PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

EILEEN DONDERO FOLEY COUNCIL CHAMBERS
CITY HALL, MUNICIPAL COMPLEX, 1 JUNKINS AVENUE

7:00 PM Public Hearings begin **January 16, 2025**

AGENDA

REGULAR MEETING 7:00pm

I. ELECTION OF OFFICERS

II. APPROVAL OF MINUTES

A. Approval of the December 19, 2024 meeting minutes.

III. DETERMINATIONS OF COMPLETENESS

SITE PLAN REVIEW

A. The request of **One Market Square LLC (Owner),** for property located at **1, 21 (15) Congress Street** requesting Site Plan Approval to construct an addition onto the previously approved project at 1 Congress Street and re-development of 15 Congress into a mixed-use building with associated site improvements; a Parking Conditional Use Permit from Section 10.1112.14 of the Zoning Ordinance to allow 21 parking spaces where 53 parking spaces are required. Said property is located on Assessor Map 117 Lots 12-15 and lies within the Character District 5 (CDR-5), Historic and Downtown Overlay Districts. (LU-22-12)

IV. PUBLIC HEARINGS -- OLD BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature.
If any person believes any member of the Board has a conflict of interest,
that issue should be raised at this point or it will be deemed waived.

A. The request of **635 Sagamore Development LLC (Owner**), for property located at **635 Sagamore Avenue** requesting Site Plan Review Approval for the demolition of the existing structures and construction of 4 single family dwellings with associated site improvements. Said property is located on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District. (LU-22-209)

B. The request of **Durgin Square LLC (Owner),** for property located at **1600 Woodbury Avenue** requesting an amended Site Plan Approval for the addition of EV charging stations in the existing parking lot with associated equipment and transformer. Said property is located on Assessor Map 238 Lot 16 and lies within the Gateway Corridor (G1) District. (LU-24-182)

V. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

B. The request of **Durgin Square LLC (Owner),** for property located at **1600 Woodbury Avenue** requesting a Conditional Use Permit approval for the addition of EV charging stations in the existing parking lot with associated equipment and transformer. Said property is located on Assessor Map 238 Lot 16 and lies within the Gateway Corridor (G1) District. (LU-24-182)

C. The request of **One Market Square LLC (Owner),** for property located at **1, 21 (15) Congress Street** requesting Site Plan Approval to construct an addition onto the previously approved project at 1 Congress Street and re-development of 15 Congress into a mixed-use building with associated site improvements; a Parking Conditional Use Permit from Section 10.1112.14 of the Zoning Ordinance to allow 21 parking spaces where 53 parking spaces are required. Said property is located on Assessor Map 117 Lots 12-15 and lies within the Character District 5 (CDR-5), Historic and Downtown Overlay Districts. (LU-22-12)

VI. CITY COUNCIL REFERRALS

A. Zoning Amendments

VII. OTHER BUSINESS

A. 815 Lafayette Road – Requesting a 1-Year extension to the Site Plan Review, Development Site and Wetland Conditional Use approvals that were granted on January 18, 2024.

B. 1 Congress Street – Requesting a second 1-year extension to unless the Board grants approval for the updated 1-15 Congress Street project. The first extension was granted on November 16, 2023 and will expire on February 16, 2025.

C. Chairman updates and discussion items

D. Board discussion of Regulatory Amendments & other matters

VIII. ADJOURNMENT

**Members of the public also have the option to join this meeting over Zoom, a unique meeting ID and password will be provided once you register. To register, click on the link below or copy and paste this into your web browser:*

https://us06web.zoom.us/webinar/register/WN_hOuHiBUWShSs0Vvpw2Us8Q

City of Portsmouth
Planning Department
1 Junkins Ave, 3rd Floor
Portsmouth, NH
(603)610-7216

Memorandum

To: Planning Board

From: Peter Stith, AICP
Planning Manager

Date: January 16, 2025

Re: Recommendations for the January 16, 2025 Planning Board Meeting

I. ELECTION OF OFFICERS

The Chair will call for nominations for Chair and Vice Chair for the year.

Please find the section on Board Membership and Officers as found in the Planning Board Rules and Procedures below:

B. Board Membership and Officers.

…

2. Officers: Board members shall elect annually from its membership in January of each year a Chair and Vice-Chair. The votes shall be public votes. The concurring votes of five members in attendance at a meeting shall be necessary to elect each Officer.

3. Duties of the Chair: The Chair shall:

a) Preside at all meetings.
b) Assist in the preparation of the agenda for each meeting in consultation with City staff.
c) Sign Board letters of decision, and Board approved plans for recording at the registry of deeds.
d) Have authority to sign agreements with consultants to the Planning Board only after: 1) a majority vote by the Planning Board specifically granting such authority; and, 2) the approval of the City Council to expend funds for a consultant.
e) Appoint alternate Board Members to sit in the absence of regular Board members.
f) Have complete voting privileges on all matters, including the election of officers.

g) Report any discussion or action relative to the Board that has taken place since the last meeting.
h) Receive, review and refer appropriate questions from the Board members to staff.
i) Represent the Planning Board outside Planning Board meetings, including before the City Council.

4. Duties of the Vice-Chair: The Vice-Chair shall assist the Chair and, in the absence of the Chair, shall have all the powers and duties of the Chair.

…

II. APPROVAL OF MINUTES

A. Approval of the December 19, 2024 meeting minutes.

Planning Department Recommendation

1) Board members should determine if the draft minutes include all relevant details for the decision-making process that occurred at the December 19, 2024 meetings and vote to approve meeting minutes with edits if needed.

III. DETERMINATION OF COMPLETENESS

SITE PLAN REVIEW

A. The request of **One Market Square LLC (Owner),** for property located at **1, 21 (*15*) Congress Street** requesting Site Plan Approval to construct an addition onto the previously approved project at 1 Congress Street and re-development of 15 Congress into a mixed-use building with associated site improvements; a Parking Conditional Use Permit from Section 10.1112.14 of the Zoning Ordinance to allow 21 parking spaces where 53 parking spaces are required. Said property is located on Assessor Map 117 Lots 12-15 and lies within the Character District 5 (CDR-5), Historic and Downtown Overlay Districts

Planning Department Recommendation

1) Vote to determine that Item A is complete according to the Site Plan Review Regulations, (contingent on the granting of any required waivers under Section V of the agenda) and to accept the application for consideration.

IV. PUBLIC HEARINGS – OLD BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

B. The request of **635 Sagamore Development LLC (Owner**), for property located at **635 Sagamore Avenue** requesting Site Plan Review Approval for the demolition of the existing structures and construction of 4 single family dwellings with associated site improvements. Said property is located on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District.

Project Background

A site visit has not been scheduled yet for this project. Staff request the Board choose a date and time prior to the February meeting to conduct a site walk.

Planning Department Recommendation

---

1) *Vote to postpone the application to the February 20, 2025 meeting and schedule a site walk.*

IV. PUBLIC HEARINGS – OLD BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

B. The request of **Durgin Square LLC (Owner),** for property located at **1600 Woodbury Avenue** requesting amended Site Plan Review Approval for the addition of EV charging stations in the existing parking lot with associated equipment and transformer. Said property is located on Assessor Map 238 Lot 16 and lies within the Gateway Corridor (G1) District.

It is recommended that Old Business Items IVB and New Business Item VA be discussed together and voted on separately.

A motion is required to consider these matters together.

V. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

A. The request of **Durgin Square LLC (Owner),** for property located at **1600 Woodbury Avenue** requesting a Conditional Use Permit approval for the addition of EV charging stations in the existing parking lot with associated equipment and transformer. Said property is located on Assessor Map 238 Lot 16 and lies within the Gateway Corridor (G1) District.

Project Background

The applicant is proposing to add 6 dual charging stations in the existing Whole Foods parking lot. The chargers will be EV fueling space B (Level 3), which requires a Conditional Use Permit.

EV fueling space B

A public or private parking space with adjacent above ground charging support equipment that uses greater than customary residential electric service for charging **EV**s.

Project Review, Decisions, and Recommendations

The project was before the Technical Advisory Committee in December. See below for details.

Technical Advisory Committee

At their regularly scheduled meeting of Tuesday, December 3, 2024 meeting TAC voted to recommend that the Planning Board recommend approval with the following conditions:

1. *Include separate conduit trench detail for Right of Way (ROW) areas showing concrete encasement around primary conduit and replacement in kind of gravels, sidewalks, curbs and pavements. City standard requires 95% compaction within City ROW.*

2. *Confirm riser requirements on utility pole with Eversource (Rigid steel or sch 80 PVC).*

2. *Keep conduit crossing Durgin Lane 15 feet from any trees and protect trees during construction.*

3. *A license will be required by both Eversource and the applicant for the new utility pole and conduit in the right of way.*

The TAC conditions have been addressed in the Planning Board submittal or added as conditions of approval.

Planning Department Recommendation
EV Fueling Space Conditional Use Permit

1) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.243 of the Ordinance and adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.243 of the Ordinance and adopt the findings of fact as amended.

2) Vote to grant the Conditional Use Permit as presented.

Planning Department Recommendation
Amended Site Plan

1) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented.

(Alt.) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as amended.

2) Vote to grant Amended Site Plan approval with the following conditions:

2.1) Keep conduit crossing Durgin Lane 15 feet from any trees and protect trees during construction.

2.2) A license will be required by both Eversource and the applicant for the new utility pole and conduit in the right of way.

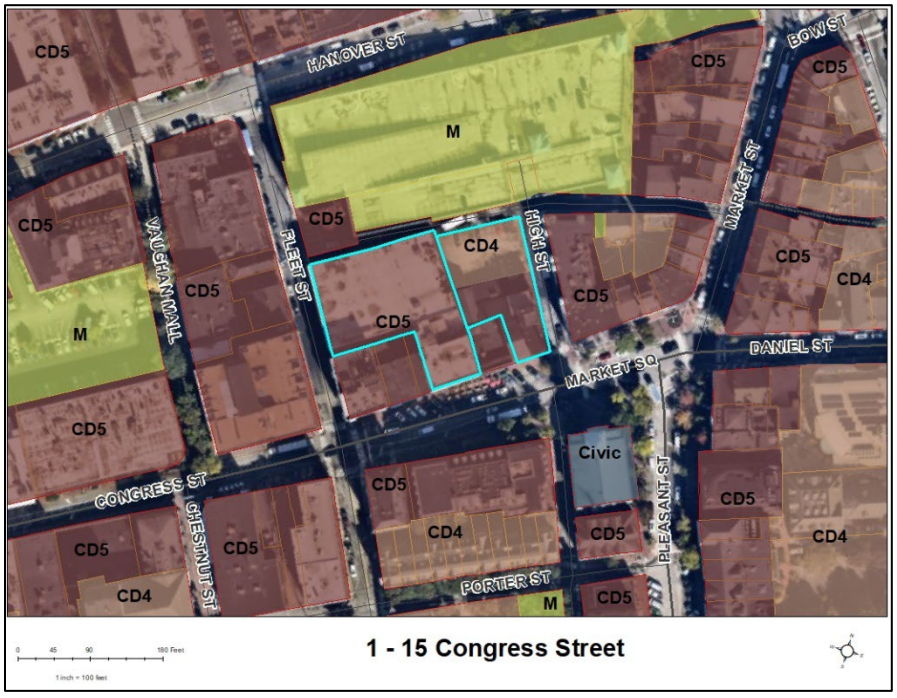
V. PUBLIC HEARINGS – NEW BUSINESS

The Board's action in these matters has been deemed to be quasi-judicial in nature. If any person believes any member of the Board has a conflict of interest, that issue should be raised at this point or it will be deemed waived.

C. The request of **One Market Square LLC (Owner),** for property located at **1, 21 (*15*) Congress Street** requesting Site Plan Approval to construct an addition onto the previously approved project at 1 Congress Street and re-development of 15 Congress into a mixed-use building with associated site improvements; a Parking Conditional Use Permit from Section 10.1112.14 of the Zoning Ordinance to allow 21 parking spaces where 53 parking spaces are required. Said property is located on Assessor Map 117 Lots 12-15 and lies within the Character District 5 (CDR-5), Historic and Downtown Overlay Districts

Project Background

This applicant received site plan approval for the project at 1 Congress on February 16, 2023 for the construction of a mixed-use building. The applicant has since acquired the JJ Newbury building adjacent to 1 Congress and is proposing to combine the project into one development by merging the lots, constructing an addition on the previously approved 1 Congress building and converting the JJ Newbury building into a mixed-use building with residential units on the upper floors. The project also includes regrading Haven Court to make it accessible from Fleet Street to High Street.



With the addition of 19 residential units in the JJ Newbury building, the project will need a parking Conditional Use Permit to allow 21 parking spaces where 53 are required per the zoning. Parking is not required for non-residential uses in the Downtown Overlay District (DOD), and a credit of 4 spaces is allowed in the DOD. The parking calculation can further be reduced by up to 5% for providing bicycle parking and the applicant is providing 36 spaces for bicycles. The property is directly adjacent to the High Hanover Garage and other municipal lots are close to this property, providing options for residents to park off-site.

As stated, the project includes merging the two lots, which can be accomplished administratively through an application for a lot merger to the Planning Department. The proposed addition on the 1 Congress building will extend to the JJ Newbury building and create a building footprint exceeding 30,000 square feet. The definition of building footprint below includes two or more buildings separated by common walls, fire walls or property lines as part of the building footprint.

Building footprint

The total area of a **building** at or above 18 inches in elevation as measured from the outside walls at the **grade plane** of a detached **building**, or of two or more **building**s separated only by fire walls, common walls or property lines.

Uncovered **community space** located immediately above a **building**'s **story** below the **grade plane** shall not constitute **building footprint,** provided it is not more than 10 feet above the adjacent **street** grade.

The definition is problematic for a majority of the built environment in the downtown core due to the fact that blocks of buildings are connected to one another. As presented, the proposed building footprint exceeds the maximum building footprint with the addition of the 1 Congress building connecting to the JJ Newbury building. The options below would allow the project to move forward:

1. *Seek a Conditional Use Permit under Section 10.5A43.43 to allow for a building footprint over 30,000 square feet which requires 10% community space and workforce housing, 5% (rental) or 10% (for sale).*
2. *Construct a smaller addition on the 1 Congress building so it does not attach to the JJ Newbury building.*
3. *Request the Planning Board amend the definition of building footprint for properties located in the CD4 and CD5 districts.*

Project Review, Decisions, and Recommendations

The project was before the Technical Advisory Committee and the Historic District Commission. See below for details.

Historic District Commission
The project was originally approved by the HDC at their at their regularly scheduled meeting of Wednesday, August 2, 2022 and has since received 2 extensions for one-year each. The addition of the JJ Newbury building was incorporated and presented to the HDC at their meeting of Wednesday, November 6, 2024. As a result of their review, the HDC granted approval as presented.

Technical Advisory Committee
At their regularly scheduled meeting of Tuesday, December 3, 2024 meeting TAC voted to recommend that the Planning Board recommend approval of the project moving forward as two separate buildings unless the Planning Board has a different interpretation or the applicant seeks a Conditional Use Permit for building footprint and with the following conditions:

1. *The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.*

2. *Later review and approval of all off-site areas including but not limited to Ladd St, High St and Haven Ct planned improvements will be required in a separate reviewing action.*

3. *The City makes no guarantee on the timeline that the proposed Fleet Street utility improvements will be constructed. The applicant must therefore show the existing utilities in Fleet Street and how any proposed work will be incorporated into the existing Fleet St pipe network. A separate sheet should be provided showing the proposed Fleet Street improvement design and how any new improvements on Haven Ct or the Newberry building will eventually interface.*

4. *Proposed elevation changes to Haven Ct may affect the foundations, walls etc. of the Hanover Municipal parking garage. Third party review of structures and foundations will be required by the City.*

Planning Department Recommendation
Site Plan Review Approval

*Staff recommends approval **only if** the footprint issue is resolved through one of the options stated above.*

1) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as

presented.

(Alt.) Vote to find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as amended.

2.) Vote to grant Site Plan Approval with the following conditions in addition to the original conditions of approval stated in the Letter of Decision dated February 16, 2023:

2.1) The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.2) Later review and approval of all off-site areas including but not limited to Ladd St, High St and Haven Ct planned improvements will be required in a separate reviewing action.

2.3) The City makes no guarantee on the timeline that the proposed Fleet Street utility improvements will be constructed. The applicant must therefore show the existing utilities in Fleet Street and how any proposed work will be incorporated into the existing Fleet St pipe network. A separate sheet should be provided showing the proposed Fleet Street improvement design and how any new improvements on Haven Ct or the Newberry building will eventually interface.

2.4) Proposed elevation changes to Haven Ct may affect the foundations, walls etc. of the Hanover Municipal parking garage. Third party review of structures and foundations will be required by the City.

Planning Department Recommendation
Parking Conditional Use Permit

1) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1112.14 of the Ordinance and adopt the findings of fact as presented.

(Alt.) Vote to find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1112.14 of the Ordinance and adopt the findings of fact as amended.

2) Vote to grant the Conditional Use Permit as presented.

VI. CITY COUNCIL REFERRALS [NOTE: ANY REFERRALS REQUIRING PUBLIC HEARING SHOULD BE INCLUDED ABOVE]

A. Zoning Amendments

Background

At the October 7, 2024 City Council meeting, the City Council voted to refer to the Legal and Planning & Sustainability Departments a request to draft an ordinance which would exempt certain structures which do not require a building permit from zoning requirements. The draft amendments limit review of structures accessory to one and two-family dwellings such as sheds, playhouses, treehouses, playground equipment, and prefabricated above-ground pools and hot tubs. Under this proposal, up to one of these structures per dwelling unit would be exempt from zoning regulations such as setbacks and lot coverage and would only need approval pursuant to environmental protection standards, Historic District compliance, and compliance with corner lot vision obstruction regulations. In addition, the amendments include increasing height of fences exempt from side and rear yard setbacks from six feet to eight feet.

The proposed amendments contain the elimination of the regulation of certain HVAC equipment pursuant to Section 10.515.14. Multiple variance applications from this section are routinely granted by the Zoning Board of Adjustment.

At the December 16, 2024 City Council meeting, the Council took the action below to:

7. First reading of Ordinance amending Chapter 10, Zoning Ordinance, by striking Article 5, Measurement Rules, Section 10.515.14; by amending Section 10.515.13; and by adding new Sections 10.811.60 and 10.811.61, relating to Accessory Uses to Permitted Residential Uses of the Ordinance of the City of Portsmouth, all in order to bring the Zoning Ordinance into better alignment with the Building Code, and to increase governmental efficiency – Moved to pass first reading and schedule a public hearing and second reading at the January 6, 2025 City Council meeting.

Agreed to accept a friendly amendment to refer the ordinance to the Planning Board for review and report back with a public hearing and second reading to be held at the February 3, 2025, City Council meeting. **Voted** to pass first reading and refer to the Planning Board for review and report back with a public hearing and second reading at the February 3, 2025, City Council meeting.

Planning Department Recommendation

1) Vote to recommend the City Council hold second reading on the proposed zoning amendments as presented.

Or

2) Vote to recommend the City Council hold second reading on the proposed zoning amendments as amended.

VI. OTHER BUSINESS

A. 815 Lafayette Road – Requesting a 1-Year extension to the Site Plan Review, Development Site and Wetland Conditional Use approvals that were granted on January 18, 2024.

Project Background

On January 18, 2024, the Planning Board granted Site Plan approval, a Development Site CUP and a Wetland CUP for the project referenced above. A building permit should be issued soon, however the applicant is seeking the extensions in case the permit is not issued by the 18th.

The applicant has yet to obtain a building permit and has requested the one-year extension per Section 2.14 of the Site Plan Regulations below.

Section 2.14 of the Site Plan regulations allows for an extension:

> **Section 2.14 Approval Expiration and Extension**
>
> 1. Site plan approval by the Planning Board shall expire unless used (obtain a Building Permit) within a period of one (1) year from the date granted.
>
> 2. The Planning Board may, for good cause shown, extend such period by as much as one (1) year if requested and acted upon prior to the expiration date.

Section 10.246.10 of the Zoning Ordinance allows for a one-time one-year extension of the CUP:

> **10.246 Expiration and Abandonment of Approvals**
>
> 10.246.10 A conditional use permit shall expire unless a **building permit** is obtained within a period of one year from the date granted, unless otherwise stated in the conditions of approval. The **Board** may, for good cause shown, extend such period by as much as one year if such extension is requested and acted upon prior to the expiration date. No other extensions may be requested.

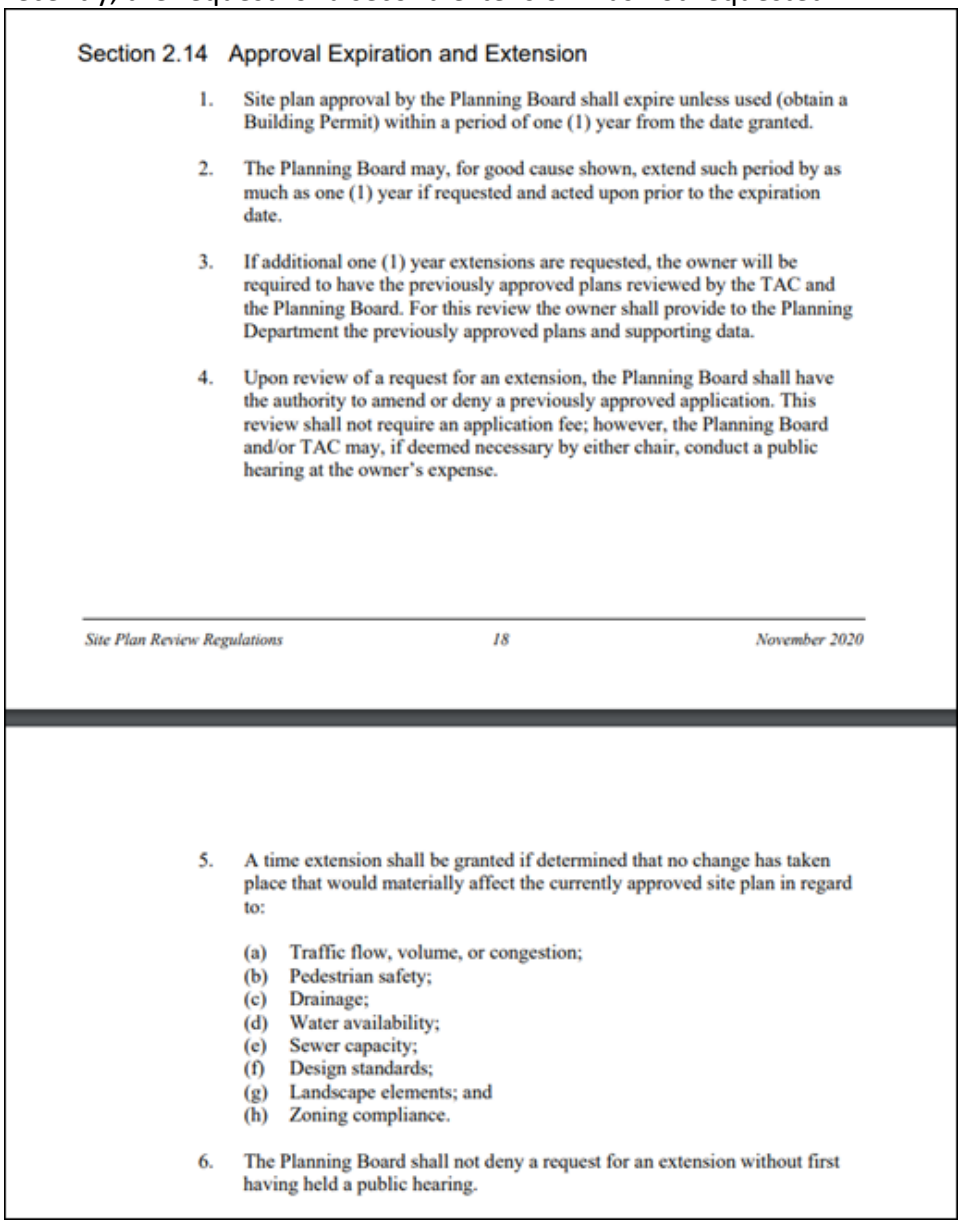
Planning Department Recommendation

1) *Vote to grant a one-year extension to the Planning Board Approval of the Site Plan and Conditional Use permits to January 18, 2026.*

B. 1 Congress Street – Requesting a second 1-year extension to unless the Board grants approval for the updated 1-15 Congress Street project. The first extension was granted on November 16, 2023 and will expire on February 16, 2025.

Background

The Planning Board approved the project on February 16, 2023 and granted an extension on November 16, 2023. The applicant is requesting a second extension request if the application under agenda item **VB** is not acted upon. A second extension request must first go before TAC for review and the applicant has submitted that request, which will be on the February agenda. While at TAC recently, the request for a second extension was not requested.



Section 2.14 Approval Expiration and Extension

1. Site plan approval by the Planning Board shall expire unless used (obtain a Building Permit) within a period of one (1) year from the date granted.

2. The Planning Board may, for good cause shown, extend such period by as much as one (1) year if requested and acted upon prior to the expiration date.

3. If additional one (1) year extensions are requested, the owner will be required to have the previously approved plans reviewed by the TAC and the Planning Board. For this review the owner shall provide to the Planning Department the previously approved plans and supporting data.

4. Upon review of a request for an extension, the Planning Board shall have the authority to amend or deny a previously approved application. This review shall not require an application fee; however, the Planning Board and/or TAC may, if deemed necessary by either chair, conduct a public hearing at the owner's expense.

Site Plan Review Regulations *18* *November 2020*

5. A time extension shall be granted if determined that no change has taken place that would materially affect the currently approved site plan in regard to:

   (a) Traffic flow, volume, or congestion;
   (b) Pedestrian safety;
   (c) Drainage;
   (d) Water availability;
   (e) Sewer capacity;
   (f) Design standards;
   (g) Landscape elements; and
   (h) Zoning compliance.

6. The Planning Board shall not deny a request for an extension without first having held a public hearing.

Planning Department Recommendation

1) *Vote to postpone the request to the February 20, 2025 meeting in order for review by the Technical Advisory Committee at their February meeting.*

C. Chairman's Updates and Discussion Items

D. Board Discussion of Regulatory Amendments and Other Matters

VII. ADJOURNMENT

PLANNING BOARD
PORTSMOUTH, NEW HAMPSHIRE

EILEEN DONDERO FOLEY COUNCIL CHAMBERS
CITY HALL, MUNICIPAL COMPLEX, 1 JUNKINS AVENUE

7:00 PM Public Hearings begin **December 19, 2024**

MEMBERS PRESENT: Rick Chellman, Chairman; Greg Mahanna, Vice Chair; Karen Conard, City Manager; Joseph Almeida, Facilities Manager; Beth Moreau, City Councilor; James Hewitt; Paul Giuliano; Andrew Samonas**;** Anthony Coviello; and William Bowen, Alternate

ALSO PRESENT: Peter Stith, Planning Department Manager

MEMBERS ABSENT: None.

I. APPROVAL OF MINUTES

A. Approval of the November 21, 2024 meeting minutes.

*Mr. Giuliano moved to **approve** the minutes as presented, seconded by Mr. Samonas. The motion **passed** with all in favor.*

II. DETERMINATIONS OF COMPLETENESS

SUBDIVISION REVIEW

Note: the following two items were considered together.

A. The request of **Frances E. Mouflouze Revocable Trust of 2015 (Owner),** for property located at **550 Sagamore Avenue** requesting Subdivision and Site Plan Review Approval to demolish the existing single-family residence and subdivide the lot into four new parcels with associated site improvements, including three single-family homes, a private roadway lot, stormwater management, utilities, and landscaping. Said property is located on Assessor Map 222 Lot 11 and lies within the Single Residence B (SRB) District.

B. The request of **Oak Street Invest GRD NET (Owner),** and **Oak Street Real Estate Capital (Owner)** and **Durgin Lane LLC (Applicant),** for property located at **100 Durgin Lane** requesting Subdivision approval for a Lot Line Adjustment of the three existing parcels, a Wetland conditional use permit in accordance with Section 10.1017.50, a conditional use permit from the Highway Noise Overlay District (HNOD) in accordance with Section 10.613.60, a conditional use permit for a Development Site in accordance with Section 10.5B41.10, and Site Plan Review Approval for the demolition of the existing buildings and the construction of 360 rental housing units in a mix of 3-story and 4-story buildings with associated site improvements including parking, pedestrian access,

community spaces, utilities, stormwater management, lighting, and landscaping. Said property is located on Assessor Map 239 Lots 13-2, 16 & 18 and lies within the Gateway Corridor (G1) and Highway Noise Overlay Districts.

1) *Councilor Moreau moved that the Board determine that Items A & B are complete according to the Subdivision Review Regulations (contingent on the granting of any required waivers under Section IV of the agenda) and to accept the applications for consideration. Ms. Conard seconded. The motion **passed** with all in favor.*

SITE PLAN REVIEW

Note: Items A through E were considered together.

A. The request of **Shaines and McEachern Company (Owner),** for property located at **282 Corporate Drive** requesting Site Plan Review Approval and a Wetland Conditional Use Permit in accordance with Article 304 - A.08 of the Pease Development Authority Ordinance for the renovation of the existing space with associated site improvements including paving, striping curbing, stormwater management and utilities. Said property is located on Assessor Map 315 Lot 2 and lies within the Airport Business Commercial (ABC) District.

B. The request of **635 Sagamore Development LLC (Owner),** for property located at **635 Sagamore Avenue** requesting Site Plan Review Approval for the demolition of the existing structures and construction of 4 single family dwellings with associated site improvements. Said property is located on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District.

C. The request of **Go-Lo Inc (Owner),** for property located at **2059 Lafayette Road** requesting Site Plan Review Approval to demolish the existing mixed-use building and construct a new 8-unit residential building. Said property is located on Assessor Map 268 Lots 12 & 13 and lie within the Mixed Residential Business (MRB) District.

D. The request of **Frances E. Mouflouze Revocable Trust of 2015 (Owner),** for property located at **550 Sagamore Avenue** requesting Subdivision and Site Plan Review Approval to demolish the existing single-family residence and subdivide the lot into four new parcels with associated site improvements, including three single-family homes, a private roadway lot, stormwater management, utilities, and landscaping. Said property is located on Assessor Map 222 Lot 11 and lies within the Single Residence B (SRB) District.

E. The request of **Oak Street Invest GRD NET (Owner),** and **Oak Street Real Estate Capital (Owner**) and **Durgin Lane LLC (Applicant),** for property located at **100 Durgin Lane** requesting Subdivision approval for a Lot Line Adjustment of the three existing parcels, a Wetland conditional use permit in accordance with Section 10.1017.50, a conditional use permit from the Highway Noise Overlay District (HNOD) in accordance with Section 10.613.60, a conditional use permit for a Development Site in accordance with Section 10.5B41.10, and Site Plan Review Approval for the demolition of the existing buildings and the construction of 360 rental housing units in a mix of 3-story and 4-story

buildings with associated site improvements including parking, pedestrian access, community spaces, utilities, stormwater management, lighting, and landscaping. Said property is located on Assessor Map 239 Lots 13-2, 16 & 18 and lies within the Gateway Corridor (G1) and Highway Noise Overlay Districts.

1) *Ms. Conard moved that the Board determine that Items A - D are complete according to the Site Plan Review Regulations (contingent on the granting of any required waivers under Section IV of the agenda) and to accept the applications for consideration. Councilor Moreau seconded. The motion **passed** with all in favor.*

III. PUBLIC HEARINGS - OLD BUSINESS

A. WITHDRAWN The request of **Matt Ball** and **Andrea Fershtam (Owners),** for property located at **252 Wibird Street** requesting a Conditional Use Permit from Section 10.814 for the conversion of an existing accessory structure into a Detached Accessory Dwelling Unit (DADU) that does not conform with the dimensional requirements of the Ordinance. Said property is located on Assessor Map 149 Lot 12 and lies within the General Residence A (GRA) District. **WITHDRAWN** (LU-24-137)

The petition was withdrawn by the applicant. .

IV. PUBLIC HEARINGS – NEW BUSINESS

A. The request of **Eric Brassard (Owner),** for property located at **233 Dennett Street** requesting a Conditional Use Permit from Section 10.814 for a Detached Accessory Dwelling Unit (DADU).Said property is located on Assessor Map 142 Lot 7 and lies within the General Residence A (GRA) District. (LU-24-213)

SPEAKING TO THE PETITION

[Timestamp 12:12] The owner/applicant Eric Brassard reviewed the site plan and said he needed a 5-ft setback so that the ADU did not overlap with his neighbors' backyards.

[Timestamp 18:04] Mr. Almeida said the drawing showed that the face of the garage was so far forward that there would not be room to park a car. He asked if the fence line was the property line. Mr. Brassard agreed and said the fence was about six feet from the road and 16 feet to the garage door. Councilor Moreau asked for more detail on the door surround of the proposed ADU. Mr. Brassard said it would stick out 18 inches and that it was trim work, but the front face of it would make the setback 14-1/2 feet instead of 16 feet. Mr. Coviello asked where the vehicles would be parked. Mr. Brassard said two vehicles would be parked in the garage and the tenant's vehicle would be parked outside the garage. Mr. Samonas asked the applicant if he considered attaching the garage to the home and setting it back farther. Mr. Brassard said if he could afford it, he would attach it and do a larger renovation.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

No one spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD

1) *Mr. Giuliano moved that the Board find that the Conditional Use Permit Application meets the requirements set forth in Section 10.814.62 of the Ordinance and adopt the findings of fact as presented. Vice-Chair Mahanna seconded. The motion **passed** with all in favor.*

2) *Mr. Giuliano moved that the Board grant the following **modification**:*

   2.1) Modification from Section 10.814.431 to allow the DADU to be setback 5 feet from the plane of the principal building.

*Vice-Chair Mahanna seconded. The motion **passed** with all in favor.*

3) *Mr. Giuliano moved that the Board grant the Conditional Use Permit with the following **conditions**:*

   3.1) Documentation of the conditional use permit approval shall be recorded at the Rockingham County Registry of Deeds, together with an affidavit that either the principal dwelling unit or the accessory dwelling unit will be occupied by the owner of the dwelling as the owner's principal place of residence, as required by Section 10.814.22.

   3.2) A certificate of use issued by the Planning Department is required to verify compliance with the standards of this Section, including the owner occupancy and principal residency requirements. Said certificate shall be issued by the Planning Department upon issuance of a certificate of occupancy by the Inspection Department. A certificate of use shall not be issued prior to recording of documentation as required by this Ordinance.

   3.3) The certificate of use shall be renewed annually upon submission of such documentation as the Planning Department may require to verify continued compliance with the standards of this Section. Failure to comply with this requirement shall be deemed a violation of the ordinance and may be enforced as provided in Article 2.

*Mr. Coviello seconded. The motion **passed** with all in favor.*

B. The request of **Shaines** and **McEachern Company (Owner),** for property located at **282 Corporate Drive** requesting Site Plan Review Approval and a Wetland Conditional Use Permit in accordance with Article 304 - A.08 of the Pease Development Authority Ordinance for the renovation of the existing space with associated site improvements including paving, striping curbing, stormwater management and utilities. Said property is located on Assessor Map 315 Lot 2 and lies within the Airport Business Commercial (ABC) District. (LU-24-169)

SPEAKING TO THE PETITION

[Timestamp 26:11] Project engineer John Chagnon and representatives from Port City Air were present to receive the Board's recommendation to the PDA Board of Directors for the site plan and the Conditional Use Permit (CUP). Mr. Chagnon said the proposal was to change the Officers Club use to a catering business. He reviewed the site plan and improvements in detail. He reviewed the PDA's five criteria and said they would be met.

[Timestamp 37:34] Mr. Almeida verified that there would be no change to the exterior lighting. He asked if the existing signage would remain the same. Mr. Chagnon said the signage would be repurposed for the new use. Mr. Coviello asked how the Green SnowPro salting program would be monitored. Mr. Chagnon said the PDA had a registered list of contractors who were certified to do the plowing but that Port City Air wanted to use sand.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

No one spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD

1) *Councilor Moreau moved that the Board recommend approval of the Wetland Conditional Use Permit to the PDA Board with the following* ***conditions****:*

    1.1) Owner should ensure that all snow salt and snowmelt applications on site are performed by someone who is certified by the NHDES Green SnowPro program.
    1.2) A schedule for the parking lot sweeping should be included within the maintenance manual. This should occur at least twice annually, particularly in the spring.
    1.3) A schedule for invasive species management should be included within the maintenance manual with species-specific removal guidance for bittersweet, as well as references via a note on the plans.
    1.4) The proposed tree areas to remain and be removed should be clearly demarcated on plan set.
    1.5) The areas of proposed invasive species removal shall be denoted on plan set.
    1.6) Wetland boundary markers should be placed along the 25' wetland buffer line.
    1.7) A note should be added to the plan set stating that the area between the wetland boundary and 25' buffer line will be a 'no-mow' zone.
    1.8) Applicant should add note to plan set stating that the area where pavement is to be removed (but not where the rain garden is proposed), conservation seed mix will be used for planting and mowing shall not occur.
    1.9) Applicant should include a note on the plan set stating that snow storage shall only occur on the south side of the parking lot to ensure that melt is not being directed into the new rain garden.

Vice-Chair Mahanna seconded.

Mr. Hewitt noted that the Board reviewed the Longo expansion a year before and voted that the project go to the Rockingham Planning Commission for a regional impact development, but then learned a few months ago that the PDA ignored it. He said if the PDA were going to ignore the Board's opinions, it was a waste of the Board's time. He recused himself from the vote.

*The motion **passed** 8-0, with Mr. Hewitt abstaining.*

1) *Councilor Moreau moved that the Board recommend Amended Site Plan Approval to the PDA Board. Vice-Chair Mahanna seconded.*

Councilor Moreau said it was good that the applicant would revive the wetlands by getting rid of the invasive species and making the site look better. Chair Chellman said he would like to see more cooperation from the PDA.

*The motion **passed** 8-0 with Mr. Hewitt abstaining.*

C. The request of **Jeffrey Nawrocki Revocable Trust of 2001 (Owner), 299 Hanover Street** requesting a Parking Conditional Use Permit from Section 10.1112.14 to allow three parking spaces where 10 are required. Said property is located on Assessor Map 125 Lot 10 and lies within the Character District 4-L1 (CD4-L1). (LU-24-204)

SPEAKING TO THE PETITION

[Timestamp 42:42] The owner/applicant Jeffrey Nawrocki was present and said he had been unable to lease the first-floor office space in his 2-story building since April and wanted to replace it with two apartments instead, which would result in less parking demand.

[Timestamp 43:33] Councilor Moreau asked if any of the existing three on-site parking spaces would be assigned to the residential units. Mr. Nawrocki agreed. Mr. Bowen said the current regulations called for 13 spaces and the applicant had three, and the proposal was that regulations would require 10 spaces and he had three spaces. Mr. Nawrocki agreed and said the parking would be more conforming. He said there was also a parking garage behind his office.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

No one spoke, and Chair Chellman closed the public hearing.

DISCUSSION OF THE BOARD

At this point, Mr. Samonas said he would abstain from the vote.

[Timestamp 45:23] Mr. Bowen said he was bothered by the frequency with which downtown developers wished to develop a property that requires parking and the Board approved it without parking. He said a parking shortage would develop and thought it might not be the right strategy

to have each parcel build its own parking. He said it might be better to have centralized parking and have people pay a fee that would go into a capital fund and be used to develop a new parking garage. He explained why it didn't seem sensible to him that the requirement called for 10 spaces and the Board said it was okay for three spaces. Mr. Almeida said the applicant's parking requirements were going down by the change in use. It was further discussed. Chair Chellman said there was a need for more public utility meeting more public parking and that was the reason there was a line item in the Capital Improvement Plan. Mr. Almeida said the lot had more parking than most buildings on the street and that he didn't want to penalize the applicant with any condition and would prefer to leave it to the property owner to manage. Mr. Giuliano said the applicant wanted to convert commercial to residential on the first floor and would not expand the footprint. He said it would add much needed residential to the area.

DECISION OF THE BOARD

1) *Mr. Giuliano moved that the Board find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1112.14 of the Ordinance and adopt the findings of fact as presented. Vice-Chair Mahanna seconded. The motion **passed** 8-0 with Mr. Samonas abstaining.*

2) *Mr. Giuliano moved that the Board grant the Conditional Use Permit as presented. Vice-Chair Mahanna seconded. The motion **passed** 8-0 with Mr. Samonas abstaining.*

D. The request of **635 Sagamore Development LLC (Owner)**, for property located at **635 Sagamore Avenue** requesting Site Plan Review Approval for the demolition of the existing structures and construction of 4 single family dwellings with associated site improvements. Said property is located on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District. (LU-22-209)

SPEAKING TO THE PETITION

[Timestamp 53:13] Project engineer Ian MacKinnon was present on behalf of the applicant and said the property had a service garage with an apartment and also an apartment in the rear that they wanted to demolish and replace with four single-family homes. He said the homes would be four condominium units. He reviewed the stormwater, water and sewer and said a landscape buffer would be created around the development. He said the project received variances from the ZBA in May 2023 and that TAC recommended approval in November 2024.

[Timestamp 56:01] Mr. Hewitt said a 3-lot proposal was presented at the January 2022 Planning Board meeting, and the driveway at that time was located farther southeasterly at the end of the property. He asked why the driveway was moved. Mr. MacKinnon said they had a highway access plan and had done a heavy analysis of sight and stop distances and felt that the new location was the safest location. Mr. Samonas asked about the TAC meetings. Mr. MacKinnon said they discussed stormwater with Altus Engineering. He said the site had a lot of slope and that there were recommended conditions due to the stormwater system and to condominium requirements related to maintenance and inspection during construction. Mr. Samonas said the blasting and undermining of the trees and root systems would be alarming to the neighborhood,

and he wanted to ensure that the drainage and retention pond had been looked at in terms of insurability and would not create additional issues to the neighborhoods behind it. Mr. MacKinnon said there was a catch basin that was installed on Sagamore Avenue to help with the neighboring community. He said the locations for the viral retention system were chosen based on test pit locations, so there was some exposed ledge in the area and the percolation tests would have been at the correct horizon to insure that any infiltration practice would operate efficiently. He said the peer review engineer thought it was a suitable system. Mr. Samonas asked if there was an Operations and Maintenance (O&M) plan. Mr. MacKinnon agreed and said it would be submitted to the City yearly. Mr. Samonas said the building design had changed because there were walkout basements in Buildings 3 and 4 that were not on prior plans. Mr. MacKinnon said the walkout basement was a product of the stormwater component.

[Timestamp 1:02:13] Councilor Moreau said there was a big grade change from the street to the lot that would be increased by two feet, and there would be four 3500-sf homes built. She said she was concerned about residents trying to get out of a frozen driveway in winter and the fact that there was no place for guests to park. She asked why the lot had to be built up higher and why the driveway depth had to go up so high, creating drainage issues and not providing enough parking spaces. Mr. MacKinnon said there was an 8 percent grade coming in from the driveway, and they had a driveway plan profile in the package that mirrored the existing grade for the first 150 feet. He said when the high point in the site was crested, the design had a vertical curve for shared access. He said the parking consisted of two spaces in the garage and two cars on the outside. Councilor Moreau said it didn't go up to 72 square feet in the existing conditions and that the applicant was making a big hill in the neighborhood even bigger. It was further discussed. Councilor Moreau said it was not safe for people driving out of their driveway in the middle of winter. Mr. MacKinnon said 8 percent was the maximum and 8-10 percent depending on the terrain. He said a public roadway was limited to 8 percent. Chair Chellman said there was a road coming in at 8 percent and almost 5 feet higher than the existing grade at the end. He said he was more concerned about its intersection with the main public road. He said there was a slope that transitioned from a 6 to 8 percent grade with no landing, and in snow and icy conditions, people would slide into the road. He said the stopping sight distance was also inadequate and the exiting sight distance was not addressed. It was further discussed. Chair Chellman said it did not conform and was a public safety matter.

[Timestamp 1:08:36] Vice-Chair Mahanna said Plan C2 still called it a 5-unit residential site. He said the stormwater O&M plan had a notation about cleaning grease traps and disposing of rags property. He asked if that was a cut-and-paste area, and Mr. MacKinnon said it was likely because it would not be required on the site. Vice-Chair Mahanna said he lived in a similar development and thought the applicant's O&M plan was onerous. He noted that TAC told the applicant to change things to quarterly, yet everything in the plan still said monthly. He said there was also the issue of requiring a chemical analysis of the leaves pulled when removing the debris from the sand traps monthly. He said dredging and chemical analysis were expensive and asked if the applicant would warn the homeowners of the cost and level of detail and if it would be recorded on the deeds that the owners were subject to all of that. Mr. MacKinnon said the monthly term came from the NHDES Best Management Practices (BMP) manual for inspection. He said the yearly inspection by a professional might be a requirement by the City, but the

monthly inspection was a guide for the condo association. He said the sand trip was a unique feature and that recommendation came from the peer review engineer. Vice-Chair Mahanna said 99 percent of the applications the Board got for similar projects had a Green SnowPro program, an organic fertilizer maintenance plan, a State-certified organic plan, and an invasive species mitigation plan. He said the applicant's plan also showed no plan for snow storage, which was a requirement, and that the plan also indicated that the snow would be stored off the pavement. He asked if the applicant intended to put contaminated snow on a filter that would filter into the stormwater and if a lab would have to test for chemicals. Mr. MacKinnon said the report would not be recorded at the Rockingham Registry of Deeds but would be an attachment as part of the HOA documents. He said they had snow storage outlined in the plan and further explained it.

Chair Chellman said there was a disconnect from what was presented and things that the applicant wanted to change. Mr. MacKinnon said the monthly inspections were part of the recommended tables. Vice-Chair Mahanna said TAC had spent a lot of time on the topic of quarterly inspections, yet it was still listed as monthly in the plan. Mr. Coviello said there was a lack of clarity in the application. Mr. Samonas said there were two precedent cases that were both the same clustered development style and had ten units and were about the same size, so conceptually it was not unheard of. He said the massing was overwhelming. He asked where contractors, fire trucks, and so on would park. He said the barrier at the rear of the property might fail and Tidewatch would have to deal with it. He said adjustments had to be made.

[Timestamp 1:22:43] Mr. Bowen said the four condo families had to have specific information, and he suggested a detailed attachment to the condo documents related to the frequency of inspections. He said the developer could be contracted to do the maintenance at first and then it could be adapted by the owners. Councilor Moreau said very few people read their condo documents and suggested including conditions in the deed instead. She said she would like to see more room for parking, cars, and delivery vehicles and thought two duplexes would take up less space and allow more parking. She said the grade could be changed more. Chair Chellman said he could not support the proposal because it was not ready.

[Timestamp 1:25:45] Project manager Mike Garrepy suggested a site walk. He said traffic and drainage were vetted through the TAC process and that the applicant worked with City Staff in doing the sight distance analysis. He said the had one controlled point of access for the site that was reviewed by their traffic and civil engineers and City Staff and that it was in the safest location on the site. He said the proposed trips per day were less than the existing trips per day, with respect to traffic. He asked for more clarification on what the Board wanted. Mr. Bowen said the January 22 plan had the location of the driveway at the end of the property and he suggested a sight line analysis. Mr. Garrepy said they did one at that point and also did one farther up the slope. Mr. Bowen asked why the driveway was therefore in the proposed location. Mr. Garrepy said it was due to discussions with their engineers, the Department of Public Works (DPW), and City Staff. Mr. Bowen said the applicant could do a comparative analysis that showed why his proposed plan was the safest, but he felt that the safest location was the one on the January 22 plan. Mr. Almeida said the previous condition had multiple uncontrolled access in and out but thought the proposed conditions were very improved as far as safety and control of traffic and that a controlled access point was in place. Mr. Garrepy said the frequency of the

inspections was once a month, but the DPW, City Staff and TAC thought that was burdensome and agreed to change it. He said it just wasn't included in the document. Mr. Samonas agreed that the proposed conditions had improved but feared the hesitation between drivers going between Tidewatch and cyclists cresting the hill. He agreed that alternative access points could work to create more safety. Chair Chellman said stopping sight distance was in the study and that the study said it was close. He said intersection sight distance referred to vehicles coming out of a driveway onto Sagamore Avenue. He said based on the information the applicant submitted, they were more deficient there than on the stopping sight distance. He said an additional factor was adding the grade without having a landing on a north facing slope, which could pose problems and was a concern. He said a site walk and a continuance was a good idea.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

First Round Speakers [Timestamp 1:41:25]

Peter Wissel of 579 Sagamore Avenue (via Zoom) asked that the Board reject the application and limit the development to a single unit for reasons of public safety, an unworkable stormwater management system, the use of city and tax payer resources for the benefit of the applicant, inadequate onsite parking, and an inadequate buffer between the development and Tidewatch. He said the minimal sight distance requirements for traffic exiting the property were not met, and that four units would create more traffic and an increased risk of collision. He said the plan diverted more stormwater toward Tidewatch and additional stormwater and snowmelt would flow down the hill. He said TAC required monthly inspection reports of the stormwater management to be filed with DPW.

Project engineer Eric Weinberg clarified that he did not make design recommendations but only reviewed designs. He said the sand filter was the design engineer's idea.

Jeff Serto of Tidewatch Condominiums said the turn into Tidewatch up from Atlantic Road was a blind turn. He asked how the 635 Sagamore Avenue residents would pull out of the development. He asked what kind of damage the blasting would do to the community and whether there would be chemicals leaching into his property from the water runoff.

Ann Hartman of 579 Sagamore Avenue said the NH Department of Business and Economic Affairs Handbook for Planning Boards outlined the duties of planning boards and said the board could exercise independent knowledge and judgment of an area. She asked that the Board hear the concerns raised for several years and exercise their judgment on the issues of drainage mitigation, a challenging traffic configuration, and the safety and wisdom of the blasting.

Andrew Jaffe of 579 Sagamore Avenue said the access road for Tidewatch had a single point of access to Sagamore Ave. He said most of the residents of Tidewatch were seniors and needed to have continuous access for emergency vehicles and medical appointments.

Elise Gallo of 579 Sagamore Avenue said she attended the TAC meetings and heard their concerns about the drainage and retention pond and that any changes should go back to the ZBA.

Tim McNamara of 579 Sagamore Avenue said the Board reduce the number of units and send the petition back to the ZBA for reconsideration. He said the project posed too much risk on the abutters and the public due to traffic safety, inadequate distance for stopping, and parking issues.

Second Round Speakers

Tim McNamara said the proposed drainage system, stormwater management, water quality, and property flooding were concerns and that TAC had significant concerns about the system working as planned. He said the developer put an unsightly retention pond on the property lines of two abutters, and the buildings were now much closer to the abutters, which was against the ZBA's ruling. He asked that the number of units be reduced.

No one else spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD

[Timestamp 1:59:03] A site walk, continuing the application, and sending the application back to the ZBA were discussed. Mr. Stith said the variances were for more than one principal dwelling on the lot and the lot area per dwelling unit, which had not changed. He said there was a condition that it could change with site plan review. He said the changes to the house complied with zoning, and if it were changed to duplexes, then it should go back to the ZBA. Chair Chellman said the applicant offered to have the driveway and the four corners of the building staked with grades. He thought the additional analysis for the continuation of the meeting would be necessary. ***Note***: Councilor Moreau originally moved to continue the application to the February 20 meeting and schedule a site walk before then, but after further discussion, she amended her motion to state that the application would be continued to the January 16 meeting.

1) *Councilor Moreau moved that the Board **continue** the application to January 16, 2025 and schedule a site walk. Vice-Chair Samonas seconded. The motion **passed** with all in favor.*

E. The request of **Go-Lo Inc (Owner),** for property located at **2059 Lafayette Road** requesting Site Plan Review Approval to demolish the existing mixed-use building and construct a new 8-unit residential building. Said property is located on Assessor Map 268 Lot 13 and lies within the Mixed Residential Business (MRB) District. (LU-23-191)

SPEAKING TO THE PETITION

[Timestamp 2:15:13] Project engineer Eric Weinberg was present on behalf of the applicant and said they wanted to replace the mixed-use building with an 8-unit residential building. He said there would be 16 underground parking spaces and five external visitor/handicap spaces. He said the access would be safer because people would drive in and out. He explained how the water, sewer, underground electric service, and gas would be serviced, and he described the screening landscaping and lighting.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

No one spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD

1) *Councilor Moreau moved that the Board find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented. Ms. Conard seconded. The motion **passed** with all in favor.*

2) *Councilor Moreau moved that the Board grant Site Plan approval with the following **conditions**:*

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.1) The site plan and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.2) The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.3) Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit: https://www.cityofportsmouth.com/publicworks/stormwater/ptap

2.4) Owner shall provide an access easement to the City for water valve and meter access and for leak detection. The easement shall be reviewed and approved by the Planning and Legal Departments prior to acceptance by the City Council.

2.5) Offsite plans for Hoover Drive shall be reviewed and approved by DPW.

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a certificate of occupancy and release of the surety:

2.6) The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance;

2.7) A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.

*Ms. Conard seconded. The motion **passed** with all in favor.*

F. The request of **Frances E. Mouflouze Revocable Trust of 2015 (Owner),** for property located at **550 Sagamore Avenue** requesting Subdivision and Site Plan Review Approval to demolish the existing single-family residence and subdivide the lot into four new parcels with associated site improvements, including three single-family homes, a private roadway lot, stormwater management, utilities, and landscaping. Said property is located on Assessor Map 222 Lot 11 and lies within the Single Residence B (SRB) District. (LU-24-166)

SPEAKING TO THE PETITION

[Timestamp 2:27:05] Project engineer Eric Weinberg was present along with realtor Jenna Green, the option holder for the property. Mr. Weinberg said after the preliminary design review they found a small wetland that did not meet the criteria for wetland buffer protection. He said the lot was 62,754 sf and in the SRB zone and had enough land area for four lots, and the parcel had 140 feet of frontage along Sagamore Avenue. He said they presented both a 4-unit and 3-unit development as a single parcel but that they were denied by the ZBA due to a lack of a hardship. He said the applicant now had a conventional subdivision with a private roadway and three buildable lots, with the fourth lot being the right-of-way that would be owned by the homeowners association. He reviewed the requested waivers and said the narrow road and cul-de-sac were functional for emergency vehicles. He said water runoff would not be increased and most of the site would be cleared of trees to achieve grading and storm management. He said the mature evergreens would be replaced with new trees.

[Timestamp 2:34:58] Councilor Moreau said the Board received a letter from the abutter who did not want the large old trees over the property line removed. Mr. Weinberg said the trees were on the applicant's property and needed to come down. He said the abutter who bought the property was at the November TAC meeting when the applicant explained the situation and that the applicant submitted the current plans to the Planning Board in November on the same day the abutter bought the property, so she had known what would happen. He said the trees needed to be removed because they would deteriorate the roof and create shade problems.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

[Timestamp 2:37:30] Christana Wille McKnight of 546 Sagamore Avenue said she was opposed because there would be a big road next to her house and more water would go into her basement because one of the big trees with a large root system that held water would be taken down.

Stephanie (no last name given) of 576 Sagamore Avenue said the plans were drawn incorrectly because they did not include the Douglas fir trees that were property line trees and co-owned by her. She said it wasn't the applicant's right to cut the trees down without her agreement, which would alter the plan presented to the Board and to TAC.

Suzan Harding of 594 Sagamore Avenue said there would be more traffic coming in and out of the development and did not know if the road could handle it. She said the neighbors had lived with blasting for two years and that the trees behind them had been cut down.

Peter Wissel of 579 Sagamore Avenue (via Zoom) said there was inadequate onsite parking and no way for a fire engine to turn around. He said no parking was allowed on Sagamore Avenue because of the bike lane. He said more parking was needed for visitors and municipal vehicles.

No one else spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD [Timestamp 2:46:47]

1) *Mr. Coviello moved that the Board grant the requested waivers to the Subdivision Standards as outlined in the applicant's memo.*
   a) *Strict conformity would pose an unnecessary hardship to the applicant and waiver would not be contrary to the spirit and intent of the regulations.*

*Ms. Conard seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board find that the Subdivision (Lot Line Revision) application meets the standards and requirements set forth in the Subdivision Rules and Regulations to adopt the findings of fact as presented. Ms. Conard seconded. The motion **passed** with all in favor.*

3) *Mr. Coviello moved that the Board grant Preliminary and Final Subdivision Approval with the following **conditions**:*

   3.1 The subdivision plan, and any easement plans and deeds shall be recorded simultaneously at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

   3.2 Property monuments shall be set as required by the Department of Public Works prior to the filing of the plat.

   3.3 GIS data shall be provided to the Department of Public Works in the form as required by the City.

*Ms. Conard seconded. The motion **passed** with all in favor.*

Site Plan

1) *Mr. Coviello moved that the Board find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented. Ms. Conard seconded. The motion **passed** with all in favor.*

There was further discussion. Mr. Coviello said the trees should be decided between the parties and not by the Board. He said State and City regulations allowed blasting on properties using the necessary precautions and monitoring, so it was nothing the Board could deny. He said he did

not think that the three units would have an impact on Sagamore Avenue traffic and that the presented data seemed to meet the standards. He said there was ample parking space on the site. Chair Chellman said the applicant showed that a fire vehicle could get in and out of the site, and he changed the paving width in one location. Mr. Samonas said Walker Bungalow was a dense road, and the rear part of it demanded attention. He said he saw no problem with the style of the development and subdivision but thought the Board was setting a dangerous precedent in subdividing three lots in the SRB zone because someone with a similar lot could realize that they might have three lots. Chair Chellman said the applicant showed that they could do a 3-lot subdivision without any waivers. Vice-Chair Mahanna said the Board was not ignoring public comment but should do what was in their purview.

*2) Mr. Coviello moved that the Board grant Site Plan approval with the following **conditions**:*

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.1) The site plan and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.2) The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.3) Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal. For more information visit https://www.cityofportsmouth.com/publicworks/stormwater/ptap

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a certificate of occupancy and release of the surety:

2.4)The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance;

2.5) A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.

*Ms. Conard seconded. The motion **passed** with all in favor.*

G. The request of **Oak Street Invest GRD NET (Owner),** and **Oak Street Real Estate Capital (Owner)** and **Durgin Lane LLC (Applicant),** for property located at 100 Durgin Lane requesting Subdivision approval for a Lot Line Adjustment of the three existing parcels, a Wetland conditional use permit in accordance with Section 10.1017.50, a conditional use permit from the Highway Noise Overlay District (HNOD) in accordance with Section 10.613.60, a conditional use permit for a Development Site in accordance with Section 10.5B41.10, and Site Plan Review Approval for the demolition of the existing buildings and

the construction of 360 rental housing units in a mix of 3-story and 4-story buildings with associated site improvements including parking, pedestrian access, community spaces, utilities, stormwater management, lighting, and landscaping. Said property is located on Assessor Map 239 Lots 13-2, 16 & 18 and lies within the Gateway Corridor (G1) and Highway Noise Overlay Districts. (LU-24-62)

Mr. Samonas recused himself from the petition, and Mr. Bowen took a voting seat.

SPEAKING TO THE PETITION

[Timestamp 2:54:03] Andrew Hayes of Eastern Real Estate was present on behalf of the applicant, along with lead architect Brett Benson, landscape designer Nick Aceto, Patrick Crimmins of Tighe and Bonds, and Attorney John Bosen. Mr. Hayes said they had their initial consultation with the Board in February and that the objectives set forward then were the same. He said they had extensive discussions with the City, TAC, the Conservation Commission and the abutters. Mr. Benson reviewed the site plan for the proposed 360 apartment development with a mix of 3-story and 4-story development. He said 573 parking spaces and 2.7 acres of community space were proposed. He said they would improve the multimodal connection along Durgin Lane and into the site. He said they provided traffic, acoustics and solar panel studies, easement and maintenance agreements, and that they would provide EV car charging. He said the project had evolved significantly and the key change was concentrated development outside the buffers. He said the site included several constraints that limited the potential building footprint, like access agreements, wetlands, and utilities. He said they restored 17,000 sf of impervious surface in the wetland buffer to pervious surface and created a variety of wayfinding.

[Timestamp 3:00:42] Mr. Aceto reviewed the landscaping plan, the connectivity along Durbin Lane, and the community spaces. [Timestamp 3:10:55] Mr. Benson described the signage design plan and the multimodal resources. He discussed site logistics, the architectural design and diversity of the buildings, and building massing and locations. He said there were changes in the building scales and entrance locations and roof slopes. He said the site would include a noise barrier wall that would connect to residents' garages. He said the exterior wall assemblies would also mitigate highway noise. He said the sustainability strategies included a low-impact urban design that decreased the impervious surface and reduced the heat island effect.

[Timestamp 3:15:09] Mr. Crimmins said the 17 buildings, parking spaces, and three proposed lots were on the site plan and that they now had a separate access to the hotel, per DPW's request, and had a turnaround at the entry. He said they located the buildings in a way that avoided the easements and wetland buffers. He reviewed the grading and drainage plans. He said a third-party peer review was done for water and sewer and that a portion of the water main in Woodbury Ave had to be upgraded. He reviewed the required permits.

Note: At this point, it was moved, seconded and passed to go past 10:00 p.m.

[Timestamp 3:22:08] Mr. Coviello asked if the provision of nearly 100 parking spaces above what was required was due to a demand analysis of the tenants. Mr. Crimmins said it was a

market analysis done by the project team and that, given the site's location, they anticipated the necessary spaces. Mr. Coviello asked if the applicant had an example of another project where a similar rain garden overlook was done and if it actually got used. Mr. Benson said the structure would provide a nice community benefit to the residents by providing a place to sit and that the overlook would activate the space and prevent people from walking into the rain garden. He said the Conservation Commission liked it and the interpretative signage as well. The sound barrier was further discussed. The applicant said the 6-ft height complied with the Noise Ordinance. Councilor Moreau asked if the bump out in Durgin Lane was for the plow trucks to use as a traffic circle. Mr. Crimmins agreed.

[Timestamp 3:26:30] Mr. Almeida said he did not see any waste management locations on the plan. Mr. Crimmins said the waste would be managed and picked up between the buildings. Mr. Almeida said the project was an island onto itself and there was nothing about the area that suggested community at all, which bothered him. He said he knew housing was needed but thought the buildings all looked the same and he did not think it was an exciting project. He also thought it was massive and repetitive, with thousands of the same window pattern over and over again. He said there was nothing that would draw anyone out there as an amenity, like retail or a playground or basketball courts. Chair Chellman said the applicant did a nice job integrating different types of public spaces, but he thought the southeast corner was lacking. He asked why the applicant did not consider joining the west side in the southeast corner and just have one east-west circulation, with extra green space around Buildings 1 and 2. The applicant said the parallel driveway was there and that TAC had a comment about separating out the access to the Hampton Inn as its own dedicated driveway. Chair Chellman disagreed and said it could be greenspace, and he said adjacent parallel routes were a waste of space. He asked for more explanation about the butterfly roof. Mr. Benson said they had several sloped roofs that manifested as butterfly roofs or gables, and they thought it was an aspect that incorporated a traditional New England sloped roof but more contemporary. Mr. Hayes said it was more of an architectural treatment to break up the massing. Chair Chellman asked how the applicant saw the setback issue and related it to the buffer. Mr. Crimmins said the zoning ordinance talked about setbacks and that he would try to find his paperwork.

[Timestamp 3:34:44] Mr. Hewitt asked what the breakout in the bedrooms was. Mr. Hayes said they had 530 bedrooms of which 14 percent were studios, 45 percent were one-bedrooms, 40 percent were two bedrooms, and under 2 percent were three bedrooms. Mr. Hewitt said it was mentioned that the parking ratio was 1.6, and he asked if that was per dwelling unit. Mr. Hayes agreed and said they were over the minimum parking requirement but still in compliance with the zoning. Mr. Hewitt asked if they generally did one parking space per bedroom in their national work, and Mr. Hayes said they did unless it was a downtown urban condition. Mr. Hewitt asked for more detail on the Gosling Road access, noting that the applicant had easements with Motel 6 and perhaps another property owner. Mr. Hayes said they had existing easements between the two private access points, Arthur Grady Dr and Gosling Road, that gave their property the right to enter and depart via those points. He said they were in discussions with the abutters Motel 6, Home Depot, and New Frontiers Church to clean up those easements. He said it was a complicated network and their goal was to preserve the existing rights between parcels and modify them to accommodate the future development and enhance the abutters'

rights. Mr. Hewitt said the traffic would blow up on the access through Gosling Road. He asked the applicant if he had seen a situation nationally where the parking demand was based on the unit area of the dwelling unit, and Mr. Hayes said he had not. Mr. Bowen asked who would live in the units and what the impact on the community would be. Mr. Hayes said they expected that young professionals and young families would live there and perhaps some empty nesters. He said they anticipated one child per household but had no specific target at this point. Mr. Coviello said the West End Yards was a comparable project and that an analysis for the student demand was shocking low at less than 10 students in 250 units, so he thought 15 or so kids could be expected. He asked how package delivery would be handled. Mr. Hayes said it would be centralized in the main community building and that the room was about 500 square feet. Mr. Coviello said he thought it was very low for that big of a development. Mr. Crimmins said he could not find the setback analysis, and Chair Chellman said if Mr. Crimmins thought it was an accurate one, then the Board could go with it.

Chair Chellman opened the public hearing.

SPEAKING TO, FOR, OR AGAINST THE PETITION

[Timestamp 3:43:54] Attorney Larry Gormley and representatives of the New Frontiers Church were present. Attorney Gormley said they were generally supportive of the project and were working cooperatively with the applicant to identify and relocate easements, and their only issue was that the applicant bought a commercial lot that was historically an auto dealership, which required tractor trailers to deliver vehicles, so one of the values of the lot was as a commercial lot serviced by tractor trailers, He said there was no guaranteed access for tractor trailers to continue to access the New Frontiers Church lot, and if it stayed that way and the church sold its lot, it would be selling less than it bought because it would not be able to sell to a buyer that required deliveries brought in via truck and that the turnaround would not accommodate a tractor trailer. He said they were assured by the developer that they were negotiating access alternatives, but the New Frontiers Church's request was a condition that a CMMP will be required for construction, and portions of that plan will be a proposed utility and access sequencing plan for the two nearby lots that are dependent on the parcel for its utility and access needs. He said the church sought the Planning Board's assurance that their highest and best use would be preserved.

No one else spoke, and Chair Chellman closed the public hearing.

DECISION OF THE BOARD

[Timestamp 3:47:25] Mr. Almeida said the church's request seemed reasonable but asked how the Board would do that to protect tractor trailer access to the site. Chair Chellman said that any existing tractor trailer access should be preserved. It was further discussed.

1) *Mr. Coviello moved that the Board find that the Subdivision (Lot Line Revision) application meets the standards and requirements set forth in the Subdivision Rules and Regulations to adopt the findings of fact as presented. Mr. Almeida seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board grant Preliminary and Final Subdivision Approval with the following **conditions**:*

2.1) The subdivision plan, and any easement plans and deeds, shall be recorded simultaneously at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.2) Property monuments shall be set as required by the Department of Public Works prior to the filing of the plat.

2.3) GIS data shall be provided to the Department of Public Works in the form as required by the City.

*Mr. Almeida seconded. The motion **passed** with all in favor.*

Wetland Conditional Use Permit

1) *Mr. Coviello moved that the Board find that the Conditional Use Permit Application meets the requirements set forth in Section 10.1017.50 of the Ordinance and adopt the findings of fact as presented. Mr. Almeida seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board grant the Conditional Use Permit with the following **conditions**:*

2.1) Applicant clarify the mowing plan for the passive areas within the buffer, which should be not be mowed more than 1 to 2 times per year.

2.2) Applicant shall have a conversation with the Department of Public Works to determine the curbing to be used within the roundabout area and use broken and/or slanted curbing.

2.3) An educational sign shall be installed in the passive recreation area that provides content on wetlands, wetland buffers and the sensitivity of the buffers.

2.4) In accordance with Section 10.1018.40 of the Zoning Ordinance, applicant shall install permanent wetland boundary markers. We suggest that these markers are placed along the 25' vegetative buffer at intervals of every 50 feet. These must be installed prior to the start of any construction. These can be purchased through the City of Portsmouth Planning and Sustainability Department. Please mark on final plan set where the markers are to be placed.

2.5) One year after landscaping is complete, if at least an 80% success rate has not been reached, applicants will replant and report back to the Planning & Sustainability Department one year after planting is complete and each subsequent year until an 80% success rate has been achieved.

*Mr. Almeida seconded. The motion **passed** with all in favor.*

Conditional Use Permit (Highway Noise)

1) *Mr. Coviello moved that the Board find that the Conditional Use Permit Application meets the requirements set forth in Section 10.674 of the Ordinance and adopt the findings of fact as presented. Mr. Almeida seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board grant the Conditional Use Permit as presented. Ms. Conard seconded. The motion **passed** with all in favor.*

Conditional Use Permit (Site Development)

1) *Mr. Coviello moved that the Board find that the Conditional Use Permit application meets the criteria set forth in Section 10.5B11 and 10.5B73 and to adopt the findings of fact as presented. Councilor Moreau seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board grant the Conditional Use Permit for the development site. Ms. Conard seconded. The motion **passed** with all in favor.*

Site Plan

1) *Mr. Coviello moved that the Board find that the Site Plan Application meets the requirements set forth in the Site Plan Regulations Section 2.9 Evaluation Criteria and adopt the findings of fact as presented. Ms. Conard seconded. The motion **passed** with all in favor.*

2) *Mr. Coviello moved that the Board grant Site Plan approval with the following **conditions**:*

Conditions to be satisfied subsequent to final approval of site plan but prior to the issuance of a building permit or the commencement of any site work or construction activity:

2.1) The site plan and any easement plans and deeds shall be recorded at the Registry of Deeds by the City or as deemed appropriate by the Planning Department.

2.2) The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site.

2.3) Any site development (new or redevelopment) resulting in 15,000 square feet or greater ground disturbance will require the submittal of a Land Use Development Tracking Form through the Pollutant Tracking and Accounting Program (PTAP) online portal.

2.4) A CMMP will be required for construction. Portions of that plan will be a proposed utility and access sequencing plan for the two nearby lots that are dependent on this parcel for their utility and access needs as currently present and not diminished. The Department of PW will need to sign off on the proposed plan prior to the CMMP being authorized.

2.5) Owner shall provide an access easement to the City for water valve and meter access and for leak detection. The easement shall be reviewed and approved by the Planning and Legal Departments prior to acceptance by the City Council.

Conditions to be satisfied subsequent to final approval of site plan but prior to the

issuance of a certificate of occupancy and release of the surety:

2.6) The Engineer of Record shall submit a written report (with photographs and engineer stamp) certifying that the stormwater infrastructure was constructed to the approved plans and specifications and will meet the design performance;

2.7) A stormwater inspection and maintenance report shall be completed annually and copies shall be submitted for review to the City's Stormwater Division/ Public Works Department.

2.8 Applicant must replace the 6" water main in Woodbury Avenue from Gosling Road to the 16" main on Woodbury Avenue with a new 12" DI pipe installed to City standards.

2.9) A 10' multi-use path on Durgin Lane must be constructed by the developer all the way to Woodbury Avenue. Multi-use path tip downs are to be concrete with tactile panels as appropriate. Developer will provide a final layout, drainage and striping plan for final review.

2.10) Continue narrowing Durgin Lane to 28' to provide a grass strip along the road in the area adjacent to the Durgin Plaza parking lot.

*Ms. Conard seconded. The motion **passed** with all in favor.*

[Timestamp 3:54:15] There was more discussion. Mr. Coviello said he felt that it was a failure of the zoning ordinance, noting that the Board could have done better and probably met the applicant's goal by adding another story to get to the unit and opening up more space. He said language could be added to the ordinance about architecture for the applicant's size of development and for more public use, like pickleball courts and so on. Chair Chellman agreed. Councilor Moreau amended her motion for the 2.4 condition for the construction management plan and add "utility and access needs as currently present and not diminished". Chair Chellman said the Board had discussed additional design standards, which could include building and architecture that was more minimal. Mr. Bowen asked if it would be a more robust development if it had commercial, like a day care. Chair Chellman said that topic would be taken up when additional changes were discussed.

H. REQUEST TO POSTPONE The request of **Durgin Square LLC (Owner),** for property located at **1600 Woodbury Avenue** requesting amended Site Plan Review Approval for the addition of EV charging stations in the existing parking lot with associated equipment and transformer. Said property is located on Assessor Map 238 Lot 16 and lies within the Gateway Corridor (G1) District. ***REQUEST TO POSTPONE*** (LU-24-182)

*Councilor Moreau moved to **grant** the applicant's request to **postpone** the petition to the January 16, 2025 meeting, seconded by Ms. Conard. The motion **passed** with all in favor.*

VII. CITY COUNCIL REFERRALS

A. Osprey Landing Open Space (*Continued from the November 21, 2024 meeting*)

[Timestamp 3:58:40] Mr. Stith said the previously missing attachment was now included with the conditions.

Ms. Conard moved that the Planning Board recommend to the City Council that it approve the acceptance, execution and recording of the terms of a restrictive covenant agreement relating to Lot 2-1950 on a certain plan entitled, "Resubdivision Plan Osprey Landing, Shearwater Drive/Sanderling Way/Osprey Drive, Portsmouth, New Hampshire," by Costello, Lomasney & de Napoli, Inc., dated February 1999, and recorded in the Rockingham County Registry of Deeds as Plan No. D-27099, all in substantial conformance to those as presented to the Planning Board this evening. Mr. Giuliano seconded. The motion ***passed*** *with all in favor.*

B. Arts Overlay District

Mr. Stith said further information would be provided.

VIII. OTHER BUSINESS

A. Chairman Updates and Discussion Items

This topic was included in Item B below.

B. Board Discussion of Regulatory Amendments, Master Plan Scope and Other Matters

[Timestamp 3:59:18] Chair Chellman said City Staff was working on several zoning amendments. Ms. Conard said the City received four responses to the Master Plan RFQ and were in contract negotiations with one firm relating to scope, schedule and price.

IX. ADJOURNMENT

The meeting adjourned at 11:00 p.m.

Submitted,

Joann Breault
Planning Board Meeting Minutes Taker

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 12/12/2024
Property Address: 635 Sagamore Avenue
Application #: LU-22-209
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	We received the required zoning relief from the Zoning Board of Adjustments on May 23, 2023. Otherwise, TAC and the City's third party review engineer have reviewed to ensure that the proposed development complies with the requirements of the Zoning Ordinance and the Site Plan Review Regulations.
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	The proposed shared driveway for the four units has been designed to accommodate Portsmouth's largest fire truck as well as an SU-30 box truck. Additionally, we are providing an offsite double panel advisory speed limit and blind drive sign as well as a TC-600 radar speed sign just down the street to the south of the proposed site entrance in order to improve traffic safety at the intersection between the proposed shared driveway and Sagamore Ave. TAC

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			has reviewed to ensure that the proposed site re-development is safe.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	The proposed stormwater management facilities, including a bioretention system with a sediment forebay, several infiltration areas, and a closed drainage system as well as a recently installed catch basin along Sagamore Avenue will ensure that peak rates and volumes of runoff will be reduced toward all offsite points of analysis resultant to this development as compared with the existing condition. Additionally, the stormwater management system has been designed to meet the stormwater treatment and pollutant removal requirements of the City of Portsmouth to the satisfaction of TAC and the City's third party review engineer.
4	Adequate protection for the quality of groundwater.	**Meets** **Does Not Meet**	We are providing groundwater recharge practices to hydrologically offset the proposed impervious surfaces. Treatment BMPs have been provided to protect the quality of surface water and groundwater.
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	The four units will be supplied by the City's municipal water system.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	The four units will be serviced by the City's municipal sanitary sewer system.
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	As stated above, the proposed stormwater management system meets the requirements of Section 7.6 of the Site Plan Review Regulations. Peak discharge rates and volumes of runoff toward the analysis points will be reduced post-construction resultant to the stormwater management system, and the pollutant removal thresholds required by these regulations have been met, Additionally, these four units will be ties into the City's sewer system and sewage will be treated at the wastewater treatment plant. Appropriate steps take nfor erosion control include silt fence, rip rap, and stabilized construction entrance. We do not anticipate smoke, soot, particulates, or odor resultant to this

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			multi-family residential development.
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	A fire hydrant has been installed at the intersection of Sagamore Ave. and the proposed shared driveway for the development and the shared driveway has been designed to accommodate Portsmouth's largest fire truck.
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	There are no wetlands or other outstanding natural features on the subject parcel. A 100' buffer to offsite wetlands is being maintained as well. See Note #6 on Sheet C2. The site has been designed to keep tree clearing and ledge removal to the minimum possible. The remaining wooded buffer to the Tidewatch Condominiums in the rear of the site will be enhanced with proposed tree plantings. This is a re-development of the existing Luster King auto detailing business.
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	There are no known historical features on the site.
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	Significant traffic is not anticipated resultant to this four-unit residential development. A trip generation memorandum prepared by Stephen G. Pernaw was included in the initial TAC submission. In order to improve traffic safety at the proposed intersection, we are proposing to provide a double panel advisory speed limit and blind drive sign as well as a TC-600 radar speed sign to the south of the site entrance. The proposed site entrance for the 20' wide site driveway directly replaces the existing Luster King site entrance and it is our opinion that this is a significant traffic safety improvement due to the width, location, and elevation of the proposed curb cut.

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	**Meets** **Does Not Meet**	See response to Comment #11, these issues are addressed in that response.
13	Adequate insulation from external noise sources.	**Meets** **Does Not Meet**	The subject parcel is located outside of the Highway Noise Overlay District and from our observation it is not noisy on the subject parcel. Landscape trees and existing vegetation will provide some insulation to noise resulting from traffic on Sagamore Avenue to the extent practicable.
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	See Note #21 on Sheet C2: "The owner of each unit shall store trash in their garage. Trash will be picked up by a private hauler". The proposed private driveway is designed for the turning radii of Portsmouth's largest fire truck. We went through the TAC process and third party review to ensure that the proposed infrastructure is adequate for the proposed development.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	80% of the subject parcel will consist of open space post-construction. Lawn space will be provided in front of, between, and behind each of the units.
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	The proposed site driveway will be tied into the recently installed sidewalk tipdowns along Sagamore Avenue. The proposed site driveway has been designed at the part of the subject parcel with the most available sight distance along Sagamore Avenue.
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	Stormwater from non-roof impervious surfaces will be treated before leaving the site or recharging t ogroundwater. The peak flow rate and volume of runoff will be reduced post-construction. The stormwater management BMPs that were implemented exceed the pollutant removal requirements of the City of Portsmouth as well. Wastewater will enter the municipal sewer system toward the

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
			wastewater treatment plant. The minimal possible amount of tree clearing and ledge removal will be performed to support the proposed development.
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	We are maintaining existing vegetation to the extent possible while still providing adequate yard space for the unit owners and enhancing the remaining buffer with proposed tree plantings. We are providing additional trees and shrubs around the site and have worked with TAC to provide vegetated buffers to abutting properties.
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	We have obtained the necessary zoning relief to have more than one free-standing dwelling on a lot and to permit more than one dwelling unit per acre, and otherwise meet all requirements of the Zoning Ordinance and the Site Plan Review Regulations.
	Other Board Findings:		

DRAFT

ALTUS ENGINEERING

Civil
Site Planning
Environmental
Engineering

133 Court Street
Portsmouth, NH
03801-4413

December 5, 2024

Peter Stith, Planning Manager
City of Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Peer Review #5
"Luster Cluster" Residential Development
Tax Map 222, Lot 19
Altus Project 5583

Transmitted via email to: pmstith@cityofportsmouth.com

Dear Peter,

On May 21, 2024, Altus Engineering (Altus) received the executed three-party contract to provide peer review of the Luster Cluster multi-family development at 635 Sagamore Avenue.

This review has been conducted to determine conformance with City of Portsmouth Stormwater Regulations as well as the City's expectations, good engineering practices, and specifically the items identified in Exhibit A, Task 1 of the Agreement including the following:

- Conduct a site visit to observe current site conditions to assess that JBE's assumptions are accurate.
- Review the drainage study and site design as it relates to the short term and long-term drainage scenarios.
- Review the Stormwater Management Operation and Maintenance Manual.
- Review the design for conformance to City Regulations, City expectations, and standard engineering practices.

On May 30, 2024, Altus walked the property with Michael Garrepy, the owner's representative and Paige Libbey, the project engineer from Jones & Beach Engineers, Inc. (JBE). Altus issued review letters on June 4th, August 28th, October 7th, and October 29, 2024.

On August 26, 2024, Altus performed a follow up visit to confirm the existing site conditions.

On November 25, 2024, JBE submitted a revised plan set dated November 25, 2024, updated Stormwater Management Operations and Maintenance Manual, and a supporting cover letter. Their October 14, 2024 Drainage Analysis remains valid.

The revised submission satisfactorily addresses our concerns with the exception of the following housekeeping items.

GENERAL COMMENTS

1. Key elevations should be added to the stone infiltration basins under the decks for Units 3 and 4. Notes should be added to the plan requiring inspection of the subgrade by the City to ensure that the design criteria is met.

2. The sitework details for both the sand absorption area and the infiltration stone underneath deck specify uncompacted in-situ soil or suitable backfill from subject parcel native material is placed beneath and adjacent to the systems. It is Altus' opinion that the Designer should provide gradation, compaction, and infiltration rate requirements for the placement of the fill adjacent, below and down gradient of the infiltration practice. The sand absorption area for unit 3 is in 5-foot fill section. The detail should include a minimum depth of native material below the treatment area as well as down gradient.

Altus is available to meet with the City and/or the applicant's engineer to further discuss this review. Please feel free to contact us at any time at (603) 433-2335.

Respectfully submitted,

Altus Engineering, LLC

Eric D. Weinrieb, PE
President

Ecopy: David Desfosses, Portsmouth DPW
Zach Cronin, Portsmouth DPW
Mike Garrepy
Daniel Meditz, JBE

Wde/5583 rev 4.docx

JONES & BEACH ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

November 22, 2024

Portsmouth Planning Board
Attn: Rick Chellman, Chair
1 Junkins Avenue, Suite 3rd Floor
Portsmouth, NH 03801

RE: Site Plan Application – Case # LU-22-209
Luster Cluster
635 Sagamore Avenue, Portsmouth, NH
Tax Map 222, Lot 19
JBE Project No. 18134.1

Dear Board Members,

Jones & Beach Engineers, Inc., respectfully submits a Site Plan Application on behalf of the applicant & owner, 635 Sagamore Development LLC. The intent of this application is to remove the 2 pre-existing non-conforming structures known as the Luster King, then construct a four-unit single-family residential condominium development with a paved driveway. This project was approved by ZBA on May 16, 2023, and TAC on November 5, 2024.

The following items are provided in support of this Application:

1. Completed Site Plan Application (submitted online).
2. Site Plan Application Checklist.
3. ZBA Approval from May 16, 2023.
4. TAC Approval from November 5, 2024.
5. Letter of Authorization.
6. Current Deed.
7. Green Building Statement.
8. RCCD Offsite Wetland Letter.
9. Response Letter to Altus Comments.
10. Wetland Delineation Letter.
11. Trip Generation Memorandum.
12. Test Pit Log.
13. One (1) Full Size Plan Set Folded.
14. One (1) Architectural Plans at End of Plan Set.
15. One (1) Drainage Report.
16. One (1) Stormwater Operations and Maintenance Manual.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

Joseph Coronati
Vice President

cc: Michael Garrepy (via email)
Eric Weinrieb, Altus Engineering (via email & U.S. Mail)

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: 635 Sagamore Development, LLC Date Submitted: 3/18/24

Application # (in City's online permitting): LU-22-209

Site Address: 635 Sagamore Avenue Map: 222 Lot: 19

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)**		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)**		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)**	Included with Submission	
☒	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)**	Architectural Plans	N/A
☒	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1D)**	Cover Sheet & Sheet C2	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1E)**	Cover Sheet	N/A
X	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)**	Cover Sheet	N/A
X	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1G)**	Cover Sheet	N/A
X	List of reference plans. **(2.5.3.1H)**	C1	N/A
X	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1I)**	Cover Sheet	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
X	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
X	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
X	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**	C1, Note #3	N/A
X	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
X	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	None Observed, Wetland Delineation Report Included	N/A
X	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	C1	N/A
X	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	All Sheets	N/A
X	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
X	Source and date of data displayed on the plan. **(2.5.4.2D)**	C1	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.	C1	
☒	**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.	Architectural Plans	
☒	**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).	C2 T1-T2	
☒	**4. Parking and Loading: (2.5.4.3D)** • Location of off street parking/loading areas, landscaped areas/buffers; • Parking Calculations (# required and the # provided).	C2, Note #3	
☒	**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).	C4	
☒	**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.	C4 & P2	

☒	**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.	C4	
☒	**8. Solid Waste Facilities: (2.5.4.3H)**	C2, Note #22	
	• The size, type and location of solid waste facilities.		
☒	**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.	Snow Storage - C2 Everything Else - C3	
☒	**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.	L2	
☒	**11. Indicate where dark sky friendly lighting measures have been implemented. (10.1)**	Everywhere	
☒	**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.	L1	
☒	**13. Contours and Elevation: (2.5.4.3L)** • Existing/Proposed contours (2 foot minimum) and finished grade elevations.	C3	
☒	**14. Open Space: (2.5.4.3M)** • Type, extent and location of all existing/proposed open space.	C2, Note #2	
☐	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	N/A	
☐	**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)**	Included with Submission	
☒	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	C3	
☒	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)**	C2, Note #23	
☒	Stormwater Management and Erosion Control Plan. **(7.4)**	Included with Submission	
☒	Inspection and Maintenance Plan **(7.6.5)**	Included with Submission	

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)**	C2, Note # 4 & 5	
☒	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)**	Included with Submission	
☒	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)**	Pending	

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)**	C2, Note #5	
☒	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)**	C2, Note #21	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)**	C2, Note #19 & 20	N/A

Applicant's Signature: Daniel Medlitz **Date:** 9/5/2024

CITY OF PORTSMOUTH

Planning Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801
(603) 610-7216

ZONING BOARD OF ADJUSTMENT

June 28, 2023

635 Sagamore Development, LLC
3612 Lafayette Rd Dept 4
Portsmouth, New Hampshire 03801

RE: **Board of Adjustment request for property located at 635 Sagamore Avenue (LU-22-209)**

Dear Property Owner:

The Zoning Board of Adjustment, at its regularly scheduled meeting of **Tuesday, May 16, 2023**, considered your application for the removal of existing structures and constructing 4 single family dwellings which requires the following: 1) A Variance from Section 10.513 to allow four free-standing dwellings where one is permitted. 2) A Variance from Section 10.521 to allow a lot area per dwelling unit of 21,198 square feet per dwelling where 43,560 square feet is required. Said property is shown on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District. As a result of said consideration, the Board voted to to **deny** the request initially because the proposed plan did not meet the hardship criteria. This Motion failed. The Board then voted to **approve** the variances for the project as presented with the following **condition:**

1) The design and location of the dwellings may change as a result of Planning Board review and approval.

The Board's decision may be appealed up to thirty (30) days after the vote. Any action taken by the applicant pursuant to the Board's decision during this appeal period shall be at the applicant's risk. Please contact the Planning Department for more details about the appeals process.

Approvals may also be required from other City Commissions or Boards. Once all required approvals have been received, applicant is responsible for applying for and securing a building permit from the Inspection Department prior to starting any project work.

This approval shall expire unless a building permit is issued within a period of two (2) years from the date granted unless an extension is granted in accordance with Section 10.236 of the Zoning Ordinance.

The Findings of Fact associated with this decision are available: attached here or as an attachment in the Viewpoint project record associated with this application and on the Zoning Board of Adjustment Meeting website:

https://www.cityofportsmouth.com/planportsmouth/zoning-board-adjustment/zoning-board-adjustment-archived-meetings-and-material

The minutes and audio recording of this meeting are available by contacting the Planning Department.

Very truly yours,

Phyllis Eldridge, Chair of the Zoning Board of Adjustment

cc: Shanti Wolph, Chief Building Inspector

Rosann Maurice-Lentz, City Assessor

Joseph Coronati, Jones & Beach
R. Timothy Phoenix, Hoefle, Phoenix, Gormley & Roberts, PLLC

CITY OF PORTSMOUTH
Planning & Sustainability
Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801
(603) 610-7216

TECHNICAL ADVISORY COMMITTEE

November 8, 2024

635 Sagamore Development, LLC
3612 Lafayette Rd Dept 4
Portsmouth, New Hampshire 03801

RE: Site Plan Approval request for property located at 635 Sagamore Avenue, Portsmouth, NH (LU-22-209)

Dear Property Owner:

The Technical Advisory Committee, at its regularly scheduled meeting of Tuesday, November 5, 2024 , considered your application for Site Plan approval for the removal of the existing structures and construction of 4 single-family dwellings on one lot with associated site improvements. Said property is shown on Assessor Map 222 Lot 19 and lies within the Single Residence A (SRA) District. As a result of said consideration, the Committee voted to **recommend approval** to the Planning Board with the following **conditions**:

The following changes will be made prior to Planning Board submission:

1. The stormwater maintenance manual shall be updated for the submission to the Planning Board.

Conditions:

1. Trees to remain are clearly marked before site work can commence.

2. Monthly and annual reporting of stormwater and drainage infrastructure as defined in the stormwater maintenance manual to the Department of Public Works.

3. Engineer to certify that stormwater mitigation system was monitored during construction, is installed as designed and that the system will function in compliance with the proposed drainage study and plan.

4. Developer to pay for the installation of the fire hydrant extended to the site. The hydrant was installed exclusively for the benefit of this site. The cost to install was $20,900.

5. Developer to provide fair share contribution for catch basin installed up gradient to the Tidewatch intersection. The catch basin was installed partially for the benefit of this site. The fair share contribution is $15,208.

This matter will be placed on the agenda for the Planning Board meeting scheduled for **Thursday, December 19, 2024**. One (1) hard copy of all plans and supporting reports and exhibits as well as an updated electronic file (in a PDF format) must be filed in the Planning

& Sustainability Department and uploaded to the online permit system no later than **Wednesday, November 27, 2024**.

Per Section 2.5 of the Site Plan Regulations, a site plan review application to the Planning Board must include all applicable information and supporting materials including but not limited to the following items:

- *Full updated plan set*
- *Draft Easements*
- *Drainage Analysis*
- *Traffic Studies*
- *Etc.*

All comments, corrections, and conditions identified as "Items to be addressed before Planning Board submittal' must be resolved/corrected for the Planning Board application submittal to be deemed complete.

The minutes and audio recording of this meeting are available by contacting the Planning & Sustainability Department.

Very truly yours,

Peter Britz,
Planning and Sustainability Director

cc: Joseph Coronati, Jones & Beach
cc: R. Timothy Phoenix, Hoefle, Phoenix, Gormley & Roberts, PLLC

12:20 94%
Sagamore A... Save

Letter of Authorization

635 Sagamore Development, LLC, owner of property located at 635 Sagamore Avenue in Portsmouth, NH, known as Tax Map 222, Lot 19, do hereby authorize Jones & Beach Engineers, Inc. ("JBE"), Garrepy Planning Consultants, LLC ("GPC"), and Hoefle, Phoenix, Gormley & Roberts, PLLC ("HPGR") to act on its behalf concerning the previously mentioned property.

I hereby appoint JBE, GPC and HPGR as agents to act on behalf of 635 Sagamore Development, LLC in the Planning Board and Zoning Board application process, to include any required signatures.

635 Sagamore Development, LLC

Timothy J. Black, Duly Authorized

January 5, 2022
Date

Book: 6332 Page: 1158

E # 21060614 09/24/2021 09:32:59 AM
Book 6332 Page 1158 Page 1 of 2
Register of Deeds, Rockingham County

Return to:

LCHIP	ROA585829	25.00
TRANSFER TAX	RO109828	5,807.00
RECORDING		14.00
SURCHARGE		2.00

WARRANTY DEED

KNOW ALL BY THESE PRESENTS, that I, **WILLIAM A. HINES**, married person, **TRUSTEE OF THE WILLIAM A. HINES FAMILY REVOCABLE TRUST** a/k/a The Hines Family Revocable Trust of 2006, of 635 Sagamore Avenue, Portsmouth, New Hampshire 03801, for consideration paid, hereby grant to **635 SAGAMORE DEVELOPMENT, LLC**, a New Hampshire limited liability company with a mailing address of 3612 Lafayette Road, Dept. 4, Portsmouth, New Hampshire 03801 with WARRANTY COVENANTS, the following described premises:

A certain tract of land with the buildings thereon, situate on Sagamore Avenue in said Portsmouth, more particularly described as follows:

Beginning at a point on Sagamore Avenue at land now or formerly of Arnold, thence running Westerly by said Arnold land three hundred (300) feet, more or less, to land now or formerly of W.W. and D.M. Johnston; thence turning and running Northwesterly by said Johnston land one hundred and twenty-four (124) feet; thence turning and running Northerly also by said Johnston land one hundred sixty-two (162) feet to land now or formerly of C.W. Walker; thence turning and running Easterly by said Walker land four hundred nineteen (419) feet to Sagamore Avenue; thence turning and running Easterly one hundred forty (140) feet; thence turning and running along said Sagamore Avenue thirty (30) feet to land of one Smith; thence turning and running Westerly one hundred forty (140) feet; thence turning and running Southerly ninety (90) feet; thence turning and running Easterly one hundred forty (140) feet to Sagamore Avenue; the last three bounds being land of Smith; thence turning running Southerly by said Sagamore Avenue one hundred sixty (160) feet to the point of beginning.

EXCEPTING AND RESERVING to the said William A. Hines and his wife Bonnie Hines a life estate in the above-described property permitting them to reside in the existing residential apartment on the property for the remainder of William A. Hines natural life, plus one year unless Bonne Hines shall have predeceased.

Meaning and intending to convey the same premises conveyed to the Grantor by deed of William A. Hines dated February 11, 2008 and recorded in the Rockingham County Registry of Deeds at Book 4885, Page 1538.

BY SIGNING BELOW, William A. Hines and Bonnie Hines release all homestead rights to the Premises.

TRUSTEE CERTIFICATE

I, William A. Hines, Trustee of the William A. Hines Family Revocable Trust A/K/A The Hines Family Revocable Trust of 2006, hereby covenant that said Trust is duly organized under the laws of the State of New Hampshire; that I am the sole trustee pursuant to said Declaration of Trust; that said Trust is still in full force and effect; that I have the power thereunder to convey as aforesaid; and that, in making this conveyance, I have, in all respects, acted pursuant to the authority vested in and granted to me therein and no purchaser or third party shall be bound to inquire whether the Trustee has said power or are properly exercising said power or to see to the application of any trust assets paid to the Trustee for a conveyance thereof.

Signed this 3rd day of September, 2021.

William A. Hines, Trustee of the William A. Hines Family Revocable Trust A/K/A The Hines Family Revocable Trust of 2006

Bonnie Hines

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

On this, the 3rd day of September, 2021, before me, the undersigned Officer, personally appeared William A. Hines, Trustee of the William A. Hines Family Revocable Trust A/K/A The Hines Family Revocable Trust of 2006, 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 set forth therein.

Justice of the Peace/Notary Public
My commission expires:

LAURA H. RAMSDELL
MY COMMISSION EXPIRES MAY 20, 2025
NOTARY PUBLIC
NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

On this, the 3rd day of September, 2021, before me, the undersigned Officer, personally appeared Bonnie Hines, known to me, or satisfactorily proven, to be the person whose name is subscribed to the foregoing instrument, and acknowledged that she executed the same for the purposes set forth therein.

Justice of the Peace/Notary Public
My commission expires:

LAURA H. RAMSDELL
MY COMMISSION EXPIRES MAY 20, 2025
NOTARY PUBLIC
NEW HAMPSHIRE

12:20 94%
Sagamore A... Save

Letter of Authorization

635 Sagamore Development, LLC, owner of property located at 635 Sagamore Avenue in Portsmouth, NH, known as Tax Map 222, Lot 19, do hereby authorize Jones & Beach Engineers, Inc. ("JBE"), Garrepy Planning Consultants, LLC ("GPC"), and Hoefle, Phoenix, Gormley & Roberts, PLLC ("HPGR") to act on its behalf concerning the previously mentioned property.

I hereby appoint JBE, GPC and HPGR as agents to act on behalf of 635 Sagamore Development, LLC in the Planning Board and Zoning Board application process, to include any required signatures.

635 Sagamore Development, LLC

Timothy J. Black, Duly Authorized

January 5, 2022
Date

We GSD Studios
Architecture | Planning
22 Jady Hill Avenue
Exeter, NH 03833
207.347.1504

City of Portsmouth
Planning Department
Attn: Peter Stith, Principal Planner
1 Junkins Ave, 3rd Floor
Portsmouth, NH 03801

April 1, 2024

Dear Mr. Stith,

The residential units proposed for the project at 635 Sagamore Avenue are being designed to meet or exceed the applicable green building standards as set forth in the 2018 set of Codes adopted by the State of New Hampshire, along with associated amendments codified by the City of Portsmouth.

In an effort promote the buildings' efficiency, longevity, and health of their occupants, close attention shall be given to the following building categories:

- Tight building enclosures
  - Watertightness (though moisture barriers)
  - Vapor permeability
  - Airtightness
  - Aire quality, environmental controls, and whole-house ventilation
- Thermal control for reduced energy usage
  - Enhanced envelope assembly R-Values and window/door U-Values
  - Solar Heat Gain Coefficient and orientation of windows and doors
- High-efficiency water heating & HVAC equipment
- ENERGY STAR appliances
- High-efficiency lighting
- Low-flow water fixtures

Assemblies and systems for the proposed residences shall be specified during the Building Permit Application phase.

Thank you,

Margaret Randolph, RA, NCARB, AIA, LEED AP ND

ROCKINGHAM COUNTY CONSERVATION DISTRICT

110 North Road, Brentwood, NH 03833-6614
Tel: 603-679-2790 • Fax: 603-679-2860
www.rockinghamccd.org

23 May 2024

Peter Britz, Director of Planning
City of Portsmouth Planning Dept.
1 Junkins Avenue
Portsmouth, NH 03801

RE: 635 Sagamore Avenue
Tax map/lot: 222, lot 19
RCCD #PR222-19 N24

Dear Mr. Britz;

At your instruction, Rockingham County Conservation District (RCCD) performed a wetland review of this site. The scope of work included a wetland review on the project site and a determination of reference lines for buffer measurements from off-site wetlands. A site visit was conducted on 22 May 2024 by Michael Cuomo of the Rockingham County Conservation District and Brenden Walden of Gove Environmental Services.

1) Confirming the findings of Mr. Walden's letter dated 8 November 2021, there are no wetlands on the project site.

2) There are two wetlands across the street from the project site on the Tidewatch Condominium property. The attached Sketch One shows the general locations, overlaid on part of the Jones and Beach existing conditions plan. The wetlands were not flagged because they are off the project site. Measurements were taken from the wetland boundary to the centerline of the road for location reference. The Easterly wetland requires a 100 foot buffer and the Westerly wetland does not, according to the City's GIS.

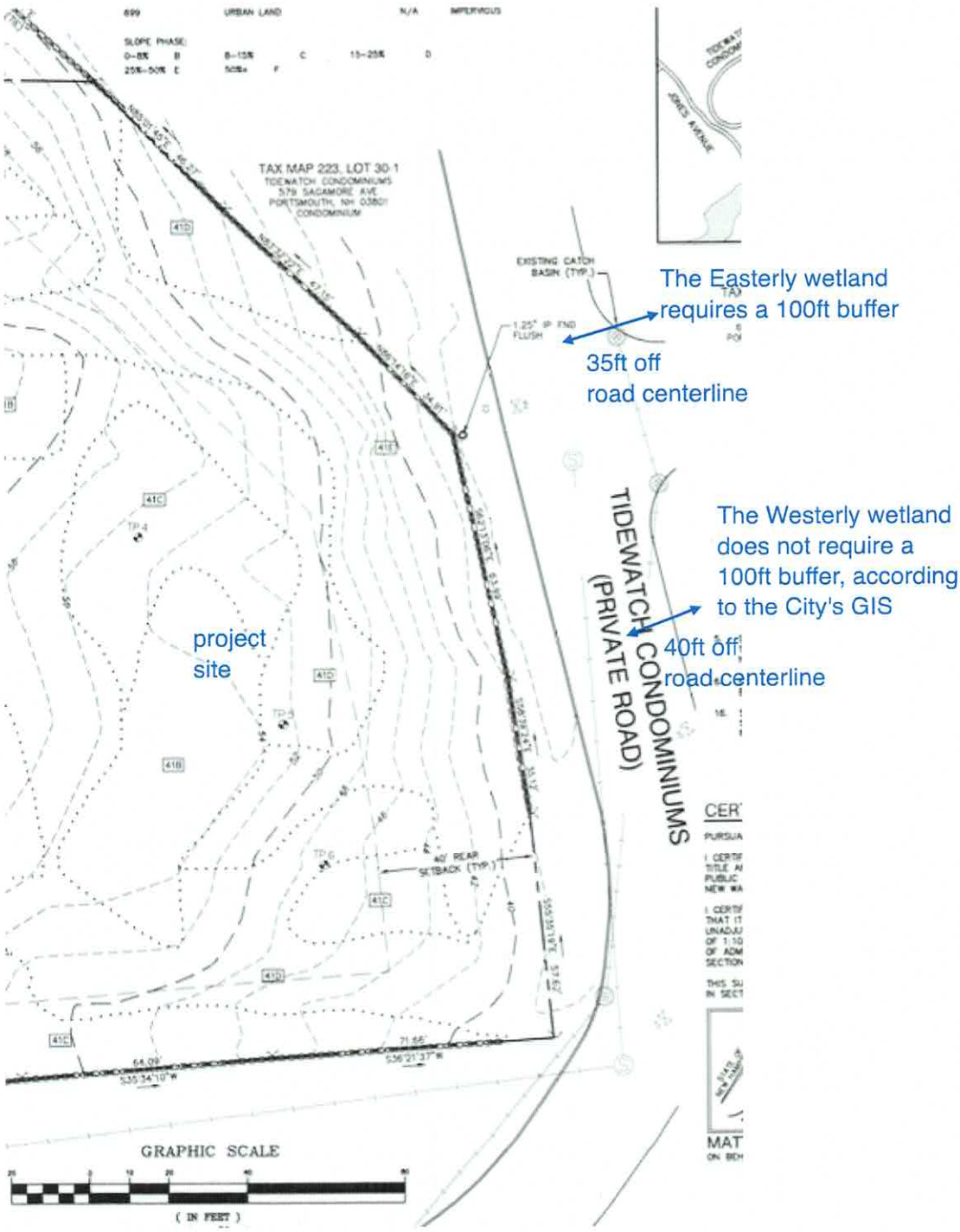
3) Sketch Two is taken from the City's GIS. It generally shows the two wetlands discussed above and a third 'wetland' south and east of the project site, partially on the Tidewatch Condominium property. This 'wetland' does not exist; its is a map error.

Sincerely,

Michael Cuomo
NH Certified Soil Scientist #6
NH Certified Wetland Scientist #4

Copy to: plbritz@cityofportsmouth.com
bwalden@gesinc.biz
mgarrepy@gmail.com

Sketch One
Part of 635 Sagamore Ave, Portsmouth
Buffer from off-site wetlands
23 May 2024
Michael Cuomo, RCCD



Sketch Two
635 Sagamore Avenue, Portsmouth
Wetlands around site
23 May 2024
Michael Cuomo, RCCD

JONES&BEACH
ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

November 22, 2024

City of Portsmouth Planning Department
Attn: Peter Stith, Planning Manager
1 Junkins Avenue, Suite 3rd Floor
Portsmouth, NH 03801

RE: Response Letter 4
635 Sagamore Ave, Portsmouth, NH
Tax Map 222, Lot 19
JBE Project No. 18134.1

Dear Mr. Stith,

We are in receipt of comments from Eric Weinrieb, P.E., Altus Engineering dated October 29, 2024. Review comments are listed below with our responses in bold. Additionally, the Technical Advisory Committee decided to recommend approval to the Planning Board at their meeting on November 8, 2024. The TAC requested one change the stormwater operations and maintenance manual as a condition of their recommendation for approval, so we are responding to that condition with this letter as well.

ALTUS Comments:

1. Based on the discussion at the October 1st TAC meeting, it is understood the Designer was going to expand the retaining wall and move it closer to buildings 3 and 4, making the wall higher, while preserving more of the natural vegetation. The boulder wall to the south of Unit 4 has not moved. The natural buffer between the development and Tidewatch Condominium development remains the same in this area. The Committee should confirm if the wall location is acceptable.
RESPONSE: TAC has signed off on the retaining wall location.

2. Key elevations should be added to the stone infiltration basins under the decks for Units 3 and 4. Additionally, the design computations include an assumption that there will be no ledge to elevation 62.33 for building 3 and elevation 61.0 for building 4. Notes should be added to the plan requiring inspection of the subgrade to ensure that the design criteria are met.
RESPONSE: Specifications for the top and bottom of stone elevations relative to existing grade have been added the labels for the stone infiltration beds on Sheet C3. Additionally, notes have been added to the "Infiltration Stone Underneath Deck" detail on Sheet D5 directing the contractor to remove ledge to at least 2' below existing grade in the footprint of these practices if encountered, and to verify that existing subgrade has not been excessively compacted prior to placement of stone.

3. The Designer is proposing to provide "sand absorption areas" for the gravity foundation drainage discharge. The absorption area for building units 1 and 2 is approximately 30- feet from the nearest test pit. Altus recommends that notes be added to the plans requiring confirmation that there is adequate separation to ledge.
RESPONSE: Note #4 has been added to the sand absorption area detail on Sheet D4 specifying that a test pit shall be performed prior to construction of these practices in order to confirm adequate separation to ledge, and that ledge shall be removed to at least 12" below the bottom of the practice if encountered.

4. The sitework details for both the sand absorption area and the infiltration stone underneath deck specify native material is placed beneath and adjacent to the systems. It is Altus' opinion that the Designer should provide gradation and compaction requirements for the placement of the fill. The detail should include a minimum depth of native material below the treatment area as well as down gradient.
RESPONSE: We revised the sand absorption area detail to specify that the sand, per the specified gradation, shall be placed from existing grade to finished grade. The material below that will be uncompacted in-situ soil. Fill material on the downgradient slopes will be suitable backfill from the subject parcel. The same sand gradation from the sand absorption area detail has been added to the detail for the stone infiltration beds underneath unit decks and the detail has been revised to state that this sand material shall be placed from existing grade to the bottom of stone on these features.

5. The Designer provided two Stormwater Management Operation and Maintenance Manuals with their submission. One dated October 14th and an updated copy dated October 22nd. It is presumed that the October 22nd version is the correct version. The Designer notes that the sand absorption areas maintenance are to be inspected monthly. The maintenance requirements should include the removal of any vegetated growth.
RESPONSE: The Stormwater Management Operation and Maintenance Manual dated October 22nd was the correct version (though a November 19th revision date has now been added). A sentence has been added to the O&M sections for the sediment forebay, bioretention system, stone drip edges, stone underneath decks, and rip rap outlet protection aprons stating that excessive vegetative growth shall be removed, and to the section for the sand absorption areas stating that ALL vegetative growth shall be removed.

TAC Changes to be made prior to Planning Board Submission:

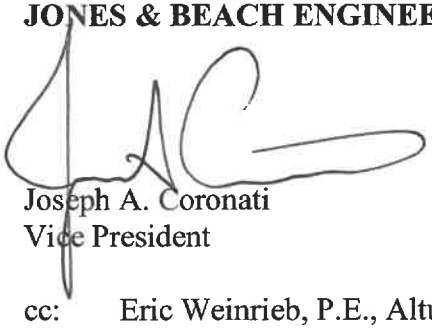
1. *The stormwater maintenance manual shall be updated for the submission to the Planning Board.*
   RESPONSE: The Stormwater Operations & Maintenance Manual has been updated to specify that the sand absorption areas shall be inspected quarterly rather than monthly, as requested.

Included with this response letter are the following:

1. One (1) Full Size Revised Plan Set (Architectural Plans at End of Set).
2. One (1) Revised Stormwater Operations & Maintenance Manual.

If you have any questions or need any additional information, please feel free to contact our office. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.



Joseph A. Coronati
Vice President

cc: Eric Weinrieb, P.E., Altus Engineering (via email and hand delivered)
Michael Garrepy (via email)

GOVE ENVIRONMENTAL SERVICES, INC.

November 8, 2021

Subject: Wetland Delineation Report
635 Sagamore Ave, Portsmouth, NH

Dear Michael Garrepy,

Per your request, this letter is to verify that Gove Environmental Services, Inc., performed a site inspection to identify wetlands on the subject properties located on Tax Map 222 Lots 19 on Sagamore Ave in Portsmouth, NH. Wetlands were evaluated utilizing the following standards:

1. *US Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, Technical Report ERDC/EL TR-12-1 (January 2012).
2. *Field Indicators for Identifying Hydric Soils in New England – Version 4, June 2020.* New England Hydric Soils Technical Committee.
3. *US Army Corps of Engineers National Wetland Plant List, 2018.*
4. *Classification of Wetlands and Deepwater Habitats of the United States.* USFW Manual FWS/OBS–79/31 (1979).

Brenden Walden performed the site inspection on 10/29/2021. The Subject property was reviewed in its entirety with careful attention paid to the area outlined southeast of the property on the City of Portsmouth's GIS website as being a wetland with a 100ft buffer that encroaches onto the property. During the site review it was determined, using the methods and standards above, that no areas on the property had any areas that would meet the criteria needed to be classified as a wetland. The area outside to the southeast of the property was also reviewed and was determined to also not have any characteristics of a wetland and thus would not have any buffer that would encroach on the subject property.

This concludes the wetland delineation report. If I can be of further assistance, please feel free to contact me at (603) 778-0644.

Sincerely,

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.

Enc. Portsmouth GIS
Granitview Maps: Aerial
Aerial w/ Topography
Aerial w/ Topography & NWI

8 Continental Dr Unit H, Exeter, NH 03833-7507
Ph (603) 778 0644 / *Fax* (603) 778 0654
www.gesinc.biz
info@gesinc.biz

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019
Data updated 7/17/2019

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Map Theme Legends

Wetlands

City of Portsmouth

Map by NH GRANIT

Legend

Map Scale

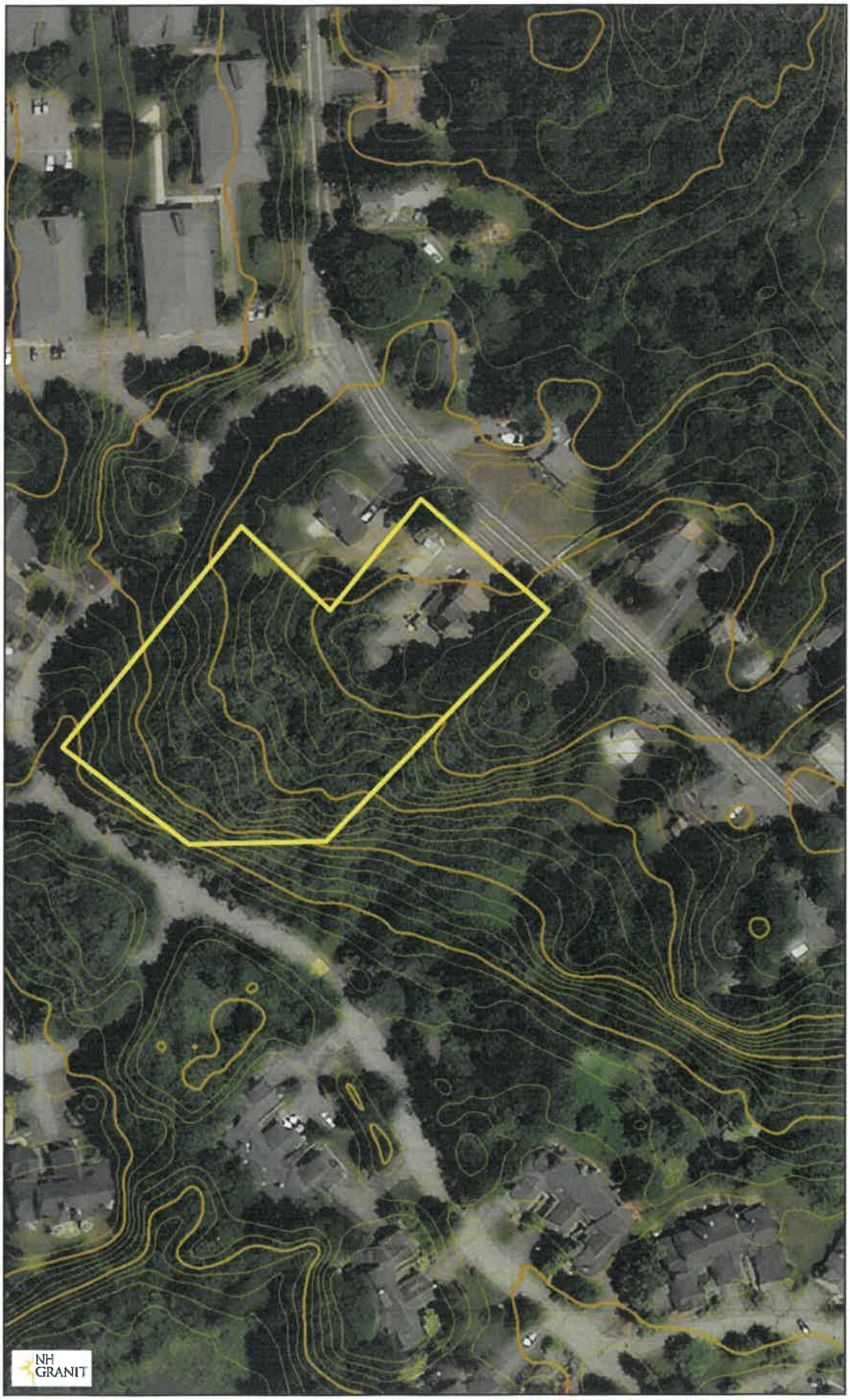
1: 1,624

© NH GRANIT, www.granit.unh.edu

Map Generated: 11/8/2021

Notes

Map by NH GRANIT



Legend

Contour_2ft_0108020201_s
Contour_2ft_0108020202_s
Contour_2ft_0108020201_s
Contour_2ft_0108020202_s
Contour_2ft_0108020101_s
Contour_2ft_0108020102_s
Contour_2ft_0108020103_s
Contour_2ft_0108020104_s
Contour_2ft_0108020105_s
Contour_2ft_0108020101_s
Contour_2ft_0108020102_s
Contour_2ft_0108020103_s
Contour_2ft_0108020104_s
Contour_2ft_0108020105_s
Contour_2ft_0108010702_s
Contour_2ft_0108010705_s
Contour_2ft_0108010702_s
Contour_2ft_0108010705_s
Contour_2ft_0108010601_s
Contour_2ft_0108010603_s
Contour_2ft_0108010604_s
Contour_2ft_0108010607_s
Contour_2ft_0108010601_s
Contour_2ft_0108010603_s
Contour_2ft_0108010604_s
Contour_2ft_0108010607_s
Contour_2ft_0108010402_s
Contour_2ft_0108010404_s
Contour_2ft_0108010402_s
Contour_2ft_0108010404_s
Contour_2ft_0108010301_s
Contour_2ft_0108010302_s
Contour_2ft_0108010303_s
Contour_2ft_0108010304_s
Contour_2ft_0108010305_s
Contour_2ft_0108010307_s
Contour_2ft_0108010301_s

Map Scale
1: 1,624

© NH GRANIT, www.granit.unh.edu
Map Generated: 11/8/2021

Notes

NWI

Legend

NWIPlus

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetlan
- Freshwater Pond
- Lake
- Other
- Riverine

Map Scale

1: 1,624

© NH GRANIT, www.granit.unh.edu

Map Generated: 11/8/2021

Notes

Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

MEMORANDUM

Ref: 2180A

To: Michael Garrepy

From: Stephen G. Pernaw, P.E., PTOE

Subject: Residential Development – 635 Sagamore Avenue
Portsmouth, New Hampshire

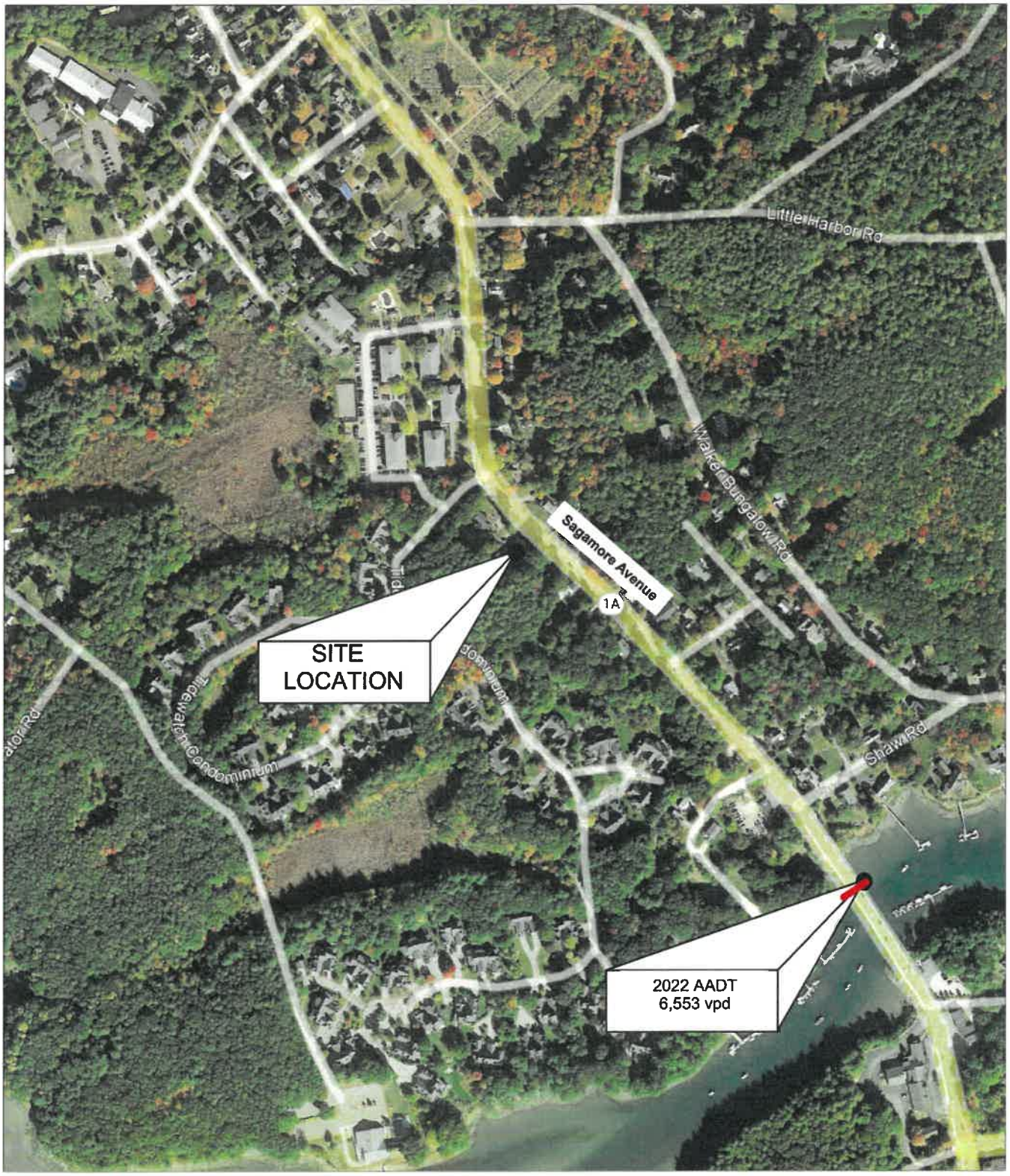
Date: August 8, 2023

Introduction - As requested, our office has conducted a trip generation analysis for the proposed change of use that will occur at 635 Sagamore Avenue (NH1A) in Portsmouth, New Hampshire. This analysis is based on the latest edition of the Institute of Transportation Engineers *"Trip Generation Manual"* and the results reflect average weekday conditions. We also researched available traffic count data at the New Hampshire Department of Transportation. Figure 1 shows the location of the subject site with respect to the area road system.

Proposed Development - The plan entitled *"ZBA Site Plan,"* prepared by Jones and Beach Engineers, Inc. dated 12/7/21 (revised 6/23/22), Scale 1" = 20', Sheet C2 shows that the existing Luster King Car Care business located on the west side of Sagamore Avenue will be razed and replaced by four single-family detached dwelling units. The wide-open curb cut that provides access to the current site will be replaced by a well-defined site access road. Access to the individual residences will be provided by driveways that intersect the site access road (see Attachment 1).

Existing Conditions - Sagamore Avenue is a two-lane state-maintained minor arterial roadway that is delineated with a four-inch double-yellow centerline and four-inch single white edge lines. The speed limit is posted at 30 mph in both directions.

Research at the NHDOT revealed that a short-term automatic traffic recorder count was conducted on Sagamore Avenue at Sagamore Creek in August 2022. This count station is located approximately 0.3 miles south of the subject site. The NHDOT estimates that the 2022 Annual Average Daily Traffic volume was 6,553 vehicles per day (see Attachment 2). The raw data collected in the month of August exceeded 7,000 vehicles per day. This data confirms that the highest traffic hours on Sagamore Avenue occurred from 8:00 to 9:00 AM and from 5:00 to 6:00 PM on weekdays (see Attachment 3)`.



= AUTOMATIC TRAFFIC RECORDER LOCATION (NHDOT)

NORTH

2180A

Figure 1

Site Location

Traffic Evaluation, Proposed Residential Development, Portsmouth, New Hampshire

Trip Generation – To estimate the volume of traffic generated by the former use and the proposed residential development, Pernaw & Company, Inc. considered the standardized trip-generation rates and equations published by the Institute of Transportation Engineers (ITE)[1]. More specifically, ITE Land Use Code (LUC) 942 (Automobile Care Center) was selected for the former use and the number of service bays (3 bays) was utilized as the independent variable. ITE LUC 210 (Single-Family Detached Housing) was chosen for the residential development and the number of dwelling units was used as the independent variable. The results of the trip generation comparison are summarized in Table 1.

During the peak hour periods of the adjacent street system, the proposed residential development will generate approximately 3 vehicle-trips (1 arrival, 2 departures) during the AM peak hour, and 4 vehicle-trips (2 arrivals, 2 departures) during the PM peak hour. When compared to the car care center, the proposed development likely generates slightly fewer vehicle-trips during both the AM and PM peak hour periods. The trip generation computations are attached (see Attachments 4 - 8).

Table 1 — Trip Generation Comparison

		Current Use [1] (Car Care)	Proposed Use [2] (Residential)	Change
Weekday Peak Hour (24 hrs.)				
	Entering	NA	19 veh	NA
	Exiting	NA	19 veh	NA
	Total	NA	38 trips	NA
AM Peak Hour				
	Entering	3 veh	1 veh	-2 trips
	Exiting	2 veh	2 veh	0 trips
	Total	5 trips	3 trips	-2 trips
PM Peak Hour				
	Entering	3 veh	2 veh	-1 trips
	Exiting	4 veh	2 veh	-2 trips
	Total	7 trips	4 trips	-3 trips

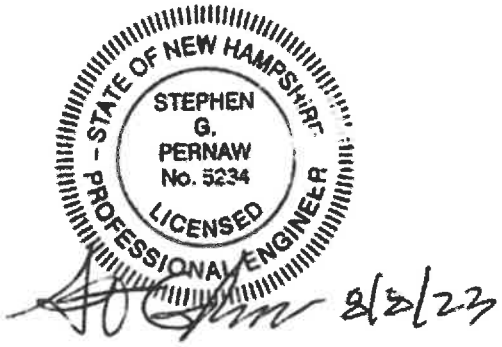
[1] ITE Land Use Code 942 - Automobile Care Center - 3 Service Bays - Trip Rate Method (PM directional distribution is estimated)

[2] ITE Land Use Code 210 - Single-Family Detached Housing - Trip Rate Method

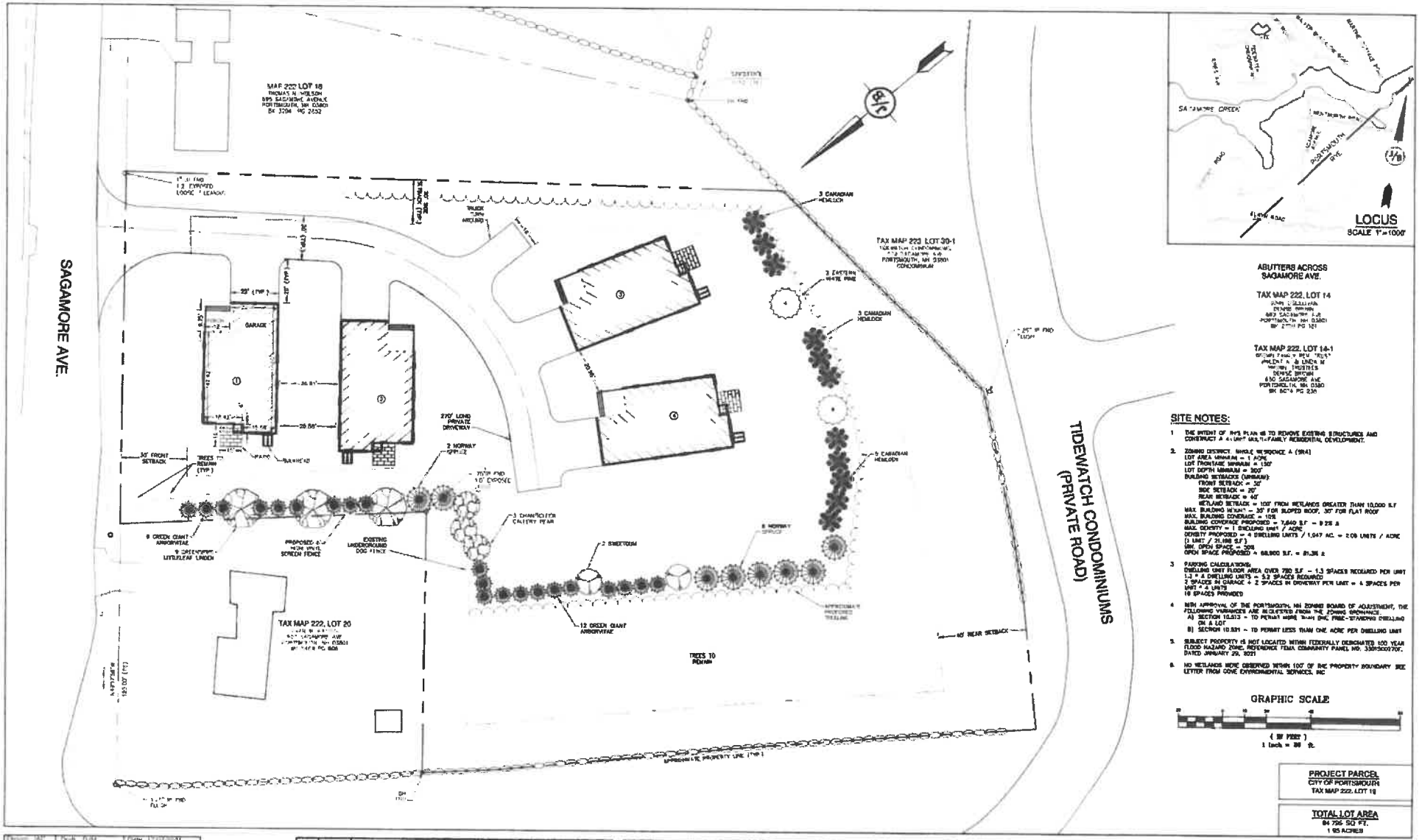
[1] Institute of Transportation Engineers, *Trip Generation*, eleventh edition (Washington, D.C., 2021)

Conclusions - Replacement of the Luster King car care business with four residential single-family dwelling units will likely result in a slight reduction in vehicle-trips that are generated during the weekday AM and PM peak hour periods. From this it is reasonable to conclude that off-site traffic impacts will be de minimis. The proposed closure of the wide-open curb cut on the highway, and replacing it with one well-defined site access road intersection on the state highway, represents a significant improvement from an access management and safety standpoint. In short, we find that the proposed redevelopment of the subject site to be reasonable and beneficial from a transportation engineering and traffic operations standpoint.

Attachments



ATTACHMENTS



Design: JAT | Drafting: DJM | Date: 12/07/2021
Checked: JAT | Scale: AS NOTED | Project No: 18134.1
Owner's Name: 635 SAGAMORE DEVELOPMENT, LLC

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV	DATE	REVISION	BY
5	8/23/22	REVISED CONCEPTUAL LAYOUT	DJM
4	6/1/22	ADDED UTILITY INFORMATION	DJM
3	3/31/22	REVISED CONCEPTUAL LAYOUT	DJM
2	2/10/22	REVISED CONCEPTUAL LAYOUT	DJM
1	1/4/22	REVISED CONCEPTUAL LAYOUT	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
83 Portsmouth Ave
PO Box 219
Stratham, NH 03885
603 772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESBEACH.COM

Plan Name:	ZBA SITE PLAN
Project:	5-UNIT RESIDENTIAL SITE 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT, LLC 3812 LAFAYETTE RD., DEPT #, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No: C2
SHEET 2 OF 3
JBE PROJECT NO. 18134.1

Attachment 1

New Hampshire DOT Department of Transportation

MS2

Transportation Data Management System

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	82379151	**MPO ID**	
Type	SPOT	**HPMS ID**	
On NHS	No	**On HPMS**	No
LRS ID	S0000001A_	**LRS Loc Pt.**	
SF Group	04	**Route Type**	
AF Group	04	**Route**	NH 1A
GF Group	E	**Active**	Yes
Class Dist Grp	Default	**Category**	3
Seas Clss Grp	Default		
WIM Group	Default		
QC Group	Default		
Fnct'l Class	Minor Arterial	**Milepost**	
Located On	Sagamore Ave		
Loc On Alias	NH 1A (SAGAMORE AVE) AT SAGAMORE CREEK (SB-NB) (81379151-81379152)		

More Detail

STATION DATA

Directions: 2-WAY | NB | SB

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2022	6,553	702	11	54	6,250 (95%)	303 (5%)	
2021	6,633[3]		11	56	6,029 (91%)	604 (9%)	Grown from 2020
2020	5,981[3]		11	56	5,442 (91%)	539 (9%)	Grown from 2019
2019	7,086	763	11	56	6,489 (92%)	597 (8%)	
2018	7,823[3]		10	58	7,212 (92%)	611 (8%)	Grown from 2017

> | >>| 1-5 of 16

Travel Demand Model

	Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

VOLUME COUNT

	Date	Int	Total
	Thu 8/11/2022	60	7,538
	Wed 8/10/2022	60	7,434
	Tue 8/9/2022	60	7,490
	Thu 6/6/2019	60	8,374
	Wed 6/5/2019	60	8,121
	Tue 6/4/2019	60	8,151

VOLUME TREND

Year	Annual Growth
2022	-1%
2021	11%
2020	-16%
2019	-9%
2018	2%
2017	2%

New Hampshire DOT Department of Transportation

MS2 Transportation Data Management System

Excel Version

Weekly Volume Report			
Location ID:	82379151	**Type:**	SPOT
Located On:	Sagamore Ave	:	
Direction:	2-WAY		
Community:	PORTSMOUTH	**Period:**	Mon 8/8/2022 - Sun 8/14/2022
AADT:	6553		

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg	Graph
12:00 AM		33	19	29				27	0.4%
1:00 AM		10	8	12				10	0.1%
2:00 AM		5	0	6				4	0.0%
3:00 AM		6	1	6				4	0.1%
4:00 AM		13	16	18				16	0.2%
5:00 AM		48	48	46				47	0.6%
6:00 AM		143	127	142				137	1.8%
7:00 AM		298	289	313				300	4.0%
8:00 AM		404	434	425				421	5.6%
9:00 AM		467	470	419				452	6.0%
10:00 AM		438	480	428				449	6.0%
11:00 AM		541	546	504				530	7.1%
12:00 PM		533	582	516				544	7.3%
1:00 PM		521	536	541				533	7.1%
2:00 PM		559	538	533				543	7.3%
3:00 PM		575	563	582				573	7.7%
4:00 PM		573	639	630				614	8.2%
5:00 PM		693	644	702				680	9.1%
6:00 PM		539	476	566				527	7.0%
7:00 PM		440	403	377				407	5.4%
8:00 PM		306	269	367				314	4.2%
9:00 PM		198	190	220				203	2.7%
10:00 PM		110	99	93				101	1.3%
11:00 PM		37	57	63				52	0.7%
Total	**0**	**7,490**	**7,434**	**7,538**	**0**	**0**	**0**		
24hr Total		7490	7434	7538				7,487	
AM Pk Hr		11:00	11:00	11:00					
AM Peak		541	546	504				530	
PM Pk Hr		5:00	5:00	5:00					
PM Peak		693	644	702				680	
% Pk Hr		9.25%	8.66%	9.31%				9.07%	

Graph Look Up

Query

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
942

LAND USE GROUP:
(900-999) Services

LAND USE :
942 - Automobile Care Center

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

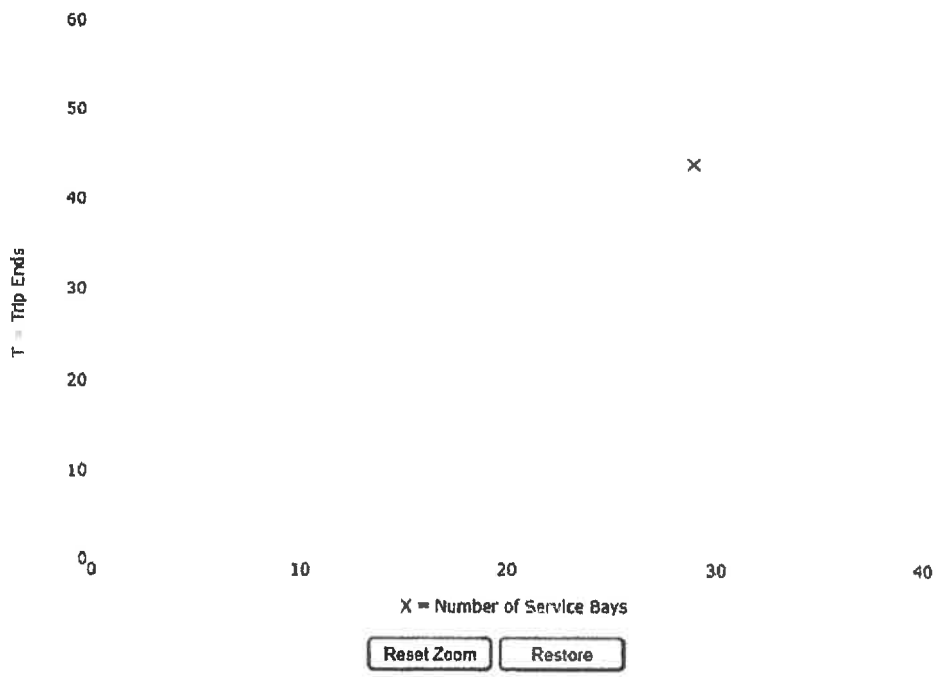
INDEPENDENT VARIABLE (IV):
Service Bays

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
3 Calculate

Data Plot and Equation



Caution – Small Sample Size

DATA STATISTICS

Land Use:
Automobile Care Center (942)

Independent Variable:
Service Bays

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. Num. of Service Bays
29

Average Rate
1.52

Range of Rates
1.52 - 1.52

Standard Deviation
****

Fitted Curve Equation:
Not Given

R^2
****

Directional Distribution:
68% entering, 32% exiting

Calculated Trip Ends:
Average Rate: 5 (Total), 3 (Entry), 2 (Exit)

Use the mouse wheel to Zoom Out or Zoom In

Attachment 4

ITETripGen Web-based App

Help Stephen Pernav

Graph Look Up

Query

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
942

LAND USE GROUP:
(900-999) Services

LAND USE:
942 - Automobile Care Center

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
Service Bays

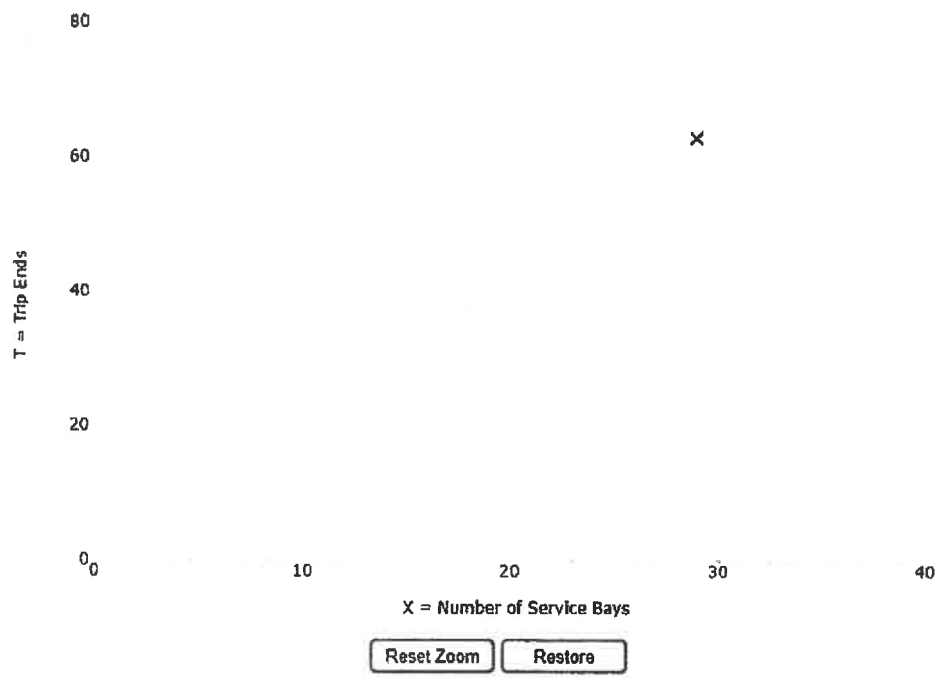
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
3 Calculate

Data Plot and Equation

Caution – Small Sample Size



DATA STATISTICS

Land Use:
Automobile Care Center (942)

Independent Variable:
Service Bays

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. Num. of Service Bays:
29

Average Rate:
2.17

Range of Rates:
2.17 - 2.17

Standard Deviation:
****

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
Not available

Calculated Trip Ends:
Average Rate: 7 (Total)

Attachment 5

Graph Look Up

Query

DATA SOURCE:
Trip Generation Manual 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

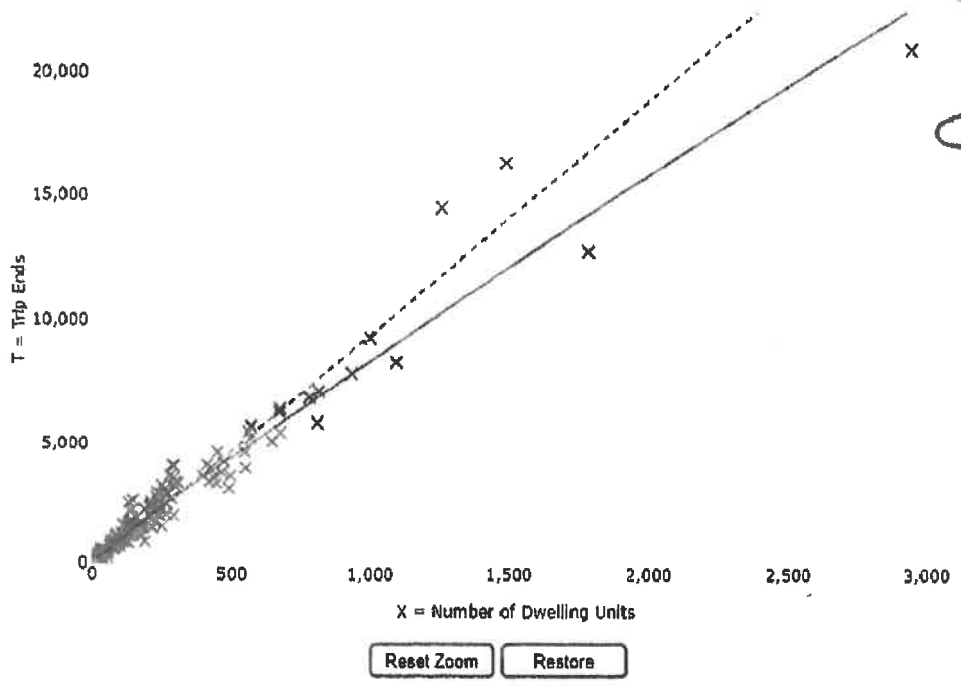
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
4 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) for
Independent Variable:
Dwelling Units
Time Period:
Weekday
Setting/Location:
General Urban/Suburban
Trip Type:
Vehicle
Number of Studies:
174
Avg. Num. of Dwelling Units:
246
Average Rate:
9.43
Range of Rates:
4.45 - 22.61
Standard Deviation:
2.13
Fitted Curve Equation:
Ln(T) = 0.92 Ln(X) + 2.68
R^2:
0.95
Directional Distribution:
50% entering, 50% exiting
Calculated Trip Ends:
Average Rate: 38 (Total) 19 (Entry), 19 (Exit)
Fitted Curve: 52 (Total) 26 (Entry), 26 (Exit)

Attachment 6

Graph Look Up

Query

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

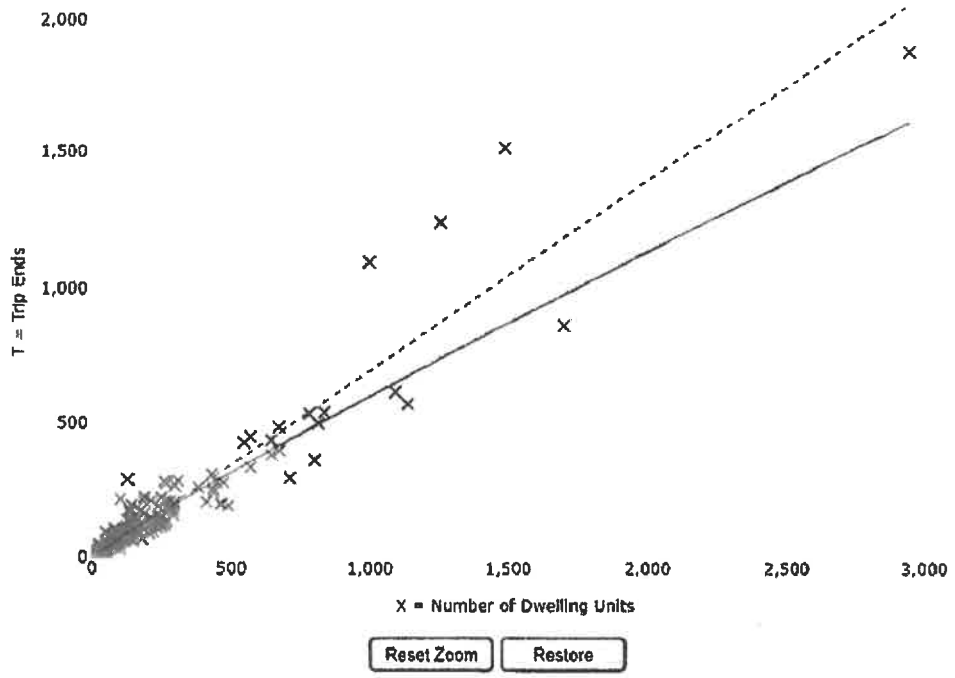
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
4 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a m

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
192

Avg. Num. of Dwelling Units
226

Average Rate
0 70

Range of Rates.
0 27 - 2 27

Standard Deviation
0 24

Fitted Curve Equation:
Ln(T) = 0 91 Ln(X) + 0 12

R^2
0 90

Directional Distribution:
25% entering, 75% exiting

Calculated Trip Ends:
Average Rate: 3 (Total), 1 (Enter), 2 (Exit)
Fitted Curve: 4 (Total), 1 (Enter), 3 (Exit)

Attachment 7

Graph Look Up

Query

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE:
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

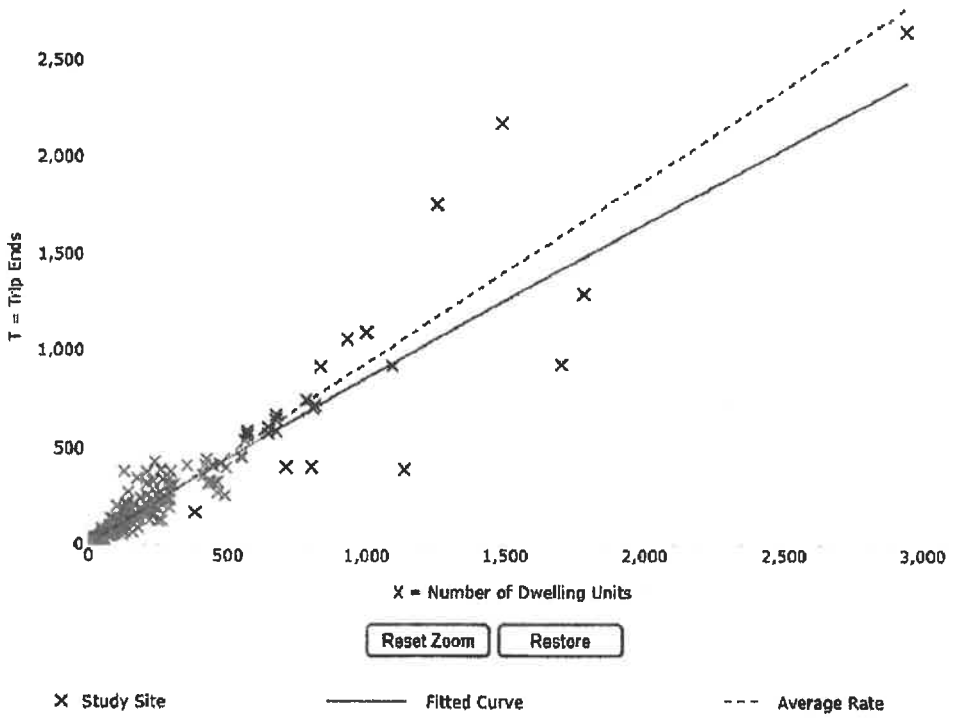
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: Vehicle
4 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 4 (Total), 2 (Entry), 2 (Exit)
Fitted Curve: 5 (Total), 3 (Entry), 2 (Exit)

Attachment 8

Daniel Meditz

From: Eric B. Eby <ebeby@cityofportsmouth.com>
Sent: Friday, February 23, 2024 9:06 AM
To: Daniel Meditz; Joseph Coronati; Zachary M. Cronin; Dave J. Desfosses
Cc: Mike Garrepy (mgarrepy@gmail.com); Steve Pernaw
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

You don't often get email from ebeby@cityofportsmouth.com. Learn why this is important

Daniel
I've had a chance to review the Green Book section on sight distance and I am fine with your calcs and explanation. As described in the Green Book, stopping sight distance is broken into two portions. One is the distance traveled during the brake reaction time and the second is the distance to brake the vehicle to a stop. At 33 mph, the brake reaction distance is 121 feet, meaning that with a sight distance of 228 feet, 107 feet remains to bring the vehicle to a stop. This is approximately the 100 feet that is being assumed in this case, so I am fine with your calculations. As the sight distance is very close to the minimum requirement, there is a chance it may meet the minimum requirements after the City finishes the roadwork planned for this year. I would recommend checking it again after the roadwork is complete and if still short on the sight line, then I would recommend the installation of an advance warning sign for BLIND DRIVEWAY with a supplementary advisory speed plaque of 25 MPH.
Best,
Eric

Eric B. Eby, P.E.
City Engineer – Parking, Transportation, and Planning
Department of Public Works
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 766-1415
Cell (603)-815-1761

From: Daniel Meditz <DMeditz@jonesandbeach.com>
Sent: Wednesday, February 21, 2024 8:51 AM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

Eric,

The 100 feet braking distance was an approximation after consulting with Steve Pernaw, who is copied on this email. The only thing it really effects in terms of our analysis is that the slope we used to determine the required stopping sight distance is based on the average slope for the first 100' along the approach.

Thanks,

Daniel Meditz, P.E.
Lead Design Engineer

JONES&BEACH ENGINEERS, INC.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #128)
http://www.jonesandbeach.com

LEGAL NOTICE
Unless expressly stated otherwise, this message is confidential and contains privileged information intended for the addressee(s) only. Access to this E-mail by anyone else is unauthorized. If you are not an addressee, any disclosure or copying of the contents of this E-mail or any action taken (or not taken) is unauthorized and may be unlawful. If you are not an addressee, please inform the sender immediately.

From: Eric B. Eby <ebeby@cityofportsmouth.com>
Sent: Friday, February 16, 2024 3:43 PM
To: Daniel Meditz <DMeditz@jonesandbeach.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

> You don't often get email from ebeby@cityofportsmouth.com. Learn why this is important

Daniel
Thank you for the explanation and revised plans. I think we are very close. I want to check on the 100-foot assumption of when vehicles apply their brakes. Is that guidance from the Green Book or just an assumption on your part? That distance would seem to depend on their speed. I think they may be applying the brakes sooner, and on the northbound approach they may still be going uphill, which could reduce the required sight distance needed and allow the minimum sight line to be provided.
For a vehicle waiting to turn out of the driveway onto Sagamore, they need to be able to see the minimum stopping sight distance to the south, which, if the driver's eye is at 69 feet, would appear to be sufficient, even for the sight line as currently calculated. This is based on my rough drawing of lines on my computer screen. That can be checked once we agree on what the sight distance should be for the northbound approach.
I agree it will be an improvement over existing conditions, but I would prefer that we do all we can to meet or exceed the required minimums.
I am out of the office this afternoon, so I don't have access to the Green Book or my other materials on sight distance. I will check them when I return on Tuesday.

Eric B. Eby, P.E.
City Engineer – Parking, Transportation, and Planning
Department of Public Works
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 766-1415
Cell (603)-815-1761

From: Daniel Meditz <DMeditz@jonesandbeach.com>
Sent: Thursday, February 15, 2024 3:44 PM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

Eric,

Thank you for reviewing. The profile I was showing actually reflected the grade of the centerline of Sagamore Avenue where I had the stationing, though I can see the confusion as I had the sight line itself thick, dashed and in red. I inverted the color scheme for those but I am still showing the line of sight from the driveway as a solid line. Second, I switched the profile from being along the centerline of the road to the centerline of each lane. Third, I am no longer accounting for the driveway grade in the stopping sight distance profile – As you said, that will impact intersection sight distance but not stopping sight distance.

I have updated the plans and report accordingly. Let me know if you have any more questions or comments.

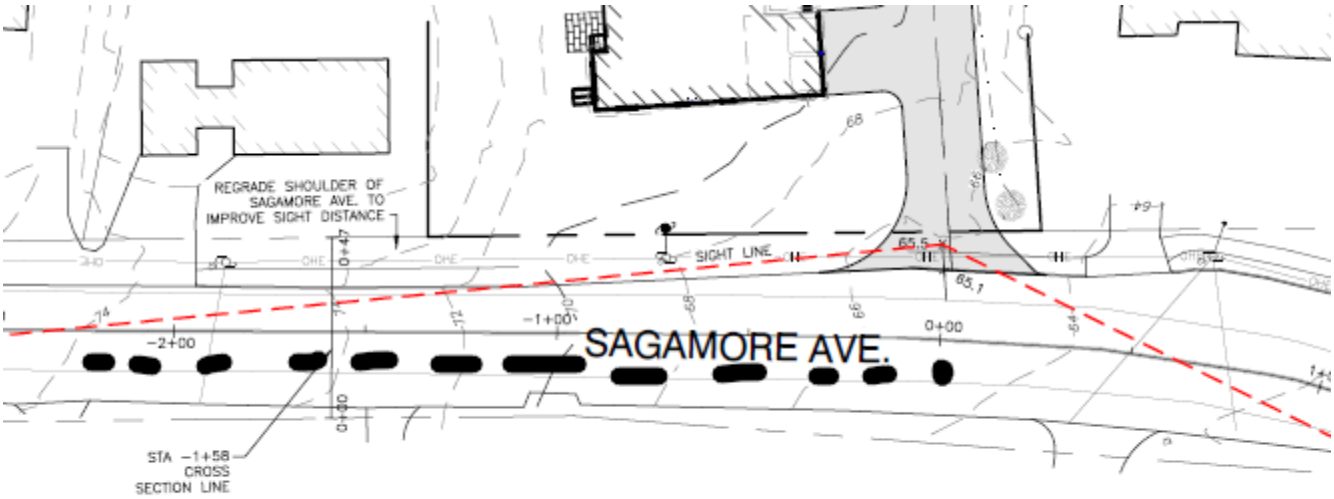
Thanks,

Daniel Meditz, P.E.
Lead Design Engineer
JONES&BEACH ENGINEERS, INC.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #128)
http://www.jonesandbeach.com

LEGAL NOTICE
Unless expressly stated otherwise, this message is confidential and contains privileged information intended for the addressee(s) only. Access to this E-mail by anyone else is unauthorized. If you are not an addressee, any disclosure or copying of the contents of this E-mail or any action taken (or not taken) is unauthorized and may be unlawful. If you are not an addressee, please inform the sender immediately.

From: Eric B. Eby <ebeby@cityofportsmouth.com>
Sent: Thursday, February 15, 2024 2:07 PM
To: Daniel Meditz <DMeditz@jonesandbeach.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

Daniel
Looking at the plans, it appears that the sight line was plotted along the red dashed line. However, this line would represent the intersection sight line and not the stopping sight line. The 2-foot object height for stopping sight distance needs to be at a point in the travel lane, not at a point 14.5 feet from the edge of the travel lane. Stopping sight distance is for approaching vehicles to be able to see and react to a vehicle stopped in Sagamore Ave waiting to turn left into the site driveway. I don't know how much of a difference, if any, the location of the 2-foot object will have on the sight lines, but it needs to be shown and the report updated to reflect the proper location.
The black dotted line in the figure below illustrates where the 2-foot object should be located.
Let me know if you have any questions.
Best,
Eric



Eric B. Eby, P.E.
City Engineer – Parking, Transportation, and Planning
Department of Public Works
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 766-1415
Cell (603)-815-1761

From: Daniel Meditz <DMeditz@jonesandbeach.com>
Sent: Wednesday, February 14, 2024 8:58 AM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

Eric,

Please see attached technical report and revised sight distance plans. The northern curb cut would provide us with the best sight distance. Please review and let us know if you have any questions.

Thanks,

Daniel Meditz, P.E.
Lead Design Engineer
JONES&BEACH ENGINEERS, INC.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #128)
http://www.jonesandbeach.com

LEGAL NOTICE
Unless expressly stated otherwise, this message is confidential and contains privileged information intended for the addressee(s) only. Access to this E-mail by anyone else is unauthorized. If you are not an addressee, any disclosure or

copying of the contents of this E-mail or any action taken (or not taken) is unauthorized and may be unlawful. If you are not an addressee, please inform the sender immediately.

From: Eric B. Eby <ebeby@cityofportsmouth.com>
Sent: Wednesday, January 3, 2024 12:03 PM
To: Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>; Daniel Meditz <DMeditz@jonesandbeach.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

> You don't often get email from ebeby@cityofportsmouth.com. Learn why this is important

Joe,

Thank you for the updated plans.

Looking at the sight lines, neither driveway location has adequate Stopping Sight distance under current conditions. Due to the existing grade of the driveway at 695 Sagamore, we wouldn't be able to lower the top of the hill on Sagamore more than a few inches. While you might want to look and determine if it is possible to raise your driveway a bit to improve Intersection Sight lines, a profile adjustment of Sagamore is most likely the key to providing adequate Stopping Sight distance. Raising Sagamore a bit near the driveway should also be looked at to see if it is feasible without acquiring easements.

Stopping Sight distance is the critical requirement, whereas Intersection Sight distance is desirable but at a minimum must at least equal the Stopping Sight distance. With that in mind, the Option 2 location would appear to have more of a chance of meeting Stopping Sight line requirements if the profile of the roadway could be modified sufficiently. I would suggest that you develop a profile of Sagamore Ave that will provide the minimum Stopping Sight distance at the Option 2 location and then we can review that with our design consultant to determine if it is feasible.

Eric B. Eby, P.E.
City Engineer – Parking, Transportation, and Planning
Department of Public Works
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 766-1415
Cell (603)-815-1761

From: Joseph Coronati <jcoronati@Jonesandbeach.com>
Sent: Wednesday, January 3, 2024 10:06 AM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>; Daniel Meditz <DMeditz@jonesandbeach.com>
Subject: Re: 18134.1 - Luster Cluster, Sight Distance

Eric,
Hope you had a good holiday. Was wondering if you have had a chance to review this.

thanks

Joseph Coronati
Vice President
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #114)
jcoronati@jonesandbeach.com
http://www.jonesandbeach.com

From: Joseph Coronati
Sent: Thursday, December 21, 2023 1:28:06 PM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>; Steve Pernaw <sgp@pernaw.com>; Daniel Meditz <DMeditz@jonesandbeach.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

Eric,
Here's the modified plans and the speed study that Steve Pernaw did for the site. Let us know if you want to have a quick Teams meeting to determine the best driveway location.

Thanks

Joseph Coronati
Vice President
JONES&BEACH ENGINEERS, INC.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #114)
jcoronati@jonesandbeach.com
http://www.jonesandbeach.com

From: Eric B. Eby <ebeby@cityofportsmouth.com>
Sent: Thursday, December 7, 2023 12:47 PM
To: Joseph Coronati <jcoronati@Jonesandbeach.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>
Subject: RE: 18134.1 - Luster Cluster, Sight Distance

You don't often get email from ebeby@cityofportsmouth.com. Learn why this is important

Joe
Thank you for the plans and the update. Looking quickly at the profile plans, you have provided plans for both Intersection Sight Distance (ISD) on Sheet H1 and Stopping Sight Distance (SSD) on Sheet H2. ISD is for vehicles turning out of the driveway. SSD is for vehicles approaching the driveway on Sagamore Ave. The ISD appears to be plotted correctly. However, in the case of SSD, the 3.5-foot driver height should be a 2-foot object height. Revising the plans

with the 2-foot object height is needed to provide a more complete picture of the constraints and limitations at the driveway location.
It also appears that you used a 33 MPH design speed in your calculations. Did we give you that information or did you do your own speed data collection? Need to be sure that it is based on 85th %ile speeds, and not just an estimation.
I am available anytime on Tuesday and Wednesday next week, as well as parts of other days.

Eric B. Eby, P.E.
City Engineer – Parking, Transportation, and Planning
Department of Public Works
City of Portsmouth
680 Peverly Hill Road
Portsmouth, NH 03801
(603) 766-1415
Cell (603)-815-1761

From: Joseph Coronati <jcoronati@Jonesandbeach.com>
Sent: Wednesday, December 6, 2023 5:16 PM
To: Eric B. Eby <ebeby@cityofportsmouth.com>; Zachary M. Cronin <zmcronin@cityofportsmouth.com>; Dave J. Desfosses <djdesfosses@cityofportsmouth.com>
Cc: Mike Garrepy (mgarrepy@gmail.com) <mgarrepy@gmail.com>
Subject: 18134.1 - Luster Cluster, Sight Distance

Eric, Zach & Dave,
We have been coordinating with Steve Pernaw, who is retired so this took a little longer than expected. Please review the plans and let us know if you have any questions. I think in the end, it would be better to look at each of these locations in person as it is tight. The sight lines go over sidewalk, which is changing and uneven and over lawn areas with vegetation at the uphill section. I'm not sure how much you are lowering the hill in your next contract with Severino.

Let me know if you can meet next week to look at this so we can determine the best driveway location.

Thanks

Joseph Coronati
Vice President
JONES&BEACH ENGINEERS, INC.
85 Portsmouth Avenue
PO Box 219
Stratham, NH 03885
(603) 772-4746 (ext. #114)
jcoronati@jonesandbeach.com
http://www.jonesandbeach.com

EXTERNAL SENDER: Use caution when following links or opening attachments.

EXTERNAL SENDER: Use caution when following links or opening attachments.

EXTERNAL SENDER: Use caution when following links or opening attachments.

EXTERNAL SENDER: Use caution when following links or opening attachments.

EXTERNAL SENDER: Use caution when following links or opening attachments.

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project 635 Sagamore Ave
Client 635 Sagamore Development LLC
GES Project No. GES 2021307
MM/DD/YY Staff 3-18-2022 JPG

Test Pit No. 1
ESHWT: n/a
Termination @ 15”
Refusal: 15” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–5”	10YR 3/2	FSL	GR	FR	NONE
5–15”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 2
ESHWT: n/a
Termination @ 25”
Refusal: 25” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–5”	10YR 3/2	FSL	GR	FR	NONE
5–25”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 3
ESHWT: n/a
Termination @ 25”
Refusal: 25” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–6”	10YR 3/2	FSL	GR	FR	NONE
6–25”	10YR 5/6	FSL	GR	FR	NONE

8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

Test Pit No. 4
ESHWT: n/a
Termination @ 15”
Refusal: 15” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–15”	10YR 3/2	FSL	GR	FR	NONE

Test Pit No. 5
ESHWT: 30”
Termination @ 36”
Refusal: 36” SCS Soil: Chatfield variant
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–8”	10YR 3/2	FSL	GR	FR	NONE
8–30”	10YR 4/6	FSL	GR	FR	NONE
30–36”	2.5Y 5/3	FSL	GR	FR	10% Distinct

Test Pit No. 6
ESHWT: n/a
Termination @ 12”
Refusal: 12” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–12”	10YR 3/2	FSL	GR	FR	NONE

Test Pit No. 7
ESHWT: n/a
Termination @ 27”
Refusal: 27” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–4”	10YR 3/2	FSL	GR	FR	NONE
4–27”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 8
ESHWT: 35”
Termination @ 40”
Refusal: 40” SCS Soil: Chatfield variant
Obs. Water: none

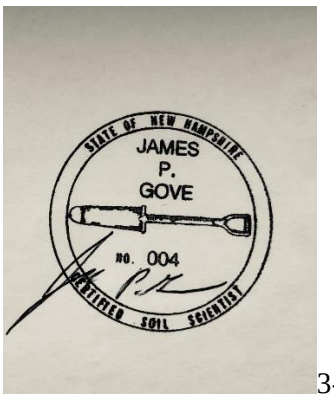
Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–6”	10YR 3/2	FSL	GR	FR	NONE
6–35”	10YR 5/6	FSL	GR	FR	NONE
35–40”	2.5Y 5/3	FSL	OM	FI	10% Distinct

Test Pit No. 9
ESHWT: n/a
Termination @ 27”
Refusal: 27” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–4”	10YR 3/2	FSL	GR	FR	NONE
4–27”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 10
ESHWT: 35
Termination @ 62”
Refusal: 62” SCS Soil: Scituate
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–10”	10YR 3/2	FSL	GR	FR	NONE
10–35”	10YR 5/6	FSL	GR	FR	NONE
35–62”	2.5Y 5/3	FSL	PL	FI	10%, Distinct



3-21-2022

Legend:

FSL = fine sandy loam
GR = granular
PL = platy
FI = firm

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project 635 Sagamore Ave., Portsmouth NH
Client 635 Sagamore Development LLC
GES Project No. 2021308
MM/DD/YY Staff 07-24-2024 James Gove, CSS#004

Witnessed by: David Desfosses, City of Portsmouth

Test Pit No.	**11**	Soils Series:	Udorthents
ESHWT::	none	Landscape:	Paved
Termination @	32”	Slope:	B
Refusal:	32”	Parent Material:	Fill over till
Obs. Water:	None	Hydrologic Soil Group:	Impervious

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
Fill 1, 0-8”	10YR4/4	fine sandy loam	massive-friable-none
Fill 2, 8-19”	10YR2/1	ground pavement	massive-firm-none
Bw 18-32”	10YR5/6	fine sandy loam	granular-friable-none

Test Pit No.	**12**	Soils Series:	Chatfield
ESHWT::	none	Landscape:	Hillside
Termination @	28”	Slope:	C
Refusal:	28”	Parent Material:	Bedrock Till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-6”	10YR3/2	fine sandy loam	granular-friable-none
Bw 6-28”	10YR5/6	fine sandy loam	granular-friable-none

Bedrock ranges from 20” to 28” in test pit.

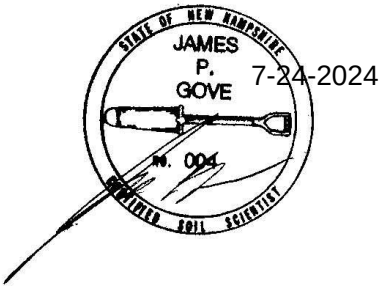
8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

Test Pit No.	**13**	Soils Series:	Chatfield
ESHWT::	none	Landscape:	Hillside
Termination @	36”	Slope:	C
Refusal:	36”	Parent Material:	Bedrock Till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-6”	10YR3/2	fine sandy loam	granular-friable-none
Bw 6-24”	10YR4/6	fine sandy loam	granular-friable-none
C 24-36”	2.5Y5/3	fine sandy loam	granular-friable-none

Bedrock ranges from 24” to 36” in test pit.

Note: Site should be calculated as HSG C, due to the limited infiltration in thin soil layers above the bedrock.



635 Sagamore Avenue (LU-24-34) Staff Comments for TAC Meeting

"not type B soils due to shallow ledge"

The dominant soil unit mapped on the site was 41- a complex of soil types so intermixed that no one soil can be separated into a single consociation or soil type. The complex is named Chatfield-Hollis-Rock Outcrop. Based upon the test pits (3 Hollis, 6 Chatfield (Chatfield well drained and Chatfield moderately well drained) and one deep soil), the percentage of each soil type was 50% Chatfield, 25% Hollis, and 25% Rock Outcrop. The standard protocol is to utilize the dominant soil type for Hydrologic Soil Group, which is Chatfield (well drained and moderately well drained) with a Hydrologic Soil Group of B. Chatfield has a depth of 20 to 40 inches to bedrock. The Hydrologic Soil Groups are assigned to soil units by Publication Number 5 of the Society of Soil Scientists of Northern New England and adopted by NH DES Alteration of Terrain.

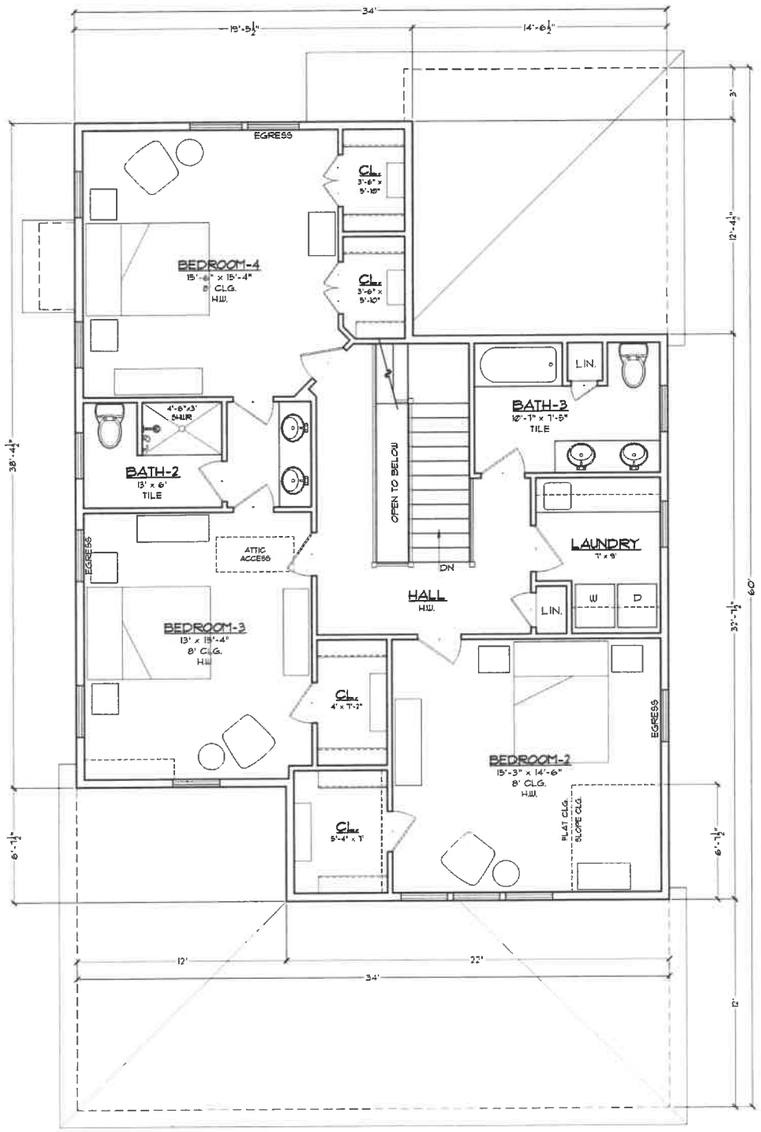
Hollis has a soil depth of 10 to 20 inches to bedrock. It also has a combined Hydrologic Soil Group of C/D. Rock Outcrop is any area that has surface exposed bedrock to 10 inches deep.

Typically for drainage analysis, the dominant hydrologic soil group is used, in this case B. Conversely, a weighted average could be used to mimic the complex: 50% B, 25% C/D, and 25% D-virtually impervious.

Complexes are difficult to interpret given that multiple soil types are present and randomly intermixed. It becomes even more difficult when the multiple soil types have differing characteristics.

Jim Gove, CSS #004

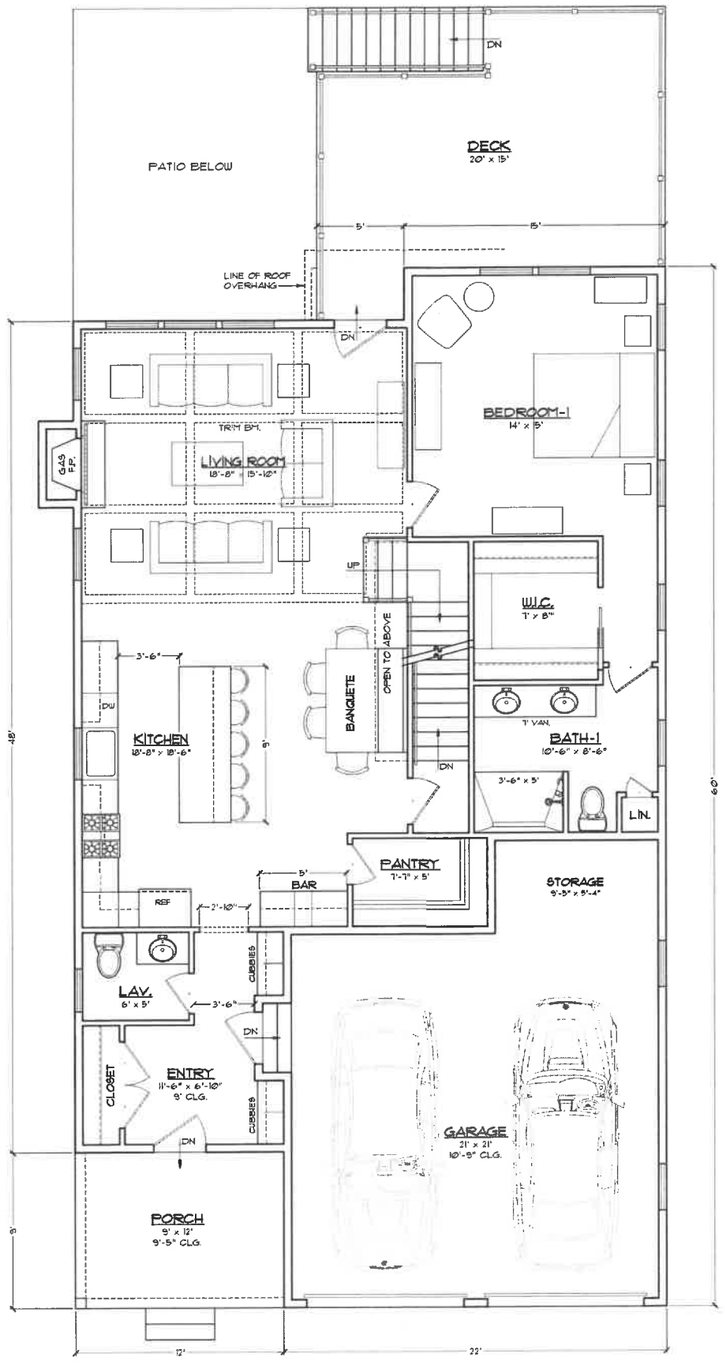
4-1-2024



SECOND FLOOR PLAN

¼"=1'-0"

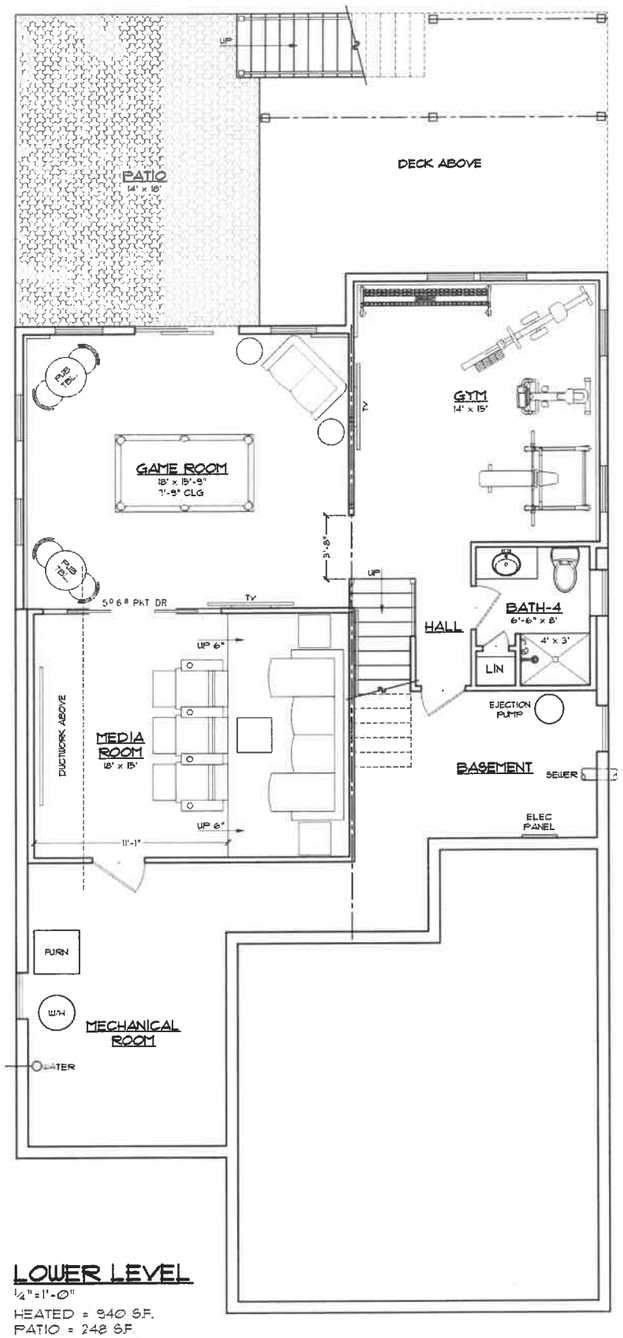
HEATED = 1270 S.F.
(INCLUDES 67 S.F. OF STAIRWELL)



FIRST FLOOR PLAN

¼"=1'-0"

HEATED = 1,347 S.F.
GARAGE = 528 S.F.
FRONT PORCH = 108 S.F.
DECK = 280 S.F.
TOTAL HEATED =3,557 S.F.



