
Delay (s)	28.6	28.6	22.3	28.0	28.0	16.7	30.6	21.0	11.4	29.7	20.7	7.5
Level of Service	C	C	C	C	C	B	C	C	B	C	C	A
Approach Delay (s)		26.3			24.5			19.9			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	66.7	Sum of lost time (s)	25.5
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	67	49	140	73	21	60	459	126	12	539	386
Future Volume (vph)	239	67	49	140	73	21	60	459	126	12	539	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1660		1954	1988		1728	3343		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1660		1954	1988		1728	3343		1728	3455	1546
Peak-hour factor, PHF	0.77	0.77	0.77	0.78	0.78	0.78	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	310	87	64	179	94	27	65	499	137	12	556	398
RTOR Reduction (vph)	0	21	0	0	8	0	0	18	0	0	0	194
Lane Group Flow (vph)	310	130	0	179	113	0	65	618	0	12	556	204
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.5	11.5		12.6	12.6		6.9	28.8		1.2	23.1	41.1
Effective Green, g (s)	11.5	11.5		12.6	12.6		6.9	28.8		1.2	23.1	41.1
Actuated g/C Ratio	0.14	0.14		0.16	0.16		0.09	0.36		0.01	0.29	0.51
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	469	238		307	312		148	1201		25	996	793
v/s Ratio Prot	c0.09	0.08		c0.09	0.06		c0.04	c0.18		0.01	0.16	0.13
v/s Ratio Perm												
v/c Ratio	0.66	0.55		0.58	0.36		0.44	0.51		0.48	0.56	0.26
Uniform Delay, d1	32.5	31.9		31.3	30.2		34.8	20.2		39.1	24.2	10.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	2.6		2.8	0.7		2.1	0.4		13.8	0.7	0.2
Delay (s)	35.9	34.5		34.1	30.9		36.8	20.5		52.9	24.9	11.1
Level of Service	D	C		C	C		D	C		D	C	B
Approach Delay (s)		35.5			32.8			22.0			19.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	28.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1111	67	0	658	0	52
Future Volume (Veh/h)	1111	67	0	658	0	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.95	0.95	0.55	0.55
Hourly flow rate (vph)	1195	72	0	693	0	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1267		1578	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1267		1578	335
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	86
cM capacity (veh/h)			550		102	667

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	341	341	341	243	346	346	95
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	72	0	0	95
cSH	1700	1700	1700	1700	1700	1700	667
Volume to Capacity	0.20	0.20	0.20	0.14	0.20	0.20	0.14
Queue Length 95th (ft)	0	0	0	0	0	0	12
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.3
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	5.5					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	200	120	80	146	48
Future Vol, veh/h	100	200	120	80	146	48
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	81	81	88	88
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	105	211	148	99	166	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	149	0	-	0	570	150
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1439	-	-	-	486	902
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	667	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1438	-	-	-	445	900
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	666	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1438	-	-	-	445	900
HCM Lane V/C Ratio	0.073	-	-	-	0.373	0.061
HCM Control Delay (s)	7.7	0	-	-	17.8	9.3
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	239	104	90	896	0	0	0	0	408	0	759
Future Volume (vph)	0	239	104	90	896	0	0	0	0	408	0	759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5923	1516	3173	3388					1698	1698	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5923	1516	3173	3388					1698	1698	2814
Peak-hour factor, PHF	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86
Adj. Flow (vph)	0	257	112	103	1030	0	0	0	0	474	0	883
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	0	170
Lane Group Flow (vph)	0	257	33	103	1030	0	0	0	0	237	237	713
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		27.9	27.9	24.8	58.7					25.1	25.1	25.1
Effective Green, g (s)		27.9	27.9	24.8	58.7					25.1	25.1	25.1
Actuated g/C Ratio		0.29	0.29	0.26	0.61					0.26	0.26	0.26
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1724	441	821	2075					444	444	737
v/s Ratio Prot		0.04	0.02	0.03	c0.30					0.14	0.14	c0.25
v/s Ratio Perm												
v/c Ratio		0.15	0.07	0.13	0.50					0.53	0.53	0.97
Uniform Delay, d1		25.2	24.6	27.2	10.3					30.3	30.3	35.0
Progression Factor		1.00	1.00	0.88	1.59					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.1	0.3					2.3	2.3	25.5
Delay (s)		25.2	24.7	24.1	16.8					32.6	32.6	60.5
Level of Service		C	C	C	B					C	C	E
Approach Delay (s)		25.1			17.4			0.0			50.7	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	537	0	0	293	44	693	0	261	0	0	0
Future Volume (vph)	110	537	0	0	293	44	693	0	261	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.98		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4844		3400	1490	1490			
Flt Permitted	0.52	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1768	3455			4844		3400	1490	1490			
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	118	577	0	0	329	49	762	0	287	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	106	106	0	0	0
Lane Group Flow (vph)	118	577	0	0	361	0	762	38	37	0	0	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	41.4	27.9			39.2		25.1	25.1	25.1			
Effective Green, g (s)	41.4	27.9			39.2		25.1	25.1	25.1			
Actuated g/C Ratio	0.43	0.29			0.41		0.26	0.26	0.26			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	970	1006			1982		890	390	390			
v/s Ratio Prot	c0.02	c0.17			c0.07		c0.22	0.03	0.03			
v/s Ratio Perm	0.04											
v/c Ratio	0.12	0.57			0.18		0.86	0.10	0.10			
Uniform Delay, d1	16.0	28.9			18.1		33.6	26.8	26.8			
Progression Factor	1.26	1.23			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.2			0.1		8.9	0.2	0.2			
Delay (s)	20.2	36.7			18.2		42.5	27.0	27.0			
Level of Service	C	D			B		D	C	C			
Approach Delay (s)		33.9			18.2			38.3			0.0	
Approach LOS		C			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	95.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	38	446	27	13	6	222	173	18	36	286	8
Future Volume (vph)	92	38	446	27	13	6	222	173	18	36	286	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1706	1656		1605		3400	3456		1678	3355	1501
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1706	1656		1605		3400	3456		1678	3355	1501
Peak-hour factor, PHF	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	101	42	490	30	15	7	264	206	21	40	321	9
RTOR Reduction (vph)	0	0	346	0	5	0	0	5	0	0	0	5
Lane Group Flow (vph)	0	143	144	0	47	0	264	222	0	40	321	4
Heavy Vehicles (%)	4%	4%	4%	13%	13%	13%	3%	3%	3%	4%	4%	4%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		9.0	21.2		4.8		12.2	24.8		4.3	16.4	31.4
Effective Green, g (s)		9.0	21.2		4.8		12.2	24.8		4.3	16.4	31.4
Actuated g/C Ratio		0.12	0.29		0.07		0.17	0.34		0.06	0.23	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		212	485		106		573	1185		99	761	651
v/s Ratio Prot		c0.08	0.09		c0.03		c0.08	0.06		0.02	c0.10	0.00
v/s Ratio Perm												
v/c Ratio		0.67	0.30		0.45		0.46	0.19		0.40	0.42	0.01
Uniform Delay, d1		30.3	19.8		32.5		27.1	16.7		32.8	23.9	11.6
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.2	0.3		3.0		0.6	0.1		2.7	0.4	0.0
Delay (s)		38.4	20.1		35.5		27.7	16.8		35.5	24.3	11.6
Level of Service		D	C		D		C	B		D	C	B
Approach Delay (s)		24.3			35.5			22.6			25.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	25.5
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	3	27	27	0	34	9	329	38	45	665	50
Future Volume (vph)	23	3	27	27	0	34	9	329	38	45	665	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1570	1593	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1570	1593	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Peak-hour factor, PHF	0.82	0.82	0.82	0.65	0.65	0.65	0.85	0.85	0.85	0.98	0.98	0.98
Adj. Flow (vph)	28	4	33	42	0	52	11	387	45	46	679	51
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	26	0	0	23
Lane Group Flow (vph)	16	16	4	21	21	52	11	387	19	46	679	28
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	5.0	5.0	8.2	5.5	5.5	12.0	3.2	25.2	30.7	6.5	28.0	39.0
Effective Green, g (s)	5.0	5.0	8.2	5.5	5.5	12.0	3.2	25.2	30.7	6.5	28.0	39.0
Actuated g/C Ratio	0.07	0.07	0.12	0.08	0.08	0.17	0.05	0.36	0.43	0.09	0.39	0.55
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	110	112	171	126	126	260	74	1173	750	159	1371	854
v/s Ratio Prot	c0.01	0.01	0.00	0.01	0.01	c0.03	0.01	0.12	0.01	c0.03	c0.20	0.02
v/s Ratio Perm												
v/c Ratio	0.15	0.14	0.02	0.17	0.17	0.20	0.15	0.33	0.03	0.29	0.50	0.03
Uniform Delay, d1	30.9	30.9	27.8	30.6	30.6	25.3	32.5	16.7	11.5	30.0	16.1	7.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.1	0.6	0.6	0.4	0.9	0.2	0.0	1.0	0.3	0.0
Delay (s)	31.6	31.5	27.8	31.2	31.2	25.7	33.5	16.9	11.5	31.1	16.4	7.3
Level of Service	C	C	C	C	C	C	C	B	B	C	B	A
Approach Delay (s)		29.7			28.2			16.7			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

105: Market Street & Woodbury Avenue & Market Basket Driveway
2026 No-Build Weekday AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	39	47	3	32	40	66	292	77	2	261	200
Future Volume (vph)	103	39	47	3	32	40	66	292	77	2	261	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1615		1898	1830		1711	3299		1694	3388	1516
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1615		1898	1830		1711	3299		1694	3388	1516
Peak-hour factor, PHF	0.73	0.73	0.73	0.65	0.65	0.65	0.75	0.75	0.75	0.97	0.97	0.97
Adj. Flow (vph)	141	53	64	5	49	62	88	389	103	2	269	206
RTOR Reduction (vph)	0	34	0	0	40	0	0	17	0	0	0	104
Lane Group Flow (vph)	141	83	0	5	71	0	88	475	0	2	269	102
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	9.2	9.2		6.3	6.3		6.8	22.1		0.9	16.2	31.9
Effective Green, g (s)	9.2	9.2		6.3	6.3		6.8	22.1		0.9	16.2	31.9
Actuated g/C Ratio	0.14	0.14		0.10	0.10		0.11	0.34		0.01	0.25	0.49
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	466	230		185	178		180	1130		23	850	749
v/s Ratio Prot	0.04	c0.05		0.00	c0.04		c0.05	c0.14		0.00	0.08	0.07
v/s Ratio Perm												
v/c Ratio	0.30	0.36		0.03	0.40		0.49	0.42		0.09	0.32	0.14
Uniform Delay, d1	24.8	25.0		26.3	27.3		27.2	16.3		31.4	19.6	8.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.0		0.1	1.5		2.1	0.3		1.6	0.2	0.1
Delay (s)	25.1	26.0		26.4	28.8		29.3	16.5		33.0	19.9	8.9
Level of Service	C	C		C	C		C	B		C	B	A
Approach Delay (s)		25.5			28.7			18.5			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	28.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	711	87	0	337	0	13
Future Volume (Veh/h)	711	87	0	337	0	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.46	0.46
Hourly flow rate (vph)	733	90	0	379	0	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			823		968	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			823		968	228
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			784		255	781

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	209	209	209	195	190	190	28
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	90	0	0	28
cSH	1700	1700	1700	1700	1700	1700	781
Volume to Capacity	0.12	0.12	0.12	0.11	0.11	0.11	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.8
Lane LOS							A
Approach Delay (s)	0.0				0.0		9.8
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	87	77	71	82	48
Future Vol, veh/h	50	87	77	71	82	48
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	84	84	81	81
Heavy Vehicles, %	4	4	2	2	0	0
Mvmt Flow	59	102	92	85	101	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	313	94
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1489	-	-	-	684	968
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	821	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1488	-	-	-	654	966
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1488	-	-	-	654	966
HCM Lane V/C Ratio	0.04	-	-	-	0.155	0.061
HCM Control Delay (s)	7.5	0	-	-	11.5	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1171	586	463	308	0	0	0	0	230	1	114
Future Volume (vph)	0	1171	586	463	308	0	0	0	0	230	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1703	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1703	2814
Peak-hour factor, PHF	0.84	0.84	0.84	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	1394	698	493	328	0	0	0	0	245	1	121
RTOR Reduction (vph)	0	0	358	0	0	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	1394	340	493	328	0	0	0	0	122	124	24
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		35.9	35.9	21.1	56.2					18.9	18.9	18.9
Effective Green, g (s)		35.9	35.9	21.1	56.2					18.9	18.9	18.9
Actuated g/C Ratio		0.38	0.38	0.22	0.60					0.20	0.20	0.20
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2309	591	727	2067					341	342	566
v/s Ratio Prot		c0.23	0.22	c0.15	0.09					0.07	c0.07	0.01
v/s Ratio Perm												
v/c Ratio		0.60	0.58	0.68	0.16					0.36	0.36	0.04
Uniform Delay, d1		23.3	23.0	33.3	8.4					32.3	32.3	30.2
Progression Factor		1.00	1.00	1.35	0.85					1.00	1.00	1.00
Incremental Delay, d2		0.7	2.2	2.5	0.1					1.3	1.4	0.1
Delay (s)		24.0	25.1	47.6	7.2					33.6	33.7	30.3
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		24.3			31.4			0.0			32.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 4 NB Off-ramp/US Route 4 NB On-Ramp & Pease Blvd/Gosling Road
2026 No-Build Weekday PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	718	683	0	0	629	330	142	0	517	0	0	0
Future Volume (vph)	718	683	0	0	629	330	142	0	517	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.95		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4871		3433	1504	1504			
Flt Permitted	0.19	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	655	3455			4871		3433	1504	1504			
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	825	785	0	0	669	351	151	0	550	0	0	0
RTOR Reduction (vph)	0	0	0	0	88	0	0	220	220	0	0	0
Lane Group Flow (vph)	825	785	0	0	932	0	151	55	55	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	57.8	35.9			35.1		18.9	18.9	18.9			
Effective Green, g (s)	57.8	35.9			35.1		18.9	18.9	18.9			
Actuated g/C Ratio	0.62	0.38			0.37		0.20	0.20	0.20			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	1005	1320			1820		690	302	302			
v/s Ratio Prot	c0.19	0.23			0.19		c0.04	0.04	0.04			
v/s Ratio Perm	c0.31											
v/c Ratio	0.82	0.59			0.51		0.22	0.18	0.18			
Uniform Delay, d1	16.2	23.2			22.8		31.3	31.1	31.1			
Progression Factor	2.29	0.46			1.00		1.00	1.00	1.00			
Incremental Delay, d2	4.8	0.9			0.5		0.3	0.6	0.6			
Delay (s)	41.8	11.5			23.3		31.7	31.7	31.7			
Level of Service	D	B			C		C	C	C			
Approach Delay (s)		27.1			23.3			31.7			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	61	505	61	56	49	358	484	34	31	473	122
Future Volume (vph)	89	61	505	61	56	49	358	484	34	31	473	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749	1689		1756		3467	3534		1711	3421	1531
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1749	1689		1756		3467	3534		1711	3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.96	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	99	68	561	76	70	61	373	504	35	32	488	126
RTOR Reduction (vph)	0	0	424	0	13	0	0	3	0	0	0	74
Lane Group Flow (vph)	0	167	137	0	194	0	373	536	0	32	488	52
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.1		15.0		13.7	34.3		2.9	23.0	37.4
Effective Green, g (s)		8.4	22.1		15.0		13.7	34.3		2.9	23.0	37.4
Actuated g/C Ratio		0.09	0.24		0.17		0.15	0.38		0.03	0.25	0.41
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		162	411		290		524	1337		54	868	632
v/s Ratio Prot		c0.10	0.08		c0.11		c0.11	0.15		0.02	c0.14	0.03
v/s Ratio Perm												
v/c Ratio		1.03	0.33		0.67		0.71	0.40		0.59	0.56	0.08
Uniform Delay, d1		41.1	28.2		35.5		36.6	20.6		43.3	29.4	16.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		79.1	0.5		6.0		4.5	0.2		16.2	0.8	0.1
Delay (s)		120.2	28.7		41.5		41.1	20.8		59.5	30.3	16.2
Level of Service		F	C		D		D	C		E	C	B
Approach Delay (s)		49.7			41.5			29.1			29.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	25.5
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	19	61	106	16	95	29	691	100	78	710	29
Future Volume (vph)	117	19	61	106	16	95	29	691	100	78	710	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1659	1424	1682	1708	1584	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1659	1424	1682	1708	1584	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	136	22	71	138	21	123	33	794	115	83	755	31
RTOR Reduction (vph)	0	0	59	0	0	0	0	0	63	0	0	13
Lane Group Flow (vph)	79	79	12	79	80	123	33	794	52	83	755	18
Heavy Vehicles (%)	0%	0%	8%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	7.9	7.9	12.6	8.1	8.1	22.8	4.7	24.6	32.7	9.2	28.6	42.5
Effective Green, g (s)	7.9	7.9	12.6	8.1	8.1	22.8	4.7	24.6	32.7	9.2	28.6	42.5
Actuated g/C Ratio	0.11	0.11	0.17	0.11	0.11	0.31	0.06	0.34	0.45	0.13	0.39	0.58
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	180	246	187	190	496	108	1138	793	221	1377	915
v/s Ratio Prot	c0.05	0.05	0.01	c0.05	0.05	0.08	0.02	c0.24	0.03	c0.05	c0.22	0.01
v/s Ratio Perm												
v/c Ratio	0.45	0.44	0.05	0.42	0.42	0.25	0.31	0.70	0.07	0.38	0.55	0.02
Uniform Delay, d1	30.4	30.4	25.1	30.2	30.2	18.6	32.5	20.9	11.4	29.2	17.1	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.7	0.1	1.5	1.5	0.3	1.6	1.9	0.0	1.1	0.4	0.0
Delay (s)	32.2	32.1	25.2	31.7	31.7	18.9	34.1	22.8	11.4	30.2	17.6	6.4
Level of Service	C	C	C	C	C	B	C	C	B	C	B	A
Approach Delay (s)		30.0			26.1			21.8			18.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	25.5
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	72	100	200	95	17	100	468	145	17	655	383
Future Volume (vph)	217	72	100	200	95	17	100	468	145	17	655	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1618		1954	2009		1728	3332		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1618		1954	2009		1728	3332		1728	3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Adj. Flow (vph)	241	80	111	220	104	19	114	532	165	19	728	426
RTOR Reduction (vph)	0	41	0	0	5	0	0	20	0	0	0	220
Lane Group Flow (vph)	241	150	0	220	118	0	114	677	0	19	728	206
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.2	11.2		15.0	15.0		10.6	37.9		2.7	30.0	47.7
Effective Green, g (s)	11.2	11.2		15.0	15.0		10.6	37.9		2.7	30.0	47.7
Actuated g/C Ratio	0.11	0.11		0.15	0.15		0.11	0.38		0.03	0.30	0.48
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	370	183		296	305		185	1279		47	1050	747
v/s Ratio Prot	0.07	c0.09		c0.11	0.06		c0.07	c0.20		0.01	c0.21	0.13
v/s Ratio Perm												
v/c Ratio	0.65	0.82		0.74	0.39		0.62	0.53		0.40	0.69	0.28
Uniform Delay, d1	41.9	42.8		40.0	37.7		42.1	23.5		47.2	30.3	15.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	24.6		9.7	0.8		6.0	0.4		5.6	2.0	0.2
Delay (s)	46.0	67.4		49.7	38.5		48.1	23.9		52.8	32.3	15.4
Level of Service	D	E		D	D		D	C		D	C	B
Approach Delay (s)		55.4			45.7			27.3			26.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	28.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1105	95	0	959	0	31
Future Volume (Veh/h)	1105	95	0	959	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.98	0.97	0.72	0.72
Hourly flow rate (vph)	1176	101	0	989	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1277		1721	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1277		1721	344
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			545		82	657

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	336	336	336	269	494	494	43
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	101	0	0	43
cSH	1700	1700	1700	1700	1700	1700	657
Volume to Capacity	0.20	0.20	0.20	0.16	0.29	0.29	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS							B
Approach Delay (s)	0.0				0.0		10.9
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	178	239	72	111	67
Future Vol, veh/h	67	178	239	72	111	67
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	80	80	74	74
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	69	184	299	90	150	91

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	300	0	-	0	622	301
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.1	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1273	-	-	-	452	741
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1272	-	-	-	424	739
Mov Cap-2 Maneuver	-	-	-	-	424	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1272	-	-	-	424	739
HCM Lane V/C Ratio	0.054	-	-	-	0.354	0.123
HCM Control Delay (s)	8	0	-	-	18.1	10.6
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	304	68	366	197	0	0	0	0	317	1	52
Future Volume (vph)	0	304	68	366	197	0	0	0	0	317	1	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1702	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1702	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	0	330	74	431	232	0	0	0	0	364	1	60
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	330	24	431	232	0	0	0	0	182	183	15
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		27.5	27.5	18.4	51.4					21.0	21.0	21.0
Effective Green, g (s)		27.5	27.5	18.4	51.4					21.0	21.0	21.0
Actuated g/C Ratio		0.32	0.32	0.22	0.61					0.25	0.25	0.25
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1956	500	701	2091					420	420	696
v/s Ratio Prot		c0.05	0.02	c0.13	c0.07					0.11	c0.11	0.01
v/s Ratio Perm												
v/c Ratio		0.17	0.05	0.61	0.11					0.43	0.44	0.02
Uniform Delay, d1		20.5	19.7	30.0	7.1					26.9	27.0	24.2
Progression Factor		1.00	1.00	1.43	0.79					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	1.8	0.0					1.5	1.5	0.0
Delay (s)		20.6	19.8	44.6	5.6					28.4	28.5	24.2
Level of Service		C	B	D	A					C	C	C
Approach Delay (s)		20.5			31.0			0.0			27.8	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	540	0	0	482	190	81	3	661	0	0	0
Future Volume (vph)	81	540	0	0	482	190	81	3	661	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.96		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4918		3467	1521	1519			
Flt Permitted	0.37	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1265	3455			4918		3467	1521	1519			
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	87	581	0	0	507	200	84	3	689	0	0	0
RTOR Reduction (vph)	0	0	0	0	64	0	0	260	259	0	0	0
Lane Group Flow (vph)	87	581	0	0	643	0	84	88	85	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	40.4	27.5			33.0		21.0	21.0	21.0			
Effective Green, g (s)	40.4	27.5			33.0		21.0	21.0	21.0			
Actuated g/C Ratio	0.48	0.32			0.39		0.25	0.25	0.25			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	901	1119			1911		857	376	375			
v/s Ratio Prot	c0.01	c0.17			c0.13		0.02	c0.06	0.06			
v/s Ratio Perm	0.03											
v/c Ratio	0.10	0.52			0.34		0.10	0.23	0.23			
Uniform Delay, d1	12.0	23.3			18.2		24.6	25.5	25.5			
Progression Factor	1.18	1.05			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.8			0.2		0.1	0.7	0.6			
Delay (s)	14.3	25.3			18.5		24.7	26.2	26.1			
Level of Service	B	C			B		C	C	C			
Approach Delay (s)		23.9			18.5			26.0			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

103: Woodbury Avenue & Gosling Road
2026 No-Build Saturday Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	38	342	24	43	65	298	393	20	35	448	61
Future Volume (vph)	56	38	342	24	43	65	298	393	20	35	448	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766	1706		1758		3467	3548		1728	3455	1546
Flt Permitted		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766	1706		1758		3467	3548		1728	3455	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	67	45	407	28	51	76	327	432	22	40	509	69
RTOR Reduction (vph)	0	0	305	0	29	0	0	2	0	0	0	40
Lane Group Flow (vph)	0	112	102	0	126	0	327	452	0	40	509	29
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	21.7		11.6		13.3	31.5		4.7	22.4	36.8
Effective Green, g (s)		8.4	21.7		11.6		13.3	31.5		4.7	22.4	36.8
Actuated g/C Ratio		0.10	0.25		0.13		0.15	0.37		0.05	0.26	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		171	428		236		534	1295		94	896	659
v/s Ratio Prot		c0.06	0.06		c0.07		c0.09	0.13		0.02	c0.15	0.02
v/s Ratio Perm												
v/c Ratio		0.65	0.24		0.54		0.61	0.35		0.43	0.57	0.04
Uniform Delay, d1		37.6	25.7		34.8		34.1	19.9		39.5	27.7	14.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.7	0.3		2.3		2.1	0.2		3.1	0.8	0.0
Delay (s)		46.3	26.0		37.2		36.2	20.1		42.6	28.6	14.5
Level of Service		D	C		D		D	C		D	C	B
Approach Delay (s)		30.4			37.2			26.8			27.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	25.5
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

104: Woodbury Avenue & Durgin Lane/BJ's Driveway
2026 No-Build Saturday Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	23	81	122	11	60	24	583	109	81	767	163
Future Volume (vph)	122	23	81	122	11	60	24	583	109	81	767	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1662	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1662	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	145	27	96	134	12	66	27	655	122	88	834	177
RTOR Reduction (vph)	0	0	78	0	0	0	0	0	70	0	0	41
Lane Group Flow (vph)	86	86	18	72	74	66	27	655	52	88	834	136
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	12.6	8.0	8.0	20.7	4.5	20.8	28.8	7.2	23.0	37.1
Effective Green, g (s)	8.1	8.1	12.6	8.0	8.0	20.7	4.5	20.8	28.8	7.2	23.0	37.1
Actuated g/C Ratio	0.12	0.12	0.19	0.12	0.12	0.31	0.07	0.31	0.43	0.11	0.34	0.55
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	200	288	202	204	493	112	1044	758	188	1202	867
v/s Ratio Prot	c0.05	0.05	0.01	0.04	c0.04	0.04	0.02	0.19	0.03	c0.05	c0.24	0.09
v/s Ratio Perm												
v/c Ratio	0.44	0.43	0.06	0.36	0.36	0.13	0.24	0.63	0.07	0.47	0.69	0.16
Uniform Delay, d1	27.4	27.4	22.4	27.2	27.2	16.7	29.7	19.8	11.3	28.2	19.0	7.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.5	0.1	1.1	1.1	0.1	1.1	1.2	0.0	1.8	1.8	0.1
Delay (s)	28.9	28.8	22.5	28.3	28.3	16.9	30.8	21.0	11.3	30.0	20.8	7.4
Level of Service	C	C	C	C	C	B	C	C	B	C	C	A
Approach Delay (s)		26.6			24.7			19.9			19.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	25.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	68	50	142	75	22	61	468	129	12	549	393
Future Volume (vph)	244	68	50	142	75	22	61	468	129	12	549	393
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1660		1954	1987		1728	3343		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1660		1954	1987		1728	3343		1728	3455	1546
Peak-hour factor, PHF	0.77	0.77	0.77	0.78	0.78	0.78	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	317	88	65	182	96	28	66	509	140	12	566	405
RTOR Reduction (vph)	0	21	0	0	8	0	0	18	0	0	0	197
Lane Group Flow (vph)	317	132	0	182	116	0	66	631	0	12	566	208
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.5	11.5		12.8	12.8		6.9	29.2		1.2	23.5	41.5
Effective Green, g (s)	11.5	11.5		12.8	12.8		6.9	29.2		1.2	23.5	41.5
Actuated g/C Ratio	0.14	0.14		0.16	0.16		0.09	0.36		0.01	0.29	0.51
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	236		309	315		147	1209		25	1006	795
v/s Ratio Prot	c0.10	0.08		c0.09	0.06		c0.04	c0.19		0.01	0.16	0.13
v/s Ratio Perm												
v/c Ratio	0.68	0.56		0.59	0.37		0.45	0.52		0.48	0.56	0.26
Uniform Delay, d1	32.9	32.2		31.5	30.3		35.1	20.3		39.4	24.2	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	3.0		2.9	0.7		2.2	0.4		13.8	0.7	0.2
Delay (s)	37.0	35.3		34.4	31.1		37.3	20.7		53.2	25.0	11.2
Level of Service	D	D		C	C		D	C		D	C	B
Approach Delay (s)		36.4			33.0			22.2			19.6	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	28.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1133	68	0	672	0	53
Future Volume (Veh/h)	1133	68	0	672	0	53
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.95	0.95	0.55	0.55
Hourly flow rate (vph)	1218	73	0	707	0	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1291		1608	341
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1291		1608	341
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	85
cM capacity (veh/h)			538		98	661

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	348	348	348	247	354	354	96
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	73	0	0	96
cSH	1700	1700	1700	1700	1700	1700	661
Volume to Capacity	0.20	0.20	0.20	0.15	0.21	0.21	0.15
Queue Length 95th (ft)	0	0	0	0	0	0	13
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	102	204	122	81	149	49
Future Vol, veh/h	102	204	122	81	149	49
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	81	81	88	88
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	107	215	151	100	169	56

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	152	0	-	0	581	153
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1435	-	-	-	479	898
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	437	896
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	660	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1434	-	-	-	437	896
HCM Lane V/C Ratio	0.075	-	-	-	0.387	0.062
HCM Control Delay (s)	7.7	0	-	-	18.4	9.3
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	259	113	99	984	0	0	0	0	451	0	831
Future Volume (vph)	0	259	113	99	984	0	0	0	0	451	0	831
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5923	1516	3173	3388					1698	1698	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5923	1516	3173	3388					1698	1698	2814
Peak-hour factor, PHF	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86
Adj. Flow (vph)	0	278	122	114	1131	0	0	0	0	524	0	966
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	0	137
Lane Group Flow (vph)	0	278	36	114	1131	0	0	0	0	262	262	829
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		28.7	28.7	25.1	59.8					25.1	25.1	25.1
Effective Green, g (s)		28.7	28.7	25.1	59.8					25.1	25.1	25.1
Actuated g/C Ratio		0.30	0.30	0.26	0.62					0.26	0.26	0.26
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1754	449	821	2090					439	439	728
v/s Ratio Prot		0.05	0.02	0.04	c0.33					0.15	0.15	c0.29
v/s Ratio Perm												
v/c Ratio		0.16	0.08	0.14	0.54					0.60	0.60	1.14
Uniform Delay, d1		25.2	24.6	27.6	10.7					31.5	31.5	35.9
Progression Factor		1.00	1.00	0.87	1.60					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2	0.1	0.4					3.3	3.3	78.5
Delay (s)		25.3	24.7	24.1	17.4					34.7	34.7	114.4
Level of Service		C	C	C	B					C	C	F
Approach Delay (s)		25.1			18.0			0.0			86.4	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	96.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	592	0	0	321	48	762	0	288	0	0	0
Future Volume (vph)	118	592	0	0	321	48	762	0	288	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.98		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4844		3400	1490	1490			
Flt Permitted	0.50	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1703	3455			4844		3400	1490	1490			
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	127	637	0	0	361	54	837	0	316	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	117	117	0	0	0
Lane Group Flow (vph)	127	637	0	0	397	0	837	41	41	0	0	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	45.6	28.7			36.9		25.1	25.1	25.1			
Effective Green, g (s)	45.6	28.7			36.9		25.1	25.1	25.1			
Actuated g/C Ratio	0.47	0.30			0.38		0.26	0.26	0.26			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	1068	1023			1844		880	385	385			
v/s Ratio Prot	c0.02	c0.18			c0.08		c0.25	0.03	0.03			
v/s Ratio Perm	0.04											
v/c Ratio	0.12	0.62			0.22		0.95	0.11	0.11			
Uniform Delay, d1	14.1	29.4			20.2		35.3	27.4	27.4			
Progression Factor	1.24	1.25			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.5			0.1		19.9	0.3	0.3			
Delay (s)	17.6	38.2			20.4		55.2	27.6	27.6			
Level of Service	B	D			C		E	C	C			
Approach Delay (s)		34.8			20.4			47.6			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	96.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	42	491	29	15	7	241	192	20	39	316	9
Future Volume (vph)	101	42	491	29	15	7	241	192	20	39	316	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1706	1656		1604		3400	3455		1678	3355	1501
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1706	1656		1604		3400	3455		1678	3355	1501
Peak-hour factor, PHF	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	111	46	540	33	17	8	287	229	24	44	355	10
RTOR Reduction (vph)	0	0	380	0	6	0	0	5	0	0	0	6
Lane Group Flow (vph)	0	157	160	0	52	0	287	248	0	44	355	4
Heavy Vehicles (%)	4%	4%	4%	13%	13%	13%	3%	3%	3%	4%	4%	4%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		9.0	21.8		4.9		12.8	25.9		4.3	16.9	31.9
Effective Green, g (s)		9.0	21.8		4.9		12.8	25.9		4.3	16.9	31.9
Actuated g/C Ratio		0.12	0.30		0.07		0.17	0.35		0.06	0.23	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		208	491		106		592	1217		98	771	651
v/s Ratio Prot		c0.09	0.10		c0.03		c0.08	0.07		0.03	c0.11	0.00
v/s Ratio Perm												
v/c Ratio		0.75	0.33		0.49		0.48	0.20		0.45	0.46	0.01
Uniform Delay, d1		31.2	20.1		33.1		27.4	16.6		33.5	24.4	11.8
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.4	0.4		3.6		0.6	0.1		3.2	0.4	0.0
Delay (s)		45.6	20.5		36.7		28.0	16.7		36.7	24.8	11.8
Level of Service		D	C		D		C	B		D	C	B
Approach Delay (s)		26.2			36.7			22.7			25.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	3	29	29	0	37	10	360	42	50	733	55
Future Volume (vph)	26	3	29	29	0	37	10	360	42	50	733	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1570	1591	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1570	1591	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Peak-hour factor, PHF	0.82	0.82	0.82	0.65	0.65	0.65	0.85	0.85	0.85	0.98	0.98	0.98
Adj. Flow (vph)	32	4	35	45	0	57	12	424	49	51	748	56
RTOR Reduction (vph)	0	0	31	0	0	0	0	0	27	0	0	25
Lane Group Flow (vph)	18	18	4	22	23	57	12	424	22	51	748	31
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	5.1	5.1	8.3	5.6	5.6	12.2	3.2	26.9	32.5	6.6	29.8	40.9
Effective Green, g (s)	5.1	5.1	8.3	5.6	5.6	12.2	3.2	26.9	32.5	6.6	29.8	40.9
Actuated g/C Ratio	0.07	0.07	0.11	0.08	0.08	0.17	0.04	0.37	0.45	0.09	0.41	0.56
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	109	111	168	125	125	257	72	1218	772	157	1419	871
v/s Ratio Prot	c0.01	0.01	0.00	0.01	0.01	c0.04	0.01	0.13	0.01	c0.03	c0.22	0.02
v/s Ratio Perm												
v/c Ratio	0.17	0.16	0.02	0.18	0.18	0.22	0.17	0.35	0.03	0.32	0.53	0.04
Uniform Delay, d1	31.9	31.9	28.7	31.5	31.5	26.2	33.6	16.7	11.3	31.1	16.2	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.7	0.1	0.7	0.7	0.4	1.1	0.2	0.0	1.2	0.4	0.0
Delay (s)	32.6	32.6	28.8	32.2	32.2	26.7	34.7	16.8	11.4	32.3	16.6	7.2
Level of Service	C	C	C	C	C	C	C	B	B	C	B	A
Approach Delay (s)		30.7			29.1			16.7			16.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	43	52	3	35	44	73	321	85	2	288	220
Future Volume (vph)	112	43	52	3	35	44	73	321	85	2	288	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1616		1898	1830		1711	3299		1694	3388	1516
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1616		1898	1830		1711	3299		1694	3388	1516
Peak-hour factor, PHF	0.73	0.73	0.73	0.65	0.65	0.65	0.75	0.75	0.75	0.97	0.97	0.97
Adj. Flow (vph)	153	59	71	5	54	68	97	428	113	2	297	227
RTOR Reduction (vph)	0	34	0	0	40	0	0	17	0	0	0	114
Lane Group Flow (vph)	153	96	0	5	82	0	97	524	0	2	297	113
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	9.8	9.8		6.7	6.7		7.1	23.0		0.9	16.8	33.1
Effective Green, g (s)	9.8	9.8		6.7	6.7		7.1	23.0		0.9	16.8	33.1
Actuated g/C Ratio	0.15	0.15		0.10	0.10		0.11	0.35		0.01	0.25	0.50
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	482	238		191	184		182	1142		22	857	755
v/s Ratio Prot	0.05	c0.06		0.00	c0.05		c0.06	c0.16		0.00	0.09	0.07
v/s Ratio Perm												
v/c Ratio	0.32	0.40		0.03	0.45		0.53	0.46		0.09	0.35	0.15
Uniform Delay, d1	25.3	25.6		26.9	28.1		28.1	16.9		32.3	20.3	9.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.1		0.1	1.7		3.0	0.3		1.8	0.2	0.1
Delay (s)	25.7	26.8		27.0	29.8		31.1	17.2		34.1	20.6	9.1
Level of Service	C	C		C	C		C	B		C	C	A
Approach Delay (s)		26.2			29.7			19.3			15.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	28.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	784	96	0	369	0	15
Future Volume (Veh/h)	784	96	0	369	0	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.46	0.46
Hourly flow rate (vph)	808	99	0	415	0	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			907		1065	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			907		1065	252
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			728		221	754

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	231	231	231	214	208	208	33
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	99	0	0	33
cSH	1700	1700	1700	1700	1700	1700	754
Volume to Capacity	0.14	0.14	0.14	0.13	0.12	0.12	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Lane LOS							A
Approach Delay (s)	0.0				0.0		10.0
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	4.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	96	85	79	90	53
Future Vol, veh/h	55	96	85	79	90	53
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	84	84	81	81
Heavy Vehicles, %	4	4	2	2	0	0
Mvmt Flow	65	113	101	94	111	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	102	0	-	0	345	103
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1478	-	-	-	656	957
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	624	955
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	801	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1477	-	-	-	624	955
HCM Lane V/C Ratio	0.044	-	-	-	0.178	0.069
HCM Control Delay (s)	7.5	0	-	-	12	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1282	644	511	339	0	0	0	0	254	1	125
Future Volume (vph)	0	1282	644	511	339	0	0	0	0	254	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1703	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1703	2814
Peak-hour factor, PHF	0.84	0.84	0.84	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	1526	767	544	361	0	0	0	0	270	1	133
RTOR Reduction (vph)	0	0	359	0	0	0	0	0	0	0	0	105
Lane Group Flow (vph)	0	1526	408	544	361	0	0	0	0	135	136	28
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		35.8	35.8	22.4	56.3					20.4	20.4	20.4
Effective Green, g (s)		35.8	35.8	22.4	56.3					20.4	20.4	20.4
Actuated g/C Ratio		0.37	0.37	0.23	0.58					0.21	0.21	0.21
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2238	572	750	2013					358	359	594
v/s Ratio Prot		0.25	c0.26	c0.17	0.10					0.08	c0.08	0.01
v/s Ratio Perm												
v/c Ratio		0.68	0.71	0.73	0.18					0.38	0.38	0.05
Uniform Delay, d1		25.6	26.0	34.3	9.4					32.7	32.7	30.4
Progression Factor		1.00	1.00	1.35	0.84					1.00	1.00	1.00
Incremental Delay, d2		1.1	5.2	3.2	0.1					1.4	1.4	0.1
Delay (s)		26.7	31.2	49.6	7.9					34.0	34.1	30.4
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		28.2			33.0			0.0			32.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	785	751	0	0	693	365	157	0	571	0	0	0
Future Volume (vph)	785	751	0	0	693	365	157	0	571	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.95		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4870		3433	1504	1504			
Flt Permitted	0.14	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	488	3455			4870		3433	1504	1504			
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	902	863	0	0	737	388	167	0	607	0	0	0
RTOR Reduction (vph)	0	0	0	0	91	0	0	240	239	0	0	0
Lane Group Flow (vph)	902	863	0	0	1034	0	167	64	64	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	60.1	35.8			33.9		20.4	20.4	20.4			
Effective Green, g (s)	60.1	35.8			33.9		20.4	20.4	20.4			
Actuated g/C Ratio	0.62	0.37			0.35		0.21	0.21	0.21			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	994	1280			1709		724	317	317			
v/s Ratio Prot	c0.23	0.25			0.21		c0.05	0.04	0.04			
v/s Ratio Perm	c0.34											
v/c Ratio	0.91	0.67			0.61		0.23	0.20	0.20			
Uniform Delay, d1	23.2	25.5			25.8		31.6	31.4	31.4			
Progression Factor	1.94	0.48			1.00		1.00	1.00	1.00			
Incremental Delay, d2	9.6	1.4			0.9		0.3	0.7	0.7			
Delay (s)	54.6	13.7			26.7		31.9	32.1	32.1			
Level of Service	D	B			C		C	C	C			
Approach Delay (s)		34.6			26.7			32.0			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	68	554	68	61	54	394	534	38	34	522	135
Future Volume (vph)	98	68	554	68	61	54	394	534	38	34	522	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749	1689		1755		3467	3533		1711	3421	1531
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1749	1689		1755		3467	3533		1711	3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.96	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	109	76	616	85	76	68	410	556	40	35	538	139
RTOR Reduction (vph)	0	0	467	0	12	0	0	3	0	0	0	83
Lane Group Flow (vph)	0	185	149	0	217	0	410	593	0	35	538	56
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.0		15.8		13.6	31.9		4.7	22.5	36.9
Effective Green, g (s)		8.4	22.0		15.8		13.6	31.9		4.7	22.5	36.9
Actuated g/C Ratio		0.09	0.24		0.17		0.15	0.35		0.05	0.25	0.41
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		161	408		305		518	1239		88	846	621
v/s Ratio Prot		c0.11	0.09		c0.12		c0.12	0.17		0.02	c0.16	0.04
v/s Ratio Perm												
v/c Ratio		1.15	0.37		0.71		0.79	0.48		0.40	0.64	0.09
Uniform Delay, d1		41.2	28.6		35.4		37.3	23.0		41.7	30.5	16.7
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		116.6	0.6		7.6		8.1	0.3		2.9	1.6	0.1
Delay (s)		157.9	29.2		43.0		45.4	23.3		44.7	32.1	16.7
Level of Service		F	C		D		D	C		D	C	B
Approach Delay (s)		58.9			43.0			32.3			29.7	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	21	68	117	17	104	32	762	111	86	781	32
Future Volume (vph)	129	21	68	117	17	104	32	762	111	86	781	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1659	1424	1682	1707	1584	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1659	1424	1682	1707	1584	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	150	24	79	152	22	135	37	876	128	91	831	34
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	68	0	0	14
Lane Group Flow (vph)	87	87	13	87	87	135	37	876	60	91	831	20
Heavy Vehicles (%)	0%	0%	8%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	12.8	8.3	8.3	23.3	4.7	27.6	35.9	9.5	31.9	46.0
Effective Green, g (s)	8.1	8.1	12.8	8.3	8.3	23.3	4.7	27.6	35.9	9.5	31.9	46.0
Actuated g/C Ratio	0.11	0.11	0.17	0.11	0.11	0.30	0.06	0.36	0.47	0.12	0.42	0.60
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	175	238	182	185	482	103	1215	829	217	1462	943
v/s Ratio Prot	c0.05	0.05	0.01	c0.05	0.05	0.09	0.02	c0.26	0.03	c0.05	c0.24	0.01
v/s Ratio Perm												
v/c Ratio	0.51	0.50	0.06	0.48	0.47	0.28	0.36	0.72	0.07	0.42	0.57	0.02
Uniform Delay, d1	32.3	32.3	26.8	32.1	32.0	20.2	34.5	21.1	11.2	31.0	17.0	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	2.2	0.1	2.0	1.9	0.3	2.1	2.1	0.0	1.3	0.5	0.0
Delay (s)	34.6	34.5	26.9	34.0	33.9	20.5	36.6	23.3	11.2	32.3	17.6	6.2
Level of Service	C	C	C	C	C	C	D	C	B	C	B	A
Approach Delay (s)		32.2			28.1			22.3			18.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	80	111	221	104	18	111	517	160	18	722	421
Future Volume (vph)	239	80	111	221	104	18	111	517	160	18	722	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.98		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1619		1954	2011		1728	3333		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1619		1954	2011		1728	3333		1728	3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Adj. Flow (vph)	266	89	123	243	114	20	126	588	182	20	802	468
RTOR Reduction (vph)	0	41	0	0	5	0	0	20	0	0	0	244
Lane Group Flow (vph)	266	171	0	243	129	0	126	750	0	20	802	224
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.2	11.2		16.1	16.1		11.1	38.9		2.8	30.6	48.3
Effective Green, g (s)	11.2	11.2		16.1	16.1		11.1	38.9		2.8	30.6	48.3
Actuated g/C Ratio	0.11	0.11		0.16	0.16		0.11	0.39		0.03	0.30	0.48
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	362	179		311	320		189	1283		47	1046	739
v/s Ratio Prot	0.08	c0.11		c0.12	0.06		c0.07	c0.22		0.01	c0.23	0.14
v/s Ratio Perm												
v/c Ratio	0.73	0.96		0.78	0.40		0.67	0.58		0.43	0.77	0.30
Uniform Delay, d1	43.5	44.7		40.8	38.1		43.2	24.6		48.3	32.0	16.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.5	53.9		12.0	0.8		8.6	0.7		6.1	3.4	0.2
Delay (s)	51.0	98.6		52.8	39.0		51.7	25.3		54.4	35.4	16.3
Level of Service	D	F		D	D		D	C		D	D	B
Approach Delay (s)		72.1			47.9			29.0			28.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1218	104	0	1058	0	34
Future Volume (Veh/h)	1218	104	0	1058	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.98	0.97	0.72	0.72
Hourly flow rate (vph)	1296	111	0	1091	0	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1407		1897	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1407		1897	380
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	92
cM capacity (veh/h)			486		63	624