LOWER LEVEL

¼"=1'-0"

HEATED = 940 S.F.
PATIO = 248 S.F.

WALK-OUT CONCEPT

PROJECT:
The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-ill2@comcast.net
Phone: 603-964-1300
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
196 Bunker Hill Ave. Stratham, NH 03885

DATE: 1-30-24
REVISED:
DWG NO. 3

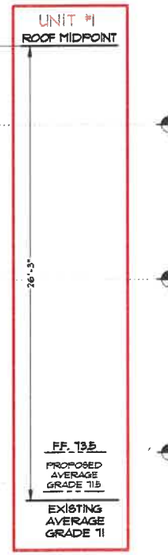
C:\TI-INC\2024\Oaks Walk-Out\BD

RIGHT SIDE ELEVATION
1/4"=1'-0"

UNIT #1 - F.F. = 73.5
UNIT #2 - F.F. = 74.0
UNIT #3 - F.F. = 75.25
W/O = 65.45
UNIT #4 - F.F. = 75.5
W/O = 65.70

REAR ELEVATION
1/4"=1'-0"

LEFT SIDE ELEVATION
1/4"=1'-0"



FRONT ELEVATION
1/4"=1'-0"

UNITS 1&2

C:\TI-INC\2024\Oaks80

PROJECT: The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-ill@comcast.net
Phone: 603-964-1300
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
186 Bunker Hill Ave. Stratham, NH 03885

DATE: 10-21-24
REVISED:
SHEET NO. 1

RIGHT SIDE ELEVATION

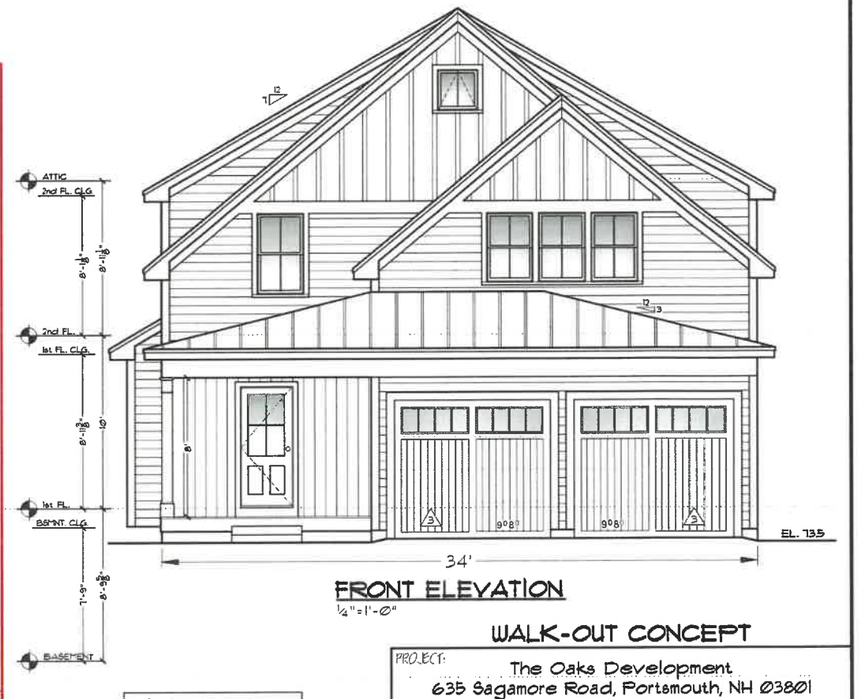
¼"=1'-0"

REAR ELEVATION

¼"=1'-0"

LEFT SIDE ELEVATION

¼"=1'-0"



FRONT ELEVATION

¼"=1'-0"

UNITS 3&4

WALK-OUT CONCEPT

UNIT #1 - F.F. = 73.5
UNIT #2 - F.F. = 74.0
UNIT #3 - F.F. = 75.25
W/O = 65.45
UNIT #4 - F.F. = 73.5
W/O = 65.70

PROJECT: The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-ill2@comcast.net
Phone: 603-964-1500
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
196 Bunker Hill Ave. Stratham, NH 03885

DATE: 10-21-24
REVISED:
DRG NO. 1

C:\Tech-INC\2024\Oaks Walk-Out80

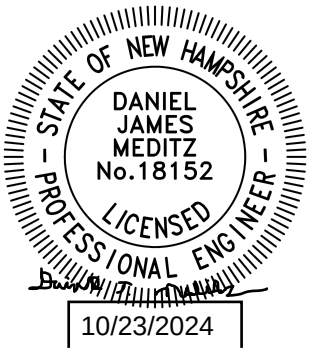
DRAINAGE ANALYSIS

SEDIMENT AND EROSION CONTROL PLAN

"Luster Cluster"
635 Sagamore Ave.
Portsmouth, NH 03801
Tax Map 222, Lot 19

Prepared for:

635 Sagamore Development LLC
3612 Lafayette Rd., Dept 4
Portsmouth, NH 03801



Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
March 14, 2024
Revised April 18, 2024
Revised August 16, 2024
Revised September 17, 2024
Revised October 14, 2024
JBE Project No. 18134.1

EXECUTIVE SUMMARY

635 Sagamore Development LLC proposes to demolish an existing commercial development and construct a 4-unit multi-family residential site on the subject parcel located at 635 Sagamore Ave. in Portsmouth, NH. In the existing condition, the subject parcel is home to two buildings and a paved parking area that used to comprise the "Luster King," a former auto detailing business that has since closed.

A drainage analysis of the entire site as well as offsite contributing watershed area was conducted for the purpose of estimating the peak rate of stormwater runoff and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Year – 24 Hour (3.70"), 10 Year – 24 Hour (5.61"), 25 Year – 24 Hour (7.12"), and 50 Year – 24 Hour (8.53") storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC), and the values have been increased by 15% due to the project being within the Coastal/Great Bay Region. A summary of the existing and proposed conditions peak rates of runoff toward the three analysis points and toward the existing drainage ditch on the Tidewatch Condominium property (Reach 1R) in units of cubic feet per second (cfs) is as follows:

Analysis Point	2 Year		10 Year		25 Year		50 Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	1.36	1.03	2.38	1.83	3.19	2.46	3.95	3.05
Analysis Point #2	0.09	0.06	0.20	0.13	0.29	0.19	0.37	0.24
Analysis Point #3	2.79	2.40	5.63	4.12	8.00	5.49	10.27	7.72
Analysis Point #4	1.08	0.81	2.18	1.63	3.10	2.32	3.97	2.97

A similar summary of the existing and proposed peak volumes in units of acre-feet is as follows:

Analysis Point	2 Year		10 Year		25 Year		50 Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	0.100	0.076	0.177	0.135	0.241	0.185	0.301	0.231
Analysis Point #2	0.007	0.005	0.014	0.009	0.021	0.014	0.027	0.018
Analysis Point #3	0.240	0.208	0.477	0.405	0.681	0.577	0.879	0.744
Analysis Point #4	0.084	0.064	0.167	0.126	0.238	0.179	0.307	0.230

Peak flows and volumes are being reduced in the post-construction condition toward all analysis points during all analyzed storm events. The subject parcel is located in the Single Residence A (SRA) Zoning District. The subject parcel currently consists of the aforementioned former commercial site which is proposed to be demolished. Despite impervious surface existing on the subject parcel now, the proposed development results in an increase in impervious surface on the subject parcel. The addition of the proposed impervious surfaces causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), and if a stormwater management system were not implemented, the net result of this would be a potential increase in peak rates of runoff from the site. In order to avoid this potential, a stormwater management system has been designed, consisting of a bioretention system with a sediment forebay for pre-treatment of runoff, stone drip edges, and stone underneath decks as well as sand absorption areas for foundation drain effluent. Due to the use of these

stormwater management features, the peak flow and volume of runoff will be reduced toward all analysis points during all analyzed storm events in the proposed condition as compared to the existing condition, and the treatment requirements of the City of Portsmouth are met. Additionally, the NHDES Alteration of Terrain Bureau's groundwater recharge volume and channel protection requirements are met with the proposed development. Although some runoff from the front of the site proposed to drain into the Sagamore Avenue right of way and into a new catch basin without on-site treatment, the catch basin was presumably designed for the impervious surface being directed toward it from the Luster King development that currently exists. We are decreasing the amount of impervious surface as well as the peak flow rate and volume of runoff being directed toward this catch basin compared to what it was designed for. Therefore, if there is a treatment system at the outfall of the closed drainage network, then it will continue to function as designed for the runoff being directed to it from the proposed development. **The stormwater management system as designed meets all requirements of the City of Portsmouth stormwater regulations per Section 7.1 and 7.4-7.6 of the Site Plan Review Regulations.**

The use of Best Management Practices per the NHDES Stormwater Manual have been applied to the design of this stormwater management system and will be observed during all stages of construction. All land disturbed during construction will be stabilized within thirty days of groundbreaking and abutting property owners will suffer minimal adversity resultant to this development.

TABLE OF CONTENTS

Executive Summary

1.0 Rainfall Characteristics

2.0 Existing Conditions Analysis

3.0 Proposed Conditions Analysis

4.0 Conclusion

Appendix I Existing Conditions Analysis

2 Year - 24 Hour Summary
10 Year - 24 Hour Complete
25 Year - 24 Hour Summary
50 Year - 24 Hour Complete

Appendix II Proposed Conditions Analysis

2 Year - 24 Hour Summary
10 Year - 24 Hour Complete
25 Year - 24 Hour Summary
50 Year - 24 Hour Complete

Appendix III Test Pit Logs
Appendix IV Site Specific Soil Survey and Map
Appendix V NRCS Soil Map
Appendix VI Extreme Precipitation Estimates
Appendix VII Rip Rap Calculations
Appendix VIII BMP Worksheets
Appendix IX Pollutant Removal Calculations
Appendix X Infiltration Testing Data
Appendix XI Stormwater Operations and Maintenance Manual
Appendix XII Pre- and Post-Construction Watershed Plans

1.0 RAINFALL CHARACTERISTICS

This drainage report includes an existing conditions analysis of the area involved in the proposed development, as well as a proposed condition, or post-construction analysis, of the same area. These analyses were accomplished using the USDA SCS TR-20 Method within the HydroCAD 10.20-3c Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas. A Type III SCS 24-hour rainfall distribution was utilized in analyzing the data for the 2 Year – 24 Hour (3.70”), 10 Year – 24 Hour (5.61”), 25 Year – 24 Hour (7.12"), and 50 Year – 24 Hour (8.53") storm events. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC), and the values have been increased by 15% due to the project being within the Coastal/Great Bay Region.

The peak rates and volume of runoff will be reduced from the existing condition, thereby minimizing any potential for a negative impact on abutting properties. This is accomplished through treatment of stormwater runoff and attenuation of peak flows and volumes resulting from storm events.

2.0 EXISTING CONDITIONS ANALYSIS

In the existing condition, the site consists of two commercial buildings as well as a shed and a paved parking area that comprise the former Luster King auto detailing business, which has since closed. Most of the area behind the existing commercial development is wooded with light underbrush and large ledge outcrops. There is some lawn space around the existing developed area as well.

The existing topography and roof ridges divide the subject parcel and offsite contributing watershed areas into four subcatchments, draining toward three analysis points. Subcatchment 1 represents the front of the subject parcel as well as a stretch of the northbound lane of Sagamore Avenue and some offsite contributing watershed. This subcatchment is entirely developed in the existing condition, and it drains directly into the Sagamore Ave. right of way, down a flow path modelled as Reach 3R. Reach 3R ends at Analysis Point 1, a specific point along the Sagamore Avenue right of way. The reason why Analysis Point 1 was located at the specific place where it was is explained later in this report.

Runoff that reaches Analysis Point 1 from the subject parcel then follows the curb lines of Sagamore Avenue and of the Tidewatch Condominium Roadway, modelled as Reaches 4R and 5R, toward an existing water collection point on the side of the Tidewatch Condominium Roadway where it appears that a significant amount of runoff puddles in the existing condition, modelled as Analysis Point 3.

A new catch basin has been installed just to the south of the intersection of Sagamore Avenue and the Tidewatch Condominium roadway as part of the ongoing Sagamore Avenue roadway improvements. This catch basin captures all runoff directed toward Analysis Point 1 immediately downstream of Reach 3R. Therefore, Analysis Point 1 was placed at the location of the newly installed catch basin. The addition of this catch basin prevents water from the Sagamore Avenue right of way up to the top of the hill to the south of the subject parcel from draining down the Tidewatch Condominium roadway, and therefore it will somewhat mitigate the existing drainage issue. However, because this catch basin was not yet installed at the time that the design of the proposed project began, we are modelling the hydrology of the site as it was before the catch basin was installed for the purposes of the existing conditions analysis. This is consistent with Env-Wq 1503.12(d), which requires that the existing conditions for a project site be modelled as the site was 10 years ago. In the proposed conditions analysis, we are modelling the site hydrology as is with the catch basin having been installed.

Subcatchment 2S represents a small section of the developed portion of the property to the north of an existing high point which drains on to abutting Tax Map 222, Lot 20, modelled as Analysis Point 2. It is very important that peak flows and volumes draining toward Analysis Points 1 and 2 are reduced in the post-construction condition, as these two analysis points represent a highway and a house lot, respectively. Runoff directed toward Analysis Point 2 is directed through Reach 2R, a flow path through Tax Map 222 Lot 20, toward aforementioned Reach 3R, from where the runoff then collects at AP1 before following Reaches 4R and 5R toward Analysis Point 3. In effect, the runoff directed toward AP1 includes the runoff directed toward AP2, and the runoff directed toward AP3 includes the runoff directed toward both AP1 and AP2 in the existing condition.

The largest subcatchment is Subcatchment 3S. Subcatchment 3S is roughly the western quarter of the property and it consists primarily of woodland with large ledge outcrops. Subcatchment 3S drains toward an existing drainage ditch alongside and below the grade of the Tidewatch Condominium private roadway, which is curbed so that no runoff from the roadway itself enters the ditch. This drainage ditch is modelled as a Tc segment for the subcatchment and it drains toward Analysis Point 3. Analysis Point 3 is an existing water collection point along the Tidewatch Condominium Road. In theory, water that collects here eventually infiltrates or overflows, but from on-site observations, there is erosion and puddling which is evidence that runoff mostly stops in this spot. Therefore, it is modelled as an analysis point with no overflow. This point receives the runoff from 3S as well as the runoff from AP1 and AP2 upstream.

Finally, a section of both developed and undeveloped land in the western end of the property, modelled as Subcatchment 4S, drains into abutting woodland on the Tidewatch Condominium property and ultimately toward a catch basin adjacent to the Tidewatch Condominium mailhouse that is modelled as Analysis Point 4.

Existing soil types were determined through a Site Specific Soil Survey conducted by a Certified Soil Scientist. The pervious soils are categorized into Hydrologic Soil Group (HSG) B while the impervious areas of the subject parcel are categorized as Urban Land (SSS Symbol 699). The pervious sections of the property are represented as Chatfield-Hollis-Rock Outcrop complex and Chatfield Variant (moderately well drained). Although these soils are categorized as HSG B currently, it is our understanding that the “Ksat Values for New Hampshire Soils,” Special Publication No. 5 sponsored by the Society of Soil Scientists of Northern New England (SSSNNE) is in the process of being updated and there are plans to reclassify Chatfield as a HSG C soil. For this reason, Dave Desfosses of the Portsmouth Department of Public Works has requested that we model the entire site and all offsite contributing watershed areas as HSG C. We asked the project soil scientist, who confirmed that this is an acceptable approach in his professional opinion as well. Therefore, we have modelled the entire site and all offsite areas as HSG C.

According to "Ksat Values for New Hampshire Soils," Special Publication No. 5 sponsored by the Society of Soil Scientists of Northern New England (SSSNNE), Chatfield, Chatfield Variant, and Hollis soils all have identical saturated hydraulic conductivities, ranging from 0.6 to 6.0 inches/hour within both the B and C horizons.

To further determine the appropriate Ksat to use for design, infiltration testing was performed on site using a Compact Constant Head Permeameter (CCHP, also known as an amoozemeter) on July 2, 2024. Three (3) pits were dug using a shovel in the soil and three (3) infiltration tests were performed in each pit. The first pit was dug in the front of the site in order to evaluate the feasibility of adding a

new infiltration practice here. The second pit was dug in the footprint of the proposed bioretention system. The third and final pit was dug in the vicinity of Unit #4.

Standard size auger holes, 4 cm in diameter were dug within each pit to the depth of the bottom of each respective practice to obtain an accurate permeability reading below the bottom of the proposed systems. Water was then discharged through the soil and the drop in water level on the tube in which the water was stored before being discharged was recorded at several time intervals. The comparison between the drop in water level and the elapsed time from the start of the test was used to calculate the Ksat value. For example, if the water level dropped 3 cm after 5 minutes and 5 cm after 10 minutes, this was recorded and used as data to calculate the Ksat using the formulas listed in the data spreadsheets in the appendix of this report. The Ksat values from each time increment were then averaged to determine the mean Ksat, and lowest mean Ksat from each area was divided by a factor of safety of two in order to determine the saturated hydraulic conductivity to use for design purposes.

It should be noted that the CCHP was observed to drain very rapidly on these holes and it was difficult to achieve a steady state. The device was consistently draining while still attempting to fill the auger holes with water. When the test could finally be started, the first one or two increments on each test needed to be discarded from the results because they were much larger than the following increments after the soils were saturated and the infiltration rate stabilized. The saturated hydraulic conductivity that was determined at each test site was ultimately much higher than anticipated, but logically it makes sense as the substrate was observed to consist of coarse sand with many stones.

The results of the permeability testing are as summarized below:

Test	Ksat (in/hr)
Front of site – Test #1	27.33
Front of site – Test #2	30.85
Front of site – Test #3	22.26
Front of site – Low Ksat	**22.26**
Bioretention – Test #1	14.84
Bioretention – Test #2	33.41
Bioretention – Test #3	65.74
Bioretention – Low Ksat	**14.84**
Unit 4 – Test #1	30.64
Unit 4 – Test #2	25.41
Unit 4 – Test #3	37.31
Unit 4 – Low Ksat	**25.41**

A further breakdown of the data used to arrive at the final Ksat values is included in the appendix of this report. Applying a factor of safety of two, this comes out to a saturated hydraulic conductivity of **11.1 in/hr** to use for the front of the site, **7.4 in/hr** to use for the bioretention system, and **12.71 in/hr** to use for the infiltration practices around the back two units. It was later determined that, because the bioretention system is in a cut, has a clay core berm, and is surrounded by ledge outcrops, infiltration could not be modelled on this device anyway. Because the infiltration practices are in a fill, a design infiltration rate of 0.6 in/hr was assumed as a worst-case scenario for the fill material. A factor of safety of two was applied and an infiltration rate of **0.3 in/hr** was used for design.

3.0 PROPOSED CONDITIONS ANALYSIS

The addition of the proposed impervious surfaces causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), and if a stormwater management system were not implemented, the net result of this would be a potential increase in peak rates of runoff from the site. A stormwater management system was designed in order to avoid this potential. The proposed development, consisting of the aforementioned four (4) residential units with associated paved roadway and driveways as well as stormwater management features divide the subject parcel into seventeen (17) subcatchments. Subcatchments 1S-4S drain directly toward Analysis Points 1-4, respectively, as previously outlined. However, because a new catch basin will now intercept the flow that reaches the Sagamore Avenue right of way (Analysis Point 1) from the subject parcel, analysis point 3 is no longer modelled downstream of analysis point 1.

Subcatchment 5S has been removed from the drainage analysis as it was the subcatchment associated with a stormwater pond that has since been removed from the drainage design. Subcatchments 6S-9S drain through catch basins into a closed drainage system which outlets toward a bioretention pond modelled as Pond 1P. The bioretention pond is designed to treat the water quality volume of runoff directed to it and otherwise attenuate stormwater so that the peak rate of runoff at the analysis point is lower post-development than it is in the existing condition. The bioretention pond will have a sediment forebay for pre-treatment. Any discharge from Pond 1P follows a path through Subcatchment 3S represented as Reach 7R, toward Reach 8R, an existing roadside ditch on the Tidewatch condominium property leading to Analysis Point 3.

Subcatchments 11S and 12S consist of lawn and roof areas that drain toward yard drains 1 and 2, respectively. The runoff that is caught by these yard drains additionally enters the previously described closed drainage system that outlets toward Pond 1P.

Subcatchments 13S and 14S represent roof and deck areas on Units 3-4 which are routed toward infiltration stone underneath these units back decks. These devices are modelled as Ponds 3P and 4P.

Subcatchments 15S and 16S represent roof areas on Units 3 and 4 which drain into stone drip edges adjacent to the inside facing walls on these units. The stone drip edges, modelled as Ponds 5P and 6P, will be lined and underdrained for the sole purpose of directing this roof water into the aforementioned stone areas underneath the back decks of these units (3P and 4P) in order to meet the City's pollutant removal requirements.

Subcatchments 17S and 18S represent roof areas on Units 3 and 4 which drain into stone drip edges adjacent to the outside facing walls on these units. Although these stone drip edges, modelled as Ponds 7P and 8P, are useless for infiltration due to the presence of a perimeter drain beneath them, they will prevent the grassed slope adjacent to the units from eroding due to inundation with roof runoff. The stone drip edges will be lined and underdrained, and the underdrains for Ponds 7P and 8P will outlet toward Reaches 9R and 10R, which themselves carry water toward 1P and AP4, respectively.

Finally, Subcatchment 19S represents the grassed and roof area that drains directly toward Pond 1P without passing through the closed drainage system in the proposed condition.

As a result of the implementation of this stormwater management system, peak flows and runoff volumes are reduced toward all four analysis points during all analyzed storm events in the proposed condition as compared with the existing condition. The NHDES Alteration of Terrain Bureau allows

an increase in runoff volume of up to 0.1 acre-feet during the 2-year 24-hour storm event. We are decreasing runoff volumes and therefore this would be approvable by the AOT Bureau if the project needed an AOT permit (which it does not as the area of disturbance is below 100,000 SF).

Furthermore, the project as designed exceeds the AOT Bureau's groundwater recharge volume requirement. A GRV worksheet is contained within the appendix of this report in order to illustrate this. Therefore, we have designed the drainage system to avoid adverse impacts to abutting infrastructure and the requirement per Section 7.1 of the Site Plan Review Regulations to "design practices to the maximum extent practical (MEP) to reduce stormwater runoff volumes, maintain predevelopment site hydrology, and protect water quality in receiving waters" is met. Rain gardens (also known as bioretention systems) are recommended as a Low Impact Development practice in this same section of the regulations. We are using bioretention systems to treat and attenuate runoff from paved areas of the subject parcel in the proposed condition.

According to the NH Stormwater Manual, bioretention systems provide a pollutant removal efficiency of 90% for TSS and 65% for nitrogen, and drip edges provide a removal efficiency of 90% for TSS and 55% for nitrogen. While drip edges cannot be used for infiltration in this case as the units will have foundation drains, stone underneath a deck is assumed to provide similar stormwater treatment to a stone drip edge. The City of Portsmouth Site Plan Review Regulations stipulate that stormwater BMPs shall be designed for 80% TSS removal and 50% nitrogen removal of stormwater runoff from post-construction impervious surfaces. This plan meets the pollutant removal requirement for runoff directed toward Analysis Points 3 and 4 in the post-construction condition. A breakdown of pollutant removal efficiencies for the runoff that passes through the bioretention ponds, stone infiltration areas, or no treatment BMP and reaches Analysis Points 3 and 4 from the subject parcel is contained within the appendix of this report in order to demonstrate this.

No impervious surface is directed toward Analysis Point 2 post-construction. Presumably, the flow directed toward the new catch basin along the gutter line of Sagamore Avenue from the existing Luster King development was accounted for in the design of the City's closed drainage network. Because the amount of impervious surface being directed toward Analysis Point 1 is being decreased post-construction, we presume that whatever stormwater management the City had proposed for the runoff downstream of the new catch basin will continue to function as intended post-construction. Therefore, no on-site treatment BMPs are proposed for the impervious surface directed toward Analysis Point 1 post-construction, and the impervious surface directed toward analysis point 1 post-construction is excluded from the pollutant removal calculations. Even if we did propose a treatment BMP for the runoff directed toward the Sagamore Avenue right of way, what would result is a point discharge of stormwater from an outlet pipe or weir directly toward pavement, which is not advisable. Therefore, this water *cannot* be treated on site, which will not be a problem assuming that the City designed an appropriate BMP for the runoff directed toward its catch basin from the Luster King site.

5.0 CONCLUSION

This proposed site development will have minimal adverse effect on abutting infrastructures, properties, and downstream wetlands by way of stormwater runoff or siltation. Appropriate steps will be taken to eliminate erosion and sedimentation; this will be accomplished through the construction of a drainage system consisting of site grading, catch basins, yard drains, a bioretention system, lined stone drip edges, infiltration stone underneath decks, and temporary erosion control measures including but not limited to silt fence and the use of a stabilized construction entrance. Best Management Practices developed by the State of New Hampshire have been utilized in the design of

this system and their application will be enforced throughout the construction process. Peak rates and volumes of runoff from the site will be reduced toward all analysis points during all analyzed storm events.

This project disturbs less than 100,000 S.F. and does not require a NHDES Alteration of Terrain Permit.

Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

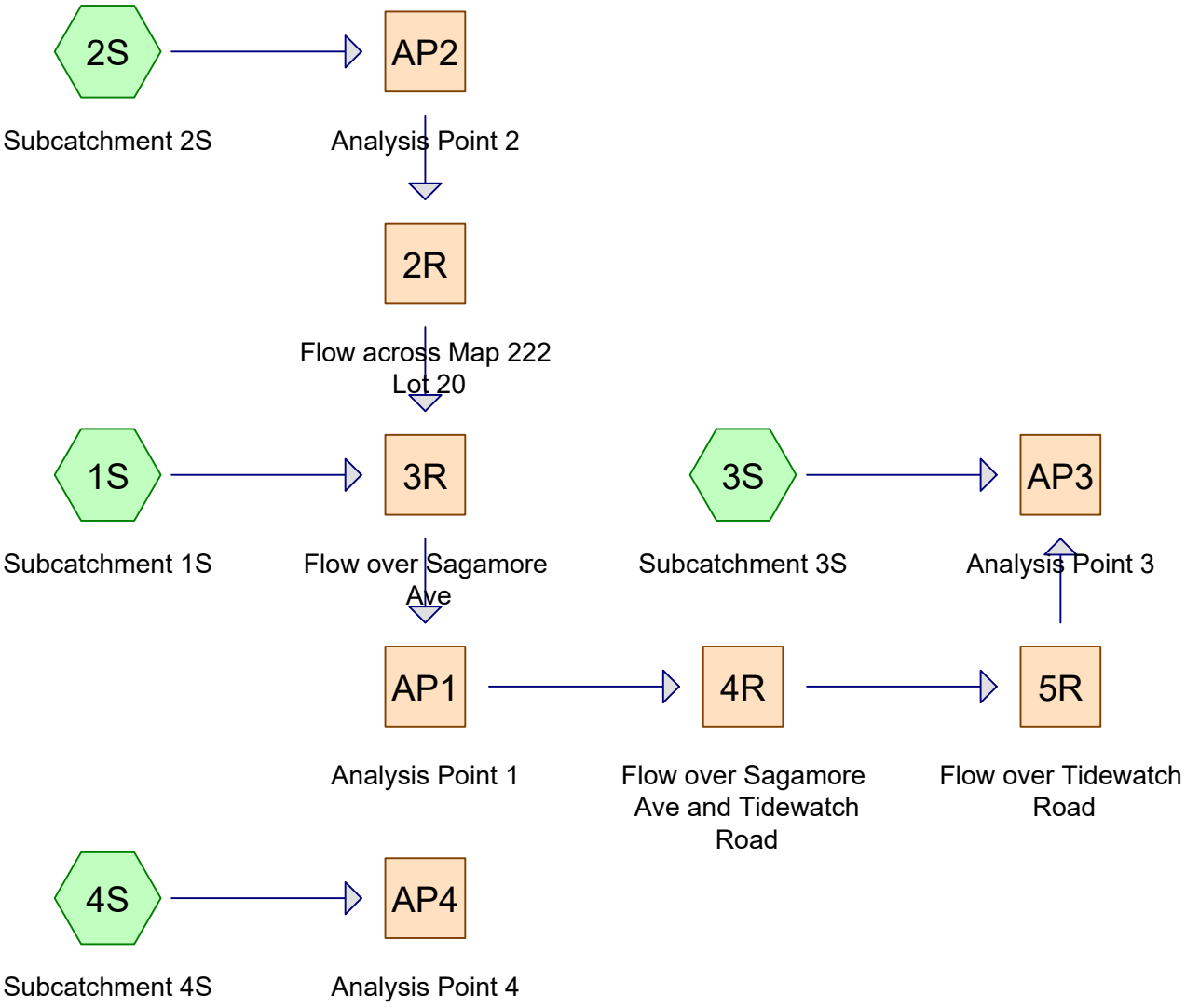
Daniel Meditz

Daniel Meditz, P.E
Lead Design Engineer

APPENDIX I

EXISTING CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR



Subcat Reach Pond Link

Routing Diagram for 18134-EXISTING
Prepared by Jones & Beach Engineers Inc, Printed 9/16/2024
HydroCAD® 10.20-3c s/n 00762 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.621	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 4S)
0.123	96	Ledge, HSG C (3S, 4S)
0.230	98	Paved parking, HSG C (1S, 4S)
0.129	98	Roofs, HSG C (1S, 3S, 4S)
1.415	70	Woods, Good, HSG C (1S, 2S, 3S, 4S)
2.518	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.518	HSG C	1S, 2S, 3S, 4S
0.000	HSG D	
0.000	Other	
2.518		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=20,592 sf 54.90% Impervious Runoff Depth>2.36"
Flow Length=187' Tc=6.0 min CN=87 Runoff=1.28 cfs 0.093 af

Subcatchment2S: Subcatchment2S Runoff Area=2,614 sf 0.00% Impervious Runoff Depth>1.38"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.09 cfs 0.007 af

Subcatchment3S: Subcatchment3S Runoff Area=58,629 sf 0.32% Impervious Runoff Depth>1.25"
Flow Length=447' Tc=11.9 min CN=72 Runoff=1.53 cfs 0.140 af

Subcatchment4S: Subcatchment4S Runoff Area=27,837 sf 14.82% Impervious Runoff Depth>1.58"
Flow Length=216' Tc=7.8 min CN=77 Runoff=1.08 cfs 0.084 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.02' Max Vel=0.63 fps Inflow=0.09 cfs 0.007 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.09 cfs 0.007 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.14' Max Vel=2.71 fps Inflow=1.36 cfs 0.100 af
n=0.016 L=101.0' S=0.0297 '/' Capacity=39.77 cfs Outflow=1.36 cfs 0.100 af

Reach 4R: Flow over Sagamore Ave and Avg. Flow Depth=0.14' Max Vel=2.85 fps Inflow=1.36 cfs 0.100 af
n=0.016 L=145.0' S=0.0345 '/' Capacity=42.85 cfs Outflow=1.35 cfs 0.100 af

Reach 5R: Flow over Tidewatch Road Avg. Flow Depth=0.12' Max Vel=3.38 fps Inflow=1.35 cfs 0.100 af
n=0.016 L=253.0' S=0.0553 '/' Capacity=54.28 cfs Outflow=1.31 cfs 0.100 af

Reach AP1: Analysis Point 1 Inflow=1.36 cfs 0.100 af
Outflow=1.36 cfs 0.100 af

Reach AP2: Analysis Point 2 Inflow=0.09 cfs 0.007 af
Outflow=0.09 cfs 0.007 af

Reach AP3: Analysis Point 3 Inflow=2.79 cfs 0.240 af
Outflow=2.79 cfs 0.240 af

Reach AP4: Analysis Point 4 Inflow=1.08 cfs 0.084 af
Outflow=1.08 cfs 0.084 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.324 af Average Runoff Depth = 1.55"
85.76% Pervious = 2.159 ac 14.24% Impervious = 0.359 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=20,592 sf 54.90% Impervious Runoff Depth>4.14"
Flow Length=187' Tc=6.0 min CN=87 Runoff=2.19 cfs 0.163 af

Subcatchment2S: Subcatchment2S Runoff Area=2,614 sf 0.00% Impervious Runoff Depth>2.86"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.20 cfs 0.014 af

Subcatchment3S: Subcatchment3S Runoff Area=58,629 sf 0.32% Impervious Runoff Depth>2.67"
Flow Length=447' Tc=11.9 min CN=72 Runoff=3.44 cfs 0.300 af

Subcatchment4S: Subcatchment4S Runoff Area=27,837 sf 14.82% Impervious Runoff Depth>3.14"
Flow Length=216' Tc=7.8 min CN=77 Runoff=2.18 cfs 0.167 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.03' Max Vel=0.80 fps Inflow=0.20 cfs 0.014 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.19 cfs 0.014 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.17' Max Vel=3.12 fps Inflow=2.38 cfs 0.177 af
n=0.016 L=101.0' S=0.0297 '/' Capacity=39.77 cfs Outflow=2.38 cfs 0.177 af

Reach 4R: Flow over Sagamore Ave and Avg. Flow Depth=0.17' Max Vel=3.29 fps Inflow=2.38 cfs 0.177 af
n=0.016 L=145.0' S=0.0345 '/' Capacity=42.85 cfs Outflow=2.37 cfs 0.177 af

Reach 5R: Flow over Tidewatch Road Avg. Flow Depth=0.15' Max Vel=3.88 fps Inflow=2.37 cfs 0.177 af
n=0.016 L=253.0' S=0.0553 '/' Capacity=54.28 cfs Outflow=2.31 cfs 0.177 af

Reach AP1: Analysis Point 1 Inflow=2.38 cfs 0.177 af
Outflow=2.38 cfs 0.177 af

Reach AP2: Analysis Point 2 Inflow=0.20 cfs 0.014 af
Outflow=0.20 cfs 0.014 af

Reach AP3: Analysis Point 3 Inflow=5.63 cfs 0.477 af
Outflow=5.63 cfs 0.477 af

Reach AP4: Analysis Point 4 Inflow=2.18 cfs 0.167 af
Outflow=2.18 cfs 0.167 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.644 af Average Runoff Depth = 3.07"
85.76% Pervious = 2.159 ac 14.24% Impervious = 0.359 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 2.19 cfs @ 12.09 hrs, Volume= 0.163 af, Depth> 4.14"
Routed to Reach 3R : Flow over Sagamore Ave

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
2,869	98	Roofs, HSG C
8,436	98	Paved parking, HSG C
9,256	74	>75% Grass cover, Good, HSG C
31	70	Woods, Good, HSG C
20,592	87	Weighted Average
9,287		45.10% Pervious Area
11,305		54.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	46	0.1090	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.1	4	0.0670	1.26		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.70"
0.1	41	0.0670	5.25		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	96	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Depth> 2.86"
Routed to Reach AP2 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
2,495	74	>75% Grass cover, Good, HSG C
119	70	Woods, Good, HSG C
2,614	74	Weighted Average
2,614		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.1000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.3	20	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 3.44 cfs @ 12.17 hrs, Volume= 0.300 af, Depth> 2.67"
Routed to Reach AP3 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

	Area (sf)	CN	Description
	187	98	Roofs, HSG C
	9,391	74	>75% Grass cover, Good, HSG C
	46,312	70	Woods, Good, HSG C
*	2,739	96	Ledge, HSG C
	58,629	72	Weighted Average
	58,442		99.68% Pervious Area
	187		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0415	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.7	62	0.0968	1.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	54	0.0741	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	122	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	159	0.0189	4.55	18.20	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.00' Z= 3.0 '/' Top.W=7.00' n= 0.030 Short grass
11.9	447	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 2.18 cfs @ 12.11 hrs, Volume= 0.167 af, Depth> 3.14"
Routed to Reach AP4 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

	Area (sf)	CN	Description
	2,555	98	Roofs, HSG C
	1,571	98	Paved parking, HSG C
	5,912	74	>75% Grass cover, Good, HSG C
	15,194	70	Woods, Good, HSG C
*	2,605	96	Ledge, HSG C
	27,837	77	Weighted Average
	23,711		85.18% Pervious Area
	4,126		14.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	14	0.0210	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.2	36	0.1280	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.5	50	0.1280	1.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	87	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	29	0.2860	2.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.8	216	Total			

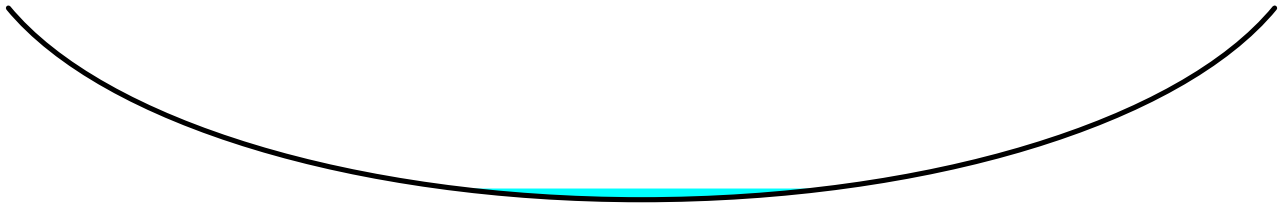
Summary for Reach 2R: Flow across Map 222 Lot 20

Inflow Area = 0.060 ac, 0.00% Impervious, Inflow Depth > 2.86" for 10 Yr 24 Hr +15% event
Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.19 cfs @ 12.11 hrs, Volume= 0.014 af, Atten= 3%, Lag= 1.2 min
Routed to Reach 3R : Flow over Sagamore Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.80 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 4.4 min

Peak Storage= 19 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 12.14'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 88.18 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 81.0' Slope= 0.0494 '/'
Inlet Invert= 66.00', Outlet Invert= 62.00'



‡

Summary for Reach 3R: Flow over Sagamore Ave

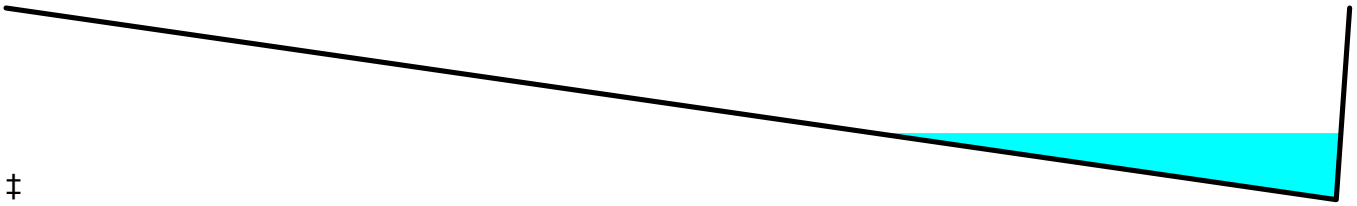
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 2R OUTLET depth by 2.14' @ 12.10 hrs
[64] Warning: Exceeded Reach 2R outlet bank by 1.67' @ 12.10 hrs

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 4.00" for 10 Yr 24 Hr +15% event
Inflow = 2.38 cfs @ 12.09 hrs, Volume= 0.177 af
Outflow = 2.38 cfs @ 12.10 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.4 min
Routed to Reach AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.12 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.23 fps, Avg. Travel Time= 1.4 min

Peak Storage= 77 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 8.78'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 39.77 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 101.0' Slope= 0.0297 '/'
Inlet Invert= 64.00', Outlet Invert= 61.00'



‡

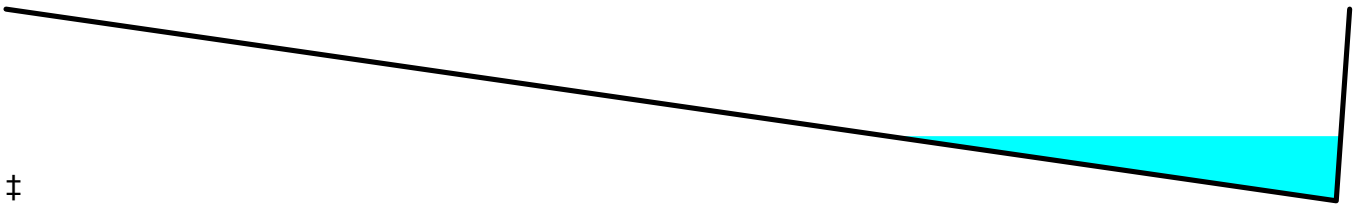
Summary for Reach 4R: Flow over Sagamore Ave and Tidewatch Road

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 4.00" for 10 Yr 24 Hr +15% event
Inflow = 2.38 cfs @ 12.10 hrs, Volume= 0.177 af
Outflow = 2.37 cfs @ 12.11 hrs, Volume= 0.177 af, Atten= 1%, Lag= 0.6 min
Routed to Reach 5R : Flow over Tidewatch Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.29 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 1.9 min

Peak Storage= 104 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 8.52'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 42.85 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 145.0' Slope= 0.0345 '/'
Inlet Invert= 61.00', Outlet Invert= 56.00'



‡

Summary for Reach 5R: Flow over Tidewatch Road

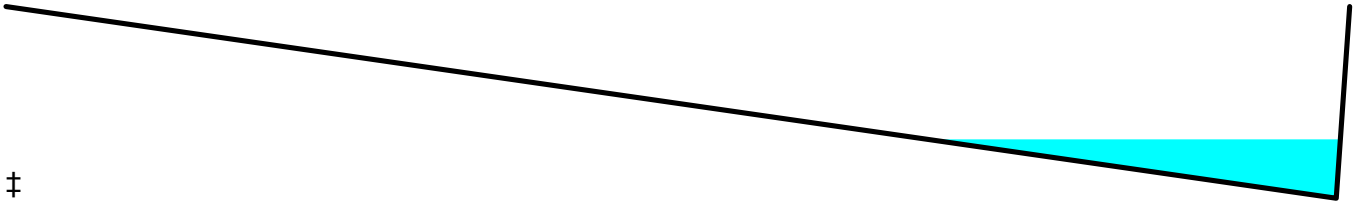
[61] Hint: Exceeded Reach 4R outlet invert by 0.15' @ 12.10 hrs

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 3.99" for 10 Yr 24 Hr +15% event
Inflow = 2.37 cfs @ 12.11 hrs, Volume= 0.177 af
Outflow = 2.31 cfs @ 12.12 hrs, Volume= 0.177 af, Atten= 2%, Lag= 0.9 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.88 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 2.7 min

Peak Storage= 150 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 7.74'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 54.28 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 253.0' Slope= 0.0553 '/'
Inlet Invert= 56.00', Outlet Invert= 42.00'



‡

Summary for Reach AP1: Analysis Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 4.00" for 10 Yr 24 Hr +15% event
Inflow = 2.38 cfs @ 12.10 hrs, Volume= 0.177 af
Outflow = 2.38 cfs @ 12.10 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 4R : Flow over Sagamore Ave and Tidewatch Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP2: Analysis Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.060 ac, 0.00% Impervious, Inflow Depth > 2.86" for 10 Yr 24 Hr +15% event
Inflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.20 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : Flow across Map 222 Lot 20

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP3: Analysis Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.879 ac, 14.04% Impervious, Inflow Depth > 3.05" for 10 Yr 24 Hr +15% event
Inflow = 5.63 cfs @ 12.15 hrs, Volume= 0.477 af
Outflow = 5.63 cfs @ 12.15 hrs, Volume= 0.477 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP4: Analysis Point 4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.639 ac, 14.82% Impervious, Inflow Depth > 3.14" for 10 Yr 24 Hr +15% event
Inflow = 2.18 cfs @ 12.11 hrs, Volume= 0.167 af
Outflow = 2.18 cfs @ 12.11 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=20,592 sf 54.90% Impervious Runoff Depth>5.59"
Flow Length=187' Tc=6.0 min CN=87 Runoff=2.91 cfs 0.220 af

Subcatchment2S: Subcatchment2S Runoff Area=2,614 sf 0.00% Impervious Runoff Depth>4.14"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.29 cfs 0.021 af

Subcatchment3S: Subcatchment3S Runoff Area=58,629 sf 0.32% Impervious Runoff Depth>3.92"
Flow Length=447' Tc=11.9 min CN=72 Runoff=5.08 cfs 0.440 af

Subcatchment4S: Subcatchment4S Runoff Area=27,837 sf 14.82% Impervious Runoff Depth>4.47"
Flow Length=216' Tc=7.8 min CN=77 Runoff=3.10 cfs 0.238 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.04' Max Vel=0.90 fps Inflow=0.29 cfs 0.021 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.28 cfs 0.021 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.19' Max Vel=3.35 fps Inflow=3.19 cfs 0.241 af
n=0.016 L=101.0' S=0.0297 '/' Capacity=39.77 cfs Outflow=3.19 cfs 0.241 af

Reach 4R: Flow over Sagamore Ave and Avg. Flow Depth=0.19' Max Vel=3.54 fps Inflow=3.19 cfs 0.241 af
n=0.016 L=145.0' S=0.0345 '/' Capacity=42.85 cfs Outflow=3.18 cfs 0.241 af

Reach 5R: Flow over Tidewatch Road Avg. Flow Depth=0.17' Max Vel=4.19 fps Inflow=3.18 cfs 0.241 af
n=0.016 L=253.0' S=0.0553 '/' Capacity=54.28 cfs Outflow=3.11 cfs 0.241 af

Reach AP1: Analysis Point 1 Inflow=3.19 cfs 0.241 af
Outflow=3.19 cfs 0.241 af

Reach AP2: Analysis Point 2 Inflow=0.29 cfs 0.021 af
Outflow=0.29 cfs 0.021 af

Reach AP3: Analysis Point 3 Inflow=8.00 cfs 0.681 af
Outflow=8.00 cfs 0.681 af

Reach AP4: Analysis Point 4 Inflow=3.10 cfs 0.238 af
Outflow=3.10 cfs 0.238 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.919 af Average Runoff Depth = 4.38"
85.76% Pervious = 2.159 ac 14.24% Impervious = 0.359 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=20,592 sf 54.90% Impervious Runoff Depth>6.96"
Flow Length=187' Tc=6.0 min CN=87 Runoff=3.58 cfs 0.274 af

Subcatchment2S: Subcatchment2S Runoff Area=2,614 sf 0.00% Impervious Runoff Depth>5.40"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.37 cfs 0.027 af

Subcatchment3S: Subcatchment3S Runoff Area=58,629 sf 0.32% Impervious Runoff Depth>5.15"
Flow Length=447' Tc=11.9 min CN=72 Runoff=6.66 cfs 0.578 af

Subcatchment4S: Subcatchment4S Runoff Area=27,837 sf 14.82% Impervious Runoff Depth>5.76"
Flow Length=216' Tc=7.8 min CN=77 Runoff=3.97 cfs 0.307 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.04' Max Vel=0.98 fps Inflow=0.37 cfs 0.027 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.36 cfs 0.027 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.21' Max Vel=3.54 fps Inflow=3.94 cfs 0.301 af
n=0.016 L=101.0' S=0.0297 '/' Capacity=39.77 cfs Outflow=3.95 cfs 0.301 af

Reach 4R: Flow over Sagamore Ave and Avg. Flow Depth=0.20' Max Vel=3.74 fps Inflow=3.95 cfs 0.301 af
n=0.016 L=145.0' S=0.0345 '/' Capacity=42.85 cfs Outflow=3.93 cfs 0.301 af

Reach 5R: Flow over Tidewatch Road Avg. Flow Depth=0.19' Max Vel=4.42 fps Inflow=3.93 cfs 0.301 af
n=0.016 L=253.0' S=0.0553 '/' Capacity=54.28 cfs Outflow=3.86 cfs 0.301 af

Reach AP1: Analysis Point 1 Inflow=3.95 cfs 0.301 af
Outflow=3.95 cfs 0.301 af

Reach AP2: Analysis Point 2 Inflow=0.37 cfs 0.027 af
Outflow=0.37 cfs 0.027 af

Reach AP3: Analysis Point 3 Inflow=10.27 cfs 0.879 af
Outflow=10.27 cfs 0.879 af

Reach AP4: Analysis Point 4 Inflow=3.97 cfs 0.307 af
Outflow=3.97 cfs 0.307 af

Total Runoff Area = 2.518 ac Runoff Volume = 1.186 af Average Runoff Depth = 5.65"
85.76% Pervious = 2.159 ac 14.24% Impervious = 0.359 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 3.58 cfs @ 12.09 hrs, Volume= 0.274 af, Depth> 6.96"
Routed to Reach 3R : Flow over Sagamore Ave

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
2,869	98	Roofs, HSG C
8,436	98	Paved parking, HSG C
9,256	74	>75% Grass cover, Good, HSG C
31	70	Woods, Good, HSG C
20,592	87	Weighted Average
9,287		45.10% Pervious Area
11,305		54.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	46	0.1090	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.1	4	0.0670	1.26		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.70"
0.1	41	0.0670	5.25		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	96	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Depth> 5.40"
Routed to Reach AP2 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
2,495	74	>75% Grass cover, Good, HSG C
119	70	Woods, Good, HSG C
2,614	74	Weighted Average
2,614		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.1000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.3	20	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 6.66 cfs @ 12.17 hrs, Volume= 0.578 af, Depth> 5.15"
Routed to Reach AP3 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

	Area (sf)	CN	Description
	187	98	Roofs, HSG C
	9,391	74	>75% Grass cover, Good, HSG C
	46,312	70	Woods, Good, HSG C
*	2,739	96	Ledge, HSG C
	58,629	72	Weighted Average
	58,442		99.68% Pervious Area
	187		0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0415	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.7	62	0.0968	1.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	54	0.0741	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	122	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	159	0.0189	4.55	18.20	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.00' Z= 3.0 '/' Top.W=7.00' n= 0.030 Short grass
11.9	447	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 3.97 cfs @ 12.11 hrs, Volume= 0.307 af, Depth> 5.76"
Routed to Reach AP4 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

	Area (sf)	CN	Description
	2,555	98	Roofs, HSG C
	1,571	98	Paved parking, HSG C
	5,912	74	>75% Grass cover, Good, HSG C
	15,194	70	Woods, Good, HSG C
*	2,605	96	Ledge, HSG C
	27,837	77	Weighted Average
	23,711		85.18% Pervious Area
	4,126		14.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	14	0.0210	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.2	36	0.1280	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.5	50	0.1280	1.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	87	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	29	0.2860	2.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.8	216	Total			

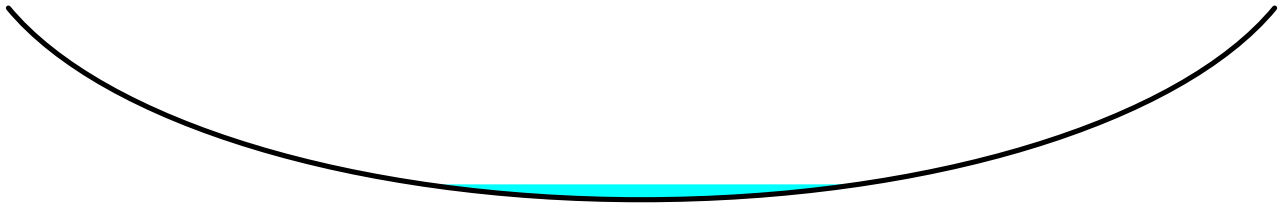
Summary for Reach 2R: Flow across Map 222 Lot 20

Inflow Area = 0.060 ac, 0.00% Impervious, Inflow Depth > 5.40" for 50 Yr 24 Hr +15% event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.36 cfs @ 12.11 hrs, Volume= 0.027 af, Atten= 2%, Lag= 1.0 min
Routed to Reach 3R : Flow over Sagamore Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.98 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.35 fps, Avg. Travel Time= 3.9 min

Peak Storage= 30 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 14.09'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 88.18 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 81.0' Slope= 0.0494 '/'
Inlet Invert= 66.00', Outlet Invert= 62.00'



‡

Summary for Reach 3R: Flow over Sagamore Ave

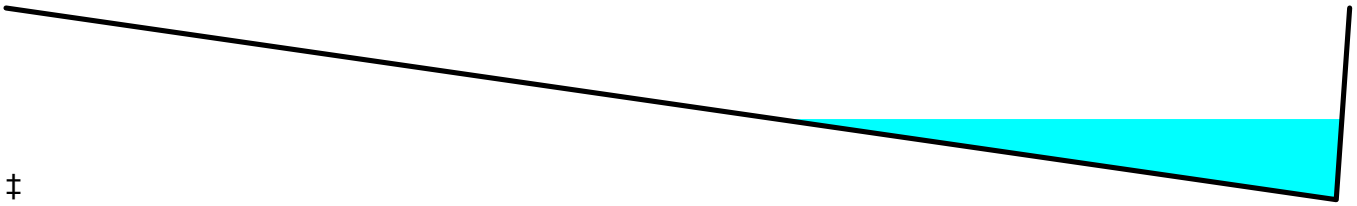
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 2R OUTLET depth by 2.17' @ 12.10 hrs
[64] Warning: Exceeded Reach 2R outlet bank by 1.71' @ 12.10 hrs

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 6.78" for 50 Yr 24 Hr +15% event
Inflow = 3.94 cfs @ 12.09 hrs, Volume= 0.301 af
Outflow = 3.95 cfs @ 12.10 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.4 min
Routed to Reach AP1 : Analysis Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.54 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.38 fps, Avg. Travel Time= 1.2 min

Peak Storage= 113 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.21' , Surface Width= 10.62'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 39.77 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 101.0' Slope= 0.0297 '/'
Inlet Invert= 64.00', Outlet Invert= 61.00'



‡

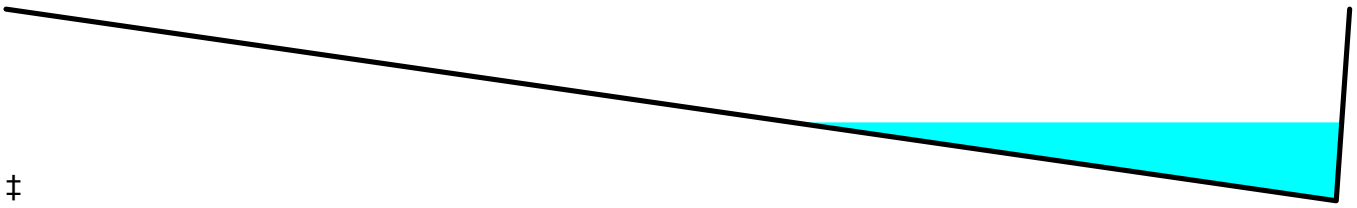
Summary for Reach 4R: Flow over Sagamore Ave and Tidewatch Road

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 6.78" for 50 Yr 24 Hr +15% event
Inflow = 3.95 cfs @ 12.10 hrs, Volume= 0.301 af
Outflow = 3.93 cfs @ 12.10 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.5 min
Routed to Reach 5R : Flow over Tidewatch Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.74 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.46 fps, Avg. Travel Time= 1.7 min

Peak Storage= 153 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.20' , Surface Width= 10.31'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 42.85 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 145.0' Slope= 0.0345 '/'
Inlet Invert= 61.00', Outlet Invert= 56.00'



‡

Summary for Reach 5R: Flow over Tidewatch Road

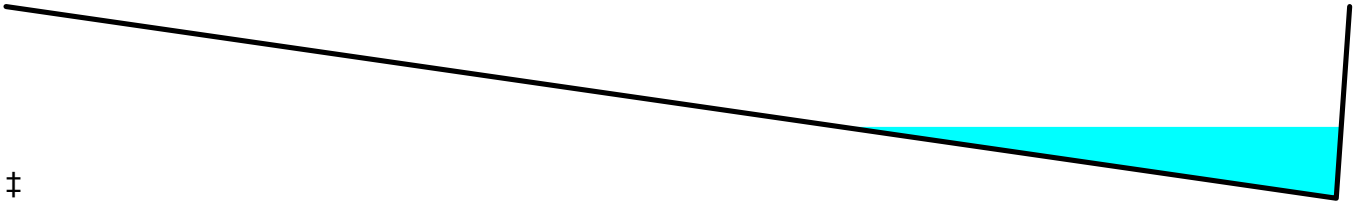
[61] Hint: Exceeded Reach 4R outlet invert by 0.18' @ 12.10 hrs

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 6.78" for 50 Yr 24 Hr +15% event
Inflow = 3.93 cfs @ 12.10 hrs, Volume= 0.301 af
Outflow = 3.86 cfs @ 12.12 hrs, Volume= 0.301 af, Atten= 2%, Lag= 0.8 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 4.42 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 2.4 min

Peak Storage= 220 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.19' , Surface Width= 9.38'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 54.28 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 253.0' Slope= 0.0553 '/'
Inlet Invert= 56.00', Outlet Invert= 42.00'



‡

Summary for Reach AP1: Analysis Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.533 ac, 48.72% Impervious, Inflow Depth > 6.78" for 50 Yr 24 Hr +15% event
Inflow = 3.95 cfs @ 12.10 hrs, Volume= 0.301 af
Outflow = 3.95 cfs @ 12.10 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 4R : Flow over Sagamore Ave and Tidewatch Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP2: Analysis Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.060 ac, 0.00% Impervious, Inflow Depth > 5.40" for 50 Yr 24 Hr +15% event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : Flow across Map 222 Lot 20

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP3: Analysis Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.879 ac, 14.04% Impervious, Inflow Depth > 5.61" for 50 Yr 24 Hr +15% event
Inflow = 10.27 cfs @ 12.15 hrs, Volume= 0.879 af
Outflow = 10.27 cfs @ 12.15 hrs, Volume= 0.879 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP4: Analysis Point 4

[40] Hint: Not Described (Outflow=Inflow)

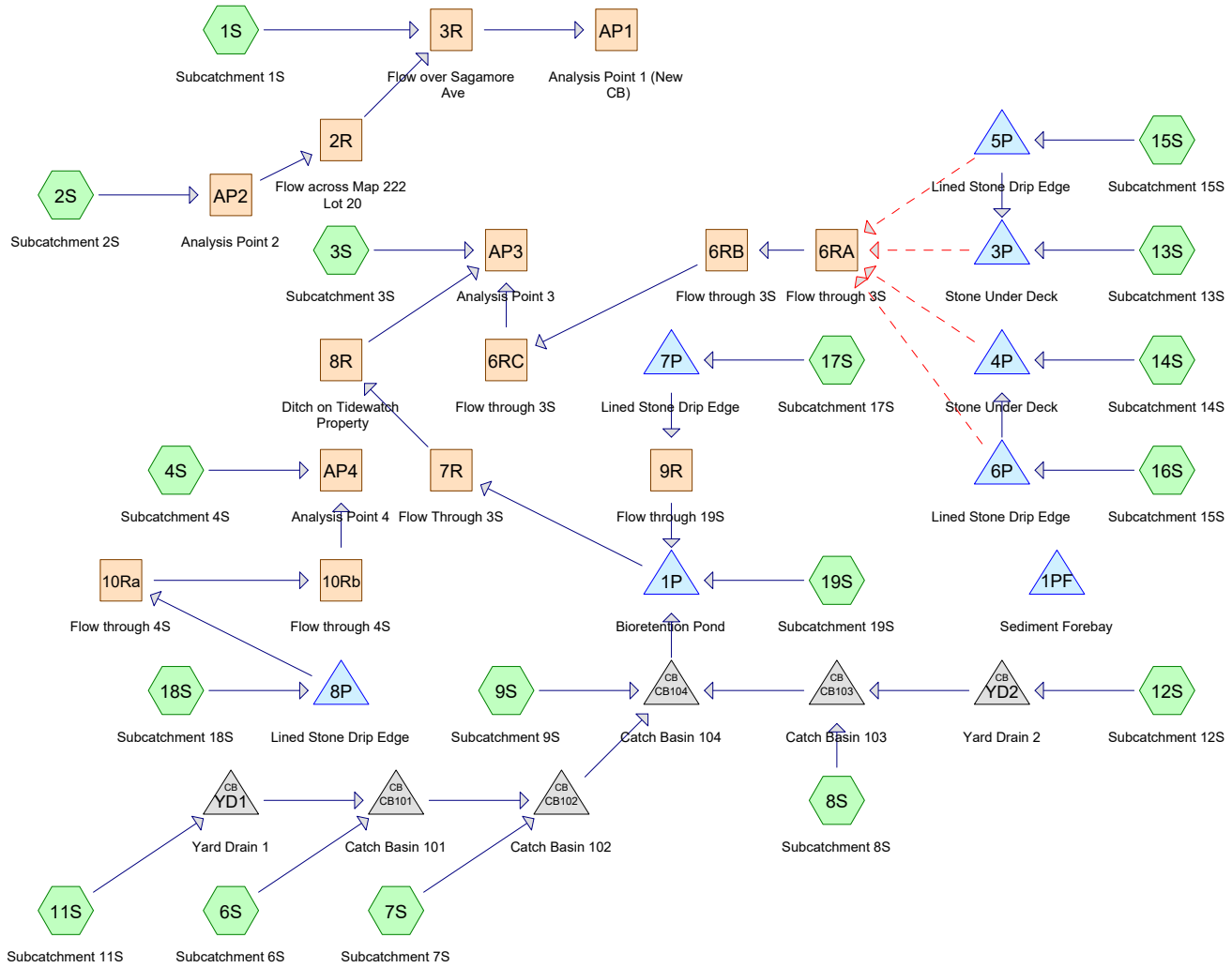
Inflow Area = 0.639 ac, 14.82% Impervious, Inflow Depth > 5.76" for 50 Yr 24 Hr +15% event
Inflow = 3.97 cfs @ 12.11 hrs, Volume= 0.307 af
Outflow = 3.97 cfs @ 12.11 hrs, Volume= 0.307 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

APPENDIX II

PROPOSED CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR



Subcat Reach Pond Link

Routing Diagram for 18134-PROPOSED
Prepared by Jones & Beach Engineers Inc, Printed 10/17/2024
HydroCAD® 10.20-3c s/n 00762 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.067	74	>75% Grass cover, Good, HSG C (1S, 2S, 3S, 4S, 11S, 12S, 19S)
0.071	96	Ledge, HSG C (3S, 4S)
0.287	98	Paved parking, HSG C (1S, 6S, 7S, 8S, 9S, 11S, 19S)
0.241	98	Roofs, HSG C (1S, 4S, 8S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S)
0.017	98	Water Surface, 0% imp, HSG C (15S, 16S, 17S, 18S)
0.835	70	Woods, Good, HSG C (3S, 4S)
2.518	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.518	HSG C	1S, 2S, 3S, 4S, 6S, 7S, 8S, 9S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S
0.000	HSG D	
0.000	Other	
2.518		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=16,321 sf 51.36% Impervious Runoff Depth>2.27"
Flow Length=186' Tc=6.0 min CN=86 Runoff=0.98 cfs 0.071 af

Subcatchment2S: Subcatchment2S Runoff Area=1,728 sf 0.00% Impervious Runoff Depth>1.38"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.06 cfs 0.005 af

Subcatchment3S: Subcatchment3S Runoff Area=44,463 sf 0.00% Impervious Runoff Depth>1.25"
Flow Length=447' Tc=11.9 min CN=72 Runoff=1.16 cfs 0.106 af

Subcatchment4S: Subcatchment4S Runoff Area=20,212 sf 5.43% Impervious Runoff Depth>1.51"
Flow Length=216' Tc=7.8 min CN=76 Runoff=0.75 cfs 0.058 af

Subcatchment6S: Subcatchment6S Runoff Area=1,084 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment7S: Subcatchment7S Runoff Area=954 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment8S: Subcatchment8S Runoff Area=3,011 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.24 cfs 0.020 af

Subcatchment9S: Subcatchment9S Runoff Area=325 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment11S: Subcatchment11S Runoff Area=4,571 sf 49.42% Impervious Runoff Depth>2.27"
Flow Length=77' Slope=0.0396 '/' Tc=6.0 min CN=86 Runoff=0.27 cfs 0.020 af

Subcatchment12S: Subcatchment12S Runoff Area=3,734 sf 35.30% Impervious Runoff Depth>1.95"
Flow Length=50' Slope=0.0320 '/' Tc=6.0 min CN=82 Runoff=0.19 cfs 0.014 af

Subcatchment13S: Subcatchment13S Runoff Area=560 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment14S: Subcatchment14S Runoff Area=560 sf 100.00% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment15S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment16S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment17S: Subcatchment17S Runoff Area=779 sf 75.74% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment18S: Subcatchment18S Runoff Area=779 sf 75.74% Impervious Runoff Depth>3.46"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment19S: Subcatchment19S Runoff Area=9,042 sf 12.11% Impervious Runoff Depth>1.58"
Flow Length=58' Tc=6.0 min CN=77 Runoff=0.37 cfs 0.027 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.02' Max Vel=0.56 fps Inflow=0.06 cfs 0.005 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.06 cfs 0.005 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.12' Max Vel=2.94 fps Inflow=1.03 cfs 0.076 af
n=0.016 L=45.0' S=0.0444 '/' Capacity=48.65 cfs Outflow=1.03 cfs 0.076 af

Reach 6RA: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=35.0' S=0.3429 '/' Capacity=464.76 cfs Outflow=0.00 cfs 0.000 af

Reach 6RB: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=39.0' S=0.1026 '/' Capacity=127.08 cfs Outflow=0.00 cfs 0.000 af

Reach 6RC: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=45.0' S=0.2667 '/' Capacity=409.88 cfs Outflow=0.00 cfs 0.000 af

Reach 7R: Flow Through 3S Avg. Flow Depth=0.12' Max Vel=3.30 fps Inflow=1.30 cfs 0.102 af
n=0.030 L=220.0' S=0.0909 '/' Capacity=66.79 cfs Outflow=1.30 cfs 0.101 af

Reach 8R: Ditch on Tidewatch Property Avg. Flow Depth=0.30' Max Vel=2.28 fps Inflow=1.30 cfs 0.101 af
n=0.030 L=159.0' S=0.0189 '/' Capacity=18.18 cfs Outflow=1.28 cfs 0.101 af

Reach 9R: Flow through 19S Avg. Flow Depth=0.03' Max Vel=0.61 fps Inflow=0.06 cfs 0.005 af
n=0.030 L=39.0' S=0.0205 '/' Capacity=16.36 cfs Outflow=0.06 cfs 0.005 af

Reach 10Ra: Flow through 4S Avg. Flow Depth=0.00' Max Vel=0.83 fps Inflow=0.06 cfs 0.005 af
n=0.030 L=18.0' S=0.3333 '/' Capacity=199.20 cfs Outflow=0.06 cfs 0.005 af

Reach 10Rb: Flow through 4S Avg. Flow Depth=0.00' Max Vel=0.70 fps Inflow=0.06 cfs 0.005 af
n=0.030 L=51.0' S=0.2353 '/' Capacity=167.36 cfs Outflow=0.06 cfs 0.005 af

Reach AP1: Analysis Point 1 (New CB) Inflow=1.03 cfs 0.076 af
Outflow=1.03 cfs 0.076 af

Reach AP2: Analysis Point 2 Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af

Reach AP3: Analysis Point 3 Inflow=2.40 cfs 0.208 af
Outflow=2.40 cfs 0.208 af

Reach AP4: Analysis Point 4 Inflow=0.81 cfs 0.064 af
Outflow=0.81 cfs 0.064 af

Pond 1P: Bioretention Pond Peak Elev=60.50' Storage=72 cf Inflow=1.33 cfs 0.102 af
Outflow=1.30 cfs 0.102 af

Pond 1PF: Sediment Forebay Peak Elev=0.00' Storage=0 cf

Pond 3P: Stone Under Deck Peak Elev=63.57' Storage=0.005 af Inflow=0.11 cfs 0.009 af
Discarded=0.01 cfs 0.007 af Secondary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af

Pond 4P: Stone Under Deck Peak Elev=63.19' Storage=0.002 af Inflow=0.11 cfs 0.009 af
Discarded=0.04 cfs 0.009 af Secondary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.009 af

Pond 5P: Lined Stone Drip Edge Peak Elev=66.05' Storage=0.000 af Inflow=0.06 cfs 0.005 af
Primary=0.06 cfs 0.005 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.005 af

Pond 6P: Lined Stone Drip Edge Peak Elev=66.05' Storage=0.000 af Inflow=0.06 cfs 0.005 af
Primary=0.06 cfs 0.005 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.005 af

Pond 7P: Lined Stone Drip Edge Peak Elev=64.16' Storage=0.000 af Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af

Pond 8P: Lined Stone Drip Edge Peak Elev=64.66' Storage=0.000 af Inflow=0.06 cfs 0.005 af
Outflow=0.06 cfs 0.005 af

Pond CB101: Catch Basin 101 Peak Elev=66.97' Inflow=0.36 cfs 0.027 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0071 '/' Outflow=0.36 cfs 0.027 af

Pond CB102: Catch Basin 102 Peak Elev=66.80' Inflow=0.44 cfs 0.033 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0060 '/' Outflow=0.44 cfs 0.033 af

Pond CB103: Catch Basin 103 Peak Elev=67.97' Inflow=0.43 cfs 0.034 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0071 '/' Outflow=0.43 cfs 0.034 af

Pond CB104: Catch Basin 104 Peak Elev=66.37' Inflow=0.90 cfs 0.069 af
12.0" Round Culvert n=0.012 L=31.0' S=0.0065 '/' Outflow=0.90 cfs 0.069 af

Pond YD1: Yard Drain 1 Peak Elev=67.64' Inflow=0.27 cfs 0.020 af
8.0" Round Culvert n=0.012 L=15.0' S=0.0247 '/' Outflow=0.27 cfs 0.020 af

Pond YD2: Yard Drain 2 Peak Elev=68.48' Inflow=0.19 cfs 0.014 af
8.0" Round Culvert n=0.012 L=13.0' S=0.0208 '/' Outflow=0.19 cfs 0.014 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.365 af Average Runoff Depth = 1.74"
79.02% Pervious = 1.990 ac 20.98% Impervious = 0.528 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=16,321 sf 51.36% Impervious Runoff Depth>4.04"
Flow Length=186' Tc=6.0 min CN=86 Runoff=1.70 cfs 0.126 af

Subcatchment2S: Subcatchment2S Runoff Area=1,728 sf 0.00% Impervious Runoff Depth>2.86"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.13 cfs 0.009 af

Subcatchment3S: Subcatchment3S Runoff Area=44,463 sf 0.00% Impervious Runoff Depth>2.67"
Flow Length=447' Tc=11.9 min CN=72 Runoff=2.61 cfs 0.227 af

Subcatchment4S: Subcatchment4S Runoff Area=20,212 sf 5.43% Impervious Runoff Depth>3.04"
Flow Length=216' Tc=7.8 min CN=76 Runoff=1.54 cfs 0.118 af

Subcatchment6S: Subcatchment6S Runoff Area=1,084 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment7S: Subcatchment7S Runoff Area=954 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment8S: Subcatchment8S Runoff Area=3,011 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.37 cfs 0.031 af

Subcatchment9S: Subcatchment9S Runoff Area=325 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment11S: Subcatchment11S Runoff Area=4,571 sf 49.42% Impervious Runoff Depth>4.04"
Flow Length=77' Slope=0.0396 '/' Tc=6.0 min CN=86 Runoff=0.48 cfs 0.035 af

Subcatchment12S: Subcatchment12S Runoff Area=3,734 sf 35.30% Impervious Runoff Depth>3.63"
Flow Length=50' Slope=0.0320 '/' Tc=6.0 min CN=82 Runoff=0.35 cfs 0.026 af

Subcatchment13S: Subcatchment13S Runoff Area=560 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.07 cfs 0.006 af

Subcatchment14S: Subcatchment14S Runoff Area=560 sf 100.00% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.07 cfs 0.006 af

Subcatchment15S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.10 cfs 0.008 af

Subcatchment16S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.10 cfs 0.008 af

Subcatchment17S: Subcatchment17S Runoff Area=779 sf 75.74% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.10 cfs 0.008 af

Subcatchment18S: Subcatchment18S Runoff Area=779 sf 75.74% Impervious Runoff Depth>5.37"
Tc=6.0 min CN=98 Runoff=0.10 cfs 0.008 af

Subcatchment19S: Subcatchment19S Runoff Area=9,042 sf 12.11% Impervious Runoff Depth>3.14"
Flow Length=58' Tc=6.0 min CN=77 Runoff=0.75 cfs 0.054 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.02' Max Vel=0.70 fps Inflow=0.13 cfs 0.009 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.13 cfs 0.009 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.15' Max Vel=3.39 fps Inflow=1.82 cfs 0.135 af
n=0.016 L=45.0' S=0.0444 '/' Capacity=48.65 cfs Outflow=1.83 cfs 0.135 af

Reach 6RA: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=35.0' S=0.3429 '/' Capacity=464.76 cfs Outflow=0.00 cfs 0.000 af

Reach 6RB: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=39.0' S=0.1026 '/' Capacity=127.08 cfs Outflow=0.00 cfs 0.000 af

Reach 6RC: Flow through 3S Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=45.0' S=0.2667 '/' Capacity=409.88 cfs Outflow=0.00 cfs 0.000 af

Reach 7R: Flow Through 3S Avg. Flow Depth=0.13' Max Vel=3.52 fps Inflow=1.53 cfs 0.178 af
n=0.030 L=220.0' S=0.0909 '/' Capacity=66.79 cfs Outflow=1.53 cfs 0.178 af

Reach 8R: Ditch on Tidewatch Property Avg. Flow Depth=0.32' Max Vel=2.40 fps Inflow=1.53 cfs 0.178 af
n=0.030 L=159.0' S=0.0189 '/' Capacity=18.18 cfs Outflow=1.53 cfs 0.178 af

Reach 9R: Flow through 19S Avg. Flow Depth=0.04' Max Vel=0.71 fps Inflow=0.09 cfs 0.008 af
n=0.030 L=39.0' S=0.0205 '/' Capacity=16.36 cfs Outflow=0.09 cfs 0.008 af

Reach 10Ra: Flow through 4S Avg. Flow Depth=0.01' Max Vel=0.89 fps Inflow=0.09 cfs 0.008 af
n=0.030 L=18.0' S=0.3333 '/' Capacity=199.20 cfs Outflow=0.09 cfs 0.008 af

Reach 10Rb: Flow through 4S Avg. Flow Depth=0.01' Max Vel=0.80 fps Inflow=0.09 cfs 0.008 af
n=0.030 L=51.0' S=0.2353 '/' Capacity=167.36 cfs Outflow=0.09 cfs 0.008 af

Reach AP1: Analysis Point 1 (New CB) Inflow=1.83 cfs 0.135 af
Outflow=1.83 cfs 0.135 af

Reach AP2: Analysis Point 2 Inflow=0.13 cfs 0.009 af
Outflow=0.13 cfs 0.009 af

Reach AP3: Analysis Point 3 Inflow=4.12 cfs 0.405 af
Outflow=4.12 cfs 0.405 af

Reach AP4: Analysis Point 4 Inflow=1.63 cfs 0.126 af
Outflow=1.63 cfs 0.126 af

Pond 1P: Bioretention Pond Peak Elev=61.22' Storage=411 cf Inflow=2.33 cfs 0.179 af
Outflow=1.53 cfs 0.178 af

Pond 1PF: Sediment Forebay Peak Elev=0.00' Storage=0 cf

Pond 3P: Stone Under Deck Peak Elev=64.72' Storage=0.008 af Inflow=0.17 cfs 0.014 af
Discarded=0.01 cfs 0.010 af Secondary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af

Pond 4P: Stone Under Deck Peak Elev=63.65' Storage=0.003 af Inflow=0.17 cfs 0.014 af
Discarded=0.06 cfs 0.014 af Secondary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.014 af

Pond 5P: Lined Stone Drip Edge Peak Elev=66.07' Storage=0.000 af Inflow=0.10 cfs 0.008 af
Primary=0.10 cfs 0.008 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af

Pond 6P: Lined Stone Drip Edge Peak Elev=66.07' Storage=0.000 af Inflow=0.10 cfs 0.008 af
Primary=0.10 cfs 0.008 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.008 af

Pond 7P: Lined Stone Drip Edge Peak Elev=64.21' Storage=0.000 af Inflow=0.10 cfs 0.008 af
Outflow=0.09 cfs 0.008 af

Pond 8P: Lined Stone Drip Edge Peak Elev=64.71' Storage=0.000 af Inflow=0.10 cfs 0.008 af
Outflow=0.09 cfs 0.008 af

Pond CB101: Catch Basin 101 Peak Elev=67.13' Inflow=0.61 cfs 0.046 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0071 '/' Outflow=0.61 cfs 0.046 af

Pond CB102: Catch Basin 102 Peak Elev=66.96' Inflow=0.73 cfs 0.056 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0060 '/' Outflow=0.73 cfs 0.056 af

Pond CB103: Catch Basin 103 Peak Elev=68.09' Inflow=0.73 cfs 0.057 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0071 '/' Outflow=0.73 cfs 0.057 af

Pond CB104: Catch Basin 104 Peak Elev=66.58' Inflow=1.49 cfs 0.116 af
12.0" Round Culvert n=0.012 L=31.0' S=0.0065 '/' Outflow=1.49 cfs 0.116 af

Pond YD1: Yard Drain 1 Peak Elev=67.77' Inflow=0.48 cfs 0.035 af
8.0" Round Culvert n=0.012 L=15.0' S=0.0247 '/' Outflow=0.48 cfs 0.035 af

Pond YD2: Yard Drain 2 Peak Elev=68.59' Inflow=0.35 cfs 0.026 af
8.0" Round Culvert n=0.012 L=13.0' S=0.0208 '/' Outflow=0.35 cfs 0.026 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.695 af Average Runoff Depth = 3.31"
79.02% Pervious = 1.990 ac 20.98% Impervious = 0.528 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.126 af, Depth> 4.04"
Routed to Reach 3R : Flow over Sagamore Ave

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
6,930	98	Paved parking, HSG C
7,938	74	>75% Grass cover, Good, HSG C
1,453	98	Roofs, HSG C
16,321	86	Weighted Average
7,938		48.64% Pervious Area
8,383		51.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	50	0.1250	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.0	6	0.1250	2.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0670	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	186	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 2.86"
Routed to Reach AP2 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
1,728	74	>75% Grass cover, Good, HSG C
1,728		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.1000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.3	20	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 2.61 cfs @ 12.17 hrs, Volume= 0.227 af, Depth> 2.67"
Routed to Reach AP3 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

	Area (sf)	CN	Description
	14,740	74	>75% Grass cover, Good, HSG C
	28,306	70	Woods, Good, HSG C
*	1,417	96	Ledge, HSG C
	44,463	72	Weighted Average
	44,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0415	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.7	62	0.0968	1.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	54	0.0741	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	122	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	159	0.0189	4.55	18.20	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.00' Z= 3.0 '/' Top.W=7.00' n= 0.030 Short grass
11.9	447	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 1.54 cfs @ 12.11 hrs, Volume= 0.118 af, Depth> 3.04"
Routed to Reach AP4 : Analysis Point 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 24 Hr +15% Rainfall=5.61"

	Area (sf)	CN	Description
	9,377	74	>75% Grass cover, Good, HSG C
	8,075	70	Woods, Good, HSG C
	1,097	98	Roofs, HSG C
*	1,663	96	Ledge, HSG C
	20,212	76	Weighted Average
	19,115		94.57% Pervious Area
	1,097		5.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	14	0.0210	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.2	36	0.1280	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.5	50	0.1280	1.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	87	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	29	0.2860	2.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.8	216	Total			

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.011 af, Depth> 5.37"
Routed to Pond CB101 : Catch Basin 101

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
1,084	98	Paved parking, HSG C
1,084		100.00% Impervious Area

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

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 5.37"
Routed to Pond CB102 : Catch Basin 102

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
954	98	Paved parking, HSG C
954		100.00% Impervious Area

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

Summary for Subcatchment 8S: Subcatchment 8S

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 5.37"
Routed to Pond CB103 : Catch Basin 103

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
2,554	98	Paved parking, HSG C
457	98	Roofs, HSG C
3,011	98	Weighted Average
3,011		100.00% Impervious Area

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

Summary for Subcatchment 9S: Subcatchment 9S

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Depth> 5.37"
Routed to Pond CB104 : Catch Basin 104

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
325	98	Paved parking, HSG C
325		100.00% Impervious Area

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

Summary for Subcatchment 11S: Subcatchment 11S

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth> 4.04"
Routed to Pond YD1 : Yard Drain 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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
1,998	98	Roofs, HSG C
2,312	74	>75% Grass cover, Good, HSG C
261	98	Paved parking, HSG C
4,571	86	Weighted Average
2,312		50.58% Pervious Area
2,259		49.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0396	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.3	27	0.0396	1.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	77	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 12S: Subcatchment 12S

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 3.63"
Routed to Pond YD2 : Yard Drain 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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
1,318	98	Roofs, HSG C
2,416	74	>75% Grass cover, Good, HSG C
3,734	82	Weighted Average
2,416		64.70% Pervious Area
1,318		35.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0320	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.3	50	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 13S: Subcatchment 13S

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 5.37"
Routed to Pond 3P : Stone Under Deck

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
560	98	Roofs, HSG C
560		100.00% Impervious Area

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

Summary for Subcatchment 14S: Subcatchment 14S

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 5.37"
Routed to Pond 4P : Stone Under Deck

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
560	98	Roofs, HSG C
560		100.00% Impervious Area

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

Summary for Subcatchment 15S: Subcatchment 15S

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 5.37"
Routed to Pond 5P : Lined Stone Drip Edge

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 16S: Subcatchment 15S

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 5.37"
Routed to Pond 6P : Lined Stone Drip Edge

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 17S: Subcatchment 17S

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 5.37"
Routed to Pond 7P : Lined Stone Drip Edge

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 18S: Subcatchment 18S

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 5.37"
Routed to Pond 8P : Lined Stone Drip Edge

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 19S: Subcatchment 19S

Runoff = 0.75 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 3.14"
Routed to Pond 1P : Bioretention Pond

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 24 Hr +15% Rainfall=5.61"

Area (sf)	CN	Description
7,947	74	>75% Grass cover, Good, HSG C
695	98	Roofs, HSG C
400	98	Paved parking, HSG C
9,042	77	Weighted Average
7,947		87.89% Pervious Area
1,095		12.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	43	0.0930	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.4	7	0.3333	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.0	8	0.3333	4.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	58	Total, Increased to minimum Tc = 6.0 min			

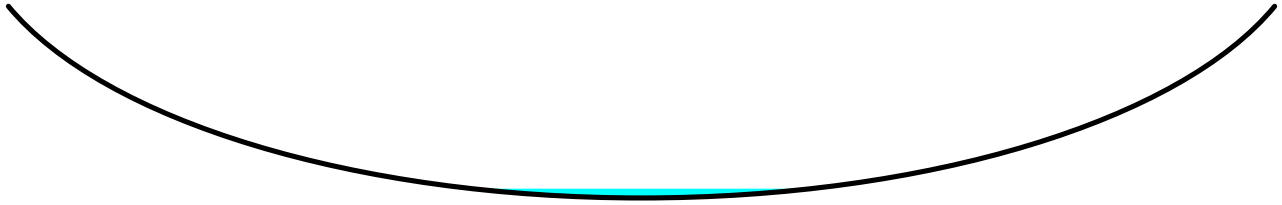
Summary for Reach 2R: Flow across Map 222 Lot 20

Inflow Area = 0.040 ac, 0.00% Impervious, Inflow Depth > 2.86" for 10 Yr 24 Hr +15% event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.12 hrs, Volume= 0.009 af, Atten= 4%, Lag= 1.4 min
Routed to Reach 3R : Flow over Sagamore Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.70 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.28 fps, Avg. Travel Time= 4.8 min

Peak Storage= 14 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 11.00'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 88.18 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Short grass
Length= 81.0' Slope= 0.0494 '/'
Inlet Invert= 66.00', Outlet Invert= 62.00'



‡

Summary for Reach 3R: Flow over Sagamore Ave

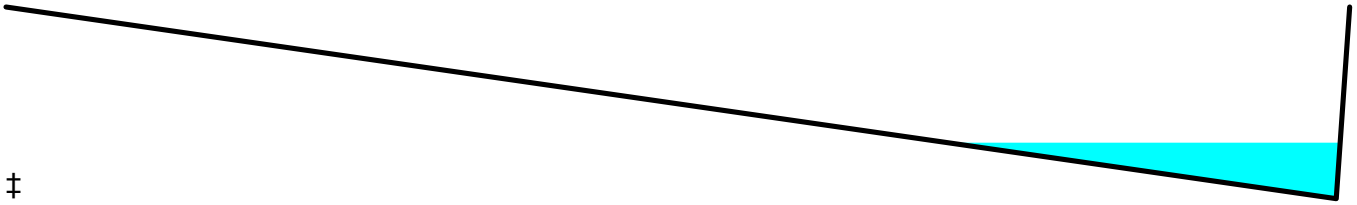
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 2R OUTLET depth by 1.12' @ 12.10 hrs
[64] Warning: Exceeded Reach 2R outlet bank by 0.65' @ 12.09 hrs

Inflow Area = 0.414 ac, 46.45% Impervious, Inflow Depth > 3.92" for 10 Yr 24 Hr +15% event
Inflow = 1.82 cfs @ 12.09 hrs, Volume= 0.135 af
Outflow = 1.83 cfs @ 12.09 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.2 min
Routed to Reach AP1 : Analysis Point 1 (New CB)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.39 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 0.6 min

Peak Storage= 24 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 7.37'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 48.65 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 45.0' Slope= 0.0444 '/'
Inlet Invert= 63.00', Outlet Invert= 61.00'



‡

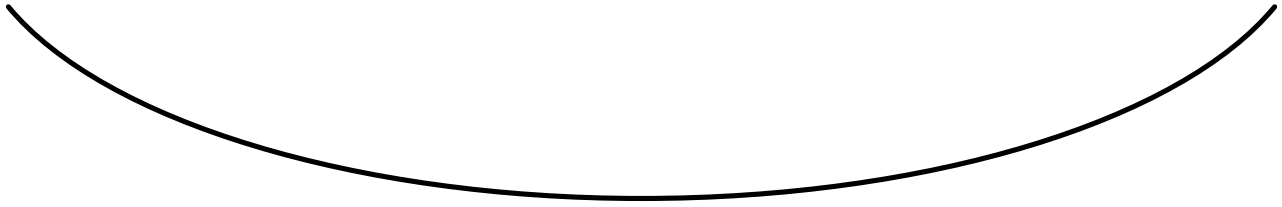
Summary for Reach 6RA: Flow through 3S

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6RB : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 33.3 sf, Capacity= 464.76 cfs

100.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 35.0' Slope= 0.3429 '/'
Inlet Invert= 66.00', Outlet Invert= 54.00'



‡

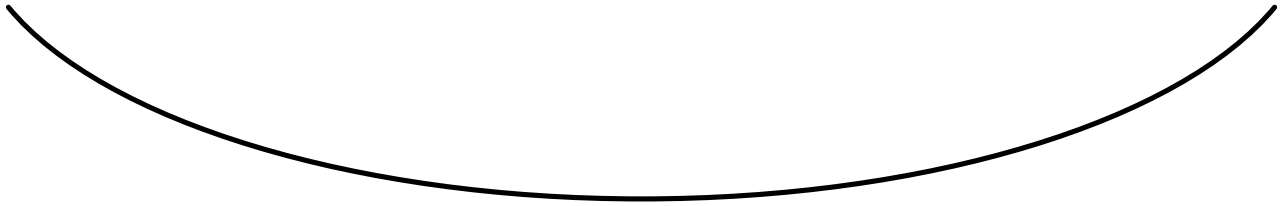
Summary for Reach 6RB: Flow through 3S

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6RC : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 127.08 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 39.0' Slope= 0.1026 '/'
Inlet Invert= 54.00', Outlet Invert= 50.00'



‡

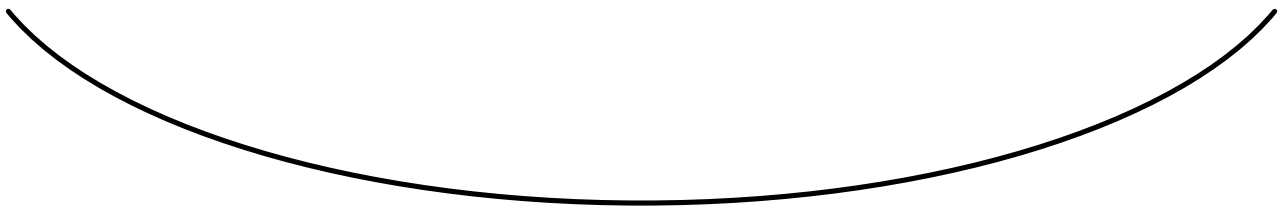
Summary for Reach 6RC: Flow through 3S

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 33.3 sf, Capacity= 409.88 cfs

100.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 45.0' Slope= 0.2667 '/'
Inlet Invert= 50.00', Outlet Invert= 38.00'



‡

Summary for Reach 7R: Flow Through 3S

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 3.97" for 10 Yr 24 Hr +15% event
Inflow = 1.53 cfs @ 12.19 hrs, Volume= 0.178 af
Outflow = 1.53 cfs @ 12.20 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.7 min
Routed to Reach 8R : Ditch on Tidewatch Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.52 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 3.4 min

Peak Storage= 96 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 3.77'
Bank-Full Depth= 1.00' Flow Area= 6.0 sf, Capacity= 66.79 cfs

3.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 9.00'
Length= 220.0' Slope= 0.0909 '/'
Inlet Invert= 58.00', Outlet Invert= 38.00'

‡

Summary for Reach 8R: Ditch on Tidewatch Property

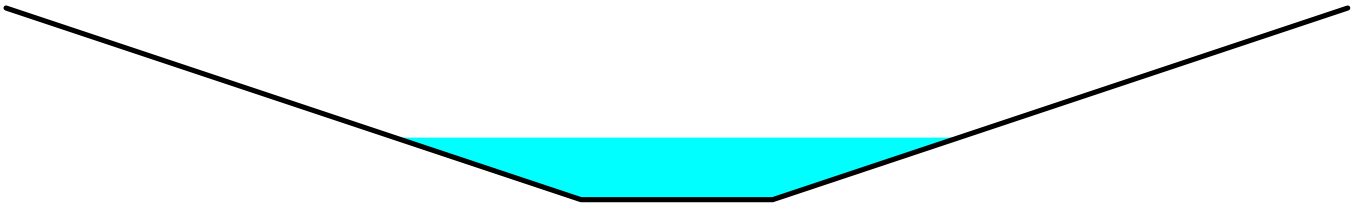
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.20' @ 12.20 hrs

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 3.96" for 10 Yr 24 Hr +15% event
Inflow = 1.53 cfs @ 12.20 hrs, Volume= 0.178 af
Outflow = 1.53 cfs @ 12.21 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.8 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 2.40 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 3.1 min

Peak Storage= 102 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.32' , Surface Width= 2.94'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 18.18 cfs

1.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 159.0' Slope= 0.0189 '/'
Inlet Invert= 38.00', Outlet Invert= 35.00'



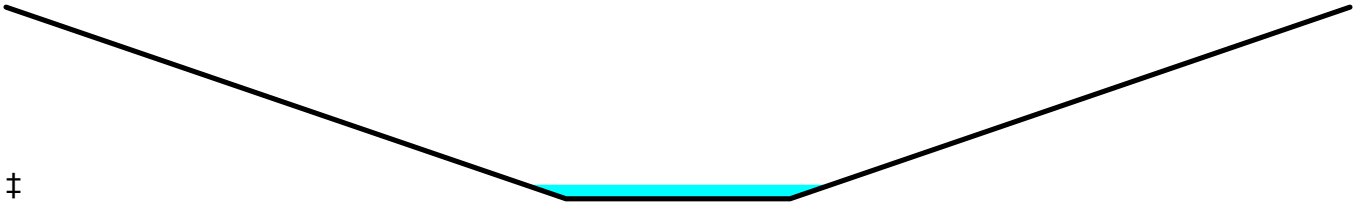
Summary for Reach 9R: Flow through 19S

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.35" for 10 Yr 24 Hr +15% event
Inflow = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af
Outflow = 0.09 cfs @ 12.12 hrs, Volume= 0.008 af, Atten= 1%, Lag= 0.6 min
Routed to Pond 1P : Bioretention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.71 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 2.8 min

Peak Storage= 5 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 4.10'
Bank-Full Depth= 0.50' Flow Area= 5.3 sf, Capacity= 16.36 cfs

3.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 15.0 '/' Top Width= 18.00'
Length= 39.0' Slope= 0.0205 '/'
Inlet Invert= 63.80', Outlet Invert= 63.00'



‡

Summary for Reach 10Ra: Flow through 4S

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.35" for 10 Yr 24 Hr +15% event
Inflow = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.2 min
Routed to Reach 10Rb : Flow through 4S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.89 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 0.4 min

Peak Storage= 2 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 20.11'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 199.20 cfs

20.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 18.0' Slope= 0.3333 '/'
Inlet Invert= 64.00', Outlet Invert= 58.00'

‡

Summary for Reach 10Rb: Flow through 4S

[61] Hint: Exceeded Reach 10Ra outlet invert by 0.01' @ 12.10 hrs

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.35" for 10 Yr 24 Hr +15% event
Inflow = 0.09 cfs @ 12.11 hrs, Volume= 0.008 af
Outflow = 0.09 cfs @ 12.12 hrs, Volume= 0.008 af, Atten= 1%, Lag= 0.7 min
Routed to Reach AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.80 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 1.2 min

Peak Storage= 6 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 20.12'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 167.36 cfs

20.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 51.0' Slope= 0.2353 '/'
Inlet Invert= 58.00', Outlet Invert= 46.00'

‡

Summary for Reach AP1: Analysis Point 1 (New CB)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.414 ac, 46.45% Impervious, Inflow Depth > 3.92" for 10 Yr 24 Hr +15% event
Inflow = 1.83 cfs @ 12.09 hrs, Volume= 0.135 af
Outflow = 1.83 cfs @ 12.09 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP2: Analysis Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.040 ac, 0.00% Impervious, Inflow Depth > 2.86" for 10 Yr 24 Hr +15% event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : Flow across Map 222 Lot 20

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP3: Analysis Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.560 ac, 15.65% Impervious, Inflow Depth > 3.12" for 10 Yr 24 Hr +15% event
Inflow = 4.12 cfs @ 12.17 hrs, Volume= 0.405 af
Outflow = 4.12 cfs @ 12.17 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP4: Analysis Point 4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.482 ac, 8.04% Impervious, Inflow Depth > 3.13" for 10 Yr 24 Hr +15% event
Inflow = 1.63 cfs @ 12.11 hrs, Volume= 0.126 af
Outflow = 1.63 cfs @ 12.11 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Pond 1P: Bioretention Pond

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 3.97" for 10 Yr 24 Hr +15% event
Inflow = 2.33 cfs @ 12.09 hrs, Volume= 0.179 af
Outflow = 1.53 cfs @ 12.19 hrs, Volume= 0.178 af, Atten= 34%, Lag= 6.0 min
Primary = 1.53 cfs @ 12.19 hrs, Volume= 0.178 af
Routed to Reach 7R : Flow Through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 61.22' @ 12.19 hrs Surf.Area= 845 sf Storage= 411 cf

Plug-Flow detention time= 3.9 min calculated for 0.178 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (792.5 - 789.9)

Volume	Invert	Avail.Storage	Storage Description
#1	58.09'	2,583 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
58.09	117	48.0	0.0	0	0	117
58.10	117	48.0	40.0	0	0	117
59.09	117	48.0	40.0	46	47	165
59.10	117	48.0	15.0	0	47	165
60.59	117	48.0	15.0	26	73	237
60.60	117	48.0	100.0	1	74	237
61.00	764	120.0	100.0	157	232	1,201
62.00	1,157	143.0	100.0	954	1,185	1,700
63.00	1,618	164.0	100.0	1,381	2,566	2,235
63.01	1,618	164.0	100.0	16	2,583	2,237

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.35' / 58.00' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	58.35'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	61.80'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.53 cfs @ 12.19 hrs HW=61.22' TW=58.13' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.53 cfs of 4.59 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.53 cfs @ 7.79 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1PF: Sediment Forebay

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	61.00'	272 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.00	9	0	0
62.00	119	64	64
63.00	297	208	272

Summary for Pond 3P: Stone Under Deck

Ledge surface modelled 24" below original grade based on TP 13 (Bedrock found from 24" to 36". High existing contour within footprint of stone is 63.0 and therefore ledge surface modelled at 61.0

Inflow Area = 0.031 ac, 85.88% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.01 cfs @ 13.77 hrs, Volume= 0.010 af, Atten= 94%, Lag= 100.5 min
Discarded = 0.01 cfs @ 13.77 hrs, Volume= 0.010 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.72' @ 13.77 hrs Surf.Area= 0.006 ac Storage= 0.008 af

Plug-Flow detention time= 299.4 min calculated for 0.010 af (72% of inflow)
Center-of-Mass det. time= 208.6 min (955.0 - 746.4)

Volume	Invert	Avail.Storage	Storage Description
#1	61.73'	0.009 af	**14.00'W x 20.00'L x 3.31'H Prismatoid** 0.021 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	65.04'	**Automatic Storage Overflow** (Discharged without head)
#1	Discarded	61.73'	**0.300 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 61.00' Phase-In= 0.10'

Discarded OutFlow Max=0.01 cfs @ 13.77 hrs HW=64.72' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=61.73' TW=66.00' (Dynamic Tailwater)

Summary for Pond 4P: Stone Under Deck

Ledge surface modelled 20" below original grade based on TP 12 (Bedrock ranging from 20" to 28". High existing grade within footprint of practice is 64.0 and therefore ledge surface modelled at 62.33

Inflow Area = 0.031 ac, 85.88% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.06 cfs @ 12.32 hrs, Volume= 0.014 af, Atten= 61%, Lag= 13.8 min
Discarded = 0.06 cfs @ 12.32 hrs, Volume= 0.014 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 63.65' @ 12.32 hrs Surf.Area= 0.006 ac Storage= 0.003 af

Plug-Flow detention time= 35.4 min calculated for 0.014 af (99% of inflow)
Center-of-Mass det. time= 30.3 min (776.2 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1	62.37'	0.006 af	**14.00'W x 20.00'L x 2.41'H Prismatoid** 0.015 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	64.78'	**Automatic Storage Overflow** (Discharged without head)
#1	Discarded	62.37'	**0.300 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 62.33' Phase-In= 0.10'

Discarded OutFlow Max=0.06 cfs @ 12.32 hrs HW=63.64' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.06 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.37' TW=66.00' (Dynamic Tailwater)

Summary for Pond 5P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Outflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.5 min
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Routed to Pond 3P : Stone Under Deck
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.07' @ 12.09 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 1.4 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (746.9 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	67.01'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	66.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	67.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.09 cfs @ 12.09 hrs HW=66.07' TW=63.58' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Weir Controls 0.09 cfs @ 0.86 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.00' TW=66.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 6P: Lined Stone Drip Edge

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Outflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.5 min
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Routed to Pond 4P : Stone Under Deck
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.07' @ 12.09 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (746.1 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	66.01'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	67.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.09 cfs @ 12.09 hrs HW=66.07' TW=63.33' (Dynamic Tailwater)
1=Orifice/Grate (Weir Controls 0.09 cfs @ 0.86 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.01' TW=66.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af, Atten= 1%, Lag= 1.1 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af
Routed to Reach 9R : Flow through 19S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.21' @ 12.10 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 6.6 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 4.8 min (750.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**6.0" Round Culvert** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 64.00' / 63.80' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	64.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	65.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=64.21' TW=63.84' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 0.09 cfs @ 1.22 fps)
- **2=Orifice/Grate** (Passes 0.09 cfs of 0.43 cfs potential flow)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 8P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 5.37" for 10 Yr 24 Hr +15% event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af, Atten= 1%, Lag= 1.1 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.008 af
Routed to Reach 10ra : Flow through 4S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.71' @ 12.10 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 6.6 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 4.8 min (750.6 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	64.50'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	64.50'	**6.0" Round Culvert** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 64.50' / 64.00' S= 0.1250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	64.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	65.50'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=64.71' TW=64.01' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.09 cfs @ 1.22 fps)
└─**2=Orifice/Grate** (Passes 0.09 cfs of 0.43 cfs potential flow)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB101: Catch Basin 101

Inflow Area = 0.130 ac, 59.12% Impervious, Inflow Depth > 4.29" for 10 Yr 24 Hr +15% event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.046 af
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.09 hrs, Volume= 0.046 af
Routed to Pond CB102 : Catch Basin 102

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 67.13' @ 12.09 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	**12.0" Round Culvert** L= 14.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.50' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.60 cfs @ 12.09 hrs HW=67.12' TW=66.95' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.60 cfs @ 2.12 fps)

Summary for Pond CB102: Catch Basin 102

Inflow Area = 0.152 ac, 65.02% Impervious, Inflow Depth > 4.45" for 10 Yr 24 Hr +15% event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.056 af
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.09 hrs, Volume= 0.056 af
Routed to Pond CB104 : Catch Basin 104

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.96' @ 12.09 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	**12.0" Round Culvert** L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.40' / 65.90' S= 0.0060 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.09 hrs HW=66.95' TW=66.57' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.71 cfs @ 2.31 fps)

Summary for Pond CB103: Catch Basin 103

Inflow Area = 0.155 ac, 64.18% Impervious, Inflow Depth > 4.40" for 10 Yr 24 Hr +15% event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.09 hrs, Volume= 0.057 af
Routed to Pond CB104 : Catch Basin 104

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 68.09' @ 12.09 hrs
Flood Elev= 72.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.60'	**12.0" Round Culvert** L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.60' / 67.30' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.09 hrs HW=68.09' TW=66.57' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.71 cfs @ 1.87 fps)

Summary for Pond CB104: Catch Basin 104

Inflow Area = 0.314 ac, 65.44% Impervious, Inflow Depth > 4.45" for 10 Yr 24 Hr +15% event
Inflow = 1.49 cfs @ 12.09 hrs, Volume= 0.116 af
Outflow = 1.49 cfs @ 12.09 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min
Primary = 1.49 cfs @ 12.09 hrs, Volume= 0.116 af
Routed to Pond 1P : Bioretention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.58' @ 12.09 hrs
Flood Elev= 71.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	65.80'	**12.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.80' / 65.60' S= 0.0065 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.46 cfs @ 12.09 hrs HW=66.57' TW=61.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.46 cfs @ 3.10 fps)

Summary for Pond YD1: Yard Drain 1

Inflow Area = 0.105 ac, 49.42% Impervious, Inflow Depth > 4.04" for 10 Yr 24 Hr +15% event
Inflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af
Routed to Pond CB101 : Catch Basin 101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 67.77' @ 12.09 hrs
Flood Elev= 69.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.30'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.30' / 66.93' S= 0.0247 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.47 cfs @ 12.09 hrs HW=67.76' TW=67.12' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.47 cfs @ 1.82 fps)

Summary for Pond YD2: Yard Drain 2

Inflow Area = 0.086 ac, 35.30% Impervious, Inflow Depth > 3.63" for 10 Yr 24 Hr +15% event
Inflow = 0.35 cfs @ 12.09 hrs, Volume= 0.026 af
Outflow = 0.35 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.09 hrs, Volume= 0.026 af
Routed to Pond CB103 : Catch Basin 103

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 68.59' @ 12.09 hrs
Flood Elev= 70.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.20'	**8.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 68.20' / 67.93' S= 0.0208 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.35 cfs @ 12.09 hrs HW=68.58' TW=68.09' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.35 cfs @ 1.67 fps)

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=16,321 sf 51.36% Impervious Runoff Depth>5.48"
Flow Length=186' Tc=6.0 min CN=86 Runoff=2.27 cfs 0.171 af

Subcatchment2S: Subcatchment2S Runoff Area=1,728 sf 0.00% Impervious Runoff Depth>4.14"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.19 cfs 0.014 af

Subcatchment3S: Subcatchment3S Runoff Area=44,463 sf 0.00% Impervious Runoff Depth>3.92"
Flow Length=447' Tc=11.9 min CN=72 Runoff=3.85 cfs 0.334 af

Subcatchment4S: Subcatchment4S Runoff Area=20,212 sf 5.43% Impervious Runoff Depth>4.36"
Flow Length=216' Tc=7.8 min CN=76 Runoff=2.20 cfs 0.169 af

Subcatchment6S: Subcatchment6S Runoff Area=1,084 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment7S: Subcatchment7S Runoff Area=954 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.013 af

Subcatchment8S: Subcatchment8S Runoff Area=3,011 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.040 af

Subcatchment9S: Subcatchment9S Runoff Area=325 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment11S: Subcatchment11S Runoff Area=4,571 sf 49.42% Impervious Runoff Depth>5.48"
Flow Length=77' Slope=0.0396 '/' Tc=6.0 min CN=86 Runoff=0.64 cfs 0.048 af

Subcatchment12S: Subcatchment12S Runoff Area=3,734 sf 35.30% Impervious Runoff Depth>5.02"
Flow Length=50' Slope=0.0320 '/' Tc=6.0 min CN=82 Runoff=0.49 cfs 0.036 af

Subcatchment13S: Subcatchment13S Runoff Area=560 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment14S: Subcatchment14S Runoff Area=560 sf 100.00% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment15S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment16S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment17S: Subcatchment17S Runoff Area=779 sf 75.74% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment18S: Subcatchment18S Runoff Area=779 sf 75.74% Impervious Runoff Depth>6.88"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment19S: Subcatchment19S Runoff Area=9,042 sf 12.11% Impervious Runoff Depth>4.47"
Flow Length=58' Tc=6.0 min CN=77 Runoff=1.06 cfs 0.077 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.03' Max Vel=0.79 fps Inflow=0.19 cfs 0.014 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.18 cfs 0.014 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.16' Max Vel=3.65 fps Inflow=2.45 cfs 0.185 af
n=0.016 L=45.0' S=0.0444 '/' Capacity=48.65 cfs Outflow=2.46 cfs 0.185 af

Reach 6RA: Flow through 3S Avg. Flow Depth=0.01' Max Vel=0.96 fps Inflow=0.06 cfs 0.002 af
n=0.030 L=35.0' S=0.3429 '/' Capacity=464.76 cfs Outflow=0.07 cfs 0.002 af

Reach 6RB: Flow through 3S Avg. Flow Depth=0.02' Max Vel=0.74 fps Inflow=0.07 cfs 0.002 af
n=0.030 L=39.0' S=0.1026 '/' Capacity=127.08 cfs Outflow=0.07 cfs 0.002 af

Reach 6RC: Flow through 3S Avg. Flow Depth=0.01' Max Vel=0.85 fps Inflow=0.07 cfs 0.002 af
n=0.030 L=45.0' S=0.2667 '/' Capacity=409.88 cfs Outflow=0.06 cfs 0.002 af

Reach 7R: Flow Through 3S Avg. Flow Depth=0.14' Max Vel=3.63 fps Inflow=1.67 cfs 0.242 af
n=0.030 L=220.0' S=0.0909 '/' Capacity=66.79 cfs Outflow=1.67 cfs 0.241 af

Reach 8R: Ditch on Tidewatch Property Avg. Flow Depth=0.34' Max Vel=2.46 fps Inflow=1.67 cfs 0.241 af
n=0.030 L=159.0' S=0.0189 '/' Capacity=18.18 cfs Outflow=1.67 cfs 0.241 af

Reach 9R: Flow through 19S Avg. Flow Depth=0.04' Max Vel=0.77 fps Inflow=0.12 cfs 0.010 af
n=0.030 L=39.0' S=0.0205 '/' Capacity=16.36 cfs Outflow=0.12 cfs 0.010 af

Reach 10Ra: Flow through 4S Avg. Flow Depth=0.01' Max Vel=1.00 fps Inflow=0.12 cfs 0.010 af
n=0.030 L=18.0' S=0.3333 '/' Capacity=199.20 cfs Outflow=0.12 cfs 0.010 af

Reach 10Rb: Flow through 4S Avg. Flow Depth=0.01' Max Vel=0.90 fps Inflow=0.12 cfs 0.010 af
n=0.030 L=51.0' S=0.2353 '/' Capacity=167.36 cfs Outflow=0.12 cfs 0.010 af

Reach AP1: Analysis Point 1 (New CB) Inflow=2.46 cfs 0.185 af
Outflow=2.46 cfs 0.185 af

Reach AP2: Analysis Point 2 Inflow=0.19 cfs 0.014 af
Outflow=0.19 cfs 0.014 af

Reach AP3: Analysis Point 3 Inflow=5.49 cfs 0.577 af
Outflow=5.49 cfs 0.577 af

Reach AP4: Analysis Point 4 Inflow=2.32 cfs 0.179 af
Outflow=2.32 cfs 0.179 af

Pond 1P: Bioretention Pond Peak Elev=61.73' Storage=886 cf Inflow=3.14 cfs 0.242 af
Outflow=1.67 cfs 0.242 af

Pond 1PF: Sediment Forebay Peak Elev=0.00' Storage=0 cf

Pond 3P: Stone Under Deck Peak Elev=65.04' Storage=0.009 af Inflow=0.21 cfs 0.018 af
Discarded=0.01 cfs 0.011 af Secondary=0.06 cfs 0.002 af Outflow=0.07 cfs 0.013 af

Pond 4P: Stone Under Deck Peak Elev=64.00' Storage=0.004 af Inflow=0.21 cfs 0.018 af
Discarded=0.08 cfs 0.017 af Secondary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.017 af

Pond 5P: Lined Stone Drip Edge Peak Elev=66.08' Storage=0.000 af Inflow=0.12 cfs 0.010 af
Primary=0.12 cfs 0.010 af Secondary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.010 af

Pond 6P: Lined Stone Drip Edge Peak Elev=66.08' Storage=0.000 af Inflow=0.12 cfs 0.010 af
Primary=0.12 cfs 0.010 af Secondary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.010 af

Pond 7P: Lined Stone Drip Edge Peak Elev=64.24' Storage=0.000 af Inflow=0.12 cfs 0.010 af
Outflow=0.12 cfs 0.010 af

Pond 8P: Lined Stone Drip Edge Peak Elev=64.74' Storage=0.000 af Inflow=0.12 cfs 0.010 af
Outflow=0.12 cfs 0.010 af

Pond CB101: Catch Basin 101 Peak Elev=67.25' Inflow=0.81 cfs 0.062 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0071 '/' Outflow=0.81 cfs 0.062 af

Pond CB102: Catch Basin 102 Peak Elev=67.09' Inflow=0.96 cfs 0.075 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0060 '/' Outflow=0.96 cfs 0.075 af

Pond CB103: Catch Basin 103 Peak Elev=68.18' Inflow=0.96 cfs 0.076 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0071 '/' Outflow=0.96 cfs 0.076 af

Pond CB104: Catch Basin 104 Peak Elev=66.74' Inflow=1.96 cfs 0.154 af
12.0" Round Culvert n=0.012 L=31.0' S=0.0065 '/' Outflow=1.96 cfs 0.154 af

Pond YD1: Yard Drain 1 Peak Elev=67.86' Inflow=0.64 cfs 0.048 af
8.0" Round Culvert n=0.012 L=15.0' S=0.0247 '/' Outflow=0.64 cfs 0.048 af

Pond YD2: Yard Drain 2 Peak Elev=68.67' Inflow=0.49 cfs 0.036 af
8.0" Round Culvert n=0.012 L=13.0' S=0.0208 '/' Outflow=0.49 cfs 0.036 af

Total Runoff Area = 2.518 ac Runoff Volume = 0.975 af Average Runoff Depth = 4.64"
79.02% Pervious = 1.990 ac 20.98% Impervious = 0.528 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=16,321 sf 51.36% Impervious Runoff Depth>6.84"
Flow Length=186' Tc=6.0 min CN=86 Runoff=2.81 cfs 0.214 af

Subcatchment2S: Subcatchment2S Runoff Area=1,728 sf 0.00% Impervious Runoff Depth>5.40"
Flow Length=20' Slope=0.1000 '/' Tc=6.0 min CN=74 Runoff=0.24 cfs 0.018 af

Subcatchment3S: Subcatchment3S Runoff Area=44,463 sf 0.00% Impervious Runoff Depth>5.15"
Flow Length=447' Tc=11.9 min CN=72 Runoff=5.05 cfs 0.438 af

Subcatchment4S: Subcatchment4S Runoff Area=20,212 sf 5.43% Impervious Runoff Depth>5.64"
Flow Length=216' Tc=7.8 min CN=76 Runoff=2.83 cfs 0.218 af

Subcatchment6S: Subcatchment6S Runoff Area=1,084 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.017 af

Subcatchment7S: Subcatchment7S Runoff Area=954 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment8S: Subcatchment8S Runoff Area=3,011 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.57 cfs 0.048 af

Subcatchment9S: Subcatchment9S Runoff Area=325 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment11S: Subcatchment11S Runoff Area=4,571 sf 49.42% Impervious Runoff Depth>6.84"
Flow Length=77' Slope=0.0396 '/' Tc=6.0 min CN=86 Runoff=0.79 cfs 0.060 af

Subcatchment12S: Subcatchment12S Runoff Area=3,734 sf 35.30% Impervious Runoff Depth>6.36"
Flow Length=50' Slope=0.0320 '/' Tc=6.0 min CN=82 Runoff=0.61 cfs 0.045 af

Subcatchment13S: Subcatchment13S Runoff Area=560 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment14S: Subcatchment14S Runoff Area=560 sf 100.00% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment15S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment16S: Subcatchment15S Runoff Area=779 sf 75.74% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment17S: Subcatchment17S Runoff Area=779 sf 75.74% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment18S: Subcatchment18S Runoff Area=779 sf 75.74% Impervious Runoff Depth>8.28"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment19S: Subcatchment19S Runoff Area=9,042 sf 12.11% Impervious Runoff Depth>5.76"
Flow Length=58' Tc=6.0 min CN=77 Runoff=1.36 cfs 0.100 af

Reach 2R: Flow across Map 222 Lot 20 Avg. Flow Depth=0.03' Max Vel=0.86 fps Inflow=0.24 cfs 0.018 af
n=0.030 L=81.0' S=0.0494 '/' Capacity=88.18 cfs Outflow=0.24 cfs 0.018 af

Reach 3R: Flow over Sagamore Ave Avg. Flow Depth=0.18' Max Vel=3.85 fps Inflow=3.04 cfs 0.231 af
n=0.016 L=45.0' S=0.0444 '/' Capacity=48.65 cfs Outflow=3.05 cfs 0.231 af

Reach 6RA: Flow through 3S Avg. Flow Depth=0.01' Max Vel=1.21 fps Inflow=0.17 cfs 0.004 af
n=0.030 L=35.0' S=0.3429 '/' Capacity=464.76 cfs Outflow=0.16 cfs 0.004 af

Reach 6RB: Flow through 3S Avg. Flow Depth=0.02' Max Vel=0.97 fps Inflow=0.16 cfs 0.004 af
n=0.030 L=39.0' S=0.1026 '/' Capacity=127.08 cfs Outflow=0.15 cfs 0.004 af

Reach 6RC: Flow through 3S Avg. Flow Depth=0.01' Max Vel=1.12 fps Inflow=0.15 cfs 0.004 af
n=0.030 L=45.0' S=0.2667 '/' Capacity=409.88 cfs Outflow=0.16 cfs 0.004 af

Reach 7R: Flow Through 3S Avg. Flow Depth=0.18' Max Vel=4.33 fps Inflow=2.75 cfs 0.302 af
n=0.030 L=220.0' S=0.0909 '/' Capacity=66.79 cfs Outflow=2.82 cfs 0.302 af

Reach 8R: Ditch on Tidewatch Property Avg. Flow Depth=0.43' Max Vel=2.81 fps Inflow=2.82 cfs 0.302 af
n=0.030 L=159.0' S=0.0189 '/' Capacity=18.18 cfs Outflow=2.78 cfs 0.302 af

Reach 9R: Flow through 19S Avg. Flow Depth=0.05' Max Vel=0.82 fps Inflow=0.14 cfs 0.012 af
n=0.030 L=39.0' S=0.0205 '/' Capacity=16.36 cfs Outflow=0.14 cfs 0.012 af

Reach 10Ra: Flow through 4S Avg. Flow Depth=0.01' Max Vel=1.08 fps Inflow=0.14 cfs 0.012 af
n=0.030 L=18.0' S=0.3333 '/' Capacity=199.20 cfs Outflow=0.14 cfs 0.012 af

Reach 10Rb: Flow through 4S Avg. Flow Depth=0.01' Max Vel=0.96 fps Inflow=0.14 cfs 0.012 af
n=0.030 L=51.0' S=0.2353 '/' Capacity=167.36 cfs Outflow=0.14 cfs 0.012 af

Reach AP1: Analysis Point 1 (New CB) Inflow=3.05 cfs 0.231 af
Outflow=3.05 cfs 0.231 af

Reach AP2: Analysis Point 2 Inflow=0.24 cfs 0.018 af
Outflow=0.24 cfs 0.018 af

Reach AP3: Analysis Point 3 Inflow=7.72 cfs 0.744 af
Outflow=7.72 cfs 0.744 af

Reach AP4: Analysis Point 4 Inflow=2.97 cfs 0.230 af
Outflow=2.97 cfs 0.230 af

Pond 1P: Bioretention Pond Peak Elev=61.96' Storage=1,144 cf Inflow=3.90 cfs 0.302 af
Outflow=2.75 cfs 0.302 af

Pond 1PF: Sediment Forebay Peak Elev=0.00' Storage=0 cf

Pond 3P: Stone Under Deck Peak Elev=65.04' Storage=0.009 af Inflow=0.25 cfs 0.021 af
Discarded=0.01 cfs 0.012 af Secondary=0.17 cfs 0.004 af Outflow=0.18 cfs 0.016 af

Pond 4P: Stone Under Deck Peak Elev=64.34' Storage=0.005 af Inflow=0.25 cfs 0.021 af
Discarded=0.10 cfs 0.021 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.021 af

Pond 5P: Lined Stone Drip Edge Peak Elev=66.09' Storage=0.000 af Inflow=0.15 cfs 0.012 af
Primary=0.15 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.012 af

Pond 6P: Lined Stone Drip Edge Peak Elev=66.09' Storage=0.000 af Inflow=0.15 cfs 0.012 af
Primary=0.15 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.012 af

Pond 7P: Lined Stone Drip Edge Peak Elev=64.26' Storage=0.000 af Inflow=0.15 cfs 0.012 af
Outflow=0.14 cfs 0.012 af

Pond 8P: Lined Stone Drip Edge Peak Elev=64.76' Storage=0.000 af Inflow=0.15 cfs 0.012 af
Outflow=0.14 cfs 0.012 af

Pond CB101: Catch Basin 101 Peak Elev=67.39' Inflow=0.99 cfs 0.077 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0071 '/' Outflow=0.99 cfs 0.077 af

Pond CB102: Catch Basin 102 Peak Elev=67.24' Inflow=1.17 cfs 0.092 af
12.0" Round Culvert n=0.012 L=84.0' S=0.0060 '/' Outflow=1.17 cfs 0.092 af

Pond CB103: Catch Basin 103 Peak Elev=68.25' Inflow=1.17 cfs 0.093 af
12.0" Round Culvert n=0.012 L=42.0' S=0.0071 '/' Outflow=1.17 cfs 0.093 af

Pond CB104: Catch Basin 104 Peak Elev=66.94' Inflow=2.40 cfs 0.190 af
12.0" Round Culvert n=0.012 L=31.0' S=0.0065 '/' Outflow=2.40 cfs 0.190 af

Pond YD1: Yard Drain 1 Peak Elev=67.98' Inflow=0.79 cfs 0.060 af
8.0" Round Culvert n=0.012 L=15.0' S=0.0247 '/' Outflow=0.79 cfs 0.060 af

Pond YD2: Yard Drain 2 Peak Elev=68.75' Inflow=0.61 cfs 0.045 af
8.0" Round Culvert n=0.012 L=13.0' S=0.0208 '/' Outflow=0.61 cfs 0.045 af

Total Runoff Area = 2.518 ac Runoff Volume = 1.245 af Average Runoff Depth = 5.93"
79.02% Pervious = 1.990 ac 20.98% Impervious = 0.528 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 2.81 cfs @ 12.09 hrs, Volume= 0.214 af, Depth> 6.84"
Routed to Reach 3R : Flow over Sagamore Ave

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
6,930	98	Paved parking, HSG C
7,938	74	>75% Grass cover, Good, HSG C
1,453	98	Roofs, HSG C
16,321	86	Weighted Average
7,938		48.64% Pervious Area
8,383		51.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	50	0.1250	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.0	6	0.1250	2.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.0670	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	186	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Depth> 5.40"
Routed to Reach AP2 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
1,728	74	>75% Grass cover, Good, HSG C
1,728		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.1000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
1.3	20	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 5.05 cfs @ 12.17 hrs, Volume= 0.438 af, Depth> 5.15"
Routed to Reach AP3 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

	Area (sf)	CN	Description
	14,740	74	>75% Grass cover, Good, HSG C
	28,306	70	Woods, Good, HSG C
*	1,417	96	Ledge, HSG C
	44,463	72	Weighted Average
	44,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0415	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.7	62	0.0968	1.56		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	54	0.0741	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	122	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	159	0.0189	4.55	18.20	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.00' Z= 3.0 '/' Top.W=7.00' n= 0.030 Short grass
11.9	447	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 2.83 cfs @ 12.11 hrs, Volume= 0.218 af, Depth> 5.64"
Routed to Reach AP4 : Analysis Point 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 50 Yr 24 Hr +15% Rainfall=8.53"

	Area (sf)	CN	Description
	9,377	74	>75% Grass cover, Good, HSG C
	8,075	70	Woods, Good, HSG C
	1,097	98	Roofs, HSG C
*	1,663	96	Ledge, HSG C
	20,212	76	Weighted Average
	19,115		94.57% Pervious Area
	1,097		5.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	14	0.0210	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.2	36	0.1280	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.70"
0.5	50	0.1280	1.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	87	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	29	0.2860	2.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.8	216	Total			

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 8.28"
Routed to Pond CB101 : Catch Basin 101

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
1,084	98	Paved parking, HSG C
1,084		100.00% Impervious Area

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

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 8.28"
Routed to Pond CB102 : Catch Basin 102

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
954	98	Paved parking, HSG C
954		100.00% Impervious Area

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

Summary for Subcatchment 8S: Subcatchment 8S

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 8.28"
Routed to Pond CB103 : Catch Basin 103

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
2,554	98	Paved parking, HSG C
457	98	Roofs, HSG C
3,011	98	Weighted Average
3,011		100.00% Impervious Area

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

Summary for Subcatchment 9S: Subcatchment 9S

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 8.28"
Routed to Pond CB104 : Catch Basin 104

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
325	98	Paved parking, HSG C
325		100.00% Impervious Area

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

Summary for Subcatchment 11S: Subcatchment 11S

Runoff = 0.79 cfs @ 12.09 hrs, Volume= 0.060 af, Depth> 6.84"
Routed to Pond YD1 : Yard Drain 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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
1,998	98	Roofs, HSG C
2,312	74	>75% Grass cover, Good, HSG C
261	98	Paved parking, HSG C
4,571	86	Weighted Average
2,312		50.58% Pervious Area
2,259		49.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0396	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.3	27	0.0396	1.39		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	77	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 12S: Subcatchment 12S

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.045 af, Depth> 6.36"
Routed to Pond YD2 : Yard Drain 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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
1,318	98	Roofs, HSG C
2,416	74	>75% Grass cover, Good, HSG C
3,734	82	Weighted Average
2,416		64.70% Pervious Area
1,318		35.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0320	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
4.3	50	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 13S: Subcatchment 13S

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 8.28"
Routed to Pond 3P : Stone Under Deck

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
560	98	Roofs, HSG C
560		100.00% Impervious Area

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

Summary for Subcatchment 14S: Subcatchment 14S

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.009 af, Depth> 8.28"
Routed to Pond 4P : Stone Under Deck

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
560	98	Roofs, HSG C
560		100.00% Impervious Area

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

Summary for Subcatchment 15S: Subcatchment 15S

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 8.28"
Routed to Pond 5P : Lined Stone Drip Edge

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 16S: Subcatchment 15S

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 8.28"
Routed to Pond 6P : Lined Stone Drip Edge

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 17S: Subcatchment 17S

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 8.28"
Routed to Pond 7P : Lined Stone Drip Edge

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 18S: Subcatchment 18S

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 8.28"
Routed to Pond 8P : Lined Stone Drip Edge

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
590	98	Roofs, HSG C
189	98	Water Surface, 0% imp, HSG C
779	98	Weighted Average
189		24.26% Pervious Area
590		75.74% Impervious Area

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

Summary for Subcatchment 19S: Subcatchment 19S

Runoff = 1.36 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 5.76"
Routed to Pond 1P : Bioretention Pond

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 50 Yr 24 Hr +15% Rainfall=8.53"

Area (sf)	CN	Description
7,947	74	>75% Grass cover, Good, HSG C
695	98	Roofs, HSG C
400	98	Paved parking, HSG C
9,042	77	Weighted Average
7,947		87.89% Pervious Area
1,095		12.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	43	0.0930	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.4	7	0.3333	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.70"
0.0	8	0.3333	4.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	58	Total, Increased to minimum Tc = 6.0 min			

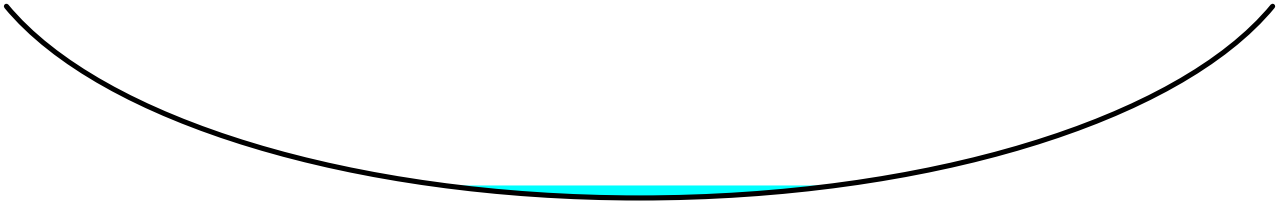
Summary for Reach 2R: Flow across Map 222 Lot 20

Inflow Area = 0.040 ac, 0.00% Impervious, Inflow Depth > 5.40" for 50 Yr 24 Hr +15% event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.24 cfs @ 12.11 hrs, Volume= 0.018 af, Atten= 2%, Lag= 1.1 min
Routed to Reach 3R : Flow over Sagamore Ave

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.86 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 4.3 min

Peak Storage= 23 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 12.77'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 88.18 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Short grass
Length= 81.0' Slope= 0.0494 '/'
Inlet Invert= 66.00', Outlet Invert= 62.00'



‡

Summary for Reach 3R: Flow over Sagamore Ave

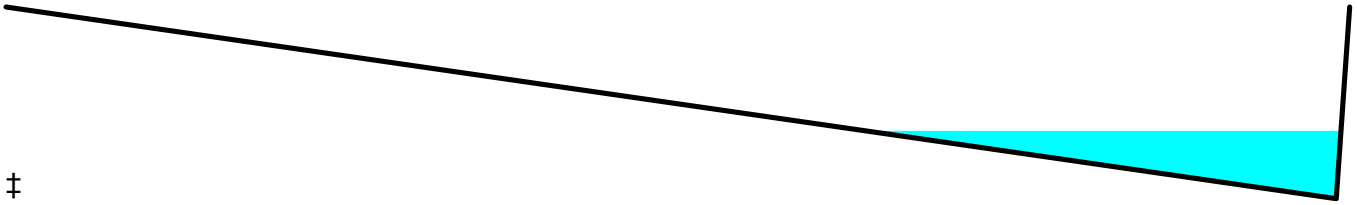
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 2R OUTLET depth by 1.14' @ 12.10 hrs
[64] Warning: Exceeded Reach 2R outlet bank by 0.68' @ 12.09 hrs

Inflow Area = 0.414 ac, 46.45% Impervious, Inflow Depth > 6.70" for 50 Yr 24 Hr +15% event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 0.231 af
Outflow = 3.05 cfs @ 12.09 hrs, Volume= 0.231 af, Atten= 0%, Lag= 0.2 min
Routed to Reach AP1 : Analysis Point 1 (New CB)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.85 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 0.5 min

Peak Storage= 36 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 8.94'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 48.65 cfs

0.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 50.0 0.5 '/' Top Width= 25.25'
Length= 45.0' Slope= 0.0444 '/'
Inlet Invert= 63.00', Outlet Invert= 61.00'



‡

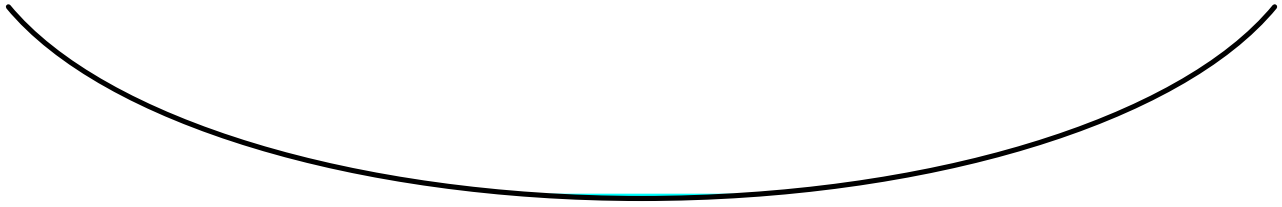
Summary for Reach 6RA: Flow through 3S

Inflow = 0.17 cfs @ 12.21 hrs, Volume= 0.004 af
Outflow = 0.16 cfs @ 12.22 hrs, Volume= 0.004 af, Atten= 2%, Lag= 0.4 min
Routed to Reach 6RB : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 1.21 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.71 fps, Avg. Travel Time= 0.8 min

Peak Storage= 5 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 15.86'
Bank-Full Depth= 0.50' Flow Area= 33.3 sf, Capacity= 464.76 cfs

100.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 35.0' Slope= 0.3429 '/'
Inlet Invert= 66.00', Outlet Invert= 54.00'



‡

Summary for Reach 6RB: Flow through 3S

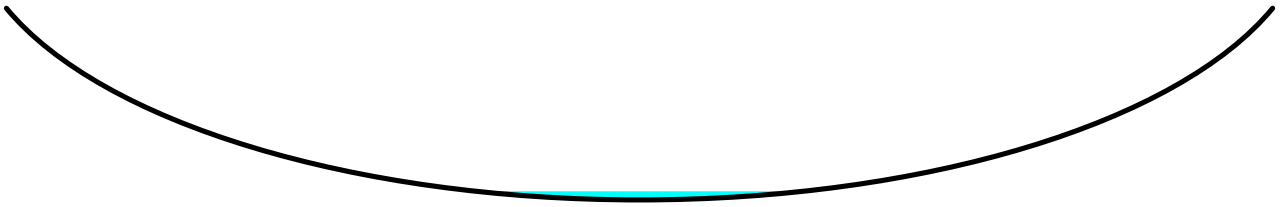
[62] Hint: Exceeded Reach 6RA OUTLET depth by 0.01' @ 12.25 hrs

Inflow = 0.16 cfs @ 12.22 hrs, Volume= 0.004 af
Outflow = 0.15 cfs @ 12.24 hrs, Volume= 0.004 af, Atten= 5%, Lag= 1.3 min
Routed to Reach 6RC : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.97 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.46 fps, Avg. Travel Time= 1.4 min

Peak Storage= 6 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 10.59'
Bank-Full Depth= 0.50' Flow Area= 16.7 sf, Capacity= 127.08 cfs

50.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 39.0' Slope= 0.1026 '/'
Inlet Invert= 54.00', Outlet Invert= 50.00'



‡

Summary for Reach 6RC: Flow through 3S

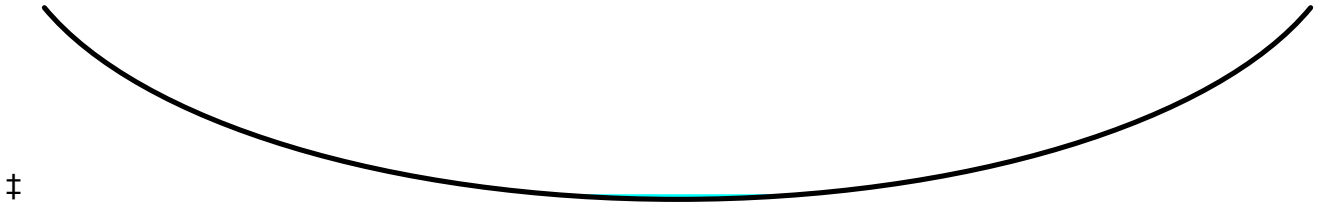
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[61] Hint: Exceeded Reach 6RB outlet invert by 0.01' @ 12.25 hrs

Inflow = 0.15 cfs @ 12.24 hrs, Volume= 0.004 af
Outflow = 0.16 cfs @ 12.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.7 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 1.12 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 1.2 min

Peak Storage= 6 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 16.23'
Bank-Full Depth= 0.50' Flow Area= 33.3 sf, Capacity= 409.88 cfs

100.00' x 0.50' deep Parabolic Channel, n= 0.030 Stream, clean & straight
Length= 45.0' Slope= 0.2667 '/'
Inlet Invert= 50.00', Outlet Invert= 38.00'



‡

Summary for Reach 7R: Flow Through 3S

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 6.72" for 50 Yr 24 Hr +15% event
Inflow = 2.75 cfs @ 12.18 hrs, Volume= 0.302 af
Outflow = 2.82 cfs @ 12.20 hrs, Volume= 0.302 af, Atten= 0%, Lag= 1.2 min
Routed to Reach 8R : Ditch on Tidewatch Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 4.33 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.26 fps, Avg. Travel Time= 2.9 min

Peak Storage= 143 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 4.10'
Bank-Full Depth= 1.00' Flow Area= 6.0 sf, Capacity= 66.79 cfs

3.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 9.00'
Length= 220.0' Slope= 0.0909 '/'
Inlet Invert= 58.00', Outlet Invert= 38.00'

‡

Summary for Reach 8R: Ditch on Tidewatch Property

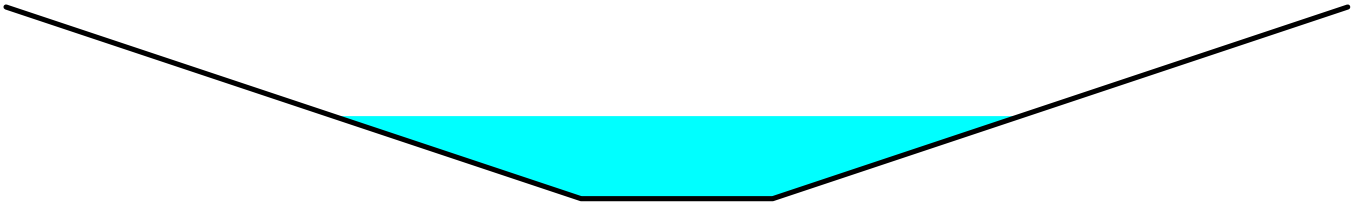
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.25' @ 12.20 hrs

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 6.71" for 50 Yr 24 Hr +15% event
Inflow = 2.82 cfs @ 12.20 hrs, Volume= 0.302 af
Outflow = 2.78 cfs @ 12.21 hrs, Volume= 0.302 af, Atten= 1%, Lag= 0.7 min
Routed to Reach AP3 : Analysis Point 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 2.81 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.6 min

Peak Storage= 157 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 3.59'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 18.18 cfs

1.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 159.0' Slope= 0.0189 '/'
Inlet Invert= 38.00', Outlet Invert= 35.00'



Summary for Reach 9R: Flow through 19S

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.27" for 50 Yr 24 Hr +15% event
Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.012 af, Atten= 1%, Lag= 0.6 min
Routed to Pond 1P : Bioretention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.82 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 2.6 min

Peak Storage= 7 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 4.41'
Bank-Full Depth= 0.50' Flow Area= 5.3 sf, Capacity= 16.36 cfs

3.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 15.0 '/' Top Width= 18.00'
Length= 39.0' Slope= 0.0205 '/'
Inlet Invert= 63.80', Outlet Invert= 63.00'

‡

Summary for Reach 10Ra: Flow through 4S

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.27" for 50 Yr 24 Hr +15% event
Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af
Outflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 1%, Lag= 0.2 min
Routed to Reach 10Rb : Flow through 4S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 1.08 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 0.4 min

Peak Storage= 2 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 20.13'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 199.20 cfs

20.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 18.0' Slope= 0.3333 '/'
Inlet Invert= 64.00', Outlet Invert= 58.00'

‡

Summary for Reach 10Rb: Flow through 4S

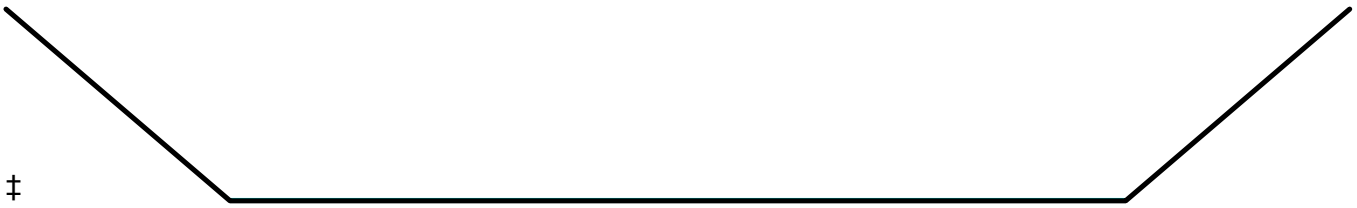
[61] Hint: Exceeded Reach 10Ra outlet invert by 0.01' @ 12.10 hrs

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.27" for 50 Yr 24 Hr +15% event
Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.012 af, Atten= 1%, Lag= 0.6 min
Routed to Reach AP4 : Analysis Point 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.96 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 1.2 min

Peak Storage= 8 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 20.15'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 167.36 cfs

20.00' x 0.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 51.0' Slope= 0.2353 '/'
Inlet Invert= 58.00', Outlet Invert= 46.00'



‡

Summary for Reach AP1: Analysis Point 1 (New CB)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.414 ac, 46.45% Impervious, Inflow Depth > 6.70" for 50 Yr 24 Hr +15% event
Inflow = 3.05 cfs @ 12.09 hrs, Volume= 0.231 af
Outflow = 3.05 cfs @ 12.09 hrs, Volume= 0.231 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP2: Analysis Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.040 ac, 0.00% Impervious, Inflow Depth > 5.40" for 50 Yr 24 Hr +15% event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : Flow across Map 222 Lot 20

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP3: Analysis Point 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.560 ac, 15.65% Impervious, Inflow Depth > 5.72" for 50 Yr 24 Hr +15% event
Inflow = 7.72 cfs @ 12.19 hrs, Volume= 0.744 af
Outflow = 7.72 cfs @ 12.19 hrs, Volume= 0.744 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Reach AP4: Analysis Point 4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.482 ac, 8.04% Impervious, Inflow Depth > 5.73" for 50 Yr 24 Hr +15% event
Inflow = 2.97 cfs @ 12.11 hrs, Volume= 0.230 af
Outflow = 2.97 cfs @ 12.11 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Summary for Pond 1P: Bioretention Pond

Inflow Area = 0.539 ac, 45.26% Impervious, Inflow Depth > 6.73" for 50 Yr 24 Hr +15% event
Inflow = 3.90 cfs @ 12.09 hrs, Volume= 0.302 af
Outflow = 2.75 cfs @ 12.18 hrs, Volume= 0.302 af, Atten= 30%, Lag= 5.3 min
Primary = 2.75 cfs @ 12.18 hrs, Volume= 0.302 af
Routed to Reach 7R : Flow Through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 61.96' @ 12.18 hrs Surf.Area= 1,141 sf Storage= 1,144 cf

Plug-Flow detention time= 4.4 min calculated for 0.302 af (100% of inflow)
Center-of-Mass det. time= 3.6 min (783.1 - 779.5)

Volume	Invert	Avail.Storage	Storage Description
#1	58.09'	2,583 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
58.09	117	48.0	0.0	0	0	117
58.10	117	48.0	40.0	0	0	117
59.09	117	48.0	40.0	46	47	165
59.10	117	48.0	15.0	0	47	165
60.59	117	48.0	15.0	26	73	237
60.60	117	48.0	100.0	1	74	237
61.00	764	120.0	100.0	157	232	1,201
62.00	1,157	143.0	100.0	954	1,185	1,700
63.00	1,618	164.0	100.0	1,381	2,566	2,235
63.01	1,618	164.0	100.0	16	2,583	2,237

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.35' / 58.00' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	58.35'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	61.80'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.69 cfs @ 12.18 hrs HW=61.96' TW=58.18' (Dynamic Tailwater)
↑**1=Culvert** (Passes 2.69 cfs of 5.26 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.73 cfs @ 8.82 fps)
3=Orifice/Grate (Weir Controls 0.95 cfs @ 1.29 fps)

Summary for Pond 1PF: Sediment Forebay

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	61.00'	272 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.00	9	0	0
62.00	119	64	64
63.00	297	208	272

Summary for Pond 3P: Stone Under Deck

Ledge surface modelled 24" below original grade based on TP 13 (Bedrock found from 24" to 36". High existing contour within footprint of stone is 63.0 and therefore ledge surface modelled at 61.0

Inflow Area = 0.031 ac, 85.88% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.18 cfs @ 12.21 hrs, Volume= 0.016 af, Atten= 30%, Lag= 7.2 min
Discarded = 0.01 cfs @ 12.15 hrs, Volume= 0.012 af
Secondary = 0.17 cfs @ 12.21 hrs, Volume= 0.004 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 65.04' @ 12.15 hrs Surf.Area= 0.006 ac Storage= 0.009 af

Plug-Flow detention time= 232.7 min calculated for 0.016 af (76% of inflow)
Center-of-Mass det. time= 148.6 min (889.2 - 740.6)

Volume	Invert	Avail.Storage	Storage Description
#1	61.73'	0.009 af	**14.00'W x 20.00'L x 3.31'H Prismatoid** 0.021 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	65.04'	**Automatic Storage Overflow** (Discharged without head)
#1	Discarded	61.73'	**0.300 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 61.00' Phase-In= 0.10'

Discarded OutFlow Max=0.01 cfs @ 12.15 hrs HW=65.04' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 12.21 hrs HW=65.04' TW=66.01' (Dynamic Tailwater)

Summary for Pond 4P: Stone Under Deck

Ledge surface modelled 20" below original grade based on TP 12 (Bedrock ranging from 20" to 28". High existing grade within footprint of practice is 64.0 and therefore ledge surface modelled at 62.33

Inflow Area = 0.031 ac, 85.88% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.10 cfs @ 12.32 hrs, Volume= 0.021 af, Atten= 61%, Lag= 13.8 min
Discarded = 0.10 cfs @ 12.32 hrs, Volume= 0.021 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.34' @ 12.32 hrs Surf.Area= 0.006 ac Storage= 0.005 af

Plug-Flow detention time= 35.1 min calculated for 0.021 af (99% of inflow)
Center-of-Mass det. time= 30.7 min (771.0 - 740.2)

Volume	Invert	Avail.Storage	Storage Description
#1	62.37'	0.006 af	**14.00'W x 20.00'L x 2.41'H Prismatoid** 0.015 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	64.78'	**Automatic Storage Overflow** (Discharged without head)
#1	Discarded	62.37'	**0.300 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 62.33' Phase-In= 0.10'

Discarded OutFlow Max=0.10 cfs @ 12.32 hrs HW=64.33' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.37' TW=66.00' (Dynamic Tailwater)

Summary for Pond 5P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Outflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.4 min
Primary = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Routed to Pond 3P : Stone Under Deck
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.09' @ 12.09 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 1.3 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (741.0 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#0	Secondary	67.01'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	66.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	67.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.14 cfs @ 12.09 hrs HW=66.09' TW=64.75' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Weir Controls 0.14 cfs @ 0.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.00' TW=66.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 6P: Lined Stone Drip Edge

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Outflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.4 min
Primary = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Routed to Pond 4P : Stone Under Deck
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6RA : Flow through 3S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.09' @ 12.09 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.4 min (740.4 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	66.01'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	67.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.14 cfs @ 12.09 hrs HW=66.09' TW=63.85' (Dynamic Tailwater)
1=Orifice/Grate (Weir Controls 0.14 cfs @ 0.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.01' TW=66.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Outflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 1%, Lag= 0.9 min
Primary = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af
Routed to Reach 9R : Flow through 19S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.26' @ 12.10 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 5.5 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 4.0 min (744.0 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	64.00'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**6.0" Round Culvert** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 64.00' / 63.80' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	64.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	65.00'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.14 cfs @ 12.10 hrs HW=64.26' TW=63.85' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 0.14 cfs @ 1.38 fps)
- **2=Orifice/Grate** (Passes 0.14 cfs of 0.48 cfs potential flow)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 8P: Lined Stone Drip Edge

Inflow Area = 0.018 ac, 75.74% Impervious, Inflow Depth > 8.28" for 50 Yr 24 Hr +15% event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af
Outflow = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 1%, Lag= 0.9 min
Primary = 0.14 cfs @ 12.10 hrs, Volume= 0.012 af
Routed to Reach 10ra : Flow through 4S

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 64.76' @ 12.10 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 5.5 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 4.0 min (744.0 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	64.50'	0.001 af	**2.00'W x 63.00'L x 1.01'H Prismatoid** 0.003 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	64.50'	**6.0" Round Culvert** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 64.50' / 64.00' S= 0.1250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	64.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	65.50'	**63.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.14 cfs @ 12.10 hrs HW=64.76' TW=64.01' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.14 cfs @ 1.38 fps)
└─**2=Orifice/Grate** (Passes 0.14 cfs of 0.48 cfs potential flow)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB101: Catch Basin 101

Inflow Area = 0.130 ac, 59.12% Impervious, Inflow Depth > 7.12" for 50 Yr 24 Hr +15% event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 0.077 af
Outflow = 0.99 cfs @ 12.09 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.09 hrs, Volume= 0.077 af
Routed to Pond CB102 : Catch Basin 102

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 67.39' @ 12.09 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	66.60'	**12.0" Round Culvert** L= 14.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.60' / 66.50' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.97 cfs @ 12.09 hrs HW=67.37' TW=67.22' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.97 cfs @ 1.49 fps)

Summary for Pond CB102: Catch Basin 102

Inflow Area = 0.152 ac, 65.02% Impervious, Inflow Depth > 7.29" for 50 Yr 24 Hr +15% event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.09 hrs, Volume= 0.092 af
Routed to Pond CB104 : Catch Basin 104

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 67.24' @ 12.09 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	**12.0" Round Culvert** L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 66.40' / 65.90' S= 0.0060 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.14 cfs @ 12.09 hrs HW=67.22' TW=66.92' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.14 cfs @ 2.26 fps)

Summary for Pond CB103: Catch Basin 103

Inflow Area = 0.155 ac, 64.18% Impervious, Inflow Depth > 7.22" for 50 Yr 24 Hr +15% event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.093 af
Outflow = 1.17 cfs @ 12.09 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.09 hrs, Volume= 0.093 af
Routed to Pond CB104 : Catch Basin 104

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 68.25' @ 12.09 hrs
Flood Elev= 72.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.60'	**12.0" Round Culvert** L= 42.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.60' / 67.30' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.14 cfs @ 12.09 hrs HW=68.24' TW=66.92' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.14 cfs @ 2.15 fps)

Summary for Pond CB104: Catch Basin 104

Inflow Area = 0.314 ac, 65.44% Impervious, Inflow Depth > 7.28" for 50 Yr 24 Hr +15% event
Inflow = 2.40 cfs @ 12.09 hrs, Volume= 0.190 af
Outflow = 2.40 cfs @ 12.09 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 12.09 hrs, Volume= 0.190 af
Routed to Pond 1P : Bioretention Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 66.94' @ 12.09 hrs
Flood Elev= 71.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	65.80'	**12.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 65.80' / 65.60' S= 0.0065 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.34 cfs @ 12.09 hrs HW=66.92' TW=61.64' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.34 cfs @ 2.98 fps)

Summary for Pond YD1: Yard Drain 1

Inflow Area = 0.105 ac, 49.42% Impervious, Inflow Depth > 6.84" for 50 Yr 24 Hr +15% event
Inflow = 0.79 cfs @ 12.09 hrs, Volume= 0.060 af
Outflow = 0.79 cfs @ 12.09 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.79 cfs @ 12.09 hrs, Volume= 0.060 af
Routed to Pond CB101 : Catch Basin 101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 67.98' @ 12.09 hrs
Flood Elev= 69.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.30'	**8.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 67.30' / 66.93' S= 0.0247 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.77 cfs @ 12.09 hrs HW=67.97' TW=67.37' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.77 cfs @ 2.19 fps)

Summary for Pond YD2: Yard Drain 2

Inflow Area = 0.086 ac, 35.30% Impervious, Inflow Depth > 6.36" for 50 Yr 24 Hr +15% event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.045 af
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.09 hrs, Volume= 0.045 af
Routed to Pond CB103 : Catch Basin 103

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 68.75' @ 12.09 hrs
Flood Elev= 70.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.20'	**8.0" Round Culvert** L= 13.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 68.20' / 67.93' S= 0.0208 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.59 cfs @ 12.09 hrs HW=68.74' TW=68.24' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.59 cfs @ 1.97 fps)

APPENDIX III

Test Pit Logs

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project 635 Sagamore Ave
Client 635 Sagamore Development LLC
GES Project No. GES 2021307
MM/DD/YY Staff 3-18-2022 JPG

Test Pit No. 1
ESHWT: n/a
Termination @ 15”
Refusal: 15” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–5”	10YR 3/2	FSL	GR	FR	NONE
5–15”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 2
ESHWT: n/a
Termination @ 25”
Refusal: 25” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–5”	10YR 3/2	FSL	GR	FR	NONE
5–25”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 3
ESHWT: n/a
Termination @ 25”
Refusal: 25” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–6”	10YR 3/2	FSL	GR	FR	NONE
6–25”	10YR 5/6	FSL	GR	FR	NONE

8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

Test Pit No. 4
ESHWT: n/a
Termination @ 15”
Refusal: 15” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–15”	10YR 3/2	FSL	GR	FR	NONE

Test Pit No. 5
ESHWT: 30”
Termination @ 36”
Refusal: 36” SCS Soil: Chatfield variant
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–8”	10YR 3/2	FSL	GR	FR	NONE
8–30”	10YR 4/6	FSL	GR	FR	NONE
30–36”	2.5Y 5/3	FSL	GR	FR	10% Distinct

Test Pit No. 6
ESHWT: n/a
Termination @ 12”
Refusal: 12” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–12”	10YR 3/2	FSL	GR	FR	NONE

Test Pit No. 7
ESHWT: n/a
Termination @ 27”
Refusal: 27” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–4”	10YR 3/2	FSL	GR	FR	NONE
4–27”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 8
ESHWT: 35”
Termination @ 40”
Refusal: 40” SCS Soil: Chatfield variant
Obs. Water: none

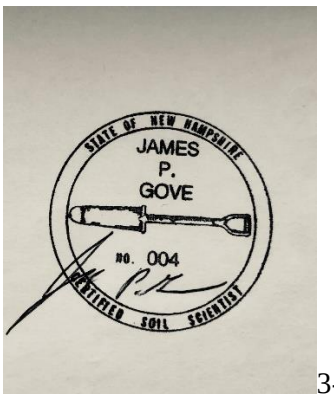
Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–6”	10YR 3/2	FSL	GR	FR	NONE
6–35”	10YR 5/6	FSL	GR	FR	NONE
35–40”	2.5Y 5/3	FSL	OM	FI	10% Distinct

Test Pit No. 9
ESHWT: n/a
Termination @ 27”
Refusal: 27” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–4”	10YR 3/2	FSL	GR	FR	NONE
4–27”	10YR 5/6	FSL	GR	FR	NONE

Test Pit No. 10
ESHWT: 35
Termination @ 62”
Refusal: 62” SCS Soil: Scituate
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–10”	10YR 3/2	FSL	GR	FR	NONE
10–35”	10YR 5/6	FSL	GR	FR	NONE
35–62”	2.5Y 5/3	FSL	PL	FI	10%, Distinct



3-21-2022

Legend:

FSL = fine sandy loam
GR = granular
PL = platy
FI = firm

GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project 635 Sagamore Ave., Portsmouth NH
Client 635 Sagamore Development LLC
GES Project No. 2021308
MM/DD/YY Staff 07-24-2024 James Gove, CSS#004

Witnessed by: David Desfosses, City of Portsmouth

Test Pit No.	**11**	Soils Series:	Udorthents
ESHWT::	none	Landscape:	Paved
Termination @	32”	Slope:	B
Refusal:	32”	Parent Material:	Fill over till
Obs. Water:	None	Hydrologic Soil Group:	Impervious

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
Fill 1, 0-8”	10YR4/4	fine sandy loam	massive-friable-none
Fill 2, 8-19”	10YR2/1	ground pavement	massive-firm-none
Bw 18-32”	10YR5/6	fine sandy loam	granular-friable-none

Test Pit No.	**12**	Soils Series:	Chatfield
ESHWT::	none	Landscape:	Hillside
Termination @	28”	Slope:	C
Refusal:	28”	Parent Material:	Bedrock Till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-6”	10YR3/2	fine sandy loam	granular-friable-none
Bw 6-28”	10YR5/6	fine sandy loam	granular-friable-none

Bedrock ranges from 20” to 28” in test pit.

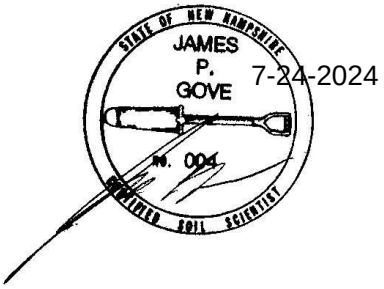
8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz
www.gesinc.biz

Test Pit No.	**13**	Soils Series:	Chatfield
ESHWT::	none	Landscape:	Hillside
Termination @	36”	Slope:	C
Refusal:	36”	Parent Material:	Bedrock Till
Obs. Water:	None	Hydrologic Soil Group:	B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-6”	10YR3/2	fine sandy loam	granular-friable-none
Bw 6-24”	10YR4/6	fine sandy loam	granular-friable-none
C 24-36”	2.5Y5/3	fine sandy loam	granular-friable-none

Bedrock ranges from 24” to 36” in test pit.

Note: Site should be calculated as HSG C, due to the limited infiltration in thin soil layers above the bedrock.



APPENDIX IV

Site Specific Soil Survey Report and Map

GOVE ENVIRONMENTAL SERVICES, INC

SITE-SPECIFIC SOIL SURVEY REPORT
For
635 Sagamore Avenue, Portsmouth, NH
By
GES, Inc.
Project # 2021308
Date: 02-20-2024

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 2-20-2024; 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" = 20'.

Contours Interval: 2 feet

2. LANDFORMS & EXISTING CONDITIONS:

The site is located on sloping hillside that is bedrock controlled. Rock outcrops are numerous. At the top of the hill, adjacent Sagamore Avenue, is an existing commercial building and paved areas. Behind the impervious areas to the south, the hillside slopes downward. The area is forested in white pines. There are no wetlands on the site.

3. DATE SOIL MAP PRODUCED

Date(s) of on-site field work: 3-18-2022

Date(s) of test pits: 3-18-2922

Test pits recorded by: JP Gove, CSS # 004

4. GEOGRAPHIC LOCATION AND SIZE OF SITE

City or town where soil mapping was conducted: Portsmouth, NH

Location: Tax Map 222 Lot 19

Size of area: Approximately 2 acres

Was the map for the entire lot? Yes

If no, where was the mapping conducted on the parcel: n/a

5. PURPOSE OF THE SOIL MAP

Was the map prepared to meet the requirement of Alteration of Terrain? No

If no, what was the purpose of the map? City of Portsmouth requirements

Who was the map prepared for? Jones & Beach Engineers, Inc.

6. SOIL IDENTIFICATION LEGEND

Map Unit Symbol	Map Unit Name	HISS Symbol	Hydrologic Soil Group
41	Chatfield-Hollis-Rock Outcrop complex	228	B
289	Chatfield Variant (moderately well drained)	327	B
699	Urban Land	n/a	Impervious

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: 41

CORRELATED SOIL SERIES: Chatfield-Hollis-Rock Outcrop complex

LANDSCAPE SETTING: Sloping to very steep hillside.

CHARACTERISTIC SURFACE FEATURES: Numerous rock outcrops

DRAINAGE CLASS: Well drained

PARENT MATERIAL: Glacial Till

NATURE OF DISSIMILAR INCLUSIONS: With a complex, several similar soils are present. While the major soil is the moderately deep Chatfield, the shallow Hollis and the exposed ledge of the Rock Outcrop, are large minor components. Chatfield is 50%, Hollis is 25%, and Rock Outcrop is 25%. A few deeper soil areas are present in hollow in the bedrock.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: less than 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:

Test Pit No. 3
ESHWT: n/a
Termination @ 25”
Refusal: 25” SCS Soil: Chatfield
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–6”	10YR 3/2	FSL	GR	FR	NONE
6–25”	10YR 5/6	FSL	GR	FR	NONE

No OBSWT, no ESHWT, lithic contact at 25”, 20% rock fragments.

Test Pit No. 1
ESHWT: n/a
Termination @ 15”
Refusal: 15” SCS Soil: Hollis
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–5”	10YR 3/2	FSL	GR	FR	NONE
5–15”	10YR 5/6	FSL	GR	FR	NONE

No OBSWT, no ESHWT, lithic contact at 15”, 20% rock fragments.

SITE-SPECIFIC MAP UNIT: 289

CORRELATED SOIL SERIES: Chatfield Variant (moderately well drained)

LANDSCAPE SETTING: At the top of the slope, a slightly deeper soil area on the northwest corner of the site.

CHARACTERISTIC SURFACE FEATURES: Fewer outcrops than the rest of the site.

DRAINAGE CLASS: Moderately well drained.

PARENT MATERIAL: Glacial till.

NATURE OF DISSIMILAR INCLUSIONS: Scituate soils with a hard pan above the bedrock,

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:

Test Pit No. 5
ESHWT: 30”
Termination @ 36”
Refusal: 36” SCS Soil: Chatfield variant
Obs. Water: none

Depth	Color	Texture	Structure	Consistence	Redox; Quantity/Contrast
0–8”	10YR 3/2	FSL	GR	FR	NONE
8–30”	10YR 4/6	FSL	GR	FR	NONE
30–36”	2.5Y 5/3	FSL	GR	FR	10% Distinct

ESHWT is 30”, no OBSWT, lithic contact at 36”, 20% rock fragments.

SITE-SPECIFIC MAP UNIT: 699

CORRELATED SOIL SERIES: Urban land

LANDSCAPE SETTING: Top of slope adjacent to Sagamore Avenue.

CHARACTERISTIC SURFACE FEATURES: Impervious.

DRAINAGE CLASS: N/A

PARENT MATERIAL: N/A

NATURE OF DISSIMILAR INCLUSIONS: N/A

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: N/A

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:

N/A ---- Pavement and buildings.

8. RESPONSIBLE SOIL SCIENTIST

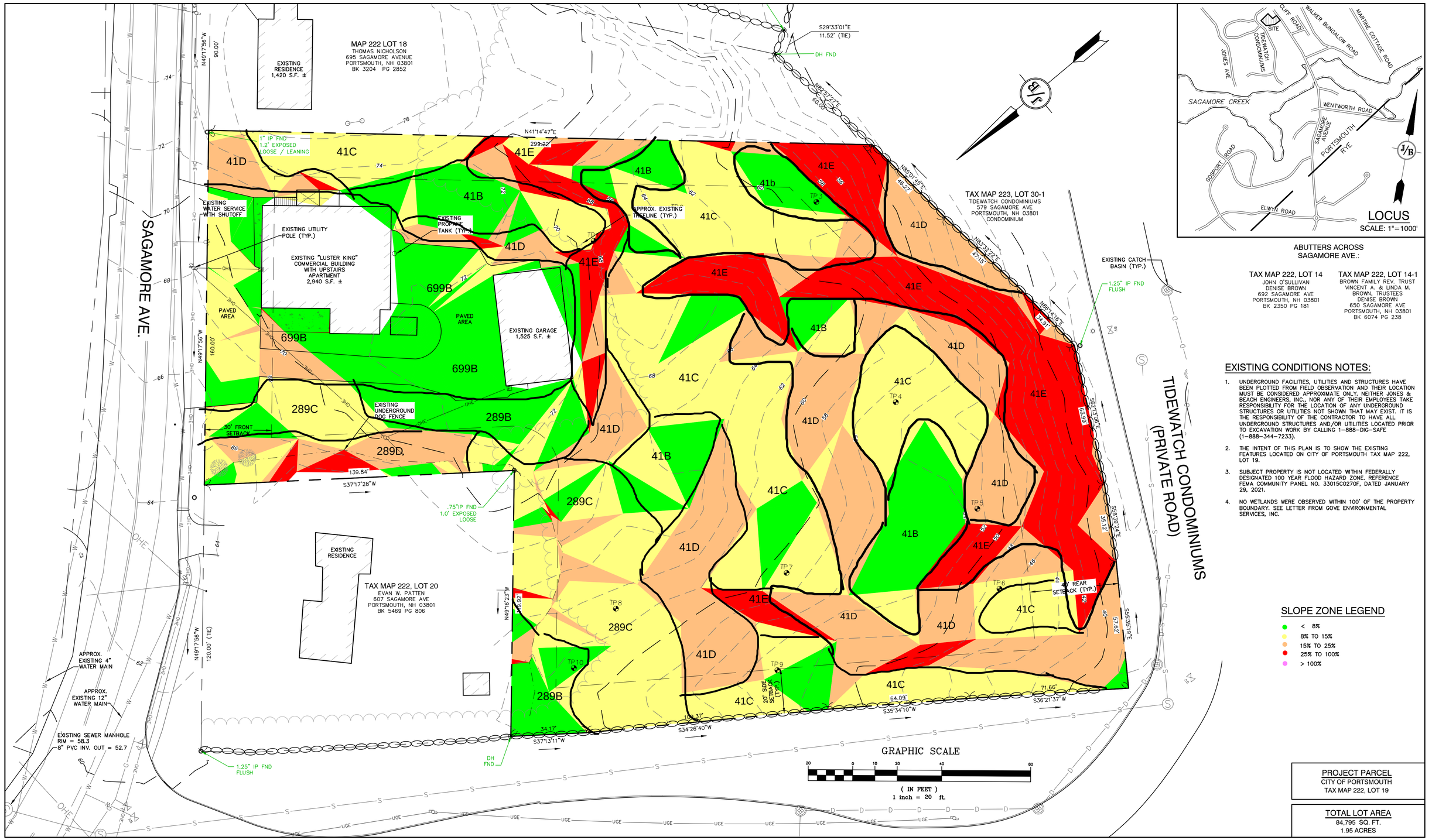
Name: James Gove

Certified Soil Scientist Number: 004

9. OTHER DISTINGUISHING FEATURES OF SITE

Is the site in a natural condition? Yes, with exception of existing development.

8 Continental Dr Unit H, Exeter, NH 03833-7507
Ph (603) 778 0644 / *Fax* (603) 778 0654
www.gesinc.biz
info@gesinc.biz



ABUTTERS ACROSS SAGAMORE AVE.:

TAX MAP 222, LOT 14
JOHN O'SULLIVAN
DENISE BROWN
692 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 2350 PG 181

TAX MAP 222, LOT 14-1
BROWN FAMILY REV. TRUST
VINCENT A. & LINDA M. BROWN, TRUSTEES
DENISE BROWN
650 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 6074 PG 238

EXISTING CONDITIONS NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE (1-888-344-7233).
2. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING FEATURES LOCATED ON CITY OF PORTSMOUTH TAX MAP 222, LOT 19.
3. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33015C0270F, DATED JANUARY 29, 2021.
4. NO WETLANDS WERE OBSERVED WITHIN 100' OF THE PROPERTY BOUNDARY. SEE LETTER FROM GOVE ENVIRONMENTAL SERVICES, INC.

SLOPE ZONE LEGEND

- < 8%
- 8% TO 15%
- 15% TO 25%
- 25% TO 100%
- > 100%

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: JAC	Draft: DJM	Date: 12/07/2021
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134-CONCEPT-8.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
11	1/31/24	MINOR REVISIONS TO SIGHT DISTANCE PLAN AND PROFILE	DJM
10	10/27/23	MINOR REVISIONS	DJM
9	10/20/23	MINOR REVISIONS	DJM
8	9/27/23	REVISED PER TAC COMMENTS	DJM
7	9/5/23	ISSUED TO TAC	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING CONDITIONS PLAN

Project: 4-UNIT RESIDENTIAL SITE
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT, LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
C1
SHEET 2 OF 8
JBE PROJECT NO. 18134.1

APPENDIX V

NRCS Soil Map

Soil Map—Rockingham County, New Hampshire
(635 Sagamore Ave.)

Map Scale: 1:893 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 40 80 160 240

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
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	0.7	30.5%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	1.6	69.5%
Totals for Area of Interest		**2.3**	**100.0%**

APPENDIX VI

Extreme Precipitation Estimates

Extreme Precipitation in New York & New England

An Interactive Web Tool for Extreme Precipitation Analysis

About this Project | Data & Products | Daily Monitoring | Documentation

Select Product

- Extreme Precipitation Tables - HTML
- Extreme Precipitation Tables - Text/CSV
- Partial Duration Series - by Point
- Partial Duration Series - by Station
- Distribution Curves - Graphical
- Distribution Curves - Text/TBL
- Intensity Frequency Duration Graphs
- Precipitation Frequency Duration Graphs
- GIS Data Files
- Regional/State Maps

Select Location *Double-click map to place a marker, or enter address or latitude/longitude.*

Hybrid | Map | Satellite | Terrain

Locate by Address: 635 Sagamore Avenue,

Locate by Lat/Lon: 43.05 °N -70.75 °W

Locate by State/County:

Select Options

Smoothing: Yes

Delivery: Popup

Submit

Version 2.0 Copyright 2010-2022
This project is a joint collaboration between:
Northeast Regional Climate Center (NRCC)
Natural Resources Conservation Service (NRCS)
Cornell University
Contact: precip@cornell.edu

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	
Location	
Latitude	43.058 degrees North
Longitude	70.753 degrees West
Elevation	10 feet
Date/Time	Wed Feb 21 2024 09:41:54 GMT-0500 (Eastern Standard Time)

+15% due to location in Coastal/Great Bay Region
2yr: 3.22*1.15 = 3.70 in
10yr: 4.88*1.15 = 5.16 in
25yr: 6.19*1.15 = 7.12 in
50yr: 7.42*1.15 = 8.53 in

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.67	2.94	**1yr**	2.36	2.82	3.24	3.96	4.57
2yr	0.32	0.50	0.62	0.82	1.03	1.30	**2yr**	0.89	1.18	1.52	1.94	2.49	3.22	3.58	**2yr**	2.85	3.45	3.95	4.70	5.35
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.44	3.15	4.08	4.60	**5yr**	3.61	4.42	5.07	5.96	6.73
10yr	0.41	0.65	0.82	1.12	1.46	1.90	**10yr**	1.26	1.73	2.24	2.90	3.76	4.88	5.55	**10yr**	4.32	5.34	6.12	7.14	8.01
25yr	0.48	0.76	0.97	1.34	1.78	2.35	**25yr**	1.54	2.15	2.79	3.65	4.76	6.19	7.13	**25yr**	5.48	6.86	7.85	9.07	10.09
50yr	0.54	0.86	1.11	1.55	2.08	2.77	**50yr**	1.80	2.54	3.31	4.35	5.69	7.42	8.62	**50yr**	6.57	8.29	9.48	10.87	12.02
100yr	0.60	0.97	1.25	1.78	2.43	3.28	**100yr**	2.10	2.99	3.93	5.19	6.80	8.89	10.42	**100yr**	7.87	10.02	11.46	13.04	14.33
200yr	0.68	1.11	1.44	2.06	2.85	3.86	**200yr**	2.46	3.54	4.65	6.17	8.12	10.65	12.60	**200yr**	9.43	12.12	13.85	15.64	17.09
500yr	0.81	1.33	1.73	2.51	3.51	4.80	**500yr**	3.03	4.41	5.81	7.76	10.28	13.54	16.21	**500yr**	11.98	15.59	17.81	19.90	21.58

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.62	0.86	0.93	1.33	1.69	2.26	2.51	**1yr**	2.00	2.41	2.88	3.20	3.93
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.33	3.07	3.47	**2yr**	2.72	3.33	3.84	4.56	5.11
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.11	2.73	3.80	4.21	**5yr**	3.36	4.05	4.74	5.56	6.27
10yr	0.39	0.59	0.74	1.03	1.33	1.60	**10yr**	1.15	1.57	1.81	2.38	3.05	4.39	4.88	**10yr**	3.88	4.70	5.48	6.45	7.23
25yr	0.44	0.67	0.83	1.19	1.57	1.90	**25yr**	1.35	1.86	2.10	2.74	3.52	4.77	5.92	**25yr**	4.22	5.70	6.70	7.85	8.73
50yr	0.48	0.73	0.92	1.32	1.77	2.17	**50yr**	1.53	2.12	2.35	3.06	3.91	5.40	6.84	**50yr**	4.78	6.58	7.79	9.11	10.08
100yr	0.54	0.81	1.02	1.47	2.02	2.47	**100yr**	1.74	2.42	2.63	3.39	4.33	6.08	7.90	**100yr**	5.38	7.60	9.07	10.60	11.64
200yr	0.59	0.89	1.13	1.64	2.29	2.82	**200yr**	1.97	2.75	2.94	3.75	4.76	6.83	9.12	**200yr**	6.05	8.77	10.54	12.34	13.47
500yr	0.69	1.02	1.32	1.92	2.72	3.37	**500yr**	2.35	3.29	3.42	4.28	5.41	7.97	11.03	**500yr**	7.06	10.61	12.87	15.13	16.32

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day
1yr	0.29	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.99	3.18	**1yr**	2.64	3.05	3.59	4.38	5.06
2yr	0.34	0.52	0.64	0.87	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.43	3.72	**2yr**	3.03	3.57	4.10	4.86	5.64
5yr	0.40	0.62	0.77	1.05	1.34	1.63	**5yr**	1.16	1.59	1.89	2.54	3.25	4.36	4.98	**5yr**	3.85	4.79	5.40	6.40	7.18
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.94	2.29	3.11	3.96	5.36	6.22	**10yr**	4.74	5.98	6.84	7.87	8.78
25yr	0.58	0.88	1.09	1.56	2.06	2.58	**25yr**	1.77	2.52	2.96	4.08	5.17	7.77	8.36	**25yr**	6.87	8.04	9.18	10.37	11.44
50yr	0.67	1.03	1.28	1.84	2.48	3.15	**50yr**	2.14	3.08	3.61	5.01	6.35	9.71	10.48	**50yr**	8.60	10.08	11.48	12.76	14.00
100yr	0.80	1.20	1.51	2.17	2.98	3.83	**100yr**	2.57	3.75	4.39	6.18	7.80	12.14	13.13	**100yr**	10.74	12.62	14.35	15.74	17.13
200yr	0.93	1.40	1.78	2.57	3.58	4.69	**200yr**	3.09	4.58	5.36	7.61	9.60	15.22	16.46	**200yr**	13.47	15.83	17.96	19.40	20.96
500yr	1.16	1.72	2.22	3.22	4.58	6.09	**500yr**	3.95	5.95	6.96	10.07	12.65	20.54	22.22	**500yr**	18.18	21.36	24.18	25.57	27.38

Powered by ACIS Northeast Regional Climate Center

APPENDIX VII

Rip Rap Calculations

RIP RAP CALCULATIONS
"Luster Cluster"
635 Sagamore Ave.
Portsmouth, NH

Jones & Beach Engineers, Inc.
P.O. Box 219
Stratham, NH 03885
3/14/2024 REVISED 4/19/2024 REVISED 8/8/2024 REVISED 9/16/2024

Rip Rap equations were obtained from the *Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.*
Aprons are sized for the 10-Year storm event.

TAILWATER < HALF THE D_o

$L_a = (1.8 \times Q) / D_0^{3/2} + (7 \times D_o)$
$W = L_a + (3 \times D_o)$ or defined channel width
$d_{50} = (0.02 \times Q^{4/3}) / (T_w \times D_0)$

Culvert or Catch Basin (Sta. No.)	Tailwater (Feet) T_w	Discharge (C.F.S.) Q	Diameter of Pipe D_o	Length of Rip Rap L_a (feet)	Width of Rip Rap W (feet)	d_{50}-Median Stone Rip Rap d50 (feet)
1P Outlet Pipe	0.39	1.67	1	10.0	13	0.10

TAILWATER > HALF THE D_o

$L_a = (3.0 \times Q) / D_0^{3/2} + (7 \times D_o)$
$W = (0.4 \times L_a) + (3 \times D_o)$ or defined channel width
$d_{50} = (0.02 \times Q^{4/3}) / (T_w \times D_0)$

Culvert or Catch Basin (Sta. No.)	Tailwater (Feet) T_w	Discharge (C.F.S.) Q	Diameter of Pipe D_o	Length of Rip Rap L_a (feet)	Width of Rip Rap W (feet)	d_{50}-Median Stone Rip Rap d50 (feet)
CB104 Outlet Pipe	0.59	1.96	1	12.9	8	0.08

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d_{50} Size =	0.25	Feet	3	Inches
% of Weight Smaller		Size of Stone (Inches)		
Than the Given d_{50} Size		From		To
100%		5		6
85%		4		5
50%		3		5
15%		1		2

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d_{50} Size =	0.5	Feet	6	Inches
% of Weight Smaller		Size of Stone (Inches)		
Than the Given d_{50} Size		From		To
100%		9		12
85%		8		11
50%		6		9
15%		2		3

APPENDIX VIII

BMP Worksheets

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **Bioretention Pond (1P)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.54	ac	A = Area draining to the practice	
0.24	ac	A_I = Impervious area draining to the practice	
0.45	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.46	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.25	ac-in	WQV= 1" x Rv x A	
895	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
224	cf	25% x WQV (check calc for sediment forebay volume)	
671	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
272	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]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
61.78	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
1.69	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
0.29	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	≤ 72-hrs
59.10	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
58.35	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
58.08	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
57.67	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
0.75	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	≥ 1'
1.43	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	≥ 1'
1.02	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	≥ 1'
61.96	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
63.00	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**
905	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	D4	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D4	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 mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course 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:

Stage-Area-Storage for Pond 1P: Bioretention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
58.09	117	0
58.14	117	2
58.19	117	5
58.24	117	7
58.29	117	9
58.34	117	12
58.39	117	14
58.44	117	16
58.49	117	19
58.54	117	21
58.59	117	23
58.64	117	26
58.69	117	28
58.74	117	30
58.79	117	33
58.84	117	35
58.89	117	37
58.94	117	40
58.99	117	42
59.04	117	44
59.09	117	47
59.14	117	48
59.19	117	49
59.24	117	49
59.29	117	50
59.34	117	51
59.39	117	52
59.44	117	53
59.49	117	54
59.54	117	55
59.59	117	56
59.64	117	56
59.69	117	57
59.74	117	58
59.79	117	59
59.84	117	60
59.89	117	61
59.94	117	62
59.99	117	63
60.04	117	63
60.09	117	64
60.14	117	65
60.19	117	66
60.24	117	67
60.29	117	68
60.34	117	69
60.39	117	70
60.44	117	70
60.49	117	71
60.54	117	72
60.59	117	73
60.64	156	80
60.69	213	89
60.74	279	101
60.79	354	117
60.84	437	137
60.89	530	161
60.94	631	190
60.99	741	224
61.04	778	262
61.09	796	302
61.14	814	342
61.19	832	383
61.24	851	425
61.29	870	468
61.34	889	512
61.39	908	557
61.44	927	603
61.49	946	650
61.54	966	698
61.59	986	746
61.64	1,006	796
61.69	1,026	847
61.74	1,047	899
61.79	1,068	952
61.84	1,089	1,006
61.89	1,110	1,061
61.94	1,131	1,117
61.99	1,153	1,174
62.04	1,174	1,232
62.09	1,195	1,291
62.14	1,217	1,352
62.19	1,239	1,413
62.24	1,261	1,475
62.29	1,283	1,539
62.34	1,305	1,604
62.39	1,328	1,669
62.44	1,350	1,736
62.49	1,373	1,805
62.54	1,396	1,874
62.59	1,420	1,944
62.64	1,443	2,016
62.69	1,467	2,088
62.74	1,491	2,162
62.79	1,515	2,238
62.84	1,539	2,314
62.89	1,564	2,391
62.94	1,588	2,470
62.99	**1,613**	**2,550**

Bottom of filter course = 59.1
Vol. below = 47 cf

Volume below E(WQV) = Volume of stone voids + Required WQV = 47+895 = 942 cf

E(WQV) = 61.78 by interpolation

Overflow el. = 61.8
Vol. below = 952 cf
Storage volume provided = 952-47 = 905 cf > 895 cf

Stage-Discharge for Pond 1P: Bioretention Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
58.09	0.00	60.69	1.37
58.14	0.00	60.74	1.38
58.19	0.00	60.79	1.40
58.24	0.00	60.84	1.41
58.29	0.00	60.89	1.43
58.34	0.00	60.94	1.45
58.39	0.01	60.99	1.46
58.44	0.02	61.04	1.48
58.49	0.06	61.09	1.49
58.54	0.10	61.14	1.51
58.59	0.16	61.19	1.52
58.64	0.22	61.24	1.54
58.69	0.28	61.29	1.55
58.74	0.35	61.34	1.56
58.79	0.41	61.39	1.58
58.84	0.47	61.44	1.59
58.89	0.51	61.49	1.61
58.94	0.55	61.54	1.62
58.99	0.59	61.59	1.63
59.04	0.63	61.64	1.65
59.09	0.66	61.69	1.66
59.14	0.69	61.74	1.68
59.19	0.73	61.79	1.69
59.24	0.76	61.84	1.83
59.29	0.79	61.89	2.13
59.34	0.81	61.94	2.54
59.39	0.84	61.99	3.02
59.44	0.87	62.04	3.57
59.49	0.89	62.09	4.17
59.54	0.92	62.14	4.83
59.59	0.94	62.19	5.46
59.64	0.96	62.24	5.50
59.69	0.99	62.29	5.54
59.74	1.01	62.34	5.58
59.79	1.03	62.39	5.62
59.84	1.05	62.44	5.66
59.89	1.07	62.49	5.70
59.94	1.09	62.54	5.74
59.99	1.11	62.59	5.77
60.04	1.13	62.64	5.81
60.09	1.15	62.69	5.85
60.14	1.17	62.74	5.89
60.19	1.19	62.79	5.93
60.24	1.21	62.84	5.96
60.29	1.23	62.89	6.00
60.34	1.25	62.94	6.04
60.39	1.26	62.99	**6.07**
60.44	1.28		
60.49	1.30		
60.54	1.32		
60.59	1.33		
60.64	1.35		

E(WQV) = 61.78
Q(WQV) = 1.69 cfs

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
0.12	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"
0.25	inches	Rd = Weighted groundwater recharge depth	
0.031	ac-in	GRV = AI * Rd	
113	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):

Stone Beneath Unit 3 deck: (14 ft * 20 ft * 2.4 ft)*0.4 = 269 cf

Stone Beneath Unit 4 deck: (14 ft * 20 ft *3.3 ft)*0.4 = 370 cf

269+370 = 639 cf > 113 cf

APPENDIX IX

Pollutant Removal Calculations

POLLUTANT REMOVAL CALCULATIONS

BMP	Drip Edge	Bioretention	None	Total	Required
Acres Impervious	0.053	0.244	0.039	0.335	
TSS Removal (%)	90%	90%	0%	**80%**	**80%**
TN Removal (%)	55%	65%	0%	**67%**	**50%**

Calculations are based on post-construction impervious surfaces directed toward AP3 and AP4. Post-construction impervious surfaces directed toward AP1 are handled offsite via the City's drainage system, and the amount of impervious surface directed toward AP1 is being decreased post-construction.

Stone underneath decks are assumed to provide similar treatment to a stone drip edge.

TSS removal of 80% provided meets 80% requirement

TN removal of 67% provided exceeds 50% requirement

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	**BMP**	**Notes**	**Lit. Ref.**	**TSS**	**TN**	**TP**
Stormwater Ponds	Wet Pond		B, F	70%	35%	45%
	Wet Extended Detention Pond		A, B	80%	55%	68%
	Micropool Extended Detention Pond	TBA				
	Multiple Pond System	TBA				
	Pocket Pond	TBA				
Stormwater Wetlands	Shallow Wetland		A, B, F, I	80%	55%	45%
	Extended Detention Wetland		A, B, F, I	80%	55%	45%
	Pond/Wetland System	TBA				
	Gravel Wetland		H	95%	85%	64%
Infiltration Practices	Infiltration Trench (≥75 ft from surface water)		B, D, I	90%	55%	60%
	Infiltration Trench (<75 ft from surface water)		B, D, I	90%	10%	60%
	Infiltration Basin (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Infiltration Basin (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Dry Wells			90%	55%	60%
	Drip Edges			90%	55%	60%
Filtering Practices	Aboveground or Underground Sand Filter that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Aboveground or Underground Sand Filter that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Aboveground or Underground Sand Filter with underdrain		A, I, F, G, H	85%	10%	45%
	Tree Box Filter	TBA				
	Bioretention System		I, G, H	90%	65%	65%
	Permeable Pavement that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Permeable Pavement that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Permeable Pavement with underdrain		Use TN and TP values for sand filter w/ underdrain and outlet pipe	90%	10%	45%

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	**BMP**	**Notes**	**Lit. Ref.**	**TSS**	**TN**	**TP**
Treatment Swales	Flow Through Treatment Swale	TBA				
Vegetated Buffers	Vegetated Buffers		A, B, I	73%	40%	45%
Pre-Treatment Practices	Sediment Forebay	TBA				
	Vegetated Filter Strip		A, B, I	73%	40%	45%
	Vegetated Swale		A, B, C, F, H, I	65%	20%	25%
	Flow-Through Device - Hydrodynamic Separator		A, B, G, H	35%	10%	5%
	Flow-Through Device - ADS Underground Multichamber Water Quality Unit (WQU)		G, H	72%	10%	9%
	Other Flow-Through Devices	TBA				
	Off-line Deep Sump Catch Basin		J, K, L, M	15%	5%	5%

APPENDIX X

Infiltration Testing Data

Front of Site - Test #1

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
6.2	105	0.5	0.008333	78120.0	82.4947	32.4782
9.9	105	1	0.016667	62370.0	65.8627	25.9302
13.5	105	1.5	0.025	56700.0	59.8752	23.5729

Mean	**27.3271**
σ (Std. Dev.)	**3.7674**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 22.3 iph (Test #3)

With factor of safety of two = 11.15 iph

Front of Site - Test #2

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
6.7	105	0.5	0.008333	84420.0	89.1475	35.0974
11.2	105	1	0.016667	70560.0	74.5114	29.3352
16.1	105	1.5	0.025	67620.0	71.4067	28.1129

Mean	**30.8485**
σ (Std. Dev.)	**3.0456**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 22.3 iph (Test #3)

With factor of safety of two = 11.15 iph

Front of Site - Test #3

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
4.8	105	0.5	0.008333	60480.0	63.8669	25.1444
8.3	105	1	0.016667	52290.0	55.2182	21.7395
11.4	105	1.5	0.025	47880.0	50.5613	19.9060

Mean	**22.2633**
σ (Std. Dev.)	**2.1704**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 22.3 iph (Test #3)

With factor of safety of two = 11.15 iph

Bioretention - Test #1

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
2.9	105	0.5	0.008333	36540.0	38.5862	15.1914
5.7	105	1	0.016667	35910.0	37.9210	14.9295
8	105	1.5	0.025	33600.0	35.4816	13.9691
10.65	105	2	0.033333	33547.5	35.4262	13.9473
14.7	105	2.5	0.041667	37044.0	39.1185	15.4010
17.9	105	3	0.05	37590.0	39.6950	15.6280

Mean	**14.8444**
σ (Std. Dev.)	**0.6611**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 14.8 iph (Test #1)

With factor of safety of two = 7.4 iph

Bioretention - Test #2

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
6.8	105	0.5	0.008333	85680.0	90.4781	35.6213
13	105	1	0.016667	81900.0	86.4864	34.0498
17.5	105	1.5	0.025	73500.0	77.6160	30.5575

Mean	**33.4095**
σ (Std. Dev.)	**2.1163**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 14.8 iph (Test #1)

With factor of safety of two = 7.4 iph

Bioretention - Test #3

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
12.6	105	0.5	0.008333	158760.0	167.6506	66.0042
25	105	1	0.016667	157500.0	166.3200	65.4803

Mean	**65.7422**
σ (Std. Dev.)	**0.2619**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 14.8 iph (Test #1)

With factor of safety of two = 7.4 iph

Unit 4 - Test #1

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
6.5	105	0.5	0.008333	81900.0	86.4864	34.0498
11.7	105	1	0.016667	73710.0	77.8378	30.6448
15.6	105	1.5	0.025	65520.0	69.1891	27.2398

Mean	**30.6448**
σ (Std. Dev.)	**2.7802**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 25.4 iph (Test #2)

With factor of safety of two = 12.7 iph

Unit 4 - Test #2

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
5.6	105	0.5	0.008333	70560.0	74.5114	29.3352
9.5	105	1	0.016667	59850.0	63.2016	24.8825
12.6	105	1.5	0.025	52920.0	55.8835	22.0014

Mean	**25.4064**
σ (Std. Dev.)	**3.0168**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 25.4 iph (Test #2)

With factor of safety of two = 12.7 iph

Unit 4 - Test #3

Height	Constant	Time		Outflow	Rate (K_{sat})	
cm	cm^2	Minutes	Hours	cm^3/hr	cm/hr	in/hr
0						
8.4	105	0.5	0.008333	105840.0	111.7670	44.0028
13.6	105	1	0.016667	85680.0	90.4781	35.6213
18.5	105	1.5	0.025	77700.0	82.0512	32.3036

Mean	**37.3092**
σ (Std. Dev.)	**4.9230**

Constant	105	cm^2
Glover Coefficient:	0.001056	$1/cm^2$

Calculations:

Constant = 20 cm^2 for one tube, 105 cm^2 for two tubes (two tubes used)

Hours = Minutes / 60

Outflow = (Height*Constant)/Hours

Ksat = Outflow*Glover Coefficient

Lowest Mean Ksat = 25.4 iph (Test #2)

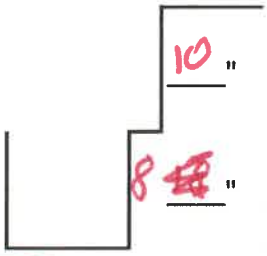
With factor of safety of two = 12.7 iph

AMOOZEMETER DATA SHEET

Project #: 18134.1
Test Pit #: Front - #2
Permeameter Test #: 1
Date: 7/2/24
Location: 635 Sag
Soil Map Unit Series:
Horizon: B / C (circle one)

JONES&BEACH ENGINEERS INC.

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

F:\Forms, Apps, Regs\Templates\Amoozemeter\Amoozemeter Data Sheet.xlsx

Discard - error

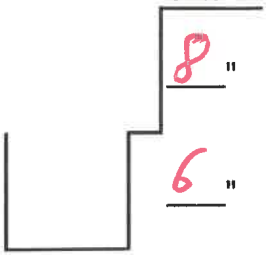
Start ↓ last

AMOOZEMETER DATA SHEET

JONES&BEACH ENGINEERS INC.

Project #: 18134 Lot 1
Test Pit #: Front Pit 2
Permeameter Test #:
Date: 7/2/24
Location: 635 Bay
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Discard - Saturated

Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

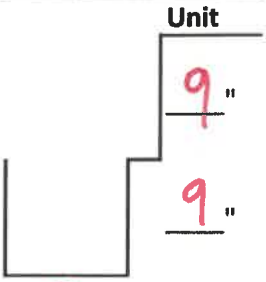
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

AMOOZEMETER DATA SHEET

JONES&BEACH ENGINEERS INC.

Project #: 18134.1
Test Pit #: ~~#~~ Front
Permeameter Test #: 3
Date: 7/2/24
Location: 635 Say
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

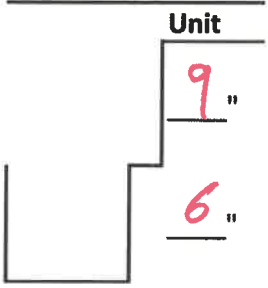
F:\Forms, Apps, Regs\Templates\Amoozemeter\Amoozemeter Data Sheet.xlsx

AMOOZEMETER DATA SHEET

JONES&BEACH ENGINEERS INC.

Project #: 18179.1
Test Pit #: Bioretention
Permeameter Test #: 1
Date: 7/24/24
Location: 635 Sab
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

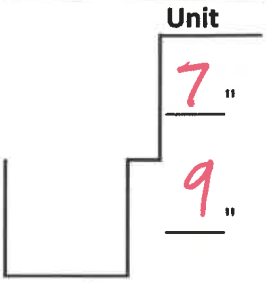
Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

AMOOZEMETER DATA SHEET

JONES&BEACH ENGINEERS INC.

Project #: 18134.1
Test Pit #: Bioretention 1
Permeameter Test #: 2
Date: 7/2/24
Location: 635 Sag
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

Discard

X Discard

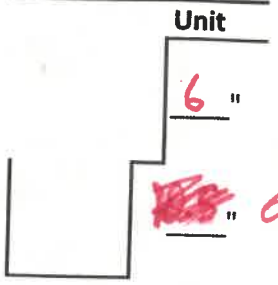
Start

AMOOZEMETER DATA SHEET

JONES & BEACH ENGINEERS INC.

Project #: 18134.1
Test Pit #: Bioretention #1
Permeameter Test #: 3
Date: 7/2/24
Location: 63 Sag
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

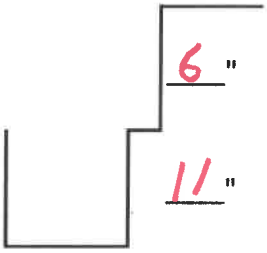
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

AMOOZEMETER DATA SHEET

Project #: 18134.1
Test Pit #: Unit 4
Permeameter Test #: 1
Date: 7/2/2024
Location: 635 Say
Soil Map Unit Series:
Horizon: B / C (circle one)

JONES & BEACH ENGINEERS INC.

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B			C	D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

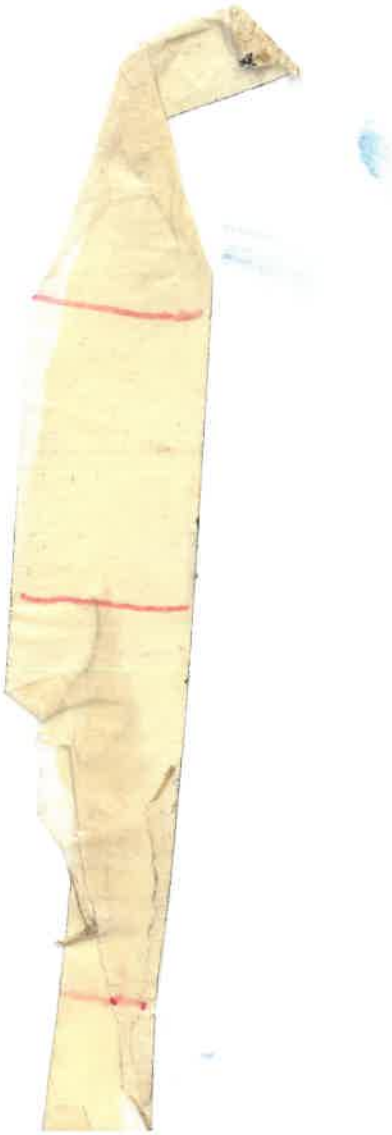
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

F:\Forms, Apps, Regs\Templates\Amoozemeter\Amoozemeter Data Sheet.xlsx

Discard

Discard

Start →

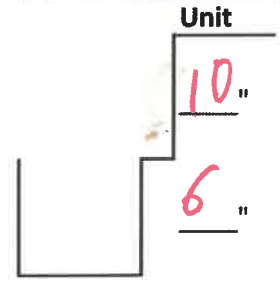


AMOOZEMETER DATA SHEET

JONES&BEACH ENGINEERS INC.

Project #: 18134.1
Test Pit #: Unit 4
Permeameter Test #: 2
Date: 7/2/2024
Location: 635 Sag
Soil Map Unit Series:
Horizon: B / C (circle one)

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") Both ("2 on") <-- "B"

Associated Conversion Factor: (= 20.0cm^2) (= 105.0 cm^2)

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

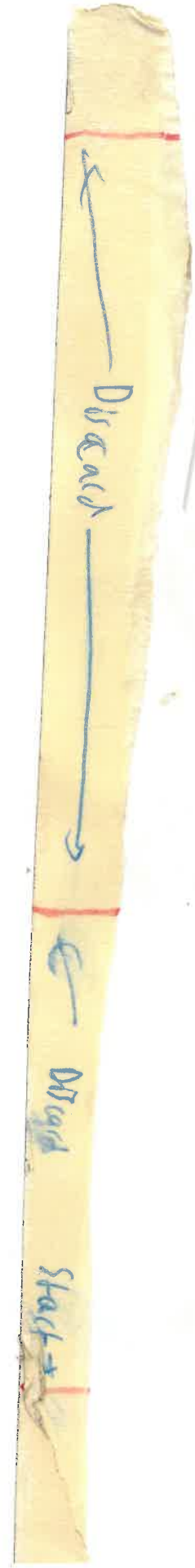
E = D x 0.001056

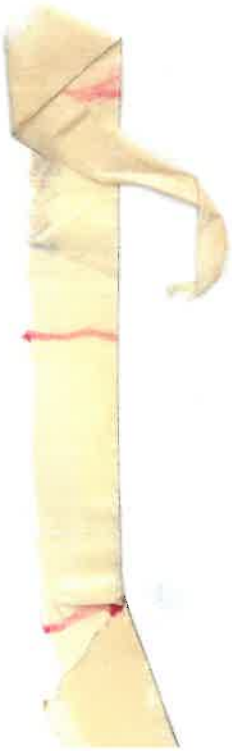
F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr

Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

F:\Forms, Apps, Regs\Templates\Amoozemeter\Amoozemeter Data Sheet.xlsx



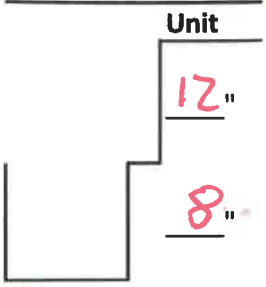


AMOOZEMETER DATA SHEET

Project #: 18134.1
Test Pit #: Unit 4
Permeameter Test #: 3
Date: 7/2/24
Location: 635 Sag
Soil Map Unit Series:
Horizon: B / C (circle one)

JONES & BEACH ENGINEERS INC.

Test hole profile:



Set-Up Calculation	
Hole Depth (cm):	
Distance From Bottom of Bubble:	
Tube to Soil Surface (cm):	
Desired Water Depth In Hole (cm):	
= CHT Tube Setting (cm):	

Outflow Chamber(s) Used (circle one) : Small ("1 on") (= 20.0cm^2) | Both ("2 on") (= 105.0 cm^2) <-- "B"

Associated Conversion Factor:

A	B				D	E	F
Drop In Water Level	Outflow Chamber	Clock Time	Elapsed Time		Outflow (Q)	Saturated Hydraulic Conductivity (Ksat)	
				C			
(cm)	(C.F.)	(hr : min)	(min)	(min/hr)	(cm^3/hr)	(cm/hr)	(in/hr)
Example:	*20*	*10:17*	*15*	*0.25*	*392*	*0.4139*	*0.1629*
Start (0)							
					Mean Ksat		

Calculation Formulas:

D = (AxB)/C

E = D x 0.001056

F = E / 2.54

Notes: Mulitply "D" by 0.001056 for a conversion from cm^3/hr to cm/hr
Multiply "E" by 0.393701 for conversion fro cm/hr to in/hr

APPENDIX XI

Stormwater Operations and Maintenance Manual

JONES & BEACH ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

STORMWATER MANAGEMENT OPERATIONS AND MAINTENANCE MANUAL

Luster Cluster
635 Sagamore Ave.
Portsmouth, NH 03801
Tax Map 222, Lot 19

Prepared for:

635 Sagamore Development LLC
3612 Lafayette Rd., Dept 4
Portsmouth, NH 03801

Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
March 18, 2024
Revised April 15, 2024
Revised August 8, 2024
Revised October 22, 2024
JBE Project No. 18134.1

Inspection and Maintenance of Facilities and Property

A. Maintenance of Common Facilities or Property

1. The Condominium Association, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. The Association, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form and shall submit an Operations and Maintenance report on a yearly basis to the Portsmouth Planning Department.

B. General Inspection and Maintenance Requirements

1. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:

    a. Roadway and driveways
    b. Vegetation and landscaping
    c. Sediment Forebay
    d. Bioretention system
    e. Catch Basins & Yard Drains
    f. Stone Drip Edges
    g. Stone Underneath Decks
    h. Culverts
    i. Rip-Rap Outlet Protection Aprons
    j. Sand Absorption Areas

2. Maintenance of permanent measures shall follow the following schedule:

    a. Normal winter roadway maintenance including plowing and snow removal. Road sweeping at the end of every winter, preferably before the start of the spring rain season.

    b. **Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately. **Annual inspection** of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind, if they are found to be dead or dying.

    c. Cleaning Criteria for all Sedimentation Forebays: Sediment shall be removed from the sedimentation chamber (forebay) when it accumulates to a depth of more than 12 inches (30 cm) or 10 percent of the pretreatment volume. The sedimentation forebay shall be cleaned of vegetation if persistent standing water and wetland vegetation becomes dominant. The cleaning interval is once every year. A dry sedimentation forebay is the optimal condition while in practice this condition is rarely achieved. The sedimentation chamber, forebay, and treatment cell outlet devices shall be cleaned when drawdown

times exceed 60 to 72 hours. Materials can be removed with heavy construction equipment; however, this equipment shall not track on the wetland surface. Revegetate disturbed areas as necessary. Removed sediments shall be dewatered (if necessary) and disposed of in an acceptable manner.

d. Bioretention Systems:

- Visually inspect monthly and repair erosion. Use small stones to stabilize erosion along drainage paths.
- Check the pH once a year if grass is not surviving. Apply an alkaline product, such as limestone, if needed.
- Re-seed any bare areas by hand as needed.
- Immediately after the completion of cell construction, water grass for 14 consecutive days unless there is sufficient natural rainfall.
- Once a month (more frequently in the summer), the land owner or Association shall visually inspect vegetation for disease or pest problems and treat as required.
- During times of extended drought, look for physical features of stress. Water in the early morning as needed.
- Weed regularly, if needed.
- After rainstorms, inspect the cell and make sure that drainage paths are clear and that ponding water dissipates over 4-6 hours. (Water may pond for longer times during the winter and early spring.)
- Twice annually, inspect the outlet control structures to ensure that they are not clogged and correct any clogging found as needed.
- Any debris and sediment accumulations shall be removed from the outlet structures, overflow risers, and emergency spillways and disposed of properly.
- Inspect outlet structure for deterioration and or clogging.
- If erosion is evident on the berm or emergency spillway, stabilize the affected area by seeding. Trees must not be allowed to grow in these areas.
- KEEP IN MIND, THE BIORETENTION CELL IS NOT A POND. IT SHALL NOT PROVIDE A BREEDING GROUND FOR MOSQUITOES. MOSQUITOES NEED AT LEAST FOUR (4) DAYS OF STANDING WATER TO DEVELOP AS LARVA.

e. **Annual inspection** of catch basins and yard drains to determine if they need to be cleaned. Catch basins and yard drains are to be cleaned if the depth of deposits is greater than one-half the depth from the basin bottom to the invert of the lowest pipe or opening into or out of the basin. If a catch basin or yard drain significantly exceeds the one-half depth standard during the inspection, then it shall be cleaned more frequently. If woody debris or trash accumulates in the catch basin or yard drain, then it shall be cleaned on a weekly basis. The catch basin or yard drain can be cleaned either manually or by specially designed equipment including, but not limited to, bucket loaders and vacuum pumps. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if the materials meet the EPA criteria for hazardous waste. This will help determine how the materials shall be stored, treated, and disposed. Grease hoods are to be

wiped clean and the rags disposed of properly. Debris obscuring the grate inlet shall also be removed.

f. Stone drip edges:

Units 3 & 4 feature stone drip edges to collect roof runoff into a pipe in order to direct it into the stone areas underneath the unit decks. These practices shall be lined and are not intended for infiltration. The following course of action will help assure that the roof drip edges are maintained to preserve its effectiveness.

In the spring and fall, visually inspect the area around the edges and repair any erosion. Use small stones to stabilize erosion along drainage paths. Inspect stone area to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation shall not be allowed to become established in stone areas, and/or any debris removed from the void spaces between the stones

g. Stone underneath decks:

Units 3 and 4 feature stone areas underneath their associated rear decks for infiltration of roof runoff. The following guidelines will help ensure proper functioning of the system.

In the spring and fall, visually inspect the area around the edges and repair any erosion. Use small stones to stabilize erosion along drainage paths. Inspect stone area to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation shall not be allowed to become established in stone areas, and/or any debris removed from the void spaces between the stones.

h. **Inspection** of culvert inlets and outlets at least **once per month** during the rainy season (March to November). Any debris is to be removed and disposed of properly.

i. Rock riprap shall be **inspected annually** in order to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation must not be allowed to become established in riprap areas, and/or any debris removed from the void spaces between the rocks. If the riprap is adjacent to a stream or other waterbody, the water shall be kept clear of obstructions, debris, and sediment deposits

j. There are two sand absorption areas intended to infiltrate foundation drain effluent to the extent practicable. One is located approximately 34'-45' past the end of the shared driveway near the southeast property line of the site in order to handle foundation drain effluent for Units 1 and 2. The other is located between the backyards of Units 3 and 4 in order to handle foundation drain effluent for Units 3 and 4. The foundation drain outfalls shall be **inspected monthly** and more frequently during autumn in order to ensure that there is no debris or leaf buildup. Any debris or leaves that is either clogging or appears that it may clog the outlets must be removed **immediately** and disposed of properly.

During these inspections, additionally check for sediment buildup and standing water in the small ponding areas for these devices. If more than 1" of standing water is persistently present in these systems, contact a professional engineer to evaluate the issue. Remedies may range from cleaning the overflow spillway to replacing the sand media.

See attached sample forms as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above-mentioned facilities or tasks shall be directed to the project engineer:

Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746
F#: (603) 772-0227

Commitment to maintenance requirements

I agree to complete and/or observe all of the required maintenance practices and their respective schedules as outlined above.

_____
Signature

_____
Print Name

_____
Title

_____
Date

Annual Operations and Maintenance Report

The Condominium Association, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. The Association, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form and shall submit an Operations and Maintenance report on a yearly basis to the Portsmouth Planning Department.

Construction Activity	**Date of Inspection**	**Who Inspected**	**Findings of Inspector**
Roadway and Driveways			
Vegetation and Landscaping			
Sediment Forebay			
Bioretention Pond			
Catch Basins & Yard Drains			

Unit 3 Stone Drip Edge			
Unit 4 Stone Drip Edge			
Stone underneath unit 3 deck			
Stone underneath unit 4 deck			
Culverts			
Rip Rap Outlet Protection			
Units 1&2 Foundation drain outfall sand absorption area			

Units 3&4 Foundation drain outfall sand absorption area			
Swale			
Other (please note):			

Regular Inspection and Maintenance Guidance for Bioretention Systems / Tree Filters

Maintenance of bioretention systems and tree filters can typically be performed as part of standard landscaping. Regular inspection and maintenance is critical to the effective operation of bioretention systems and tree filters to insure they remain clear of leaves and debris and free draining. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less, frequent maintenance needs, depending on a variety of factors including the occurrence of large storm events, overly wet or dry (I.E., drought), regional hydrologic conditions, and the upstream land use.

ACTIVITIES

The most common maintenance activity is the removal of leaves from the system and bypass structure. Visual inspections are routine for system maintenance. This includes looking for standing water, accumulated leaves, holes in the soil media, signs of plant distress, and debris and sediment accumulation in the system. Mulch and/or vegetation coverage is integral to the performance of the system, including infiltration rate and nutrient uptake. Vegetation care is important to system productivity and health.

ACTIVITY	FREQUENCY
A record should be kept of the time to drain for the system completely after a storm event. The system should drain completely within 72 hours.	After every major storm in the first few months, then biannually.
Check to insure the filter surface remains well draining after storm event. **Remedy**: If filter bed is clogged, draining poorly, or standing water covers more than 15% of the surface 48 hours after a precipitation event, then remove top few inches of discolored material. Till or rake remaining material as needed.	
Check inlets and outlets for leaves and debris. **Remedy**: Rake in and around the system to clear it of debris. Also, clear the inlet and overflow if obstructed.	Quarterly initially, biannually, frequency adjusted as needed after 3 inspections
Check for animal burrows and short circuiting in the system **Remedy**: Soil erosion from short circuiting or animal boroughs should be repaired when they occur. The holes should be filled and lightly compacted.	
Check to insure the filter bed does not contain more than 2 inches accumulated material **Remedy**: Remove sediment as necessary. If 2 inches or more of filter bed has been removed, replace media with either mulch or a (50% sand, 20% woodchips, 20% compost, 10% soil) mixture.	
During extended periods without rainfall, inspect plants for signs of distress. **Remedy**: Plants should be watered until established (typical only for first few months) or as needed thereafter.	
Inspect inlets and outlets to ensure good condition and no evidence of deterioration. Check to see if high-flow bypass is functioning. **Remedy**: Repair or replace any damaged structural parts, inlets, outlets, sidewalls.	Annually
Check for robust vegetation coverage throughout the system. **Remedy**: If at least 50% vegetation coverage is not established after 2 years, reinforcement planting should be performed.	
Check for dead or dying plants, and general long term plant health. **Remedy**: This vegetation should be cut and removed from the system. If woody vegetation is present, care should be taken to remove dead or decaying plant Material. Separation of Herbaceous vegetation rootstock should occur when overcrowding is observed.	As needed

JONES&BEACH ENGINEERS INC.

CHECKLIST FOR INSPECTION OF BIORETENTION SYSTEM / TREE FILTERS

Location: Inspector:

Date: Time: Site Conditions:

Date Since Last Rain Event:

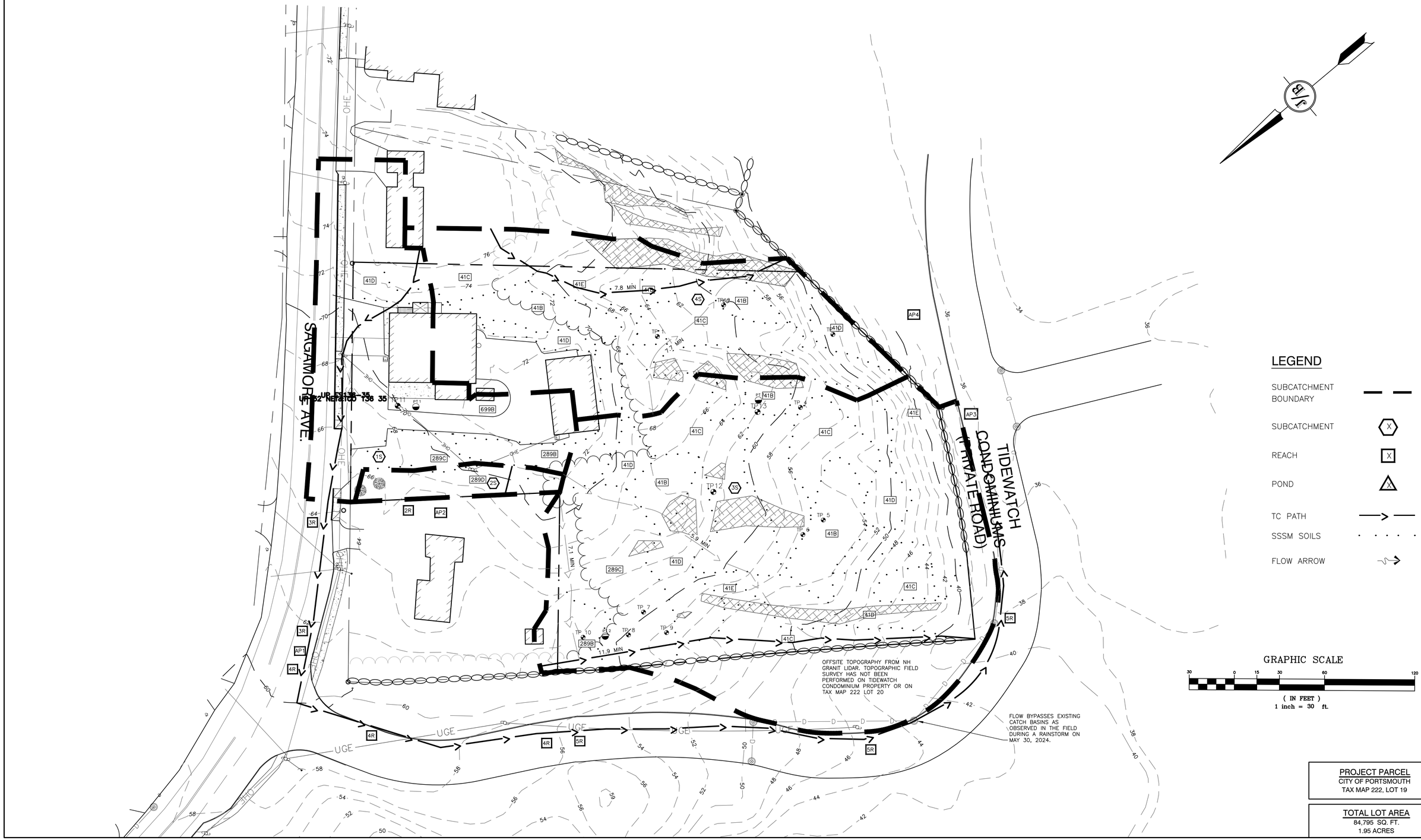
Inspection Items	Satisfactory (S) or Unsatisfactory (U)		Comments/Corrective Action
1. Initial Inspection After Planting and Mulching			
Plants are stable, roots not exposed	**S**	**U**	
Surface is at design level, typically 4" below overpass	**S**	**U**	
Overflow bypass / inlet (if available) is functional	**S**	**U**	
2. Debris Cleanup (2 times a year minimum, Spring & Fall)			
Litter, leaves, and dead vegetation removed from the system	**S**	**U**	
Prune perennial vegetation	**S**	**U**	
3. Standing Water (1 time a year, After large storm events)			
No evidence of standing water after 72 hours	**S**	**U**	
4. Short Circuiting & Erosion (1 time a year, After large storm events)			
No evidence of animal burrows or other holes	**S**	**U**	
No evidence of erosion	**S**	**U**	
5. Drought Conditions (As needed)			
Water plants as needed	**S**	**U**	
Dead or dying plants			
6. Overflow Bypass / Inlet Inspection (1 time a year, After large storm events)			
No evidence of blockage or accumulated leaves	**S**	**U**	
Good condition, no need for repair	**S**	**U**	
7. Vegetation Coverage (once a year)			
50% coverage established throughout system by first year	**S**	**U**	
Robust coverage by year 2 or later	**S**	**U**	
8. Mulch Depth (if applicable)(once every 2 years)			
Mulch at original design depth after tilling or replacement	**S**	**U**	
9. Vegetation Health (once every 3 years)			
Dead or decaying plants removed from the system	**S**	**U**	
10. Tree Pruning (once every 3 years)			
Prune dead, diseased, or crossing branches	**S**	**U**	
Corrective Action Needed			**Due Date**
1.			
2.			
3.			

1/15/2011, University of New Hampshire Stormwater Center

JONES&BEACH ENGINEERS INC.

APPENDIX XII

Pre- and Post-Construction Watershed Plans



PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: DJM	Date: 2/26/2024
Checked: PSL	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134-WATERSHED.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ No. 18152
LICENSED PROFESSIONAL ENGINEER
10/23/2024

REV.	DATE	REVISION	BY
4	10/17/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/16/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM
0	3/8/24	ISSUED FOR REVIEW	DJM

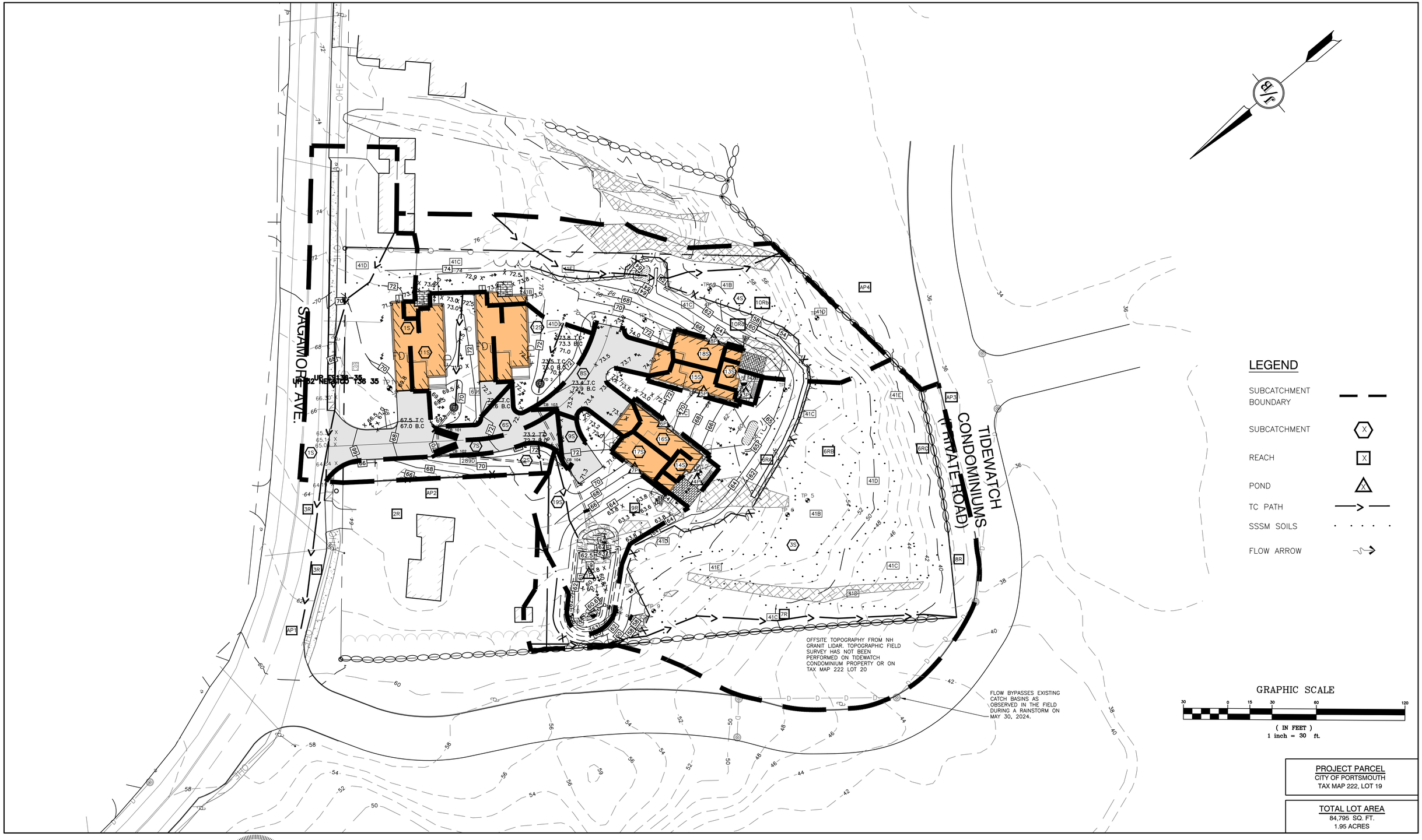
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING WATERSHED PLAN

Project: "LUSTER CLUSTER"
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
W1
SHEET 1 OF 2
JBE PROJECT NO. 18134.1



PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: DJM	Date: 2/26/2024
Checked: PSL	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134-WATERSHED.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED PROFESSIONAL ENGINEER
10/23/2024

REV.	DATE	REVISION	BY
4	10/17/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/16/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM
0	3/8/24	ISSUED FOR REVIEW	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: PROPOSED WATERSHED PLAN
Project: "LUSTER CLUSTER"
635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
W2
SHEET 2 OF 2
JBE PROJECT NO. 18134.1

JONES&BEACH
ENGINEERS INC.
85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

STORMWATER MANAGEMENT OPERATIONS AND MAINTENANCE MANUAL

Luster Cluster
635 Sagamore Ave.
Portsmouth, NH 03801
Tax Map 222, Lot 19

Prepared for:

635 Sagamore Development LLC
3612 Lafayette Rd., Dept 4
Portsmouth, NH 03801

Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
March 18, 2024
Revised April 15, 2024
Revised August 8, 2024
Revised October 22, 2024
Revised November 19, 2024
JBE Project No. 18134.1

Inspection and Maintenance of Facilities and Property

A. Maintenance of Common Facilities or Property

1. The Condominium Association, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. The Association, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form and shall submit an Operations and Maintenance report on a yearly basis to the Portsmouth Planning Department.

B. General Inspection and Maintenance Requirements

1. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:

    a. Roadway and driveways
    b. Vegetation and landscaping
    c. Sediment Forebay
    d. Bioretention system
    e. Catch Basins & Yard Drains
    f. Stone Drip Edges
    g. Stone Underneath Decks
    h. Culverts
    i. Rip-Rap Outlet Protection Aprons
    j. Sand Absorption Areas

2. Maintenance of permanent measures shall follow the following schedule:

    a. Normal winter roadway maintenance including plowing and snow removal. Road sweeping at the end of every winter, preferably before the start of the spring rain season.

    b. **Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately. **Annual inspection** of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind, if they are found to be dead or dying.

    c. Cleaning Criteria for all Sedimentation Forebays: Sediment shall be removed from the sedimentation chamber (forebay) when it accumulates to a depth of more than 12 inches (30 cm) or 10 percent of the pretreatment volume. The sedimentation forebay shall be cleaned of vegetation if persistent standing water and wetland vegetation becomes dominant. The cleaning interval is once every year. A dry sedimentation forebay is the optimal condition while in practice this condition is rarely achieved. The sedimentation chamber, forebay, and treatment cell outlet devices shall be cleaned when drawdown

times exceed 60 to 72 hours. Materials can be removed with heavy construction equipment; however, this equipment shall not track on the wetland surface. Revegetate disturbed areas as necessary. Removed sediments shall be dewatered (if necessary) and disposed of in an acceptable manner. Remove excessive vegetative growth with the exception of grass.

d. Bioretention Systems:

- Visually inspect monthly and repair erosion. Use small stones to stabilize erosion along drainage paths.
- Check the pH once a year if grass is not surviving. Apply an alkaline product, such as limestone, if needed.
- Re-seed any bare areas by hand as needed.
- Immediately after the completion of cell construction, water grass for 14 consecutive days unless there is sufficient natural rainfall.
- Once a month (more frequently in the summer), the land owner or Association shall visually inspect vegetation for disease or pest problems and treat as required.
- During times of extended drought, look for physical features of stress. Water in the early morning as needed.
- Weed regularly, if needed.
- After rainstorms, inspect the cell and make sure that drainage paths are clear and that ponding water dissipates over 4-6 hours. (Water may pond for longer times during the winter and early spring.)
- Twice annually, inspect the outlet control structures to ensure that they are not clogged and correct any clogging found as needed.
- Any debris and sediment accumulations shall be removed from the outlet structures, overflow risers, and emergency spillways and disposed of properly.
- Inspect outlet structure for deterioration and or clogging.
- If erosion is evident on the berm or emergency spillway, stabilize the affected area by seeding. Trees must not be allowed to grow in these areas.
- Remove excessive vegetative growth with the exception of grass.
- KEEP IN MIND, THE BIORETENTION CELL IS NOT A POND. IT SHALL NOT PROVIDE A BREEDING GROUND FOR MOSQUITOES. MOSQUITOES NEED AT LEAST FOUR (4) DAYS OF STANDING WATER TO DEVELOP AS LARVA.

e. **Annual inspection** of catch basins and yard drains to determine if they need to be cleaned. Catch basins and yard drains are to be cleaned if the depth of deposits is greater than one-half the depth from the basin bottom to the invert of the lowest pipe or opening into or out of the basin. If a catch basin or yard drain significantly exceeds the one-half depth standard during the inspection, then it shall be cleaned more frequently. If woody debris or trash accumulates in the catch basin or yard drain, then it shall be cleaned on a weekly basis. The catch basin or yard drain can be cleaned either manually or by specially designed equipment including, but not limited to, bucket loaders and vacuum pumps. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if

the materials meet the EPA criteria for hazardous waste. This will help determine how the materials shall be stored, treated, and disposed. Grease hoods are to be wiped clean and the rags disposed of properly. Debris obscuring the grate inlet shall also be removed.

f. Stone drip edges:

Units 3 & 4 feature stone drip edges to collect roof runoff into a pipe in order to direct it into the stone areas underneath the unit decks. These practices shall be lined and are not intended for infiltration. The following course of action will help assure that the roof drip edges are maintained to preserve its effectiveness.

In the spring and fall, visually inspect the area around the edges and repair any erosion. Use small stones to stabilize erosion along drainage paths. Inspect stone area to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation shall not be allowed to become established in stone areas, and/or any debris removed from the void spaces between the stones. Remove any excessive vegetation that grows in the voids of the stones.

g. Stone underneath decks:

Units 3 and 4 feature stone areas underneath their associated rear decks for infiltration of roof runoff. The following guidelines will help ensure proper functioning of the system.

In the spring and fall, visually inspect the area around the edges and repair any erosion. Use small stones to stabilize erosion along drainage paths. Inspect stone area to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation shall not be allowed to become established in stone areas, and/or any debris removed from the void spaces between the stones. Remove any excessive vegetation that grows in the voids of the stones.

h. **Inspection** of culvert inlets and outlets at least **once per month** during the rainy season (March to November). Any debris is to be removed and disposed of properly.

i. Rock riprap shall be **inspected annually** in order to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock shall be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation must not be allowed to become established in riprap areas, and/or any debris removed from the void spaces between the rocks. Remove any excessive vegetation that grows in the voids of the stone. If the

riprap is adjacent to a stream or other waterbody, the water shall be kept clear of obstructions, debris, and sediment deposits.

j. There are two sand absorption areas intended to infiltrate foundation drain effluent to the extent practicable. One is located approximately 34'-45' past the end of the shared driveway near the southeast property line of the site in order to handle foundation drain effluent for Units 1 and 2. The other is located between the backyards of Units 3 and 4 in order to handle foundation drain effluent for Units 3 and 4. The homeowner for the respective unit or landscape company shall regularly observe the foundation drain outfalls, particularly during autumn and winter, to keep them free of snow, debris or leaves. Any debris or leaves that is either clogging or appears that it may clog the outlets must be removed **immediately** and disposed of properly.

Quarterly, check for sediment buildup and standing water in the small ponding areas for these devices. If more than 1" of standing water is persistently present in these systems, contact a professional engineer to evaluate the issue. Remedies may range from cleaning the overflow spillway to replacing the sand media. Remove any vegetation that grows within the sand absorption areas.

See attached sample forms as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above-mentioned facilities or tasks shall be directed to the project engineer:

Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746
F#: (603) 772-0227

Commitment to maintenance requirements

I agree to complete and/or observe all of the required maintenance practices and their respective schedules as outlined above.

_____

Signature

_____

Print Name

_____

Title

_____

Date

Annual Operations and Maintenance Report

The Condominium Association, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. The Association, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form and shall submit an Operations and Maintenance report on a yearly basis to the Portsmouth Planning Department.

Construction Activity	Date of Inspection	Who Inspected	Findings of Inspector
Roadway and Driveways			
Vegetation and Landscaping			
Sediment Forebay			
Bioretention Pond			
Catch Basins & Yard Drains			

Unit 3 Stone Drip Edge			
Unit 4 Stone Drip Edge			
Stone underneath unit 3 deck			
Stone underneath unit 4 deck			
Culverts			
Rip Rap Outlet Protection			
Units 1&2 Foundation drain outfall sand absorption area			

Units 3&4 Foundation drain outfall sand absorption area			
Swale			
Other (please note):			

Regular Inspection and Maintenance Guidance for Bioretention Systems / Tree Filters

Maintenance of bioretention systems and tree filters can typically be performed as part of standard landscaping. Regular inspection and maintenance is critical to the effective operation of bioretention systems and tree filters to insure they remain clear of leaves and debris and free draining. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less, frequent maintenance needs, depending on a variety of factors including the occurrence of large storm events, overly wet or dry (I.E., drought), regional hydrologic conditions, and the upstream land use.

ACTIVITIES

The most common maintenance activity is the removal of leaves from the system and bypass structure. Visual inspections are routine for system maintenance. This includes looking for standing water, accumulated leaves, holes in the soil media, signs of plant distress, and debris and sediment accumulation in the system. Mulch and/or vegetation coverage is integral to the performance of the system, including infiltration rate and nutrient uptake. Vegetation care is important to system productivity and health.

ACTIVITY	FREQUENCY
A record should be kept of the time to drain for the system completely after a storm event. The system should drain completely within 72 hours.	After every major storm in the first few months, then biannually.
Check to insure the filter surface remains well draining after storm event. **Remedy**: If filter bed is clogged, draining poorly, or standing water covers more than 15% of the surface 48 hours after a precipitation event, then remove top few inches of discolored material. Till or rake remaining material as needed.	
Check inlets and outlets for leaves and debris. **Remedy**: Rake in and around the system to clear it of debris. Also, clear the inlet and overflow if obstructed.	Quarterly initially, biannually, frequency adjusted as needed after 3 inspections
Check for animal burrows and short circuiting in the system **Remedy**: Soil erosion from short circuiting or animal boroughs should be repaired when they occur. The holes should be filled and lightly compacted.	
Check to insure the filter bed does not contain more than 2 inches accumulated material **Remedy**: Remove sediment as necessary. If 2 inches or more of filter bed has been removed, replace media with either mulch or a (50% sand, 20% woodchips, 20% compost, 10% soil) mixture.	
During extended periods without rainfall, inspect plants for signs of distress. **Remedy**: Plants should be watered until established (typical only for first few months) or as needed thereafter.	
Inspect inlets and outlets to ensure good condition and no evidence of deterioration. Check to see if high-flow bypass is functioning. **Remedy**: Repair or replace any damaged structural parts, inlets, outlets, sidewalls.	Annually
Check for robust vegetation coverage throughout the system. **Remedy**: If at least 50% vegetation coverage is not established after 2 years, reinforcement planting should be performed.	
Check for dead or dying plants, and general long term plant health. **Remedy**: This vegetation should be cut and removed from the system. If woody vegetation is present, care should be taken to remove dead or decaying plant Material. Separation of Herbaceous vegetation rootstock should occur when overcrowding is observed.	As needed

JONES&BEACH ENGINEERS INC.

CHECKLIST FOR INSPECTION OF BIORETENTION SYSTEM / TREE FILTERS

Location: Inspector:

Date: Time: Site Conditions:

Date Since Last Rain Event:

Inspection Items	Satisfactory (S) or Unsatisfactory (U)		Comments/Corrective Action
1. Initial Inspection After Planting and Mulching			
Plants are stable, roots not exposed	**S**	**U**	
Surface is at design level, typically 4" below overpass	**S**	**U**	
Overflow bypass / inlet (if available) is functional	**S**	**U**	
2. Debris Cleanup (2 times a year minimum, Spring & Fall)			
Litter, leaves, and dead vegetation removed from the system	**S**	**U**	
Prune perennial vegetation	**S**	**U**	
3. Standing Water (1 time a year, After large storm events)			
No evidence of standing water after 72 hours	**S**	**U**	
4. Short Circuiting & Erosion (1 time a year, After large storm events)			
No evidence of animal burrows or other holes	**S**	**U**	
No evidence of erosion	**S**	**U**	
5. Drought Conditions (As needed)			
Water plants as needed	**S**	**U**	
Dead or dying plants			
6. Overflow Bypass / Inlet Inspection (1 time a year, After large storm events)			
No evidence of blockage or accumulated leaves	**S**	**U**	
Good condition, no need for repair	**S**	**U**	
7. Vegetation Coverage (once a year)			
50% coverage established throughout system by first year	**S**	**U**	
Robust coverage by year 2 or later	**S**	**U**	
8. Mulch Depth (if applicable)(once every 2 years)			
Mulch at original design depth after tilling or replacement	**S**	**U**	
9. Vegetation Health (once every 3 years)			
Dead or decaying plants removed from the system	**S**	**U**	
10. Tree Pruning (once every 3 years)			
Prune dead, diseased, or crossing branches	**S**	**U**	
Corrective Action Needed			**Due Date**
1.			
2.			
3.			

1/15/2011, University of New Hampshire Stormwater Center

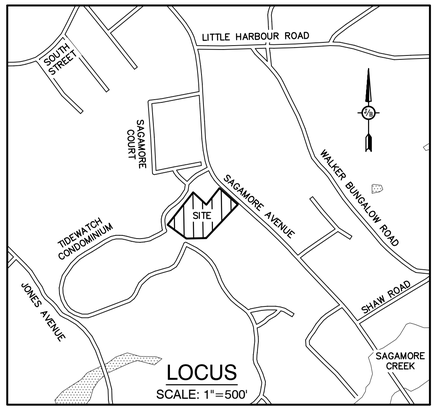
JONES&BEACH ENGINEERS INC.

SINGLE FAMILY CONDOMINIUM
"LUSTER CLUSTER"
TAX MAP 222, LOT 19
635 SAGAMORE AVE., PORTSMOUTH, NH

Know what's **below**
811 before you dig

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		CENTERLINE
		TREE LINE
		STONEWALL
		BARBED WIRE
		FENCE
		SOIL BOUNDARY
		EASEMENT
100	100	MAJOR CONTOUR
98	98	MINOR CONTOUR
VGC	VGC	EDGE OF PAVEMENT
SGC	SGC	VERTICAL GRANITE CURB
		SLOPE GRANITE CURB
		FIBER BERM
		DRAINAGE LINE
		SEWER LINE
		SEWER FORCE MAIN
		GAS LINE
		WATER LINE
		WATER SERVICE
		OVERHEAD ELECTRIC
		UNDERGROUND ELECTRIC
		UNDERDRAIN
		THRUST BLOCK
		IRON PIPE/IRON ROD
		DRILL HOLE
		IRON ROD/DRILL HOLE
100x0	100x0	STONE/GRANITE BOUND
100.00	100.00	SPOT GRADE
100.00	100.00	PAVEMENT SPOT GRADE
99.50	99.50	CURB SPOT GRADE
		BENCHMARK (TBM)
		DOUBLE POST SIGN
		SINGLE POST SIGN
		WELL
		TEST PIT
		TREES AND BUSHES
		UTILITY POLE
		DRAIN MANHOLE
		SEWER MANHOLE
		HYDRANT
		WATER GATE VALVE
		WATER SHUT OFF
		REDUCER
		SINGLE GRATE CATCH BASIN
		TRANSFORMER
		CULVERT W/FLARED END SECTION
		CULVERT W/STRAIGHT HEADWALL
		STONE CHECK DAM
		DRAINAGE FLOW DIRECTION
		RIPRAP
		PAVEMENT HATCH
		STABILIZED CONSTRUCTION ENTRANCE
		CONCRETE
		GRAVEL
		SNOW STORAGE
		RETAINING WALL



SHEET INDEX

CS	COVER SHEET
C1	EXISTING CONDITIONS PLAN
DM1	DEMOLITION PLAN
C2	SITE PLAN
CS1	CONDOMINIUM SITE PLAN
C3	GRADING AND DRAINAGE PLAN
C4	UTILITY PLAN
L1	LIGHTING PLAN
L2	LANDSCAPE PLAN
P1	DRIVEWAY PLAN AND PROFILE
P2	SEWER PLAN AND PROFILE
H1	HIGHWAY ACCESS PLAN
T1-T2	TRUCK TURNING PLAN
D1-D5	DETAIL SHEET
D6	TC-600 RADAR SPEED SIGN SPECIFICATIONS
E1	EROSION AND SEDIMENT CONTROL DETAILS
	ARCHITECTURAL PLANS

CIVIL ENGINEER / SURVEYOR
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746
CONTACT: JOSEPH CORONATI
EMAIL: JCORONATI@JONESANDBEACH.COM

TRAFFIC ENGINEER
STEPHEN G. PERNAW & COMPANY, INC.
P.O. BOX 1721
CONCORD, NH 03302
(603) 731-8500
CONTACT: STEPHEN PERNAW

SOILS CONSULTANT
GOVE ENVIRONMENTAL SERVICES, INC.
8 CONTINENTAL DRIVE, BLDG 2, UNIT H
EXETER, NH 03833-7507
(603) 418-7260
CONTACT: JAMES GOVE
EMAIL: JGOVE@GESINC.BIZ

LANDSCAPE DESIGNER
LM LAND DESIGN, LLC
11 SOUTH ROAD
BRENTWOOD, NH 03833
(603) 770-7728
CONTACT: LISE MCNAUGHTON

WATER
CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
WATER DIVISION
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
(603) 427-1530

SEWER
CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
SEWER DIVISION
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801
(603) 766-1421

LIGHTING DESIGN
EXPOSURE LIGHTING
501 ISLINGTON STREET,UNIT 1A
PORTSMOUTH, NH 03801
CONTACT: KEN SWEENEY

ELECTRIC
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, NH 03801
(800) 662-7764

TELEPHONE
CONSOLIDATED COMMUNICATIONS
1575 GREENLAND ROAD
GREENLAND, NH 03840
(800) 427-5525

CABLE TV
COMCAST COMMUNICATION CORPORATION
334-B CALEF HIGHWAY
EPPING, NH 03042-2325
(603) 679-5695

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON _____ DATE _____

Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	Date: 2/26/2024
	Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED
PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	COVER SHEET
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
CS
SHEET 1 OF 21
JBE PROJECT NO. 18134.1

635 SAGAMORE AVE, PORTSMOUTH, NH
JBE # 18134.1 REVISION 5: 11/25/24

PLAN REFERENCES:

1. "PLAN OF LAND FOR WILLIAM HINES, PORTSMOUTH, N.H." DATED AUGUST 31, 1979. PREPARED BY EMERY ENGINEERING. R.C.R.D. 9456.
2. "SKETCH OF LOT, 781 SAGAMORE AVE, PORTSMOUTH, N.H.: DATED DECEMBER 1938. PREPARED BY JOHN W. DURGIN. R.C.R.D. 0879.
3. "BOUNDARY SURVEY LOCATED IN PORTSMOUTH, NH. PREPARED FOR TIDEWATCH ASSOCIATES, INC. DATED MARCH 13, 1986. PREPARED BY KIMBALL CHASE COMPANY, INC. R.C.R.D. 14771.

SOIL NOTE

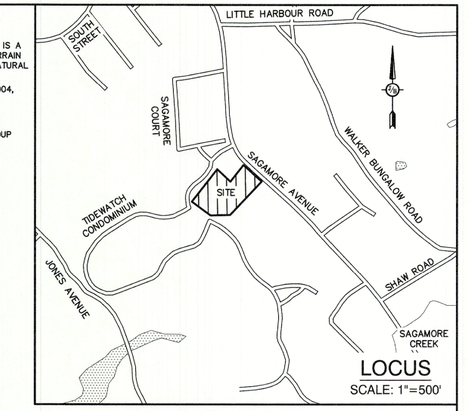
THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL MAP WAS PRODUCED 2-20-2024, 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
41	CHATFIELD-HOLLIS-ROCK OUTCROP COMPLEX	228	B
289	CHATFIELD VARIANT (MODERATELY WELL DRAINED)	327	B
699	URBAN LAND N/A	IMPERVIOUS	

SLOPE PHASE:
0-8% B 8-15% C 15-25% D
25%-50% E 50%+ F



ABUTTERS ACROSS 635 SAGAMORE AVE.:

TAX MAP 222, LOT 14
JOHN O'SULLIVAN
DENISE BROWN
692 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 2350 PG 181

TAX MAP 222, LOT 14-1
BROWN FAMILY REV. TRUST
VINCENT A. & LINDA M. BROWN, TRUSTEES
DENISE BROWN
650 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 6074 PG 238

EXISTING CONDITIONS NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE (1-888-344-7233).
2. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING FEATURES LOCATED ON CITY OF PORTSMOUTH TAX MAP 222, LOT 19.
3. VERTICAL DATUM: NAVD88. HORIZONTAL DATUM: NH STATE PLANE
4. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33015C0270F, DATED JANUARY 29, 2021.
5. NO WETLANDS WERE OBSERVED WITHIN 100' OF THE PROPERTY BOUNDARY. SEE LETTER FROM GOVE ENVIRONMENTAL SERVICES, INC.
6. SURVEY TIE LINES SHOWN HEREON ARE NOT BOUNDARY LINES. THEY SHOULD ONLY BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY THIS SURVEY.

CERTIFICATION:

PURSUANT TO RSA 676:18-III AND RSA 672:14

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEED BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

STATE OF NEW HAMPSHIRE — No. 1030 — MATTHEW J. SALVUCCI — LAND SURVEYOR
SIGNATURE

11/25/24
MATTHEW J. SALVUCCI, LLS 1030 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

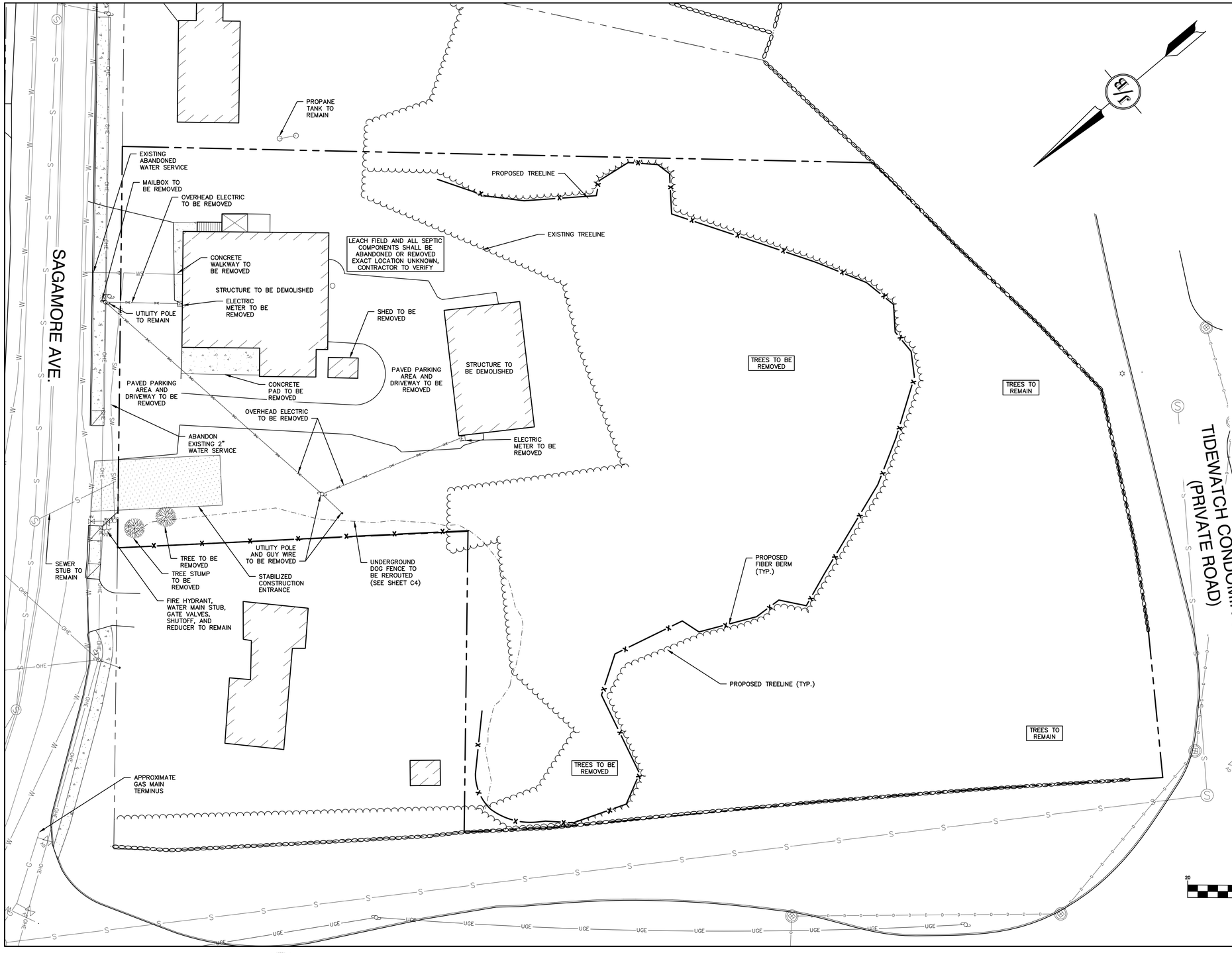
DANIEL JAMES MEDITZ No.18152 LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE
10/23/2024

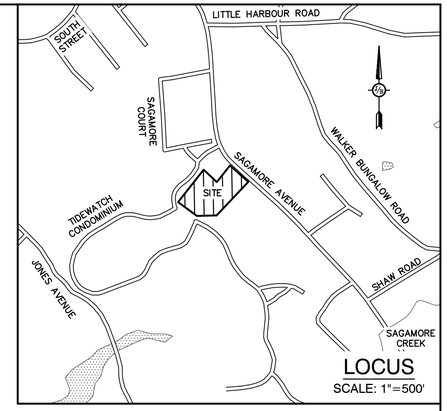
REV.	DATE	REVISION	BY
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM
0	3/18/24	ISSUED FOR REVIEW	KDR

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING CONDITIONS PLAN
Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
C1
SHEET 2 OF 21
JBE PROJECT NO. 18134.1





DEMOLITION NOTES:

1. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC., SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
3. ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE SHALL BE SUBJECT TO LOCAL ORDINANCES.
4. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL CONTAMINATED MATERIAL LOCATED IN THE AREA OF EXISTING LEACHFIELDS IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
5. ALL CURBING, CONCRETE, PAVEMENT, BUILDINGS AND SUBBASE MATERIALS LOCATED WITHIN PROPOSED LANDSCAPED AREAS SHALL BE REMOVED AND REPLACED WITH LOAM MATERIALS SUITABLE FOR LANDSCAPING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS. (SEE ALSO LANDSCAPE PLAN).
6. THE CONTRACTOR SHALL OBTAIN TREE CLEARING PERMIT FROM LOCAL AND STATE AUTHORITIES PRIOR TO START OF CONSTRUCTION (IF REQUIRED).
7. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
8. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND ANY EARTH MOVING OPERATIONS. FIBER BERM SHALL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAILS SHOWN ON SHEET E1.
9. EXCAVATED MATERIALS WILL BE PLACED WITHIN UPLAND AREAS AS FILL MATERIAL OR HAULED OFF-SITE FOR DISPOSAL IN AN APPROPRIATE UPLAND LOCATION.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	

Date: 2/26/2024
Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

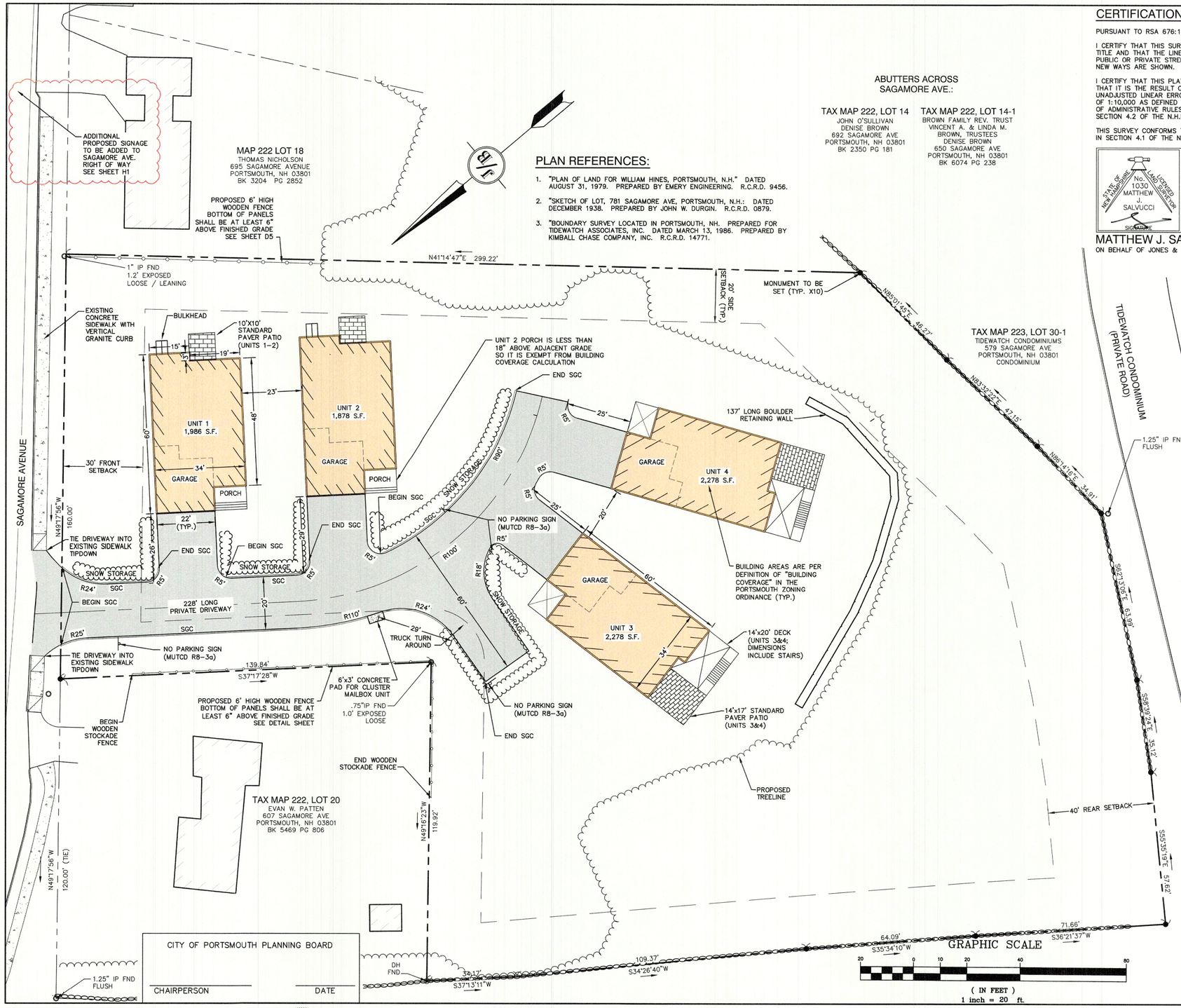
STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
PROFESSIONAL ENGINEER
LICENSED
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DEMOLITION PLAN
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
DM-1
SHEET 3 OF21
JBE PROJECT NO. 18134.1



CERTIFICATION:

PURSUANT TO RSA 676:18–III AND RSA 672:14

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEED BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

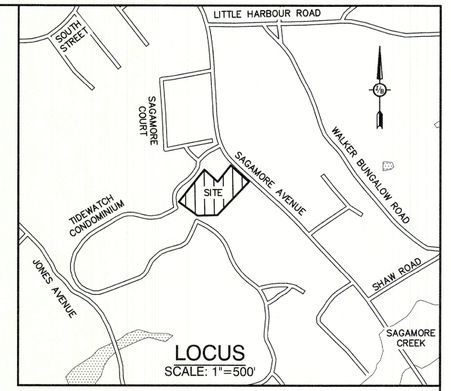
THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

STATE OF NEW HAMPSHIRE — No. 1030 — MATTHEW J. SALVUCCI — LICENSED LAND SURVEYOR — SIGNATURE

4/25/24

MATTHEW J. SALVUCCI, LLS 1030 — DATE:

ON BEHALF OF JONES & BEACH ENGINEERS, INC.



SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO REMOVE EXISTING STRUCTURES AND CONSTRUCT A 4–UNIT MULTI–FAMILY RESIDENTIAL DEVELOPMENT.
2. ZONING DISTRICT: SINGLE RESIDENCE A (SRA)
   LOT AREA MINIMUM = 1 ACRE
   LOT FRONTAGE MINIMUM = 150'
   LOT DEPTH MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 30'
   SIDE SETBACK = 20'
   REAR SETBACK = 40'
   WETLAND SETBACK = 100' FROM WETLANDS GREATER THAN 10,000 S.F.
   MAX. BUILDING HEIGHT = 35' FOR SLOPED ROOF; 30' FOR FLAT ROOF
   MAX. BUILDING COVERAGE = 10%
   BUILDING COVERAGE PROPOSED = 8,420 S.F. = 9.9%
   MAX. DENSITY = 1 DWELLING UNIT / ACRE
   DENSITY PROPOSED = 4 DWELLING UNITS / 1.947 AC. = 2.05 UNITS / ACRE
   (1 UNIT / 21,248 S.F.)
   MIN. OPEN SPACE = 50%
   OPEN SPACE PROPOSED = 68,700 S.F. = 80.0%
3. PARKING CALCULATIONS:
   DWELLING UNIT FLOOR AREA OVER 750 S.F. – 1.3 SPACES REQUIRED PER UNIT
   1.3 * 4 DWELLING UNITS = 5.2 SPACES REQUIRED
   2 SPACES IN GARAGE + 2 SPACES IN DRIVEWAY PER UNIT = 4 SPACES PER UNIT * 4 UNITS
   16 SPACES PROVIDED
   ONE BICYCLE SPACE PROVIDED IN EACH GARAGE (1 REQUIRED FOR EVERY 5 DWELLING UNITS PER ZONING)
4. ON MAY 23, 2023, THE PORTSMOUTH, NH ZONING BOARD OF ADJUSTMENT VOTED TO APPROVE VARIANCES FROM THE FOLLOWING SECTIONS OF THE ZONING ORDINANCE:
   A) SECTION 10.513 – TO PERMIT MORE THAN ONE FREE–STANDING DWELLING ON A LOT
   B) SECTION 10.521 – TO PERMIT LESS THAN ONE ACRE PER DWELLING UNIT
5. NHDES SEWER CONNECTION PERMIT NO. , DATED .
6. AS DETERMINED IN THE FIELD BY BRENDEN WALDEN, CWS AND MIKE CUOMO, CWS, THE WETLAND ON THE TIDEWATCH CONDOMINIUM PROPERTY IS FAR OFFSITE AND IT IS APPARENT THAT THE PROPOSED DISTURBANCE WILL BE OUTSIDE OF ITS ASSOCIATED 100 FOOT BUFFER.
7. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON–SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON–SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW.
8. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
9. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33015C0270F, DATED JANUARY 29, 2021.
10. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
11. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.). THIS DOCUMENT IS TO BE KEPT ONSITE AT ALL TIMES AND UPDATED AS REQUIRED.
12. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
13. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND NHDOT STANDARDS AND SPECIFICATIONS (NON–REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.
14. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.
15. SNOW TO BE STORED AT EDGE OF PAVEMENT AND IN AREAS SHOWN ON THE PLANS, OR TRUCKED OFFSITE TO AN APPROVED SNOW DUMPING LOCATION.
16. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
17. AN ACCESS EASEMENT SHALL BE GRANTED TO THE CITY OF PORTSMOUTH FOR ACCESS AND LEAK DETECTION OF THE WATER MAIN, SHUTOFFS, AND METERS ON THE PROPERTY. EASEMENT DESCRIPTION MUST BE APPROVED BY THE CITY'S LEGAL DEPARTMENT AND ACCEPTED BY THE CITY COUNCIL.
18. 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 THE SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
19. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
20. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
21. THE OWNER OF EACH UNIT SHALL STORE TRASH IN THEIR GARAGE. TRASH WILL BE PICKED UP BY A PRIVATE HAULER.
22. THE SUBJECT PARCEL IS NOT LOCATED WITHIN A WELLHEAD PROTECTION OR AQUIFER PROTECTION AREA PER NHDES ONESTOP DATA.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE — DANIEL JAMES MEDITZ No.18152 — LICENSED PROFESSIONAL ENGINEER
10/23/2024

REV.	DATE	REVISION	BY
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM
0	3/18/24	ISSUED FOR REVIEW	KDR

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: SITE PLAN

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
C2
SHEET 4 OF 21
JBE PROJECT NO. 18134.1

ABUTTERS ACROSS SAGAMORE AVE.:

TAX MAP 222, LOT 14
JOHN O'SULLIVAN
DENISE BROWN
692 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 2350 PG 181

TAX MAP 222, LOT 14-1
BROWN FAMILY REV. TRUST
VINCENT A. & LINDA M. BROWN, TRUSTEES
DENISE BROWN
650 SAGAMORE AVE
PORTSMOUTH, NH 03801
BK 6074 PG 238

MAP 222 LOT 18
THOMAS NICHOLSON
695 SAGAMORE AVENUE
PORTSMOUTH, NH 03801
BK 3204 PG 2852

PLAN REFERENCES:

1. "PLAN OF LAND FOR WILLIAM HINES, PORTSMOUTH, N.H." DATED AUGUST 31, 1979. PREPARED BY EMERY ENGINEERING. R.C.R.D. 9456.
2. "SKETCH OF LOT, 781 SAGAMORE AVE, PORTSMOUTH, N.H.; DATED DECEMBER 1938. PREPARED BY JOHN W. DURGIN. R.C.R.D. 0879.
3. "BOUNDARY SURVEY LOCATED IN PORTSMOUTH, NH. PREPARED FOR TIDEWATCH ASSOCIATES, INC. DATED MARCH 13, 1986. PREPARED BY KIMBALL CHASE COMPANY, INC. R.C.R.D. 14771.

GENERAL LEGEND

- EXISTING PROPERTY LINE
- ABUTTER PROPERTY LINE
- PROPERTY LINE SETBACK
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED ROAD CENTERLINE
- IRON PIPE / IRON ROD
- DRILL HOLE
- IRON ROD TO BE SET

CONDOMINIUM SITE PLAN CERTIFICATION:

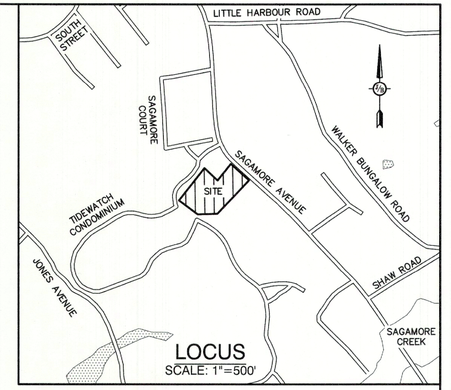
I CERTIFY THAT THIS PLAN FULLY AND ACCURATELY DEPICTS THE LOCATION AND DIMENSIONS OF THE LAND AND EXISTING IMPROVEMENTS SHOWN THEREON AND TO THE EXTEND FEASIBLE, ALL EASEMENTS APPURTENANT THERETO, THAT UNITS 1-4 ARE NOT YET BEGUN AND THIS PLAN COMPLIES WITH NH RSA 356-B20 (1).

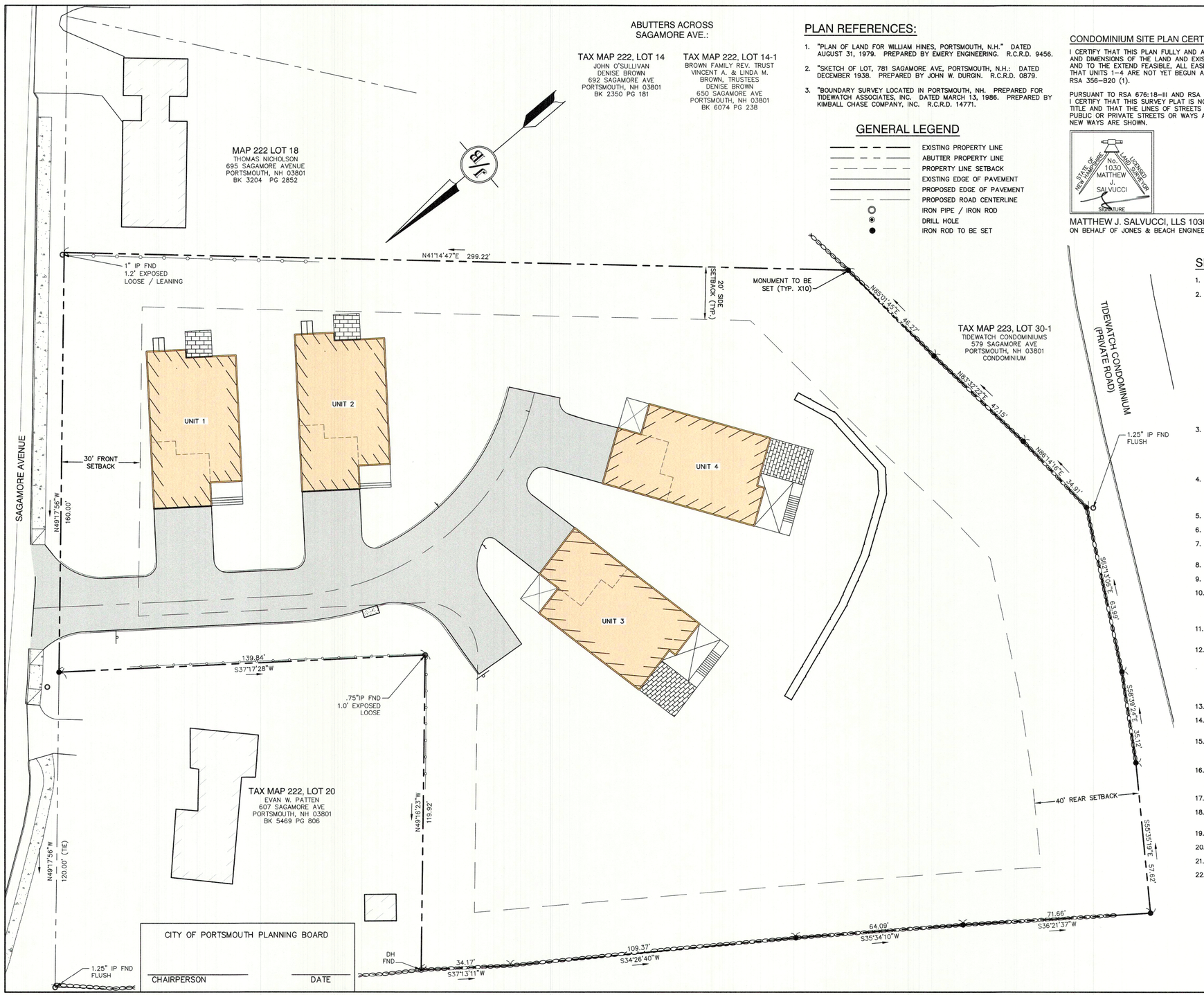
PURSUANT TO RSA 676:18-III AND RSA 672:14
I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

STATE OF NEW HAMPSHIRE — No. 1030 — MATTHEW J. SALVUCCI — LICENSED LAND SURVEYOR — SIGNATURE

11/25/24

MATTHEW J. SALVUCCI, LLS 1030 DATE:
ON BEHALF OF JONES & BEACH ENGINEERS, INC.





CITY OF PORTSMOUTH PLANNING BOARD

CHAIRPERSON _____ DATE _____

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO REMOVE EXISTING STRUCTURES AND CONSTRUCT A 4-UNIT MULTI-FAMILY RESIDENTIAL DEVELOPMENT.
2. ZONING DISTRICT: SINGLE RESIDENCE A (SRA)
   LOT AREA MINIMUM = 1 ACRE
   LOT FRONTAGE MINIMUM = 150'
   LOT DEPTH MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 30'
   SIDE SETBACK = 20'
   REAR SETBACK = 40'
   WETLAND SETBACK = 100' FROM WETLANDS GREATER THAN 10,000 S.F.
   MAX. BUILDING HEIGHT = 35' FOR SLOPED ROOF; 30' FOR FLAT ROOF
   MAX. BUILDING COVERAGE = 10%
   BUILDING COVERAGE PROPOSED = 8,476 S.F. = JUST UNDER 10%
   MAX. DENSITY = 1 DWELLING UNIT / ACRE
   DENSITY PROPOSED = 4 DWELLING UNITS / 1.947 AC. = 2.05 UNITS / ACRE
   (1 UNIT / 21,248 S.F.)
   MIN. OPEN SPACE = 50%
   OPEN SPACE PROPOSED = 68,700 S.F. = 80.0%
3. PARKING CALCULATIONS:
   DWELLING UNIT FLOOR AREA OVER 750 S.F. - 1.3 SPACES REQUIRED PER UNIT
   1.3 * 4 DWELLING UNITS = 5.2 SPACES REQUIRED
   2 SPACES IN GARAGE + 2 SPACES IN DRIVEWAY PER UNIT = 4 SPACES PER UNIT * 4 UNITS
   16 SPACES PROVIDED
   ONE BICYCLE SPACE PROVIDED IN EACH GARAGE (1 REQUIRED FOR EVERY 5 DWELLING UNITS PER ZONING)
4. ON MAY 23, 2023, THE PORTSMOUTH, NH ZONING BOARD OF ADJUSTMENT VOTED TO APPROVE VARIANCES FROM THE FOLLOWING SECTIONS OF THE ZONING ORDINANCE:
   A) SECTION 10.513 - TO PERMIT MORE THAN ONE FREE-STANDING DWELLING ON A LOT
   B) SECTION 10.521 - TO PERMIT LESS THAN ONE ACRE PER DWELLING UNIT
5. NHDES SEWER CONNECTION PERMIT NO. , DATED .
6. AS-BUILT CONDOMINIUM SITE AND FLOOR PLANS SHALL BE RECORDED.
7. BASIS OF BEARING:
   HORIZONTAL - NH STATE PLANE. VERTICAL - NAVD88.
8. ALL BOOK AND PAGE NUMBERS REFER TO THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
9. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE CITY OF PORTSMOUTH TAX RECORDS AND ARE SUBJECT TO CHANGE.
10. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.
11. SURVEY TIE LINES SHOWN HEREON ARE NOT BOUNDARY LINES. THEY MUST ONLY BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY THIS SURVEY
12. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW.
13. THIS PLAN IS THE RESULT OF A CLOSED TRAVERSE WITH A RAW, UNADJUSTED LINEAR ERROR OF CLOSURE GREATER THAN 1 IN 15,000
14. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33015C0270F, DATED JANUARY 29, 2021.
15. AN ACCESS EASEMENT SHALL BE GRANTED TO THE CITY OF PORTSMOUTH FOR ACCESS AND LEAK DETECTION OF THE WATER MAIN, SHUTOFFS, AND METERS ON THE PROPERTY. EASEMENT DESCRIPTION MUST BE APPROVED BY THE CITY'S LEGAL DEPARTMENT AND ACCEPTED BY THE CITY COUNCIL.
16. 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 THE SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.
17. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
18. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
19. THE OWNER OF EACH UNIT SHALL STORE TRASH IN THEIR GARAGE. TRASH WILL BE PICKED UP BY A PRIVATE HAULER.
20. THE SUBJECT PARCEL IS NOT LOCATED WITHIN A WELLHEAD PROTECTION OR AQUIFER PROTECTION AREA PER NHDES ONESTOP DATA.
21. THE IMPROVEMENTS SHOWN HEREON HAVE NOT YET BEEN CONSTRUCTED.
22. LIMITED COMMON AREAS TO BE DESCRIBED IN THE CONDOMINIUM DOCUMENTS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE — DANIEL JAMES MEDITZ No.18152 — LICENSED PROFESSIONAL ENGINEER — 10/23/2024

REV.	DATE	REVISION	BY
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM
0	3/18/24	ISSUED FOR REVIEW	KDR

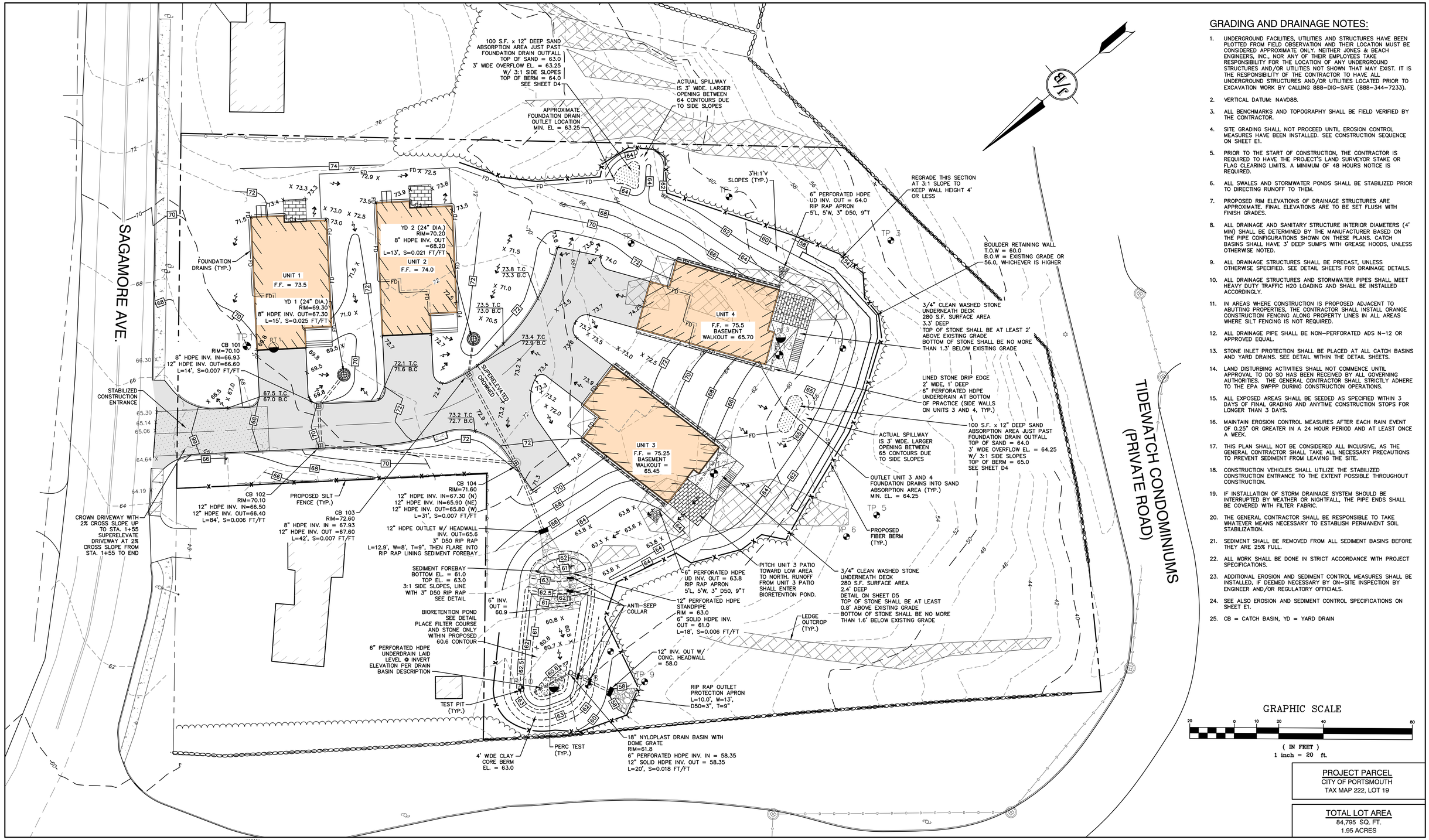
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: CONDOMINIUM SITE PLAN

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
CS1
SHEET 5 OF 21
JBE PROJECT NO. 18134.1



GRADING AND DRAINAGE NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
2. VERTICAL DATUM: NAVD88.
3. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
4. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1.
5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
6. ALL SWALES AND STORMWATER PONDS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
7. PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
8. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
9. ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED. SEE DETAIL SHEETS FOR DRAINAGE DETAILS.
10. ALL DRAINAGE STRUCTURES AND STORMWATER PIPES SHALL MEET HEAVY DUTY TRAFFIC H20 LOADING AND SHALL BE INSTALLED ACCORDINGLY.
11. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
12. ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL.
13. STONE INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS AND YARD DRAINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
14. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
15. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING AND ANYTIME CONSTRUCTION STOPS FOR LONGER THAN 3 DAYS.
16. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.25" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
17. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
18. CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
19. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
20. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
21. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
22. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
23. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
24. SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1.
25. CB = CATCH BASIN, YD = YARD DRAIN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

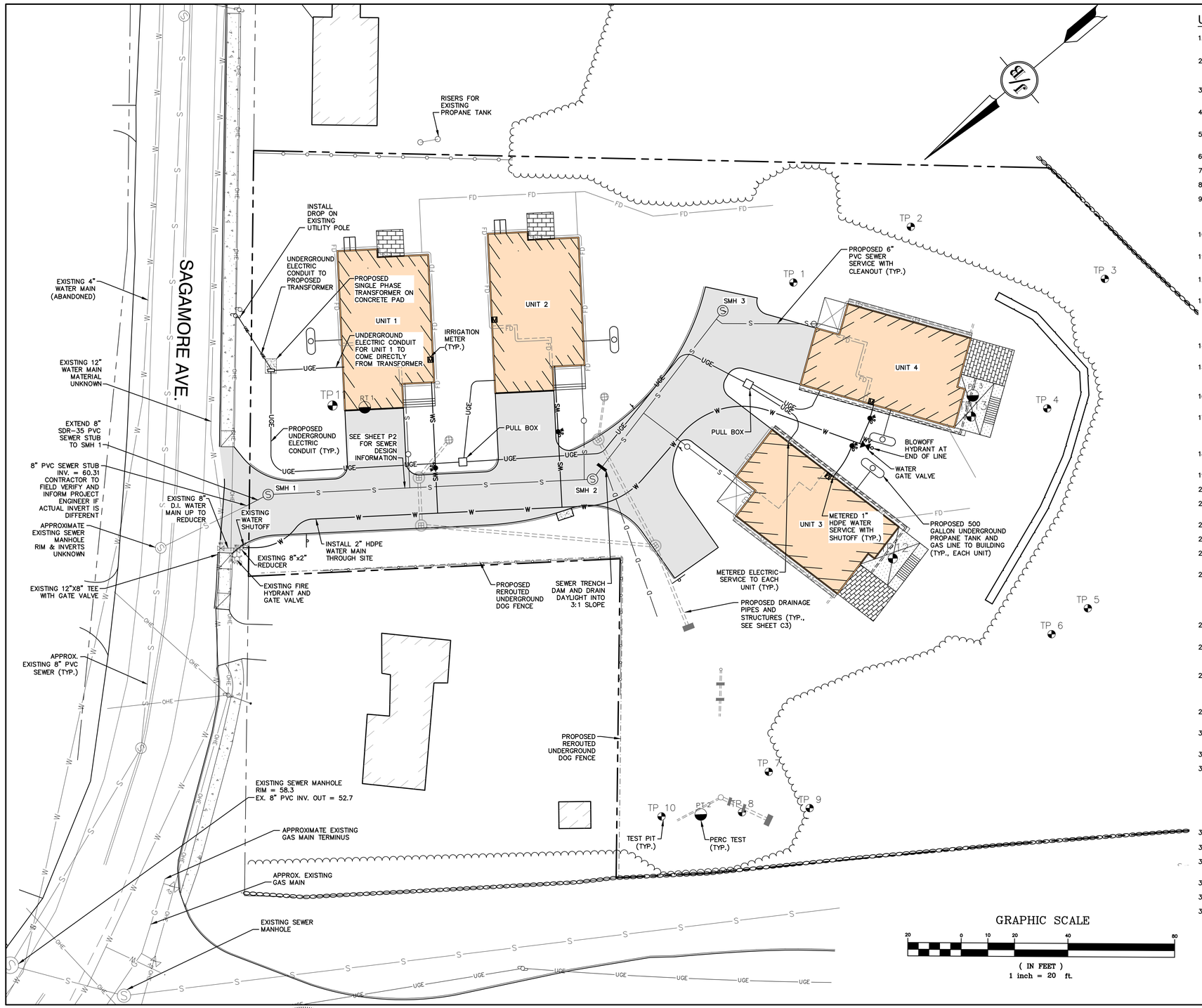
STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ No.18152
PROFESSIONAL ENGINEER
LICENSED
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: GRADING AND DRAINAGE PLAN
Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
C3
SHEET 6 OF 21
JBE PROJECT NO. 18134.1



UTILITY NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, WATER, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE CITY STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
7. BUILDINGS TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
9. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
10. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
11. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H20 LOADS. (THIS APPLIES TO SMH 1)
12. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
13. SANITARY SEWER FLOW CALCULATIONS:
    4 – FOUR BEDROOM UNITS. ASSUME 5 PEOPLE IN 4–BEDROOM UNITS.
    PER METCALF & EDDY TABLE 3-2: 61 GPD/PERSON IN 5 PERSON HOUSE
    (61 GPD * 5 PEOPLE * 4) = 1,220 GPD.
    1,000 GPD ADDITIONAL ESTIMATED WATER USE FOR IRRIGATION
14. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
15. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
16. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
17. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICH EVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
18. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
19. WATER LINE TO BE DEFLECTED IN LIEU OF THRUST BLOCKS AT BENDS.
20. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
21. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
22. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
23. ALL WATER LINES SHALL HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
24. ALL GRAVITY SEWER PIPE, MANHOLES, AND FORCE MAINS SHALL BE TESTED ACCORDING TO NHDES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWAGE AND WASTEWATER TREATMENT FACILITIES, CHAPTER ENV-WQ 700. ADOPTED ON 10-15-14.
25. ENV-WQ 704.06 GRAVITY SEWER PIPE TESTING: GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY USE OF LOW-PRESSURE AIR TESTS CONFORMING WITH ASTM F1417-92(2005) OR UNI-BELL PVC PIPE ASSOCIATION UNI-B-6. LINES SHALL BE CLEANED AND VISUALLY INSPECTED AND TRUE TO LINE AND GRADE. DEFLECTION TESTS SHALL TAKE PLACE AFTER 30 DAYS FOLLOWING INSTALLATION AND THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.
26. ENV-WQ 704.17 SEWER MANHOLE TESTING: SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST PRIOR TO BACKFILLING AND PLACEMENT OF SHELVES AND INVERTS.
27. SANITARY SEWER LINES SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM AN EXISTING OR PROPOSED WATER LINE. WHEN A SEWER LINE CROSSES UNDER A WATER LINE, THE SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATERMAIN. THE SEWER LINE SHALL ALSO MAINTAIN A VERTICAL SEPARATION OF NOT LESS THAN 18 INCHES.
28. SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6 FEET BELOW GRADE IN ALL ROADWAY LOCATIONS, AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. PROVIDE TWO-INCHES OF R-10 FOAM BOARD INSULATION 2-FOOT WIDE TO BE INSTALLED 6-INCHES OVER SEWER PIPE IN AREAS WHERE DEPTH IS NOT ACHIEVED. A WAIVER FROM THE DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER ENGINEERING BUREAU IS REQUIRED PRIOR TO INSTALLING SEWER AT LESS THAN MINIMUM COVER.
29. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO FOUR (4) HOURS OR LESS AS DESIGNATED BY THE CITY SEWER DEPARTMENT.
30. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
31. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
32. DISINFECTION OF WATER MAINS SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH AWWA STANDARD C651, LATEST EDITION. THE BASIC PROCEDURE TO BE FOLLOWED FOR DISINFECTING WATER MAINS IS AS FOLLOWS:
    a. PREVENT CONTAMINATING MATERIALS FROM ENTERING THE WATER MAIN DURING STORAGE, CONSTRUCTION, OR REPAIR.
    b. REMOVE, BY FLUSHING OR OTHER MEANS, THOSE MATERIALS THAT MAY HAVE ENTERED THE WATER MAINS.
    c. CHLORINATE ANY RESIDUAL CONTAMINATION THAT MAY REMAIN, AND FLUSH THE CHLORINATED WATER FROM THE MAIN.
    d. PROTECT THE EXISTING DISTRIBUTION SYSTEM FROM BACKFLOW DUE TO HYDROSTATIC PRESSURE TEST AND DISINFECTION PROCEDURES.
    e. DETERMINE THE BACTERIOLOGICAL QUALITY BY LABORATORY TEST AFTER DISINFECTION.
    f. MAKE FINAL CONNECTION OF THE APPROVED NEW WATER MAIN TO THE ACTIVE DISTRIBUTION SYSTEM
33. DOMESTIC SHUTOFFS & VALVES SHALL BE PAINTED BLUE.
34. SEWER TRENCH DAMS SHALL BE INSTALLED EVERY 75' ALONG GRAVITY SEWER PIPE.
35. IF IRRIGATION IS TO BE USED, THE PIPING SYSTEM SHALL BE REVIEWED AND APPROVED BY THE PORTSMOUTH CITY PLANNER, CITY ENGINEER, AND THE WATER DEPARTMENT PRIOR TO INSTALLATION.
36. WATER LINE TO BE CONSTRUCTED PER CITY OF PORTSMOUTH SPECIFICATIONS.
37. AN AS-BUILT PLAN OF THE WATER LINE IS TO BE PREPARED AND SUBMITTED TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.
38. IRRIGATION METERS SHALL BE USED IF IRRIGATION IS DESIRED. IF USED, THEY SHALL BE ABOVE GROUND AND INSIDE OF A STRUCTURE, AND SHALL HAVE BACKFLOW ENCLOSURES.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	Date: 2/26/2024
	Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

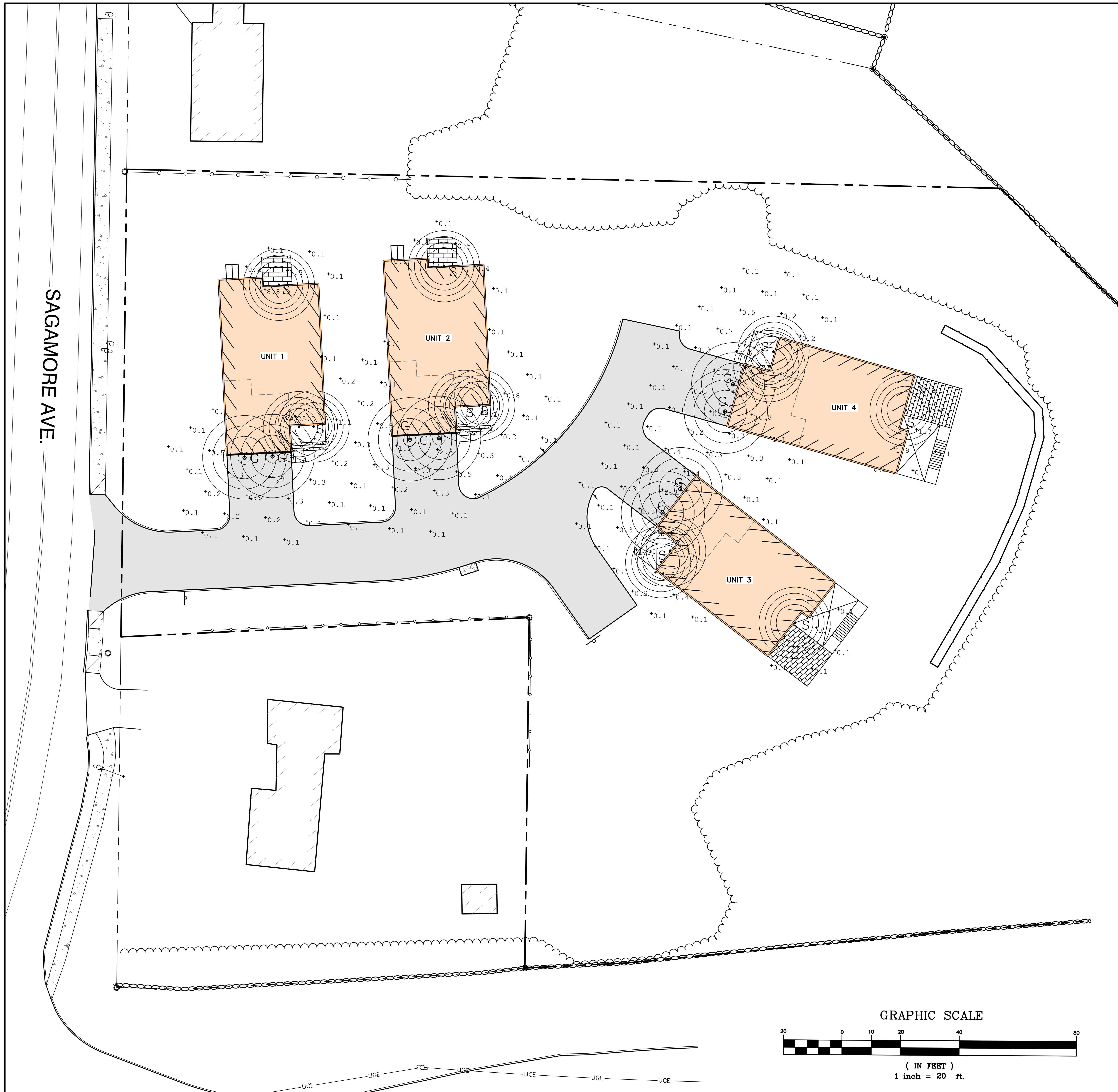
STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	UTILITY PLAN
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
C4
SHEET 7 OF 21
JBE PROJECT NO. 18134.1



LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY EXPOSURE LIGHTING, 501 ISLINGTON ST, UNIT 1A, PORTSMOUTH, NH 03801, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHALL BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.

UAA-30146
Atlantic 7 Small Shade Surface
LIGMAN LIGHTING USA

29w COB 1105 Lumens
IP55 • Suitable For Wet Locations
IK04 • Impact Resistant
Weight 14 lbs

Mounting Detail

Classic urban neighborhood wall-mounted luminaire family. Timeless lines coupled with unparalleled build quality, flexibility and performance.

A small and medium size shade decorative wall lantern with symmetrical light distribution. Developed to complement the Atlantic bollard and Atlantic pillar light. Designed for lighting of entrances and footpaths.
Custom wattages can be provided to suit customer and Title 24 requirements. (Specify total watts per fixture)

All Ligman fixtures can be manufactured using a special pre-treatment and coating process that ensures the fixture can be installed in natatoriums as well as environments with high concentrations of chlorine or salt and still maintain the 5 year warranty. For this natatorium rated process please specify NAT in options.

Construction

BUG Rating
B1 - U3 - G1

Hardware
Provided Hardware is Marine grade 316 Stainless steel.

Anti Seize Screw Holes
Tapped holes are infused with a special anti seize compound designed to prevent seizure of threaded connections, due to electrolysis from heat, corrosive atmospheres and moisture.

Opal Borosilicate Glass Lens
Provided with opal borosilicate impact resistant glass.

Optics & LED
Precise optic design provides exceptional light control and precise distribution of light.
LED CRI > 80

Lumen - Maintenance Life
L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

UCI-30131
Cinati Type I, II, III & IV Surface
microVos TECHNOLOGY
LIGMAN LIGHTING USA

18w LED 2309 Lumens | 30w LED 3848 Lumens
21w COB 1984 Lumens
IP65 • Suitable For Wet Locations
IK08 • Impact Resistant (Vandal Resistant)
Weight 8 lbs

Mounting Detail

Construction

Aluminum
Less than 0.1% copper content – Marine Grade 6060 extruded & LM6 Aluminum High Pressure die casting provides excellent mechanical strength, clean detailed product lines and excellent heat dissipation.

Pre paint
8 step degrease and phosphate process that includes deoxidizing and etching as well as a zinc and nickel phosphate process before product painting.

Memory Retentive -Silicon Gasket
Provided with special injection molded "fit for purpose" long life high temperature memory retentive silicon gaskets. Maintains the gaskets exact profile and seal over years of use and compression.

Thermal management
LM6 Aluminum is used for its excellent mechanical strength and thermal dissipation properties in low and high ambient temperatures. The superior thermal heat sink design by Ligman used in conjunction with the driver, controls thermals below critical temperature range to ensure maximum luminous flux output, as well as providing long LED service life and ensuring less than 10% lumen depreciation at 50,000 hours.

Surge Suppression
Standard 10kv surge suppressor provided with all fixtures.

BUG Rating
B2 - U0 - G0

Finishing
All Ligman products go through an extensive finishing process that includes fettling to improve paint adherence.

Paint
UV Stabilized 4.9Mil thick powder coat paint and baked at 200 Deg C. This process ensures that Ligman products can withstand harsh environments. Rated for use in natatoriums.

Inspired by Nature Finishes
The Inspired by nature Finishing is a unique system of decorative powder coating. Our metal decoration process can easily transform the appearance of metal or aluminum product into a wood grain finish.

This patented technology enables the simulation of wood grain, and even marble or granite finish through the use of decorative powder coating.

The wood grain finish is so realistic that it's almost undistinguishable from real wood, even from a close visual inspection. The system of coating permeates the entire thickness of the coat and as a result, the coating cannot be removed by normal rubbing, chipping, or scratching.

The Coating Process
After pre-treatment the prepared parts are powder coated with a specially formulated polyurethane powder. This powder provides protection against wear, abrasion, impact and corrosion and acts as the relief base color for the finalized metal decoration.

The component is then wrapped with a sheet of non-porous film with the selected decoration pattern printed on it using special high temperature inks.

This printed film transfer is vacuum-sealed to the surface for a complete thermo print and then transferred into a customized oven. The oven transforms the ink into different forms within the paint layer before it becomes solid. Finally, the film is removed, and a vivid timber look on aluminum remains.

Wood grain coating can create beautiful wood-looking products of any sort. There are over 300 combinations of designs currently in use. Wood grains can be made with different colors, designs, etc.

Our powder coatings are certified for indoor and outdoor applications and are backed by a comprehensive warranty. These coatings rise to the highest conceivable standard of performance excellence and design innovation.

Added Benefits
• Resistance to salt-acid room, accelerated aging
• Boiling water, lime and condensed water resistant
• Anti-Graffiti, Anti-Slip, Anti-Microbial, Anti-Scratch
• Super durable (UV restant)
• TGIC free (non-toxic)

Hardware
Provided Hardware is Marine grade 316 Stainless steel.

Anti Seize Screw Holes
Tapped holes are infused with a special anti seize compound designed to prevent seizure of threaded connections, due to electrolysis from heat, corrosive atmospheres and moisture.

Crystal Clear Low Iron Glass Lens
Provided with tempered, impact resistant crystal clear low iron glass ensuring no green glass tinge.

Optics & LED
Precise optic design provides exceptional light control and precise distribution of light.
LED CRI > 80

Lumen - Maintenance Life
L80 /B10 at 50,000 hours (This means that at least 90% of the LED still achieve 80% of their original flux)

Ligman's micro Variable Optical System provides the ability to interchange, mix & rotate optics to provide specific light distributions for optimized spacing and uniformity.

Type I | Type II | Type III | Type IV | Type V

The variable optic system allows for the designer to create hybrid distributions for precise lighting requirements.

HYBRID TYPE I & TYPE IV

Cone-shaped wall-mounted downlight fixtures. Simple clean form hiding multiple high-performance glare free optic choices.

A cone shaped wall wash luminaire. Suitable for outdoor up, or down light applications. This luminaire is provided with precision optics and high powered LEDs, to provide narrow, medium, wide and very wide distributions. The vandal resistant tempered glass is available in clear or lightly frosted versions.

This product is suitable for commercial, as well as residential applications and with the selection of optics available can provide an excellent lighting solution. Integral electronic driver. Fixture is mounted over a 3" octagonal junction box.

To meet International Dark Sky criteria, 3000k or warmer LEDs must be selected and luminaire fix mounted (+/- 15˚ allowable to permit leveling).

Additional Options (Consult Factory For Pricing)

SCBT
Surface Conduit Box Trim

NOTE: This trim covers a shallow single gang, surface mount junction box (Provided by contractor)
Example: Hubbell: - 5322-0 - 1-Gang Weatherproof Box, Five 1/2" in. Threaded Outlets - or - 5332-0 - 1-Gang Weatherproof Box, Five 3/4 in. Threaded Outlets

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Description	Tag	[MANUFAC]
—⊙	8	G	Single	UAA-30146-29W-2-1-W27-01	MOUNTED OVER GARAGE DOORS	LIGMAN
⊙	12	S	Single	UCI-30131-21W-VW-W27-01	MOUNTED AT HOUSE DOORS	LIGMAN

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ No.18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

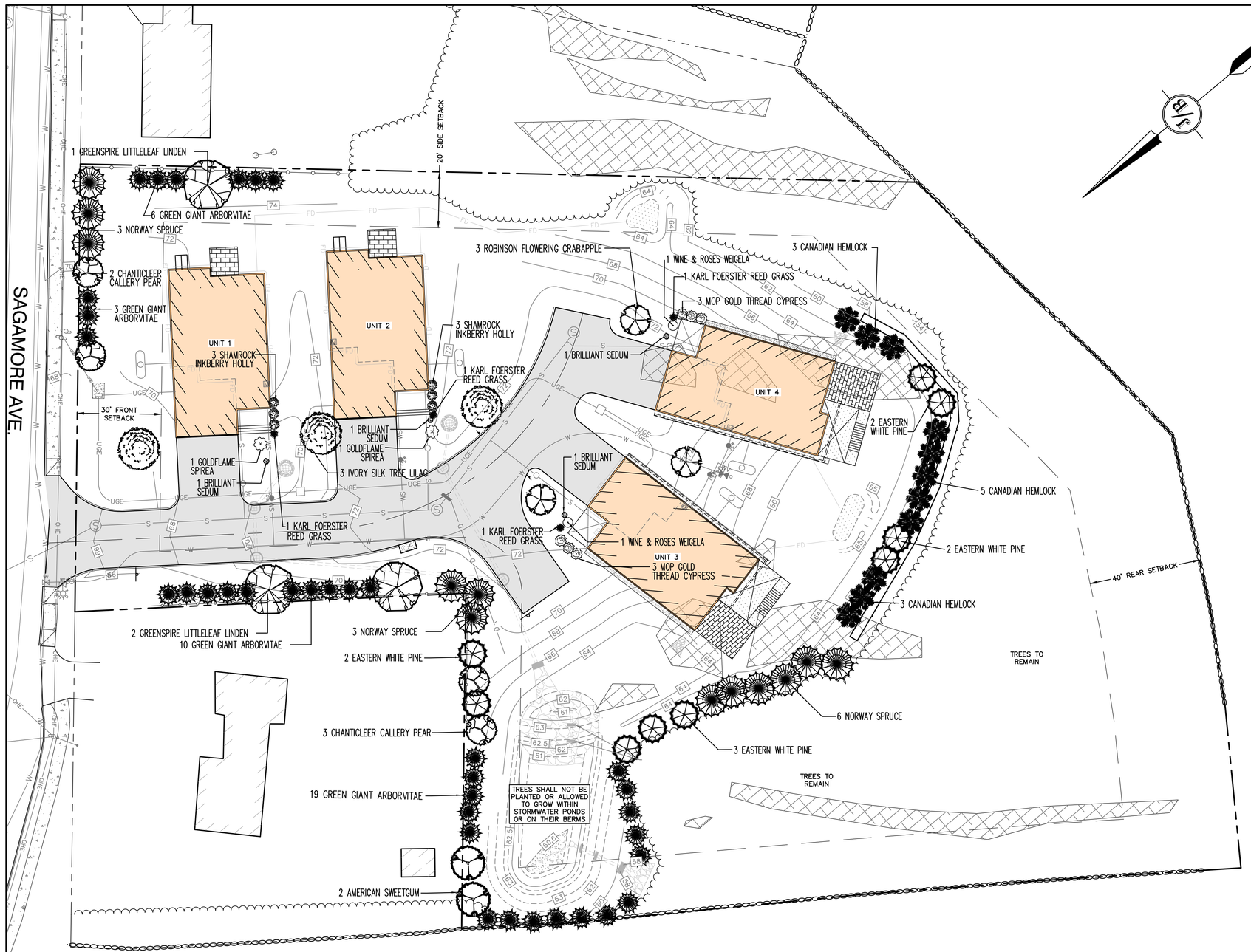
Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: LIGHTING PLAN

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
L1
SHEET 8 OF 21
JBE PROJECT NO. 18134.1



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING FOR CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
5. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
6. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN COMPLETED.
7. ALL WORK AND PLANTS SHALL BE DONE, INSTALLED AND DETAILED IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
8. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
9. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION, EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS SPECIFIED.
10. ALL TREES AND SHRUBS SHALL BE PLANTED IN MULCH BEDS WITH EDGE STRIPS TO SEPARATE TURF GRASS AREAS.
11. THE CONTRACTOR SHALL REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC. FROM ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE. GRASS SEED OR PINE BARK MULCH SHALL BE APPLIED AS DEPICTED ON PLANS.
12. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE DRIPLINE OF THE TREE. THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
13. ALL MULCH AREAS SHALL RECEIVE A 3" LAYER OF SHREDDED PINE BARK MULCH OVER A 10 MIL WEED MAT EQUAL TO 'WEEDBLOCK' BY EASY GARDENER OR DEWITT WEED BARRIER.
14. ALL LANDSCAPED AREAS SHALL HAVE SELECT MATERIALS REMOVED TO A DEPTH OF AT LEAST 9" BELOW FINISH GRADE. THE RESULTING VOID IS TO BE FILLED WITH A MINIMUM OF 9" HIGH-QUALITY SCREENED LOAM AMENDED WITH 3" OF AGED ORGANIC COMPOST.
15. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO CIVIL/SITE DRAWINGS FOR OTHER SITE CONSTRUCTION INFORMATION.
16. IRRIGATION PIPING SYSTEM SHALL BE REVIEWED AND APPROVED BY OWNER AND ENGINEER PRIOR TO INSTALLATION.
17. WITH AUTHORIZATION OF THE PROJECT ENGINEER, PROPOSED TREES ALONG EDGE OF WOODED BUFFER SHALL BE PLACED WHEREVER NECESSARY IN ORDER TO COVER GAPS IN EXISTING WOODED BUFFER IN ORDER TO BLOCK VISIBILITY FROM TIDEWATCH CONDOMINIUM PROPERTY.
18. TREES SHALL NOT BE PLANTED ON BERMS OF STORMWATER PONDS.
19. ALL PLANTING SHALL ADHERE TO THE GENERAL REQUIREMENTS OUTLINED IN SECTION 6.3 AND THE PLANTING REQUIREMENTS OUTLINED IN SECTION 6.4 OF THE PORTSMOUTH SITE PLAN REVIEW REGULATIONS.
20. ALL PLANTING SHALL FOLLOW THE ANSI A300 PART 6 STANDARD PRACTICES FOR PLANTING AND TRANSPLANTING (AS AMENDED).
21. LEDGE SHALL BE REMOVED TO AT LEAST 3 FEET BELOW ALL PROPOSED PLANTINGS, OR PLANTS SHALL BE PLACED ON MOUNDS THAT IN A WAY THAT DOES NOT OBSTRUCT DRAINAGE FLOW TO AN ELEVATION AT LEAST 3 FEET ABOVE THE LEDGE SURFACE, FOR SURVIVABILITY.

Quantity	Botanical Name	Common Name	Size	Growth Habits
4	Calamagrostis x acutiflora 'Karl Foerster'	KARL FOERSTER REED GRASS **	2 Gallon	5' tall narrow grass
6	Chamaecyparis pisifera 'Mop'	MOP GOLD THREAD CYPRESS **	5 Gallon	4'x5' spreading conifer shrub
6	Ilex glabra 'Shamrock'	SHAMROCK INKBERRY HOLLY **	5 Gallon	5'x4' evergreen shrub
2	Liquidambar styraciflua	AMERICAN SWEETGUM **	3" Caliper	60'x40' upright tree
3	Malus x 'Robinson'	ROBINSON FLOWERING CRABAPPLE **	2" Caliper	20'x20' spreading tree
12	Picea abies	NORWAY SPRUCE	8-9 Ft. Ht.	60'x30' conifer tree
9	Pinus strobus	EASTERN WHITE PINE	8-9 Ft. Ht.	60'x30' conifer tree
4	Pyrus calleryana 'Chanticleer'	CHANTICLEER CALLERY PEAR **	2.5" Caliper	30'x15' upright flowering tree
4	Sedum spectabile 'Brilliant'	BRILLIANT SEDUM **	1 Gallon	18" late season color perennial
2	Spiraea japonica 'Goldflame'	GOLDFLAME SPIREA **	5 Gallon	3'x4' flowering shrub
3	Syringa reticulata 'Ivory Silk'	IVORY SILK TREE LILAC	2" Caliper	30'x20' upright flowering tree
38	Thuja plicata 'Green Giant'	GREEN GIANT ARBORVITAE **	7-8 Ft. Ht.	30'x15' conifer tree
3	Tilia cordata 'Greenspire'	GREENSPIRE LITTLELEAF LINDEN **	3" Caliper	50'x35' upright tree
11	Tsuga canadensis	CANADIAN HEMLOCK	8-9 Ft. Ht.	60'x30' conifer tree
2	Weigela florida 'Alexandra'	WINE & ROSES WEIGELA	5 Gallon	4'x5' flowering shrub
**	Denotes plants that are tolerant of urban conditions including road salt, soil compaction, drought, heat, and air pollution.			

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

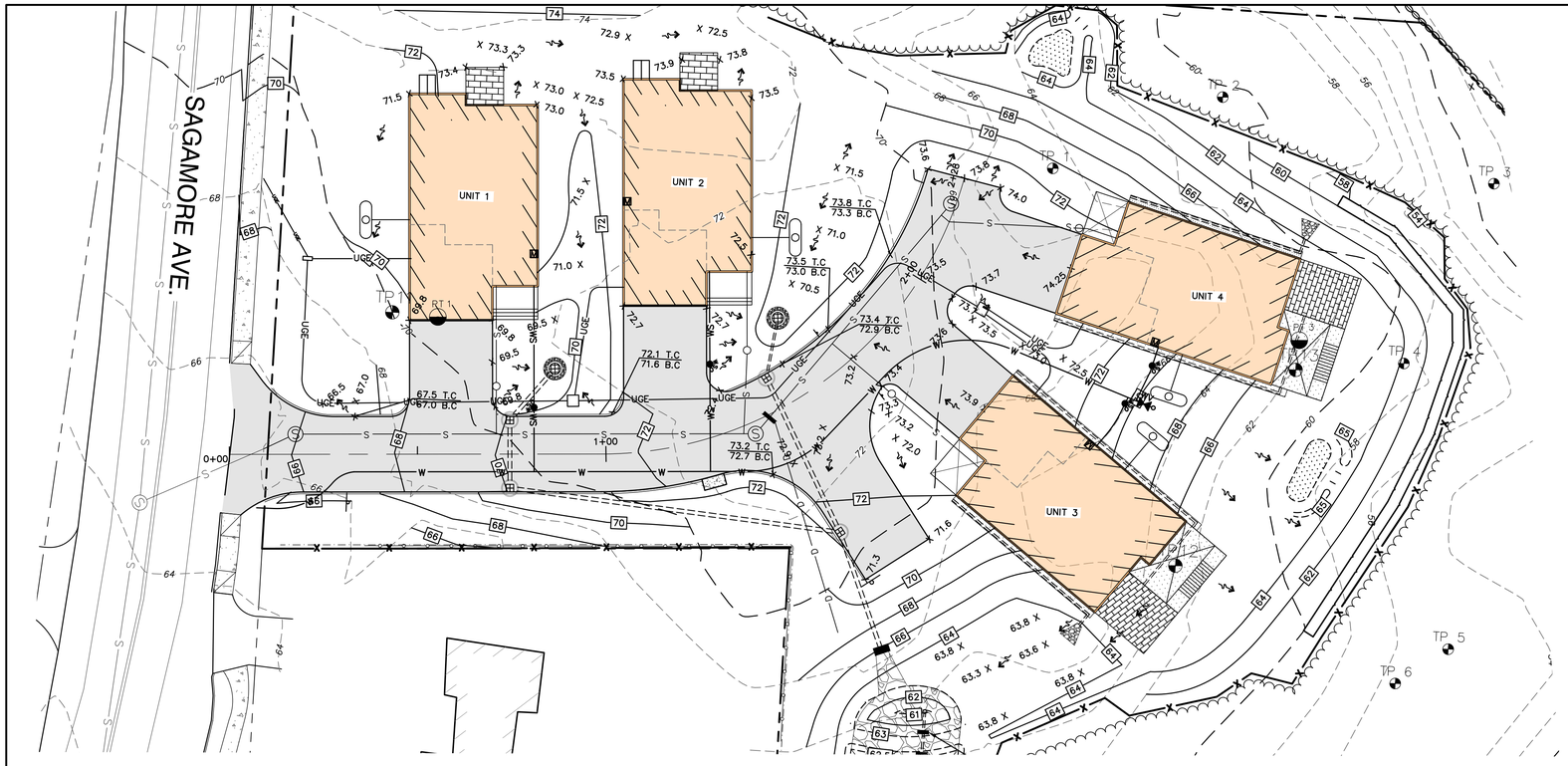
STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

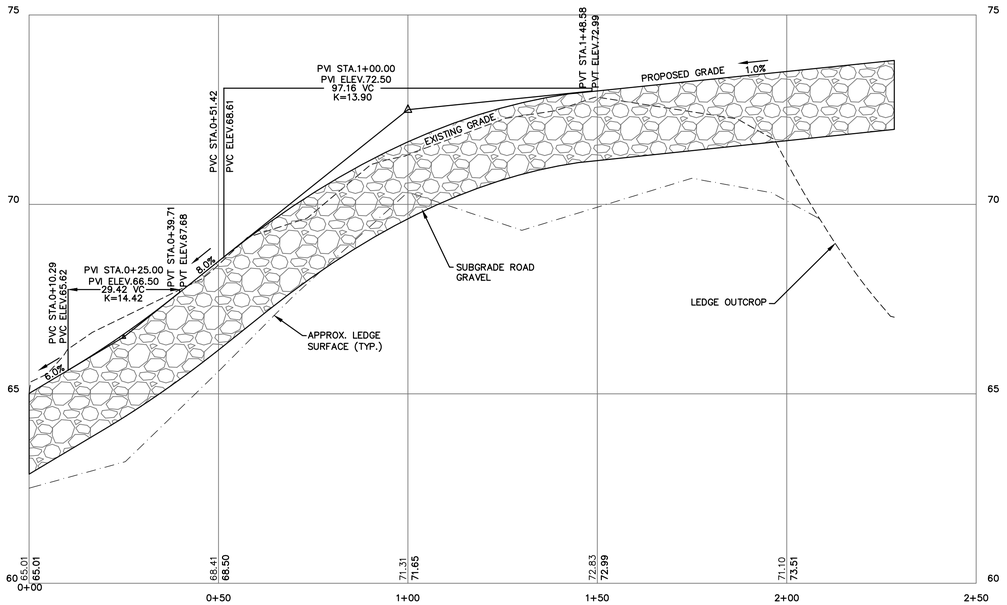
REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: LANDSCAPE PLAN
Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

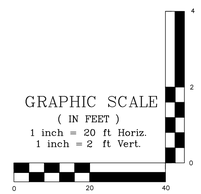
DRAWING No.
L2
SHEET 9 OF 21
JBE PROJECT NO. 18134.1





NOTES:

1. THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE CONSTRUCTION SITE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND BE MADE ACCESSIBLE TO THE PUBLIC. THE CONSTRUCTION SITE OPERATOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA REGIONAL OFFICE SEVEN DAYS PRIOR TO COMMENCEMENT OF ANY WORK ON SITE. EPA WILL POST THE NOI AT HTTP://CFPUB1.EPA.GOV/NPDES/STORMWATER/NOI/NOISEARCH.CFM. AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE" STATUS ON THIS WEBSITE. A COMPLETED NOTICE OF TERMINATION SHALL BE SUBMITTED TO THE NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET:
   A. FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR
   B. ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED. PROVIDE DPW WITH A COPY OF THE NOTICE OF TERMINATION (NOT).
2. ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE CITY, AND NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
3. AS-BUILT PLANS TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE ROADWAY.
4. CONTRACTOR TO COORDINATE AND COMPLETE ALL WORK REQUIRED FOR THE RELOCATION AND/OR INSTALLATION OF ELECTRIC, CATV, TELEPHONE, PER UTILITY DESIGN AND STANDARDS. LOCATIONS SHOWN ARE APPROXIMATE. LOW PROFILE STRUCTURES SHALL BE USED TO THE GREATEST EXTENT POSSIBLE.
5. THIS PLAN HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC. FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
6. SILTATION AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN UNTIL SITE HAS BEEN STABILIZED WITH PERMANENT VEGETATION. SEE DETAIL SHEET E1 FOR ADDITIONAL NOTES ON EROSION CONTROL.
7. ALL DISTURBED AREAS NOT STABILIZED BY OCTOBER 15TH SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE ENGINEER.
8. FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
9. CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
10. DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE: SILT FENCING WILL BE INSPECTED DURING AND AFTER STORM EVENTS TO ENSURE THAT THE FENCE STILL HAS INTEGRITY AND IS NOT ALLOWING SEDIMENT TO PASS. SEDIMENT BUILD UP IN SWALES WILL BE REMOVED IF IT IS DEEPER THAN SIX INCHES, AND IS TO BE REMOVED FROM SUMPS BELOW THE INLET OF CULVERTS SEMIANNUALLY, AS WELL AS FROM CATCH BASINS. FOLLOWING MAJOR STORM EVENTS, THE STAGE DISCHARGE OUTLET STRUCTURES ARE TO BE INSPECTED AND ANY DEBRIS REMOVED FROM THE ORIFICE, TRASH TRACK AND EMERGENCY SPILL WAY. INFREQUENTLY, SEDIMENT MAY ALSO HAVE TO BE REMOVED FROM THE SUMP OF THE STRUCTURE.
11. ALL DRAINAGE INFRASTRUCTURE SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING ANY RUNOFF TO IT.
12. BIORETENTION PONDS REQUIRE TIMELY MAINTENANCE AND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM EVENT, AS WELL AS FREQUENTLY DURING THE FIRST YEAR OF OPERATION, AND ANNUALLY THEREAFTER. EVERY FIVE YEARS, THE SERVICES OF A PROFESSIONAL ENGINEER SHOULD BE RETAINED TO PERFORM A THOROUGH INSPECTION OF THE BIORETENTION POND AND ITS INFRASTRUCTURE. ANY DEBRIS AND SEDIMENT ACCUMULATIONS SHOULD BE REMOVED FROM THE OUTLET STRUCTURE(S) AND EMERGENCY SPILLWAY(S) AND DISPOSED OF PROPERLY. BIORETENTION POND BERMS SHOULD BE MOWED AT LEAST ONCE ANNUALLY SO AS TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION. TREES SHOULD NEVER BE ALLOWED TO GROW ON A BIORETENTION POND BERM, AS THEY MAY DESTABILIZE THE STRUCTURE AND INCREASE THE POTENTIAL FOR FAILURE. AREAS SHOWING SIGNS OF EROSION OR THIN OR DYING VEGETATION SHOULD BE REPAIRED IMMEDIATELY BY WHATEVER MEANS NECESSARY, WITH THE EXCEPTION OF FERTILIZER. RODENT BORROWS SHOULD BE REPAIRED IMMEDIATELY AND THE ANIMALS SHOULD BE TRAPPED AND RELOCATED IF THE PROBLEM PERSISTS.
13. IN THOSE AREAS WHERE THE BERMS OF THE BIORETENTION SYSTEMS MUST BE CONSTRUCTED BY THE PLACEMENT OF FILL, THE ENTIRE EMBANKMENT AREA OF THE BIORETENTION PONDS SHALL BE EXCAVATED TO PROPOSED GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 95% AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. IN THE EVENT THE FOUNDATION MATERIAL EXPOSED DOES NOT ALLOW THE SPECIFIED COMPACTION, AN ADDITIONAL ONE FOOT (1') OF EXCAVATION AND THE PLACEMENT OF A ONE FOOT (1') THICK, TWELVE FOOT (12') WIDE PAD OF THE MATERIAL DESCRIBED IN THE NOTE BELOW, COMPACTED TO 95% OF ASTM D-1557 MAY BE NECESSARY. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED WITHIN FOR ANY REASON.
14. EMBANKMENT IS TO HAVE 3:1 SIDE SLOPES (MAX.) AND IS TO BE BROUGHT TO SPECIFIED GRADES PRIOR TO THE ADDITION OF LOAM (4" MINIMUM) SO AS TO ALLOW FOR THE COMPACTION OF THE STRUCTURE OVER TIME WHILE MAINTAINING THE PROPER BERM ELEVATION.
15. COMPACTION TESTING SERVICES (I.E. NUCLEAR DENSITY TESTS) ARE TO BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR FOR ROADWAY CONSTRUCTION, AND ON THE FOUNDATION OF THE BERM AND ON EVERY LIFT OF NEWLY PLACED MATERIAL.



Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	

Date: 2/26/2024
Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

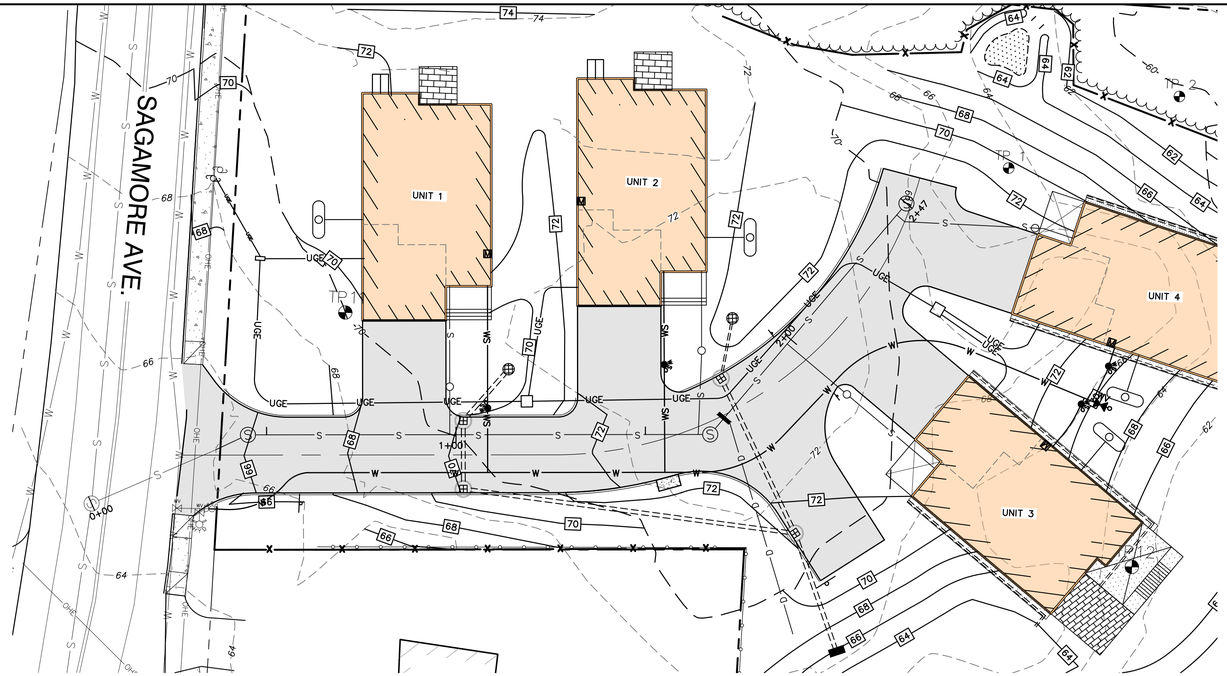
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

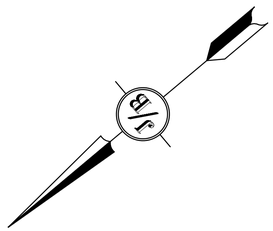
Plan Name: DRIVEWAY PLAN AND PROFILE

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

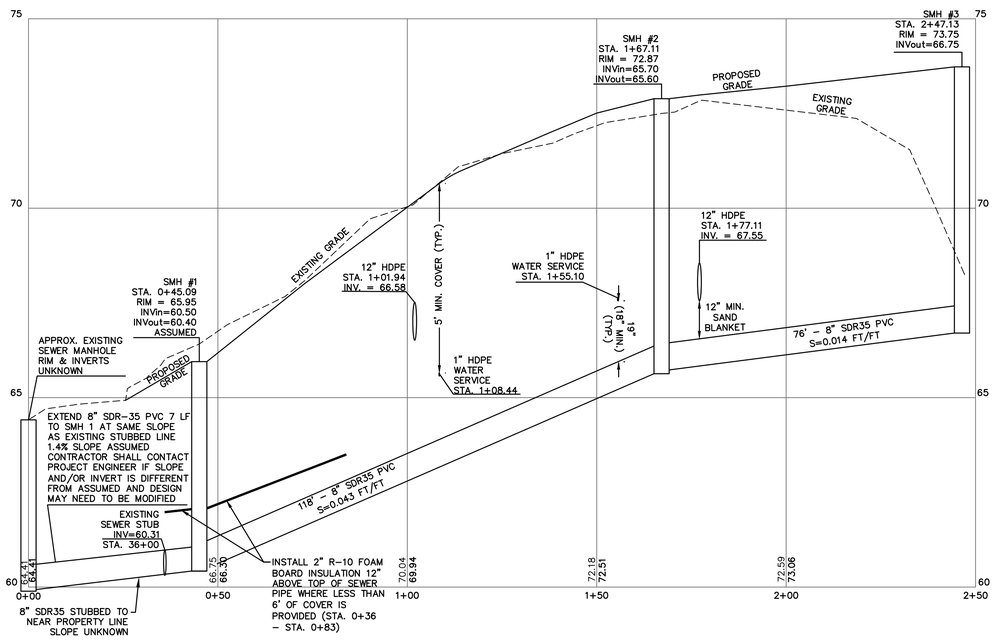
DRAWING No.
P1
SHEET 10 OF 21
JBE PROJECT NO. 18134.1

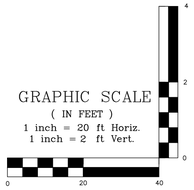




NOTES:

1. PROPOSED GRADES SHOWN HEREON ARE APPROXIMATE. REFER TO SHEETS C3 AND P1 FOR GRADING OF SITE AND DRIVEWAY. SET RIM ELEVATIONS OF SEWER STRUCTURES FLUSH WITH PROPOSED GRADE.
2. STATIONS REFER TO CENTERLINE OF SEWER STRUCTURE OR CROSSING DRAINAGE/WATER PIPE.
3. CONTRACTOR TO CONFIRM ACTUAL EXISTING INVERT OF STUB IN THE FIELD AND NOTIFY ENGINEER IF IT IS MORE THAN 0.1' DIFFERENT FROM THE STATED INVERT.





Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

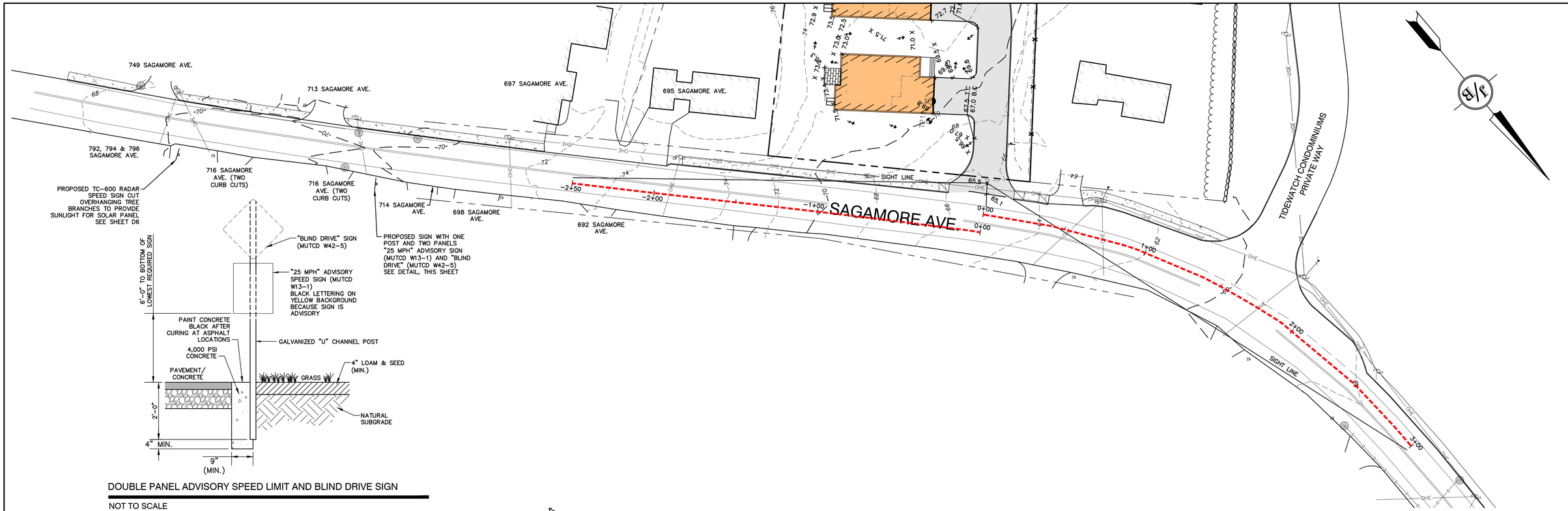
REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SEWER PLAN AND PROFILE
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.

P2



DOUBLE PANEL ADVISORY SPEED LIMIT AND BLIND DRIVE SIGN

NOT TO SCALE

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

Where:

S = Stopping sight distance on grade (ft)

V = Design speed (mph)

G = Grade (%)

Stopping Sight Distance on Grades

Exhibit 1260-3

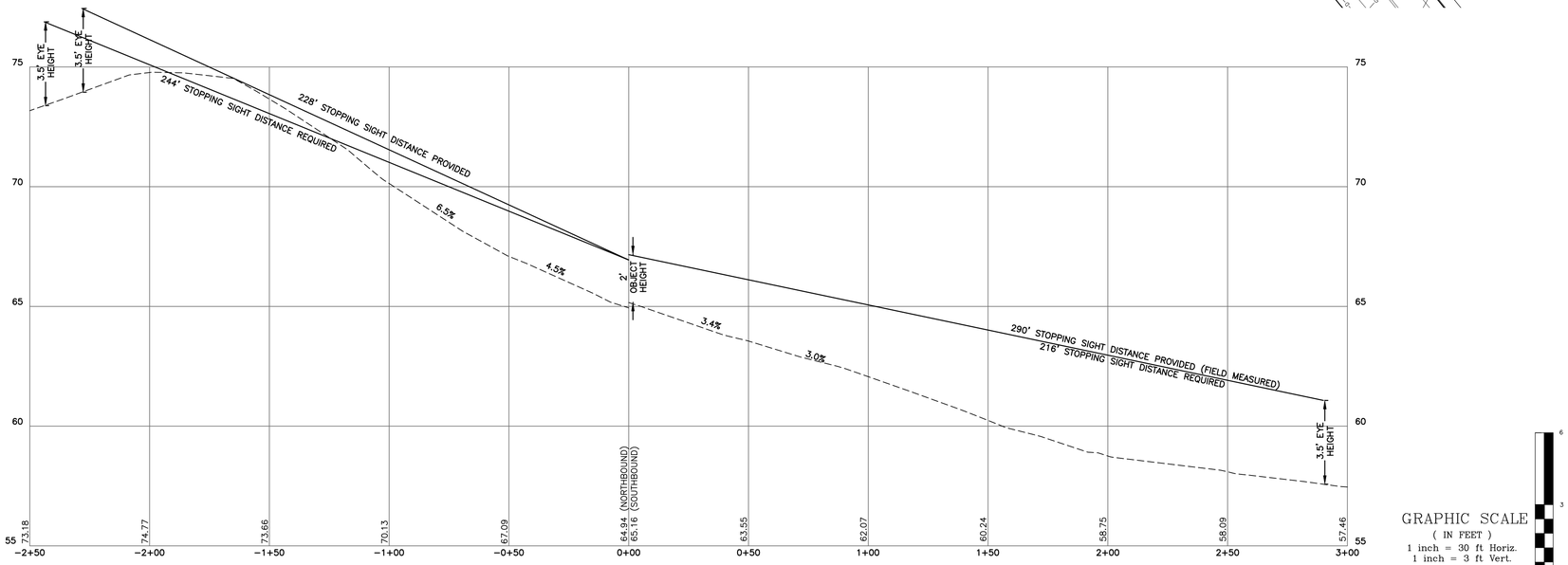
PER AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS:

NORTHBOUND APPROACH
DESIGN SPEED: 33 MPH
AVERAGE ROAD GRADE OVER FIRST 100 FEET: -5.2% (5.2' DROP OVER 100 FEET)
REQUIRED SIGHT DISTANCE:
1.47(33)(2.5)+((33)^2/(30*(0.347826-(5.2/100)))) = 244' SIGHT DISTANCE REQUIRED

SOUTHBOUND APPROACH
DESIGN SPEED: 33 MPH
AVERAGE ROAD GRADE OVER FIRST 100 FEET: 3.3% (3.3' GAIN OVER 100 FEET)
REQUIRED SIGHT DISTANCE:
1.47(33)(2.5)+((33)^2/(30*(0.347826+(3.3/100)))) = 216' SIGHT DISTANCE REQUIRED

PORTSMOUTH SITE PLAN REVIEW REGULATIONS SECTION 3.3.2.1

ACCESSWAYS AND DRIVEWAYS SHALL, WHERE PRACTICAL, HAVE AN ALL-SEASON SAFE SIGHT DISTANCE (ACCORDING TO AASHTO STANDARDS) IN BOTH DIRECTIONS ALONG THE PUBLIC STREET. WHERE ONLY A LESSER SIGHT DISTANCE IS OBTAINABLE, NO MORE THAN ONE ACCESSWAY PER SINGLE PARCEL SHALL BE ALLOWED.



STOPPING SIGHT DISTANCE PLAN & PROFILE

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
PROFESSIONAL ENGINEER
LICENSED
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

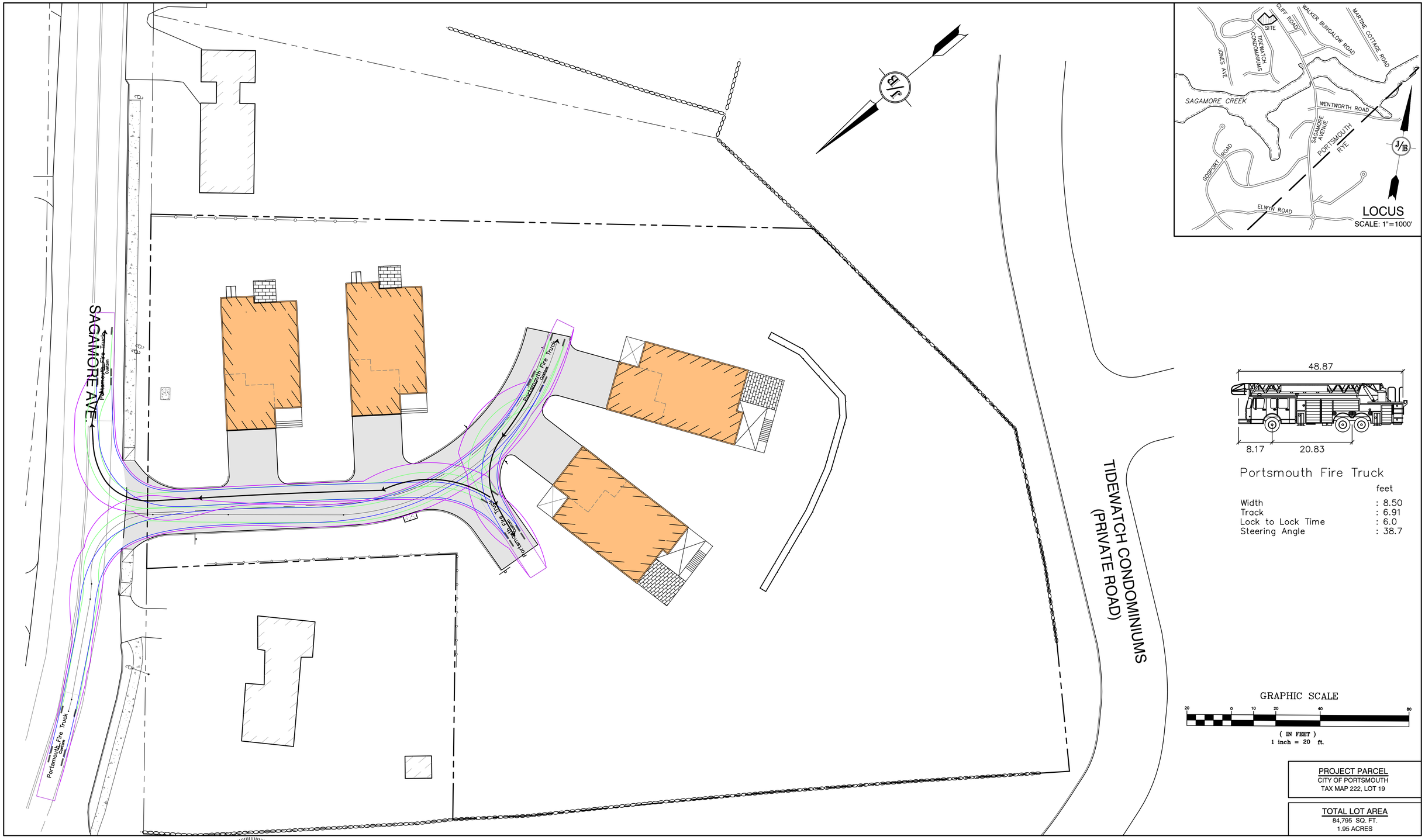
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	HIGHWAY ACCESS PLAN
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.

H1

SHEET 12 OF 21
JBE PROJECT NO. 18134.1



PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED
PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

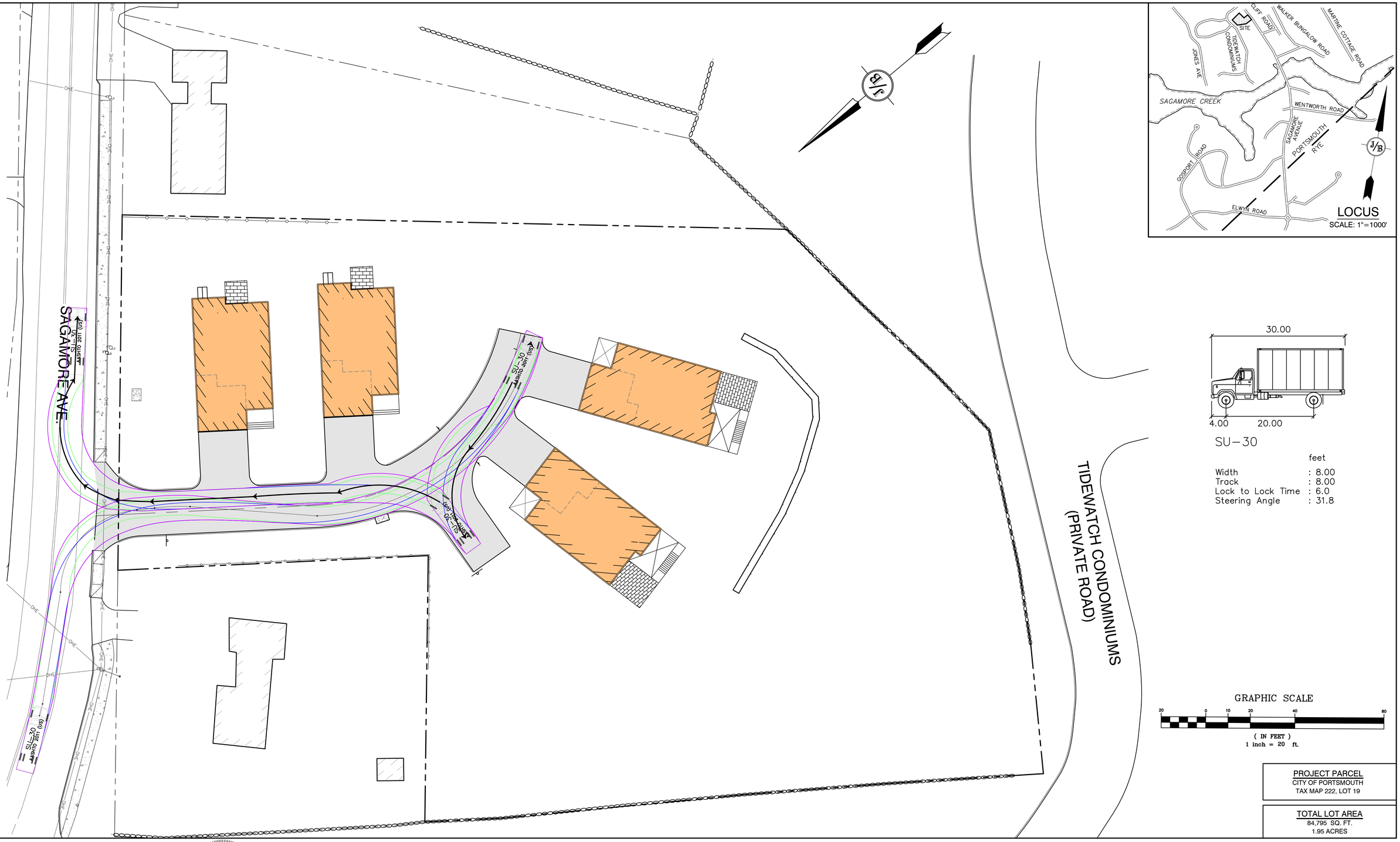
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: TRUCK TURNING PLAN

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
T1
SHEET 13 OF 21
JBE PROJECT NO. 18134.1



SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 222, LOT 19

TOTAL LOT AREA
84,795 SQ. FT.
1.95 ACRES

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

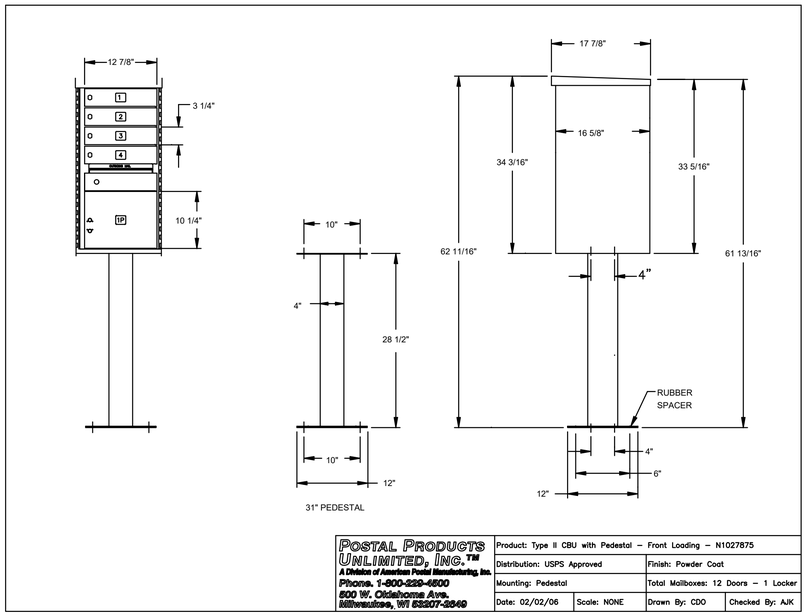
STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No.18152
LICENSED
PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	TRUCK TURNING PLAN
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

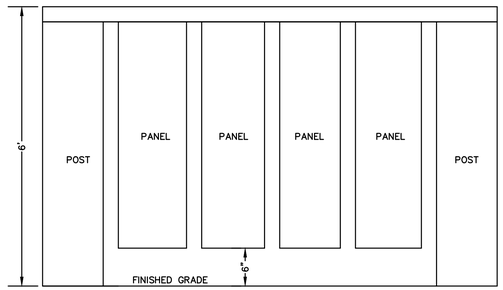
DRAWING No.
T2
SHEET 14 OF 21
JBE PROJECT NO. 18134.1



POSTAL PRODUCTS UNLIMITED, INC.™ A Division of American Postal Manufacturing, Inc. Phone: 1-800-229-4500 600 W. Oklahoma Ave. Milwaukee, WI 53207-3249	Product: Type II CBU with Pedestal – Front Loading – N1027875			
	Distribution: USPS Approved		Finish: Powder Coat	
	Mounting: Pedestal		Total Mailboxes: 12 Doors – 1 Locker	
	Date: 02/02/06	Scale: NONE	Drawn By: CDO	Checked By: AJK

CLUSTER MAILBOX UNIT DETAIL

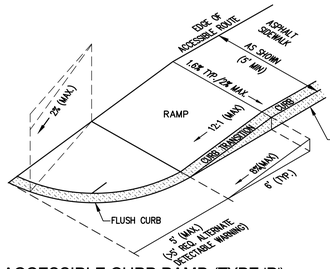
NOT TO SCALE



1. THE INTENT OF THIS DETAIL IS TO SHOW THE REQUIRED CLEARANCE FROM FINISHED GRADE TO THE BOTTOM OF THE WOODEN PANELS ON THE PROPOSED FENCE. THIS DETAIL SHALL NOT CONSTRUE A REQUIREMENT WITH REGARDS TO POST OR PANEL PLACEMENT ALONG THE LENGTH OF THE FENCE.

6' HIGH WOODEN STOCKADE FENCE DETAIL

NOT TO SCALE

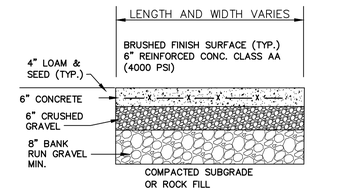


NHDOT ITEM 609.01
VERTICAL GRANITE CURB

NOTES:
1. THE MAXIMUM ALLOWABLE CROSS SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) AND CURB SHALL BE 1.5%.
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) CURB RAMPS SHALL BE 8%.
4. A MINIMUM OF 4 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (i.e., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SECTION FOR RAMP CONSTRUCTION.

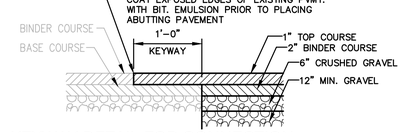
ACCESSIBLE CURB RAMP (TYPE 'B')

NOT TO SCALE



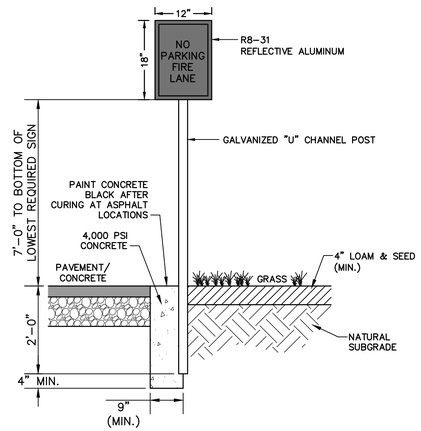
CONCRETE PAD DETAIL

NOT TO SCALE



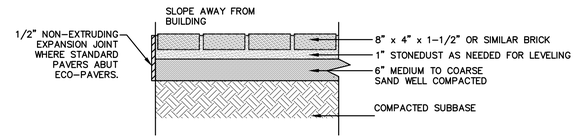
KEYWAY DETAIL FOR CONNECTION TO EXISTING PAVEMENT

NOT TO SCALE



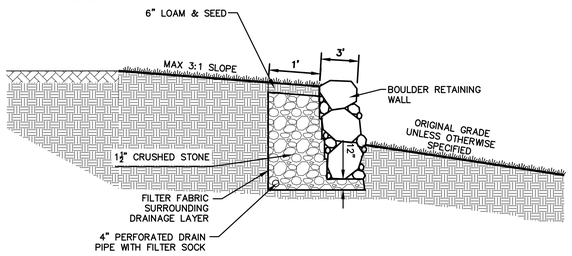
"NO PARKING" SIGN (MUTCD R8-31)

NOT TO SCALE



STANDARD BRICK PAVER

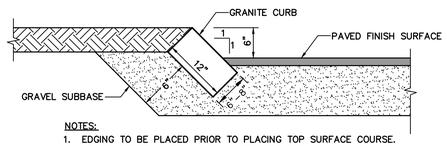
NOT TO SCALE



THE CONTRACTOR IS RESPONSIBLE FOR RETAINING THE SERVICES OF A STRUCTURAL ENGINEER LISENCED IN THE STATE OF NEW HAMPSHIRE TO DESIGN ANY WALL THAT HAS A HEIGHT OVER 4.0'. JONES & BEACH ENGINEERS, INC. DOES NOT ACCEPT ANY LIABILITY FOR THE STRUCTURAL DESIGN AND/OR INSTALLATION OF ANY RETAINING WALL OF ANY TYPE ABOVE THIS HEIGHT. THIS DETAIL IS INTENDED TO PROVIDE AN EXAMPLE OF THE RETAINING WALL FOR PLANNING PURPOSES ONLY AND IS SPECIFICALLY NOT INTENDED FOR USE BY THE CONTRACTOR IN ANY CONSTRUCTION-RELATED ACTIVITY FOR A WALL GREATER THAN 4.0' IN HEIGHT.

BOULDER RETAINING WALL CROSS SECTION

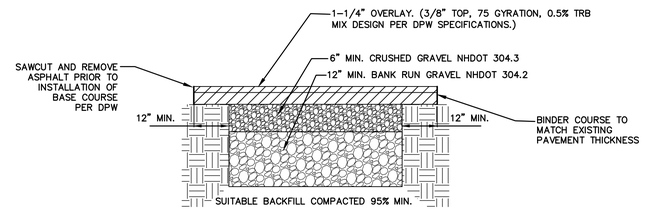
NOT TO SCALE



NOTES:
1. EDGING TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.
2. JOINTS BETWEEN STONES SHALL BE MORTARED.
3. SALVAGE GRANITE CURBS ON-SITE AND RESET TO THE EXTENT POSSIBLE.

SLOPED GRANITE CURB

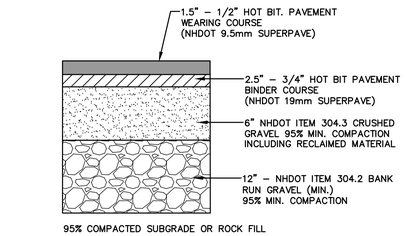
NOT TO SCALE



1. AFTER PROPER BACKFILLING AND COMPACTION, ADJACENT PAVEMENT MUST BE "SAW CUT" (STRAIGHT CUTS) A MINIMUM OF ONE FOOT (1') AROUND THE PERIMETER OF THE EXCAVATION. PAVEMENT MUST BE REMOVED.
2. INSTALL BASE COURSE LEAVING A REVEAL FOR SURFACE COURSE.
3. INSTALL SURFACE COURSE OF ASPHALT PAVING.
4. APPLY EMULSION SEALANT AT PERIMETER OF JOINT OVERLAPPING BASE COURSE. INSTALL WEARING COURSE OF ASPHALT TO GRADE. APPLY LIGHT SAND TO ABSORB EXCESS JOINT SEALANT.
5. GRAVEL COMPACTIONS TO MEET 95% MINIMUM.

TYPICAL PAVEMENT REPAIR DETAIL

NOT TO SCALE



TYPICAL BITUMINOUS PAVEMENT

NOT TO SCALE

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

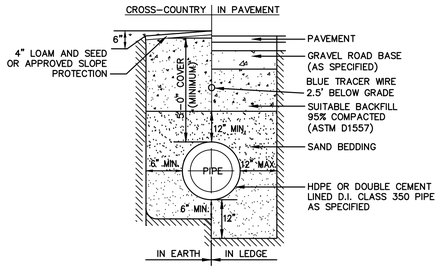
STATE OF NEW HAMPSHIRE – DANIEL JAMES MEDITZ No.18152 – LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

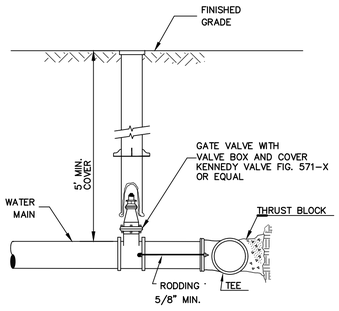
Plan Name:	DETAIL SHEET
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D1
SHEET 15 OF 21
JBE PROJECT NO. 18134.1



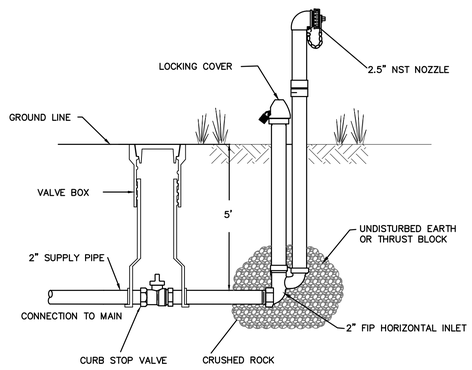
WATER SYSTEM TRENCH

NOT TO SCALE



BURIED GATE VALVE DETAIL

NOT TO SCALE

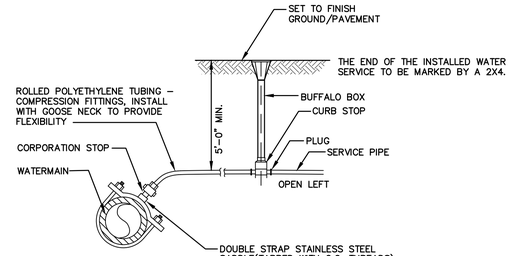


POST HYDRANTS SHALL BE NON-FREEZING, SELF DRAINING TYPE WITH A 5' BURY. THESE HYDRANTS WILL BE FURNISHED WITH A 2" FIP HORIZONTAL INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN LEFT. BRONZE OPERATING MECHANISM AND ALUMINUM PLUNGER. DESIGN, AND BE SERVICABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2-1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR APPROVED EQUAL.

INLET PRESSURE (PSI)	FLOW RATE (GPM)
75	675
100	742
125	800
150	856

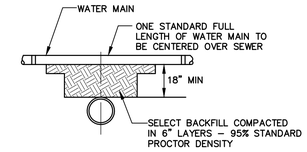
BLOW-OFF HYDRANT DETAIL

NOT TO SCALE



WATER SERVICE CONNECTION-POLYETHYLENE

NOT TO SCALE

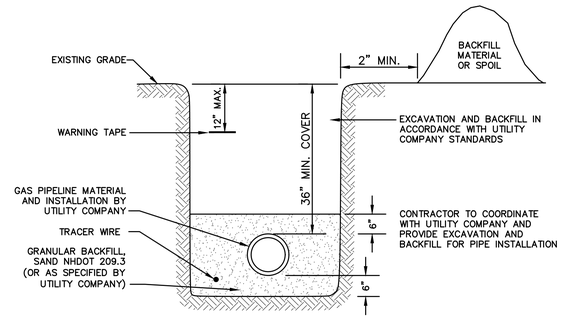


SEPARATION NOTES:

1. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWERS. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
2. WATER MAINS CROSSING SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN PIPES. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.

TYPICAL WATER / SEWER SEPARATION

NOT TO SCALE



GAS TRENCH

NOT TO SCALE

SUBMITTALS
SHOP DRAWINGS, INCLUDING SPECIFICATIONS, CATALOG CUTS, DATA SHEETS, DRAWINGS AND OTHER DESCRIPTIVE MATERIAL SHALL BE SUPPLIED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION. A CERTIFICATE OF COMPLIANCE FROM THE MANUFACTURER INDICATING CONFORMANCE WITH THE SPECIFIED REQUIREMENTS FOR DUCTILE IRON PIPE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

DELIVERY, HANDLING, AND STORAGE
ALL PIPE AND APPURTENANCES ARE SUBJECT TO INSPECTION BY THE ENGINEER AT THE POINT OF DELIVERY. MATERIAL FOUND TO BE DEFECTIVE DUE TO MANUFACTURE OR DAMAGE IN SHIPMENT SHALL BE REJECTED OR RECORDED ON THE BILL OF LADING AND REMOVED FROM THE JOB SITE. ALL MATERIALS, IF STORED, SHALL BE KEPT SAFE FROM ANY POTENTIAL DAMAGE.

SAND BEDDING
SAND BLANKET SHALL CONSIST OF CLEAN SAND THAT IS FREE FROM ORGANIC MATTER AND GRADED SO THAT 90-100% PASSES A 1/2" SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE.

BACKFILL
SUITABLE MATERIAL FOR BACKFILL IN ROADS, ROAD SHOULDERS, AND WALKWAYS SHALL BE THE NATURAL MATERIAL REMOVED DURING THE COURSE OF TRENCH EXCAVATION, BUT SHALL EXCLUDE ANY DEBRIS, PAVEMENT, ORGANIC MATTER, LOAM, WET OR SOFT MUCK, PEAT, OR CLAY. BACKFILL MATERIAL SHALL BE PLACED IN 6" LIFTS AND SHALL BE COMPACTED TO 95% OF ASTM-1557 AT OPTIMUM MOISTURE CONTENT.