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	370	370	370	296	546	546	47
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	111	0	0	47
cSH	1700	1700	1700	1700	1700	1700	624
Volume to Capacity	0.22	0.22	0.22	0.17	0.32	0.32	0.08
Queue Length 95th (ft)	0	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.2
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.2
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	197	264	80	123	74
Future Vol, veh/h	74	197	264	80	123	74
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	80	80	74	74
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	76	203	330	100	166	100

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	331	0	-	0	686	332
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	355	-
Critical Hdwy	4.1	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1240	-	-	-	415	712
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1239	-	-	-	386	710
Mov Cap-2 Maneuver	-	-	-	-	386	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1239	-	-	-	386	710
HCM Lane V/C Ratio	0.062	-	-	-	0.431	0.141
HCM Control Delay (s)	8.1	0	-	-	21.2	10.9
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.1	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	336	75	405	217	0	0	0	0	350	1	57
Future Volume (vph)	0	336	75	405	217	0	0	0	0	350	1	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1702	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1702	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	0	365	82	476	255	0	0	0	0	402	1	66
RTOR Reduction (vph)	0	0	55	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	365	27	476	255	0	0	0	0	201	202	16
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		30.1	30.1	20.1	56.2					21.9	21.9	21.9
Effective Green, g (s)		30.1	30.1	20.1	56.2					21.9	21.9	21.9
Actuated g/C Ratio		0.33	0.33	0.22	0.62					0.24	0.24	0.24
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2017	516	721	2155					412	413	683
v/s Ratio Prot		c0.06	0.02	c0.15	0.07					0.12	c0.12	0.01
v/s Ratio Perm												
v/c Ratio		0.18	0.05	0.66	0.12					0.49	0.49	0.02
Uniform Delay, d1		21.3	20.3	31.9	6.9					29.3	29.3	26.0
Progression Factor		1.00	1.00	1.45	0.79					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	2.4	0.1					1.9	1.9	0.0
Delay (s)		21.4	20.4	48.7	5.5					31.2	31.2	26.0
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		21.2			33.6			0.0			30.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 4 NB Off-ramp/US Route 4 NB On-Ramp & Pease Blvd/Gosling Road
2036 No-Build Saturday Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	596	0	0	532	210	90	3	730	0	0	0
Future Volume (vph)	90	596	0	0	532	210	90	3	730	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.96		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4918		3467	1521	1519			
Flt Permitted	0.34	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1172	3455			4918		3467	1521	1519			
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	97	641	0	0	560	221	94	3	760	0	0	0
RTOR Reduction (vph)	0	0	0	0	61	0	0	288	288	0	0	0
Lane Group Flow (vph)	97	641	0	0	720	0	94	95	92	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	43.1	30.1			37.2		21.9	21.9	21.9			
Effective Green, g (s)	43.1	30.1			37.2		21.9	21.9	21.9			
Actuated g/C Ratio	0.48	0.33			0.41		0.24	0.24	0.24			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	858	1154			2030		842	369	369			
v/s Ratio Prot	c0.02	c0.19			c0.15		0.03	c0.06	0.06			
v/s Ratio Perm	0.04											
v/c Ratio	0.11	0.56			0.35		0.11	0.26	0.25			
Uniform Delay, d1	12.6	24.5			18.2		26.5	27.5	27.5			
Progression Factor	1.16	1.06			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.0			0.2		0.1	0.8	0.7			
Delay (s)	14.7	27.1			18.4		26.7	28.3	28.2			
Level of Service	B	C			B		C	C	C			
Approach Delay (s)		25.4			18.4			28.1			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	42	377	27	48	72	330	435	22	39	495	67
Future Volume (vph)	62	42	377	27	48	72	330	435	22	39	495	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766	1706		1758		3467	3549		1728	3455	1546
Flt Permitted		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766	1706		1758		3467	3549		1728	3455	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	74	50	449	32	56	85	363	478	24	44	562	76
RTOR Reduction (vph)	0	0	336	0	29	0	0	2	0	0	0	44
Lane Group Flow (vph)	0	124	113	0	144	0	363	500	0	44	563	32
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.0		12.4		13.6	31.8		4.8	22.5	36.9
Effective Green, g (s)		8.4	22.0		12.4		13.6	31.8		4.8	22.5	36.9
Actuated g/C Ratio		0.10	0.25		0.14		0.16	0.36		0.05	0.26	0.42
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		169	428		249		538	1289		94	888	651
v/s Ratio Prot		c0.07	0.07		c0.08		c0.10	0.14		0.03	c0.16	0.02
v/s Ratio Perm												
v/c Ratio		0.73	0.26		0.58		0.67	0.39		0.47	0.63	0.05
Uniform Delay, d1		38.5	26.3		35.1		34.9	20.6		40.1	28.8	14.9
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		15.2	0.3		3.2		3.3	0.2		3.7	1.5	0.0
Delay (s)		53.6	26.6		38.3		38.2	20.8		43.8	30.3	15.0
Level of Service		D	C		D		D	C		D	C	B
Approach Delay (s)		32.4			38.3			28.1			29.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	25	90	135	12	66	27	644	120	90	847	180
Future Volume (vph)	135	25	90	135	12	66	27	644	120	90	847	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1662	1538	1699	1716	1600	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1662	1538	1699	1716	1600	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	161	30	107	148	13	73	30	724	135	98	921	196
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	76	0	0	38
Lane Group Flow (vph)	95	96	19	80	81	73	30	724	59	98	921	158
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	12.7	8.1	8.1	23.2	4.6	23.4	31.5	9.6	27.9	42.0
Effective Green, g (s)	8.1	8.1	12.7	8.1	8.1	23.2	4.6	23.4	31.5	9.6	27.9	42.0
Actuated g/C Ratio	0.11	0.11	0.18	0.11	0.11	0.32	0.06	0.32	0.44	0.13	0.39	0.58
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	183	186	270	190	192	514	107	1091	770	233	1355	912
v/s Ratio Prot	c0.06	0.06	0.01	0.05	c0.05	0.05	0.02	0.21	0.03	c0.06	c0.26	0.10
v/s Ratio Perm												
v/c Ratio	0.52	0.52	0.07	0.42	0.42	0.14	0.28	0.66	0.08	0.42	0.68	0.17
Uniform Delay, d1	30.2	30.2	24.8	29.9	29.9	17.4	32.2	21.0	11.9	28.7	18.4	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	2.4	0.1	1.5	1.5	0.1	1.4	1.5	0.0	1.2	1.4	0.1
Delay (s)	32.7	32.6	24.9	31.4	31.4	17.6	33.7	22.5	11.9	30.0	19.8	7.1
Level of Service	C	C	C	C	C	B	C	C	B	C	B	A
Approach Delay (s)		29.9			27.1			21.3			18.6	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	25.5
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	75	55	157	82	24	67	517	142	13	607	435
Future Volume (vph)	270	75	55	157	82	24	67	517	142	13	607	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1661		1954	1986		1728	3344		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1661		1954	1986		1728	3344		1728	3455	1546
Peak-hour factor, PHF	0.77	0.77	0.77	0.78	0.78	0.78	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	351	97	71	201	105	31	73	562	154	13	626	448
RTOR Reduction (vph)	0	21	0	0	8	0	0	18	0	0	0	216
Lane Group Flow (vph)	351	147	0	201	128	0	73	698	0	13	626	232
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.4	11.4		13.9	13.9		7.2	31.5		1.3	25.6	43.5
Effective Green, g (s)	11.4	11.4		13.9	13.9		7.2	31.5		1.3	25.6	43.5
Actuated g/C Ratio	0.14	0.14		0.17	0.17		0.09	0.37		0.02	0.30	0.52
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	442	225		322	328		147	1252		26	1051	799
v/s Ratio Prot	c0.11	0.09		c0.10	0.06		c0.04	c0.21		0.01	0.18	0.15
v/s Ratio Perm												
v/c Ratio	0.79	0.65		0.62	0.39		0.50	0.56		0.50	0.60	0.29
Uniform Delay, d1	35.2	34.5		32.7	31.3		36.7	20.8		41.1	24.9	11.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.5	6.7		3.7	0.8		2.6	0.5		14.3	0.9	0.2
Delay (s)	44.7	41.2		36.4	32.1		39.3	21.3		55.4	25.8	11.7
Level of Service	D	D		D	C		D	C		E	C	B
Approach Delay (s)		43.6			34.7			23.0			20.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	28.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1251	75	0	742	0	58
Future Volume (Veh/h)	1251	75	0	742	0	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.95	0.95	0.55	0.55
Hourly flow rate (vph)	1345	81	0	781	0	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1426		1776	377
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1426		1776	377
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	83
cM capacity (veh/h)			478		75	627

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	384	384	384	273	390	390	105
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	81	0	0	105
cSH	1700	1700	1700	1700	1700	1700	627
Volume to Capacity	0.23	0.23	0.23	0.16	0.23	0.23	0.17
Queue Length 95th (ft)	0	0	0	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.9
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.9
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	112	225	135	90	165	54
Future Vol, veh/h	112	225	135	90	165	54
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	81	81	88	88
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	118	237	167	111	188	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	168	0	-	0	641	169
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1416	-	-	-	442	880
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1415	-	-	-	399	878
Mov Cap-2 Maneuver	-	-	-	-	399	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	630	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1415	-	-	-	399	878
HCM Lane V/C Ratio	0.083	-	-	-	0.47	0.07
HCM Control Delay (s)	7.8	0	-	-	21.8	9.4
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	239	104	102	896	0	0	0	0	415	0	759
Future Volume (vph)	0	239	104	102	896	0	0	0	0	415	0	759
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5923	1516	3173	3388					1698	1698	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5923	1516	3173	3388					1698	1698	2814
Peak-hour factor, PHF	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86
Adj. Flow (vph)	0	257	112	117	1030	0	0	0	0	483	0	883
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	0	170
Lane Group Flow (vph)	0	257	33	117	1030	0	0	0	0	241	242	713
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		28.3	28.3	24.7	59.0					25.1	25.1	25.1
Effective Green, g (s)		28.3	28.3	24.7	59.0					25.1	25.1	25.1
Actuated g/C Ratio		0.29	0.29	0.26	0.61					0.26	0.26	0.26
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1744	446	815	2080					443	443	734
v/s Ratio Prot		0.04	0.02	0.04	c0.30					0.14	0.14	c0.25
v/s Ratio Perm												
v/c Ratio		0.15	0.07	0.14	0.50					0.54	0.55	0.97
Uniform Delay, d1		25.0	24.4	27.5	10.3					30.6	30.6	35.1
Progression Factor		1.00	1.00	0.89	1.58					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	0.1	0.3					2.4	2.4	26.5
Delay (s)		25.1	24.6	24.7	16.5					33.0	33.0	61.6
Level of Service		C	C	C	B					C	C	E
Approach Delay (s)		24.9			17.3			0.0			51.5	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 4 NB Off-ramp/US Route 4 NB On-Ramp & Pease Blvd/Gosling Road
2026 Build Weekday AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	544	0	0	305	44	693	0	268	0	0	0
Future Volume (vph)	110	544	0	0	305	44	693	0	268	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.98		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4847		3400	1490	1490			
Flt Permitted	0.51	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1743	3455			4847		3400	1490	1490			
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	118	585	0	0	343	49	762	0	295	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	109	109	0	0	0
Lane Group Flow (vph)	118	585	0	0	376	0	762	39	38	0	0	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	41.8	28.3			39.5		25.1	25.1	25.1			
Effective Green, g (s)	41.8	28.3			39.5		25.1	25.1	25.1			
Actuated g/C Ratio	0.43	0.29			0.41		0.26	0.26	0.26			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	967	1017			1992		888	389	389			
v/s Ratio Prot	c0.02	c0.17			c0.08		c0.22	0.03	0.03			
v/s Ratio Perm	0.04											
v/c Ratio	0.12	0.58			0.19		0.86	0.10	0.10			
Uniform Delay, d1	15.9	28.8			18.1		33.8	26.9	26.9			
Progression Factor	1.26	1.24			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.2			0.1		9.0	0.2	0.2			
Delay (s)	20.1	36.8			18.2		42.8	27.2	27.2			
Level of Service	C	D			B		D	C	C			
Approach Delay (s)		34.0			18.2			38.5			0.0	
Approach LOS		C			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	38	446	27	13	6	234	173	18	36	286	8
Future Volume (vph)	92	38	446	27	13	6	234	173	18	36	286	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1706	1656		1605		3400	3456		1678	3355	1501
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1706	1656		1605		3400	3456		1678	3355	1501
Peak-hour factor, PHF	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	101	42	490	30	15	7	279	206	21	40	321	9
RTOR Reduction (vph)	0	0	345	0	5	0	0	5	0	0	0	5
Lane Group Flow (vph)	0	143	145	0	47	0	279	222	0	40	321	4
Heavy Vehicles (%)	4%	4%	4%	13%	13%	13%	3%	3%	3%	4%	4%	4%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		9.0	21.5		4.8		12.5	25.0		4.3	16.3	31.3
Effective Green, g (s)		9.0	21.5		4.8		12.5	25.0		4.3	16.3	31.3
Actuated g/C Ratio		0.12	0.30		0.07		0.17	0.34		0.06	0.22	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		211	491		106		586	1191		99	754	648
v/s Ratio Prot		c0.08	0.09		c0.03		c0.08	0.06		0.02	c0.10	0.00
v/s Ratio Perm												
v/c Ratio		0.68	0.30		0.45		0.48	0.19		0.40	0.43	0.01
Uniform Delay, d1		30.4	19.7		32.6		27.0	16.6		32.9	24.1	11.7
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.3	0.3		3.0		0.6	0.1		2.7	0.4	0.0
Delay (s)		38.7	20.0		35.6		27.7	16.7		35.6	24.5	11.7
Level of Service		D	C		D		C	B		D	C	B
Approach Delay (s)		24.2			35.6			22.7			25.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	3	108	27	0	34	21	329	38	45	665	50
Future Volume (vph)	35	3	108	27	0	34	21	329	38	45	665	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1570	1586	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1570	1586	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Peak-hour factor, PHF	0.82	0.82	0.82	0.65	0.65	0.65	0.85	0.85	0.85	0.98	0.98	0.98
Adj. Flow (vph)	43	4	132	42	0	52	25	387	45	46	679	51
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	26	0	0	25
Lane Group Flow (vph)	23	24	24	21	21	52	25	387	19	46	679	26
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	7.1	7.1	13.6	5.9	5.9	12.8	6.5	24.7	30.6	6.9	24.6	37.7
Effective Green, g (s)	7.1	7.1	13.6	5.9	5.9	12.8	6.5	24.7	30.6	6.9	24.6	37.7
Actuated g/C Ratio	0.10	0.10	0.18	0.08	0.08	0.17	0.09	0.34	0.42	0.09	0.33	0.51
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	151	152	273	130	130	267	145	1108	720	162	1160	796
v/s Ratio Prot	0.01	c0.02	0.02	0.01	0.01	c0.03	0.02	0.12	0.01	c0.03	c0.20	0.02
v/s Ratio Perm												
v/c Ratio	0.15	0.16	0.09	0.16	0.16	0.19	0.17	0.35	0.03	0.28	0.59	0.03
Uniform Delay, d1	30.5	30.5	24.9	31.5	31.5	26.0	31.1	18.4	12.7	31.0	20.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.1	0.6	0.6	0.4	0.6	0.2	0.0	1.0	0.8	0.0
Delay (s)	31.0	31.0	25.0	32.1	32.1	26.4	31.6	18.6	12.7	32.0	21.0	8.9
Level of Service	C	C	C	C	C	C	C	B	B	C	C	A
Approach Delay (s)		26.6			28.9			18.7			20.9	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	25.5
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	39	47	3	32	40	66	299	77	2	296	246
Future Volume (vph)	108	39	47	3	32	40	66	299	77	2	296	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1615		1898	1830		1711	3302		1694	3388	1516
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1615		1898	1830		1711	3302		1694	3388	1516
Peak-hour factor, PHF	0.73	0.73	0.73	0.65	0.65	0.65	0.75	0.75	0.75	0.97	0.97	0.97
Adj. Flow (vph)	148	53	64	5	49	62	88	399	103	2	305	254
RTOR Reduction (vph)	0	34	0	0	40	0	0	17	0	0	0	127
Lane Group Flow (vph)	148	83	0	5	71	0	88	485	0	2	305	127
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	9.4	9.4		6.3	6.3		6.9	22.7		0.9	16.7	32.6
Effective Green, g (s)	9.4	9.4		6.3	6.3		6.9	22.7		0.9	16.7	32.6
Actuated g/C Ratio	0.14	0.14		0.10	0.10		0.11	0.35		0.01	0.26	0.50
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	470	232		183	176		180	1147		23	866	756
v/s Ratio Prot	0.05	c0.05		0.00	c0.04		c0.05	c0.15		0.00	0.09	0.08
v/s Ratio Perm												
v/c Ratio	0.31	0.36		0.03	0.40		0.49	0.42		0.09	0.35	0.17
Uniform Delay, d1	25.1	25.2		26.7	27.7		27.5	16.3		31.8	19.9	8.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.9		0.1	1.5		2.1	0.3		1.6	0.2	0.1
Delay (s)	25.4	26.2		26.8	29.3		29.6	16.5		33.4	20.1	9.0
Level of Service	C	C		C	C		C	B		C	C	A
Approach Delay (s)		25.8			29.2			18.5			15.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	28.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	711	101	0	349	0	13
Future Volume (Veh/h)	711	101	0	349	0	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.46	0.46
Hourly flow rate (vph)	733	104	0	392	0	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			837		981	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			837		981	235
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			774		250	773

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	209	209	209	209	196	196	28
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	104	0	0	28
cSH	1700	1700	1700	1700	1700	1700	773
Volume to Capacity	0.12	0.12	0.12	0.12	0.12	0.12	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.8
Lane LOS							A
Approach Delay (s)	0.0				0.0		9.8
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	59	87	77	71	82	71
Future Vol, veh/h	59	87	77	71	82	71
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	84	84	81	81
Heavy Vehicles, %	4	4	2	2	0	0
Mvmt Flow	69	102	92	85	101	88

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	93	0	-	0	333	94
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1489	-	-	-	666	968
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1488	-	-	-	632	966
Mov Cap-2 Maneuver	-	-	-	-	632	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1488	-	-	-	632	966
HCM Lane V/C Ratio	0.047	-	-	-	0.16	0.091
HCM Control Delay (s)	7.5	0	-	-	11.8	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1171	586	469	308	0	0	0	0	251	1	114
Future Volume (vph)	0	1171	586	469	308	0	0	0	0	251	1	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1703	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1703	2814
Peak-hour factor, PHF	0.84	0.84	0.84	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	1394	698	499	328	0	0	0	0	267	1	121
RTOR Reduction (vph)	0	0	361	0	0	0	0	0	0	0	0	96
Lane Group Flow (vph)	0	1394	337	499	328	0	0	0	0	133	135	25
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		35.6	35.6	21.5	56.6					19.6	19.6	19.6
Effective Green, g (s)		35.6	35.6	21.5	56.6					19.6	19.6	19.6
Actuated g/C Ratio		0.38	0.38	0.23	0.60					0.21	0.21	0.21
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2270	581	734	2064					351	352	582
v/s Ratio Prot		c0.23	0.22	c0.15	0.09					0.08	c0.08	0.01
v/s Ratio Perm												
v/c Ratio		0.61	0.58	0.68	0.16					0.38	0.38	0.04
Uniform Delay, d1		24.0	23.6	33.5	8.5					32.3	32.3	30.0
Progression Factor		1.00	1.00	1.37	0.85					1.00	1.00	1.00
Incremental Delay, d2		0.7	2.3	2.5	0.1					1.4	1.5	0.1
Delay (s)		24.7	25.9	48.3	7.3					33.7	33.8	30.1
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		25.1			32.0			0.0			32.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	718	704	0	0	635	330	142	0	538	0	0	0
Future Volume (vph)	718	704	0	0	635	330	142	0	538	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.95		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4872		3433	1504	1504			
Flt Permitted	0.19	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	647	3455			4872		3433	1504	1504			
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	825	809	0	0	676	351	151	0	572	0	0	0
RTOR Reduction (vph)	0	0	0	0	87	0	0	227	227	0	0	0
Lane Group Flow (vph)	825	809	0	0	940	0	151	59	59	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	57.6	35.6			35.1		19.6	19.6	19.6			
Effective Green, g (s)	57.6	35.6			35.1		19.6	19.6	19.6			
Actuated g/C Ratio	0.61	0.38			0.37		0.21	0.21	0.21			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	994	1298			1805		710	311	311			
v/s Ratio Prot	c0.19	0.23			0.19		c0.04	0.04	0.04			
v/s Ratio Perm	c0.31											
v/c Ratio	0.83	0.62			0.52		0.21	0.19	0.19			
Uniform Delay, d1	16.9	24.1			23.2		31.1	31.0	31.0			
Progression Factor	2.22	0.47			1.00		1.00	1.00	1.00			
Incremental Delay, d2	5.1	1.1			0.5		0.3	0.6	0.6			
Delay (s)	42.6	12.3			23.8		31.5	31.6	31.6			
Level of Service	D	B			C		C	C	C			
Approach Delay (s)		27.6			23.8			31.6			0.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	61	505	61	56	49	364	484	34	31	473	122
Future Volume (vph)	89	61	505	61	56	49	364	484	34	31	473	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749	1689		1756		3467	3534		1711	3421	1531
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1749	1689		1756		3467	3534		1711	3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.96	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	99	68	561	76	70	61	379	504	35	32	488	126
RTOR Reduction (vph)	0	0	424	0	13	0	0	3	0	0	0	74
Lane Group Flow (vph)	0	167	137	0	194	0	379	536	0	32	488	52
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.1		15.0		13.7	34.3		2.9	23.0	37.4
Effective Green, g (s)		8.4	22.1		15.0		13.7	34.3		2.9	23.0	37.4
Actuated g/C Ratio		0.09	0.24		0.17		0.15	0.38		0.03	0.25	0.41
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		162	411		290		524	1337		54	868	632
v/s Ratio Prot		c0.10	0.08		c0.11		c0.11	0.15		0.02	c0.14	0.03
v/s Ratio Perm												
v/c Ratio		1.03	0.33		0.67		0.72	0.40		0.59	0.56	0.08
Uniform Delay, d1		41.1	28.2		35.5		36.6	20.6		43.3	29.4	16.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		79.1	0.5		6.0		4.9	0.2		16.2	0.8	0.1
Delay (s)		120.2	28.7		41.5		41.6	20.8		59.5	30.3	16.2
Level of Service		F	C		D		D	C		E	C	B
Approach Delay (s)		49.7			41.5			29.4			29.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	25.5
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	19	105	106	16	95	65	691	100	78	710	29
Future Volume (vph)	123	19	105	106	16	95	65	691	100	78	710	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1658	1424	1682	1708	1584	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1658	1424	1682	1708	1584	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	143	22	122	138	21	123	75	794	115	83	755	31
RTOR Reduction (vph)	0	0	98	0	0	0	0	0	65	0	0	14
Lane Group Flow (vph)	82	83	24	79	80	123	75	794	50	83	755	17
Heavy Vehicles (%)	0%	0%	8%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	7.9	7.9	13.9	8.1	8.1	22.8	6.0	23.2	31.3	9.2	25.9	39.8
Effective Green, g (s)	7.9	7.9	13.9	8.1	8.1	22.8	6.0	23.2	31.3	9.2	25.9	39.8
Actuated g/C Ratio	0.11	0.11	0.19	0.11	0.11	0.32	0.08	0.32	0.44	0.13	0.36	0.56
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	180	183	277	190	193	505	141	1094	774	225	1272	874
v/s Ratio Prot	c0.05	0.05	0.02	c0.05	0.05	0.08	0.04	c0.24	0.03	c0.05	c0.22	0.01
v/s Ratio Perm												
v/c Ratio	0.46	0.45	0.09	0.42	0.41	0.24	0.53	0.73	0.07	0.37	0.59	0.02
Uniform Delay, d1	29.7	29.7	23.5	29.4	29.4	17.9	31.4	21.3	11.6	28.4	18.5	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.8	0.1	1.5	1.4	0.3	3.8	2.4	0.0	1.0	0.7	0.0
Delay (s)	31.6	31.5	23.7	30.9	30.9	18.2	35.2	23.7	11.6	29.5	19.2	7.1
Level of Service	C	C	C	C	C	B	D	C	B	C	B	A
Approach Delay (s)		28.2			25.4			23.2			19.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	25.5
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

105: Market Street & Woodbury Avenue & Market Basket Driveway
2026 Build Weekday PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	72	100	200	95	17	100	488	145	17	674	408
Future Volume (vph)	233	72	100	200	95	17	100	488	145	17	674	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1618		1954	2009		1728	3336		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1618		1954	2009		1728	3336		1728	3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Adj. Flow (vph)	259	80	111	220	104	19	114	555	165	19	749	453
RTOR Reduction (vph)	0	41	0	0	5	0	0	19	0	0	0	232
Lane Group Flow (vph)	259	150	0	220	118	0	114	701	0	19	749	221
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.2	11.2		15.0	15.0		10.6	38.6		2.7	30.7	48.4
Effective Green, g (s)	11.2	11.2		15.0	15.0		10.6	38.6		2.7	30.7	48.4
Actuated g/C Ratio	0.11	0.11		0.15	0.15		0.11	0.39		0.03	0.31	0.49
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	368	182		294	303		184	1295		46	1067	752
v/s Ratio Prot	0.08	c0.09		c0.11	0.06		c0.07	c0.21		0.01	c0.22	0.14
v/s Ratio Perm												
v/c Ratio	0.70	0.83		0.75	0.39		0.62	0.54		0.41	0.70	0.29
Uniform Delay, d1	42.5	43.1		40.4	38.1		42.5	23.5		47.6	30.3	15.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	25.2		10.0	0.8		6.1	0.5		5.9	2.1	0.2
Delay (s)	48.5	68.3		50.4	38.9		48.6	24.0		53.5	32.4	15.5
Level of Service	D	E		D	D		D	C		D	C	B
Approach Delay (s)		56.9			46.3			27.4			26.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	28.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1105	137	0	965	0	31
Future Volume (Veh/h)	1105	137	0	965	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.98	0.97	0.72	0.72
Hourly flow rate (vph)	1176	146	0	995	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1322		1746	367
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1322		1746	367
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	93
cM capacity (veh/h)			524		79	636

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	336	336	336	314	498	498	43
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	146	0	0	43
cSH	1700	1700	1700	1700	1700	1700	636
Volume to Capacity	0.20	0.20	0.20	0.18	0.29	0.29	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.1
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.1
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection						
Int Delay, s/veh	5.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	178	239	72	111	80
Future Vol, veh/h	93	178	239	72	111	80
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	80	80	74	74
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	96	184	299	90	150	108

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	300	0	-	0	676	301
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	376	-
Critical Hdwy	4.1	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1273	-	-	-	420	741
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1272	-	-	-	384	739
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1272	-	-	-	384	739
HCM Lane V/C Ratio	0.075	-	-	-	0.391	0.146
HCM Control Delay (s)	8.1	0	-	-	20.3	10.7
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	304	68	373	197	0	0	0	0	332	1	52
Future Volume (vph)	0	304	68	373	197	0	0	0	0	332	1	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1702	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1702	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	0	330	74	439	232	0	0	0	0	382	1	60
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	330	24	439	232	0	0	0	0	191	192	15
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		28.0	28.0	18.7	52.5					21.1	21.1	21.1
Effective Green, g (s)		28.0	28.0	18.7	52.5					21.1	21.1	21.1
Actuated g/C Ratio		0.33	0.33	0.22	0.61					0.25	0.25	0.25
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1971	504	705	2114					417	418	692
v/s Ratio Prot		c0.05	0.02	c0.14	c0.07					0.11	c0.11	0.01
v/s Ratio Perm												
v/c Ratio		0.17	0.05	0.62	0.11					0.46	0.46	0.02
Uniform Delay, d1		20.6	19.8	30.4	6.9					27.5	27.5	24.5
Progression Factor		1.00	1.00	1.43	0.79					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	1.9	0.0					1.7	1.7	0.0
Delay (s)		20.7	19.9	45.4	5.5					29.2	29.2	24.5
Level of Service		C	B	D	A					C	C	C
Approach Delay (s)		20.5			31.6			0.0			28.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	555	0	0	489	190	81	3	676	0	0	0
Future Volume (vph)	81	555	0	0	489	190	81	3	676	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.96		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4920		3467	1521	1519			
Flt Permitted	0.37	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1254	3455			4920		3467	1521	1519			
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	87	597	0	0	515	200	84	3	704	0	0	0
RTOR Reduction (vph)	0	0	0	0	62	0	0	265	265	0	0	0
Lane Group Flow (vph)	87	597	0	0	653	0	84	90	87	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	40.9	28.0			33.8		21.1	21.1	21.1			
Effective Green, g (s)	40.9	28.0			33.8		21.1	21.1	21.1			
Actuated g/C Ratio	0.48	0.33			0.39		0.25	0.25	0.25			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	895	1127			1938		852	374	373			
v/s Ratio Prot	c0.01	c0.17			c0.13		0.02	c0.06	0.06			
v/s Ratio Perm	0.03											
v/c Ratio	0.10	0.53			0.34		0.10	0.24	0.23			
Uniform Delay, d1	12.1	23.5			18.2		25.0	25.9	25.9			
Progression Factor	1.19	1.07			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	0.8			0.2		0.1	0.7	0.7			
Delay (s)	14.5	26.1			18.4		25.1	26.6	26.5			
Level of Service	B	C			B		C	C	C			
Approach Delay (s)		24.6			18.4			26.4			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	38	342	24	43	65	305	393	20	35	448	61
Future Volume (vph)	56	38	342	24	43	65	305	393	20	35	448	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766	1706		1758		3467	3548		1728	3455	1546
Flt Permitted		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766	1706		1758		3467	3548		1728	3455	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	67	45	407	28	51	76	335	432	22	40	509	69
RTOR Reduction (vph)	0	0	304	0	29	0	0	2	0	0	0	40
Lane Group Flow (vph)	0	112	103	0	126	0	335	452	0	40	509	29
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	21.9		11.6		13.5	31.7		4.7	22.4	36.8
Effective Green, g (s)		8.4	21.9		11.6		13.5	31.7		4.7	22.4	36.8
Actuated g/C Ratio		0.10	0.25		0.13		0.16	0.37		0.05	0.26	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		171	431		235		541	1300		93	894	657
v/s Ratio Prot		c0.06	0.06		c0.07		c0.10	0.13		0.02	c0.15	0.02
v/s Ratio Perm												
v/c Ratio		0.65	0.24		0.54		0.62	0.35		0.43	0.57	0.04
Uniform Delay, d1		37.7	25.7		34.9		34.1	19.9		39.6	27.9	14.6
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		8.7	0.3		2.4		2.1	0.2		3.2	0.8	0.0
Delay (s)		46.4	26.0		37.3		36.2	20.1		42.8	28.7	14.6
Level of Service		D	C		D		D	C		D	C	B
Approach Delay (s)		30.4			37.3			26.9			28.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	23	132	122	11	60	50	583	109	81	767	163
Future Volume (vph)	129	23	132	122	11	60	50	583	109	81	767	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1660	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1660	1538	1699	1717	1600	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	154	27	157	134	12	66	56	655	122	88	834	177
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	67	0	0	41
Lane Group Flow (vph)	89	92	32	72	74	66	56	655	55	88	834	136
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.0	8.0	14.0	8.0	8.0	21.0	6.0	23.2	31.2	7.5	24.2	38.2
Effective Green, g (s)	8.0	8.0	14.0	8.0	8.0	21.0	6.0	23.2	31.2	7.5	24.2	38.2
Actuated g/C Ratio	0.11	0.11	0.20	0.11	0.11	0.30	0.09	0.33	0.45	0.11	0.35	0.55
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	190	308	195	197	482	144	1121	790	188	1217	859
v/s Ratio Prot	0.05	c0.06	0.02	0.04	c0.04	0.04	0.03	0.19	0.03	c0.05	c0.24	0.09
v/s Ratio Perm												
v/c Ratio	0.48	0.48	0.10	0.37	0.38	0.14	0.39	0.58	0.07	0.47	0.69	0.16
Uniform Delay, d1	28.9	28.9	22.7	28.5	28.5	17.7	30.1	19.3	11.0	29.2	19.5	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	1.9	0.1	1.2	1.2	0.1	1.7	0.8	0.0	1.8	1.6	0.1
Delay (s)	30.8	30.9	22.9	29.7	29.7	17.9	31.9	20.0	11.0	31.1	21.1	7.9
Level of Service	C	C	C	C	C	B	C	C	B	C	C	A
Approach Delay (s)		27.1			26.0			19.5			19.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	25.5
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	68	50	142	75	22	61	483	129	12	571	422
Future Volume (vph)	255	68	50	142	75	22	61	483	129	12	571	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1660		1954	1987		1728	3346		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1660		1954	1987		1728	3346		1728	3455	1546
Peak-hour factor, PHF	0.77	0.77	0.77	0.78	0.78	0.78	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	331	88	65	182	96	28	66	525	140	12	589	435
RTOR Reduction (vph)	0	21	0	0	8	0	0	17	0	0	0	209
Lane Group Flow (vph)	331	132	0	182	116	0	66	648	0	12	589	226
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.5	11.5		12.8	12.8		6.9	29.9		1.2	24.2	42.2
Effective Green, g (s)	11.5	11.5		12.8	12.8		6.9	29.9		1.2	24.2	42.2
Actuated g/C Ratio	0.14	0.14		0.16	0.16		0.08	0.37		0.01	0.30	0.52
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	461	234		307	312		146	1229		25	1027	801
v/s Ratio Prot	c0.10	0.08		c0.09	0.06		c0.04	c0.19		0.01	0.17	0.15
v/s Ratio Perm												
v/c Ratio	0.72	0.57		0.59	0.37		0.45	0.53		0.48	0.57	0.28
Uniform Delay, d1	33.4	32.6		31.9	30.7		35.5	20.2		39.8	24.2	11.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.3	3.1		3.1	0.7		2.2	0.4		13.8	0.8	0.2
Delay (s)	38.7	35.7		34.9	31.4		37.7	20.6		53.6	25.0	11.2
Level of Service	D	D		C	C		D	C		D	C	B
Approach Delay (s)		37.8			33.5			22.2			19.6	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	28.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1133	98	0	679	0	53
Future Volume (Veh/h)	1133	98	0	679	0	53
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.95	0.95	0.55	0.55
Hourly flow rate (vph)	1218	105	0	715	0	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1323		1628	357
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1323		1628	357
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	85
cM capacity (veh/h)			523		95	645

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	348	348	348	279	358	358	96
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	105	0	0	96
cSH	1700	1700	1700	1700	1700	1700	645
Volume to Capacity	0.20	0.20	0.20	0.16	0.21	0.21	0.15
Queue Length 95th (ft)	0	0	0	0	0	0	13
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.6
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.6
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	120	204	122	81	149	63
Future Vol, veh/h	120	204	122	81	149	63
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	81	81	88	88
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	126	215	151	100	169	72

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	152	0	-	0	619	153
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	467	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1435	-	-	-	455	898
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	409	896
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1434	-	-	-	409	896
HCM Lane V/C Ratio	0.088	-	-	-	0.414	0.08
HCM Control Delay (s)	7.8	0	-	-	19.9	9.4
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	-	-	-	2	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	259	113	111	984	0	0	0	0	458	0	831
Future Volume (vph)	0	259	113	111	984	0	0	0	0	458	0	831
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		5923	1516	3173	3388					1698	1698	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		5923	1516	3173	3388					1698	1698	2814
Peak-hour factor, PHF	0.93	0.93	0.93	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86
Adj. Flow (vph)	0	278	122	128	1131	0	0	0	0	533	0	966
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	0	137
Lane Group Flow (vph)	0	278	36	128	1131	0	0	0	0	266	267	829
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		29.0	29.0	25.1	60.1					25.1	25.1	25.1
Effective Green, g (s)		29.0	29.0	25.1	60.1					25.1	25.1	25.1
Actuated g/C Ratio		0.30	0.30	0.26	0.62					0.26	0.26	0.26
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		1767	452	819	2094					438	438	726
v/s Ratio Prot		0.05	0.02	0.04	c0.33					0.16	0.16	c0.29
v/s Ratio Perm												
v/c Ratio		0.16	0.08	0.16	0.54					0.61	0.61	1.14
Uniform Delay, d1		25.1	24.5	27.9	10.6					31.7	31.7	36.0
Progression Factor		1.00	1.00	0.89	1.58					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2	0.1	0.4					3.5	3.5	79.7
Delay (s)		25.2	24.7	24.8	17.2					35.2	35.3	115.7
Level of Service		C	C	C	B					D	D	F
Approach Delay (s)		25.0			18.0			0.0			87.1	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	599	0	0	333	48	762	0	295	0	0	0
Future Volume (vph)	118	599	0	0	333	48	762	0	295	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.98		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4847		3400	1490	1490			
Flt Permitted	0.49	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1681	3455			4847		3400	1490	1490			
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.91	0.91	0.91	0.90	0.90	0.90
Adj. Flow (vph)	127	644	0	0	374	54	837	0	324	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	120	120	0	0	0
Lane Group Flow (vph)	127	644	0	0	411	0	837	42	42	0	0	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	45.9	29.0			37.2		25.1	25.1	25.1			
Effective Green, g (s)	45.9	29.0			37.2		25.1	25.1	25.1			
Actuated g/C Ratio	0.47	0.30			0.38		0.26	0.26	0.26			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	1064	1030			1855		877	384	384			
v/s Ratio Prot	c0.02	c0.19			c0.08		c0.25	0.03	0.03			
v/s Ratio Perm	0.04											
v/c Ratio	0.12	0.63			0.22		0.95	0.11	0.11			
Uniform Delay, d1	14.1	29.4			20.2		35.5	27.5	27.5			
Progression Factor	1.24	1.25			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.5			0.1		20.4	0.3	0.3			
Delay (s)	17.5	38.4			20.4		55.9	27.8	27.8			
Level of Service	B	D			C		E	C	C			
Approach Delay (s)		35.0			20.4			48.1			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	42	491	29	15	7	253	192	20	39	316	9
Future Volume (vph)	101	42	491	29	15	7	253	192	20	39	316	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1706	1656		1604		3400	3455		1678	3355	1501
Flt Permitted		0.97	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1706	1656		1604		3400	3455		1678	3355	1501
Peak-hour factor, PHF	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84	0.89	0.89	0.89
Adj. Flow (vph)	111	46	540	33	17	8	301	229	24	44	355	10
RTOR Reduction (vph)	0	0	379	0	6	0	0	5	0	0	0	6
Lane Group Flow (vph)	0	157	161	0	52	0	301	248	0	44	355	4
Heavy Vehicles (%)	4%	4%	4%	13%	13%	13%	3%	3%	3%	4%	4%	4%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.9	22.0		5.0		13.1	26.1		4.4	16.9	31.8
Effective Green, g (s)		8.9	22.0		5.0		13.1	26.1		4.4	16.9	31.8
Actuated g/C Ratio		0.12	0.30		0.07		0.18	0.35		0.06	0.23	0.43
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		205	492		108		602	1220		99	767	645
v/s Ratio Prot		c0.09	0.10		c0.03		c0.09	0.07		0.03	c0.11	0.00
v/s Ratio Perm												
v/c Ratio		0.77	0.33		0.49		0.50	0.20		0.44	0.46	0.01
Uniform Delay, d1		31.5	20.2		33.2		27.4	16.7		33.6	24.6	12.0
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		15.6	0.4		3.4		0.7	0.1		3.2	0.4	0.0
Delay (s)		47.1	20.6		36.6		28.1	16.7		36.7	25.0	12.0
Level of Service		D	C		D		C	B		D	C	B
Approach Delay (s)		26.6			36.6			22.9			26.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	3	110	29	0	37	22	360	42	50	733	55
Future Volume (vph)	38	3	110	29	0	37	22	360	42	50	733	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1570	1586	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Flt Permitted	0.95	0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1570	1586	1479	1634	1634	1539	1652	3303	1733	1736	3473	1554
Peak-hour factor, PHF	0.82	0.82	0.82	0.65	0.65	0.65	0.85	0.85	0.85	0.98	0.98	0.98
Adj. Flow (vph)	46	4	134	45	0	57	26	424	49	51	748	56
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	28	0	0	27
Lane Group Flow (vph)	25	25	24	22	23	57	26	424	21	51	748	29
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	7.1	7.1	13.6	6.0	6.0	13.0	6.5	26.8	32.8	7.0	26.8	39.9
Effective Green, g (s)	7.1	7.1	13.6	6.0	6.0	13.0	6.5	26.8	32.8	7.0	26.8	39.9
Actuated g/C Ratio	0.09	0.09	0.18	0.08	0.08	0.17	0.09	0.35	0.43	0.09	0.35	0.53
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	146	148	265	129	129	263	141	1166	748	160	1226	816
v/s Ratio Prot	c0.02	0.02	0.02	0.01	0.01	c0.04	0.02	0.13	0.01	c0.03	c0.22	0.02
v/s Ratio Perm												
v/c Ratio	0.17	0.17	0.09	0.17	0.18	0.22	0.18	0.36	0.03	0.32	0.61	0.04
Uniform Delay, d1	31.7	31.7	26.0	32.6	32.6	27.1	32.2	18.2	12.4	32.2	20.2	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.1	0.6	0.7	0.4	0.6	0.2	0.0	1.2	0.9	0.0
Delay (s)	32.2	32.2	26.1	33.3	33.3	27.5	32.9	18.4	12.4	33.4	21.1	8.7
Level of Service	C	C	C	C	C	C	C	B	B	C	C	A
Approach Delay (s)		27.8			30.0			18.6			21.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	43	52	3	35	44	73	328	85	2	323	266
Future Volume (vph)	117	43	52	3	35	44	73	328	85	2	323	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1616		1898	1830		1711	3301		1694	3388	1516
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1616		1898	1830		1711	3301		1694	3388	1516
Peak-hour factor, PHF	0.73	0.73	0.73	0.65	0.65	0.65	0.75	0.75	0.75	0.97	0.97	0.97
Adj. Flow (vph)	160	59	71	5	54	68	97	437	113	2	333	274
RTOR Reduction (vph)	0	34	0	0	40	0	0	17	0	0	0	135
Lane Group Flow (vph)	160	96	0	5	82	0	97	533	0	2	333	139
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	1%	1%	1%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	9.9	9.9		6.7	6.7		7.1	23.9		0.9	17.7	34.1
Effective Green, g (s)	9.9	9.9		6.7	6.7		7.1	23.9		0.9	17.7	34.1
Actuated g/C Ratio	0.15	0.15		0.10	0.10		0.11	0.35		0.01	0.26	0.51
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	480	237		188	181		180	1170		22	889	766
v/s Ratio Prot	0.05	c0.06		0.00	c0.05		c0.06	c0.16		0.00	0.10	0.09
v/s Ratio Perm												
v/c Ratio	0.33	0.40		0.03	0.46		0.54	0.46		0.09	0.37	0.18
Uniform Delay, d1	25.8	26.1		27.4	28.6		28.6	16.7		32.8	20.3	9.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	1.1		0.1	1.8		3.1	0.3		1.8	0.3	0.1
Delay (s)	26.2	27.2		27.5	30.4		31.7	17.0		34.6	20.6	9.2
Level of Service	C	C		C	C		C	B		C	C	A
Approach Delay (s)		26.7			30.3			19.2			15.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	28.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	784	110	0	381	0	15
Future Volume (Veh/h)	784	110	0	381	0	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.46	0.46
Hourly flow rate (vph)	808	113	0	428	0	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			921		1078	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			921		1078	258
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	96
cM capacity (veh/h)			719		217	747