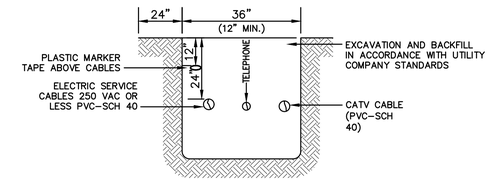
DUCTILE IRON PIPE-CLASS 52
JOINTS SHALL BE OF "PUSH-ON" TYPE UNLESS OTHERWISE SPECIFIED. PIPE SHALL HAVE A DOUBLE CEMENT LINING WITH SEAL COATING INSIDE AND BITUMINOUS COATING OUTSIDE THAT MEETS OR EXCEEDS THE REQUIREMENTS OF AWWA/ANSI C104/A21.4. GASKETS FOR DUCTILE IRON PIPE SHALL BE OIL-RESISTANT RUBBER WHICH MEETS OR EXCEEDS THE REQUIREMENTS OF AWWA/ANSI C111/A21.11. PIPE SHALL BE FURNISHED COMPLETE WITH ALL GASKETS AND LUBRICANT.

WATERMAIN TESTING
ALL WATER MAINS WILL BE CLEANED AND HYDROSTATICALLY TESTED AT A MINIMUM PRESSURE OF 150psi AT THE HIGHEST POINT ALONG THE TEST SECTION. THE HYDROSTATIC TEST SHALL BE CONDUCTED FOR A MINIMUM OF TWO HOURS DURING WHICH TEST PRESSURE SHALL NOT VARY MORE THAN ±5psi. LEAKAGE CALCULATIONS WILL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AMERICAN WATER WORKS ASSOCIATION. DISINFECTION WILL BE REQUIRED PER THE SPECIFICATIONS OF ANSI/AWWA C651. WITHIN 24 HOURS OF DISINFECTION, ALL NEWLY INSTALLED MAINS SHALL BE FLUSHED.

WATER LINE TECHNICAL SPECIFICATIONS

NOTES

1. CONTRACTOR TO INSTALL 2" RIGID INSULATION BETWEEN THE PROPOSED WATERMAIN(S) AND DRAINAGE LINES IN ALL AREAS WHERE SEPARATION IS TO BE IN 4' OR LESS.
2. ALL PIPE, FITTINGS, HYDRANTS, AND WORKMANSHIP SHALL BE INSPECTED AND APPROVED BY THE MUNICIPAL WATER/SEWER DEPARTMENT.
4. ALL CONSTRUCTION AND TESTING SHALL COMPLY WITH THE REGULATIONS OF THE MUNICIPAL, THE STATE, AND THE AMERICAN WATER WORKS ASSOCIATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UNFORESEEN UTILITY FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION. ANY APPROPRIATE REMEDIAL ACTION MUST BE AGREED TO BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS BEFORE DIGGING.
6. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 2000 PSI AFTER 28 DAYS.
7. CONTRACTOR TO INSTALL CORPORATION FITTINGS AT EACH CONNECTION TO THE WATER MAIN FOR TESTING PURPOSES. CORPORATIONS SHALL BE REMOVED AND PLUGGED AT THE COMPLETION OF TESTING.
8. CONTRACTOR TO OBSERVE ALL APPROPRIATE BEST MANAGEMENT PRACTICES.
9. ALL GATE VALVES TO BE MUELLER RESILIENT WEDGE (OPEN RIGHT).
10. ALL TEES TO BE ANCHOR TEES.
11. THE TERMINAL 36' OF ALL "DEAD END" WATERMAINS AND ALL BENDS AND TEES ARE TO BE FITTED WITH MECHANICAL RESTRAINING JOINTS, "MEGALUG" OR APPROVED EQUAL AND THRUST BLOCKS.
12. INSTALL THRUST BLOCKS AT ALL TEES, BENDS, AND FITTINGS.



NOTE: ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.

UTILITY TRENCH

NOT TO SCALE

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE - DANIEL JAMES MEDITZ No.18152 - LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

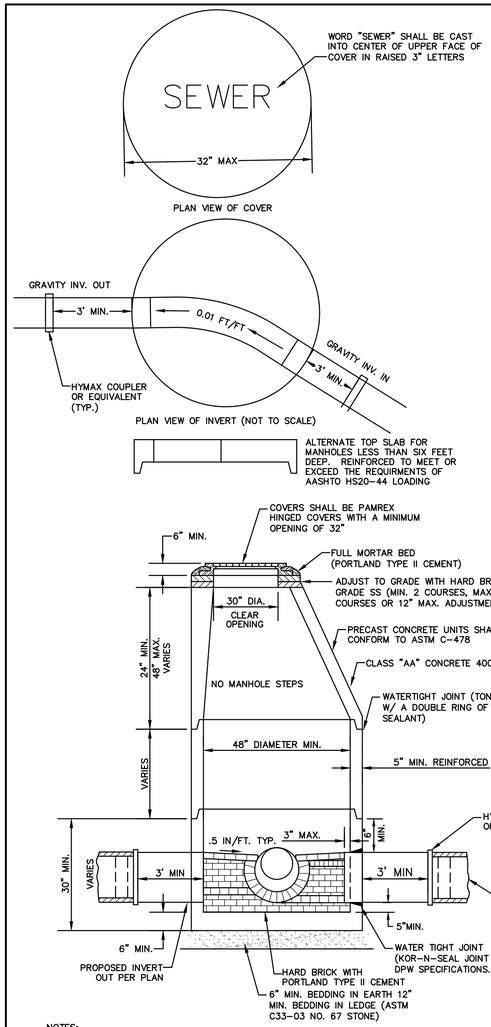
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: DETAIL SHEET

Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D2
SHEET 16 OF 21
JBE PROJECT NO. 18134.1

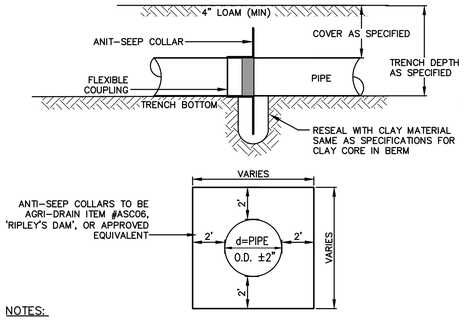


NOTES:

1. PER NHDES ENV-WQ 704.13(C), THE MORTAR SPECIFICATION SHALL BE AS FOLLOWS:
   1. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION;
   2. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
      A. 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
      B. 4.5 PARTS SAND, ONE PART CEMENT AND 0.5 PART HYDRATED LIME;
   3. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05;
   4. HYDRATED LIME SHALL BE TYPE S CONFORMING TO THE ASTM C207-06 'STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES';
   5. SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO THE ASTM C33-03 'STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES';
2. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL IN ACCORDANCE WITH ENV-WQ 704.12 (K).
3. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH ENV-WQ 704.17 (a) THROUGH (e).
4. SEWER MANHOLE COVERS SHALL CONFORM TO ASTM A48 WITH A CASTING EQUAL TO CLASS 30 IN ACCORDANCE WITH ENV-WQ 704.13 (a).
5. ALL ASBESTOS CONTAINING WASTE MATERIALS MUST BE PROPERLY IDENTIFIED, PACKAGED AND DELIVERED TO A LANDFILL LICENCED BY THE NHDES SOLID WASTE MANAGEMENT PROGRAM FOR DISPOSAL. CALL (603) 271-2925 FOR MORE INFORMATION.
6. PORTSMOUTH STANDARD SEWER MANHOLE SHALL BE USED.
7. CONTRACTOR TO PURCHASE SEWER MANHOLE COVERS FROM THE CITY OF PORTSMOUTH DIRECTLY.
8. MANHOLE BASE SECTIONS SHALL BE MONOLITHIC TO A POINT AT LEAST 6" ABOVE THE HIGHEST INCOMING SEWER PIPE PER ENV-WQ 704.12 (e).
9. MANHOLE CASTINGS SHALL CONFORM TO ASTM A48 PER ENV-WQ 704.13 (a) (8).

PORTSMOUTH SEWER MANHOLE

NOT TO SCALE

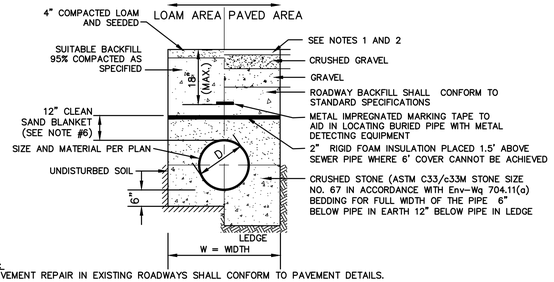


NOTES:

1. CONTRACTOR SHALL INSTALL COLLAR(S) PER MANUFACTURER'S SPECIFICATIONS.
2. CONTRACTOR SHALL ENSURE A WATERTIGHT SEAL BETWEEN THE COLLAR(S) AND PIPE(S).
3. ANTI-SEEP COLLARS SHALL BE PLACED ±15' AND ±25' DOWNSTREAM OF THE CULVERT INLETS, UNLESS OTHERWISE SPECIFIED. WHEN A CLAY CORE IS SPECIFIED, A COLLAR SHALL BE INSTALLED ON BOTH SIDES OF THE CORE.

ANTI-SEEP COLLAR

NOT TO SCALE

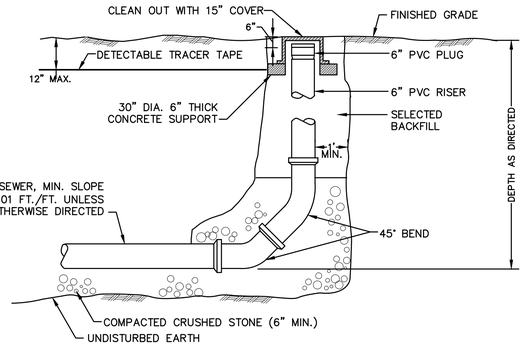


NOTES:

1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO PAVEMENT DETAILS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO SUBDIVISION SPECIFICATIONS.
3. TRENCH BACKFILL SHALL CONFORM WITH ENV. Wq 704.11(h) AND BE FREE OF DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE OR ROCKS OVER SIX INCHES.
4. W= MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12" INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, WIDTH SHALL BE NO MORE THAN 36"; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, WIDTH SHALL BE 24 INCHES PLUS PIPE O.D. WIDTH SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
5. RIGID FOAM INSULATION TO BE PROVIDED WHERE COVER IN THE ROADWAY IS LESS THAN 6' AND CROSS COUNTRY IS LESS THAN 4', PURSUANT TO DES WAIVER BEING ISSUED.
6. PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND, FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100% PASSES A 1/2 " SIEVE AND A MAXIMUM OF 15% PASSES A #200 SIEVE IN ACCORDANCE WITH Env-Wq 704.11(b).
7. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL AND CERTIFIED BY THE MANUFACTURER AS CONFORMING TO THE ASTM D3212 STANDARD IN EFFECT WHEN THE JOINT SEALS WERE MANUFACTURED, AND SHALL BE PUSH-ON, BELL-AND-SPIGOT TYPE PER Env-Wq 704.05 (e).
8. PVC PIPE SHALL CONFORM WITH ASTM D3034 AND ASTM D2412.

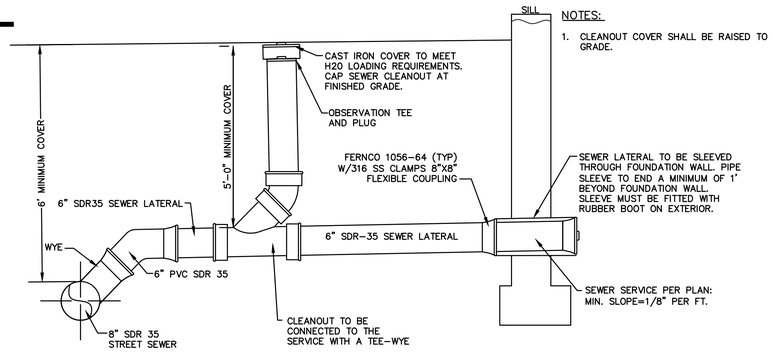
GRAVITY SEWER TRENCH

NOT TO SCALE



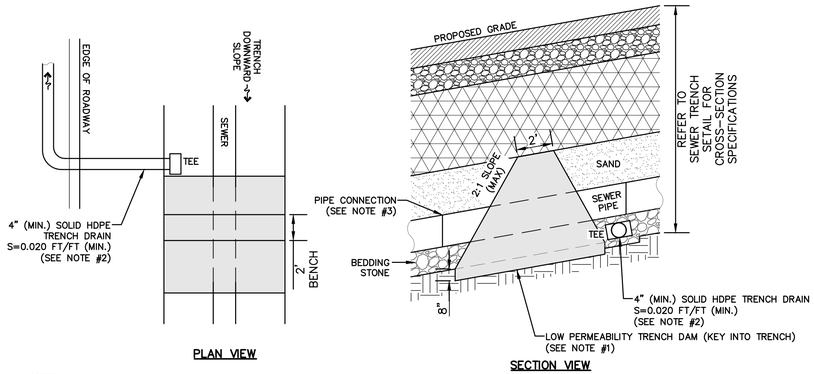
SEWER CLEAN OUT

NOT TO SCALE



HOUSE SEWER SERVICE

NOT TO SCALE



NOTES:

1. LOW PERMEABILITY SOIL USED FOR TRENCH DAM SHALL MEET THE FOLLOWING SPECIFICATION: CLAYEY SOIL – MIN. 15% PASSING THE #200 SEIVE AND A MIN. PERMEABILITY OF $1x10^{-5}$ CM/SEC
2. DRAINS SHALL DAYLIGHT TO NEAREST AT-GRADE POINT, TIE INTO A DRAINAGE STRUCTURE, OR INTO A NETWORK OR TRENCH DRAINS.
3. CONTRACTOR SHALL NOT LOCATE A PIPE CONNECTION WITHIN THE LIMITS OF THE TRENCH DAM. A 2' SEPARATION BETWEEN LIMIT OF TRENCH DAM AND CONNECTION IS RECOMMENDED.
4. CONTRACTOR SHALL INSTALL DAMS & DRAINS AT A MAXIMUM. 75' SPACING. REFER TO PROJECT PLANS.

SEWER TRENCH DAM & DRAIN

NOT TO SCALE

Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	

Date: 2/26/2024
Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE – DANIEL JAMES MEDITZ No.18152 – LICENSED PROFESSIONAL ENGINEER
11/25/2024

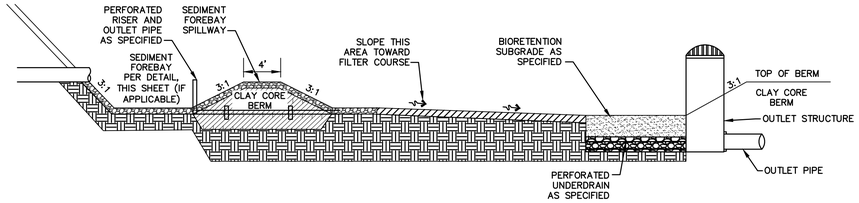
REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D3
SHEET 17 OF21
JBE PROJECT NO. 18134.1

BIORETENTION SYSTEM ELEVATIONS	
ELEVATION	SYSTEM #1
A	63.00
B	60.60
C	59.10
D	58.85
E	58.10
BOTTOM SURFACE AREA (S.F.)	117



1. REFER TO SEDIMENT FOREBAY SPILLWAY, BIORETENTION SYSTEM WITH UNDERDRAIN, PERFORATED SEDIMENT FOREBAY STANDPIPE, AND NYLOPLAST DRAIN BASIN DETAILS ON THIS SHEET. SPECIFICATIONS ON THOSE DETAILS SHALL TAKE PRECEDENCE OVER WHAT IS VISUALLY SHOWN ON THIS CROSS SECTION.

TYPICAL BIORETENTION OVERVIEW CROSS SECTION

NOT TO SCALE

SAND SPECIFICATION

SIEVE SIZE	% BY WEIGHT
⅜"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–60
#60	10–30
#100	2–10
#200	0–5

TOPSOIL SPECIFICATION

LOAMY SAND TOPSOIL WITH MINIMAL CLAY CONTENT AND BETWEEN 15 TO 25% FINES PASSING THE #200 SIEVE.

MULCH SPECIFICATION

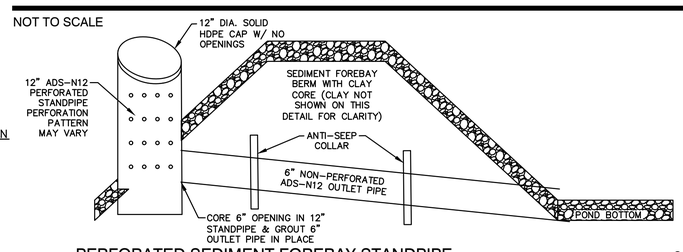
MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE #200 SIEVE.

PEA GRAVEL SPECIFICATION

SIEVE SIZE	% BY WEIGHT
⅜"	100
¼"	85–100
#4	10–30
#8	0–10
#16	0–15

COARSE GRAVEL SPECIFICATION

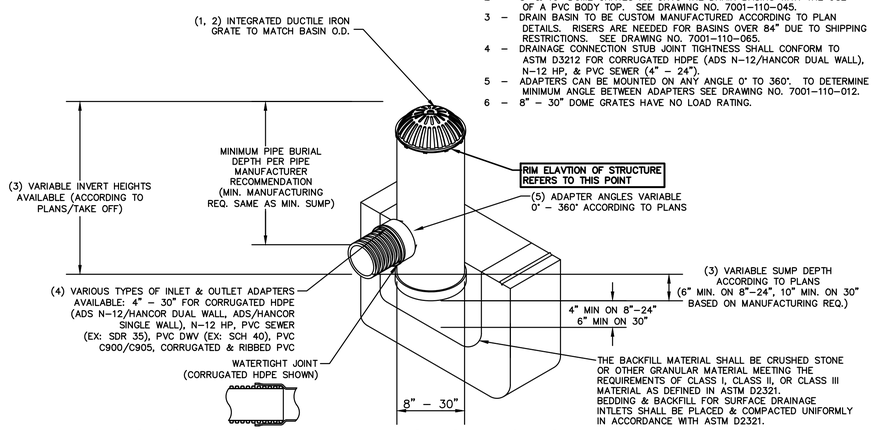
SIEVE SIZE	% BY WEIGHT
1"	90–100
¾"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5



PERFORATED SEDIMENT FOREBAY STANDPIPE

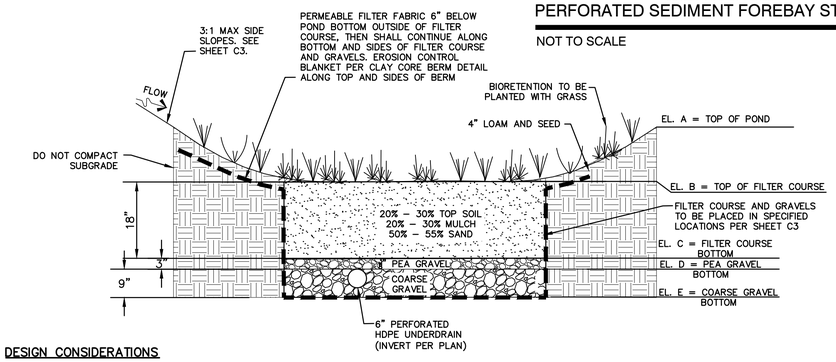
NOT TO SCALE

NOTES:
1 – 8" – 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70–50–05.
2 – 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001–110–045.
3 – DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001–110–065.
4 – DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N–12/HANCOR DUAL WALL), N–12 HP, & PVC SEWER (4" – 24").
5 – ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001–110–012.
6 – 8" – 30" DOME GRATES HAVE NO LOAD RATING.



24" DIA. NYLOPLAST DRAIN BASIN (YARD DRAIN & POND OUTLET STRUCTURE SPECIFICATION)

NOT TO SCALE



DESIGN CONSIDERATIONS

1. DO NOT PLACE BIORETENTION SYSTEMS INTO SERVICE UNTIL THE BMP HAS BEEN SEEDED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUN–OFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
3. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
4. REMOVE LEDGE TO AT LEAST TWO FEET BELOW BOTTOM OF COARSE GRAVEL LAYER IF ENCOUNTERED.
5. IN ADDITION TO DESIGN CRITERIA LISTED HERE, REFER TO GUIDELINES LISTED IN UNIVERSITY OF NEW HAMPSHIRE (UNH) STORMWATER CENTER BIORETENTION SOIL SPECIFICATION.
6. THE EXISTING NATIVE SUBGRADE MATERIAL BENEATH THE FILTER COURSE AND GRAVEL LAYERS SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO STONE PLACEMENT. IF SOIL MEDIA OR SUBGRADE IS OVER COMPACTED, DISTURBED, OR CONTAMINATED BY FOREIGN OR DELETERIOUS MATERIALS OR LIQUIDS, REMOVE THE SOIL MEDIA AND CONTAMINATION; RESTORE THE SUBGRADE AS DIRECTED BY ENGINEER AND REPLACE CONTAMINATED SOIL MEDIA WITH NEW SOIL MEDIA.

MAINTENANCE REQUIREMENTS:

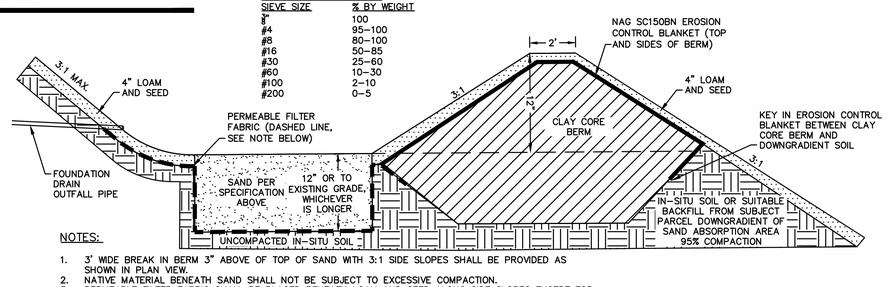
1. SYSTEMS SHALL BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
2. PRETREATMENT MEASURES SHALL BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
3. TRASH AND DEBRIS SHALL BE REMOVED AT EACH INSPECTION.
4. AT LEAST ONCE ANNUALLY, SYSTEM SHALL BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72 HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHALL ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION, INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
5. VEGETATION SHALL BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.
6. COMPACTION AND MATERIALS TESTING SERVICES SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE OWNER.

BIORETENTION SYSTEM WITH UNDERDRAIN

NOT TO SCALE

SAND SPECIFICATION

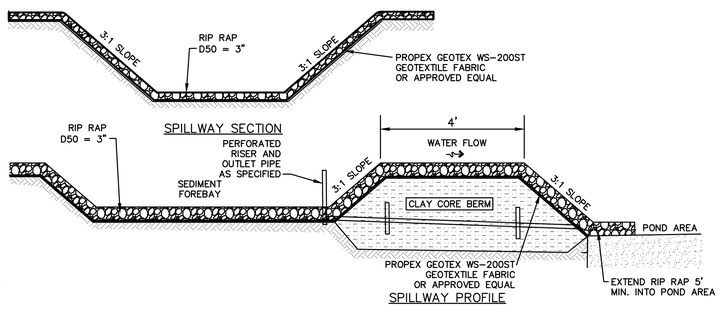
SIEVE SIZE	% BY WEIGHT
⅜"	100
#4	95–100
#8	80–100
#16	50–85
#30	25–60
#60	10–30
#100	2–10
#200	0–5



NOTES:
1. 3' WIDE BREAK IN BERM 3" ABOVE OF TOP OF SAND WITH 3:1 SIDE SLOPES SHALL BE PROVIDED AS SHOWN IN PLAN VIEW.
2. NATIVE MATERIAL BENEATH SAND SHALL NOT BE SUBJECT TO EXCESSIVE COMPACTION.
3. PERMEABLE FILTER FABRIC SHALL BE PLACED BENEATH LOAM AND SEED ALONG SIDE SLOPES EXCEPT FOR BERM, AND ALONG BOTTOM AND SIDES OF SAND IN ABSORPTION AREA. NAG SC150BN EROSION CONTROL BLANKET ALONG CLAY CORE BERM.
4. PERFORM A TEST PIT WITHIN SAND ABSORPTION AREA FOR UNITS 1 AND 2 FOUNDATION DRAINS TO VERIFY DEPTH TO LEDGE AND SEASONAL HIGH WATER TABLE PRIOR TO CONSTRUCTION. REMOVE LEDGE TO AT LEAST 1' BELOW BOTTOM OF PRACTICE IF ENCOUNTERED. SEASONAL HIGH WATER TABLE (SHWT) IS NOT ANTICIPATED AT THIS DEPTH, BUT CONTACT ENGINEER OF RECORD IF SHWT IS ENCOUNTERED LESS THAN 12" BELOW THE BOTTOM OF SAND.

SAND ABSORPTION AREA

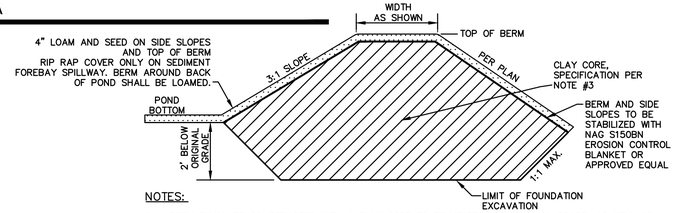
NOT TO SCALE



GRADE OF SEDIMENT FOREBAY SPILLWAY IS EQUAL TO GRADE OF BERM OF POND IN THIS CASE.

SEDIMENT FOREBAY SPILLWAY

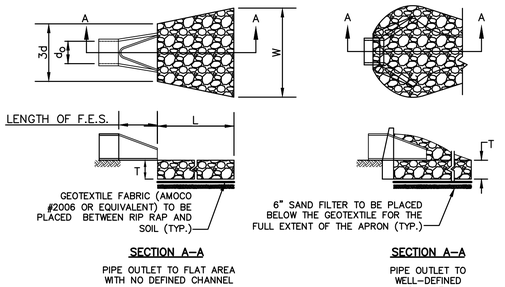
NOT TO SCALE



NOTES:
1. BERM SHALL BE CONSTRUCTED WITH A CLAY CORE TO BE KEYED INTO ORIGINAL GRADE, AS WELL AS A FINE GEOTEXTILE, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THE EARTHEN DIVIDER.
2. THE ENTIRE EMBANKMENT AREA OF THE POND AREAS SHALL BE EXCAVATED TO 2' BELOW ORIGINAL GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 92% OF ASTM D–1557, AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED FOR ANY REASON.
3. CLAY CORE MATERIAL SHALL BE CLEAN SILTY–CLAY BORROW FREE OF ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL CONTAIN NO ROCKS OR LUMPS OVER THREE INCHES (3") IN DIAMETER. THIS MATERIAL SHALL BE INSTALLED IN 6" LIFTS COMPACTED TO 92% OF ASTM D–1557, AND SHALL MEET THE FOLLOWING SPECIFICATIONS: 6" PASSING 100%, #4 SIEVE 95–100%, #40 SIEVE 60–90%, #100 SIEVE 40–60%, #200 SIEVE 25–45% (OF THE FRACTION PASSING THE #4 SIEVE). THE CLAY COMPONENT SHALL HAVE A PLASTICITY INDEX OF AT LEAST 8 AND A HYDRAULIC CONDUCTIVITY OF 10 TO THE –6 CM/SEC.
4. COMPACTION AND MATERIALS TESTING SERVICES SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE OWNER.
5. REMOVE LEDGE TO AT LEAST 2' OUTSIDE AND EBLOW LIMITS OF CLAY CORE.

CLAY CORE BERM

NOT TO SCALE



SECTION A–A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

SECTION A–A

PIPE OUTLET TO WELL–DEFINED CHANNEL

TABLE 7–24––RECOMMENDED RIP RAP GRADATION RANGES		
THICKNESS OF RIP RAP = 0.75 FEET		
d50 SIZE= 0.25 FEET	3 INCHES	
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO
100%	5	6
85%	4	5
50%	3	5
15%	1	2

NOTES:
1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON

NOT TO SCALE

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

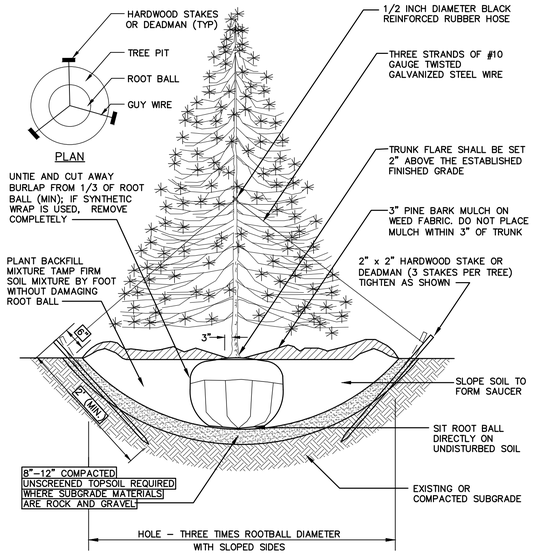
STATE OF NEW HAMPSHIRE – DANIEL JAMES MEDITZ No.18152 – LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

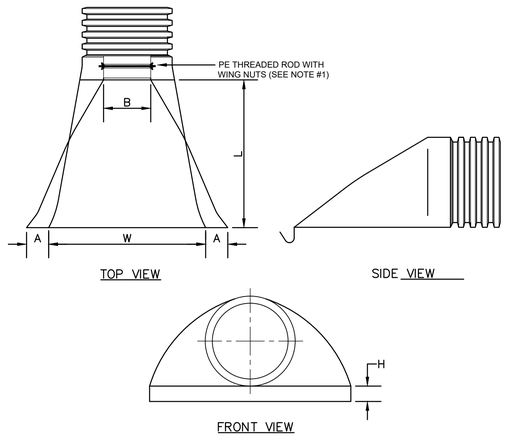
Plan Name:	DETAIL SHEET
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D4
SHEET 18 OF 21
JBE PROJECT NO. 18134.1



EVERGREEN PLANTING

NOT TO SCALE



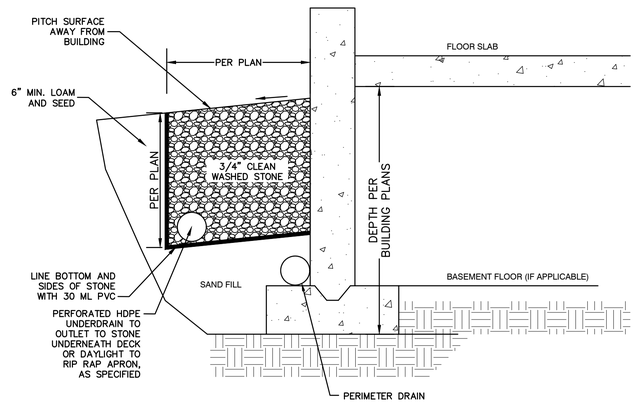
PART NO.	PIPE SIZE	A	B (MAX)	H	L	W
1210-NP	12"	6.5"	10"	6.5"	25"	29"
1510-NP	15"	6.5"	10"	6.5"	25"	29"
1810-NP	18"	7.5"	15"	6.5"	32"	35"
2410-NP	24"	7.5"	18"	6.5"	36"	45"
3010-NP	30"	10.5"	N/A	7.0"	53"	68"
3610-NP	36"	10.5"	N/A	7.0"	53"	68"

NOTES:

1. PE THREADED ROD WITH WING NUTS PROVIDED FOR END SECTIONS 12"-24". 30" AND 36" END SECTIONS TO BE WELDED PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL DIMENSIONS ARE NOMINAL.

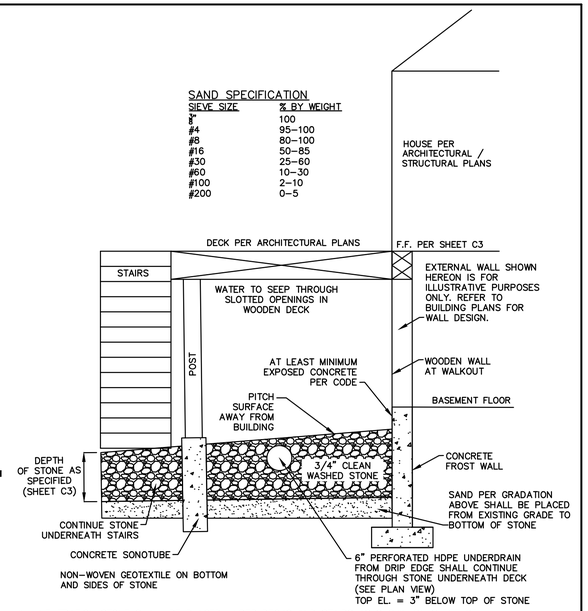
ADS N-12 FLARED END SECTION

NOT TO SCALE



LINED STONE DRIP EDGE DETAIL

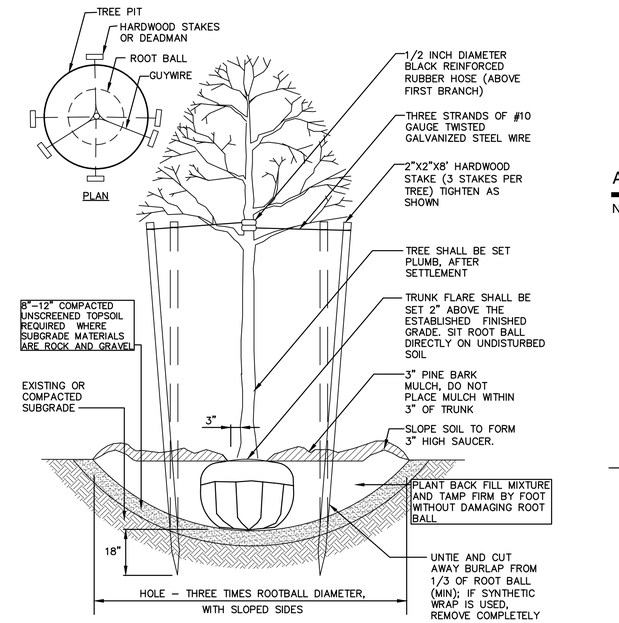
NOT TO SCALE



- INFILTRATION STONE SHALL BE PLACED UNDER DECKS AND STAIRS AS SHOWN ON SHEET C3
- UNITS 3 AND 4 SHALL HAVE A PERIMETER DRAIN ON THE FRONT AND SIDES, BUT NOT IN THE BACK WHERE THE WALKOUT AND STONE INFILTRATION BED ARE PROPOSED.
- REMOVE UNSUITABLE MATERIALS AND DEBRIS FROM SUBGRADE. DO NOT SUBJECT SUBGRADE TO EXCESSIVE COMPACTION. VERIFY THAT SUBGRADE HAS NOT BEEN EXCESSIVELY COMPACTED PRIOR TO PLACEMENT OF SAND BACKFILL AND STONE.
- REMOVE LEDGE TO A MINIMUM DEPTH OF 2' BELOW EXISTING GRADE WITHIN FOOTPRINT OF PROPOSED DECKS AND STAIRS IF ENCOUNTERED, OR DEEPER IF NECESSARY FOR BUILDING CONSTRUCTION.

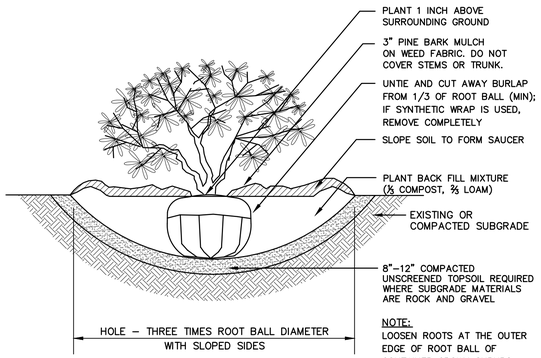
INFILTRATION STONE UNDERNEATH DECK

NOT TO SCALE



TREE PLANTING (FOR TREES UNDER 4" CALIPER)

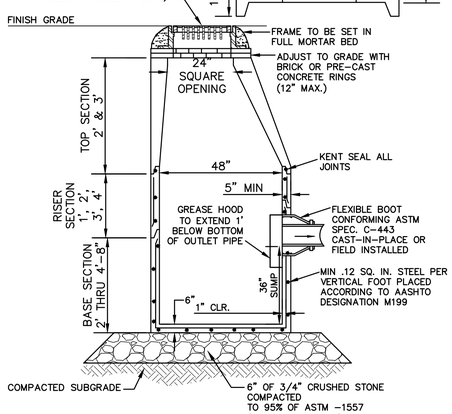
NOT TO SCALE



NOTE:
LOOSEN ROOTS AT THE OUTER EDGE OF ROOT BALL OF CONTAINER GROWN SHRUBS.

SHRUB PLANTING

NOT TO SCALE

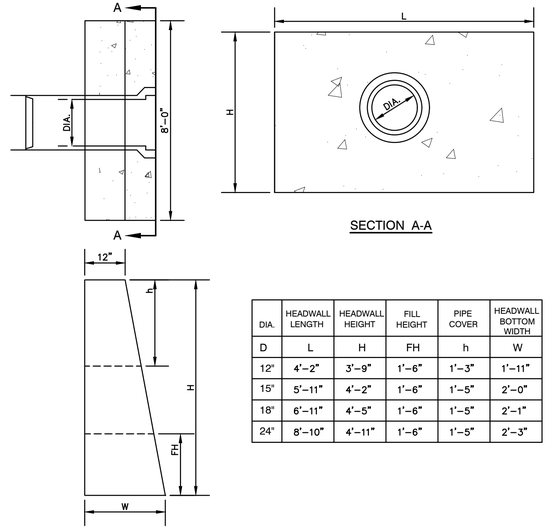


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.
8. CATCH BASINS SHALL HAVE A 36" MINIMUM SUMP AS SHOWN.

CATCH BASIN

NOT TO SCALE



LONGITUDINAL SECTION

DIA.	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	PIPE COVER	HEADWALL BOTTOM WIDTH
D	L	H	FH	h	W
12"	4'-2"	3'-9"	1'-6"	1'-3"	1'-11"
15"	5'-11"	4'-2"	1'-6"	1'-5"	2'-0"
18"	6'-11"	4'-5"	1'-6"	1'-5"	2'-1"
24"	8'-10"	4'-11"	1'-6"	1'-5"	2'-3"

NOTES:

1. ALL DIMENSIONS GIVEN IN FEET & INCHES.
2. PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
3. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150. REINFORCING TO MEET OR EXCEED ASTM A-615 GRADE 60 DEFORMED BARS.
4. 1" THREADED INSERTS PROVED FOR FINAL ATTACHMENT IN FIELD BY OTHERS.

PRECAST CONCRETE HEADWALL

NOT TO SCALE

Design: DJM	Draft: KDR
Checked: JAC	Scale: AS NOTED
Drawing Name: 18134.1-PLAN.dwg	Date: 2/26/2024
	Project No.: 18134.1

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE
DANIEL JAMES MEDITZ
No. 18152
LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

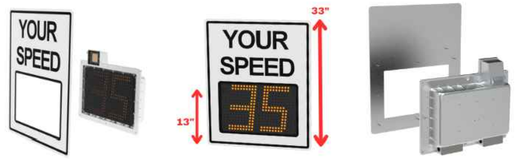
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	LUSTER CLUSTER 635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record:	635 SAGAMORE DEVELOPMENT LLC 3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D5
SHEET 19 OF 21
JBE PROJECT NO. 18134.1

radarsign
MAKING ROADS SAFER

TC-600 RADAR SPEED SIGN



LED DISPLAY
- Speed Display Numbers: 13" tall speed display numbers; capable of showcasing 2 or 3 digits, with readability up to 600 feet
- Ideal Speed Range: Ideal for roads with traffic speeds ranging from 5 to 60 mph
- LED Configuration: Super bright amber LEDs in full matrix design; Life up to 100,000 hours
- Enhanced Visibility Design: Laser cut flat black mask enhances visibility of LED display when illuminated; Ensures completely dark display when LEDs are off
- Adjustable Display Brightness: Display brightness fully automatic or user adjustable

SPEED VIOLATOR ALERTS
- Standard Alerts: SPEED with 3 flash rate options; Enhanced font; SLOW DOWN; TOO FAST
- Alert Options: Display speed and word message alerts alternately or individually based on speed settings
- Speed Display Flash Rates: MUTCD flash (approx. 55-60 fpm); slow flash (approx. 90 fpm); fast flash (approx. 140 fpm)
- ~~Optional Message Alerts: Available options include SHARP CURVE; right or left facing chevrons; SCHOOL ZONE; smiley face; FINE $$$~~ (not available with cellular signs)
- ~~Optional Strobe Alerts: Available options include red strobe alert; blue strobe alert; alternating red/blue strobe alert (police flash); white strobe alert (capable of simulating a camera flash)~~

YOUR SPEED FACEPLATE
- Dimensions: 28"W x 33"H with 4" high lettering; ~~Optional oversized 30"W x 36"H YOUR SPEED faceplate available~~
- Available in white, yellow, fluorescent yellow/green, and safety orange

SOLAR POWER MODEL
- Operation: Operates 24/7 with solar power supply
- Power Supply: Two 12-volt,18 amp/hour AGM batteries (UL recognized); Provides up to 14 days of back-up operation on fully charged batteries
- Power Consumption: < 2.0 amps (24w) at maximum display intensity; Idle mode: < 1/2 watt
- Circuit Breaker: Multi-circuit; 3 x 10 amp fuses
- Battery Status Monitoring: Check battery charge levels and solar amperage via Wi-Fi or cellular
- Low battery cut-off feature provides intelligent battery management, optimizing the performance and longevity of the battery
- Charger and battery characteristics matched to operate within the sign's operating temperature range
- Solar Panel Output: 50 watt standard
- Solar Charger: Fully integrated charge controller that continuously monitors and logs data regarding solar output and battery charge status

AC POWER MODEL
- Operation: Operates 24/7 with AC power supply
- Power Supply: Hard wire to 100 VAC-240 VAC
- Power Consumption: < 2.0 amps (24w) at maximum display intensity; Idle mode: < 1/2 watt
- Circuit Breaker: Multi-circuit, 10 amp fuse

ELECTRONICS
- All power inputs are fused and reverse polarity protected
- All circuit boards are conformally coated for extra protection
- Automatic reset and watch-dog circuitry ensure the sign returns to normal operation without the need for user intervention

Certified Quality System ISO 9001:2015 | MUTCD Compliant Radar Speed Signs | Proudly Engineered & Manufactured in the USA

info@radarsign.com radarsign.com 678-965-4814

TC-600 Radar Speed Sign Spec Sheet MK0023 V24.01

RADAR
- Type: K Band, single direction Doppler radar; FCC part 15 compliant; No license required
- Sensor Range: Detects vehicles up to 1200 feet
- Beam Width: 12 degrees, +/- 2 degrees
- Operating Frequency: 24.125 GHz, +/- 50 MHz
- Accuracy: +/- 1.0 mph
- Speed Detection Range: 5-127 mph; 8-198 kph

RADAR SPEED SIGN HOUSING
- Industrial Design: Single-piece cast aluminum housing; Seamless construction with no welding; Provides maximum protection from the elements and vandalism
- Thickness: Constructed from 0.1875" thick heavy-duty aluminum
- Compliance Standards: IP65 compliant; NEMA 4 level compliant
- Humidity Maximum: 100%; Non-sealed and ventilated
- Provides maximum protection from the elements and vandalism
- Dimensions: 18.5"H x 26.25" W x 5.0"D
- Mounting Bracket: Stainless steel mounting hardware included for poles up to 4.5" OD

WEIGHT & OPERATING TEMPERATURE
- TC-600 Solar Power Model : Weight 67 lbs.
- TC-600 AC Power Model: Weight 42 lbs.
- Operating temperature: -40°F to +160°F

STANDARD FEATURES ON ALL RADARSIGN MODELS

BASHPLATE™ WITH INTEGRATED LED REFLECTOR CONES
- Heavy duty aluminum shield over LED display to protect components from abuse or vandalism
- Radarsign's proprietary directional beam technology includes custom reflectors positioned around each LED. This unique design magnifies the intensity of the light, ensuring the highest quality viewable display with minimal energy usage.

POLYCARBONATE DISPLAY COVER
- .25" thick protective sheet covers entire display area
- Abrasion, graffiti and shatter resistant; Provides UV protection

WI-FI ENABLED
- Radar speed sign emits it's own Wi-Fi signal, eliminating the need for an internet connection. Manage sign with smart phone, tablet, or laptop; Allows for quick, easy sign operation and data download from most web enabled devices.
- Connection range up to 300 feet from sign
- WPA2 encrypted security; Unique password protected
- OTA Software Updates (over-the-air): Allow the wireless delivery of software updates and upgrades directly to the radar sign
- Speed is 10x faster and has 10x the range of Bluetooth

STANDARD PROGRAMMING
- Setup Functions: Easy-to-navigate digital menu; No mechanical switches to operate
- Daily Timers: Allow up to 5 on/off timer settings per day, including 4 customizable timers in addition to the standard setting. Settings allow for lower speed limits for school zone times.
- Stealth Mode: This feature allows the display to be turned off while still allowing continuous traffic data collection. This ensures data monitoring even when the display is not active.
- Possum Switch™: In the event of a forceful attack, the sign can simulate inactivity or "play dead" for a duration of 30 minutes. This feature helps protect the sign from malicious tampering or damage.
- Maximum Speed Cutoff: Designed to prevent the sign from displaying excessively high speeds, this feature curbs any attempts at speeding towards or "racing" the sign. Users have the option to choose between flashing dashes or an LED display cutoff.

WARRANTY : 2 years on parts and labor including batteries; Exceptions: Does not cover malicious abuse, theft, or damage due to unauthorized modification.

OPTIONAL DATA REPORTING, MANAGEMENT AND SCHEDULING FEATURES

STREETSMART TRAFFIC DATA COLLECTION & REPORTING SOFTWARE: This feature comes with a lifetime license for a one-time charge, eliminating recurring fees. It is licensed per sign and allows the download, reporting, organization, and analysis of speed and traffic data recorded by the radar speed sign. Users can generate 35 charts and graphs with Excel™ macro. The Traffic Data Storage Capacity allows data storage for up to 5 million vehicles, retaining data for 12 months in the sign before overwriting the oldest data first.

CLOUD SERVICE: The built-in cellular modem allows cloud accessibility from anywhere with an internet connection. It enables remote management of sign settings for your entire network of signs. Additionally, it uploads daily traffic statistics to the Radarsign Cloud server (requires the purchase of a Streetsmart data license). This feature also provides alerts in case of low battery or interrupted connection.

ADVANCED SCHEDULER: Date-driven program enables the pre-programming of multiple years and schedules for radar speed signs. This functionality is particularly beneficial for scheduling in school zones or areas where events occur regularly.

radarsign
MAKING ROADS SAFER

Pole and Base Options

Radarsign offers a round aluminum or decorative black fluted aluminum pole for use with our radar speed signs. Our selection of pole bases includes square or octagonal aluminum bases, or a black decorative base for a more architectural look. All Radarsign pole bases have a breakaway design that meets FHWA crash test guidelines.

Pole Style	Round aluminum	Round aluminum	Decorative black fluted
Pole OD (outside diameter)	4.5"	4.5"	4"
Pole Length	Choice of 12', 13', 14', 15', or 16'	Choice of 12', 13', 14', 15', or 16'	12'
Base Style	Square	Octagonal	Decorative black
Base Anchor Meth	Cement pad with concrete form kit or anchor bolt cage kit	Cement pad with concrete form kit or anchor bolt cage kit	2.5" x 2.5" sleeve in cement

Installation Form Kits

Concrete Form Kit
The concrete form kit, customized for the aluminum pole bases with the round aluminum poles, makes base and pole installation easy. The kit includes a prefabricated concrete pole base form, four anchor bolts, a rebar base cap, and a rebar sample. *(Not compatible with decorative black pole).*

Anchor Bolt Cage Kit
The anchor bolt cage kit is a pre-fabricated form guide for pole footing installation. The kit includes an anchor bolt cage with hardware and (4) 18" x 3/4" J bolts.

Certified Quality System ISO 9001:2015 | MUTCD Compliant Radar Speed Signs | Proudly Engineered & Manufactured in the USA

info@radarsign.com radarsign.com 678-965-4814

Pole and Base Options MK0003 v22.01

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

STATE OF NEW HAMPSHIRE – DANIEL JAMES MEDITZ No. 18152 – LICENSED PROFESSIONAL ENGINEER – 11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: TC-600 RADAR SPEED SIGN SPECIFICATIONS

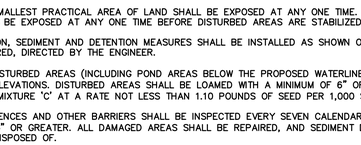
Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH

Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

DRAWING No.
D6
SHEET 20 OF 21
JBE PROJECT NO. 18134.1

TEMPORARY EROSION CONTROL NOTES

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
4. SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
5. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
6. AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
7. 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 NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) 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.
8. 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.
9. AFTER OCTOBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
10. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
    d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.

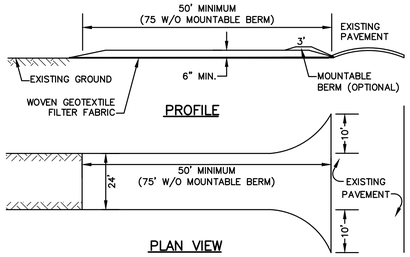


NOTES:

1. ORGANIC FILTER BERMS SHALL BE UTILIZED IN LIEU OF SILT FENCE.
2. THE EROSION CONTROL MIX USED IN THE FILTER BERMS SHALL BE A WELL-GRADED MIXTURE OF PARTICLE SIZES, MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER, STUMP GRINDINGS, SHREDDED OR COMPOSTED BARK, OR ACCEPTABEL MANUFACTURED PRODUCTS, AND SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH, AND SHALL MEET THE FOLLOWING STANDARDS:
    a) THE ORGANIC CONTENT SHALL BE 25-65% OF DRY WEIGHT.
    b) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 3" SCREEN, 90-100% PASSING A 1" SCREEN, 70-100& PASSING A 0.75" SCREEN, AND 30-75% PASSING A 0.25" SCREEN.
    c) THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
    d) LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
    e) SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
    f) THE pH SHALL BE BETWEEN 5.0 AND 8.0.
3. ORGANIC FILTER BERMS SHALL BE INSTALLED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BERM.
4. ON SLOPES LESS THAN 5%, OR AT THE BOTTOM OF SLOPES STEEPER THAN 3:1, UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE), AND A MINIMUM OF 36" WIDE. ON LONGER OR STEEPER SLOPES, THE BERM SHALL BE WIDER TO ACCOMMODATE THE POTENTIAL ADDITIONAL RUNOFF.
5. FROZEN GROUND, OUTCROPS OF BEDROCK, AND VERY ROOTED FORESTED AREAS PRESENT THE MOST PRACTICAL AND EFFECTIVE LOCATIONS FOR ORGANIC FILTER BERMS. OTHER BMP'S SHOULD BE USED AT LOW POINTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT HAVE A LARGE CONTRIBUTING AREA.
6. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
7. STRUCTURES MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED.

ORGANIC FILTER BERM / FIBER BERM

NOT TO SCALE



NOTES:

1. STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, 75' WITHOUT A MOUNTABLE BERM, AND EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS, OR 10 FEET, WHICHEVER IS GREATER.
5. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

SEEDING SPECIFICATIONS

1. GRADING AND SHAPING
    A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
    B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. SEEDBED PREPARATION
    A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
    B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. ESTABLISHING A STAND
    A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
    AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.
    NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.
    PHOSPHATE(P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
    POTASH(K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
    (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
    B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
    C. REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
    D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
4. MULCH
    A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
    B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
5. MAINTENANCE TO ESTABLISH A STAND
    A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
    B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
    C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

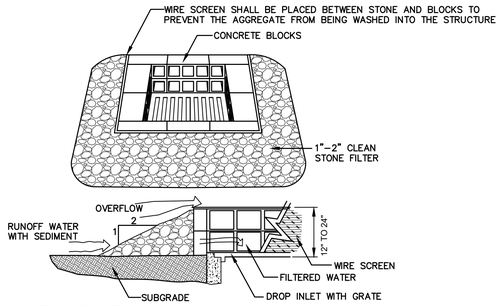
NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

SEEDING GUIDE

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH	15	0.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
* C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDS FOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING RATES



MAINTENANCE NOTE:

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

TEMPORARY CATCH BASIN INLET PROTECTION (Block and Gravel Drop Inlet Sediment Filter)

NOT TO SCALE

CONSTRUCTION SEQUENCE

1. PRIOR TO THE START OF ANY ACTIVITY, IT IS THE RESPONSIBILITY OF THE SITE'S SITE DEVELOPER (OR OWNER) TO FILE A NOTICE OF INTENT (NOI) FORM WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) IN ORDER TO GAIN COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. A PRE CONSTRUCTION MEETING IS TO BE HELD WITH ALL DEPARTMENT HEADS PRIOR TO THE START OF CONSTRUCTION.
2. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
3. INSTALL FIBER BERM, HAY BALES AND CONSTRUCTION ENTRANCES PRIOR TO THE START OF CONSTRUCTION. THESE ARE TO BE MAINTAINED UNTIL THE FINAL PAVEMENT SURFACING AND LANDSCAPING AREAS ARE ESTABLISHED.
4. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
5. CONSTRUCT AND/OR INSTALL TEMPORARY OR PERMANENT SEDIMENT AND/OR DETENTION BASIN(S) AS REQUIRED. THESE FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUN-OFF TO THEM.
6. STRIP LOAM AND PAVEMENT PER THE RECOMMENDATIONS OF THE PROJECT ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY.
7. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS.
8. INSTALL THE SEWER AND DRAINAGE SYSTEMS FIRST, THEN ANY OTHER UTILITIES IN ACCORDANCE WITH THE PLAN AND DETAILS. ANY CONFLICTS BETWEEN UTILITIES ARE TO BE RESOLVED WITH THE INVOLVEMENT AND APPROVAL OF THE ENGINEER.
9. INSTALL INLET PROTECTION AT ALL CATCH BASINS AS THEY ARE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
10. ALL SWALES AND DRAINAGE STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUN-OFF DIRECTED TO THEM.
11. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE DITCHES, CHECK DAMS, SEDIMENT TRAPS, ETC., TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ABUTTING WATERS AND/OR PROPERTY.
12. PERFORM FINAL FINE GRADING, INCLUDING PLACEMENT OF 'SELECT' SUBGRADE MATERIALS.
13. PAVE ROADWAY AND DRIVEWAYS WITH INITIAL 'BASE COURSE'.
14. PERFORM ALL REMAINING SITE CONSTRUCTION (i.e. BUILDING, CURBING, UTILITY CONNECTIONS, ETC.).
15. LOAM AND SEED ALL DISTURBED AREAS AND INSTALL ANY REQUIRED SEDIMENT AND EROSION CONTROL FACILITIES (i.e. RIP RAP, EROSION CONTROL BLANKETS, ETC.).
16. FINISH PAVING ROADWAY AND DRIVEWAYS WITH 'FINISH' COURSE.
17. ROADWAY AND DRIVEWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
18. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
19. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
20. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE BEEN 75%-85% ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND RE-VEGETATE ALL DISTURBED AREAS.
21. CLEAN SITE AND ALL DRAINAGE STRUCTURES, PIPES AND SUMPS OF ALL SILT AND DEBRIS.
22. INSTALL ALL PAINTED PAVEMENT MARKINGS AND SIGNAGE PER THE PLANS AND DETAILS.
23. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY QUARTER-INCH OF RAINFALL.
24. UPON COMPLETION OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ANY RELEVANT PERMITTING AGENCIES THAT THE CONSTRUCTION HAS BEEN FINISHED IN A SATISFACTORY MANNER.

Design: DJM	Draft: KDR	Date: 2/26/2024
Checked: JAC	Scale: AS NOTED	Project No.: 18134.1
Drawing Name: 18134.1-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

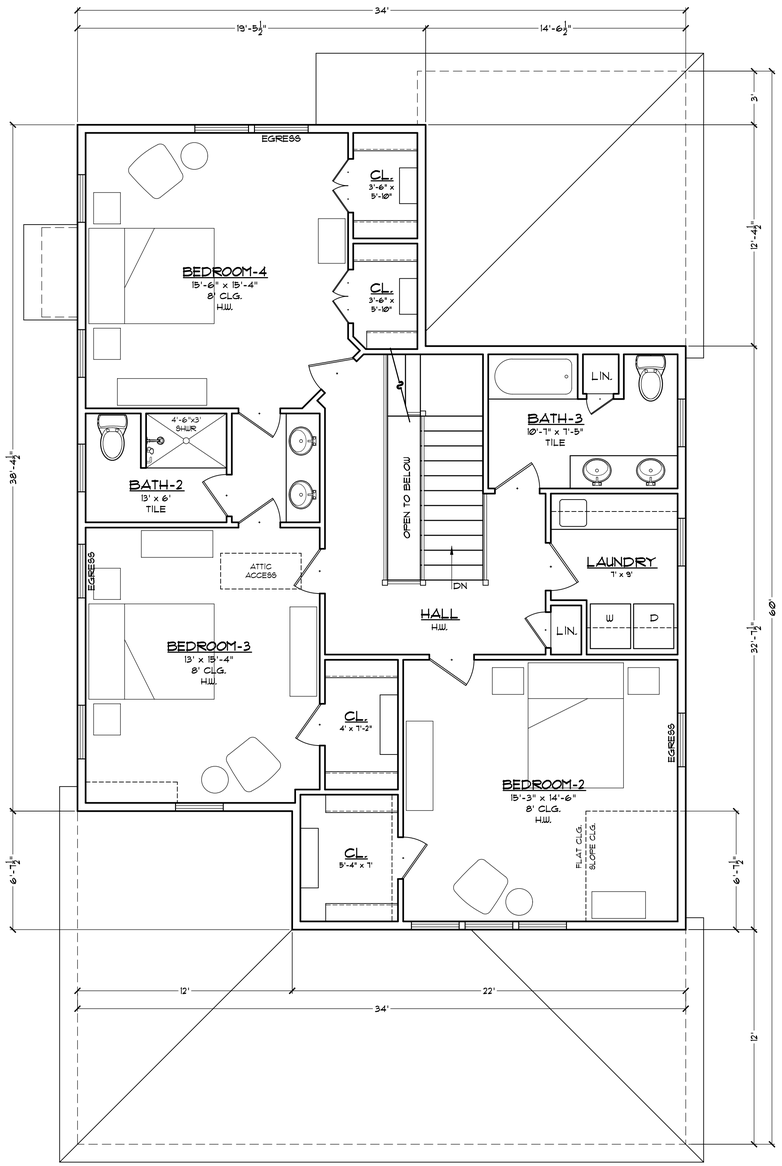
STATE OF NEW HAMPSHIRE - DANIEL JAMES MEDITZ No.18152 - LICENSED PROFESSIONAL ENGINEER
11/25/2024

REV.	DATE	REVISION	BY
5	11/25/24	REVISED PER ALTUS COMMENTS	DJM
4	10/22/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
3	9/16/24	REVISED PER ALTUS AND TAC COMMENTS	DJM
2	8/14/24	REVISED PER CITY REVIEW ENGINEER COMMENTS	DJM
1	4/19/24	REVISED PER TAC COMMENTS	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EROSION AND SEDIMENT CONTROL DETAILS
Project: LUSTER CLUSTER
635 SAGAMORE AVE., PORTSMOUTH, NH
Owner of Record: 635 SAGAMORE DEVELOPMENT LLC
3612 LAFAYETTE RD., DEPT 4, PORTSMOUTH, NH 03801 BK 6332 PG 1158

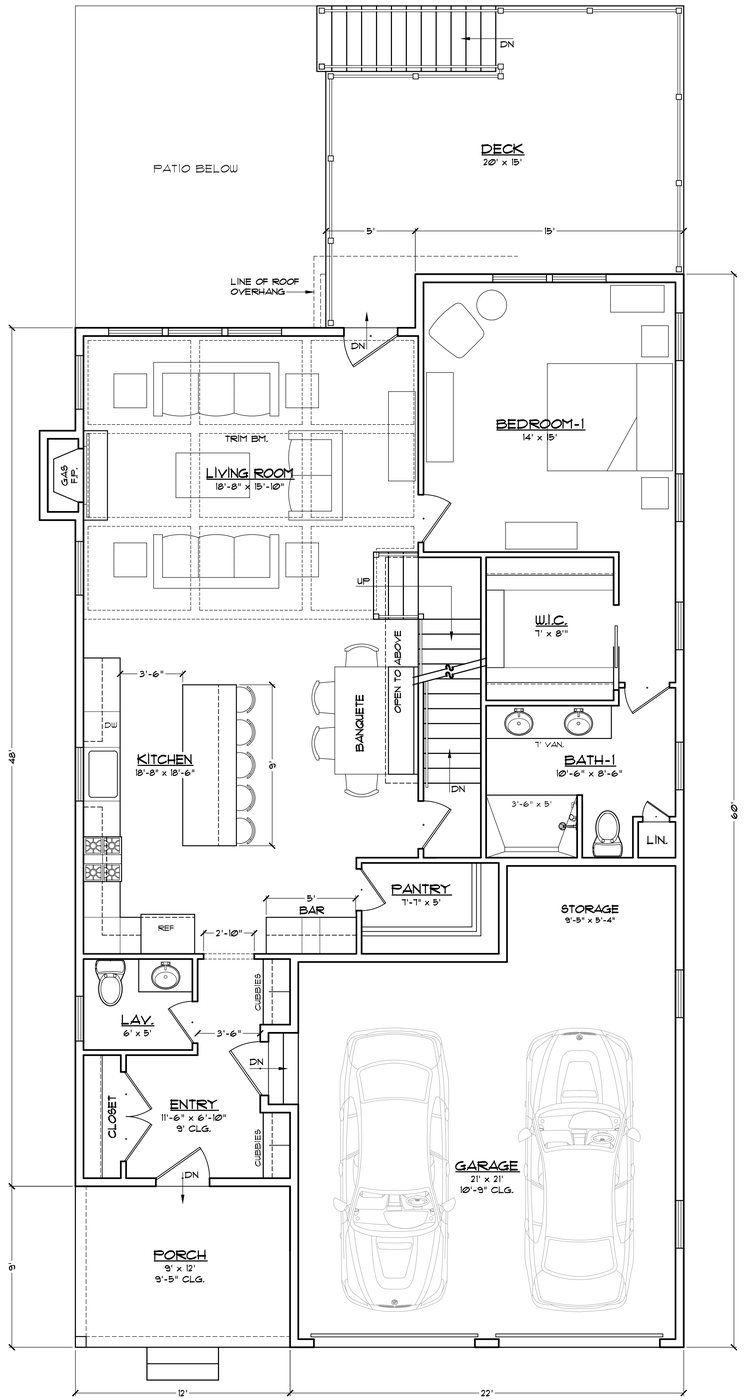
DRAWING No.
E1
SHEET 21 OF 21
JBE PROJECT NO. 18134.1



SECOND FLOOR PLAN

¼"=1'-0"

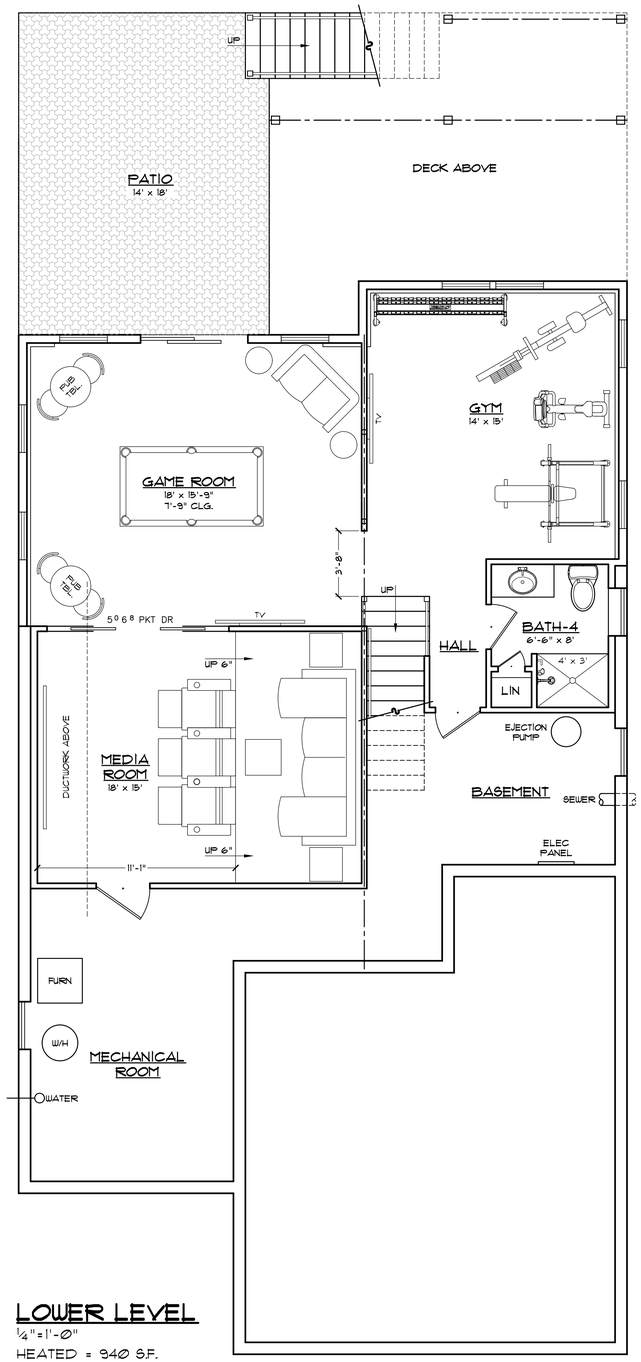
HEATED = 1270 S.F.
(INCLUDES 67 S.F. OF STAIRWELL)



FIRST FLOOR PLAN

¼"=1'-0"

HEATED = 1,347 S.F.
GARAGE = 528 S.F.
FRONT PORCH = 108 S.F.
DECK = 280 S.F.
TOTAL HEATED =3,557 S.F.



LOWER LEVEL

¼"=1'-0"

HEATED = 940 S.F.
PATIO = 248 S.F.

WALK-OUT CONCEPT

PROJECT:
The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-1112@comcast.net
Phone: 603-964-1300
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
196 Bunker Hill Ave.
Stratham, NH 03885

DATE: 1-30-24
REVISED:
DWG. NO. 3

C:\TI-INC\2024\Oaks Walk-OutBD

RIGHT SIDE ELEVATION

1/4"=1'-0"

UNIT #2
ROOF MIDPOINT
25'-3"
PROPOSED AVERAGE GRADE 73.1
EXISTING AVERAGE GRADE 72.25

UNIT #1 - F.F. = 73.5
UNIT #2 - F.F. = 74.0
UNIT #3 - F.F. = 75.25
W/O = 65.45
UNIT #4 - F.F. = 75.5
W/O = 65.70

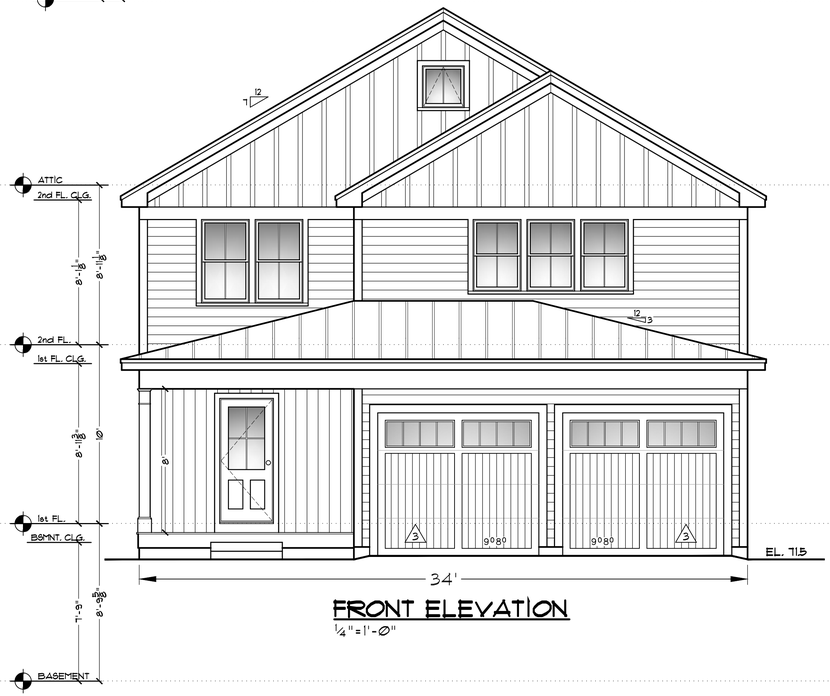
REAR ELEVATION

1/4"=1'-0"

LEFT SIDE ELEVATION

1/4"=1'-0"

UNIT #1
ROOF MIDPOINT
26'-3"
F.F. 73.5
PROPOSED AVERAGE GRADE 71.5
EXISTING AVERAGE GRADE 71



FRONT ELEVATION

1/4"=1'-0"

UNITS 1&2

C:\TI-INC\2024\Oaks80

PROJECT:
The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-ill2@comcast.net
Phone: 603-964-1300
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
196 Bunker Hill Ave.
Stratham, NH 03885

DATE: 10-21-24
REVISED:
DWG. NO. 1

RIGHT SIDE ELEVATION

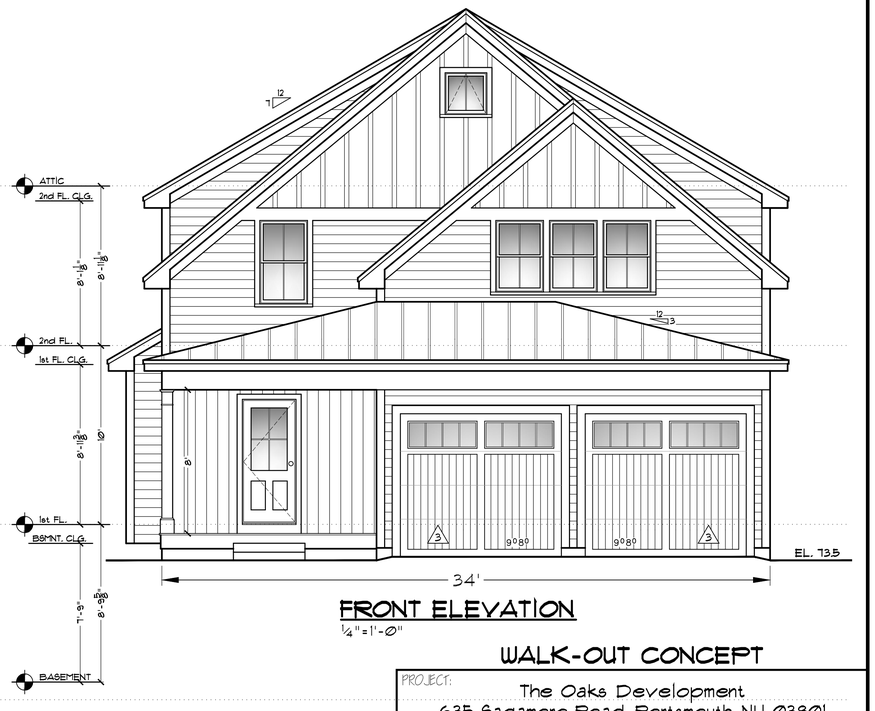
¼"=1'-0"

REAR ELEVATION

¼"=1'-0"

LEFT SIDE ELEVATION

¼"=1'-0"



FRONT ELEVATION

¼"=1'-0"

UNITS 3&4

WALK-OUT CONCEPT

UNIT #1 - F.F. = 73.5
UNIT #2 - F.F. = 74.0
UNIT #3 - F.F. = 75.25
W/O = 65.45
UNIT #4 - F.F. = 73.5
W/O = 65.70

PROJECT:
The Oaks Development
635 Sagamore Road, Portsmouth, NH 03801

E-mail: tech-ill2@comcast.net
Phone: 603-964-1300
Fax: 603-580-1414
Technical Illustrations
ARCHITECTURAL DRAFTING SERVICE
196 Bunker Hill Ave.
Stratham, NH 03885

DATE: 10-21-24
REVISED:
DWG. NO. 1

C:\TI-INC\2024\Oaks Walk-Out\BD

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 12/19/2024
Property Address: 1600 Woodbury Avenue
Application #: LU-24-182
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - in order to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding (Meets Standard/Criteria)**	**Supporting Information**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	Applicable standards: SSC has reviewed local AHJ and state code compliance for site design
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	The EV installation follows development standards by the Landlord and Client "Ionna" to ensure proper site design and use of existing parking lot.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	The design of the EV installation does not impact negatively the flow of stormwater management on the site and erosion control will be utilized by the installation crew during the course of construction.
4	Adequate protection for the		The Design of the new Chargers

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	quality of groundwater.	**Meets** **Does Not Meet**	does not impact the site ground water as all construction is taking place below grade between 3'-6'
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	N/A
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	N/A
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	The installation crew for the site will follow all state and local requirements for environmental protection.
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	The installation crew for the site will follow all state and local requirements for fire safety prevention and control. Daily morning meetings regarding site safety will be taking place
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	The are of work is taking place away from the wetlands area of the parcel and will have no impact on the wetlands area
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	N/A
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	Traffic control will be utilized for the installation of the EV conduit below Durgin Street and the site will be fenced off around EV construction for public safety. Given the location of the EV chargers installation there is no negative impact to the traffic flow of the parking lot
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	**Meets** **Does Not Meet**	Traffic Control will be managed by the installation crew throughout the course of the construction project. Given the scope and location within the parking lot current traffic patterns will not be impacted.
13	Adequate insulation from		N/A

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
	external noise sources.	**Meets** **Does Not Meet**	
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	The site could utilize the need for emergency services only at the new EV location and proper E-911 address will be assigned
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	The EV design utilizes existing parking stalls for new use case for EV charging
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	The EV design does not impact any of the existing infrastructure around or on the parcel with regards to access ways, sidewalks, bicycle paths
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	N/A
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	The EV installation will protect existing landscaping around the ROW of Durgin and at this time per TAC Review no additional landscaping is required. During Plan Review if Landscaping is required site plans can be updated to meet AHJ requirements
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	At this time AGI & SSC feel that the installation of new EV chargers at this location fits well within the city standards and appropriate use case of the subject parcel this new development is located in
	Other Board Findings:		

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information

DRAFT

Findings of Fact | EV Fueling Space B Conditional Use Permit
City of Portsmouth Planning Board

Date: January 16, 2025
Property Address: 1600 Woodbury Ave
Application #: LU-24-182
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of the all conditions necessary to obtain final approval.

EV Fueling Space B Conditional Use Permit
10.242.10 The Planning Board may grant a conditional use permit if the application is found to be in compliance with the general criteria in Section 10.243 or, if applicable, the specific standards or criteria set forth in this Ordinance for the particular use or activity.

	EV Fueling Space B Conditional Use Permit 10.243 Requirements	**Finding** **(Meets Criteria/Requirement)**	**Supporting Information**
1	10.243.21 The design of proposed structures, their height and scale in relation to the site's surroundings, the nature and intensity of the proposed use or activity, and the layout and design of the site will be compatible with adjacent and nearby properties, buildings and uses, will complement or enhance the character of surrounding development, and will encourage the appropriate and orderly development and use of land and buildings in the surrounding area.	**Meets** **Does Not Meet**	• The proposed EV charging equipment will be compatible with the existing site's surroundings, as well as the adjacent and nearby properties. The proposed use will be an accessory to the existing principal use of the parking lot and surrounding commercial retail business. The availability of EV charging in this location will complement and enhance the character of surrounding development.
2	10.243.22 All necessary public and private utility infrastructure and services will be available and adequate to serve the	**Meets** **Does Not Meet**	• New electric service is being installed by the Utility to serve the proposed EV charging equipment.

DRAFT

	EV Fueling Space B Conditional Use Permit 10.243 Requirements	Finding (Meets Criteria/Requirement)	Supporting Information
	proposed use.		
3	10.243.23 The site and surrounding streets will have adequate vehicular and pedestrian infrastructure to serve the proposed use consistent with the City's Master Plan.	**Meets** **Does Not Meet**	• The existing site and surrounding streets will maintain adequate vehicular and pedestrian infrastructure to serve the proposed use consistent with the City's Master Plan.
4	10.243.24 The proposed structures, uses, or activities will not have significant adverse impacts on abutting and surrounding properties on account of traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare.	**Meets** **Does Not Meet**	• The proposed EV charging station will not have significant adverse impacts on abutting and surrounding properties. There will not be any additional traffic, noise, odors, vibrations, dust, or fumes due to the proposed use. There will be lighting added, but it will have minimal impacts on surrounding properties. A photometric plan has been completed and submitted with the plans.
5	10.243.25 The proposed structures and uses will not have significant adverse impacts on natural or scenic resources surrounding the site, including wetlands, floodplains, and significant wildlife habitat.	**Meets** **Does Not Meet**	• The proposed EV charging station will not have significant adverse impacts on any natural or scenic resources surrounding the site.
6	10.243.26 The proposed use will not cause or contribute to a significant decline in property values of adjacent properties.	**Meets** **Does Not Meet**	• The proposed EV charging station will not cause or contribute to a significant decline in property values of adjacent properties.
6	**<u>Other Board Findings:</u>**		
7	**<u>Additional Conditions of Approval</u>:**		

DRAFT

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

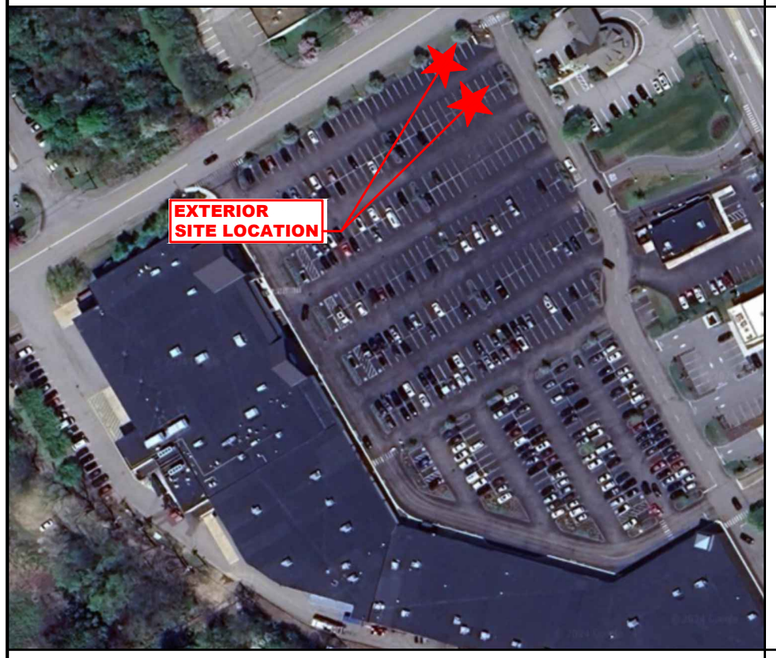
PROJECT:

CHARGING STATION ADDITION

DRAWING DESCRIPTION:

FINAL CD100

AERIAL MAP



SITE INFORMATION

SITE ADDRESS: 1600 WOODBURY AVE
PORTSMOUTH, NH 03801

COUNTY: ROCKINGHAM

PROPERTY OWNER: DURGIN SQUARE, LLC.
CLIFFORD LONG
1600 WOODBURY AVE.
PORTSMOUTH, NH 03801
(617) 462-1200

SITE INFORMATION:
LATITUDE: 43° 05' 23.05" N (NAD 83)
LONGITUDE: 70° 47' 33.07" W (NAD 83)
GROUND ELEV: 63.0' AMSL

APPLICANT: AGI
5514 RIO VISTA DRIVE
CLEARWATER, FL 33760
(800) 877-7868 ex. 4520

UTILITY COMPANY: UNITIL

APN: 08178-0238-0016-0000

CONSULTING TEAM

ENGINEERING:
SSC, INC.
7171 WEST 95TH STREET, SUITE 600
OVERLAND PARK, KANSAS 66212
PHONE: (913) 438-7700
FAX: (913) 438-7777

SURVEY:
ODONE SURVEY & MAPPING
291 MAIN STREET, SUITE 5
NORTHBOROUGH, MA 01532
PHONE: (508) 351-6022
FAX: (508) 351-6633

STRUCTURAL:
ARCHITECTURAL GRAPHICS INC.
2655 INTERNATIONAL PARKWAY
VIRGINIA BEACH, VIRGINIA 23452
PHONE: (615) 329-1300

LIGHTING:
AGI, INC.
5514 RIO VISTA DRIVE
CLEARWATER, FLORIDA 33760
PHONE: (800) 877-7868, ex. 4520

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1.0	TITLE SHEET
	SURVEY (BY OTHERS)
C-1.0	OVERALL SITE & ZONING PLAN
C-1.1	EXISTING SITE PLAN
C-1.2	ENLARGED SITE PLAN & ELEVATION
C-1.3	OPEN SPACE & VEGETATION PLAN
C-1.4	EROSION CONTROL PLAN
C-2.0	FOUNDATION PLANS (1 OF 2)
C-2.1	FOUNDATION PLANS (2 OF 2)
C-3.0	EQUIPMENT DETAILS (1 OF 3)
C-3.1	EQUIPMENT DETAILS (2 OF 3)
C-3.2	EQUIPMENT DETAILS (3 OF 3)
E-1.0	UTILITY PLAN
E-1.1	ENLARGED UTILITY PLAN
E-2.0	ELECTRICAL ONE-LINE DIAGRAM
E-2.1	PANEL SCHEDULE
E-3.0	ELECTRICAL DETAILS (1 OF 2)
E-3.1	ELECTRICAL DETAILS (2 OF 2)
E-3.2	UTILITY RISER DIAGRAM
G-1.0	GROUNDING DETAILS
SP-1.0	SPECIFICATIONS (1 OF 5)
SP-1.1	SPECIFICATIONS (2 OF 5)
SP-1.2	SPECIFICATIONS (3 OF 5)
SP-2.0	SPECIFICATIONS (4 OF 5)
SP-2.1	SPECIFICATIONS (5 OF 5)
	EQUIPMENT SPECIFICATIONS (BY OTHERS)
	PHOTOMETRIC SPECIFICATIONS (BY OTHERS)
	CANOPY STRUCTURAL ANALYSIS (BY OTHERS)

PROJECT DESCRIPTION

- INSTALL (6) DC400KW DISPENSERS
- INSTALL (1) UTILITY TRANSFORMER (BY UTILITY COMPANY)
- INSTALL (1) 3000A 480Y/277V SWITCHBOARD "MDP"
- INSTALL (1) 15KVA TRANSFORMER
- INSTALL (1) CT CABINET W/ METER
- INSTALL (1) MINI POWER-ZONE
- INSTALL (1) SITE COMMS BOX
- INSTALL (22) BOLLARDS
- INSTALL (2) EV SIGNAGE
- INSTALL (12) WHEELSTOPS

JURISDICTION COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE
2. INTERNATIONAL MECHANICAL CODE
3. ANSI/TIA-222 STRUCTURAL STANDARD
4. NFPA 780 – LIGHTNING PROTECTION CODE
5. NATIONAL ELECTRICAL CODE

811 Know what's below. Call before you dig. www.call811.com

THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION: TITLE SHEET

SHEET #: T-1.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

VICINITY MAP - NOT TO SCALE

ZONING INFORMATION

LISTED BELOW ARE SETBACK, HEIGHT, AND FLOOR SPACE AREA RESTRICTIONS AS DISCLOSED BY APPLICABLE ZONING OR BUILDING CODES AS REQUIRED UNDER TABLE A 6(a) AND 6(b) OF THE ALTA STANDARDS.

ZONING CLASSIFICATION: GENERAL BUSINESS (GB)
PROVIDED FROM THE CITY OF PORTSMOUTH ZONING ORDINANCE

NOTE: THE SURVEYOR WAS NOT PROVIDED WITH UPDATED ZONING INFORMATION FROM THE INSURER PURSUANT TO TABLE A ITEM 6B.

ZONING ITEM		REQUIRED
MINIMUM LOT AREA		43,560 SQ. FT.,
MINIMUM FRONTAGE		200 FT.,
MAX. LOT COVERAGE		30%
MINIMUM OPEN SPACE		20%
MINIMUM SETBACKS:	FRONT SIDE REAR	30 FT. 30 FT. 50 FT.
MAXIMUM BUILDING HEIGHT		60 FT.

PARKING REQUIREMENT: (NON-RESIDENTIAL USES)

MINIMUM: 1 SPACE PER 350 SQUARE FEET OF GROSS FLOOR AREA
MAXIMUM: 1 SPACE PER 250 SQUARE FEET OF GROSS FLOOR AREA.

PARKING TABLE	NO. OF SPACES
REGULAR PARKING	516
HANDICAP PARKING	25
TOTAL PARKING SPACES	541

FEMA FLOOD NOTE

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X, OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 33015C0260F, WHICH BEARS AN EFFECTIVE DATE OF JANUARY 29, 2021 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA, AS SHOWN ON THE FEMA WEBSITE (HTTPS://MSC.FEMA.GOV) BY FIRMETTE CREATED ON NOEMBER 7, 2024 WE HAVE LEARNED THIS COMMUNITY DOES CURRENTLY PARTICIPATE IN THE PROGRAM, NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

SURVEYOR'S NOTES

1. CURRENT OWNER OF RECORD: DURGIN SQUARE LLC
   ASSESSORS PARCEL: MAP 238 LOT 16
   DEED REFERENCE: BOOK 6362, PAGE 2336.
   PLAN REFERENCE: (D-32485)
   SITE ADDRESS: 1600-1618 WOODBURY AVE, PORTSMOUTH, NH (ROCKINGHAM COUNTY)
2. THIS PLAN IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY ODONE SURVEY & MAPPING ON APRIL 15-17, 2014 AND UPDATED BY PHYSICAL INSPECTION ON NOVEMBER 7, 2024. THIS PLAN HAS BEEN PREPARED FOR TITLE PURPOSES ONLY AND NOT TO BE USED FOR DESIGN OR SITE PLANNING. SURVEY BY TRIMBLE S6 TOTAL STATION.
3. BASIS OF BEARINGS: PLAN NO. D-32485
4. THIS SURVEY IS BASED ON INFORMATION SHOWN ON COMMITMENT FOR TITLE INSURANCE FILE NO. 50034969 OF AMC SETTLEMENT SERVICES, BEARING AN EFFECTIVE DATE OF NOVEMBER 21, 2024 AND ALL SCHEDULE B EXCEPTIONS IN SAID TITLE REPORT HAVE BEEN ADDRESSED.
5. TABLE A (ITEM 16): THERE IS NO OBSERVED EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
6. TABLE A (ITEM 17): THERE ARE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES. THERE IS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
7. NO EVIDENCE WAS OBSERVED OF CEMETERIES, GRAVESITES OR BURIAL GROUNDS, LOCATED ON THE SUBJECT PREMISES.
8. NO OBSERVABLE EVIDENCE OF SUBSTANTIAL AREAS OF REFUSE.
9. PROPERTY HAS DIRECT VEHICULAR AND PEDESTRIAN ACCESS TO ARTHUR BRADY DRIVE AND DURGIN LANE AS SHOWN AND INDIRECT ACCESS TO WOODBURY AVENUE THROUGH ACCESS EASEMENT AS NOTED.
10. UNLESS SHOWN OTHERWISE THE SURVEYED BOUNDARY SHOWN HEREON ARE CONTIGUOUS WITH ADJOINING PROPERTIES AND/OR RIGHTS OF WAY WITHOUT ANY GAPS, GORES OR OVERLAPS.
11. UTILITY NOTE: LOCATION OF UTILITIES SHOWN HEREON WERE DETERMINED BY OBSERVATION OF ABOVE GROUND EVIDENCE PURSUANT TO SECTION 5 PARAGRAPH E (IV) OF THE ALTA/NSPS MINIMUM STANDARD DETAIL REQUIREMENTS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND PLANS OR SURFACE GROUND MARKINGS TO DETERMINE THE LOCATION OF ANY SUBTERRANEAN USES.
12. THE DIMENSIONS AND AREA OF THE BUILDING SHOWN ARE BASED ON THE BUILDING'S EXTERIOR FOOTPRINT AT GROUND LEVEL.
13. THE POINT OF HEIGHT MEASUREMENT IS IDENTIFIED ON THE SURVEY AND WAS TAKEN FROM THE NEAREST ADJACENT GRADE AT SAID POINT. THIS POINT REPRESENTS THE HEIGHT OF THE STRUCTURE AS OBSERVED FROM GROUND LEVEL.
14. PLAN REFERENCES: (ROCKINGHAM COUNTY REGISTRY OF DEEDS)
    D-32485, D-21957 AND D-22028

NOTES CORRESPONDING TO SCHEDULE B

EXCEPTIONS FROM COVERAGE. SCHEDULE B, COMMITMENT FOR TITLE INSURANCE COMMITMENT NO. 50034969 OF AMC SETTLEMENT SERVICES, BEARING AN EFFECTIVE DATE OF NOVEMBER 21, 2024

NOTE: EXCEPTION ITEMS NOT LISTED BELOW ARE STANDARD TITLE EXCEPTIONS AND/OR ARE NOT MATTERS OR ISSUES THAT PERTAIN TO THIS SURVEY.

8. SUBJECT TO EASEMENTS AS SET FORTH IN DECLARATIONS OF TAKING, ETC, BY UNITED STATES OF AMERICA RECORDED IN BOOK 1263 PAGE 201, BOOK 1337 PAGE 277, BOOK 1340 PAGE 437, BOOK 1370 PAGE 335 AND BOOK 1379 PAGE 210, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
9. SUBJECT TO EASEMENT FROM VASILIOUS ALEXANDROPOLUS AND ANGELOS KOSTROLEN TO NEW HAMPSHIRE ELECTRIC COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY RECORDED 11/29/1952 IN BOOK 1267 PAGE 326, ROCKINGHAM COUNTY RECORDS. (EASEMENT IS BLANKET COVERAGE AND CANNOT BE PLOTTED)
10. SUBJECT TO EASEMENT AS SET FORTH JUDGMENT ON DECLARATION OF TAKING BY THE UNITED STATES OF AMERICA RECORDED 4/11/1954 IN BOOK 1311 PAGE 322, AND QUIT CLAIM DEED BETWEEN MARION R. SANBORN AND EDWARD N. EAMES RECORDED 9/22/1972 IN BOOK 2172 PAGE 202, ROCKINGHAM COUNTY RECORDS, (PLOTTED-AFFECTS PROPERTY AS SHOWN)
11. SUBJECT TO EASEMENT AGREEMENT FROM NELSON E. RAMSDELL, JR. AND EDITH RAMSDELL TO THE CITY OF PORTSMOUTH RECORDED 9/2/1977 IN BOOK 2292 PAGE 627, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
12. SUBJECT TO SLOPE RELEASE FROM AGDA G. CARLSON, WIDOW, TO THE STATE OF NEW HAMPSHIRE RECORDED 5/12/1983 IN BOOK 2456 PAGE 108, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-LOCATION OF EASEMENT IS NOT DEFINED BY DESCRIPTION)
13. SUBJECT TO NOTICE OF CONDEMNATION BY THE STATE OF NEW HAMPSHIRE, BY JOHN A. CLEMENTE, COMMISSIONER OF PUBLIC WORKS AND HIGHWAYS RECORDED 8/26/1983 IN BOOK 2457 PAGE 1956, ROCKINGHAM COUNTY RECORDS. (PLOTTED-DESCRIBED AS RIGHTS TO MAINTAIN SLOPES ALONG WOODBURY AVENUE, HOWEVER THERE IS NO DEFINED WIDTH OF EASEMENT)
14. SUBJECT TO EASEMENT FROM EDWARD N. EAMES TO NORTHERN NEW ENGLAND CARPENTERS' PENSION FUND RECORDED 8/28/1984 IN BOOK 2508 PAGE 863, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
15. SUBJECT TO NOTICE OF LEASE BETWEEN JDC PORTSMOUTH LIMITED PARTNERSHIP AND SHAW'S SUPERMARKETS, INC. RECORDED 9/12/1991 IN BOOK 2890 PAGE 1795, ROCKINGHAM COUNTY RECORDS. AS AFFECTED BY THIRD AMENDMENT TO LEASE AND TO NOTICE OF LEASE BETWEEN DURGIN SQUARE LIMITED PARTNERSHIP AND SHAW'S SUPERMARKETS, INC, RECORDED 3/16/2005 IN BOOK 4452 PAGE 930, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
16. SUBJECT TO EASEMENT AGREEMENT BETWEEN K & M REALTY AND DURGIN SQUARE LIMITED PARTNERSHIP RECORDED 7/23/1992 IN BOOK 2935 PAGE 603, ROCKINGHAM COUNTY RECORDS. AS AFFECTED BY FIRST AMENDMENT TO EASEMENT AGREEMENT BETWEEN K & M REALTY AND DURGIN SQUARE LIMITED PARTNERSHIP RECORDED 4/20/1993 IN BOOK 2977 PAGE 2428, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
17. SUBJECT TO GRANT OF RIGHT-OF-WAY FROM DURGIN SQUARE LIMITED PARTNERSHIP TO LOUIS L. DOW, SR. AND BEVERLY DOW; ROBERT S. FARRINGTON; GILBERT E. AND DOROTHY SOUCY; FREDERICK LAND AND DONNA LEROUX; AND SHAW'S REALTY CO. RECORDED 8/19/1992 IN BOOK 2939 PAGE 504, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
18. SUBJECT TO GRANT OF RIGHT-OF-WAY FROM SHAW'S REALTY CO. TO GILBERT E. AND DOROTHY SOUCY RECORDED 1/20/1993 IN BOOK 2965 PAGE 548, ROCKINGHAM COUNTY RECORDS, (NON-LOCUS, ABUTS PROPERTY AS SHOWN)
19. SUBJECT TO GRANT OF RIGHT-OF-WAY FROM COSTCO WHOLESALE CORPORATION TO GILBERT E. AND DOROTHY SOUCY RECORDED 1/27/1993 IN BOOK 2966 PAGE 754, ROCKINGHAM COUNTY RECORDS. (NON-LOCUS, ABUTS PROPERTY AS SHOWN)
20. SUBJECT TO RIGHT-OF-WAY AND EASEMENT AGREEMENT BETWEEN 1650 WOODBURY AVENUE COMPANY AND DURGIN SQUARE LIMITED PARTNERSHIP RECORDED 4/7/1993 IN BOOK 2975 PAGE 2651, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
21. SUBJECT TO EASEMENT FROM DURGIN SQUARE LIMITED PARTNERSHIP TO PUBLIC SERVICE OF NEW HAMPSHIRE AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY RECORDED 4/19/1993 IN BOOK 2977 PAGE 1753, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
22. SUBJECT TO DEPARTMENT OF THE ARMY PERMIT RECORDED 6/14/1993 IN BOOK 2988 PAGE 1503, ROCKINGHAM COUNTY RECORDS. (PERTAINS TO MATTERS OF LAND USE AND CANNOT BE PLOTTED)
23. SUBJECT TO ORDER BY THE STATE OF NEW HAMPSHIRE WETLAND BOARD AS RECORDED 6/17/1993 IN BOOK 2989 PAGE 1306, ROCKINGHAM COUNTY RECORDS. (PERTAINS TO MATTERS OF LAND USE AND CANNOT BE PLOTTED)
24. SUBJECT TO MEMORANDUM OF LEASE BETWEEN JDC PORTSMOUTH LIMITED PARTNERSHIP AND TJX OPERATING COMPANIES, INC. RECORDED 6/23/1993 IN BOOK 2990 PAGE 1711, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
25. SUBJECT TO EASEMENT FROM DURGIN SQUARE LIMITED PARTNERSHIP TO THE CITY OF PORTSMOUTH RECORDED 7/22/1993 IN BOOK 2996 PAGE 767, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
26. SUBJECT TO CONSERVATION EASEMENT DEED FROM THOMAS J. FLATLEY TO THE CITY OF PORTSMOUTH RECORDED 7/22/1993 IN BOOK 2996 PAGE 771, ROCKINGHAM COUNTY RECORDS. (NON-LOCUS PROPERTY)
27. SUBJECT TO CONSERVATION EASEMENT DEED FROM DURGIN SQUARE LIMITED PARTNERSHIP TO THE CITY OF PORTSMOUTH RECORDED 7/22/1993 IN BOOK 2996 PAGE 782, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
28. SUBJECT TO AGREEMENT OF RESTRICTIVE COVENANTS BETWEEN DURGIN SQUARE LIMITED PARTNERSHIP, DSP SHOPPING CENTER, LLC, ENDICOTT HOTEL COMPANY AND RICHARD P. FUSEGNI RECORDED 3/18/2005 IN BOOK 4452 PAGE 885, ROCKINGHAM COUNTY RECORDS, AS AFFECTED BY ACKNOWLEDGEMENT BY DPF 1600 WOODBURY AVENUE LLC AND RICHARD P. FUSEGNI OF COMPLIANCE WITH THE AGREEMENT OF RESTRICTIVE COVENANTS RECORDED 6/30/2020 IN BOOK 6133 PAGE 292, ROCKINGHAM COUNTY RECORDS, (PERTAINS TO MATTERS OF LAND USE AND CANNOT BE PLOTTED)
29. SUBJECT TO NOTICE OF RECONVEYANCE RIGHTS AMONG DURGIN SQUARE LIMITED PARTNERSHIP, DSP SHOPPING CENTER LLC AND ENDICOTT HOTEL COMPANY AND RICHARD P. FUSEGNI RECORDED 3/18/2005 IN BOOK 4452 PAGE 894, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
30. SUBJECT TO RIGHT-OF-WAY AND EASEMENT AGREEMENT BETWEEN RICHARD P. FUSEGNI AND DSP SHOPPING CENTER AND ENDICOTT HOTEL COMPANY AND DURGIN SQUARE LIMITED PARTNERSHIP RECORDED 3/18/2005 IN BOOK 4452 PAGE 900, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
31. SUBJECT TO EASEMENT DEED FROM RICHARD P. FUSEGNI TO DSP SHOPPING CENTER LLC AND ENDICOTT HOTEL COMPANY AND DURGIN SQUARE LIMITED PARTNERSHIP RECORDED 3/18/2005 IN BOOK 4452 PAGE 914, ROCKINGHAM COUNTY RECORDS, AS AFFECTED BY EASEMENT DEED FROM RICHARD P. FUSEGNI TO DSP SHOPPING CENTER, LLC AND ENDICOTT HOTEL COMPANY AND SURGIN SQUARE LIMITED PARTNERSHIP RECORDED 3/22/2005 IN BOOK 4453 PAGE 1631, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
32. SUBJECT TO UTILITY EASEMENT FROM DSP SHOPPING CENTER LLC AND ENDICOTT HOTEL COMPANY AND DURGIN SQUARE LIMITED PARTNERSHIP TO RICHARD P. FUSEGNI RECORDED 3/22/2005 IN BOOK 4453 PAGE 1621, ROCKINGHAM COUNTY RECORDS, (BLANKET COVERAGE-DRAIN/SEWER CONNECTIONS, LOCATION IS NOT DEFINED BY DESCRIPTION)
33. SUBJECT TO MEMORANDUM OF LEASE BETWEEN DSQ HOLDING, LLC AND VITAMIN SHOPPE INDUSTRIES INC. RECORDED 2/25/2010 IN BOOK 5091 PAGE 2199, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
34. SUBJECT TO MEMORANDUM OF LEASE BETWEEN DSQ HOLDING, LLC AND HOMEGOODS, INC. RECORDED 5/17/2010 IN BOOK 5111 PAGE 880, ROCKINGHAM COUNTY RECORDS, (NOT PLOTTED-NON-SURVEY RELATED)
35. SUBJECT TO MEMORANDUM OF LEASE BETWEEN DSQ HOLDING, LLC AND ZRC OPERATIONS COMPANY, INC. RECORDED 1/23/2014 IN BOOK 5509 PAGE 327, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
36. SUBJECT TO NOTICE OF LEASE BETWEEN DPF 100 WOODBURY AVENUE LLC AND TSG ENTERPRISES, LLC RECORDED 5/20/2021 IN BOOK 6281 PAGE 667, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
37. SUBJECT TO SIGNAL AND SIDEWALK EASEMENT FROM DPF 1600 WOODBURY AVENUE, LLC TO THE CITY OF PORTSMOUTH RECORDED 8/24/2021 IN BOOK 6319 PAGE 843, ROCKINGHAM COUNTY RECORDS. AS AFFECTED BY SCRIVENER'S ERROR AFFIDAVITY BY CHRISTOPHER P. MULLIGAN, ESQUIRE RECORDED 2/4/2022 IN BOOK 6380 PAGE 1859, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)
38. SUBJECT TO NOTICE OF LEASE BETWEEN DPF 1600 WOODBURY AVENUE LLC AND CONVENIENTMD, LLC RECORDED 11/17/2021 IN BOOK 6354 PAGE 2045, ROCKINGHAM COUNTY RECORDS. (NOT PLOTTED-NON-SURVEY RELATED)
39. SUBJECT TO ANY MATTERS AS MAY BE SHOWN ON THE FOLLOWING PLATS:
    D-21788; D-21957; D-22028; D-32485; D-42929; D-42930; AND D-43255, ROCKINGHAM COUNTY RECORDS. (PLOTTED-AFFECTS PROPERTY AS SHOWN)

TITLE LEGAL DESCRIPTION

ALL THAT PARCEL OF LAND IN THE CITY OF PORTSMITH IN THE COUNTY OF ROCKINGHAM AND STATE OF NEW HAMPSHIRE AS MORE FULLY DESCRIBED IN DEED BOOK 6362 PAGE 2336 AND PARCEL # 0238/0016/ 0000 / /, BEING KNOWN AND DESIGNATED AS:

SHOWN ON PLAN D32485 AS MAP R-38, LOT 16, SAID TO CONTAIN 694,376 SQUARE FEET, ACCORDING TO SAID PLAN.

PARCEL NUMBER: 0238/ 0016/ 0000/ /

BEING THE SAME PROPERTY ACQUIRED BY DURGIN SQUARE, LLC BY DEED OF DPF 1600 WOODBURY AVENUE LLC, DATED 12/07/2021 AND RECORDED 12/09/2021 IN BOOK / PAGE : 6362 / 2336

THE LAND DEPICTED ON THIS SURVEY IS THE SAME PROPERTY AS DESCRIBED IN COMMITMENT FOR TITLE INSURANCE COMMITMENT NO. 50034969 OF AMC SETTLEMENT SERVICES, BEARING AN EFFECTIVE DATE OF NOVEMBER 21, 2024.

ALTA/NSPS LAND TITLE SURVEY

DURGIN SQUARE

1600-1618 WOODBURY AVENUE, PORTSMOUTH, NH

BASED UPON TITLE COMMITMENT NO. 50034969
OF AMC SETTLEMENT SERVICES
BEARING AN EFFECTIVE DATE OF NOVEMBER 21, 2024.

SURVEYOR'S CERTIFICATION

TO:

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, 6A, 6B, 7A, 7B1, 7C, 8, 9, 13, 14, 16, 17, AND 19 OF TABLE A THEREOF, THE FIELDWORK WAS COMPLETED ON NOVEMBER 7, 2024,

I CERTIFY THAT THE BOUNDARY LINES AND ALL LOT LINES WITHIN AND BORDERING THE SUBJECT PARCEL, SHOWN HEREON ARE A RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND, CONDUCTED APRIL 15-17, 2014 USING A TRIMBLE S6 TOTAL STATION, AND THE UNADJUSTED LINEAR ERROR OF CLOSURE EXCEEDS BOTH THE MINIMUM OF THE 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE NEW HAMPSHIRE LAND SURVEYORS ASSOCIATION ETHICS AND STANDARDS:

THIS SURVEY CONFORMS TO CATEGORY 1 CONDITION 1 AS DEFINED IN SECTION 4.3.1.1 OF THE NEW HAMPSHIRE LAND SURVEYORS ASSOCIATION ETHICS AND STANDARDS.

I CERTIFY THAT THIS PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN, (RSA 676:18 PAR. III)

GLENN D. ODONE JR., LLS
STATE OF NEW HAMPSHIRE NO. 976

DATE OF SURVEY: NOVEMBER 18, 2024
DATE OF LAST REVISION: DECEMBER 16, 2024

SIGNATURE

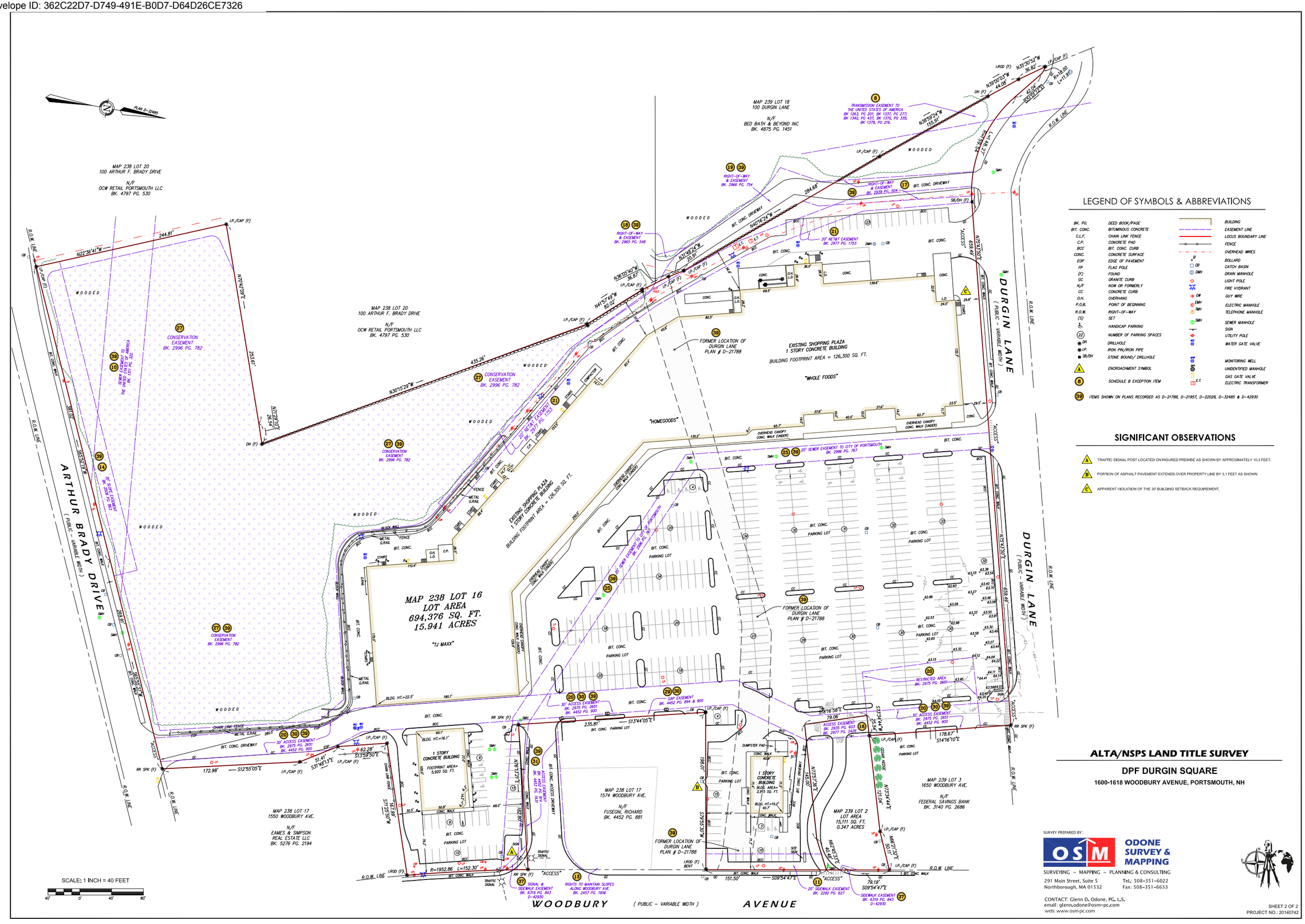
THIS SURVEY WAS PREPARED FOR THE PURPOSE OF THIS REAL ESTATE TRANSACTION ONLY AND NO FURTHER PARTIES OTHER THAN THOSE CERTIFIED ABOVE SHALL RELY ON IT FOR ANY OTHER PURPOSE OR TRANSACTION.

SURVEY PREPARED BY:

OSM ODONE SURVEY & MAPPING
SURVEYING ~ MAPPING ~ PLANNING & CONSULTING
291 Main Street, Suite 5 Tel.: 508-351-6022
Northborough, MA 01532 Fax: 508-351-6633

CONTACT: Glenn D. Odone, PG, LS.
email: glenn_odone@osm-pc.com
web: www.osm-pc.com

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



LEGEND OF SYMBOLS & ABBREVIATIONS

BK. PG.	DEED BOOK/PAGE		BUILDING
BIT. CONC.	BITUMINOUS CONCRETE		EASEMENT LINE
C.L.F.	CHAIN LINK FENCE		LOCUS BOUNDARY LINE
C.P.	CONCRETE PAD		FENCE
BCC	BIT. CONC. CURB		OVERHEAD WIRES
CONC.	CONCRETE SURFACE	B	BOLLARD
EOP	EDGE OF PAVEMENT	CB	CATCH BASIN
FP	FLAG POLE	DMH	DRAIN MANHOLE
(F)	FOUND	GC	LIGHT POLE
GC	GRANITE CURB		FIRE HYDRANT
N/F	NOW OR FORMERLY	GW	GUY WIRE
CC	CONCRETE CURB	EMH	ELECTRIC MANHOLE
O.H.	OVERHANG	TMH	TELEPHONE MANHOLE
P.O.B.	POINT OF BEGINNING	SMH	SEWER MANHOLE
R.O.W.	RIGHT-OF-WAY		SIGN
(S)	SET		UTILITY POLE
	HANDICAP PARKING		WATER GATE VALVE
(22)	NUMBER OF PARKING SPACES		MONITORING WELL
DH	DRILLHOLE	MH	UNIDENTIFIED MANHOLE
I.P.	IRON PIN/IRON PIPE		GAS GATE VALVE
SB/DH	STONE BOUND/ DRILLHOLE	E.T.	ELECTRIC TRANSFORMER
A	ENCROACHMENT SYMBOL		
(8)	SCHEDULE B EXCEPTION ITEM		

(39) ITEMS SHOWN ON PLANS RECORDED AS D-21788, D-21957, D-22028, D-32485 & D-42930

SIGNIFICANT OBSERVATIONS

A TRAFFIC SIGNAL POST LOCATED ON INSURED PREMISE AS SHOWN BY APPROXIMATELY 10.3 FEET.

B PORTION OF ASPHALT PAVEMENT EXTENDS OVER PROPERTY LINE BY 3.1 FEET AS SHOWN

C APPARENT VIOLATION OF THE 30' BUILDING SETBACK REQUIREMENT.

ALTA/NSPS LAND TITLE SURVEY

DPF DURGIN SQUARE

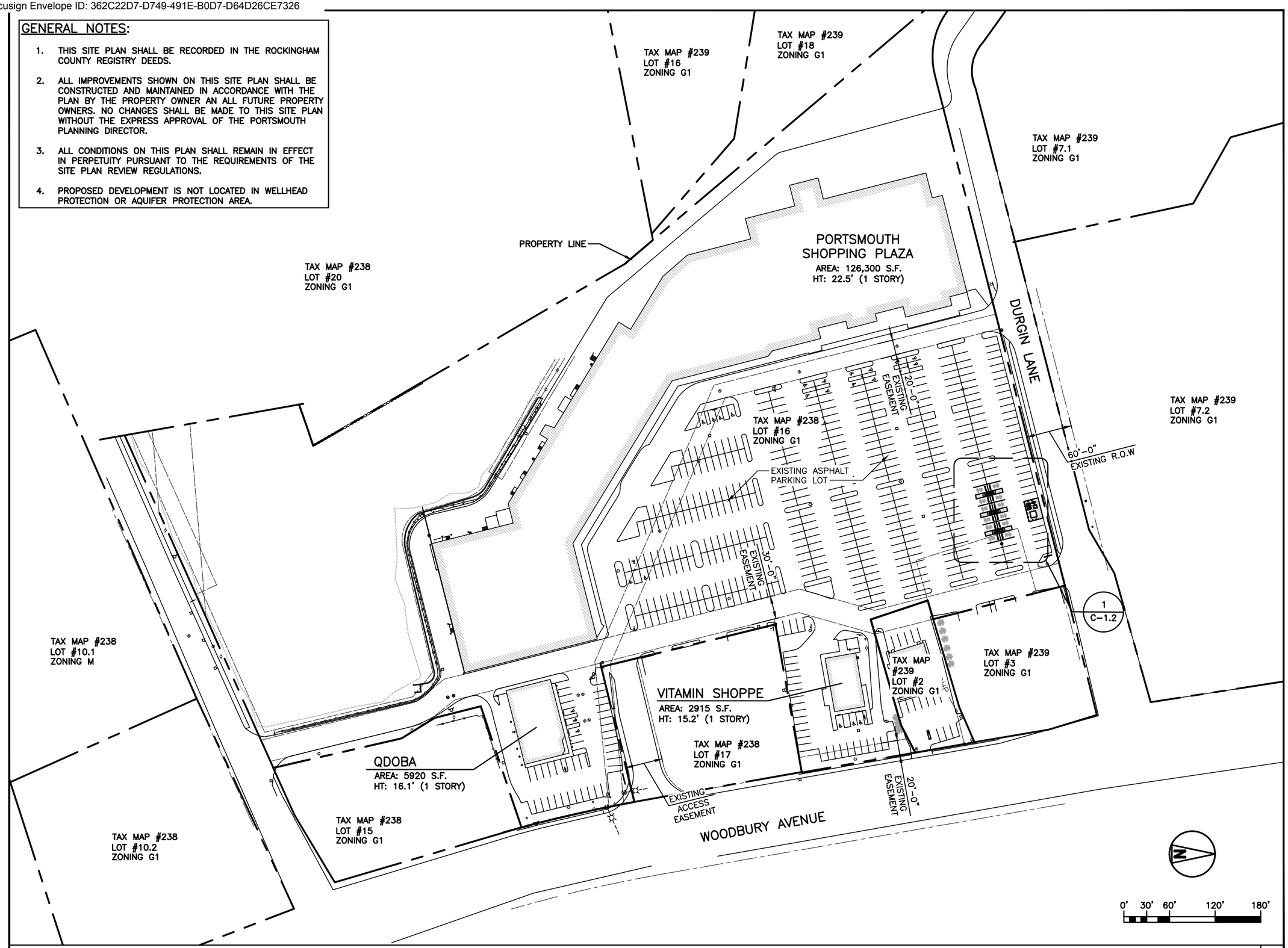
1600-1618 WOODBURY AVENUE, PORTSMOUTH, NH

SURVEY PREPARED BY:
ODONE SURVEY & MAPPING
SURVEYING ~ MAPPING ~ PLANNING & CONSULTING
291 Main Street, Suite 5
Northborough, MA 01532
Tel.: 508-351-6022
Fax: 508-351-6633
CONTACT: Glenn D. Odone, PG, L.S.
email: glenn.odone@osm-pc.com
web: www.osm-pc.com

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

GENERAL NOTES:

1. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY DEEDS.
2. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AN 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. PROPOSED DEVELOPMENT IS NOT LOCATED IN WELLHEAD PROTECTION OR AQUIFER PROTECTION AREA.



OVERALL SITE & ZONING PLAN | 1

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

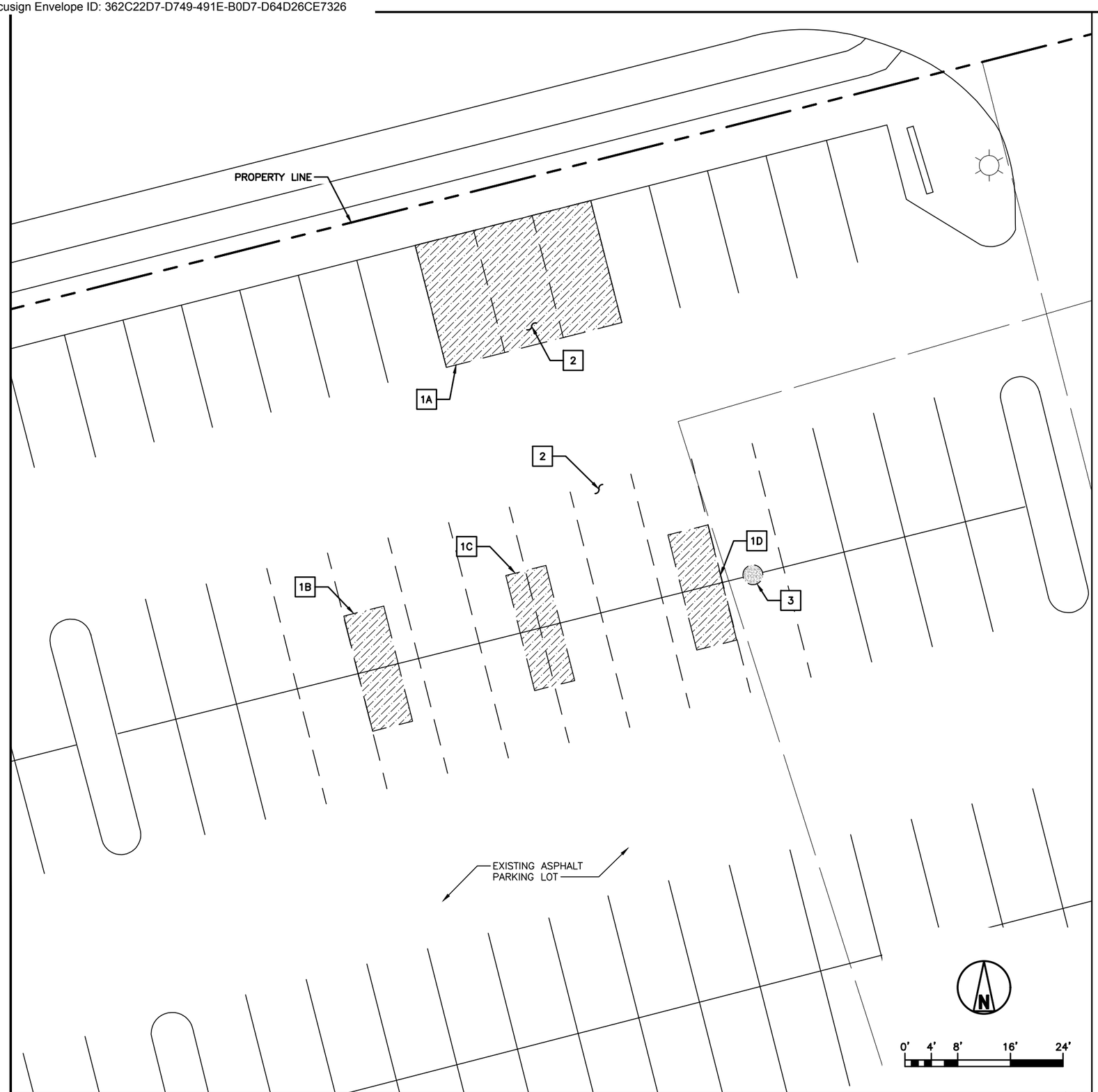
SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION: OVERALL SITE & ZONING PLAN

SHEET #: C-1.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



EXISTING SITE PLAN | 1

TOTAL AREA LEGEND:

DISTURBED IMPERVIOUS AREA
870± SQ. FT

KEYED NOTES:

1A APPROX. 525 SQ. FT. DISTURBED IMPERVIOUS AREA FOR PROPOSED AGI EQUIPMENT & CONDUIT ROUTING

1B APPROX. 115 SQ. FT. DISTURBED IMPERVIOUS AREA FOR PROPOSED AGI EQUIPMENT & CONDUIT ROUTING

1C APPROX. 115 SQ. FT. DISTURBED IMPERVIOUS AREA FOR PROPOSED AGI EQUIPMENT & CONDUIT ROUTING

1D APPROX. 115 SQ. FT. DISTURBED IMPERVIOUS AREA FOR PROPOSED AGI EQUIPMENT & CONDUIT ROUTING

2 EXISTING PARKING STALL TO BE RESTRIPED (TYP OF 18)

3 EXISTING LIGHT POLE TO BE RELOCATED

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR:
AGI

PLANS PREPARED BY:
SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:
EXISTING SITE PLAN

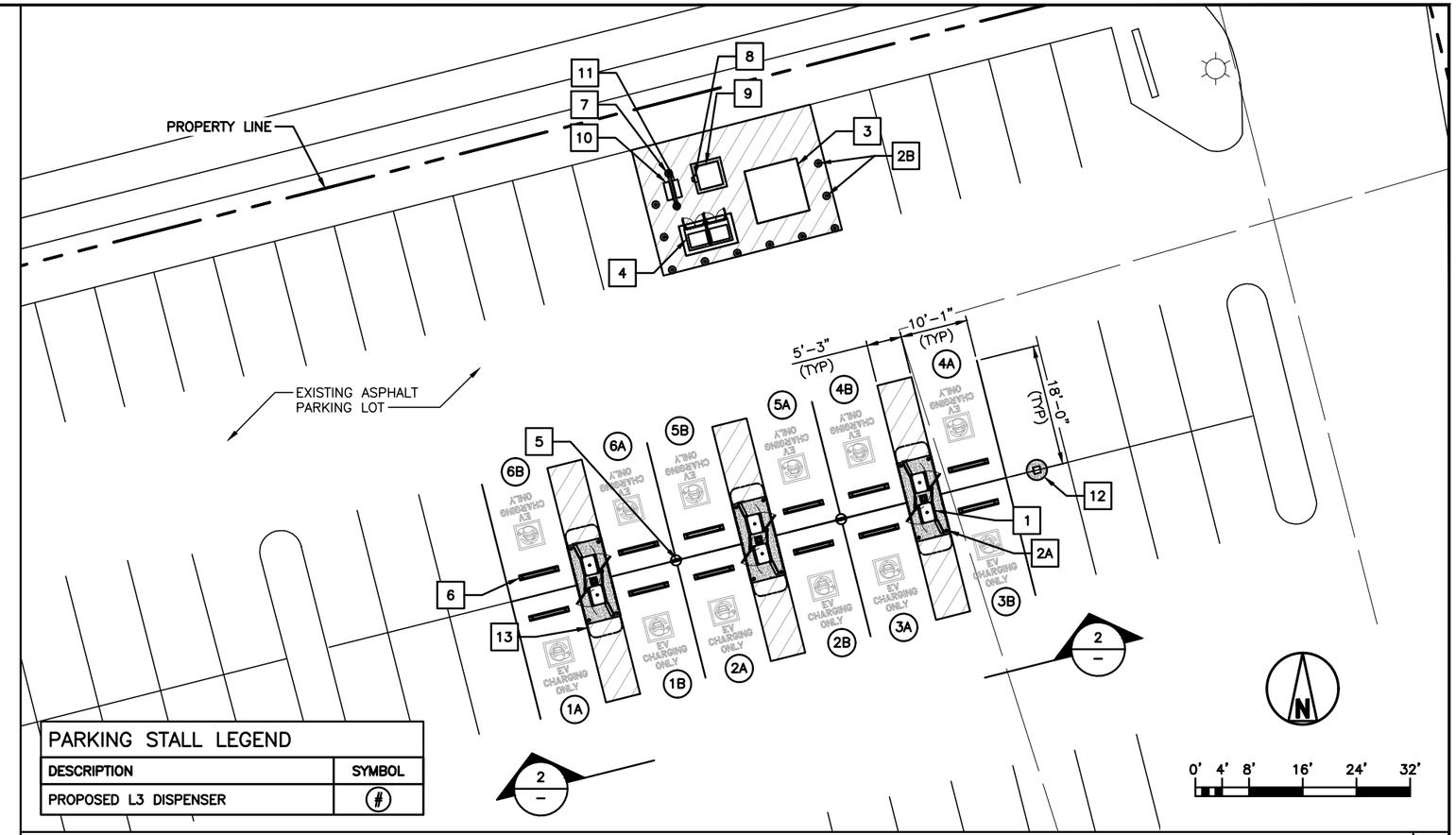
SHEET #:
C-1.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

KEYED NOTES:

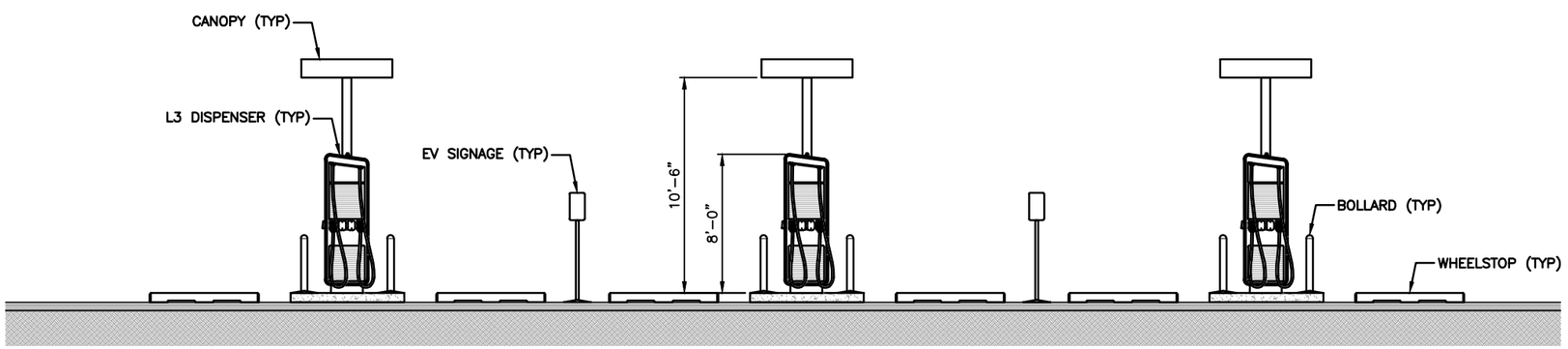
1. PROPOSED DUAL L3 DISPENSER (TYP OF 6)
2A. PROPOSED BOLLARD (FURNISH & INSTALL) (TYP OF 20) (SEE SHEET C-3.1, DETAIL 1)
2B. PROPOSED REMOVABLE BOLLARD (FURNISH & INSTALL) (TYP OF 2)
3. PROPOSED UTILITY TRANSFORMER (BY UTILITY COMPANY)
4. PROPOSED SWITCHBOARD "MDP"
5. PROPOSED EV SIGN POST (TYP OF 2) (SEE SHEET C-3.2, DETAIL 2)
6. PROPOSED WHEELSTOP (FURNISH & INSTALL) (TYP OF 12) (SEE SHEET C-3.1, DETAIL 4)
7. PROPOSED UTILITY RACK
8. PROPOSED METER SOCKET
9. PROPOSED CT CABINET
10. PROPOSED SITE COMM BOX
11. PROPOSED MINI POWER-ZONE
12. RELOCATED LIGHT POLE
13. PROPOSED 16'-6 x 5'-0" x 11'-10" CANOPY (PER CANOPY STRUCTURAL PACKAGE) (TYP OF 3)

CANOPY DATA	
CANOPY OVERHANG AREA	82.5 S.F. (16.5' x 5')
CANOPY FLOOR TO CEILING HEIGHT	10.5'
TOTAL PROJECT STRUCTURE AREA	82.5 x 3 = 247.5 S.F.



PARKING STALL LEGEND	
DESCRIPTION	SYMBOL
PROPOSED L3 DISPENSER	(#)

ENLARGED SITE PLAN 1



EQUIPMENT ELEVATION 2

STAMP:
12/19/2024
STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER
DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:	PE#:	DISCIPLINE:	
SDK SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS TERRANCE M. SUPER	10926	ELECTRICAL	E

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: ENLARGED SITE PLAN & ELEVATION

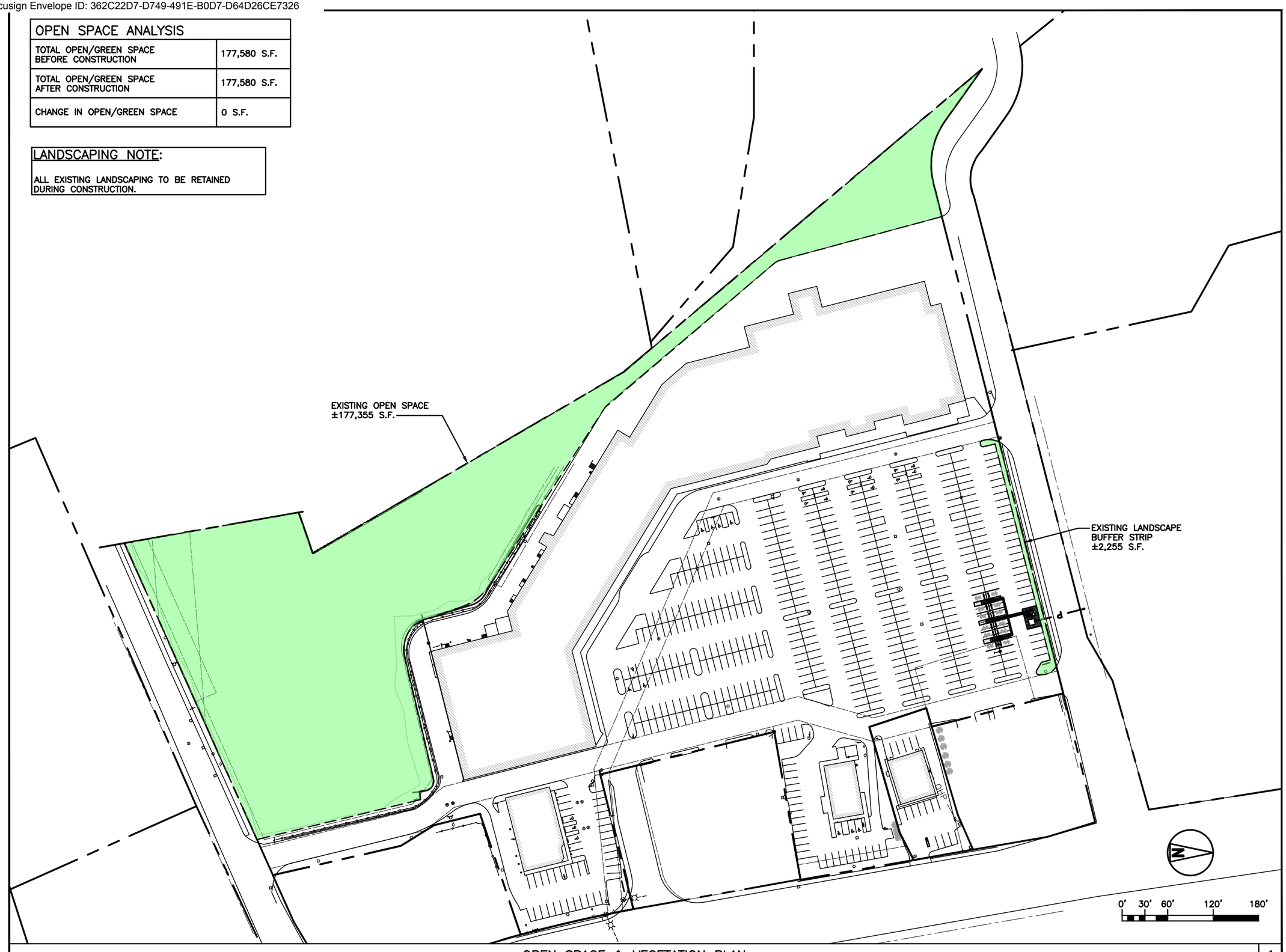
SHEET #: C-1.2

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

OPEN SPACE ANALYSIS	
TOTAL OPEN/GREEN SPACE BEFORE CONSTRUCTION	177,580 S.F.
TOTAL OPEN/GREEN SPACE AFTER CONSTRUCTION	177,580 S.F.
CHANGE IN OPEN/GREEN SPACE	0 S.F.

LANDSCAPING NOTE:

ALL EXISTING LANDSCAPING TO BE RETAINED DURING CONSTRUCTION.



OPEN SPACE & VEGETATION PLAN | 1

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

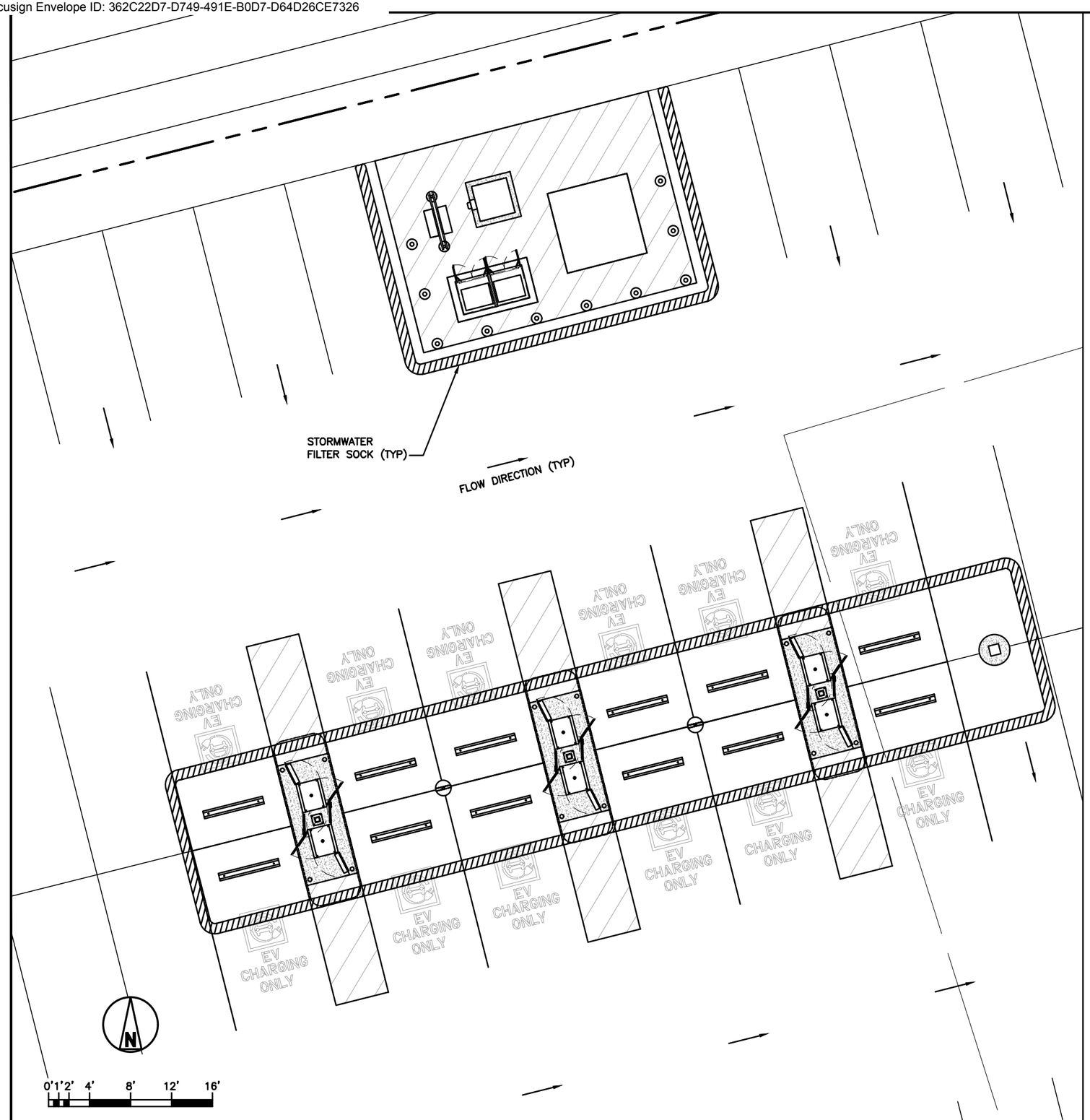
SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

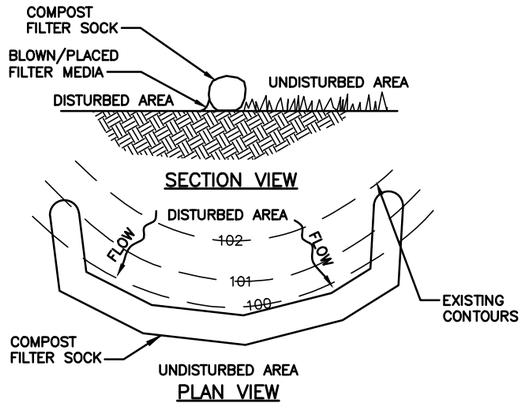
SHEET DESCRIPTION: OPEN SPACE & VEGETATION PLAN

SHEET #: C-1.3

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



EROSION CONTROL PLAN | 1



NOTES:

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
4. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 48 HOURS OF INSPECTION.
5. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED.

STORMWATER FILTER SOCK DETAIL | 2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR:

AGI

PLANS PREPARED BY:

SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

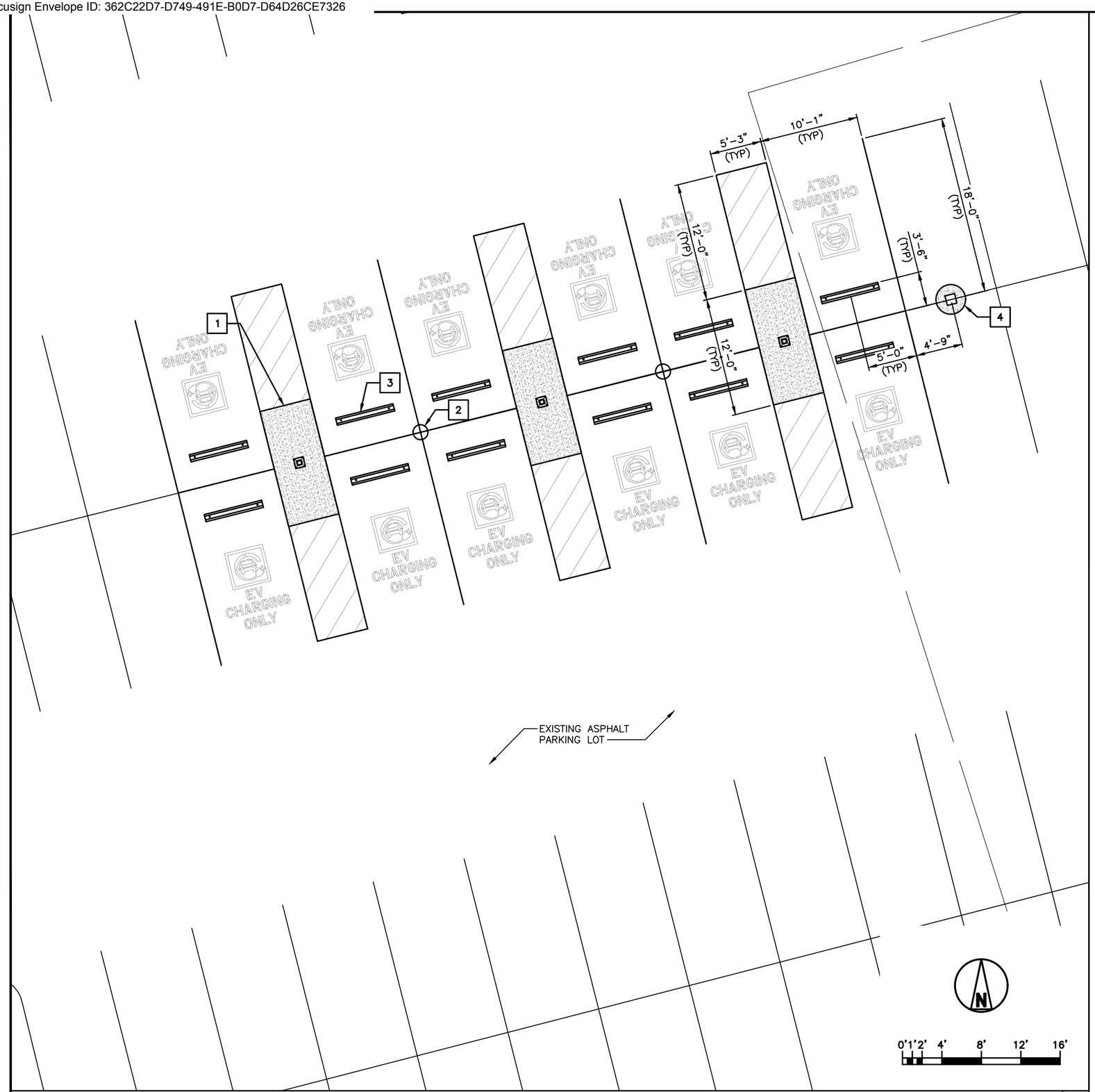
SHEET DESCRIPTION:

EROSION CONTROL PLAN

SHEET #:

C-1.4

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



DISPENSER FOUNDATION PLAN | 1

GENERAL NOTE:

1. CONTRACTOR SHALL INSTALL BELL END FITTINGS ON ALL CONDUITS AFTER INSTALLATION

KEYED NOTES:

1. PROPOSED 5'-3" x 12'-0" PAD FOR L3 DISPENSER (TYP OF 3) (SEE SHEET C-3.0)
2. PROPOSED SIGN POST FOUNDATION (TYP OF 2) (SEE SHEET C-3.2, DETAIL 2)
3. PROPOSED WHEELSTOP (TYP OF 12) (SEE SHEET C-3.1, DETAIL 4)
4. RELOCATED LIGHT POLE

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

IONNA™

PLANS PREPARED FOR:
AGI

PLANS PREPARED BY:
SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

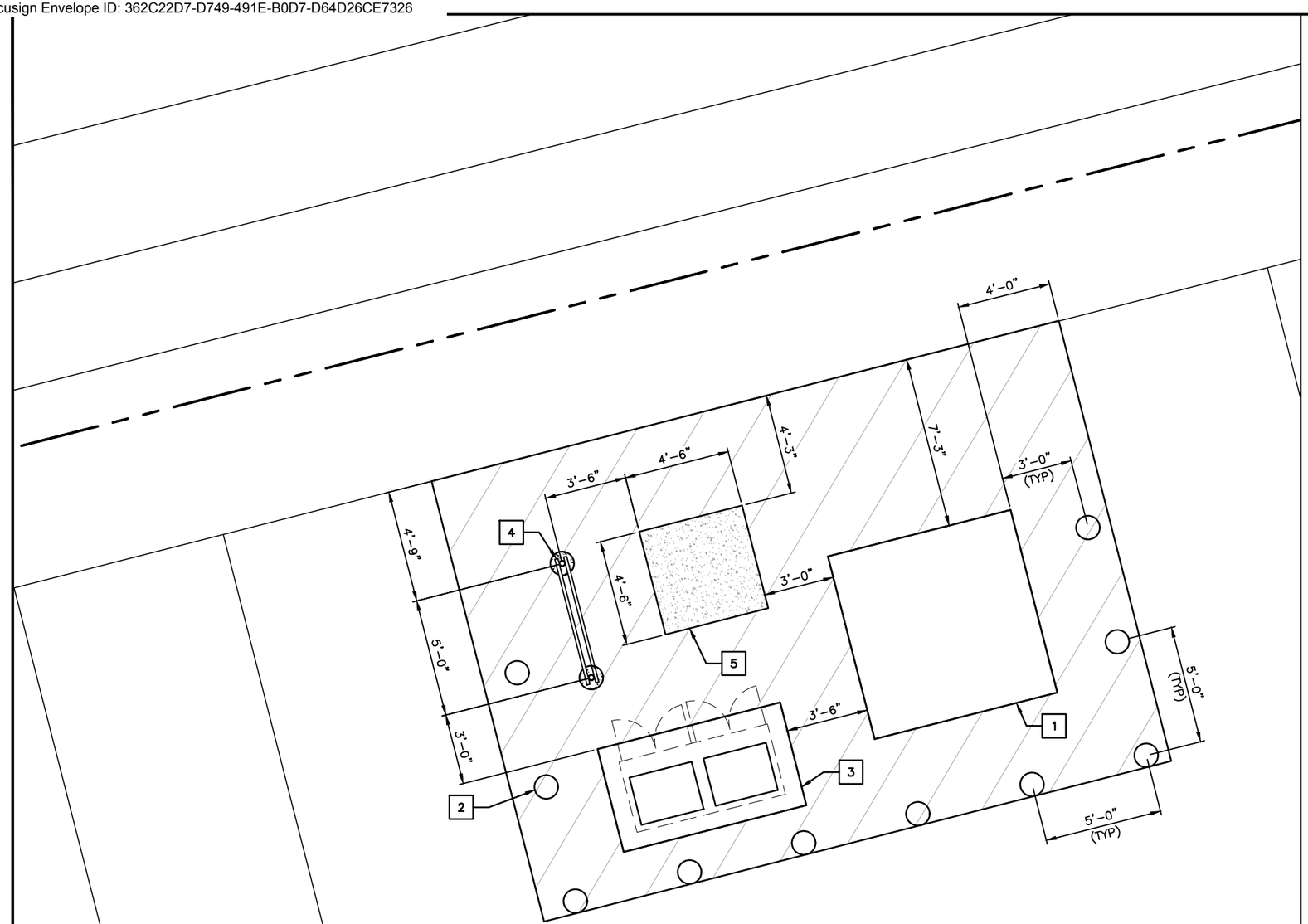
APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:
FOUNDATION PLANS (1 OF 2)

SHEET #:
C-2.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



KEYED NOTES:

1. UTILITY TRANSFORMER (BY UTILITY COMPANY)
2. PROPOSED BOLLARD FOUNDATION (TYP OF 10) (SEE SHEET C-3.1, DETAIL 1)
3. PROPOSED SWITCHBOARD PAD (FIELD VERIFY SIZE PER MANUFACTURER SPECIFICATIONS)
4. PROPOSED UTILITY RACK
5. PROPOSED CT CABINET FOUNDATION

N

0' 1' 2' 4' 6' 8'

EQUIPMENT FOUNDATION PLAN | 1

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:

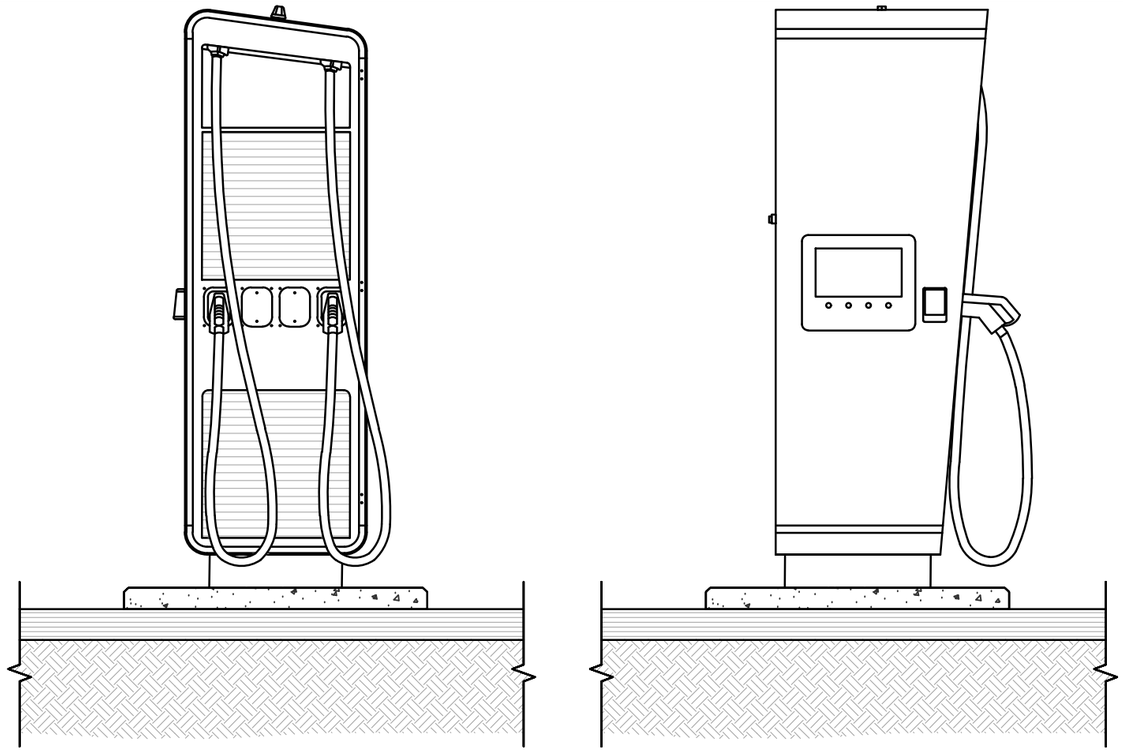
FOUNDATION PLANS (2 OF 2)

SHEET #:

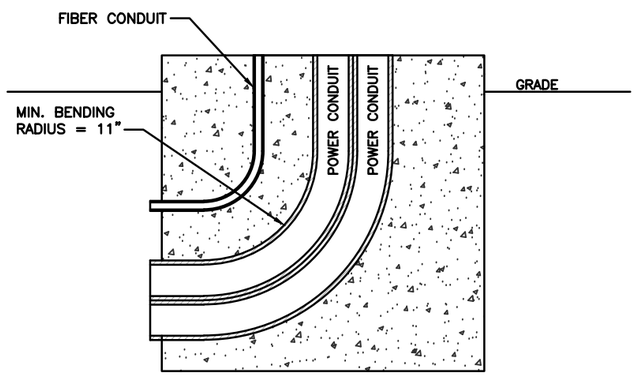
C-2.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

CHARGER FOUNDATION & ANCHORING PER CANOPY STRUCTURAL PACKAGE



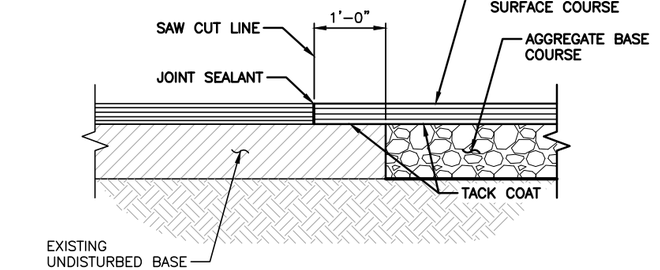
HYC 400UL DISPENSER & FOUNDATION DETAIL | 1



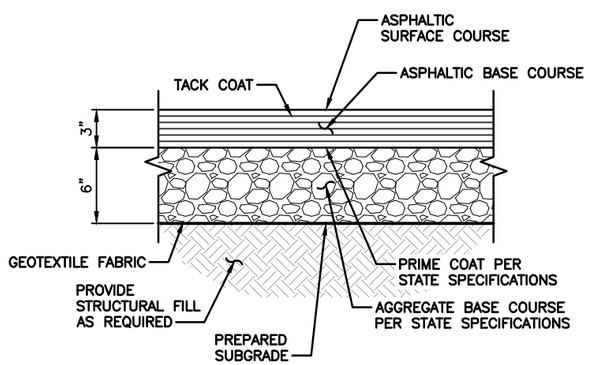
DISPENSER CONDUIT STUB UP DETAIL | 4

CHARGER FOUNDATION & ANCHORING PER CANOPY STRUCTURAL PACKAGE

HYC 400UL DC DISPENSER – ANCHORING | 3



SAW CUT SECTION



ASPHALTIC PAVING SECTION

ASPHALT REPAIR DETAIL | 2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

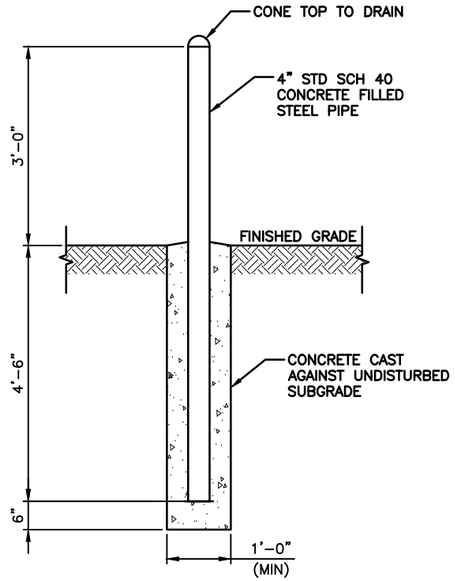
APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: EQUIPMENT DETAILS (1 OF 3)

SHEET #: C-3.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



SPECIFICATIONS:

MATERIAL:	STEEL
FINISH:	PRIME AND PAINT OR INSTALL COVERS
COLORING:	WHITE, RAL 9016

BOLLARD DETAIL | 1

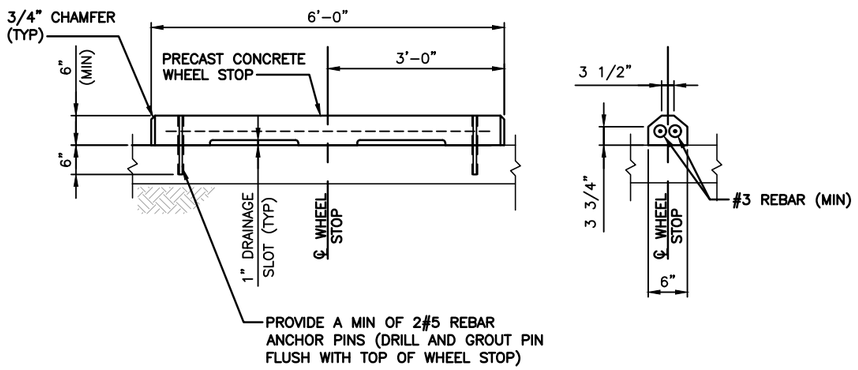
NOTE:

1. EVCS SIGN FOR REFERENCE ONLY. ACTUAL SIGN MAY BE DIFFERENT.

SPECIFICATIONS:

DIMENSIONS (WxH): 18" x 24" OR 12" x 18"

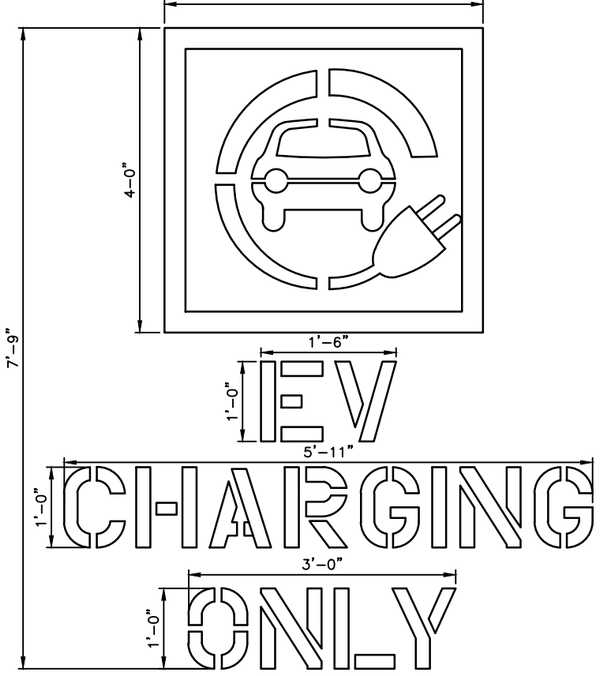
SIGNAGE DETAIL | 2



ELEVATION

END VIEW

WHEELSTOP DETAIL | 4



STENCIL NOTES:

1. USE ON ALL STANDARD & VAN ACCESSIBLE STALLS WHERE APPLICABLE
2. EVCS STALL SHALL PROVIDE SURFACE MARKING STATION "EV CHARGING ONLY" IN LETTER 12" HIGH MIN. THE CENTER LINE OF THE TEXT SHALL BE A MAX. OF 6" FROM THE CENTER LINE OF THE STALL & ITS LOWER CORNER AT, OR LOWER SIDE ALIGNED WITH, THE END OF THE STALL LENGTH.
3. BOTTOM OF STENCIL TO BE PLACE AT THE LEADING EDGE OF THE PROPOSED STALL.
4. PROVIDE 4 1/2" SPACING BETWEEN STENCILS.
5. PAVEMENT MARKING TO BE PAINTED WHITE.
6. PAINT SHALL BE WATER BORNE OR SOLVENT BORNE, COLORS AS SHOWN OR SPECIFIED HEREIN. PAVEMENT MARKING PAINTS SHALL COMPLY WITH APPLICABLE STATE AND LOCAL LAWS ENACTED TO ENSURE COMPLIANCE WITH FEDERAL CLEAN AIR STANDARDS. PAINT MATERIALS SHALL CONFORM TO THE RESTRICTIONS OF THE LOCAL AIR POLLUTION CONTROL DISTRICT.
7. WATER BORNE PAINT" PAINTS SHALL CONFORM TO FS TT-P-1952.
8. SOLVENT BORNE PAINT: PAINT SHALL CONFORM TO FS A-A-2886 OR AASHTO M248. PAINT SHALL BE NON BLEEDING, QUICK DRYING, AND ALKYD PETROLEUM BASE PAINT SUITABLE FOR TRAFFIC BEARING SURFACE AND BE MIXED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS BEFORE APPLICATION.

STENCIL DETAIL | 3

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR:

AGI

PLANS PREPARED BY:

SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

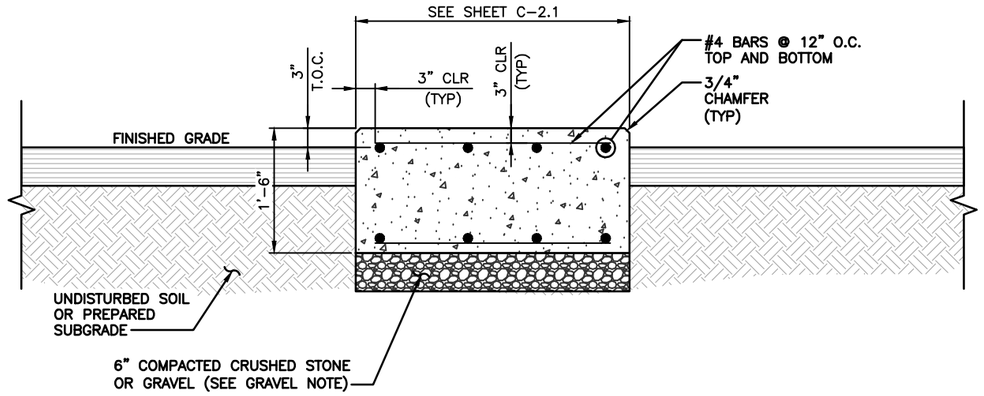
SHEET DESCRIPTION:

EQUIPMENT DETAILS (2 OF 3)

SHEET #:

C-3.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



GRAVEL NOTE:

GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE.

FOUNDATION NOTE:

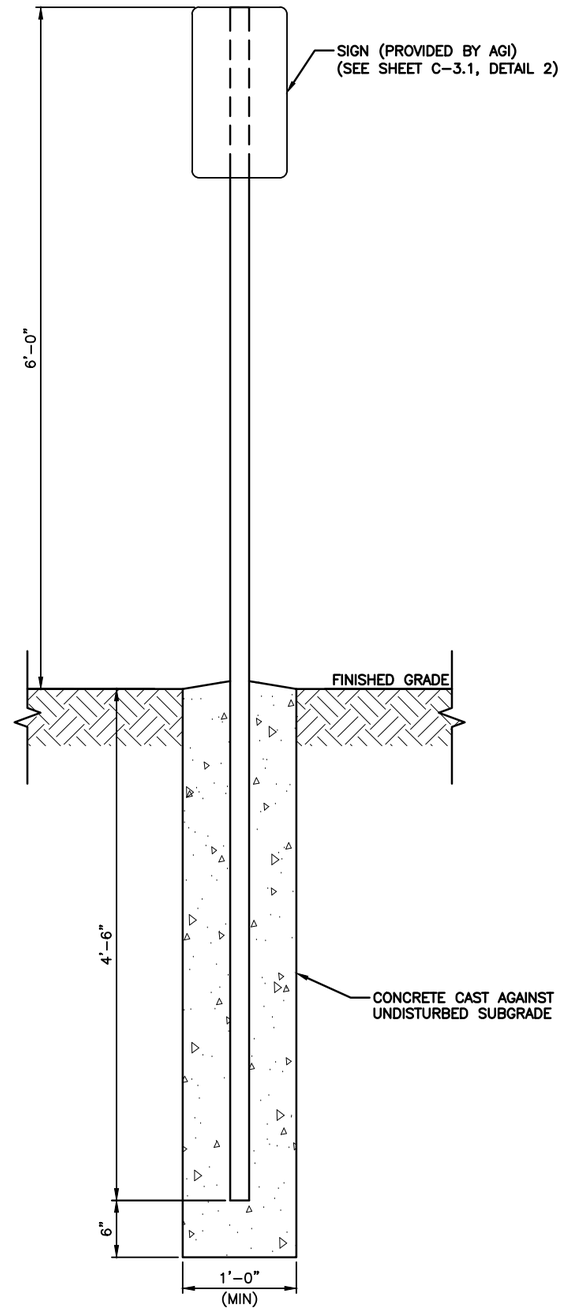
MINIMUM SOIL BEARING CAPACITY OF 1500 PSF IS ASSUMED IN ALL FOUNDATIONS AND SLAB AREAS. (GENERAL CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION)

GROUNDING NOTE:

SEE SHEET G-1.0, DETAIL 2 FOR SWITCHBOARD FOUNDATION GROUNDING PLAN.

SWITCHBOARD FOUNDATION SECTION | 1

DETAIL NOT USED | 3



SPECIFICATIONS:

MATERIAL:	STEEL
FINISH:	POWDER COATED – SEMI GLOSS
COLORING:	COORDINATE W/ AGI/LANDLORD

EV SIGNAGE DETAIL | 2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

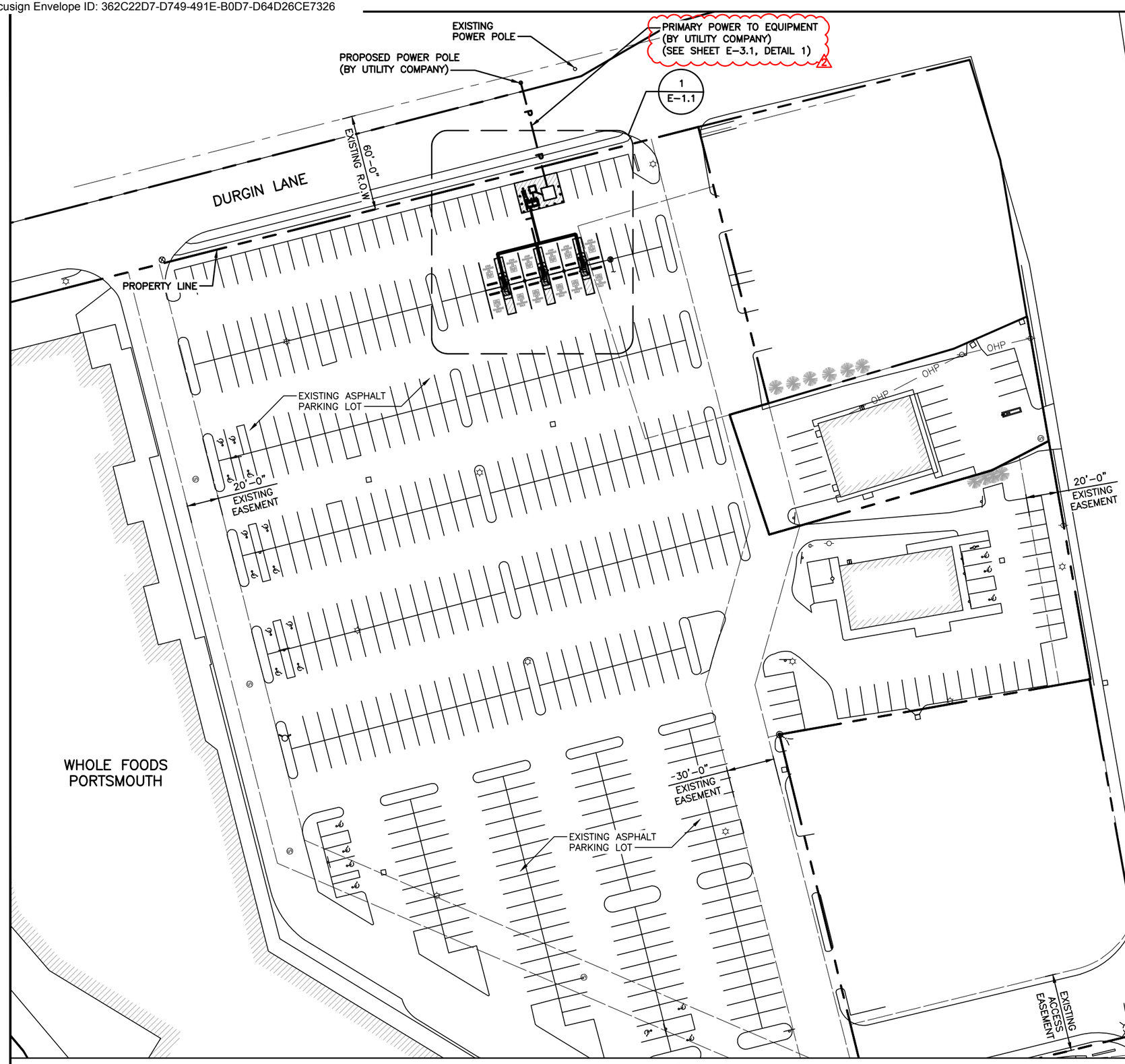
APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: EQUIPMENT DETAILS (3 OF 3)

SHEET #: C-3.2

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



UTILITY PLAN 1

UTILITY NOTES:

1. CONDUITS SHALL BE 2-5" EMBEDDED IN 3" CONCRETE ENCASEMENT.
2. CONDUITS SHALL HAVE A DEPTH OF AT LEAST 36" TO TOP OF CONDUIT.
3. CONDUITS SHALL BE STEEL AND HAVE 48" LONG SWEEPS.
4. RISER ON UTILITY POLE MAY BE SCH 80 WITH NO STANDOFFS.

2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION: UTILITY PLAN

SHEET #: E-1.0

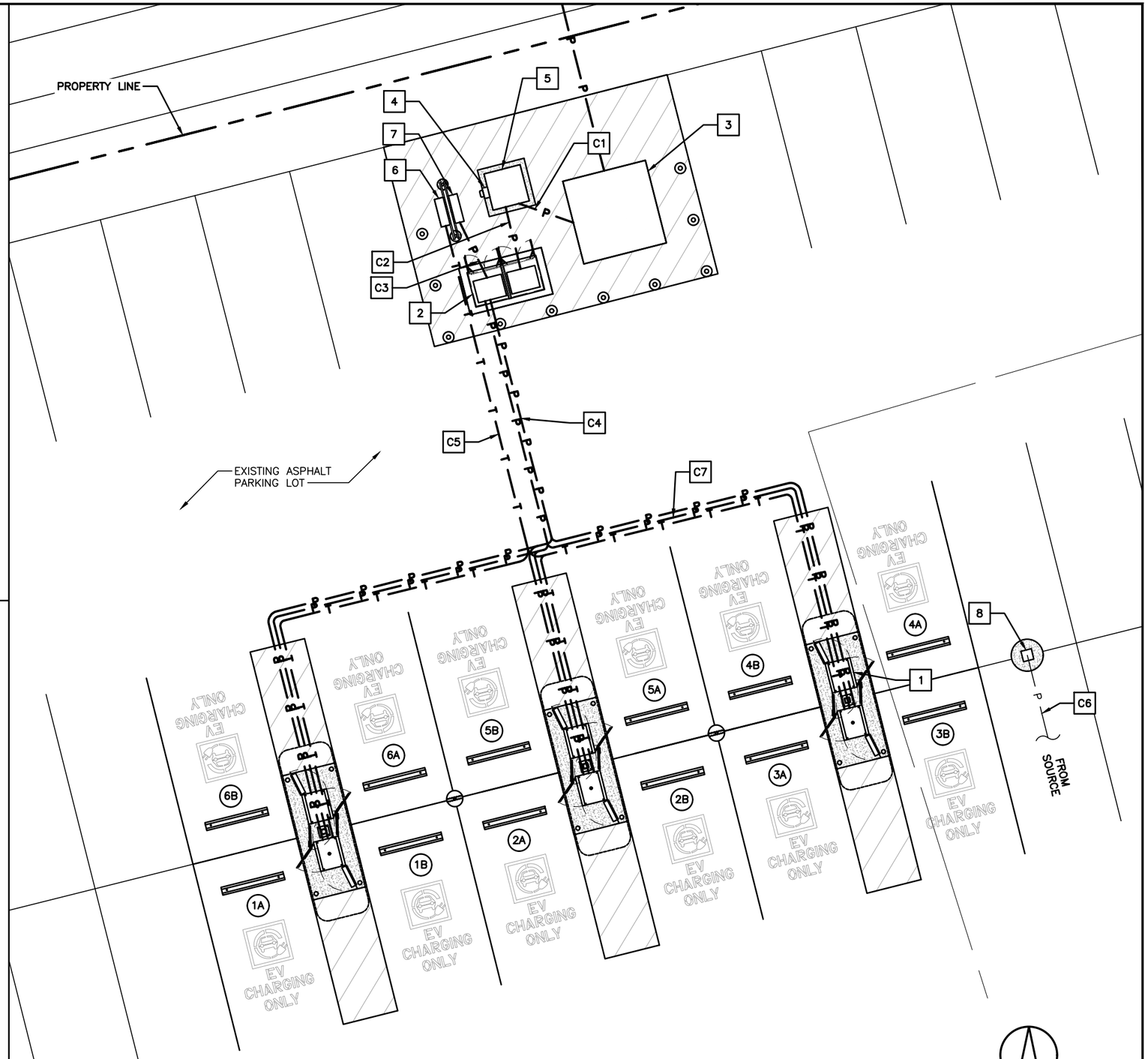
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

EQUIPMENT NOTES:

1. PROPOSED DUAL L3 DISPENSER (TYP OF 6)
2. PROPOSED 3000A, 480Y/277V SWITCHBOARD "MDP"
3. PROPOSED UTILITY TRANSFORMER (BY UTILITY COMPANY)
4. PROPOSED METER SOCKET
5. PROPOSED CT CABINET
6. PROPOSED SITE COMM BOX
7. PROPOSED MINI POWER-ZONE
8. RELOCATED LIGHT POLE

CONDUIT ROUTING NOTES:

- C1 (9) 4" PVC SCH40 CONDUITS FOR POWER FROM UTILITY TRANSFORMER TO CT CABINET
- C2 (9) 4" PVC SCH40 CONDUITS FOR POWER FROM CT CABINET TO SWITCHBOARD "MDP"
- C3 1" PVC SCH40 CONDUIT FOR POWER FROM SWITCHBOARD "MDP" TO MINI POWER-ZONE
- C4 (2) 3" PVC SCH40 CONDUITS FOR POWER FROM SWITCHBOARD "MDP" TO 400KW DC DISPENSER (TYP OF 6)
- C5 1" PVC SCH40 CONDUIT FOR FIBER FROM SITE COMMS BOX TO 400KW DC DISPENSER (TYP OF 6)
- C6 EXISTING REROUTED CONDUIT FOR POWER FROM SOURCE TO RELOCATED LIGHT POLE
- C7 3/4" CONDUIT FOR POWER FROM PANEL "LP-1" TO CANOPY LIGHTING (TYP OF 3)



PARKING STALL LEGEND	
DESCRIPTION	SYMBOL
PROPOSED L3 DISPENSER	(#)

LINE TYPE LEGEND	
FIBER	T
POWER	P

0' 1' 2' 4' 8' 12' 16'

ENLARGED UTILITY PLAN | 1

STAMP:
12/19/2024
STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED
DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

IONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:
ENLARGED UTILITY PLAN

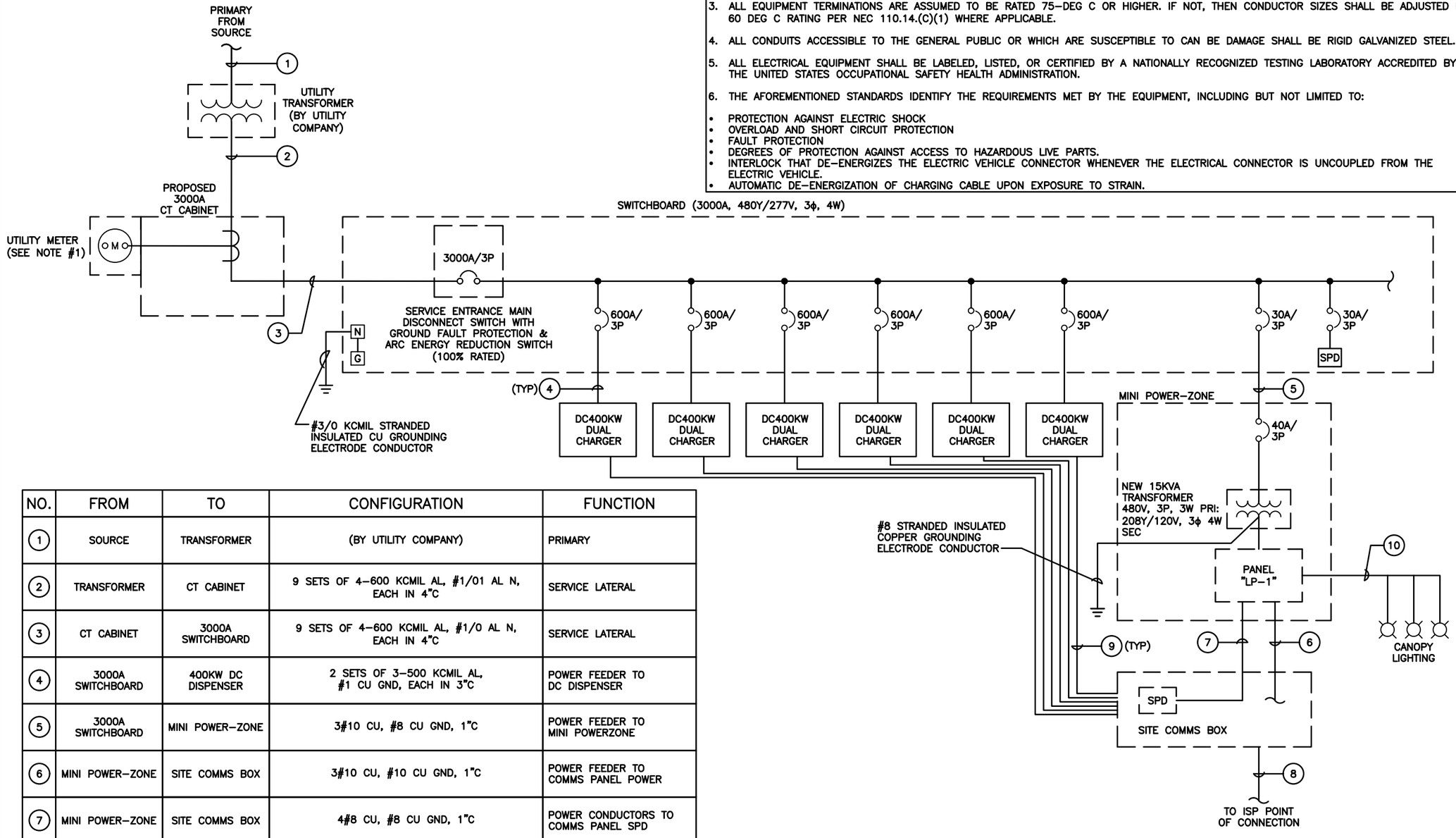
SHEET #:
E-1.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

GENERAL NOTES:

1. PROPOSED UTILITY CT'S SHALL BE LOCATED IN UTILITY APPROVED PAD MOUNTED CT CABINET. PROPOSED METER SOCKET SHALL BE MOUNTED ON UTILITY RACK.
2. WIRE AND CABLE SHALL BE 600V, TYPE THHN/THWN-2, UNLESS OTHERWISE INDICATED.
3. ALL EQUIPMENT TERMINATIONS ARE ASSUMED TO BE RATED 75-DEG C OR HIGHER. IF NOT, THEN CONDUCTOR SIZES SHALL BE ADJUSTED FOR 60 DEG C RATING PER NEC 110.14.(C)(1) WHERE APPLICABLE.
4. ALL CONDUITS ACCESSIBLE TO THE GENERAL PUBLIC OR WHICH ARE SUSCEPTIBLE TO CAN BE DAMAGE SHALL BE RIGID GALVANIZED STEEL.
5. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
6. THE AFOREMENTIONED STANDARDS IDENTIFY THE REQUIREMENTS MET BY THE EQUIPMENT, INCLUDING BUT NOT LIMITED TO:

- PROTECTION AGAINST ELECTRIC SHOCK
- OVERLOAD AND SHORT CIRCUIT PROTECTION
- FAULT PROTECTION
- DEGREES OF PROTECTION AGAINST ACCESS TO HAZARDOUS LIVE PARTS.
- INTERLOCK THAT DE-ENERGIZES THE ELECTRIC VEHICLE CONNECTOR WHENEVER THE ELECTRICAL CONNECTOR IS UNCOUPLED FROM THE ELECTRIC VEHICLE.
- AUTOMATIC DE-ENERGIZATION OF CHARGING CABLE UPON EXPOSURE TO STRAIN.



NO.	FROM	TO	CONFIGURATION	FUNCTION
1	SOURCE	TRANSFORMER	(BY UTILITY COMPANY)	PRIMARY
2	TRANSFORMER	CT CABINET	9 SETS OF 4-600 KCMIL AL, #1/01 AL N, EACH IN 4"C	SERVICE LATERAL
3	CT CABINET	3000A SWITCHBOARD	9 SETS OF 4-600 KCMIL AL, #1/0 AL N, EACH IN 4"C	SERVICE LATERAL
4	3000A SWITCHBOARD	400KW DC DISPENSER	2 SETS OF 3-500 KCMIL AL, #1 CU GND, EACH IN 3"C	POWER FEEDER TO DC DISPENSER
5	3000A SWITCHBOARD	MINI POWER-ZONE	3#10 CU, #8 CU GND, 1"C	POWER FEEDER TO MINI POWERZONE
6	MINI POWER-ZONE	SITE COMMS BOX	3#10 CU, #10 CU GND, 1"C	POWER FEEDER TO COMMS PANEL POWER
7	MINI POWER-ZONE	SITE COMMS BOX	4#8 CU, #8 CU GND, 1"C	POWER CONDUCTORS TO COMMS PANEL SPD
8	SITE COMMS BOX	ISP POINT OF CONNECTION	FIBER OPTIC CABLE	FIBER FROM ISP POINT OF CONNECTION
9	SITE COMMS BOX	400KW DC DISPENSER	FIBER OPTIC CABLE, 1"C	FIBER TO DC DISPENSER
10	PANEL "LP-1"	CANOPY LIGHTING	2#12, #12 GND, 3/4"C (LIGHTS CONTROLLED BY PHOTOCELL)	POWER TO CANOPY LIGHTING

ELECTRICAL ONE-LINE DIAGRAM | 1

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:
ELECTRICAL ONE-LINE DIAGRAM

SHEET #:
E-2.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

PANEL NAME:	SWITCHBOARD	**MAINS TYPE:**	MCB	**DISTRIBUTION TYPE:**	277/480Y, 3-PH, 4-WIRE
		MAINS RATING (A):	3000	**RATED FAULT CURRENT:**	65 KAIC (VERIFY W/ UTILITY PRIOR TO ORDERING)
STATUS:	NEW	**BUS RATING (A):**	3000	**RATING TYPE:**	FULLY RATED
LOCATION:	OUTSIDE	**ENCLOSURE:**	NEMA 3R	**SERVICE ENTRANCE RATED:**	YES
SUPPLY FROM:	TRANSFORMER	**MOUNTING:**	PAD-MOUNTED	**ISOLATED GND BAR:**	NO

CKT #	LOAD L	R	HV	M	C	DESCRIPTION	NOTE	AMP	POLE	TOTAL PER PHASE IN KVA A	B	C	AMP	POLE	NOTE	DESCRIPTION	LOAD L	R	HV	M	C	CKT #
1					133.33	PROPOSED DC400KW CHARGER EVCS-01		600	3	266.66			600	3		PROPOSED DC400KW CHARGER EVCS-02					133.33	2
3					133.33						266.66											133.33	4
5					133.33							266.66										133.33	6
7					133.33	PROPOSED DC400KW CHARGER EVCS-03		600	3	266.66			600	3		PROPOSED DC400KW CHARGER EVCS-04					133.33	8
9					133.33						266.66											133.33	10
11					133.33							266.66										133.33	12
13					133.33	PROPOSED DC400KW CHARGER EVCS-05		600	3	266.66			600	3		PROPOSED DC400KW CHARGER EVCS-06					133.33	14
15					133.33						266.66											133.33	16
17					133.33							266.66										133.33	18
19					1.80	MINI POWER-ZONE		30	3	1.80			30	3		SURGE PROTECTION DEVICE						20
21					0.00						0.00												22
23					0.18							0.18											24
									TOTAL KVA=	801.78	799.98	800.16				2401.92 TOTAL CONN KVA						
									TOTAL AMPS =	2,894.5	2,888.0	2,888.7				2889.06 TOTAL CONN AMPS						

	DEMAND FACTOR	A	B	C	TOTAL	NOTES
LIGHTING	1.25	0.00	0.00	0.00	0.00	
FIRST 10KVA RECEPTACLES (3.33 KVA PER PHASE)	1.00	0.00	0.00	0.00	0.00	
REMAINING RECEPTACLES	0.50	0.00	0.00	0.00	0.00	
HVAC EQUIP	1.00	0.00	0.00	0.00	0.00	
25% OF LARGEST MOTOR	0.25	0.00	0.00	0.00	0.00	
MISCELLANEOUS	1.00	0.00	0.00	0.00	0.00	
CONTINUOUS	1.25	1002.23	999.98	1000.20	3002.40	
TOTALS (KVA)		1002.23	999.98	1000.20	3002.40	
TOTALS (A)		3618.14	3610.02	3610.83	3611.33	

PANEL NAME:	PANELBOARD "LP-1"	**MAINS TYPE:**	MCB	**DISTRIBUTION TYPE:**	120/208Y, 3-PH, 4-WIRE
		MAINS RATING (A):	60	**RATED FAULT CURRENT:**	22 KAIC
STATUS:	NEW	**BUS RATING (A):**	60	**RATING TYPE:**	FULLY RATED
LOCATION:	OUTSIDE	**ENCLOSURE:**	NEMA 3R	**SERVICE ENTRANCE RATED:**	YES
SUPPLY FROM:	TRANSFORMER "LP-1"	**MOUNTING:**	H-FRAME	**ISOLATED GND BAR:**	NO

CKT #	LOAD L	R	HV	M	C	DESCRIPTION	NOTE	AMP	POLE	TOTAL PER PHASE IN KVA A	B	C	AMP	POLE	NOTE	DESCRIPTION	LOAD L	R	HV	M	C	CKT #
1				1.50		SITE COMMS BOX PWR		30	1	1.80			20	1		CANOPY LIGHTING	0.30					2
3						SPACE					0.00					SPACE						4
5		0.18				RECEPTACLE		20	1			0.18				SPACE						6
7						COMMS SPD		30	3	0.00						SPACE						8
9											0.00					SPACE						10
11												0.00				SPACE						12
									TOTAL KVA=	1.80	0.00	0.18				1.98 TOTAL CONN KVA						
									TOTAL AMPS =	15.0	-	1.5				5.50 TOTAL CONN AMPS						

	DEMAND FACTOR	A	B	C	TOTAL	NOTES
LIGHTING	1.25	0.38	0.00	0.00	0.38	
FIRST 10KVA RECEPTACLES (3.33 KVA PER PHASE)	1.00	0.00	0.00	0.18	0.18	
REMAINING RECEPTACLES	0.50	0.00	0.00	0.00	0.00	
HVAC EQUIP	1.00	0.00	0.00	0.00	0.00	
25% OF LARGEST MOTOR	0.25	0.00	0.00	0.00	0.00	
MISCELLANEOUS	1.00	1.50	0.00	0.00	1.50	
CONTINUOUS	1.25	0.00	0.00	0.00	0.00	
TOTALS (KVA)		1.88	0.00	0.18	2.06	
TOTALS (A)		15.63	0.00	1.50	5.70	

PANELBOARD NOTES:

1. PROVIDE EQUIPMENT WITH SUFFICIENT INTERRUPTING CAPACITY (AIC) REQUIRED FOR A SAFE INSTALLATION. AIC RATING NOTED ON EACH PANELBOARD SCHEDULE IS MINIMUM RATING ACCEPTED WITHOUT ADDITIONAL DOCUMENTATION THAT INDICATES OTHERWISE.
2. CIRCUITS SHALL BE REARRANGED AS REQUIRED TO MAINTAIN THE MOST BALANCED LOADS ON EACH PHASE WITHIN EACH PANEL. PROVIDE TYPED PANEL DIRECTORY MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:
WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:
AGI-INA-NH-0001

SITE ADDRESS:
1600 WOODBURY AVE
PORTSMOUTH, NH 03801

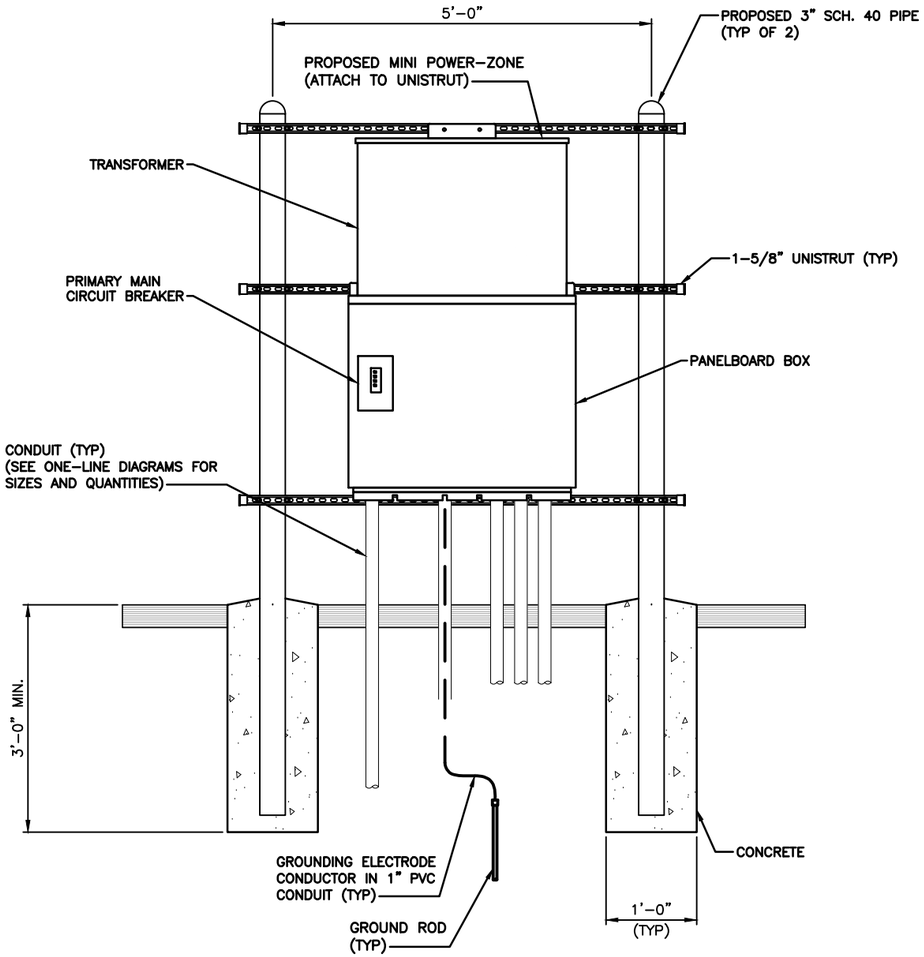
SHEET DESCRIPTION: PANEL SCHEDULE

SHEET #: E-2.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

ELECTRICAL NOTES:

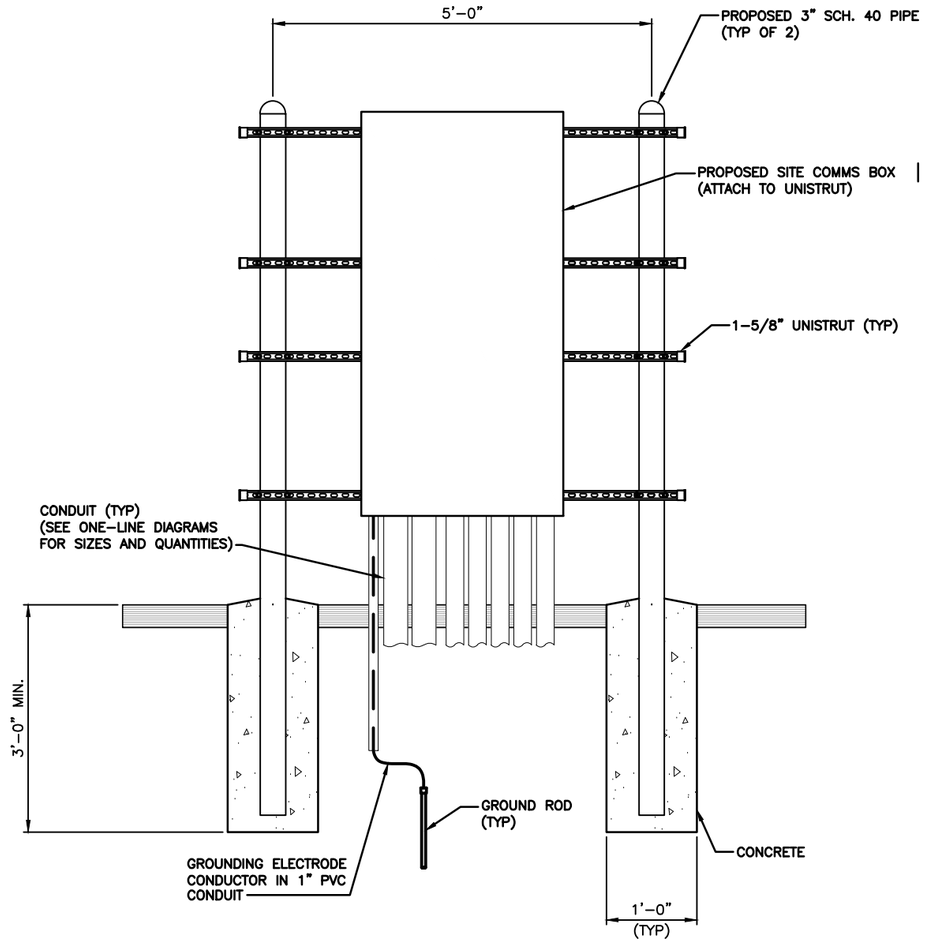
1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE U.L. LISTED.
2. ALL COMPONENTS SHALL BE AS SPECIFIED OR EQUIVALENT AS APPROVED BY AGI
3. BELOW GRADE EXOTHERMIC CONNECTIONS ARE TYPE–TA.
4. CONTRACTOR SHALL INSTALL SLIP JOINTS ON ALL CONDUITS.



UTILITY RACK DETAIL (POWERZONE) | 1

ELECTRICAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE U.L. LISTED.
2. ALL COMPONENTS SHALL BE AS SPECIFIED OR EQUIVALENT AS APPROVED BY AGI
3. BELOW GRADE EXOTHERMIC CONNECTIONS ARE TYPE–TA.
4. CONTRACTOR SHALL INSTALL SLIP JOINTS ON ALL CONDUITS.



UTILITY RACK DETAIL (SITE COMMS BOX) | 2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

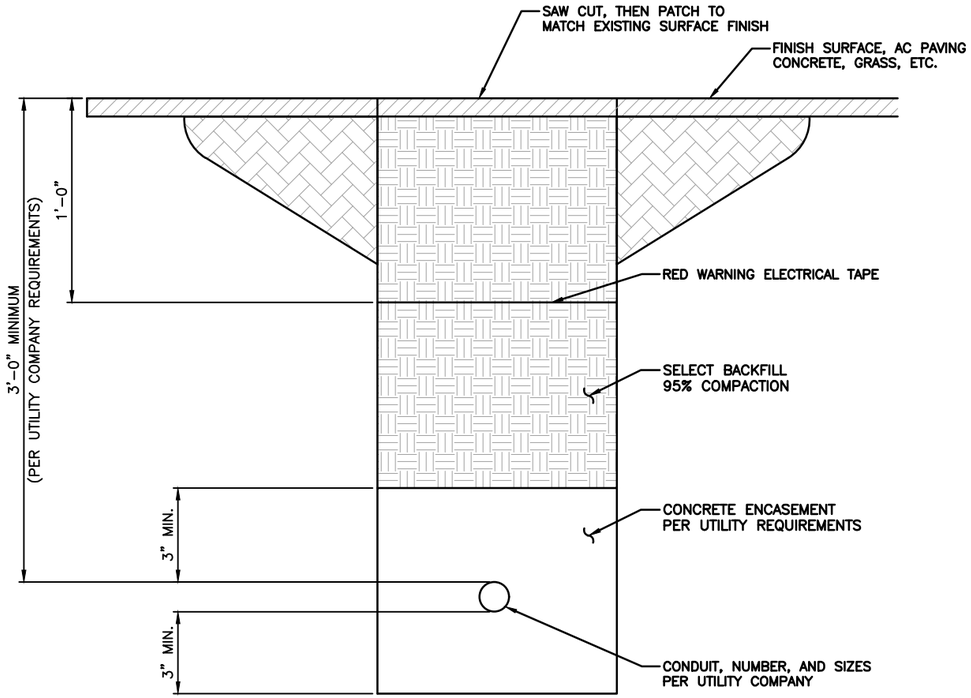
APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: ELECTRICAL DETAILS

SHEET #: E-3.0

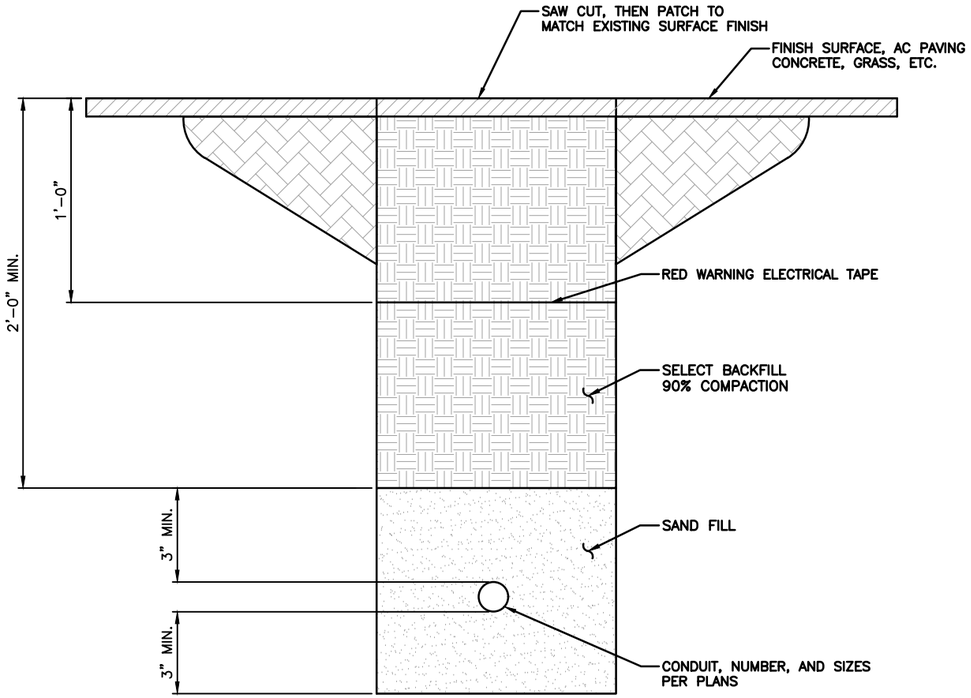
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



CONDUIT TRENCH DETAIL (UTILITY PRIMARY, UNDER ROAD) | 1

NOTE:

1. WIDTH OF TRENCH WILL BE DETERMINED BY THE SIZE OF CONDUITS, NUMBER OF CONDUITS, AND CONFIGURATION.



CONDUIT TRENCH DETAIL (SECONDARY, TRANSFORMER TO DISPENSERS) | 2

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

PLANS PREPARED FOR:

PLANS PREPARED BY:

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

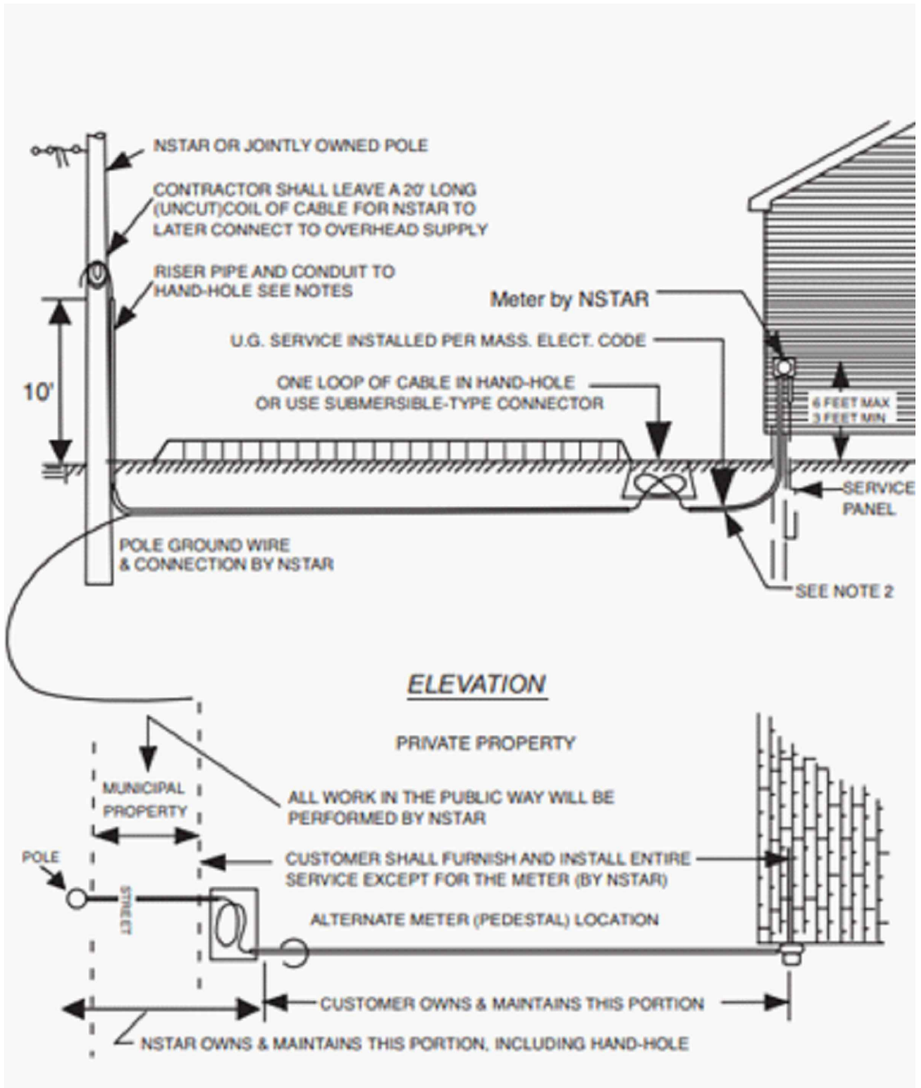
SHEET DESCRIPTION:

ELECTRICAL DETAILS (2 OF 2)

SHEET #:

E-3.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



UTILITY RISER DIAGRAM

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE
SHELTON DOUGLAS KEISLING
No. 18260
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR:

AGI

PLANS PREPARED BY:

SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:

UTILITY RISER DIAGRAM

SHEET #:

E-3.2

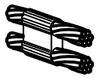
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

TYPE SS

TYPE TA

TYPE HS

TYPE GT



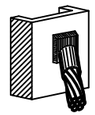
TYPE PT

TYPE HA

TYPE XA

TYPE GR

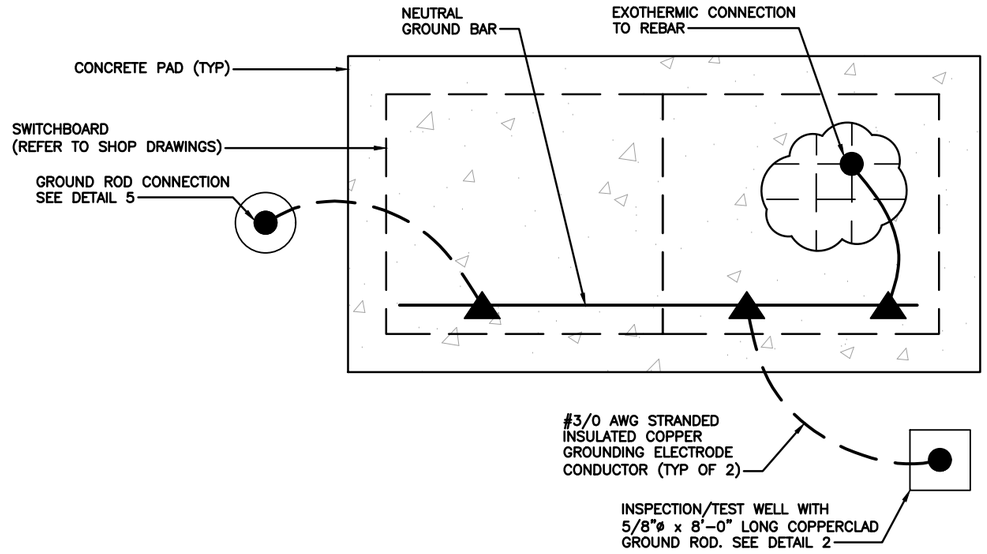
TYPE GL LUG



TYPE VS

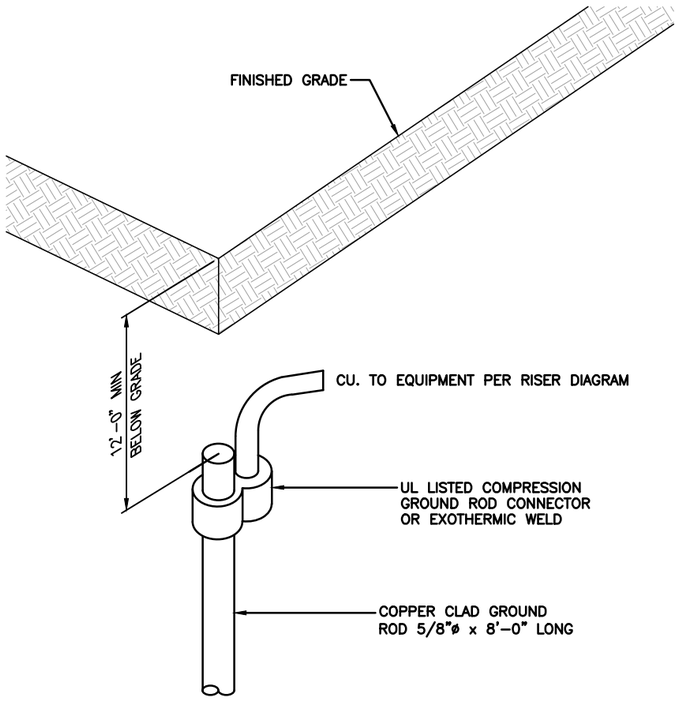
LEGEND:

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION

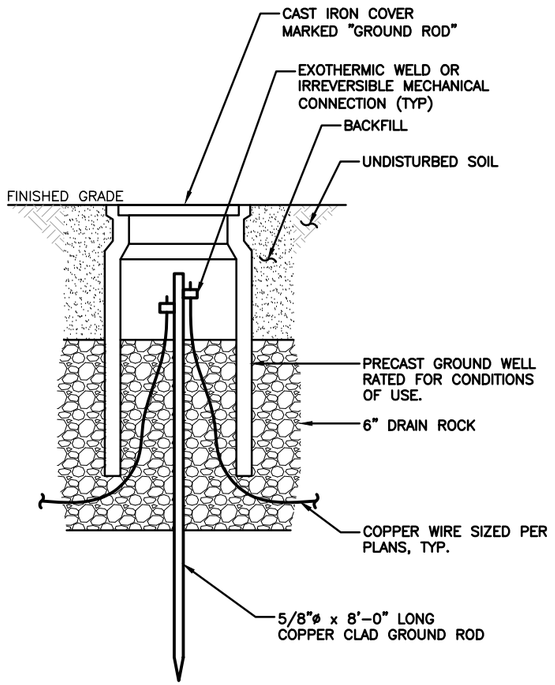


EXOTHERMIC CONNECTION DETAILS | 1

TYPICAL SWITCHBOARD FOUNDATION GROUNDING PLAN | 2



GROUND ROD DETAIL | 5



INSPECTION/TEST WELL DETAIL | 4

DETAIL NOT USED | 3

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME:

WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER:

AGI-INA-NH-0001

SITE ADDRESS:

1600 WOODBURY AVE
PORTSMOUTH, NH 03801

SHEET DESCRIPTION:

GROUNDING DETAILS

SHEET #:

G-1.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

GENERAL REQUIREMENTS

PART 1: GENERAL

1.1 INTENT:

A. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION. PLANS ARE NOT TO BE SCALED.
B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.
C. THE INTENTION OF DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
D. CONFLICTS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIALS OR DOING ANY WORK. NO COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE ON THE DOCUMENTS. ANY DISCREPANCY SHALL BE REPORTED TO THE OWNER OR THEIR AGENT FOR CONSIDERATION.

1.2 LICENSING REQUIREMENTS:

A. THE CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT AND MAINTAINING ALL APPLICABLE LICENSES AND BONDS.

1.3 STORAGE:

A. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION THAT DOES NOT OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1.4 CLEAN UP:

A. THE CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH AT ALL TIMES.

1.5 QUALITY ASSURANCE:

A. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

PART 2: PRODUCTS – NOT APPLICABLE TO THIS SECTION

PART 3: EXECUTION – NOT APPLICABLE TO THIS SECTION

END OF SECTION

SITE CLEARING/EROSION CONTROL

PART 1: GENERAL

1.1 SUMMARY:

A. PROVIDE SITE–CLEARING AS REQUIRED TO COMPLETE WORK AS SHOWN ON CONTRACT DOCUMENTS INCLUDING CLEARING, GRUBBING, STRIPPING, EROSION AND SILTATION CONTROL, AND PROTECTION OF LANDSCAPE MATERIALS DESIGNATED TO BE PROTECTED DURING CONSTRUCTION.

1.2 QUALITY ASSURANCE:

A. COMPLY WITH GOVERNING CODES AND REGULATIONS.

B. SITE PROTECTION: PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT

C. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.

D. ANY AND ALL WASTE MATERIALS (E.G., CONCRETE WASTE) AND SOIL ARE PROHIBITED FROM BEING DISCHARGED OFF OF THE WORK SITE AND/OR ENTERING STORM DRAINS.

PART 2: PRODUCTS

2.1 MATERIALS:

A. TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL MATERIALS SUITABLE FOR SITE CONDITIONS.

PART 3: EXECUTION

3.1 SITE CLEARING OPERATIONS:

A. PROTECTION OF EXISTING TREES, VEGETATION, LANDSCAPING, AND SITE IMPROVEMENTS NOT SCHEDULED FOR CLEARING WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.

B. TRIMMING OF EXISTING TREES AND VEGETATION AS RECOMMENDED BY ARBORIST FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.

C. CLEARING AND GRUBBING OF STUMPS AND VEGETATION, AND REMOVAL AND DISPOSAL OF DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.

D. TOPSOIL STRIPPING AND STOCKPILING.

E. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL.

F. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.

G. WATERING OF TREES AND VEGETATION DURING CONSTRUCTION ACTIVITIES.

H. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.

I. MAINTAIN ALL EXISTING FENCING AND GATES TO MAINTAIN A SECURE SITE AT ALL TIMES.

J. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT LIFE AND PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

3.2 CLEARING:

A. PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED TO REMAIN, INCLUDING ON AND OFF SITE. PROTECT EXISTING TREES AND VEGETATION INDICATED TO REMAIN. DO NOT STOCKPILE MATERIALS AND RESTRICT TRAFFIC WITHIN DRIP LINE OF EXISTING TREES TO REMAIN OR THAT INTERFERE WITH ACCESS TO SITE. PROVIDE AND MAINTAIN TEMPORARY GUARDS TO ENCIRCLE TREES OR GROUPS OF TREES TO REMAIN; OBTAIN APPROVAL BEFORE BEGINNING WORK.

B. WATER VEGETATION AS REQUIRED TO MAINTAIN HEALTH. COVER TEMPORARILY EXPOSED ROOTS WITH WET BURLAP AND BACKFILL AS SOON AS POSSIBLE. COAT CUT PLANT SURFACES WITH APPROVED EMULSIFIED ASPHALT PLANT COATING.

C. REPAIR OR REPLACE VEGETATION DESIGNATED FOR REUSE, WHICH HAS BEEN DAMAGED. REMOVE HEAVY GROWTHS OF GRASS BEFORE STRIPPING. STOCKPILE SATISFACTORY TOPSOIL CONTAINING NO LARGE STONES, FOREIGN MATTER AND WEEDS ON SITE FOR REUSE.

D. COMPLETELY REMOVE ALL IMPROVEMENTS, STUMPS AND DEBRIS EXCEPT FOR THOSE INDICATED TO REMAIN. REMOVE BELOW GRADE IMPROVEMENTS AT LEAST 12" BELOW FINISH GRADE SO AS NOT TO INTERFERE WITH NEW CONSTRUCTION. REMOVE ABANDONED MECHANICAL AND ELECTRICAL WORK AS REQUIRED.

E. PREVENT EROSION AND SILTATION OF STREETS, CATCH BASINS AND PIPING. CONTROL WINDBLOWN DUST. REMOVE WASTE MATERIALS AND UNSUITABLE SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER. ALL MATERIAL SHALL BE CONTAINED BY APPROPRIATE CONTROLS.

F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL AND COMPACT AS REQUIRED.

3.3 EROSION CONTROL:

A. PROVIDE EROSION AND SILTATION CONTROL AS REQUIRED TO MEET ALL LOCAL AND STATE REQUIREMENTS.

END OF SECTION

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling

EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

IONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: SPECIFICATIONS (1 OF 5)

SHEET #: SP-1.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

CAST–IN–PLACE–CONCRETE

PART 1: GENERAL

1.1 SUMMARY:

A. FURNISH AND INSTALL ALL CAST–IN–PLACE CONCRETE, REINFORCING AND ACCESSORIES, AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.

1.2 SUBMITTALS:

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. MIX DESIGN: SUBMIT FOR APPROVAL MIX DESIGN PROPOSED FOR USE.

1.3 QUALITY ASSURANCE:

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR A MINIMUM OF THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TESTING: EMPLOY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO OWNER TO DESIGN CONCRETE MIXES AND TO PERFORM MATERIAL EVALUATION TESTS. PROVIDE 4 AND 28 DAY CYLINDER TESTS. COMPLY WITH ASTM C 143, C 173, C 31 AND C 39.

C. STANDARDS

1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

2. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AND CRSI MANUAL OF STANDARD PRACTICE.

PART 2: PRODUCTS

2.1 MATERIALS:

A. MATERIALS SHALL CONFORM TO THE RESPECTIVE PUBLICATIONS AND OTHER REQUIREMENTS SPECIFIED HEREIN.

B. CEMENT: CEMENT SHALL CONFORM TO ASTM C150, TYPE 1. CEMENT MAY BE BAGGED OR BULK. CEMENT SHALL BE USED FROM ONLY ONE MILL THROUGHOUT PROJECT.

C. FINE AGGREGATE: FINE AGGREGATE SHALL CONFORM TO ASTM C33–08 AND SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, WASHED MATERIAL OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.

D. COURSE AGGREGATE: COURSE AGGREGATE SHALL CONFORM TO ASTM C33–08 AND SHALL BE NATURAL WASHED GRAVEL OR WASHED CRUSHED ROCK HAVING HARD, STRONG, DURABLE PIECES, FREE FORM ADHERENT COATINGS, THE MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4" IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C33–08; GRADATION SIZE NO. 67.

E. WATER: WATER USED IN THE CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER INJURIOUS SUBSTANCES.

F. REINFORCING STEEL: ALL BARS ARE TO BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. BENDING DETAILS ARE TO CONFORM TO THE STANDARDS OF ACI 318.

G. FORMS: THE FORMS SHALL BE TRUE AND RIGID AND CONFORM TO SHAPE, LINE AND DIMENSIONS AS SHOWN ON THE DRAWINGS. ALL FORMS SHALL BE RIGIDLY CONSTRUCTED, BRACED AND TIED TO PREVENT ANY DEFLECTION OR DISPLACEMENT DURING PLACING OF CONCRETE. ALL EXPOSED CORNERS AND EDGES SHALL HAVE 3/4" FILLETS. ALL JOINTS SHALL BE MORTAR TIGHT; OPEN JOINTS SHALL BE SEALED AS REQUIRED.

H. CONCRETE:

1. PROPORTIONING: CONCRETE SHALL CONFORM TO THE FOLLOWING:

a. CEMENT–6 SACKS PER CUBIC YARD, MINIMUM

b. WATER SHALL BE KEPT TO AN ABSOLUTE MINIMUM TO MAINTAIN SLUMP AS SPECIFIED

c. AGGREGATE; SAND FACTOR SHALL BE AS REQUIRED TO GIVE THE BEST WORKABLE MIX WITHIN THE RANGE OF 46% TO 52% OF TOTAL AGGREGATE.

d. STRENGTH–4,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE

e. ALL CONCRETE SHALL CONTAIN A WATER–REDUCING AGENT AND SHALL HAVE THREE (3) TO FIVE (5) PERCENT ENTRAINED AIR.

2.2 SLUMP:

A. THE MAXIMUM SLUMP SHALL NOT EXCEED 3" EXCEPT FOR CONCRETE TO BE PLACED IN FORMS 8" WIDE OR LESS, WHERE THE MAXIMUM SLUMP SHALL BE 4".

B. THE DETERMINATION OF SLUMP SHALL CONFORM TO ASTM C143.

2.3 MIXING:

A. THE CONTRACTOR SHALL USE READY–MIXED CONCRETE, MIXED AND DELIVERED IN CONFORMANCE WITH ASTM C94.

2.4 MIXTURES:

A. THE CONCRETE SHALL CONTAIN AN AIR–ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–260 AND ACI 212.1R AND A WATER–REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–494 AND ACI 212.1R. ADMIXTURES SHALL BE PURCHASE AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED.

B. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY.

C. ACCEPTABLE MANUFACTURERS ARE:

1. W.R. GRACE 3. MASTER BUILDERS

2. SIKA GROUP 4. EUCLID CHEMICAL CO

2.5 CURING COMPOUNDS:

A. CURING COMPOUNDS SHALL CONFORM TO ASTM C309, TYPE 1, ID, CLASS A AND B AND ASTM C171 AS APPLICABLE

PART 3: EXECUTION

3.1 GENERAL:

A. CONSTRUCT AND ERECT FORMWORK IN ACCORDANCE WITH ACI 301 ACI 347.

B. COLD–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.

C. HOT–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.

3.2 INSERTS, EMBEDDED COMPONENTS AND OPENINGS:

A. CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS AND OTHER ITEMS TO BE BUILT INTO THE CONCRETE WORK.

B. COORDINATE THE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENINGS, RECESSES, SLOTS, CHASES, ANCHORS, INSERTS AND OTHER ITEMS TO BE EMBEDDED.

C. EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION, AND PLUMBNESS. LOCATE AND MEASURE FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.

D. EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE AS REQUIRED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

A. REINFORCEMENT SHALL BE PLACED IN ACCORDANCE WITH CHECKED AND RELEASED DRAWINGS AND ACI 301 AND ACI 315; SECURELY WIRE–TIE REINFORCEMENT AT ALL INTERSECTIONS.

B. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORMWORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. REINFORCING SHALL BE SUPPORTED ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS.

C. SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SHOWN OTHERWISE. SPLICES SHALL BE STAGGERED. FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.

D. LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.

E. WELDING OF AND TO ANY REINFORCING MATERIALS INCLUDING TACK WELDING OF CROSSING BARS IS STRICTLY PROHIBITED. BARS SHALL BE FREE OF FLAKY OR SCALY RUST AT THE TIME THE CONCRETE IS PLACED.

3.4 CONCRETE PLACEMENT:

A. PRIOR TO PLACING CONCRETE, FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED. ALL WOOD CHIPS, DIRT, ETC., AS WELL AS ALL TEMPORARY BRACING, TIES, AND CLEATS REMOVED, AND ALL OPENINGS FOR UTILITIES PROPERLY BOXED, ALL FORMS SHALL BE PROPERLY SECURED IN THEIR CORRECT POSITION AND MADE TIGHT. ALL REINFORCING AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS.. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED AND ALL STANDING WATER AND OTHER FOREIGN MATTER REMOVED.

B. PLACING CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE CARRIED OUT AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESHLY PLACE CONCRETE. CONCRETING, ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. NO COLD JOINTS SHALL BE ALLOWED.

C. CONSTRUCTION JOINTS: USE KEYWAYS, CONTINUE REINFORCEMENT THROUGH JOINT.

D. EXPANSION JOINTS: FOR EXTERIOR WORK, LOCATE AT 30'–0" O.C. MAXIMUM, AT APPROVED LOCATIONS. PROVIDE SMOOTH DOWELS ACROSS JOINT WHICH PERMIT 1" HORIZONTAL MOVEMENT AND NO VERTICAL SHEAR MOVEMENT.

E. ISOLATION JOINTS: PROVIDE BETWEEN SLABS AND VERTICAL ELEMENTS SUCH AS COLUMNS AND STRUCTURAL WALLS.

F. CONTROL JOINTS: PROVIDE SAWN OR TOOLED JOINTS OR REMOVABLE INSERT STRIPS; DEPTH EQUAL TO 1/4" SLAB THICKNESS. SPACING SHALL BE AS REQUIRED AND APPROVED.

G. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION, SPADING, RODDING, OR FORKING DURING THE OPERATION OF PLACING AND DEPOSITING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNERS OF THE FORMS SO AS TO ELIMINATE ALL AIR AND STONE POCKETS.

3.5 FINISHING:

A. FINISHING OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1; SECTION 7.2 WITH A MINIMUM OF THREE TROWELINGS.

1. INTERIOR SLAB FINISH TOLERANCE AS MEASURED IN ACCORDANCE WITH ASTM E 1155, SHALL HAVE AN OVERALL TEST F NUMBER FOR FLATNESS, FF=20 AND FOR LEVEL, FL=15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, FF=15 AND FOR LEVEL, FL=10.

2. EXTERIOR SLAB FINISH SHALL BE FLAT (FF=20) AND SHALL BE SLOPED A MINIMUM OF 1/8" PER FOOT TO A MAXIMUM OF 1/4" PER FOOT TO PREVENT PONDING WATER.

B. SURFACES OF SLABS SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDENER.

C. ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.

3.6 CURING:

A. FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT OR COLD TEMPERATURES AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER HARDENING OF THE CONCRETE.

B. CURING SHALL IMMEDIATELY FOLLOW THE FINISH OPERATION. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING. BEFORE THE CONCRETE HAS DRIED, ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:

1. PONDING OR CONTINUOUS SPRINKLING

2. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET

3. NON–ABSORPTIVE FILM (POLYETHYLENE) OVER A PREVIOUSLY SPRINKLED SURFACE

4. SAND OR OTHER COVERING KEPT CONTINUOUSLY WET

5. CONTINUOUS STEAM (NOT EXCEEDING 150 DEGREES F) OR VAPOR MIST BATH.

6. SPRAYED–ON CURING COMPOUND APPLIED IN TWO COATES, SPRAYED IN PERPENDICULAR DIRECTIONS.

C. THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50 DEGREES F HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.

END OF SECTION

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

IONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: SPECIFICATIONS (2 OF 5)

SHEET #: SP-1.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

EARTH MOVING/EXCAVATION/BACKFILLING SECTION

PART 1: GENERAL

1.1 SUMMARY:

A. PROVIDE EARTHWORK OPERATIONS INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TRENCHING AND COMPACTION.

1.2 QUALITY ASSURANCE COMPACTION:

A. UNDER STRUCTURES, BUILDING SLABS, STEPS, PAVEMENTS, AND WALKWAYS, 95% MAXIMUM DENSITY, ASTM D 1557.

1. GRADING TOLERANCES:

   a. LAWNS, UNPAVED AREAS, AND WALKS, PLUS OR MINUS 1".

   b. KEEP SITE FREE FROM ANY PONDING WATER

   c. GRADING TOLERANCE FOR FILL UNDER BUILDING OR EQUIPMENT SLABS: PLUS OR MINUS 1/4" MEASURED WITH 10'-0" STRAIGHTEDGE.

2. TESTING: FIELD TESTING OF EARTHWORK AND COMPACTION SHALL BE PERFORMED BY OWNER'S INDEPENDENT TESTING LAB. THIS WORK IS TO BE COORDINATED BY THE CONTRACTOR.

3. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE OWNER OR HIS AGENT WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK AS SPECIFIED AND/OR CALLED OUT BY THE CONSTRUCTION DOCUMENTS. PROVIDE A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY PLACEMENT OF CONCRETE OR BACKFILLING OF TRENCHES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

4. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY OWNER OR HIS AGENT AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

PART 2: PRODUCTS

2.1 GENERAL:

A. UTILITY TRENCH: PROVIDE WELL GRADED SAND (SW-SM) FROM BASE OF TRENCH TO MINIMUM ABOVE THE HIGHEST CONDUIT WITHIN TRENCH. REMAINDER OF TRENCH AREA CAN BE EITHER AB 3 OR CLEAN GRAVEL AS DESCRIBED HEREIN. COMPACT AS REQUIRED TO PREVENT SETTLING.

B. ACCESS ROADS: 6" MINIMUM (UNLESS NOTED OTHERWISE ON DRAWINGS) COMPACTED AB 3 OR APPROVED EQUAL (UNWASHED CRUSHED LIMESTONE GRAVEL CONSISTING OF MULTIPLE AGGREGATE SIZES, ROCK CHIPS, AND ROCK DUST.)

C. COMPOUND (NEW CONSTRUCTION): 2" THICK CLEAN GRAVEL, WITH 100% PASSING THROUGH A 1" SIEVE OVER 4" COMPACTED AB 3.

D. COMPOUND (EXISTING): PROVIDE CLEAN GRAVEL WITH 100% PASSING THROUGH A 1" SIEVE AS REQUIRED TO BRING COMPOUND TO PROPER GRADE OR REPAIR EXISTING DAMAGED AREAS.

E. STRUCTURAL FILL: PROVIDE 4" MINIMUM AB 3 BELOW STRUCTURES OR SLABS

2.2 MATERIALS:

A. GEOTEXTILE FABRIC: PROVIDE MIRAFI 500X OR APPROVED EQUAL.

B. PLASTIC MARKING TAPE: SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6" WIDE WITH A MINIMUM THICKNESS OF 0.004". TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3'-0" DEEP. THE CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR OTHER MEANS TO PROTECT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION

PART 3: EXECUTION

3.1 INSTALLATION:

A. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE OF ANY STRUCTURE NOT SHOWN THAT MIGHT INTERFERE WITH NEW CONSTRUCTION. NOTIFY THE OWNER OR HIS AGENT OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

B. EXCAVATION IS UNCLASSIFIED AND INCLUDES EXCAVATION TO SUBGRADE REGARDLESS OF MATERIALS. REPAIR EXCAVATIONS BEYOND ELEVATIONS AND DIMENSIONS INDICATED AS REQUIRED.

C. MAINTAIN STABILITY OF EXCAVATIONS; COORDINATE SHORING AND BRACING AS REQUIRED BY AUTHORITIES HAVING JURISDICTION. PREVENT SURFACE AND SUBSURFACE WATER FROM ACCUMULATING IN EXCAVATIONS. STOCKPILE SATISFACTORY MATERIALS FOR REUSE, ALLOW FOR PROPER DRAINAGE.

D. COMPACT MATERIALS AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 1557 BY AERATION OR WETTING TO 95% OF MAXIMUM DRY DENSITY TO SUITABLE DEPTH.

E. PLACE ACCEPTABLE MATERIALS IN LAYERS NOT MORE THAN 8" LOOSE DEPTH FOR MATERIALS COMPACTED BY HEAVY EQUIPMENT AND NOT MORE THAN 4" LOOSE DEPTH FOR MATERIALS COMPACTED BY HAND EQUIPMENT TO SUBGRADES INDICATED AS FOLLOWS:

1. STRUCTURAL FILL: USE UNDER FOUNDATIONS, SLABS ON GRADE IN LAYERS AS INDICATED.

2. DRAINAGE FILL: USE UNDER DESIGNATED BUILDING SLABS, AT FOUNDATION DRAINAGE AND ELSEWHERE AS INDICATED.

3. COMMON FILL: USE UNDER UNPAVED AREAS.

4. SUBBASE MATERIAL: USE UNDER GENERAL COMPOUND AREA. IF THICKNESS OF LIFT IS GREATER THAN 6 SPREAD AND COMPACT THE CRUSHED STONE IN MULTIPLE LIFTS OF EQUAL THICKNESS WITH A MAXIMUM LIFT OF 6"

F. GRADE TO 1/2" ABOVE OR BELOW REQUIRED SUBGRADE AND TO A TOLERANCE OF 1/4" IN 10'-0".

G. PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION. RE-COMPACT AND RE-GRADE SETTLED, DISTURBED AND DAMAGED AREAS TO RESTORE QUALITY, APPEARANCE, AND CONDITION.

H. CONTROL EROSION TO PREVENT RUNOFF INTO SEWERS OR DAMAGE TO AREAS.

I. CONTROL DUST TO PREVENT HAZARDS TO ADJACENT PROPERTIES AND VEHICLES. IMMEDIATELY REPAIR OR REMEDY DAMAGE CAUSED BY DUST INCLUDING AIR FILTERS IN EQUIPMENT AND VEHICLES. CLEAN SOILED SURFACES.

J. DISPOSE OF WASTE AND UNSUITABLE MATERIALS OFF-SITE IN A LEGAL MANNER.

3.2 BACKFILL:

A. AS SOON AS PRACTICAL AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.

1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL HAVE BEEN REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.

2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL, WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8" LOOSE THICKNESS. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4" IN LOOSE DEPTH.

3. IF THE DENSITY TESTING INDICATES THAT THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS AUTHORIZED BY THE GEO-TECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY TO OBTAIN PROPER COMPACTION.

B. COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.3 TRENCH EXCAVATION:

A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE OWNER OR HIS AGENT. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.

B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6" BEYOND THE OUTSIDE EDGE OF THE OUTER-MOST CONDUIT.

C. WHEN SOFT, YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, BACKFILL AT THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12" BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.

3.4 TRENCH BACKFILL:

A. PROVIDE GRANULAR BEDDING MATERIAL (WELL GRADED SAND) IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.

B. NOTIFY THE OWNER OR HIS AGENT 24 HOURS IN ADVANCE OF BACKFILLING.

C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.

D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6" UNCOMPACTED LIFTS UNTIL 6" OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACES AROUND CONDUITS.

E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.

F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT BACKFILL MATERIAL IN 8" MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.

G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN EXISTING UNDISTURBED MATERIAL ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.5 AGGREGATE ACCESS ROAD (IF APPLICABLE):

A. CLEAR, GRUB, STRIP AND EXCAVATE FOR ACCESS ROAD TO THE LINES AND GRADES INDICATED ON DRAWINGS. SCARIFY TO A DEPTH OF 6" AND PROOF-ROLL ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS.

B. THE ENTIRE SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 1557.

C. AFTER PREPARATION OF THE SUBGRADE IS COMPLETE, THE GEOTEXTILE FABRIC (MIRAFI 500X) SHALL BE INSTALLED TO THE LIMITS INDICATED ON DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, AS SMOOTHLY AS POSSIBLE.

1. OVERLAPS PARALLEL TO THE ROADWAY WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3'-0" WIDE.

2. TRANSVERSE OR PERPENDICULAR OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3'-0".

3. ALL OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS BETWEEN 10" AND 12" LONG TO INSURE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25'-0" O.C. AND TRANSVERSE SEAMS EVERY 5'-0" O.C.

D. THE AGGREGATE BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS OF AT LEAST 6" (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC AND SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. AT NO TIME SHALL EQUIPMENT BE PERMITTED ON THE ROADWAY WITH LESS THAN 6" OF MATERIAL COVERING THE FABRIC.

E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE PROCTOR TEST, ASTM D 1557 WITH A TAMPING ROLLER, A PNEUMATIC-TIRED ROLLER, OR WITH A VIBRATORY MACHINE OR ANY COMBINATION OF THE ABOVE. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE-WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

A. PERFORM ALL GRADING TO PROVIDE SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.

B. UTILIZE SATISFACTORY FILL MATERIALS RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR THE REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.

C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 6" OF AB 3 ON TOP OF SOIL STABILIZER FABRIC.

D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

END OF SECTION

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF NEW HAMPSHIRE
PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: SPECIFICATIONS (3 OF 5)

SHEET #: SP-1.2

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

ELECTRICAL

PART 1: GENERAL

1.1 GENERAL CONDITIONS:

A. THE CONTRACTOR SHALL INSPECT THE SITE WHERE THIS WORK IS TO BE PERFORMED AND FULLY FAMILIARIZE HIMSELF WITH ALL CONDITIONS RELATED TO THIS PROJECT.

B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES AND SHALL MAKE ALL DEPOSITS AND PAY ALL FEES REQUIRED FOR THE PERFORMANCE OF WORK UNDER THIS SECTION.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES:

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.

1.3 REFERENCES:

A. THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

1. NEC (NATIONAL ELECTRICAL CODE)
2. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
3. IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)
4. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
5. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
6. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
7. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
8. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
9. UL (UNDERWRITERS LABORATORIES, INC.)

1.4 SCOPE OF WORK:

A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL AND ASSOCIATED SERVICES REQUIRED TO COMPLETELY CONSTRUCT AND LEAVE READY FOR OPERATION SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREIN DESCRIBED.

B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.

D. THE CONTRACTOR SHALL FURNISH TO THE OWNER, CERTIFICATES OF FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.

PART 2: PRODUCTS

2.1 GENERAL:

A. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE NEW, FREE FROM DEFECTS AND OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE.

B. ALL MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.

C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:

1. RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE HOT-DIP GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. FLEXIBLE METAL CONDUIT SHALL BE GALVANIZED, ZINC-COATED STEEL, PVC COATED FOR OUTDOOR APPLICATIONS.
3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION TYPE AND WATERTIGHT.
4. NON-METALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC, HEAVY-WALL RIGID WITH SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. WIRE AND CABLE:

1. WIRE AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZES AS INDICATED, #12 AWG MINIMUM.
2. #10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, PRESSURE-TYPE CONNECTORS CONSTRUCTED OF HIGH-STRENGTH, NON-CORRODIBLE, TIN-PLATED COPPER DESIGNED TO FURNISH HIGH-PULLOUT STRENGTH AND HIGH CONDUCTIVITY JOINTS SHALL BE USED.
4. SUPPORT GRIPS SHALL BE SINGLE WEAVE, CLOSED MESH, HIGH-GRADE, NON-MAGNETIC, TIN-COATED BRONZE CAPABLE OF SUPPORTING TEN TIMES THE CABLE DEAD WEIGHT, HUBBELL KELLEMS OR APPROVED EQUAL.

C. DISCONNECT SWITCHES:

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCKED WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE D CLASS 3110 OR APPROVED EQUAL.

D. SYSTEM GROUNDING:

1. GROUNDING CONDUCTOR SHALL BE SOLID TINNED BARE COPPER, SIZE AS INDICATED, EXCEPT ABOVE GROUND GROUNDING CONDUCTORS SHALL BE STRANDED INSULATED.
2. GROUND BUSSES SHALL BE GALVANIZED STEEL BARS OF RECTANGULAR CROSS SECTION.
3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS.
4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 3/4" x 10'-0".

E. OTHER MATERIALS:

1. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER - LICENSED

SHELTON DOUGLAS KEISLING No. 18260

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: SPECIFICATIONS (4 OF 5)

SHEET #: SP-2.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

PART 3: EXECUTION

3.1 GENERAL:

A. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.

3.2 LABOR AND WORKMANSHIP:

A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE DONE BY EXPERIENCED MECHANICS OF THE PROPER TRADES.

B. ALL ELECTRICAL EQUIPMENT FURNISHED SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.

C. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER–FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

A. CONDUIT:

1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS HEREIN SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4" NOMINAL SIZE SHALL BE USED.
2. PROVIDE RGS CONDUIT FOR ALL EXPOSED, EXTERIOR CONDUIT.
3. PROVIDE SCHEDULE 40 PVC OR RGS CONDUIT BELOW GRADE, 1" MINIMUM, UNLESS NOTED OTHERWISE. ALL 90 DEGREE BENDS TO ABOVE GRADE SHALL BE RGS. MINIMUM BURIAL DEPTH SHALL BE 24" CLEAR TO TOP OF CONDUIT, UNLESS NOTED OTHERWISE.
4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION IS NOT DESIRABLE FOR REASONS OF EQUIPMENT MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUIDTIGHT, PVC COATED FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS.
5. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORTS TO ALLOW FOR EXPANSION AND CONTRACTION.
6. A RUN OF CONDUIT BETWEEN BOXES OR FITTINGS SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER–BENDS INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE BOX OR FITTING. THE RADIUS OF BENDS SHALL NEVER BE SHORTER THAN THAT OF THE CORRESPONDING TRADE ELBOW.
7. WHERE CONDUIT HAS TO BE CUT IN THE FIELD, IT SHALL BE CUT SQUARE WITH A PIPE CUTTER USING CUTTING KNIVES.
8. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF WIRE OR CABLE. CLEAR ALL BLOCKAGES AND REMOVE BURRS, DIRT, AND DEBRIS.
9. INSTALL PULL STRINGS IN ALL EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END WITH ITS DESTINATION.
10. PROVIDE INSULATED GROUNDING BUSHINGS FOR ALL CONDUITS STUBBED INTO EQUIPMENT ENCLOSURES OR STUBBED OUT FOR FUTURE USE BY OTHERS.
11. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
12. INSTALL 2" ORANGE DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUIT AND WIRE.
13. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.

B. WIRE AND CABLE:

1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	120/240V	208Y/120V	480Y/277V
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN

2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAYS WITH PRESSURE–TYPE CONNECTORS.
3. PULLING LUBRICANTS SHALL BE SOAPSTONE POWDER, POWDERED TALC, OR A COMMERCIAL PULLING COMPOUND. NO SOAP SUDS, SOAP FLAKES, OIL, OR GREASE SHALL BE USED, AS THESE MAY BE HARMFUL TO CABLE INSULATION. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CABLE TO AVOID SCORING THE CONDUIT.
4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES, EQUIPMENT, ETC. TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS, AND SHALL BE PROTECTED FROM MECHANICAL INJURY AND FROM MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUND AS INDICATED.

D. GROUNDING:

1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
4. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
5. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
6. ALL GROUND CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC–WELDED CONNECTIONS SHALL BE APPROVED BY THE CONSTRUCTION INSPECTOR BEFORE BEING PERMANENTLY CONCEALED.
7. APPLY CORROSION–RESISTANT FINISH TO FIELD CONNECTIONS, AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE COPPER–BASED "NO–OX" OR APPROVED EQUAL.
8. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS
9. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS OR GROUNDING LUG IN ENCLOSURE.
10. DIRECT BURIED GROUND CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" BELOW GRADE, UNLESS NOTED OTHERWISE.
11. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSULATED OR INSTALLED IN PVC CONDUIT.
12. INSTALL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
13. DRIVE GROUND RODS UNTIL TOPS ARE 30" BELOW FINAL GRADE.
14. GROUNDING CONDUCTOR TO EQUIPMENT GROUND LUGS:
    a. BOLTED TO EQUIPMENT HOUSING WITH STAINLESS STEEL BOLTS AND LOCK WASHERS.
    b. ALL EQUIPMENT TO BE GROUNDED SHALL BE FREE OF PAINT OR ANY OTHER MATERIAL COVERING BARE METAL AT THE POINT OF CONNECTION.

3.5 ACCEPTANCE TESTING:

A. PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRED TESTS, AND SUBMIT TEST REPORTS UPON COMPLETION OF TESTS.

B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NONCOMPLYING ITEMS SHALL BE REMOVED FROM THE JOBSITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE OF SUCH NON–COMPLIANCE.

C. TEST PROCEDURES:

1. ALL FEEDERS SHALL HAVE THEIR INSULATION TESTED AFTER INSTALLATION, BUT BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. INVESTIGATE ANY VALUES LESS THAN 50 MEGAOHMS.
2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE WIRES AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
4. PERFORM GROUND TEST TO MEASURE GROUND RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3–POINT "FALL–OF–POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES & LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

END OF SECTION

END OF SPECIFICATION

STAMP:

12/19/2024

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER – SHELTON DOUGLAS KEISLING No. 18260 LICENSED

DocuSigned by: Shelton Keisling EF94D8A5B80B407...

ENGINEERING LICENSE:

STATE OF NEW HAMPSHIRE

PE CERTIFICATE OF AUTHORIZATION # 01191

ENGINEER:		PE#:	DISCIPLINE:	
SDK	SHELTON D. KEISLING	18260	ELECTRICAL	E
TMS	TERRANCE M. SUPER	10926	ELECTRICAL	E

iONNA™

PLANS PREPARED FOR: AGI

PLANS PREPARED BY: SSC

DRAWING NOTICE:

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

SUBMITTALS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	09/20/24	IBA	A
ISSUED FOR PERMITTING	09/25/24	IBA	0
REVISED PER AHJ COMMENTS	11/15/24	IBA	1
ADDED UTILITY DESIGN	12/19/24	EDA	2

APPLICANT SITE NAME: WHOLE FOOD (PORTSMOUTH)

APPLICANT SITE NUMBER: AGI-INA-NH-0001

SITE ADDRESS: 1600 WOODBURY AVE PORTSMOUTH, NH 03801

SHEET DESCRIPTION: SPECIFICATIONS (5 OF 5)

SHEET #: SP-2.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Installation and Maintenance Manual

hypercharger HYC_400UL
(100 kW – 400 kW)
Ultra-fast charging system for electric vehicles

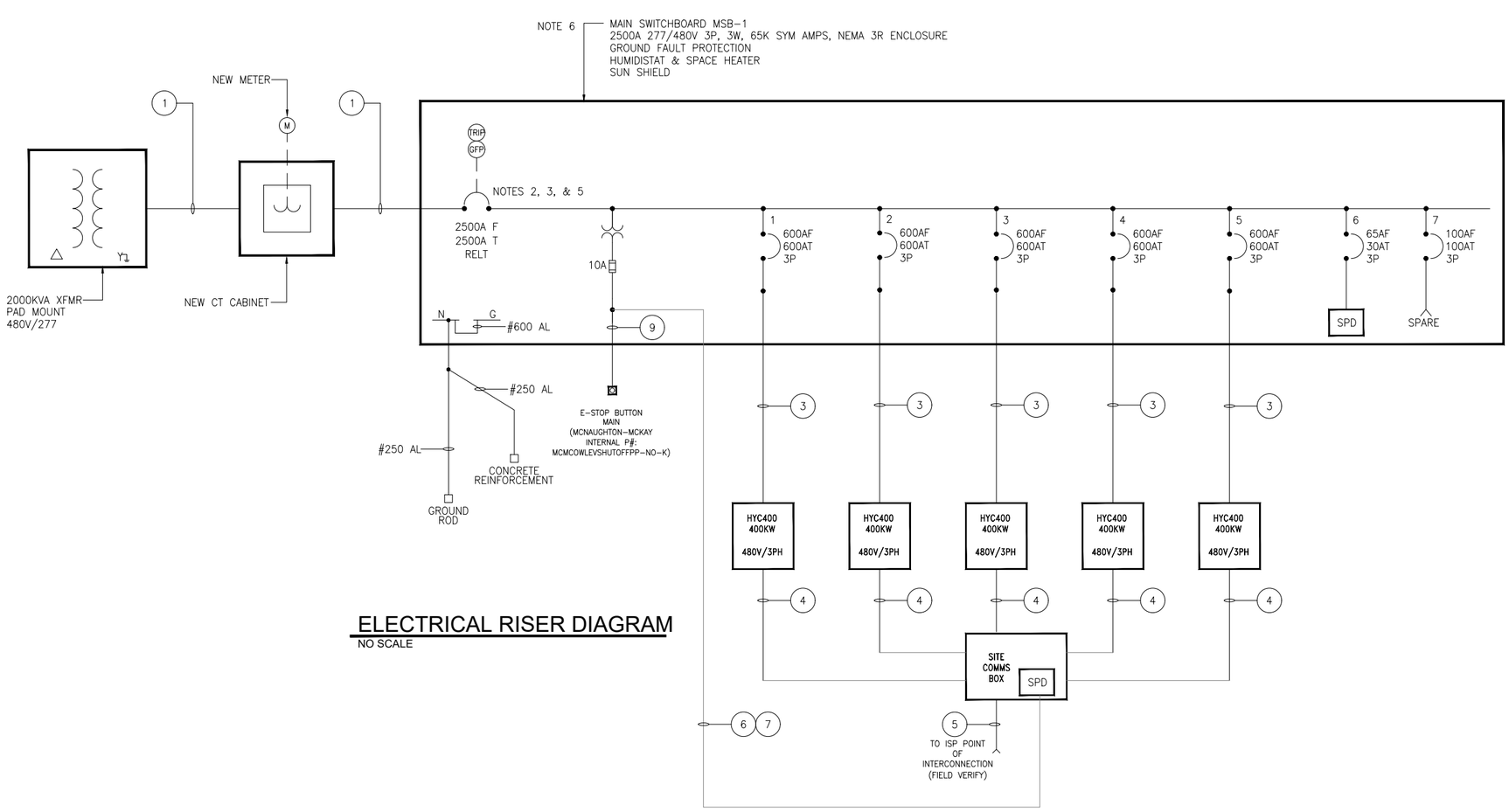
for HW version 4

All rights reserved. Reproduction, in whole or part, of this document is permissible only with express written consent from alpitronic Americas LLC.

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

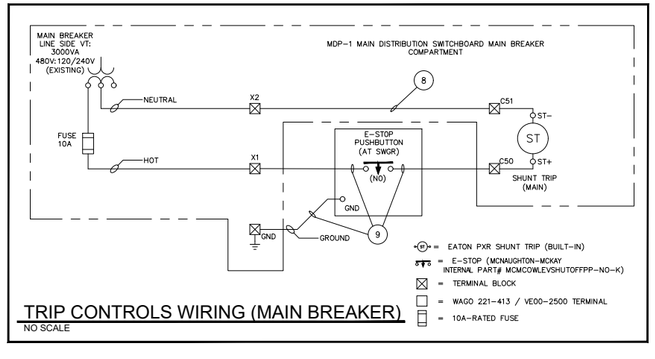
NOTES

1. METER PLACEMENT, CT CABINET AND FINAL SWITCHBOARD/DISTRIBUTION DESIGN TO BE COORDINATED ACCORDING TO UTILITY REQUIREMENTS. CONTRACTOR TO PROVIDE METER SOCKET (METER ENCLOSURE) PER LISTED ON LOCAL UTILITY'S APPROVED METER ENCLOSURE LIST.
2. THE MAIN CIRCUIT BREAKER IN THIS SWITCHBOARD SHALL BE 100% RATED.
3. PROVIDE GROUND FAULT PROTECTION (GFP) FOR EQUIPMENT PER NEC ARTICLE 230.95.
4. SEE UTILITY POWER MANUAL FOR ADDITIONAL INFORMATION.
5. THIS SWITCHBOARD IS INSTALLED WITH AN ENERGY REDUCTION MAINTENANCE SWITCH (ERMS), AKA RELT, AT THE MAIN BREAKER FOR ARC FLASH MITIGATION PER NEC ARTICLE 240.87.
6. THE SERVICE EQUIPMENT SHALL BE FIELD MARKED IN COMPLIANCE WITH ALL REQUIREMENTS STATED IN NEC ARTICLES 110.24(A) AND 230.70(B).



ELECTRICAL RISER DIAGRAM
NO SCALE

NEW MAIN SWITCHBOARD MSB-1											
MAIN	2500 (100% RATED)			VOLTAGE:	480/277			PHASE:	3		
MTG	FLOOR			AIC:	65K			WIRE:	4		
CKT	CIRCUIT BREAKER			DESCRIPTION	LOAD (KVA)				PHASE		
#	FRAME	TRIP	POLE		LTG	REC	MTR	MISC	A	B	C
1	600	600	3	HYC400 DISPENSER 1				133.0			
								133.0			
								133.0			
2	600	600	3	HYC400 DISPENSER 2				133.0			
								133.0			
3	600	600	3	HYC400 DISPENSER 3				133.0			
								133.0			
								133.0			
4	600	600	3	HYC400 DISPENSER 4				133.0			
								133.0			
5	600	600	3	HYC400 DISPENSER 5				133.0			
								133.0			
6	65	30	3	SPD				0.0			
								0.0			
7	100	100	3	SPARE							
					0	0	0	1995.2			
CONNECTED LOAD (KVA):				1995.2				AMPS	KVA		
DEMAND LOAD (KVA):				1995.2			PHASE A	2401.0	665.1		
							PHASE B	2401.0	665.1		
CONNECTED LOAD (AMPS):				2399.8			PHASE C	2401.0	665.1		
DEMAND LOAD (AMPS):				2399.8							



TRIP CONTROLS WIRING (MAIN BREAKER)
NO SCALE

CONDUIT AND WIRING SCHEDULE

	FROM	TO	CONFIGURATION
1	PROPOSED TRANSFORMER	PROPOSED 480V SWITCHBOARD	(4) #600 KCMIL AL (THWN-2) IN EACH OF (8) 4" SCH 40 PVC CONDUITS
2	PROPOSED UTILITY TRANSFORMER (BY OTHERS)	PROPOSED METER	1-1/4" PVC CONDUIT FOR METERING CIRCUITS PER UTILITY
3	PROPOSED 480V SWITCHBOARD	PROPOSED HYC400 DISPENSER (POST)	(3) #500 KCMIL AL (THWN-2) + (1) #2/0 AWG AL (THWN-2) EGC IN EACH OF (2) 3" SCH 40 PVC CONDUITS
4	PROPOSED HYC400 DISPENSER (POST)	SITE COMMS BOX	(1) FIBER OPTIC CABLE IN (1) 1" SCH 40 PVC CONDUIT FOR COMMS
5	SITE COMMS BOX	ISP POINT OF CONNECTION (FIELD LOCATE)	(1) 1" SCH 40 PVC CONDUIT FOR INTERNET CABLE/FO
6	PROPOSED 480V SWITCHBOARD	SITE COMMS BOX POWER	(2) #10 KCMIL CU (THWN-2) + (1) #10 AWG CU (THWN-2) EGC IN (1) 1" SCH 40 PVC CONDUIT
7	PROPOSED 480V SWITCHBOARD	SITE COMMS BOX SPD	(3) #10 KCMIL CU (THWN-2) + (1) #10 AWG CU (THWN-2) EGC IN (1) 1" SCH 40 PVC CONDUIT
8	MAIN BREAKER CONTROLS WITHIN SWITCHBOARD	MAIN BREAKER CONTROLS WITHIN SWITCHBOARD	(1) #14 AWG CU (THWN-2)
9	SWITCHBOARD MAIN BKR SECTION SHUNT MODULE & CONTROLS	E-STOP BUTTON	(2) #14 AWG CU (THWN-2) + (1) #14 AWG CU (THWN-2) EGC IN EACH OF (1) 1" SCH 40 PVC CONDUIT

IONNA

OWL

STATE OF OHIO
PHILLIP J. JAMINET
E-70353
REGISTERED
PROFESSIONAL ENGINEER

IONNA - WILLOUGHBY CHARGING HUB
4145 OH-306
WILLOUGHBY, OH 44094

NO.	DATE	REVISION DESCRIPTION
A	06/17/24	CD-50
B	06/27/24	CD-90 FOR INTERNAL REVIEW
C	7/5/24	CD-90 FOR PERMITTING
-	-	-
-	-	-

DATE
06/17/2024

SHEET TITLE
ELECTRICAL SINGLE LINE DIAGRAM

SHEET NUMBER
E-2.0

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

SPECIFICATIONS

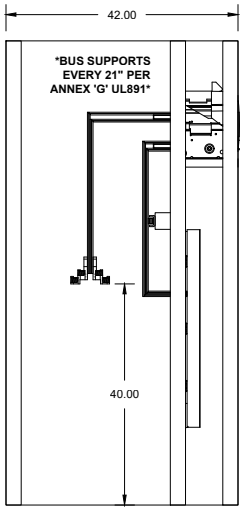
1. CONSTRUCTION
UL TYPE 3R, GA. STEEL, OSHPD OSP-0308-10, UL 891

2. FINISH
CARDINAL T007-WH121 POWDER COAT, WHITE, 70% GLOSS

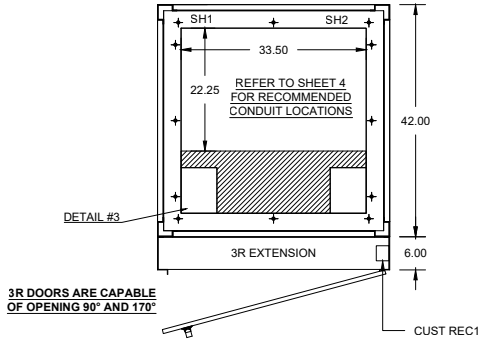
3. SERVICE
UNKNOWN, 2500A, 480VAC, 3ϕ 4W, 65KAIC

4. BUS
SILVER-PLATED COPPER

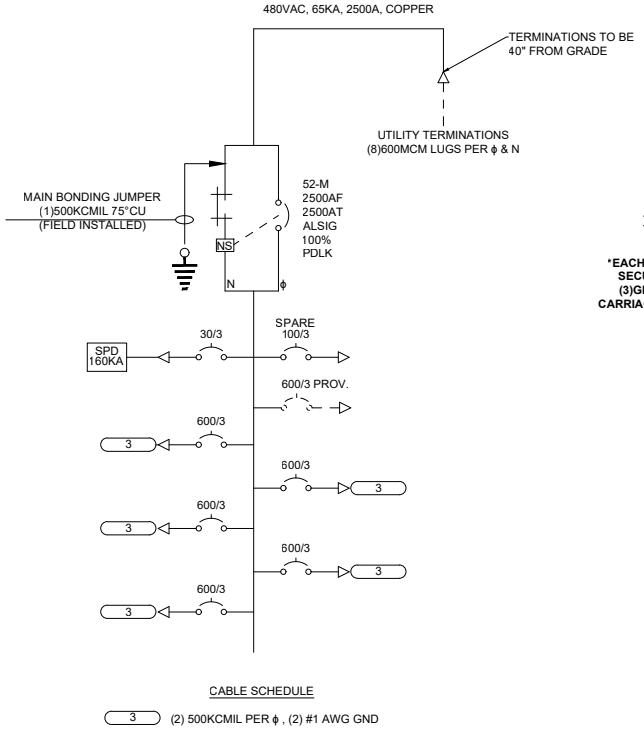
NOTE: REAR OR SIDE ACCESS REQUIRED



INTERIOR SIDE ELEVATION
APPROX. BUS DETAIL
SHOWN WITHOUT 3R
COMPONENTS

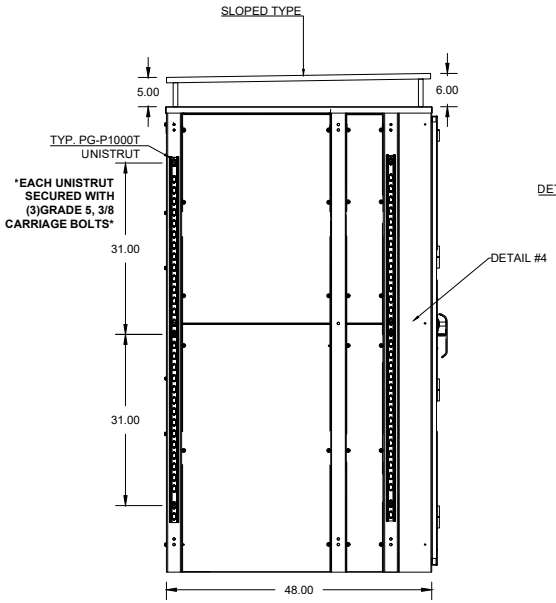


BASE LAYOUT
(REFER TO SHEET 4 FOR ANCHOR LOCATIONS)

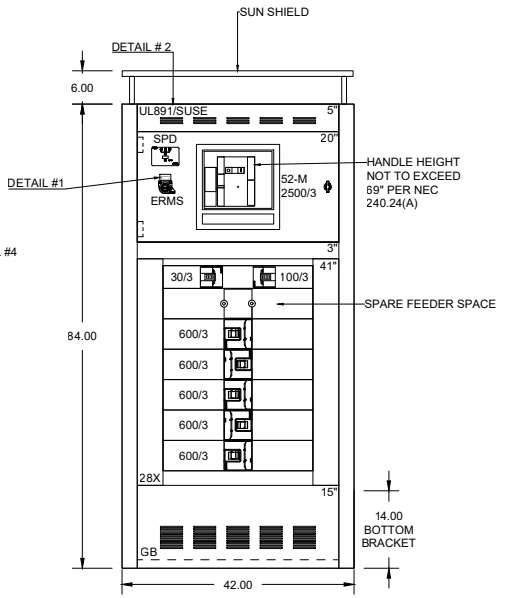


CABLE SCHEDULE

3 (2) 500KCMIL PER ϕ , (2) #1 AWG GND



SIDE ELEVATION
SHOWN WITH 3R DOORS



≈ WT 2000 LBS

FRONT ELEVATION
SHOWN WITH 3R COMPONENTS
REMOVED FOR CLARITY

POWER & DISTRIBUTION
16450 PHOEBE AVENUE
LA MIRADA, CA 90638
PHONE: (714)-307-9198

CUSTOMER APPROVAL:

#	REVISION	DATE
0	ISSUED FOR APPROVAL	08/14/24

SITE NAME:
IONNA
WILLOUGHBY CHARGING HUB
MSB-1

ADDRESS:
4145 OH-306,
WILLOUGHBY, OH 44094

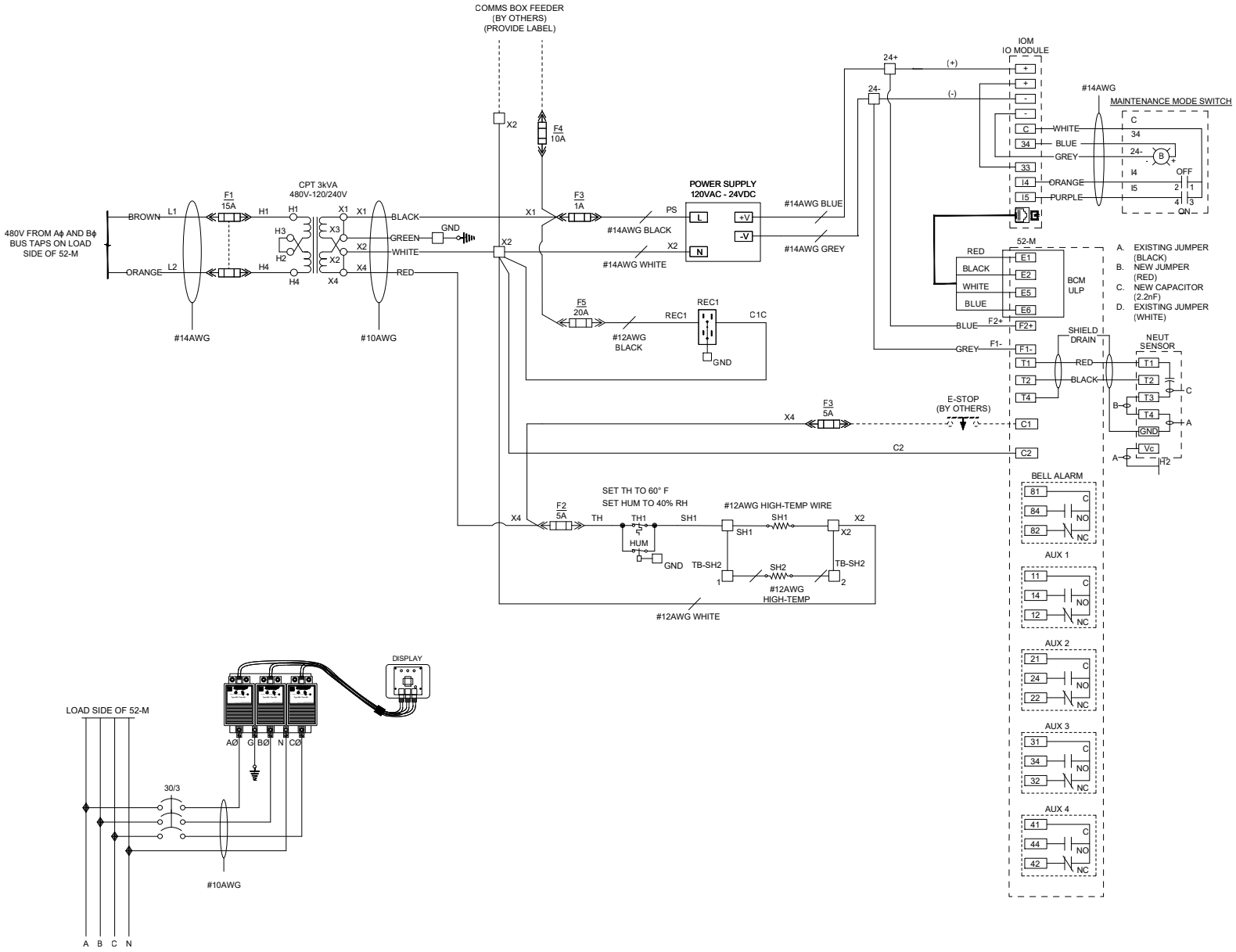
DRAWING: 2408-3-17102

SHEET DESCRIPTION: ELEVATIONS/ SPECIFICATIONS

DRAWN BY:	SHEET:
EB	1
REV:	PAPER:
0	8.5"X 11"

PLOT DATE: 8/14/2024 5:16 AM BY: EDWINBAZ V:\#_SO\~Ionna\17102_Willoughby Charging Hub

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



POWER & DISTRIBUTION
16450 PHOEBE AVENUE
LA MIRADA, CA 90638
PHONE: (714)-307-9198

CUSTOMER APPROVAL:

#	REVISION	DATE
0	ISSUED FOR APPROVAL	08/14/24

SITE NAME:
IONNA
WILLOUGHBY CHARGING
HUB
MSB-1

ADDRESS:
4145 OH-306,
WILLOUGHBY, OH 44094

DRAWING:
2408-3-17102

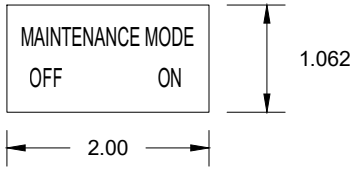
SHEET DESCRIPTION:
WIRING SCHEME

DRAWN BY:	SHEET:
EB	2
REV:	PAPER:
0	8.5"X 11"

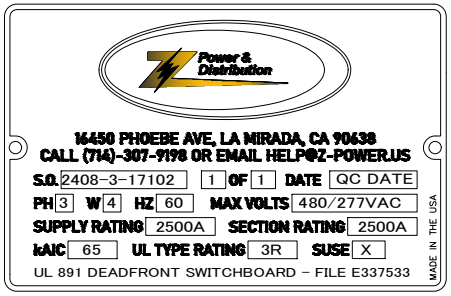
PLOT DATE: 8/14/2024 5:16 AM BY: EDWINBAZ V:\#_SO\~Ionna\17102_Willoughby Charging Hub

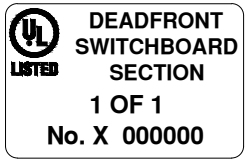
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

DETAIL #1
WHITE LETTERING ON
RED BACKGROUND

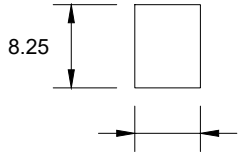


DETAIL #2

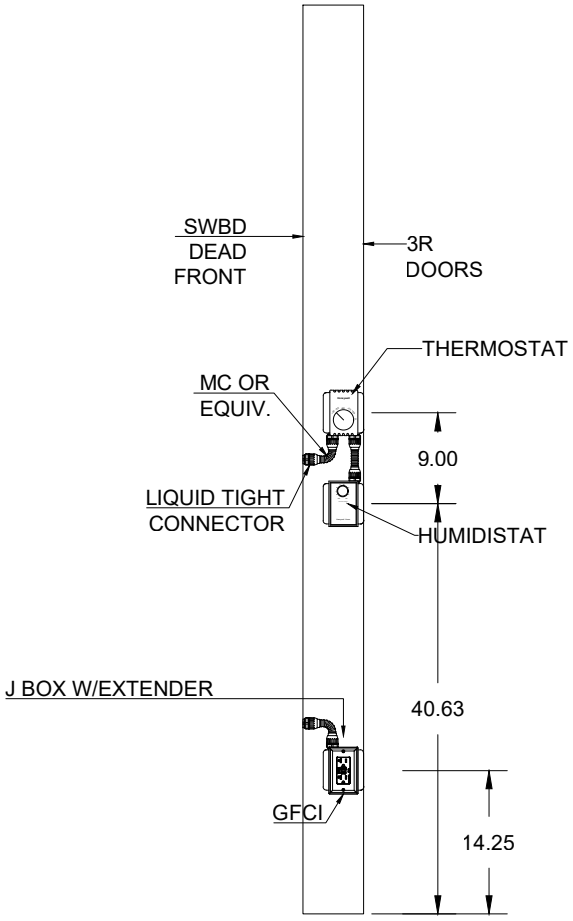




DETAIL #3
FRONT CONDUIT
OPENING



DETAIL #4
TH/HUM/REC MOUNTING



RIGHT 3R EXTENSION
ALL DIMENSIONS ARE APPROX.

POWER & DISTRIBUTION
16450 PHOEBE AVENUE
LA MIRADA, CA 90638
PHONE: (714)-307-9198

CUSTOMER APPROVAL:

#	REVISION	DATE
0	ISSUED FOR APPROVAL	08/14/24

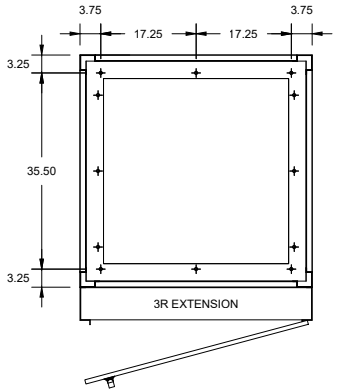
SITE NAME:
IONNA
WILLOUGHBY CHARGING
HUB
MSB-1

ADDRESS:
4145 OH-306,
WILLOUGHBY, OH 44094

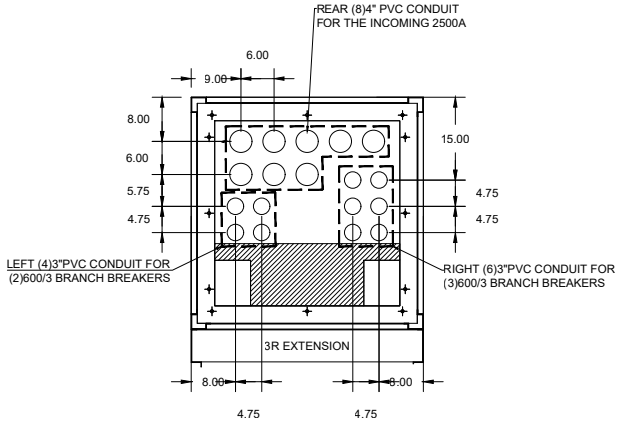
DRAWING: 2408-3-17102	
SHEET DESCRIPTION: DETAILS #1-4	
DRAWN BY: EB	SHEET: 3
REV: 0	PAPER: 8.5"X 11"

PLOT DATE: 8/14/2024 5:16 AM BY: EDWINBAZ V:\#_SO\~Ionna\17102_Willoughby Charging Hub

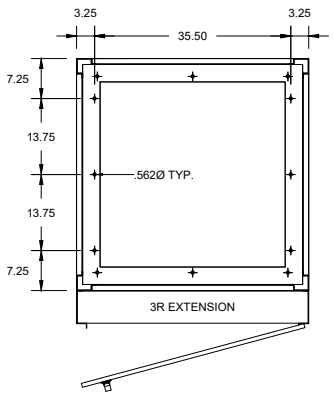
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



BASE PLAN - FRONT AND BACK ANCHORING OPTION



BASE PLAN - CONDUIT LOCATION RECOMMENDATIONS



BASE PLAN - SIDES ANCHORING OPTION

ITEM	QTY.	MFG	CAT. No.	DESCRIPTION	REV
2500/3	1	SQ D	WL3GGH64A35XXXXXCXT	MODEL NW25H 3-POLE, 2500A, 100% 100KAIC 480VAC, 2500A SENSOR PLUG, TYPE 'A' PLUG, TRIP UNIT TYPE 6.0P ALSIG, (4) AUX CONTACTS, PROV. FOR PADLOCK AND PROVISIONS , HORIZONTAL REAR CONNECTED "T"	
	1	SQ D	S48182	NEUTRAL SENSOR 2500A-3000A	
ERMS	1	SQ D	9001K11J35LLL	SWITCH WITH BLUE INDICATOR LIGHT (24VDC)	
	1	SQ D	9001KA1	SWITCH CONTACT BLOCK	
	1	SQ D	9001K7	PADLOCK ATTACHMENT	
	1	SQ D	LV434063	I/O MODULE	
	1	SQ D	LV434196	CIRCUIT BREAKER ULP CORD 4.27 FT	
600/3	5	EATON	PDG33M0600B2NN	MCCB, 600AT/600AF, 3P, 65KA/480V, 80%, PXR10 LSI TRIP UNIT	
	5	EATON	PDG3XPLKTOFF	PADLOCK PROVISION, FRAME 3	
	5	EATON	PDG3X3TA630	(2)#2-500 KCMIL LOAD LUGS	
100/3	1	EATON	PDG23M0100B2NL	MCCB, 100AF/100AT, 3P, 65KA/480V, 80%, PXR10 LSI TRIP UNIT, (1)#14-1/0	
	1	EATON	PDG2XPLKTOFF	PADLOCK PROVISION, FRAME 2	
30/3	1	EATON	PDG23M0060B2NL	MCCB, 60AF/30AT, 3P, 65KA/480V, 80%, PXR10 LSI TRIP UNIT. (1)#14-1/0 LOAD LUGS	
	1	EATON	PDG2XPLKTOFF	PADLOCK PROVISION, FRAME 2	
CPT	1	HAMMOND	C1F003LES	CONTROL POWER TRANSFORMER 480-120/240V, 3.0 KVA	
PS	1	PHOENIX	2902991	POWER SUPPLY, 120VAC IN, 24VDC OUTPUT, 30W	
F1-5	LOT	FERRAZ	USCC1I, USCC2I,USCC3I	30A 1P, 2P,3P 600VAC FUSE BLOCKS	
SPD	1	SQ D	TVS4IMA160	SURGE PROTECTION DEVICE, 160KA, 480VAC + GND DELTA, REMOTE DISPLAY	
REC	1	HUBBLE	GFRST20W	20A 120VAC GFCI RECEPTACLE	
TH	1	CADET	T410A	THERMOSTAT 50-90 F, 22A	
HUM	1	BROAN	DD500W OR EQUIV	DE-HUMIDISTAT 20-80% RH	
SH	2	TEMPCO	CSF00500	STRIP HEATER 350W, 120V	

POWER & DISTRIBUTION
16450 PHOEBE AVENUE
LA MIRADA, CA 90638
PHONE: (714)-307-9198

CUSTOMER APPROVAL:

#	REVISION	DATE
0	ISSUED FOR APPROVAL	08/14/24

SITE NAME:
IONNA
WILLOUGHBY CHARGING
HUB
MSB-1

ADDRESS:
4145 OH-306,
WILLOUGHBY, OH 44094

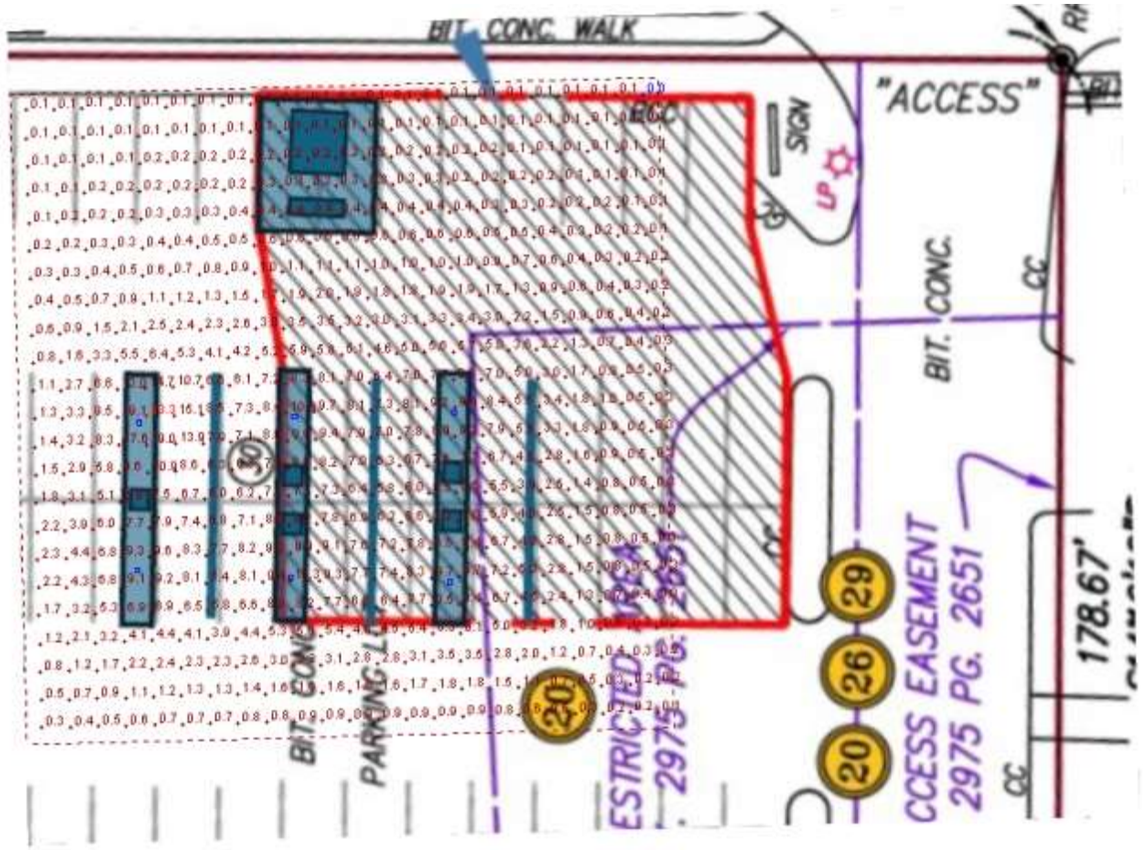
DRAWING:
2408-3-17102

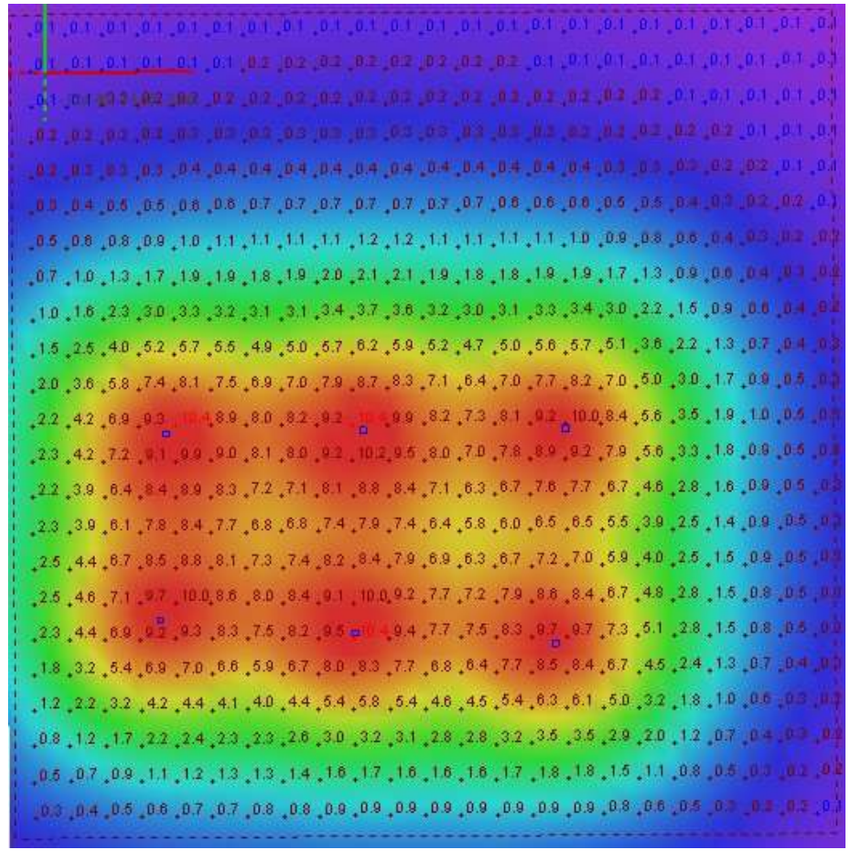
SHEET DESCRIPTION:
ANCHORING
LOCATIONS/BOM

DRAWN BY:	SHEET:
EB	4
REV:	PAPER:
0	8.5"X 11"

PLOT DATE: 8/14/2024 5:16 AM BY: EDWINBAZ V:\#_SO\~Ionna\17102_Willoughby Charging Hub

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326





Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #2	+	3.1 fc	23.3 fc	0.0 fc	0.0 fc	N/A

Schedule

Symbol	Label	QTY	Manufacturer	Catalog	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	A	6	KEYSTONE TECHONOLOGIES LLC	KT-CLED60PS-M1-8CSB-VDIM-Z (Setting at 3000K)	1	7706	1	57.31	Max: 2404cd

Glantz

Ionna NH Dark Skies renedering
AGI Knoxvile, TN
Keystone CLED 60 watt (6 ea.)

Designer
TJ Grunwald CLEP
Date
11/13/2024
Scale
Not to Scale
Drawing No.

Summary

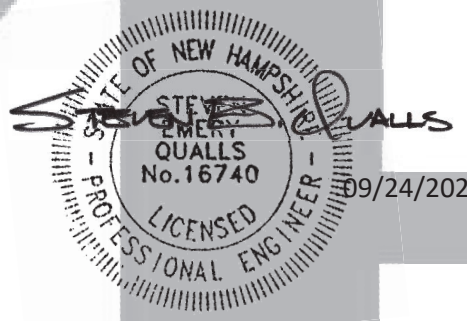
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

iONNA Single Pole 4-Plug Canopy
1600 Woodbury Avenue
Portsmouth, NH 03801

RBA Job No. 24 45149

CALCULATIONS FOR:
Standalone Canopy

Designed in accordance with:
2021 International Building Code / New Hampshire Building Code
ASCE 7-16
Wind Velocity = 125 mph
Risk Category II



09/24/2024

FABRICATOR
Architectural Graphics, Inc.
2655 International Parkway
Virginia Beach, Virginia 23452

DESIGN ENGINEER
RBA Structural Engineering, LLC
1 Vantage Way, Suite B-400
Nashville, Tennessee 37228

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

SUBJECT DONNA CANOPY
SINGLE POLE 4-PLUG
FOR ACI BY JRH

RBA STRUCTURAL ENGINEERING, LLC
A Subsidiary of Ross Bryan Associates, Inc.

SHEET NO. 1 OF 16
JOB NO. 24 45149
DATE 9/19/24

CANOPY LOADS:

2021 INTERNATIONAL BUILDING CODE ; ASCE 7-16

DEAD LOADS: DECK PANS + FASCIA PANELS : 5 PSF MAX.

STEEL CHANNELS: 9 PLF MAX

HSS 5"x5"x1/4" : 15.62 PLF

COLUMN: 27.48 PLF MAX

SNOW LOAD:

P_g = 50 PSF

$p_f = 0.7 C_e C_t I_s p_g = (0.7)(1.1)(1.2)(1.0)(50 PSF) = 46.2$ PSF

$C_e \leq 1.1$

$C_t \leq 1.2$

$I_s = 1.0$

$\gamma = 0.13 p_g + 14 = (0.13)(50 PSF) + 14 = 20.5$ PCF

46.2 PSF / 20.5 PCF = 2.25' EXCEEDS 1'-0" CANOPY HEIGHT.: NO DRIFT LOADING

$p_m = 20 I_s = (20)(1.0) = 20$ PSF < 46.2 PSF $\Rightarrow$ USE P_g

WIND LOAD:

$V \leq 125$ MPH

$q_z = 0.00256 K_z K_{zt} K_d V^2 = 28.90$ PSF

$K_z = 0.85$ (EXP C, $h \leq 11'-10"$)

$K_{zt} = 1.0$

$K_d = 0.85$

VERTICAL WIND:

$p = q_h G C_N = \pm 29.48$ PSF (ULT.)

$G = 0.85$

$C_N = \pm 1.2$ (MAX VALUES)

SERVICE LOADS:

$D + S = 5$ PSF $+ 46.2$ PSF $= 51.2$ PSF

$D + 0.6W = 5$ PSF $+ (0.6)(29.48$ PSF$) = 22.7$ PSF

$D + 0.75S + 0.75(0.6W) = 5$ PSF $+ (0.75)(46.2$ PSF$) + (0.75)(0.6)(29.48$ PSF$) = 53.0$ PSF (CONTROLS)

HORIZONTAL WIND LOADS: SEE SHEET 2

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

CODES:

Wind Loads per provisions of ASCE 7-16, Chapter 29

SIGN DIMENSIONS:

Length, B = **5.00** ft. Height, s = **1.00** ft. OAH Above Grade, h = **11.83** ft.

Depth, t = **16.50** ft. A_{sign} = **5.0** ft^2 Ground Elevation, z_g = **0** ft.

WIND LOADS:

Natural Frequency = **1** **RIGID STRUCTURE**

Exposure Category = **C** Risk Category = **II**

$q_h = 0.00256 * K_z * K_{zt} * K_d * K_e * V^2$ Velocity Pressure, ASCE 7-16, Section 26.10.2

K_z = 0.85 Velocity Pressure Exposure Coefficient, ASCE 7-16, Table 26.10-1

K_{zt} = 1.0 Topographic Factor, ASCE 7-16, Section 26.8.2

K_d = 0.85 Wind Directionality Factor, ASCE 7-16, Table 26.6-1

K_e = 1.00 Ground Elevation Factor, ASCE 7-16, Table 26.9-1

V = **125** Basic Wind Speed, mph, ASCE 7-16, Figure 26.5-1B

q_h = 28.86 lb/ft^2

$F/A = q_h * G * C_f$ Design Wind Loads, ASCE 7-16, Section 29.3.1

G = 0.85 Gust Effect Factor, ASCE 7-16, Section 26.11

B/s = 5.00 Length of Sign/Depth of Sign

s/h = 0.08 Depth of Sign/Overall Height

C_f = 1.85 Force Coefficient, ASCE 7-16, Figure 29.3-1

F/A = 45.39 lb/ft^2

CASE A: resultant acts normal to sign face through the geometric center

CASE B: resultant acts normal to sign face at a distance from the geometric center toward the windward edge equal to 1.00'

CASE C loading applies

LRFD Loading:

Use wind pressure = 45.39 lb/ft^2 for 1.0*W from ASCE 7-16, Section 2.3.1

ASD Loading:

Use wind pressure = 27.23 lb/ft^2 for 0.6*W from ASCE 7-16, Section 2.4.1

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

CANOPY CHANNELS:

@ 54" MAX O.C.

$W \leq (53.0\ PSF)(54"/12"/1') + 9\ PLF = 248\ PLF$

$L_{CANT} \leq 5'-0"/2 = 2'-6"$

$M \leq \frac{(248\ PLF)(2'-6")^2}{2} = 775\ \#'$

@ MIN. 3" DEEP x 2" WIDE x 1/4": $Z_x = 1.765\ IN^3$

$M_{ALL} \geq \frac{(36000\ PSI)(1.765\ IN^3)}{(12"/1')(1.67)} = 3170\ \#' > 775\ \#'$ OK

$P@\ BEAM = \frac{(248\ PLF)(5'-0")}{2} = 620\ \#\ EA.\ SIDE$

@ 2" LONG FLARE-BEVEL TO BEAM:

$\frac{R_{NW}}{\Omega} = \frac{(0.60)(70000\ PSI)(5/8")(1/4")(2")}{2.0} = 6562\ \# > 620\ \#$ OK

MAIN BEAM:

$W \leq (53\ PSF)(5'-0") + \frac{(9\ PLF)(5'-0")(4)}{16'-6"} + 15.62\ PLF = 292\ PLF$

$L_{CANT} \leq 16'-6"/2 = 8'-3"$

$M \leq \frac{(292\ PLF)(8'-3")^2}{2} = 9937\ \#'$

$M_{ALL} \geq 17500\ \#' > 9937\ \#'$ OK

$W_D = (5\ PSF)(5'-0") + \frac{(9\ PLF)(5'-0")(4)}{16'-6"} + 15.62\ PLF = 51.6\ PLF$

DEFLECTION:
$I = 16.0\ IN^4$

$\delta_{DEAD} \simeq \frac{(51.6\ PLF/12"/1')(99")^4}{(8)(29{,}000{,}000\ PSI)(16.0\ IN^4)} = 0.111"$

$\sim L/1780$ OK

$\delta_{TOTAL} \simeq \frac{(292\ PLF/12"/1')(99")^4}{(8)(29{,}000{,}000\ PSI)(16.0\ IN^4)} = 0.630"$

$\sim L/314 < L/240$ OK

WELD @ R: $S_W = (12")^2/3 \# 5/8 \# 1/4" = 7.5\ IN^3$

$M_{ALL} \geq \frac{(0.60)(70000\ PSI)(7.5\ IN^3)}{(12"/1')(2.0)} = 13125\ \#' > 9937\ \#'$ OK

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

MATCH PLATE:

$M \leq 9937\#'$

$P \leq (292\ PLF)(16'-6") = 4818\#$

$T_b \leq \frac{(9937\#')(12"/1')}{(9")(2\ BOLTS)} = 6625\#/BOLT$

@ 1" A325:

$\frac{R_n}{\Omega} \geq \frac{\mu D_u h_f T_b n_s}{1.50} = 7684\# > 6625\#$ OK

$\mu \geq 0.20$

$D_u = 1.13$

$h_f = 1.0$

$T_b \geq 51000\#$

$n_s = 1.0$

$M_R \leq (2)(6625\#)(2.5") = 33125\#"$

$t_{MIN} = \sqrt{\frac{(4)(33125\#")}{(36000\ PSI/1.67)(12")}} = 0.716" < 1"$ OK

COLUMN:

CONSIDER ONLY 1 CANOPY SIDE LOADED FOR MOMENT (CONSERVATIVE)

$M_{TOP} \leq 9937\#'$

$P_{D,TOP} \leq 4818\#$

$P_{L,TOP} \leq (16'-6")(1'-0")(27.27\ PSF) = 450\#$

$M_{TOTAL} \leq 9937\#' + (450\#)(11'-4") = 15037\#'$

$P_{TOTAL} \leq 4818\# + (27.48\ PLF)(11') = 5120\#$

$M_{ALL} \geq 32400\#' > 15037\#'$ OK

$P_{ALL} \geq 78600\# > 5120\#$ OK

$\frac{5120\#}{78600\#} + \frac{8}{9}\left(\frac{15037\#'}{32400\#'}\right) = 0.478 < 1.0$ OK

WELD: $S_W \geq \frac{(\pi)(7" + 3/8")^2}{4}(0.707)(3/8") = 11.32\ IN^3$

$M_{ALL} \geq \frac{(0.60)(70000\ PSI)(11.32\ IN^3)}{(12"/1')(2.0)} = 19820\#' > 15037\#'$ OK (TOP & BOTTOM)

BASE PLATE:

$T_b \leq \frac{(15037\#')(12"/1')}{(9")(2\ ANCHORS)} = 10025\#$

$M_R \leq (2)(10025\#)(2.1") = 42104\#"$

$t_{MIN} = \sqrt{\frac{(4)(42104\#")}{(36000\ PSI/1.67)(12")}} = 0.807" < 1"$ OK

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

SUBJECT TONNA CANOPY
SINGLE POLE 4-PLUG
FOR AGI BY JRH

RBA STRUCTURAL ENGINEERING, LLC
A Subsidiary of Ross Bryan Associates, Inc.

SHEET NO. 5 OF 16
JOB NO. 24 45149
DATE 9/19/24

UPLIFT CHECK

WIND: $(0.6)(29.48\ PSF)(16'-6")(5'-0") = 1460^{\#}$

DEAD: $(0.6)\left[(5\ PSF)(16'-6")(5'-0") + (4)(9\ PLF)(5'-0") + (16'-6")(15.62\ PLF) + (11')(27.48\ PLF)\right]$
SUPERSTRUCTURE $= 691^{\#}$

FOUNDATION: $(0.6)(5'-3")(5'-3")(3'-0")(150\ PCF) = 7441^{\#}$

$7441^{\#} + 691^{\#} = 8132^{\#} > 1460^{\#}$ OK

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

CHECK FOUNDATIONS:

LRFD Load Combinations: 1.2D + 1.0W ASCE 7-16, Section 2.3

Resistance Factors:

Φ_{plain} =	0.6	ACI 318
Φ_v =	0.75	ACI 318
Φ_b =	0.9	ACI 318

f'_c =	**2500**	psi
p_a =	**150**	psf/ft
q_a =	**2000**	psf

Total Service Wind Load: P_w = 0.45 kips

Total Service Moment at Base: M = 15.04 k-ft

Rectangular Spread Foundation:

Length = **5.25** ft. Width = **5.25** ft. Depth = **4** ft.

Dead Load, P_d =	16.54	kips				
Overturning Moment, M_o =	17.06	k-ft				
Resistive Moment, M_r =	43.41	k-ft	M_r/M_o =	2.54	> 1.5	**O.K.**
Eccentricity, e = M/P_d =	0.91	ft.	kern, k =	0.88	ft.	**e > k**
Bearing Pressure, q_{max} =	1223.97	psf	<	q_a = 2000	psf	**O.K.**
Moment in Footing M_u =	23.38	k-ft	No Reinforcing Required - Use Minimum Steel			
Use **6** No.	**7**	Bars Top and Bottom - Length.				
Use **6** No.	**7**	Bars Top and bottom - Width.				
Moment Capacity, ΦM_n =	710.37	k-ft	>	M_u = 23.38	k-ft	**O.K.**
Check Shear, V_u =	N/A		*See Note Below			
Shear Capacity, $\Phi * V_u$ =	40.11	kips/ft				

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	7
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

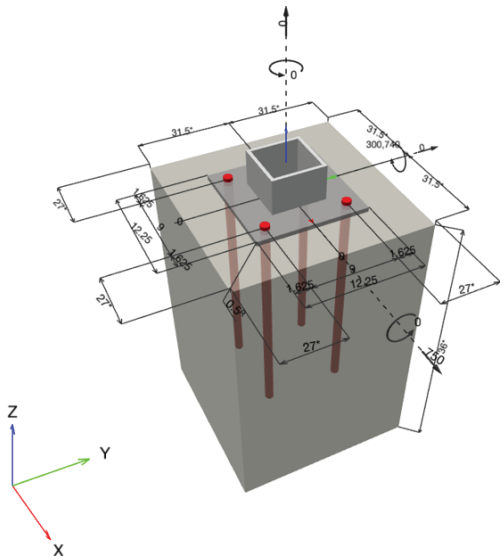
Specifier's comments:

1 Input data

Anchor type and diameter:	**Hex Head ASTM F 1554 GR. 36 1**
Item number:	not available
Specification text:	Hilti Hex Head headed stud anchor with 25 in embedment, 1, Steel galvanized, installation per instruction for use
Effective embedment depth:	h_{ef} = 25.000 in.
Material:	ASTM F 1554
Evaluation Service Report:	Hilti Technical Data
Issued I Valid:	- | -
Proof:	Design Method ACI 318-19 / CIP
Stand-off installation:	e_b = 0.000 in. (no stand-off); t = 0.500 in.
Anchor plate[R] :	l_x x l_y x t = 12.000 in. x 12.000 in. x 1.000 in.; (Recommended plate thickness: not calculated)
Profile:	Square HSS (AISC), HSS6X6X.375; (L x W x T) = 6.000 in. x 6.000 in. x 0.375 in.
Base material:	uncracked concrete, 2500, f_c' = 2,500 psi; h = 36.000 in.
Reinforcement:	tension: not present, shear: not present; edge reinforcement: none or < No. 4 bar

[R] - The anchor calculation is based on a rigid anchor plate assumption.

Geometry [in.] & Loading [lb, in.lb]



Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	8
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

1.1 Design results

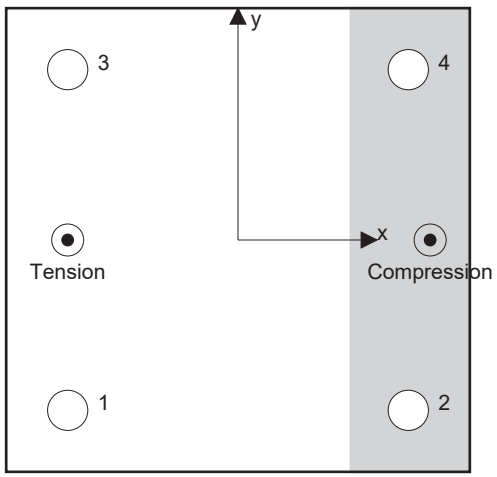
Case	Description	Forces [lb] / Moments [in.lb]	Seismic	Max. Util. Anchor [%]
1	Combination 1	N = 0; V_x = 750; V_y = 0; M_x = 0; M_y = 300,740; M_z = 0;	no	69

2 Load case/Resulting anchor forces

Anchor reactions [lb]

Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	15,700	188	188	0
2	0	188	188	0
3	15,700	188	188	0
4	0	188	188	0



Max. concrete compressive strain:	0.37 [‰]
Max. concrete compressive stress:	1,631 [psi]
Resulting tension force in (x/y)=(-4.500/0.000):	31,400 [lb]
Resulting compression force in (x/y)=(5.078/0.000):	31,400 [lb]

Anchor forces are calculated based on the assumption of a rigid anchor plate.

3 Tension load

	Load N_{ua} [lb]	Capacity ϕ N_n [lb]	Utilization $\beta_N = N_{ua}/\phi$ N_n	Status
Steel Strength*	15,700	26,361	60	OK
Pullout Strength*	15,700	22,795	69	OK
Concrete Breakout Failure**	31,400	98,994	32	OK
Concrete Side-Face Blowout, direction **	N/A	N/A	N/A	N/A

* highest loaded anchor **anchor group (anchors in tension)

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	9
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

3.1 Steel Strength

$N_{sa} = A_{se,N} f_{uta}$ ACI 318-19 Eq. (17.6.1.2)
$\phi N_{sa} \geq N_{ua}$ ACI 318-19 Table 17.5.2

Variables

$A_{se,N}$ [in.^{2}]	f_{uta} [psi]
0.61	58,000

Calculations

N_{sa} [lb]
35,148

Results

N_{sa} [lb]	ϕ_{steel}	ϕN_{sa} [lb]	N_{ua} [lb]
35,148	0.750	26,361	15,700

3.2 Pullout Strength

$N_{pN} = \psi_{c,p} N_p$ ACI 318-19 Eq. (17.6.3.1)
$N_p = 8 A_{brg} f'_c$ ACI 318-19 Eq. (17.6.3.2.2a)
$\phi N_{pN} \geq N_{ua}$ ACI 318-19 Table 17.5.2

Variables

$\psi_{c,p}$	A_{brg} [in.^{2}]	λ_a	f'_c [psi]
1.400	1.16	1.000	2,500

Calculations

N_p [lb]
23,260

Results

N_{pn} [lb]	$\phi_{concrete}$	ϕN_{pn} [lb]	N_{ua} [lb]
32,564	0.700	22,795	15,700

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	10
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

3.3 Concrete Breakout Failure

$N_{cbg} = \left(\frac{A_{Nc}}{A_{Nc0}}\right) \psi_{ec,N}\ \psi_{ed,N}\ \psi_{c,N}\ \psi_{cp,N}\ N_b$ — ACI 318-19 Eq. (17.6.2.1b)

$\phi\ N_{cbg} \geq N_{ua}$ — ACI 318-19 Table 17.5.2

A_{Nc} see ACI 318-19, Section 17.6.2.1, Fig. R 17.6.2.1(b)

$A_{Nc0} = 9\ h_{ef}^2$ — ACI 318-19 Eq. (17.6.2.1.4)

$\psi_{ec,N} = \left(\frac{1}{1 + \frac{2\ e'_N}{3\ h_{ef}}}\right) \leq 1.0$ — ACI 318-19 Eq. (17.6.2.3.1)

$\psi_{ed,N} = 0.7 + 0.3\left(\frac{c_{a,min}}{1.5h_{ef}}\right) \leq 1.0$ — ACI 318-19 Eq. (17.6.2.4.1b)

$\psi_{cp,N} = \text{MAX}\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5h_{ef}}{c_{ac}}\right) \leq 1.0$ — ACI 318-19 Eq. (17.6.2.6.1b)

$N_b = 16\ \lambda_a\ \sqrt{f'_c}\ h_{ef}^{5/3}$ — ACI 318-19 Eq. (17.6.2.2.3)

Variables

h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]	$\psi_{c,N}$
24.000	0.000	0.000	27.000	1.250

c_{ac} [in.]	k_c	λ_a	f'_c [psi]
-	16	1.000	2,500

Calculations

A_{Nc} [in.^{2}]	A_{Nc0} [in.^{2}]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
3,969.00	5,184.00	1.000	1.000	0.925	1.000	159,750

Results

N_{cbg} [lb]	$\phi_{concrete}$	$\phi\ N_{cbg}$ [lb]	N_{ua} [lb]
141,420	0.700	98,994	31,400

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	11
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

4 Shear load

	Load V_{ua} [lb]	Capacity ϕ V_n [lb]	Utilization $\beta_V = V_{ua}/\phi$ V_n	Status
Steel Strength*	188	13,708	2	OK
Steel failure (with lever arm)*	N/A	N/A	N/A	N/A
Pryout Strength**	750	235,582	1	OK
Concrete edge failure in direction x+**	750	41,967	2	OK

* highest loaded anchor **anchor group (relevant anchors)

4.1 Steel Strength

$V_{sa} = 0.6\ A_{se,V}\ f_{uta}$ ACI 318-19 Eq. (17.7.1.2b)
$\phi\ V_{steel} \geq V_{ua}$ ACI 318-19 Table 17.5.2

Variables

$A_{se,V}$ [in.^{2}]	f_{uta} [psi]
0.61	58,000

Calculations

V_{sa} [lb]
21,089

Results

V_{sa} [lb]	ϕ_{steel}	ϕ V_{sa} [lb]	V_{ua} [lb]
21,089	0.650	13,708	188

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	12
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

4.2 Pryout Strength

$V_{cpg} = k_{cp} \left[\left(\frac{A_{Nc}}{A_{Nc0}} \right) \psi_{ec,N} \psi_{ed,N} \psi_{c,N} \psi_{cp,N} N_b \right]$ ACI 318-19 Eq. (17.7.3.1b)

$\phi V_{cpg} \geq V_{ua}$ ACI 318-19 Table 17.5.2

A_{Nc} see ACI 318-19, Section 17.6.2.1, Fig. R 17.6.2.1(b)

$A_{Nc0} = 9 h_{ef}^2$ ACI 318-19 Eq. (17.6.2.1.4)

$\psi_{ec,N} = \left(\frac{1}{1 + \frac{2 e'_N}{3 h_{ef}}} \right) \leq 1.0$ ACI 318-19 Eq. (17.6.2.3.1)

$\psi_{ed,N} = 0.7 + 0.3 \left(\frac{c_{a,min}}{1.5 h_{ef}} \right) \leq 1.0$ ACI 318-19 Eq. (17.6.2.4.1b)

$\psi_{cp,N} = \text{MAX}\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5 h_{ef}}{c_{ac}} \right) \leq 1.0$ ACI 318-19 Eq. (17.6.2.6.1b)

$N_b = 16 \lambda_a \sqrt{f'_c} h_{ef}^{5/3}$ ACI 318-19 Eq. (17.6.2.2.3)

Variables

k_{cp}	h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]
2	18.000	0.000	0.000	27.000

$\psi_{c,N}$	c_{ac} [in.]	k_c	λ_a	f'_c [psi]
1.250	∞	16	1.000	2,500

Calculations

A_{Nc} [in.^{2}]	A_{Nc0} [in.^{2}]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
3,969.00	2,916.00	1.000	1.000	1.000	1.000	98,903

Results

V_{cpg} [lb]	$\phi_{concrete}$	ϕV_{cpg} [lb]	V_{ua} [lb]
336,546	0.700	235,582	750

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	13
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

4.3 Concrete edge failure in direction x+

$V_{cbg} = \left(\frac{A_{Vc}}{A_{Vc0}}\right) \Psi_{ec,V} \Psi_{ed,V} \Psi_{c,V} \Psi_{h,V} \Psi_{parallel,V} V_b$ — ACI 318-19 Eq. (17.7.2.1b)

$\phi V_{cbg} \geq V_{ua}$ — ACI 318-19 Table 17.5.2

A_{Vc} see ACI 318-19, Section 17.7.2.1, Fig. R 17.7.2.1(b)

$A_{Vc0} = 4.5 c_{a1}^2$ — ACI 318-19 Eq. (17.7.2.1.3)

$\Psi_{ec,V} = \left(\frac{1}{1 + \frac{e'_v}{1.5c_{a1}}}\right) \leq 1.0$ — ACI 318-19 Eq. (17.7.2.3.1)

$\Psi_{ed,V} = 0.7 + 0.3\left(\frac{c_{a2}}{1.5c_{a1}}\right) \leq 1.0$ — ACI 318-19 Eq. (17.7.2.4.1b)

$\Psi_{h,V} = \sqrt{\frac{1.5c_{a1}}{h_a}} \geq 1.0$ — ACI 318-19 Eq. (17.7.2.6.1)

$V_b = 9 \lambda_a \sqrt{f'_c} c_{a1}^{1.5}$ — ACI 318-19 Eq. (17.7.2.2.1b)

Variables

c_{a1} [in.]	c_{a2} [in.]	e_{cV} [in.]	$\Psi_{c,V}$	h_a [in.]
24.000	27.000	0.000	1.400	36.000

l_e [in.]	λ_a	d_a [in.]	f'_c [psi]	$\Psi_{parallel,V}$
8.000	1.000	1.000	2,500	1.000

Calculations

A_{Vc} [in.^{2}]	A_{Vc0} [in.^{2}]	$\Psi_{ec,V}$	$\Psi_{ed,V}$	$\Psi_{h,V}$	V_b [lb]
2,268.00	2,592.00	1.000	0.925	1.000	52,909

Results

V_{cbg} [lb]	$\phi_{concrete}$	ϕV_{cbg} [lb]	V_{ua} [lb]
59,952	0.700	41,967	750

5 Combined tension and shear loads, per ACI 318-19 section 17.8

β_N	β_V	ζ	Utilization $\beta_{N,V}$ [%]	Status
0.689	0.018	5/3	54	OK

$\beta_{NV} = \beta_N^{\zeta} + \beta_V^{\zeta} <= 1$

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	14
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

6 Warnings

- The anchor design methods in PROFIS Engineering require rigid anchor plates per current regulations (AS 5216:2021, ETAG 001/Annex C, EOTA TR029 etc.). This means load re-distribution on the anchors due to elastic deformations of the anchor plate are not considered - the anchor plate is assumed to be sufficiently stiff, in order not to be deformed when subjected to the design loading. PROFIS Engineering calculates the minimum required anchor plate thickness with CBFEM to limit the stress of the anchor plate based on the assumptions explained above. The proof if the rigid anchor plate assumption is valid is not carried out by PROFIS Engineering. Input data and results must be checked for agreement with the existing conditions and for plausibility!
- Condition A applies where the potential concrete failure surfaces are crossed by supplementary reinforcement proportioned to tie the potential concrete failure prism into the structural member. Condition B applies where such supplementary reinforcement is not provided, or where pullout or pryout strength governs.
- For additional information about ACI 318 strength design provisions, please go to https://submittals.us.hilti.com/PROFISAnchorDesignGuide/

Fastening meets the design criteria!

PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	15
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

7 Installation data

Profile: Square HSS (AISC), HSS6X6X.375; (L x W x T) = 6.000 in. x 6.000 in. x 0.375 in.

Hole diameter in the fixture: d_f = 1.062 in.

Plate thickness (input): 1.000 in.

Recommended plate thickness: not calculated

Anchor type and diameter: Hex Head ASTM F 1554 GR. 36 1

Item number: not available

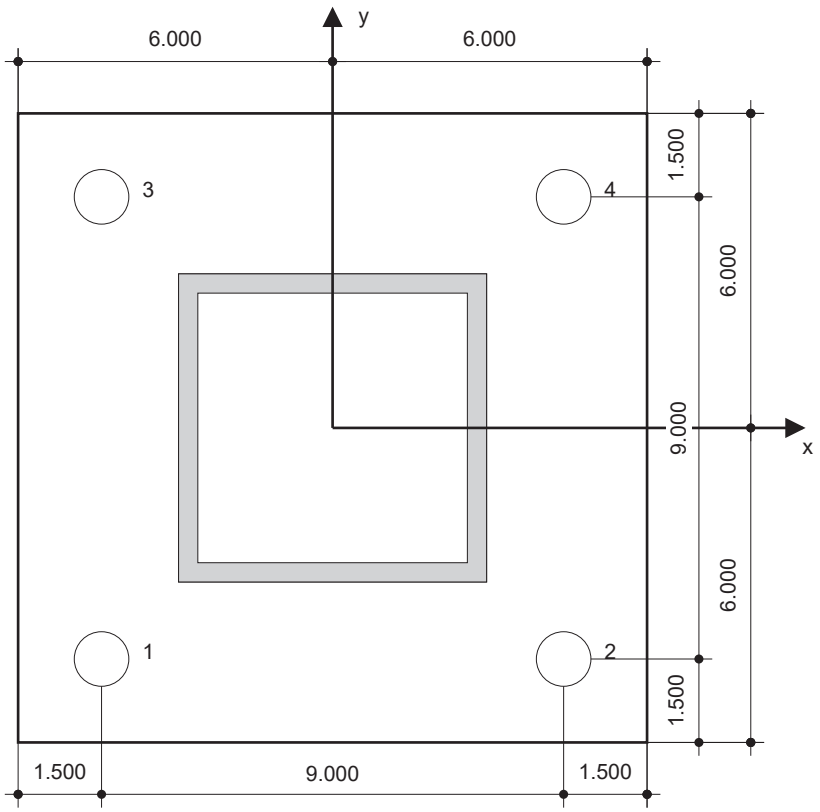
Maximum installation torque: -

Hole diameter in the base material: - in.

Hole depth in the base material: 25.000 in.

Minimum thickness of the base material: 26.172 in.

Hilti Hex Head headed stud anchor with 25 in embedment, 1, Steel galvanized, installation per instruction for use



Coordinates Anchor [in.]

Anchor	x	y	c_{-x}	c_{+x}	c_{-y}	c_{+y}
1	-4.500	-4.500	27.000	36.000	27.000	36.000
2	4.500	-4.500	36.000	27.000	27.000	36.000
3	-4.500	4.500	27.000	36.000	36.000	27.000
4	4.500	4.500	36.000	27.000	36.000	27.000

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

Company:	Ross Bryan Associates	Page:	16
Address:		Specifier:	Jacob R. Holloway
Phone I Fax:	(615) 329-1300 |	E-Mail:	
Design:	iONNA Canopy Single Pole 4-Plug	Date:	9/19/2024
Fastening point:			

8 Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.

PROFIS Engineering (c) 2003-2024 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

iONNA CANOPY CONCEPT

RBA Structural Engineering, LLC
Engineers
1 Vantage Way, Suite B400 Nashville TN 37228

DESIGNED IN
ACCORDANCE WITH
2021 INTERNATIONAL
BUILDING CODE
ASCE 7-16

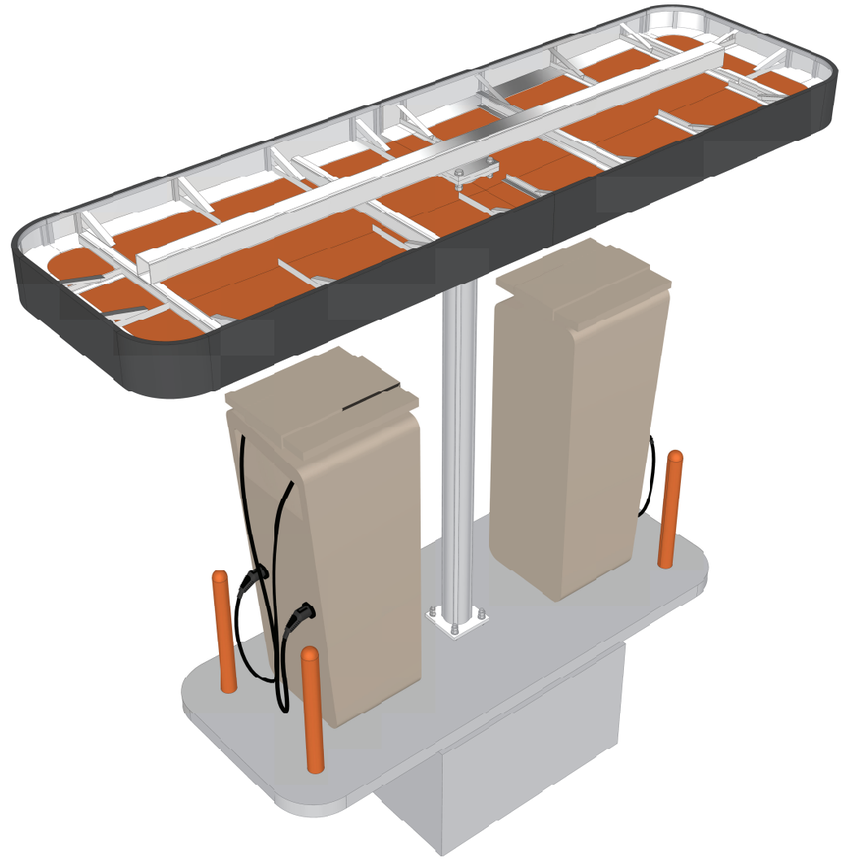
"SEALED FOR STRUCTURAL COMPONENTS ONLY"
It is unlawful to alter this document as sealed by a professional engineer.

PROJECT MANAGER

DESIGN SPECIALIST
BEN WEIENETH

SHEET INDEX

C01	COVER
P01	PLANS
E01	ELEVATIONS
S01	SECTIONS
D01	DETAILS



APPROVAL

NAME

ORGANIZATION

TITLE

☐ APPROVED

☐ APPROVED AS NOTED

☐ REVISE & RESUBMIT

NOTES:

OTHER MATERIALS

- ☐ PLYWOOD (3/4" CDX)
- ☐ VAPROSHIELD - IT / SA
- ☐ SHEET METAL (TRIM)
- ☐ NON STD. SCREW
- ☐ SIGNAGE
- ☐ OTHER - SEE NOTES

GENERAL NOTES:

1. MATERIALS: STEEL HSS – ASTM A500 GR. C; STEEL CHANNELS, PLATES, AND ANGLES – ASTM A36.
2. ALL EXPOSED STRUCTURAL STEEL TO BE GALVANIZED.
3. BOLTED CONNECTIONS WITHIN STEEL STRUCTURE TO CONSIST OF ASTM A325 OR ASTM A449 BOLTS, ASTM A563 NUTS, AND ASTM F436 HARDENED WASHERS AT FAYING SURFACES, UNLESS NOTED OTHERWISE. BOLTS TO BE FULLY PRETENSIONED TO 70% MINIMUM TENSILE STRENGTH PER AISC SPECIFICATIONS. VERIFY PRETENSION THROUGH USE OF DIRECT-TENSION INDICATORS OR TWIST-OFF TYPE TENSION CONTROL BOLTS.
4. ANCHOR BOLTS TO CONSIST OF ASTM F1554 GR. 36 OR ASTM A36 THREADED RODS, ASTM A563 NUTS, AND ASTM F436 HARDENED WASHERS AT FAYING SURFACES, UNLESS NOTED OTHERWISE. ALL ANCHOR BOLTS TO BE DOUBLE-NUTTED.
5. ALL EXPOSED HARDWARE TO BE GALVANIZED.
6. ALL STEEL WELDS TO BE COMPLETED PER AWS D1.1 REQUIREMENTS USING E-70 SERIES ELECTRODES. ALL WELDMENTS TO BE FREE OF WELD SPLATTER, SLAG, AND ARCING.
7. REMOVE ALL SHARP EDGES & BURRS.
8. PROVIDE NEOPRENE OR RUBBER ISOLATION BARRIERS BETWEEN ALL DISSIMILAR METALS.

STATE OF NEW HAMPSHIRE
BRENT QUALLS
No. 16740
LICENSED
PROFESSIONAL ENGINEER
09/24/2024

AGI
Architectural Branding - Atlanta
218 River Drive
Cartersville, GA 30120
800-877-7868
www.AGI.net

PROJECT: iONNA CANOPY CONCEPT
...
ARCHITECT: ...

DRAWN BY: BJW
JOB #: ...
DATE: 9/19/24

REV #	DATE	COMMENTS
1	...	...

This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

Approved By _____
Date Approved _____

SHEET NUMBER
1 of 5
SHEET NUMBER
C01

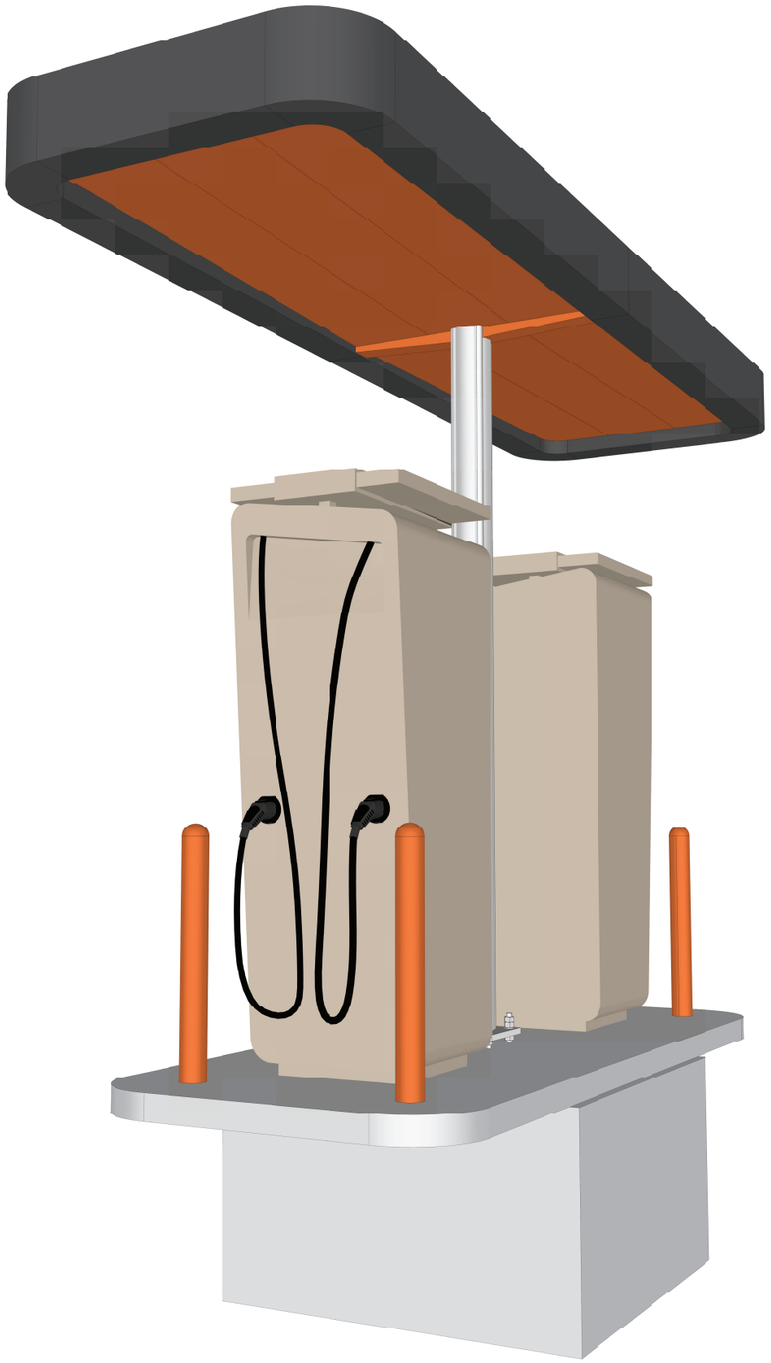
T:\CORPORATE IMAGE Newsh\ DEVELOPMENT\IONNA Canopy\Design Documents\Current Models\IONNA Canopy - Single Pole 4 Plug 3.bim page 1 of 5 printed 9/19/2024 11:18 last saved 9/19/2024 11:16

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

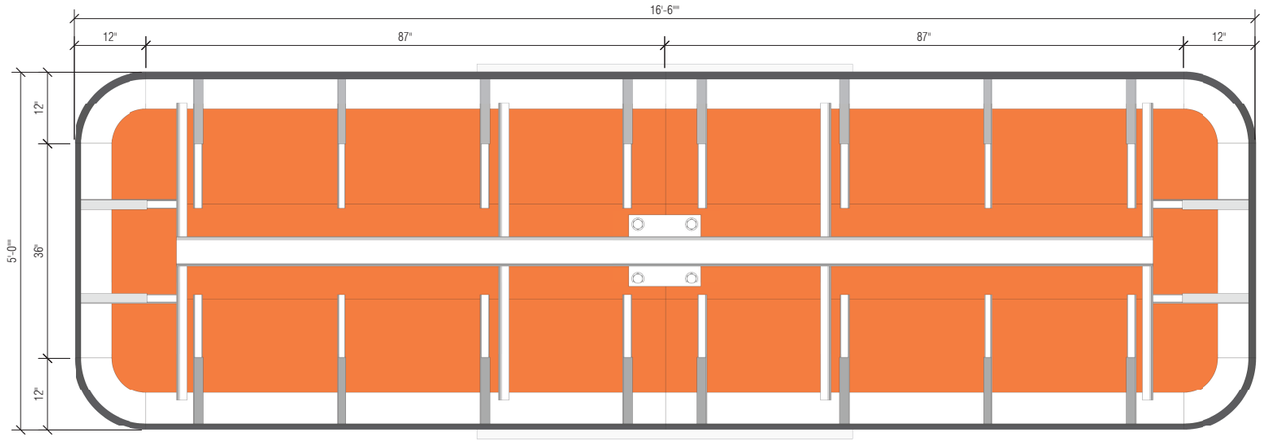
RBA Structural Engineering, LLC
Engineers
1 Vantage Way, Suite B400 Nashville TN 37228

DESIGNED IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE ASCE 7-16

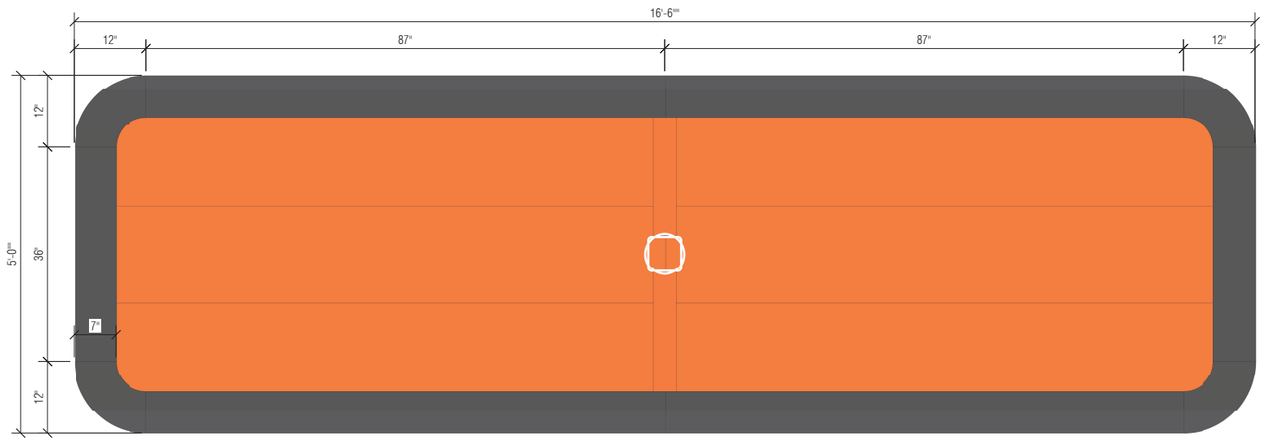
"SEALED FOR STRUCTURAL COMPONENTS ONLY"
It is unlawful to alter this document as sealed by a professional engineer.



1 P01 PERSPECTIVE VEIW
REF: NTS



2 P01 TOP VIEW
REF: 1" = 1'-0"



3 P01 REFLECTED CEILING PLAN
REF: 1" = 1'-0"

Architectural Branding - Atlanta

218 River Drive
Cartersville, GA 30120
800-877-7868
www.AGI.net

PROJECT
iONNA CANOPY CONCEPT

...

ARCHITECT
...

DRAWN BY
BJW

JOB #
...

DATE
9/19/24

REV #	DATE	COMMENTS
1	...	...
2		
3		
4		
5		
6		

This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

Approved By _____

Date Approved _____

SHEET NUMBER
2 of 5

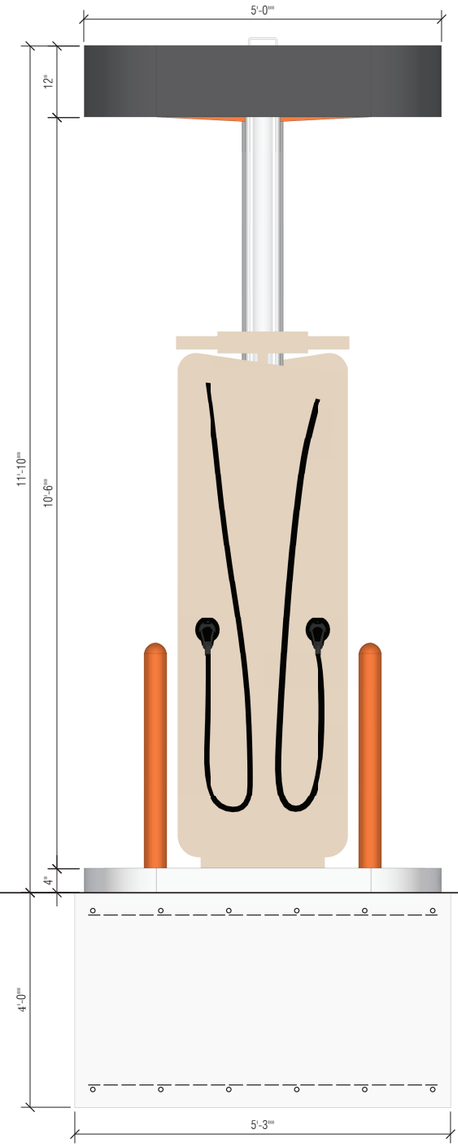
SHEET NUMBER
P01

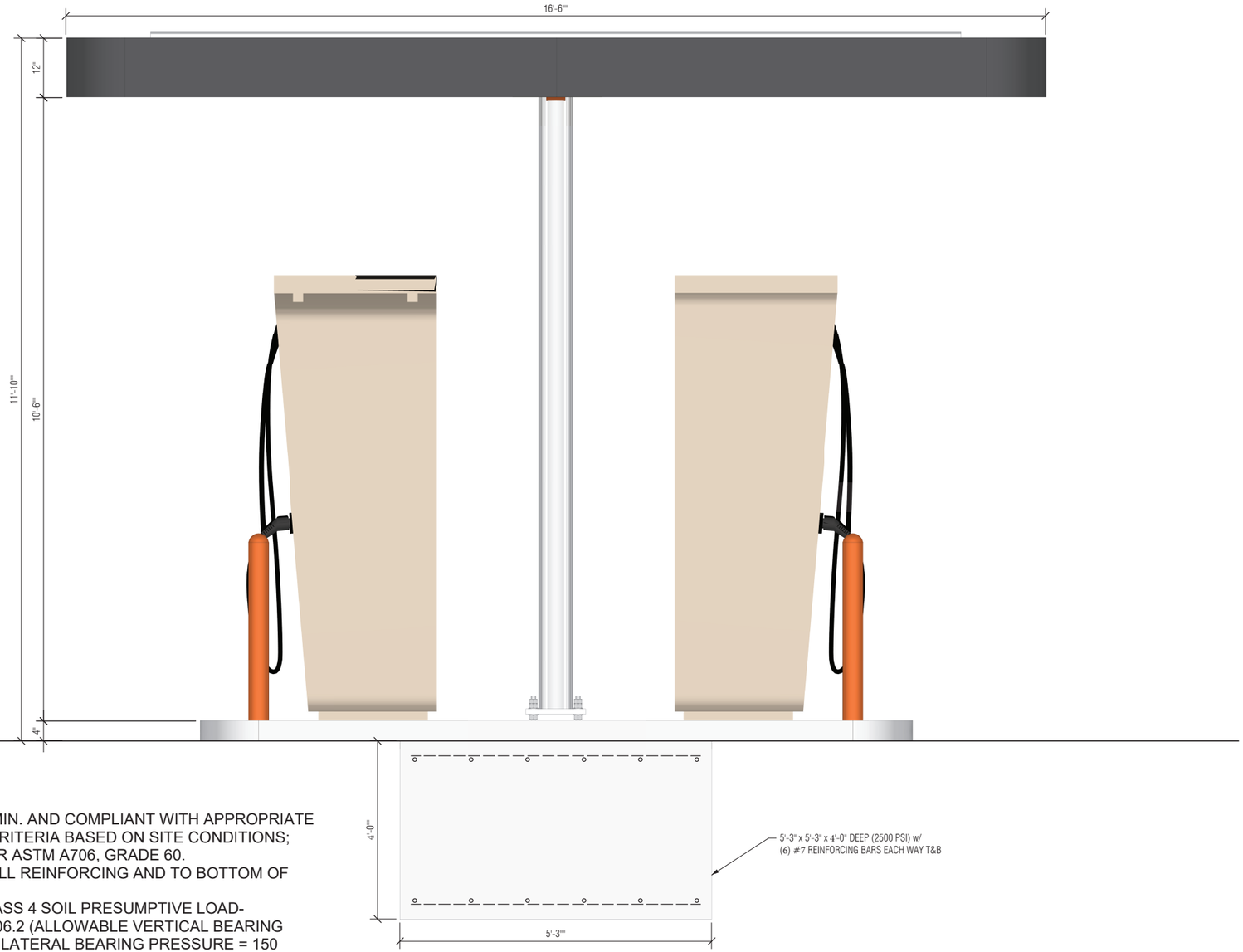
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

RBA Structural Engineering, LLC
Engineers
1 Vantage Way, Suite B400 Nashville TN 37228

DESIGNED IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE ASCE 7-16

"SEALED FOR STRUCTURAL COMPONENTS ONLY"
It is unlawful to alter this document as sealed by a professional engineer.





FOUNDATION NOTES:

1. MATERIALS: CONCRETE – 2,500 PSI MIN. AND COMPLIANT WITH APPROPRIATE ACI 318 EXPOSURE CLASS DESIGN CRITERIA BASED ON SITE CONDITIONS; REINFORCING STEEL – ASTM A615 OR ASTM A706, GRADE 60.
2. PROVIDE 3" MIN. CLEAR COVER TO ALL REINFORCING AND TO BOTTOM OF ANCHOR BOLTS.
3. FOUNDATION DESIGN BASED ON CLASS 4 SOIL PRESUMPTIVE LOAD-BEARING VALUES PER IBC TABLE 1806.2 (ALLOWABLE VERTICAL BEARING PRESSURE = 2,000 PSF; ALLOWABLE LATERAL BEARING PRESSURE = 150 PSF/FT). ACTUAL SOIL CONDITIONS TO BE VERIFIED IN FIELD.

STATE OF NEW HAMPSHIRE
PAUL QUALLS No.16740
PROFESSIONAL ENGINEER
09/24/2024

1 / E01 END VIEW
REF: 1" = 1'-0"

2 / E01 SIDE VIEW
REF: 1" = 1'-0"

AGI
Architectural Branding - Atlanta
218 River Drive
Cartersville, GA 30120
800-877-7868
www.AGI.net

PROJECT: iONNA CANOPY CONCEPT
...
ARCHITECT: ...

DRAWN BY: BJW
JOB #: ...
DATE: 9/19/24

REV #	DATE	COMMENTS
1	...	...

This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

Approved By _____
Date Approved _____

SHEET NUMBER: 3 of 5
SHEET NUMBER: E01

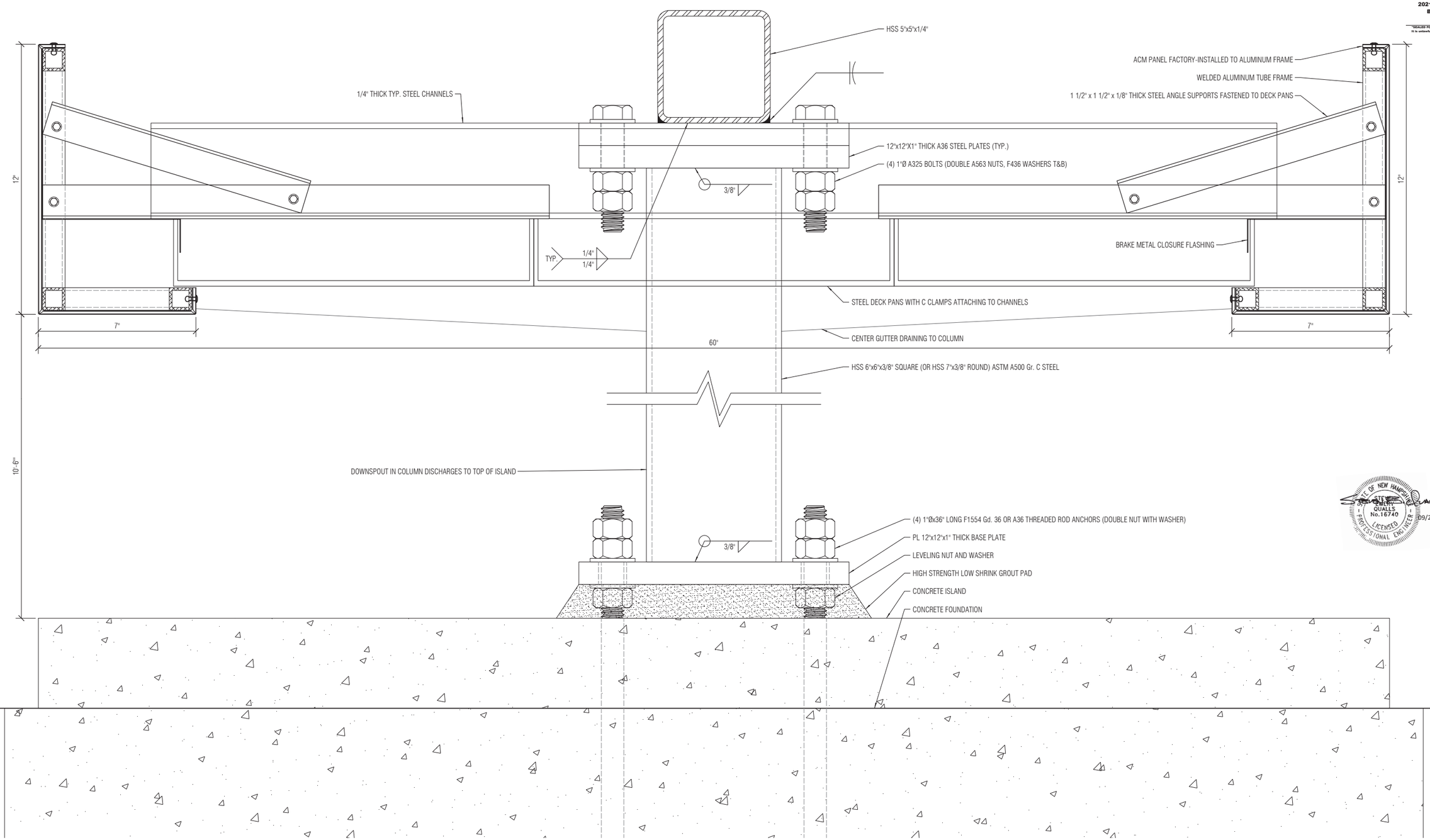
T:\CORPORATE IMAGE New\IN DEVELOPMENT\IONNA Canopy\Design Documents\Current Models\IONNA Canopy - Single Poles 4 Plug 30in ...page 3 of 5 ... plotted 9/19/2024 11:19 ... last saved 9/19/2024 11:16

Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326

RBA Structural Engineering, LLC
Engineers
1 Vantage Way, Suite B400 Nashville TN 37228

DESIGNED IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE ASCE 7-16

"SEALED FOR STRUCTURAL COMPONENTS ONLY"
It is unlawful to alter this document as sealed by a professional engineer.



1 / S01 CANOPY SECTION
REF: 6" = 1'-0"

STATE OF NEW HAMPSHIRE
BRENT QUALLS
No.16740
LICENSED PROFESSIONAL ENGINEER
09/24/2024

AGI
Architectural Branding - Atlanta
218 River Drive
Cartersville, GA 30120
800-877-7868
www.AGI.net

PROJECT: iONNA CANOPY CONCEPT
...
ARCHITECT: ...

DRAWN BY: BJW
JOB #: ...
DATE: 9/19/24

REV #	DATE	COMMENTS
1	...	...

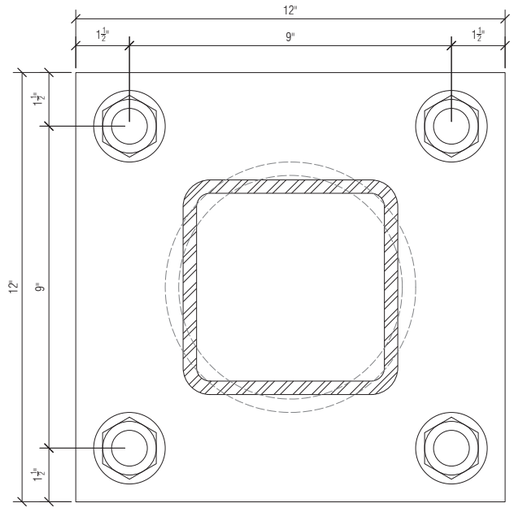
This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

Approved By _____
Date Approved _____

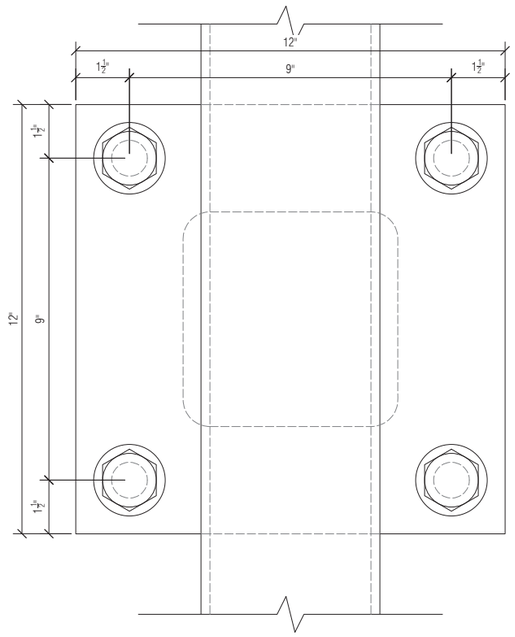
SHEET NUMBER 4 of 5
SHEET NUMBER S01

T:\CORPORATE IMAGE\New\N DEVELOPMENT\iONNA Canopy\Design Documents\Current Models\iONNA Canopy - Single Pole 4 Plug.3dm page 4 of 5 printed 9/19/2024 11:19 last saved 9/19/2024 11:16

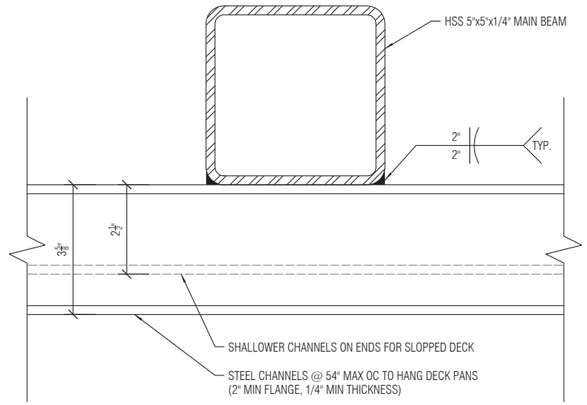
Docusign Envelope ID: 362C22D7-D749-491E-B0D7-D64D26CE7326



1 / D01 COLUMN BASE DETAIL
REF: 6" = 1'-0"



2 / D01 MAIN BEAM TO COLUMN CONNECTION DETAIL
REF: 6" = 1'-0"



3 / D01 CHANNEL TO MAIN BEAM CONNECTION DETAIL
REF: 6" = 1'-0"

RBA Structural Engineering, LLC
Engineers
1 Vantage Way, Suite B400 Nashville TN 37228

DESIGNED IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE ASCE 7-16

"SEALED FOR STRUCTURAL COMPONENTS ONLY"
It is unlawful to alter this document as sealed by a professional engineer.

STATE OF NEW HAMPSHIRE
STEVEN QUALLS
No.16740
LICENSED PROFESSIONAL ENGINEER
09/24/2024

AGI
Architectural Branding - Atlanta
218 River Drive
Cartersville, GA 30120
800-877-7868
www.AGI.net

PROJECT
iONNA CANOPY CONCEPT
...
ARCHITECT
...

DRAWN BY
BJW
JOB #
...
DATE
9/19/24

REV #	DATE	COMMENTS
1	...	...
2		
3		
4		
5		
6		

This document is the sole property of AGI, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly forbidden. It is submitted under a confidential relationship, for a special purpose, and the recipient, by accepting this document assumes custody and agrees that this document will not be copied or reproduced in whole or in part, nor its contents revealed in any manner or to any person except for the purpose for which it was tendered, nor any special features peculiar to this design be incorporated in other projects.

Approved By _____
Date Approved _____

SHEET NUMBER
5 of 5
SHEET NUMBER
D01

T:\CORPORATE IMAGE New\REVEL\DEVELOPMENT\IONNA Canopy\Design Documents\Current Models\IONNA Canopy - Single Poles 4 Plus 30in.rvt page 5 of 5 printed 9/19/2024 11:10 last saved 9/19/2024 11:10

Findings of Fact | Site Plan Review
City of Portsmouth Planning Board

Date: 9 January 2025
Property Address: 1-15 Congress Street
Application #: LU – 22 - 12
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:

Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of all the conditions necessary to obtain final approval.

Site Plan Regulations Section 2.9 Evaluation Criteria - to grant site plan review approval, the TAC and the Planning Board shall find that the application satisfies evaluation criteria pursuant to NH State Law and listed herein. In making a finding, the TAC and the Planning Board shall consider all standards provided in Articles 3 through 11 of these regulations.

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	**Finding (Meets Standard/Criteria)**	**Supporting Information**
1	Compliance with all City Ordinances and Codes and these regulations. Applicable standards:	**Meets** **Does Not Meet**	In our opinion the Project complies with the intent and language of the Ordinance requirements. ; see Sheet C3 Table for details. A modest Parking CUP is requested.
2	Provision for the safe development, change or expansion of use of the site.	**Meets** **Does Not Meet**	To facilitate the construction High Street will sometimes be limited to only construction, cranes, and truck deliveries. Safety plans / alternative routes will be developed in the CMPP process.
3	Adequate erosion control and stormwater management practices and other mitigative measures, if needed, to prevent adverse effects on downstream water quality and flooding of the property or that of another.	**Meets** **Does Not Meet**	The project proposes providing additional drainage structures in High Street to alleviate the existing puddling and the resulting existing negative impacts. The plans show the procedures that will be utilized to provide erosion control during construction.

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
4	Adequate protection for the quality of groundwater.	**Meets** **Does Not Meet**	Runoff is captured in city collection system. No groundwater withdrawal (water supply is city). No nearby production wells.
5	Adequate and reliable water supply sources.	**Meets** **Does Not Meet**	Water supply is Public -City. Supply confirmed by TAC review. All plumbing fixtures will be low /water conserving.
6	Adequate and reliable sewage disposal facilities, lines, and connections.	**Meets** **Does Not Meet**	Sewer connection is Public - City. Connection(s) reviewed by TAC.
7	Absence of undesirable and preventable elements of pollution such as smoke, soot, particulates, odor, wastewater, stormwater, sedimentation or any other discharge into the environment which might prove harmful to persons, structures, or adjacent properties.	**Meets** **Does Not Meet**	The office and residential uses will not contribute the types of pollutants listed. If there is a first-floor restaurant use it would not contribute any more smoke / odor than the other facilities downtown.
8	Adequate provision for fire safety, prevention and control.	**Meets** **Does Not Meet**	Full wet sprinkler system. Building access reviewed by Portsmouth FD – suggested making High Street wider for added safety.
9	Adequate protection of natural features such as, but not limited to, wetlands.	**Meets** **Does Not Meet**	Urban site, no wetlands or buffers. All excavation materials will be tested prior to removal from site.
10	Adequate protection of historical features on the site.	**Meets** **Does Not Meet**	No Historical features present. The portion of the existing building to be removed is non-contributing. The other facades will be renovated. HDC Approved.
11	Adequate management of the volume and flow of traffic on the site and adequate traffic controls to protect public safety and prevent traffic congestion.	**Meets** **Does Not Meet**	Underground parking entrance has been placed on Newberry Way to minimize traffic congestion on High Street. See the Traffic Impact Analysis submission indicating no significant impact.
12	Adequate traffic controls and traffic management measures to prevent an unacceptable increase in safety hazards and traffic congestion off-site.	**Meets** **Does Not Meet**	TAC did not find that traffic will be an issue off-site given the proposed use.
13	Adequate insulation from external noise sources.	**Meets** **Does Not Meet**	Construction to match the required conditions for the location.

DRAFT

	Site Plan Review Regulations Section 2.9 Evaluation Criteria	Finding (Meets Standard/Criteria)	Supporting Information
14	Existing municipal solid waste disposal, police, emergency medical, and other municipal services and facilities adequate to handle any new demands on infrastructure or services created by the project.	**Meets** **Does Not Meet**	Trash collection will be organized in the High Hanover Parking garage in consultation with the city. TAC Review included Fire and Police Departments. All concerns addressed in design. Developer reconstruction of the adjacent streets is a benefit.
15	Provision of usable and functional open spaces of adequate proportions, including needed recreational facilities that can reasonably be provided on the site	**Meets** **Does Not Meet**	Site development utilizes site allowable density. Future improvements include additional improvements to public spaces; including the pedestrian alley. Rooftop area for residents provided.
16	Adequate layout and coordination of on-site accessways and sidewalks in relationship to off-site existing or planned streets, accessways, bicycle paths, and sidewalks.	**Meets** **Does Not Meet**	Adequate access for the site development is provided from High Street.
17	Demonstration that the land indicated on plans submitted with the application shall be of such character that it can be used for building purposes without danger to health.	**Meets** **Does Not Meet**	Land is suitable for the intended purpose, currently used as an urban building site and attached parking lot. Plans follow ordinance and guidelines; see TAC approval.
18	Adequate quantities, type or arrangement of landscaping and open space for the provision of visual, noise and air pollution buffers.	**Meets** **Does Not Meet**	Significant Landscaping improvements proposed.
19	Compliance with applicable City approved design standards.	**Meets** **Does Not Meet**	See HDC and TAC approvals.
	Other Board Findings:		

DRAFT

Findings of Fact | Parking Conditional Use Permit
City of Portsmouth Planning Board

Date: 9 January 2025
Property Address: 1-15 Congress Street
Application #: LU 22 - 12
Decision: □ Approve □ Deny □ Approve with Conditions

Findings of Fact:
Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of all the conditions necessary to obtain final approval.

Parking Conditional Use Permit
10.1112.14 The Planning Board may grant a conditional use permit to allow a building or use to provide less than the minimum number of off-street parking spaces required by Section 10.1112.30, Section 10.1112.61, or Section 10.1115.20, as applicable, or to exceed the maximum number of off-street parking spaces allowed by Section 10.1112.51.

	Parking Conditional Use Permit 10.1112.14 Requirements	**Finding** **(Meets Criteria/Requirement)**	**Supporting Information**
1	10.1112.141 An application for a conditional use permit under this section shall include a parking demand analysis, which shall be reviewed by the City's Technical Advisory Committee prior to submission to the Planning Board, demonstrating that the proposed number of off-street parking spaces is sufficient for the proposed use.	**Meets** **Does Not Meet**	Although the zoning ordinance estimates a deficit of 32 vehicle parking spaces on the site, the proposed residential uses are anticipated to generate a peak parking demand of 28 parking spaces based on ITE parking demand generation rates for similar residential uses in dense multi-use urban settings. The proposed parking supply of 21 residential parking spaces will accommodate most of the parking demand. The additional seven vehicles can be accommodated within the adjacent Hanover Garage or other area parking facilities. The TAC Committee reviewed the application.
2	10.1112.142 An application for a conditional use permit under this section shall identify permanent evidence-based measures to reduce parking	**Meets** **Does Not Meet**	The property is one block from the High Hanover public parking garage and there is on-street parking in the vicinity. The property is in the Downtown Overlay District; where parking requirements are

DRAFT

	Parking Conditional Use Permit 10.1112.14 Requirements	Finding (Meets Criteria/Requirement)	Supporting Information
	demand, including but not limited to provision of rideshare/microtransit services or bikeshare station(s) servicing the property, proximity to public transit, car/van-pool incentives, alternative transit subsidies, provisions for teleworking, and shared parking on a separate lot subject to the requirements of 10.1112.62.		frequently waived. The property has easy pedestrian and bicycle access to a variety of services and attractions in the Downtown, including bus services. Long-term storage of vehicles in off-site locations, for residential use, is a possible alternative. Bicycle Racks are being provided.
3	10.1112.143 The Planning Board may grant a conditional use permit only if it finds that the number of off-street parking spaces required or allowed by the permit will be adequate and appropriate for the proposed use of the property. In making this determination, the Board may accept, modify or reject the findings of the applicant's parking demand analysis.	**Meets** **Does Not Meet**	The proposed use is in keeping with the current goals of the Master Plan to provide more housing in the city. The submitted Traffic Impact Analysis by Gorrill Palmer indicates that the project will not have a significant impact on traffic or parking.
4	10.1112.144 At its discretion, the Planning Board may require more off-street parking spaces than the minimum number requested by the applicant, or may allow fewer spaces than the maximum number requested by the applicant.	**Meets** **Does Not Meet**	Many similar downtown sites have operated without the benefit of full on-site parking as many sites do not have the land area to provide on-site required parking. In this case, the existing parking has been reset as below grade parking. Residential parking demand is highest at night when the most parking spaces are available.
5	**<u>Other Board Findings:</u>**		
6	**<u>Additional Conditions of Approval</u>:**		

DRAFT

24 December 2024

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Site Plan Review at 1 Congress Street and 15 Congress Street, Proposed Residential and Mixed-Use Commercial Development

Dear Mr. Chellman and Planning Board Members:

On behalf of One Market Square, LLC., we are pleased to submit the attached application for **Site Plan Approval** for the above referenced project and request that we be placed on the agenda for the **January 16, 2025,** Planning Board Meeting.

The property is shown on the City of Portsmouth Tax Assessors Map 117 as Lots 12 and 14. The project is located at 1-15 Congress Street, with frontage on High Street and Fleet Street, and is within the City of Portsmouth Character District 4 (CD4) and Character District 5 (CD5) Zoning Districts. The site is currently developed with existing buildings and a surface parking lot. The project includes the construction of structured additions and the renovation of existing historic buildings.

Project Overview:

The project is a combination of the previously approved 1 Congress Street project (Tax Map 117 as Lot 14) and contained within the Land Use Application LU–22-12 (hereinafter "One Market Square"), with the property located at 15 Congress Street (Tax Map 117 as Lot 12) (hereinafter "JJ Newberry"). The project includes re-developing both lots according to the attached site plans. The project also requests a Parking Conditional Use Permit as provided for in Section 10.1112.14 of the Zoning Ordinance for providing 19 parking spaces where 53 parking spaces are required.

Property Line Adjustment:

The applicant is proposing, and previously submitted, a Lot Line Adjustment Plan to the City of Portsmouth affecting certain portions of Haven Court. The Lot Line Adjustment Plan will convey title to an 808 square foot portion of Haven Court from the City of Portsmouth to One Market Square, LLC and simultaneously convey title to land owned by One Market Square, LLC, to the City of Portsmouth in the defined area where the High Hanover Parking Garage was built onto land owned by One Market Square, LLC. The 808 square feet parcel was previously part of the JJ Newberry parcel, which was conveyed to the City of Portsmouth on December 05, 2006. The land being conveyed to the city will cure an existing encroachment of the High Hanover Parking Garage built on land owned by One

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

Market Square, LLC. This minor lot line adjustment was approved by the Portsmouth Planning Board on July 18, 2024, and is exempt from public hearing requirements pursuant to RSA 676:4, I (e)(1) and was approved by the City Council on December 18, 2024.

Existing Site Approvals:

The One Market Square project was approved by the Planning Board on February 16, 2023, and subsequently granted an approval extension to February 16, 2025. One Market Square was approved by the Historic District Commission on August 3, 2022, and subsequently granted extensions to August 2, 2025. The project includes the renovation of existing commercial buildings located at 1 and 3 Congress Street, demolition to portions of existing buildings, and new construction of a 3-story building with Attic Hip Top Mansard Roof to the rear of the existing buildings and site improvements. The area behind the existing building is currently a surface parking lot. One level of vehicular parking will be provided underground and accessed by a car elevator.

The 1 Congress Street portion of the project will remain the same as in the prior approval with the following changes:

- The proposed building will be extended approximately 10 feet and attach to the existing JJ Newberry building.

- A portion of the second floor of the One Market Square project will change its proposed use from office to residential. The Applicant is a major owner of office space in downtown Portsmouth and has experienced a substantial vacancy and lack of demand for office space.

Site Plan Update – JJ Newberry:

The JJ Newberry project consists of rehabilitation and adaptive reuse of the existing structure(s) with minor accessory additions. New projecting storefronts with recessed entrance stoops are proposed along the north elevation of the property to create a retail experience in a re-imaged, pedestrian friendly corridor connecting High Street and Fleet Street. This area, previously known as Haven Court, is proposed to be re-named Newberry Way. The proposed name change has been sent to the Portsmouth Department of Public Works (DPW) for approval. The surface elevation of Haven Court will be lowered to create an ADA compliant pedestrian space open to the public, extending the pedestrian experience from the McIntyre Building along Commercial Alley, Ladd Street, and Newberry Way to Fleet Street, with an enhanced pedestrian experience on High Street. One Market Square, LLC is committed to the previously stated commitment to include renovating Ladd Street and High Street as a part of the project.