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	231	231	231	228	214	214	33
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	113	0	0	33
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.14	0.14	0.14	0.13	0.13	0.13	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Lane LOS							B
Approach Delay (s)	0.0				0.0		10.0
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	96	85	79	90	76
Future Vol, veh/h	64	96	85	79	90	76
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	84	84	81	81
Heavy Vehicles, %	4	4	2	2	0	0
Mvmt Flow	75	113	101	94	111	94

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	102	0	-	0	365	103
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1478	-	-	-	639	957
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	603	955
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1477	-	-	-	603	955
HCM Lane V/C Ratio	0.051	-	-	-	0.184	0.098
HCM Control Delay (s)	7.6	0	-	-	12.3	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1282	644	517	339	0	0	0	0	275	1	125
Future Volume (vph)	0	1282	644	517	339	0	0	0	0	275	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1703	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1703	2814
Peak-hour factor, PHF	0.84	0.84	0.84	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	1526	767	550	361	0	0	0	0	293	1	133
RTOR Reduction (vph)	0	0	359	0	0	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	1526	408	550	361	0	0	0	0	146	148	29
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		35.8	35.8	22.5	56.4					20.9	20.9	20.9
Effective Green, g (s)		35.8	35.8	22.5	56.4					20.9	20.9	20.9
Actuated g/C Ratio		0.37	0.37	0.23	0.58					0.22	0.22	0.22
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2224	569	749	2004					365	366	605
v/s Ratio Prot		0.25	c0.26	c0.17	0.10					0.09	c0.09	0.01
v/s Ratio Perm												
v/c Ratio		0.69	0.72	0.73	0.18					0.40	0.40	0.05
Uniform Delay, d1		26.0	26.3	34.6	9.6					32.8	32.8	30.3
Progression Factor		1.00	1.00	1.36	0.83					1.00	1.00	1.00
Incremental Delay, d2		1.2	5.3	3.4	0.1					1.5	1.5	0.1
Delay (s)		27.1	31.6	50.4	8.0					34.3	34.3	30.3
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		28.6			33.6			0.0			33.1	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	785	772	0	0	699	365	157	0	592	0	0	0
Future Volume (vph)	785	772	0	0	699	365	157	0	592	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.95		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4872		3433	1504	1504			
Flt Permitted	0.14	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	477	3455			4872		3433	1504	1504			
Peak-hour factor, PHF	0.87	0.87	0.87	0.94	0.94	0.94	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	902	887	0	0	744	388	167	0	630	0	0	0
RTOR Reduction (vph)	0	0	0	0	91	0	0	247	247	0	0	0
Lane Group Flow (vph)	902	887	0	0	1041	0	167	68	68	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	60.2	35.8			33.9		20.9	20.9	20.9			
Effective Green, g (s)	60.2	35.8			33.9		20.9	20.9	20.9			
Actuated g/C Ratio	0.62	0.37			0.35		0.22	0.22	0.22			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	988	1272			1699		738	323	323			
v/s Ratio Prot	c0.23	0.26			0.21		c0.05	0.05	0.05			
v/s Ratio Perm	c0.34											
v/c Ratio	0.91	0.70			0.61		0.23	0.21	0.21			
Uniform Delay, d1	23.8	26.1			26.2		31.5	31.4	31.4			
Progression Factor	1.90	0.49			1.00		1.00	1.00	1.00			
Incremental Delay, d2	10.2	1.7			1.0		0.3	0.7	0.7			
Delay (s)	55.5	14.5			27.2		31.8	32.0	32.0			
Level of Service	E	B			C		C	C	C			
Approach Delay (s)		35.2			27.2			32.0			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	68	554	68	61	54	400	534	38	34	522	135
Future Volume (vph)	98	68	554	68	61	54	400	534	38	34	522	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1749	1689		1755		3467	3533		1711	3421	1531
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1749	1689		1755		3467	3533		1711	3421	1531
Peak-hour factor, PHF	0.90	0.90	0.90	0.80	0.80	0.80	0.96	0.96	0.96	0.97	0.97	0.97
Adj. Flow (vph)	109	76	616	85	76	68	417	556	40	35	538	139
RTOR Reduction (vph)	0	0	467	0	12	0	0	3	0	0	0	83
Lane Group Flow (vph)	0	185	149	0	217	0	417	593	0	35	538	56
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.0		15.8		13.6	31.9		4.7	22.5	36.9
Effective Green, g (s)		8.4	22.0		15.8		13.6	31.9		4.7	22.5	36.9
Actuated g/C Ratio		0.09	0.24		0.17		0.15	0.35		0.05	0.25	0.41
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		161	408		305		518	1239		88	846	621
v/s Ratio Prot		c0.11	0.09		c0.12		c0.12	0.17		0.02	c0.16	0.04
v/s Ratio Perm												
v/c Ratio		1.15	0.37		0.71		0.81	0.48		0.40	0.64	0.09
Uniform Delay, d1		41.2	28.6		35.4		37.4	23.0		41.7	30.5	16.7
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		116.6	0.6		7.6		8.9	0.3		2.9	1.6	0.1
Delay (s)		157.9	29.2		43.0		46.2	23.3		44.7	32.1	16.7
Level of Service		F	C		D		D	C		D	C	B
Approach Delay (s)		58.9			43.0			32.7			29.7	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	25.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

104: Woodbury Avenue & Durgin Lane/BJ's Driveway
2036 Build Weekday PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	21	112	117	17	104	68	762	111	86	781	32
Future Volume (vph)	135	21	112	117	17	104	68	762	111	86	781	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1657	1424	1682	1707	1584	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1657	1424	1682	1707	1584	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	157	24	130	152	22	135	78	876	128	91	831	34
RTOR Reduction (vph)	0	0	106	0	0	0	0	0	69	0	0	14
Lane Group Flow (vph)	89	92	24	87	87	135	78	876	59	91	831	20
Heavy Vehicles (%)	0%	0%	8%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	14.1	8.3	8.3	23.3	6.0	26.2	34.5	9.5	29.2	43.3
Effective Green, g (s)	8.1	8.1	14.1	8.3	8.3	23.3	6.0	26.2	34.5	9.5	29.2	43.3
Actuated g/C Ratio	0.11	0.11	0.19	0.11	0.11	0.31	0.08	0.35	0.46	0.13	0.39	0.58
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	178	267	185	188	491	134	1175	811	221	1363	904
v/s Ratio Prot	0.05	c0.06	0.02	c0.05	0.05	0.09	0.05	c0.26	0.03	c0.05	c0.24	0.01
v/s Ratio Perm												
v/c Ratio	0.51	0.52	0.09	0.47	0.46	0.27	0.58	0.75	0.07	0.41	0.61	0.02
Uniform Delay, d1	31.6	31.7	25.2	31.3	31.3	19.5	33.3	21.5	11.4	30.2	18.4	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	2.5	0.1	1.9	1.8	0.3	6.3	2.6	0.0	1.2	0.8	0.0
Delay (s)	33.9	34.2	25.4	33.2	33.1	19.8	39.6	24.1	11.4	31.5	19.2	6.8
Level of Service	C	C	C	C	C	B	D	C	B	C	B	A
Approach Delay (s)		30.4			27.3			23.7			19.9	
Approach LOS		C			C			C			B	

Intersection Summary				
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	25.5	
Intersection Capacity Utilization	53.3%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	80	111	221	104	18	111	537	160	18	741	446
Future Volume (vph)	255	80	111	221	104	18	111	537	160	18	741	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.91		1.00	0.98		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1619		1954	2011		1728	3336		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1619		1954	2011		1728	3336		1728	3455	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.88	0.88	0.88	0.90	0.90	0.90
Adj. Flow (vph)	283	89	123	243	114	20	126	610	182	20	823	496
RTOR Reduction (vph)	0	41	0	0	5	0	0	19	0	0	0	259
Lane Group Flow (vph)	283	171	0	243	129	0	126	773	0	20	823	237
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.2	11.2		16.1	16.1		11.1	38.9		2.8	30.6	48.3
Effective Green, g (s)	11.2	11.2		16.1	16.1		11.1	38.9		2.8	30.6	48.3
Actuated g/C Ratio	0.11	0.11		0.16	0.16		0.11	0.39		0.03	0.30	0.48
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	362	179		311	320		189	1284		47	1046	739
v/s Ratio Prot	0.09	c0.11		c0.12	0.06		c0.07	c0.23		0.01	c0.24	0.15
v/s Ratio Perm												
v/c Ratio	0.78	0.96		0.78	0.40		0.67	0.60		0.43	0.79	0.32
Uniform Delay, d1	43.7	44.7		40.8	38.1		43.2	24.9		48.3	32.2	16.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.5	53.9		12.0	0.8		8.6	0.8		6.1	4.0	0.3
Delay (s)	54.2	98.6		52.8	39.0		51.7	25.7		54.4	36.2	16.5
Level of Service	D	F		D	D		D	C		D	D	B
Approach Delay (s)		73.2			47.9			29.2			29.2	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1218	146	0	1064	0	34
Future Volume (Veh/h)	1218	146	0	1064	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.98	0.97	0.72	0.72
Hourly flow rate (vph)	1296	155	0	1097	0	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1451		1922	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1451		1922	402
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	92
cM capacity (veh/h)			468		60	604

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	370	370	370	340	548	548	47
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	155	0	0	47
cSH	1700	1700	1700	1700	1700	1700	604
Volume to Capacity	0.22	0.22	0.22	0.20	0.32	0.32	0.08
Queue Length 95th (ft)	0	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.5
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	197	264	80	123	87
Future Vol, veh/h	100	197	264	80	123	87
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	80	80	74	74
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	103	203	330	100	166	118

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	331	0	-	0	740	332
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	4.1	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1240	-	-	-	386	712
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1239	-	-	-	349	710
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	672	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1239	-	-	-	349	710
HCM Lane V/C Ratio	0.083	-	-	-	0.476	0.166
HCM Control Delay (s)	8.2	0	-	-	24.3	11.1
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	2.5	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	336	75	412	217	0	0	0	0	365	1	57
Future Volume (vph)	0	336	75	412	217	0	0	0	0	365	1	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	11	10	11	12	12	12	12	12	12	12
Total Lost time (s)		6.0	6.0	6.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.86	1.00	0.97	0.95					0.95	0.95	0.88
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6040	1546	3236	3455					1698	1702	2814
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6040	1546	3236	3455					1698	1702	2814
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	0	365	82	485	255	0	0	0	0	420	1	66
RTOR Reduction (vph)	0	0	55	0	0	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	365	27	485	255	0	0	0	0	210	211	16
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Prot	Prot	NA					Split	NA	Prot
Protected Phases		6	6	5	2 5					3	3	3
Permitted Phases												
Actuated Green, G (s)		30.5	30.5	20.3	56.8					22.2	22.2	22.2
Effective Green, g (s)		30.5	30.5	20.3	56.8					22.2	22.2	22.2
Actuated g/C Ratio		0.34	0.34	0.22	0.62					0.24	0.24	0.24
Clearance Time (s)		6.0	6.0	6.0						6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	4.0						5.0	5.0	5.0
Lane Grp Cap (vph)		2024	518	721	2156					414	415	686
v/s Ratio Prot		c0.06	0.02	c0.15	0.07					0.12	c0.12	0.01
v/s Ratio Perm												
v/c Ratio		0.18	0.05	0.67	0.12					0.51	0.51	0.02
Uniform Delay, d1		21.4	20.5	32.3	6.9					29.7	29.7	26.2
Progression Factor		1.00	1.00	1.45	0.79					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	2.6	0.1					2.0	2.0	0.0
Delay (s)		21.5	20.6	49.6	5.5					31.7	31.7	26.2
Level of Service		C	C	D	A					C	C	C
Approach Delay (s)		21.3			34.4			0.0			31.0	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

102: US Route 4 NB Off-ramp/US Route 4 NB On-Ramp & Pease Blvd/Gosling Road
2036 Build Weekend Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	611	0	0	539	210	90	3	745	0	0	0
Future Volume (vph)	90	611	0	0	539	210	90	3	745	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Util. Factor	0.97	0.95			0.91		0.97	0.95	0.95			
Frt	1.00	1.00			0.96		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3236	3455			4920		3467	1521	1519			
Flt Permitted	0.34	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1164	3455			4920		3467	1521	1519			
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	97	657	0	0	567	221	94	3	776	0	0	0
RTOR Reduction (vph)	0	0	0	0	61	0	0	293	293	0	0	0
Lane Group Flow (vph)	97	657	0	0	727	0	94	98	95	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	1	6			2		3	3	3			
Permitted Phases	6											
Actuated Green, G (s)	43.5	30.5			37.8		22.2	22.2	22.2			
Effective Green, g (s)	43.5	30.5			37.8		22.2	22.2	22.2			
Actuated g/C Ratio	0.48	0.34			0.42		0.24	0.24	0.24			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	4.0	5.0			5.0		5.0	5.0	5.0			
Lane Grp Cap (vph)	852	1157			2043		845	371	370			
v/s Ratio Prot	c0.02	c0.19			c0.15		0.03	c0.06	0.06			
v/s Ratio Perm	0.04											
v/c Ratio	0.11	0.57			0.36		0.11	0.26	0.26			
Uniform Delay, d1	12.8	24.8			18.2		26.7	27.8	27.7			
Progression Factor	1.16	1.08			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.1	1.0			0.2		0.1	0.8	0.8			
Delay (s)	14.9	27.9			18.5		26.9	28.6	28.5			
Level of Service	B	C			B		C	C	C			
Approach Delay (s)		26.2			18.5			28.4			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	42	377	27	48	72	337	435	22	39	495	67
Future Volume (vph)	62	42	377	27	48	72	337	435	22	39	495	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	14	12	12	16	12	12	12	11	11	11
Total Lost time (s)		6.0	6.0		5.5		6.0	6.0		5.5	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1766	1706		1758		3467	3549		1728	3455	1546
Flt Permitted		0.97	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1766	1706		1758		3467	3549		1728	3455	1546
Peak-hour factor, PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	74	50	449	32	56	85	370	478	24	44	562	76
RTOR Reduction (vph)	0	0	336	0	29	0	0	2	0	0	0	44
Lane Group Flow (vph)	0	124	113	0	144	0	370	500	0	44	563	32
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3	3 1	4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)		8.4	22.0		12.4		13.6	31.8		4.8	22.5	36.9
Effective Green, g (s)		8.4	22.0		12.4		13.6	31.8		4.8	22.5	36.9
Actuated g/C Ratio		0.10	0.25		0.14		0.16	0.36		0.05	0.26	0.42
Clearance Time (s)		6.0			5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		169	428		249		538	1289		94	888	651
v/s Ratio Prot		c0.07	0.07		c0.08		c0.11	0.14		0.03	c0.16	0.02
v/s Ratio Perm												
v/c Ratio		0.73	0.26		0.58		0.69	0.39		0.47	0.63	0.05
Uniform Delay, d1		38.5	26.3		35.1		34.9	20.6		40.1	28.8	14.9
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		15.2	0.3		3.2		3.6	0.2		3.7	1.5	0.0
Delay (s)		53.6	26.6		38.3		38.6	20.8		43.8	30.3	15.0
Level of Service		D	C		D		D	C		D	C	B
Approach Delay (s)		32.4			38.3			28.4			29.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	25	141	135	12	66	53	644	120	90	847	180
Future Volume (vph)	142	25	141	135	12	66	53	644	120	90	847	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	16	11	11	11
Grade (%)		3%			-5%			5%			-3%	
Total Lost time (s)	6.0	6.0	6.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	6.0	6.0
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1633	1660	1538	1699	1716	1600	1684	3369	1767	1753	3507	1569
Flt Permitted	0.95	0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1633	1660	1538	1699	1716	1600	1684	3369	1767	1753	3507	1569
Peak-hour factor, PHF	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	169	30	168	148	13	73	60	724	135	98	921	196
RTOR Reduction (vph)	0	0	135	0	0	0	0	0	77	0	0	40
Lane Group Flow (vph)	98	101	33	80	81	73	60	724	58	98	921	156
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	3	3	1 3	4	4	4 5	1	6	4 6	5	2	2 3
Permitted Phases												
Actuated Green, G (s)	8.1	8.1	14.1	8.1	8.1	23.2	6.0	22.5	30.6	9.6	25.6	39.7
Effective Green, g (s)	8.1	8.1	14.1	8.1	8.1	23.2	6.0	22.5	30.6	9.6	25.6	39.7
Actuated g/C Ratio	0.11	0.11	0.20	0.11	0.11	0.33	0.08	0.32	0.43	0.13	0.36	0.56
Clearance Time (s)	6.0	6.0		5.5	5.5		6.0	6.0		5.5	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	185	188	304	193	194	520	141	1063	758	236	1259	873
v/s Ratio Prot	0.06	c0.06	0.02	0.05	c0.05	0.05	0.04	0.21	0.03	c0.06	c0.26	0.10
v/s Ratio Perm												
v/c Ratio	0.53	0.54	0.11	0.41	0.42	0.14	0.43	0.68	0.08	0.42	0.73	0.18
Uniform Delay, d1	29.8	29.8	23.5	29.4	29.4	17.0	31.0	21.3	12.0	28.3	19.9	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.9	0.2	1.4	1.5	0.1	2.1	1.8	0.0	1.2	2.2	0.1
Delay (s)	32.5	32.8	23.6	30.8	30.9	17.1	33.1	23.1	12.1	29.5	22.1	7.9
Level of Service	C	C	C	C	C	B	C	C	B	C	C	A
Approach Delay (s)		28.5			26.6			22.1			20.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	25.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	75	55	157	82	24	67	532	142	13	629	464
Future Volume (vph)	281	75	55	157	82	24	67	532	142	13	629	464
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	14	14	14	11	11	11	11	11	11
Grade (%)		5%			-5%			0%			0%	
Total Lost time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.94		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3268	1661		1954	1986		1728	3346		1728	3455	1546
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3268	1661		1954	1986		1728	3346		1728	3455	1546
Peak-hour factor, PHF	0.77	0.77	0.77	0.78	0.78	0.78	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	365	97	71	201	105	31	73	578	154	13	648	478
RTOR Reduction (vph)	0	21	0	0	8	0	0	17	0	0	0	230
Lane Group Flow (vph)	365	147	0	201	128	0	73	715	0	13	648	248
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	pt+ov
Protected Phases	3	3		4	4		1	6		5	2	2 3
Permitted Phases												
Actuated Green, G (s)	11.4	11.4		13.9	13.9		7.2	31.9		1.3	26.0	43.9
Effective Green, g (s)	11.4	11.4		13.9	13.9		7.2	31.9		1.3	26.0	43.9
Actuated g/C Ratio	0.13	0.13		0.16	0.16		0.09	0.38		0.02	0.31	0.52
Clearance Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	440	224		321	326		147	1263		26	1063	803
v/s Ratio Prot	c0.11	0.09		c0.10	0.06		c0.04	c0.21		0.01	0.19	0.16
v/s Ratio Perm												
v/c Ratio	0.83	0.66		0.63	0.39		0.50	0.57		0.50	0.61	0.31
Uniform Delay, d1	35.6	34.7		32.9	31.5		36.9	20.8		41.3	24.9	11.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.2	6.8		3.8	0.8		2.6	0.6		14.3	1.0	0.2
Delay (s)	47.8	41.5		36.7	32.3		39.5	21.4		55.6	25.9	11.8
Level of Service	D	D		D	C		D	C		E	C	B
Approach Delay (s)		45.8			34.9			23.1			20.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	28.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1251	105	0	749	0	58
Future Volume (Veh/h)	1251	105	0	749	0	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.95	0.95	0.55	0.55
Hourly flow rate (vph)	1345	113	0	788	0	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	464					
pX, platoon unblocked						
vC, conflicting volume			1458		1796	393
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1458		1796	393
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	83
cM capacity (veh/h)			465		73	612

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	384	384	384	305	394	394	105
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	113	0	0	105
cSH	1700	1700	1700	1700	1700	1700	612
Volume to Capacity	0.23	0.23	0.23	0.18	0.23	0.23	0.17
Queue Length 95th (ft)	0	0	0	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	12.1
Lane LOS							B
Approach Delay (s)	0.0				0.0		12.1
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	130	225	135	90	165	68
Future Vol, veh/h	130	225	135	90	165	68
Conflicting Peds, #/hr	1	0	0	1	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	60	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	81	81	88	88
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	137	237	167	111	188	77

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	168	0	-	0	679	169
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	511	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1416	-	-	-	420	880
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1415	-	-	-	373	878
Mov Cap-2 Maneuver	-	-	-	-	373	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1415	-	-	-	373	878
HCM Lane V/C Ratio	0.097	-	-	-	0.503	0.088
HCM Control Delay (s)	7.8	0	-	-	24	9.5
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	-	-	-	2.7	0.3

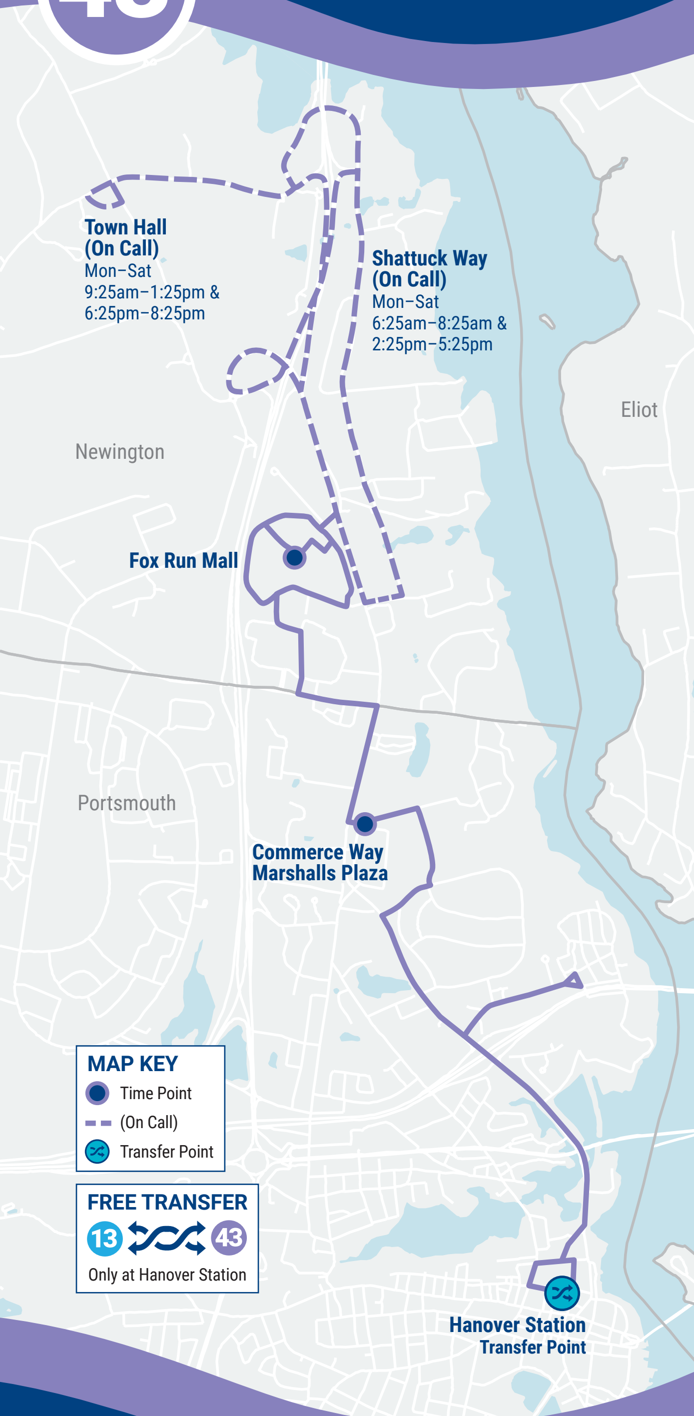
APPENDIX F

COAST & Wildcat Transit Bus Schedule & Map

Route 43 Map

43

Portsmouth • Newington



Ride Information

COAST BUS FARES

Base Cash Fare **$1.50**

All passengers ages 5 and up are required to pay this fare each time they board a COAST bus.

Half-Fare **$ 0.75**

Passengers 65 and older, or passengers with a disability are entitled to pay half the cash fare. Proof of eligibility is required by showing a Medicare card, photo ID with birth date, COAST ADA Paratransit Card, or COAST Half-Fare Card. Please contact COAST to apply for a Half-Fare Card.

Multi-Ride Tickets and Passes

Available at ***www.coastbus.org*** *or call 603-743-5777, TTY 711.*

Unlimited Monthly Pass **$ 52**

Unlimited rides on COAST Routes for the month.

YOUR RIGHTS

COAST adheres to all Federal regulations regarding Civil Rights. If you need to request an ADA Reasonable Modification/ Accommodation, or if you believe you have been discriminated against or would like to file a complaint under the ADA or Title VI, please contact COAST's Civil Rights Officer at 603-516-0788, TTY 711 or email CivilRights@coastbus.org.

NO SERVICE DAYS

COAST does not operate on the following holidays:

- New Year's Day
- Martin Luther King Jr./ Civil Rights Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Eve Day
- Christmas Day

COAST

42 Sumner Drive • Dover, NH 03820

603-743-5777 • TTY 711 • **www.coastbus.org**

This brochure is available in alternative formats upon request.

Bus Schedule & Map 43

COAST

Effective 09.17.22

ROUTE 43

Portsmouth • Newington

Find all of the full COAST schedules online at **coastbus.org**

MAP OUT
YOUR GAME PLAN

Planning your trip has never been easier!

www.coastbus.org

COAST SYSTEM MAP

EXPRESS • INBOUND • OUTBOUND

Route 43 Portsmouth • Newington

How to Read the Schedule

Printed bus schedules only show the timepoints ● (major bus stops where the bus will hold until the scheduled departure time). In between those timepoints are many other stops that you can use. For a full listing of bus stops, visit **www.coastbus.org**, or use the Passio GO! App.

The times shown represent the number of minutes after the hour that the bus will depart from that stop. Last stop times are arrivals. Any exceptions will be noted.

EXPRESS (M-Sat)	Single Run Only		
DOVER - NEWINGTON	First Bus	Minutes Past Hour	Last Bus
● Dover Transportation Center	6:30am	--	--
● Fox Run Mall	6:45am	--	--

INBOUND (M-Sat)	Service On Every Hour		
NEWINGTON - PORTSMOUTH	First Bus	Minutes Past Hour	Last Bus
● Fox Run Mall	6:30am	:30	8:30pm
● Commerce Way (Marshalls Plaza)	6:36am	:36	8:36pm
● Hanover Station	6:57am	:57	8:57pm

OUTBOUND (M-Sat)	Service On Every Hour		
PORTSMOUTH - NEWINGTON	First Bus	Minutes Past Hour	Last Bus
● Hanover Station	7:00am	:00	8:00pm
● Commerce Way (Marshalls Plaza)	7:09am	:09	8:09pm
● Fox Run Mall	7:22am	:22	8:22pm

MAP IT!

For a full listing of bus stops, visit **www.coastbus.org** or use the Passio GO! App.

Passio GO! App
Download the Passio GO! App for real-time information at the Google Play or App store.

Making Connections

Please tell your driver if you are trying to make a connection to another Route.

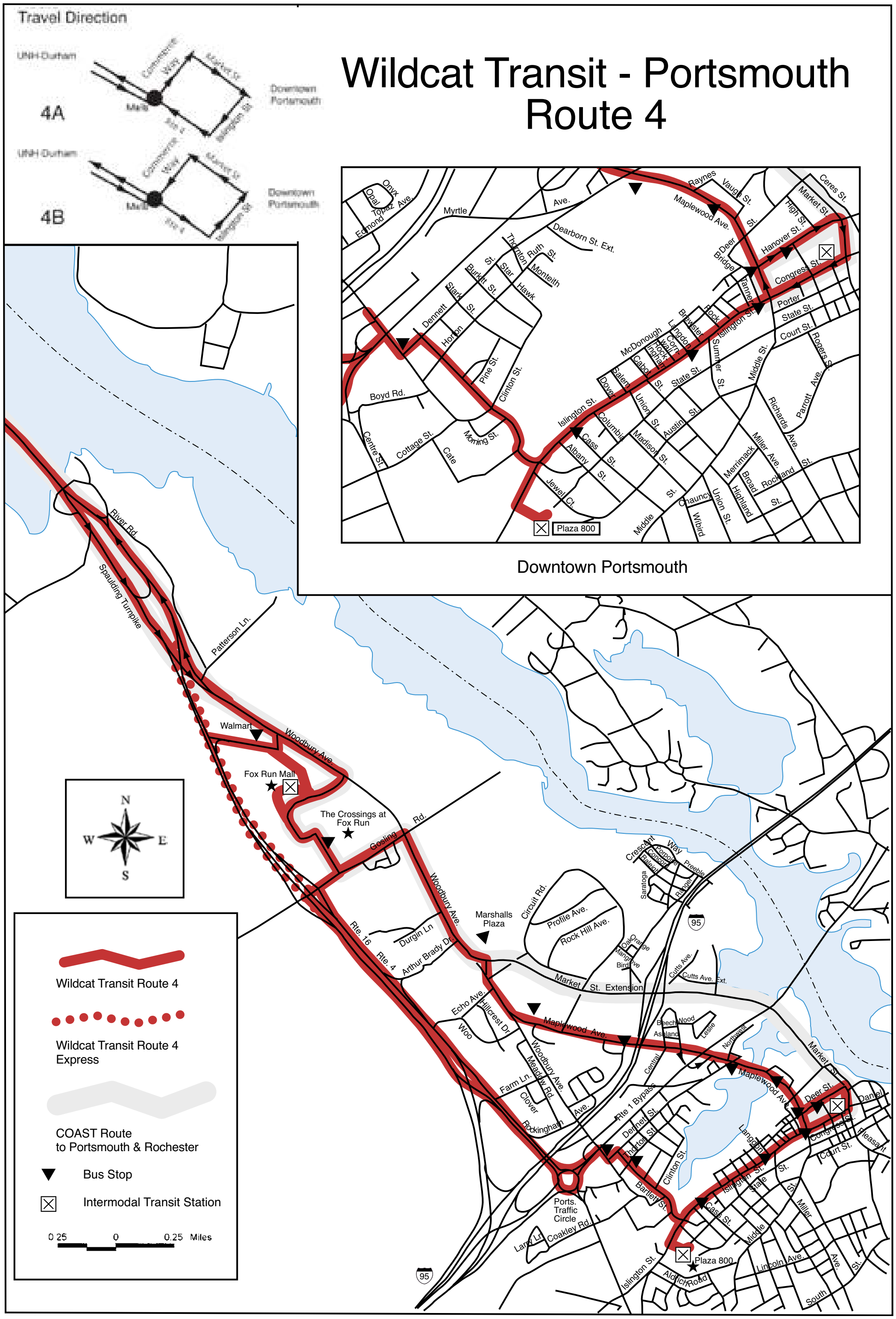
TRANSFER POINTS

Hanover Station	13, 14, 40, 41, 42, 43, 44
Dover Transportation Center	1, 12, 13, 33 M-F, 33 SAT, 34
Dover NHDOT Park & Ride (Exit 9)	1, 14
Rochester City Hall	6, 12, 14

14 33 SAT Temporarily suspended part of route due to driver shortage.

Hanover Station, Portsmouth

Wildcat Transit - Portsmouth Route 4



Route 4A Weekday — Portsmouth 4A
UNH/Durham to Malls & Portsmouth Market Square — Monday - Friday

Stop ID # & Location	Run 1 (AM Express)	Run 2 (AM Express)	Run 3	Run 4	Run 5	Run 6	Run 7
Outbound							
101 DEPART UNH McCONNELL HALL	**6:40 AM**	**7:45 AM**	**12:05 PM**	**2:05 PM**	**6:05 PM**	**7:05 PM**	**9:35 PM**
102 DEPART UNH KINGSBURY HALL	**6:42 AM**	**7:47 AM**	**12:07 PM**	**2:07 PM**	**6:07 PM**	**7:07 PM**	**9:37 PM**
103 DEPART UNH HEWITT HALL	**6:42 AM**	**7:47 AM**	**12:07 PM**	**2:07 PM**	**6:07 PM**	**7:07 PM**	**9:37 PM**
104 DEPART MAIN STREET @ UNH THOMPSON HALL	**6:45 AM**	**7:50 AM**	**12:10 PM**	**2:10 PM**	**6:10 PM**	**7:10 PM**	**9:40 PM**
106 DEPART MAIN STREET @ UNH HETZEL HALL	**6:47 AM**	**7:52 AM**	**12:12 PM**	**2:12 PM**	**6:12 PM**	**7:12 PM**	**9:42 PM**
107 Rte 108 @ Old Landing Rd	6:49 AM	7:54 AM	12:14 PM	2:14 PM	6:14 PM	7:14 PM	9:44 PM
109 Rte 108 @ Old Piscataqua Rd	6:49 AM	7:54 AM	12:14 PM	2:14 PM	6:14 PM	7:14 PM	9:44 PM
121 Rte 4 @ 68 Piscataqua Rd	**Depending on traffic, stops on Route 4 may not be serviced outbound before 9 am. Please call 603-862-2328 for daily information.**		12:15 PM	2:15 PM	6:15 PM	7:15 PM	9:45 PM
122 Rte 4 @ Riverview Rd			12:16 PM	2:16 PM	6:16 PM	7:16 PM	9:46 PM
192 Rte 4 @ 116 Piscataqua Rd			12:16 PM	2:16 PM	6:16 PM	7:16 PM	9:46 PM
123 Rte 4 @ Wagon Hill Farm			12:17 PM	2:17 PM	6:17 PM	7:17 PM	9:47 PM
124 Rte 4 @ Cedar Point Rd			12:18 PM	2:18 PM	6:18 PM	7:18 PM	9:48 PM
201 Boston Harbor Road @ DMV	**On Request Only**			**On Request Only**		**On Request Only**	
604 Newington Wal-Mart	**Not Serviced on These Runs**		12:26 PM	2:26 PM	6:26 PM	7:26 PM	9:56 PM
603 Fox Run Mall (to Portsmouth)	**Not Serviced on These Runs**		12:28 PM	2:28 PM	6:28 PM	7:28 PM	9:58 PM
601 Crossings at Fox Run @ Cold Stone Creamery	**Not Serviced on These Runs**		12:31 PM	2:31 PM	6:31 PM	7:31 PM	10:01 PM
302 Gosling Rd @ Gosling Meadows	**Not Serviced on These Runs**		12:33 PM	2:33 PM	6:33 PM	7:33 PM	10:03 PM
314 1840 Woodbury Ave	7:01 AM	8:06 AM	12:34 PM	2:34 PM	6:34 PM	7:34 PM	10:04 PM
312 Marshall's Plaza @ Commerce Way	7:03 AM	8:08 AM	12:37 PM	2:37 PM	6:37 PM	7:37 PM	10:07 PM
336 170 Commerce Way	7:04 AM	8:09 AM	12:38 PM	2:38 PM	6:38 PM	7:38 PM	10:08 PM
338 Commerce Way / Portsmouth Blvd	7:05 AM	8:10 AM	12:38 PM	2:38 PM	6:38 PM	7:38 PM	10:08 PM
316 Maplewood Ave @ Fairview Drive	7:08 AM	8:13 AM	12:42 PM	2:42 PM	6:42 PM	7:42 PM	10:10 PM
317 Maplewood Ave @ I-95 Overpass	7:10 AM	8:15 AM	12:44 PM	2:44 PM	6:44 PM	7:44 PM	10:12 PM
318 Maplewood Ave @ Dearborn Street	7:11 AM	8:16 AM	12:45 PM	2:45 PM	6:45 PM	7:45 PM	10:13 PM
319 Maplewood Ave @ North Cemetery	7:12 AM	8:17 AM	12:46 PM	2:46 PM	6:46 PM	7:46 PM	10:14 PM
303 Hanover Street @ High-Hanover Parking Facility	7:14 AM	8:19 AM	12:48 PM	2:48 PM	6:48 PM	7:48 PM	10:16 PM
311 Arrive Market Square	**7:16 AM**	**8:21 AM**	**12:50 PM**	**2:50 PM**	**6:50 PM**	**7:50 PM**	**10:18 PM**
Inbound							
311 Depart Market Square	**7:16 AM**	**8:21 AM**	**12:50 PM**	**2:50 PM**	**6:50 PM**	**7:50 PM**	**10:18 PM**
310 Islington Street @ Tanner Street	7:18 AM	8:23 AM	12:51 PM	2:51 PM	6:51 PM	7:51 PM	10:19 PM
308 Islington Street @ Cornwall Street	7:19 AM	8:24 AM	12:52 PM	2:52 PM	6:52 PM	7:52 PM	10:20 PM
307 Islington Street @ Dunkin Donuts	7:20 AM	8:25 AM	12:54 PM	2:54 PM	6:54 PM	7:54 PM	10:22 PM
305 Plaza 800	7:22 AM	8:27 AM	12:55 PM	2:55 PM	6:55 PM	7:55 PM	10:23 PM
320 Bartlett Street @ Meredith Way	7:25 AM	8:30 AM	12:58 PM	2:58 PM	6:58 PM	7:58 PM	10:26 PM
321 Dennett Street @ Woodbury Ave	7:26 AM	8:31 AM	12:59 PM	2:59 PM	6:59 PM	7:59 PM	10:27 PM
201 Boston Harbor Road @ DMV	**On Request Only**			**On Request Only**		**On Request Only**	
125 Rte 4 @ Scammel Bridge (West Side)	7:35 AM	8:40 AM	1:09 PM	3:09 PM	7:09 PM	8:09 PM	10:36 PM
126 Rte 4 @ Emery Farm	7:37 AM	8:42 AM	1:10 PM	3:10 PM	7:10 PM	8:10 PM	10:38 PM
193 Rte 4 @ Morgan Way	7:37 AM	8:42 AM	1:11 PM	3:11 PM	7:11 PM	8:11 PM	10:38 PM
127 Rte 4 @ Shearwater Street	7:38 AM	8:43 AM	1:11 PM	3:11 PM	7:11 PM	8:11 PM	10:39 PM
120 Rte 4 @ 65 Piscataqua Rd	7:38 AM	8:43 AM	1:11 PM	3:11 PM	7:11 PM	8:11 PM	10:39 PM
119 Rte 108 @ The Pines Inn (#47)	7:41 AM	8:46 AM	1:14 PM	3:14 PM	7:14 PM	8:14 PM	10:42 PM
108 Rte 108 @ Young Drive	7:41 AM	8:46 AM	1:15 PM	3:15 PM	7:15 PM	8:15 PM	10:42 PM
117 Madbury Road @ Woodman Rd	7:44 AM	8:49 AM	1:18 PM	3:17 PM	7:17 PM	8:17 PM	10:44 PM
116 ARRIVE Garrison Ave @ Sawyer Hall	**7:45 AM**	**8:50 AM**	**1:19 PM**	**3:19 PM**	**7:19 PM**	**8:19 PM**	**10:46 PM**
105 ARRIVE Holloway Commons Main Street	**7:47 AM**	**8:52 AM**	**1:21 PM**	**3:20 PM**	**7:20 PM**	**8:20 PM**	**10:47 PM**
1001 ARRIVE UNH McConnell Hall	**7:49 AM**	**8:54 AM**	**1:23 PM**	**3:22 PM**	**7:22 PM**	**8:22 PM**	**10:49 PM**

These times are approximate. Please be at the bus stop 5 minutes before the scheduled time.

Route 4A WEEKEND — Portsmouth 4A

UNH/Durham to Malls & Portsmouth Market Square — Saturday - Sunday

Stop ID # & Location	Run 1	Run 2	Run 3
Outbound			
101 DEPART UNH McCONNELL HALL	**11:35 AM**	**2:35 PM**	**7:05 PM**
102 DEPART UNH KINGSBURY HALL	**11:37 AM**	**2:37 PM**	**7:07 PM**
103 DEPART UNH HEWITT HALL	**11:37 AM**	**2:37 PM**	**7:07 PM**
104 DEPART MAIN STREET @ UNH THOMPSON HALL	**11:40 AM**	**2:40 PM**	**7:10 PM**
106 DEPART MAIN STREET @ UNH HETZEL HALL	**11:42 AM**	**2:42 PM**	**7:12 PM**
107 Rte 108 @ Old Landing Rd	11:44 AM	2:44 PM	7:14 PM
109 Rte 108 @ Old Piscataqua Rd	11:44 AM	2:44 PM	7:14 PM
121 Rte 4 @ 68 Piscataqua Rd	11:45 AM	2:45 PM	7:15 PM
122 Rte 4 @ Riverview Rd	11:46 AM	2:46 PM	7:16 PM
192 Rte 4 @ 116 Piscataqua Rd	11:46 AM	2:46 PM	7:16 PM
123 Rte 4 @ Wagon Hill Farm	11:47 AM	2:47 PM	7:17 PM
124 Rte 4 @ Cedar Point Rd	11:48 AM	2:48 PM	7:18 PM
201 Boston Harbor Road @ DMV		**On Request Only**	
604 Newington Wal-Mart	11:56 AM	2:56 PM	7:26 PM
603 Fox Run Mall (to Portsmouth)	11:58 AM	2:58 PM	7:28 PM
601 Crossings at Fox Run @ Cold Stone Creamery	12:01 PM	3:01 PM	7:30 PM
302 Gosling Rd @ Gosling Meadows	12:03 PM	3:03 PM	7:32 PM
314 1840 Woodbury Ave	12:04 PM	3:04 PM	7:33 PM
312 Marshall's Plaza @ Commerce Way	12:07 PM	3:07 PM	7:36 PM
336 170 Commerce Way	12:08 PM	3:08 PM	7:37 PM
338 Commerce Way / Portsmouth Blvd	12:08 PM	3:08 PM	7:37 PM
316 Maplewood Ave @ Fairview Drive	12:12 PM	3:12 PM	7:39 PM
317 Maplewood Ave @ I-95 Overpass	12:14 PM	3:14 PM	7:41 PM
318 Maplewood Ave @ Dearborn Street	12:15 PM	3:15 PM	7:42 PM
319 Maplewood Ave @ North Cemetery	12:16 PM	3:16 PM	7:43 PM
303 Hanover Street @ High-Hanover Parking Facility	12:18 PM	3:18 PM	7:45 PM
311 Arrive Market Square	**12:20 PM**	**3:20 PM**	**7:47 PM**
Inbound			
311 Depart Market Square	**12:20 PM**	**3:20 PM**	**7:47 PM**
310 Islington Street @ Tanner Street	12:21 PM	3:21 PM	7:49 PM
308 Islington Street @ Cornwall Street	12:22 PM	3:22 PM	7:50 PM
307 Islington Street @ Dunkin Donuts	12:24 PM	3:24 PM	7:51 PM
305 Plaza 800	12:25 PM	3:25 PM	7:53 PM
320 Bartlett Street @ Meredith Way	12:28 PM	3:28 PM	7:56 PM
321 Dennett Street @ Woodbury Ave	12:29 PM	3:29 PM	7:56 PM
602 Crossings at Fox Run @ Regal Cinemas	12:36 PM	3:36 PM	8:01 PM
606 Fox Run Mall (to UNH)	12:40 PM	3:40 PM	8:05 PM
605 Fox Run Rd @ Wal-Mart	12:42 PM	3:42 PM	8:07 PM
607 2299 Woodbury Ave	12:42 PM	3:42 PM	8:08 PM
201 Boston Harbor Road @ DMV		**On Request Only**	
125 Rte 4 @ Scammel Bridge (West Side)	12:48 PM	3:48 PM	8:14 PM
126 Rte 4 @ Emery Farm	12:50 PM	3:50 PM	8:15 PM
193 Rte 4 @ Morgan Way	12:50 PM	3:50 PM	8:16 PM
127 Rte 4 @ Shearwater Street	12:51 PM	3:51 PM	8:17 PM
120 Rte 4 @ 65 Piscataqua Road	12:52 PM	3:52 PM	8:17 PM
119 Rte 108 @ The Pines Inn (#47)	12:55 PM	3:55 PM	8:20 PM
108 Rte 108 @ Young Drive	12:55 PM	3:55 PM	8:21 PM
117 Madbury Road @ Woodman Rd	12:57 PM	3:57 PM	8:23 PM
116 ARRIVE Garrison Ave @ Sawyer Hall	**12:59 PM**	**3:59 PM**	**8:24 PM**
105 ARRIVE Holloway Commons Main Street	**1:00 PM**	**4:00 PM**	**8:26 PM**
1001 ARRIVE UNH McConnell Hall	**1:02 PM**	**4:02 PM**	**8:28 PM**

These times are approximate. Please be at the bus stop 5 minutes before the scheduled time.