The upper floor uses in the JJ Newberry Building will change from office to residential. The first-floor space along Congress Street will remain retail and restaurant use. The first-floor space along Fleet Street will be changed from office to retail uses. An egress stair tower, accessible elevator, and main

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

entrance for the upper floors of residential use will be accessed from Newberry Way, in the vicinity of the One Market Square building connection with the JJ Newberry building. A rooftop penthouse and secondary egress stairs are proposed on the existing roof. The existing flat roof will accommodate a roof deck with extensive green scape plantings for residential use, solar PV array, and mechanical equipment.

The existing brick facade on Congress Street will be repaired and restored according to historic photographs. The existing brick facade on Fleet Street will be repaired, with proposed awnings at storefront windows and entrances. Along the existing southerly 10-foot-wide alley off Fleet Street, the project will cut vertical entrances, windows and recessed balconies in the brick façade to allow for retail entrances with upper floor covered recessed balconies for residential tenants. The JJ Newberry project has been reviewed during a work session with the HDC and at a Public Hearing on November 6, 2024, the project was approved.

Site Plan Submission:

The submission requirements of the City of Portsmouth Site Plan Regulations have been reviewed. The information supplied herein is intended to assist in a determination of the project's compliance.

Plans are drawn in accordance with scale and size requirements, with dates, titles, north orientation, Map and Lot, Zoning, revision blocks, and Legends. The proposed uses and Square footage of use are shown on the Architectural plans. The professional's seals with license numbers are on the submitted plans. The Existing Conditions plan shows the site topography, building location with floor elevation, feature locations, and driveway access / egress and current parking configuration. Available utility information is shown. Subsequent plans show the proposed development with the associated site improvements and construction details.

Site Zoning:

The applicant desires to repurpose the upper floor of JJ Newberry into high density "Co-Living" residential apartments. The irregular shape of the historic JJ Newberry structure with a disproportionate amount of windowless space, is better suited for Co-Living with bedrooms *sharing common* living, kitchen, and bathrooms. This allows bedrooms to be situated on the exterior walls with windows, and to use internal windowless areas for common living use.

In the applicants Preliminary Conceptual Consultation and Design Review application to the Planning Board (LUPD 24-6), a document entitled "Zoning Ordinance Change to Allow Co-Living Use" provided an abstract, history and proposed zoning change to allow for a Co-Living Use. The developer would like to create co-living at this site, however, to comply with the existing Zoning Ordinances, the application proposes to reuse of the upper floors of JJ Newberry into large apartments as the only viable economic option within the space limitations of the existing building. The Zoning Ordinance allows micro apartments however laying out the space for micro apartments would result in

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

approximately 50% of the units having no windows, which is not viable thereby only leaving the option of creating large 2 and 3 bedroom units.

Large 2 and 3 bedroom apartments does provide more additional much needed and urgent housing. If the City of Portsmouth successfully changes the Zoning Ordinances to allow for co-living uses, prior to commencement of construction on JJ Newberry, the Applicant would seek a change of use from conventional, large apartments to their desired high-density co-living for individuals and families.

The developer plans to construct the One Congress building addition in the parking lot first, and then Haven Court improvements and lastly the renovation and change of use of the upper floors of the JJ Newberry building. It is essential for the Applicant's overall project to get approval for the change of use of the upper floors of JJ Newberry to residential now because financing for the overall project requires a commercial appraisal with resulting values satisfying financing conditions and any office space would not result in an appraised value making the overall project financially feasible.

The Applicant desires to merge the two lots (Map 117 Lot 14 with Map 117 Lot 12) however, the Planning Department believes merging the lots will create a maximum building footprint exceeding the 20,000 square maximum building footprint permitted in CD-5. The Applicant disagrees with the Planning Department's interpretation of maximum building footprint. The existing building footprint of JJ Newberry is approximately 22,000 square feet which already exceeds the 20,000 square foot maximum building footprint in CD-5 and therefore is considered a "lawful non-conforming building". The Applicant believes the definition of "building footprint" contained in the Zoning Ordinances has been misread and inconsistently applied over the years as it relates to building footprint. The definition of **building footprint** in the Zoning Ordinance is as follows:

*"The total area at or above 18 inches in elevation as measured from the outside walls at the **grade plane** of a detached **building,** or of two of more **building**s separated only by fire walls, common walls or property lines."*

The definition of building footprint is noticeably clear that it was intended to include buildings connected by only fire walls, common walls or property lines, which causes many existing projects and past projects approved to exceed the maximum building footprint in CD-4 and CD-5. By way of examples, this definition would require the maximum building footprint to be calculated for any building undergoing a renovation or change of use in the blocks from the intersection of Hanover Street and Market Street Extension to Ladd Street because all those buildings are connected and only separated by fire walls and property lines. Same thing on the opposite side of the street from the intersection of Penhallow Street and Bow Street to Commercial Alley and then again from Commercial Alley through Market Square, down Daniel Street and onto Penhallow Street. Same thing for buildings attached down State Street or down Congress Street or down Vaughn Mall. There are so many examples of continuously connected buildings exceeding the maximum building footprint of 15,000 square feet permitted in CD-4 and 20,000 square feet in CD-5 that the "administrative gloss" used for this definition renders it unenforceable for determining a maximum building footprint. In light of this

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

intended or unintended building footprint definition and lack of enforcement, the Applicant believes what establishes a maximum building footprint is the permitted building coverage and open space requirements contained in the development standards for CD-4 and CD-5. Using maximum building coverage and open space clearly establishes the maximum building footprint. Therefore, the Applicant requests the Planning Board to approve the merging of the two parcels, especially considering JJ Newberry is a lawful non-conforming building with a building footprint exceeding 22,000 square feet.

As a result of this zoning definition inconsistency, the staff memo recommends moving forward with the application as two separate buildings, unless the Planning Board votes otherwise to allow the lots to be merged. The Applicant requests approval from the Planning Board to allow the lots to remain separate or to be voluntarily merged should the Applicant submit to the Planning Board a voluntary lot merger application. The lots could not be merged at this time because the Applicant does not hold title to the JJ Newberry parcel and the merging the lots requires common ownership and fee simple interest.

The Project Site Zoning Plan C102 details information regarding the proposed uses, including unit size(s) and bedroom counts. Included is a calculation of the required parking under the Portsmouth Zoning Ordinance (PZO). The plan shows the existing and proposed Impervious Surface Areas on the combined lot, and an attachment shows the calculations for separate lots. The lots are pre-existing non-conforming. The proposed project reduces the impervious surface totals for the project. The proposed building uses, all conforming, are listed on this sheet. Information regarding the proposed Conditional Use Permits (CUP) required for the project are listed. The Ordinance Building Height and Development Standards Regulations are shown for ease of reference. No variances are required for the project.

Vehicular and Pedestrian Circulation:

The application package includes a Technical Memorandum prepared by Greenman-Pedersen, Inc. (GPI), the project Traffic Consultant, calculating site Trip Generation and Institute of Traffic Engineers (ITE) Parking Calculations. The Memorandum details the changes in traffic generation due to the project. There is a minor increase to Saturday midday traffic, which is not expected to impact on the roadway network. Parking calculations from the ITE Standards are included, and as noted there are variations expected within downtown dense urban areas. The plans show the removal of the curbed sections of High Street and Ladd Streets to a single grade with tactile and color surface changes to reflect the pedestrian and vehicular partitioning of the right-of-way. This is similar to the re-construction work performed on Chestnut Street at the Portsmouth Music Hall. As shown on the 1 Congress approval, the parking spaces on High Street have been eliminated to allow the sidewalks to have the proper width. The Portsmouth Fire department also determined that the narrow width existing on High and Ladd Streets, with the curbed sections, presented an issue with deployment of fire apparatus.

The proposed Newberry Way pedestrian connection is supported by the Master Plan as part of an overall connection running from McIntyre and potentially to Vaughan Mall. The Site Context Map

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

shows the connections. Significant improvements are proposed for Newberry Way including changing the grade, installing underground utilities, hardscape impervious and porous pavers, catenary lights, and landscaping. Utilizing the abutting property located at 175 Fleet Street (known as Gilley's), which is now under a purchase agreement by the developer, the transformer previously shown in the revised Newberry Way will be relocated out of the pedestrian corridor. The design plans include the proposed improvements on Ladd Street & High Street, which the applicant is willing to fund at their sole cost. The applicant finalized the attached Memorandum of Understanding with the Portsmouth City Council as a part of the 1 Congress Street site plan approval. The memorandum stipulates that One Congress, LLC will pay the entire cost of design and construction of the improvements, thereby not requiring the City of Portsmouth to pay the costs for the proposed improvements to the city's downtown infrastructure shown in this application. Please note the following in regard to the signed Memorandum of Understanding:

- The plans that were contemplated and approved show the removal of existing parking spaces on High Street. This is a key component of the proposed street improvement design. The developer is of the understanding that the Memorandum of Understanding allows that plan to move forward.

- Part I Developers Obligations A.4 and A.5 regarding pedestrian access to the High Hanover Parking Garage and the stairway connection would be revised due to the change of proposed grading on Newberry Way, as the contemplated stairway is being replaced by a continuous grade. The design team will work with the city to identify if alternative pedestrian access to the parking garage is achievable in the revised design.

- Part I Developers Obligations B.7 regarding permissions for construction on the Wenberry parcel has been met by the developer's acquisition of the property in a binding purchase and sales agreement.

- Part II City's Obligations 2, the developer is of the understanding that the city will procure a third-party study of the feasibility of a shared trash and recycling area within the High Hanover Garage. The developer is willing to pay for the capital improvements, management and long-term maintenance of the trash and recycling room.

- Part II City's Obligations 3, the developer is of the understanding that the city will procure a third-party study by an experienced land use firm and Parking/traffic engineer for the three entrances to the High Hanover Garage so the City may consider any changes to those entrances. The applicant favors and recommends the city close the High Street entrance to the High Hanover Garage to reduce traffic driving through Market Square.

The City Council, by vote of August 21, 2023, expressly delegated authority to the City Manager to negotiate, convey and/or accept land interests, negotiate, execute and record as necessary any and all easements, licenses, joint use agreements or other documents reasonably necessary for the purposes of

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

the Memorandum of Understanding. Currently the process is in place, with Addendum 1 (also attached) under consideration. The Revision to Part I.A.2, the 10-foot maintenance easement along the High Hanover Parking Garage, has been stated as Note 10 to a revised Lot Line Relocation Plan.

Screening and Landscaping:

The site is currently only landscaped at the existing surface parking lot at 1 Congress Street, rear. The proposed pedestrian corridor improvements expand the landscaping from the High Street / Newberry Way intersection along the pedestrian corridor all the way to Fleet Street. Landscaping is detailed on Landscape Plans L01 – L05.

Water and Sewage Systems:

The site is served by municipal water and sewer. The development proposes improvements (upgrades) to the water and sewer infrastructure on High Street and Ladd Streets. The utility demand generated by the additions and renovations are not expected to exceed the capacity of the existing updated infrastructure. These and other utilities are detailed on Utility and Street Profile Plans C014 – C105 and C201 – C203.

Stormwater Management:

The site drainage patterns are detailed and discussed in the attached Stormwater Management Plan. The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the roof drain filter the post-development runoff is treated sufficiently. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

Site Lighting:

The re-development will introduce adequate lighting of the street and pedestrian corridors to provide a welcoming and safe pedestrian and vehicular experience, contrary to the existing condition. The proposal is to provide catenary mounted lighting located at a suitable height above grade. The lighting intensities are detailed on the Lighting Plans C106 and C107, and the proposed fixtures are included in the Supplemental Material submission.

Site Signage and Artwork:

The site is currently served by existing building mounted signage, which will be re-worked as needed. New signage will be permitted through the signage permit process. The project will work to retain and display some of the JJ Newbery historic signage. In addition, there will be some added building mounted artwork to provide additional interest and pedestrian engagement.

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

Site Utilities and Solid Waste:

Site utilities include natural gas, underground electric and communications services. The existing services will not be adjusted and will remain operational as is, unless changes are required, which would be limited to existing corridors / conduits. The developer will assist Eversource and the city in providing the space on Newberry Way to install underground electrical primary lines that will come from Fleet Street and go the transformers and switchgear at the High Ladd Street intersection and create a redundant loop for additional reliability. High Pressure Natural Gas will also be extended on Newberry way to the site and beyond the subject property (by others) to and in accordance with utility company desires.

Solid Waste will be relocated to space within the High Hanover garage, subject to city DPW review and authorization from the City Council. Currently there is a dumpster in the pedestrian corridor that needs to be removed to allow the desired public use and enjoyment of the updated corridor. The applicant is agreeable to fund the improvements to the space within the High Hanover garage to create a trash room and provide for the ongoing operation and maintenance of the facility, subject to city approval and licensing. Regarding the trash room, the developer envisions access for trash haulers to pick up in High Street by having trained employes move with electric hand carts 8-yard trash dumpsters and 8-yard recycling dumpsters into a pickup area near the High Street entrance to the parking garage. This is the same way trash is taken out of the 60 Penhallow property and the Port Walk parking garage, and it works well. The grades on Newberry Way will be too high to have any street level access to the trash disposal in the garage directly from Newberry Way. The developer will fabricate stainless-steel trash/recycling shoots in the face of the garage on the Newberry Way side for trash and recycling drop off into the bins within the city space. The final design concept will be done by a professional firm with the requisite expertise, or otherwise designed by mutual agreement. There could be card readers in the public space to provide access to the trash area or to open the trash shoots, similar to what is in place at the 60 Penhallow building.

Approval Process:

The TAC Committee voted to recommend approval of the project at the December 3, 2024, meeting. The approval was recommended with 4 Conditions, subject to the applicant moving forward as two separate buildings, *unless the Planning Board has a different interpretation, or the applicant seeks a Conditional Use Permit for building footprint.* We leave it up to the Board to deliberate and decide the path forward. We submit the package and address the conditions with the following:

1. The applicant shall agree to pay for the services of an oversight engineer, to be selected by the City, to monitor the construction of improvements within the public rights-of-way and on site. **This condition is acceptable to the Applicant.**

2. Later review and approval of all off-site areas including but not limited to Ladd Street, High Street and Haven Court planned improvements will be required in a separate reviewing action. **This condition is acceptable to the Applicant.**

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

3. The City makes no guarantee on the timeline that the proposed Fleet Street utility improvements will be constructed. The applicant must therefore show the existing utilities in Fleet Street and how any proposed work will be incorporated into the existing Fleet Street pipe network. A separate sheet should be provided showing the proposed Fleet Street improvement design and how any new improvements on Haven Court or the Newberry building will eventually interface. **This condition is acceptable to the Applicant.**

4. Proposed elevation changes to Haven Court may affect the foundations, walls etc. of the Hanover Municipal parking garage. Third party review of structures and foundations will be required by the City. **This condition is acceptable to the Applicant.**

The following plans are included in our submission:

- Cover Sheet: This shows the Development Team, Legend, Site Location, and Site Zoning.
- 1 Congress Boundary Plan: This plan shows the existing 1 Congress Street property boundaries.
- 1 Congress Lot Line Adjustment Plan: This plan shows the proposed 1 Congress Street property boundaries after a Lot Line Relocation with the City of Portsmouth.
- 15 Congress Street Standard Boundary Survey and Existing Conditions Plan - Development Parcel V101: This plan shows the 15 Congress Street Boundary and the existing development area conditions in detail.
- Existing Conditions Orthophoto Plan: This plan shows the site conditions from an aerial drone photograph prospective.
- Demolition Plan C101: This plan shows portions of the existing buildings and other site features which will be removed.
- Project Site Zoning C102: This plan shows information about site zoning.
- Proposed Site Plan C103: This plan shows the site development and proposed building placement.
- Grading and Drainage Plan C104 & Detailed Grading & Utility Plan C104: These plans show project site grading, grading elevation details, and drainage.
- Utility Plan C105: This plan shows proposed utilities.
- Lighting Plans C106 – C107: These plans show proposed project street and pedestrian corridor lighting.
- Proposed Plan and Profile Newberry Way C201: This plan shows the proposed profile of Newberry Way.
- Proposed Plan and Profile High Street C202: This plan shows the proposed profile of High Street.
- Proposed Plan and Profile Ladd Street C203: This plan shows the proposed profile of Ladd Street.
- Architectural Plans A0 – A9: Floor Plans, Roof Plan, Elevations 3D View – Birdseye and Street Level, showing the proposed building information.

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

- Landscape Plans L-01 to L-05: These plans show proposed Newberry Way, High Street, Ladd Street and Fleet Street Alley proposed surface features. Included are Lighting and hardscape details.
- Detail Sheets C501 to C505: These plans show the associated construction details.

Also attached to this submission is additional material to aid in the review of the application:

- ✓ Memorandum of Understanding
- ✓ CUP Parking Application Letter
- ✓ Lighting Specifications
- ✓ Green Building Statement
- ✓ Individual Lot Impervious Calculations
- ✓ Traffic Impact Assessment
- ✓ Stormwater Analysis
- ✓ Average Grade Plane Calculations
- ✓ Gilley's Property Survey
- ✓ Site Development Context Plan

We look forward to Planning Board review of this submission and look forward to an in-person presentation at your meeting.

Sincerely,

John R. Chagnon, PE

P:\NH\5010156-McNabb_Properties\3406-Congress St., Portsmouth-JRC\2025 Site Plan\03-WIP_Files\Application\Portsmouth Site Plan\2024.12.24 Clean Planning Board Letter.doc

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM

ADDENDUM I TO MEMORANDUM OF AGREEMENT

THIS FIRST ADDENDUM AGREEMENT ("Addendum I") is entered into this ___ day of November, 2024, between the One Market Square, LLC, a New Hampshire limited liability company, with an address of 3 Pleasant Street, Suite 400, Portsmouth, NH 03801 (the "Developer") and the City of Portsmouth, a New Hampshire municipality, with an address of 1 Junkins Avenue, Portsmouth, NH 03801 (the "City"). The Developer and the City may be collectively referred to herein as "the Parties".

WITNESSETH:

WHEREAS, the Developer and the City are parties to a certain Memorandum of Agreement, fully executed on December 13, 2023, describing the Parties rights, responsibilities and covenants relative to High Street, Ladd Street, Haven Court, and Developer's property located at 1 Congress Street (Tax Map/Lot 117/14), all in Portsmouth, New Hampshire (the "Agreement");

WHEREAS, the Developer has procured a draft plan titled "Lot Line Adjustment Plan Tax Map 117 Lots 14 &16, Owners of Record: One Market Square, LLC & City of Portsmouth, Property Located at: 1 Congress Street & 44 High Street, City of Portsmouth, County of Rockingham, State of New Hampshire", prepared by Haley Ward and dated May 30, 2024 (the "Plan");

WHEREAS, the City is the owner of a strip of property located adjacent to Fleet Street, which is more completely described in a Quitclaim Deed from Wenberry Associates LLC recorded at the Rockingham County Registry of Deeds (the "Registry") on December 5, 2006 and at Book 4741, Page 797, and is shown on the Plan as the "Land to be Conveyed to One Market Square, LLC" (the "City Strip")

WHEREAS, the Developer is the owner of certain real property located at 1 Congress Street in the city of Portsmouth, located at Tax Map/Lot 117/14 ("1 Congress");

WHEREAS, the Developer acquired the fee interest in Haven Court from the edge of 1 Congress Street through to the edge of the City Strip a certain Quitclaim Deed, recorded at the Registry at Book 6523, Page 34 on December 14, 2023, from F. Thomas Critchley, Jr. (the "Remainder Parcel");

WHEREAS, the City owns a parking garage known as the High Hanover Garage, located on parcels at 34 Hanover Street and 44 High Street, Map/Lots 117/1 and 117/16, respectively (collectively the "High Hanover Garage");

WHEREAS, the Developer believes a portion of the High Hanover Garage is encroaching on the Remainder Parcel;

DRAFT

WHEREAS, the Developer desires to acquire the City Strip, and to incorporate the City Strip and the Remainder Parcel into the Public Realm Improvements as described in the Agreement to Haven Court from Fleet Street through to High Street;

WHEREAS, the City is amendable to conveying the City Strip to the Developer in exchange for a conveyance of any fee interest owned by the Developer under the High Hanover Garage, along with easements within Haven Court from High Street to Fleet Street for public access and utilities;

WHEREAS, the area including the City Strip, the Remainder Parcel, and the area shown on the Plan as Haven Court may be renamed by the Developer, but for the purposes of the Agreement and this Addendum I, shall be referred to collectively herein as "Haven Court"; and,

WHEREAS, in addition to the obligations described in the Agreement, the Parties desire for the Developer, at its sole cost, to design, engineer and construct certain public realm improvements within Haven Court from High Street to Fleet Street (together with the Public Realm Improvements as defined in the Agreement the "Expanded Public Realm Improvements").

NOW, THEREFORE, the Parties agree as follows:

Part I: The Developer's Obligations:

A. <u>The Expanded Public Realm Improvements</u>
   1. The Developer shall, at its sole cost and obligation design, engineer and install the Expanded Public Realm Improvements in accordance with the terms and conditions contained within the Agreement and the Addendum I. This provision shall include, but be in no way limited to, the provisions of Part 1, Section (A)(7) relating to referral to the Public Art Review Committee.
   2. Following its acquisition of the City Strip, the Developer shall convey to the City easements for public access and utilities within Haven Court, as well as a ten (10) foot easement adjacent to the High Hanover garage for maintenance.
   3. Following its acquisition of the City Strip, the Developer shall convey appropriate easements to the City for repair, access and maintenance of the High Hanover Garage.
   4. Following its acquisition of the City Strip, the Developer and the City shall execute a boundary line agreement pursuant to RSA 472:4 or a lot line adjustment resulting in the boundary shown on the Plan as "Land to be Conveyed to the City of Portsmouth".
   5. Following the completion of the conveyances described herein, the Developer shall assume all cost and liability for the maintenance of Haven Court from Fleet Street to High Street.

Part II: The City's Obligations:

DRAFT

1. The City shall convey the City Strip to the Developer by Quitclaim Deed.
2. The City Council, by its vote of November 18, 2024, delegated to the City Manager the right and authority to negotiate, execute, deliver, accept, and record any and all legal documents necessary to implement the transactions described under the City's Obligations and the Developer's Obligations.

For the City of Portsmouth

_____
Karen S. Conard, City Manager
Dated:_____
Pursuant to vote of the City Council
On November 18, 2024.

For the Developer: One Market Square, LLC

Signature: _____
Dated: _____
Printed Name: Mark A. McNabb, Manager

DRAFT

MEMORANDUM OF AGREEMENT

THIS AGREEMENT ("Agreement") is entered into this ___ day of December, 2023, between the One Market Square, LLC, a New Hampshire limited liability company, with an address of 3 Pleasant Street, Suite 400, Portsmouth, NH 03801 (the "Developer") and the City of Portsmouth, a New Hampshire municipality, with an address of 1 Junkins Avenue, Portsmouth, NH 03801 (the "City"). The Developer and the City may be collectively referred to herein as "the Parties".

WITNESSETH:

WHEREAS, the Developer is the owner of certain real property located at 1 Congress Street in the city of Portsmouth, located at Tax Map/Lot 117/14 (the "Property");

WHEREAS, the City is the owner of certain rights of way abutting the Property known as High Street and Ladd Street;

WHEREAS, the City and the Developer claim interest to portions of the abutting way known as Haven Court (together with High and Ladd Streets the "Rights of Way");

WHEREAS, the City owns a parking garage known as the High Hanover Garage, located on parcels at 34 Hanover Street and 44 High Street, Map/Lots 117/1 and 117/16, respectively (collectively the "High Hanover Garage");

WHEREAS, Wenberry Associates, LLC owns the abutting parcel located at 15 Congress Street, Tax Map/Lot 117/12 (the "Wenberry Parcel"):

WHEREAS, the Developer has obtained certain approvals from the City's land use boards to construct a 3-story mixed-use building with associated on-site and off-site improvements (see generally City permit number LU-22-12) (the "Developer's Project");

WHEREAS, as a part of the Developer's Project, the Developer plans to conduct substantial utility work within High Street, Ladd Street and Haven Court;

WHEREAS, the Parties recognize the public benefit to be derived from beautifying the Rights of Way and creating greater pedestrian connectivity from Penhallow Street through to Fleet Street;

WHEREAS, the Parties desire for the Developer, at its sole cost, to design, engineer and construct certain public realm improvements within the Rights of Way (collectively, and as further defined herein, the "Public Realm Improvements").

NOW, THEREFORE, the Parties agree as follows:

Part I: The Developer's Obligations.

A. The Public Realm Improvements

The Developer shall, at its sole cost and obligation design, engineer and install the following Public Realm Improvements in accordance with the drawing set attached as Exhibit A within the Rights of Way:

1. Repave the Rights of Way using decorative pavers as a pedestrian-vehicular shared space;
2. Install catenary lights over Haven Court, affixed to the High Hanover garage and the Developer's Property;
    a. The Developer shall attempt to negotiate the rights necessary to install catenary lights affixed to abutting private buildings, but failure to secure such rights shall not affect the validity of this Agreement nor prevent the Developer from installing the catenary lights affixed to the City Property and the Developer's Property, as shown in Exhibit A.
3. Install public fences, benches, railings, and other infrastructure within the Rights of Way.
4. Install an additional pedestrian entrance to the High Hanover Garage at the high point of Haven Court.
5. Install a stairway connecting Haven Court to Fleet Street.
6. All Public Realm Improvements on High Street and Ladd Street shall be compliant with the Americans with Disabilities Act (ADA), including but not limited to making the sidewalks flush with the streets.
7. All changes to the Public Realm Improvements from what is depicted in Exhibit A shall be submitted to the City Manager in writing and reviewed and approved by the Director of Public Works. If the City Manager, at her sole discretion, determines that any change is a material change to the aesthetics of the Public Realm Improvements, such change shall be reviewed and approved by the City's Public Art Review Committee (PARC).

B. Construction Obligations

The Developer shall complete at its sole cost and obligation the following tasks to secure the construction of the infrastructure described in Section I, A:

1. Prior to commencing any construction, the Developer shall submit construction plans to the City (the "Construction Plans"). The construction plans must be reviewed and approved by the Director of Public Works for consistency with City standards. The City may, at its sole discretion, employ a third-party engineer to conduct a peer review of the construction plans, and the cost of any third-party review shall be borne by the Developer.
2. The Developer shall secure the construction of the items above via a security instrument, such as a bond or letter of credit, in a form acceptable to the City Attorney. The value of the security instrument shall be estimated by the Developer and set by the Director of Public Works. Upon acceptance of the Public Realm Improvements by the City, the City shall release the security instrument.
3. The Developer shall enter into a Construction Management Mitigation Agreement (CMMP) with the City sufficient to describe the Developer's construction plan for the Public Realm Improvements and the Developer's Project. The CMMP shall

reasonably ensure vehicular and pedestrian public access to abutting properties, including but not limited to businesses and residences with entrances on the Rights of Way, the High Hanover Garage and other adjacent parking facilities. This shall also include access for police, fire, and trash pickup by the City. The Parties understand there will be times access is limited or interrupted to parking, traffic flow and sidewalks and the Developer is responsible for coordinating those interruptions with the City and abutters prior to making any interruption of normal vehicular and pedestrian access.

4. The Developer shall provide written notice to abutters and their tenants, as may be reasonably identified, at the construction stages, to be established by the CMMP. These notices shall be in any event no less than once per month.
5. As a part of the CMMP, the Developer shall designate a Project Manager, who shall serve as the point of contact for all public inquiries regarding the Public Realm Improvements, the Developer's Project, and the related impacts on vehicular travel. This point of contact shall be available to respond to public inquiries and respond to requests within 24 hours.
6. The Developer shall provide the City with proof of insurance at the City's customary levels for the period of construction of the Public Realm Improvements. The proof of insurance shall list the City as an additional insured.
7. The Developer shall secure the legal rights necessary to construct the anticipated Public Realm Improvements over the Wenberry Parcel. The Developer shall provide evidence of sufficient legal rights to the City prior to the commencement of the construction of any Public Realm Improvements.
8. Following construction of the Public Realm Improvements, the Developer shall provide the City with as-built drawings depicting the Public Realm Improvements.

Part II: The City's Obligations

1. The City shall employ a third-party engineer to oversee the construction of the Public Realm Improvements. The cost of the third-party engineer shall be paid by the Developer, subject to the reasonable approval by the Developer of the company to be employed, the scope of work and cost.
2. The City or the Developer may procure a third-party study of the feasibility of a shared trash and recycling area within the High Hanover Garage.
3. The City or the Developer may procure a third-party study by an experienced land use firm and Parking/traffic engineer for the three entrances to the High Hanover Garage so the City may consider any changes to those entrances.
4. The City hereby waives all license fees applicable to the construction of the Public Realm Improvements. This provision shall not apply to any permit fees required pursuant to the Developer's Project.
5. The City shall designate a Project Manager for the Public Realm Improvements. All communications regarding the Public Realm Improvements from the Developer shall be addressed to the Project Manager, with a copy to the City Attorney.
6. Following approval of the Public Realm Improvements by the City's third-party engineer and the Director of Public Works, the City shall accept ownership in writing of all Public Realm Improvements, excepting the catenary lights. If review

by the City's third-party engineer or the City's Public Works Department reveal the Public Realm Improvements are not constructed to City standards or the Construction Plans, the Developer shall cause the insufficiencies to be remedied to the City's satisfaction.

7. The City and Developer shall negotiate, execute and record as necessary any and all easements, licenses, joint use agreements or other documents reasonably necessary to complete the obligations set forth herein. The City Council, by vote of August 21, 2023 expressly delegates authority to the City Manager to negotiate, convey and/or accept land interests reasonably necessary for the purposes of this paragraph.
8. The City shall eliminate or otherwise relocate a parking space within the High Hanover Garage to facilitate the construction of the additional pedestrian entrance to the High Hanover Garage.
9. The Parties agree the improvements being made to High Street and Ladd Street reflected in Exhibit A will become City property upon acceptance of the Public Realm Improvements by the City, and nothing in this Agreement shall be construed to prohibit the City from making any changes to High Street and Ladd Street, including their use, in the future.

Part III: Miscellaneous

1. Compliance with other laws: The Developer acknowledges that their obligations under this contract are subject to full compliance with all applicable state, federal, and local laws, and failure to adhere to such laws shall constitute a material breach of this contract.

2. Costs: Following acceptance of the Public Realm Improvements by the City, the City shall assume maintenance of the Rights of Way. The City's maintenance obligations shall not exceed the ordinary maintenance responsibilities for any other right of way in the City. For the purposes of this paragraph, the catenary lights are specifically exempted and maintenance for the catenary lights shall be the responsibility of the Developer.

3. Entire Agreement. This Agreement and the attachments hereto, each of which is hereby incorporated herein, sets forth all the agreements, promises, covenants conditions and undertakings between the parties with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements and understandings, inducements, or conditions, express or implied, oral or written.

4. Amendment. No waiver or modification of any of the terms of this Agreement shall be valid unless in writing and signed by each of the parties hereto. Failure by any party to enforce any rights under this Agreement shall not be construed as a waiver of such rights, and a waiver by any party of a default hereunder in one or more instances shall not be construed as constituting a continuing waiver or as a waiver of other instances of default.

5. Waiver of Breach: The failure of either party to enforce any provision of this contract shall not be construed as a waiver of subsequent breaches or as a relinquishment of the right to enforce such provisions. No waiver by either party of any breach of this contract shall be deemed to be a waiver of any other or subsequent breach.

6. Governing Law. The construction and effect of the terms of this Agreement shall be determined in accordance with the laws of the State of New Hampshire.

For the City of Portsmouth

Karen S. Conard
Karen S. Conard (Dec 12, 2023 15:34 EST)

Karen S. Conard, City Manager
Dated: 12/12/2023
Pursuant to vote of the City Council
On August 21, 2023.

Reviewed by Trevor P. McCort
Deputy City Attorney

Trevor P. McCourt
Trevor P. McCourt (Dec 12, 2023 15:33 EST)

For the Developer: One Market Square, LLC

Signature: _____
Dated: 12/13/2023
Printed Name: Mark A. McNabb, Manager

EXHIBIT A

IMPROVEMENT PLANS

HIGH STREET, LADD STREET & HAVEN COURT
PORTSMOUTH, NEW HAMPSHIRE
CITY COUNCIL APPROVAL SET

PROJECT PROPONENT:
ONE MARKET SQUARE LLC
3 PLEASANT STREET
SUITE #400
PORTSMOUTH, NH 03801
TEL. (603) 427-0725

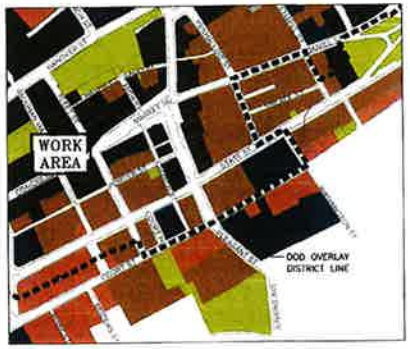
LAND SURVEYOR & CIVIL ENGINEER:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801
Tel. (603) 430-9282
Fax (603) 436-2315

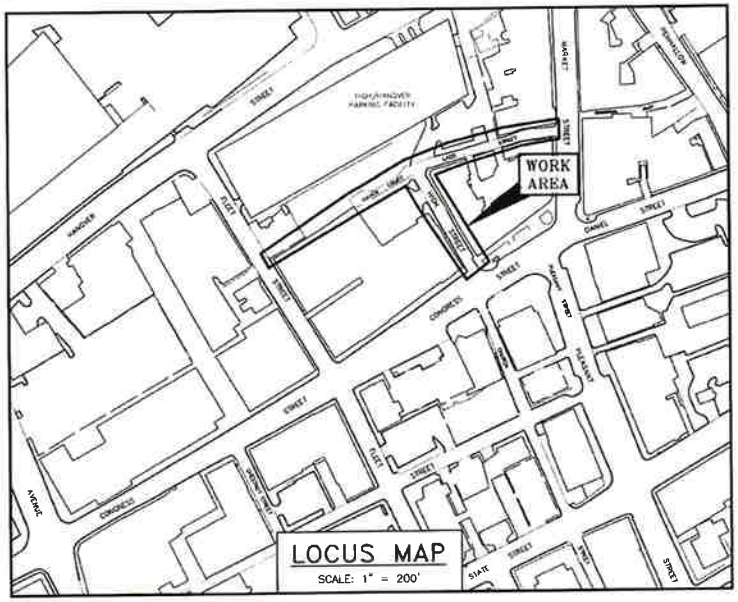
ARCHITECT:
ARCOVE LLC
3 CONGRESS STREET
SUITE 1
PORTSMOUTH, NH 03801
TEL. (603) 731-5187

LANDSCAPE ARCHITECT:
TERRA FIRMA LANDSCAPE ARCHITECTURE
163A COURT STREET
PORTSMOUTH, NH 03801
TEL. (603) 430-8388

GEOTECHNICAL:
GEOTECHNICAL SERVICES INC.
18 COTE AVENUE, UNIT 11
GOFFSTOWN, N.H. 03045
Tel. (603) 624-2722

LAND USE ATTORNEY:
BRUTON & BERUBE, PLLC
601 CENTRAL AVENUE
DOVER, N.H. 03820
Tel. (603) 749-4529





DIG SAFE
ME - NH - RI - VT
1-888-344-7233

LEGEND:

EXISTING	PROPOSED	
		PROPERTY LINE
		SETBACK
S	S	SEWER PIPE
SL	SL	SEWER LATERAL
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
UGE	UGE	UNDERGROUND ELECTRIC
OHW	OHW	OVERHEAD ELECTRIC/WIRES
	UD	FOUNDATION DRAIN
		EDGE OF PAVEMENT (EP)
100	100	CONTOUR
97x3	98x6	SPOT ELEVATION
		UTILITY POLE
		WALL MOUNTED EXTERIOR LIGHTS
		TRANSFORMER ON CONCRETE PAD
		ELECTRIC HANDHOLD
		SHUT OFFS (WATER/GAS)
	GV	GATE VALVE
	HYD	HYDRANT
CB	CB	CATCH BASIN
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
T	TMH	TELEPHONE MANHOLE
14	14	PARKING SPACE COUNT
		PARKING METER
LSA		LANDSCAPED AREA
TBD	TBD	TO BE DETERMINED
CI	CI	CAST IRON PIPE
COP	COP	COPPER PIPE
DI	DI	DUCTILE IRON PIPE
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
AC	-	ASBESTOS CEMENT PIPE
VC	VC	VITRIFIED CLAY PIPE
EP	EP	EDGE OF PAVEMENT
EL	EL	ELEVATION
FF	FF	FINISHED FLOOR
INV	INV	INVERT
S =	S =	SLOPE FT/FT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL

INDEX OF SHEETS

EXISTING CONDITIONS / WORK AREA
PEDESTRIAN CONNECTIONS
LANDSCAPE PLAN-HAVEN COURT
LANDSCAPE PLAN-HIGH STREET
LANDSCAPE PLAN-LADD STREET
LANDSCAPE PLAN-PLANTING
LANDSCAPE DETAILS
LANDSCAPE PERSPECTIVES
PROPOSED UTILITIES-WORK AREA

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436-7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294-5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679-5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427-1530
ATTN: JIM TOW

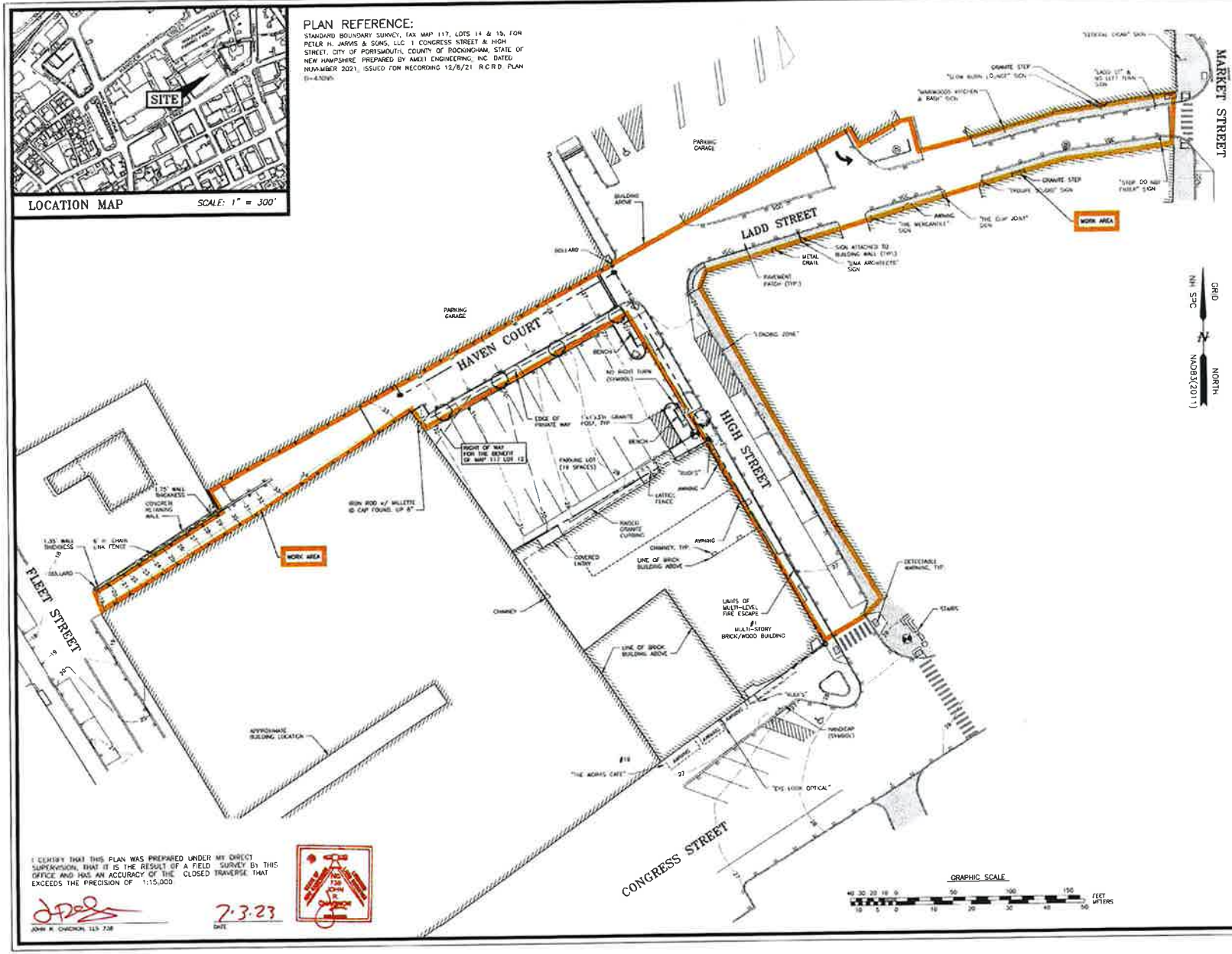
COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427-5525

CITY COUNCIL APPROVAL PLAN SET
IMPROVEMENT PLANS
HIGH STREET, LADD STREET & HAVEN COURT
PORTSMOUTH, N.H.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

PLAN SET SUBMITTAL DATE: 3 JULY 2023

5010156 | 3406



I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000

JOHN R. CHAGNON, LLS 738

7.3.23
DATE

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM

NOTES:
1) 1 CONGRESS DEVELOPMENT PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 14.

2) OWNER OF RECORD (MAP 117 LOT 14)
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE AREA OF WORK ASSOCIATED WITH THE IMPROVEMENT PLANS.

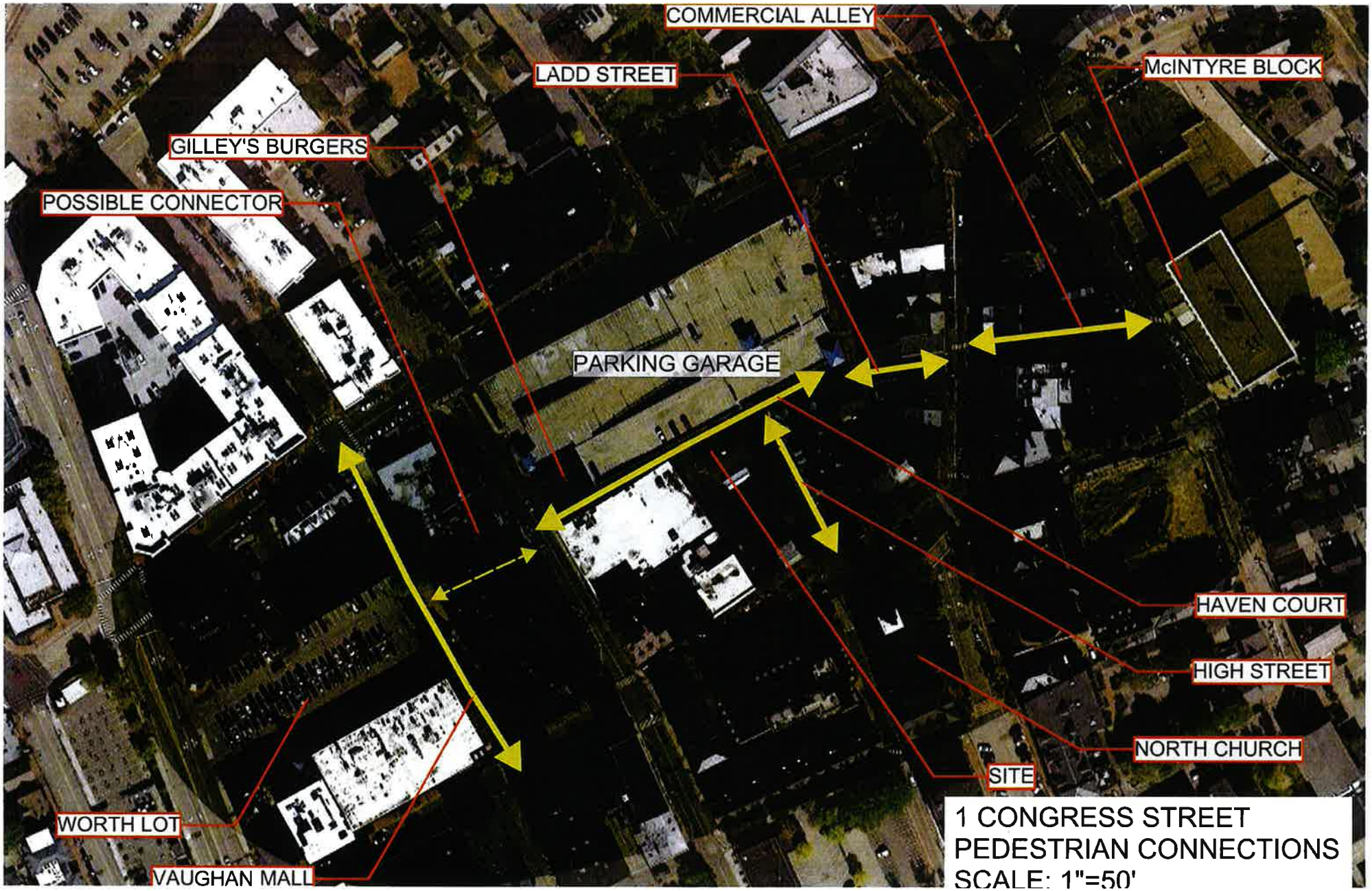
NO	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	7/3/23

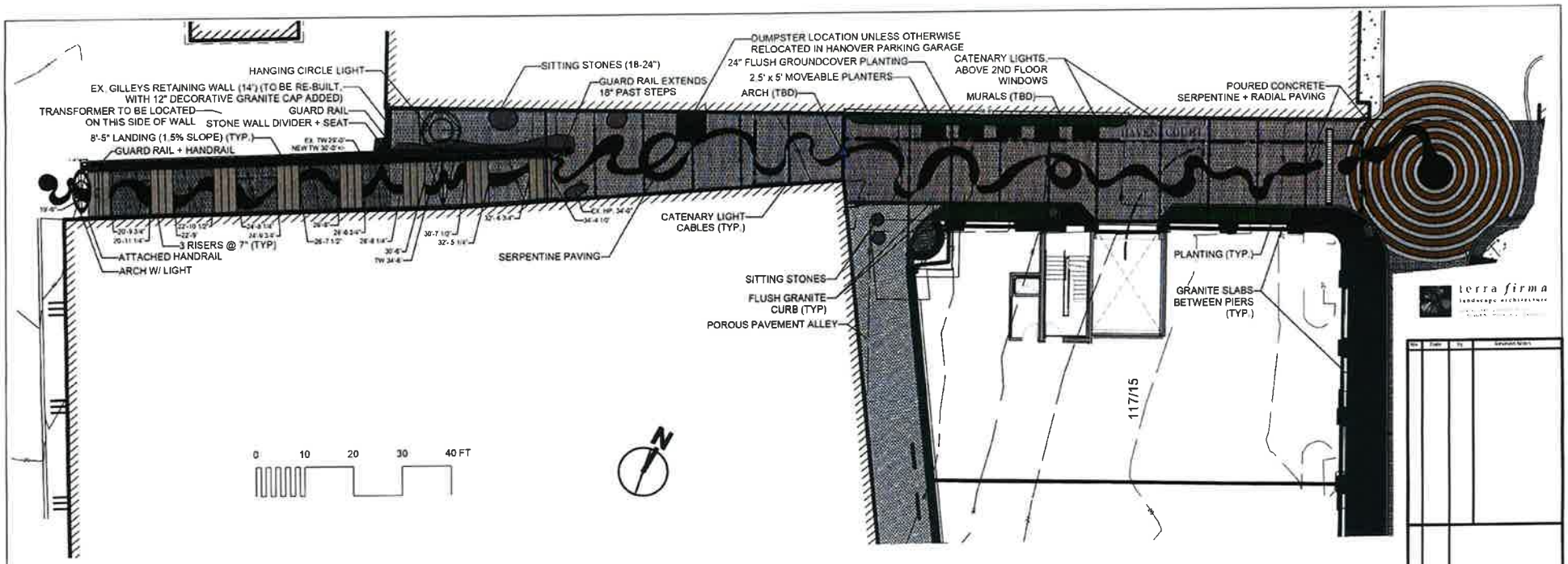
REVISIONS

EXISTING CONDITIONS WORK AREA

OWNER OF RECORD:
THE CITY OF PORTSMOUTH
HIGH STREET, LADD STREET & HAVEN COURT
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1" = 40'
JUNE 2023
FB 309 PG 15
5010158 3406


COMMERCIAL ALLEY
LADD STREET
McINTYRE BLOCK
GILLEY'S BURGERS
POSSIBLE CONNECTOR
PARKING GARAGE
HAVEN COURT
HIGH STREET
NORTH CHURCH
SITE
WORTH LOT
VAUGHAN MALL
1 CONGRESS STREET
PEDESTRIAN CONNECTIONS
SCALE: 1"=50'



LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTORS RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY. THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.

PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE

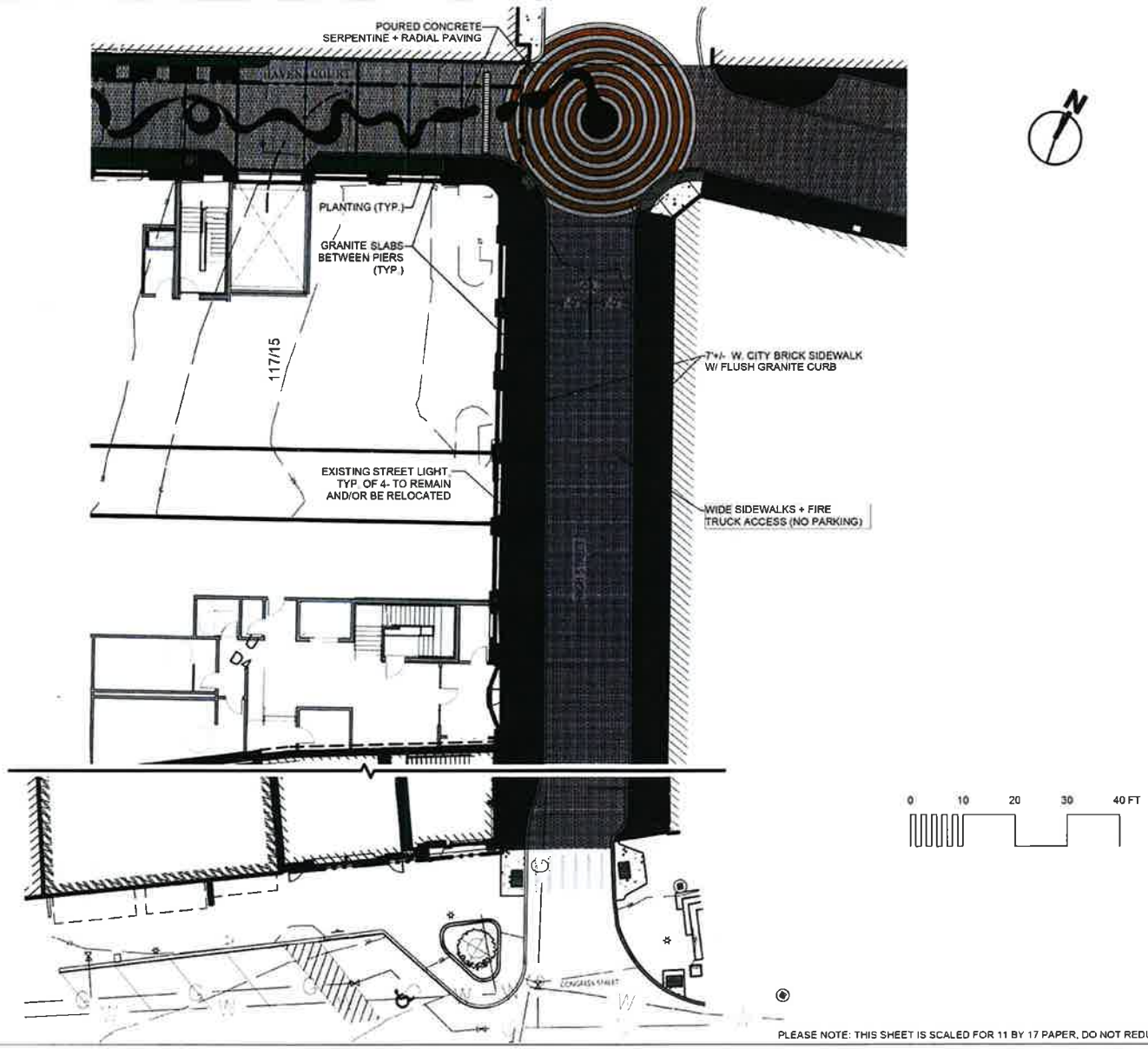
terra firma landscape architecture

terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE PLAN - HAVEN COURT

L-1A



PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER, DO NOT REDUCE OR ENLARGE.

terra firma landscape architecture

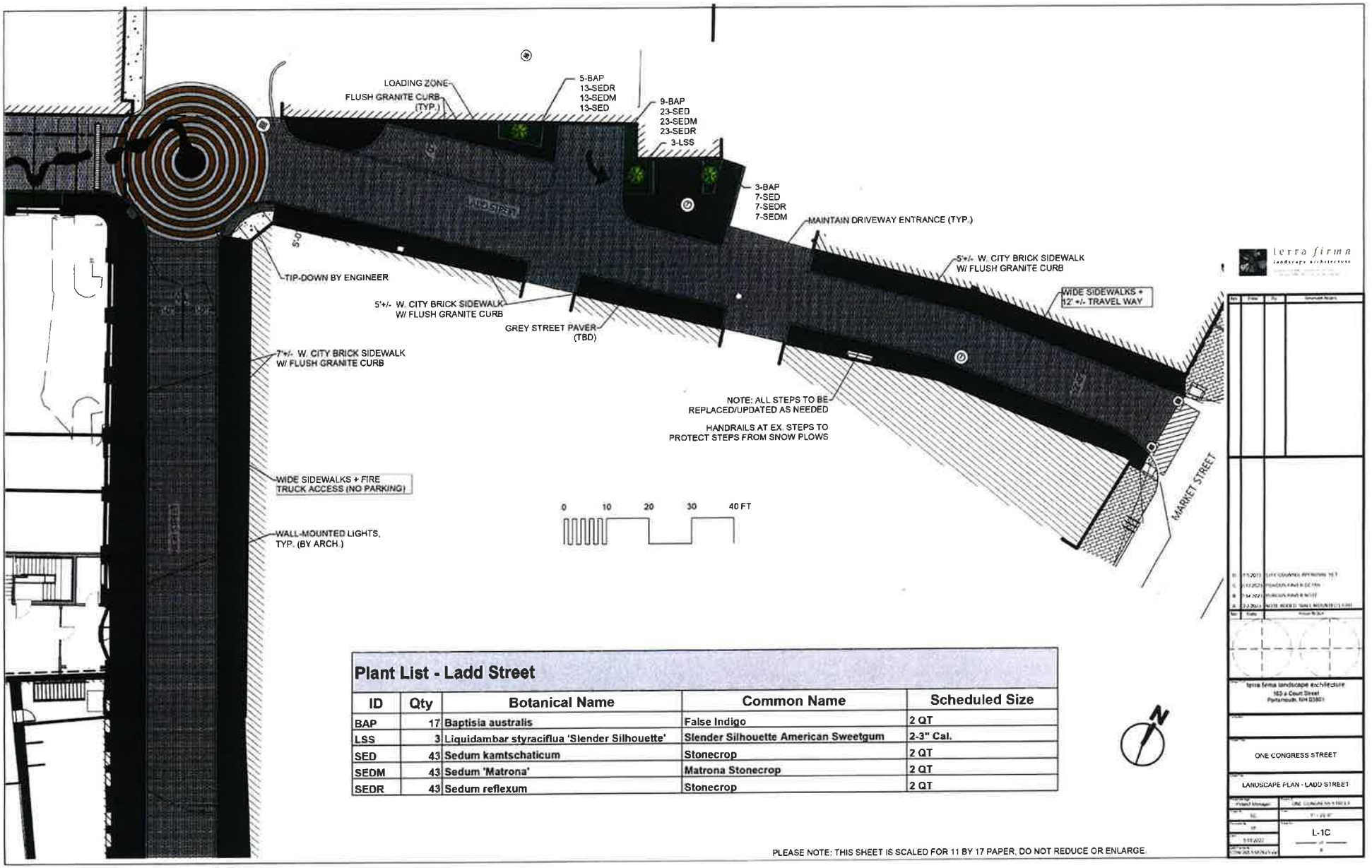
No.	Date	By	Revised Notes
D	[illegible]		CITY COUNCIL APPROVAL SET
C	[illegible]		POROUS PAVER DETAIL
B	[illegible]		POROUS PAVER NOTE
A	[illegible]		NOTE ADDED WALL MODIFIED LIGHT

terra firma landscape architecture
163 a Court Street
Portsmouth NH 03801

ONE CONGRESS STREET

LANDSCAPE PLAN - HIGH STREET

L-1B



Plant List - Ladd Street

ID	Qty	Botanical Name	Common Name	Scheduled Size
BAP	17	Baptisia australis	False Indigo	2 QT
LSS	3	Liquidambar styraciflua 'Slender Silhouette'	Slender Silhouette American Sweetgum	2-3" Cal.
SED	43	Sedum kamtschaticum	Stonecrop	2 QT
SEDM	43	Sedum 'Matrona'	Matrona Stonecrop	2 QT
SEDR	43	Sedum reflexum	Stonecrop	2 QT

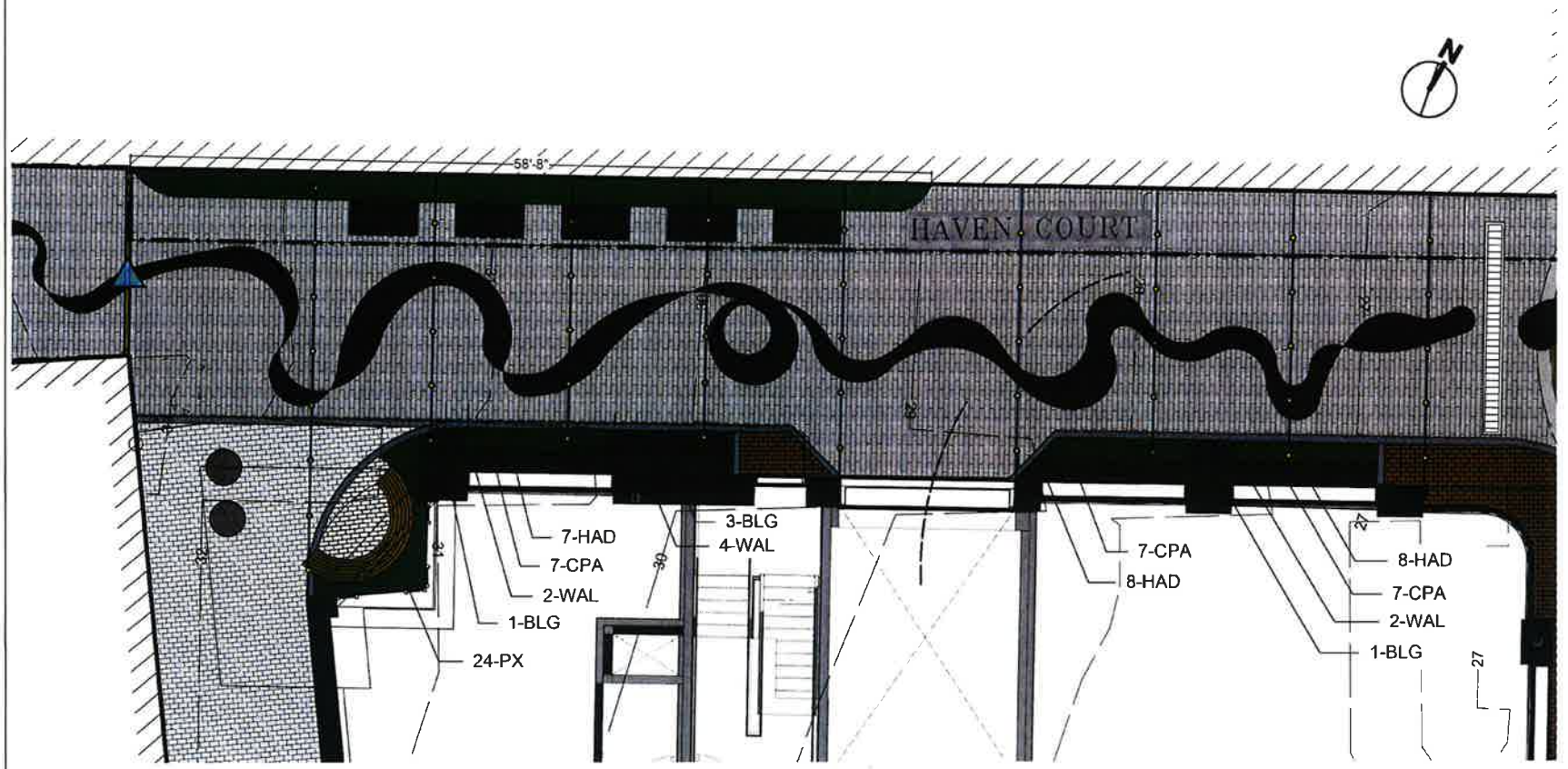
PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE.

terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE PLAN - LADD STREET

L-1C



Plant List

ID	Qty	Botanical Name	Common Name	Scheduled Size
BLG	5	Buxus m. 'Little Gem'	Little Gem Boxwood	3 Gal.
CPA	21	Carex appalachia	Appalachian Sedge	2 QT
HAD	23	Heuchera americana 'Dale'	Dale's Strain Coral Bells	2 QT
PX	24	Polystichum acrostichoides	Christmas Fern	2 QT
WAL	8	Waldsteinia ternata	Siberian Barren Strawberry	2 QT

0 4 8 12 16 FT

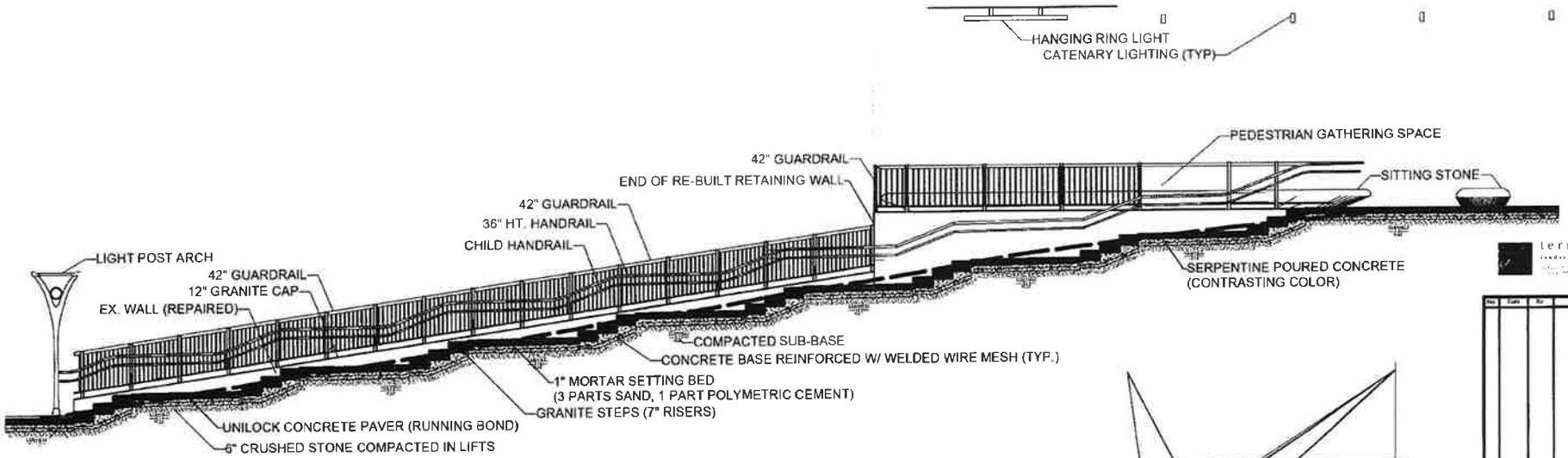
PLEASE NOTE THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE

terra forma landscape architecture
183 a Court Street
Portsmouth, NH 03801

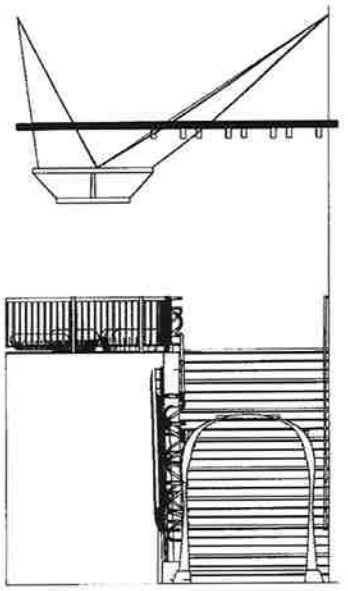
ONE CONGRESS STREET

LANDSCAPE PLAN - PLANTING

L-2



1 / L-3 HAVEN COURT STEP DETAIL
SCALE: 1/8"=1'-0"



2 / L-3 HAVEN COURT ARCH DETAIL
SCALE: 1/8"=1'-0"

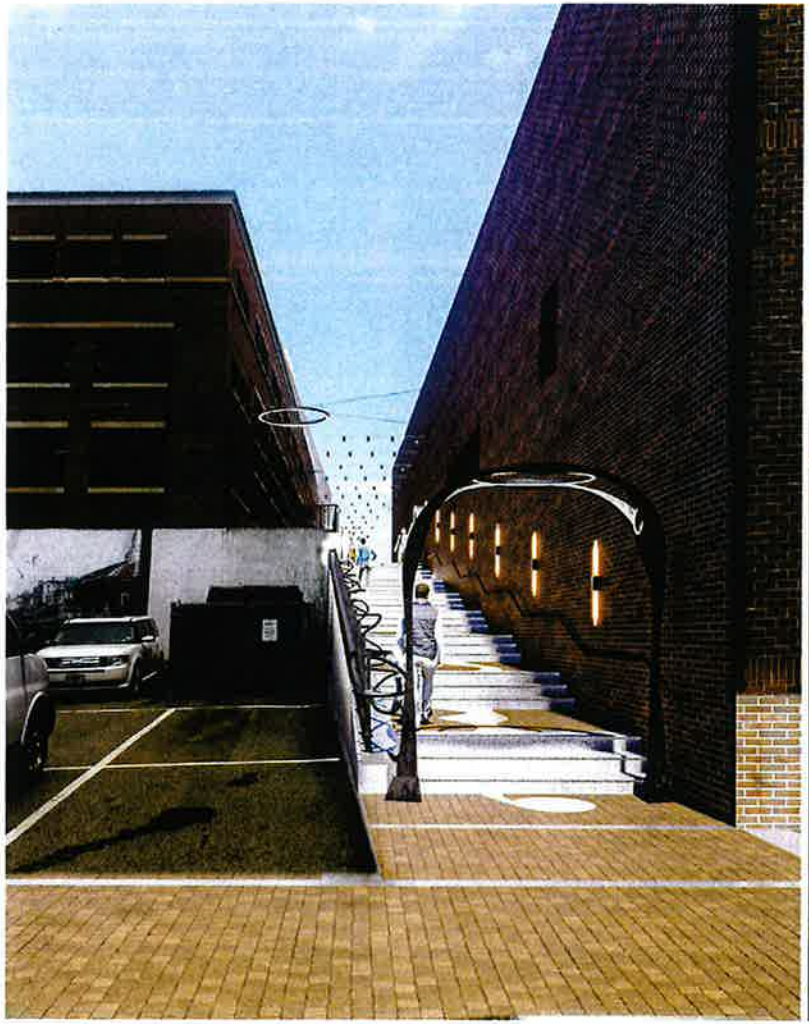
PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE.

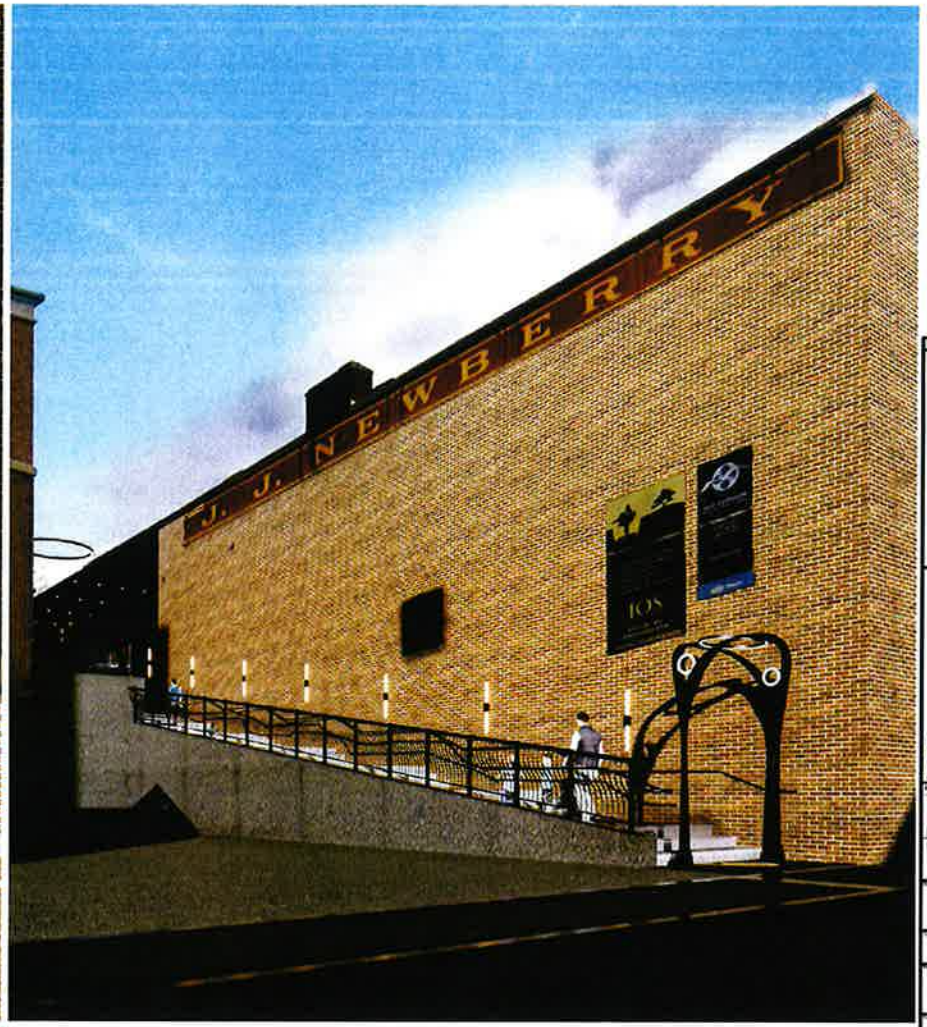
terra firma landscape architecture
163 # Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE DETAILS

L-3





1 STEPS FROM FLEET STREET
L-4 SCALE: NTS

PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE

terra firma
landscape architecture

No	Date	By	Notes
B	[illegible]	[illegible]	
C	[illegible]	[illegible]	
B	[illegible]	[illegible]	
A	[illegible]	[illegible]	

terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE PERSPECTIVES

L-4

1

L-5

STEPS FROM FLEET STREET
SCALE: NTS

PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER. DO NOT REDUCE OR ENLARGE

terra firma
landscape architecture

No.	Date	By	Document Notes
B	[illegible]	[illegible]	
C	[illegible]	[illegible]	
D	[illegible]	[illegible]	
A	[illegible]	[illegible]	

No.	Date	Issue Notes

terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE PERSPECTIVES

L-5

1
L-6

STONE SEATING NEAR FLEET STREET STEPS
SCALE: NTS

PLEASE NOTE: THIS SHEET IS SCALED FOR 11 BY 17 PAPER, DO NOT REDUCE OR ENLARGE

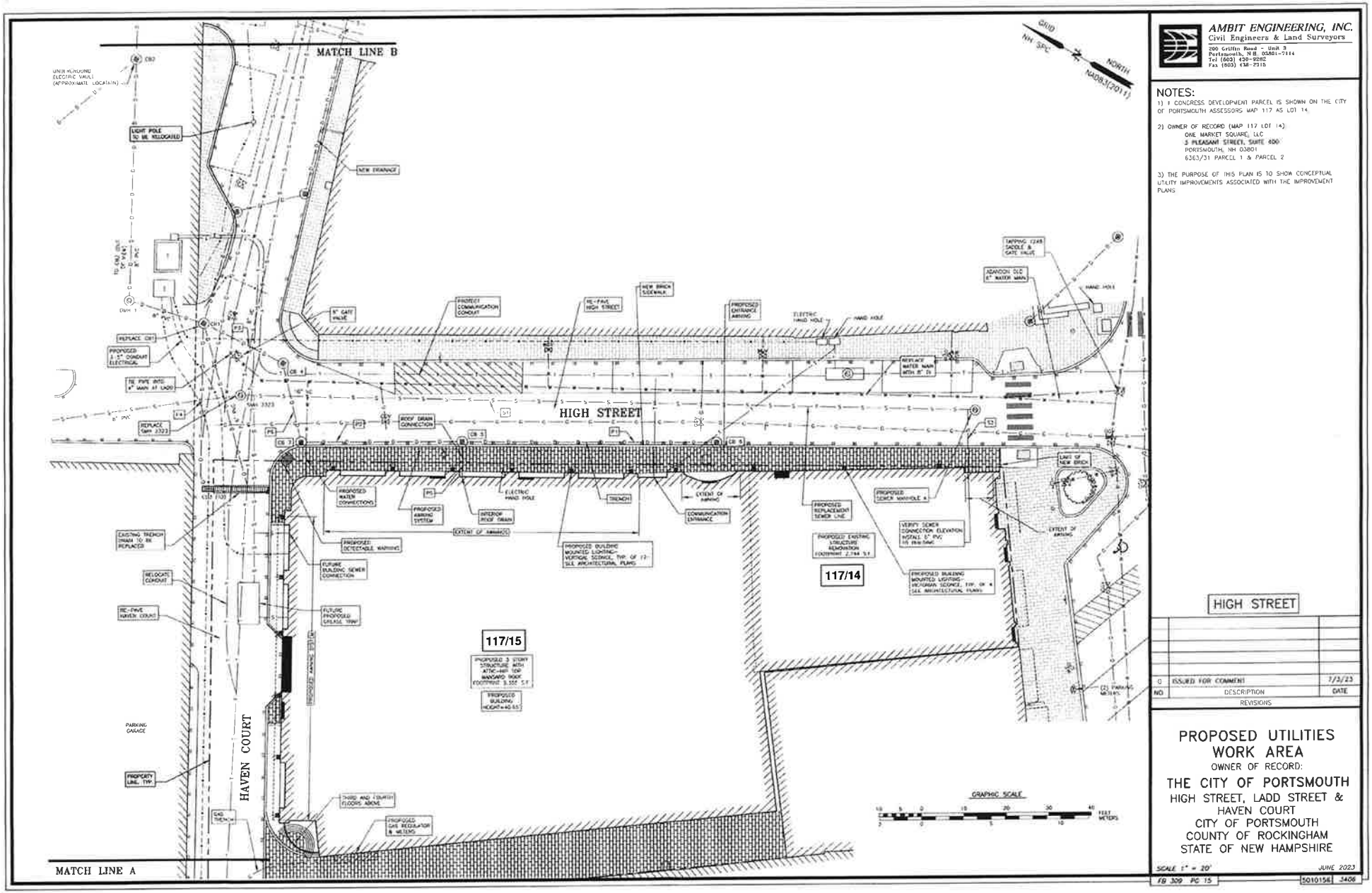
terra firma landscape architecture

terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

ONE CONGRESS STREET

LANDSCAPE PERSPECTIVES

L-6



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, NH 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONGRESS DEVELOPMENT PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 14.

2) OWNER OF RECORD (MAP 117 LOT 14)
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 600
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

3) THE PURPOSE OF THIS PLAN IS TO SHOW CONCEPTUAL UTILITY IMPROVEMENTS ASSOCIATED WITH THE IMPROVEMENT PLANS

HIGH STREET

NO	DESCRIPTION	DATE
	REVISIONS	
0	ISSUED FOR COMMENT	7/3/23

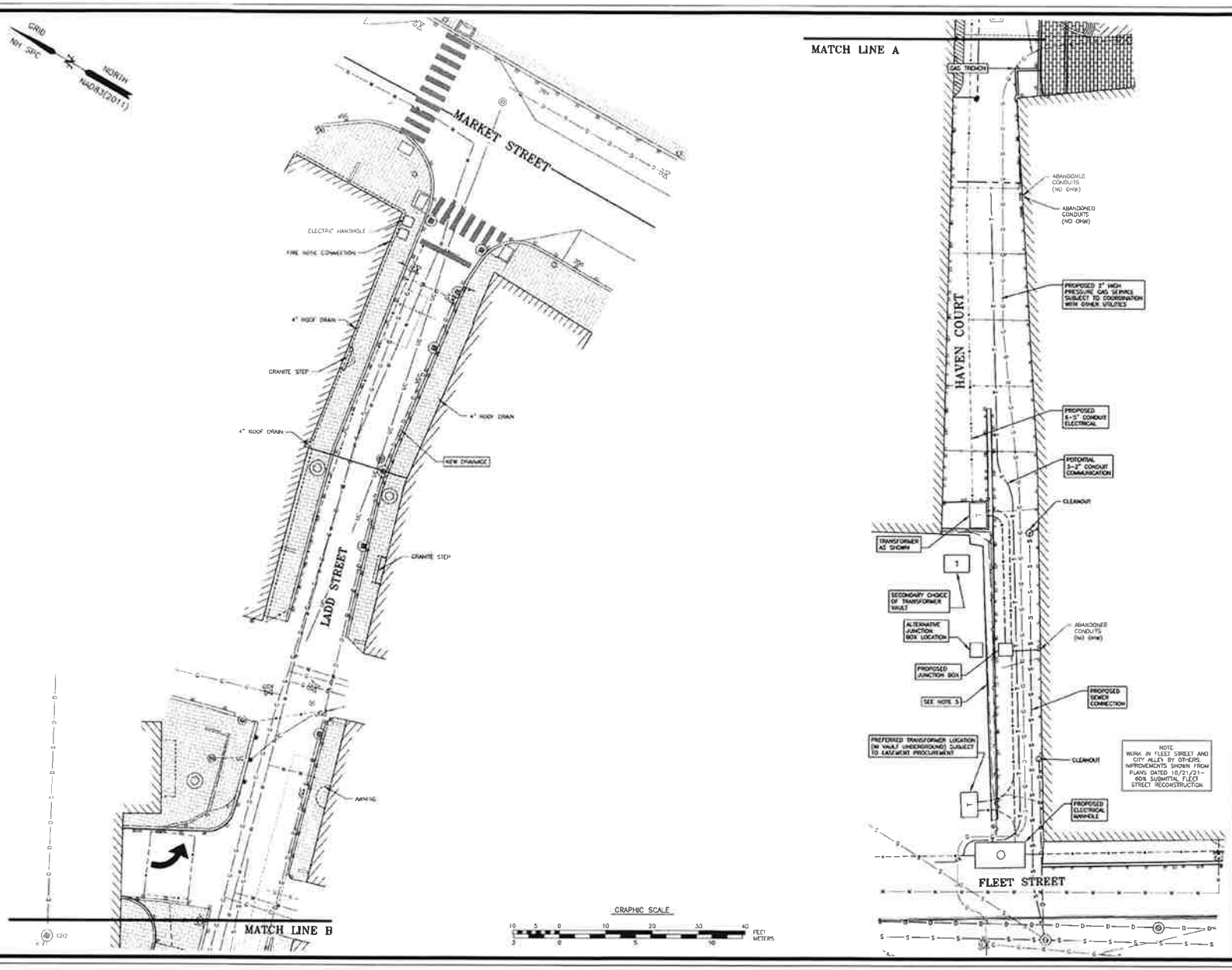
PROPOSED UTILITIES WORK AREA

OWNER OF RECORD:

THE CITY OF PORTSMOUTH
HIGH STREET, LADD STREET & HAVEN COURT
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1" = 20' JUNE 2023

FB 309 PG 15 5010156 3406



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7344
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) 1 CONGRESS DEVELOPMENT PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 14.

2) OWNER OF RECORD (MAP 117 LOT 14):
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

3) THE PURPOSE OF THIS PLAN IS TO SHOW CONCEPTUAL UTILITY IMPROVEMENTS ASSOCIATED WITH THE IMPROVEMENT PLANS.

4) WORK IN FLEET STREET AND CITY ALLEY BY OTHERS. IMPROVEMENTS SHOWN FROM PLANS DATED 10/21/21- 60% SUBMITTAL FLEET STREET RECONSTRUCTION

5) RETAINING WALL TO BE REBUILT IF NEEDED. COORDINATE WITH ABUTTING LANDOWNER

LADD STREET & HAVEN COURT

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	7/3/23

REVISIONS

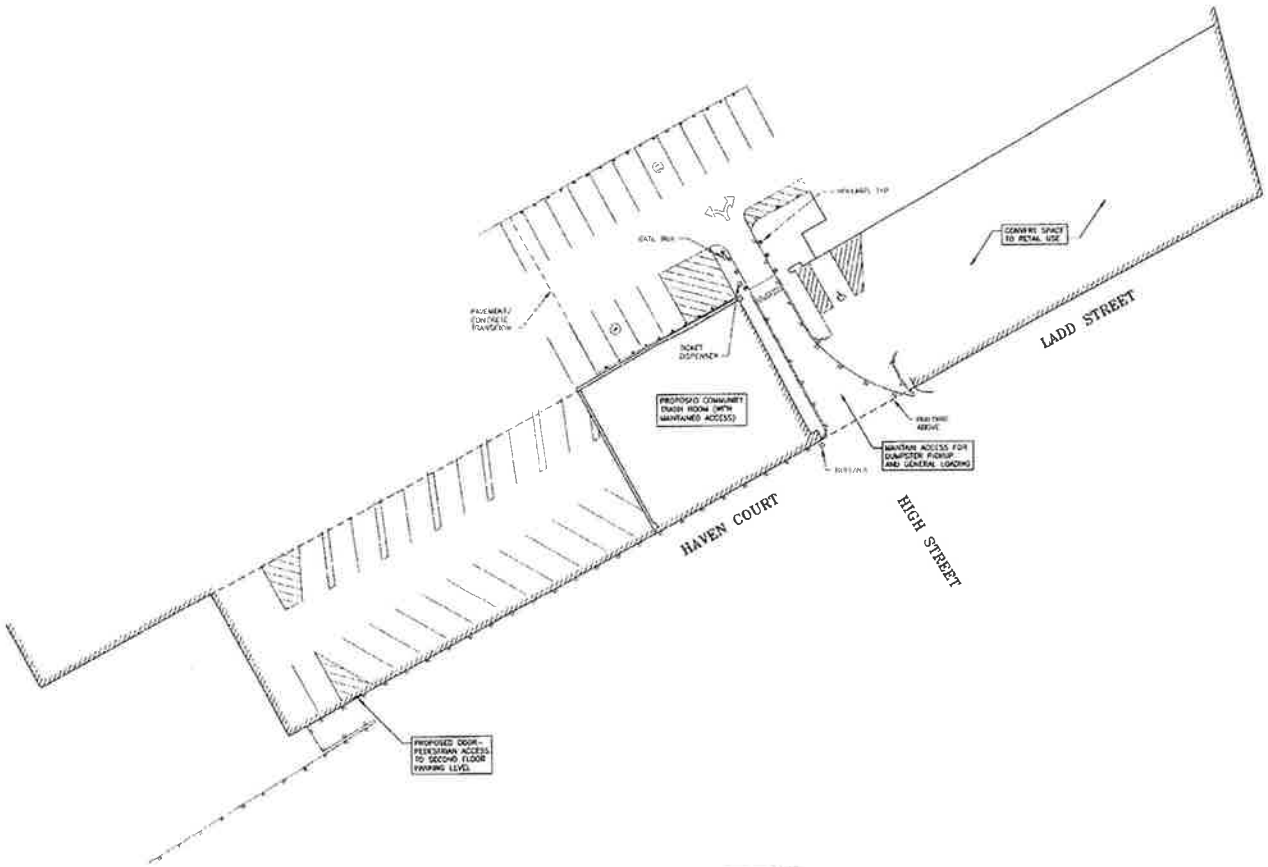
PROPOSED UTILITIES WORK AREA

THE CITY OF PORTSMOUTH

HIGH STREET, LADD STREET & HAVEN COURT
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1" = 20' JUNE 2023

FB 309 PG 15 5010156 3406



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	7/3/23

REVISIONS

PROPOSED CHANGES TO HIGH HANOVER PARKING GARAGE

THE CITY OF PORTSMOUTH
HIGH STREET, LADD STREET & HAVEN COURT
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE 1" = 40' | JUNE 2023

FB 309 PG 15 | 5010156 | 3408

2023.12.08 MOU City of Portsmouth High Ladd Haven Court

Final Audit Report 2023-12-13

Created:	2023-12-12
By:	Marie Bodi (marie@mcnabbgroup.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAZeCY6mXWFOzTGZ8QIP6abNR8GnZwv41q

"2023.12.08 MOU City of Portsmouth High Ladd Haven Court" History

Document created by Marie Bodi (marie@mcnabbgroup.com)
2023-12-12 - 8:21:09 PM GMT- IP address: 23.30.130.149

Document emailed to tmccourt@cityofportsmouth.com for signature
2023-12-12 - 8:23:42 PM GMT

Email viewed by tmccourt@cityofportsmouth.com
2023-12-12 - 8:25:56 PM GMT- IP address: 100.27.34.37

Signer tmccourt@cityofportsmouth.com entered name at signing as Trevor P. McCourt
2023-12-12 - 8:33:13 PM GMT- IP address: 69.168.4.66

Document e-signed by Trevor P. McCourt (tmccourt@cityofportsmouth.com)
Signature Date: 2023-12-12 - 8:33:15 PM GMT - Time Source: server- IP address: 69.168.4.66

Document emailed to kconard@cityofportsmouth.com for signature
2023-12-12 - 8:33:19 PM GMT

Email viewed by kconard@cityofportsmouth.com
2023-12-12 - 8:34:19 PM GMT- IP address: 3.234.144.171

Signer kconard@cityofportsmouth.com entered name at signing as Karen S. Conard
2023-12-12 - 8:34:56 PM GMT- IP address: 50.224.228.202

Document e-signed by Karen S. Conard (kconard@cityofportsmouth.com)
Signature Date: 2023-12-12 - 8:34:58 PM GMT - Time Source: server- IP address: 50.224.228.202

Document emailed to Mark McNabb (house@mcnabbgroup.com) for signature
2023-12-12 - 8:35:02 PM GMT

Adobe Acrobat Sign

Email viewed by Mark McNabb (house@mcnabbgroup.com)

2023-12-12 - 8:40:22 PM GMT- IP address: 172.225.237.132

Document e-signed by Mark McNabb (house@mcnabbgroup.com)

Signature Date: 2023-12-13 - 11:01:19 AM GMT - Time Source: server- IP address: 71.235.10.14

Agreement completed.

2023-12-13 - 11:01:19 AM GMT

Adobe Acrobat Sign

November 18, 2024

NEX-2400328.00

Mr. Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

SUBJECT: Application for Parking Conditional Use Permit (CUP) Approval
Tax Map 117, Lots 12 – 15, #1 & 15 Congress Street

Dear Mr. Chellman and Planning Board members:

On behalf of One Market Square, LLC, Greenman-Pedersen Inc. (GPI) hereby applies for a Parking Conditional Use Permit (CUP) for the redevelopment of the site at #1 & #15 Congress Street. The existing mixed-used use buildings are proposed for redevelopment to provide a total of ±8,430 square feet (SF) of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units. As the site is located within the City's Downtown Overlay District, parking for the proposed office, restaurant, and retail spaces is anticipated to occur within on-street parking spaces and in area public parking garages and lots. Parking for the proposed residential units will be provided in a basement-level parking garage to contain a total of 21 vehicle parking spaces and 36 bicycle parking spaces.

The Applicant has made best efforts to renovate and retrofit the existing buildings on the site. As such, the number of on-site parking spaces that can be provided within the below-ground parking garage is limited by the size of the existing surface lot on Parcel 14 and foundations for the existing buildings on site. The Applicant has maximized the number of vehicle parking spaces to be provided within the underground lot with the introduction of a vehicle elevator. Areas of the underground garage that cannot accommodate vehicle turning maneuvers are proposed for bicycle parking to offset the deficit in vehicle parking spaces within the garage. The site is located in a dense multi-use urban area with immediate access to numerous multi-modal travel opportunities, including walking, biking, and public transit services. In addition, the site is located in close proximity to other land uses for employment, shopping, and entertainment for residents of the proposed apartments, reducing the need to own a vehicle. The provision of 36 bicycle parking spaces within secured, weather-protected parking areas will further reduce the need for residents to own vehicles.

The City's zoning ordinance requires a total of 53 parking spaces on the site to accommodate the proposed 40 residential units, resulting in a deficit of 32 parking spaces. Since 21 vehicle parking spaces are being provided on the site, this request is to provide twenty-one (21) parking spaces where fifty-three (53) are required. A detailed parking demand assessment was performed as part of the *Traffic Impact Assessment* (TIA)[1] that is attached to this letter for reference.

We submit that the application conforms to the Portsmouth Ordinance Sections, repeated below with comments in **bold** text, as follows:

> Section 10.1112.141: An application for a conditional use permit under this section shall include a parking demand analysis demonstrating that the proposed number of off-street parking spaces is sufficient for the proposed use. **The parking demand assessment contained in the attached *Traffic Impact Assessment* indicates that the proposed residential units are anticipated to generate a peak parking demand of 28 parking spaces based on Institute of Transportation Engineers (ITE) parking demand generation rates for similar uses in dense multi-use urban settings. The provision of 36 bicycle parking spaces is anticipated to decrease the vehicle parking demand to 22 parking spaces, resulting in deficit of**

[1] *Traffic Impact Assessment, #1 & 15 Congress Street – Portsmouth, New Hampshire*; prepared by Greenman-Pedersen, Inc.; dated November 18, 2024.

only one parking space on-site for the proposed residential uses. This additional vehicle can easily be accommodated within one of the seven (7) public parking lots and garages that are located within 2,000 feet (10-minute walk) of the site.

Section 10.1112.142: An application for a conditional use permit under this section shall identify permanent evidence-based measures to reduce parking demand, including but not limited to provision of rideshare/micro transit services or bike share station(s) servicing the property, proximity to public transit, car/van-pool incentives, alternative transit subsidies, provisions for teleworking, and shared parking on a separate lot subject to the requirements of 10.1112.62. **The location of the proposed residential units is within a dense urban core and in close proximity to numerous opportunities for employment, shopping, and entertainment within walking distance. In addition, the site is located approximately 200 feet from the Hanover Station where bus transportation is provided along seven (7) bus routes by COAST (Cooperative Alliance for Seacoast Transportation). A stop is also provided on Congress Street at Market Square, less than 100 feet from the building entrance, for COAST Bus Routes 4, 40, and 41. The Applicant will provide 36 bicycle parking spaces within the on-site underground parking garage for secure, weather-protected bicycle parking for residents to further promote alternative travel.**

Section 10.1112.143: The Planning Board may grant a conditional use permit only if it finds that the number of off-street parking spaces required or allowed by the permit will be adequate and appropriate for the proposed use of the property. In making this determination, the Board may accept, modify or reject the findings of the applicant's parking demand analysis. **The parking analysis provided in the *Traffic Impact Assessment* indicates that the proposed development will generate a peak parking demand of 28 parking spaces based on ITE parking demand generation rates. The provision of 36 bicycle parking spaces may reduce this parking demand by up to six spaces, resulting in a peak parking demand of 22 vehicle parking spaces. The proposed on-site parking garage will provide 21 vehicle parking spaces, resulting in a deficit of only one parking space based on ITE data. This additional vehicle can be accommodated within the adjacent Hanover Garage or within one of the other six public parking facilities located within 2,000 feet (10-minute walk) of the site. Further, the Applicant plans to market the proposed residential units to residents desiring a downtown location, close to amenities and public transit services. As such, many of the residents may not own vehicles, thus further reducing the anticipated parking demand.**

Section 10.1112.144: At its discretion, the Planning Board may require more off-street parking spaces than the minimum number requested by the applicant or may allow fewer spaces than the maximum number requested by the applicant. **The application requests approval as presented; the maximum available given the existing site configuration.**

Sincerely,

GREENMAN-PEDERSEN, INC.

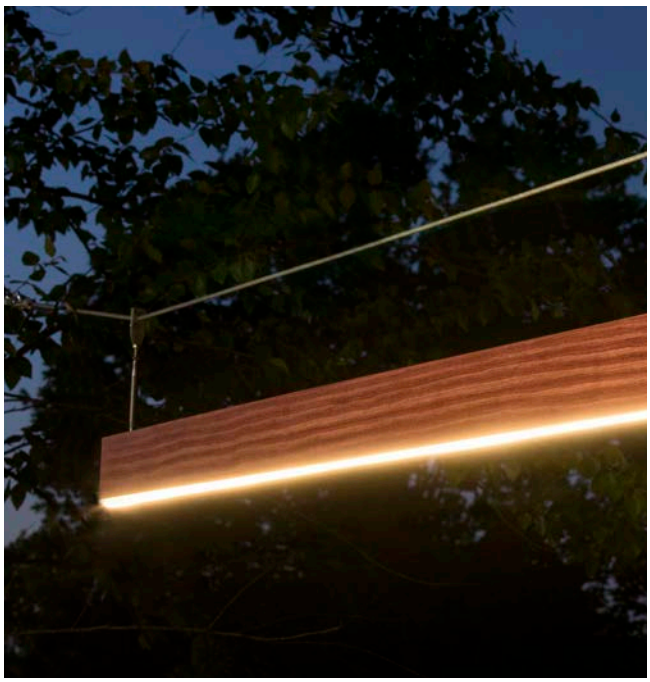
Rebecca L. Brown, P.E.
Senior Project Manager
116 South River Road, Building B, Suite 1, Bedford, NH 03110

Enclosure(s)

cc: Mark McNabb, McNabb Properties
Tracy Kozak, Arcove Architects
John Chagnon, Ambit Engineering

structura

CATENARY DESIGN GUIDE



WHAT WE PROVIDE

Luminaires with Cable Mounting, Adjustment and Power Supplies

Dimmable IP67 power supply and a standard 40’ lead wire provided with the Structura fixture. Stainless steel clamp, rod and turnbuckles with ±1.5” adjustability provided for fixture mounting and leveling.

Poles with Cable Eyes

Pad eye for cable mounting welded to designated catenary pole. Poles must be oriented so that pad eye is in line with the cable.

Cable Assemblies

1 x 19 stainless steel cable with turnbuckles on each end. Cable size determined from layout design. Cables provide ±5” of adjustability. Lengths must be verified prior to final engineering/release.

Stamped Drawings

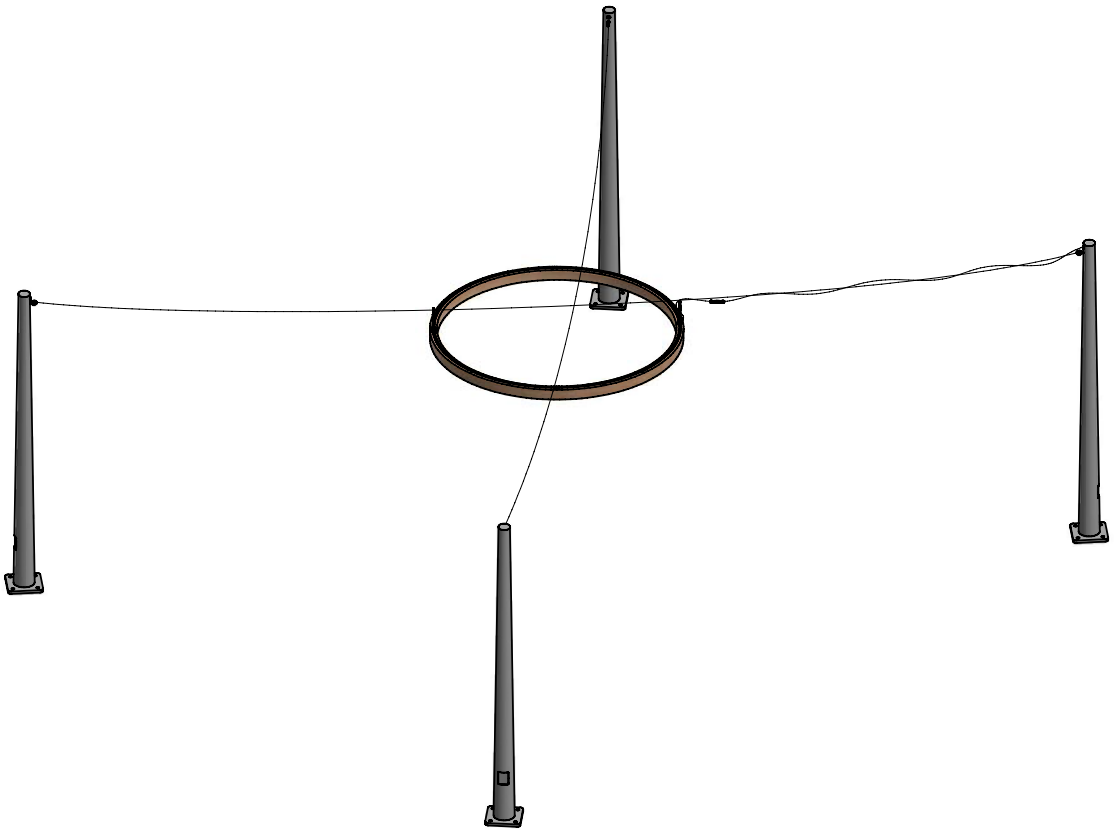
Stamped drawings will extend lead time, have additional costs, and may not have licensing in all states. Base and cable reaction forces will be provided with stamped drawings.

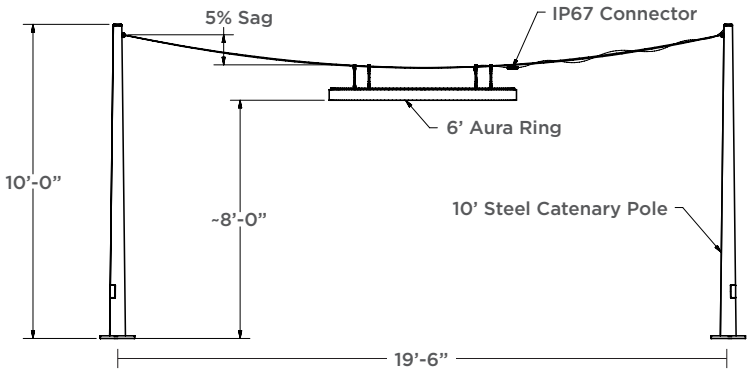
What We Don’t Provide

- Structural design and engineering of building attachment or pole foundation
- Installation
- Building cable attachment detail

AURA RING

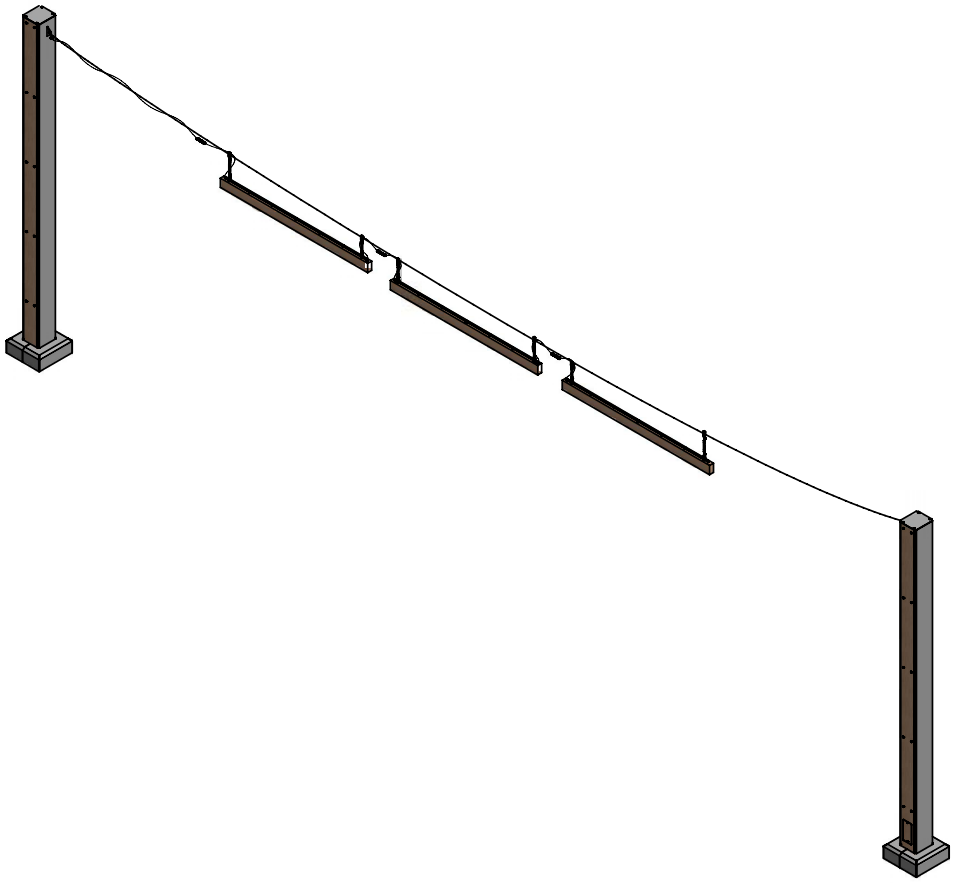
Solid wood exterior/interior round LED pendants

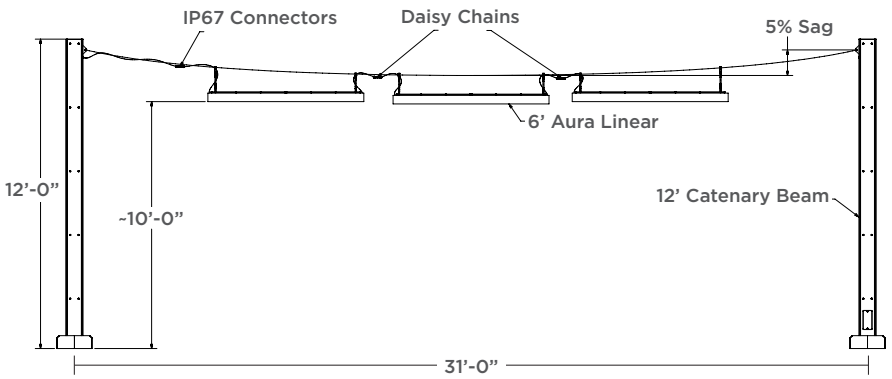




AURA LINEAR

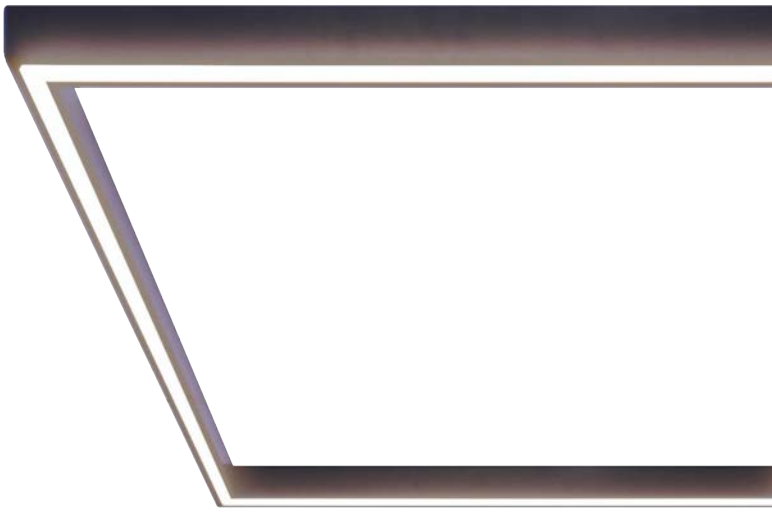
Solid wood exterior/interior linear LED pendants

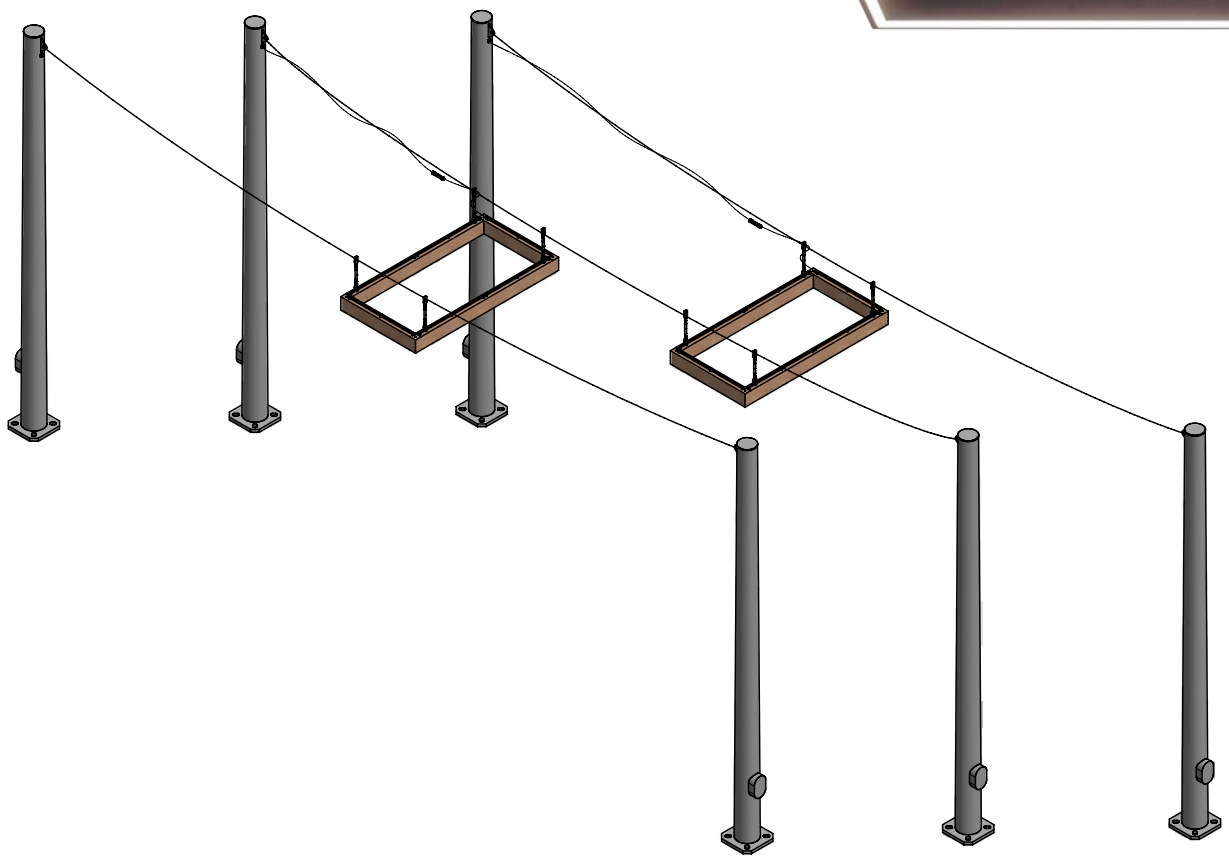


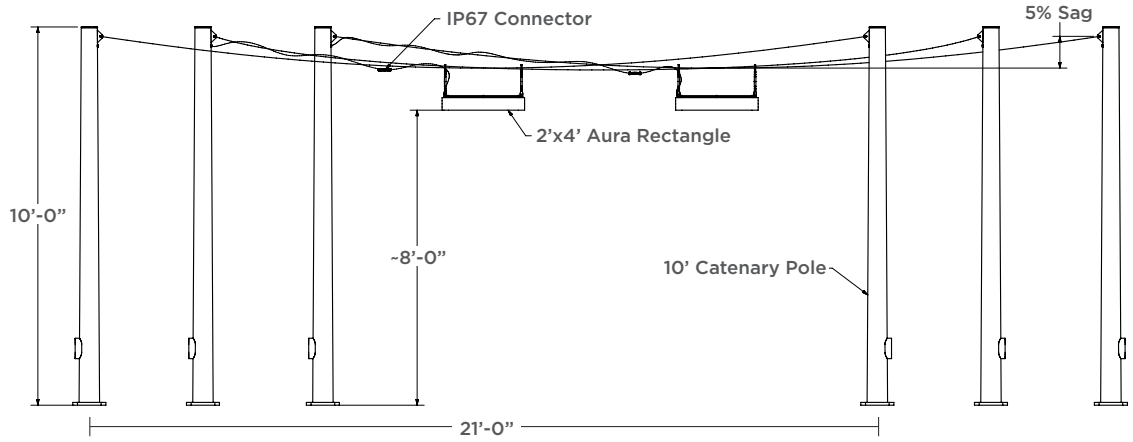


SQUARE/RECTANGLE SYSTEM

Solid wood exterior/interior square/rectangle LED pendants

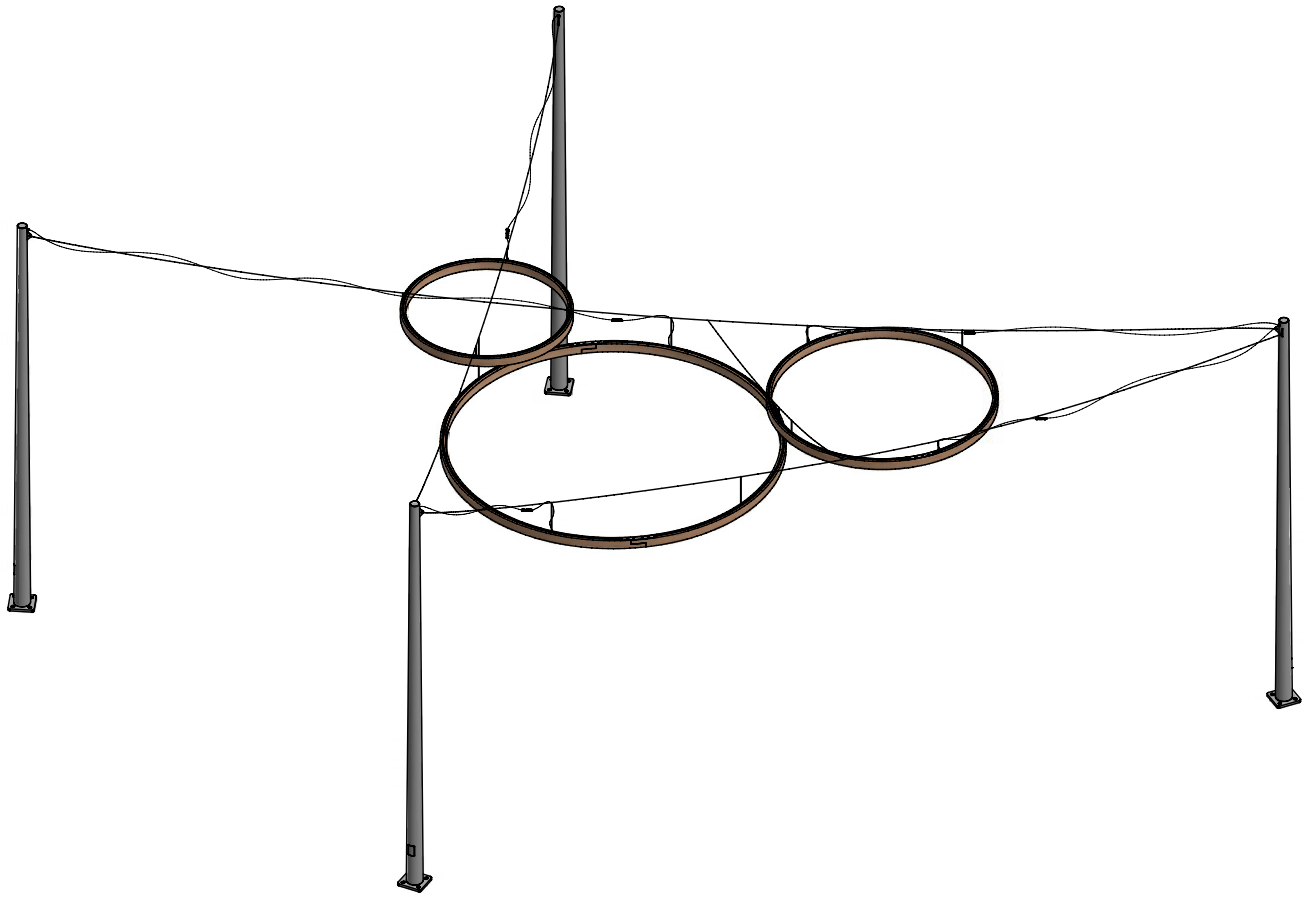


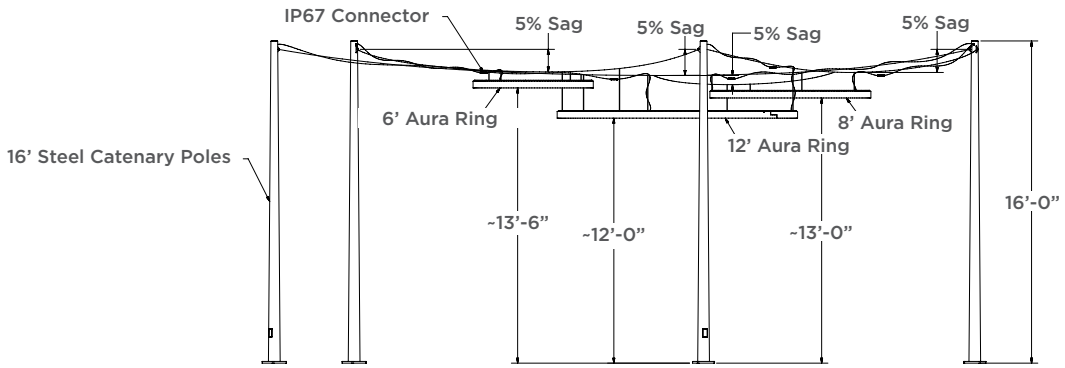




COMPLEX SYSTEM

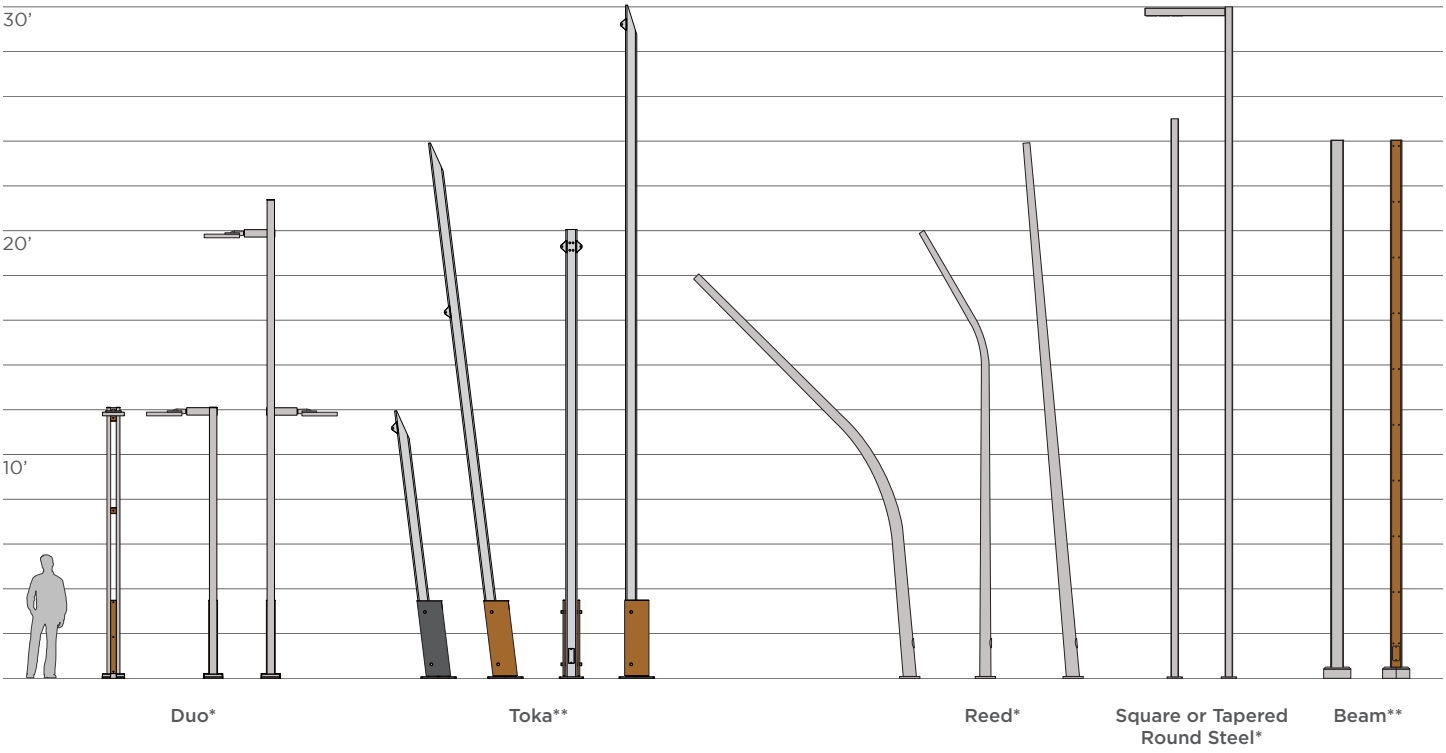
Solid wood exterior/interior LED
pendant multiples





POLE SELECTION GUIDELINES

Choosing the pole to use in your design is dependent upon the tension load of the luminaire selected, length of span, and other environmental considerations. Use the chart below as a guide to help determine which pole can be used for your design.



*Additional height options are available. | **Has a strong and weak orientation; additional height options are available.

	Duo	Toka	Reed	Square Steel	Tapered Round Steel	Beam
Minimal string lighting < 20’ span with min. 12” sag	✓	✓	✓	✓	✓	✓
String lighting > 20’ span with min. 12” sag		✓	✓	✓	✓	✓
Catenary Luminaires < 20’ span and < 20 lb. luminaire weight		✓	✓	✓	✓	✓
Catenary Luminaires < 40’ span and < 80 lb. luminaire weight		✓	✓		✓	✓
Catenary Luminaires > 40’ span or > 80 lb. luminaire weight					✓	

Site layout and location will play the biggest role in determining what poles will be available for each design.

CATENARY FAQS

Is geographic location important when designing a catenary system?

Geographic location is critical when designing your project. Not only wind zones, but ice loading elevation and many other factors can dramatically change the cabling and poles required.

Can wood poles be used on catenary projects?

Wood-look poles will only work with minimal string light. If a wood look is desired, Beam may be a better alternative.

How much cable sag can be expected between connections?

As a rule of thumb, plan on a sag of 5% of the cable span for each cable length as the sag in a section. For example if you had a 20' cable span the sag would be 12".

What is the typical process to get budget estimates on projects?

Once Structura has obtained the required information, it will take one to two weeks (depending on the complexity of the design) for preliminary engineering. At this time, a budget estimate, layout drawings and BOM will be provided.

Can Structura provide stamped drawings if required?

Structura can provide stamped drawings for a fee. It is important to identify this at the budget stage so the cost can be included at the beginning of the project. Stamped drawings may extend the lead time for approval drawings.

What is the difference between preliminary and final engineering?

During the quoting phase, preliminary engineering will be done to estimate the size of the poles and cables. Final engineering will begin at the time of order or after an engineering fee has been paid. Poles and cable sizing are subject to change until final engineering is completed.

What are the mounting point requirements?

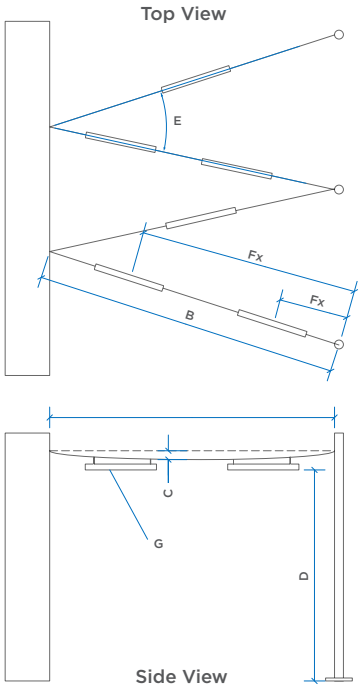
Rings 6' or smaller require four mounting points and rings 8' or greater must have six mounting points. Linears up to 6' must have two mounting points and linears 8' or greater require three mounting points. If mounting points are limited, please consult with the factory.

DESIGN INFORMATION

When designing catenary systems, each site has unique information that needs to be provided to ensure the proper sizing of the system components. The below information needs to be supplied before we can begin preliminary engineering or the quoting process.

Critical Information

- All span lengths (B)
- Cable sag (if greater than 5%) (C)
- Minimum fixture height (D)
- Cable angles (E)
- Luminaire center location from the pole (Fx)
- Spec of Structura luminaires (size/shape) (G)
- Geographic location of installation for wind and ice loading
- Any additional loading (fixtures, elevation, etc).
- AutoCAD file is preferred
- Elevation (if above ground level)
- Weight/foot of string lights



After all of the critical information is obtained by Structura:

1-2 Weeks:

- Preliminary Engineering – Approximate sizing for poles and cables without full analysis.
- Layout Drawings – Visual representation of Structura's interpretation of the critical information.
- Bill of Materials – List of what will and will not be provided by Structura.
- Budget Quote – Pricing for everything Structura will provide in the BOM as well as the Engineering Fee.

After Engineering Fee is paid or Purchase Order placed:

3-4 Weeks:

- Final Engineering – Post-analysis sizing for cables and poles. Includes reaction forces. PRICING AND SIZING ARE SUBJECT TO CHANGE UNTIL FINAL ENGINEERING IS COMPLETED!
- Final Quote – Pricing for everything Structura will provide based on Final Engineering.
- Approval Drawings – Layout, pole, and/or luminaire drawings that must be approved and reviewed prior to release.

After Approval Drawings are returned and deposit (50% of order) is received:

< 1 Week:

- Production – Structura can begin production for all ordered materials.
- Cables – 2-4 Weeks
- Luminaires – 8-10 Weeks
- Poles – 10+ Weeks (Depends on size, quantity, shop capacity, etc.)

1-15 Congress Street

Site Plan Review 11-18-2024

Green Building Statement

WATER

- Protect water quality – Eliminate surface parking lot.
- Conserve Water -- Target 30% reduction in fixtures water use over building code, meeting EPACT 2005.

ENERGY

- Conserve Energy – Basis of Design to Target 50% Energy Use Index (EUI = 32) reduction over code compliance (IECC 2018) in combined attached existing and new buildings. Use early energy modeling to analyze effective scenarios. Provide high performance thermal envelope. Achieve Energy Star certification and associated rebates. Use Heat Recovery for ventilation.
  Commission energy using systems. LED lighting throughout. See attached engineering report and preliminary energy model summary for additional details.
- Renewable Energy – Rooftop Solar Photovoltaic system for portion of building's energy needs.
- Building Performance -- Use industry tools to annually monitor and benchmark buildings. Train staff on proper building operation with comprehensive Facilities Staff Training and Systems Manuals.
- Reduce Low level ozone (smog) -- Provide safe and secure bicycle storage. Use only low-VOC products for construction and operation.

MATERIALS & RESOURCES

- Minimize waste (during construction and operation)
- Use regional, renewable, low carbon footprint materials

INDOOR ENVIRONMENTAL QUALITY

- Thermal comfort -- Meet ASHRAE 55 Thermal Comfort Code. Address thermal envelope per above. Provide multiple zones of heating and cooling in each apartment.
- Indoor air quality (before and during occupancy) -- MEET ASHRAE 62 Ventilation Code in all occupied spaces. MEET LEED IEQ credit requirements.
- Views / connection to outdoors -- Provide views to outdoors for every regularly occupied space.
- Daylighting -- Achieve Daylight Factor of 2% minimum for every regularly occupied space.
- Individual controls (light, heat etc…) -- Provide individual controls for temperature and lighting.

IMPERVIOUS SURFACE AREAS 117/12
(TO PROPERTY LINE)

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	22,560	22,622
CONCRETE	1,067	1,086
BRICK SIDEWALK	81	0
TOTAL	23708	23708
LOT SIZE	23,708	23,708
% LOT COVERAGE	100.0%	100.0%

IMPERVIOUS SURFACE AREAS 117/14
(TO PROPERTY LINE)

STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	7,371	13,133
CONCRETE	158	2,237
BRICK SIDEWALK	335	255
PAVEMENT	9530	0
CURB	138	258
TOTAL	17532	15883
LOT SIZE	18,225	18,225
% LOT COVERAGE	96.2%	87.1%

TECHNICAL MEMORANDUM

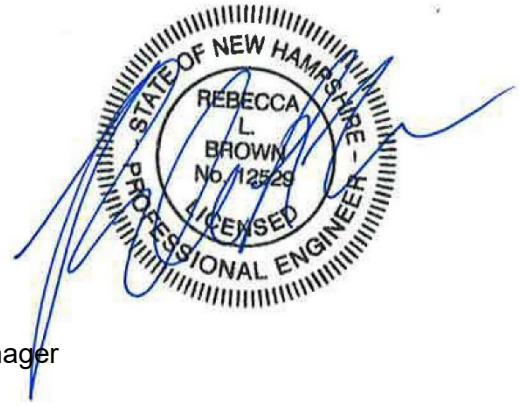
REF: NEX-2200015.00

DATE: November 18, 2024

TO: Mr. Mark A. McNabb
McNabb Properties
3 Pleasant Street, Suite 400
Portsmouth, New Hampshire 03801

FROM: Ms. Rebecca L. Brown, P.E., Senior Project Manager

RE: Traffic Impact Assessment
#1 & 15 Congress Street – Portsmouth, New Hampshire



INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this *Traffic Impact Assessment* (TIA) for a proposed mixed-use redevelopment located at #1 & 15 Congress Street in Portsmouth, New Hampshire. The site is comprised of two lots on Tax Map 117, Parcels 12 - 15. Parcels 12 and 13 (#15 Congress Street) currently contain a mixed-use building with approximately 11,630 square feet (SF) of restaurant space and 3,430 SF of retail space on the first floor and basement levels, and 35,290 SF of office space and two residential apartment unit on the upper levels. Parcel 14 currently contains a 4-story mixed-use building with retail and restaurant space on the first floor and office and apartment space on the upper floors. Parcel 15 contains a private parking locate. Parcels 14 and 15 (#1 Congress Street) were previously approved for a redevelopment project consisting of renovating a portion of the existing building on Parcel 14 and constructing a 4-story addition to encompass the remainder of Parcels 14 and 15, and constructing basement-level parking. Access to the parking lot was proposed to be provided via a driveway on Haven Court to a vehicle elevator for access to the basement level. Upon completion, the Project was proposed to provide ±8,025 SF of retail space on the first floor, ±8,312 SF of office space on the second floor and a total of 18 residential units on the upper floors. The project has since been modified to include the redevelopment of both #1 and #15 Congress Street. As part of the Project, the space within the building at #15 Congress Street will be converted to approximately ±12,785 SF of retail space, ±8,665 SF of restaurant space and 22 residential apartment units. The redevelopment of #1 Congress Street has also been modified to include extending a portion of the building to connect to the existing JJ Newberry building at #15 Congress Street. Upon completion, #1 Congress Street will provide ±8,430 SF of office space, ±475 SF of restaurant space, ±11,535 SF of retail space, and 18 residential apartment units. Access to the underground parking lot will still be provided via a driveway on Haven Court, which will be extended to Fleet Street and converted to a pedestrian walkway.

This TIA provides a preliminary assessment of the potential vehicular traffic and parking demand to be generated by the proposed redevelopment, and a review of the safety of the roadways providing access/egress for the redevelopment.

The site is bounded by Haven Court to the north, Congress Street to the south, High Street to the east, and Fleet Street to the west. The site location in relation to the surrounding roadways is shown on the map on Figure 1.

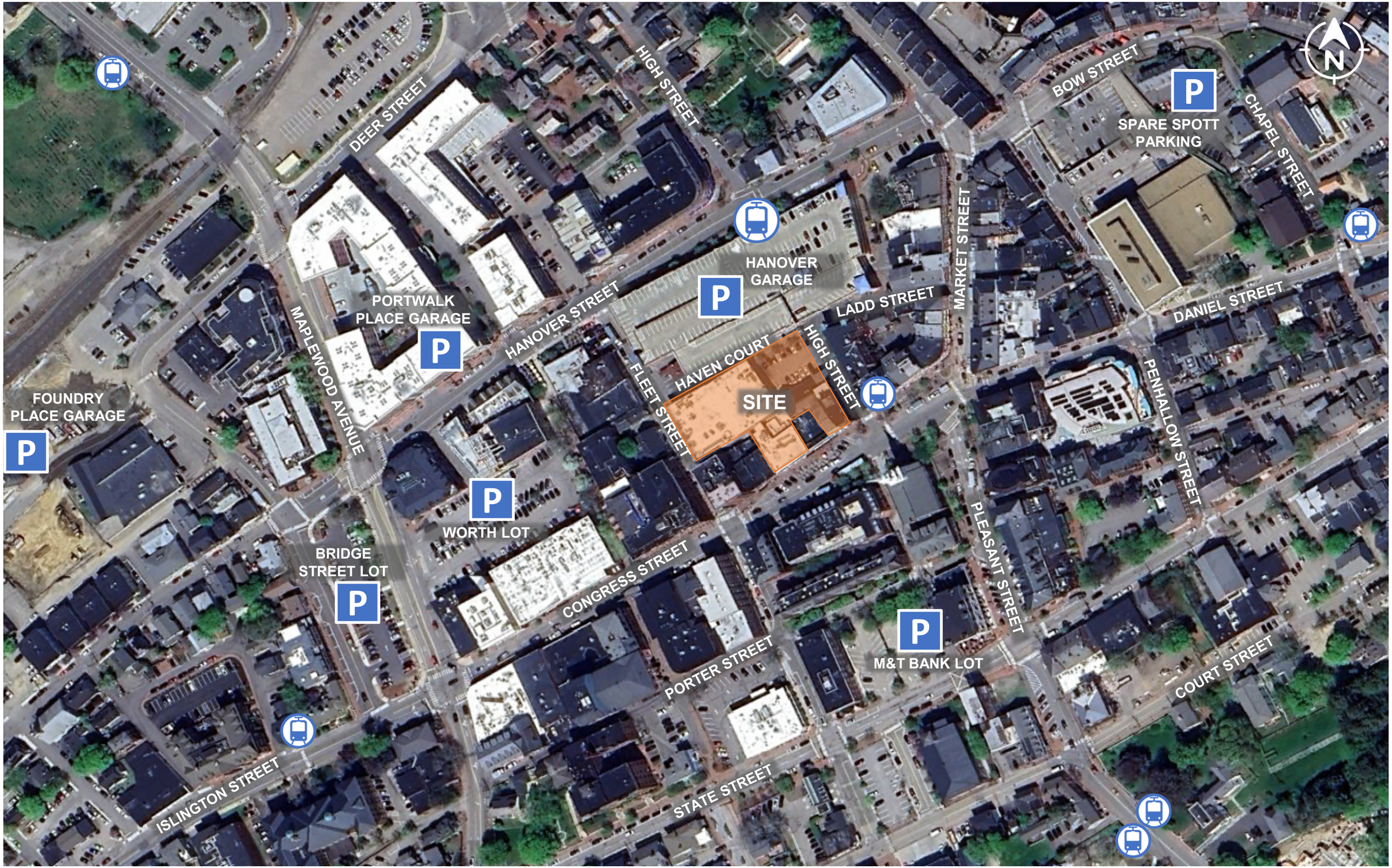


FIGURE 1 – SITE LOCATION MAP

COLLISIONS

Collision data for the section of Congress Street between Market Square and Fleet Street, as well as along High Street, Haven Court, Ladd Street, and Fleet Street, were obtained from NHDOT for the latest complete three years available (2015-2017). A summary of the crashes at this intersection is provided in Table 1. The detailed crash history is provided in the Appendix.

Based on the collision data, the section of Congress Street between Market Square and Fleet Street experienced an average of 5.0 collisions per year over the three-year study period. Of the 15 crashes, three were single-vehicle crashes with a light pole and may have involved vehicles striking the light poles immediately adjacent to the angled parking spaces along the northerly side of Congress Street. Five of the collisions involved a collision with a pedestrian, three of which occurred late at night when visibility of pedestrians in the roadway may have been a factor. Only one of the pedestrian crashes occurred at the intersection with High Street and involved a pedestrian crossing outside of the crosswalk at night.

The section of Fleet Street between Congress Street and Hanover Street experienced an average of 2.0 collisions per year over the three-year study period. One of the collisions occurred with a parked vehicle near the intersection with Congress Street under dark conditions. Two of the collisions occurred late night in front of Gilley's Diner and an additional three collisions occurred in the evening at the driveway with Gilley's Diner. Fleet Street near Gilley's Diner is a narrow two-way roadway with a total 27-foot roadway width consisting of a 7.5-ft parking lane, a 10-ft southbound travel-lane and a 9.5-ft northbound travel-lane. The narrow roadway width, combined with parking along the west side of the roadway makes turning maneuvers in and out of Gilley's Diner parking lot difficult. In addition, the Hanover Street Garage and J.J. Newberry Buildings are located immediately adjacent to the roadway on either side of the parking lot for Gilley's Diner, and block sight lines for vehicles backing out of the parking spaces at Gilley's Diner.

There were no collisions reported along Haven Court, High Street, or Ladd Street over the three-year study period.

TABLE 1
Collision Summary

Location	Number of Collisions		Severity [a]				Collision Type [b]					Percent During	
	Total	Average per Year	PD	PI	F	NR	VEH	PED	FO	SV	U	Commuter Peak [c]	Wet/Icy Conditions [d]
Congress Street from Market Square to Fleet Street	15	5.0	11	4	--	--	7	5	3	--	--	20%	20%
Haven Court	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
High Street	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
Ladd Street	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
Fleet Street from Congress Street to Hanover Street	6	2.0	5	1	--	--	5	--	1	--	--	0%	0%

Source: NHDOT (2015-2017).

[a] PD = property damage only; PI = personal injury; F = fatality, NR = not reported.

[b] VEH = collision with another motor vehicle; PED = pedestrian / bicycle; FO = fixed object; SV = single vehicle; U = unknown.

[c] Percent of vehicle incidents that occurred during the weekday AM (7:00 AM-9:00 AM) and weekday PM (4:00 PM -6:00 PM) commuter peak periods.

[d] Represents the percentage of only “known” collisions occurring during inclement weather conditions.

TRIP GENERATION

The site at #1 Congress Street currently contains approximately 1,180 SF of retail space and 5,500 SF of restaurant space on the first floor, with an additional 2,720 SF of office space and 10 residential units on the upper floors. The site at #15 Congress Street currently contains 11,630 square feet (SF) of restaurant space , 3,430 SF of retail, 35,290 SF of office space and two residential units. Upon completion, the Project will provide a total of ±8,430 SF of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units. GPI utilized trip-generation rates published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*[1] for Land Use Code (LUC) 221 (Multi-family Housing (Mid-Rise)), LUC 710 (General Office Building), LUC 822 (Strip Retail Plaza <40k)), and LUC 932 (High Turnover Sit-Down Restaurant) to estimate the trips generated by the proposed uses.

The Project will be located in downtown Portsmouth, in close proximity to multiple retail, restaurant, office, residential, and entertainment uses for sharing of trips between uses. As a result, many of the trips generated by the site will be walking and biking trips. In addition, the site is located in close proximity to multiple bus routes, allowing for easy access to public transportation for access to/from the site. Therefore, the trip rates for the residential (LUC 221), office (LUS 710), and retail (LUC 822) uses were based on Dense Multi-Use Urban settings. ITE does not provide trip generation data within dense multi-use urban settings for restaurant uses, therefore, the trip rates for the restaurant uses were based on General Urban / Suburban settings. The resulting trip generation estimate is summarized in Table 2, and the detailed calculations are provided in the Appendix.

TABLE 2 – Proposed Trip Generation Summary

Time Period/Direction	Residential Trips (LUC 221) [a]	Office Trips (LUC 710) [b]	Retail Trips (LUC 822) [c]	Restaurant Trips (LUC 932) [d]	Total Trips [e]
Weekday Daily	118	56	824	980	**1,978**
Weekday AM Peak Hour:					
Enter	2	6	22	48	**78**
Exit	9	1	14	39	**63**
Total	11	7	36	87	**141**
Weekday PM Peak Hour:					
Enter	7	1	50	51	**109**
Exit	3	6	50	32	**91**
Total	10	7	100	83	**200**
Saturday Daily	78	12	1,648	1,118	**2,856**
Saturday Midday Peak Hour:					
Enter	6	0	64	52	**122**
Exit	5	1	62	50	**118**
Total	11	1	126	102	**240**

[a] ITE LUC 221 (Multi-family Housing (Mid-Rise)) in Dense Multi-Use Urban setting for 41 units.
[b] ITE LUC 710 (General Office Building) in Dense Multi-Use Urban setting for 8,430 SF
[c] ITE LUC 822 (Strip Retail Plaza (<40K)) in Dense Multi-Use Urban setting for 24,320 SF.
[d] ITE LUC 932 (High Turnover Sit-Down Restaurant) in General Urban / Suburban setting for 9,140 SF.
[e] Sum of Residential Trips, Office Trips, and Retail Trips.

[1] *Trip Generation Manual*, 11th Edition; Institute of Transportation Engineers; Washington, DC; September 2021.

As previously noted, the site currently contains a mix of residential, office, retail, and restaurant space that is currently generating traffic. Therefore, not all of the site-generated trips will be new to the area. GPI has estimated the trips generated by the former uses on the site based on ITE trip rates for LUC 221 (Multifamily Housing (Mid-Rise)), LUC 710 (General Office), LUC 822 (Strip Retail Plaza <40k)), LUC 931 (Fine-Dining Restaurant), and LUC 932 (High Turnover Sit-Down Restaurant). The trip rates for the office (LUC 710), retail (LUC 822) and residential (LUC 221) uses were based on Dense Multi-Use Urban settings, while the trip rates for the restaurant (LUC 931 and LUC 932) use were based on General Urban/Suburban settings due to the lack of available trip generation data within dense multi-use urban settings for this use. The resulting trip generation estimate is summarized in Table 3, and the detailed calculations are provided in the Appendix.

TABLE 3 – Existing Trip Generation Summary

Time Period/Direction	Residential Trips (LUC 221) [a]	Office Trips (LUC 710) [b]	Retail Trips (LUC 822) [c]	Restaurant Trips (LUC 931) [d]	Total Trips [e]
Weekday Daily	36	248	156	1,708	**2,148**
Weekday AM Peak Hour:					
Enter	0	28	4	63	**95**
Exit	3	4	2	52	**61**
Total	3	32	6	115	**156**
Weekday PM Peak Hour:					
Enter	2	5	9	93	**109**
Exit	1	28	9	55	**93**
Total	3	33	18	148	**202**
Saturday Daily	24	50	312	1,920	**2,306**
Saturday Midday Peak Hour:					
Enter	2	0	12	101	**115**
Exit	1	6	12	88	**107**
Total	3	6	24	189	**222**

[a] ITE LUC 221 (Multifamily Housing (Mid-Rise)) in Dense Multi-Use Urban setting for 12 dwelling units.

[b] ITE LUC 710 (General Office Building) in Dense Multi-Use Urban setting for 38,010 SF.

[c] ITE LUC 822 (Strip Retail Plaza (<40K)) in Dense Multi-Use Urban setting for 4,610 SF.

[d] Sum of ITE LUC 931 (Fine-Dining Restaurant) in General Urban/Suburban setting for 5,500 SF and ITE LUC 932 (High Turnover Sit-Down Restaurant) in General Urban/Suburban setting for 11,630 SF.

[e] Sum of Residential Trips, Office Trips, Retail Trips, and Restaurant Trips.

Table 4 provides a comparison of the trips generated by the proposed land uses to the trips generated by the former uses on the site.

TABLE 4 – Trip Generation Comparison

Time Period/Direction	Existing Trips [a]	Proposed Trips [b]	Net Increase in Trips [c]
Weekday Daily	2,148	1,978	**-170**
Weekday AM Peak Hour:			
Enter	95	78	**-17**
Exit	61	63	**2**
Total	156	141	**-15**
Weekday PM Peak Hour:			
Enter	109	109	**0**
Exit	93	91	**-2**
Total	202	200	**-2**
Saturday Daily	2,306	2,856	**550**
Saturday Midday Peak Hour:			
Enter	115	122	**7**
Exit	107	118	**11**
Total	222	240	**18**

[a] Total Existing Trips (From Table 3).
[b] Total Proposed Trips (From Table 4).
[c] Proposed Trips minus Existing Trips.

As shown in Table 4, the proposed redevelopment will result in a minimal increase in vehicle trips of 18 additional trips (7 entering and 11 exiting) during the Saturday midday peak hour. These increases in traffic volumes represent less than one additional vehicle every three minutes on downtown roadways and are anticipated to result in negligible impacts to traffic operations downtown. The proposed redevelopment will result in a net reduction in overall weekday daily trips and trips during the weekday AM and PM peak hours.

PARKING

As part of the project, a total of 21 car parking spaces and 36 bicycle parking spaces will be provided in the basement level parking structure for use by the residents. No on-site parking will be provided for the proposed retail and restaurant uses.

The site is located within the Downtown Overlay District, in close proximity to numerous municipal parking garages and on-street public parking. Based on Section 10.1115.21 of the Zoning Ordinance, non-residential uses within the Downtown Overlay District are not required to provide any parking. Therefore, no on-site parking will be provided for the proposed retail and restaurant uses. It is assumed that the office, retail and restaurant employees will walk, bike, or use public transit to work or park in the adjacent Hanover Street parking garage. Similarly, it is assumed that retail and restaurant patrons will either park in one of the municipal parking lots or utilize on-street parking spaces in the area.

Residential Parking

Section 10.1112.311 of the City of Portsmouth Zoning Ordinance requires:

- 0.5 parking spaces per unit for residential dwellings of less than 500 SF;
- 1.0 parking spaces per unit for residential dwellings of between 500 SF and 750 SF; and
- 1.3 parking spaces per unit for residential dwellings of greater than 750 SF.

The Project proposes to include a total of 2 units with 500-750 SF, and 38 units greater than 750 SF. Therefore, a total of 51.4 parking spaces are required to serve the proposed residential units.

In addition, Section 10.1112.312 of the Zoning Ordinance states that:

"In addition to the off-street parking spaces provided in accordance with Sec. 10.1112.311, any dwelling or group of dwellings on a lot containing more than 4 dwelling units shall provide one visitor parking space for every 5 dwelling units or portion thereof."

Therefore, a total of 8.0 visitor parking spaces would be required to meet zoning regulations, which would result in a total of 59.4 parking spaces required for the residential use.

The Project is located within Downtown Overlay District. Section 10.1115.23 of the Zoning Ordinance allows for a 4-space reduction from the requirements of Section 10.1115.21 for any uses located within the Downtown Overlay District. Applying this reduction would result in a total parking requirement of 55.4 parking spaces.

The Zoning Ordinance also allows for a reduction in parking requirements of 1.0 parking spaces for every six (6.0) bicycle parking spaces with a maximum reduction of 5 percent. As 36 bicycle parking spaces are proposed on the site, a reduction of up to six vehicle parking spaces could be applied. However, the reduction is limited to a maximum of 5 percent of the total parking requirement or 2.77 spaces. Therefore, a total of 53 parking spaces would be required to serve the proposed residential units based on the Zoning Ordinance.

As the proposed parking supply of 21 vehicle parking spaces will result in a deficit of 32 parking spaces as compared to the Zoning Ordinance requirement, a Conditional Use Permit will be required for this project for parking.

ITE Parking Demand Data

To assess the adequacy of the proposed parking supply to accommodate the parking demand generated by the proposed residential units, GPI reviewed parking demand generation rates contained in the ITE publication *Parking Generation Manual, 6th Edition*. ITE provides separate parking demand generation rates for studio and 1-bedroom units as compared to units with 2 or more bedrooms. Within a dense multi-use urban setting, studio and 1-bedroom units generate a peak parking demand of 0.28 spaces per unit based on Land Use Code (LUC) 218 (Multifamily Housing – 1 BR (Mid-Rise)). Similarly, within a dense multi-use urban setting, units with 2 or more bedrooms generate a peak parking demand of 0.93 spaces per unit based on LUC 221 (Multifamily Housing – 2+ BR (Mid-Rise)).

There are a total of 14 apartment units proposed as studio or one-bedroom units and 26 units proposed with 2 or more bedrooms. Therefore, the proposed residential development is anticipated to generate a peak parking demand of 28 parking spaces based on ITE parking demand data. As the development is proposed to provide 21 parking spaces, the proposed parking supply will result in a deficit of 7 vehicle parking spaces based on ITE parking demand data. These additional parking spaces can be accommodated within the adjacent Hanover Garage or other area parking garages. As shown in Figure 1,

there are seven public parking garages / lots withing 2,000 feet (10-minute walk) of the site, providing more than adequate parking for any overflow from the proposed on-site garage. In addition, the provision of 36 bicycle parking spaces is anticipated to offset the parking deficit based on the City's Zoning Ordinance that allows for a reduction in vehicle parking spaces of one space for every six bicycle parking spaces provided.

CONCLUSIONS

- The site is comprised of four lots on Tax Map 117, Parcels 12 - 15. Parcel 14 currently contains a 4-story mixed-use building with retail and restaurant space on the first floor and office and apartment space on the upper floors. Parcel 15 contains a private parking locate. Parcels 12 and 13 contain a mixed-use building with retail and restaurant space on the first and basement levels and office and apartment space on the upper levels. The project consists of renovating a portion of the existing building on Parcel 14 and constructing a 4-story addition to encompass the remainder of Parcels 14 and 15, and constructing basement-level parking. In addition, the building on Parcels 12 – 13 will be redeveloped to convert a substantial portion of the office space to retail space and residential apartment units. Access to the parking lot would be provided via a driveway on Haven Court to a vehicle elevator for access to the basement level. Upon completion, the Project would provide ±8,430 SF of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units.

- The section of Congress Street between Market Square and Fleet Street experienced an average of 5.0 collisions per year over the three-year study period. Of the 15 crashes, three were single-vehicle crashes with a light pole and may have involved vehicles striking the light poles immediately adjacent to the angled parking spaces along the northerly side of Congress Street. Five of the collisions involved a collision with a pedestrian, three of which occurred late at night when visibility of pedestrians in the roadway may have been a factor. Only one of the pedestrian crashes occurred at the intersection with High Street and involved a pedestrian crossing outside of the crosswalk at night. The occurrence of collisions with pedestrians at night may be an indication that the crosswalk is not adequately lit due either to poor lighting or overgrown street trees blocking existing light poles.

- The section of Fleet Street between Congress Street and Hanover Street experienced an average of 2.0 collisions per year over the three-year study period. One of the collisions occurred with a parked vehicle near the intersection with Congress Street under dark conditions. Two of the collisions occurred late night in front of Gilley's Diner and an additional three collisions occurred in the evening at the driveway with Gilley's Diner. Fleet Street near Gilley's Diner is a narrow two-way roadway with a total 27-foot roadway width consisting of a 7.5-ft parking lane, a 10-ft southbound travel-lane and a 9.5-ft northbound travel-lane. The narrow roadway width, combined with parking along the west side of the roadway makes turning maneuvers in and out of Gilley's Diner parking lot difficult. In addition, the Hanover Street Garage and J.J. Newberry Buildings are located immediately adjacent to the roadway on either side of the parking lot for Gilley's Diner, and block sight lines for vehicles backing out of the parking spaces at Gilley's Diner.

- There were no collisions reported along Haven Court, High Street, or Ladd Street over the three-year study period.

- The proposed redevelopment will result in a minimal increase in vehicle trips of 18 additional trips (7 entering and 11 exiting) during the Saturday midday peak hour, which represents less than one additional vehicle every three minutes on downtown roadways and is anticipated to result in negligible impacts to traffic operations downtown. The proposed redevelopment will result in a net reduction in overall weekday daily trips and trips during the weekday AM and PM peak hours.

- A total of 21 vehicle parking spaces and 36 bicycle parking spaces are proposed within the basement level parking garage at #1 Congress Street. Based on the City's zoning regulations a total of 53 parking spaces would be required to serve the proposed residential uses within the Downtown Overlay District. Therefore, a Conditional Use Permit will be required to allow a reduction in parking supply for the proposed development. No on-site parking is required for office, retail and restaurant uses within the Downtown Overlay District.

- Although the zoning ordinance estimates a deficit of 32 vehicle parking spaces on the site, the proposed residential uses are anticipated to generate a peak parking demand of 28 parking spaces based on ITE parking demand generation rates for similar residential uses in dense multi-use urban settings. The proposed parking supply of 21 residential parking spaces will accommodate the majority of the parking demand. The additional seven vehicles can be accommodated within the adjacent Hanover Garage or other area parking facilities. In addition, the proposed 36 bicycle parking spaces will offset a 6-space deficit in vehicle parking spaces based on the City's zoning regulations allowing for a reduction in vehicle parking spaces of one space for every six bicycle parking spaces provided.

- APPENDIX

- ***NHDOT Crash Data***
- ***Trip Generation Calculations***

NHDOT CRASH DATA

FID	ACDYEAR_NU	CRASH_DATE	ACDDAY	ACDTIME	ACDSTREET	INTERSTREE	MILESFTFRO	NSEW_TO_IN	TYPE_OF_AC	FIXED_OBJE	LOCATION_F	NUMVEHICLE	TOTALFATAL	TOTALINJUR	PEDFATALS	PROPDAMAGE	INFONOTREP	SEVERITY	ROAD_ALIGN	ROAD_CONDI	SURFACE_CO	LIGHTING_D	WEATHER_DE	ROAD_DESIG	TRAFFIC_CO
414619	15009106	3/17/2015	TUE	2331	90 FLEET ST	62 CONGRESS ST	100	N	Parked Motor Vehicle		Intersection Related	2	0	0	0		X	Unknown	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Not Physically Divided (2 Way Traffic)	Visible Road Markings
466799	16009879	4/30/2016	SAT	1955	175 FLEET ST	HANOVER ST	150	S	Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Not Physically Divided (2 Way Traffic)	Visible Road Markings
481652	16014951	6/27/2016	MON	1436	174 FLEET ST	HANOVER ST	100	S	Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Unknown	Normal	Dry	Daylight	Clear		None
483078	16019691	8/6/2016	SAT	120	175 FLEET ST		0		Other Motor Vehicle		Along Road at Driveway Access	1	0	0	0		X	Unknown	Straight and Level	Normal	Unknown	Dark-Street Light On	Unknown	Not Physically Divided (2 Way Traffic)	None
488681	16019675	8/4/2016	THU	53	175 FLEET ST		0		Other Motor Vehicle		Along the Road	2	0	1	0			Non-Incapacitating	Unknown	Normal	Dry	Dark-Street Light On	Clear		None
496398	16019655	8/20/2016	SAT	1453	175 FLEET ST		0		Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Not Physically Divided (2 Way Traffic)	None

FID	CRASH_DATE	ACDDAY	ACDTIME	ACDSTREET	INTERSTREE	MILESFTFR	NSEW_TO	TYPE_OF_AC	FIXED_OBJE	LOCATION_F	NUMVEHICLE	TOTALFATAL	TOTALINJUR	PEDFATALS	SEVERITY	ROAD_ALIGN	ROAD_CONDI	SURFACE_CO	LIGHTING_D	WEATHER_DE	TRAFFIC_CO
417934	6/22/2015	MON	1558	151 HIGH ST	HIGH ST AND DEER ST	150	E	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
434430	8/13/2015	THU	933	75 CONGRESS ST	FLEET ST	10	S	Fixed Object	Light Pole	Along the Road	1	0	0	0	Unknown	Straight and Level	Normal	Dry	Daylight	Clear	Visible Road Markings
455142	11/4/2015	WED	1443	1 DANIEL ST	1 MARKET SQ	0	AT	Pedestrian		At Intersection	1	0	1	0	No Apparent Injury	Other	Normal	Dry	Daylight	Clear	Stop Sign
466467	5/17/2016	TUE	1242	5 MARKET SQ	CONGRESS ST	10	N	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
488867	6/16/2016	TUE	2302	5 MARKET SQ	PLEASANT ST	0	AT	Pedestrian		Intersection Related	3	0	2	0	Non_Incapacitating	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Visible Road Markings
481938	7/17/2016	SUN	1444	62 CONGRESS ST	FLEET ST	20	W	Other Motor Vehicle		Unknown	2	0	0	0	No Apparent Injury	Unknown	Normal	Dry	Daylight	Clear	None
482191	7/19/2016	TUE	1356	10 PLEASANT ST	14 MARKET SQ	0	AT	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	None
482892	10/25/2016	TUE	1638	29 CONGRESS ST		0		Other Motor Vehicle		Unknown	2	0	0	0	Non_Incapacitating	Unknown	Normal	Dry	Daylight	Clear	Yield Sign
469157	11/8/2016	TUE	1934	14 MARKET SQ		0		Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
499903	11/20/2016	SUN	1251	75 CONGRESS ST	FLEET ST	40	W	Pedestrian		Intersection Related	2	0	1	0	Non_Incapacitating	Straight and Level	Normal	Dry	Daylight	Clear	Traffic Signals
481331	12/8/2016	THU	2018	5 CONGRESS ST	HIGH ST	0	AT	Pedestrian		At Intersection	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Visible Road Markings
469809	12/12/2016	MON	1612	40 PLEASANT ST		0		Other Motor Vehicle		Unknown	2	0	0	0	No Apparent Injury	Unknown	Normal	Dry	Dusk	Clear	None
479143	12/22/2016	THU	1426	8 CONGRESS ST		0		Fixed Object	Light Pole	At Intersection	1	0	0	0	No Apparent Injury	Unknown	Normal	Wet	Daylight	Snow	None
484255	12/24/2016	SAT	1	5 MARKET SQ	1 PLEASANT ST	0	AT	Pedestrian		Intersection Related	2	0	1	0	Possible	Straight and Level	Normal	Wet	Dark-Street Light On	Cloudy	Stop Sign
477050	3/28/2017	TUE	833	6 CONGRESS ST	1 CHURCH ST	0	AT	Fixed Object	Light Pole	Along the Road	1	0	0	0	Unknown	Straight and Level	Normal	Wet	Unknown	Cloudy	None

TRIP-GENERATION CALCULATIONS

Proposed Use	Size	Variable
Residential (LUC 221)	40	Units
Office (LUC 710)	8430	SF
Retail (LUC 822)	24320	SF
Restaurant (LUC 931)	0	SF
Restaurant (LUC 932)	9140	SF

Existing Uses	Size	Variable
Residential (LUC 221)	12	Units
Office (LUC 710)	38010	SF
Retail (LUC 822)	4610	SF
Restaurant (LUC 931)	5500	SF
Restaurant (LUC 932)	11630	SF

Time Period / Direction	Proposed Trips					First Floor Office					Net Change in Trips
	Office LUC 710	Residential LUC 221	Retail LUC 822	Restaurant LUC 930	Total Trips	Office LUC 710	Residential LUC 221	Retail LUC 822	Restaurant LUC 930	Total Trips	
Weekday Daily	56	118	824	980	1,978	248	36	156	1,708	2,148	-170
Weekday AM Peak Hour											
Enter	6	2	22	48	78	28	0	4	63	95	-17
Exit	1	9	14	39	63	4	3	2	52	61	2
Total	7	11	36	87	141	32	3	6	115	156	-15
Weekday PM Peak Hour											
Enter	1	7	50	51	109	5	2	9	93	109	0
Exit	6	3	50	32	91	28	1	9	55	93	-2
Total	7	10	100	83	200	33	3	18	148	202	-2
Saturday Daily	12	78	1,648	1,118	2,856	50	24	312	1,920	2,306	550
Saturday Midday Peak Hour											
Enter	0	6	64	52	122	0	2	12	101	115	7
Exit	1	5	62	50	118	6	1	12	88	107	11
Total	1	11	126	102	240	6	3	24	189	222	18

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 40

AVERAGE WEEKDAY DAILY

T = 2.93 * (X)
T = 2.93 * 40
T = 117.20
T = 118 vehicle trips
with 50% (59 vpd) entering and 50% (59 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.28 * (X)
T = 0.28 * 40
T = 11.20
T = 11 vehicle trips
with 14% (2 vph) entering and 86% (9 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.26 * (X)
T = 0.26 * 40
T = 10.40
T = 10 vehicle trips
with 72% (7 vph) entering and 28% (3 vph) exiting.

SATURDAY DAILY

T = 1.95 * (X)
T = 1.95 * 40
T = 78.00
T = 78 vehicle trips
with 50% (39 vpd) entering and 50% (39 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.27 * (X)
T = 0.27 * 40
T = 10.80
T = 11 vehicle trips
with 51% (6 vph) entering and 49% (5 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 710 - General Office Building

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 8.430

AVERAGE WEEKDAY DAILY

$$\frac{\text{ITE LUC 710 Weekday Trip Rate (U)}}{\text{ITE LUC 710 Weekday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{10.84} = \frac{0.87}{1.44} \qquad Y = 6.55$$

T = Y * 8.430
T = 55.21
T = 56 vehicle trips
with 50% (28 vpd) entering and 50% (28 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.84 * (X)
T = 0.84 * 8.430
T = 7.08
T = 7 vehicle trips
with 87% (6 vph) entering and 13% (1 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.87 * (X)
T = 0.87 * 8.430
T = 7.33
T = 7 vehicle trips
with 16% (1 vph) entering and 84% (6 vph) exiting.

SATURDAY DAILY

$$\frac{\text{ITE LUC 710 Saturday Trip Rate (U)}}{\text{ITE LUC 710 Saturday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{2.21} = \frac{0.87}{1.44} \qquad Y = 1.34$$

T = Y * 8.430
T = 1.34 * 8.430
T = 11.26
T = 12 vehicle trips
with 50% (6 vpd) entering and 32% (6 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.17 * (X)
T = 0.17 * 8.430
T = 1.43
T = 1 vehicle trips
with 8% (0 vph) entering and 92% (1 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 822 - Strip Retail Plaza (<40k)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Ft. Gross Floor Area
Independent Variable (X): 24.320

AVERAGE WEEKDAY DAILY

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday Daily Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday Daily Trip Rate

3.23 / 5.19 = (Y) / 54.45 Y = 33.89

T = Y * 24.320
T = 824.20
T = 824 vehicle trips
with 500% (412 vpd) entering and 50% (412 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday Daily)

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday AM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday AM Trip Rate

3.23 / 5.19 = (Y) / 2.36 Y = 1.47

T = Y * 24.320
T = 35.75
T = 36 vehicle trips
with 60% (22 vpd) entering and 40% (14 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday PM Trip Rate

3.23 / 5.19 = (Y) / 6.59 Y = 4.10

T = Y * 24.320
T = 99.71
T = 100 vehicle trips
with 50% (50 vpd) entering and 50% (50 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday PM)

SATURDAY DAILY

ITE LUC 821 (General Urban/Suburban) Saturday Daily Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Peak Hour Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Daily Trip Rate / ITE LUC 822 (Dense Multi-Use Urban) Saturday Peak Hour Trip Rate

81.07 / 6.22 = (Y) / 5.20 Y = 67.78

T = Y * 24.320
T = 1648.41
T = 1,648 vehicle trips
with 50% (824 vpd) entering and 50% (824 vpd) exiting.

(same distribution split as ITE LUC 821 during the Saturday Daily)

SATURDAY PEAK HOUR OF GENERATOR

ITE LUC 821 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Midday Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 822 (General Urban/Suburban) Saturday Midday Trip Rate

4.92 / 6.22 = (Y) / 6.57 Y = 5.20

T = Y * 24.320
T = 126.46
T = 126 vehicle trips
with 51% (64 vpd) entering and 49% (62 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Saturday Midday)

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 932 - High Turnover Sit-Down Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 9.140

AVERAGE WEEKDAY DAILY

T = 107.2 * (X)
T = 107.20 * 9.140
T = 979.81
T = 980 vehicle trips
with 50% (490 vpd) entering and 50% (490 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.57 * (X)
T = 9.57 * 9.140
T = 87.47
T = 87 vehicle trips
with 55% (48 vph) entering and 45% (39 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.05 * (X)
T = 9.05 * 9.140
T = 82.72
T = 83 vehicle trips
with 61% (51 vph) entering and 39% (32 vph) exiting.

SATURDAY DAILY

T = 122.40 * (X)
T = 122.40 * 9.140
T = 1118.74
T = 1,118 vehicle trips
with 50% (559 vpd) entering and 50% (559 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 11.19 * (X)
T = 11.19 * 9.140
T = 102.28
T = 102 vehicle trips
with 51% (52 vph) entering and 49% (50 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 12

AVERAGE WEEKDAY DAILY

T = 2.93 * (X)
T = 2.93 * 12
T = 35.16
T = 36 vehicle trips
with 50% (18 vpd) entering and 50% (18 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.28 * (X)
T = 0.28 * 12
T = 3.36
T = 3 vehicle trips
with 14% (0 vph) entering and 86% (3 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.26 * (X)
T = 0.26 * 12
T = 3.12
T = 3 vehicle trips
with 72% (2 vph) entering and 28% (1 vph) exiting.

SATURDAY DAILY

T = 1.95 * (X)
T = 1.95 * 12
T = 23.40
T = 24 vehicle trips
with 50% (12 vpd) entering and 50% (12 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.27 * (X)
T = 0.27 * 12
T = 3.24
T = 3 vehicle trips
with 51% (2 vph) entering and 49% (1 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 710 - General Office Building

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 38.010

AVERAGE WEEKDAY DAILY

$$\frac{\text{ITE LUC 710 Weekday Trip Rate (U)}}{\text{ITE LUC 710 Weekday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{10.84} = \frac{0.87}{1.44} \qquad Y = 6.55$$

T = Y * 38.010
T = 248.93
T = 248 vehicle trips
with 50% (124 vpd) entering and 50% (124 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.84 * (X)
T = 0.84 * 38.010
T = 31.93
T = 32 vehicle trips
with 87% (28 vph) entering and 13% (4 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.87 * (X)
T = 0.87 * 38.010
T = 33.07
T = 33 vehicle trips
with 16% (5 vph) entering and 84% (28 vph) exiting.

SATURDAY DAILY

$$\frac{\text{ITE LUC 710 Saturday Trip Rate (U)}}{\text{ITE LUC 710 Saturday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{2.21} = \frac{0.87}{1.44} \qquad Y = 1.34$$

T = Y * 38.010
T = 1.34 * 38.010
T = 50.75
T = 50 vehicle trips
with 50% (25 vpd) entering and 32% (25 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.17 * (X)
T = 0.17 * 38.010
T = 6.46
T = 6 vehicle trips
with 8% (0 vph) entering and 92% (6 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 822 - Strip Retail Plaza (<40k)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Ft. Gross Floor Area
Independent Variable (X): 4.610

AVERAGE WEEKDAY DAILY

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday Daily Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday Daily Trip Rate

3.23 / 5.19 = (Y) / 54.45 Y = 33.89

T = Y * 4.610
T = 156.23
T = 156 vehicle trips
with 500% (78 vpd) entering and 50% (78 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday Daily)

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday AM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday AM Trip Rate

3.23 / 5.19 = (Y) / 2.36 Y = 1.47

T = Y * 4.610
T = 6.78
T = 6 vehicle trips
with 60% (4 vpd) entering and 40% (2 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday PM Trip Rate

3.23 / 5.19 = (Y) / 6.59 Y = 4.10

T = Y * 4.610
T = 18.90
T = 18 vehicle trips
with 50% (9 vpd) entering and 50% (9 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday PM)

SATURDAY DAILY

ITE LUC 821 (General Urban/Suburban) Saturday Daily Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Peak Hour Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Daily Trip Rate / ITE LUC 822 (Dense Multi-Use Urban) Saturday Peak Hour Trip Rate

81.07 / 6.22 = (Y) / 5.20 Y = 67.78

T = Y * 4.610
T = 312.47
T = 312 vehicle trips
with 50% (156 vpd) entering and 50% (156 vpd) exiting.
(same distribution split as ITE LUC 821 during the Saturday Daily)

SATURDAY PEAK HOUR OF GENERATOR

ITE LUC 821 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Midday Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 822 (General Urban/Suburban) Saturday Midday Trip Rate

4.92 / 6.22 = (Y) / 6.57 Y = 5.20

T = Y * 4.610
T = 23.97
T = 24 vehicle trips
with 51% (12 vpd) entering and 49% (12 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Saturday Midday)

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 931 - Fine Dining Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 5.500

AVERAGE WEEKDAY DAILY

T = 83.84 * (X)
T = 83.84 * 5.500
T = 461.12
T = 462 vehicle trips
with 50% (231 vpd) entering and 50% (231 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.73 * (X)
T = 0.73 * 5.500
T = 4.02
T = 4 vehicle trips
with 55% (2 vph) entering and 45% (2 vph) exiting.
(same distribution split as ITE LUC 932 during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 7.80 * (X)
T = 7.8 * 5.500
T = 42.90
T = 43 vehicle trips
with 67% (29 vph) entering and 33% (14 vph) exiting.

SATURDAY DAILY

T = 90.04 * (X)
T = 90.04 * 5.500
T = 495.22
T = 496 vehicle trips
with 50% (248 vpd) entering and 50% (248 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 10.68 * (X)
T = 10.68 * 5.500
T = 58.74
T = 59 vehicle trips
with 59% (35 vph) entering and 41% (24 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 932 - High Turnover Sit-Down Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 11.630

AVERAGE WEEKDAY DAILY

T = 107.2 * (X)
T = 107.20 * 11.630
T = 1246.74
T = 1,246 vehicle trips
with 50% (623 vpd) entering and 50% (623 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.57 * (X)
T = 9.57 * 11.630
T = 111.30
T = 111 vehicle trips
with 55% (61 vph) entering and 45% (50 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.05 * (X)
T = 9.05 * 11.630
T = 105.25
T = 105 vehicle trips
with 61% (64 vph) entering and 39% (41 vph) exiting.

SATURDAY DAILY

T = 122.40 * (X)
T = 122.40 * 11.630
T = 1423.51
T = 1,424 vehicle trips
with 50% (712 vpd) entering and 50% (712 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 11.19 * (X)
T = 11.19 * 11.630
T = 130.14
T = 130 vehicle trips
with 51% (66 vph) entering and 49% (64 vph) exiting.

HALEY WARD

STORMWATER MANAGEMENT PLAN

TO THE CITY OF PORTSMOUTH
FOR 1-15 CONGRESS STREET MIXED USE DEVELOPMENT

APPLICANT:

ONE MARKET SQUARE, LLC
3 Pleasant Street, Suite 400
Portsmouth, NH 03801

NOVEMEBR 18, 2024
JN: 5010156.3406

REPORT PREPARED BY:
Haley Ward, Inc.
120 Main Street, Suite 132 | Saco, ME 04072

STORMWATER MANAGEMENT PLAN
1-15 CONGRESS STREET, PORTSMOUTH, NH
MIXED-USED DEVELOPMENT

EXECUTIVE SUMMARY

This Stormwater Management Plan has been prepared for the proposed Mixed-Use Development located at 1-15 Congress Street, in accordance the City of Portsmouth's Site Plan Review Ordinance, specifically, sections 2.5.4 and 7.4.

This analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Mixed-Use Development at the properties known as 1 and 15 Congress Street in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 117 as Lots 14 and 16 and includes portions of the public ways identified as Haven Court, High Street, and Ladd Street. The total size of the associated drainage analysis area is 46,633± square-feet (1.07 acres.) The total Lot area for the subject properties is 41,933± square-feet (0.96 acres.) Please refer to the cover letter associated with this project's full Site Plan Permit Application for a more detailed description of the development.

Per Section 7.4.2 of the Site Plan Review ordinance, enhanced stormwater treatment standards are required for Redevelopment projects that will disturb greater than 15,000 square feet and are located on a lot with an existing impervious surface coverage greater than 40%. This development meets these thresholds and is therefore required to Implement LID or stormwater treatment BMPs that will disconnect and/or treat at least 30% of the existing impervious cover and 100% of any additional proposed impervious surfaces or paved areas preferably using filtration and/or infiltration practices; or, implement LID or stormwater treatment measures to disconnect or treat at least 60% of the entire developed area.

The development will provide for a new commercial building and redevelopment of adjacent road/sidewalk areas. The development has the potential to increase stormwater pollutants to City infrastructure, and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no increase in pollutants from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 117 as Lots 14 and 16. Bounding the site to the north is Haven Court. Bounding the site to the east is High Street. Bounding the site to the South is Congress Street. Bounding the site to the west is Fleet Street.

The proposed development will include a commercial building infill, building renovation, and the redevelopment of the adjacent sections of Haven Court (to be re-named Newberry Way), Ladd Street, and High Street. This report includes information about the existing site and the proposed expansion necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site.

Proposed stormwater management methods will also be described, as well as erosion and sediment control practices (Erosion Control Plan/Inspection and Maintenance Plans provided as separate document within this Site Plan Permit application.) To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

Project construction is expected to commence in Spring 2025 and will be completed by Late 2026. Erosion control devices will be in place prior to any site disturbance. Changes in onsite grading will be limited to the proposed work on Newberry Way; this work is expected to be completed as a part of the proposed building construction at 1 Congress.

METHODOLOGY

"Extreme Precipitation" values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances. The unadjusted table is appended to this report.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 "Hydrology" and includes the Technical Release No. 20, (TR-20) "Computer Program for Project Formulation Hydrology", and Technical Release No. 55 (TR-55) "Urban Hydrology for Small Watersheds" methods. This report uses the HydroCAD

version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Time of Concentration (Tc) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used. The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering / Haley Ward and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of one soil type:

Soil Symbol	Soil Name and Slopes
699	Urban Land

Urban Land does not have any recorded geological features, including depth to bedrock or depth to water table. The Hydraulic Soil Grade is assumed to be Type D.

The physical characteristics of the site not containing buildings consist of gently sloped (0- 8%) grades. Elevations on the site range from 18 to 32 feet above sea level. The existing site is developed with multi-story commercial buildings and associated parking.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0259F (effective date January 29, 2021), the proposed development is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included with this report.

The site and its surrounding areas are entirely developed; there are no wetlands, water bodies, or other natural resources directly adjacent to the site.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as four subcatchment basins based on localized topography, discharge location and ownership. While Only Subcatchments 1 and (a portion) of 3 will be modified by the proposed development, all areas described below are under common ownership, and their inclusion in this analysis will provide ease of analysis for potential future development of these areas.

Subcatchment 1 contains the existing parking lot which abuts the existing building at 1 Congress Street to the north, as well as the western half of Haven Court. These areas discharge as surface flow to a trench drain/catch basin system at the intersection of Haven Court and High Street. These inlets direct runoff to the public storm drain on Ladd Street, which discharges to the east towards Market Street (Summation Point 1.)

Subcatchment 2 represents the roof of the existing building at 1 Congress Street, whose runoff is collected via roof drain and discharged to the public system on High Street, which ultimately discharges towards Ladd Street (Summation Point 1,) as Subcatchment 1 does.

Subctachment 3 represents the westerly half of Haven Court, as well as the parcel identified as Map 117 Lot 8. Runoff from these areas is directed as surface flow to the public subsurface system on Fleet Street (Summation Point 2.)

Subcatchment 4 represents the roof of the existing building at 15 Fleet Street, which is discharged via roof drains to the public system on Fleet Street (Summation Point 2.)

All the pre-development analysis area is characterized by an impervious cover type, other than approximately 490 sf of vegetated area around the perimeter of the existing parking lot.

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed at the same two Summation Points as in Pre-Development. The total analysis area is the same between pre- and post-development. The post-development model contains 3 subcatchments:

Subcatchment 1 includes the existing building at 1 Congress Street, as well as the proposed building abutting it to the north. Both the existing and proposed building roof areas will be directed to Summation Point 1 via roof drains.

Subcatchment 2 includes all of Newberry Way, as well as the parcel identified as Map 117 Lot 8. Runoff from these areas is directed as surface flow to the public subsurface system on Fleet Street (Summation Point 2.)

Subcatchment 3 is unchanged from pre-development conditions.

Most of the post-development analysis area is characterized by an impervious cover

type, other than approximately 1,915 sf of proposed landscaped area along Haven Court.

Pre/Post Development Comparison

The overall impervious coverage of the subcatchment areas analyzed in this report decreases from 98.94% in the pre-development condition to 95.88% in the post-development condition. The proposed impervious area for this development includes the 490 sf of existing landscaped area that will be removed. The proposed development will include 1,915 sf of new landscaped area, resulting in a net impervious area decrease of 1,425 sf.

Drainage patterns will generally remain the same in post-development conditions as in pre-development. While Haven Court originally contained a high point in its center, with its western half draining to the west and its eastern half draining to the east, the proposed development will alter this grade so that all of Newberry Way will drain to the west. This change will result in an insignificant decrease in peak flows at Summation Point 1, and an insignificant increase in peak flows at Summation Point 2. Please see the table below for peak discharge values. With increases/decreases of <1 cfs for the 50-year storm event, adverse impacts to downstream systems are not anticipated. Trench drains are proposed along Newberry Way which will prevent channelization of surface flow onto Fleet Street.

The table shows a summary of the comparison between pre-developed flows and post-developed flows for both Summation Points.

Pre-Development to Post-Development Comparison

		2-Year Storm (cfs)	10-Year Storm (cfs)	25-Year Storm (cfs)	50-Year Storm (cfs)	50-Year Storm Net Change (cfs)
Summation Point 1	Pre	2.03	3.12	3.96	4.75	-0.87
	Post	1.67	2.55	3.24	3.88	
Summation Point 2	Pre	3.59	5.48	6.96	8.34	+0.85
	Post	~~3.92~~	~~6.02~~	7.65	9.19	

Stormwater Quality

As mentioned above, the City of Portsmouth specifies that 30% of existing impervious cover in addition to 100% of additional proposed impervious cover is treated in a Redevelopment project. Please see the calculations below for a demonstration of how this standard is met.

Existing Impervious Cover: 41,933 square feet
Proposed Impervious Cover: 490 square feet
Required Treatment Area: (41,933 sf * 30%) + (490 sf * 100%) = 13,070 sf

The runoff from both the existing and proposed building roofs at 1 Congress Street will be collected in a roof drain system. This system will be equipped with a BioClean roof drain filter. This filter will provide contaminant removal as required by the City's Land Use code. This roof area is approximately 13,817 square feet, exceeding the required treatment area of 13,070 sf. Product cutsheets for this filter have been provided with this report.

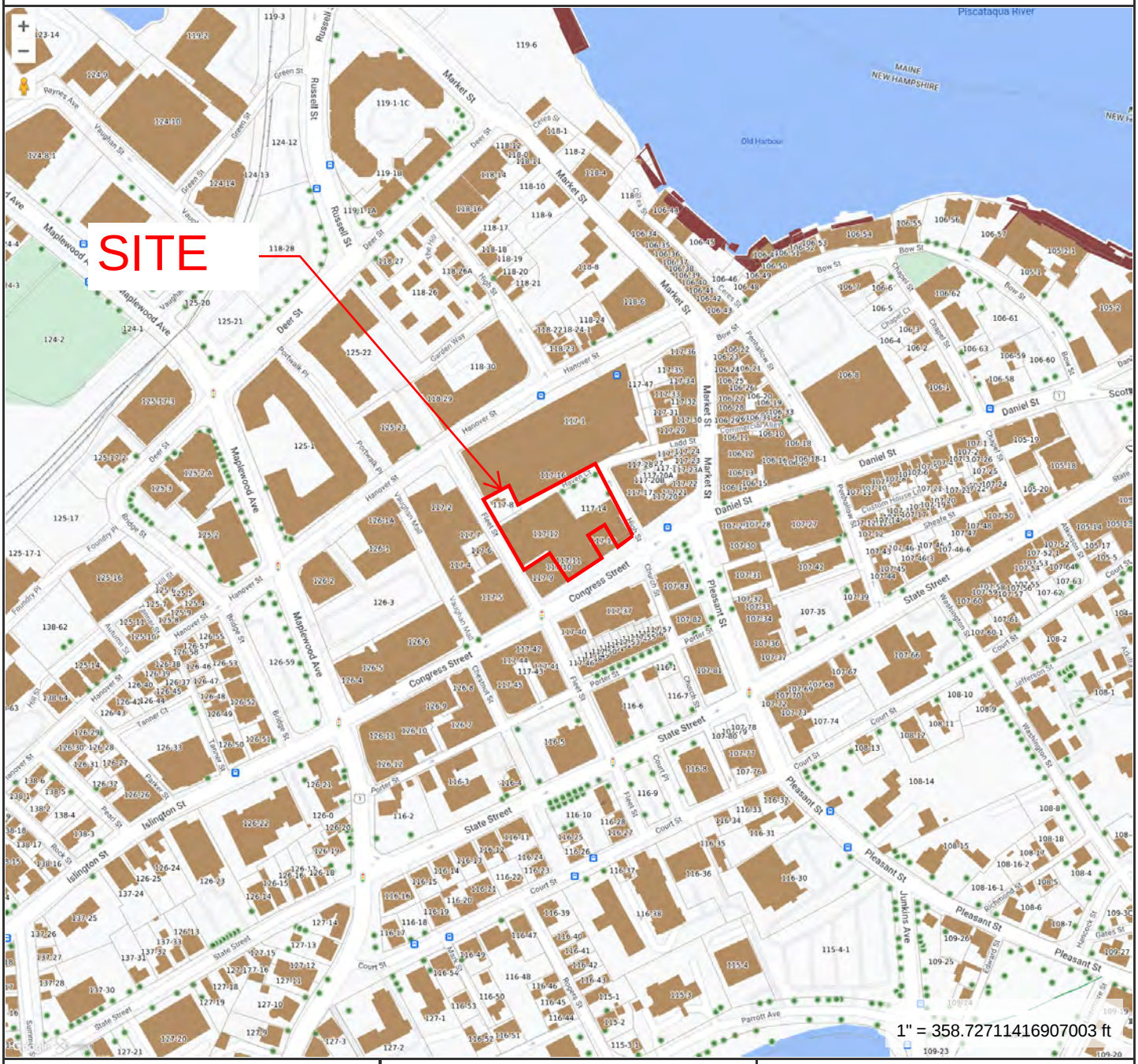
CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the roof drain filter the post-development runoff is treated sufficiently. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

REFERENCES

1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. New Hampshire Stormwater Manual (Volumes 1, 2 and 3), December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. HydroCAD Stormwater Modeling System Version 10.20 copyright 2022.

Tax Map

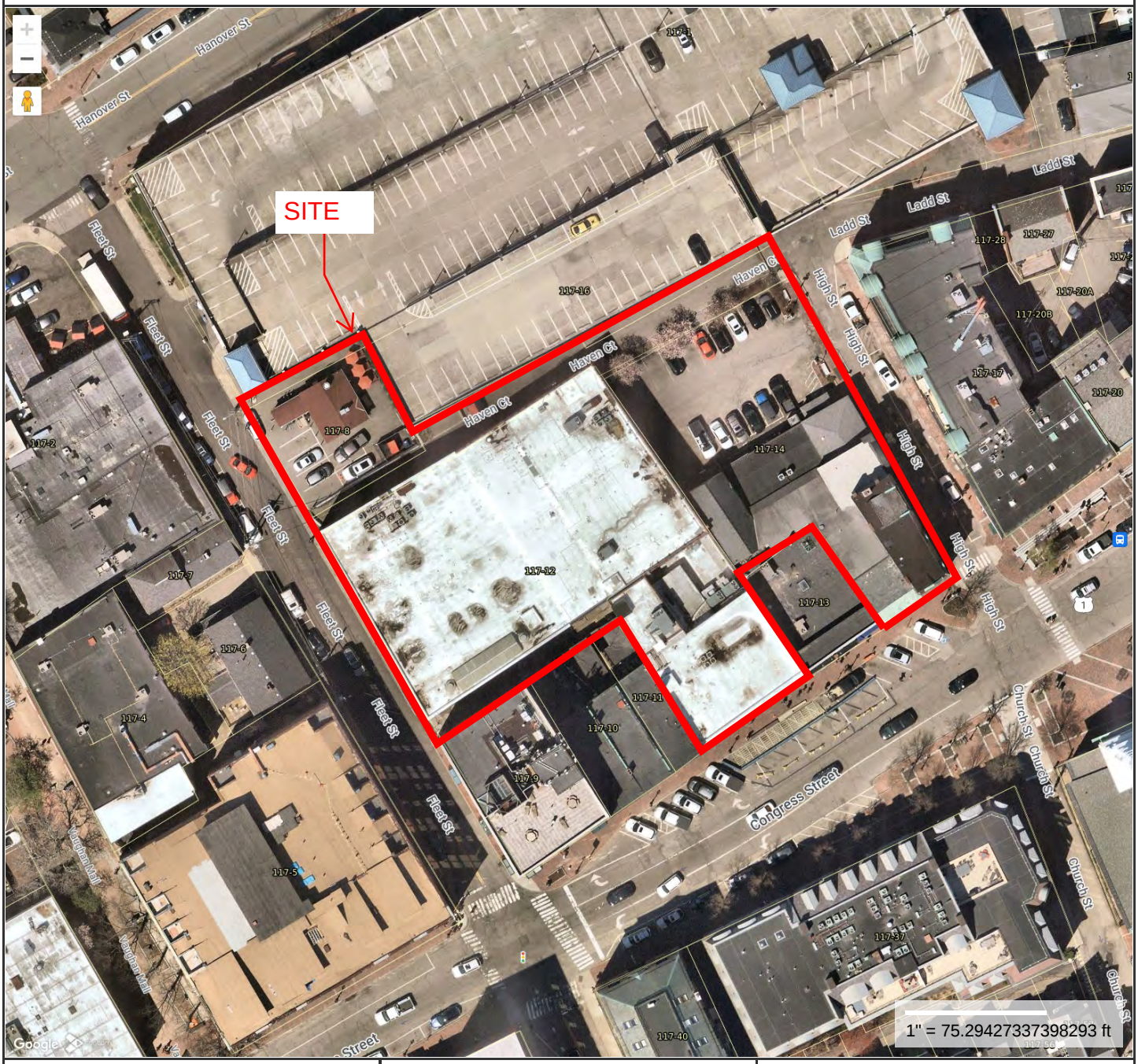


MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 09/26/2024

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 09/26/2024

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

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

November 14, 2024

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: 1:1,080 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 27, Sep 3, 2024

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
699	Urban land	2.4	100.0%
Totals for Area of Interest		**2.4**	**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.

National Flood Hazard Layer FIRMette

FEMA

70°45'49"W 43°4'51"N

70°45'12"W 43°4'24"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/13/2024 at 8:02 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

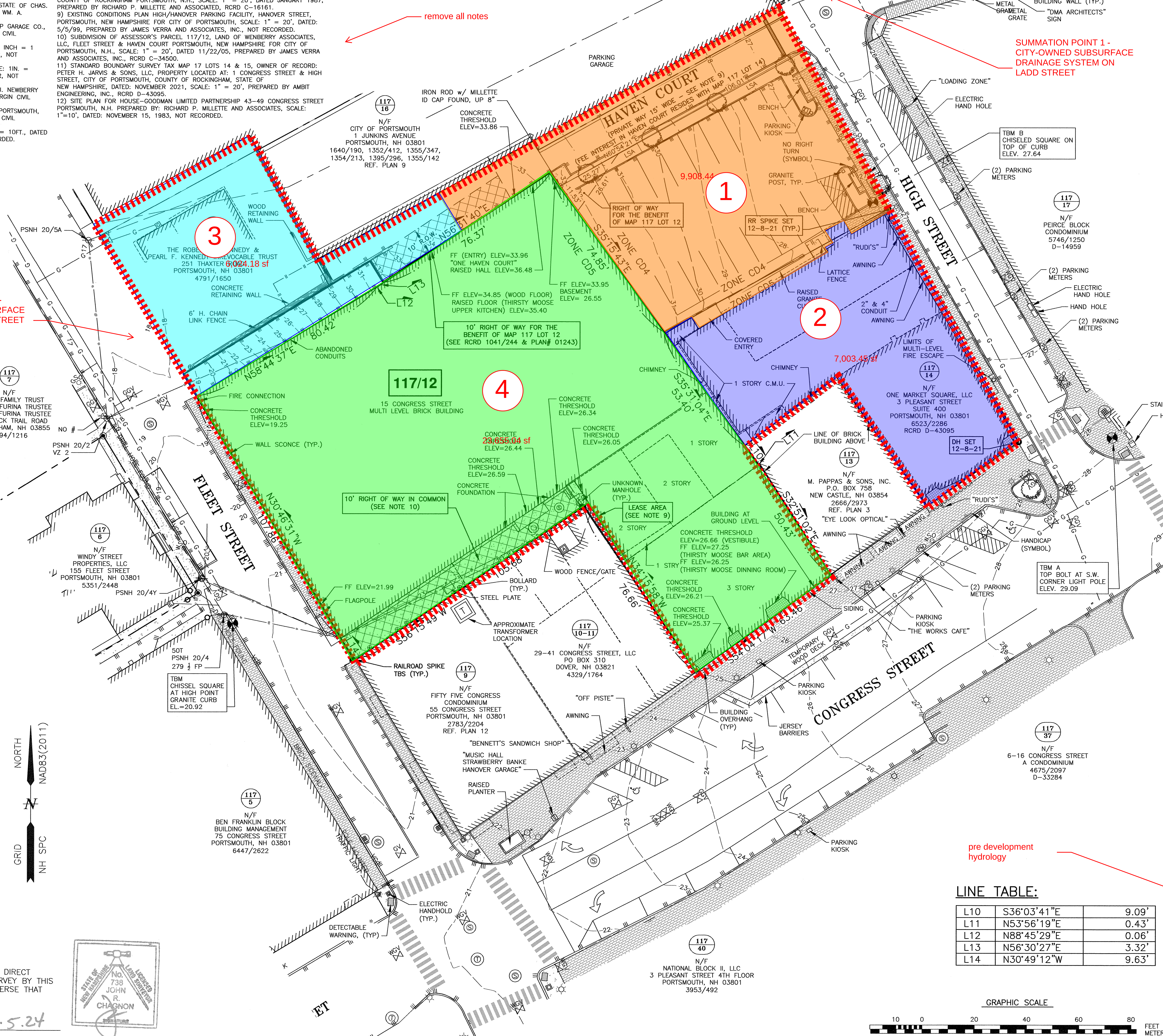
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND IN PORTSMOUTH N.H. BELONGING TO THE ESTATE OF CHAS. H. MENDUM, SCALE: 1 IN = 20 FT, DATED JULY 1, 1908, PREPARED BY WM. A. GROVER CIVIL ENGINEER, RCRD 00469.
2) LAND ON HAVEN COURT PORTSMOUTH, N.H., F.W. HARTFORD TO HISLOP GARAGE CO., SCALE: 1IN. = 20FT., DATED FEB. 1926, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 00376.
3) LOT PLAN NOS. 7–13 CONGRESS ST. PORTSMOUTH, N.H., SCALE: 1/4 INCH = 1 FOOT, DATED MAR. 1937, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
4) PLAN OF LOT NOS. 173 – 181 FLEET ST. PORTSMOUOTH, N.H., SCALE: 1IN. = 20FT., DATED NOV. 1945, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
5) LAND IN PORTSMOUTH, N.H., RALPH T. WOOD & IRA A. NEWICK TO J.J. NEWBERRY CO., SCALE: 1IN. = 20FT., DATED MAY 1946, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 01243.
6) PLAN OF LOT PORTSMOUTH, N.H., NEWICK & WOOD INC. TO CITY OF PORTSMOUTH, SCALE 1IN. = 40FT., DATED MAR. 1956, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD 02537.
7) PLAN OF LOT 26 – 30 HIGH ST. PORTSMOUTH, N.H., SCALE: 1IN. = 10FT., DATED OCT. 1961, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, NOT RECORDED.
8) PLAN OF LAND FOR RICHARD A. CABRAL & BRUCE E. NADEAU CONGRESS/FLEET ST. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H., SCALE: 1" = 20', DATED JANUARY 1987, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATED, RCRD C–16161.
9) EXISTING CONDITIONS PLAN HIGH/HANOVER PARKING FACILITY, HANOVER STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, SCALE: 1" = 20', DATED: 5/5/99, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., NOT RECORDED.
10) SUBDIVISION OF ASSESSOR'S PARCEL 117/12, LAND OF WENBERRY ASSOCIATES, LLC, FLEET STREET & HAVEN COURT PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, N.H., SCALE: 1" = 20', DATED 11/22/05, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., RCRD C–34500.
11) STANDARD BOUNDARY SURVEY TAX MAP 17 LOTS 14 & 15, OWNER OF RECORD: PETER H. JARVIS & SONS, LLC, PROPERTY LOCATED AT: 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, DATED: NOVEMBER 2021, SCALE: 1" = 20', PREPARED BY AMBIT ENGINEERING, INC., RCRD D–43095.
12) SITE PLAN FOR HOUSE–GOODMAN LIMITED PARTNERSHIP 43–49 CONGRESS STREET PORTSMOUTH, N.H. PREPARED BY: RICHARD P. MILLETTE AND ASSOCIATES, SCALE: 1"=10', DATED: NOVEMBER 15, 1983, NOT RECORDED.

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
	BOUND FOUND
——S——	SEWER LINE
——G——	GAS LINE
——D——	STORM DRAIN
——W——	WATER LINE
——UE——	UNDERGROUND ELECTRIC
— — —	OVERHEAD ELECTRIC/WIRES
——100——	CONTOUR
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT (EP)
	UTILITY POLE
WSO	WATER SHUT OFF/CURB STOP
GSO	GAS SHUT OFF
GV	GATE VALVE
HYD	HYDRANT
G W E	METER (GAS, WATER, ELECTRIC)
	CATCH BASIN
(T)	TELEPHONE MANHOLE
(S)	SEWER MANHOLE
(D)	DRAIN MANHOLE
EL.	ELEVATION
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
INV	INVERT
TBM	TEMPORARY BENCH MARK
TYP	TYPICAL
VGC/SGC	VERTICAL/SLOPED GRANITE CURB



LINE TABLE:

L10	S36°03'41"E	9.09'
L11	N53°56'19"E	0.43'
L12	N88°45'29"E	0.06'
L13	N56°30'27"E	3.32'
L14	N30°49'12"W	9.63'

GRAPHIC SCALE

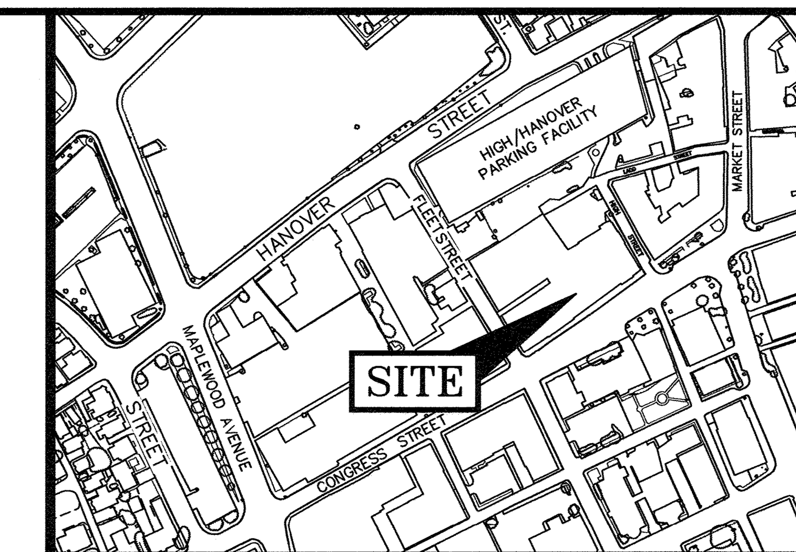
10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

JOHN R. CHAGNON, LLS 738

11.5.24
DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON SIGNATURE



LOCATION MAP 1" = 300'

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 12.

2) OWNERS OF RECORD:
WENBERRY ASSOCIATES, LLC
C/O CP MANAGEMENT
11 COURT STREET SUITE 100
EXETER, N.H. 03833
3060/164

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) EXISTING LOT AREA:

LOT 12 AREA:
23,708 S.F.
0.5443 ACRES

LOT 14 AREA (AFTER LLR):
18,225 S.F.
0.4184 ACRES

PROPOSED COMBINED LOT AREA:
41,933 S.F.
0.9626 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY SURVEY AND EXISTING CONDITIONS ON ASSESSORS MAP 117 LOT 12.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) PARCEL IS SUBJECT TO A LEASE AGREEMENT FOR A PORTION OF LESSEE'S WALL IS ENCROACHING ON SUBJEST PARCEL. SEE RCRD 1512/410 & 1690/130.

10) PARCEL IS SUBJECT TO A RIGHT OF WAY IN COMMON FOR PASSAGE AND UTILITIES AND GENERAL PURPOSES PER DEEDS. SEE RCRD 322/318, 322/380, 322/381, 348/80, 348/81, 348/82, 1484/44, 2713/797, AND RCRD C–16161.

11) PARCEL IS SUBJECT TO A UTILITY EASEMENT TO P.S.N.H. FROM UTILITY POLE 20/4 ON FLEET STREET EASTERLY TO GRANTORS EASTERLY BOUNDARY. SEE RCRD 3124/695.

12) HAVEN COURT IS A PRIVATE WAY 15 FEET WIDE. ALL RIGHTS, TITLE AND INTEREST UNTO SAID HAVEN COURT WERE CONVEYED WITH ASSESSOR'S MAP 117 LOT 15, AS DESCRIBED IN RCRD 983/179, SUBJECT TO RIGHTS OF OTHERS (OTHERS NOT DEFINED ON THIS SURVEY).

No.	DATE	DESCRIPTION	BY	CHK.
2	11/5/24	ISSUED FOR COMMENT	EDS	JRC
1	8/15/24	PARTY WALL	RJB	JRC
0	7/24/24	ISSUED FOR COMMENT	RJB	JRC

DRAWING ISSUE STATUS
SITE SURVEY

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT
APPLICANT: ONE MARKET SQUARE, LLC
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE
15 CONGRESS
STANDARD BOUNDARY SURVEY &
EXISTING CONDITIONS PLAN
OF THE DEVELOPMENT PARCEL

DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
RJB	---	JRC

PROJECT No.	FIELD BOOK & PAGE
5010156.01	FB 309 PG 54

SHEET No.	REV.
V101	2

P:\NH\5010156-McNabb_Properties\3406-Congress St., Portsmouth-JRC\2024 Site Plan\Plans & Specs\Site\3406 JJ Newberry Existing Conditions 2024.dwg, 11/1/2024 1:31:19 PM, Canon TX-3000 - Direct

NORTH
NAD83(2011)
GRID
NH SPC

SUMMATION POINT 1 - CITY-OWNED SUBSURFACE DRAINAGE SYSTEM ON LADD STREET

SUMMATION POINT 2 - CITY-OWNED SUBSURFACE SYSTEM ON FLEET STREET

POST DEVELOPMENMT HYDROLOGY PLAN

PROPOSED NEWBERRY WAY

PROPOSED UNDERDRAIN

LADD STREET

HIGH STREET

CONGRESS STREET

FLEET STREET

1 — 9,161.23 sf

2 — 23,385.06 sf

3 — 13,817.55 sf

PROPOSED 3 STORY WITH ATTIC-HIP TOP MANSARD ROOF FOOTPRINT=9,355 S.F. HEIGHT=40.65' FF=24.917

PROPOSED EXISTING STRUCTURE RENOVATION 22,622 SF

PROPOSED EXISTING STRUCTURE RENOVATION FOOTPRINT 2,744 S.F.

NEW STORMDRAIN PIPING WITHIN FLEET STREET IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY AND IS NOT PART OF THIS PROJECT. LOCATION BASED OFF DRAFT PLANS FROM CITY OF PORTSMOUTH.

ROOF DRAIN CONNECTION

INTERIOR ROOF DRAIN

PROPOSED CATCH BASIN, TYP.

CB 2 · CB 4 · CB 5 · CB 6 · CB 7

DMH 1

P1 · P2 · P3 · P5 · P6

N/F CITY OF PORTSMOUTH 1 JUNKINS AVENUE PORTSMOUTH, NH 03801 1640/190, 1352/412, 1355/347, 1354/213, 1395/296, 1355/142 REF. PLAN 9

N/F 401 STREET PROPERTIES, LLC 155 FLEET STREET PORTSMOUTH, NH 03801 5351/2448

N/F M. PAPPAS & SONS, INC. P.O. BOX 758 NEW CASTLE, NH 03854 2666/2973 REF. PLAN 3

N/F FIFTY FIVE CONGRESS CONDOMINIUM 55 CONGRESS STREET PORTSMOUTH, NH 03801 2783/2204 REF. PLAN 12

N/F NORTH CHURCH OF PORTSMOUTH 355 SPINNEY ROAD PORTSMOUTH, NH 03801

N/F THE ROBERT F. KENNEDY 251 THAN PORTSMOUTH 4791/16

TBM CHISSEL SQUARE AT HIGH POINT GRANITE CURB EL=20.92

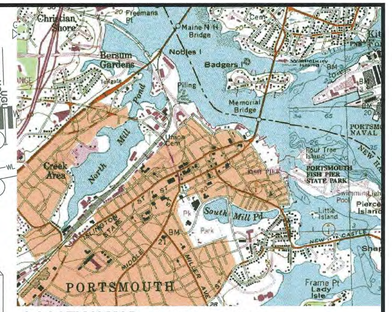
TBM B CHISELED SQUARE ON TOP OF CURB ELEV. 27.64

TBM A TOP BOLT AT S.W. CORNER LIGHT POLE ELEV. 29.09

B-1 (27.17) · B-2 (27.49) · B-3 (27.25) · B-4 (27.17) · B-5 (31.02) · B-6 (31.42)

"LOADING ZONE" · "OFF PISTE" · "BENNETT'S SANDWICH SHOP" · "MUSIC HALL STRAWBERRY BANKE HANOVER GARAGE" · "THE WORKS CAFE" · "RUDI'S" · "EYE LOOK OPTICAL" · "THE MERCANTILE" · "THE CLIP JOINT" · "TROUPE STUDIO" · "MARIWOODS KITCHEN & BATH" · "FEDERAL CIGAR" SIGN · "LADD ST" & NO LEFT TURN SIGN · "SLOW BURN LOUNGE" SIGN · "DMA ARCHITECTS" SIGN · "STOP DO NOT ENTER" SIGN

(2) PARKING METERS · ELECTRIC HAND HOLE · HAND HOLE · ELECTRIC HANDHOLE · COMMUNICATION HANDHOLE · FIRE HOSE CONNECTION · GRANITE STEP · 4" ROOF DRAIN · AWNING · SIGN ATTACHED TO BUILDING WALL (TYP.) · METAL GRATE · STAIRS · RAILROAD SPIKE TBS (TYP.) · BOLLARD (TYP.) · APPROXIMATE EXISTING TRANSFORMER LOCATION · WOOD FENCE/GATE · STEEL PLATE · FLAGPOLE · WALL SCONCE (TYP.) · CLEANOUT · FIRE CONNECTION · CONCRETE RETAINING WALL · 8' H. CHAIN LINK FENCE · 1.35' WALL THICKNESS · 1.75' WALL THICKNESS · EXISTING ABANDONED CURB CUTS · TEMPORARY WOOD DECK · EXISTING JERSEY BARRIERS · PARKING KIOSK · BUILDING OVERHANG (TYP) · LINE OF BRICK BUILDING ABOVE · BUILDING ABOVE · BUILDING AT GROUND LEVEL · SIDING · CHIMNEY · ROOF DRAIN · DH SET 12-8-21 · RR SPIKE SET 12-8-21 · RR SPIKE SET 12-8-21 (TYP.) · (2) PARKING METERS · 2" & 4" CONDUIT · UNDERGROUND ELECTRIC VAULT (APPROXIMATE LOCATION) · PARKING GARAGE · CB3 (TRENCH DRAIN) · 8" PVC · 6" PVC · 10" RIGHT OF WAY IN COMMON (SEE NOTE 10) · 10' RIGHT OF WAY FOR THE BENEFIT OF MAP 117 LOT 12 (SEE ROD 1041/244 & PLAN# 01243) · RIGHT OF WAY FOR THE BENEFIT OF MAP 117 LOT 12 · IRON ROD w/ MILLETTE ID CAP FOUND, UP 8" · PSNH 60/5 w/CROSS BRACE · TENSE POST · DRILL HOLE ROUND · CUT OFF FENCE POST · FENCE POST UPOLE GUYED TO BUILDING · SOT PSNH 20/4 FP 279 1/2 · EXHAUST PIPE · DOOR · DECK · CONCRETE · CONCRETE THRESHOLD ELEV=33.86 · FF (ENTRY) ELEV=33.96 "ONE HAVEN COURT" RAISED HALL ELEV=36.46 · FF ELEV=33.95 BASEMENT ELEV= 26.55 · FF ELEV=34.85 (WOOD FLOOR) RAISED FLOOR (THIRSTY MOOSE UPPER KITCHEN) ELEV=35.40 · N56° 30' 22"E 3.32' · N88° 45' 29"E 0.06' · CONCRETE THRESHOLD ELEV=19.25 · CONCRETE THRESHOLD ELEV=26.34 · CONCRETE THRESHOLD ELEV=26.05 · CONCRETE THRESHOLD ELEV=26.59 · CONCRETE FOUNDATION · CONCRETE THRESHOLD ELEV=28.44 · CONCRETE THRESHOLD ELEV=26.66 (VESTIBULE) FF ELEV=27.25 (THIRSTY MOOSE BAR AREA) FF ELEV=26.25 (THIRSTY MOOSE DINNING ROOM) · CONCRETE THRESHOLD ELEV=26.21 · CONCRETE THRESHOLD ELEV=25.37 · 1 STORY S36° 03' 41"E 9.09' · N63° 56' 19"E 0.43' · 2 STORY · 3 STORY · UNKNOWN MANHOLE (TYP.) · ZONE CD4 · ZONE CD5 · 117/16 · 117/8 · 117/6 · 117/13 · 117/9 · 107/83



LOCATION MAP: USGS QUADRANGLE: PORTSMOUTH
SCALE: 1"=2000'
MAPTECH® USGS TOPOGRAPHIC SERIES™. ©MAPTECH®, INC. 978-933-3000 WWW.MAPTECH.COM/TOPO

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

GRAPHIC SCALE

20 0 19.99 ft 20 40 60

(IN FEET)
1 inch = 20 ft.

REV.	DATE	DESCRIPTION	BY	CHK
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

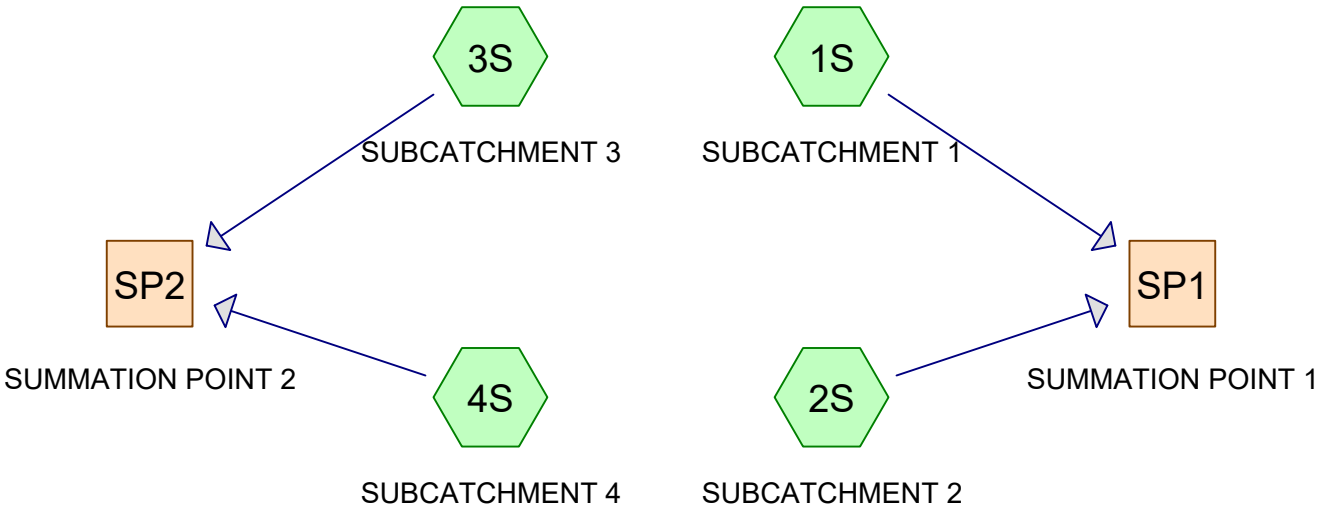
GRADING AND DRAINAGE PLAN

DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

PROJECT No. 5010156.3406

SHEET No. C104 · REV. No. 1



Subcat Reach Pond Link

Routing Diagram for Pre Development
Prepared by Haley Ward, Printed 11/14/2024
HydroCAD® 10.20-5c s/n 00641 © 2023 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=9,908 sf 95.05% Impervious Runoff Depth>3.10"
Tc=5.0 min CN=97 Runoff=1.19 cfs 0.059 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=7,003 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=0.85 cfs 0.043 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=6,024 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.037 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=2.86 cfs 0.144 af

Reach SP1: SUMMATION POINT 1 Inflow=2.03 cfs 0.101 af
Outflow=2.03 cfs 0.101 af

Reach SP2: SUMMATION POINT 2 Inflow=3.59 cfs 0.181 af
Outflow=3.59 cfs 0.181 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.282 af Average Runoff Depth = 3.16"
1.05% Pervious = 0.011 ac 98.95% Impervious = 1.058 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 1.19 cfs @ 11.95 hrs, Volume= 0.059 af, Depth> 3.10"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	9,418	98	IMPERVIOUS
	490	84	50-75% Grass cover, Fair, HSG D
	9,908	97	Weighted Average
	490		4.95% Pervious Area
	9,418		95.05% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 0.85 cfs @ 11.95 hrs, Volume= 0.043 af, Depth> 3.18"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	7,003	98	IMPERVIOUS
	7,003		100.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 0.73 cfs @ 11.95 hrs, Volume= 0.037 af, Depth> 3.18"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	6,024	98	IMPERVIOUS
	6,024		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 2.86 cfs @ 11.95 hrs, Volume= 0.144 af, Depth> 3.18"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.388 ac, 97.10% Impervious, Inflow Depth > 3.13" for 2-yr event
Inflow = 2.03 cfs @ 11.95 hrs, Volume= 0.101 af
Outflow = 2.03 cfs @ 11.95 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.681 ac,100.00% Impervious, Inflow Depth > 3.18" for 2-yr event
Inflow = 3.59 cfs @ 11.95 hrs, Volume= 0.181 af
Outflow = 3.59 cfs @ 11.95 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=9,908 sf 95.05% Impervious Runoff Depth>4.83"
Tc=5.0 min CN=97 Runoff=1.82 cfs 0.092 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=7,003 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=1.29 cfs 0.066 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=6,024 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=1.11 cfs 0.056 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=4.37 cfs 0.222 af

Reach SP1: SUMMATION POINT 1 Inflow=3.12 cfs 0.157 af
Outflow=3.12 cfs 0.157 af

Reach SP2: SUMMATION POINT 2 Inflow=5.48 cfs 0.278 af
Outflow=5.48 cfs 0.278 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.435 af Average Runoff Depth = 4.89"
1.05% Pervious = 0.011 ac 98.95% Impervious = 1.058 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 1.82 cfs @ 11.95 hrs, Volume= 0.092 af, Depth> 4.83"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	9,418	98	IMPERVIOUS
	490	84	50-75% Grass cover, Fair, HSG D
	9,908	97	Weighted Average
	490		4.95% Pervious Area
	9,418		95.05% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.29 cfs @ 11.95 hrs, Volume= 0.066 af, Depth> 4.90"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	7,003	98	IMPERVIOUS
	7,003		100.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 1.11 cfs @ 11.95 hrs, Volume= 0.056 af, Depth> 4.90"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	6,024	98	IMPERVIOUS
	6,024		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 4.37 cfs @ 11.95 hrs, Volume= 0.222 af, Depth> 4.90"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.388 ac, 97.10% Impervious, Inflow Depth > 4.86" for 10-yr event
Inflow = 3.12 cfs @ 11.95 hrs, Volume= 0.157 af
Outflow = 3.12 cfs @ 11.95 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.681 ac,100.00% Impervious, Inflow Depth > 4.90" for 10-yr event
Inflow = 5.48 cfs @ 11.95 hrs, Volume= 0.278 af
Outflow = 5.48 cfs @ 11.95 hrs, Volume= 0.278 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=9,908 sf 95.05% Impervious Runoff Depth>6.17"
Tc=5.0 min CN=97 Runoff=2.32 cfs 0.117 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=7,003 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=1.64 cfs 0.084 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=6,024 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=1.41 cfs 0.072 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=5.55 cfs 0.282 af

Reach SP1: SUMMATION POINT 1 Inflow=3.96 cfs 0.201 af
Outflow=3.96 cfs 0.201 af

Reach SP2: SUMMATION POINT 2 Inflow=6.96 cfs 0.354 af
Outflow=6.96 cfs 0.354 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.555 af Average Runoff Depth = 6.22"
1.05% Pervious = 0.011 ac 98.95% Impervious = 1.058 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 2.32 cfs @ 11.95 hrs, Volume= 0.117 af, Depth> 6.17"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	9,418	98	IMPERVIOUS
	490	84	50-75% Grass cover, Fair, HSG D
	9,908	97	Weighted Average
	490		4.95% Pervious Area
	9,418		95.05% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.64 cfs @ 11.95 hrs, Volume= 0.084 af, Depth> 6.24"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	7,003	98	IMPERVIOUS
	7,003		100.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 1.41 cfs @ 11.95 hrs, Volume= 0.072 af, Depth> 6.24"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	6,024	98	IMPERVIOUS
	6,024		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 5.55 cfs @ 11.95 hrs, Volume= 0.282 af, Depth> 6.24"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.388 ac, 97.10% Impervious, Inflow Depth > 6.20" for 25-yr event
Inflow = 3.96 cfs @ 11.95 hrs, Volume= 0.201 af
Outflow = 3.96 cfs @ 11.95 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.681 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-yr event
Inflow = 6.96 cfs @ 11.95 hrs, Volume= 0.354 af
Outflow = 6.96 cfs @ 11.95 hrs, Volume= 0.354 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=9,908 sf 95.05% Impervious Runoff Depth>7.43"
Tc=5.0 min CN=97 Runoff=2.78 cfs 0.141 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=7,003 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=1.97 cfs 0.100 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=6,024 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=1.69 cfs 0.086 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=6.65 cfs 0.339 af

Reach SP1: SUMMATION POINT 1 Inflow=4.75 cfs 0.241 af
Outflow=4.75 cfs 0.241 af

Reach SP2: SUMMATION POINT 2 Inflow=8.34 cfs 0.425 af
Outflow=8.34 cfs 0.425 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.667 af Average Runoff Depth = 7.48"
1.05% Pervious = 0.011 ac 98.95% Impervious = 1.058 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

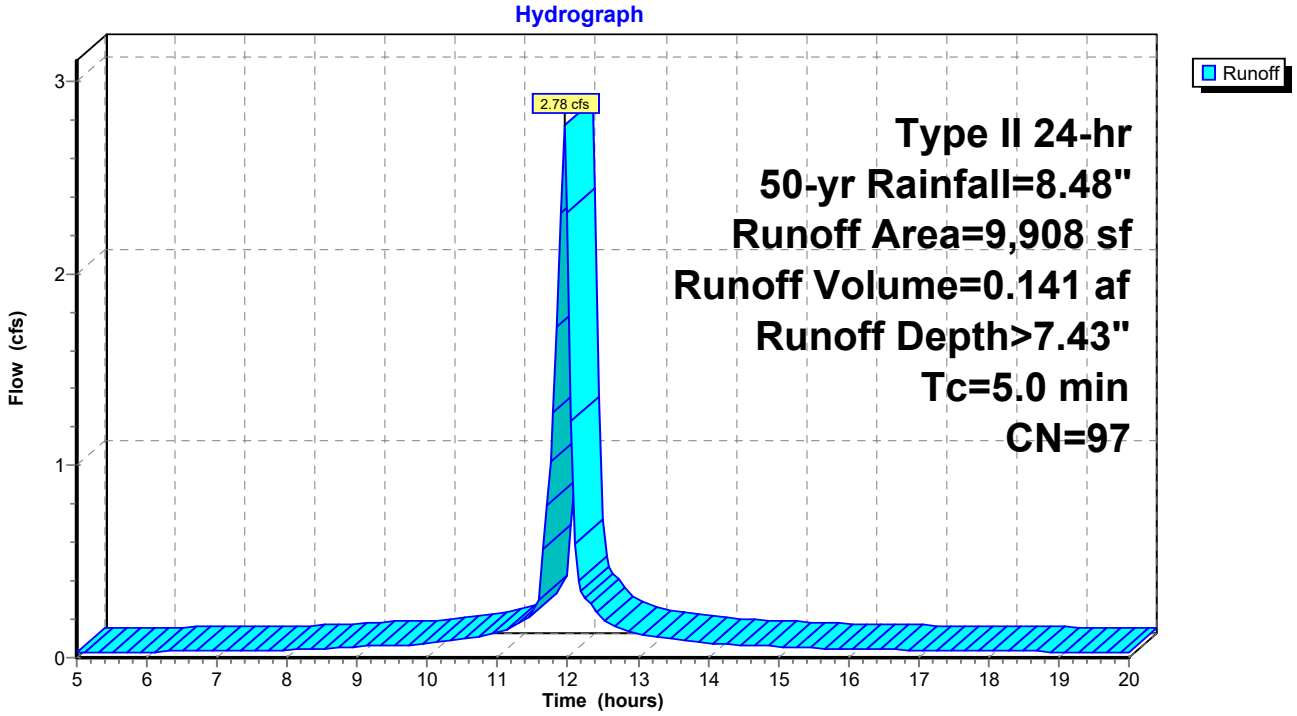
Runoff = 2.78 cfs @ 11.95 hrs, Volume= 0.141 af, Depth> 7.43"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	9,418	98	IMPERVIOUS
	490	84	50-75% Grass cover, Fair, HSG D
	9,908	97	Weighted Average
	490		4.95% Pervious Area
	9,418		95.05% Impervious Area

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

Subcatchment 1S: SUBCATCHMENT 1



Summary for Subcatchment 2S: SUBCATCHMENT 2

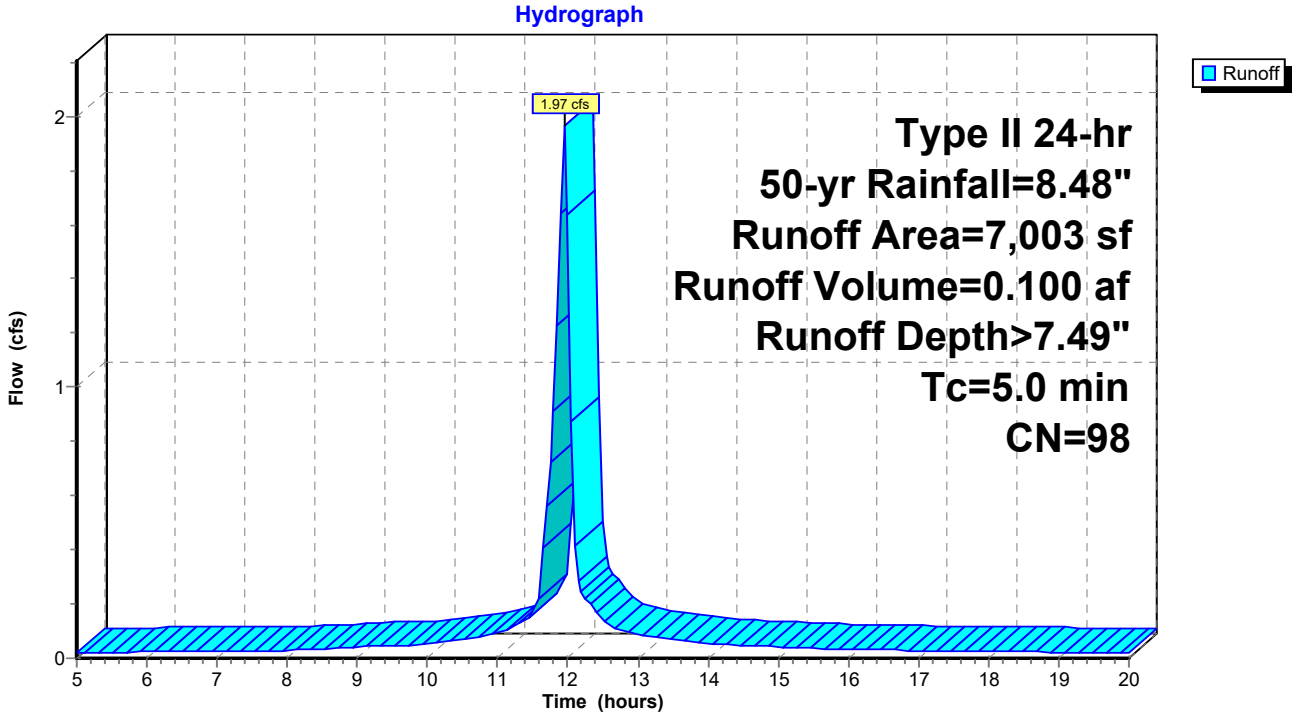
Runoff = 1.97 cfs @ 11.95 hrs, Volume= 0.100 af, Depth> 7.49"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	7,003	98	IMPERVIOUS
	7,003		100.00% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2



Summary for Subcatchment 3S: SUBCATCHMENT 3

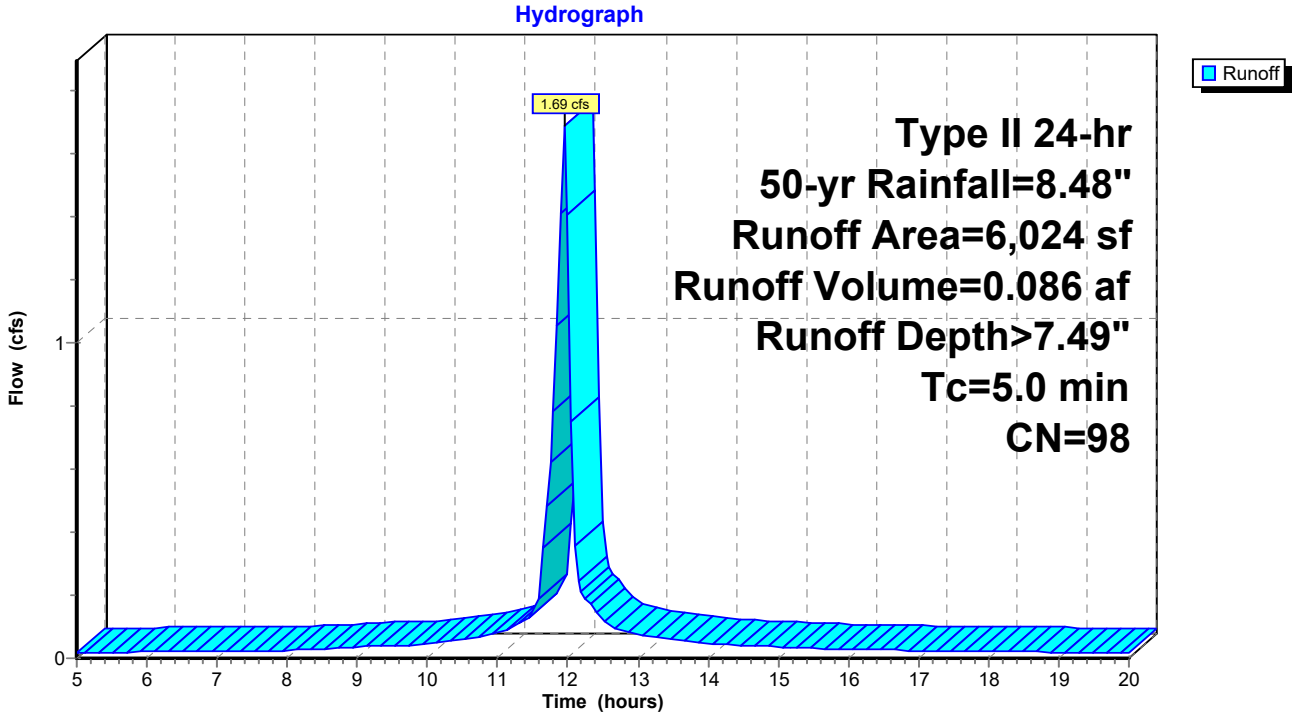
Runoff = 1.69 cfs @ 11.95 hrs, Volume= 0.086 af, Depth> 7.49"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	6,024	98	IMPERVIOUS
	6,024		100.00% Impervious Area

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

Subcatchment 3S: SUBCATCHMENT 3



Summary for Subcatchment 4S: SUBCATCHMENT 4

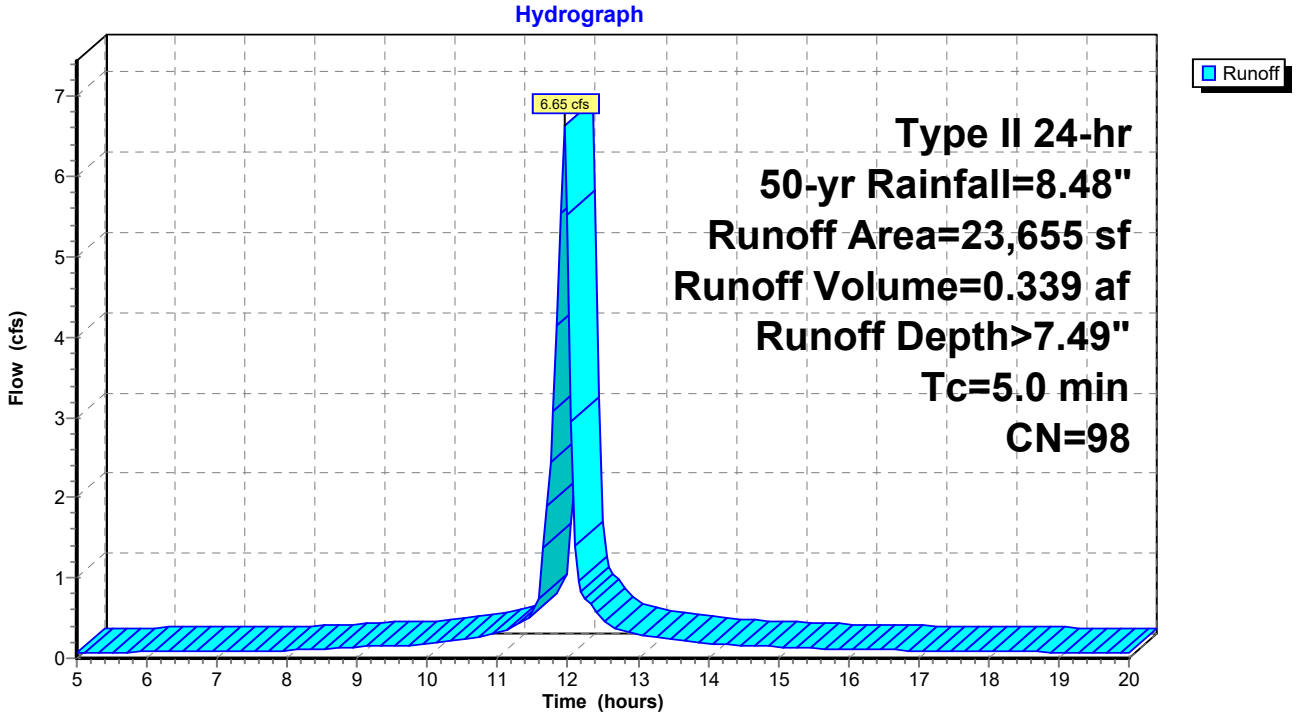
Runoff = 6.65 cfs @ 11.95 hrs, Volume= 0.339 af, Depth> 7.49"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Subcatchment 4S: SUBCATCHMENT 4

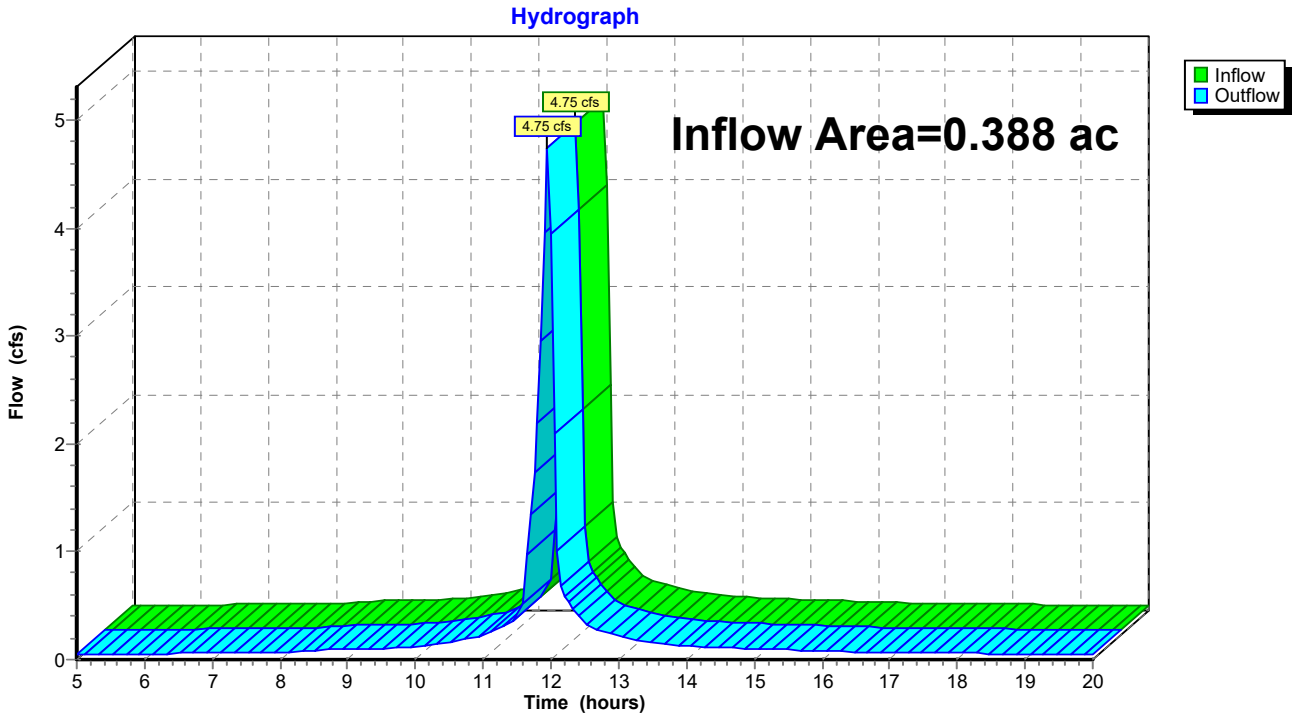


Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.388 ac, 97.10% Impervious, Inflow Depth > 7.46" for 50-yr event
Inflow = 4.75 cfs @ 11.95 hrs, Volume= 0.241 af
Outflow = 4.75 cfs @ 11.95 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1

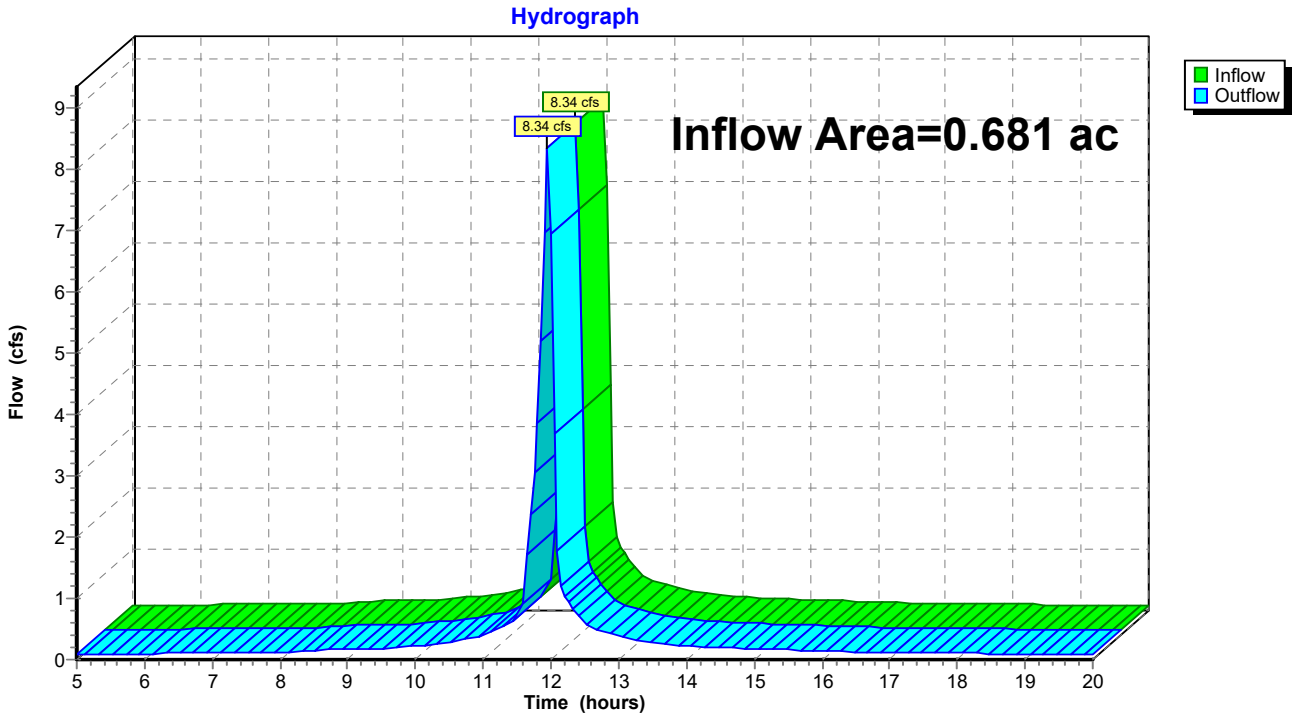


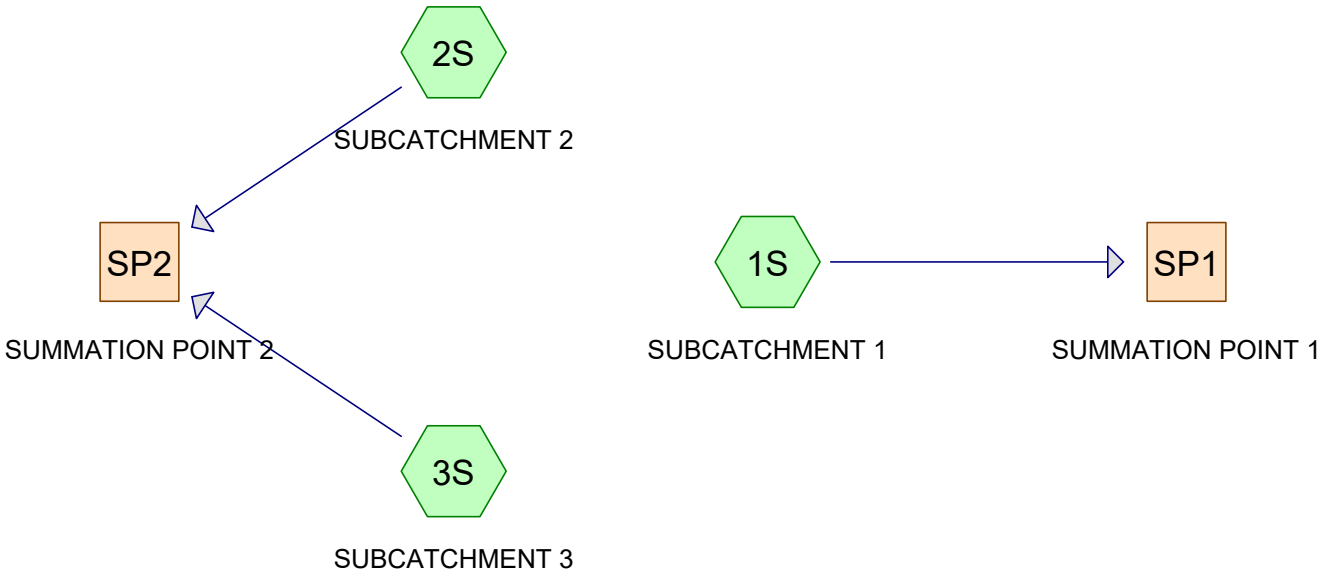
Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.681 ac,100.00% Impervious, Inflow Depth > 7.49" for 50-yr event
Inflow = 8.34 cfs @ 11.95 hrs, Volume= 0.425 af
Outflow = 8.34 cfs @ 11.95 hrs, Volume= 0.425 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2





Subcat Reach Pond Link

Routing Diagram for Proposed Development
Prepared by Haley Ward, Printed 11/14/2024
HydroCAD® 10.20-5c s/n 00641 © 2023 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=13,817 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=1.67 cfs 0.084 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,118 sf 79.00% Impervious Runoff Depth>2.92"
Tc=5.0 min CN=95 Runoff=1.06 cfs 0.051 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=98 Runoff=2.86 cfs 0.144 af

Reach SP1: SUMMATION POINT 1 Inflow=1.67 cfs 0.084 af
Outflow=1.67 cfs 0.084 af

Reach SP2: SUMMATION POINT 2 Inflow=3.92 cfs 0.195 af
Outflow=3.92 cfs 0.195 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.279 af Average Runoff Depth = 3.13"
4.11% Pervious = 0.044 ac 95.89% Impervious = 1.026 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 1.67 cfs @ 11.95 hrs, Volume= 0.084 af, Depth> 3.18"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	13,817	98	IMPERVIOUS
	0	84	50-75% Grass cover, Fair, HSG D
	13,817	98	Weighted Average
	13,817		100.00% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.06 cfs @ 11.95 hrs, Volume= 0.051 af, Depth> 2.92"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	7,203	98	IMPERVIOUS
	1,915	84	50-75% Grass cover, Fair, HSG D
	9,118	95	Weighted Average
	1,915		21.00% Pervious Area
	7,203		79.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 2.86 cfs @ 11.95 hrs, Volume= 0.144 af, Depth> 3.18"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.68"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.317 ac,100.00% Impervious, Inflow Depth > 3.18" for 2-yr event
Inflow = 1.67 cfs @ 11.95 hrs, Volume= 0.084 af
Outflow = 1.67 cfs @ 11.95 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.752 ac, 94.16% Impervious, Inflow Depth > 3.11" for 2-yr event
Inflow = 3.92 cfs @ 11.95 hrs, Volume= 0.195 af
Outflow = 3.92 cfs @ 11.95 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=13,817 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=2.55 cfs 0.130 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,118 sf 79.00% Impervious Runoff Depth>4.66"
Tc=5.0 min CN=95 Runoff=1.65 cfs 0.081 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>4.90"
Tc=5.0 min CN=98 Runoff=4.37 cfs 0.222 af

Reach SP1: SUMMATION POINT 1 Inflow=2.55 cfs 0.130 af
Outflow=2.55 cfs 0.130 af

Reach SP2: SUMMATION POINT 2 Inflow=6.02 cfs 0.303 af
Outflow=6.02 cfs 0.303 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.433 af Average Runoff Depth = 4.85"
4.11% Pervious = 0.044 ac 95.89% Impervious = 1.026 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 2.55 cfs @ 11.95 hrs, Volume= 0.130 af, Depth> 4.90"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	13,817	98	IMPERVIOUS
	0	84	50-75% Grass cover, Fair, HSG D
	13,817	98	Weighted Average
	13,817		100.00% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.65 cfs @ 11.95 hrs, Volume= 0.081 af, Depth> 4.66"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	7,203	98	IMPERVIOUS
	1,915	84	50-75% Grass cover, Fair, HSG D
	9,118	95	Weighted Average
	1,915		21.00% Pervious Area
	7,203		79.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 4.37 cfs @ 11.95 hrs, Volume= 0.222 af, Depth> 4.90"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.317 ac,100.00% Impervious, Inflow Depth > 4.90" for 10-yr event
Inflow = 2.55 cfs @ 11.95 hrs, Volume= 0.130 af
Outflow = 2.55 cfs @ 11.95 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.752 ac, 94.16% Impervious, Inflow Depth > 4.83" for 10-yr event
Inflow = 6.02 cfs @ 11.95 hrs, Volume= 0.303 af
Outflow = 6.02 cfs @ 11.95 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=13,817 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=3.24 cfs 0.165 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,118 sf 79.00% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=95 Runoff=2.11 cfs 0.105 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=5.55 cfs 0.282 af

Reach SP1: SUMMATION POINT 1 Inflow=3.24 cfs 0.165 af
Outflow=3.24 cfs 0.165 af

Reach SP2: SUMMATION POINT 2 Inflow=7.65 cfs 0.387 af
Outflow=7.65 cfs 0.387 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.552 af Average Runoff Depth = 6.19"
4.11% Pervious = 0.044 ac 95.89% Impervious = 1.026 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 3.24 cfs @ 11.95 hrs, Volume= 0.165 af, Depth> 6.24"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	13,817	98	IMPERVIOUS
	0	84	50-75% Grass cover, Fair, HSG D
	13,817	98	Weighted Average
	13,817		100.00% Impervious Area

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

Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 2.11 cfs @ 11.95 hrs, Volume= 0.105 af, Depth> 6.02"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	7,203	98	IMPERVIOUS
	1,915	84	50-75% Grass cover, Fair, HSG D
	9,118	95	Weighted Average
	1,915		21.00% Pervious Area
	7,203		79.00% Impervious Area

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

Summary for Subcatchment 3S: SUBCATCHMENT 3

Runoff = 5.55 cfs @ 11.95 hrs, Volume= 0.282 af, Depth> 6.24"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=7.08"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.317 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-yr event
Inflow = 3.24 cfs @ 11.95 hrs, Volume= 0.165 af
Outflow = 3.24 cfs @ 11.95 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.752 ac, 94.16% Impervious, Inflow Depth > 6.18" for 25-yr event
Inflow = 7.65 cfs @ 11.95 hrs, Volume= 0.387 af
Outflow = 7.65 cfs @ 11.95 hrs, Volume= 0.387 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=13,817 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=3.88 cfs 0.198 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,118 sf 79.00% Impervious Runoff Depth>7.29"
Tc=5.0 min CN=95 Runoff=2.54 cfs 0.127 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=23,655 sf 100.00% Impervious Runoff Depth>7.49"
Tc=5.0 min CN=98 Runoff=6.65 cfs 0.339 af

Reach SP1: SUMMATION POINT 1 Inflow=3.88 cfs 0.198 af
Outflow=3.88 cfs 0.198 af

Reach SP2: SUMMATION POINT 2 Inflow=9.19 cfs 0.466 af
Outflow=9.19 cfs 0.466 af

Total Runoff Area = 1.070 ac Runoff Volume = 0.664 af Average Runoff Depth = 7.45"
4.11% Pervious = 0.044 ac 95.89% Impervious = 1.026 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

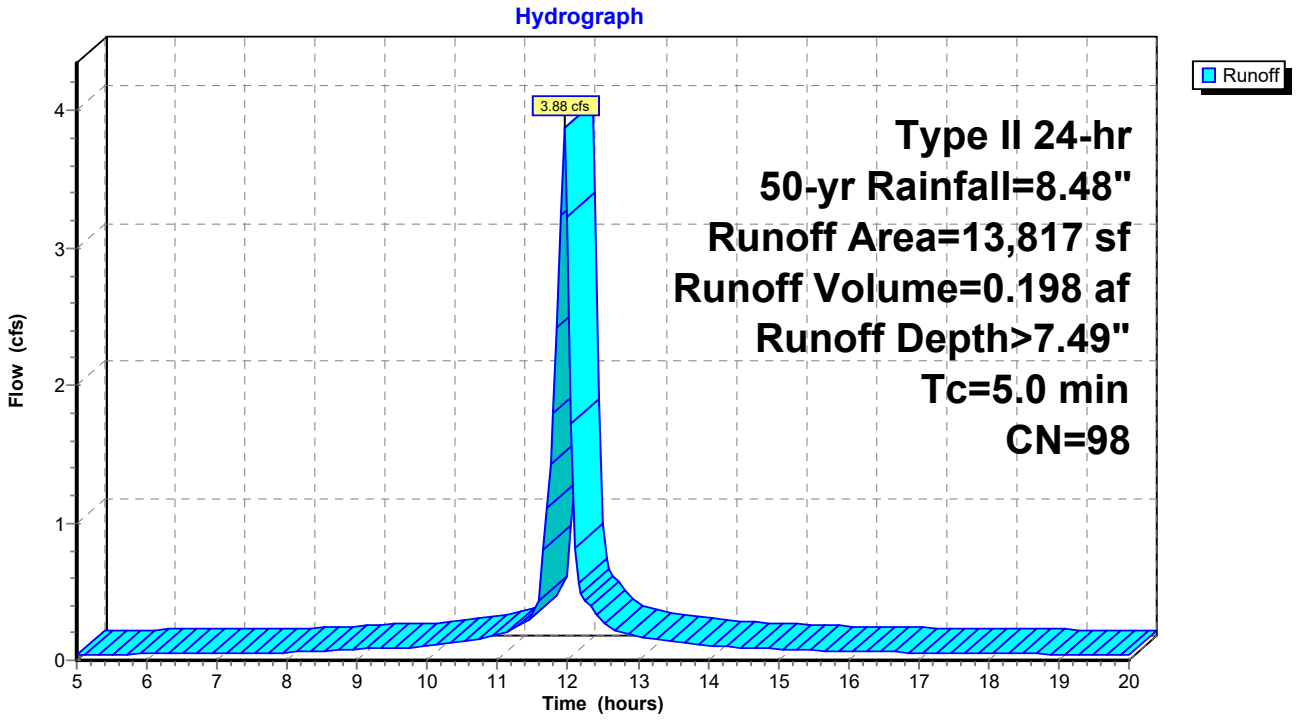
Runoff = 3.88 cfs @ 11.95 hrs, Volume= 0.198 af, Depth> 7.49"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	13,817	98	IMPERVIOUS
	0	84	50-75% Grass cover, Fair, HSG D
	13,817	98	Weighted Average
	13,817		100.00% Impervious Area

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

Subcatchment 1S: SUBCATCHMENT 1



Summary for Subcatchment 2S: SUBCATCHMENT 2

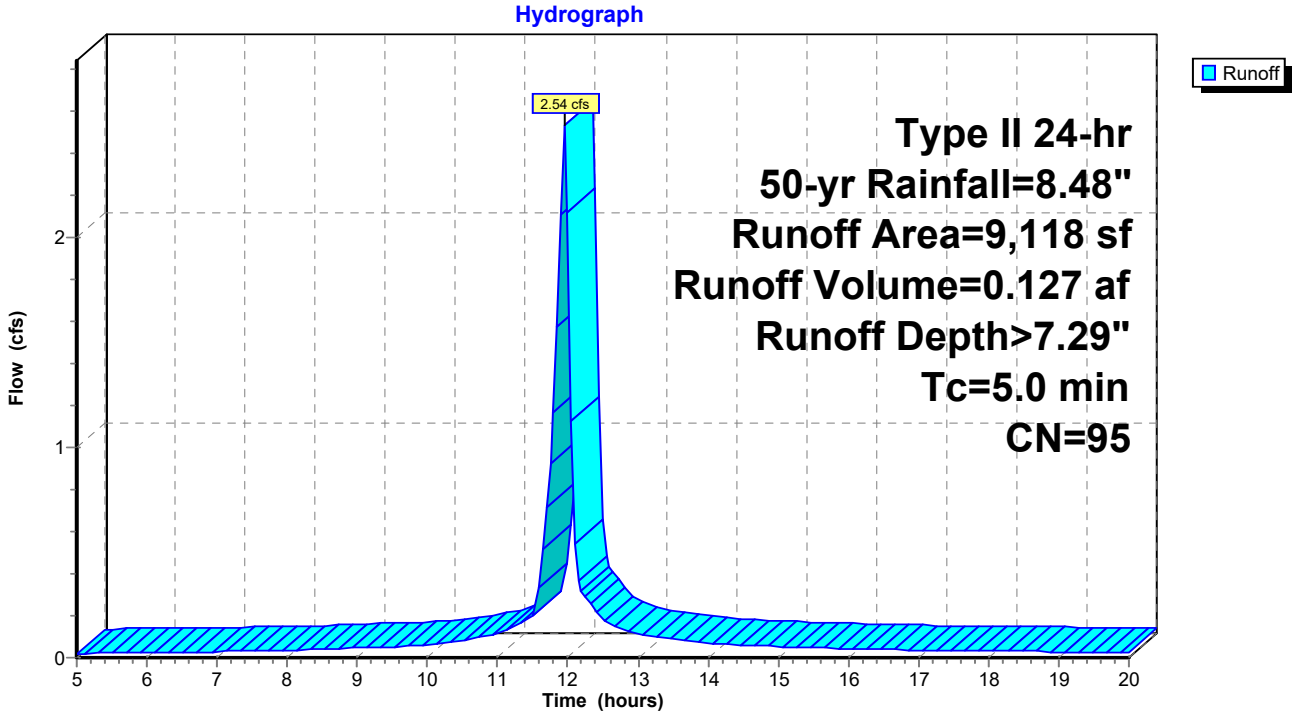
Runoff = 2.54 cfs @ 11.95 hrs, Volume= 0.127 af, Depth> 7.29"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	7,203	98	IMPERVIOUS
	1,915	84	50-75% Grass cover, Fair, HSG D
	9,118	95	Weighted Average
	1,915		21.00% Pervious Area
	7,203		79.00% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2



Summary for Subcatchment 3S: SUBCATCHMENT 3

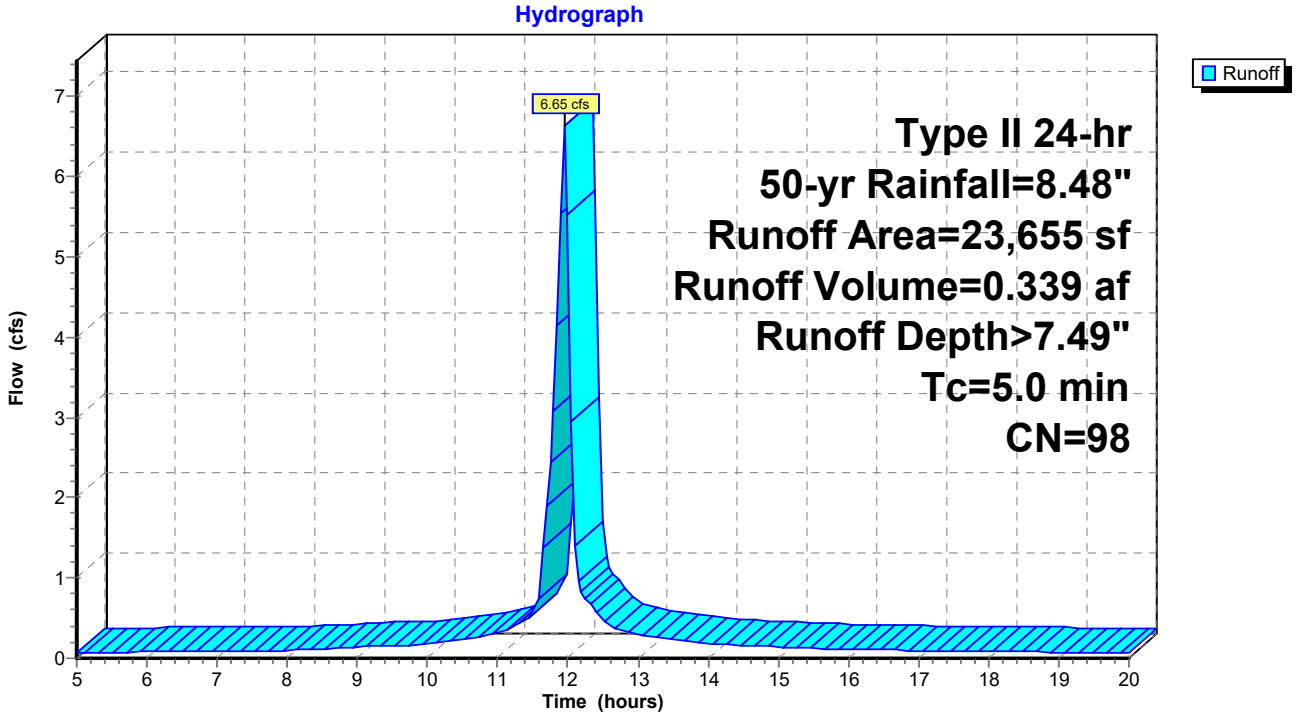
Runoff = 6.65 cfs @ 11.95 hrs, Volume= 0.339 af, Depth> 7.49"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-yr Rainfall=8.48"

	Area (sf)	CN	Description
*	23,655	98	IMPERVIOUS
	23,655		100.00% Impervious Area

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

Subcatchment 3S: SUBCATCHMENT 3

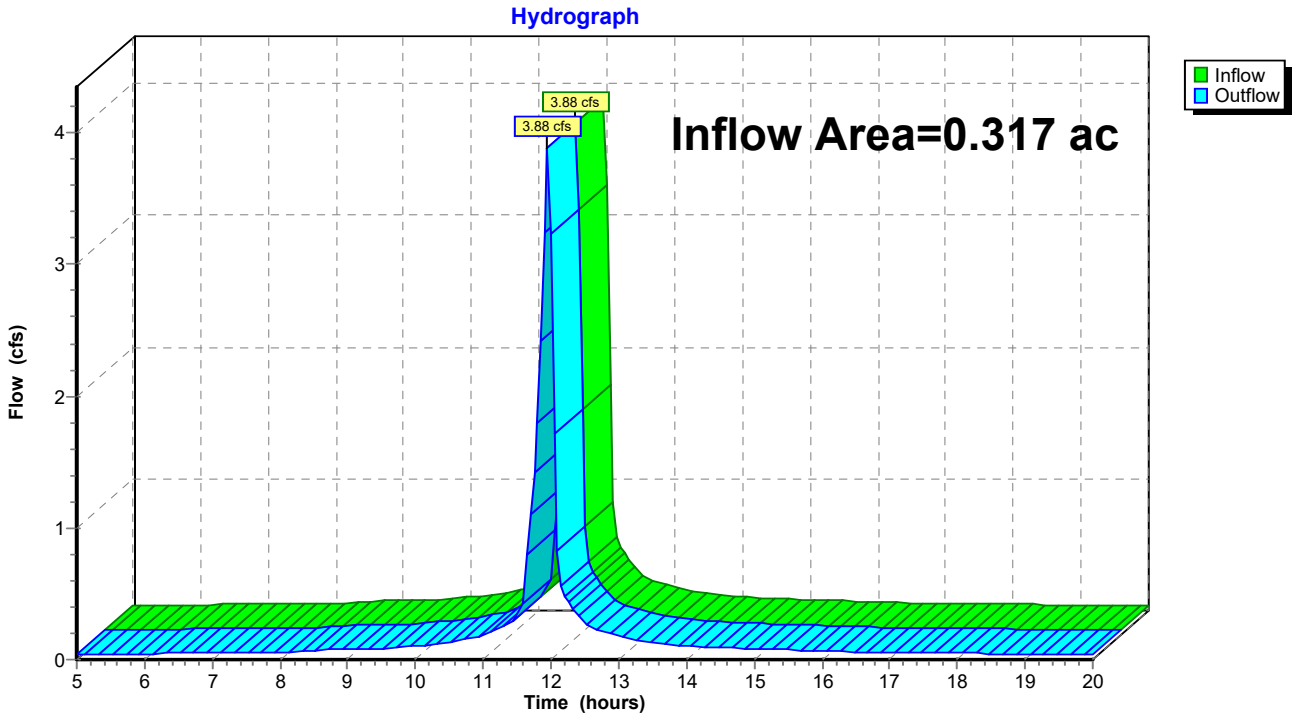


Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.317 ac,100.00% Impervious, Inflow Depth > 7.49" for 50-yr event
Inflow = 3.88 cfs @ 11.95 hrs, Volume= 0.198 af
Outflow = 3.88 cfs @ 11.95 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1

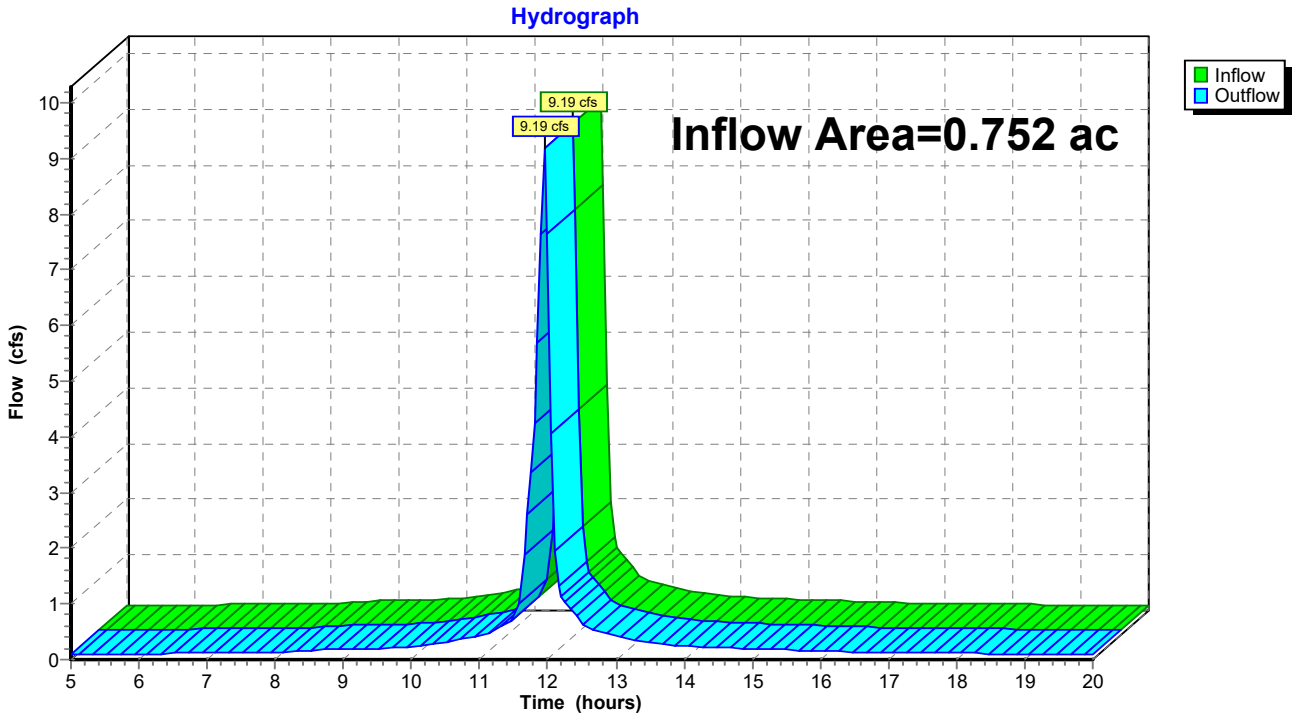


Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.752 ac, 94.16% Impervious, Inflow Depth > 7.43" for 50-yr event
Inflow = 9.19 cfs @ 11.95 hrs, Volume= 0.466 af
Outflow = 9.19 cfs @ 11.95 hrs, Volume= 0.466 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.758 degrees West
Latitude	43.077 degrees North
Elevation	0 feet
Date/Time	Tue, 01 Feb 2022 09:49:16 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.34	1.77	2.34	**25yr**	1.53	2.14	2.78	3.63	4.73	6.16	7.09	**25yr**	5.45	6.81	7.79	9.00	10.03	**25yr**
50yr	0.54	0.86	1.10	1.54	2.07	2.76	**50yr**	1.79	2.53	3.29	4.32	5.65	7.37	8.57	**50yr**	6.52	8.24	9.40	10.79	11.95	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.90	5.15	6.76	8.83	10.36	**100yr**	7.81	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.43	2.05	2.82	3.83	**200yr**	2.44	3.51	4.61	6.12	8.07	10.58	12.52	**200yr**	9.36	12.04	13.72	15.50	16.97	**200yr**
500yr	0.80	1.31	1.71	2.48	3.48	4.76	**500yr**	3.00	4.38	5.76	7.70	10.20	13.44	16.10	**500yr**	11.90	15.48	17.62	19.72	21.43	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.93	1.33	1.68	2.23	2.47	**1yr**	1.98	2.38	2.86	3.19	3.89	**1yr**
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	3.82	4.54	5.08	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.17	**5yr**	3.34	4.01	4.71	5.52	6.22	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.84	**10yr**	3.86	4.65	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.71	5.86	**25yr**	4.17	5.63	6.61	7.75	8.64	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.16	**50yr**	1.52	2.12	2.34	3.07	3.92	5.32	6.75	**50yr**	4.71	6.50	7.67	8.99	9.97	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.41	4.34	5.98	7.79	**100yr**	5.30	7.49	8.89	10.43	11.50	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.78	4.78	6.71	8.97	**200yr**	5.93	8.63	10.30	12.13	13.29	**200yr**
500yr	0.68	1.01	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.31	5.43	7.80	10.82	**500yr**	6.90	10.41	12.52	14.82	16.09	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.16	**1yr**	2.63	3.04	3.57	4.37	5.03	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.02	3.56	4.09	4.84	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.54	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.33	6.21	**10yr**	4.72	5.97	6.83	7.84	8.75	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.96	4.07	5.16	7.76	8.35	**25yr**	6.87	8.03	9.17	10.34	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.60	5.00	6.33	9.71	10.48	**50yr**	8.60	10.08	11.48	12.73	13.97	**50yr**
100yr	0.79	1.19	1.50	2.16	2.96	3.81	**100yr**	2.56	3.73	4.38	6.16	7.78	12.15	13.14	**100yr**	10.75	12.64	14.37	15.71	17.10	**100yr**
200yr	0.92	1.39	1.76	2.55	3.56	4.65	**200yr**	3.07	4.55	5.34	7.59	9.56	15.24	16.50	**200yr**	13.49	15.86	18.02	19.37	20.93	**200yr**
500yr	1.15	1.71	2.20	3.19	4.54	6.04	**500yr**	3.92	5.90	6.94	10.03	12.60	20.59	22.29	**500yr**	18.23	21.44	24.31	25.55	27.36	**500yr**

Powered by ACIS Northeast Regional Climate Center

HALEY WARD

INSPECTION & LONG-TERM MAINTENANCE PLAN FOR MIXED-USE DEVELOPMENT

1-15 CONGRESS STREET
PORTSMOUTH, NH

Introduction

The intent of this plan is to provide One Market Square, LLC (herein referred to as the "Owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for proposed development at 1-15 Congress Street. Specifically, the proposed roof drain filters (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help maintain a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Construction Inspections

During the construction period, inspections shall be conducted at least once every seven (7) calendar days or once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inch or greater.

Annual Report

Following construction, the owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the Portsmouth DPW, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate the quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project may include but are not limited to:

- Dust control
- Sediment barriers
- Stabilized construction entrance
- Catch basin basket
- Dewatering control

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Bio Clean Downspout Filter
- Closed Drainage System

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. Bio Clean Downspout Filter: Refer to the manufacturer's Operation and Maintenance manual for guidance, included herewith.
2. Storm Drains: Monitor accumulation of debris in drainage structures monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet- vacuuming.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

The contractors are required to remove trash from the site. Hazardous material storage is prohibited. Salt and other de-icing materials must remain under covered storage. Salt storage areas shall be covered using permanent or semi-permanent measures and loading/offloading areas shall be located and designed to not drain directly to receiving waters and be maintained with good housekeeping measures in accordance with NHDES guidance documents. Snow will not be stored onsite – it will be removed from the site by a licensed contractor as needed. There are no wetlands, waterbodies, or other protected natural resources directly adjacent to the development area. Down-gradient stormwater structures will be protected as outlined in this

document.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Downspout Filter

PROVEN STORMWATER TREATMENT TECHNOLOGY

Bio Clean
A Forterra Company

Overview

The Bio Clean Downspout Filter is the industry's leading solution for treatment of roof runoff. This technology is used to treat commercial and industrial roof tops along with highrise buildings, parking structures and residential buildings.

Available in 3 sizes, this filter can easily adapt to downspouts 2" to 12" in diameter. The filter comes standard with rubber boots that allow for easy installation to the downspout.

Proven since 2003, the Bio Clean Downspout Filter has been used on hundreds of installations throughout the United States. All internal components are constructed of stainless steel.

The sleek in-line design allows the filter to be used in tight spaces. Approved by the IAPMO, this filter can meet all your needs.

Advantages

- 10 Year Warranty
- No Nets or Geofabrics
- Sleek In-Line Design
- High Treatment Flow Rate
- High Bypass Flow Rate
- Low Cost

Performance

- 93% Removal of TSS
- 87% Removal of Hydrocarbons
- Effective at Removing Metals, Nutrients and Bacteria (Media Type)

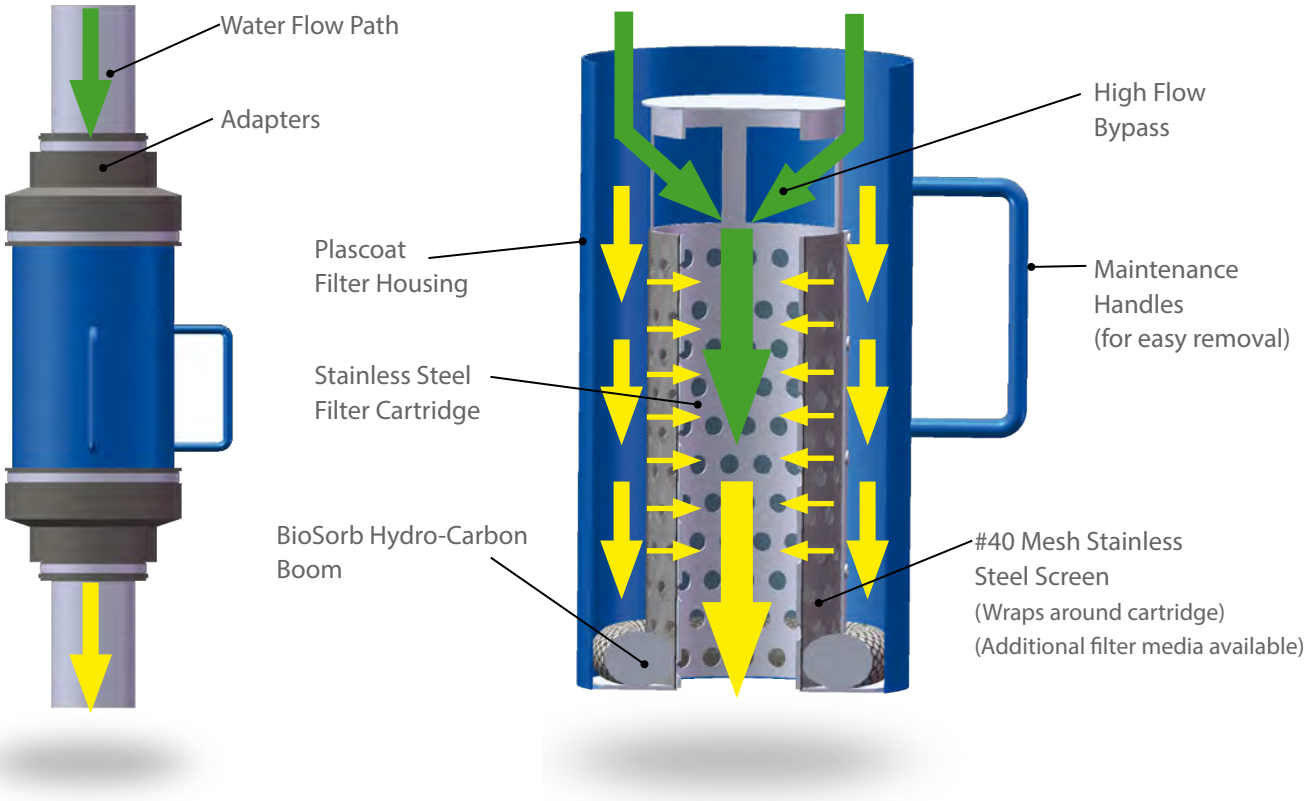
Specifications

Model #	Inlet ID (dia., in.)	Filter OD (dia., in.)	Storage Cap. (cu. ft.)	Filtered Flow (gpm)	Bypass Flow (gpm)
BC-DF4	4	6.625	.09	249	566
BC-DF6	6	8.625	0.21	509	1006
BC-DF8	8	8.625	0.21	509	1006
BC-DF10	10	12.75	0.77	1145	2264
BC-DF12	12	12.75	0.77	1145	2264

Downspout Filter

PROVEN STORMWATER TREATMENT TECHNOLOGY

Operation



Application

Easily adapts to square or rectangular downspouts

- Commercial
- Residential
- Parking Structures
- Mixed Use

Fits In-line with iron, steel or plastic pipe

Approvals

IAPMO Testing & Approval Listing

Installation & Maintenance

See Our Website for Installation & Maintenance Manuals at:
www.BioCleanEnvironmental.com/products/downspout

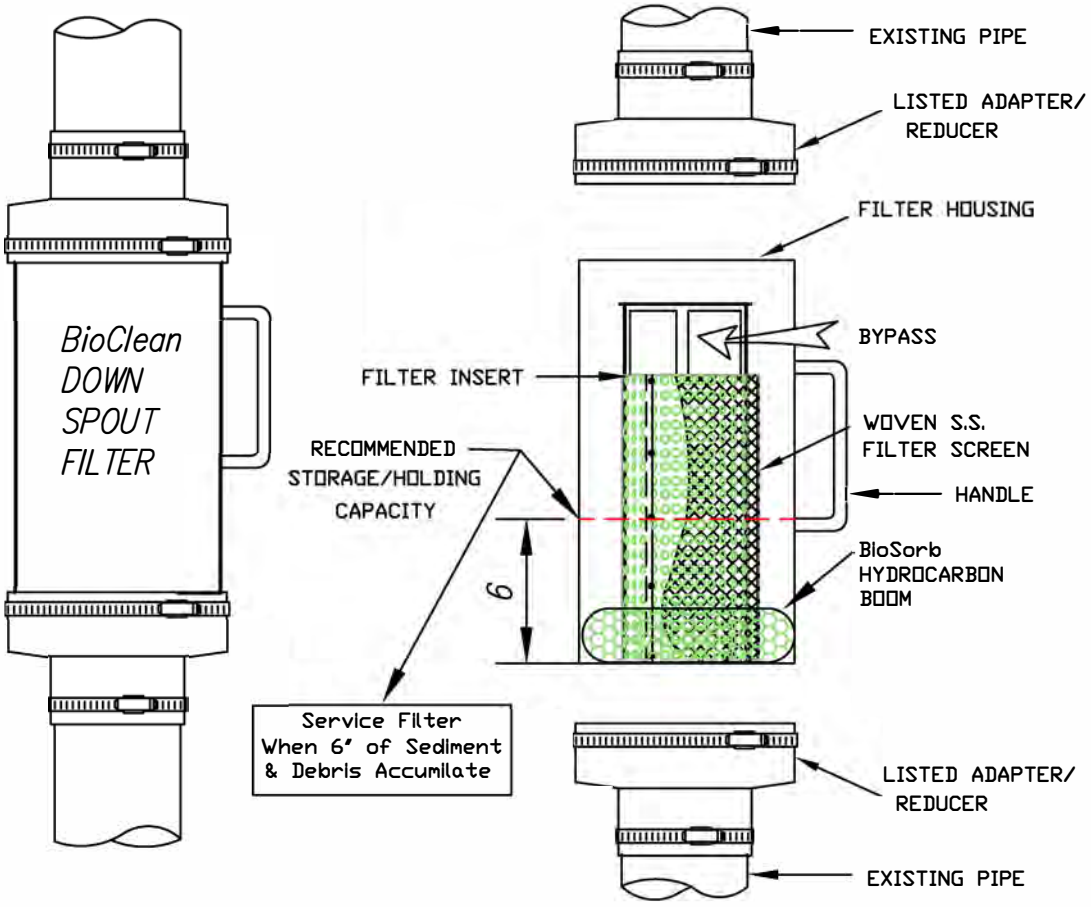
398 Via El Centro
Oceanside, CA 92058
p 760.433.7640 f 760.433.3176
www.BioCleanEnvironmental.com

Bio Clean
A Forterra Company

SERVICE MANUAL

(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

TOOLS AND EQUIPMENT NEEDED:

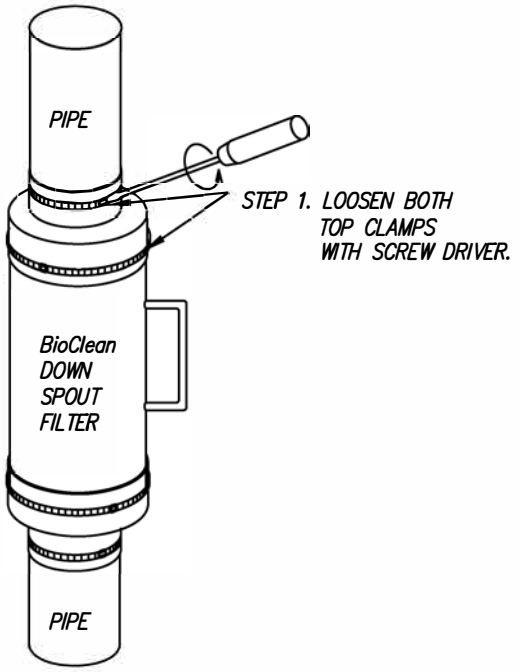
1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia.
   (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

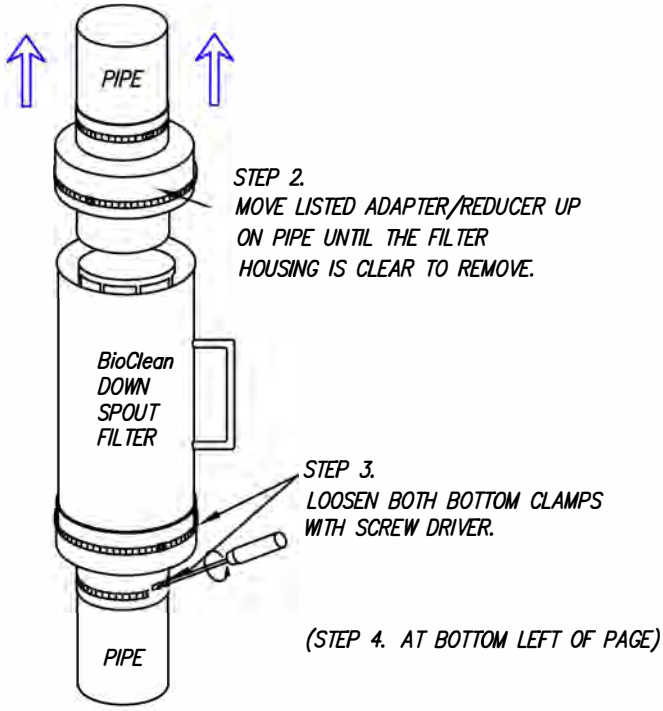
Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.bioclean environmental.net

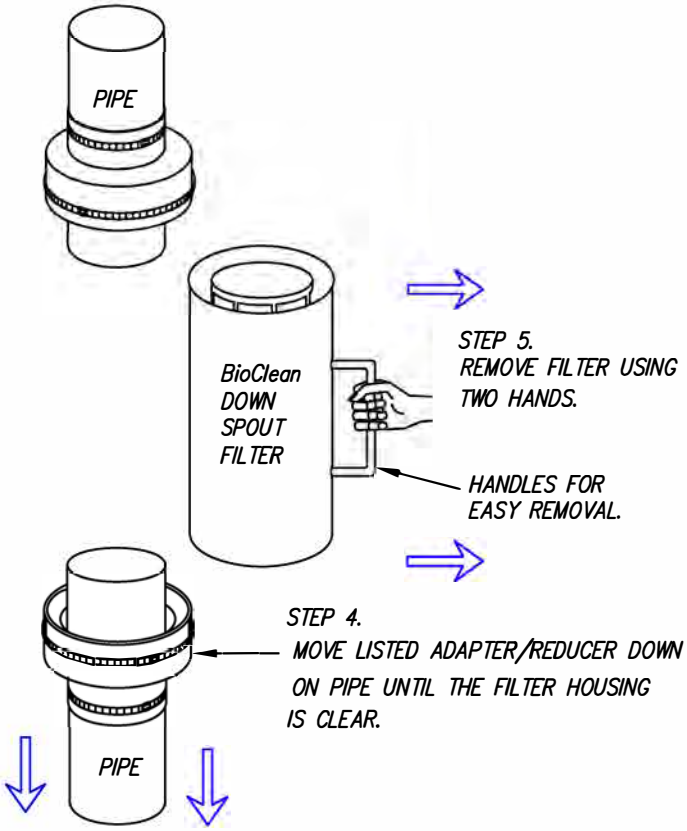
REMOVING FILTER

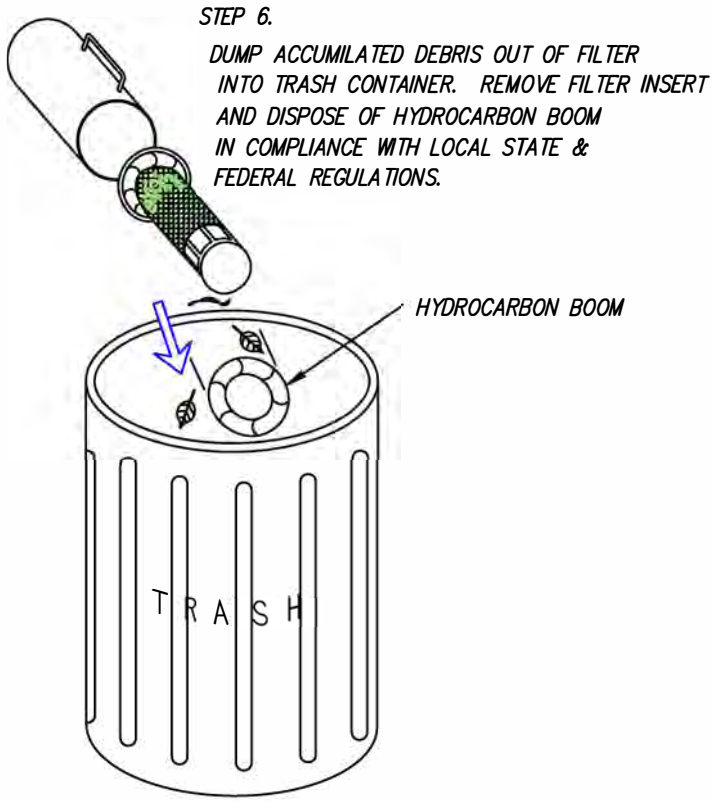




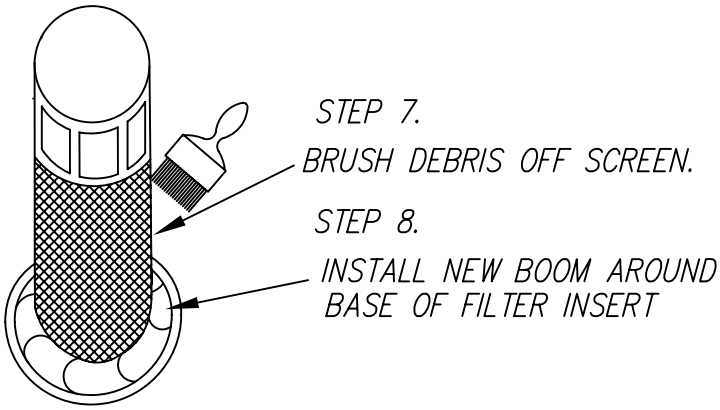
(STEP 4. AT BOTTOM LEFT OF PAGE)

CLEANING FILTER

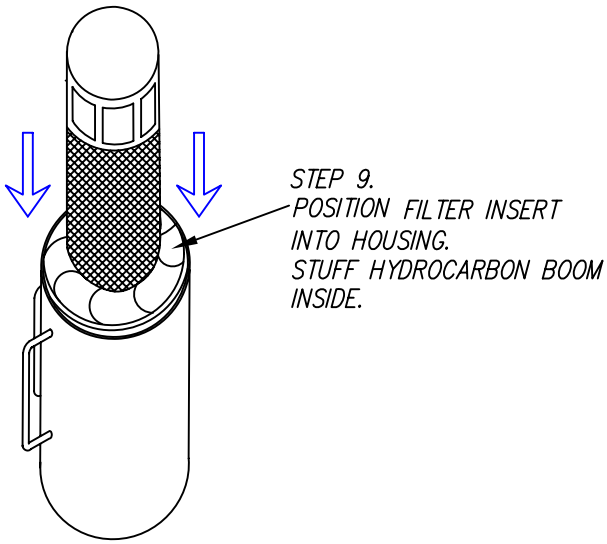


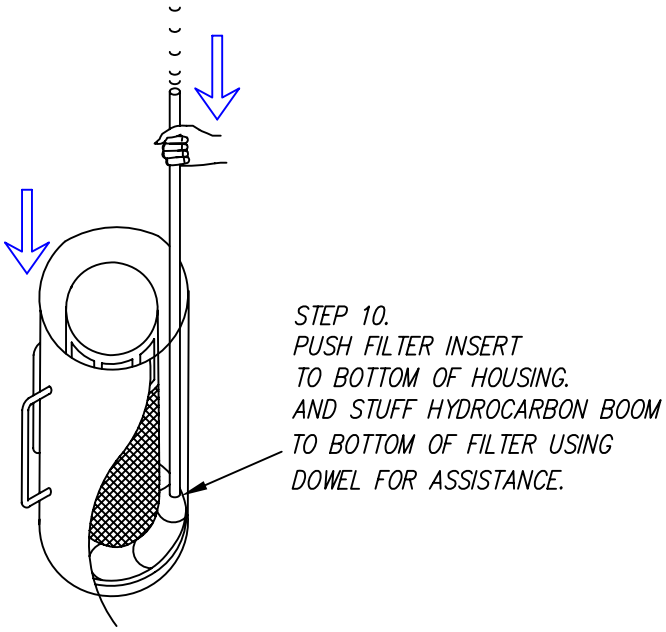


Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



REPLACING FILTER INSERT

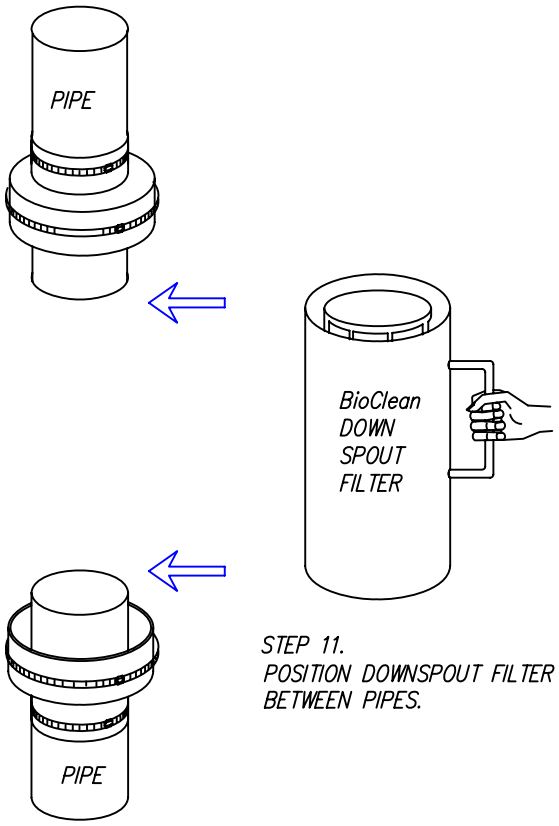




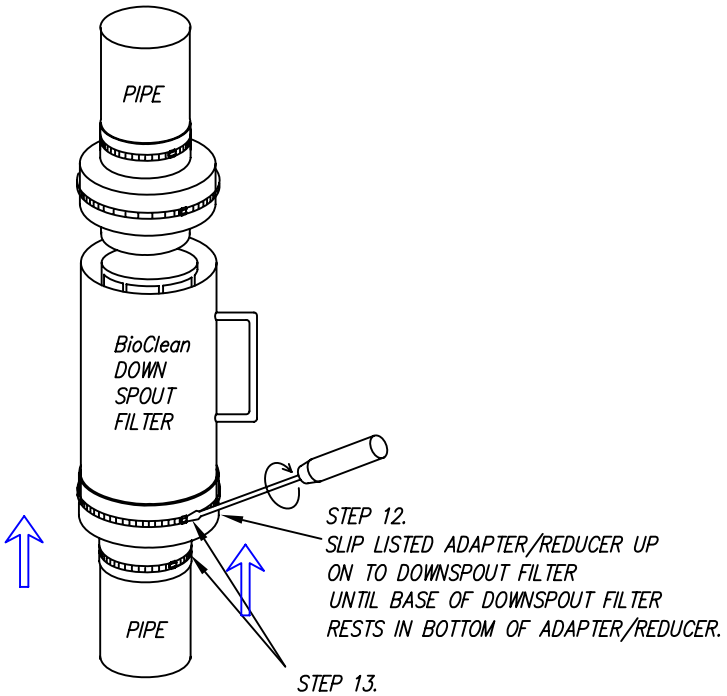
REPLACING FILTER

Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

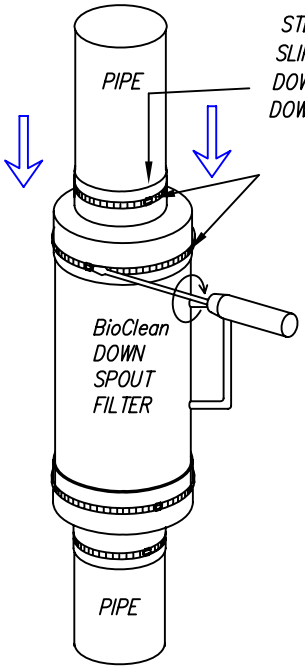


STEP 11.
POSITION DOWNSPOUT FILTER
BETWEEN PIPES.



STEP 12.
SLIP LISTED ADAPTER/REDUCER UP
ON TO DOWNSPOUT FILTER
UNTIL BASE OF DOWNSPOUT FILTER
RESTS IN BOTTOM OF ADAPTER/REDUCER.

STEP 13.
SECURE BY TIGHTENING
BOTH CLAMPS.



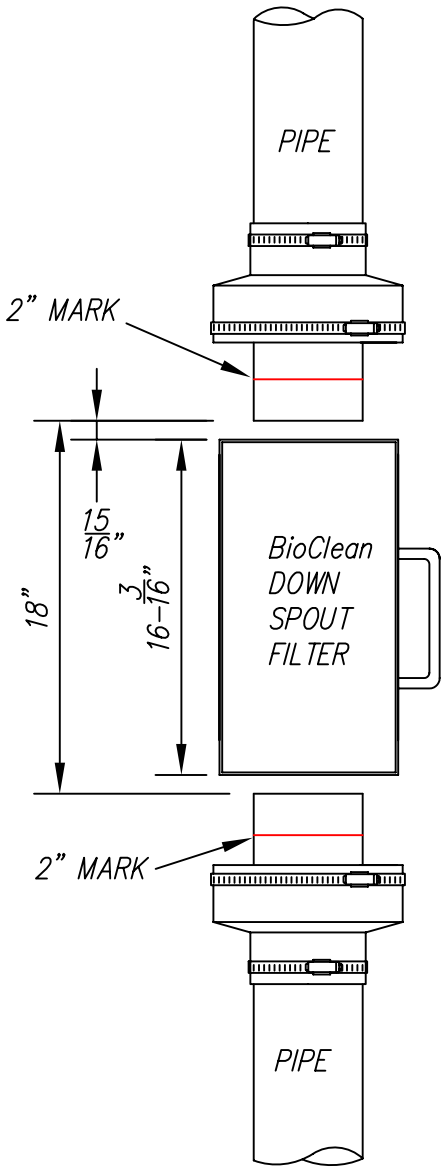
STEP 14.
SLIP LISTED ADAPTER/REDUCER
DOWNWARD ON TO
DOWNSPOUT FILTER.

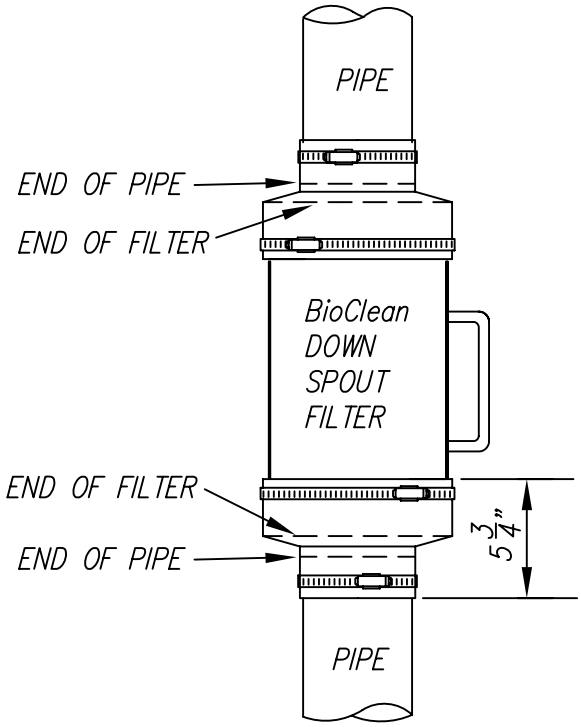
STEP 15.
SECURE BY TIGHTENING
BOTH CLAMPS
WITH SCREWDRIVER.

ENSURE CLAMPS
ARE PROPERLY TIGHTENED.
SERVICE COMLPLETE.

APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM





NOTE: GAP BETWEEN PIPE AND FILTER SHOULD BE 15/16" BOTH TOP AND BOTTOM

Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

CATCH BASIN BASKET CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Check for damage to basket -Remove sediment from basket	Within 24 hours of rainfall, Daily during extended rainfall	*-Repair basket as necessary to prevent particles from reaching drainage system, or to prevent flooding.* *-Empty basket after every storm, or if clogged.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Outlet Control Structures *-Drain Manholes* *-Catch Basins*	Every other Month	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	1 time per 2 years	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

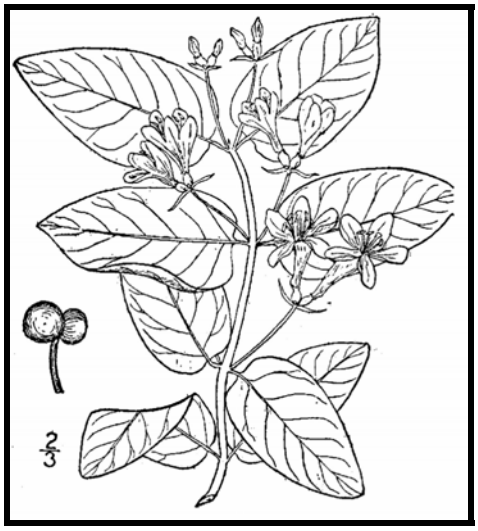
INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

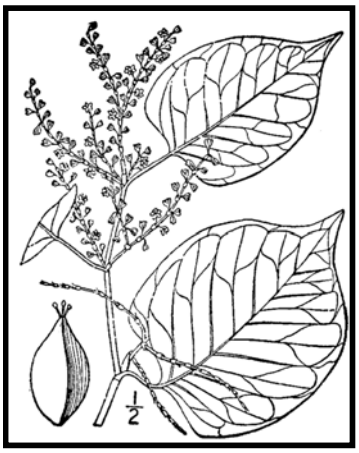
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
 </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

<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

UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations, and prohibits discrimination in its programs, activities and employment on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sex, sexual orientation, or veteran’s, marital or family status. College of Life Sciences and Agriculture, County Governments, NH Dept. of Resources and Economic Development, Division of Forests and Lands, NH Fish and Game ,and U.S. Dept. of Agriculture cooperating.

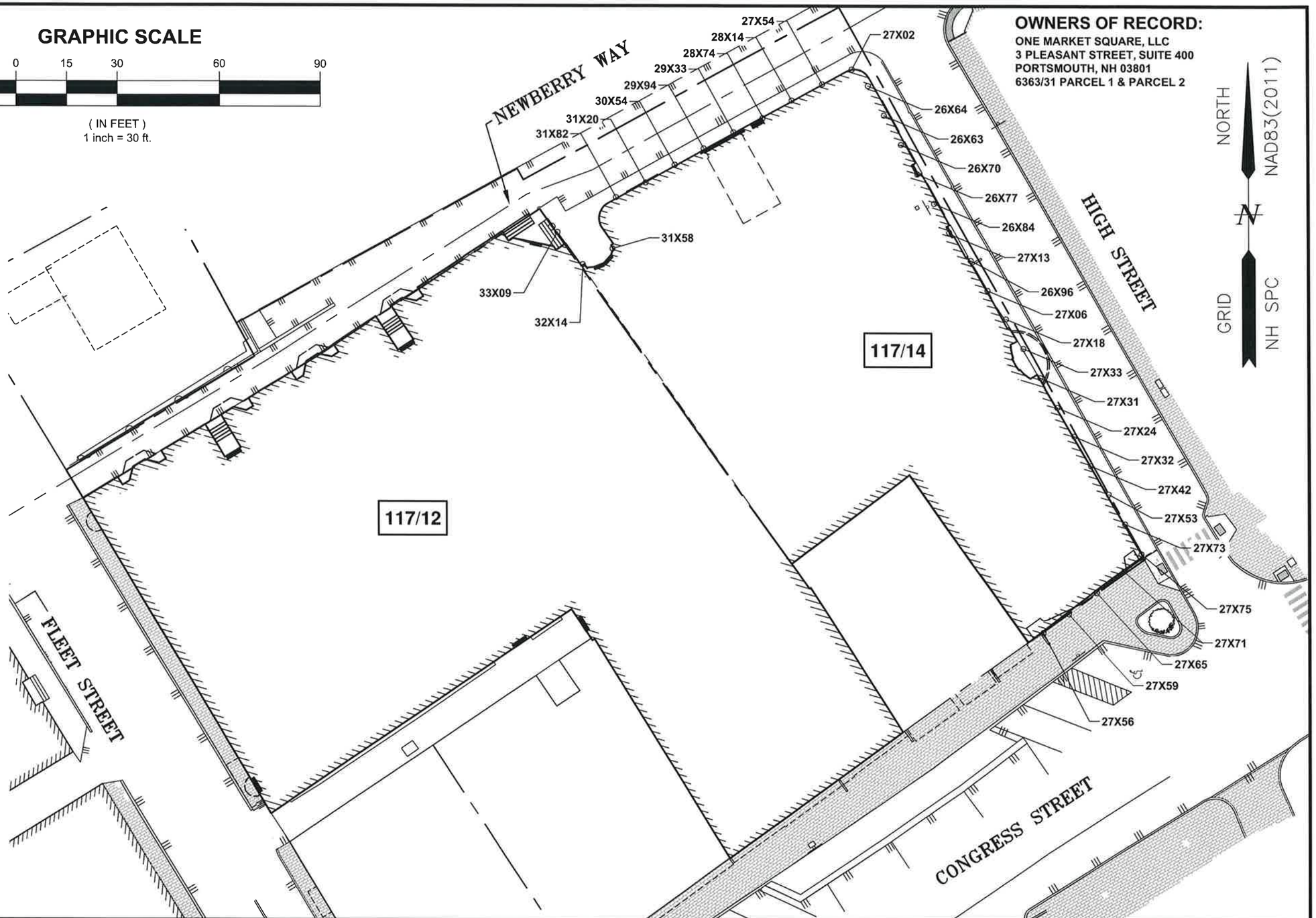
SPOT GRADES	
	33.09
	32.14
	31.58
	31.82
	31.20
	30.54
	29.94
	29.33
	28.74
	28.14
	27.54
	27.02
	26.64
	26.63
	26.70
	26.77
	26.84
	27.13
	26.96
	27.06
	27.18
	27.33
	27.31
	27.24
	27.32
	27.42
	27.53
	27.73
	27.75
	27.71
	27.65
	27.59
	27.56
TOTAL	933.13

933.13/33 =28.3
EXISTING AVERAGE GRADE = 28.3

GRAPHIC SCALE

30 0 15 30 60 90

(IN FEET)
1 inch = 30 ft.



OWNERS OF RECORD:
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

NORTH NAD83(2011)
GRID NH SPC

PROJECT	**MIXED USE DEVELOPMENT** **1-15 CONGRESS STREET PORTSMOUTH, NH**
TITLE	**EXISTING AVERAGE GRADE PLANE- 1 CONGRESS**
DWG No.	**AGP-1**
JN	5010156.3406
SCALE	N.T.S.
BY	SJR
DATE	11/13/24
REV.	
REV. DATE	
DRAWING STATUS	**PERMIT PLANS**

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

P:\NH\5010156 McNabb, Properties\3406 Congress St, Portsmouth JRC\2025 Site Plan\05-Deliverables_Archive\Portsmouth Drawings\5010156.3406 Average Grade Plane-Existing.dwg, 11/13/2024 11:59:54 AM

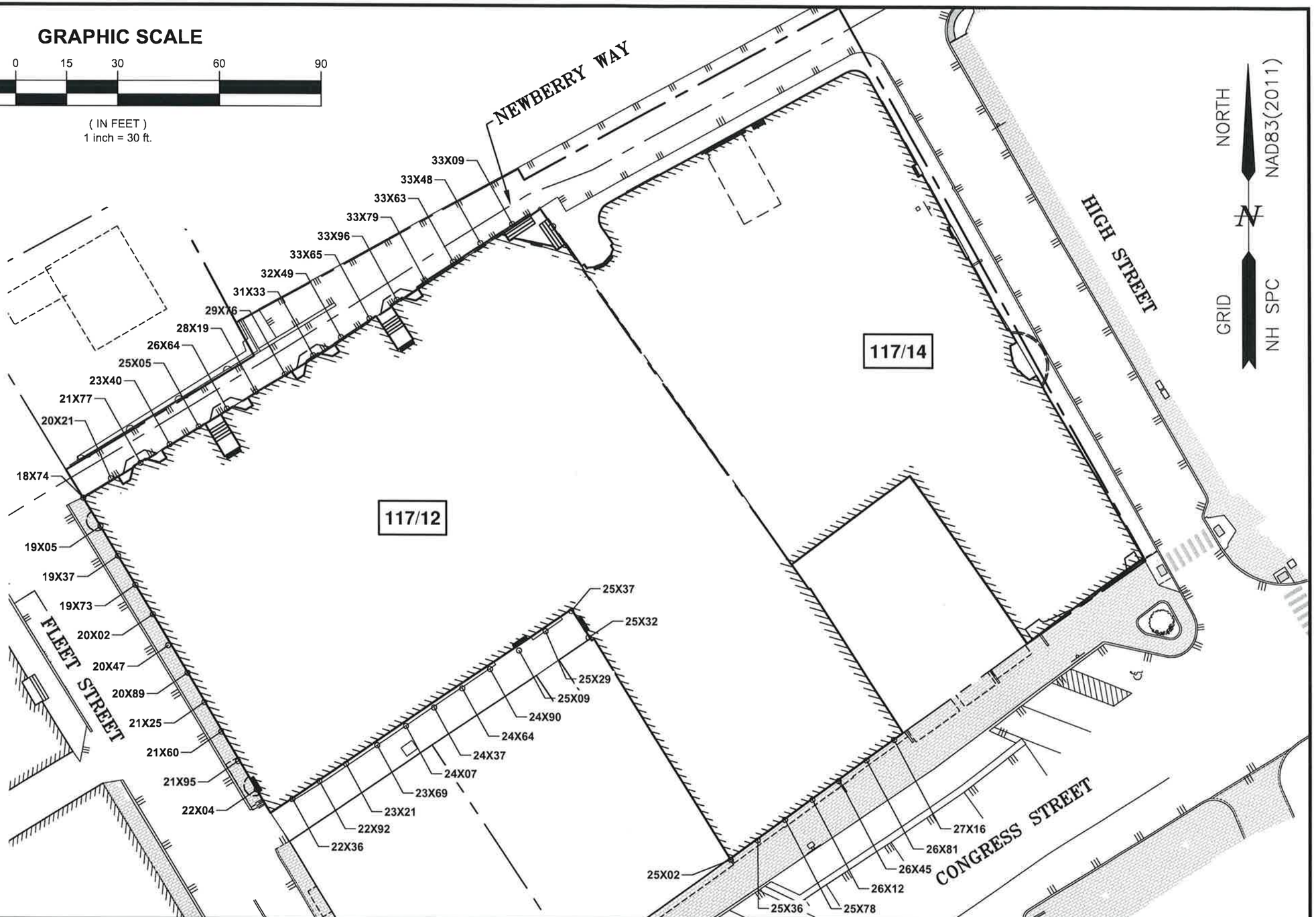
SPOT GRADES	
	27.16
	26.81
	26.45
	26.12
	25.78
	25.36
	25.02
	25.32
	25.37
	25.29
	25.09
	24.90
	24.64
	24.37
	24.07
	23.69
	23.21
	22.92
	22.36
	22.04
	21.95
	21.60
	21.25
	20.89
	20.47
	20.02
	19.73
	19.37
	19.05
	18.74
	20.21
	21.77
	23.40
	25.05
	26.64
	28.19
	29.76
	31.33
	32.49
	33.65
	33.96
	33.79
	33.63
	33.48
	33.09
TOTAL	1139.48

1139.48/45 = 25.3
EXISTING AVERAGE GRADE = 25.3

GRAPHIC SCALE

30 0 15 30 60 90

(IN FEET)
1 inch = 30 ft.



PROJECT: **MIXED USE DEVELOPMENT** 1-15 CONGRESS STREET PORTSMOUTH, NH	DWG No. AGP-2	BY SJR	DRAWING STATUS: PERMIT PLANS
		DATE 11/13/24	
TITLE: **EXISTING AVERAGE GRADE PLANE- 15 CONGRESS**	JN 5010156.3406	REV.	
	SCALE N.T.S.	REV. DATE	

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

P:\NH\5010156 McNabb_Properties\3406 Congress St., Portsmouth - JRC\2025 Site Plan\05 Deliverables_Archive\Portsmouth Drawings\5010156.3406 Average Grade Plane Existing.dwg, 11/13/2024 12:02:51 PM

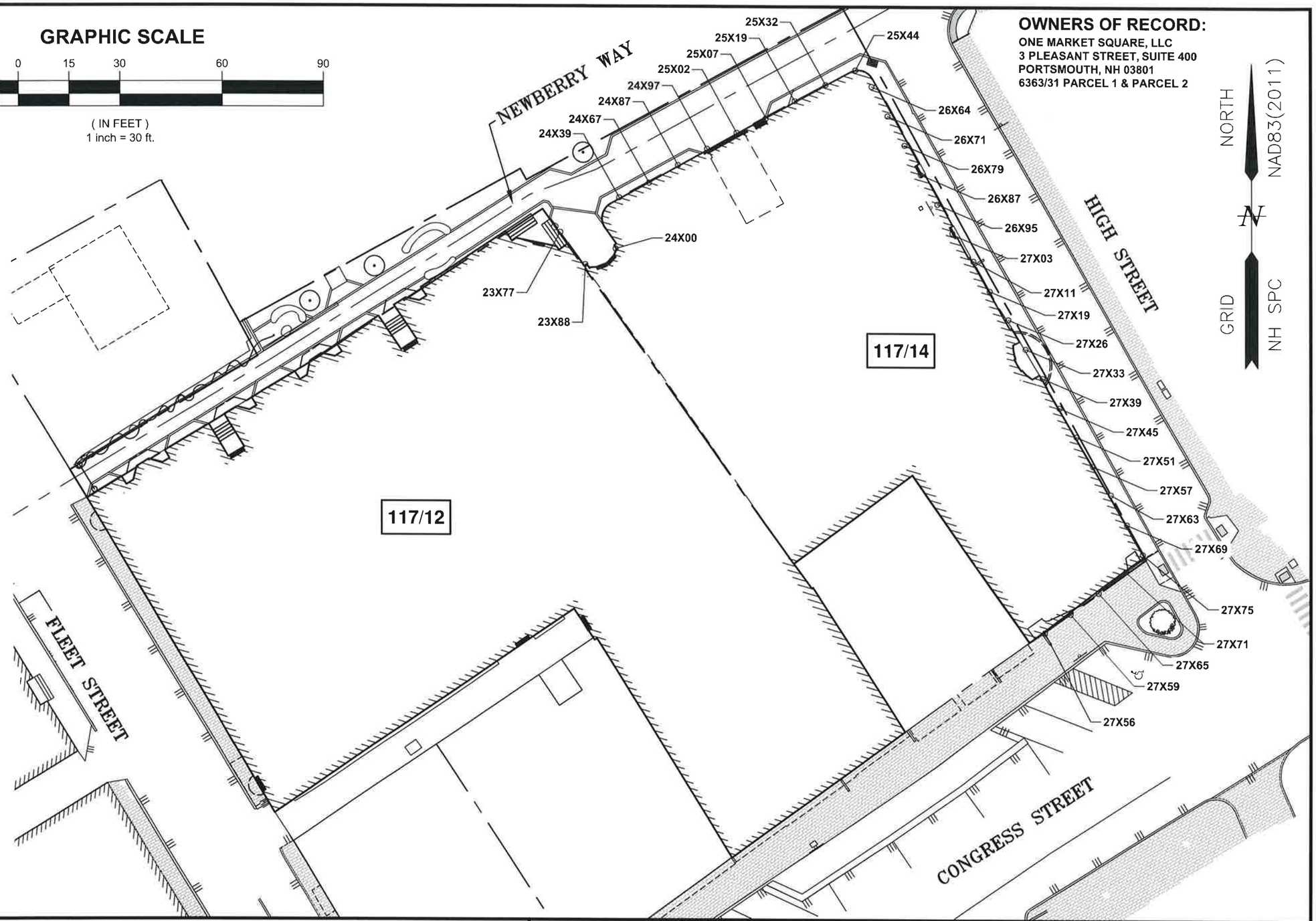
SPOT GRADES	
	23.77
	23.88
	24.00
	24.39
	24.67
	24.87
	24.97
	25.02
	25.07
	25.19
	25.32
	25.44
	26.64
	26.71
	26.79
	26.87
	26.95
	27.03
	27.11
	27.19
	27.26
	27.33
	27.39
	27.45
	27.51
	27.57
	27.63
	27.69
	27.75
	27.71
	27.65
	27.59
	27.56
TOTAL	869.97

869.97/33 = 26.4
PROPOSED AVERAGE GRADE = 26.4

GRAPHIC SCALE

30 0 15 30 60 90

(IN FEET)
1 inch = 30 ft.



OWNERS OF RECORD:
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

NORTH
NAD83(2011)
GRID
NH SPC

PROJECT	**MIXED USE DEVELOPMENT** **1-15 CONGRESS STREET PORTSMOUTH, NH**
TITLE	**PROPOSED AVERAGE GRADE PLANE- 1 CONGRESS**
DWG No.	**AGP-3**
JN	5010156.3406
SCALE	N.T.S.
BY	SJR
DATE	11/13/24
REV.	
REV. DATE	
DRAWING STATUS	**PERMIT PLANS**

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

P:\NH\5010156 McNabb Properties\3406-Congress St, Portsmouth-JRC\2025 Site Plan\05 Deliverables, Archive\Portsmouth Drawings\5010156.3406 Average Grade Plane Proposed.dwg, 11/14/2024 11:23:14 AM

SPOT GRADES	
	27.16
	26.81
	26.45
	26.12
	25.78
	25.36
	25.02
	25.32
	25.37
	25.29
	25.09
	24.90
	24.64
	24.37
	24.07
	23.69
	23.21
	22.92
	22.36
	22.04
	21.95
	21.60
	21.25
	20.89
	20.47
	20.02
	19.73
	19.37
	19.05
	18.74
	18.88
	19.20
	19.52
	19.84
	20.15
	20.47
	20.79
	21.10
	21.42
	21.74
	22.06
	22.38
	22.70
	23.01
	22.36
TOTAL	1014.66

1014.66/45 = 22.5
PROPOSED AVERAGE GRADE = 22.5

GRAPHIC SCALE

30 0 15 30 60 90

(IN FEET)
1 inch = 30 ft.

NEWBERRY WAY

23X36
23X01
22X70
22X38
22X06
21X74
21X42
21X10
20X79
20X47
20X15
19X84
19X52
19X20
18X88
18X74
19X05
19X37
19X73
20X02
20X47
20X89
21X25
21X60
21X95
22X04
22X36
22X92
23X21
23X69
24X07
24X37
24X64
24X90
25X09
25X29
25X32
25X37
25X02
25X36
25X78
26X12
26X45
26X81
27X16

117/14

117/12

HIGH STREET

FLEET STREET

CONGRESS STREET

NORTH
NAD83(2011)
GRID
NH SPC

PROJECT: **MIXED USE DEVELOPMENT** 1-15 CONGRESS STREET PORTSMOUTH, NH	DWG No. AGP-4	BY SJR	DRAWING STATUS: **PERMIT PLANS**
		DATE 11/13/24	
TITLE: **PROPOSED AVERAGE GRADE PLANE- 15 CONGRESS**	JN 5010156.3406	REV.	
	SCALE N.T.S.	REV. DATE	

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

P:\NH\5010156 McNabb_Properties\3406 Congress St, Portsmouth JRC\2025 Site Plan\05-Deliverables_Archive\Portsmouth Drawings\5010156.3406-Average Grade Plane Proposed.dwg, 11/14/2024 9:16:25 AM

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/27	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
	BOUND FOUND
S S	SEWER LINE
G G	GAS LINE
D D	STORM DRAIN
W W	WATER LINE
UE UE	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC/WIRES
100	CONTOUR
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT (EP)
	UTILITY POLE
WSO	WATER SHUT OFF/CURB STOP
GSO	GAS SHUT OFF
GV	GATE VALVE
HYD	HYDRANT
G W E	METER (GAS, WATER, ELECTRIC)
	CATCH BASIN
T	TELEPHONE MANHOLE
S	SEWER MANHOLE
D	DRAIN MANHOLE
EL.	ELEVATION
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
INV	INVERT
TBM	TEMPORARY BENCH MARK
TYP	TYPICAL
VGC/SGC	VERTICAL/SLOPED GRANITE CURB

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND IN PORTSMOUTH N.H. BELONGING TO THE ESTATE OF CHAS. H. MENDUM, SCALE: 1 IN = 20 FT, DATED JULY 1, 1908, PREPARED BY WM. A. GROVER CIVIL ENGINEER, RCRD 00469.

2) LAND ON HAVEN COURT PORTSMOUTH, N.H., F.W. HARTFORD TO HISLOP GARAGE CO., SCALE: 1IN. = 20FT., DATED FEB. 1926, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 00376.

3) LOT PLAN NOS. 7-13 CONGRESS ST. PORTSMOUTH, N.H., SCALE: 1/4 INCH = 1 FOOT, DATED MAR. 1937, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.

4) PLAN OF LOT NOS. 173 - 181 FLEET ST. PORTSMOUTH, N.H., SCALE: 1IN. = 20FT., DATED NOV. 1945, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.

5) LAND IN PORTSMOUTH, N.H., RALPH T. WOOD & IRA A. NEWICK TO J.J. NEWBERRY CO., SCALE: 1IN. = 20FT., DATED MAY 1946, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 01243.

6) PLAN OF LOT PORTSMOUTH, N.H., NEWICK & WOOD INC. TO CITY OF PORTSMOUTH, SCALE 1IN. = 40FT., DATED MAR. 1956, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD 02537.

7) PLAN OF LOT 26 - 30 HIGH ST. PORTSMOUTH, N.H., SCALE: 1IN. = 10FT., DATED OCT. 1961, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, NOT RECORDED.

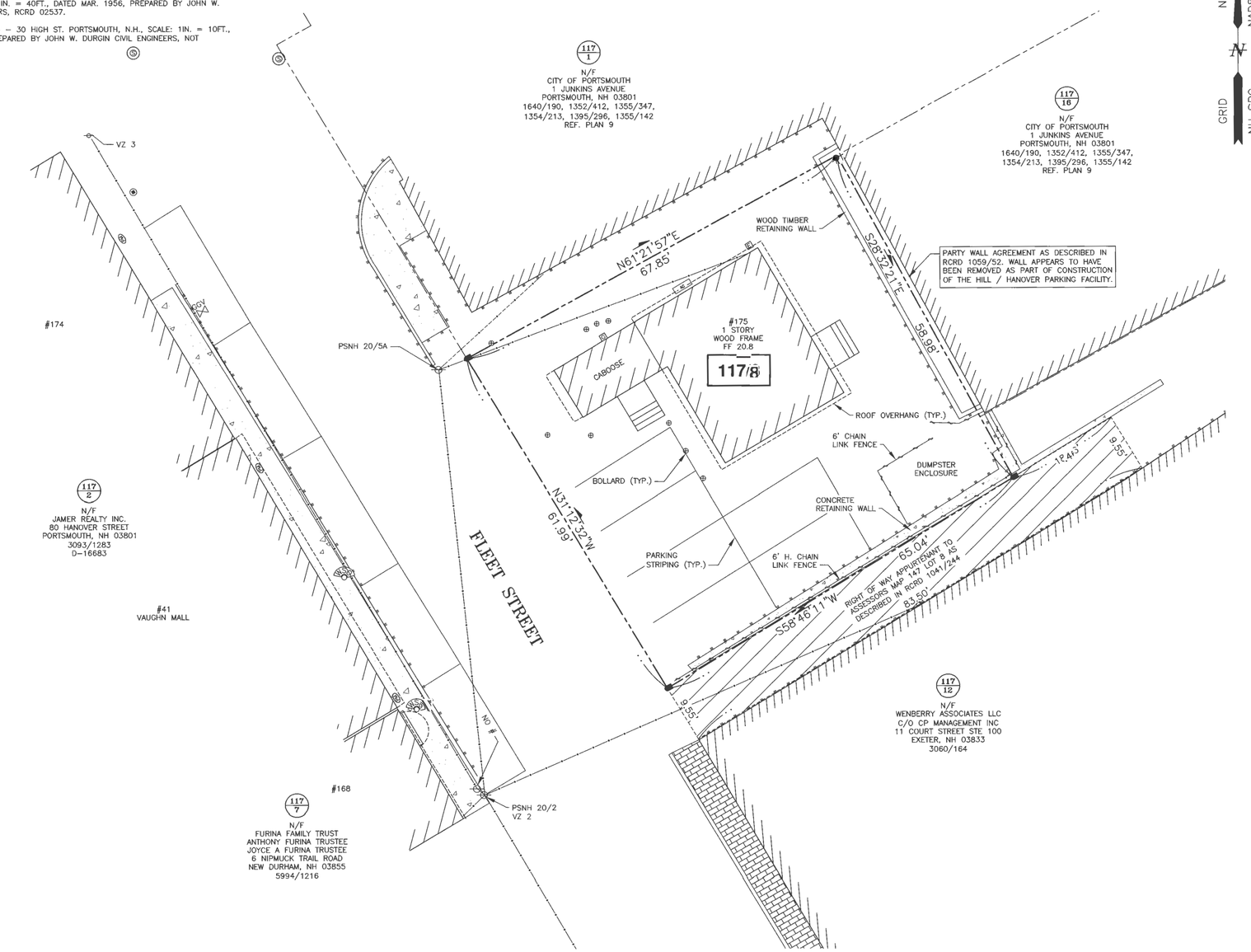
8) PLAN OF LAND FOR RICHARD A. CABRAL & BRUCE E. NADEAU CONGRESS/FLEET ST. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H., SCALE: 1" = 20', DATED JANUARY 1987, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATED, RCRD C-16161.

9) EXISTING CONDITIONS PLAN HIGH/HANOVER PARKING FACILITY, HANOVER STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, SCALE: 1" = 20', DATED: 5/5/99, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., NOT RECORDED.

10) SUBDIVISION OF ASSESSOR'S PARCEL 117/12, LAND OF WENBERRY ASSOCIATES, LLC, FLEET STREET & HAVEN COURT PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, N.H., SCALE: 1" = 20', DATED 11/22/05, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., RCRD C-34500.

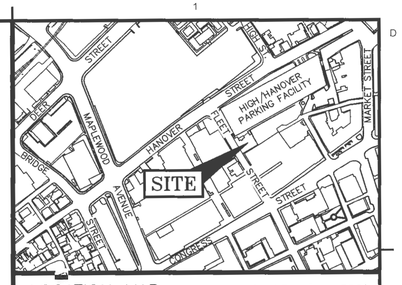
11) STANDARD BOUNDARY SURVEY TAX MAP 17 LOTS 14 & 15, OWNER OF RECORD: PETER H. JARVIS & SONS, LLC, PROPERTY LOCATED AT: 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, DATED: NOVEMBER 2021, SCALE: 1" = 20', PREPARED BY AMBIT ENGINEERING, INC., RCRD D-43095.

12) SITE PLAN FOR HOUSE--GOODMAN LIMITED PARTNERSHIP 43--49 CONGRESS STREET PORTSMOUTH, N.H. PREPARED BY: RICHARD P. MILLETTE AND ASSOCIATES, SCALE: 1"=10', DATED: NOVEMBER 15, 1983, NOT RECORDED.



GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS



LOCATION MAP SCALE: 1" = 300'

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S TAX MAP 117 AS LOT 8.

2) OWNERS OF RECORD:
STEPHEN R. KENNEDY
571 BRACKETT ROAD
RYE, NH 03870
6586/1231

3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F. EFFECTIVE JANUARY 29, 2021.

4) EXISTING LOT AREA:
4,017 S.F.
0.0922 ACRES

5) PARCEL IS LOCATED IN THE CHARACTER DISTRICT 5 (CD5) DISTRICT, HISTORIC DISTRICT & DOWNTOWN OVERYLAY DISTRICT.

6) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY SURVEY OF ASSESSOR'S TAX MAP 117, LOT 8 IN THE CITY OF PORTSMOUTH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

9) PARCEL IS BENEFITED BY A RIGHT OF WAY OVER ASSESSOR'S MAP 117 LOT 12 AS SHOWN HEREON AND DESCRIBED IN RCRD 1041/244.

10) PARCEL IS SUBJECT TO AND BENEFITED BY A PARTY WALL AGREEMENT ADJACENT TO THE EASTERLY LOT LINE AS DESCRIBED IN RCRD 1059/52. PARTY WALL APPEARS TO HAVE BEEN REMOVED AS PART OF THE CONSTRUCTION OF THE HILL / HANOVER PARKING FACILITY ON ASSESSOR'S MAP 117 LOT 16.

11) ABUTTER INFORMATION TAKEN FROM THE CITY OF PORTSMOUTH ASSESSORS GIS WEBSITE.

No.	DATE	DESCRIPTION	BY	CHK
0	11/26/24	ISSUED FOR COMMENT	CSA	PAY

DRAWING ISSUE STATUS

SITE SURVEY

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

GILLEY'S DINER
175 FLEET STREET, PORTSMOUTH, NH 03801

TITLE

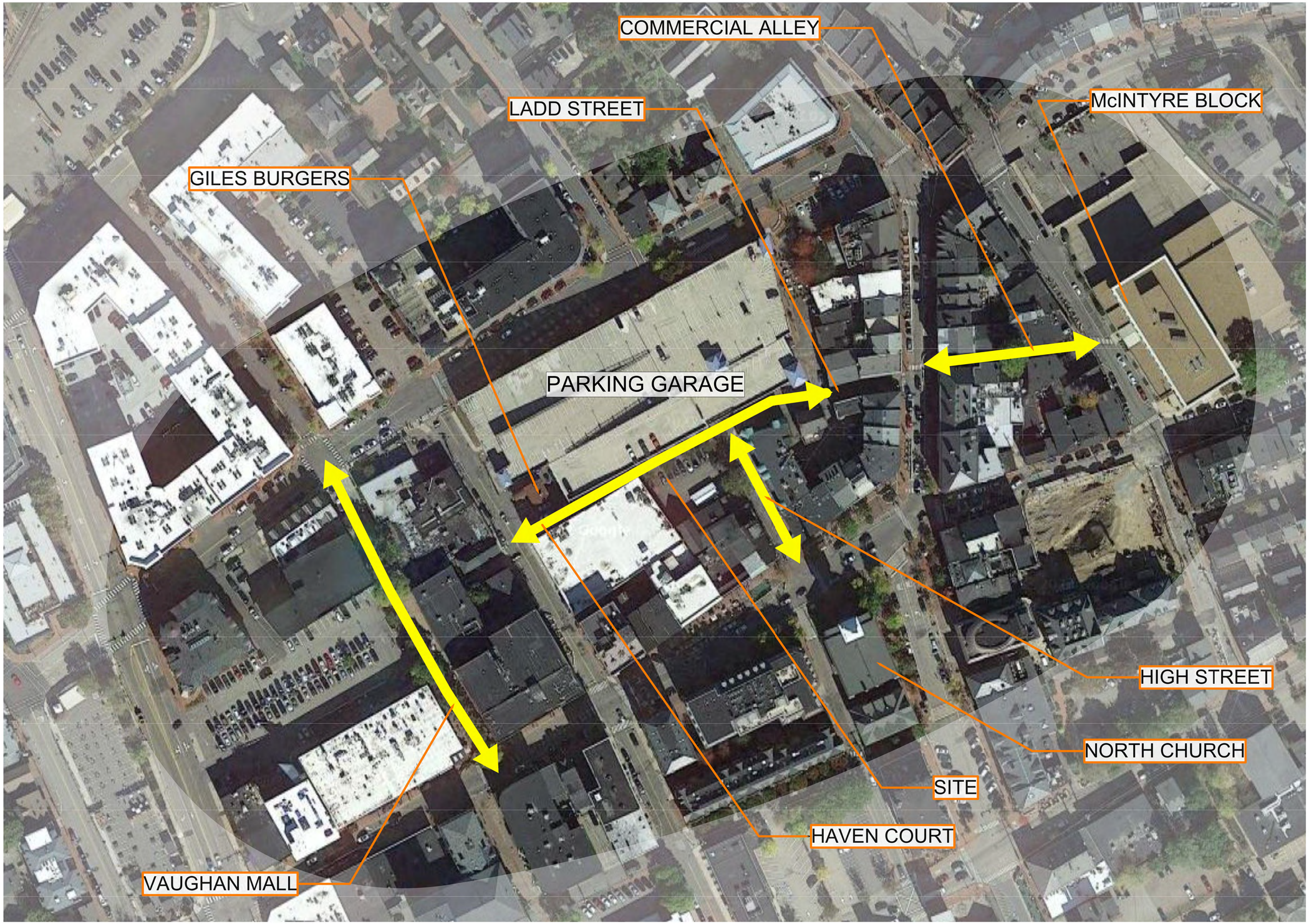
STANDARD BOUNDARY SURVEY

DATE: NOVEMBER 2024	SCALE: 1" = 10'
DRAWN BY: CSA	DESIGNED BY: ---
CHECKED BY: PAY	
PROJECT No.: 5010156.3406	FIELD BOOK & PAGE: FB 309 PG 68
SHEET No.: V-101	DWG No.: 0

STATE OF NEW HAMPSHIRE
No. 1122
PHILLIP A YETMAN
LICENSED LAND SURVEYOR
LLS

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

PHILLIP A. YETMAN, LLS 1122 — 11-27-2024 DATE



ARCOVE ARCHITECTS
3 Congress St, Ste 1
Portsmouth, NH 03801
T 603.731.5187
arcove.com

Ambit Engineering Inc
Civil Engineering
200 Griffin Rd Unit 3
Portsmouth NH 03801
(603) 430-9282
ambitengineering.com

Terra Firma Landscape
Landscape Architecture
163a Court St
Portsmouth NH 03801
(603) 531-9109
terrafirmalandarch.com

1 CONGRESS STREET

1 CONGRESS STREET & HIGH STREET
PORTSMOUTH, NH 03801

ONE MARKET SQUARE LLC, OWNER

Scale:
Date: 02/16/2022
Project Number: 1002

REVISIONS		
NO.	DESCRIPTION	DATE

CONCEPT DESIGN

CONTEXT MAP

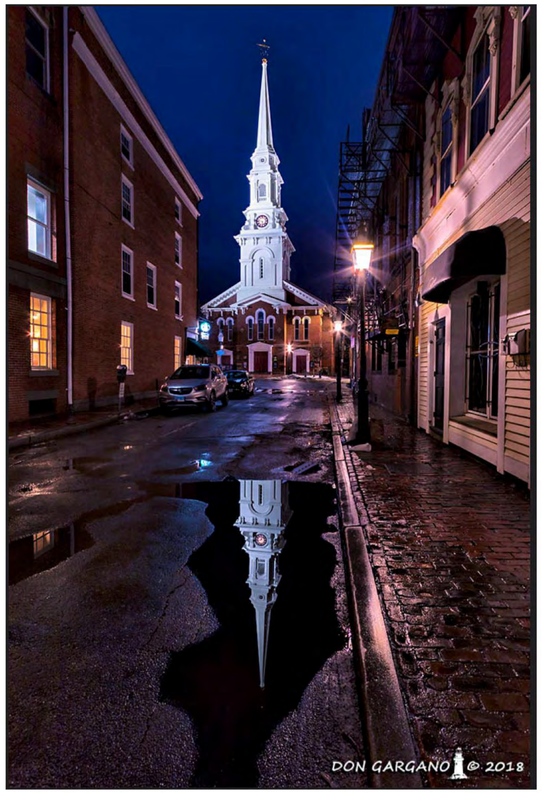
PC.02

COPYRIGHT © 2022

2/16/2022 9:19:42 AM E:\Users\Admin\Documents\1MS central 2022-01-25_Tracy.kozak.rvt

1

2



3

4

5

6

7

ARCOVE ARCHITECTS
3 Congress St, Ste 1
Portsmouth, NH 03801
T 603.731.5187
arcove.com

Ambit Engineering Inc
Civil Engineering
200 Griffin Rd Unit 3
Portsmouth NH 03801
(603) 430-9282
ambitengineering.com

Terra Firma Landscape
Landscape Architecture
163a Court St
Portsmouth NH 03801
(603) 531-9109
terrafirmalandarch.com

1 CONGRESS STREET

1 CONGRESS STREET & HIGH STREET
PORTSMOUTH, NH 03801

ONE MARKET SQUARE LLC, OWNER

Scale:
Date: 02/16/2022
Project Number: 1002

REVISIONS		
NO.	DESCRIPTION	DATE

CONCEPT DESIGN

EXISTING CONDITIONS - CONTEXT

PC.03

COPYRIGHT © 2022

2/16/2022 7:04:45 AM E:\Users\Admin\Documents\1MS central 2022-01-25_Tracy.kozak.rvt

MIXED USE DEVELOPMENT

1 CONGRESS STREET/15 CONGRESS STREET

PORTSMOUTH, NEW HAMPSHIRE

SITE PERMIT PLANS

OWNER 1 CONGRESS:
ONE MARKET SQUARE LLC
3 PLEASANT STREET
SUITE #400
PORTSMOUTH, NH 03801
TEL. (603) 427–0725

OWNER 15 CONGRESS:
WENBERRY ASSOCIATES, LLC
C/O CP MANAGEMENT
11 COURT STREET SUITE 100
EXETER, N.H. 03833
TEL: (603) 778–6300

LAND SURVEYOR & CIVIL ENGINEER:
HALEY WARD
200 GRIFFIN ROAD, UNIT 14
PORTSMOUTH, N.H. 03801
Tel. (603) 430–9282
Fax (603) 436–2315

ARCHITECT:
ARCOVE LLC
3 CONGRESS STREET
SUITE 1
PORTSMOUTH, NH 03801
TEL. (603) 731–5187

LANDSCAPE ARCHITECT:
TERRA FIRMA LANDSCAPE ARCHITECTURE
163A COURT STREET
PORTSMOUTH, NH 03801
TEL. (603) 531–9109

GEOTECHNICAL:
GEOTECHNICAL SERVICES INC.
18 COTE AVENUE, UNIT 11
GOFFSTOWN, N.H. 03045
Tel. (603) 624–2722

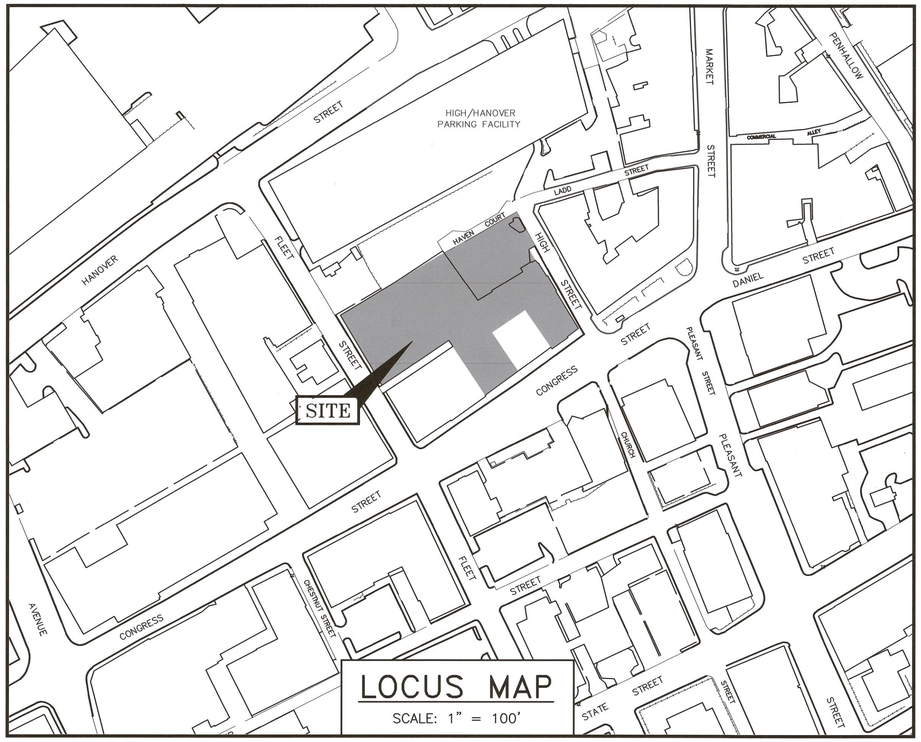
Map 10.5A21A
Character Districts and Civic Districts

Legend
- Downtown Overlay District
- Historic District

Character Districts
- CD5 Character District 5
- CD4 Character District 4
- CD4-W Character District 4-W
- CD4-L1 Character District 4-L1
- CD4-L2 Character District 4-L2

Civic District
- Civic District

Municipal District
- Municipal District

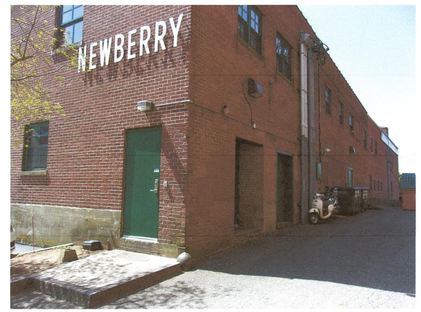


LOCUS MAP
SCALE: 1" = 100'

LEGEND:

EXISTING	PROPOSED		EXISTING	PROPOSED	
		PROPERTY LINE SETBACK	(CB)	(CB)	CATCH BASIN
S	S	SEWER PIPE	(S)	(SMH)	SEWER MANHOLE
SL	SL	SEWER LATERAL			
G	G	GAS LINE	(D)	(DMH)	DRAIN MANHOLE
D	D	STORM DRAIN			
W	W	WATER LINE	(T)	(TMH)	TELEPHONE MANHOLE
WS	WS	WATER SERVICE			
UGE	UGE	UNDERGROUND ELECTRIC	(14)	(14)	PARKING SPACE COUNT
OHW	OHW	OVERHEAD ELECTRIC/WIRES	PM		PARKING METER
	UD	FOUNDATION DRAIN			
		EDGE OF PAVEMENT (EP)	LSA		LANDSCAPED AREA
100	100	CONTOUR	TBD	TBD	TO BE DETERMINED
97x3	98x0	SPOT ELEVATION	CI	CI	CAST IRON PIPE
		UTILITY POLE	COP	COP	COPPER PIPE
		WALL MOUNTED EXTERIOR LIGHTS	DI	DI	DUCTILE IRON PIPE
		TRANSFORMER ON CONCRETE PAD	PVC	PVC	POLYVINYL CHLORIDE PIPE
			RCP	RCP	REINFORCED CONCRETE PIPE
		ELECTRIC HANDHOLD	AC	–	ASBESTOS CEMENT PIPE
			VC	VC	VITRIFIED CLAY PIPE
WS GS	WS GS	SHUT OFFS (WATER/GAS)	EP	EP	EDGE OF PAVEMENT
	GV	GATE VALVE	EL.	EL.	ELEVATION
	HYD	HYDRANT	FF	FF	FINISHED FLOOR
			INV	INV	INVERT
			S =	S =	SLOPE FT/FT
			TBM	TBM	TEMPORARY BENCH MARK
			TYP	TYP	TYPICAL

DIG SAFE
– ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE



INDEX OF SHEETS

	1 CONGRESS BOUNDARY PLAN
	1 CONGRESS LOT LINE ADJUSTMENT PLAN
V101	15 CONGRESS STANDARD BOUNDARY SURVEY (EXISTING CONDITIONS PLAN) DEVELOPMENT PARCEL
01	EXISTING CONDITIONS ORTHOPHOTO PLAN
C101	DEMOLITION PLAN
C102	PROJECT SITE ZONING PLAN
C103	PROPOSED SITE PLAN
C104	GRADING AND DRAINAGE PLAN
C105	PROPOSED UTILITY PLAN
C106–C107	LIGHTING PLANS
C201	PROPOSED PLAN & PROFILE NEWBERRY WAY
C202	PROPOSED PLAN & PROFILE HIGH STREET
C203	PROPOSED PLAN & PROFILE LADD STREET
PBN.A0–A9	ARCHITECTURAL PLANS
L01–L05	LANDSCAPE PLANS
C501–C505	DETAILS

UTILITY CONTACTS

ELECTRIC:
EVERSOURCE
1700 LAFAYETTE ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 436–7708, Ext. 555.5678
ATTN: MICHAEL BUSBY, P.E. (MANAGER)

NATURAL GAS:
UNITIL
325 WEST ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 294–5144
ATTN: DAVE BEAULIEU

CABLE:
COMCAST
155 COMMERCE WAY
PORTSMOUTH, N.H. 03801
Tel. (603) 679–5695 (X1037)
ATTN: MIKE COLLINS

SEWER & WATER:
PORTSMOUTH DEPARTMENT OF PUBLIC WORKS
680 PEVERLY HILL ROAD
PORTSMOUTH, N.H. 03801
Tel. (603) 427–1530
ATTN: JIM TOW

COMMUNICATIONS:
FAIRPOINT COMMUNICATIONS
JOE CONSIDINE
1575 GREENLAND ROAD
GREENLAND, N.H. 03840
Tel. (603) 427–5525

PERMIT LIST:
NHDES SEWER DISCHARGE PERMIT: TO BE SUBMITTED
PORTSMOUTH HDC: PENDING
PORTSMOUTH SITE PLAN: PENDING

PORTSMOUTH APPROVAL CONDITIONS NOTE:
ALL CONDITIONS ON THIS PLAN SET SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE CITY OF PORTSMOUTH SITE PLAN REVIEW REGULATIONS.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

SITE PERMIT PLANS
MIXED USE DEVELOPMENT
1 CONGRESS STREET/15 CONGRESS STREET
PORTSMOUTH, N.H.

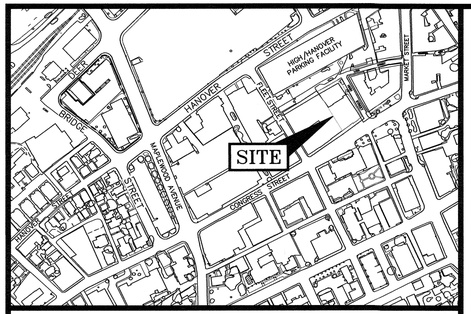
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

Submission REV 12-23-2024

PLAN SET SUBMITTAL DATE: 18 NOVEMBER 2024

5010156 3406

P:\Job\5010156 McNabb_Properties\3406-Congress St., Portsmouth, NH\2024 Site Plan\Plans & Specs\Site\Current\3406 Cover 2024.dwg, 11/18/2024 2:03:22 PM, Canon TX-3000 - Direct



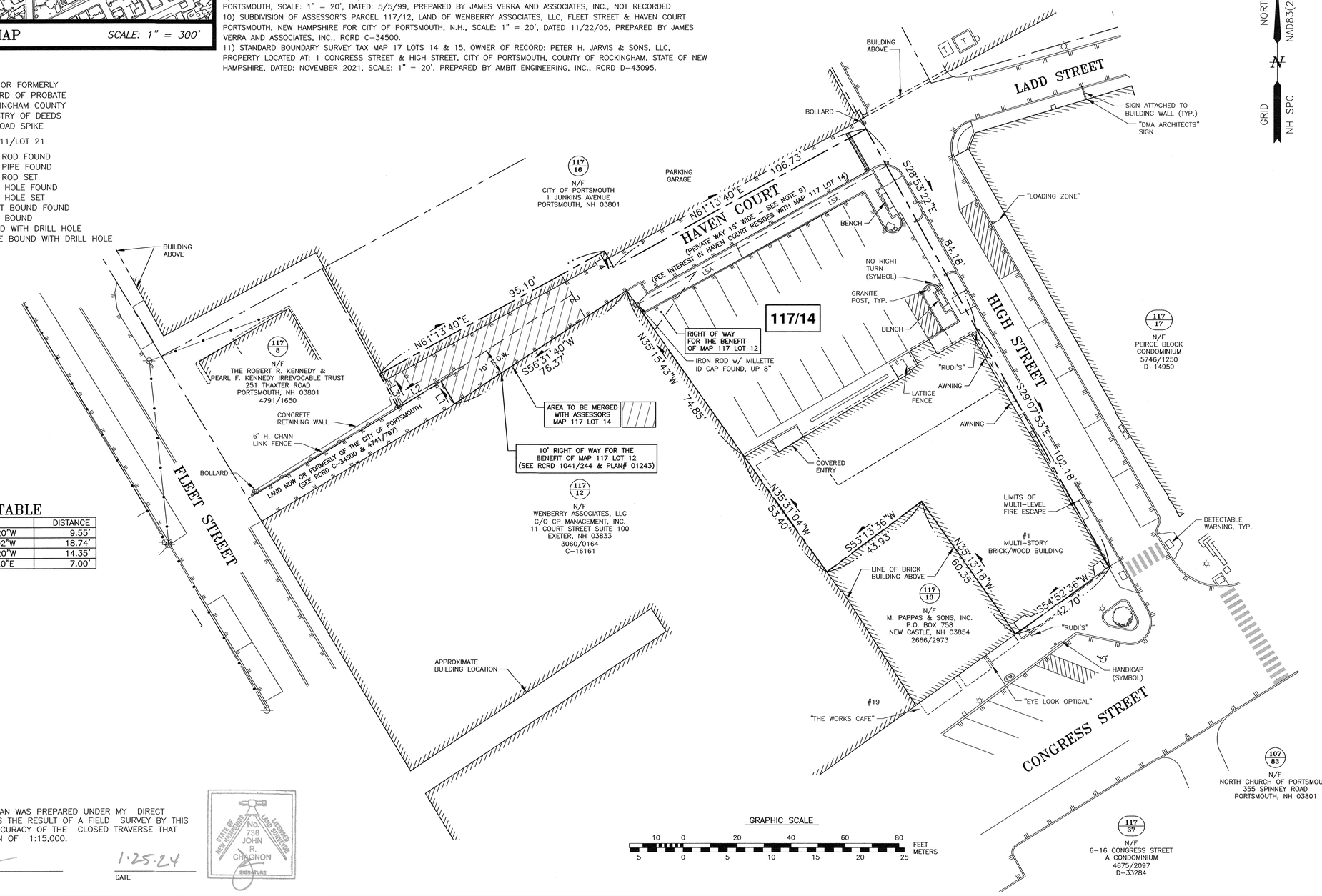
LOCATION MAP SCALE: 1" = 300'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
○ IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
◉ DH FND	DRILL HOLE FOUND
○ DH SET	DRILL HOLE SET
⊙ NHHB	NHDOT BOUND FOUND
⊙ TB	TOWN BOUND
⊙ BND w/DH	BOUND WITH DRILL HOLE
⊙ ST BND w/DH	STONE BOUND WITH DRILL HOLE

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND IN PORTSMOUTH N.H. BELONGING TO THE ESTATE OF CHAS. H. MENDUM, SCALE: 1 IN = 20 FT, DATED JULY 1, 1908, PREPARED BY WM. A. GROVER CIVIL ENGINEER, RCRD 00469.
2) LAND ON HAVEN COURT PORTSMOUTH, N.H., F.W. HARTFORD TO HISLOP GARAGE CO., SCALE: 1IN. = 20FT., DATED FEB. 1926, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 00376.
3) LOT PLAN NOS. 7–13 CONGRESS ST. PORTSMOUTH, N.H., SCALE: 1/4 INCH = 1 FOOT, DATED MAR. 1937, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
4) PLAN OF LOT NOS. 173 – 181 FLEET ST. PORTSMOUOTH, N.H., SCALE: 1IN. = 20FT., DATED NOV. 1945, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED
5) LAND IN PORTSMOUTH, N.H., RALPH T. WOOD & IRA A. NEWICK TO J.J. NEWBERRY CO., SCALE: 1IN. = 20FT., DATED MAY 1946, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 01243.
6) PLAN OF LOT PORTSMOUTH, N.H., NEWICK & WOOD INC. TO CITY OF PORTSMOUTH, SCALE 1IN. = 40FT., DATED MAR. 1956, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD 02537
7) PLAN OF LOT 26 – 30 HIGH ST. PORTSMOUTH, N.H., SCALE: 1IN. = 10FT., DATED OCT. 1961, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, NOT RECORDED
8) PLAN OF LAND FOR RICHARD A. CABRAL & BRUCE E. NADEAU CONGRESS/FLEET ST. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H., SCALE: 1" = 20', DATED JANUARY 1987, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATED, RCRD C–16161
9) EXISTING CONDITIONS PLAN HIGH/HANOVER PARKING FACILITY, HANOVER STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, SCALE: 1" = 20', DATED: 5/5/99, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., NOT RECORDED
10) SUBDIVISION OF ASSESSOR'S PARCEL 117/12, LAND OF WENBERRY ASSOCIATES, LLC, FLEET STREET & HAVEN COURT PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, N.H., SCALE: 1" = 20', DATED 11/22/05, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., RCRD C–34500.
11) STANDARD BOUNDARY SURVEY TAX MAP 17 LOTS 14 & 15, OWNER OF RECORD: PETER H. JARVIS & SONS, LLC, PROPERTY LOCATED AT: 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, DATED: NOVEMBER 2021, SCALE: 1" = 20', PREPARED BY AMBIT ENGINEERING, INC., RCRD D–43095.



LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N31°13'20"W	9.55'
L2	S58°47'02"W	18.74'
L3	N28°32'20"W	14.35'
L4	S28°46'20"E	7.00'

GRAPHIC SCALE
10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

JOHN R. CHAGNON, LLS 738

1.25.24
DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 738 JOHN R. CHAGNON SIGNATURE

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 14 & AND AN UNNUMBERED PARCEL OF LAND DEPICTED AS A PORTION OF HAVEN COURT.

2) OWNER OF RECORD:
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2
6381/1527 NOTICE OF MERGER
6523/28, 6523/32, 6523/2286

3) PARCEL IS LOCATED IN THE CHARACTER DISTRICT 4 AND CHARACTER DISTRICT 5.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) LOT AREA:
17,724 S.F.
0.4069 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY SURVEY OF ASSESSORS MAP 117 LOT 14 AND AN UNNUMBERED PARCEL OF LAND SITUATED ADJACENT AND WESTERLY OF A PRIVATE WAY OVER LOT 14 KNOWN AS HAVEN COURT.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) HAVEN COURT IS A PRIVATE WAY 15 FEET WIDE. ALL RIGHTS, TITLE AND INTEREST UNTO SAID HAVEN COURT WERE CONVEYED WITH ASSESSOR'S MAP 117 LOT 15, AS DESCRIBED IN RCRD 983/179, SUBJECT TO RIGHTS OF OTHERS (OTHERS NOT DEFINED ON THIS SURVEY).

10) PARCEL TO BE MERGED WITH ASSESSOR'S MAP 117 LOT 14 WAS ACQUIRED FROM THE HEIRS OF RALPH T. WOOD & IRA A. NEWICK AND IS THE REMAINDER OF THE PARCEL CONVEYED TO WOOD & NEWICK BY DEED OF HARTFORD REAL ESTATE PARTNERSHIP RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AT BOOK 1042 PAGE 34.

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/25/24

REVISIONS

STANDARD BOUNDARY SURVEY
TAX MAP 117 LOT 14

OWNER OF RECORD:
ONE MARKET SQUARE, LLC

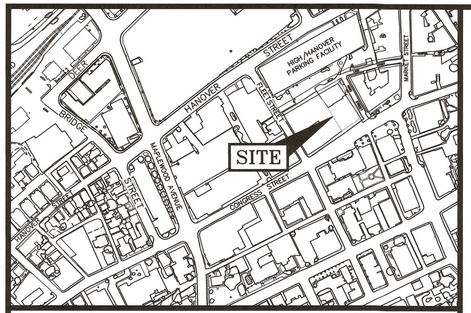
PROPERTY LOCATED AT:
1 CONGRESS STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 20' JANUARY 2024

FB 309 PG 15

5010156.3406

P:\NH\5010156-McNabb_Properties\3406-Congress St, Portsmouth-MC\2021 Survey and Site Plan\Plats & Specs\Site\3406 Survey 2024.dwg, 8/20/2024 8:07:21 AM, EDT, Adobe PDF



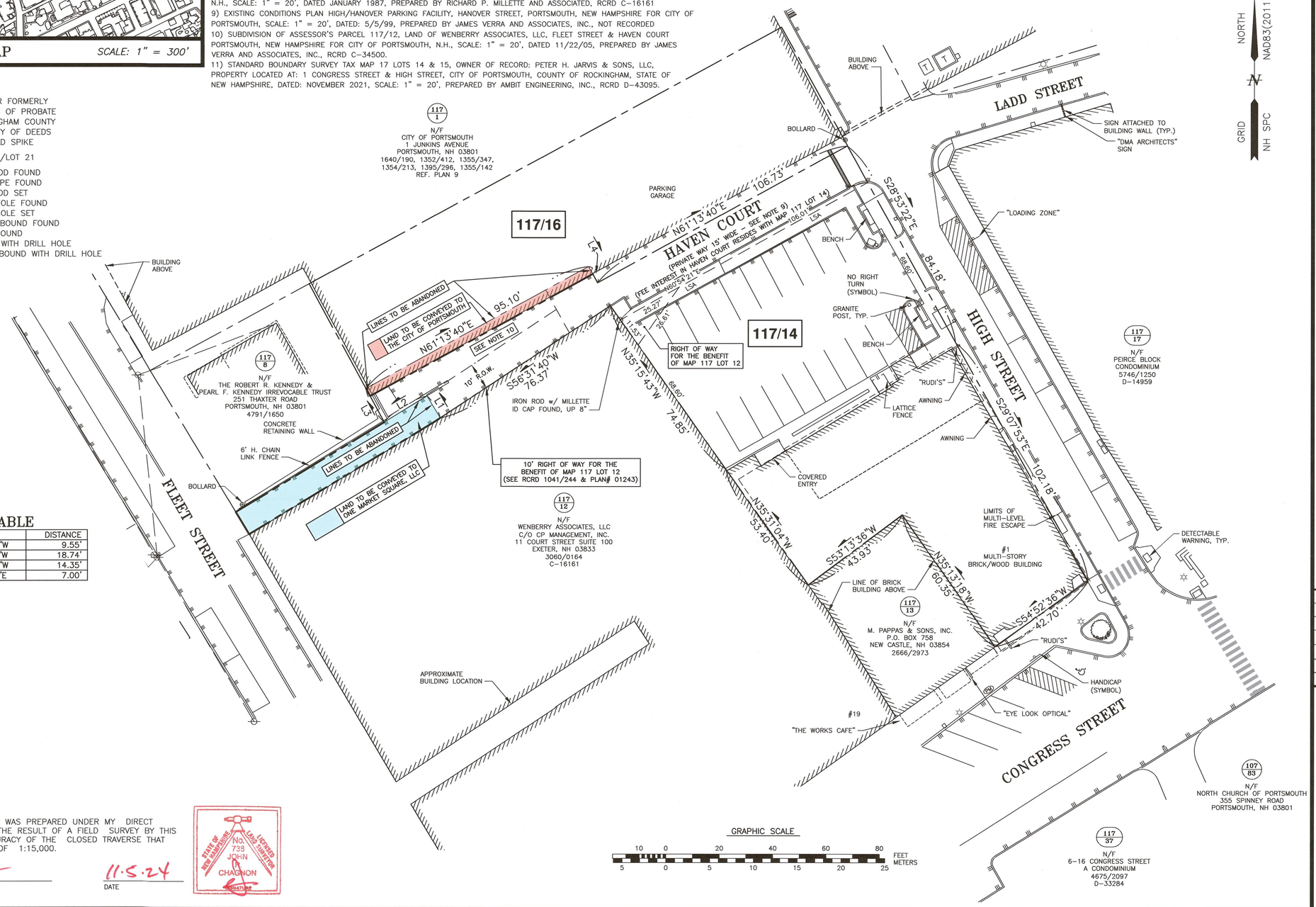
LOCATION MAP SCALE: 1" = 300'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
○ IR FND	IRON ROD FOUND
○ IP FND	IRON PIPE FOUND
● IR SET	IRON ROD SET
◉ DH FND	DRILL HOLE FOUND
○ DH SET	DRILL HOLE SET
⊙ NHHB	NHDOT BOUND FOUND
⊙ TB	TOWN BOUND
⊙ BND w/DH	BOUND WITH DRILL HOLE
⊙ ST BND w/DH	STONE BOUND WITH DRILL HOLE

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND IN PORTSMOUTH N.H. BELONGING TO THE ESTATE OF CHAS. H. MENDUM, SCALE: 1 IN = 20 FT, DATED JULY 1, 1908, PREPARED BY WM. A. GROVER CIVIL ENGINEER, RCRD 00469.
2) LAND ON HAVEN COURT PORTSMOUTH, N.H., F.W. HARTFORD TO HISLOP GARAGE CO., SCALE: 1IN. = 20FT., DATED FEB. 1926, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 00376.
3) LOT PLAN NOS. 7–13 CONGRESS ST. PORTSMOUTH, N.H., SCALE: 1/4 INCH = 1 FOOT, DATED MAR. 1937, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
4) PLAN OF LOT NOS. 173 – 181 FLEET ST. PORTSMOUOTH, N.H., SCALE: 1IN. = 20FT., DATED NOV. 1945, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED
5) LAND IN PORTSMOUTH, N.H., RALPH T. WOOD & IRA A. NEWICK TO J.J. NEWBERRY CO., SCALE: 1IN. = 20FT., DATED MAY 1946, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 01243.
6) PLAN OF LOT PORTSMOUTH, N.H., NEWICK & WOOD INC. TO CITY OF PORTSMOUTH, SCALE 1IN. = 40FT., DATED MAR. 1956, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD 02537
7) PLAN OF LOT 26 – 30 HIGH ST. PORTSMOUTH, N.H., SCALE: 1IN. = 10FT., DATED OCT. 1961, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, NOT RECORDED
8) PLAN OF LAND FOR RICHARD A. CABRAL & BRUCE E. NADEAU CONGRESS/FLEET ST. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H., SCALE: 1" = 20', DATED JANUARY 1987, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATED, RCRD C–16161
9) EXISTING CONDITIONS PLAN HIGH/HANOVER PARKING FACILITY, HANOVER STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, SCALE: 1" = 20', DATED: 5/5/99, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., NOT RECORDED
10) SUBDIVISION OF ASSESSOR'S PARCEL 117/12, LAND OF WENBERRY ASSOCIATES, LLC, FLEET STREET & HAVEN COURT PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, N.H., SCALE: 1" = 20', DATED 11/22/05, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., RCRD C–34500.
11) STANDARD BOUNDARY SURVEY TAX MAP 17 LOTS 14 & 15, OWNER OF RECORD: PETER H. JARVIS & SONS, LLC, PROPERTY LOCATED AT: 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, DATED: NOVEMBER 2021, SCALE: 1" = 20', PREPARED BY AMBIT ENGINEERING, INC., RCRD D–43095.