There is no weekend service during periods of "Reduced Service"

Route 4B Weekday — Portsmouth 4B

UNH/Durham to Malls & Portsmouth Market Square — Monday - Friday

Stop ID # & Location	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Outbound						
101 DEPART UNH McCONNELL HALL	**8:45 AM**	**10:35 AM**	**1:05 PM**	**3:05 PM**	**4:35 PM**	**8:05 PM**
102 DEPART UNH KINGSBURY HALL	**8:47 AM**	**10:37 AM**	**1:07 PM**	**3:07 PM**	**4:37 PM**	**8:07 PM**
103 DEPART UNH HEWITT HALL	**8:47 AM**	**10:37 AM**	**1:07 PM**	**3:07 PM**	**4:37 PM**	**8:07 PM**
104 DEPART MAIN STREET @ UNH THOMPSON HALL	**8:50 AM**	**10:40 AM**	**1:10 PM**	**3:10 PM**	**4:40 PM**	**8:10 PM**
106 DEPART MAIN STREET @ UNH HETZEL HALL	**8:52 AM**	**10:42 AM**	**1:12 PM**	**3:12 PM**	**4:42 PM**	**8:12 PM**
107 Rte 108 @ Old Landing Rd	8:54 AM	10:44 AM	1:14 PM	3:14 PM	4:44 PM	8:14 PM
109 Rte 108 @ Old Piscataqua Rd	8:54 AM	10:44 AM	1:14 PM	3:14 PM	4:44 PM	8:14 PM
121 Rte 4 @ 68 Piscataqua Rd	8:55 AM	10:45 AM	1:15 PM	3:15 PM	4:45 PM	8:15 PM
122 Rte 4 @ Riverview Rd	8:56 AM	10:46 AM	1:16 PM	3:16 PM	4:46 PM	8:16 PM
192 Rte 4 @ 116 Piscataqua Rd	8:56 AM	10:46 AM	1:16 PM	3:16 PM	4:46 PM	8:16 PM
123 Rte 4 @ Wagon Hill Farm	8:57 AM	10:47 AM	1:17 PM	3:17 PM	4:47 PM	8:17 PM
124 Rte 4 @ Cedar Point Rd	8:58 AM	10:48 AM	1:18 PM	3:18 PM	4:48 PM	8:18 PM
201 Boston Harbor Road @ DMV	**On Request Only**					
322 676 Dennett Street	9:09 AM	10:57 AM	1:27 PM	3:27 PM	4:57 PM	8:27 PM
323 Bartlett Street @ Thornton Street	9:10 AM	10:58 AM	1:28 PM	3:28 PM	4:58 PM	8:28 PM
305 Plaza 800	9:13 AM	11:01 AM	1:31 PM	3:31 PM	5:01 PM	8:30 PM
306 Islington Street @ Cass Street	9:15 AM	11:03 AM	1:33 PM	3:33 PM	5:03 PM	8:32 PM
304 Islington Street @ Goodwin Park	9:16 AM	11:04 AM	1:34 PM	3:34 PM	5:04 PM	8:33 PM
309 Islington Street @ Keefe House	9:17 AM	11:05 AM	1:35 PM	3:35 PM	5:05 PM	8:34 PM
303 Hanover Street @ High-Hanover Parking Facility	9:19 AM	11:07 AM	1:37 PM	3:37 PM	5:07 PM	8:36 PM
311 Arrive Market Square	**9:21 AM**	**11:09 AM**	**1:39 PM**	**3:39 PM**	**5:09 PM**	**8:38 PM**
Inbound						
311 Depart Market Square	**9:21 AM**	**11:09 AM**	**1:39 PM**	**3:39 PM**	**5:09 PM**	**8:38 PM**
324 Maplewood Ave @ Vaughan Street	9:23 AM	11:11 AM	1:41 PM	3:41 PM	5:11 PM	8:40 PM
325 Maplewood Ave @ Jackson Hill St	9:24 AM	11:12 AM	1:42 PM	3:42 PM	5:12 PM	8:41 PM
326 651 Maplewood Ave (Odd Fellow's Lodge)	9:25 AM	11:13 AM	1:43 PM	3:43 PM	5:13 PM	8:42 PM
327 Maplewood Ave @ Heritage Hill	9:26 AM	11:14 AM	1:44 PM	3:44 PM	5:14 PM	8:43 PM
333 Portsmouth Blvd @ Shearwater Drive	9:31 AM	11:19 AM	1:49 PM	3:49 PM	5:19 PM	8:48 PM
334 215 Commerce Way	9:31 AM	11:19 AM	1:49 PM	3:49 PM	5:19 PM	8:48 PM
335 175 Commerce Way	9:32 AM	11:20 AM	1:50 PM	3:50 PM	5:20 PM	8:49 PM
339 Commerce Way @ Marshall's Plaza	9:33 AM	11:21 AM	1:51 PM	3:51 PM	5:21 PM	8:49 PM
313 1855 Woodbury Ave @ Starbucks	9:34 AM	11:22 AM	1:52 PM	3:52 PM	5:22 PM	8:50 PM
301 Gosling Road @ Winsor Rd	9:36 AM	11:24 AM	1:54 PM	3:54 PM	5:24 PM	8:52 PM
602 Crossings at Fox Run @ Regal Cinemas	9:38 AM	11:26 AM	1:56 PM	3:56 PM	5:26 PM	8:53 PM
606 Fox Run Mall (to UNH)	9:41 AM	11:29 AM	1:59 PM	3:59 PM	5:29 PM	8:56 PM
605 Fox Run Rd @ Wal-Mart	9:43 AM	11:31 AM	2:01 PM	4:01 PM	5:31 PM	8:58 PM
607 2299 Woodbury Ave	9:45 AM	11:32 AM	2:02 PM	4:02 PM	5:32 PM	8:59 PM
201 Boston Harbor Road @ DMV	**On Request Only**					
125 Rte 4 @ Scammel Bridge (West Side)	9:53 AM	11:40 AM	2:10 PM	4:10 PM	5:40 PM	9:06 PM
126 Rte 4 @ Emery Farm	9:54 AM	11:41 AM	2:12 PM	4:12 PM	5:42 PM	9:07 PM
193 Rte 4 @ Morgan Way	9:55 AM	11:42 AM	2:12 PM	4:12 PM	5:42 PM	9:07 PM
127 Rte 4 @ Shearwater Street	9:55 AM	11:42 AM	2:13 PM	4:13 PM	5:43 PM	9:08 PM
120 Rte 4 @ 65 Piscataqua Rd	9:56 AM	11:43 AM	2:13 PM	4:13 PM	5:43 PM	9:08 PM
119 Rte 108 @ The Pines Inn (#47)	9:59 AM	11:46 AM	2:16 PM	4:16 PM	5:46 PM	9:11 PM
108 Rte 108 @ Young Drive	9:59 AM	11:46 AM	2:17 PM	4:17 PM	5:47 PM	9:12 PM
117 Madbury Road @ Woodman Rd	10:01 AM	11:48 AM	2:19 PM	4:19 PM	5:49 PM	9:14 PM
116 ARRIVE Garrison Ave @ Sawyer Hall	**10:03 AM**	**11:50 AM**	**2:20 PM**	**4:20 PM**	**5:50 PM**	**9:15 PM**
105 ARRIVE Holloway Commons Main Street	**10:04 AM**	**11:51 AM**	**2:21 PM**	**4:21 PM**	**5:51 PM**	**9:16 PM**
1001 ARRIVE UNH McConnell Hall	**10:06 AM**	**11:53 AM**	**2:23 PM**	**4:23 PM**	**5:53 PM**	**9:18 PM**

These times are approximate. Please be at the bus stop 5 minutes before the scheduled time.

Route 4B WEEKEND Portsmouth 4B

UNH / Durham to Malls & Portsmouth Market Square Saturday - Sunday

Stop ID # & Location Outbound	Run 1	Run 2	Run 3	Run 4
101 DEPART UNH McCONNELL HALL	**1:05 PM**	**3:35 PM**	**5:05 PM**	**9:05 PM**
102 DEPART UNH KINGSBURY HALL	**1:07 PM**	**3:37 PM**	**5:07 PM**	**9:07 PM**
103 DEPART UNH HEWITT HALL	**1:07 PM**	**3:37 PM**	**5:07 PM**	**9:07 PM**
HALL	**1:10 PM**	**3:40 PM**	**5:10 PM**	**9:10 PM**
106 DEPART MAIN STREET @ UNH HETZEL HALL	**1:12 PM**	**3:42 PM**	**5:12 PM**	**9:12 PM**
107 Rte 108 @ Old Landing Rd	1:14 PM	3:44 PM	5:14 PM	9:14 PM
109 Rte 108 @ Old Piscataqua Rd	1:14 PM	3:44 PM	5:14 PM	9:14 PM
121 Rte 4 @ 68 Piscataqua Rd	1:15 PM	3:45 PM	5:15 PM	9:15 PM
122 Rte 4 @ Riverview Rd	1:16 PM	3:46 PM	5:16 PM	9:16 PM
192 Rte 4 @ 116 Piscataqua Rd	1:16 PM	3:46 PM	5:16 PM	9:16 PM
123 Rte 4 @ Wagon Hill Farm	1:17 PM	3:47 PM	5:17 PM	9:17 PM
124 Rte 4 @ Cedar Point Rd	1:18 PM	3:48 PM	5:18 PM	9:18 PM
201 Boston Harbor Road @ DMV	**On Request Only**			
604 Newington Wal-Mart	1:26 PM	3:56 PM	5:26 PM	9:26 PM
603 Fox Run Mall (To Portsmouth)	1:28 PM	3:58 PM	5:28 PM	9:28 PM
601 Crossings at Fox Run @ Cold Stone Creamery	1:31 PM	4:01 PM	5:31 PM	9:31 PM
322 676 Dennett Street	1:38 PM	4:08 PM	5:38 PM	9:38 PM
323 Bartlett Street @ Thornton Street	1:39 PM	4:09 PM	5:39 PM	9:39 PM
305 Plaza 800	1:42 PM	4:12 PM	5:42 PM	9:42 PM
306 Islington Street @ Cass Street	1:44 PM	4:14 PM	5:44 PM	9:44 PM
304 Islington Street @ Goodwin Park	1:45 PM	4:15 PM	5:45 PM	9:45 PM
309 Islington Street @ Keefe House	1:46 PM	4:16 PM	5:46 PM	9:46 PM
303 Hanover Street @ High-Hanover Parking Facilit	1:48 PM	4:18 PM	5:48 PM	9:48 PM
311 Arrive Market Square	**1:50 PM**	**4:20 PM**	**5:50 PM**	**9:50 PM**
Inbound				
311 Depart Market Square	**1:50 PM**	**4:20 PM**	**5:50 PM**	**9:50 PM**
324 Maplewood Ave @ Vaughan Street	1:52 PM	4:22 PM	5:52 PM	9:52 PM
325 Maplewood Ave @ Jackson Hill St	1:53 PM	4:23 PM	5:53 PM	9:53 PM
326 651 Maplewood Ave (Odd Fellow's Lodge)	1:54 PM	4:24 PM	5:54 PM	9:54 PM
327 Maplewood Ave @ Heritage Hill	1:55 PM	4:25 PM	5:55 PM	9:55 PM
333 Portsmouth Blvd @ Shearwater Drive	2:00 PM	4:30 PM	6:00 PM	10:00 PM
334 215 Commerce Way	2:00 PM	4:30 PM	6:00 PM	10:00 PM
335 175 Commerce Way	2:01 PM	4:31 PM	6:01 PM	10:01 PM
339 Commerce Way @ Marshall's Plaza	2:02 PM	4:32 PM	6:02 PM	10:02 PM
313 1855 Woodbury Ave @ Starbucks	2:03 PM	4:33 PM	6:03 PM	10:03 PM
301 Gosling Road @ Winsor Rd	2:05 PM	4:35 PM	6:05 PM	10:05 PM
602 Crossings at Fox Run @ Regal Cinemas	2:07 PM	4:37 PM	6:07 PM	10:06 PM
606 Fox Run Mall (to UNH)	2:10 PM	4:40 PM	6:10 PM	10:09 PM
605 Fox Run Rd @ Wal-Mart	2:12 PM	4:42 PM	6:12 PM	10:11 PM
607 2299 Wodbury Ave	2:13 PM	4:43 PM	6:13 PM	10:12 PM
201 Boston Harbor Road @ DMV	**On Request Only**			
125 Rte 4 @ Scammel Bridge (West Side)	2:20 PM	4:50 PM	6:20 PM	10:19 PM
126 Rte 4 @ Emery Farm	2:22 PM	4:52 PM	6:22 PM	10:21 PM
193 Rte 4 @ Morgan Way	2:22 PM	4:52 PM	6:22 PM	10:22 PM
127 Rte 4 @ Shearwater Street	2:23 PM	4:53 PM	6:23 PM	10:22 PM
120 Rte 4 @ 65 Piscataqua Road	2:24 PM	4:54 PM	6:24 PM	10:23 PM
119 Rte 108 @ The Pines Inn (#47)	2:27 PM	4:57 PM	6:27 PM	10:26 PM
108 Rte 108 @ Young Drive	2:27 PM	4:57 PM	6:27 PM	10:27 PM
117 Madbury Road @ Woodman Rd	2:29 PM	4:59 PM	6:29 PM	10:29 PM
116 ARRIVE Garrison Ave @ Sawyer Hall	**2:31 PM**	**5:01 PM**	**6:31 PM**	**10:30 PM**
105 ARRIVE Holloway Commons Main Street	**2:32 PM**	**5:02 PM**	**6:32 PM**	**10:31 PM**
1001 ARRIVE UNH McConnell Hall	**2:34 PM**	**5:04 PM**	**6:34 PM**	**10:33 PM**

These times are approximate. Please be at the bus stop 5 minutes before the scheduled time.

There is no weekend service during periods of "Reduced Service"

APPENDIX G

US Census Journey-to-Work Data

Table 3. Residence MCD/County to Workplace MCD/County Commuting Flows for the United States and Puerto R

For more information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, see

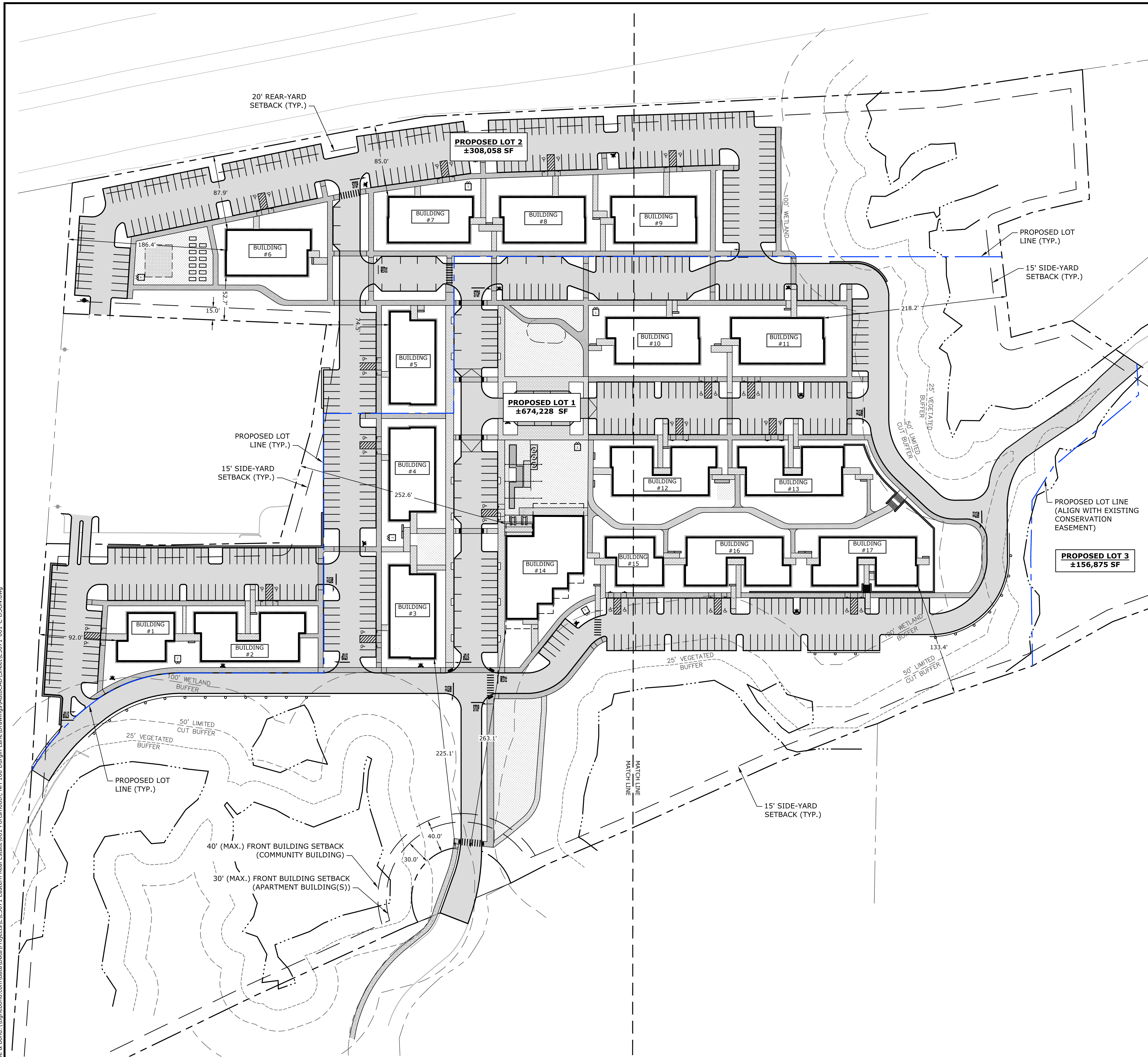
Universe: Workers 16 years and over.

Commuting flows are sorted by residence state, residence county, and residence minor civil division.

Residence		Place of Work		Commuting Flow	TO / FROM				
State Name	**Minor Civil Division Name**	**State Name**	**Minor Civil Division Name**	**Workers in Commuting Flow**	North via I-95	South via I-95	North via Spaulding Tpke	South via Route 1 Bypass	Portsmouth Center via Woodbury/ Market
New Hampshire	Portsmouth city	New Hampshire	Portsmouth city	6,310	315.5	315.5	315.5	1893	3470.5
New Hampshire	Portsmouth city	New Hampshire	Dover city	643			643		
New Hampshire	Portsmouth city	New Hampshire	Durham town	470		117.5	376		
New Hampshire	Portsmouth city	New Hampshire	Exeter town	437		437			
New Hampshire	Portsmouth city	Maine	Kittery town	379	151.6				227.4
New Hampshire	Portsmouth city	New Hampshire	Newington town	360		36	324		
New Hampshire	Portsmouth city	New Hampshire	Hampton town	354		106.2		247.8	
New Hampshire	Portsmouth city	Massachusetts	Boston city	164		82		82	
New Hampshire	Portsmouth city	New Hampshire	North Hampton town	162		48.6		113.4	
New Hampshire	Portsmouth city	New Hampshire	Salem town	159		159			
New Hampshire	Portsmouth city	Maine	York town	142	71				71
New Hampshire	Portsmouth city	New Hampshire	New Castle town	134					134
New Hampshire	Portsmouth city	New Hampshire	Manchester city	129		90.3	38.7		
New Hampshire	Portsmouth city	New Hampshire	Somersworth city	125			125		
New Hampshire	Portsmouth city	New Hampshire	Rye town	123				123	
New Hampshire	Portsmouth city	New Hampshire	Stratham town	123		30.75		92.25	
New Hampshire	Portsmouth city	New Hampshire	Greenland town	112		28		84	
New Hampshire	Portsmouth city	New Hampshire	Londonderry town	92		92			
New Hampshire	Portsmouth city	New Hampshire	Concord city	89			89		
New Hampshire	Portsmouth city	Massachusetts	Newburyport city	86		43		43	
New Hampshire	Portsmouth city	New Hampshire	Seabrook town	85		42.5		42.5	
New Hampshire	Portsmouth city	New Hampshire	Rochester city	80			80		
New Hampshire	Portsmouth city	Massachusetts	Peabody city	78		39		39	
New Hampshire	Portsmouth city	New Hampshire	Brentwood town	77		77			
New Hampshire	Portsmouth city	New Hampshire	Raymond town	75		75			
New Hampshire	Portsmouth city	Maine	North Berwick town	72	36		36		
New Hampshire	Portsmouth city	New Hampshire	Bedford town	69		69			
New Hampshire	Portsmouth city	New Hampshire	Barrington town	56			56		
New Hampshire	Portsmouth city	New Hampshire	Hampton Falls town	53		26.5		26.5	
New Hampshire	Portsmouth city	New Hampshire	Plymouth town	51		45.9	5.1		
New Hampshire	Portsmouth city	Massachusetts	North Andover town	49		36.75		12.25	
New Hampshire	Portsmouth city	New Hampshire	Wolfeboro town	49			49		
New Hampshire	Portsmouth city	Maine	Eliot town	48	24				24
New Hampshire	Portsmouth city	Massachusetts	Amesbury Town city	48		24		24	
New Hampshire	Portsmouth city	Massachusetts	Quincy city	43		21.5		21.5	
New Hampshire	Portsmouth city	Massachusetts	Andover town	41		20.5		20.5	
New Hampshire	Portsmouth city	Massachusetts	Methuen Town city	40		20		20	
New Hampshire	Portsmouth city	Massachusetts	Stoneham town	39		19.5		19.5	
New Hampshire	Portsmouth city	New Hampshire	Plaistow town	39		39			
New Hampshire	Portsmouth city	New Hampshire	Nashua city	38		38			
New Hampshire	Portsmouth city	Massachusetts	Burlington town	37		18.5		18.5	
New Hampshire	Portsmouth city	New Hampshire	Hooksett town	37		33.3	3.7		
New Hampshire	Portsmouth city	New Hampshire	Rollinsford town	37			37		
New Hampshire	Portsmouth city	New Hampshire	Newmarket town	33		33			
New Hampshire	Portsmouth city	Massachusetts	Haverhill city	32		16		16	
New Hampshire	Portsmouth city	Maine	South Portland city	25	25				
New Hampshire	Portsmouth city	Massachusetts	Groveland town	25		12.5		12.5	
New Hampshire	Portsmouth city	Massachusetts	Cambridge city	25		12.5		12.5	
New Hampshire	Portsmouth city	Massachusetts	Chelmsford town	24		12		12	
New Hampshire	Portsmouth city	Maine	South Berwick town	23	17.25		5.75		
New Hampshire	Portsmouth city	New Hampshire	Hampstead town	22		22			
New Hampshire	Portsmouth city	Maine	Portland city	21	21				
New Hampshire	Portsmouth city	Massachusetts	Boxborough town	21		10.5		10.5	
New Hampshire	Portsmouth city	Massachusetts	Billerica town	20		10		10	
			TOTAL	12,105	661	2,360	2,184	2,996	3,927
					5%	**20%**	**20%**	**25%**	**30%**

APPENDIX H

Site Development Plan



SITE DATA:

LOCATION: TAX MAP 239, LOT 13-2, MAP 239 LOT 16, MAP 239 LOT 18
OWNER: 100 DURGIN LANE OWNER LLC
ONE MARINA PARK DRIVE, SUITE 1500
BOSTON, MA 02210

ZONING DISTRICT: GATEWAY NEIGHBORHOOD MIXED USE CORRIDOR (G1)
HIGHWAY NOISE OVERLAY DISTRICT

PROPOSED USE: MULTI-FAMILY RESIDENTIAL DEVELOPMENT
EXISTING LOT SIZE: ±1,139,161 SF / 26.15 ACRES (MAP 239 LOT 13-2, LOT 16, LOT 18)

DEVELOPMENT STANDARDS

GENERAL RESIDENTIAL DEVELOPMENT (10.5B42.30)	REQUIRED	PROPOSED
MINIMUM SITE DEVELOPMENT AREA:	10,000 SF	±1,139,161 SF
MINIMUM SITE WIDTH:	75 FT	>75 FT
MINIMUM SITE LENGTH:	100 FT	>100 FT
MINIMUM PERIMETER BUFFER:	N/A	-
MAXIMUM DEVELOPMENT BLOCK DIMS:		
BLOCK LENGTH:	500 FT	<500 FT
BLOCK PERIMETER:	1,500 FT	<1,500 FT
MAXIMUM BUILDING COVERAGE:	50%	8.6%
MINIMUM OPEN SPACE COVERAGE:	20%	62%

APARTMENT BUILDING (10.5B34.40)	REQUIRED	PROPOSED
MINIMUM LOT DEPTH:	NR	-
MINIMUM STREET FRONTAGE:	50 FT	200.6 FT
FRONT YARD SETBACK:	10-30 FT	±225.1 FT(1)
MIN. SIDE YARD SETBACK	15 FT	52.7 FT
MIN. REAR YARD SETBACK	20 FT	85.0 FT
DWELLING UNITS PER BUILDING	4-24	VARIES (24 MAX.)
MAXIMUM DWELLING UNIT SIZE	NR	-
MAXIMUM BUILDING HEIGHT	4 STORIES OR 50 FT	<50 FT
MINIMUM STREET-FACING FACADE HEIGHT	24 FT	>24 FT
MAX. FINISH FLOOR ABOVE SIDEWALK	36"	VARIES
MAXIMUM BUILDING COVERAGE	50%	7.8%
MAXIMUM BUILDING FOOTPRINT	NR	-
MAXIMUM FACADE MODULATION LENGTH	50 FT	<50 FT
MINIMUM STREET FACING FACADE GLAZING	20% GROUND FLOOR	>20%
MAXIMUM STREET FACING ENTRANCE SPACING	NR	-
ALLOWED ROOF TYPES	ALL	SHED
ALLOWED FACADE TYPES FORECOURT, RECESSED, ENTRY, DOORYARD, STEP, PORCH		FORECOURT, RECESSED

COMMUNITY BUILDING (10.5B34.100)	REQUIRED	PROPOSED
MINIMUM LOT DEPTH:	NR	-
MINIMUM STREET FRONTAGE:	50 FT	200.6 FT
FRONT YARD SETBACK:	10-40 FT	263.1 FT(1)
MIN. SIDE YARD SETBACK	15 FT	256.4 FT
MIN. REAR YARD SETBACK	20 FT	478.2 FT
DWELLING UNITS PER BUILDING	NR	-
MAXIMUM DWELLING UNIT SIZE	NR	-
MAXIMUM BUILDING HEIGHT	3 STORIES OR 45 FT	18 FT
MINIMUM STREET-FACING FACADE HEIGHT	18 FT	18 FT
FINISH FLOOR GRADE ABOVE SIDEWALK	2 FT - 6FT	VARIES
MAXIMUM BUILDING COVERAGE	NR	-
MAXIMUM BUILDING FOOTPRINT	NR	-
MAXIMUM FACADE MODULATION LENGTH	100 FT	100 FT
MINIMUM STREET FACING FACADE GLAZING	30% GROUND FLOOR	30%
MAXIMUM STREET FACING ENTRANCE SPACING	NR	-
ALLOWED ROOF TYPES	ALL	SHED
ALLOWED FACADE TYPES DOORYARD, FORECOURT, STOOP, RECESSED, ENTRY, STEP, PORCH, TERRACE, GALLERY, ARCADE		PORCH, FORECOURT, TERRACE

(1) - THE APPLICANT IS REQUESTING THE PLANNING BOARD TO ALLOW AN INCREASE OF BUILDING SETBACK FROM THE FRONT LOT LINE AS ALLOWED BY SECTION 10.5B41.60.

COMMUNITY SPACE:	REQUIRED	PROPOSED
	10%	11.6%
	113,916 SF	131,942 SF

PARKING REQUIREMENTS

RESIDENTIAL UNITS (<750 SF)	227 UNITS X 1.0 SPACES	227 SPACES
RESIDENTIAL UNITS (>750 SF)	133 UNITS X 1.3 SPACES	173 SPACES
VISITOR SPACES	1 SPACE / 5 UNITS	72 SPACES
TOTAL MINIMUM PARKING SPACES REQUIRED =		472 SPACES

PARKING SPACES	REQUIRED	PROPOSED
	472 SPACES	567 SPACES

ADA PARKING SPACES	REQUIRED(2)	PROPOSED
	25 SPACES	34 SPACES

(2) - PER THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS, LATEST EDITION.

PARKING SPACE DIMENSIONAL REQUIREMENTS:		
STANDARD 90° STALL :		
WIDTH	8.5 FT MIN	8.5 FT
LENGTH	19 FT MIN	19 FT
STANDARD 0° STALL :		
WIDTH	8.5 FT MIN	8.5 FT
LENGTH	20 FT MIN	20 FT
DRIVE AISLE WIDTH:		
90° (2-WAY TRAFFIC)	24 FT	24 FT
0° (2-WAY TRAFFIC)	24 FT	24 FT

BICYCLE SPACES	REQUIRED	PROPOSED
1 BICYCLE SPACE / 10 PARKING SPACES:	30 SPACES (MAX.)	>58 SPACES

(INDOOR BIKE STORAGE WILL BE PROVIDED THAT MEETS OR EXCEEDS REQUIRED.)

SITE RECORDING NOTES:

1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
3. THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH.

SEE SHEET C-101 FOR SITE PLAN NOTES & LEGEND

0 60' 120'
GRAPHIC SCALE

Tighe&Bond

STATE OF NEW HAMPSHIRE PATRICK CRIMMINS No. 12378 LICENSED PROFESSIONAL ENGINEER
4/22/24

STATE OF NEW HAMPSHIRE NEIL A HANSEN No. 15227 LICENSED PROFESSIONAL ENGINEER
04/22/2024

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH, NEW HAMPSHIRE

MARK	DATE	DESCRIPTION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	E5071-001
DATE:	4/22/2024
FILE:	E5071-001-C-DSGN.dwg
DRAWN BY:	BKC/NHW
DESIGNED/CHECKED BY:	NAH
APPROVED BY:	PMC

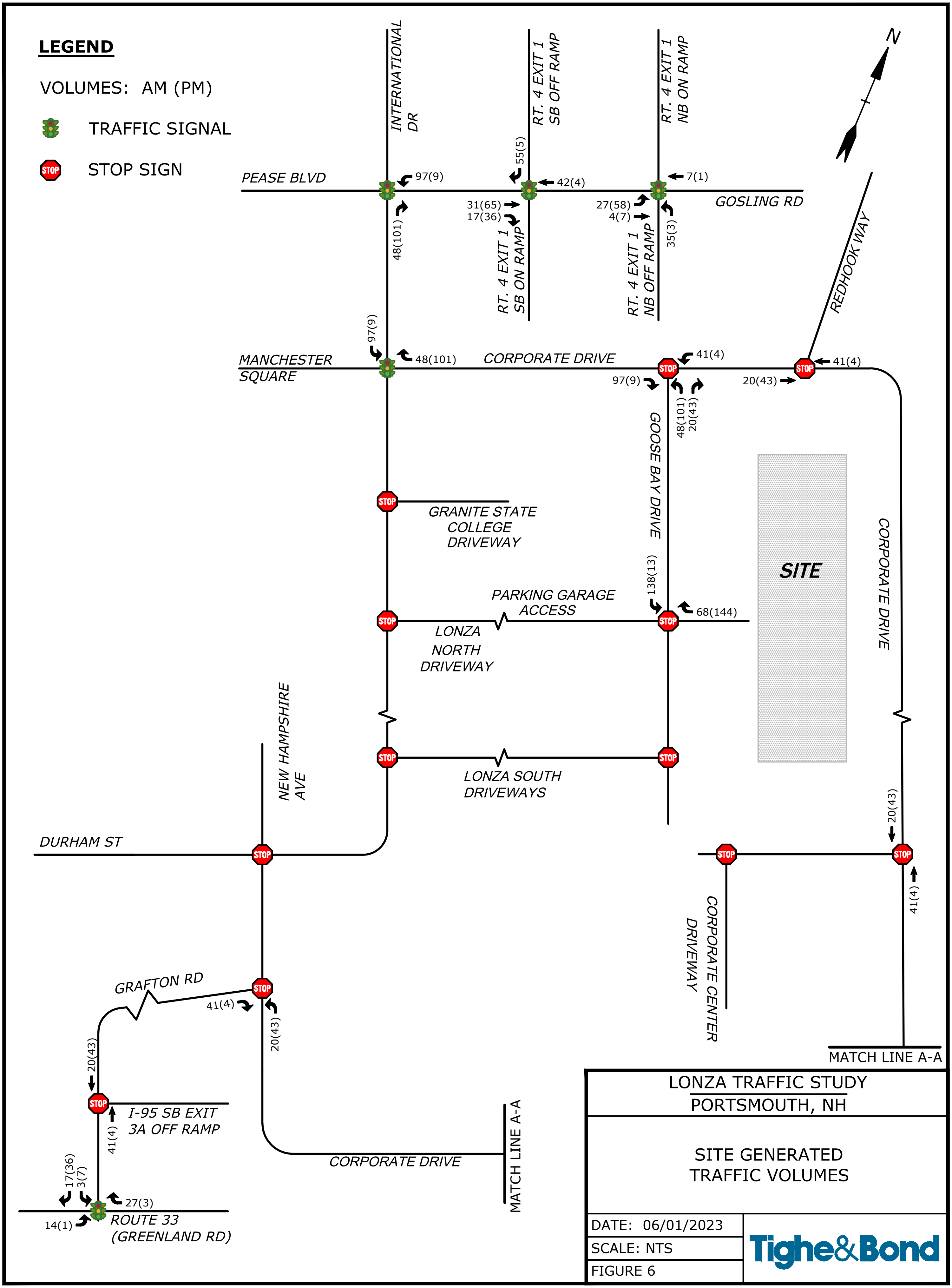
OVERALL SITE PLAN

SCALE: AS SHOWN

C-300

Last Saved: 4/19/2024
Plotted On:Apr 22, 2024-9:15am By: BCurcio
Tighe & Bond:\\tighebond.com\data\Data\Projects\E\E5071 Eastern Real Estate\001 Portsmouth, NH 100 Durgin Lane\Drawings\AutoCAD\Sheet\E5071-001-C-DSGN.dwg

APPENDIX I
Background Development Traffic Volumes

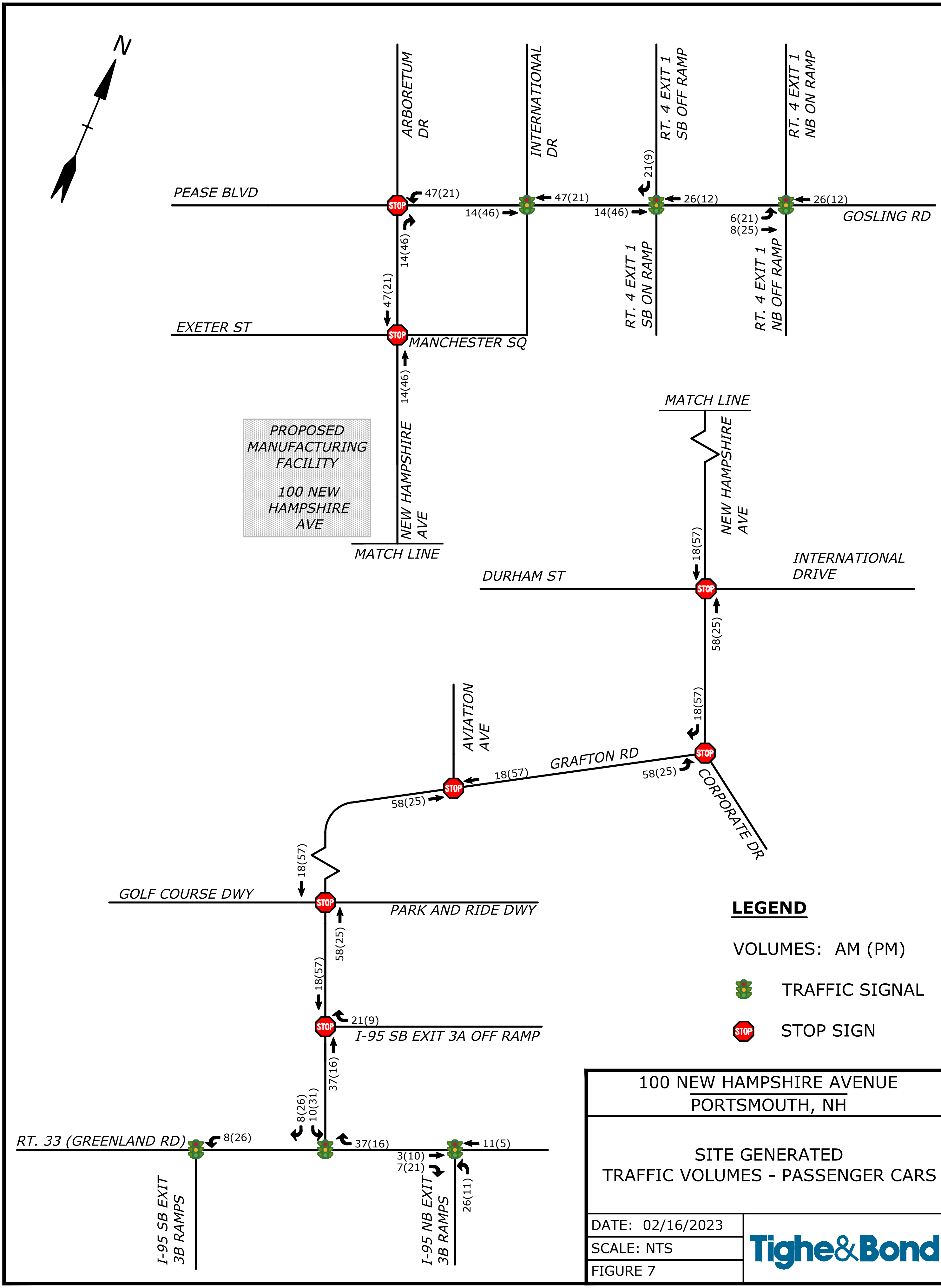


LONZA TRAFFIC STUDY
PORTSMOUTH, NH

SITE GENERATED TRAFFIC VOLUMES

DATE: 06/01/2023
SCALE: NTS
FIGURE 6

Tighe&Bond



100 NEW HAMPSHIRE AVENUE
PORTSMOUTH, NH

SITE GENERATED
TRAFFIC VOLUMES - PASSENGER CARS

DATE: 02/16/2023
SCALE: NTS
FIGURE 7

Tighe&Bond

APPENDIX J

Collision History Summary

Intersection Collision History Summary

Intersection: Pease Boulevard at US Route 4 Southbound Ramps

COLLISION TYPE

	2021	2022	2023	Total	Percent
Angle	1	0	0	**1**	**50.0%**
Single Vehicle Crash	1	0	0	**1**	**50.0%**
TOTAL	**2**	**0**	**0**	**2**	**100%**

COLLISION EVENT

	2021	2022	2023	Total	Percent
Motor Vehicle	2	0	0	**2**	**100.0%**
TOTAL	**2**	**0**	**0**	**2**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Property Damage Only (PDO)	2	0	0	**2**	**100.0%**
TOTAL	**2**	**0**	**0**	**2**	**100%**

Day & Time

	2021	2022	2023	Total	Percent
Weekday Off-Peak	2	0	0	**2**	**100.0%**
TOTAL	**2**	**0**	**0**	**2**	**100%**

Intersection Collision History Summary

Intersection: Gosling Road at US Route 4 Northbound Ramps

COLLISION TYPE

	2021	2022	2023	Total	Percent
Angle	1	0	0	**1**	**25.0%**
Rear-End	1	1	1	**3**	**75.0%**
TOTAL	**2**	**1**	**1**	**4**	**100%**

COLLISION EVENT

	2021	2022	2023	Total	Percent
Motor Vehicle	2	1	1	**4**	**100.0%**
TOTAL	**2**	**1**	**1**	**4**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Property Damage Only (PDO)	2	1	1	**4**	**100.0%**
TOTAL	**2**	**1**	**1**	**4**	**100%**

Day & Time

	2021	2022	2023	Total	Percent
Weekday 6-9 A.M.	0	1	0	**1**	**25.0%**
Weekday 3-6 P.M.	1	0	0	**1**	**25.0%**
Weekday Off-Peak	0	0	1	**1**	**25.0%**
Weekend Off-Peak	1	0	0	**1**	**25.0%**
TOTAL	**2**	**1**	**1**	**4**	**100%**

Intersection Collision History Summary

Intersection: Woodbury Avenue at Gosling Road

COLLISION TYPE

	2021	2022	2023	Total	Percent
Angle	0	1	2	**3**	**37.5%**
Fixed Object	0	1	0	**1**	**12.5%**
Rear-End	0	1	0	**1**	**12.5%**
Sideswipe, Same Direction	0	1	2	**3**	**37.5%**
TOTAL	**0**	**4**	**4**	**8**	**100%**

COLLISION EVENT

	2021	2022	2023	Total	Percent
Motor Vehicle	0	4	4	**8**	**100.0%**
TOTAL	**0**	**4**	**4**	**8**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Property Damage Only (PDO)	0	4	4	**8**	**100.0%**
TOTAL	**0**	**4**	**4**	**8**	**100%**

Day & Time

	2021	2022	2023	Total	Percent
Weekday Off-Peak	0	3	3	**6**	**75.0%**
Saturday 11 A.M. - 2 P.M.	0	0	1	**1**	**12.5%**
Weekend Off-Peak	0	1	0	**1**	**12.5%**
TOTAL	**0**	**4**	**4**	**8**	**100%**

Intersection Collision History Summary

Intersection: Woodbury Avenue at Durgin Lane

COLLISION TYPE

	2021	2022	2023	Total	Percent
Fixed Object	0	1	0	**1**	**20.0%**
Rear-End	2	1	1	**4**	**80.0%**
TOTAL	**2**	**2**	**1**	**5**	**100%**

COLLISION EVENT

	2021	2022	2023	Total	Percent
Motor Vehicle	2	2	1	**5**	**100.0%**
TOTAL	**2**	**2**	**1**	**5**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Personal Injury	0	1	1	**2**	**40.0%**
Property Damage Only (PDO)	2	1	0	**3**	**60.0%**
TOTAL	**2**	**2**	**1**	**5**	**100%**

Day & Time

	2021	2022	2023	Total	Percent
Weekday 6-9 A.M.	0	0	1	**1**	**20.0%**
Weekday 3-6 P.M.	0	1	0	**1**	**20.0%**
Saturday 11 A.M. - 2 P.M.	2	0	0	**2**	**40.0%**
Weekend Off-Peak	0	1	0	**1**	**20.0%**
TOTAL	**2**	**2**	**1**	**5**	**100%**

Intersection Collision History Summary

Intersection: Woodbury Avenue at Market Street

COLLISION TYPE

	2021	2022	2023	Total	Percent
Angle	1	0	3	**4**	**80.0%**
Sideswipe, Same Direction	0	0	1	**1**	**20.0%**
TOTAL	**1**	**0**	**4**	**5**	**100%**

COLLISION EVENT

	2021	2022	2023	Total	Percent
Motor Vehicle	1	0	4	**5**	**100.0%**
TOTAL	**1**	**0**	**4**	**5**	**100%**

SEVERITY

	2021	2022	2023	Total	Percent
Personal Injury	0	0	1	**1**	**20.0%**
Property Damage Only (PDO)	1	0	3	**4**	**80.0%**
TOTAL	**1**	**0**	**4**	**5**	**100%**

Day & Time

	2021	2022	2023	Total	Percent
Weekday 3-6 P.M.	0	0	1	**1**	**20.0%**
Weekday Off-Peak	0	0	3	**3**	**60.0%**
Weekend Off-Peak	1	0	0	**1**	**20.0%**
TOTAL	**1**	**0**	**4**	**5**	**100%**

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100% Recyclable

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. The checklist is required to be completed and uploaded to the Site Plan application in the City's online permitting system. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Applicant: 100 Durgin Lane Owner, LLC Date Submitted: June 17, 2024

Application # (in City's online permitting): LU 24-62

Site Address: 100 Durgin Lane Map: 239 Lot: 13-2, 16, & 18

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☑	Complete application form submitted via the City's web-based permitting program (2.5.2.1**(2.5.2.3A)**	Enclosed	N/A
☑	All application documents, plans, supporting documentation and other materials uploaded to the application form in viewpoint in digital Portable Document Format (PDF). One hard copy of all plans and materials shall be submitted to the Planning Department by the published deadline. **(2.5.2.8)**	Enclosed	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Statement that lists and describes "green" building components and systems. **(2.5.3.1B)**	Enclosed	
☑	Existing and proposed gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1C)**	Existing Conditions & Building Floor Plans	N/A
☑	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1D)**	Site Plan C-300	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	Enclosed	N/A
☑	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1F)**	Existing Conditions Plans	N/A
☑	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**	Cover Sheet	N/A
☑	List of reference plans. **(2.5.3.1H)**	Existing Conditions Plans	N/A
☑	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1I)**	General Notes Sheet G-100	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director.. **(2.5.4.1A)**	Required on all plan sheets	N/A
☑	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☑	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	Existing Conditions Plans	N/A
☑	Plans shall be drawn to scale and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	Required on all plan sheets	N/A
☑	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	Wetlands Delineation Report	N/A
☑	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	Required on all plan sheets	N/A
☑	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	Required on all plan sheets	N/A
☑	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☑	Source and date of data displayed on the plan. **(2.5.4.2D)**	Required on all plan sheets	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	**1. Existing Conditions: (2.5.4.3A)** • Surveyed plan of site showing existing natural and built features; • Existing building footprints and gross floor area; • Existing parking areas and number of parking spaces provided; • Zoning district boundaries; • Existing, required, and proposed dimensional zoning requirements including building and open space coverage, yards and/or setbacks, and dwelling units per acre; • Existing impervious and disturbed areas; • Limits and type of existing vegetation; • Wetland delineation, wetland function and value assessment (including vernal pools); • SFHA, 100-year flood elevation line and BFE data, as required.	Existing Conditions Plan Sheets	
☑	**2. Buildings and Structures: (2.5.4.3B)** • Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation; • Elevations: Height, massing, placement, materials, lighting, façade treatments; • Total Floor Area; • Number of Usable Floors; • Gross floor area by floor and use.	Site Plans C-300, C-301, C-302	
☑	**3. Access and Circulation: (2.5.4.3C)** • Location/width of access ways within site; • Location of curbing, right of ways, edge of pavement and sidewalks; • Location, type, size and design of traffic signing (pavement markings); • Names/layout of existing abutting streets; • Driveway curb cuts for abutting prop. and public roads; • If subdivision; Names of all roads, right of way lines and easements noted; • AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	Site Plans C-300, C-301, C-302	
☑	**4. Parking and Loading: (2.5.4.3D)** • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided).	Site Plans C-300, C-301, C-302	
☑	**5. Water Infrastructure: (2.5.4.3E)** • Size, type and location of water mains, shut-offs, hydrants & Engineering data; • Location of wells and monitoring wells (include protective radii).	Utility Plans C-501, C-502	
☑	**6. Sewer Infrastructure: (2.5.4.3F)** • Size, type and location of sanitary sewage facilities & Engineering data, including any onsite temporary facilities during construction period.	Utility Plans C-501, C-502	

☑	**7. Utilities: (2.5.4.3G)** • The size, type and location of all above & below ground utilities; • Size type and location of generator pads, transformers and other fixtures.	Utility Plans C-501, C-502	
☑	**8. Solid Waste Facilities: (2.5.4.3H)**		
	• The size, type and location of solid waste facilities.	Building Floor Plans	
☑	**9. Storm water Management: (2.5.4.3I)** • The location, elevation and layout of all storm-water drainage. • The location of onsite snow storage areas and/or proposed off-site snow removal provisions. • Location and containment measures for any salt storage facilities • Location of proposed temporary and permanent material storage locations and distance from wetlands, water bodies, and stormwater structures.	Grading & Drainage Plans C-401, C-402	
☑	**10. Outdoor Lighting: (2.5.4.3J)** • Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and photometric plan.	Photometrics Plan L4-00	
☑	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	Photometrics Plans L4-00	
☑	**12. Landscaping: (2.5.4.3K)** • Identify all undisturbed area, existing vegetation and that which is to be retained; • Location of any irrigation system and water source.	Landscape Plans L3-00	
☑	**13. Contours and Elevation: (2.5.4.3L)** • Existing/Proposed contours (2 foot minimum) and finished grade elevations.	Grading & Drainage Plans C-401, C-402	
☑	**14. Open Space: (2.5.4.3M)** • Type, extent and location of all existing/proposed open space.	Site Plans C-300, C-301, C-302	
☑	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	Existing Conditions Plan Sheets	
☑	**16. Character/Civic District (All following information shall be included): (2.5.4.3P)** • Applicable Building Height (10.5A21.20 & 10.5A43.30); • Applicable Special Requirements (10.5A21.30); • Proposed building form/type (10.5A43); • Proposed community space (10.5A46).	N/A	
☑	**17. Special Flood Hazard Areas (2.5.4.3Q)** • The proposed development is consistent with the need to minimize flood damage; • All public utilities and facilities are located and construction to minimize or eliminate flood damage; • Adequate drainage is provided so as to reduce exposure to flood hazards.	N/A	

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	Traffic Impact Study or Trip Generation Report, as required. **(3.2.1-2)**	Enclosed	
☑	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	Grading and Drainage Plan Sheet C-401, C-402	
☑	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	N/A	
☑	Stormwater Management and Erosion Control Plan. **(7.4)**	Enclosed	
☑	Inspection and Maintenance Plan **(7.6.5)**	Enclosed	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	All local approvals, permits, easements and licenses required, including but not limited to: • Waivers; • Driveway permits; • Special exceptions; • Variances granted; • Easements; • Licenses. **(2.5.3.2A)**	Cover Sheet	
☑	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: • Calculations relating to stormwater runoff; • Information on composition and quantity of water demand and wastewater generated; • Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; • Estimates of traffic generation and counts pre- and post-construction; • Estimates of noise generation; • A Stormwater Management and Erosion Control Plan; • Endangered species and archaeological / historical studies; • Wetland and water body (coastal and inland) delineations; • Environmental impact studies. **(2.5.3.2B)**	Enclosed	
☑	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	Enclosed	

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☑	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	Cover Sheet	
☑	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	Site Plan Sheet C-300	N/A
☑	For site plans that involve land designated as "Special Flood Hazard Areas" (SFHA) by the National Flood Insurance Program (NFIP) confirmation that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. **(2.5.4.2F)**	N/A	
☑	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	Site Plan Sheet C-300	N/A

Applicant's Signature: ______________________ **Date:** 6/17/24

City of Portsmouth, New Hampshire

Subdivision Application Checklist

This subdivision application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision review requirements. Please refer to the Subdivision review regulations for full details.

Applicant Responsibilities (Section III.C): Applicable fees are due upon application submittal along with required number of copies of the Preliminary or final plat and supporting documents and studies. Please consult with Planning staff for submittal requirements.

Owner: Oak Street Investment Grade Net Lease Fund Series 2021-2 LLC Date Submitted: ____________

Applicant: 100 Durgin Lane Owner, LLC

Phone Number: 617-274-5665 E-mail: ahayes@eastern-re.com

Site Address 1: 100 Durgin Lane Map: 239 Lot: ____

Site Address 2: ____________ Map: _____ Lot: _____

Lots 13-2, 16, & 18

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
✔	Completed Application form. **(III.C.2-3)**	Enclosed	N/A
✔	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. **(III.C.4)**	Enclosed	N/A

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✔	Name and address of record owner, any option holders, descriptive name of subdivision, engineer and/or surveyor or name of person who prepared the plat. **(Section IV.1/V.1)**	Cover Sheet	☑ Preliminary Plat ☑ Final Plat	N/A

Requirements for Preliminary/Final Plat				
☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Required for Preliminary / Final Plat	Waiver Requested
✔	**Preliminary Plat** Names and addresses of all adjoining property owners. **(Section IV.2)** **Final Plat** Names and addresses of all abutting property owners, locations of buildings within one hundred (100) feet of the parcel, and any new house numbers within the subdivision. **(Section V.2)**	Existing Conditions Plans	☑ Preliminary Plat ☑ Final Plat	N/A
✔	North point, date, and bar scale. **(Section IV.3/V3)**	Required on all Plan Sheets	☑ Preliminary Plat ☑ Final Plat	N/A
✔	Zoning classification and minimum yard dimensions required. **(Section IV.4/V.4)**	Site Plan C-300	☑ Preliminary Plat ☑ Final Plat	N/A
✔	**Preliminary Plat** Scale (not to be smaller than one hundred (100) feet = 1 inch) and location map (at a scale of 1" = 1000'). **(Section IV.5)** **Final Plat** Scale (not to be smaller than 1"=100'), Location map (at a scale of 1"=1,000') showing the property being subdivided and its relation to the surrounding area within a radius of 2,000 feet. Said location map shall delineate all streets and other major physical features that my either affect or be affected by the proposed development. **(Section V.5)**	Existing Conditions Plans Lot Line Adjustment Exhibit	☑ Preliminary Plat ☑ Final Plat	N/A
✔	Location and approximate dimensions of all existing and proposed property lines including the entire area proposed to be subdivided, the areas of proposed lots, and any adjacent parcels in the same ownership. **(Section IV.6)**	Existing Conditions Plans Lot Line Adjustment Exhibit	☑ Preliminary Plat ☑ Final Plat	
✔	Dimensions and areas of all lots and any and all property to be dedicated or reserved for schools, parks, playgrounds, or other public purpose. Dimensions shall include radii and length of all arcs and calculated bearing for all straight lines. **(Section V.6/ IV.7)**	Lot Line Adjustment Exhibit	☑ Preliminary Plat ☑ Final Plat	N/A
✔	Location, names, and present widths of all adjacent streets, with a designation as to whether public or private and approximate location of existing utilities to be used. Curbs and sidewalks shall be shown. **(Section IV.8/V.7)**	Existing Conditions Plan Site Plan C-300 Utilities Plans C-501, C-502	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✔	Location of significant physical features, including bodies of water, watercourses, wetlands, railroads, important vegetation, stone walls and soils types that my influence the design of the subdivision. **(Section IV.9/V.8)**	Existing Conditions Plans	☑ Preliminary Plat ☑ Final Plat	
✔	**Preliminary Plat** Proposed locations, widths and other dimensions of all new streets and utilities, including water mains, storm and sanitary sewer mains, catch basins and culverts, street lights, fire hydrants, sewerage pump stations, etc. **(Section IV.10)** **Final Plat** Proposed locations and profiles of all proposed streets and utilities, including water mains, storm and sanitary sewer mains, catchbasins and culverts, together with typical cross sections. Profiles shall be drawn to a horizontal scale of 1"=50' and a vertical scale of 1"=5', showing existing centerline grade, existing left and right sideline grades, and proposed centerline grade. **(Section V.9)**	Existing Conditions Plans Site Plan Sheet C-301, C-302 Grading, Drainage, & Erosion Control Plan C-401, C-402 Utilities Plan Sheet C-501, C-502	☑ Preliminary Plat ☑ Final Plat	
✔	When required by the Board, the plat shall be accompanied by profiles of proposed street grades, including extensions for a reasonable distance beyond the subject land; also grades and sizes of proposed utilities. **(Section IV.10)**	N/A	☑ Preliminary Plat ☑ Final Plat	
✔	Base flood elevation (BFE) for subdivisions involving greater than five (5) acres or fifty (50) lots. **(Section IV.11)**	N/A	☑ Preliminary Plat ☑ Final Plat	
✔	For subdivisions of five (5) lots or more, or at the discretion of the Board otherwise, the preliminary plat shall show contours at intervals no greater than two (2) feet. Contours shall be shown in dotted lines for existing natural surface and in solid lines for proposed final grade, together with the final grade elevations shown in figures at all lot corners. If existing grades are not to be changed, then the contours in these areas shall be solid lines. **(Section IV.12/ V.12)**	Existing Conditions Plans Grading, Drainage, and Erosion Control Plans C-401, C-402	☑ Preliminary Plat ☑ Final Plat	

Requirements for Preliminary/Final Plat				
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Required for Preliminary / Final Plat**	**Waiver Requested**
✔	Dates and permit numbers of all necessary permits from governmental agencies from which approval is required by Federal or State law. **(Section V.10)**	Cover Sheet	☐ Preliminary Plat ☑ Final Plat	
✔	For subdivisions involving greater than five (5) acres or fifty (50) lots, the final plat shall show hazard zones and shall include elevation data for flood hazard zones. **(Section V.11)**	N/A	☐ Preliminary Plat ☑ Final Plat	
✔	Location of all permanent monuments. **(Section V.12)**	TBD	☐ Preliminary Plat ☑ Final Plat	

General Requirements[1]			
☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
☑ ☑ ☑ ☑ ☐	**1. Basic Requirements: (VI.1)** a. Conformity to Official Plan or Map b. Hazards c. Relation to Topography d. Planned Unit Development	Existing Conditions Plans Lot Line Adjustment Exhibit	
☑ ☑ ☑ ☐	**2. Lots: (VI.2)** a. Lot Arrangement b. Lot sizes c. Commercial and Industrial Lots	Lot Line Adjustment Exhibit	
☑ ☑ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	**3. Streets: (VI.3)** a. Relation to adjoining Street System b. Street Rights-of-Way c. Access d. Parallel Service Roads e. Street Intersection Angles f. Merging Streets g. Street Deflections and Vertical Alignment h. Marginal Access Streets i. Cul-de-Sacs j. Rounding Street Corners k. Street Name Signs l. Street Names m. Block Lengths n. Block Widths o. Grade of Streets p. Grass Strips	N/A No new streets proposed	
☑	**4. Curbing: (VI.4)**	Site Plan Sheet C-301, C-302	
☑	**5. Driveways: (VI.5)**	Site Plan Sheet C-301, C-302	
☑	**6. Drainage Improvements: (VI.6)**	G,D & EC C-401, C-402	
☑	**7. Municipal Water Service: (VI.7)**	Utilities Plans C-501, C-502	
☑	**8. Municipal Sewer Service: (VI.8)**	Utilities Plans C-501, C-502	
☑ ☑ ☑	**9. Installation of Utilities: (VI.9)** a. All Districts b. Indicator Tape	Utilities Plans C-501, C-502	
☑	**10. On-Site Water Supply: (VI.10)**	N/A	
☑	**11. On-Site Sewage Disposal Systems: (VI.11)**	N/A	
☑ ☑ ☑ ☑ ☑	**12. Open Space: (VI.12)** a. Natural Features b. Buffer Strips c. Parks d. Tree Planting	Landscape Plans L-300	
☑ ☑ ☑ ☑ ☑	**13. Flood Hazard Areas: (VI.13)** a. Permits b. Minimization of Flood Damage c. Elevation and Flood-Proofing Records d. Alteration of Watercourses	N/A	
☑	**14. Erosion and Sedimentation Control (VI.14)**	G,D & EC C-401, C-402	

☑	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
✔ ✔ ✔	**15. Easements (VI.15)** a. Utilities b. Drainage	Utility & Drainage Easement Plan Sheet C-601	
✔	**16. Monuments: (VI.16)**	TBD	
✔	**17. Benchmarks: (VI.17)**	TBD	
✔	**18. House Numbers (VI.18)**	TBD	

Design Standards			
	Required Items for Submittal	**Indicate compliance and/or provide explanation as to alternative design**	**Waiver Requested**
✔	**1. Streets have been designed according to the design standards required under Section (VII.1).** a. Clearing b. Excavation c. Rough Grade and Preparation of Sub-Grade d. Base Course e. Street Paving f. Side Slopes g. Approval Specifications h. Curbing i. Sidewalks j. Inspection and Methods	Site Plan Sheet C-300 - C-302 Grading, Drainage, & Erosion Control Plan C-401, C-402 Utilities Plan Sheet C-501, C-502	
✔	**2. Storm water Sewers and Other Drainage Appurtenances have been designed according to the design standards required under Section (VII.2).** a. Design b. Standards of Construction	Grading, Drainage, & Erosion Control Plan C-401, C-402	
✔	**3. Sanitary Sewers have been designed according to the design standards required under Section (VII.3).** a. Design b. Lift Stations c. Materials d. Construction Standards	Utilities Plan Sheet C-501, C-502	
✔	**4. Water Mains and Fire Hydrants have been designed according to the design standards required under Section (VII.4).** a. Connections to Lots b. Design and Construction c. Materials d. Notification Prior to Construction	Utilities Plan Sheet C-501, C-502	

Applicant's/Representative's Signature:__________________________________ **Date:**____________________

[1] See City of Portsmouth, NH Subdivision Rules and Regulations for details.

EVERSOURCE
ENERGY

1700 Lafayette Road
Portsmouth, NH 03801

Trevor S Emmons
603-332-7515
Trevor.emmons@eversource.com

May 21, 2024

Benjamin Curcio, PE
Tighe & Bond, Inc.
177 Corporate Drive
Portsmouth, NH 03801

Dear Mr. Curcio:

I am responding to your request to confirm the availability of electric service for the proposed 100 Durgin Lane project being constructed for/by 100 Durgin Lane Owner, LLC.

The proposed project consists of sixteen (16) 3-story and 4-story buildings with 360 residential units, in addition to a single-story community building. The proposed development will be constructed off of Durgin Lane in Portsmouth, NH.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new buildings. The service will be as shown on attached marked up Utility Plans C-501 and C-502. The proposed building service will be fed from adjacent existing overhead services to be determined by Eversource Engineering and as depicted on utility plans C-501 and C-502. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached drawings titled "Proposed Multi-Family Development – Utilities Plan" dated 4/22/2024, shows revised transformer locations to service your proposed project.

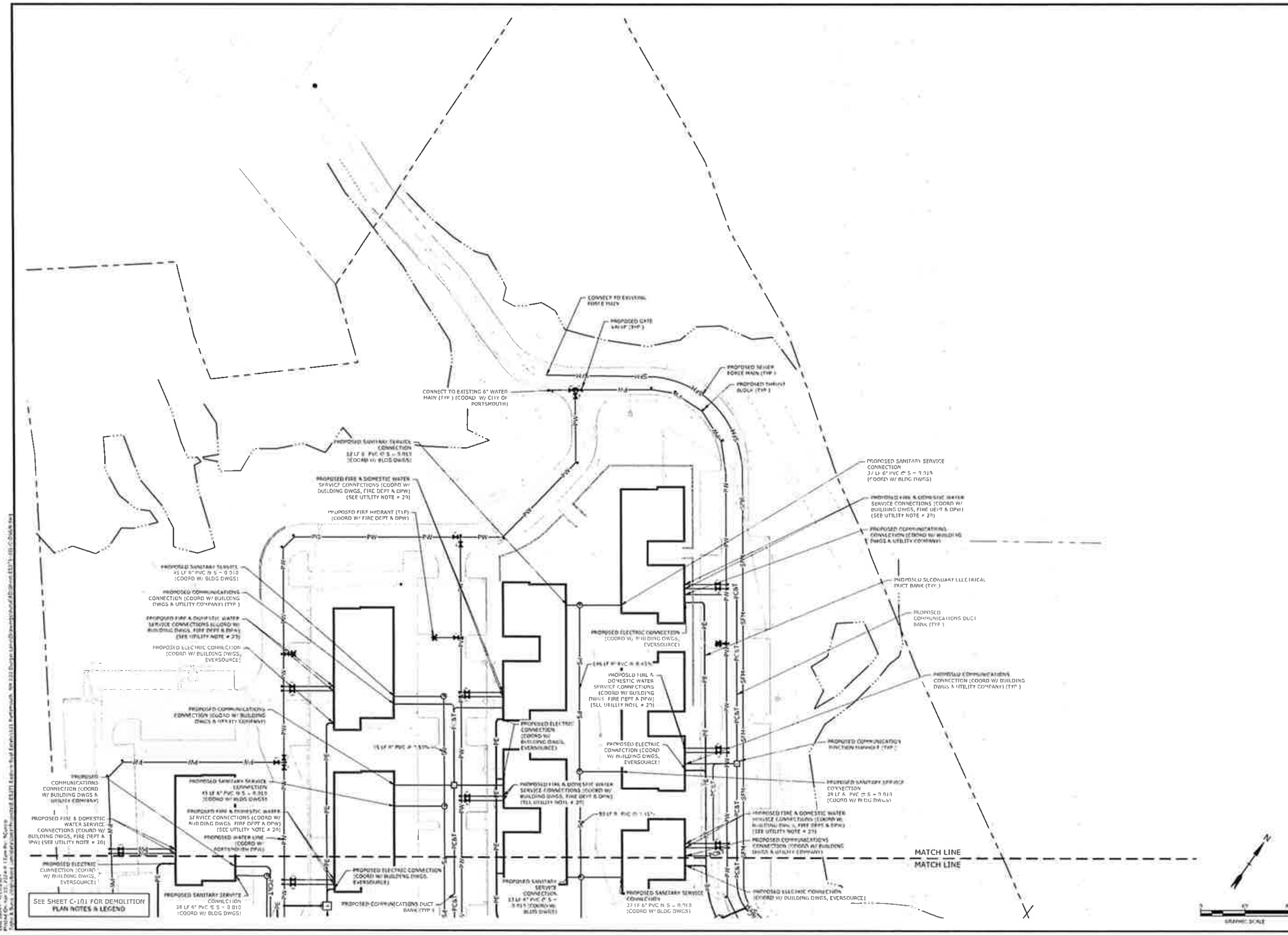
Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Rochester Office, 603-332-7515

Respectfully.

Trevor Emmons
Eastern Regional Engineer, Eversource

cc: Sam Bosse, Distribution Engineering Manager, Eversource
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource



Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

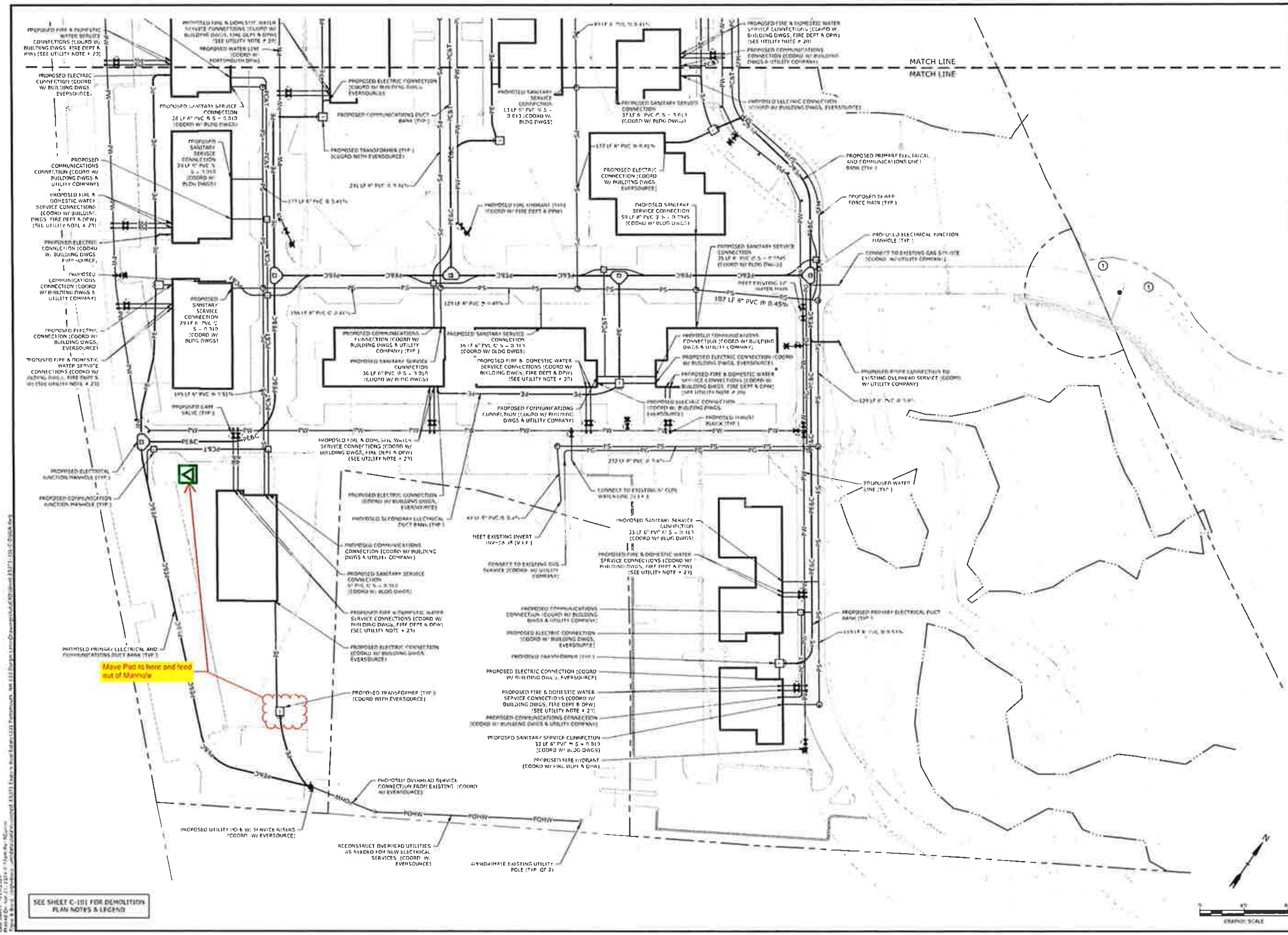
MARK	DATE	DESCRIPTION
A	4/22/2024	TAC SUBMISSION

PROJECT NO:	[illegible]
DATE:	4/22/2024
FILE:	[illegible]
DRAWN BY:	[illegible]
DESIGNED/CHECKED BY:	[illegible]
APPROVED BY:	[illegible]

UTILITIES PLAN

SCALE: AS SHOWN

C-501



Tighe&Bond

PROPOSED MULTI-FAMILY DEVELOPMENT

100 DURGIN LANE OWNER, LLC

100 DURGIN LANE
PORTSMOUTH,
NEW HAMPSHIRE

A	4/22/2024	TAC SUBMISSION
MARK	DATE	DESCRIPTION

UTILITIES PLAN

SCALE: AS SHOWN

C-502

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

GALN Galleon II

Area / Site Luminaire

Product Features

Light ARchitect™

Product Certifications

Interactive Menu

Quick Facts

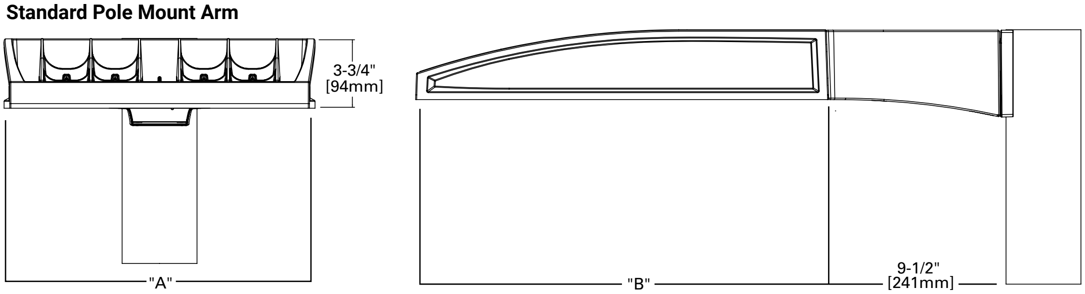
- Lumen packages range from 3,300 - 73,500 (33W - 552W)
- 17 optical distributions
- Efficacy up to 159 lumens per watt

Connected Systems

- WaveLinx Lite
- WaveLinx

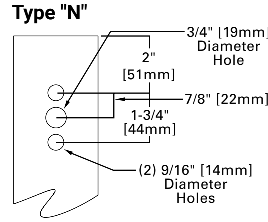
Dimensional Details

Standard Pole Mount Arm



Pole Drilling Pattern

Type "N"



Number of Light Squares	Width "A"	Housing Length "B"	Weight with Standard or QM Arm	EPA with Standard or QM Arm
1-4	16"	22"	29 lb	0.95
5-6	22"	22"	39 lb	0.95
7-9	22"	28-1/8"	48 lb	1.1

NOTES:
For arm selection requirements and additional line art, see Mounting Details section.

NOTES:
1. Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified (3000K CCT and warmer only, fixed mounting options)

Ordering Information

SAMPLE NUMBER: **GALN-SA4C-740-U-T4FT-GM**

Product Family [1, 2]	Light Engine: Configuration	Light Engine: Drive Current	Color Temperature	Voltage	Distribution	Mounting	Finish
GALN=Galleon II **BAA-GALN**=Galleon II Buy American Act Compliant [26] **TAA-GALN**=Galleon II Trade Agreements Act Compliant [26]	**SA1**=1 Square **SA2**=2 Squares **SA3**=3 Squares **SA4**=4 Squares **SA5**=5 Squares **SA6**=6 Squares **SA7**=7 Squares **SA8**=8 Squares **SA9**=9 Squares	**A**=600mA **B**=800mA **C**=1000mA **D**=1200mA [4, 16] **Z**=Configured[32]	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **760**=70CRI, 6000K **827**=80CRI, 2700K **830**=80CRI, 3000K **835**=80CRI, 3500K **840**=80CRI, 4000K **930**=90CRI, 3000K **935**=90CRI, 3500K **940**=90CRI, 4000K **950**=90CRI, 5000K **AMB**=Amber, 590nm [14, 16]	**U**=120-277V **H**=347V-480V [7, 29] **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V [7, 29] **9**=347V [7] **DV**=277V-480V DuraVolt Drivers [28, 29, 30]	**T1**=Type I **T2**=Type II **T2R**=Type II Roadway **T3**=Type III **T3R**=Type III Roadway **T4FT**=Type IV Forward Throw **T4W**=Type IV Wide **5NQ**=Type V Narrow **5MQ**=Type V Square Medium **5WQ**=Type V Square Wide **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right **RW**=Rectangular Wide Type I **AFL**=Automotive Frontline	**[Blank]**=Standard Pole Mount Arm **QU**=Quick Mount Universal Arm **QM**=Pole Mount Arm with Quick Mount Adaptor **PA**=Pole Mount, Adjustable **SP**=3" Slipfitter, Adjustable [8] **SP2**=2-3/8" Slipfitter, Adjustable [8] **QMA**=Quick Mount Mast Arm, Fixed **MA**=Mast Arm, Fixed **WM**=Wall Mount, Fixed **WA**=Wall Mount, Adjustable **UP**=Upswept Arm	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **RALXX**=Custom Color

Options (Add as Suffix)	Controls and Systems Options (Add as Suffix)	Accessories (Order Separately) [27]
DIM=External 0-10V Dimming Leads [19] **F**=Single Fuse (120, 277 or 347V Specify Voltage) **FF**=Double Fuse (208, 240 or 480V Specify Voltage) **20K**=20kV UL 1449 fused surge protective device [10] **2L**=Two Circuits [10] **HA**=50°C High Ambient **HSS**=Installed House Side Shield [17] **GRSBK**=Glare Reducing Shield, Black [22] **GRSWH**=Glare Reducing Shield, White [22] **LCF**=Light Square Trim Painted to Match Housing [25] **TH**=Tool-less Door Hardware [5] **CC**=Coastal Construction finish [3] **L90**=Optics Rotated 90° Left **R90**=Optics Rotated 90° Right **AHD145**=After Hours Dim, 5 Hours [21] **AHD245**=After Hours Dim, 6 Hours [21] **AHD255**=After Hours Dim, 7 Hours [21] **AHD355**=After Hours Dim, 8 Hours [21] **DALI**=DALI Drivers	**BPC**=Button Type Photocontrol. Must specify voltage 120V, 208V, 240V or 277V. [6] **PR**=NEMA 3-PIN Photocontrol Receptacle **PR7**=NEMA 7-PIN Photocontrol Receptacle [20] **FADC**=Field Adjustable Dimming Controller [31] **PSC**=Photocontrol Shorting Cap **SPB2**=Dimming Motion Sensor, 9'-20' mounting [23] **SPB4**=Dimming Motion Sensor, 21'-40' mounting [23] **SPB2/X**=Dimming Motion Sensor, limited square count, 9'-20' mounting [23] **SPB4/X**=Dimming Motion Sensor, limited square count, 21'-40' mounting [23] **MS/DIM-L20**=Motion Sensor for Dimming Operation, 9'-20' Mounting [33] **MS/DIM-L40**=Motion Sensor for Dimming Operation, 21'-40' Mounting [33] **WLS2XX**=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting [18, 12, 34] **WLS4XX**=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting [18, 12, 34] **WPS2XX**=WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting [18, 12, 13, 34] **WPS4XX**=WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting [18, 12, 13, 34] **DIM10-L20**=Synapse Occupancy Sensor (9'-20' Mounting) [18] **DIM10-L40**=Synapse Occupancy Sensor (21'-40' Mounting) [18]	**OA/RA1016**=NEMA Photocontrol Multi-Tap - 105-285V **OA/RA1027**=NEMA Photocontrol - 480V **OA/RA1201**=NEMA Photocontrol - 347V **OA/RA1013**=Photocontrol Shorting Cap **OA/RA1014**=120V Photocontrol **MA1252**=10kV Surge Module Replacement **MA1036-XX**=Single Tenon Adapter for 2-3/8" O.D. Tenon **MA1037-XX**=2@180° Tenon Adapter for 2-3/8" O.D. Tenon **MA1197-XX**=3@120° Tenon Adapter for 2-3/8" O.D. Tenon **MA1188-XX**=4@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1189-XX**=2@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1190-XX**=3@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1191-XX**=2@120° Tenon Adapter for 2-3/8" O.D. Tenon **MA1038-XX**=Single Tenon Adapter for 3-1/2" O.D. Tenon **MA1039-XX**=2@180° Tenon Adapter for 3-1/2" O.D. Tenon **MA1192-XX**=3@120° Tenon Adapter for 3-1/2" O.D. Tenon **MA1193-XX**=4@90° Tenon Adapter for 3-1/2" O.D. Tenon **MA1194-XX**=2@90° Tenon Adapter for 3-1/2" O.D. Tenon **MA1195-XX**=3@90° Tenon Adapter for 3-1/2" O.D. Tenon **SRA238**=Adapter kit for mounting 3" SP arm to 2-3/8" O.D. vertical tenon **FSIR-100**=Wireless Configuration Tool for MS/DIM [33] **LS/HSS**=Field Installed House Side Shield [9, 17] **LS/GRSBK-2PK** =Glare Reducing Shield, Black [9, 22] **LS/GRSWH-2PK** =Glare Reducing Shield, White [9, 22] **LS/PFS**=Perimeter Shield, Black [15] **WOLC-7P-10A**=WaveLinx Outdoor Control Module [11, 18]

NOTES:

1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
3. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654. Not available with TH option.
4. Drive current 1200mA not available with color temperatures 722, 727, 827, 830 or 930 when the HSS option is selected
5. TH option not 3G rated. Not available with Coastal Construction (CC) option.
6. Not available with voltage options H, 8 or 9.
7. Requires the use of an internal step down transformer when combined with sensor options. Not available in combination with the HA high ambient and sensor options at 1A.
8. SP arm limited to 3" O.D. vertical tenon. SP2 limited to 2-3/8" O.D. vertical tenon.
9. One required for each Light Square.
10. 2L is not available with SPB at 347V or 480V. Not available with WaveLinx or Enlighted sensors, or 20kV surge option
11. Requires PR7.
12. Replace XX with sensor color (WH, BZ or BK.)
13. WAC Gateway required to enable field-configurability: Order WAC-PoE and WPOE-120 (10V to PoE injector) power supply if needed. WAC not required for LC Bluetooth sensors.
14. Narrow-band 590nm +/- 5nm for wildlife and observatory use. Choose drive current A; supplied at 500mA drive current only. Exact luminaire wattage available in IES files. Available with 5WQ, 5MQ, SL2, SL3 and SL4 distributions. Can be used with HSS option.
15. Set of 4 pcs. One set required per Light Square.
16. Not available with HA option.
17. Not for use with T1, 5NQ, 5MQ, 5WQ or RW optics.
18. Cannot be used with other control options.
19. Low voltage control lead brought out 18" outside fixture. Not available with DALI or integrated controls options
20. Not available if any SPB, LWR, or WaveLinx sensor is selected. Motion sensor has an integral photocell.
21. Requires the use of BPC photocontrol or the PR7 or PR photocontrol receptacle with photocontrol accessory.
22. Not for use with T1, T4FT, T4W or SL4 optics.
23. Sensor configuration mobile application required for configuration. See controls page for details.
24. Replace X with number of Light Squares controlled by the SPB, referencing the "SPB/X Availability Table" on the controls page.
25. Not available with HSS, GRSWH or GRSBK.
26. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information.Components shipped separately may be separately analyzed under domestic preference requirements.
27. For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
28. DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.signify.com/duravolt for more information.
29. 480V not to be used with ungrounded or impedance grounded systems.
30. Not available in 1 square configuration at 800mA or below. Not available with any control option except SPB.
31. Cannot be used with PR7 or other motion response control options.
32. Use GALN Product Configurator to specify lumen output, drive current and wattage. Not available with AMB.
33. Uses the FSP-211 motion sensor. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
34. Controls system is not available with photocontrol receptacles (PR , PR7) or other controls systems (FADC, SPBx).

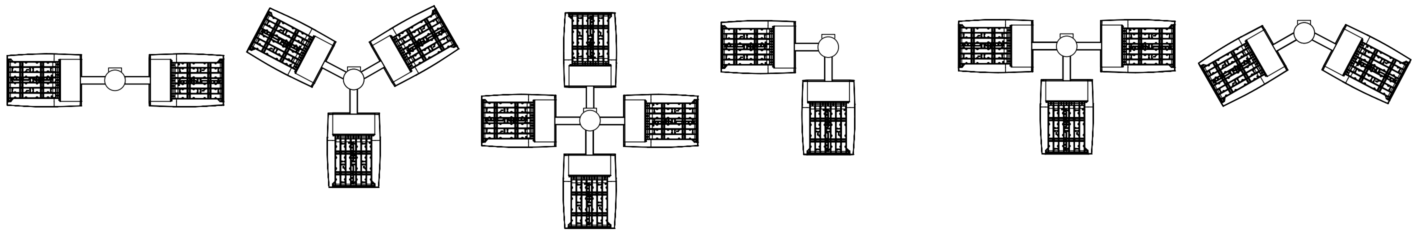
LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul	
L=LumenSafe Technology	**D**=Standard Dome Camera **H**=Hi-Res Dome Camera **Z**=Remote PTZ Camera	**C**=Cellular, No SIM **A**=Cellular, AT&T **V**=Cellular, Verizon **S**=Cellular, Sprint	**R**=Cellular, Rogers **W**=Wi-Fi Networking w/ Omni-Directional Antenna **E**=Ethernet Networking

Mounting Details

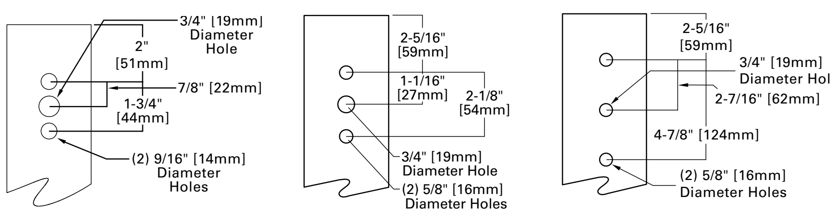
Pole Configuration Options

2 @ 180° | 3 @ 120° (Round poles only) | 4 @ 90° | 2 @ 90° | 3 @ 90° | 2 @ 120° (Round poles only)

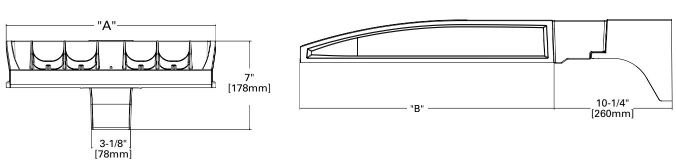


Pole Drilling Patterns

Type "N" | **Type "R"** | **Type "M"**

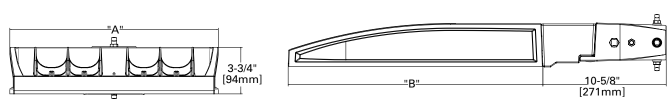


Quick Mount Universal Arm (QU)



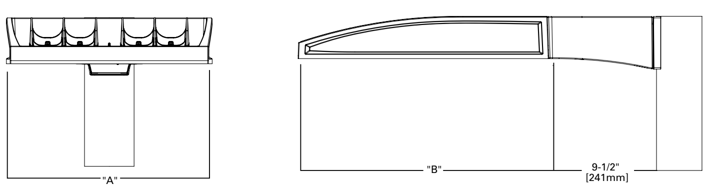
*NOTE: Universal bolt pattern compatible with Type N through Type M drilling patterns

Quick Mount Mast Arm (QMA)



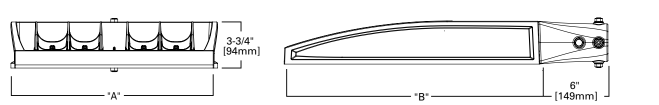
*NOTE: Fits 2-3/8" O.D. tenon

Pole Mount Arm with Quick Mount Adaptor (QM)



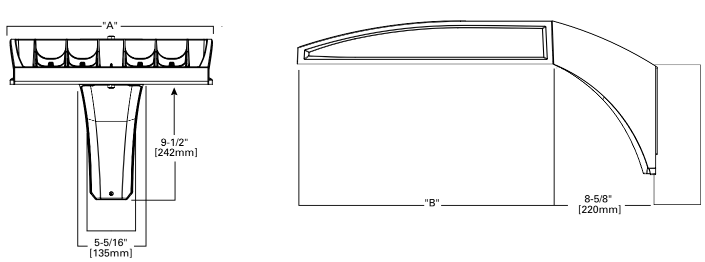
*NOTE: Use Type N drilling pattern

Mast Arm, Fixed (MA)



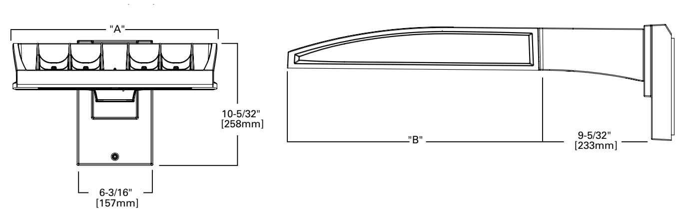
*NOTE: Fits 2-3/8" O.D. tenon

Upswept Arm (UP)



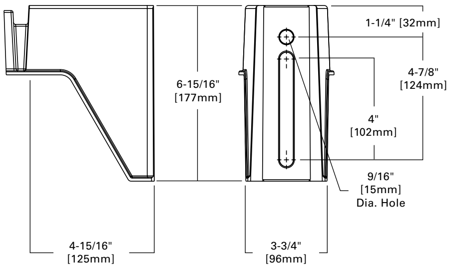
*NOTE: Universal bolt pattern compatible with Type N through Type M drilling patterns

Wall Mount, Fixed (WM)

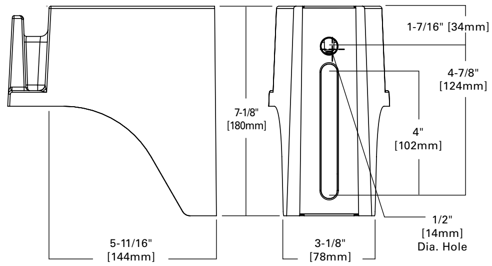


Mounting Details

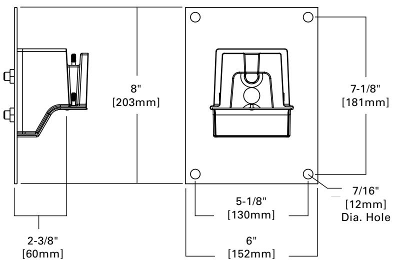
SA=QM Pole Mount Arm



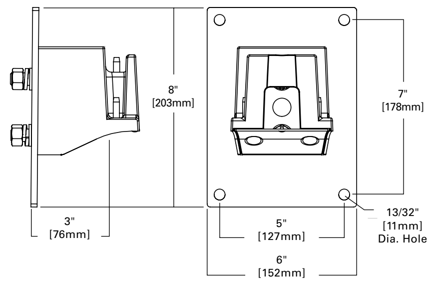
SA=QM Pole Mount Arm



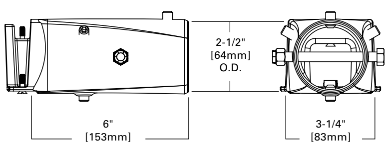
WM=QM Wall Mount Arm



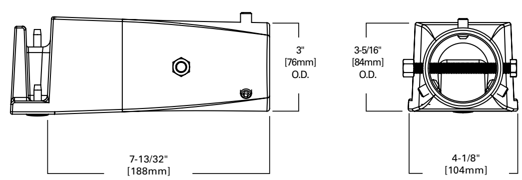
WM=QM Wall Mount Arm



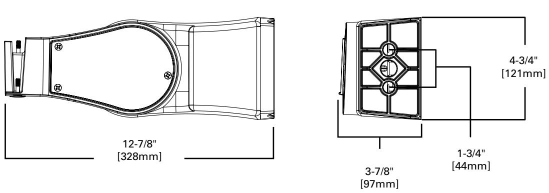
MA=QM Mast Arm



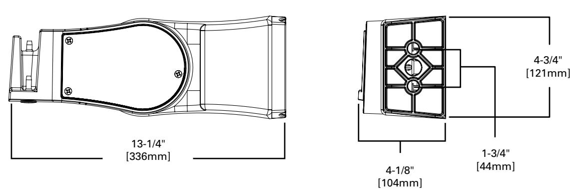
MA=QM Mast Arm



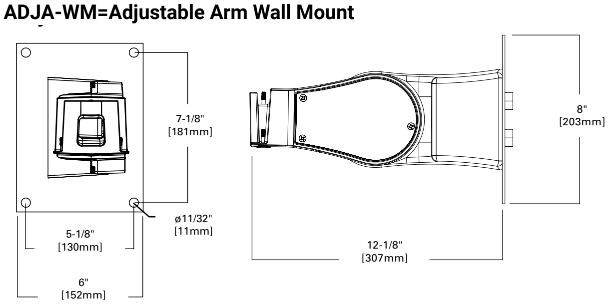
ADJA=Adjustable Arm Pole Mount



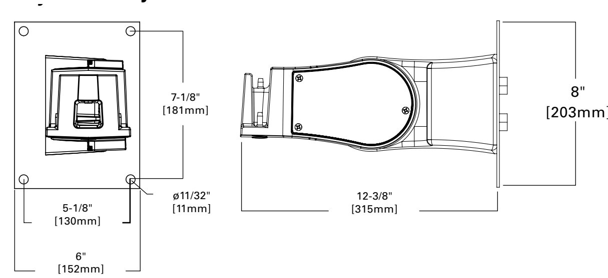
ADJA=Adjustable Arm Pole Mount



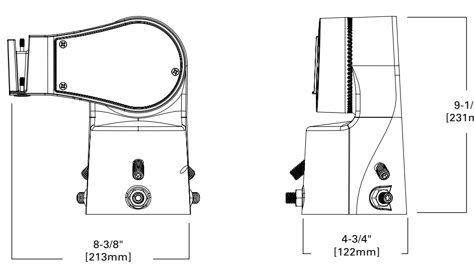
ADJA-WM=Adjustable Arm Wall Mount



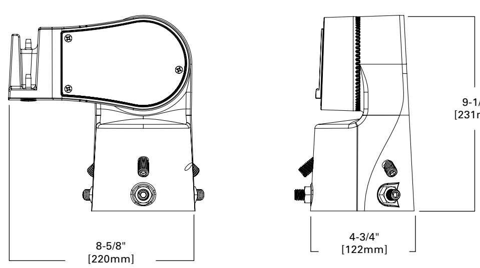
ADJA-WM=Adjustable Arm Wall Mount



ADJS=Adjustable Slipfitter 3

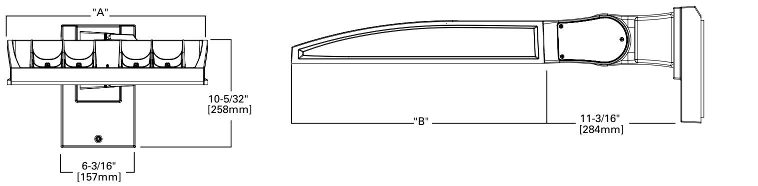


ADJS=Adjustable Slipfitter 3

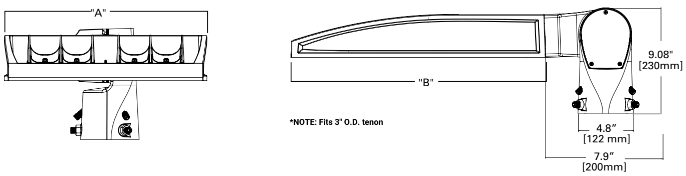


Mounting Details

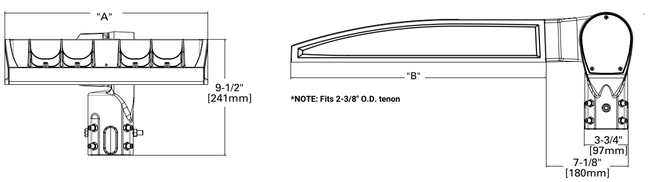
Wall Mount, Adjustable (WA)



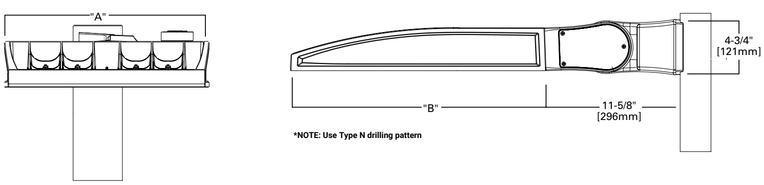
3" Slipfitter, Adjustable (SP)



2-3/8" Slipfitter, Adjustable (SP2)

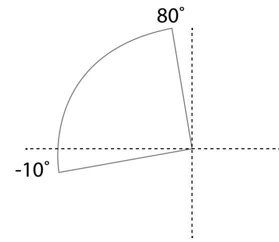


Pole Mount, Adjustable Arm (PA)



Adjustable Arm Range of Motion

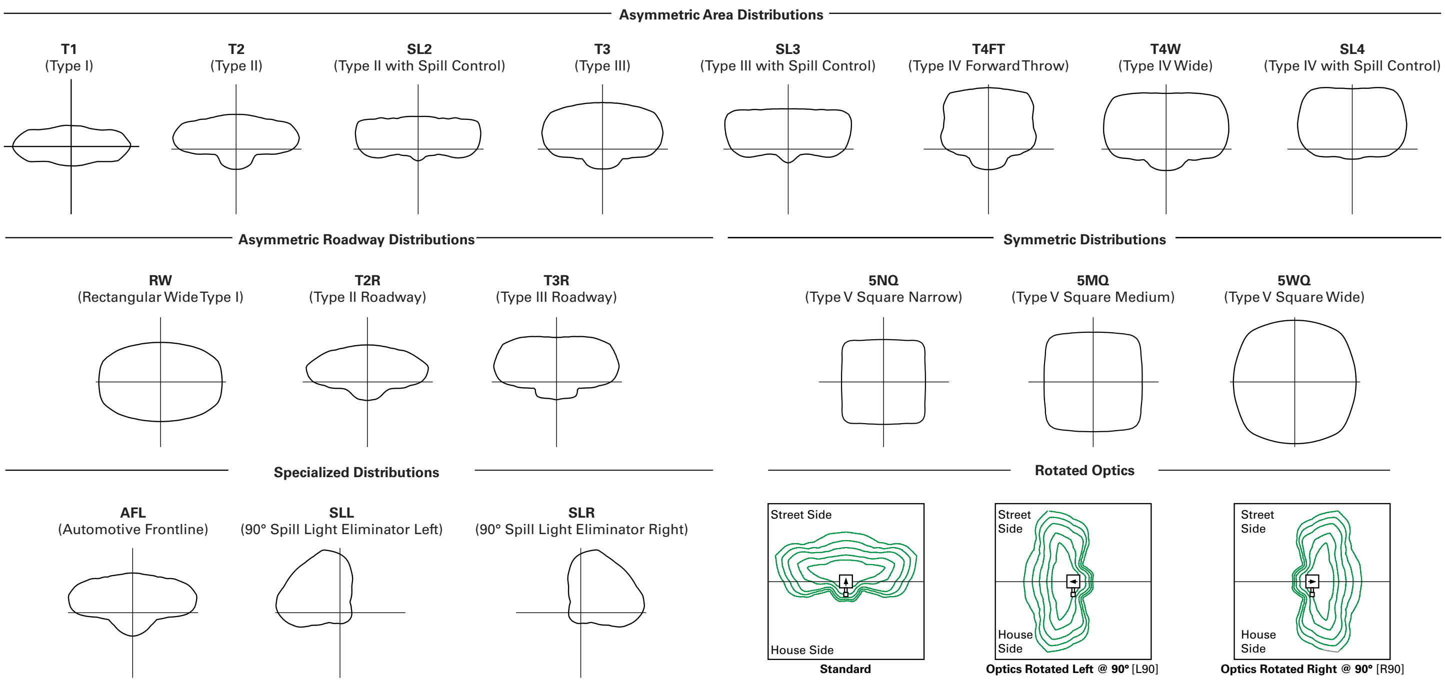
- Includes WA, SP, SP2 and PA mounting options
- Adjustable in increments of 5°
- Must maintain downward facing orientation



Fixture Weights and EPAs

Tilt Angle (Degrees)	Number of Light Squares	Weight	1 @ 90°	2 @ 180°	2 @ 90°	2 @ 120°	3 @ 90°	3 @ 120°	4 @ 90°
0°	1-4	33.5 lb (15.2 kg)	0.85	1.70	1.46	1.66	2.31	2.25	2.35
	5-6	43.5 lb (19.7 kg)	0.86	1.71	1.62	1.80	2.49	2.35	2.50
	7-9	52.5 lb (23.8 kg)	0.98	1.95	1.75	1.98	2.73	2.55	2.76
15°	1-4	33.5 lb (15.2 kg)	1.10	1.71	1.95	2.26	2.81	3.30	2.87
	5-6	43.5 lb (19.7 kg)	1.42	1.71	2.27	2.72	3.13	3.63	3.15
	7-9	52.5 lb (23.8 kg)	1.69	1.96	2.67	3.22	3.65	4.38	3.72
30°	1-4	33.5 lb (15.2 kg)	1.72	1.81	2.58	3.21	3.44	4.59	3.53
	5-6	43.5 lb (19.7 kg)	2.26	2.29	3.11	4.00	3.97	5.27	4.00
	7-9	52.5 lb (23.8 kg)	2.75	2.85	3.73	4.83	4.71	6.45	4.81
45°	1-4	33.5 lb (15.2 kg)	2.25	2.36	3.10	4.00	3.96	5.63	4.08
	5-6	43.5 lb (19.7 kg)	2.96	2.99	3.81	5.06	4.67	6.49	4.71
	7-9	52.5 lb (23.8 kg)	3.63	3.76	3.73	6.17	5.59	8.03	5.73
60°	1-4	33.5 lb (15.2 kg)	2.63	2.77	3.49	4.58	4.34	6.21	4.48
	5-6	43.5 lb (19.7 kg)	3.46	3.51	4.32	5.84	5.19	7.01	5.22
	7-9	52.5 lb (23.8 kg)	4.27	4.44	5.25	7.15	6.23	8.80	6.40

Optical Distributions



Product Specifications

Construction
- Die-cast aluminum housing and heat sink
- Three housing sizes, using 1 to 9 light squares

Optics
- High-efficiency injection-molded AccuLED Optics technology
- 17 optical distributions for area site and roadway applications
- 3 shielding options include HSS, GRS and PFS
- IDA Certified (3000K CCT and warmer only, fixed mounting options)

Electrical
- Removable power tray assembly includes drivers, surge modules and control modules for ease of maintenance and serviceability
- Standard with 0-10V dimming
- Standard with 10kV surge module, optional 20kV surge module
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected

Mounting
- Arms are factory installed, enabling closed-housing installation
- All arms suitable for round or square pole installation
- All arms provide clearance for multiple fixture installations at 90°

Finish
- 6 standard finishes use super durable TGIC polyester powder coat paint, providing 2.5 mil nominal thickness and salt-spray tested to 3,000 hours per ASTM B117
- RAL and custom color matches available
- Coastal Construction (CC) option salt-spray tested to 5,000 hours per ASTM B117, achieving a scribe rating of 9 per ASTM D1654

Typical Applications
- Outdoor, Parking Lots, Walkways, Roadways, Building Areas

Warranty
- Five year limited warranty

Energy and Performance Data

Lumen Maintenance (TM-21)

Drive Current	Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
Up to 1A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
1.2A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

* Supported by IES TM-21 standards
** Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, explaining proper use of IES TM-21 and LM-80.

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

FADC Settings
SA1-SA3 (A, B, C, D Drive Current)

FADC Position	Percent of Typical Lumen Output
1	25%
2	48%
3	56%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: +/-5% typical value

FADC Settings
SA4-SA6 (A, B, C, D Drive Current)

FADC Position	Percent of Typical Lumen Output
1	14%
2	25%
3	32%
4	43%
5	49%
6	57%
7	65%
8	72%
9	80%
10	100%

Note: +/-5% typical value

FADC Settings
SA7-SA9 (A, B, C, D Drive Current)

FADC Position	Percent of Typical Lumen Output
1	19%
2	38%
3	47%
4	63%
5	74%
6	85%
7	95%
8	97%
9	100%
10	100%

Note: +/-5% typical value

Performance Table, Drive Current "A" (615mA)

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		33	63	93	121	154	182	215	244	274
Input Current @ 120V		0.283	0.529	0.778	1.058	1.310	1.556	1.839	2.089	2.335
Input Current @ 208V		0.165	0.309	0.460	0.618	0.771	0.919	1.082	1.240	1.379
Input Current @ 240V		0.143	0.270	0.398	0.540	0.671	0.796	0.944	1.078	1.194
Input Current @ 277V		0.125	0.237	0.352	0.473	0.581	0.705	0.818	0.962	1.057
Input Current @ 347V		0.098	0.181	0.272	0.362	0.454	0.544	0.636	0.738	0.816
Input Current @ 480V		0.073	0.133	0.200	0.267	0.335	0.400	0.470	0.554	0.600
Optics										
T1	4000K Lumens	4,619	9,180	13,628	18,059	22,861	27,070	31,796	36,863	41,385
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	140	146	147	149	148	149	148	151	151
T2	4000K Lumens	4,654	9,249	13,730	18,194	23,032	27,273	32,034	37,138	41,694
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	141	147	148	150	150	150	149	152	152
T2R	4000K Lumens	4,716	9,372	13,913	18,437	23,340	27,637	32,462	37,634	42,251
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	143	149	150	152	152	152	151	154	154
T3	4000K Lumens	4,589	9,120	13,538	17,940	22,711	26,892	31,587	36,620	41,112
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	139	145	146	148	147	148	147	150	150
T3R	4000K Lumens	4,735	9,411	13,970	18,513	23,436	27,751	32,596	37,790	42,425
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	143	149	150	153	152	152	152	155	155
T4FT	4000K Lumens	4,617	9,176	13,622	18,051	22,851	27,058	31,782	36,847	41,366
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	140	146	146	149	148	149	148	151	151
T4W	4000K Lumens	4,631	9,203	13,662	18,104	22,918	27,138	31,876	36,955	41,488
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	150	149	149	148	151	151
SL2	4000K Lumens	4,619	9,180	13,627	18,058	22,860	27,069	31,795	36,861	41,383
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	149	148	149	148	151	151
SL3	4000K Lumens	4,586	9,115	13,531	17,931	22,699	26,879	31,571	36,602	41,091
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	139	145	145	148	147	148	147	150	150
SL4	4000K Lumens	4,529	9,002	13,363	17,708	22,417	26,544	31,178	36,146	40,580
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	137	143	144	146	146	146	145	148	148
5NQ	4000K Lumens	4,829	9,598	14,247	18,880	23,901	28,301	33,242	38,539	43,266
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
	Lumens per Watt	146	152	153	156	155	155	155	158	158
5MQ	4000K Lumens	4,853	9,645	14,318	18,974	24,020	28,442	33,407	38,731	43,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	147	153	154	157	156	156	155	159	159
5WQ	4000K Lumens	4,843	9,625	14,288	18,934	23,969	28,382	33,337	38,649	43,390
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	147	153	154	156	156	156	155	158	158
SLL/ SLR	4000K Lumens	3,989	7,927	11,768	15,594	19,741	23,375	27,456	31,831	35,736
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	121	126	127	129	128	128	128	130	130
RW	4000K Lumens	4,774	9,488	14,085	18,665	23,628	27,979	32,863	38,100	42,774
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	145	151	151	154	153	154	153	156	156
AFL	4000K Lumens	4,673	9,286	13,785	18,268	23,126	27,384	32,164	37,290	41,864
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	142	147	148	151	150	150	150	153	153

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Performance Table, Drive Current "B" (800mA)

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		44	82	121	164	204	243	286	325	364
Input Current @ 120V		0.367	0.689	1.014	1.378	1.704	2.027	2.393	2.716	3.041
Input Current @ 208V		0.213	0.401	0.594	0.802	0.997	1.188	1.400	1.605	1.782
Input Current @ 240V		0.184	0.347	0.510	0.694	0.860	1.021	1.210	1.386	1.531
Input Current @ 277V		0.160	0.303	0.449	0.605	0.757	0.898	1.065	1.242	1.347
Input Current @ 347V		0.125	0.235	0.355	0.471	0.592	0.710	0.828	0.958	1.065
Input Current @ 480V		0.092	0.172	0.258	0.344	0.432	0.517	0.605	0.706	0.775
Optics										
T1	4000K Lumens	5,748	11,423	16,957	22,470	28,446	33,683	39,563	45,867	51,494
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T2	4000K Lumens	5,790	11,508	17,083	22,638	28,658	33,935	39,859	46,210	51,879
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	132	140	141	138	140	140	139	142	143
T2R	4000K Lumens	5,868	11,662	17,311	22,941	29,041	34,388	40,391	46,827	52,572
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
	Lumens per Watt	133	142	143	140	142	142	141	144	144
T3	4000K Lumens	5,710	11,347	16,845	22,322	28,258	33,461	39,303	45,565	51,155
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	130	138	139	136	139	138	137	140	141
T3R	4000K Lumens	5,892	11,710	17,383	23,035	29,161	34,530	40,558	47,020	52,788
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	134	143	144	140	143	142	142	145	145
T4FT	4000K Lumens	5,745	11,418	16,949	22,460	28,433	33,668	39,546	45,847	51,471
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T4W	4000K Lumens	5,762	11,451	16,999	22,526	28,517	33,767	39,662	45,982	51,622
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	140	140	137	140	139	139	141	142
SL2	4000K Lumens	5,747	11,422	16,956	22,469	28,444	33,681	39,561	45,865	51,491
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
SL3	4000K Lumens	5,707	11,342	16,836	22,311	28,244	33,444	39,283	45,542	51,129
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	130	138	139	136	138	138	137	140	140
SL4	4000K Lumens	5,636	11,201	16,627	22,034	27,893	33,028	38,794	44,976	50,493
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	128	137	137	134	137	136	136	138	139
5NQ	4000K Lumens	6,009	11,942	17,727	23,492	29,739	35,214	41,362	47,953	53,835
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	137	146	147	143	146	145	145	148	148
5MQ	4000K Lumens	6,039	12,001	17,816	23,609	29,887	35,389	41,568	48,191	54,103
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	137	146	147	144	147	146	145	148	149
5WQ	4000K Lumens	6,026	11,976	17,778	23,559	29,824	35,315	41,480	48,090	53,989
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	137	146	147	144	146	145	145	148	148
SLL/ SLR	4000K Lumens	4,963	9,863	14,642	19,403	24,563	29,085	34,163	39,607	44,465
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	113	120	121	118	120	120	119	122	122
RW	4000K Lumens	5,940	11,806	17,526	23,224	29,400	34,813	40,891	47,407	53,222
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	135	144	145	142	144	143	143	146	146
AFL	4000K Lumens	5,814	11,555	17,153	22,730	28,775	34,073	40,021	46,398	52,090
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4
	Lumens per Watt	132	141	142	139	141	140	140	143	143

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Performance Table, Drive Current "C" (1050mA)

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		57	108	160	213	269	321	377	429	481
Input Current @ 120V		0.478	0.905	1.338	1.810	2.244	2.675	3.150	3.584	4.013
Input Current @ 208V		0.279	0.532	0.780	1.064	1.313	1.559	1.845	2.093	2.339
Input Current @ 240V		0.243	0.458	0.664	0.916	1.123	1.328	1.582	1.788	1.991
Input Current @ 277V		0.213	0.404	0.582	0.808	0.997	1.164	1.401	1.589	1.745
Input Current @ 347V		0.164	0.322	0.471	0.644	0.795	0.943	1.117	1.269	1.414
Input Current @ 480V		0.121	0.235	0.341	0.469	0.579	0.681	0.814	0.923	1.022
Optics										
T1	4000K Lumens	7,101	14,113	20,950	27,763	35,146	41,616	48,882	56,671	63,623
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T2	4000K Lumens	7,154	14,219	21,107	27,970	35,408	41,927	49,247	57,094	64,098
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	132	132	131	132	131	131	133	133
T2R	4000K Lumens	7,250	14,408	21,389	28,344	35,881	42,487	49,905	57,857	64,954
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	127	133	134	133	133	132	132	135	135
T3	4000K Lumens	7,054	14,020	20,812	27,580	34,914	41,342	48,560	56,297	63,203
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
T3R	4000K Lumens	7,280	14,468	21,477	28,461	36,029	42,663	50,111	58,096	65,222
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	128	134	134	134	134	133	133	135	136
T4FT	4000K Lumens	7,098	14,107	20,941	27,751	35,130	41,598	48,860	56,646	63,594
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T4W	4000K Lumens	7,119	14,148	21,003	27,832	35,233	41,720	49,004	56,812	63,781
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	131	131	130	130	132	133
SL2	4000K Lumens	7,101	14,112	20,949	27,761	35,144	41,614	48,879	56,668	63,619
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
SL3	4000K Lumens	7,051	14,013	20,802	27,566	34,897	41,321	48,535	56,269	63,172
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
SL4	4000K Lumens	6,963	13,839	20,543	27,223	34,463	40,808	47,932	55,569	62,386
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	122	128	128	128	128	127	127	130	130
5NQ	4000K Lumens	7,424	14,755	21,903	29,025	36,743	43,508	51,104	59,247	66,515
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	130	137	137	136	137	136	136	138	138
5MQ	4000K Lumens	7,461	14,828	22,012	29,169	36,926	43,725	51,359	59,542	66,846
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	138	137	137	136	136	139	139
5WQ	4000K Lumens	7,445	14,797	21,966	29,108	36,849	43,633	51,250	59,417	66,705
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	137	137	137	136	136	139	139
SLL/ SLR	4000K Lumens	6,132	12,187	18,091	23,973	30,348	35,936	42,210	48,935	54,938
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	108	113	113	113	113	112	112	114	114
RW	4000K Lumens	7,340	14,587	21,653	28,694	36,325	43,013	50,522	58,573	65,757
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	129	135	135	135	135	134	134	137	137
AFL	4000K Lumens	7,183	14,276	21,193	28,084	35,552	42,098	49,448	57,327	64,359
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	126	132	132	132	132	131	131	134	134

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Performance Table, Drive Current "D" (1200mA)

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		65	125	184	245	309	368	433	493	552
Input Current @ 120V		0.546	1.041	1.535	2.082	2.578	3.070	3.619	4.114	4.605
Input Current @ 208V		0.318	0.610	0.893	1.219	1.504	1.786	2.113	2.397	2.679
Input Current @ 240V		0.276	0.523	0.758	1.046	1.282	1.516	1.806	2.041	2.274
Input Current @ 277V		0.241	0.460	0.662	0.920	1.133	1.325	1.593	1.807	1.987
Input Current @ 347V		0.187	0.370	0.543	0.740	0.915	1.085	1.285	1.459	1.628
Input Current @ 480V		0.138	0.269	0.391	0.537	0.663	0.782	0.932	1.057	1.173
Optics										
T1	4000K Lumens	7,814	15,529	23,053	30,549	38,672	45,793	53,787	62,358	70,007
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T2	4000K Lumens	7,872	15,645	23,225	30,777	38,962	46,135	54,189	62,824	70,530
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	126	126	125	125	127	128
T2R	4000K Lumens	7,977	15,854	23,535	31,188	39,482	46,751	54,913	63,663	71,472
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	127	128	127	127	129	129
T3	4000K Lumens	7,762	15,427	22,901	30,348	38,418	45,491	53,433	61,947	69,546
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
T3R	4000K Lumens	8,010	15,920	23,632	31,317	39,645	46,944	55,139	63,925	71,767
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	128	128	128	127	130	130
T4FT	4000K Lumens	7,810	15,522	23,043	30,535	38,655	45,772	53,763	62,330	69,976
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T4W	4000K Lumens	7,833	15,568	23,110	30,625	38,769	45,907	53,921	62,513	70,182
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	125	125	125	125	127	127
SL2	4000K Lumens	7,813	15,528	23,052	30,547	38,670	45,790	53,784	62,354	70,003
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
SL3	4000K Lumens	7,758	15,419	22,889	30,332	38,398	45,468	53,406	61,916	69,511
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
SL4	4000K Lumens	7,662	15,228	22,605	29,955	37,921	44,903	52,742	61,146	68,646
	BUG Rating	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	118	122	123	122	123	122	122	124	124
5NQ	4000K Lumens	8,169	16,235	24,101	31,938	40,431	47,874	56,232	65,193	73,190
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	126	130	131	130	131	130	130	132	133
5MQ	4000K Lumens	8,210	16,316	24,221	32,097	40,632	48,113	56,512	65,517	73,554
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	131	132	131	131	131	131	133	133
5WQ	4000K Lumens	8,192	16,282	24,170	32,029	40,546	48,011	56,393	65,379	73,399
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	130	131	131	131	130	130	133	133
SLL/ SLR	4000K Lumens	6,747	13,410	19,906	26,379	33,394	39,542	46,445	53,846	60,451
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	104	107	108	108	108	107	107	109	110
RW	4000K Lumens	8,076	16,050	23,826	31,574	39,970	47,329	55,592	64,450	72,356
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	124	128	129	129	129	129	128	131	131
AFL	4000K Lumens	7,904	15,709	23,320	30,902	39,120	46,323	54,410	63,079	70,817
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	122	126	127	126	127	126	126	128	128

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Control Options

0-10V (DIM)
This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (BPC, PR and PR7)
Optional button-type photocontrol (BPC) and photocontrol receptacles (PR and PR7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PR7 receptacle.

After Hours Dim (AHD)
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (SPB and MS/DIM-LXX)
These passive infrared (PIR) sensors are factory installed in the luminaire housing. When the SPB (FSP-321 or FSP-311) or MS/DIM (FSP-211) sensor options are selected, the occupancy sensor is connected to a dimming driver and the luminaire dims when no motion is detected. After a set period of time, the luminaire turns off, and when motion is detected, the luminaire returns to full light output. Both sensors are factory preset to dim down to approximately 10% power with a time delay of five minutes. The MS/DIM sensor requires the FSIR-100 programming tool to adjust factory defaults. The SPB sensor default parameters are listed in the table below and can be configured utilizing the Sensor Configuration mobile application for iOS and Android devices. The SPB/X is configured to control only the specified number of light squares (See SPB/X Availability Table below.) An integral photocontrol can be activated with the app for "dusk-to-dawn" control or daylight harvesting - the factory default is off. Four sensor colors are available; Bronze, Black, Gray and White, and are automatically selected based on the luminaire finish as indicated by the table below.

SPB sensor finish matched to luminaire finish		
Luminaire Finish		SPB Sensor Finish*
WH	White	White
BK	Black	Black
GM	Graphite Metallic	Black
BZ	Bronze	Bronze
AP	Gray	Gray
DP	Dark Platinum	Gray

*SPB bezel color automatically selected based on luminaire finish

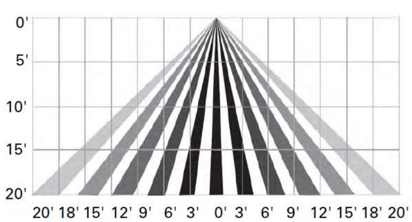
SPB/X Availability Table	
Fixture Square Count	Available SPB/X Square Count
1	Not Available
2	Not Available
3	Not Available
4	2
5	2 or 3
6	3
7	2, 3, 4 or 5
8	2, 3, 5 or 6
9	3 or 6

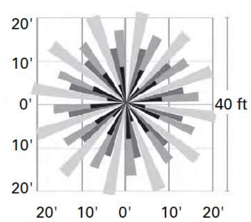
Default Program Settings (Out of the Box Functionality)

Occupancy Sensor				
Setting	MS/DIM	SPB	WaveLinx Lite (WLS4 / WLS2)	WaveLinx (WPS)
High Mode %	100%	100%	100%	100%
Low Mode %	10%	10%	50%	50%
Time Delay	5 min	5 min	15 min	15 min
Cut Off Delay	1 hr	1 hr	Disabled	Disabled
Photocell Enabled	No	No	Yes	Yes

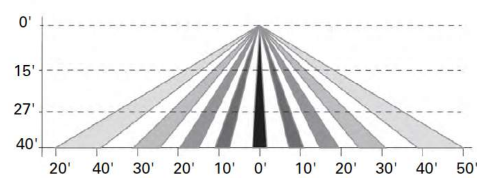
WaveLinx Wireless Control and Monitoring System
Operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. WaveLinx (WPS2 to WPS4) outdoor wireless sensors offer passive infrared (PIR) occupancy and photocell for closed loop daylight harvesting, and can be factory or field-installed. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets). WaveLinx Lite (WLS4 and WLS2) outdoor wireless sensors provide PIR occupancy and photocell for closed loop daylight harvesting, and can be factory or field-installed. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx Lite mobile application for set-up and configuration. WAC not required. WaveLinx Outdoor Control Module (WOLC-7P-10A) accessory provides a photocontrol enabling astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

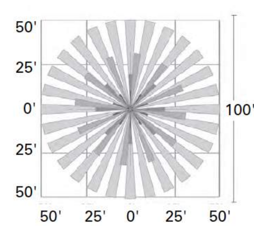
For mounting heights up to 15' (WPS2 and WLS2)





For mounting heights up to 40' (WPS4 and WLS4)





LumenSafe Integrated Network Security Camera (LD)
Cooper Lighting Solutions brings ease of camera deployment to a whole new level. No additional wiring is needed beyond providing line power to the luminaire. A variety of networking options allows security integrators to design the optimal solution for active surveillance. As the ideal solution to meet the needs for active surveillance, the LumenSafe integrated network camera is a streamlined, outdoor-ready fixed dome that provides HDTV 1080p video. This IP camera is optimally designed for deployment in the video management system or security software platform of choice.

Synapse (DIM10)
SimplySNAP integrated wireless controls system by Synapse. Includes factory installed DIM10 Synapse control module and FSP-201 motion sensor; requires additional Synapse system components for operation. Contact Synapse at www.synapsewireless.com for product support, warranty and terms and conditions.

Cooper Lighting Solutions
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

BODY OF LIGHT

SHAPE OF LIGHT

INTELLIGENCE OF LIGHT

FA

FA770
FA770–W
FA1070

Wall-mounted

Pole-mounted

A–Series
FA770
1–4 LU

A–Series
FA1070
5–6 LU

T–Series
FA770
2–4 LU

T–Series
FA1070
5–6 LU

FA170

Bollard

A–Series
8 LEDs

A–Series
16 LEDs

T–Series
32 LEDs

FA100–C, FA100–WD, FA100–U

Ceiling-mounted

Wall-mounted downlight

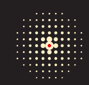
Wall-mounted uplight

A–Series
8 LEDs

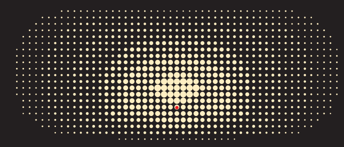
A–Series
16 LEDs

T–Series
32 LEDs

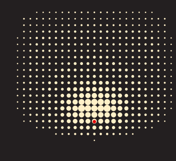
A SERIES Precision lens optics
* also available in satiné version



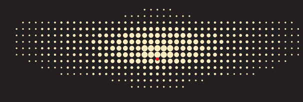
AH02*
Symmetric Wide Flood



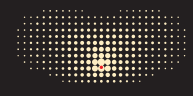
AP06*
Asymmetric Forward Extra Side Throw



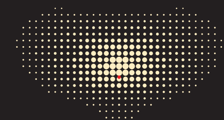
AP07*
Asymmetric Extra Forward



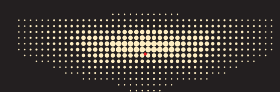
AS06*
Asymmetric Extra Side Throw



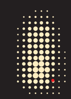
AS07*
Asymmetric Side Throw



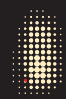
AS08*
Asymmetric Side and Forward Throw



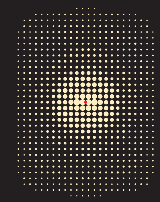
AS09*
Asymmetric Extra Side Throw



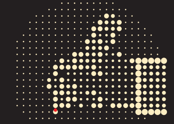
AS10–L
Asymmetric Forward – Left



AS10–R
Asymmetric Forward – Right



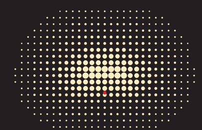
APC07*
Symmetric Extra Forward and Backward



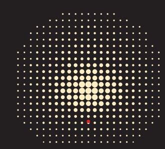
Shape your own light by combining any light distribution

2,200 K CRI ≥ 70 | 2,700 K CRI ≥ 70 | 3,000 K CRI ≥ 80 | 4,000 K CRI ≥ 70 | 5,700 K CRI ≥ 70 | CRI ≥ 80 on request

T SERIES ewoLighTile: low glare light-guiding panels



TS11
Asymmetric Side and Forward Throw



TP08
Asymmetric Extra Forward

Tunable White CRI ≥ 80 | RGBW

A SERIES

Control protocols

ON/OFF	ON OFF
DALI 2	DALI
1–10 V	1–10V
ewo connexx	
Zhaga Book 18	Z
Line Switch	L/S

Programming options

CLO	Constant Lumen Output
AC/DC	Emergency power supply
Stand-alone	

T SERIES

Control protocols

DALI 2 T8	T8 DALI

Programming options

Night dimming

ewo

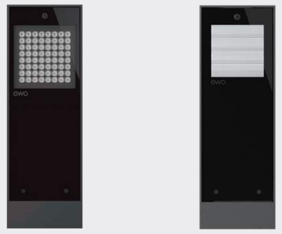
FA

FA770
FA770-W
FA1070

Public space
Roads and traffic
Pedestrian path
Accent lighting

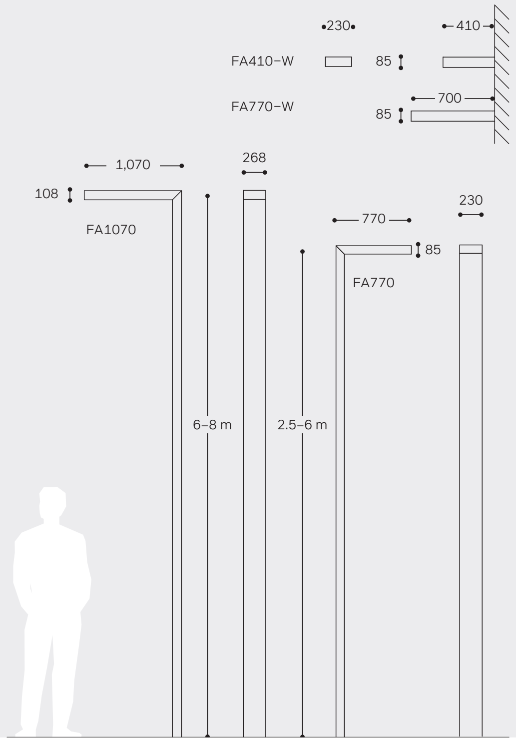
DB 703
Anthracite

ewo
colours



A-Series
1–6 lighting units

T-Series
2–6 lighting units

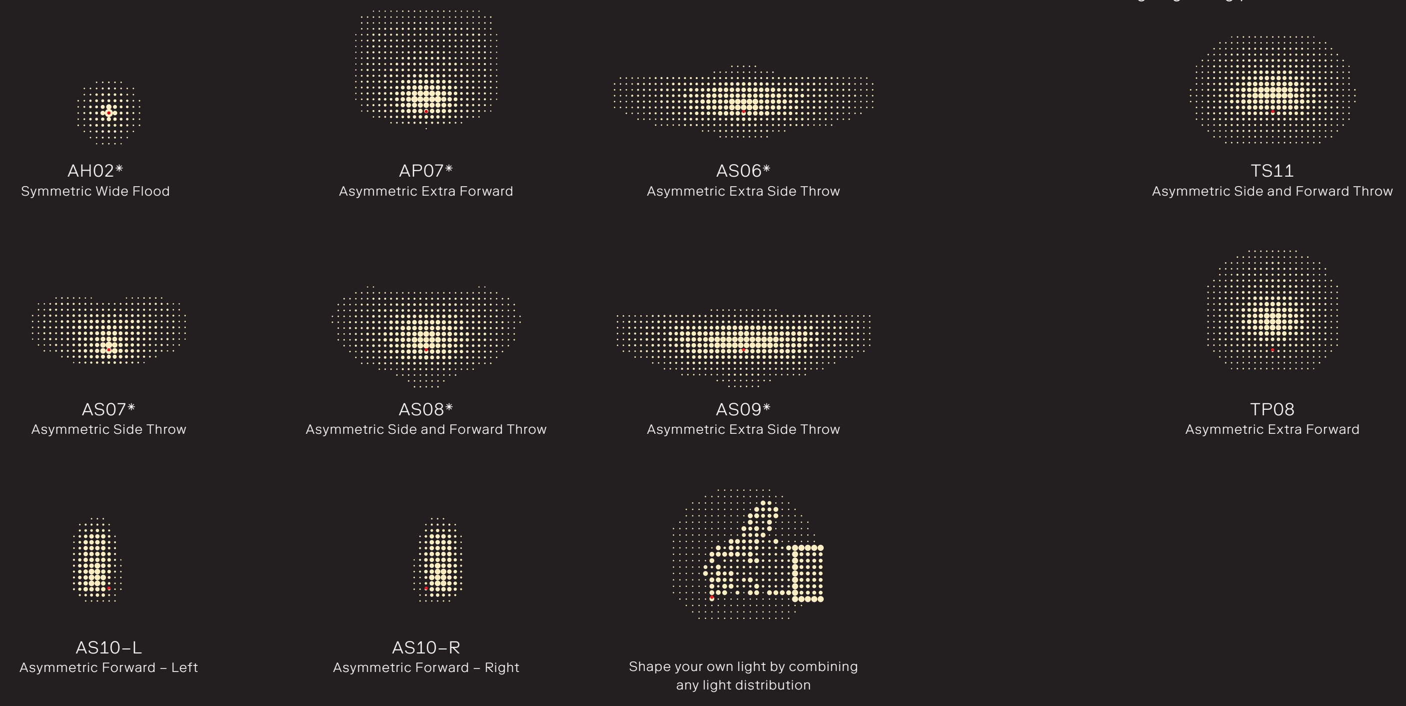


Configurator

IP66 RoHS IK08

A SERIES — Precision lens optics
* also available in satiné version

T SERIES — ewoLighTile: low glare light-guiding panels



2,200 K CRI ≥ 70 | 2,700 K CRI ≥ 70 | 3,000 K CRI ≥ 80 | 4,000 K CRI ≥ 70 | 5,700 K CRI ≥ 70 | CRI ≥ 80 on request | Tunable White CRI ≥ 80 | RGBW

Housing

Housing material	Extruded aluminium profile (optional COR-TEN steel)
Housing finish	Polyester powder coating (ewoECP upon request**)
Finish standard colour	Silver grey (RAL 9007 / DB 702)*
Glass	Safety glass (ESG)
Mounting options	Pole, wall

* other colours on request
** ewo three steps process (high quality alloy, pre-treatment, primer) to ensure extreme corrosion resistance (except 1070)

Measurements

Model	LPH [m] ①	②	③	Weight [kg] ⑤
FA770	2.5–6	0.18	1.38	95.0*
FA770-W	/	0.16	0.06	14.5
FA1070	6–8	0.29	2.14	176.0**

① in 0.5 m steps
② projected windage area [m²]
③ lateral windage area [m²]
⑤ max. weight
②③⑤ pole included

* single version with aluminium pole LPH = 6 m and telescopic element with anchor cage
** single version with aluminium pole LPH = 8 m and telescopic element with anchor cage

Electrical

	A-Series	T-Series
Protection class	I / II	I
Voltage [V], [Hz]	220–240, 50/60	220–240, 50/60
Current feed max. [mA]	700*	225
LED power max. [W]	160	71

* FA1070 max. 550 mA

Operating conditions

Lifetime	Visit the configurator for specific lifetime options

Driver

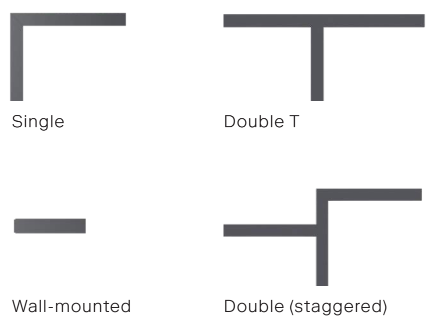
	A-Series	T-Series
Control options	ON/OFF, DALI, 1–10V, Z, LS	T8 DALI
Programming [optional]	Constant Lumen Output (CLO) Emergency power supply (AC/DC) Stand-alone	
Control accessories	Further accessories on request	
Software	connexx light management software for remote management of intelligent luminaire clusters	

Performance

Optics	AH02	AP07	AS06	AS07	AS08	AS09	AS10-L	AS10-R	TS11	TP08
MacAdam ellipses (SDCM)	≤ 5 SDCM								≤ 5 SDCM	

Model	FA770/-W	FA1070	FA770/-W	FA1070
Light units	1–5	5–6	2–4	5–6
Luminous flux [lm]	1,000–18,800	4,700–19,100	4,100	5,500

Available designs (also available as pendant)

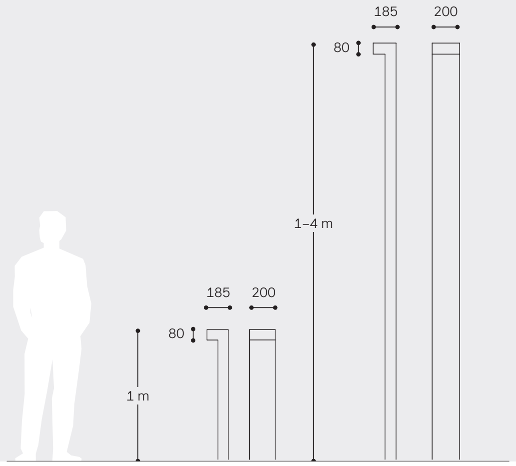


Product variations

FA

BOLLARDS
FA170

Pedestrian path
Accent lighting



Configurator

A–Series
FA170
8 LEDs

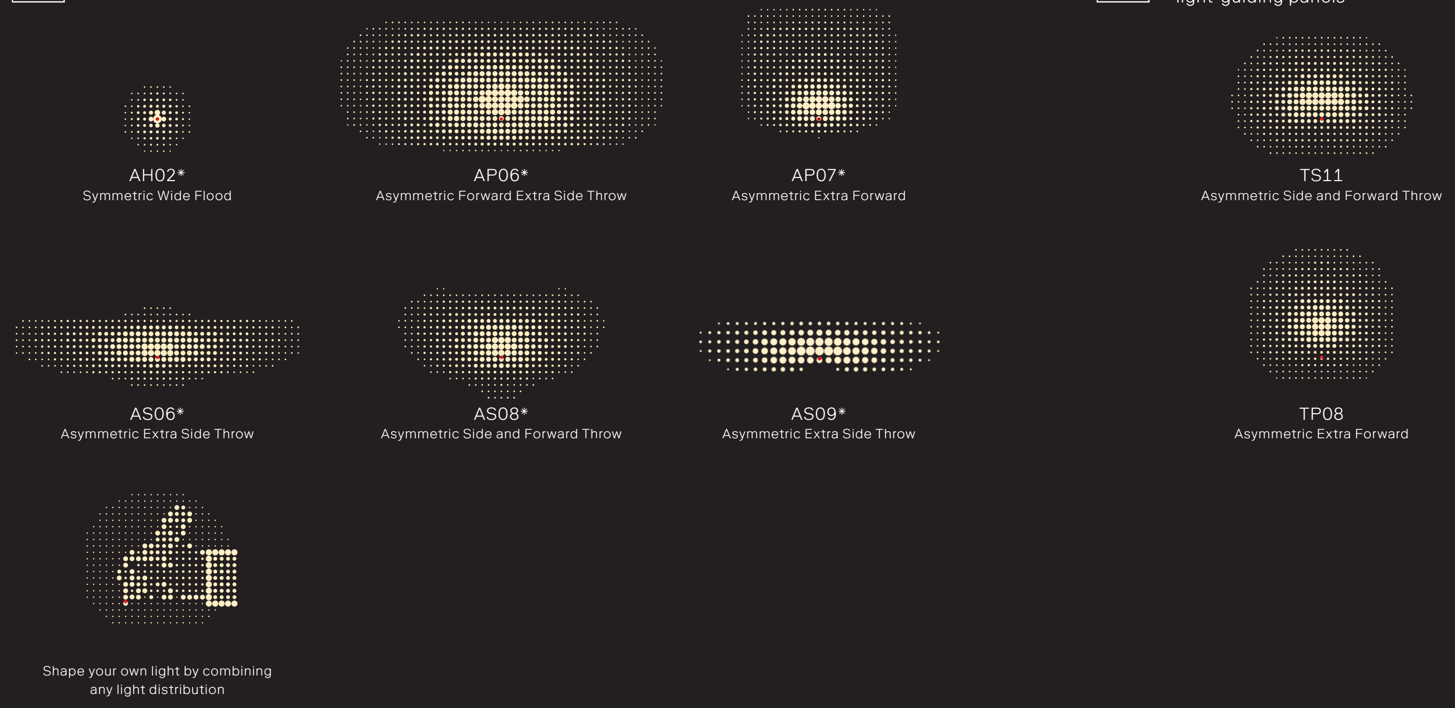
A–Series
FA170
16 LEDs

T–Series
FA170
32 LEDs

IP66 RoHS IK09*
*(IK10 on request, COR-TEN IK08)

A SERIES Precision lens optics
* also available in satiné version

T SERIES ewoLighTile: low glare light-guiding panels



2,200 K CRI ≥ 70 · 2,700 K CRI ≥ 70 · 3,000 K CRI ≥ 80 · 4,000 K CRI ≥ 70 · CRI ≥ 80 on request · Tunable White CRI ≥ 80 · RGBW

Housing

Housing material	Aluminum die-cast* (A–Series: optional COR-TEN)
Housing finish	Polyester powder coating (ewoECP upon request***)
Finish standard colour	Silver grey (RAL 9007 / DB 702)**
Glass	Safety glass (ESG)
Mounting options	Pole
Installation	Gelbox for throughwiring upon request

* pole made of extruded aluminium profile
** other colours on request
*** ewo three steps process (high quality alloy, pre-treatment, primer) to ensure extreme corrosion resistance

Measurements

Model	LPH [m] ①	②	③	Weight [kg] ⑤
FA170	1	0.04	0.20	18.5*
FA170	1–4	0.04	0.80	46.5**

① in 0.5 m steps
② projected windage area [m²]
③ lateral windage area [m²]
⑤ max. weight
②③⑤ pole included

* single version with aluminium pole LPH = 1 m and buried base
** single version with aluminium pole LPH = 4 m and buried base

Electrical

	A–Series	T–Series
Protection class	I / II	I / II
Voltage [V], [Hz]	220–240, 50/60	220–240, 50/60
Current feed max. [mA]	500	225
LED power max. [W]	26	12

Operating conditions

Lifetime	Visit the configurator for specific lifetime options

Driver

	A–Series	T–Series
Control options	ON/OFF, DALI, 1–10V, LS	T8 DALI
Programming [optional]	Constant Lumen Output (CLO) Emergency power supply (AC/DC) Stand-alone	
Control accessories	Further accessories on request	
Software	connexx light management software for remote management of intelligent luminaire clusters	

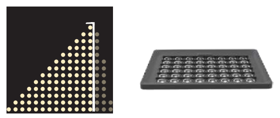
Performance

Optics	AH02	AP07	AS06	AS07	AS08	AS09	TS11	TP08
MacAdam ellipses (SDCM)	≤ 5 SDCM						≤ 5 SDCM	

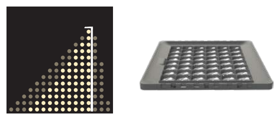
Model	FA170	FA170
Light units	1	1
Luminous flux [lm]	340–2,590	1,000

Accessories

ewoLightLayers (optical accessoires)



Backlight shield



Anti-Glare Grid 60° / 70 °

Available designs

Single

Double

Surface

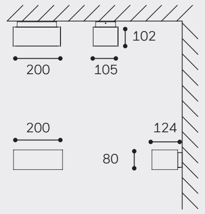
Pole luminaire / bollard: polyester powder coated

Pole luminaire / bollard: COR-TEN steel

FA

WALL / CEILING
FA100–C
FA100–WD
FA100–WU



Configurator


A–Series
FA100
8 LEDs

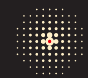

A–Series
FA100
16 LEDs

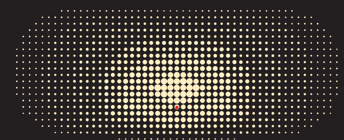

T–Series
FA100
32 LEDs

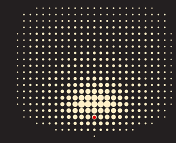
IP66 RoHS IK09*
*(IK10 on request)

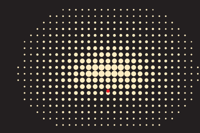
A SERIES Precision lens optics
* also available in satiné version

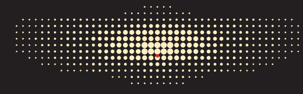
T SERIES ewoLighTile: low glare light-guiding panels

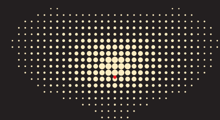

AH02*
Symmetric Wide Flood

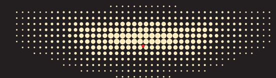

AP06*
Asymmetric Forward Extra Side Throw

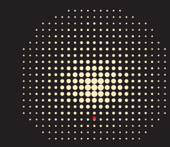

AP07*
Asymmetric Extra Forward

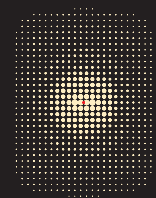

TS11
Asymmetric Side and Forward Throw

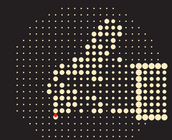

AS06*
Asymmetric Extra Side Throw


AS08*
Asymmetric Side and Forward Throw


AS09*
Asymmetric Extra Side Throw


TP08
Asymmetric Extra Forward


APC07*
Symmetric Extra Forward and Backward


Shape your own light by combining any light distribution

2,200 K CRI ≥ 70 | 2,700 K CRI ≥ 70 | 3,000 K CRI ≥ 80 | 4,000 K CRI ≥ 70 | CRI ≥ 80 on request | Tunable White CRI ≥ 80 | RGBW

Housing

Housing material	Aluminum die-cast
Housing finish	Polyester powder coating (ewoECP upon request**)
Finish standard colour	Silver grey (RAL 9007 / DB 702)*
Glass	Safety glass (ESG)
Mounting options	Wall, ceiling
Installation	Gelbox for throughwiring upon request

* other colours on request
** ewo three steps process (high quality alloy, pre-treatment, primer) to ensure extreme corrosion resistance

Measurements

Model	LPH [m] ①	↓ ②	→ ③	Weight [kg] ⑤
FA100–WD	/	0.02	0.02	2.5
FA100–WU	/	0.02	0.02	2.5
FA100–C	/	/	0.02	2.5

② projected windage area [m²]
③ lateral windage area [m²]
⑤ max. weight

Electrical

	A–Series	T–Series
Protection class	I / II	I / II
Voltage [V], [Hz]	220–240, 50/60	220–240, 50/60
Current feed max. [mA]	500	225
LED power max. [W]	26	12

Operating conditions

Lifetime	Visit the configurator for specific lifetime options

Driver

	A–Series	T–Series
Control options	ON/OFF, DALI, 1–10V, LS	T8 DALI
Programming [optional]	Constant Lumen Output (CLO) Emergency power supply (AC/DC) Stand-alone	
Control accessories	Further accessories on request	
Software	connexx light management software for remote management of intelligent luminaire clusters	

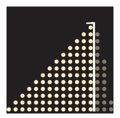
Performance

Optics	AH02	AP07	APC07	AS06	AS07	AS08	AS09			TS11	TP08
MacAdam ellipses (SDCM)					≤ 5 SDCM					≤ 5 SDCM	

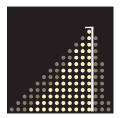
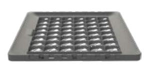
Model	FA100–WD	FA100–WU	FA100–C	FA100–WD	FA100–WU	FA100–C
Light units	1	1	1	1	1	1
Luminous flux [lm]	315–3,250	315–3,250	420–3,300	1,000	1,000	1,000

Accessories

ewoLightLayers (optical accessoires)



Backlight shield



Anti-Glare Grid 60° / 70 °

Available designs


WD (Wall Downlight)

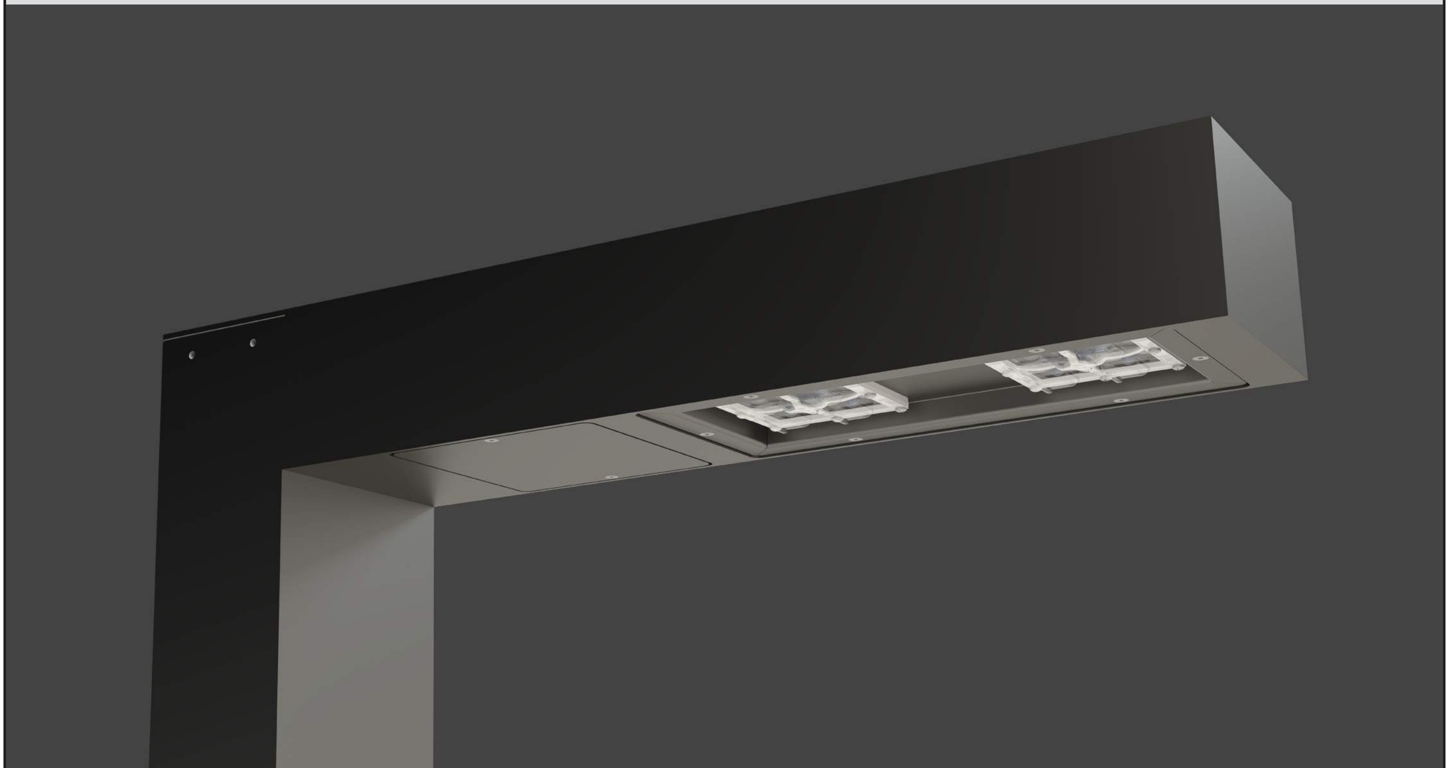

WU (Wall Uplight)


C (Ceiling)

NLS LIGHTING

TRAC 2

ARCHITECTURAL



LED WATTAGE CHART		
	16L	32L
700 milliamps	36w (4385-4720 Lumens)	71w (8770-9439 Lumens)
1050 milliamps	56w (6022-6482 Lumens)	106w (11797-12698 Lumens)

Form
- Elegant Rectilinear Extruded Aluminum Housing
- Corrosion Resistant Stainless Steel External Hardware
- Sleek, Low Profile Housing
- Spec Grade Performance
- Engineered For Optimum Thermal Management
- Anchor Base Plate For Easy Installation
- 8 Architectural Finishes Standard, RAL Colors Available

Function
- Micro Optics IES Distributions T2, T3, T4, T5
- 0-10V Dimming Drivers
  THD @ Max Load < 15%
  Power factor @ Max Load < 0.95
- Amber, 2700K, 3000K, 3500K, 4000K, Or 5000K
- 16L to 32L LED Configuration
- 36-106 Watts (Single Head Wattage)
- CRI 70, 80, or 90
- Extruded Aluminum Heat Sink
- 5 Mils Powder Coat
- Aluminum Pole .250 Wall

Reliability
- Silicone Micro Optics
- 5 Year Standard Warranty
- IP67 Optics
- Reduces Energy Consumption And Costs Up To 65%
- Dark Sky Approved

BUY AMERICAN

To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).

Project Name:	Type:

TRC-2 ORDERING GUIDE

*Ordering information for Pole & Fixture

Cat#	Light Dist.	No. of LEDs	Milliamps	Kelvin Temp	Volts
Trac 2 **(TRC-2)**	Type 2 **(T2)**	16 **(16L)**	700 **(7)**	Amber 585-600nM **(AMBER)**[5][7]	120-277 **(UNV)**
	Type 3 **(T3)**	32 **(32L)**	1050 **(1)**	2700K, 70 CRI **(27K7)**[5]	340-480 **(HV)**
	Type 4 **(T4)**			2700K, 80 CRI **(27K8)**[1][5]	
	Type 5 **(T5)**			3000K, 70 CRI **(30K7)**[5]	
				3000K, 80 CRI **(30K8)**[1][5]	
				3500K, 80 CRI **(35K8)**	
				4000K, 70 CRI **(40K7)**	
				4000K, 80 CRI **(40K8)**[1]	
				5000K, 70 CRI **(50K7)**	
				5000K, 80 CRI **(50K8)**[1]	

Config.	Color	Control Options	Options	Pole Height
Single **(SGL)**	Bronze Textured **(BRZ)**	Nema 7-Pin Receptacle **(PE7)**[3]	Marine Grade Finish **(MGF)**	10' **(10)**
Double **(D-180)**	White Textured **(WHT)**	Button Photocell **(PC)**[4]	House Side Shield **(HSS)**	12' **(12)**
MPF Triple **(TRI)**[2]	Smooth White Gloss **(SWT)**	FSP-211 with Motion Sensor **(FSP-20)**[4] 9'-20" Heights **(FSP-40)**[4] 21'-40' Heights	Rotated Optic Left **(ROL)**	14' **(14)**
MPF Quad **(QD)**[2]	Silver Textured **(SVR)**	Custom Controls Integration **(CCI)**[6]	Rotated Optic Right **(ROR)**	16' **(16)**
MPF **(MPF)**[2]	Black Textured **(BLK)**	No Options **(NO)**	Buy American **(BAA)**[8]	No Pole **(NO)**
Wall Mount **(WM)**	Smooth Black Gloss **(SBK)**		Trade American **(TAA)**[8]	Aluminum Pole .250 Wall Comes With 12" Anchor Base 1" Thick, 1" Anchor Bolts
	Graphite Textured **(GPH)**		Build America Buy American **(BABA)**[8]	
	Grey **(GRY)**		No Options **(NO)**	
	Custom **(CS)**			

Notes:

1. Consult Factory For Lead Time. Consult Factory For 90 CRI Requests.
2. MPF Mid Pole Fixture. Consult Factory
3. Only Available When Ordering NLS Pole
4. Universal Voltage 120-277
5. 3000k or lower must be selected to meet International Dark-Sky Association certification.
6. Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
7. Turtle Safe
8. Consult factory for all BAA/TAA/BABA requests

PRODUCT SPECIFICATIONS

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All drivers, controls, and sensors housed in enclosed compartment
- CRI 70, 80, or 90
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA supplied as standard.

CONSTRUCTION
- Extruded Aluminum
- Internal cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures water tight seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP67 seal around each PCB

OPTIONS
- NEMA 7-Pin Receptacle (PE7). Only available when ordering NLS pole.
- PHOTO CELL (PC)
- DIMMING CONTROL (FSP-20) (FSP-40)
- MARINE GRADE FINISH (MGF)—A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- SHIELD (HSS)—House Side Shield is designed for full property line cut-off.
- ROTATED OPTICS (ROL) (ROR)

CONTROL OPTIONS
FSP-211 with Motion Sensor (FSP-XX)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
- FSP-20 mounting heights 9-20 feet
- FSP-40 mounting heights 21-40 feet.
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.
- Motion sensor mounted to access cover
- FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering.

- NEMA 7-PIN RECEPTACLE (PE7)—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

FINISH
- 3-5 mils electrostatic powder coat.
- NLS Lighting standard high-quality finishes prevent corrosion and protects against extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.

OPTICS
Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time

LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- IP65/ IP67 Rated
- IK10 Rated

BUY AMERICAN OPTION
While all of the NLS Lighting products listed in this document qualify for the Buy America(n) Act of 1933, we reserve the right to change our listings without notice.

The information provided above is for general informational purposes only. We encourage you to consult legal professionals for advice particular to your projects concerning BAA, TAA, BABA or Buy America.

Additional NLS Products that meet BAA, TAA standards can be found at the following link:

https://nlslighting.com/buy-american/

PRODUCT SPECIFICATIONS

TRAC 2 LUMEN CHART

TRAC LUMEN CHART													
PART NUMBER	T2	LM/W	BUG	T3	LM/W	BUG	T4	LM/W	BUG	T5	LM/W	BUG	WATTS
TRC-2-16L-7-30K7	4,385	122	B1-U0-G1	4,409	122	B1-U0-G1	4,409	122	B1-U0-G1	4,495	125	B3-U0-G1	36
TRC-2-16L-7-40K7	4,604	128	B1-U0-G1	4,630	129	B1-U0-G1	4,630	129	B1-U0-G1	4,720	131	B3-U0-G1	36
TRC-2-16L-7-50K7	4,604	128	B1-U0-G1	4,630	129	B1-U0-G1	4,630	129	B1-U0-G1	4,720	131	B3-U0-G1	36
TRC-2-16L-1-30K7	6,022	108	B1-U0-G1	6,056	108	B1-U0-G1	6,056	108	B1-U0-G1	6,174	110	B3-U0-G1	56
TRC-2-16L-1-40K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G1	6,482	116	B3-U0-G1	56
TRC-2-16L-1-50K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G2	6,482	116	B3-U0-G1	56
TRC-2-32L-7-30K7	8,770	124	B2-U0-G2	8,819	124	B2-U0-G2	8,819	124	B2-U0-G2	8,990	127	B3-U0-G2	71
TRC-2-32L-7-40K7	9,208	130	B2-U0-G2	9,259	130	B2-U0-G2	9,259	130	B2-U0-G2	9,439	133	B3-U0-G2	71
TRC-2-32L-7-50K7	9,208	130	B2-U0-G2	9,259	130	B2-U0-G2	9,259	130	B2-U0-G2	9,439	133	B3-U0-G2	71
TRC-2-32L-1-30K7	11,797	111	B2-U0-G2	11,863	112	B2-U0-G2	11,863	112	B2-U0-G2	12,094	114	B4-U0-G2	106
TRC-2-32L-1-40K7	12,387	117	B2-U0-G2	12,456	118	B2-U0-G2	12,456	118	B2-U0-G2	12,698	120	B4-U0-G2	106
TRC-2-32L-1-50K7	12,387	117	B2-U0-G2	12,456	118	B2-U0-G2	12,456	118	B2-U0-G2	12,698	120	B4-U0-G2	106
3000k or lower must be selected to meet International Dark-Sky Association certification.													

TRAC 2 LUMEN CHART HSS

PART NUMBER	T2 HSS	LM/W	BUG	T3 HSS	LM/W	BUG	T4 HSS	LM/W	BUG	WATTS
TRC-2-16L-7-30K7	3,227	90	B1-U0-G1	3,120	87	B0-U0-G1	3,018	84	B0-U0-G1	36
TRC-2-16L-7-40K7	3,389	94	B1-U0-G1	3,276	91	B0-U0-G1	3,169	88	B0-U0-G1	36
TRC-2-16L-7-50K7	3,389	94	B1-U0-G1	3,276	91	B0-U0-G1	3,169	88	B0-U0-G1	36
TRC-2-16L-1-30K7	4,433	79	B1-U0-G1	4,285	77	B0-U0-G1	4,145	74	B1-U0-G1	56
TRC-2-16L-1-40K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56
TRC-2-16L-1-50K7	4,654	83	B1-U0-G1	4,499	80	B1-U0-G1	4,353	78	B1-U0-G1	56
TRC-2-32L-7-30K7	6,454	91	B1-U0-G1	6,239	88	B1-U0-G2	6,036	85	B1-U0-G2	71
TRC-2-32L-7-40K7	6,777	95	B1-U0-G2	6,551	92	B1-U0-G2	6,338	89	B1-U0-G2	71
TRC-2-32L-7-50K7	6,777	95	B1-U0-G2	6,551	92	B1-U0-G2	6,338	89	B1-U0-G2	71
TRC-2-32L-1-30K7	8,683	82	B1-U0-G2	8,394	79	B1-U0-G2	8,120	77	B1-U0-G2	106
TRC-2-32L-1-40K7	9,117	86	B1-U0-G2	8,813	83	B1-U0-G2	8,526	80	B1-U0-G2	106
TRC-2-32L-1-50K7	9,117	86	B1-U0-G2	8,813	83	B1-U0-G2	8,526	80	B1-U0-G2	106

Lumen Maintenance Data							
Ambient Temperature	**Drive Current**	**L90 Hours***	**L70 Hours****	**30,000 Hours***	**50,000 Hours***	**60,00 Hours***	**100,000 Hours****
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%
*Reported extrapolations per IESNA TM-21				**Projected extrapolations per IESNA TM-21			

POLE EPA DATA

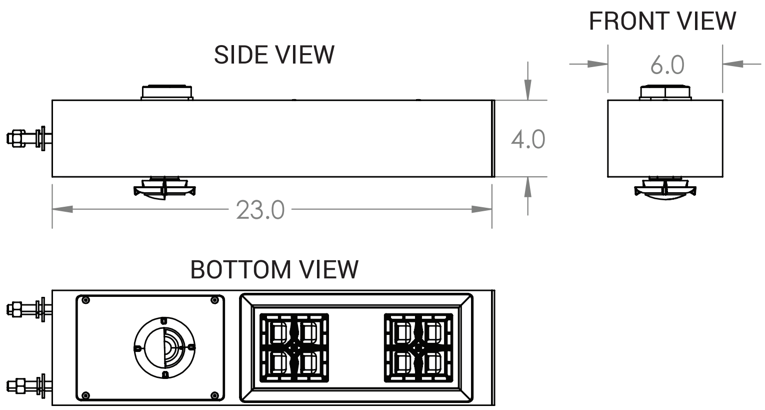
Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dim., in.	Base Plate, in.	Bolt Circle, in.	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (lb)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
TRAC-10-250-12BC-136	10	0.250	4x6	12" sq.	12	1"x36"	20.0	500	20.0	500	20.0	500	20.0	500	20.0	500	20.0	500	18.0	450	14.9	373	12.6	315	10.7	268	9.2	230	7.6	190
TRAC-12-250-12BC-136	12	0.250	4x6	12" sq.	12	1"x36"	20.0	500	20.0	500	20.0	500	20.0	500	18.9	473	17.1	428	14.0	350	11.5	288	9.4	235	7.7	193	6.5	163	5.3	133
TRAC-14-250-12BC-136	14	0.250	4x6	12" sq.	12	1"x36"	20.0	500	20.0	500	20.0	500	16.9	423	15.2	380	13.5	338	10.8	270	8.6	215	6.9	173	5.6	140	4.5	113	3.5	88
TRAC-16-250-12BC-136	16	0.250	4x6	12" sq.	12	1"x36"	20.0	500	20.0	500	16.6	415	12.9	323	11.4	285	10.0	250	7.8	195	6.0	150	4.4	110	3.5	88	2.4	60	1.8	-

PRODUCT SPECIFICATIONS

MODEL	WIDTH	DEPTH	LENGTH	WEIGHT
TRAC - 2	6”	4”	23”	16

EPA	SGL	DBL
	.8	1.5

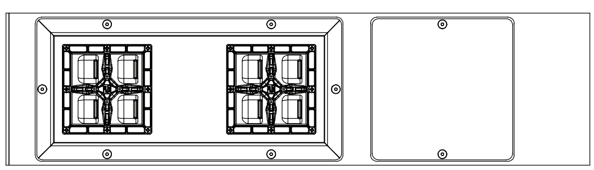
DIMENSIONS



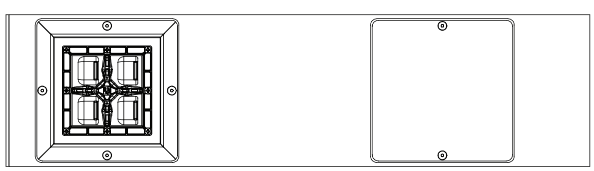
OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.

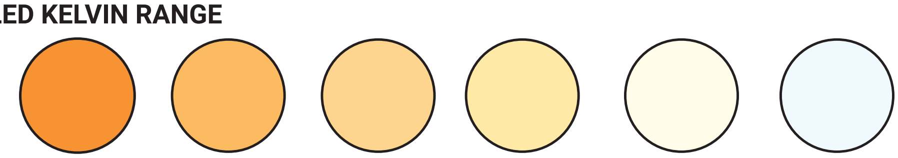
TRC-2 / 32L



TRC-2 / 16L



LED KELVIN RANGE

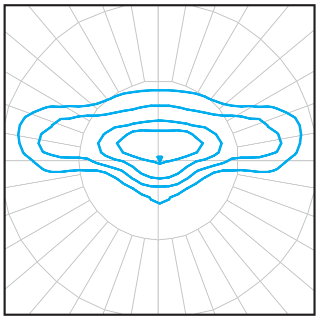
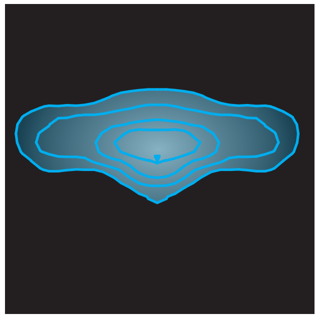


AMBER 585-600 nm | 2700K 70 CRI | 3000K 70 CRI | 3500K 80 CRI | 4000K 70 CRI | 5000K 70 CRI

Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

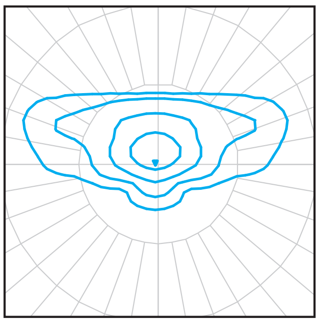
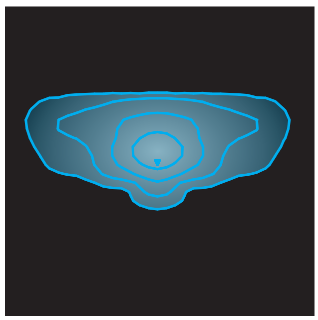
PRODUCT SPECIFICATIONS

IES DISTRIBUTIONS

T2 Optic

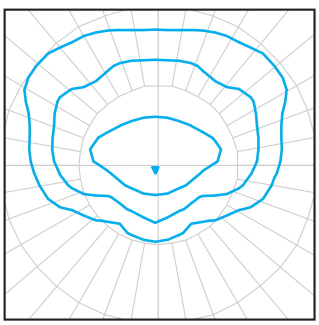
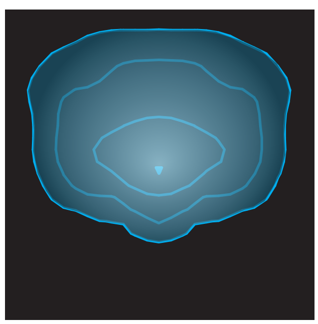
The Type II distribution is used for narrow pathways and trails, narrow entrances of shopping centers, parking lots and office complex's.

T3 Optic

The type III distribution is meant for roadway lighting, general parking areas and other areas where a larger area of lighting is required. Type III lighting needs to be placed to the side of the area, allowing the light to project outward and fill the area. This produces a filling light flow.

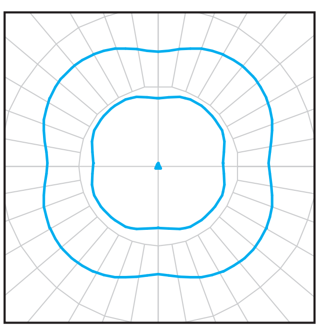
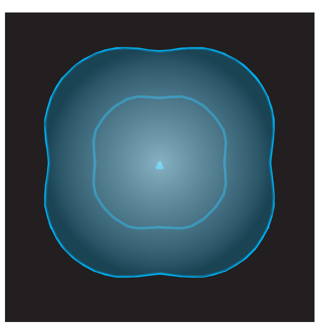
Type III light distributions have a preferred lateral width of 40 degrees. This distribution is intended for luminaires mounted at or near the side of medium width roadways or areas, where the width of the roadway or area does not exceed 2.75 times the mounting height.

T4 Optic

The type IV distribution produces a semicircular light meant for mounting on the sides of buildings and walls. It's best for illuminating the perimeter of parking areas and businesses. The intensity of the Type IV lighting has the same intensity at angles from 90 degrees to 270 degrees.

Type IV light distributions have a preferred lateral width of 60 degrees. This distribution is intended for side-of-road mounting and is generally used on wide roadways where the roadway width does not exceed 3.7 times the mounting height.

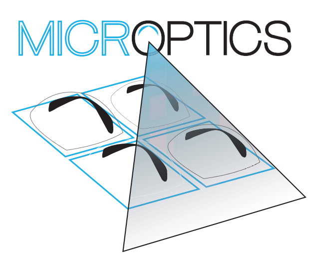



T5 Optic - Symmetrical

Type V produces a symmetrical distribution that has the same intensity at all angles. This distribution has a uniform symmetry of candlepower that is essentially the same at all lateral angles. It is meant for large, commercial parking lot lighting as well as areas where sufficient, evenly distributed light is necessary

SILICONE OPTICS

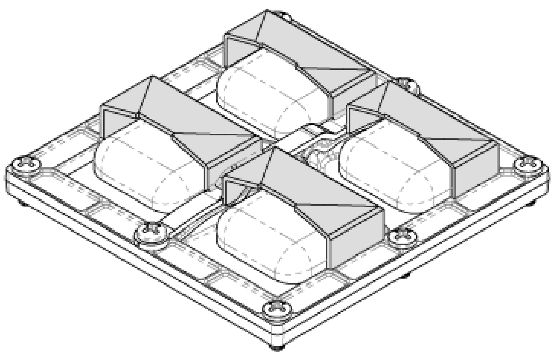
NLS Lighting Silicone Micro Optical System technology takes quality and performance to the highest level. Vandal resistant, superior clarity—Micro Optics have become the best and lasting solution in the industry.



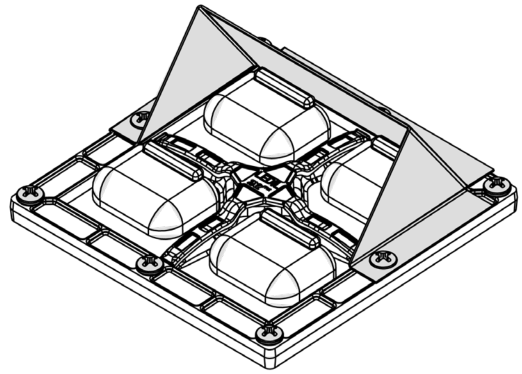
BENEFITS
- Produces superior 96% clarity
- Heat resistant to 150° C, 50% higher than acrylic
- Ecologically friendly—no glare
- Vandal-resistant
- Does not brittle, crack, or yellow over time

PRODUCT SPECIFICATIONS

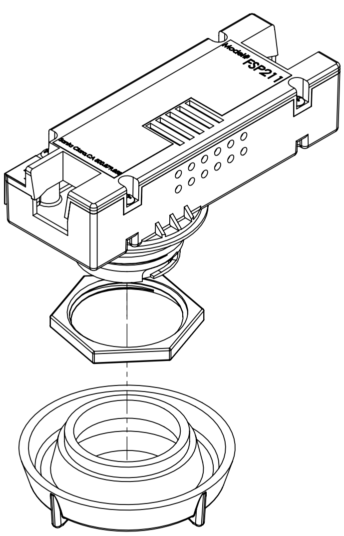
HOUSE SIDE SHIELD



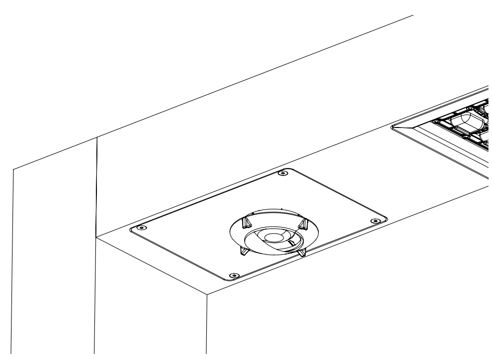
AUTOMOTIVE
HOUSE SIDE SHIELD



FSP-211



Motion Sensor Placement



TRAC POLE

RECTANGULAR ALUMINUM POLE

SHAFT

Rectangular Aluminum Pole (RAP) shaft (.250 Wall) is 6061 T6 Extruded Aluminum, 4 X 6 inch to provide a seamless transition into the Trac fixture. Poles have ground lug welded inside hand-hole opposite side of the pole extrusion. Pole Extrusion is conjoined to Anchor Base by welding internal and external to pole shaft. For custom configuration consult Factory.

ANCHOR BOLTS

All anchor bolts are fully hot dipped galvanized and come with two galvanized nuts and washers per bolt. Anchor bolts are not included for Custom Bolt Circle. Anchor Bolts are "J" style, with a 4" hook at the end for added strength.1" Anchor Bolts are 1" diameter x 36" long with a 4" long "J" hook.

ANCHOR BASE

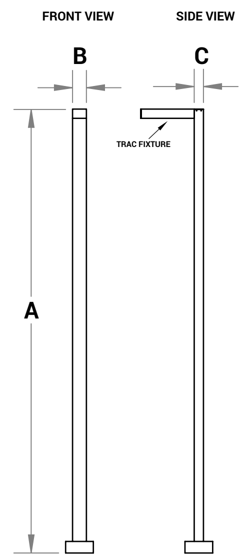
Base plates are machined from 6061 Aluminum, 12" square, 1" thick with 1" anchor bolts.

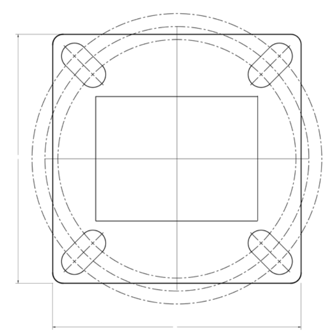
HAND HOLE COVER AND POLE CAP

All poles come with removable machined aluminum pole cap. All poles caps are powder coated to match the pole. All base covers are made of aluminum and powder coated to match the pole. Hand Hole is constructed of 3"x 5" rectangular aluminum tubing which is welded to pole shaft for added strength. Hand Hole covers are provided with internal bridge support and also powder coated to match pole finish.

FINISH

All poles have minimum 3 to 5 mils powder coat finish. All poles are sandblasted prior to powder coat application.





12" Base

***Consult Factory for Bolt Circle Template**

DIMEN-SION	RAP
A	10-16 ft. or Custom Height
B	6 in.
C	4 in.

RECTANGULAR ALUMINUM POLE DETAIL

* Anchor Bolts are NOT included with Custom Bolt Circle.
* Do NOT pour concrete referencing this drawing. Consult Factory.
* Must Specify 4-Bolt Pattern.
* Customer responsible for doing calculations if NLS pole is not ordered.

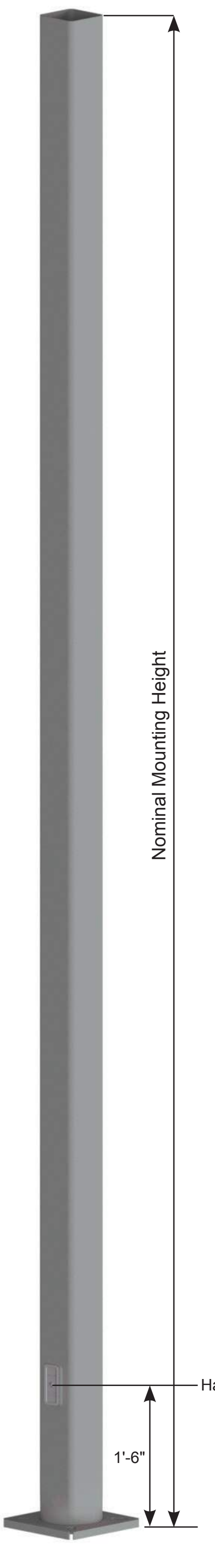
DS330

Fatigue Resistant Soft Square Steel Post

Job Name: ______________________ Client Name: ______________________

Job Location - City: ____________ State: ________ Created By: ____________ Date: ________

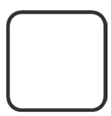
Product: DS330 ____________ Quote: ________ Customer Approval: ____________ Date: ________



Tenon Top*

Pole Cap - Plastic

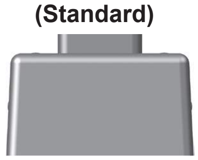
Cross Section



Soft Square

Handhole

Full Base Cover (Standard)



Dart Square - 2T (Optional)

*Consult factory on loading criteria for pole top mounted luminaires and/or brackets.

SPECIFICATIONS

Pole Shaft - The pole shaft is fabricated from hot rolled welded steel tubing of one-piece construction with a minimum yield strength of 55 KSI.

Pole Top – A removable pole cap is provided for poles receiving drilling patterns for side-mount luminaire arm assemblies. For top mount luminaire and/or bracket consult the factory. Consult the luminaire manufacturer for correct tenon size or drill pattern. Other pole top options include pole cap only (PC) or plain top (PL) which is typical when the pole top diameter matches the necessary slip fit dimensions.

Handhole – A reinforced handhole with grounding provision is provided at 1'-6" from the base end of the pole assembly. Each handhole includes an easy to install, self-contained Swing Latch handhole cover assembly. U.S. Patent Swing Latch cover is fabricated from durable polycarbonate/ABS blend plastic. All pole assemblies are provided with a 2.50" x 5.00" rectangular handhole. Handhole dimensions are nominal.

Base Cover – A two-piece full base cover fabricated from ABS plastic is provided with each pole assembly. Additional base cover options, including the dart square (2T) cast aluminum cover, are available upon request.

Anchor Bolts - Anchor bolts conform to ASTM F1554 Grade 55 and are provided with two hex nuts and two flat washers. Bolts have an “L” bend on one end and are galvanized a minimum of 12" on the threaded end.

Hardware - All structural fasteners are galvanized high strength carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

Finish - Standard finishes are either Galvanized (GV) or Finish Painted (FP). Additional finish options including Finish Paint over Galvanizing (FPGV) or any of the V-PRO™ Finish Coating Systems are available upon request. See the product ordering code for color options.

Design Criteria - Please reference Design Criteria Specification for appropriate design conditions.

DS330
Fatigue Resistant Soft Square Steel Post

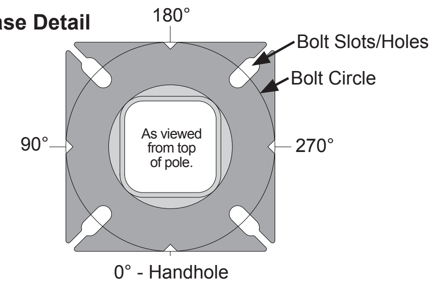
valmont® STRUCTURES

Job Name:	Client Name:
Job Location - City: State:	Created By: Date:
Product: DS330 Quote:	Customer Approval: Date:

ANCHORAGE DATA

POLE		BASE PLATE				ANCHOR BOLTS		
POLE BASE SQUARE (IN)	WALL THK (GA)	BOLT CIRCLE DIA (IN)	BOLT CIRCLE ± (IN)	SQUARE (IN)	THK (IN)	DIA x LENGTH x HOOK (IN)	PROJECTION (IN)	± (IN)
4.00	11	8.50	0.50	8.25	0.750	0.75 x 17.00 x 3.00	3.50	0.25
4.00	7	8.50	0.50	8.25	0.875	0.75 x 17.00 x 3.00	3.63	0.25
5.00	11	11.00	1.00	11.00	1.000	0.75 x 17.00 x 3.00	3.75	0.25
5.00	7	11.00	1.00	11.00	1.000	0.75 x 17.00 x 3.00	3.75	0.25
6.00	7	12.00	1.00	12.50	1.000	1.00 x 36.00 x 4.00	4.25	0.25

Anchor Base Detail



DESIGNATION,LOAD AND DIMENSIONAL DATA

	DESIGN INFORMATION						POLE DIMENSIONS[3]				DESIGNATION
	80 MPH w/1.3 GUST		90 MPH w/1.3 GUST		100 MPH w/1.3 GUST						
NOMINAL MOUNTING HEIGHT	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	SHAFT BASE SQUARE[3] (IN)	SHAFT TOP SQUARE (IN)	WALL THK (GA)	STRUCTURE WEIGHT[2] (LBS)	
10'-0"	30.6	765	23.8	595	18.9	473	4.00	4.00	11	75	400Q100
12'-0"	24.4	610	18.8	470	14.8	370	4.00	4.00	11	90	400Q120
14'-0"	19.9	498	15.1	378	11.7	293	4.00	4.00	11	100	400Q140
16'-0"	15.9	398	11.8	295	8.9	223	4.00	4.00	11	115	400Q160
18'-0"	12.6	315	9.2	230	6.7	168	4.00	4.00	11	125	400Q180
20'-0"	9.6	240	6.7	167	4.5	150	4.00	4.00	11	140	400Q200
	17.7	443	12.7	343	9.4	235	5.00	5.00	11	185	500Q200
	28.1	703	21.4	535	16.2	405	5.00	5.00	7	265	500W200
25'-0"	4.8	150	2.6	100	1.0	50	4.00	4.00	11	170	400Q250
	10.8	270	7.7	188	5.4	135	4.00	4.00	7	245	400W250
	9.8	245	6.3	157	3.7	150	5.00	5.00	11	225	500Q250
	18.5	463	13.3	333	9.5	238	5.00	5.00	7	360	500W250
30'-0"	6.7	168	4.4	110	2.6	65	4.00	4.00	7	291	400W300
	4.7	150	2.0	50	N/A	N/A	5.00	5.00	11	265	500Q300
	10.7	267	6.7	167	3.9	100	5.00	5.00	7	380	500W300
	19.0	475	13.2	330	9.0	225	6.00	6.00	7	520	600W300
35'-0"	5.9	150	2.5	100	N/A	N/A	5.00	5.00	7	440	500W350
	12.4	310	7.6	190	4.2	105	6.00	6.00	7	540	600W350
40'-0"	7.2	180	3.0	75	N/A	N/A	6.00	6.00	7	605	600W400

1. Maximum EPA (Effective Projected Area) and weight values are based on side mounted fixtures only. Consult factory on loading criteria for pole top mounted luminaires and/or brackets. Variations from sizes above are available upon inquiry at the factory. Satisfactory performance of poles is dependent upon the pole being properly attached to a supporting foundation of adequate design.
2. Structure weight is a nominal value which includes the pole shaft and base plate only.
3. Belled-bottom will have reduced thickness due to the cold-working process. However, the belled-bottom meets or exceeds the structural capacity of the original square section. In addition, the rounded section provides better fatigue resistance.

PRODUCT ORDERING CODES

MODEL	DESIGNATION	FIXTURE MOUNTING	FINISH SYSTEM	STANDARD COLOR OPTIONS	BASE COVER	ANCHOR BOLTS	SUPPLEMENTAL INFO
DS330				--	--	--	

DESIGNATION

Select Correct Designation from the Load and Dimensional Data Chart.

FIXTURE MOUNTING

Drill Mounting (See Orientation)
D1 = (1) Drilling @ 270°
D2 = (2) Drillings @ 90° & 270°
D4 = (4) Drillings @ 0°, 90°, 180°, & 270°
D5 = (2) Drillings @ 180° & 270°
D6 = (3) Drillings @ 90°, 180°, & 270°

Tenon Mounting
P2 = 2.38" OD x 4" tenon
P4 = 4.00" OD x 6" tenon
P5 = 2.88" OD x 4" tenon
P6 = 2.88" OD x 5" tenon
P7 = 2.38" OD x 5" tenon
P9 = Special Size (Specify)

Other Options
PC = Pole Cap
PL = Plain Top (No Cap)

FINISH SYSTEM

GV = Galvanized
FP = Finish Painted
-----OPTIONAL-----
FPGV = Finish Paint over Galvanizing
VP30 = V-PRO™ 30 System
VP32 = V-PRO™ 32 System
VP53 = V-PRO™ 53 System
VP54 = V-PRO™ 54 System
VP57 = V-PRO™ 57 System
VP100 = V-PRO™ 100 System
VP105 = V-PRO™ 105 System

STANDARD COLOR OPTIONS

GV = Galvanized
BK = Black
DB = Dark Bronze
MB = Medium Bronze
WH = White
LG = Light Gray
CB = Bronze
DG = Dark Green
ST = Sandstone
HTG= Hunter Green
SG = Slate Gray
SL = Silver
SC = Special Color (Specify)

BASE COVER

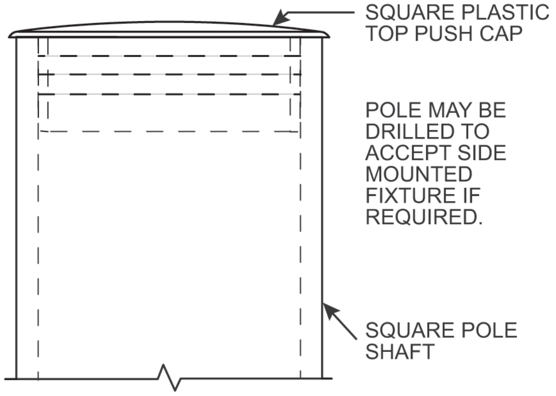
FBC = Full Base Cover
-----OPTIONAL-----
2T = Square Dart Cover

ANCHOR BOLTS

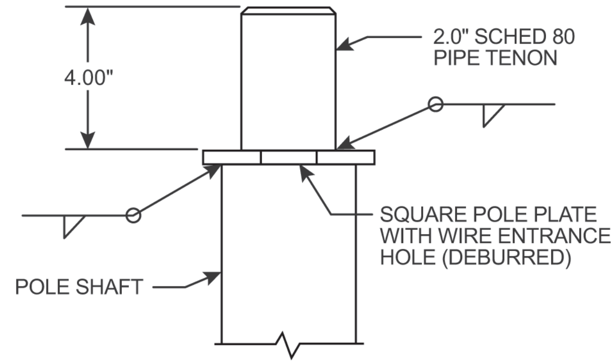
AB = With Anchor Bolts
LAB = Without Anchor Bolts

SPC7207 12/17 valmontstructures.com carries the most current spec information and supersedes these guidelines.

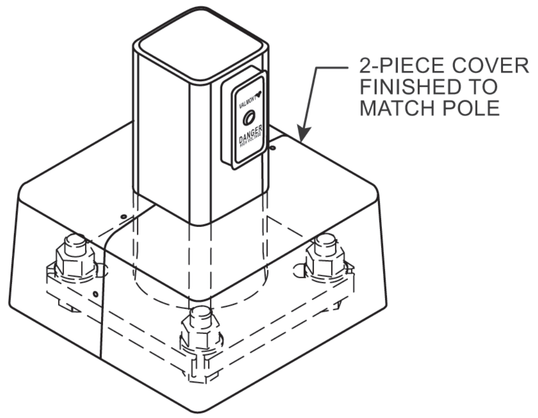
DS330 - Fatigue Resistant Square Non-Tapered Steel Pole



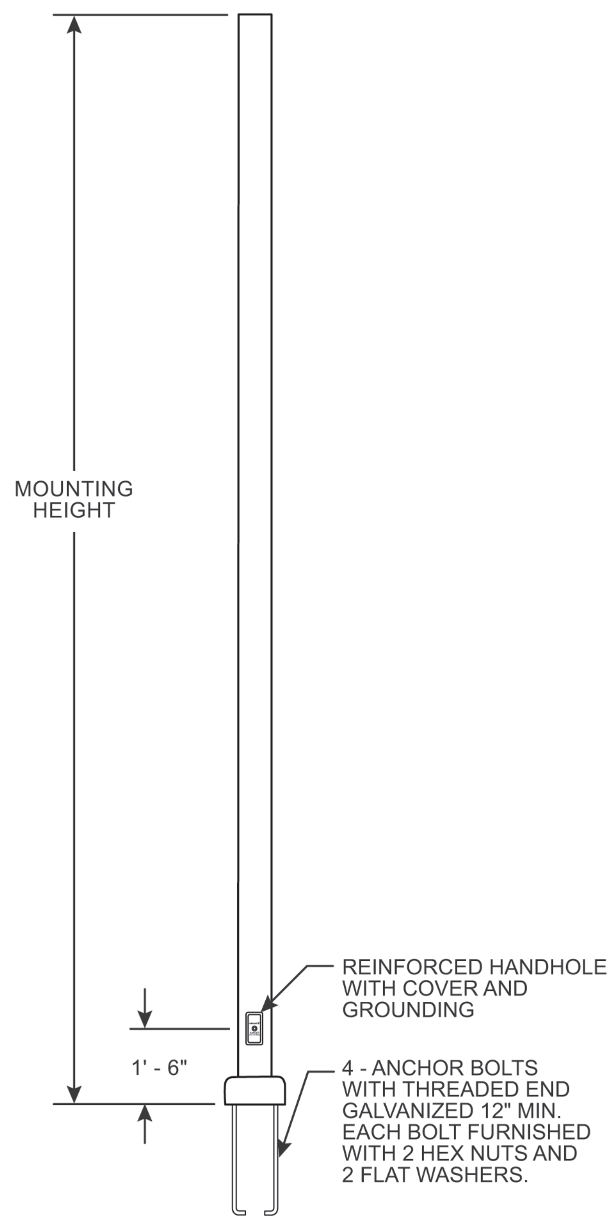
CAP DETAIL (STANDARD)

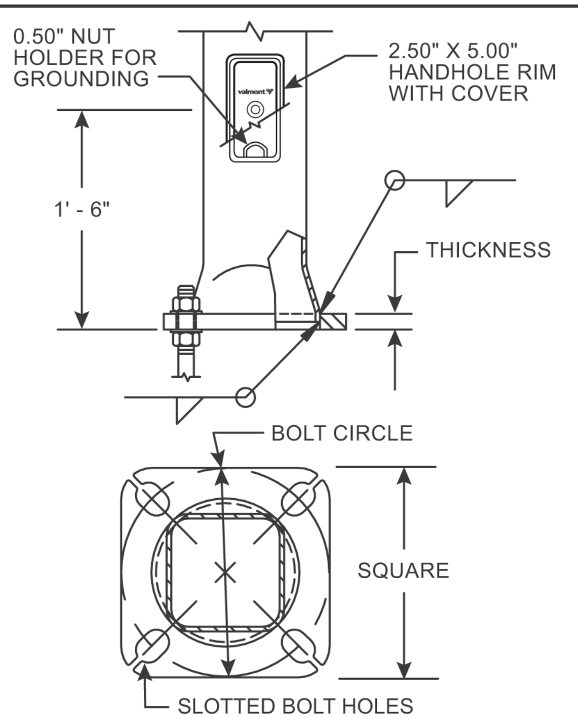


P2 TENON DETAIL (OPTIONAL)



FULL BASE COVER (STANDARD)





POLE BASE AND HANDHOLE DETAIL

DS330 POLE DETAIL

LITESPHERE 2.0

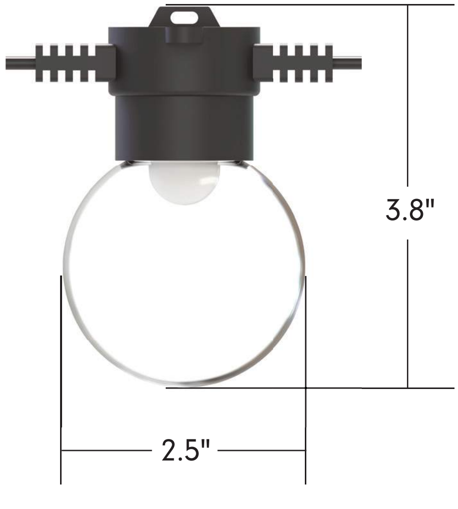
tivoli®

Project: ____________________ TYPE: ____________________

Product Features

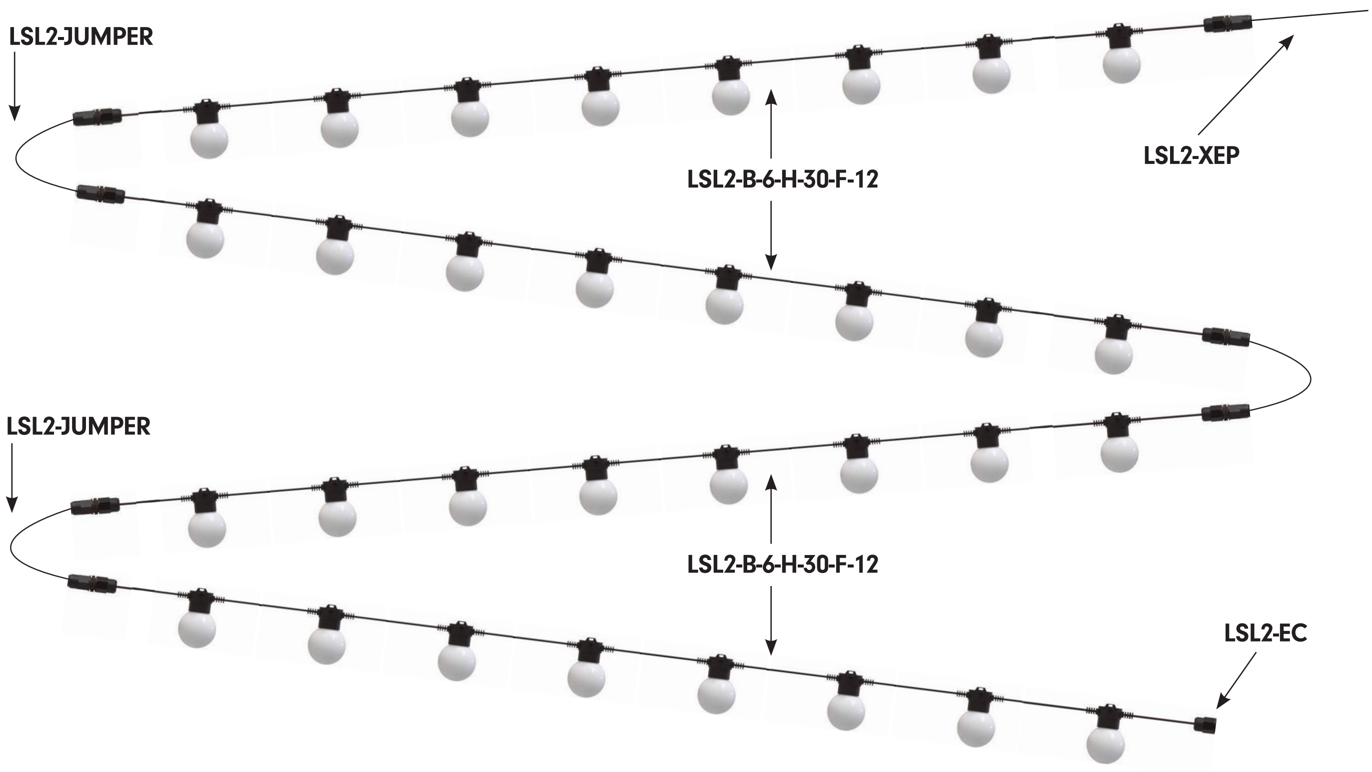
- Tivoli's next evolution of Litesphere delivers a robust specification-grade strand with factory molded standard spacing for consistent quality from start to finish
- Litesphere 2.0 design provides optional suspended mounting or a twist-off cap for surface applications
- 12V DC Low voltage system for long runs
- IP67
- cULus
- 3 Year warranty

Dimensions



Tivoli, LLC. reserves the right to modify this specification without prior notice.

System Configuration Example



Strand Order Guide

Note: For suspension application, a catenary cable is required for proper installation. Please contact Tivoli for recommendations on unique mounting applications.

Product	Wire	Spacing	LED Type	LED Color	Globe	Voltage
LSL2	-	-	-	-	-	-
Litesphere 2.0	**B** Black	**06** 6″ OC	**V** Very High Output	**19** 1900K	**C** Clear	**12** 12V DC
	W White	**12** 12″ OC	**H** High Output	**27** 2700K	**F** Frosted	
		18 18″ OC	**S** Standard Output	**30** 3000K	**O** Opal	
		24 24″ OC		**35** 3500K	**R** Red	
		36 36" OC		**40** 4000K	**N** Orange	
		48 48" OC		**50** 5000K*	**Y** Yellow	
				AM Amber*	**G** Green	
				RB Royal Blue*	**B** Blue	
				RD Red*	**P** Purple	
				GN Green*	**Z** Varried Colors	
				YL Yellow*		

*Available in VHO LED only

Tivoli, LLC. reserves the right to modify this specification without prior notice.

Power Lead Order Guide

Figure A - All Litesphere 2.0 are evenly cut between globes according to specified spacing.
Figure B - Power leads are added to the end cut, extending the total length of the power lead.

LSL2-XEP-X-XX
X = B (Black), W (White)
XX = 05 (5'), 10 (10'), 15 (15'), 20 (20'), 25 (25')
For custom length consult factory

Figure A

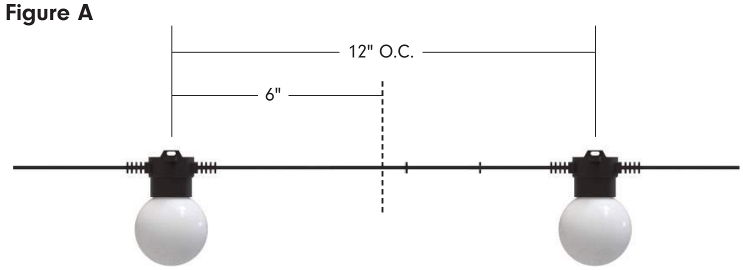
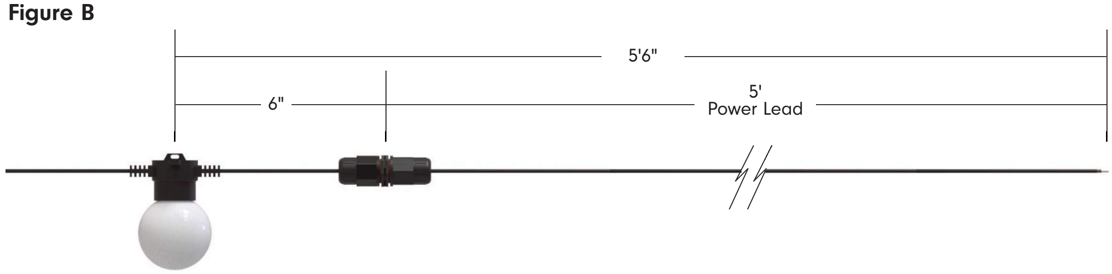


Figure B



Jumper Order Guide

Figure A - All Litesphere 2.0 are evenly cut between globes according to specified spacing.
Figure B - Jumpers are added between the cuts, extending the total length of wire between globes.

LSL2-JUMPER-X-XX
X = B (Black), W (White)
XX = 05 (5'), 10 (10')
For custom length, consult factory

Figure A

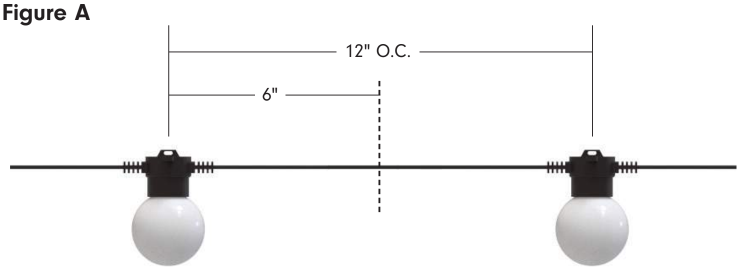
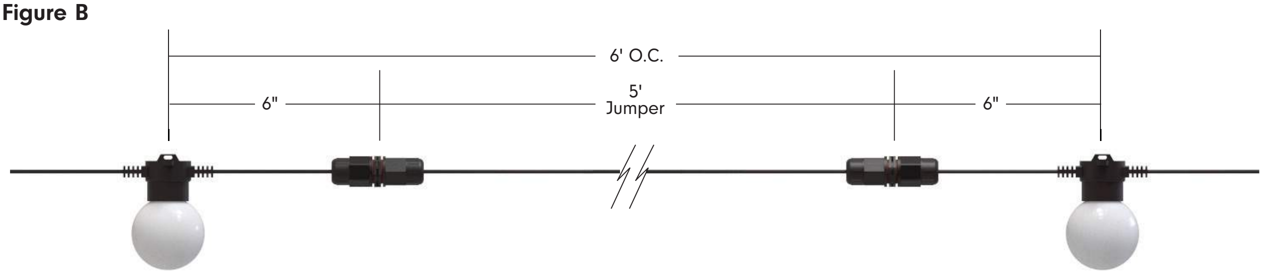


Figure B



Specifications

Output - Standard Brightness	6"	12"	18"	24"	36"	48"
Lumens/ft	11	6	4	3	2	N/A
Watts/ft	0.17	0.09	0.06	0.04	0.03	0.02
Maximun Electrical Run	130'	180'	230'	250'	275'	275'

Output - High Output	6"	12"	18"	24"	36"	48"
Lumens/ft	29.9	15	10	7	5	N/A
Watts/ft	0.46	0.23	0.15	0.12	0.08	0.05
Maximun Electrical Run	80'	110'	130'	150'	175'	200'

Output - Very High Output	6"	12"	18"	24"	36"	48"
Lumens/ft	180	90.2	60	45	30	N/A
Watts/ft	1.92	0.96	0.64	0.48	0.32	0.24
Maximun Electrical Run	30'	55'	70'	80'	90	100'

Output - Based on 3000K Clear Globe	
Efficacy	Standard Brightness (40), High Output (46), Very High Output (94)
Electrical	
Input Voltage	12V DC
Power Consumption (W/LED)	Standard Brightness (.09), High Output (.23), Very High Output (.96)
Control	
Control System	0-10V, ELV, MLV, DMX 512 (Dim to 1% with an Infinity power supply and a 0-10V Lutron Diva dimmer)
Physical	
Dimensions	2.5”W x 3.8”H
Socket Housing	PVC
American Wire Gauge	14 AWG
Globe	PE
Mounting	Surface Mount, Suspended
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)
Certification and Testing	
Certification	cULus
Environment	Wet Location
Lumen Maintenance (L70) Hours	70,000
IP Rating	IP67
Warranty	3 Years

www.tivolilighting.com tel: 714-957-6101 fax: 714-427-3458

Specifications

EPA	6"	12"	18"	24"	36"	48"
Standard	0.10	0.06	0.05	0.04	N/A	N/A
Hat 8"	N/A	0.53	0.37	0.28	N/A	N/A
Hat 13"	N/A	N/A	0.93	0.71	N/A	N/A
Dish 10"	N/A	0.82	0.55	0.42	N/A	N/A
Flower 10"	N/A	0.82	0.55	0.42	N/A	N/A
Flower 13"	N/A	N/A	0.93	0.71	N/A	N/A

Weights	6"	12"	18"	24"	36"	48"
lb/ft	0.33	0.28	0.24	0.20	0.17	0.13
lb/ft with catenary cable	0.35	0.30	0.26	0.22	0.19	0.15

Tivoli, LLC. reserves the right to modify this specification without prior notice.

Mounting Options

SURFACE/FLUSH

For surface mount applications, remove the top suspension-plate by turning counter-clockwise until off. Place socket flush against the desired surface and mount using proper screws according to substrate.

SUSPENDED

Suspended mounting will use a combination of LS-Cable, LS-Locks with LS-UVZP. Tension the cable wire with our LS-TT (Tension Tool) for desired sag (Please adhere to local city code for suspended application).

Note: For suspension application, a catenary cable is required for proper installation.
Please contact Tivoli for recommendations on unique mounting applications.

Mounting Accessories

LS-CABLE-60 Catenary Cable Kit - 60'
(1/8" galvanized cable includes 2 cable locks for use with loads up to 200lbs)

LS-CABLE-110 Catenary Cable Kit - 110'
(1/8" galvanized cable includes 2 cable locks for use with loads up to 200lbs)

LS-CABLE-500 Catenary Cable Kit - 500'
(1/8" galvanized cable for use with loads up to 200lbs)

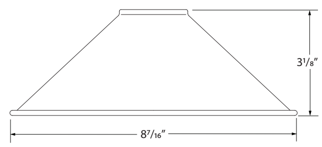
LS-LOCK-X Cable Lock
X = **2** (2 Locks), **4** (4 locks) Includes (1) cable release key. Cable Lock for 1/8th inch cable, Heavy-duty lockable fasteners support loads up to 200 lbs. Can be easily adjusted without the use of tools.

LS-TT
Catenary Cable Tensioning Tool up to 880lbs with minimal effort due to the 6:1 gear drive mechanism. Integral torque gauge controls the load applied to the wire, giving consistent tension every time and optimizing the life of the wire.

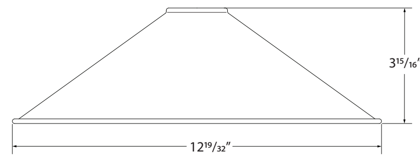
LS-UVZP-BK-XX
XX = 30 (30pcs), 50 (50pcs)
Black UV resistant, heavy duty ties.
Maximum weight up to 100 lbs./per tie.

Light Shades

HAT



SHADE-HT-BK-BK-8
Light Shade - HAT
8.3″ Black Top, Black Bottom
Weight: 0.38 lb

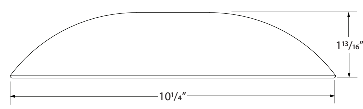


SHADE-HT-BK-BK-13*
Light Shade - HAT
12.6″ Black Top, Black Bottom
Weight: 1.06 lb

SHADE-HT-BK-CO-13 *
Light Shade - HAT
12.6″ Black Top, Copper Bottom
Weight: 1.06 lb

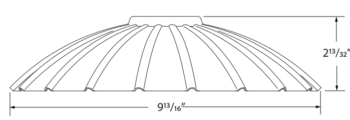
*Consult factory for lead time and MOQ

DISH

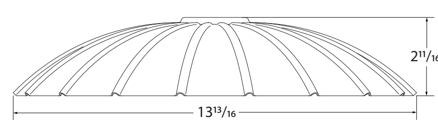


SHADE-DS-BK-BK-10
Light Shade - DISH
10.2″ Black Top, Black Bottom
Weight: 0.72 lb

FLOWER



SHADE-FL-BK-BK-10
Light Shade - FLOWER
9.8″ Light Shade , Black Top, Black Bottom
Weight: 0.54 lb



SHADE-FL-BK-BK-13
Light Shade - FLOWER
13.8″ Light Shade, Black Top, Black Bottom
Weight: 1.1 lb

Accessories

SHADE-ADP-LSL2-XX-01 2.0 Light Shade Adapter
X = BK (Black), WH (White)
PVC Black Adapter - Sold individually.

SHADE-ADP-LSL2-XX-25 2.0 Light Shade Adapter
X = BK (Black), WH (White)
PVC Black Adapter Kit - Sold in packs of 25

SHADE-ADP-LSL2-XX-50 2.0 Light Shade Adapter
X = BK (Black), WH (White)
PVC Black Adapter Kit - Sold in packs of 50

Tivoli, LLC. reserves the right to modify this specification without prior notice.

Replacement Parts

Very High Output

LSL-19-V-12
12V Wedge base
1900K
LSL-27-V-12
12V Wedge base
2700K
LSL-30-V-12
12V Wedge base
3000K
LSL-35-V-12
12V Wedge base
3500K
LSL-40-V-12
12V Wedge base
4000K
LSL-50-V-12
12V Wedge base
5000K

LSL-AM-V-12
12V Wedge base
Amber
LSL-RD-V-12
12V Wedge base
Red
LSL-RB-V-12
12V Wedge base
Royal Blue
LSL-GN-V-12
12V Wedge base
Green
LSL-YL-V-12
12V Wedge base
Yellow

Standard & High Output

STANDARD
LSL-19-S-12
12V Wedge base
1900K
LSL-27-S-12
12V Wedge base
2700K
LSL-30-S-12
12V Wedge base
3000K
LSL-35-S-12
12V Wedge base
3500K
LSL-40-S-12
12V Wedge base
4000K

HIGH OUTPUT
LSL-19-H-12
12V Wedge base
1900K
LSL-27-H-12
12V Wedge base
2700K
LSL-30-H-12
12V Wedge base
3000K
LSL-35-H-12
12V Wedge base
3500K
LSL-40-H-12
12V Wedge base
4000K

LST-CG
Clear globe
LST-FG
Frosted globe
LST-OG
Opal globe
LST-OR
Orange globe
LST-YG
Yellow globe
LST-GG
Green globe
LST-BG
Blue globe
LST-PG
Purple globe

LSL2-EC-X
X = B (black), W (white)
Litesphere 2.0 End-Cap
Weight: 0.0375 lb
sold each

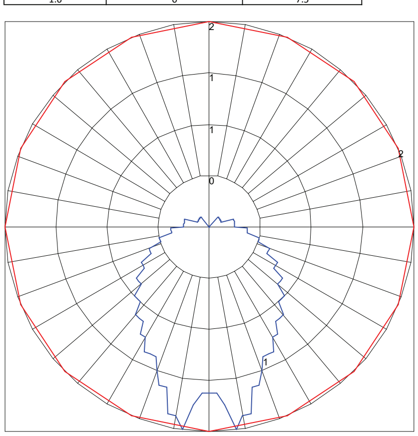
Photometrics

Frosted Globe - Based on 3000K LED

Standard Brightness

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
1.6	0	7.5

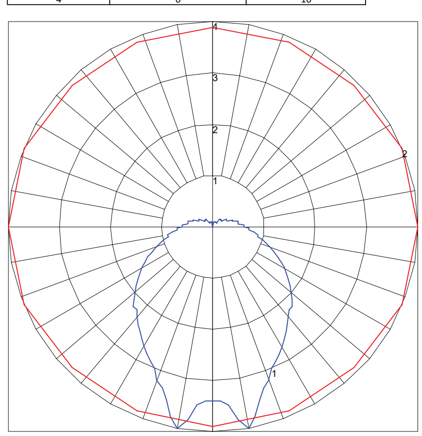


Maximum Candela = 1.6 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
4	0	10

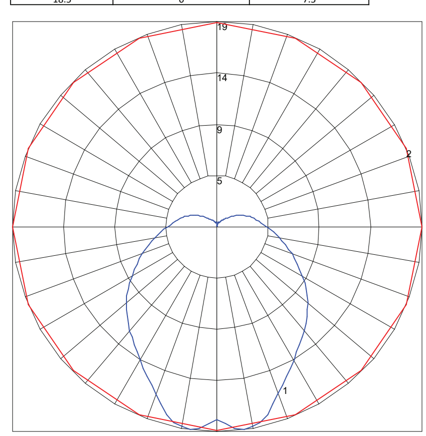


Maximum Candela = 4 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
18.5	0	7.5



Maximum Candela = 18.5 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

Tivoli, LLC. reserves the right to modify this specification without prior notice.

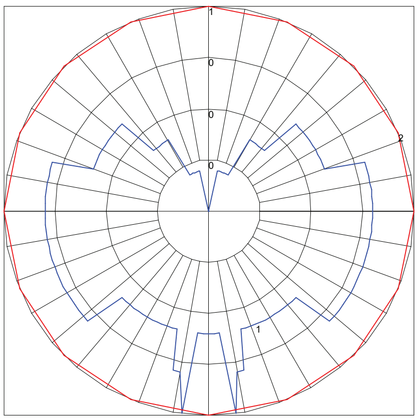
Photometrics

Opal Globe - Based on 3000K LED

Standard Brightness

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
0.5	0	7.5

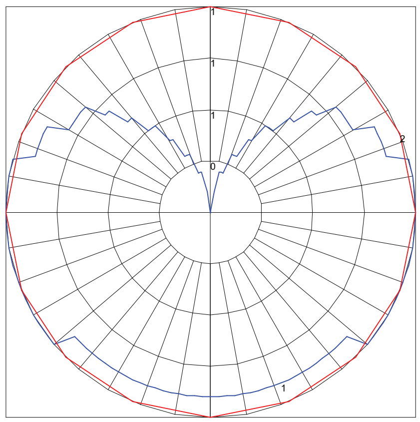


Maximum Candela = .5 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
1	0	50

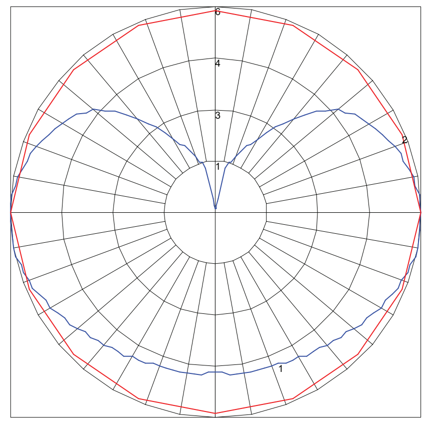


Maximum Candela = 1 Located At Horizontal Angle = 0, Vertical Angle = 50
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (50) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
5.9	0	77.5



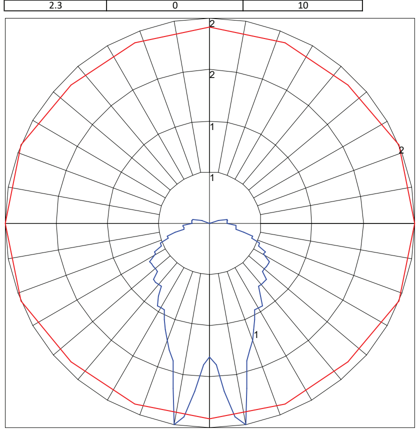
Maximum Candela = 5.9 Located At Horizontal Angle = 0, Vertical Angle = 77.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (77.5) (Through Max. Cd.)

Clear Globe - Based on 3000K LED

Standard Brightness

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
2.3	0	10

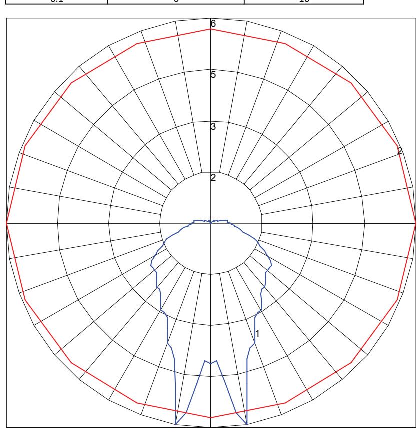


Maximum Candela = 2.3 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
6.1	0	10

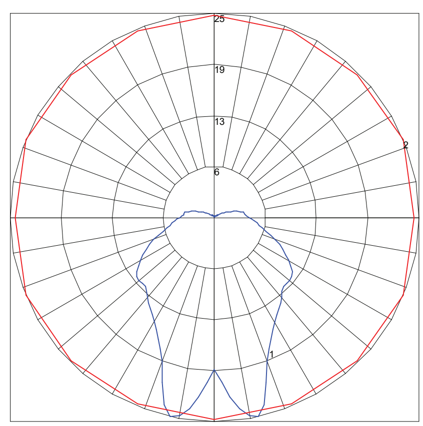


Maximum Candela = 6.1 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY		
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle
25.3	22.5	12.5



Maximum Candela = 25.3 Located At Horizontal Angle = 22.5, Vertical Angle = 12.5
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (12.5) (Through Max. Cd.)

Power Supplies

ADNM - NON DIMMING

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-D	Indoor / Outdoor	100-277V AC 50/60 HZ	12V DC	1	60W	5A
	ADNM-80-1-5-12-D				1	60W	5A
	ADNM-150-2-5-12-D				2	2x60W	2x5A
	ADNM-240-3-5-12-D				3	3x60W	3x5A
	ADNM-320-4-5-12-D				4	4x60W	4x5A

ADNM - 0-10V DIMMING

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-DOT	Indoor / Outdoor	100-277V AC 50/60 HZ	12V DC	1	60W	5A
	ADNM-80-1-5-12-DOT				1	60W	5A
	ADNM-150-2-5-12-DOT				2	2x60W	2x5A
	ADNM-240-3-5-12-DOT				3	3x60W	3x5A
	ADNM-320-4-5-12-DOT				4	4x60W	4x5A

ADNM - DMX SINGLE ADDRESS

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-DIN	Indoor / Outdoor	100-277V AC 50/60 HZ	12V DC	1	60W	5A
	ADNM-80-1-5-12-DIN				1	60W	5A
	ADNM-150-2-5-12-DIN				2	2x60W	2x5A
	ADNM-240-3-5-12-DIN				3	3x60W	3x5A
	ADNM-320-4-5-12-DIN				4	4x60W	4x5A

ADNM - DMX MULTI ADDRESS

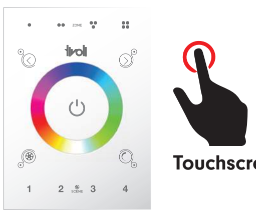
DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-150-2-5-12-DIN-2	Indoor / Damp	100-277V AC 5o/60 Hz	12V DC	2	2x60W	5A
	ADNM-240-3-5-12-din-3				3	3x60W	3x5A

INFINITY - MLV / ELV / 0-10V / PWM / TRIAC

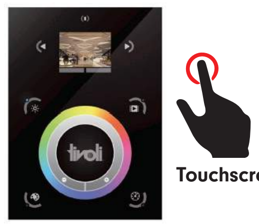
Dim to 1% with a 0-10V Lutron Diva dimmer (by others)

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	MIN LOAD	CIRCUIT CAPACITY
Infinity Series Class 2 Transformer	INF-J-30-1-2.5-12	Indoor / Outdoor	100 - 277V AC	12V DC	1	30W	3W	2.5A
	INF-J-60-1-5-12				1	60W	6W	5A
	INF-J-180-3-5-12				3	3x60W	3x6W	3x5A
	INF-J-300-5-5-12				5	5x60W	5x6W	5x5A

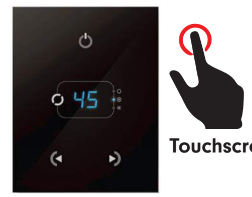
Controls


Touchscreen

TVOQ-1-WH
White
512 DMX channel, 16 scene,
4 zone, glass touch screen


Touchscreen

TVOQ-10-XX-7
XX = BK (Black), WH (White)
1024 DMX channel, 500 scene,
10 zone, glass touch screen


Touchscreen

TVOQ-2-BK
Black
512 DMX channel, 99 scene,
1 zone, glass touch screen

Fixture Type:	
Catalog Number:	
Project:	
Location:	

WAC LIGHTING

Cubix

Wall Mount 3000K

Model	Color Temp & CRI	Lumens	Finish
❍ WS-W220208	❍ 30 3000K - 80	285	❍ BK Black ❍ BZ Bronze ❍ WT White

Example: **WS-W220208-30-WT**

For custom requests please contact customs@waclighting.com

DESCRIPTION

Available in single and double directions, Cylinder is ideal for illuminating outdoor entrances and walkways.

FEATURES

- Multiple LED array for uniform illumination
- WS-W220208 is one direction, WS-W220212 is an up & down light
- ACLED driverless technology
- 5 Year warranty

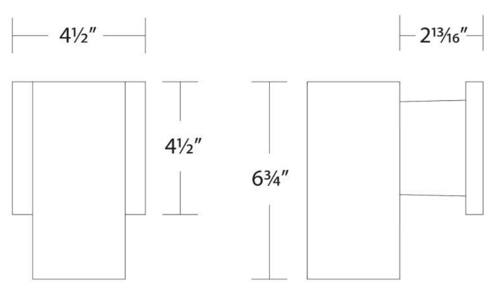
SPECIFICATIONS

Color Temp:	3000K
Input:	120 VAC,50/60Hz
CRI:	80
Dimming:	ELV: 100-10%
Rated Life:	50000 Hours
Mounting:	Installs over a 3" or 4" Junction Box,Can be mounted on wall in all orientations
Standards:	ETL, cETL
	Wet Location Listed
Construction:	Die-cast aluminum

FINISHES:

White Black Bronze

LINE DRAWING:



WAC LIGHTING

Fixture Type:	
Catalog Number:	
Project:	
Location:	

Cubix

Wall Mount 3000K

Model	Color Temp & CRI	Lumens	Finish
❍ WS-W220212	❍ 30 3000K - 80	765	❍ BK Black ❍ BZ Bronze ❍ WT White

Example: **WS-W220212-30-WT**

For custom requests please contact customs@waclighting.com

DESCRIPTION

Available in single and double directions, Cylinder is ideal for illuminating outdoor entrances and walkways.

FEATURES

- Multiple LED array for uniform illumination
- WS-W220208 is one direction, WS-W220212 is an up & down light
- ACLED driverless technology
- 5 Year warranty

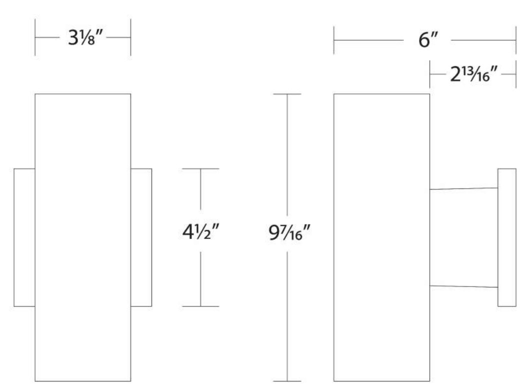
SPECIFICATIONS

Color Temp:	3000K
Input:	120 VAC,50/60Hz
CRI:	80
Dimming:	ELV: 100-10%
Rated Life:	50000 Hours
Mounting:	Installs over a 3" or 4" Junction Box,Can be mounted on wall in all orientations
Standards:	ETL, cETL
	Wet Location Listed
Construction:	Die-cast aluminum

FINISHES:

White Black Bronze

LINE DRAWING:



City of Portsmouth Planning Department

Site Plan Review Application Fee

Project: 100 Durgin Lane **Map/Lot:** Map 239, Lots 13, 16, & 18

Applicant: 100 Durgin Lane Owner, LLC

All development

Base fee $600			$600.00
Plus $5.00 per $1,000 of site costs			
Site costs	$5,600,000	+	$28,000.00
Plus $10.00 per 1,000 S.F. of site development area			
Site development area	660,000 S.F.	+	$6,600.00
		Fee	**$20,000.00**

Maximum fee: $20,000.00

Fee received by: ______________________________ Date: __________

Note: Initial application fee may be based on the applicant's estimates of site costs and site development area. Following site plan approval, the application fee will be recalculated based on the approved site plan and site engineer's corresponding site cost estimate as approved by the Department of Public Works, and any additional fee shall be paid prior to the issuance of a building permit.

Subdivision Application Fee

☒ Lot line revision/verification

$250

Fee	$250.00

Conditonal Use Permit Application Fee

Wetlands Conditonal Use Permit	Greater than 1,000 SF	$1,300.00
Wetlands Conditonal Use Permit (Non-Wetland)		
Development Site		$500.00
Highway Noise Overlay District		$500.00

AUTHORIZATION
100 Durgin Lane, Portsmouth
Map 239, Lots 13, 16 & 18

The undersigned owner and applicant of the above referenced property hereby authorize representatives of Bosen & Associates, PLLC, and Tighe & Bond Civil Engineering to represent their interests before the Portsmouth land use boards and to submit any and all applications and materials related thereto on their behalf solely in connection with the multifamily development thereof.

Oak Street Investment Grade Net Lease Fund Series 2021-2, LLC

Date: April 23, 2024

By: Ryan P. Phelan
Name: Ryan Phelan
Title: Managing Director - Delegatee

100 Durgin Lane Owner, LLC

Date: 4/24/24

By:
Name: ANDREW HAIFI
Title: AUTHORIZED SIGNER