LENGTH TABLE

LINE	BEARING	DISTANCE
L1	N31°13'20"W	9.55'
L2	S58°47'02"W	18.74'
L3	N28°32'20"W	14.35'
L4	S28°46'20"E	7.00'

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

JOHN R. CHAGNON, LLS ~~738~~

11.5.24
DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 739 JOHN R. CHAGNON SEAL/SIGNATURE

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT S 14, 16 AND AN UNNUMBERED PARCEL OF LAND DEPICTED AS A PORTION OF HAVEN COURT.

2) OWNERS OF RECORD:
MAP 117 LOT 14
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2
6381/1527 NOTICE OF MERGER
6523/28, 6523/32, 6523/2286

MAP 117 LOT 16
CITY OF PORTSMOUTH
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
3348/505
REF. PLAN 9

PORTION OF HAVEN COURT
CITY OF PORTSMOUTH
1 JUNKINS AVENUE
PORTSMOUTH, NH 03801
4741/797
C–34500

3) MAP 117 LOT 14 IS LOCATED IN CHARACTER DISTRICT 4 AND CHARACTER DISTRICT 5. MAP 117 LOT 16 IS LOCATED IN THE MUNICIPAL DISTRICT.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) EXISTING LOT AREA:

MAP 117 LOT 14	MAP 117 LOT 16	PORTION OF HAVEN COURT
17,724 S.F.	9,663 S.F.	808 S.F.
0.4069 ACRES	0.2218 ACRES	0.0185 ACRES

PROPOSED LOT AREA:

MAP 114 LOT 14	MAP 117 LOT 16	PORTION OF HAVEN COURT
18,225 S.F.	9,970 S.F.	0 S.F.
0.4184 ACRES	0.2289 ACRES	0.0000 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW A LOT LINE ADJUSTMENT BETWEEN ASSESSORS MAP 117 LOTS 14, 16 AND AN UNNUMBERED PARCEL SHOWN AS A PORTION OF HAVEN COURT.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) HAVEN COURT IS A PRIVATE WAY 15 FEET WIDE. ALL RIGHTS, TITLE AND INTEREST UNTO SAID HAVEN COURT WERE CONVEYED WITH ASSESSOR'S MAP 117 LOT 15, AS DESCRIBED IN RCRD 983/179, SUBJECT TO RIGHTS OF OTHERS (OTHERS NOT DEFINED ON THIS SURVEY).

10) ONE MARKET SQUARE, LLC SHALL CONVEY TO THE CITY A TEN FOOT MAINTENANCE EASEMENT FOR THE AREA ADJACENT TO THE HIGH HANOVER GARAGE FOR MAINTENANCE.

NO.	DESCRIPTION	DATE
1	NOTE 10	11/5/24
0	ISSUED FOR COMMENT	5/30/24

REVISIONS

LOT LINE ADJUSTMENT PLAN
TAX MAP 117 LOTS 14 & 16

OWNERS OF RECORD:
ONE MARKET SQUARE, LLC & CITY OF PORTSMOUTH

PROPERTY LOCATED AT:
1 CONGRESS STREET &
44 HIGH STREET
CITY OF PORTSMOUTH
COUNTY OF ROCKINGHAM
STATE OF NEW HAMPSHIRE

SCALE: 1" = 20' MAY 2024

FB 309 PG 15

5010156.3406

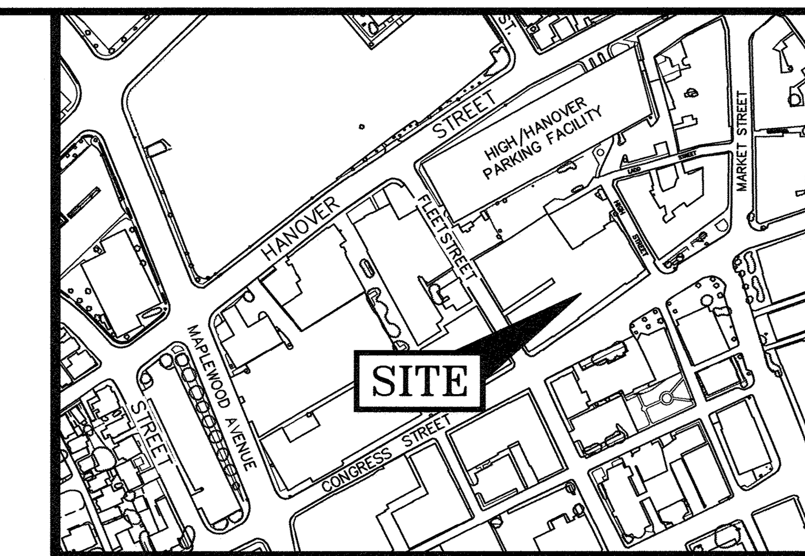
P:\5010156 McNabb, Properties\3406 Congress St., Portsmouth - (RC)\2024 Site Plan\Plans & Specs\DWG\current\3406 Lot Line Adjustment 2024.dwg, 11/4/2024 9:54:08 AM, Canon TX-8000 - Direct

PLAN REFERENCES:

1) PLAN OF A LOT OF LAND IN PORTSMOUTH N.H. BELONGING TO THE ESTATE OF CHAS. H. MENDUM, SCALE: 1 IN = 20 FT, DATED JULY 1, 1908, PREPARED BY WM. A. GROVER CIVIL ENGINEER, RCRD 00469.
2) LAND ON HAVEN COURT PORTSMOUTH, N.H., F.W. HARTFORD TO HISLOP GARAGE CO., SCALE: 1IN. = 20FT., DATED FEB. 1926, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 00376.
3) LOT PLAN NOS. 7–13 CONGRESS ST. PORTSMOUTH, N.H., SCALE: 1/4 INCH = 1 FOOT, DATED MAR. 1937, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
4) PLAN OF LOT NOS. 173 – 181 FLEET ST. PORTSMOUOTH, N.H., SCALE: 1IN. = 20FT., DATED NOV. 1945, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, NOT RECORDED.
5) LAND IN PORTSMOUTH, N.H., RALPH T. WOOD & IRA A. NEWICK TO J.J. NEWBERRY CO., SCALE: 1IN. = 20FT., DATED MAY 1946, PREPARED BY JOHN W. DURGIN CIVIL ENGINEER, RCRD 01243.
6) PLAN OF LOT PORTSMOUTH, N.H., NEWICK & WOOD INC. TO CITY OF PORTSMOUTH, SCALE 1IN. = 40FT., DATED MAR. 1956, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD 02537.
7) PLAN OF LOT 26 – 30 HIGH ST. PORTSMOUTH, N.H., SCALE: 1IN. = 10FT., DATED OCT. 1961, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, NOT RECORDED.
8) PLAN OF LAND FOR RICHARD A. CABRAL & BRUCE E. NADEAU CONGRESS/FLEET ST. COUNTY OF ROCKINGHAM PORTSMOUTH, N.H., SCALE: 1" = 20', DATED JANUARY 1987, PREPARED BY RICHARD P. MILLETTE AND ASSOCIATED, RCRD C–16161.
9) EXISTING CONDITIONS PLAN HIGH/HANOVER PARKING FACILITY, HANOVER STREET, PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, SCALE: 1" = 20', DATED: 5/5/99, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., NOT RECORDED.
10) SUBDIVISION OF ASSESSOR'S PARCEL 117/12, LAND OF WENBERRY ASSOCIATES, LLC, FLEET STREET & HAVEN COURT PORTSMOUTH, NEW HAMPSHIRE FOR CITY OF PORTSMOUTH, N.H., SCALE: 1" = 20', DATED 11/22/05, PREPARED BY JAMES VERRA AND ASSOCIATES, INC., RCRD C–34500.
11) STANDARD BOUNDARY SURVEY TAX MAP 17 LOTS 14 & 15, OWNER OF RECORD: PETER H. JARVIS & SONS, LLC, PROPERTY LOCATED AT: 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, DATED: NOVEMBER 2021, SCALE: 1" = 20', PREPARED BY AMBIT ENGINEERING, INC., RCRD D–43095.
12) SITE PLAN FOR HOUSE–GOODMAN LIMITED PARTNERSHIP 43–49 CONGRESS STREET PORTSMOUTH, N.H. PREPARED BY: RICHARD P. MILLETTE AND ASSOCIATES, SCALE: 1"=10', DATED: NOVEMBER 15, 1983, NOT RECORDED.

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
	BOUND FOUND
—S—	SEWER LINE
—G—	GAS LINE
—D—	STORM DRAIN
—W—	WATER LINE
—UE—	UNDERGROUND ELECTRIC
— — —	OVERHEAD ELECTRIC/WIRES
100	CONTOUR
97x3	SPOT ELEVATION
	EDGE OF PAVEMENT (EP)
	UTILITY POLE
WSO	WATER SHUT OFF/CURB STOP
GSO	GAS SHUT OFF
GV	GATE VALVE
HYD	HYDRANT
G W E	METER (GAS, WATER, ELECTRIC)
	CATCH BASIN
T	TELEPHONE MANHOLE
S	SEWER MANHOLE
D	DRAIN MANHOLE
EL.	ELEVATION
EP	EDGE OF PAVEMENT
FF	FINISHED FLOOR
INV	INVERT
TBM	TEMPORARY BENCH MARK
TYP	TYPICAL
VGC/SGC	VERTICAL/SLOPED GRANITE CURB



LOCATION MAP 1" = 300'

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOT 12.

2) OWNERS OF RECORD:
WENBERRY ASSOCIATES, LLC
C/O CP MANAGEMENT
11 COURT STREET SUITE 100
EXETER, N.H. 03833
3060/164

3) PARCEL IS LOCATED IN CHARACTER DISTRICT 5.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) EXISTING LOT AREA:

LOT 12 AREA:
23,708 S.F.
0.5443 ACRES

LOT 14 AREA (AFTER LLR):
18,225 S.F.
0.4184 ACRES

PROPOSED COMBINED LOT AREA:
41,933 S.F.
0.9626 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULTS OF A STANDARD BOUNDARY SURVEY AND EXISTING CONDITIONS ON ASSESSORS MAP 117 LOT 12.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) PARCEL IS SUBJECT TO A LEASE AGREEMENT FOR A PORTION OF LESSEE'S WALL IS ENCROACHING ON SUBJEST PARCEL. SEE RCRD 1512/410 & 1690/130.

10) PARCEL IS SUBJECT TO A RIGHT OF WAY IN COMMON FOR PASSAGE AND UTILITIES AND GENERAL PURPOSES PER DEEDS. SEE RCRD 322/318, 322/380, 322/381, 348/80, 348/81, 348/82, 1484/44, 2713/797, AND RCRD C–16161.

11) PARCEL IS SUBJECT TO A UTILITY EASEMENT TO P.S.N.H. FROM UTILITY POLE 20/4 ON FLEET STREET EASTERLY TO GRANTORS EASTERLY BOUNDARY. SEE RCRD 3124/695.

12) HAVEN COURT IS A PRIVATE WAY 15 FEET WIDE. ALL RIGHTS, TITLE AND INTEREST UNTO SAID HAVEN COURT WERE CONVEYED WITH ASSESSOR'S MAP 117 LOT 15, AS DESCRIBED IN RCRD 983/179, SUBJECT TO RIGHTS OF OTHERS (OTHERS NOT DEFINED ON THIS SURVEY).

No.	DATE	DESCRIPTION	BY	CHK.
2	11/5/24	ISSUED FOR COMMENT	EDS	JRC
1	8/15/24	PARTY WALL	RJB	JRC
0	7/24/24	ISSUED FOR COMMENT	RJB	JRC

DRAWING ISSUE STATUS

SITE SURVEY

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

APPLICANT: ONE MARKET SQUARE, LLC
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

15 CONGRESS
STANDARD BOUNDARY SURVEY &
EXISTING CONDITIONS PLAN
OF THE DEVELOPMENT PARCEL

DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
RJB	---	JRC

PROJECT No.	FIELD BOOK & PAGE
5010156.01	FB 309 PG 54

SHEET No.	REV.
V101	2

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON SIGNATURE

JOHN R. CHAGNON, LLS 738 — DATE 11.5.24

P:\NH\5010156-McNabb_Properties\3406-Congress St., Portsmouth-JRC\2024 Site Plan\Plans & Specs\Site\3406 JJ Newberry Existing Conditions 2024.dwg, 11/1/2024 1:31:19 PM, Canon TX-3000 - Direct

NORTH
NAD83(2011)
N
GRID
NH SPC

NOTE:
1) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING AERIAL VIEW OF THE PROJECT VICINITY.

GRAPHIC SCALE

0 50 100 120 FEET
0 10 20 30 METERS

No.	DATE	DESCRIPTION	BY	CHK
0	7/31/24	ISSUED FOR COMMENT	SJR	JRC

DRAWING ISSUE STATUS

SITE PLAN

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

APPLICANT: ONE MARKET SQUARE, LLC
1 & 15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

EXISTING CONDITIONS ORTHO PHOTO

DATE	SCALE
JULY 2024	1" = 30'

DRAWN BY	DESIGNED BY	CHECKED BY
SJR	JRC	JRC

PROJECT No.	FIELD BOOK & PAGE
5010156.01	FB 309 PG 54

SHEET No.

DWG No.
O1

DEMOLITION NOTES

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE.

I) ALL WORK WITHIN THE CITY OF PORTSMOUTH RIGHT OF WAY SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS (DPW).

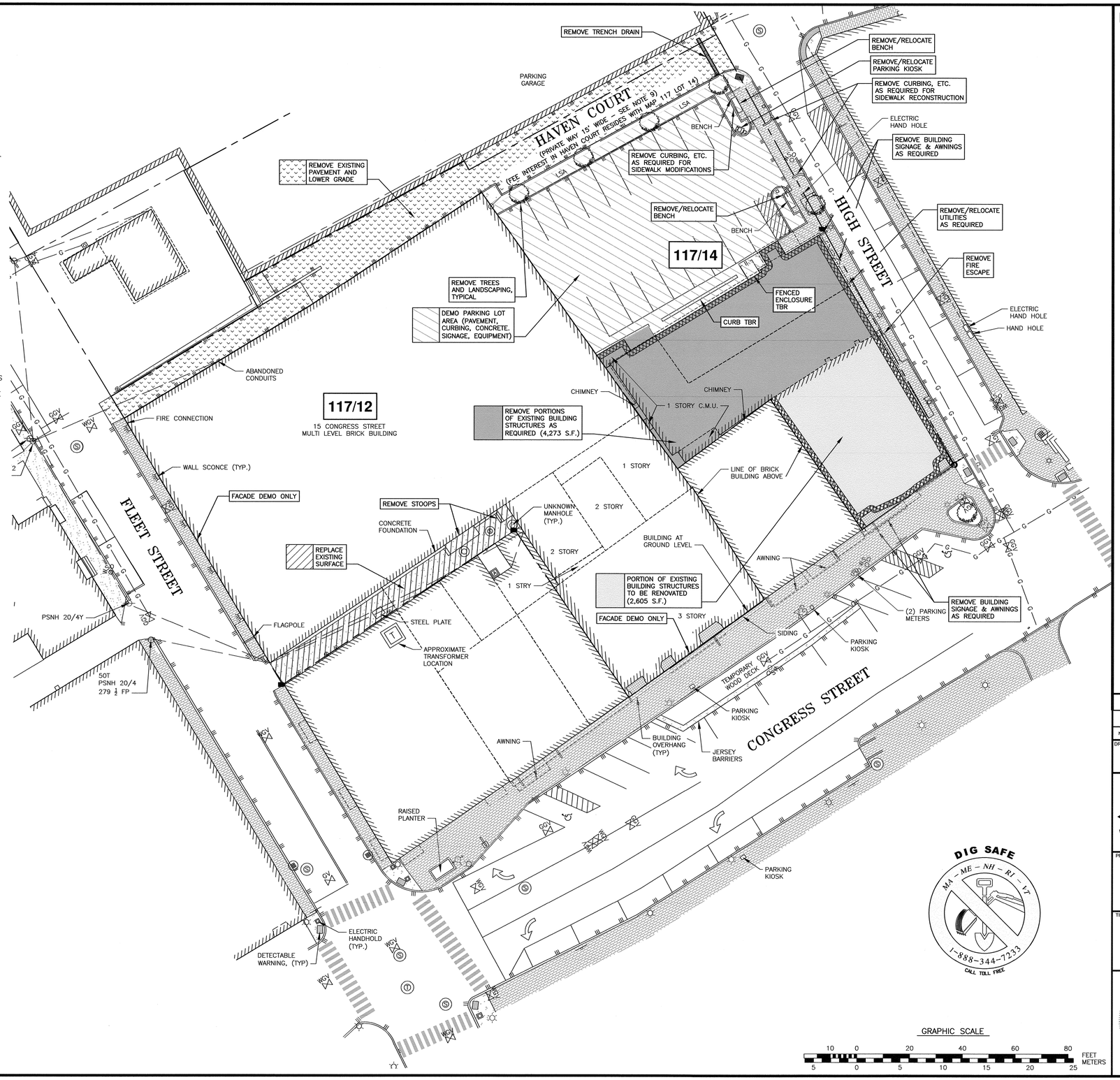
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A NH LICENSED LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN 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 WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH NHDES REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

No.	DATE	DESCRIPTION	BY	CHK
1	11/5/24	DEMO TRENCH DRAIN	EDS	JRC
0	7/31/24	ISSUED FOR COMMENT	SJR	JRC

DRAWING ISSUE STATUS

SITE PLAN

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

APPLICANT: ONE MARKET SQUARE, LLC
1 & 15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

DEMOLITION PLAN

JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
SJR	JRC	JRC

PROJECT No.	FIELD BOOK & PAGE
5010156.01	FB 309 PG 54

SHEET No. **C101** REV. 1

P:\Jobs\5010156 Markets_Properties\Mkt5-Congress St, Portsmouth, NH\2024 Site Plan\Plans & Specs\Site\Current\Mkt5 Site Concept 2024.dwg, 11/1/2024 1:48:58 PM, Connor Kreutter, Plotter

1 & 15 Congress Street
Unit/Parking Analysis
November 18, 2024

ARCOVE ARCHITECTS

Level	Room No.	# bedrooms	Area (sf)	spaces/unit	
2	1.211	1	1257	1.3	
2	1.212	1	1393	1.3	
3	1.304	1	704	1.0	
3	1.302	1	1023	1.3	
3	1.303	1	1047	1.3	
3	1.305	1	1268	1.3	
3	1.306	1	1320	1.3	
3	1.309	1	1612	1.3	
4	1.404	1	676	1.0	studio
4	1.402	1	1009	1.3	
4	1.403	1	1040	1.3	
4	1.406	1	1247	1.3	
4	1.405	1	1305	1.3	
4	1.409	1	1577	1.3	
2	15.207	2	1303	1.3	
2	15.208	2	1629	1.3	
3	1.301	2	1267	1.3	
3	15.307	2	1298	1.3	
3	15.311	2	1436	1.3	
3	15.308	2	1629	1.3	
4	1.401	2	1220	1.3	
4	1.408	2	2835	1.3	
4	1.407	2	3169	1.3	
2	15.202	3	1714	1.3	
2	15.206	3	1722	1.3	
2	15.203	3	1727	1.3	
2	15.204	3	1733	1.3	
2	15.210	3	1831	1.3	
2	15.205	3	1948	1.3	
2	15.201	3	2117	1.3	
2	15.209	3	2157	1.3	
3	15.302	3	1713	1.3	
3	15.306	3	1725	1.3	
3	15.303	3	1726	1.3	
3	15.304	3	1744	1.3	
3	15.310	3	1840	1.3	
3	15.305	3	1937	1.3	
3	15.301	3	2100	1.3	
3	15.309	3	2160	1.3	
2	15.211	4	2462	1.3	

	Total Units	al bedrooms	Parking Req.
Total Units:	40	84	51.40
Visitor Parking - 1 space per every 5 dwellings			8.00
Downtown Overlay District deduct			(4.00)
Subtotal - Residential automobile parking required			55.40

	# excess bike spaces		# car spaces deducted		
Bicycle parking deduction 1	28.0				
max 5% allowe	2.77	parking spaces		Rounded dn	(2.00)
Total Residential Auto Parking Required (adjusted)				Rounded Up	**53**

Restaurant/Retail/Office - No Parking Required in Downtown Overlay District

Building	level	Room No.	use	sf	TOTAL
1 Congress	2		Office	8,426	
total office use					**8,426**
1 Congress	1		Restaurant	474	
15 Congress	1		Restaurant	8,663	
total restaurant use					**9,137**
1 Congress	0		Retail	2,502	
1 Congress	1	1	Retail	1,268	
1 Congress	1	2	Retail	1,251	
1 Congress	1	3	Retail	1,572	
1 Congress	1	4	Retail	1,856	
1 Congress	1	5	Retail	3,083	
15 Congress	1	6	Retail	1,946	
15 Congress	1	7	Retail	2,749	
15 Congress	1	8	Retail	2,714	
15 Congress	1	9	Retail	3,551	
15 Congress	1	10	Retail	1,824	
total retail use					**24,318**

Total parking proposed	**21**
EXCESS (Deficit)	**(32)**
Existing total available-	19
Proposed Net **Increase** (reduction) in parking	**2**

TOTAL PROPOSED BUILDING UPPER LEVEL: 36,045 S.F.

IMPERVIOUS SURFACE AREAS 117/12&14
(TO PROPERTY LINE)

STRUCTURE	PRE–CONSTRUCTION IMPERVIOUS (S.F.)	POST–CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURE	29,931	35,755
CONCRETE	1,225	3,323
BRICK SIDEWALK	416	255
PAVEMENT	9530	0
CURB	138	258
TOTAL	41240	39591
LOT SIZE	41,933	41,933
% LOT COVERAGE	98.3%	94.4%

Car Parking Spaces Required per Unit Size	
0-500	0.5
500-750	1.0
751+	1.3

Bicycle Parking Required		
use	**spaces required per use**	**total required**
multifamily	1 bicycle for every 5 dwelling units	8
TOTAL Required		**8**
Total Provided (in building, basement)		36
Total Provided (outside)		0
Total Provided, inside & outside		**36**
Excess Provided (beyond required)		28 DEDUCTED @ 1:6
Scooter parking provided (none required)		
Motorcycle parking provided (none required)		

Apartment Types - Unit Mix & Locations

	number of bedrooms per apartment					
level	**S**	**1**	**2**	**3**	**4**	**Total**
4	1	5	3			9
3		6	4	8		18
2		2	2	8	1	13
total apartments	**1**	**13**	**9**	**16**	**1**	**40**
Total bedrooms	1	13	18	48	4	84

PROPOSED BUILDING USES		
FLOOR	1 CONGRESS	15 CONGRESS
4	residential dwellings	rooftop penthouse (lounge), stair & elevator access, roof decks.
3	residential dwellings	residential dwellings
2	residential dwellings & office	residential dwellings
1	retail	restaurant & retail
0	parking & storage, MEP/utility rooms	residential shared laundry, lounge, kitchen & dining; general storage, MEP/utility rooms

1 Congress Street and 15 Congress Street; Zoning

The project is a combination of previously approved 1 Congress Street (Tax Map 117 – Lot 14, LU – 22-12), hereinafter referred to as "One Market Square", with property located at 15 Congress Street (Tax Map 117 – Lot 12), hereinafter referred to as "JJ Newberry". The proposal is to merge the lots and re-develop the combined lot according to the attached site plans.

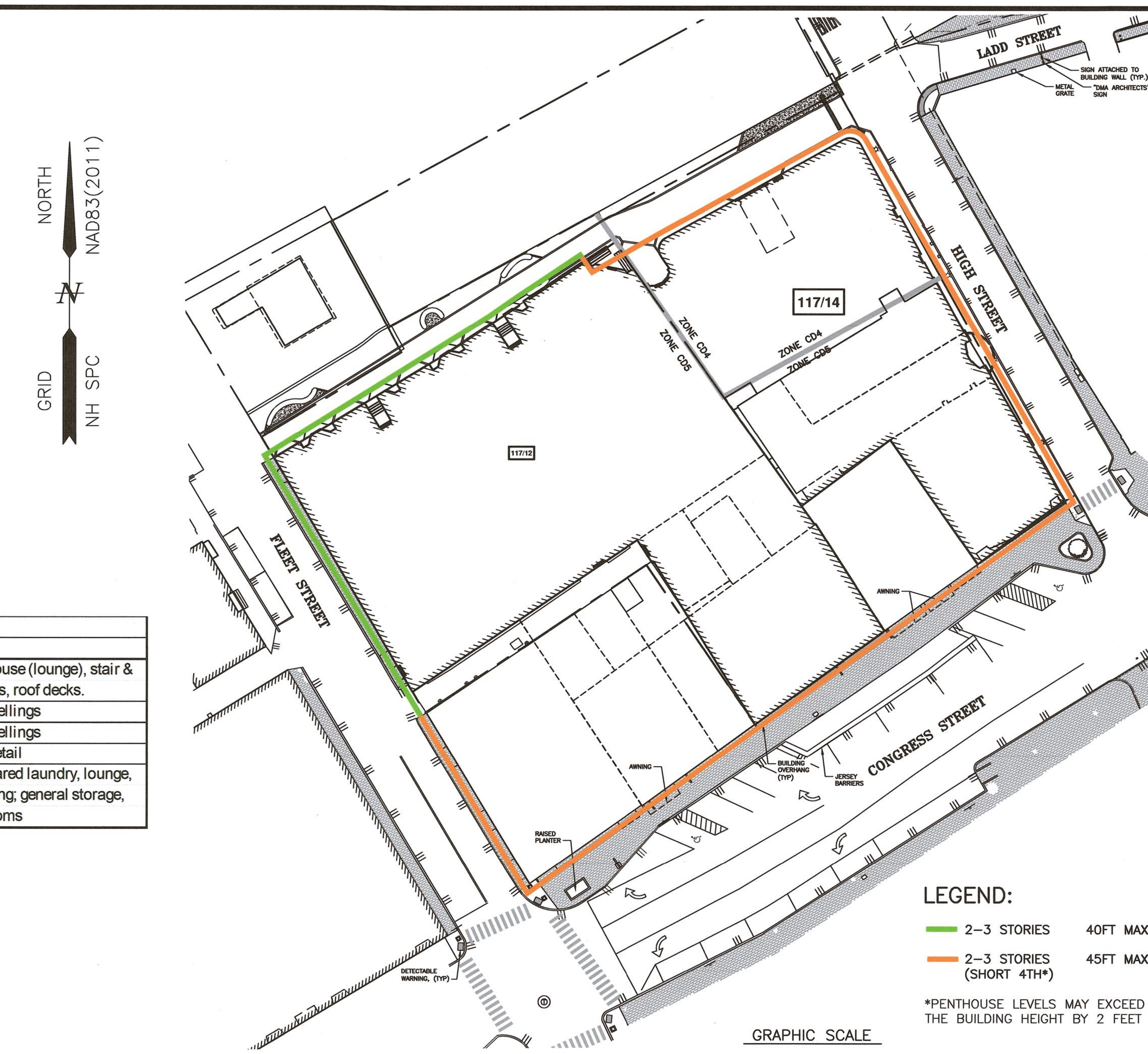
On the merged lot, we are requesting a Conditional Use Permit in accordance with Section 10.241.23(a) of the Zoning Ordinance and a Parking Conditional Use Permit as provided for in Section 10.1112.14 of the Zoning Ordinance.

The JJ Newberry project consists of rehabilitation and adaptive reuse of the existing structure(s) with minor accessory additions. New projecting storefronts with recessed entrance stoops are proposed along the north elevation of the property to create a retail experience in a re-imaged, pedestrian friendly corridor connecting High Street and Fleet Street. This area, previously known as Haven Court, is proposed to be re-named Newberry Way.

The proposed Newberry Way connection is supported by the Master Plan as part of an overall connection running from McIntyre and potentially to Vaughan Mall. Significant improvements are proposed for Newberry Way including changing the grade, installing underground utilities, hardscape impervious and porous pavers, catenary lights, and landscaping. The design plans include the proposed improvements on Ladd Street & High Street, which the applicant is willing to fund at their sole cost. The applicant finalized a Memorandum of Understanding with the Portsmouth City Council as a part of the 1 Congress Street site plan approval. The memorandum stipulates that One Congress, LLC will pay the entire cost of design and construction of the improvements, thereby not requiring the City of Portsmouth to pay the costs for the proposed improvements to the city's downtown infrastructure shown in this application. Please note the following in regard to the signed Memorandum of Understanding:

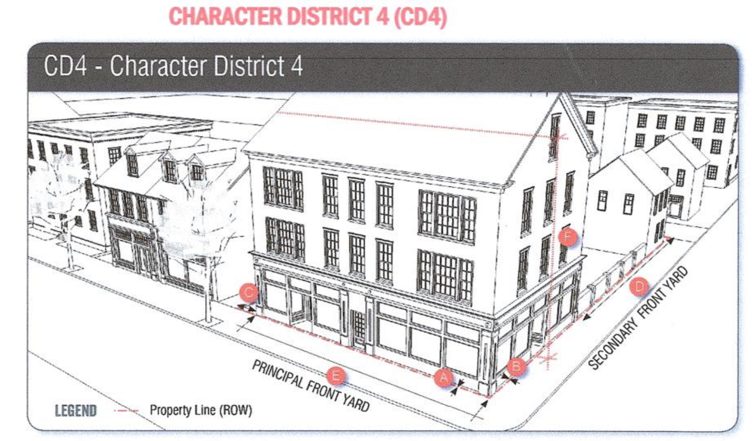
- The plans that were contemplated and approved show the removal of existing parking spaces on High Street. This is a key component of the proposed street improvement design. The developer is of the understanding that the Memorandum of Understanding allows that plan to move forward.
- Part I Developers Obligations A.4 and A.5 regarding pedestrian access to the High Hanover Parking Garage and the stairway connection would be revised due to the change of proposed grading on Newberry Way, as the contemplated stairway is being replaced by a continuous grade. The design team will work with the city to identify if alternative pedestrian access to the parking garage is achievable in the revised design.
- Part I Developers Obligations B.7 regarding permissions for construction on the Wenberry parcel has been met by the developers acquisition of the property in a binding purchase and sales agreement.
- Part II City's Obligations 2, the developer is of the understanding that the city will procure a third-party study of the feasibility of a shared trash and recycling area within the High Hanover Garage. The developer is willing to pay for the capital improvements, management and long-term maintenance of the trash and recycling room.
- Part II City's Obligations 3, the developer is of the understanding that the city will procure a third-party study by an experienced land use firm and Parking/traffic engineer for the three entrances to the High Hanover Garage so the City may consider any changes to those entrances. The applicant favors and recommends the city close the High Street entrance to the High Hanover Garage to reduce traffic driving through Market Square.

The City Council, by vote of August 21, 2023, expressly delegated authority to the City Manager to negotiate, convey and/or accept land interests, negotiate, execute and record as necessary any and all easements, licenses, joint use agreements or other documents reasonably necessary for the purposes of the Memorandum of Understanding.



GRAPHIC SCALE
40 30 20 10 0 50 100 150 FEET
10 5 0 10 20 30 40 50 METERS

FIGURE 10.5A41.10C DEVELOPMENT STANDARDS CHARACTER DISTRICT 4 (CD4)



BUILDING PLACEMENT – PRINCIPAL BUILDING*

Maximum **principal front yard**	10 ft	A
Maximum **secondary front yard**	15 ft	B
Side yard	NR	C
Minimum **rear yard**	Greater of 5 ft **from rear lot line** or 10 ft from center line of alley	D
Front lot line buildout On Ceres Street	50% max. (See Map 10.5A21C)	
Everywhere else	50% min.	

* Except for items listed under Section 10.5A42.12

BUILDING AND LOT OCCUPATION

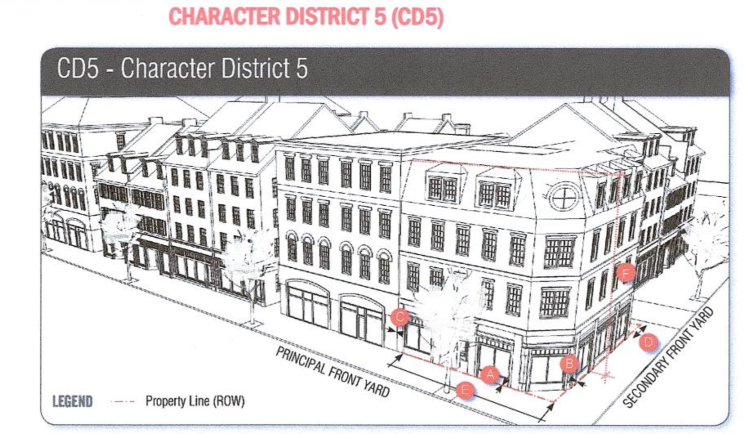
Maximum **building block length**	200 ft	E
Maximum **façade** modulation length	80 ft (see Section 10.5A43.20)	
Maximum **entrance spacing**	50 ft	
Maximum **building coverage**	90%	
Maximum **building footprint**	15,000 sf (or as allowed by Section 10.5A43.40)	

Minimum **lot area**	NR
Minimum **lot area** per **dwelling unit**	NR
Minimum **open space**	10%
Maximum **ground floor GFA** per **use**	15,000 sf

BUILDING FORM – PRINCIPAL BUILDING

Building height	See Map 10.5A21.B & Section 10.5A43.30	F
Maximum finished floor surface of **ground floor** above **sidewalk** grade	36"	
Minimum **ground story height**	12 ft	
Minimum second **story height**	10 ft	
Façade glazing: **Shopfront façade**	70% min.	
Other **façade** types	20% min. to 50% max.	
Roof type	flat, gable, hip, gambrel, **mansard**	
Roof pitch, if any: Gable	6:12 min. to 12:12 max	
Hip	3:12 min.	
Mansard/gambrel	6:12 min. to 30:12 max.	

FIGURE 10.5A41.10D DEVELOPMENT STANDARDS CHARACTER DISTRICT 5 (CD5)



BUILDING PLACEMENT – PRINCIPAL BUILDING*

Maximum **principal front yard**	5 ft	A
Maximum **secondary front yard**	5 ft	B
Side yard	NR	C
Minimum **rear yard**	Greater of 5 ft **from rear lot line** or 10 ft from center line of alley	D
Minimum **front lot line buildout**	80%	

* Except for items listed under Section 10.5A42.12

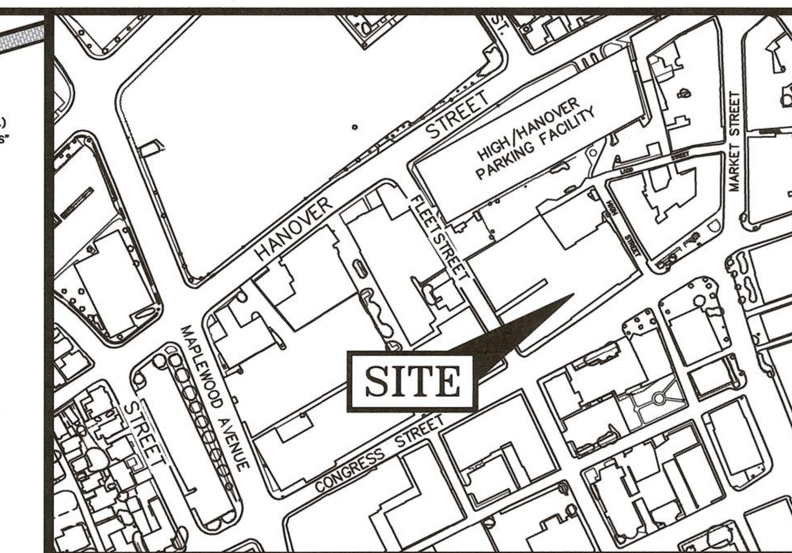
BUILDING AND LOT OCCUPATION

Maximum **building block length**	225 ft	E
Maximum **façade** modulation length	100 ft (see Section 10.5A43.20)	
Maximum **entrance spacing**	50 ft	
Maximum **building coverage**	95%	
Maximum **building footprint**	20,000 sf (or as allowed by Section 10.5A43.40)	

Minimum **lot area**	NR
Minimum **lot area** per **dwelling unit**	NR
Minimum **open space**	5%
Maximum **ground floor GFA** per **use**	15,000 sf

BUILDING FORM – PRINCIPAL BUILDING

Building height	See Map 10.5A21.B & Section 10.5A43.30	F
Maximum finished floor surface of **ground floor** above **sidewalk** grade	36"	
Minimum **ground story height**	12 ft	
Minimum second **story height**	10 ft	
Façade glazing: **Shopfront façade**	70% min.	
Other **façade** types	20% min. to 50% max.	
Roof type	flat, gable, hip, gambrel, **mansard**	
Roof pitch, if any: Gable	6:12 min. to 12:12 max	
Hip	3:12 min.	
Mansard/gambrel	6:12 min. to 30:12 max.	



LOCATION MAP 1" = 300'

NOTES:

1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOTS 12 AND 14.

2) OWNER OF RECORD:
WENBERRY ASSOCIATES, LLC
C/O CP MANAGEMENT
11 COURT STREET SUITE 100
EXETER, N.H. 03833
3060/164

OWNER/APPLICANT:
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE #400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

3) PARCEL IS LOCATED IN CHARACTER DISTRICTS 4 AND 5.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) LOT 12 AREA:
23,708 S.F.
0.5443 ACRES

LOT 14 AREA (AFTER LLR):
18,225 S.F.
0.4184 ACRES

PROPOSED COMBINED LOT AREA:
41,933 S.F.
0.9626 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED MIXED USE DEVELOPMENT ON ASSESSORS MAP 117 LOT 12.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

No.	DATE	DESCRIPTION	BY	CHK.
2	11/5/24	SITE LAYOUT AND IMPERVIOUS TABLE	EDS	JRC
0	7/31/24	ISSUED FOR COMMENT	SJR	JRC

DRAWING ISSUE STATUS
SITE PLAN

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT
APPLICANT: ONE MARKET SQUARE, LLC
1 & 15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE
PROJECT SITE ZONING

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 738 JOHN R. CHAGNON SIGNATURE

DATE	SCALE	
JULY 2024	1" = 40'	
DRAWN BY: SJR	DESIGNED BY: JRC	CHECKED BY: JRC
PROJECT No.: 5010156.01	FIELD BOOK & PAGE: FB 309 PG 54	
SHEET No.: **C102**	REV.: 2	

P:\NH\5010156-McNabb_Properties\3406-Congress St., Portsmouth-JRC\2024 Site Plan\Plans & Specs\Site\Current\3406 Site Concept 2024.dwg, 11/18/2024 2:07:34 PM, Canon TX-3000 - Direct

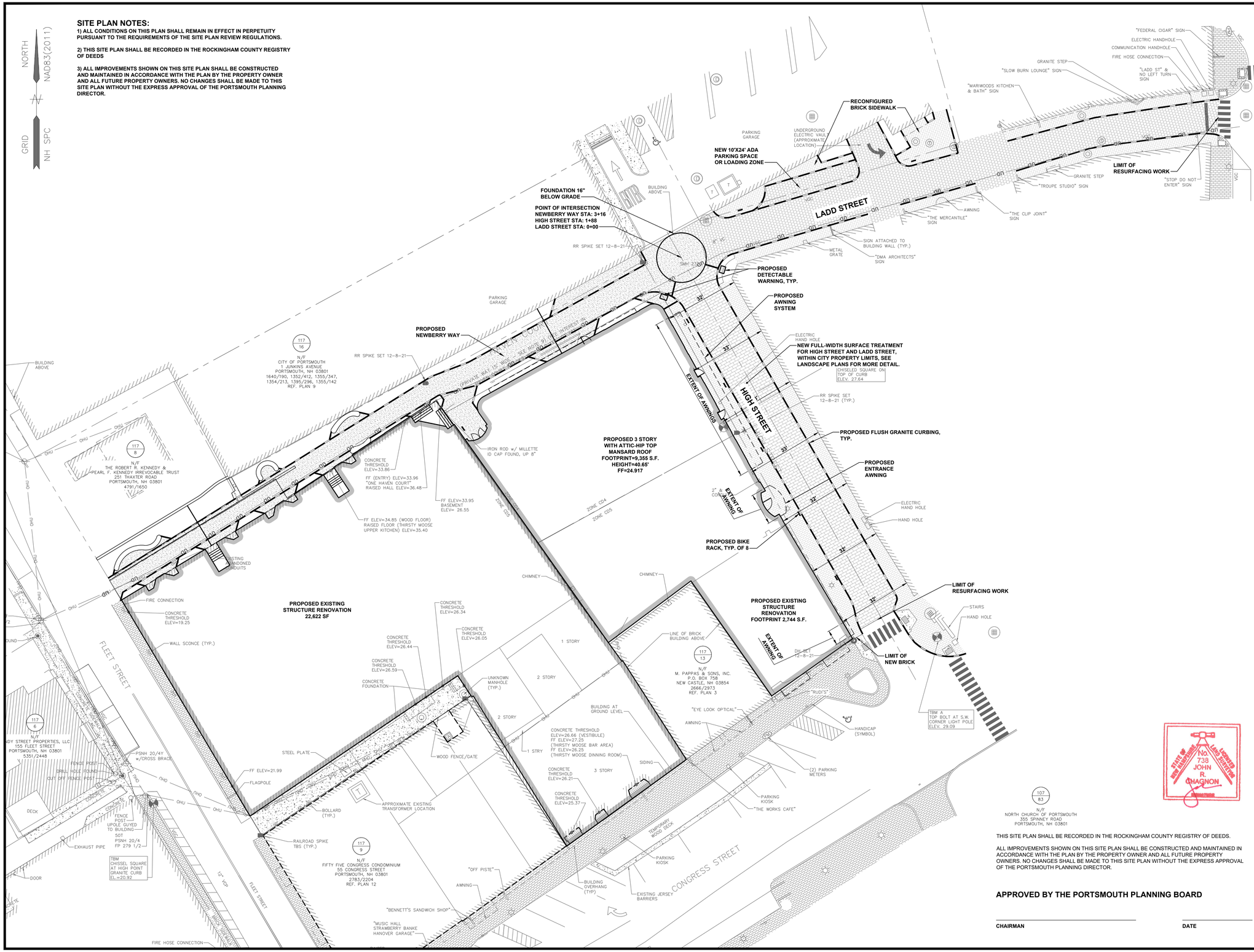
SITE PLAN NOTES:

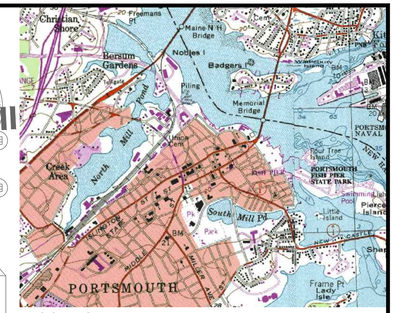
1) ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

2) THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS

3) 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.

NORTH
NAD83(2011)
GRID
NH SPC





LOCATION MAP:

SCALE: 1"=2000'

USGS QUADRANGLE: PORTSMOUTH
MAPTECH® USGS TOPOGRAPHIC SERIES™,
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO

NOTES:

1) PARCELS ARE SHOWN ON THE CITY OF PORTSMOUTH ASSESSORS MAP 117 AS LOTS 14 AND 15.

2) OWNER OF RECORD & APPLICANT:
ONE MARKET SQUARE, LLC
3 PLEASANT STREET, SUITE 400
PORTSMOUTH, NH 03801
6363/31 PARCEL 1 & PARCEL 2

3) PARCEL IS LOCATED IN THE CHARACTER DISTRICT 4 AND CHARACTER DISTRICT 5. SEE ZONING PLAN.

4) DIMENSIONAL REQUIREMENTS: SEE PORTSMOUTH ORDINANCE FOR REQUIREMENTS.

5) LOT AREAS:

MAP 117 LOT 14	MAP 117 LOT 15	MAP 117 LOT 12
7,266 S.F.	8,840 S.F.	23708 SF
0.1668 ACRES	0.2029 ACRES	0.5443 ACRES

COMBINED LOT AREA:
39,814 S.F.
0.914 ACRES

6) PARCELS ARE NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0259F, EFFECTIVE JANUARY 29, 2021

7) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED DEVELOPMENT ON TAX MAP 117, LOTS 14 AND 15 IN PORTSMOUTH, NH.

8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBS.

9) HAVEN COURT IS A PRIVATE WAY 15 FEET WIDE. ALL RIGHTS, TITLE AND INTEREST UNTO SAID HAVEN COURT WERE CONVEYED WITH ASSESSOR'S MAP 117 LOT 15, AS DESCRIBED IN RCRD 983/179, SUBJECT TO RIGHTS OF OTHERS (OTHERS NOT DEFINED ON THIS PLAN).

PLAN REFERENCE:

STANDARD BOUNDARY SURVEY, TAX MAP 117, LOTS 14 & 15, FOR PETER H. JARVIS & SONS, LLC. 1 CONGRESS STREET & HIGH STREET, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE. PREPARED BY AMBIT ENGINEERING, INC. DATED NOVEMBER 2021, ISSUED FOR RECORDING 12/8/21. R.C.R.D. PLAN D-43095.

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

PROPOSED SITE PLAN

THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.

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.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ **DATE** _____

STATE OF NEW HAMPSHIRE · No. 738 · JOHN R. CHAGNON · LICENSED LAND SURVEYOR

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 9851 · LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

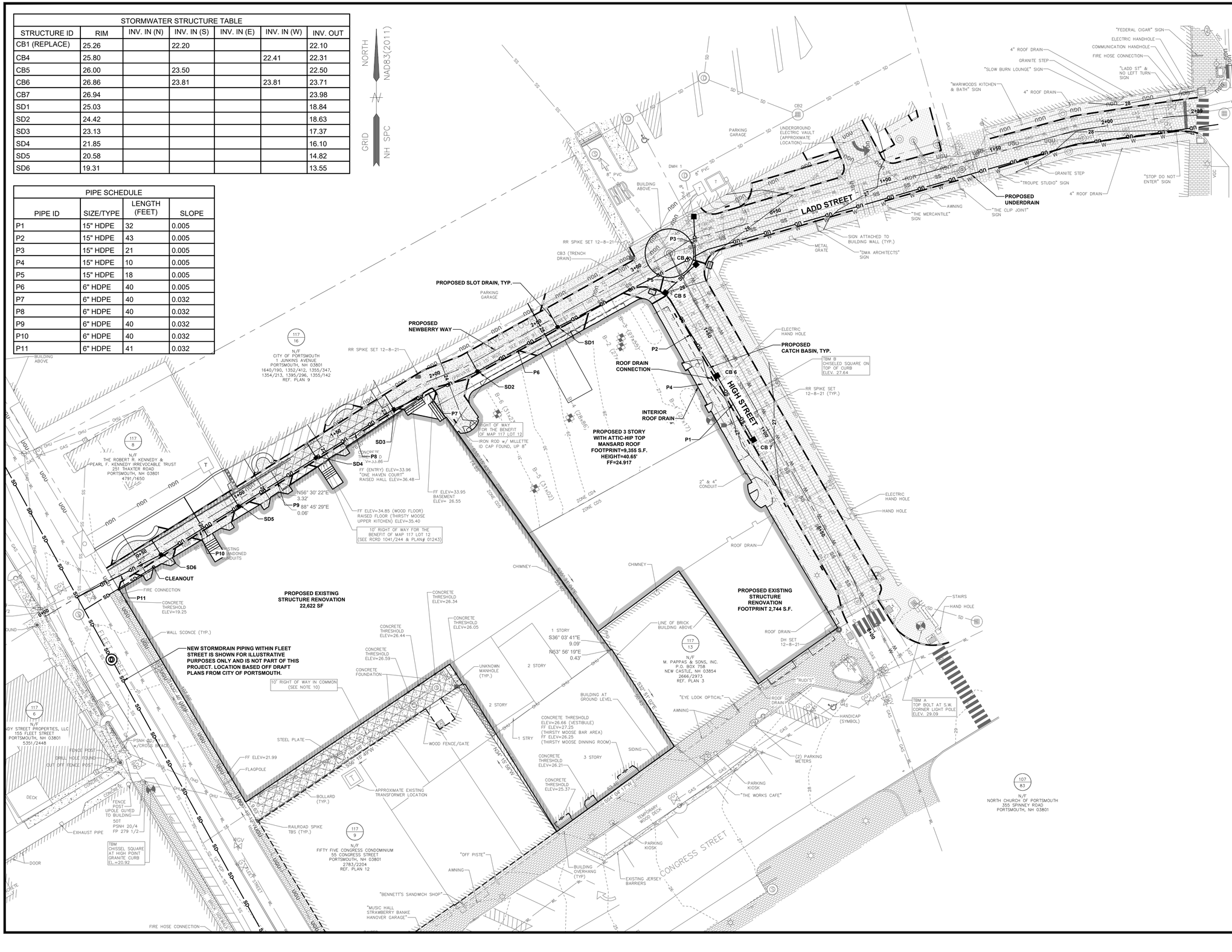
PROJECT No. 5010156.3406

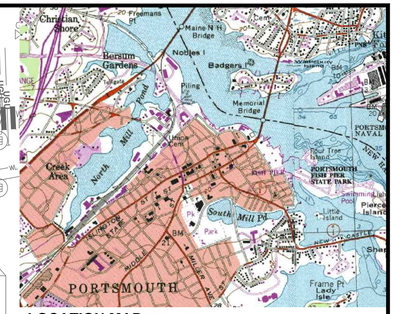
SHEET No. **C103** REV. No. **2**

STORMWATER STRUCTURE TABLE						
STRUCTURE ID	RIM	INV. IN (N)	INV. IN (S)	INV. IN (E)	INV. IN (W)	INV. OUT
CB1 (REPLACE)	25.26		22.20			22.10
CB4	25.80				22.41	22.31
CB5	26.00		23.50			22.50
CB6	26.86		23.81		23.81	23.71
CB7	26.94					23.98
SD1	25.03					18.84
SD2	24.42					18.63
SD3	23.13					17.37
SD4	21.85					16.10
SD5	20.58					14.82
SD6	19.31					13.55

PIPE SCHEDULE			
PIPE ID	SIZE/TYPE	LENGTH (FEET)	SLOPE
P1	15" HDPE	32	0.005
P2	15" HDPE	43	0.005
P3	15" HDPE	21	0.005
P4	15" HDPE	10	0.005
P5	15" HDPE	18	0.005
P6	6" HDPE	40	0.005
P7	6" HDPE	40	0.032
P8	6" HDPE	40	0.032
P9	6" HDPE	40	0.032
P10	6" HDPE	40	0.032
P11	6" HDPE	41	0.032

NORTH
NAD83(2011)
GRID
NH SPC





LOCATION MAP: USGS QUADRANGLE: PORTSMOUTH
SCALE: 1"=2000'
MAPTECH® USGS TOPOGRAPHIC SERIES™, ©MAPTECH®, INC. 978-933-3000 WWW.MAPTECH.COM/TOPO

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) OWNER/DEVELOPER SHALL MAINTAIN & CLEAR SNOW FROM PRIVATE ROADWAYS.

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

REV.	DATE	DESCRIPTION	BY	CHK
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd, Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

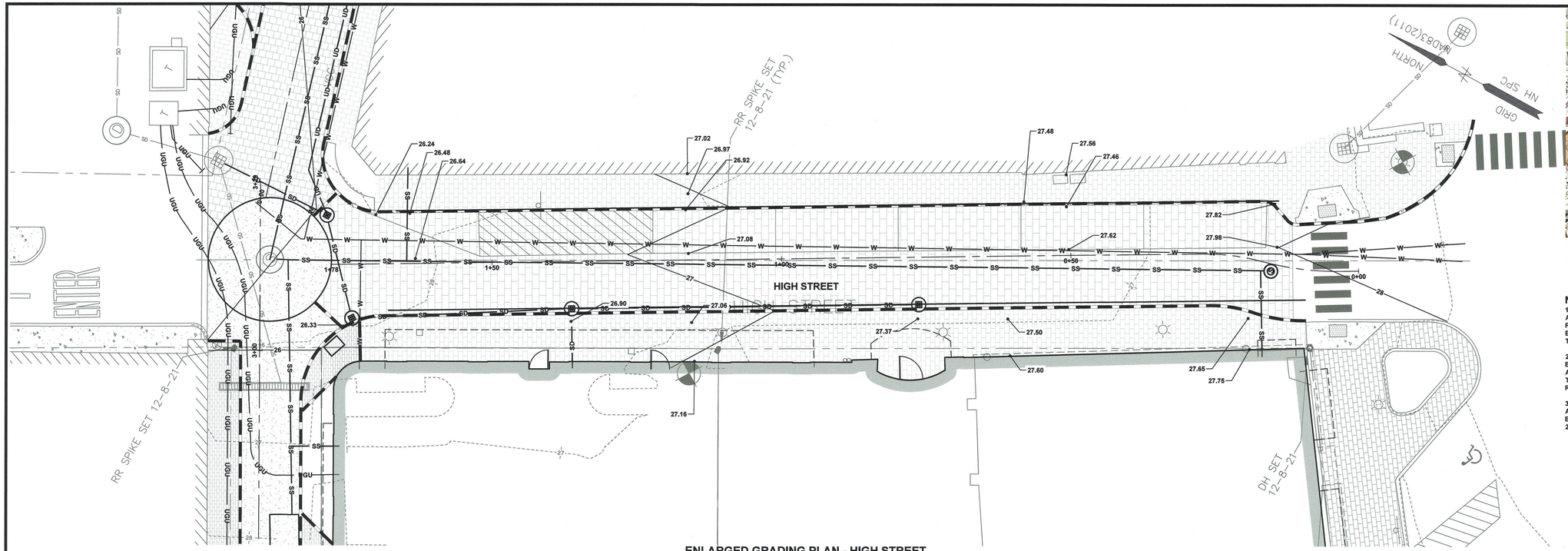
MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

GRADING AND DRAINAGE PLAN

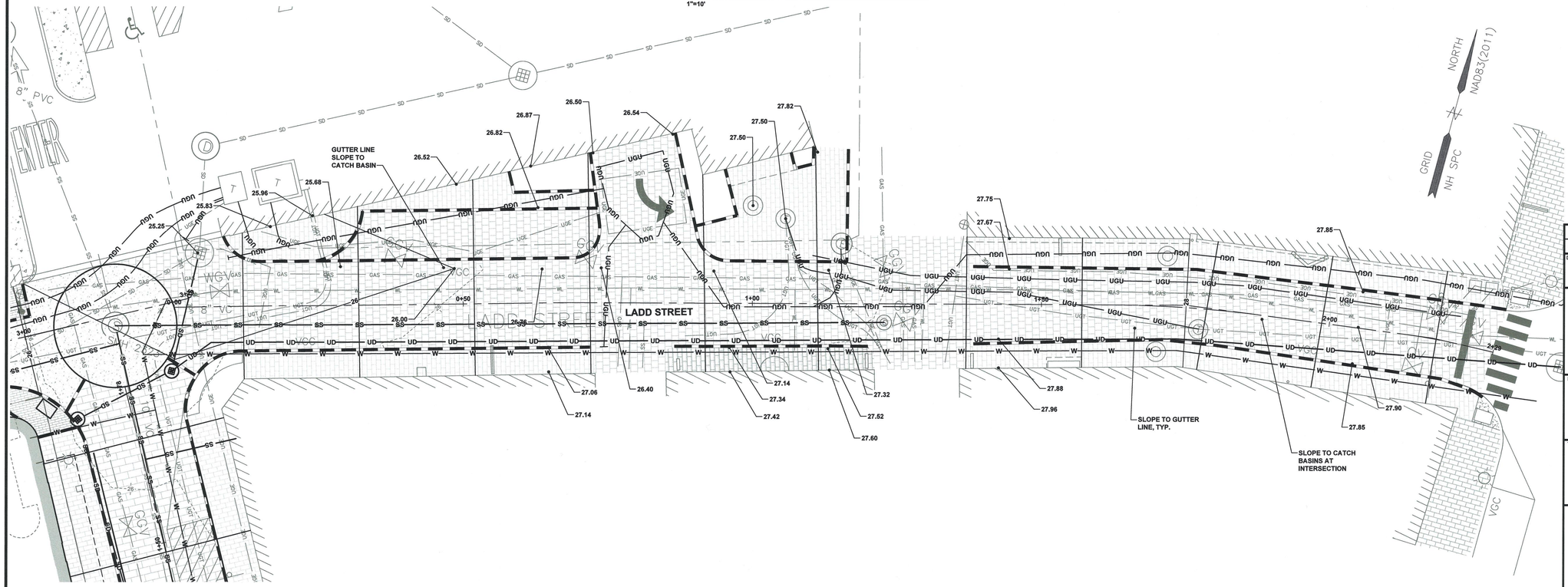
STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 7651 LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	1" = 20'
DRAWN BY: PJM	DESIGNED BY: ---
CHECKED BY: JRC	
PROJECT No.: 5010156.3406	
SHEET No.: C104	REV. No.: 2



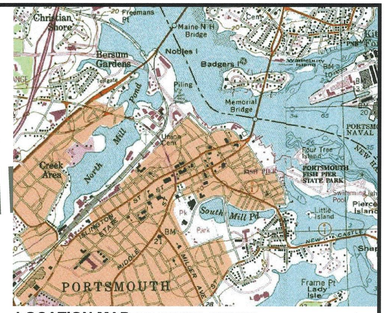
ENLARGED GRADING PLAN - HIGH STREET

1"=10'



ENLARGED GRADING PLAN - LADD STREET

1"=10'



LOCATION MAP: USGS QUADRANGLE: PORTSMOUTH
MAPTECH® USGS TOPOGRAPHIC SERIES™,
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO

SCALE: 1"=2000'

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

GRAPHIC SCALE

10 0 5 10 20 30

(IN FEET)
1 inch = 10 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

DETAILED GRADING & UTILITY PLANS
HIGH STREET & LADD STREET

DATE	SCALE
JULY 2024	1" = 10'

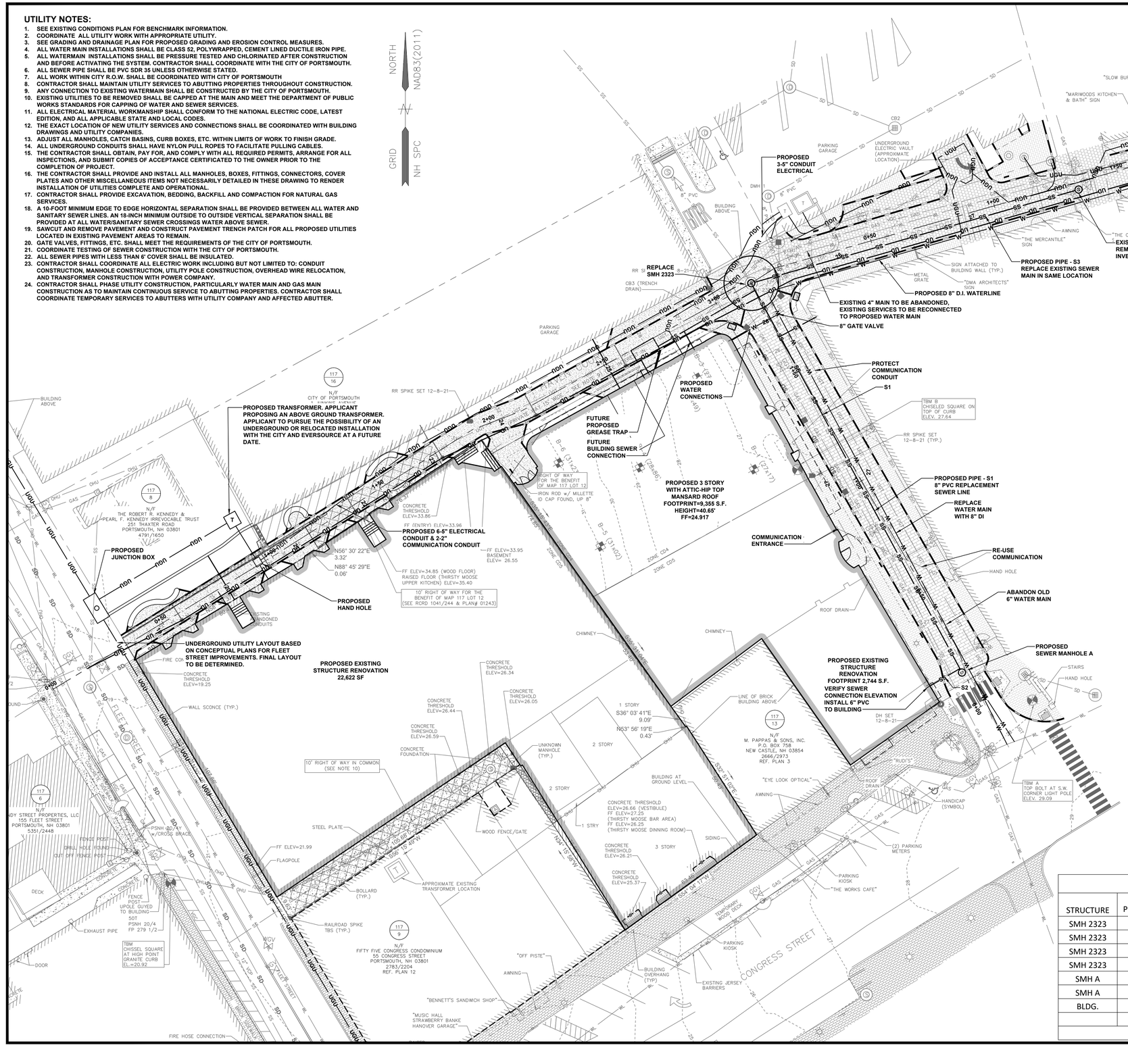
DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

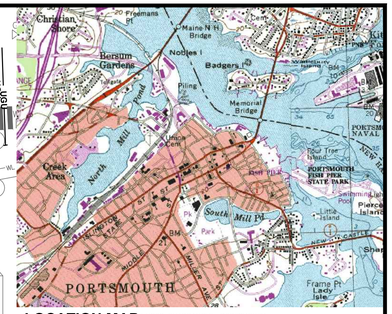
PROJECT No. 5010156.3406

SHEET No. **C104** REV. No. **1**

UTILITY NOTES:

1. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
3. SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
4. ALL WATER MAIN INSTALLATIONS SHALL BE CLASS 52, POLYWRAPPED, CEMENT LINED DUCTILE IRON PIPE.
5. ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION AND BEFORE ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORTSMOUTH.
6. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
7. ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH
8. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
9. ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
10. 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.
11. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
12. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
13. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
14. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
15. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
16. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
17. CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
18. 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 WATER ABOVE SEWER.
19. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
20. GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
21. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
22. ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
23. 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.
24. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION, PARTICULARLY WATER MAIN AND GAS MAIN CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH UTILITY COMPANY AND AFFECTED ABUTTER.





LOCATION MAP: USGS QUADRANGLE: PORTSMOUTH
SCALE: 1"=2000'
MAPTECH® USGS TOPOGRAPHIC SERIES™, ©MAPTECH®, INC. 978-933-3000 WWW.MAPTECH.COM/TOPO

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) PROVIDE TEMPORARY WATER AND SEWER SERVICES TO ALL IMPACTED PROPERTIES DURING NEW WATER AND SEWER MAIN INSTALLATION.

5) PROPOSED SEWER FLOW:
TBD

6) APPLICANT, AND AUTHORIZED AGENTS, TO WORK WITH THE CITY OF PORTSMOUTH AND UTILITY PROVIDERS TO CONSTRUCT NEW, PERMANENT SERVICE CONNECTION TO PROPOSED WATER, SEWER, STORMDRAIN, POWER , AND COMMUNICATIONS PIPING FOR ALL IMPACTED PROPERTIES ON HIGH STREET, LADD STREET AND NEWBERRY WAY.

SEWER PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
S1	8" PVC	170'	S=0.004
S2	6" PVC	15'	S=0.01

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT
SMH 2323	EX	25.64	8" AC	19.69	
SMH 2323	EX	25.64	10" VC	17.84	
SMH 2323	EX	25.64	8" PVC		17.84
SMH 2323	PROP	25.64	8" PVC	19.84	
SMH A	PROP	27.28	6" PVC	20.68	
SMH A	PROP	27.28	8"PVC		20.52
BLDG.	PROP		6" PVC	20.85	

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

PROPOSED UTILITY PLAN

STATE OF NEW HAMPSHIRE JOHN R. CHAGNON No. 9651 LICENSED PROFESSIONAL ENGINEER

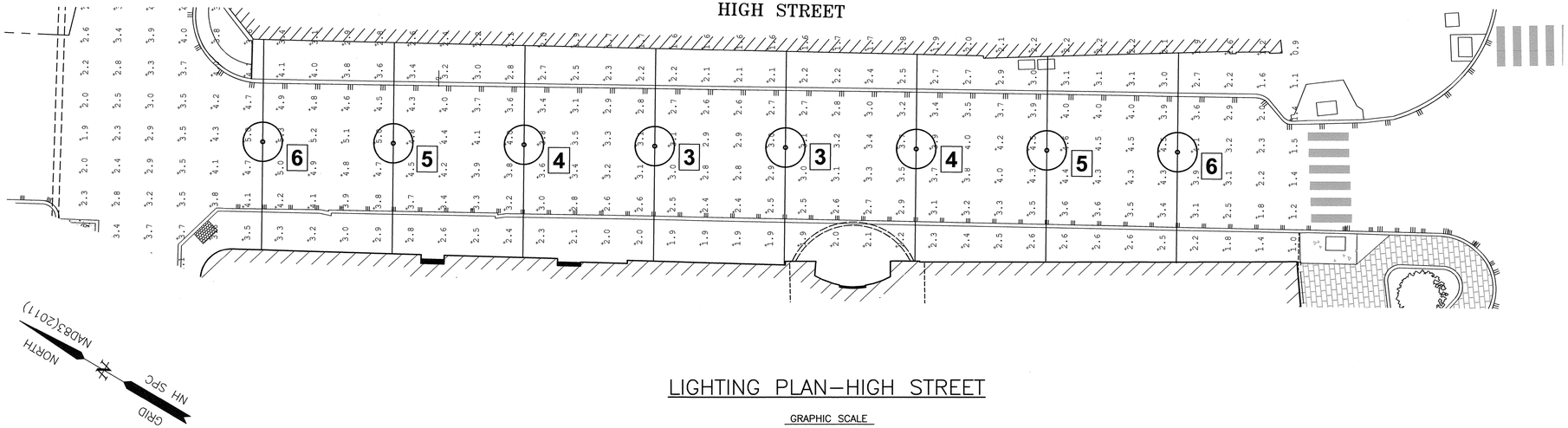
DATE	SCALE
JULY 2024	1" = 20'

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

PROJECT No.
5010156.3406

SHEET No.
C105

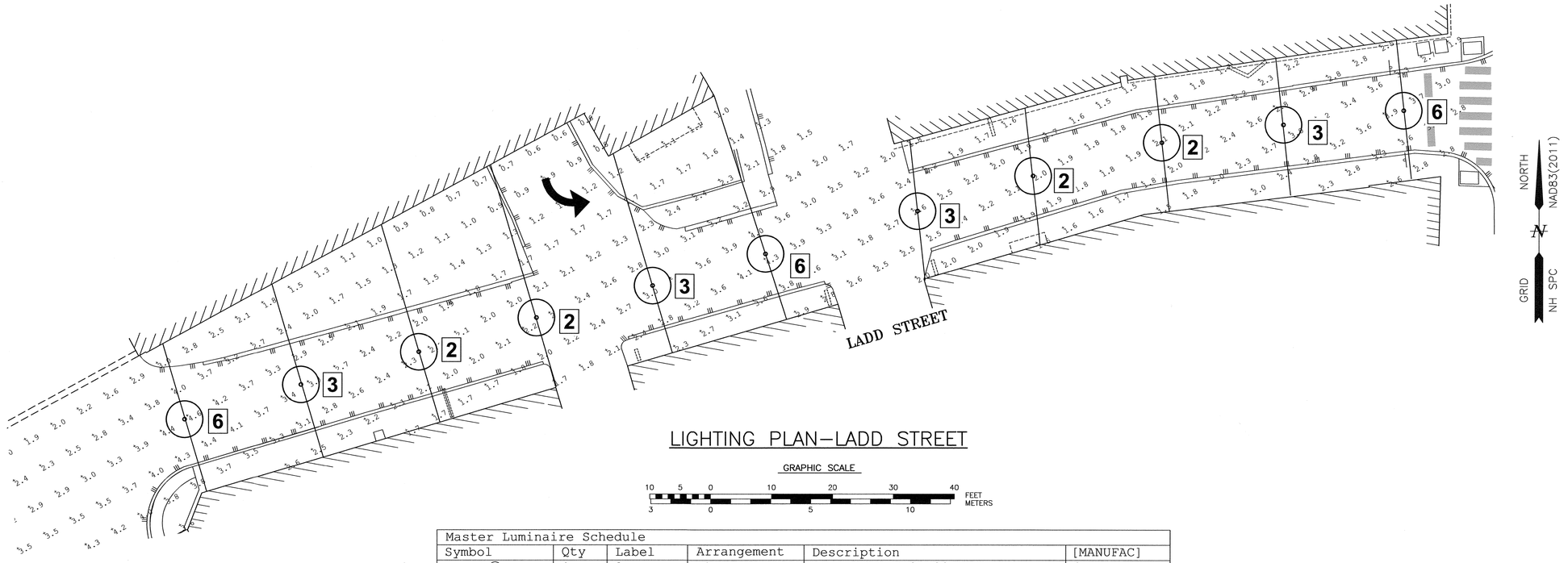
REV. No.
2



LIGHTING PLAN–HIGH STREET

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

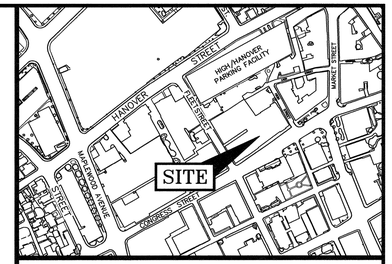


LIGHTING PLAN–LADD STREET

GRAPHIC SCALE

10 5 0 10 20 30 40 FEET
3 0 5 10 METERS

Master Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
⊙	4	2	Single	VOLTA-RNG-D-2-L30HO-S(X)-XX-S	Structura
⊙	11	3	Single	VOLTA-RNG-D-3-L30HO-S(X)-XX-S	Structura
⊙	4	4	Single	VOLTA-RNG-D-4-L30HO-S(X)-XX-S	Structura
⊙	4	5	Single	VOLTA-RNG-D-5-L30HO-S(X)-XX-S	Structura
⊙	9	6	Single	VOLTA-RNG-D-6-L30HO-S(X)-XX-S	Structura



LOCATION MAP 1" = 300'

NOTES:

1) CATENARY LIGHTING DESIGN PROVIDED BY EXPOSURE ESS ON 11/24/24. CONTACT: KEN SWEENEY 603-601-8080.

2) ALL LIGHTS SHALL BE DARK SKY COMPLIANT AND DIRECTED DOWNWARD.

3) LIGHTS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

4) NUMBERS REPRESENT INITIAL FOOTCANDLE VALUES AT 3 FEET ABOVE GRADE.

5) THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

6) BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

No.	DATE	DESCRIPTION	BY	CHK.
0	11/18/24	ISSUED FOR COMMENT	SJR	JRC

DRAWING ISSUE STATUS

SITE PLAN

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

APPLICANT: ONE MARKET SQUARE, LLC
1 & 15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

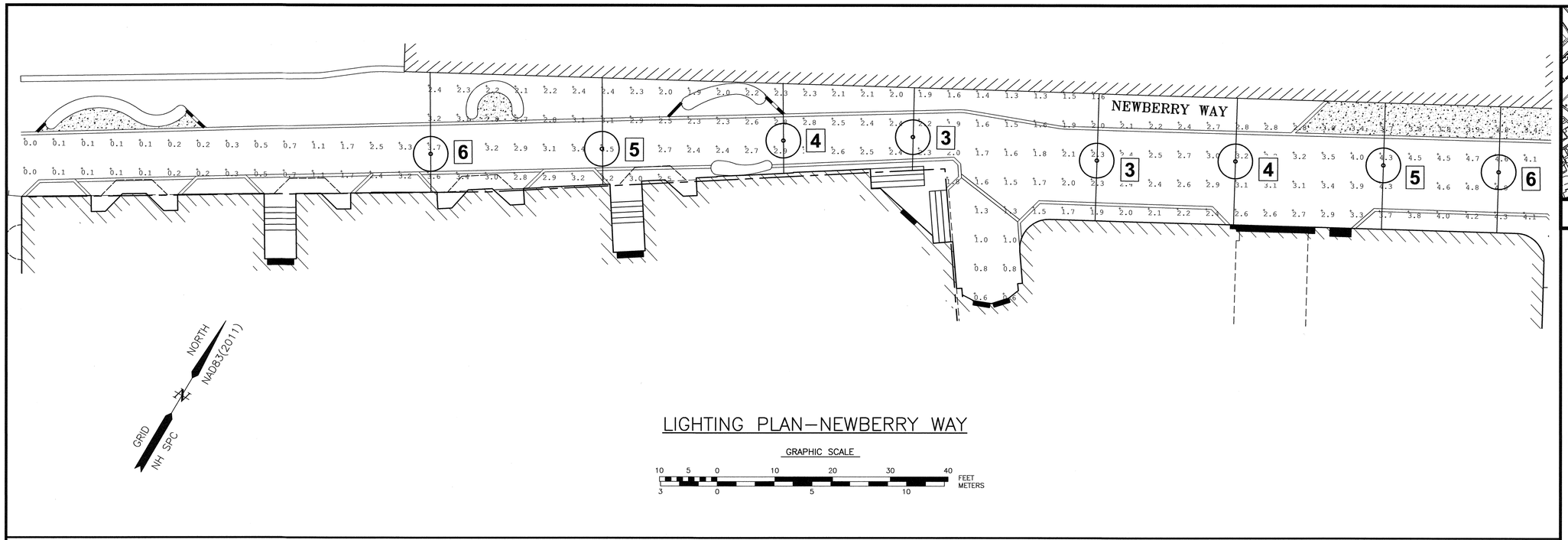
HIGH STREET & LADD STREET LIGHTING PLAN

DATE	SCALE
JULY 2024	1" = 10'

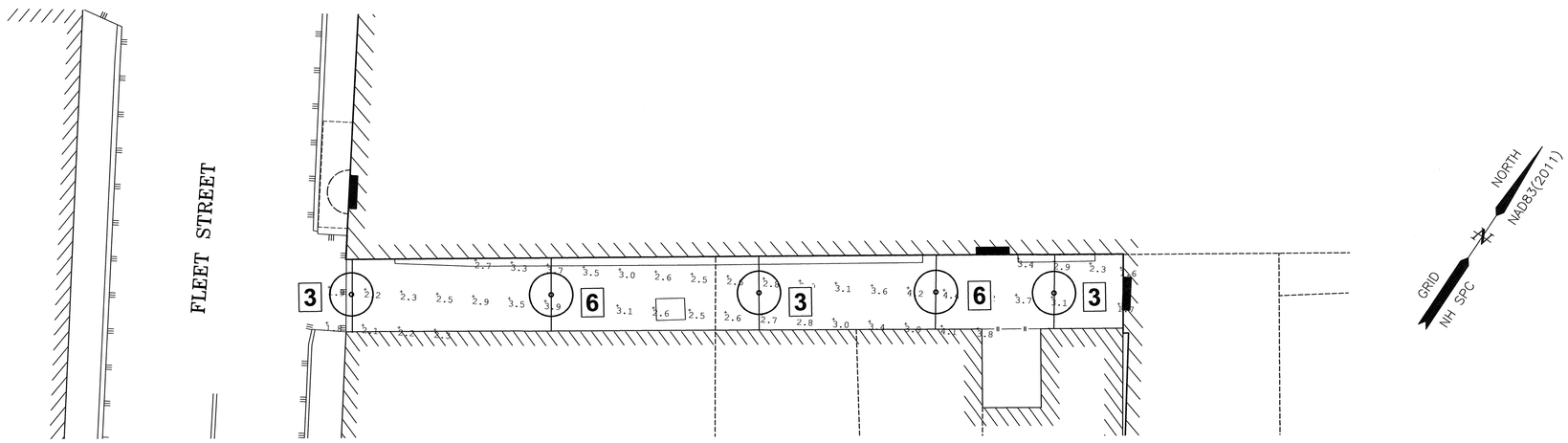
DRAWN BY	DESIGNED BY	CHECKED BY
SJR	JRC	JRC

PROJECT No.	FIELD BOOK & PAGE
5010156.01	FB 309 PG 54

SHEET No.	REV.
C106	0

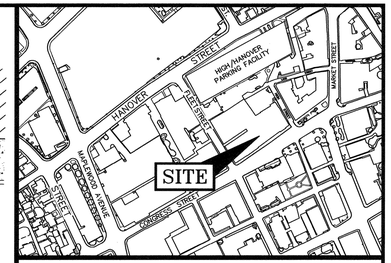


LIGHTING PLAN–NEWBERRY WAY



LIGHTING PLAN–FLEET STREET ALLEY

Master Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
⊙	4	2	Single	VOLTA-RNG-D-2-L30HO-S(X)-XX-S	Structura
⊙	11	3	Single	VOLTA-RNG-D-3-L30HO-S(X)-XX-S	Structura
⊙	4	4	Single	VOLTA-RNG-D-4-L30HO-S(X)-XX-S	Structura
⊙	4	5	Single	VOLTA-RNG-D-5-L30HO-S(X)-XX-S	Structura
⊙	9	6	Single	VOLTA-RNG-D-6-L30HO-S(X)-XX-S	Structura



LOCATION MAP 1" = 300'

NOTES:

1) CATENARY LIGHTING DESIGN PROVIDED BY EXPOSURE ESS ON 11/24/24. CONTACT: KEN SWEENEY 603-601-8080.

2) ALL LIGHTS SHALL BE DARK SKY COMPLIANT AND DIRECTED DOWNWARD.

3) LIGHTS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

4) NUMBERS REPRESENT INITIAL FOOTCANDLE VALUES AT 3 FEET ABOVE GRADE.

5) THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

6) BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

No.	DATE	DESCRIPTION	BY	CHK.
0	11/18/24	ISSUED FOR COMMENT	SJR	JRC

DRAWING ISSUE STATUS

SITE PLAN

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

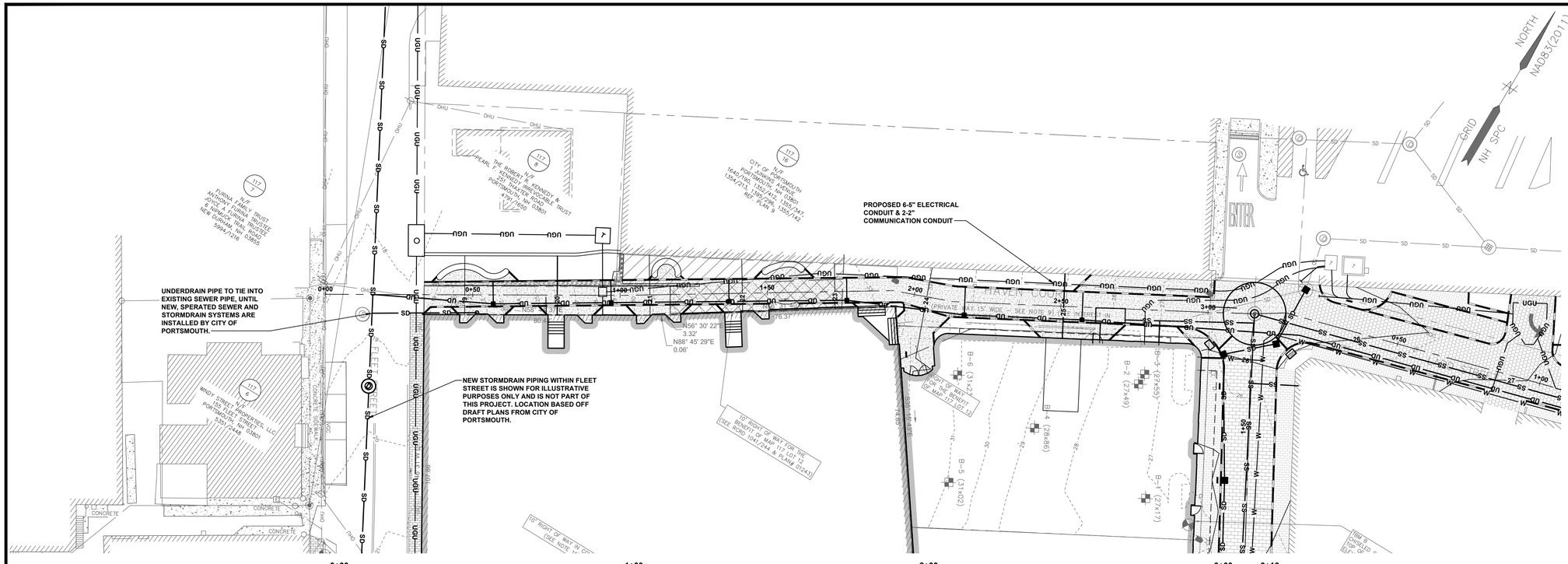
PROJECT

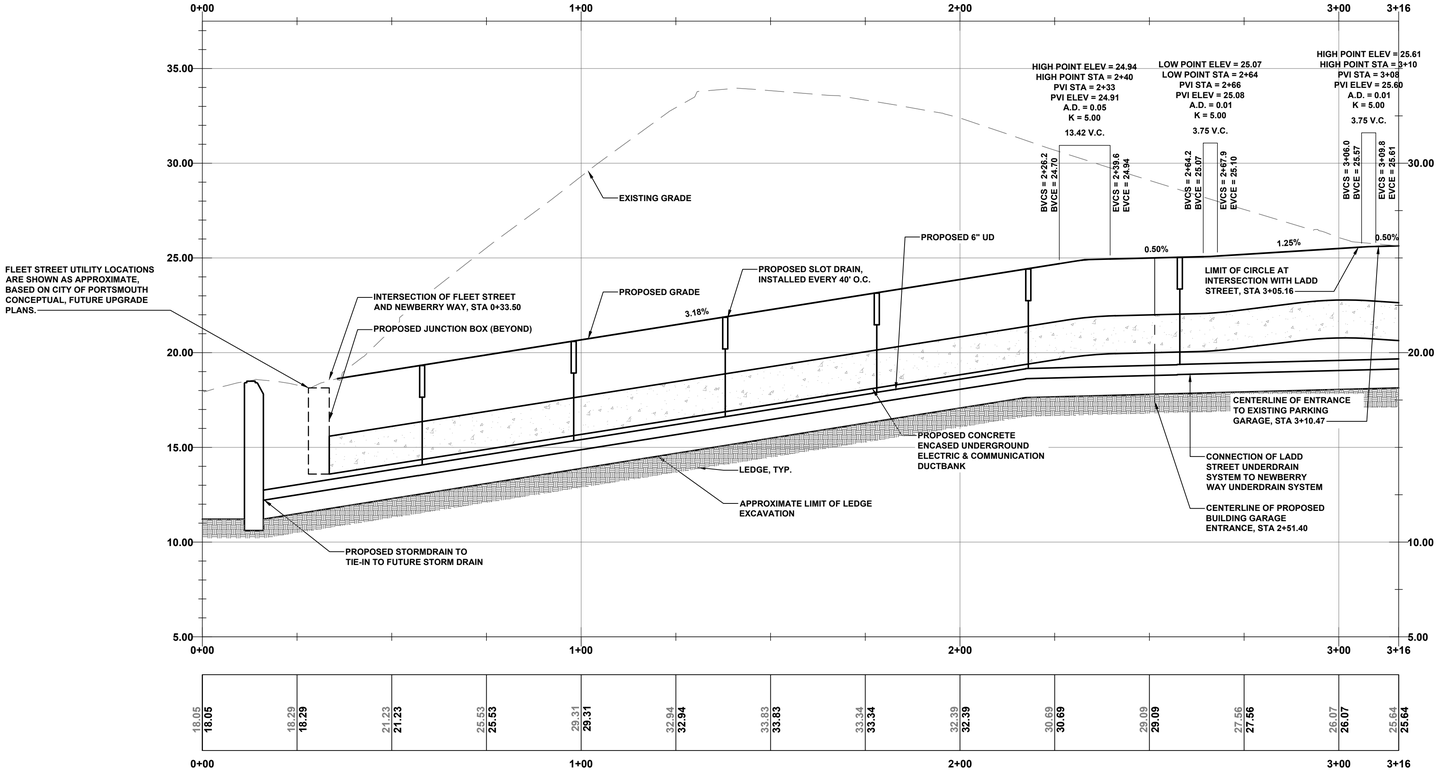
APPLICANT: ONE MARKET SQUARE, LLC
1 & 15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

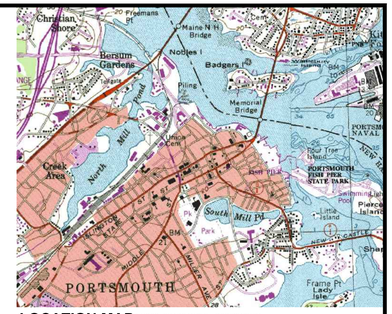
NEWBERRY WAY & FLEET STREET ALLEY LIGHTING PLAN

DATE	SCALE	
JULY 2024	1" = 10'	
DRAWN BY	DESIGNED BY	CHECKED BY
SJR	JRC	JRC
PROJECT No.	FIELD BOOK & PAGE	
5010156.01	FB 309 PG 54	
SHEET No.	REV.	
C107	0	





PROFILE VIEW OF NEWBERRY WAY - STA 0+00 TO 3+16
SCALE: H: 1"=20' / V: 1"=4'



LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTSMOUTH
MAPTECH® USGS TOPOGRAPHIC SERIES™,
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

PROFILE NOTES:

1) EXISTING & PROPOSED GRADES SHOWN DEPICT CONDITIONS ALONG THE PROPOSED ALIGNMENT.

2) UNDERGROUND UTILITIES SHOWN IN PROFILE ARE PROJECTED TO THE ALIGNMENT AND MAY NOT ALIGN WITH THE PROPOSED GRADES SHOWN. FOR ADDITIONAL INFORMATION & DETAILED GRADING, REFER TO THE PLAN VIEW.

GRAPHIC SCALE
20 0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

REV.	DATE	DESCRIPTION	BY	CHK
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS
PERMIT PLANS

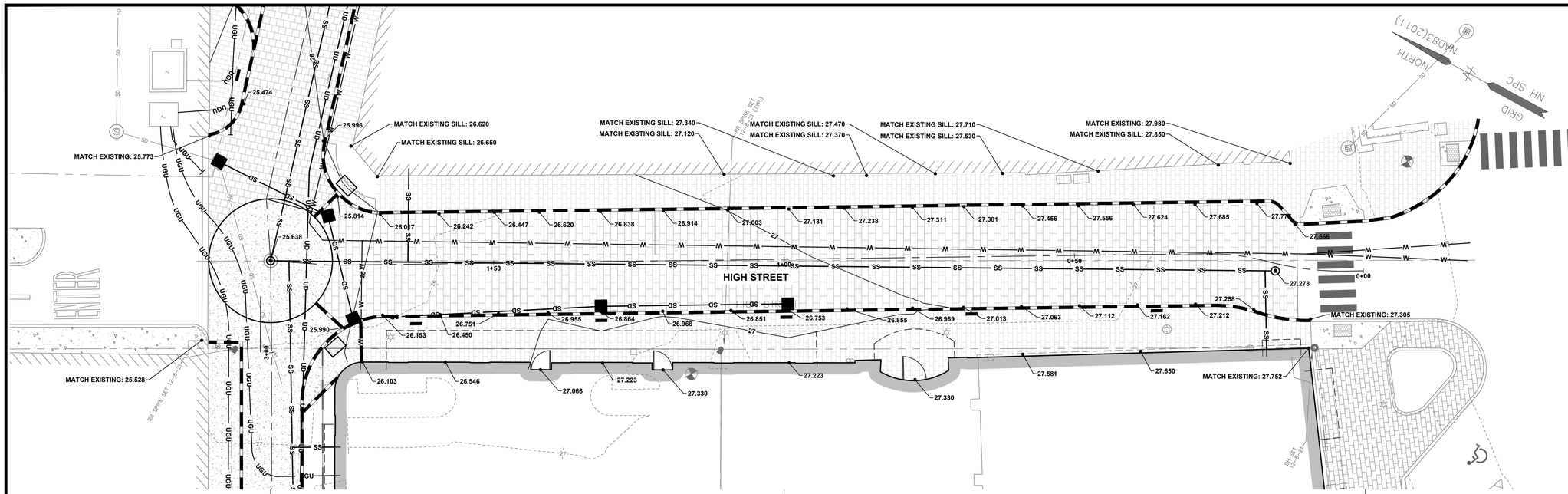
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

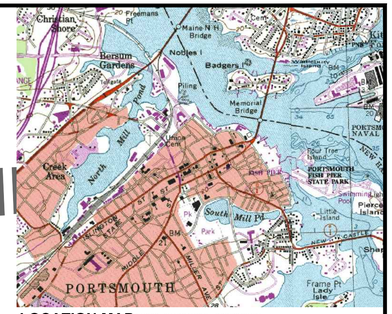
PROJECT
MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE
PROPOSED PLAN & PROFILE
NEWBERRY WAY

JOHN R. CHAGNON No. 9851 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

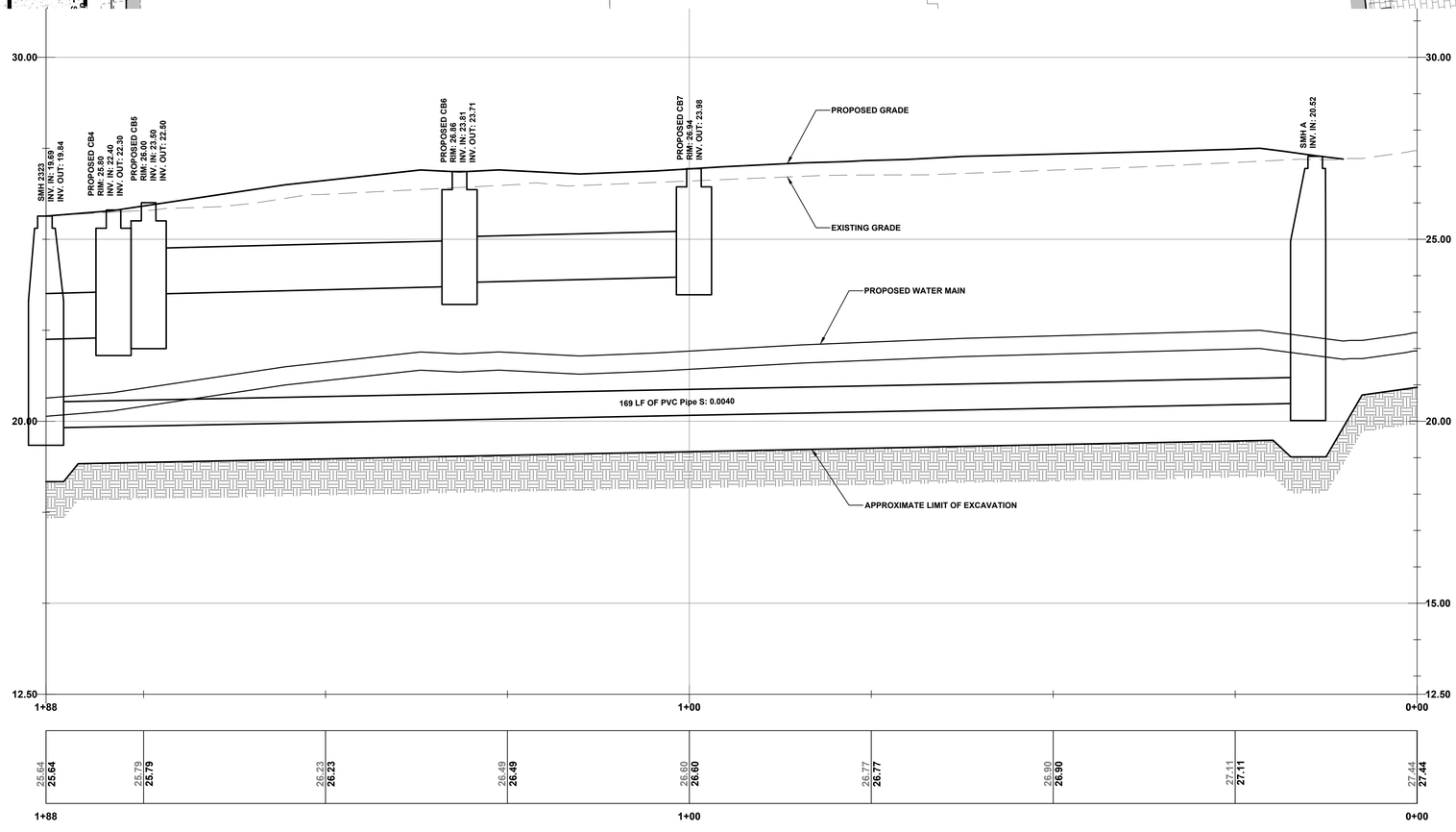
DATE	SCALE
JULY 2024	1" = 20'
DRAWN BY: PJM	DESIGNED BY: ---	CHECKED BY: JRC
PROJECT No. 5010156.3406	
SHEET No. C201	REV. No. 2





LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTSMOUTH
MAPTECH® USGS TOPOGRAPHIC SERIES™,
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO



PROFILE VIEW OF HIGH STREET - STA 0+00 TO 1+88
SCALE: H: 1"=10' / V: 1"=4'

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

PROFILE NOTES:

1) EXISTING & PROPOSED GRADES SHOWN DEPICT CONDITIONS ALONG THE PROPOSED ALIGNMENT.

2) UNDERGROUND UTILITIES SHOWN IN PROFILE ARE PROJECTED TO THE ALIGNMENT AND MAY NOT ALIGN WITH THE PROPOSED GRADES SHOWN. FOR ADDITIONAL INFORMATION & DETAILED GRADING, REFER TO THE PLAN VIEW.

GRAPHIC SCALE

10 0 5 10 20 30

(IN FEET)
1 inch = 10 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

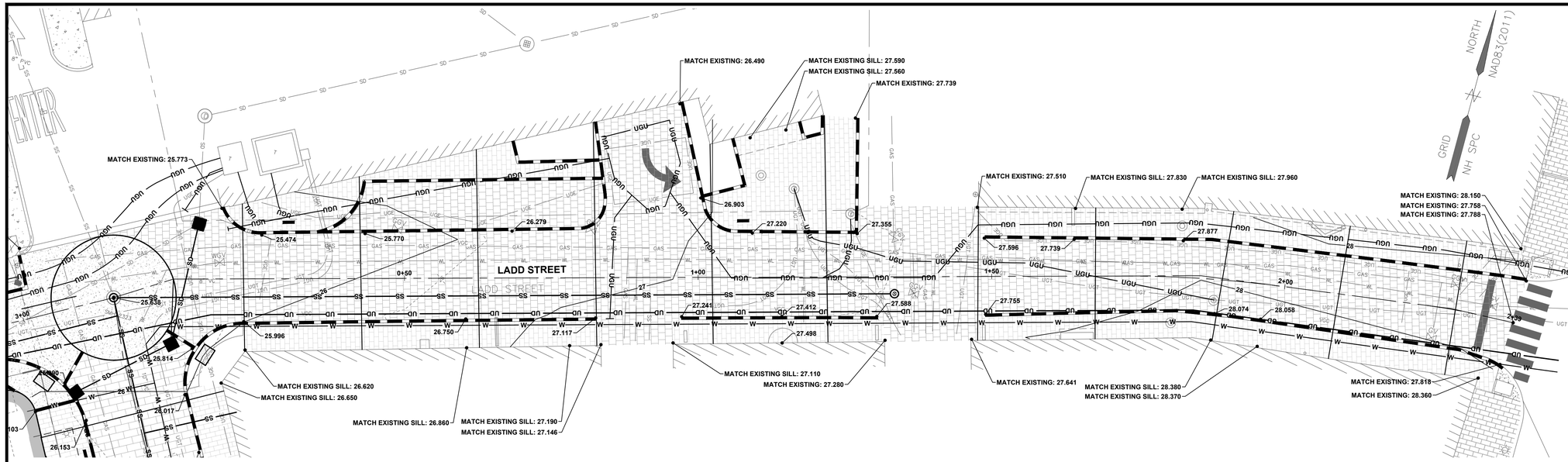
MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

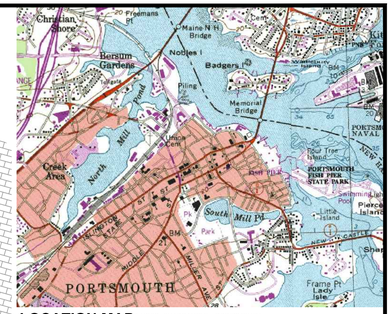
TITLE

PROPOSED PLAN & PROFILE
HIGH STREET

STATE OF NEW HAMPSHIRE
JOHN R. CHAGNON
No. 9851
LICENSED
PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	1" = 10'
DRAWN BY: PJM	DESIGNED BY: ---
CHECKED BY: JRC	
PROJECT No.: 5010156.3406	
SHEET No.: C202	REV. No.: 2





LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTSMOUTH
MAPTECH® USGS TOPOGRAPHIC SERIES™,
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

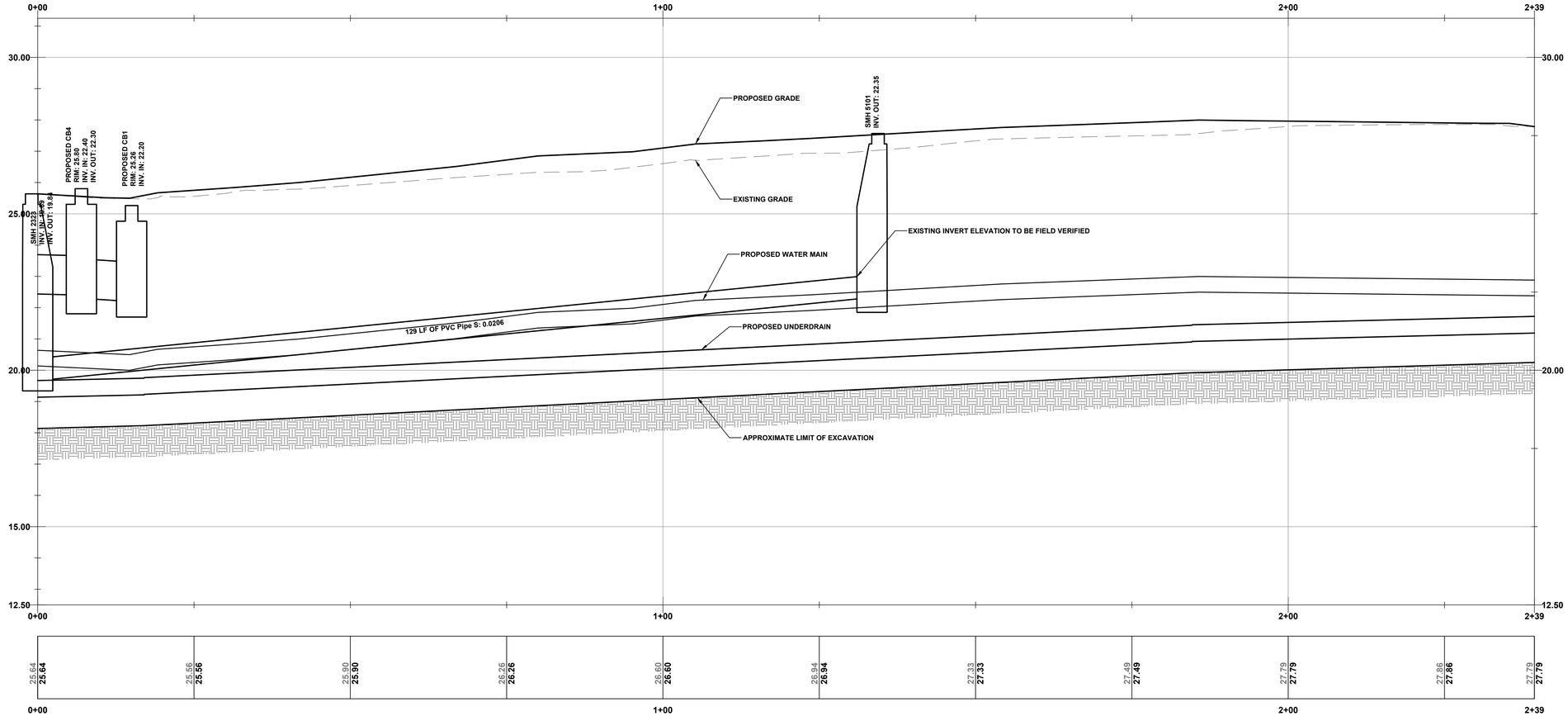
2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

PROFILE NOTES:

1) EXISTING & PROPOSED GRADES SHOWN DEPICT CONDITIONS ALONG THE PROPOSED ALIGNMENT.

2) UNDERGROUND UTILITIES SHOWN IN PROFILE ARE PROJECTED TO THE ALIGNMENT AND MAY NOT ALIGN WITH THE PROPOSED GRADES SHOWN. FOR ADDITIONAL INFORMATION & DETAILED GRADING, REFER TO THE PLAN VIEW.



PROFILE VIEW OF LADD STREET - STA 0+00 TO 2+39
SCALE: H: 1"=10' / V: 1"=4'

GRAPHIC SCALE

10 0 5 10 20 30

(IN FEET)
1 inch = 10 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd, Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

PROPOSED PLAN & PROFILE
LADD STREET

STATE OF NEW HAMPSHIRE - JOHN R. CHAGNON No. 7851 LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	1" = 10'

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

PROJECT No.
5010156.3406

SHEET No.
C203

REV. No.
2

1 **BASEMENT PB**
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

BASEMENT PLAN

4' 16' N
0' 8' 32'

SCALE: 1/16" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A0

COPYRIGHT ©2024

1 **FIRST FLOOR PLAN**
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

FIRST FLOOR PLAN

4' 16' N
0' 8' 32'

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

DATE: 12/20/24
DRAWN: HA
CHECKED: TK

PBN.A1

COPYRIGHT ©2024

1 **SECOND FLOOR PLAN**
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

SECOND FLOOR PLAN

4' 16' N
0' 8' 32'

SCALE: 1/16" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A2

COPYRIGHT ©2024

1 THIRD FLOOR PLAN
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

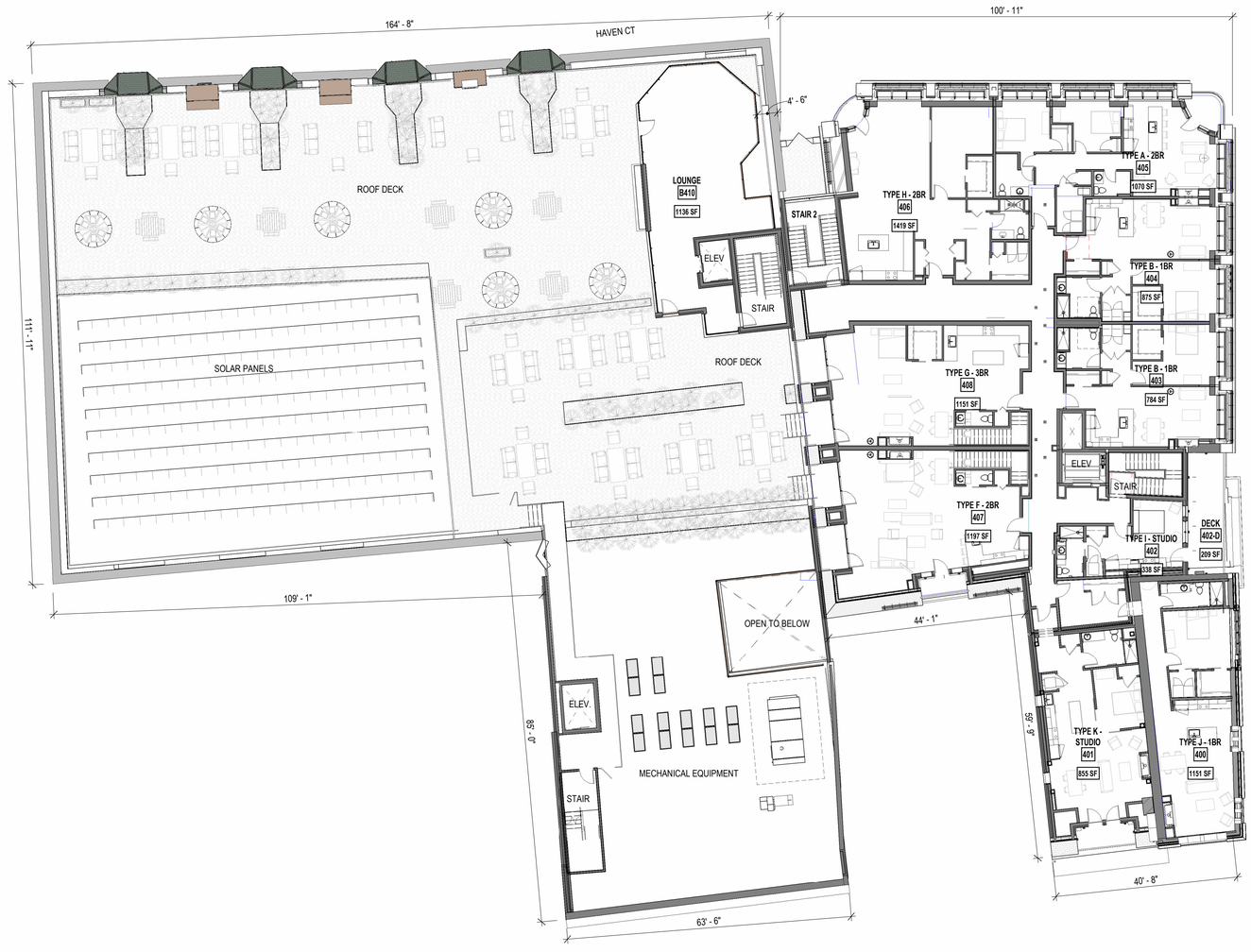
THIRD FLOOR PLAN

0' 4' 8' 16' 32'
N

SCALE: 1/16" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A3

COPYRIGHT ©2024



1 **PENTHOUSE ATTIC PLAN**
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

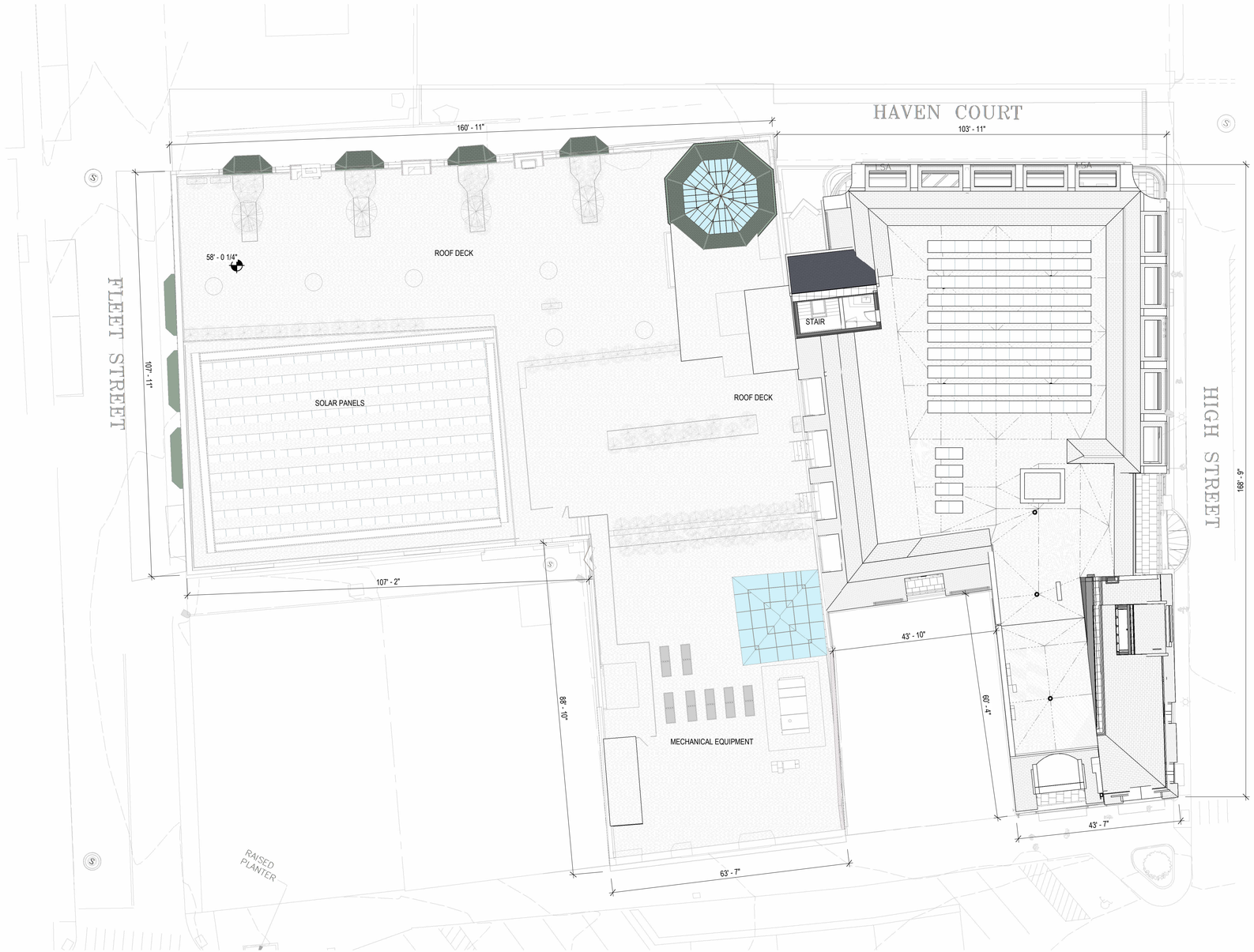
PENTHOUSE-ATTIC PLAN

0' 4' 8' 16' 32' N

SCALE: 1/16" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A4

COPYRIGHT ©2024



1 **ROOF PLAN**
1/16" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

ROOF PLAN

GRAPHIC SCALE: 1/16" = 1'-0"
0' 8' 16' 32'

N

SCALE: 1/16" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A5

COPYRIGHT ©2024

1 **SOUTH ELEVATIONS - ALLEY & CONGRESS ST**
3/32" = 1'-0"

2 **WEST ELEVATION, FLEET STREET (15 CONGRESS)**
3/32" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

ELEVATIONS

SCALE: 3/32" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A6

COPYRIGHT ©2024

2 **NORTH ELEVATION - HAVEN COURT**
3/32" = 1'-0"

1 **EAST ELEVATION - HIGH STREET (1 CONGRESS)**
3/32" = 1'-0"

ARCOVE ARCHITECTS
3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

ELEVATIONS

SCALE: 3/32" = 1'-0"
DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A7

COPYRIGHT ©2024

ARCOVE ARCHITECTS

3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

3D VIEW - BIRDSEYE

SCALE:

DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A8

COPYRIGHT ©2024

1 & 15 CONGRESS FROM HAVEN COURT, LOOKING WEST

15 CONGRESS, FROM FLEET STREET LOOKING EAST

15 CONGRESS FROM FLEET STREET, LOOKING SOUTHEAST

15 CONGRESS, FROM CONGRESS STREET LOOKING NORTH

ARCOVE
ARCHITECTS

3 CONGRESS ST., SUITE1
PORTSMOUTH NH 03801
603.988.0042
www.ARCove.com

ONE MARKET SQUARE, LLC

1 & 15 CONGRESS STREET
PORTSMOUTH, NH, 03801

PROJECT NO: 1002.1

OWNER
ONE MARKET SQUARE, LLC
10 PLEASANT STREET, SUITE 3
PORTSMOUTH, NH 03801
603.427.0725

CIVIL ENGINEERING
AMBIT ENGINEERING; A DIVISION OF HALEY WARD
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, NH 03801
603.430.9282
https://www.haleyward.com/

LANDSCAPE ARCHITECTURE
TERRAFIRMA
163.A Court Street
Portsmouth, NH 03801
603.531.9109
www.terrafirmalandarch.com

SITE PLAN REVIEW

REVISIONS

NO.	DATE	DESCRIPTION

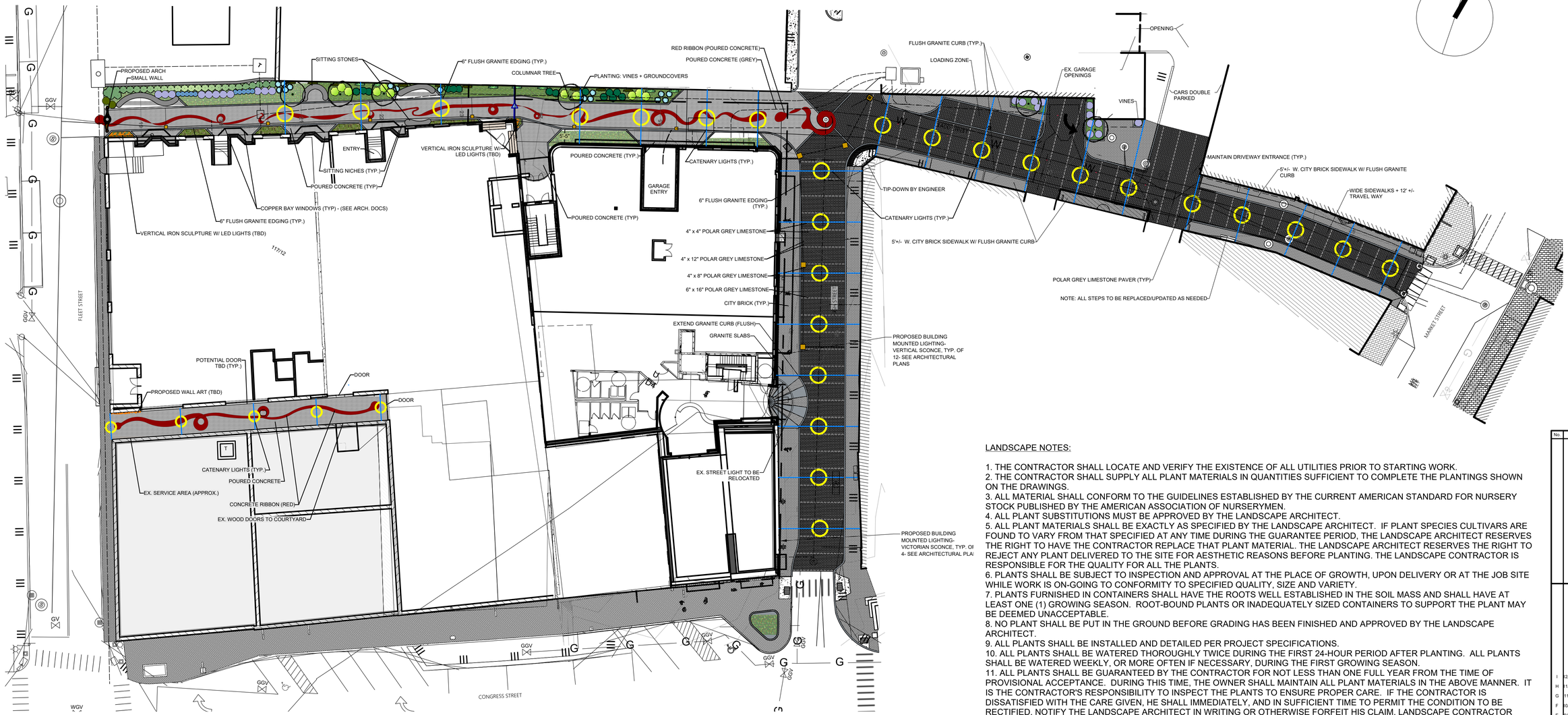
3D VIEWS - STREET LEVEL

SCALE:

DATE: 12/20/24
DRAWN: Author
CHECKED: Checker

PBN.A9

COPYRIGHT ©2024



LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
tel. 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes

No.	Date	Issue Notes
I	12/19/2024	PAVING UPDATE
H	11/26/2024	HAVEN COURT UPDATE
G	11/1/2024	ALLEY PAVING
F	10/11/2024	PLANTING UPDATE
E	9/30/2024	CATENARY LIGHT ADJUSTMENT
D	8/12/2024	SITE AMENITIES AND MATERIALS UPDATED

Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801
Consultant

Project Title: NEWBERRY WAY

Sheet Title: LANDSCAPE PLAN

Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: 1"=20'-0"
Reviewed By: TP	Sheet No.: L-01
Date: 7/18/2024	——— of ——— 1
CAD File Name: newberry121924.vwx	

SMALL WALL
PROPOSED ARCH
POURED CONCRETE (TYP)
SITTING STONES
SITTING STONES
6" FLUSH GRANITE EDGING (TYP.)
COLUMNAR TREE (TYP)
RED RIBBON (POURED CONCRETE)
PLANTING: VINES + GROUNDCOVERS
VERTICAL IRON SCULPTURE W/ LED LIGHTS (TBD)
6" FLUSH GRANITE EDGING (TYP.)
COPPER BAY WINDOWS (TYP) - (SEE ARCH. DOCS)
ENTRY
SITTING NICHES (TYP.)
POURED CONCRETE (TYP)
VERTICAL IRON SCULPTURE W/ LED LIGHTS (TBD)
5'-5"
POURED CONCRETE (TYP.)
POURED CONCRETE (GREY)
POURED CONCRETE (TYP)
CATENARY LIGHTS (TYP.)
GARAGE ENTRY
6" FLUSH GRANITE EDGING (TYP.)
4" x 12" POLAR GREY LIMESTONE
4" x 4" POLAR GREY LIMESTONE
4" x 8" POLAR GREY LIMESTONE
6" x 16" POLAR GREY LIMESTONE
CITY BRICK (TYP.)
EXTEND GRANITE CURB (FLUSH)
GRANITE SLABS
HIGH STREET
117/12
PROPOSED WALL ART (TBD)
POTENTIAL DOORS TBD (TYP)
DOOR
DOOR
EX. SERVICE AREA (APPROX.)
CATENARY LIGHTS (TYP.)
POURED CONCRETE
POURED CONCRETE RIBBON (RED)
EX. WOOD DOORS TO COURTYARD (APPROX.)
0 10 20 30 40 FT

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
tel 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes
I	12/19/2024		PAVING UPDATE
H	11/26/2024		HAVEN COURT UPDATE
G	11/1/2024		ALLEY PAVING
F	10/11/2024		PLANTING UPDATE
E	9/30/2024		CATENARY LIGHT ADJUSTMENT
D	8/12/2024		SITE AMENITIES AND MATERIALS UPDATED

No.	Date	Issue Notes

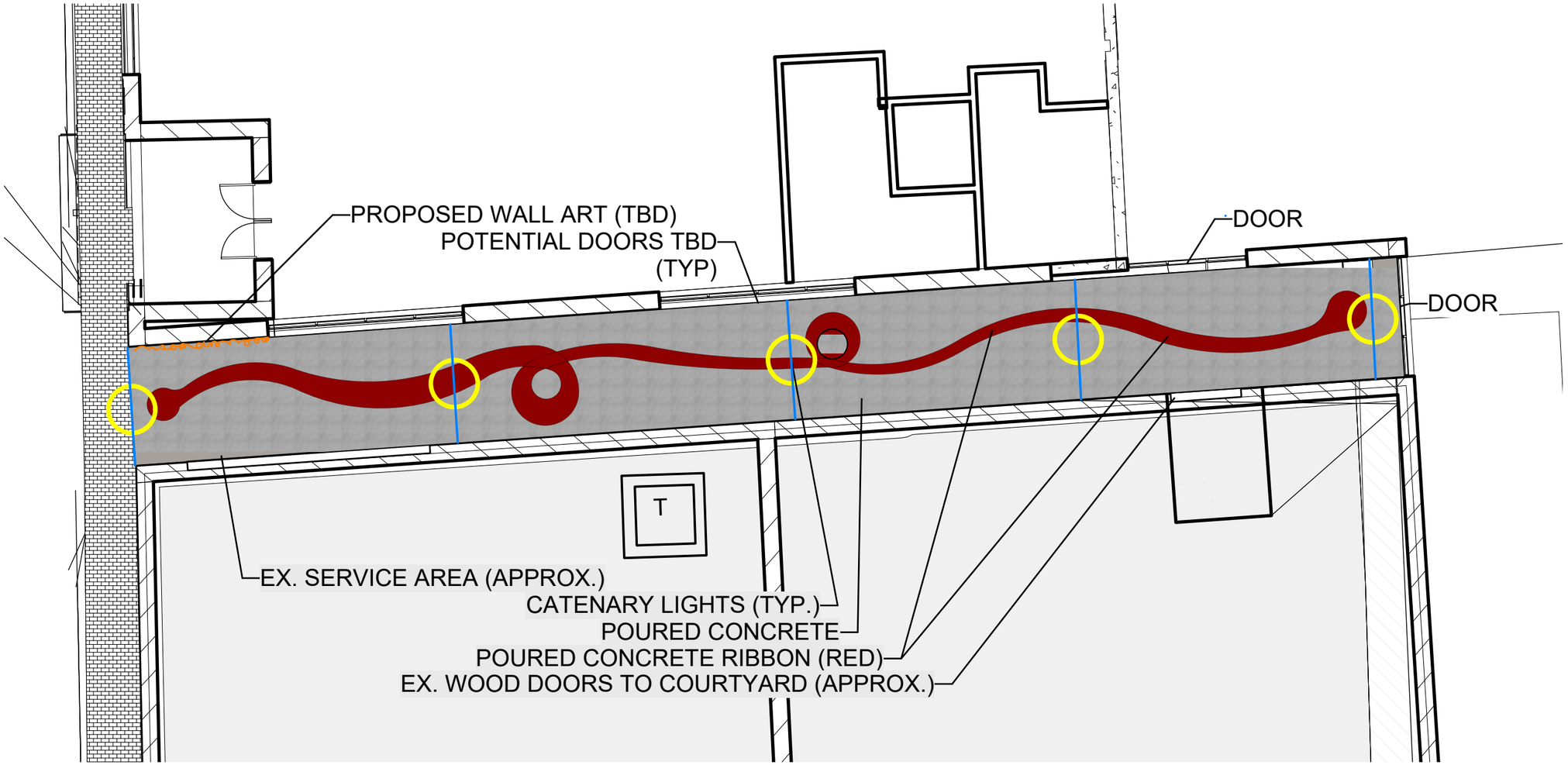
Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant

Project Title
NEWBERRY WAY

Sheet Title
LANDSCAPE PLAN

Project Manager	Project ID NEWBERRY WAY
Drawn By TC	Scale 1"=10'-0"
Reviewed By TP	Sheet No. L-01A
Date 7/18/2024	of 1
CAD File Name newberry121924.vwx	



0 10 20 30 40 FT

No.	Date	By	Revision Notes

No.	Date	Issue Notes
I	12/19/2024	PAVING UPDATE
H	11/26/2024	HAVEN COURT UPDATE
G	11/1/2024	ALLEY PAVING
F	10/11/2024	PLANTING UPDATE
E	9/30/2024	CATENARY LIGHT ADJUSTMENT
D	8/12/2024	SITE AMENTITIES AND MATERIALS UPDATED

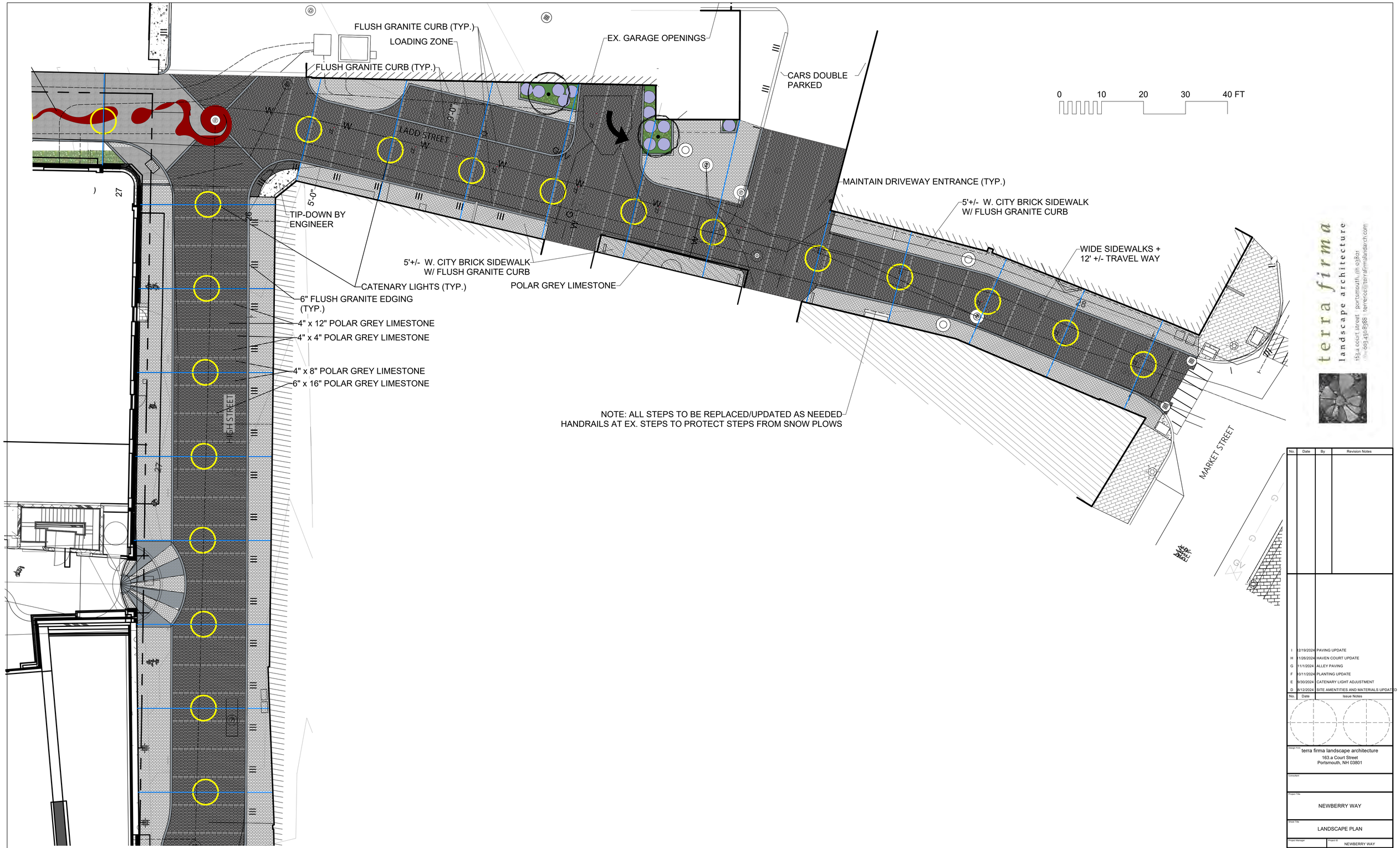
Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant

Project Title
NEWBERRY WAY

Sheet Title
LANDSCAPE PLAN - ALLEY

Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: 1"=10'-0"
Reviewed By: TP	Sheet No.: L-01A-2
Date: 7/18/2024	of 1
CAD File Name: newberry121924.vwx	



PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
tel. 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes
I	12/19/2024		PAVING UPDATE
H	11/26/2024		HAVEN COURT UPDATE
G	11/1/2024		ALLEY PAVING
F	10/11/2024		PLANTING UPDATE
E	9/30/2024		CATENARY LIGHT ADJUSTMENT
D	8/12/2024		SITE AMENITIES AND MATERIALS UPDATED

No.	Date	Issue Notes

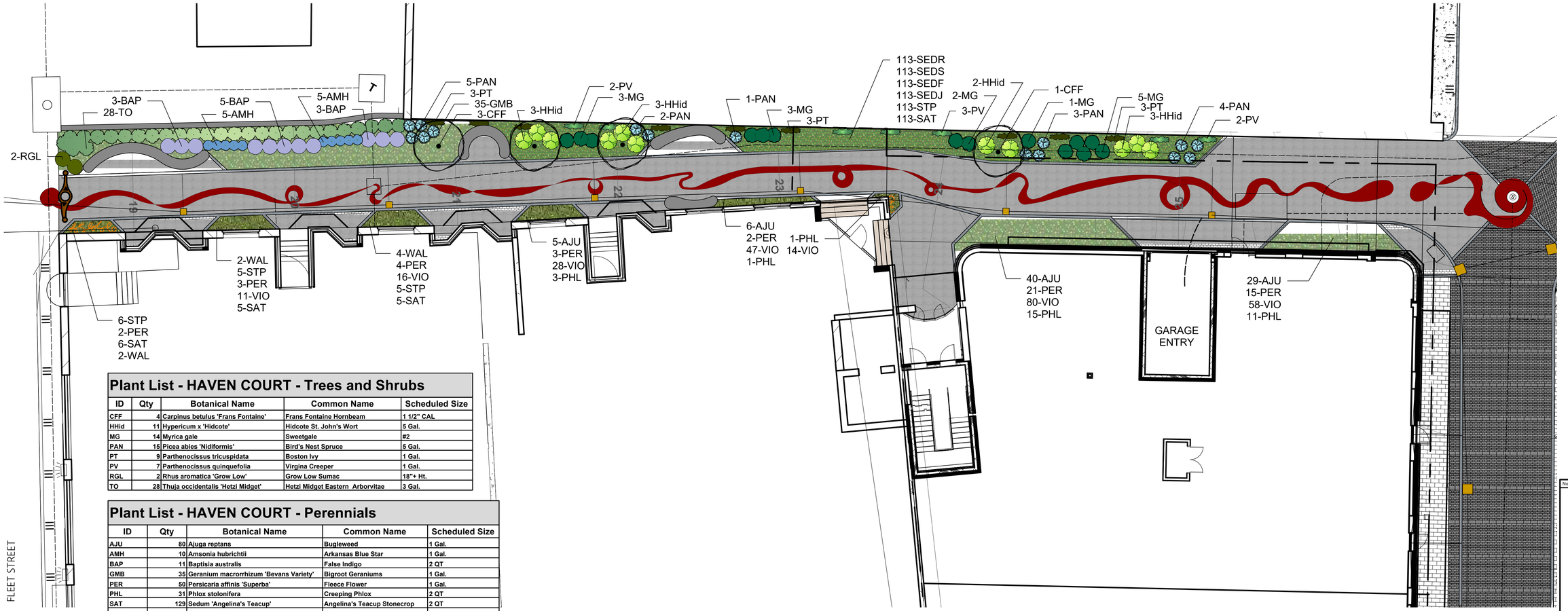
Design Firm
terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant

Project Title
NEWBERRY WAY

Sheet Title
LANDSCAPE PLAN

Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: 1"=10'-0"
Reviewed By: TP	Sheet No.: L-01B
Date: 7/18/2024	of 1
CAD File Name: newberry121924.vwx	



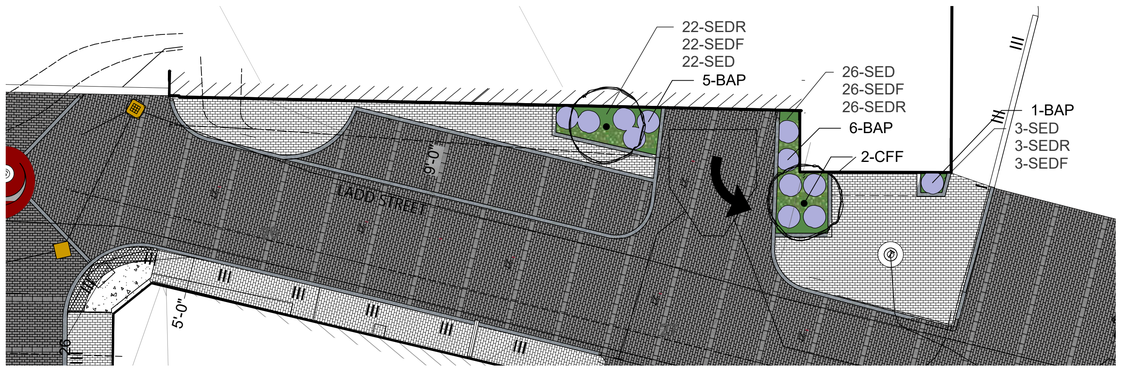
Plant List - HAVEN COURT - Trees and Shrubs

ID	Qty	Botanical Name	Common Name	Scheduled Size
CFF	4	Carpinus betulus 'Frans Fontaine'	Frans Fontaine Hornbeam	1 1/2" CAL
HHid	11	Hypericum x 'Hidcote'	Hidcote St. John's Wort	5 Gal.
MG	14	Myrica gale	Sweetgale	#2
PAN	15	Picea abies 'Nidiformis'	Bird's Nest Spruce	5 Gal.
PT	9	Parthenocissus tricuspidata	Boston Ivy	1 Gal.
PV	7	Parthenocissus quinquefolia	Virgina Creeper	1 Gal.
RGL	2	Rhus aromatica 'Grow Low'	Grow Low Sumac	18"+ Ht.
TO	28	Thuja occidentalis 'Hetzi Midget'	Hetzi Midget Eastern Arborvitae	3 Gal.

Plant List - HAVEN COURT - Perennials

ID	Qty	Botanical Name	Common Name	Scheduled Size
AJU	80	Ajuga reptans	Bugleweed	1 Gal.
AMH	10	Amsonia hubrichtii	Arkansas Blue Star	1 Gal.
BAP	11	Baptisia australis	False Indigo	2 QT
GMB	35	Geranium macrorrhizum 'Bevans Variety'	Bigroot Geraniums	1 Gal.
PER	50	Persicaria affinis 'Superba'	Fleece Flower	1 Gal.
PHL	31	Phlox stolonifera	Creeping Phlox	2 QT
SAT	129	Sedum 'Angelina's Teacup'	Angelina's Teacup Stonecrop	2 QT
SEDF	113	Sedum floriferum	Matrona Stonecrop	2 QT
SEDJ	113	Sedum 'John Creech'	Stonecrop	2 QT
SEDR	113	Sedum 'Angelina'	Stonecrop	2 QT
SEDS	113	Sedum sexangulare	Stonecrop	2 QT
STP	129	Sedum ternatum 'Larinem Park'	Stonecrop	2 QT
VIO	254	Viola pedata	Bird's Foot Violet	1 Quart
WAL	8	Waldsteinia ternata	Siberian Barren Strawberry	2 QT

HAVEN COURT PLANTING



LADD STREET PLANTING

Plant List - LADD STREET - Trees and Shrubs

ID	Qty	Botanical Name	Common Name	Scheduled Size
CFF	2	Carpinus betulus 'Frans Fontaine'	Frans Fontaine Hornbeam	2 1/2" CAL

Plant List - LADD STREET - Perennials

ID	Qty	Botanical Name	Common Name	Scheduled Size
BAP	12	Baptisia australis	False Indigo	2 QT
SED	51	Sedum kamtschaticum	Stonecrop	2 QT
SEDF	51	Sedum floriferum	Matrona Stonecrop	2 QT
SEDR	51	Sedum 'Angelina'	Stonecrop	2 QT

0 10 20 30 40 FT

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
603.436.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes
I	12/19/2024		PAVING UPDATE
H	11/26/2024		HAVEN COURT UPDATE
G	11/1/2024		ALLEY PAVING
F	10/11/2024		PLANTING UPDATE
E	9/30/2024		CATENARY LIGHT ADJUSTMENT
D	8/12/2024		SITE AMENTITIES AND MATERIALS UPDATED

No.	Date	Issue Notes

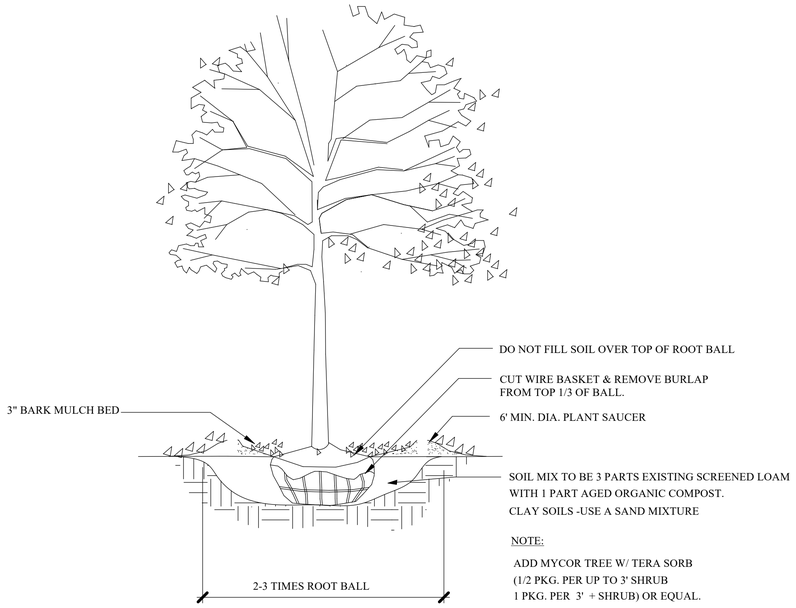
Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant:

Project Title: NEWBERRY WAY

Sheet Title: LANDSCAPE PLAN - PLANTING

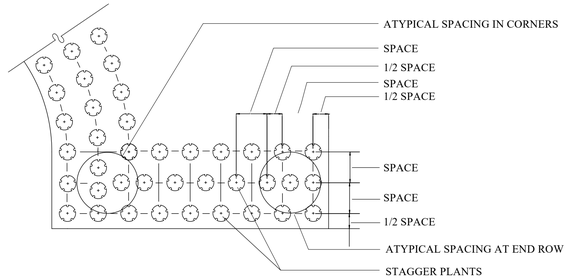
Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: 1/4"=1'-0"
Reviewed By: TP	Sheet No. L-02
Date: 1/11/2023	of 1
CAD File Name: newberry121924.vwx	



NOTE:

ADD MYCOR TREE W/ TERA SORB
(1/2 PKG. PER UP TO 3' SHRUB
1 PKG. PER 3' + SHRUB) OR EQUAL.

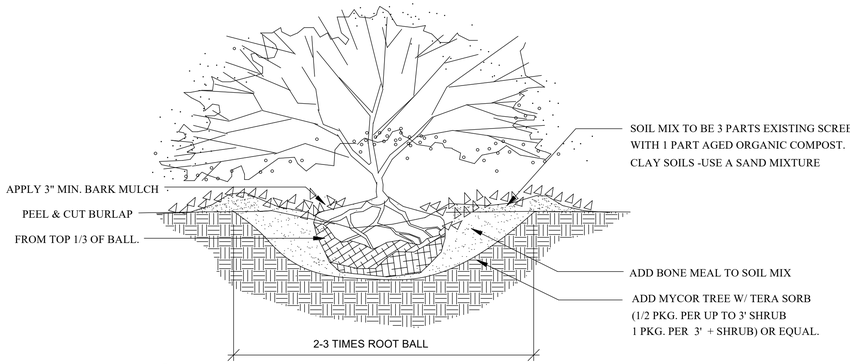
1 / L-3 TREE PLANTING - 2"+ CAL.
SCALE: NTS



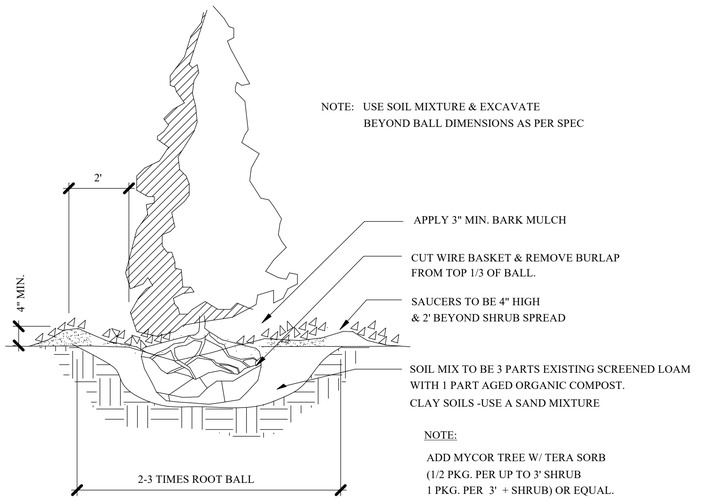
NOTES:

1. PLACE PLANTS IN BED AS SHOWN, SPACING AS SPECIFIED IN PLANT SCHEDULE.
2. GROUNDCOVER SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO STRAIGHT EDGES AND SHALL BE EVENLY SPACED IN ROWS PARALLEL TO CURVE EDGES.

4 / L-3 GROUND COVER SPACING DETAIL
SCALE: NTS



3 / L-3 B&B SHRUB PLANTING
SCALE: NTS

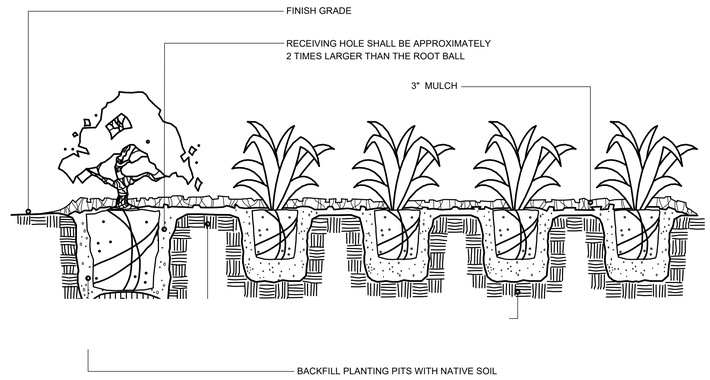


NOTE: USE SOIL MIXTURE & EXCAVATE BEYOND BALL DIMENSIONS AS PER SPEC

NOTE:

ADD MYCOR TREE W/ TERA SORB
(1/2 PKG. PER UP TO 3' SHRUB
1 PKG. PER 3' + SHRUB) OR EQUAL.

2 / L-3 PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS



NOTE: SHRUBS SHALL BE PLANTED A MINIMUM OF 1" & NO MORE THAN 2" ABOVE FINISH GRADE, DEPENDING UPON SITE CONDITIONS.

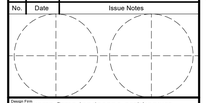
5 / L-3 SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street | portsmouth, nh 03801
tel 603.436.8388 | terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes

No.	Date	Issue Notes
I	12/19/2024	PAVING UPDATE
H	11/26/2024	HAVEN COURT UPDATE
G	11/1/2024	ALLEY PAVING
F	10/11/2024	PLANTING UPDATE
E	9/30/2024	CATENARY LIGHT ADJUSTMENT
D	8/12/2024	SITE AMENTITIES AND MATERIALS UPDATED



Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

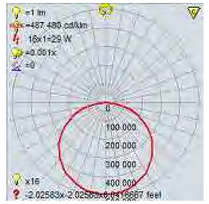
Consultant:

Project Title: NEWBERRY WAY

Sheet Title: LANDSCAPE DETAILS

Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: AS NOTED
Reviewed By: TP	Sheet No.: L-03 of 1
Date: 1/11/2023	
CAD File Name: newberry121924.vwx	

STRUCTURA
9635 Widmer Rd.
Lenexa, KS 66215
projects@structura.com
(913) 390-8787
https://structura.com/



2' DIA. SINGLE LAMP PHOTOMETRIC

Volta OR EQUAL

Catenary Cable Installation Instructions

structura

Warnings

CAUTION—risk of fire and this product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved.

Suitable for wet locations.

Mounting orientation must have light source facing down.

Electrical service must be disconnected during installation.

Proper grounding is required to protect against shock and proper operation.

Tools Required

9/64" Allen wrench for 8-32 socket cap screws.
7/16" wrench for jam nuts and coupling nuts.
4' level

Installation

Step 1: Install exterior power supply at remote location up to 40' away.

Step 2: Place clamp assembly in the top of the ring with the carriage bolt in the built-in fixture track. Slide assembly to approximate mounting location.

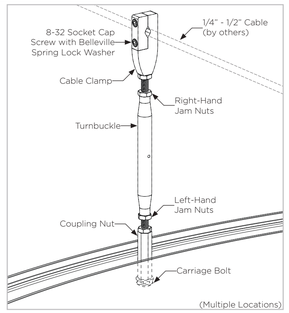
Step 3: Mount fixture to cables in approximate desired location by placing the cable clamp around the catenary cable. Position power cable from luminaire to nearest point of power supply along steel cable.

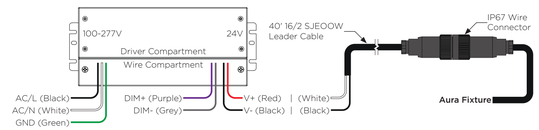
Step 4: Move fixture to final desired position. Ensure that clamp arm is perpendicular to cable and fixture. Fully tighten coupling nut and cable clamp screws to torque spec of 8ft-lbs.

Step 5: Adjust turnbuckles to level the fixture horizontally. Turnbuckles have 3" of adjustment length.

Step 6: Tighten jam nuts to secure turnbuckles using 7/16" wrench and metal pin through turnbuckle. Tighten jam nuts to 8ft-lbs.

Step 7: Connect exterior connector from fixture to wire whip. Connect whip to 24V side of power supply. Secure wire to cable with standard cable ties.





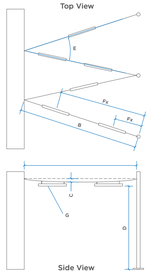
Suitable for indoor or outdoor use. Horizontal or vertical mounting. End and side knockout locations of 7/8" (1/2" trade size"). When installing multiple power supplies, separate the enclosures by at least 3" of space from edge to edge to prevent a rise of ambient temperature between the power supplies.

DESIGN INFORMATION

When designing catenary systems, each site has unique information that needs to be provided to ensure the proper sizing of the system components. The below information needs to be supplied before we can begin preliminary engineering or the quoting process.

Critical Information

- All span lengths (B)
- Cable sag (if greater than 5%) (C)
- Minimum fixture height (D)
- Cable angles (E)
- Luminaire center location from the pole (Fx)
- Spec of Structura luminaires (size/shape) (G)
- Geographic location of installation for wind and ice loading
- Any additional loading (fixtures, elevation, etc).
- AutoCAD file is preferred
- Elevation (if above ground level)
- Weight/foot of string lights



After all of the critical information is obtained by Structura:

1-2 Weeks:

- Preliminary Engineering – Approximate sizing for poles and cables without full analysis.
- Layout Drawings – Visual representation of Structura's interpretation of the critical information.
- Bill of Materials – List of what will and will not be provided by Structura.
- Budget Quote – Pricing for everything Structura will provide in the BOM as well as the Engineering Fee.

After Engineering Fee is paid or Purchase Order placed:

3-4 Weeks:

- Final Engineering – Post-analysis sizing for cables and poles. Includes reaction forces. PRICING AND SIZING ARE SUBJECT TO CHANGE UNTIL FINAL ENGINEERING IS COMPLETED!
- Final Quote – Pricing for everything Structura will provide based on Final Engineering.
- Approval Drawings – Layout, pole, and/or luminaire drawings that must be approved and reviewed prior to release.

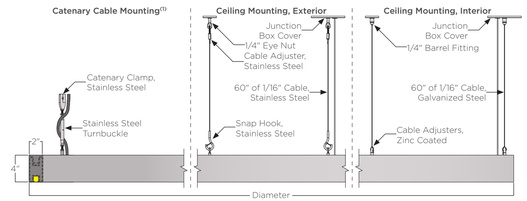
After Approval Drawings are returned and deposit (50% of order) is received:

< 1 Week:

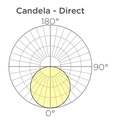
- Production – Structura can begin production for all ordered materials.
- Cables – 2-4 Weeks
- Luminaires – 8-10 Weeks
- Poles – 10+ Weeks (Depends on size, quantity, shop capacity, etc.)

Volta Ring - Direct Lighting

structura



	Standard Output		Medium Output		High Output			
Dia.	Lumens(2)	Watts	Lumens(2)	Watts	Lumens(2)	Watts	Weight(3)	EPA(3)
2'	627	9	1139	18	1593	29	16lbs.	.69ft²
4'	1299	18	2360	36	3301	60	32lbs.	1.24ft²
6'	1980	28	3597	55	5032	91	49lbs.	1.81ft²
8'	2671	37	4851	74	6787	123	64lbs.	2.36ft²



ORDERING GUIDE: EXAMPLE: VOLTA-RNG-D-6-L27MO-S4-CA-STD

VOLTA	RNG	D	2	L30	HO	JET BLACK	CA	STD
1	2	3	4	5	6	7	8	9

1 Series
VOLTA Volta
2 Series
RNG Ring
3 Lighting
D Direct

4 Diameter(4)
2 2'
4 4'
6 6'
8 8'

5 CCT
L27 2700K
L30 3000K
L35 3500K
L40 4000K

6 Output
SO Standard Output
MO Medium Output
HO High Output

7 Metal Finish
See color options on finishes technical sheet
C* Custom Color
CSM

8 Mounting
CA Catenary Cable
CE/E Ceiling Canopy, Exterior
CE/I Ceiling Canopy, Interior

9 Special
STD Standard
MOD Modified

1. Catenary cable designed and provided separately.
2. Lumen output based upon 3000K CCT.
3. Weight and EPA based off of catenary mounting option.
4. Consult factory for sizes above 8'.

Product specification sheets subject to change.

©2022 STRUCTURA, INC.

1
L-4

CATENARY LIGHT DETAIL
SCALE: NTS

NOTE: CONSULT MANUFACTURER'S DESIGN SPECIALISTS AND INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth nh 03801
tel 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes
I	12/19/2024		PAVING UPDATE
H	11/26/2024		HAVEN COURT UPDATE
G	11/1/2024		ALLEY PAVING
F	10/11/2024		PLANTING UPDATE
E	9/30/2024		CATENARY LIGHT ADJUSTMENT
D	8/12/2024		SITE AMENTITIES AND MATERIALS UPDATED

No.	Date	Issue Notes

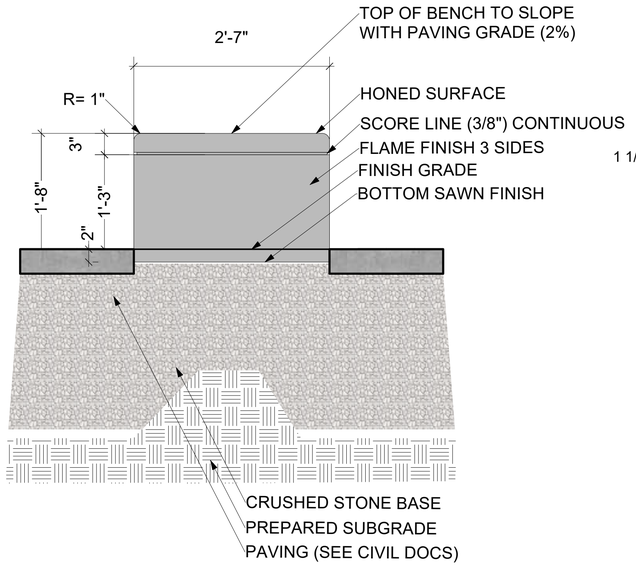
Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant:

Project Title: NEWBERRY WAY

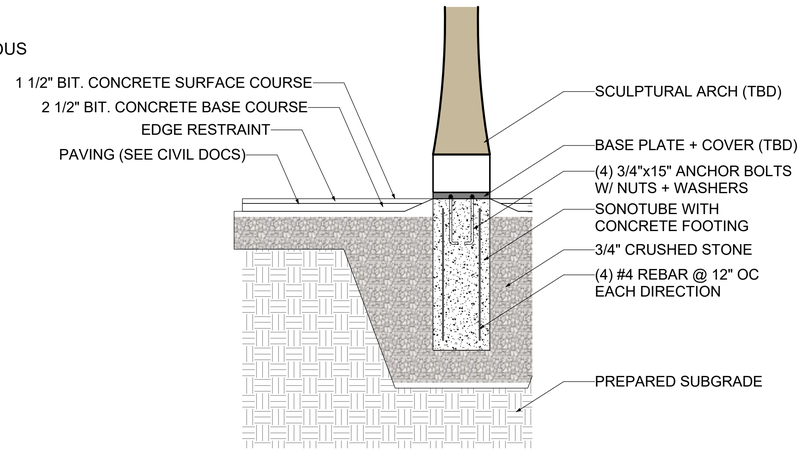
Sheet Title: LANDSCAPE DETAILS

Project Manager	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: AS NOTED
Reviewed By: TP	Sheet No.: L-04 of 1
Date: 1/11/2023	
CAD File Name: newberry121924.vwx	



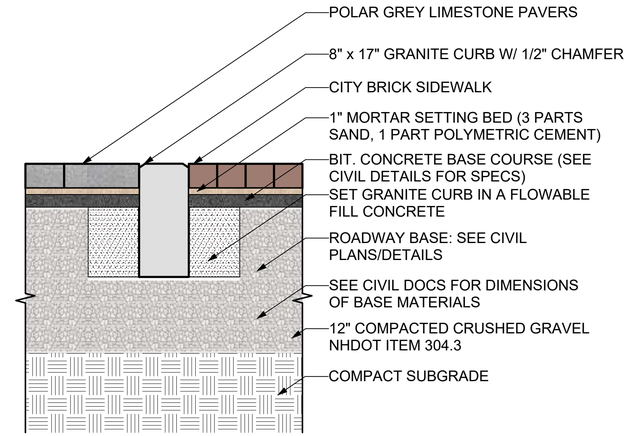
1 L-5

SITTING STONES DETAIL
SCALE: 1"=1'-0"



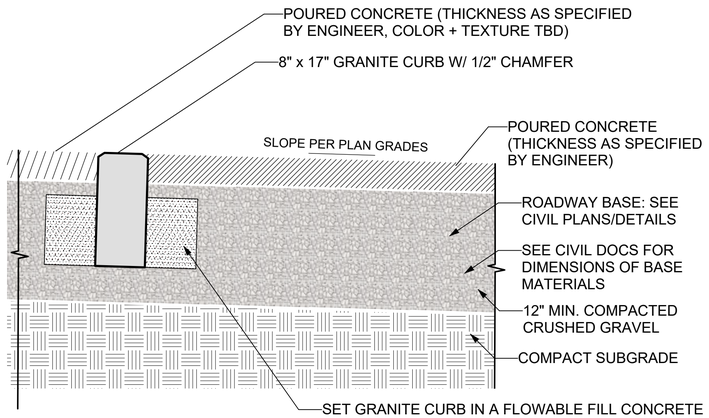
2 L-5

LIGHT POST ARCH FOOTING DETAIL
SCALE: 1/2" = 1'-0"



3 L-5

LADD + HIGH STREET PAVING DETAIL
SCALE: 1"=1'-0"



NOTE: CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL
TO PROJECT LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PLACEMENT.

4 L-5

POROUS CONCRETE DETAIL
SCALE: 1"=1'-0"

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE. .

terra firma
landscape architecture
163.a court street portsmouth, nh 03801
ofc. 603.430.8988 terrence@terrafirmalandarch.com

No.	Date	By	Revision Notes
I	12/19/2024		PAVING UPDATE
H	11/26/2024		HAVEN COURT UPDATE
G	11/1/2024		ALLEY PAVING
F	10/11/2024		PLANTING UPDATE
E	9/30/2024		CATENARY LIGHT ADJUSTMENT
D	8/12/2024		SITE AMENITIES AND MATERIALS UPDATED

No.	Date	Issue Notes

Design Firm: terra firma landscape architecture
163.a Court Street
Portsmouth, NH 03801

Consultant:

Project Title: NEWBERRY WAY

Sheet Title: LANDSCAPE DETAILS

Project Manager:	Project ID: NEWBERRY WAY
Drawn By: TC	Scale: AS NOTED
Reviewed By: TP	Sheet No. L-05
Date: 1/11/2023	of 1
CAD File Name: newberry121924.vwx	

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

IF REQUIRED THE CONTRACTOR SHALL OBTAIN AN NPDES PHASE II STORMWATER PERMIT AND SUBMIT A NOTICE OF INTENT (N.O.I) BEFORE BEGINNING CONSTRUCTION AND SHALL HAVE ON SITE A STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) AVAILABLE FOR INSPECTION BY THE PERMITTING AUTHORITY DURING THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THE S.W.P.P.P. AND INSPECTING AND MAINTAINING ALL BMP'S CALLED FOR BY THE PLAN. THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (N.O.T.) FORM TO THE REGIONAL EPA OFFICE WITHIN 30 DAYS OF FINAL STABILIZATION OF THE ENTIRE SITE OR TURNING OVER CONTROL OF THE SITE TO ANOTHER OPERATOR.

THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT:
1. 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;
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR;
3. A REPRESENTATIVE OF THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES;
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AND CATCH BASIN PROTECTION AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAYBALES IS NOT ALLOWED.

THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES. PLACE FODS AS NEEDED.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED. DEMOLISH BUILDINGS AND FENCES AS NEEDED. REMOVE WALL AND STORE.

ROUGH GRADE SITE.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING.

CONNECT UTILITIES.

PLACE BINDER LAYER OF PAVEMENT FOR SIDEWALKS.

PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.

AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT SIDEWALKS.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF A BUILDING REDEVELOPMENT WITH ASSOCIATED UTILITIES AND PARKING.

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 0.620 ACRES.

BASED ON THE USCS WEB SOIL SURVEY THE SOILS ON SITE CONSIST OF URBAN LAND WHICH HAS AN UNSPECIFIED HYDROLOGIC SOIL GROUP RATING, ASSUMED D.

THE STORMWATER RUNOFF FROM THE SITE WILL BE DISCHARGED VIA A CLOSED DRAINAGE SYSTEM TO THE CITY OF PORTSMOUTH CLOSED DRAINAGE SYSTEM WHICH ULTIMATELY FLOWS TO THE PISCATAQUA RIVER.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE". 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.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR MORE THAN 45 DAYS.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

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.

DUST CONTROL: DUST CONTROL MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.
IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL NON-STRUCTURAL, SITE-FILL SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL, TRASH, WOODY DEBRIS, LEAVES, BRUSH OR ANY DELETERIOUS MATTER SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DURING CONSTRUCTION AND UNTIL ALL DEVELOPED AREAS ARE FULLY STABILIZED, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH ONE HALF INCH OF RAINFALL.

THE CONTRACTOR SHALL MODIFY OR ADD EROSION CONTROL MEASURES AS NECESSARY TO ACCOMMODATE PROJECT CONSTRUCTION.

ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED ON AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
- EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.
- 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.

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:
- TEMPORARY SEEDING;
- MULCHING.

1. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
2. 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 THESE AREAS, SILTSOXX, MULCH BERMS, HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
3. 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 SILTSOXX, 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.

MAINTENANCE AND PROTECTION

THE SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILTSOXX SHALL BE REMOVED ONCE SITE IS STABILIZED, AND DISTURBED AREAS RESULTING FROM SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.

THE CATCH BASIN INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED 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.

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;

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;

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.

CONCRETE WASHOUT AREA

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

ALLOWABLE NON-STORMWATER DISCHARGES

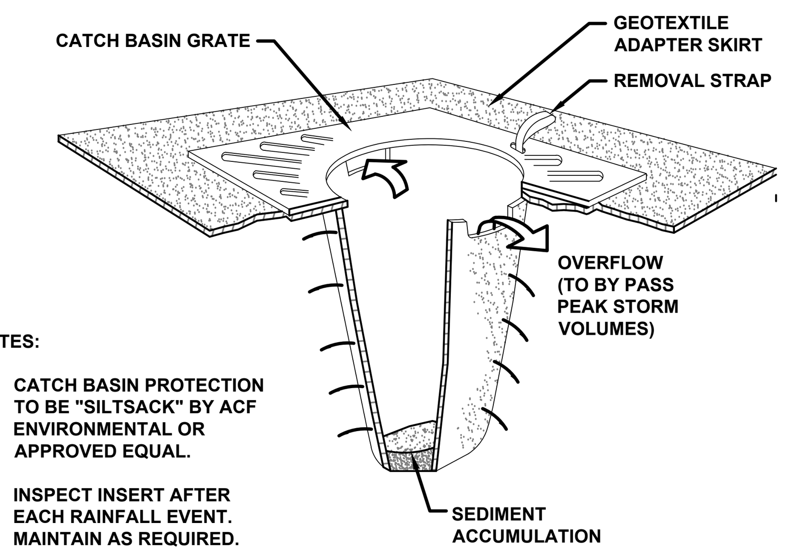
1. FIRE-FIGHTING ACTIVITIES;
2. FIRE HYDRANT FLUSHING;
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED;
4. WATER USED TO CONTROL DUST;
5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHING;
6. ROUTINE EXTERNAL BUILDING WASH DOWN WHERE DETERGENTS ARE NOT USED;
7. PAVEMENT WASH WATERS 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
   - 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;
   - NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE;
   - ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   - ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER;
   - SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   - ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

BLASTING NOTES

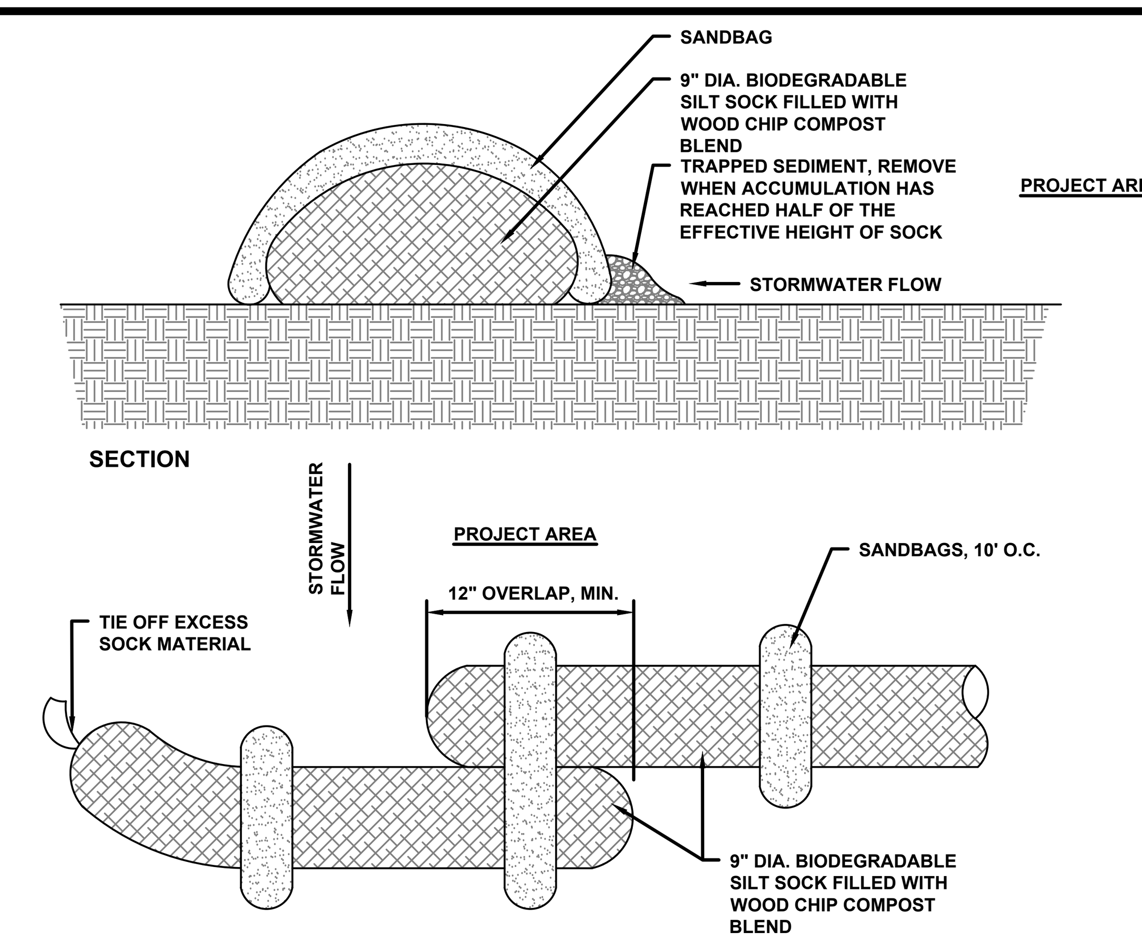
CONTRACTOR SHALL CONTACT THE NHDES AND/OR LOCAL JURISDICTION PRIOR TO COMMENCING ANY BLASTING ACTIVITIES.
FOR ANY PROJECT FOR WHICH BLASTING OF BEDROCK IS ANTICIPATED, THE APPLICANT SHALL SUBMIT A BLASTING PLAN THAT IDENTIFIES:
- WHERE THE BLASTING ACTIVITIES ARE ANTICIPATED TO OCCUR;
- THE ESTIMATED QUANTITY OF BLAST ROCK IN CUBIC YARDS; AND
- SITE-SPECIFIC BLASTING BEST MANAGEMENT PRACTICES.



NOTES:
1. CATCH BASIN PROTECTION TO BE "SILTSACK" BY ACF ENVIRONMENTAL OR APPROVED EQUAL.
2. INSPECT INSERT AFTER EACH RAINFALL EVENT. MAINTAIN AS REQUIRED.
3. SEDIMENT WITHIN INSERT SHALL BE EMPTIED WHEN 1/2 FULL.

SEDIMENT SACK INLET PROTECTION DETAIL

NTS



SILT SOCK DETAIL

SLOTDRAIN®

9000 SERIES SLOT DRAIN®
SPECIFICATION SHEET

SPECIFICATIONS

GENERAL:
The surface drainage system shall be 9000 Series Slot Drain complete with slotted linear trench opening as manufactured by Slot Drain Systems.

MATERIALS:
T304 Stainless Steel, T316 Stainless Steel, Galvanized Steel, Fiberglass

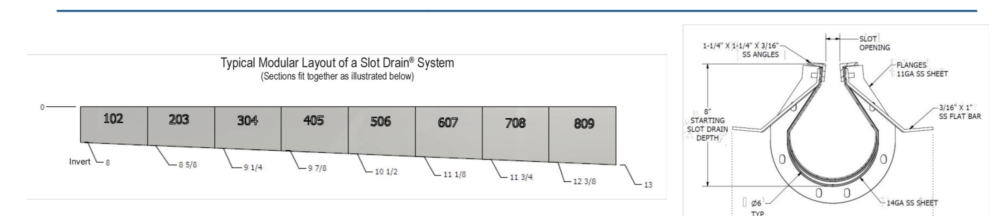
DESIGN OPTIONS:
Slot Opening (#): ½" (0), 1" (1), 1 ¼" (5)
End (*): Open (0), End Cap (1), Flush Nipple (5)
Section Lengths: Full 9'8", Half 4'10"
Typical runs start with 102 or 102B (Half Section).

LOAD CLASS:
Load Class F (10,000 lbs.)

FLOW RATE:
½" 11 gpm (per foot of drain)
1 18 gpm (per foot of drain)
1 ¼" 27 gpm (per foot of drain)

ACCESSORIES:
Cleaning paddle, Cleaning Brush, Flush Flo, CIP

INSTALLATION:
The 9000 Series Slot Drain System shall be installed in accordance with the manufacturer's installation instructions and recommendations.



DRAIN CHANNELS

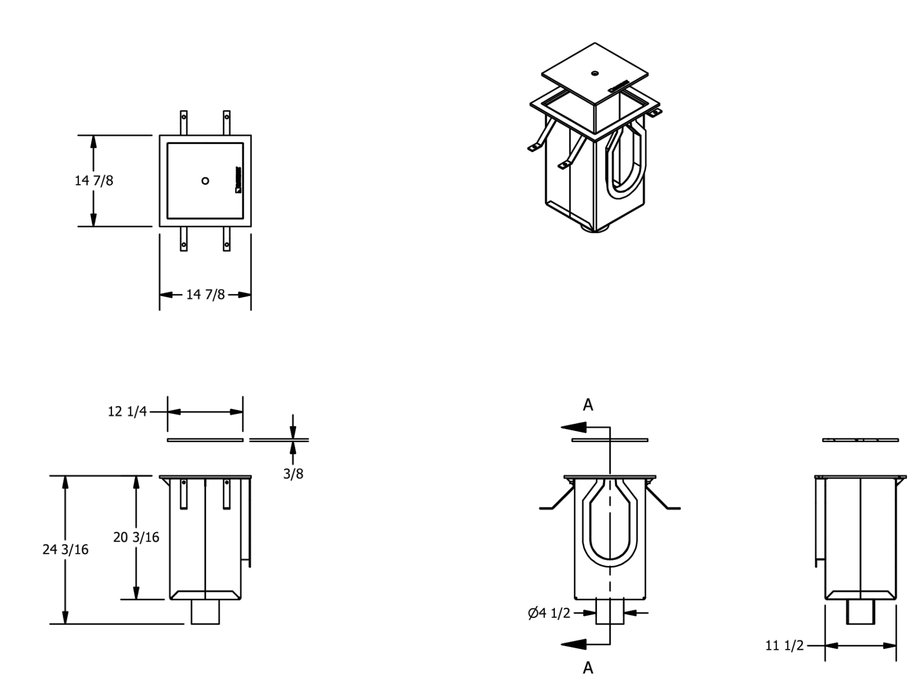
DESCRIPTION	PART NO.	INVERT SHALLOW INCHES	INVERT SHALLOW MM	INVERT DEEP INCHES	INVERT DEEP MM
9000 SERIES SS SLOT 102 HALF	SD95#*-102B	8 5/16	211.137	8 5/8	219.075
9000 SERIES SS SLOT 102	SD95#*-102	8	203.2	8 5/8	219.075
9000 SERIES SS SLOT 203	SD95#*-203	8 5/8	219.075	9 1/4	234.95
9000 SERIES SS SLOT 304	SD95#*-304	9 1/4	234.95	9 7/8	250.825
9000 SERIES SS SLOT 405	SD95#*-405	9 7/8	250.825	10 1/2	266.7
9000 SERIES SS SLOT 505 N	SD95#*-505B	10 1/2	266.7	10 1/2	266.7
9000 SERIES SS SLOT 506	SD95#*-506	10 1/2	266.7	11 1/8	282.575
9000 SERIES SS SLOT 607	SD95#*-607	11 1/8	282.575	11 3/4	298.45
9000 SERIES SS SLOT 708	SD95#*-708	11 3/4	298.45	12 3/8	314.325
9000 SERIES SS SLOT 809	SD95#*-809	12 3/8	314.325	13	330.2
9000 SERIES 90° SS SLOT	-	-	-	-	-
9000 SERIES SS TRANSITION PIT	-	-	-	-	-
	-	-	-	-	-

CATCH BASIN

DESCRIPTION	TOP WIDTH INCHES	TOP WIDTH MM	TOP LENGTH INCHES	TOP LENGTH MM	BOTTOM WIDTH INCHES	BOTTOM WIDTH MM	BOTTOM LENGTH INCHES	BOTTOM LENGTH MM	HEIGHT INCHES	HEIGHT MM	OUTLET HEIGHT INCHES	OUTLET HEIGHT MM	EDGE OF FRAME INCHES	EDGE OF FRAME MM
9000 SS CB	13	304.8	13	304.8	13	304.8	13	304.8	20 1/4	508	4 or 6	101.6 - 152.4	15	381

SPECIFYING ENGINEER IS RESPONSIBLE FOR CONCRETE ENCASEMENT AND REINFORCING BASED UPON APPLICATION AND LOCAL CODES.
SLOT DRAIN SYSTEMS RESERVES THE RIGHT TO CHANGE THE PRODUCT AND SPECIFICATIONS WITHOUT NOTICE

TF 855 . 497 . 7508 F 204 . 775 . 2324 E info@slotdrainsystems.com W slotdrainsystems.com



** All drawings are the exclusive property of SLOT DRAIN SYSTEMS,, any reproduction in part or in whole is prohibited without any proper consent.

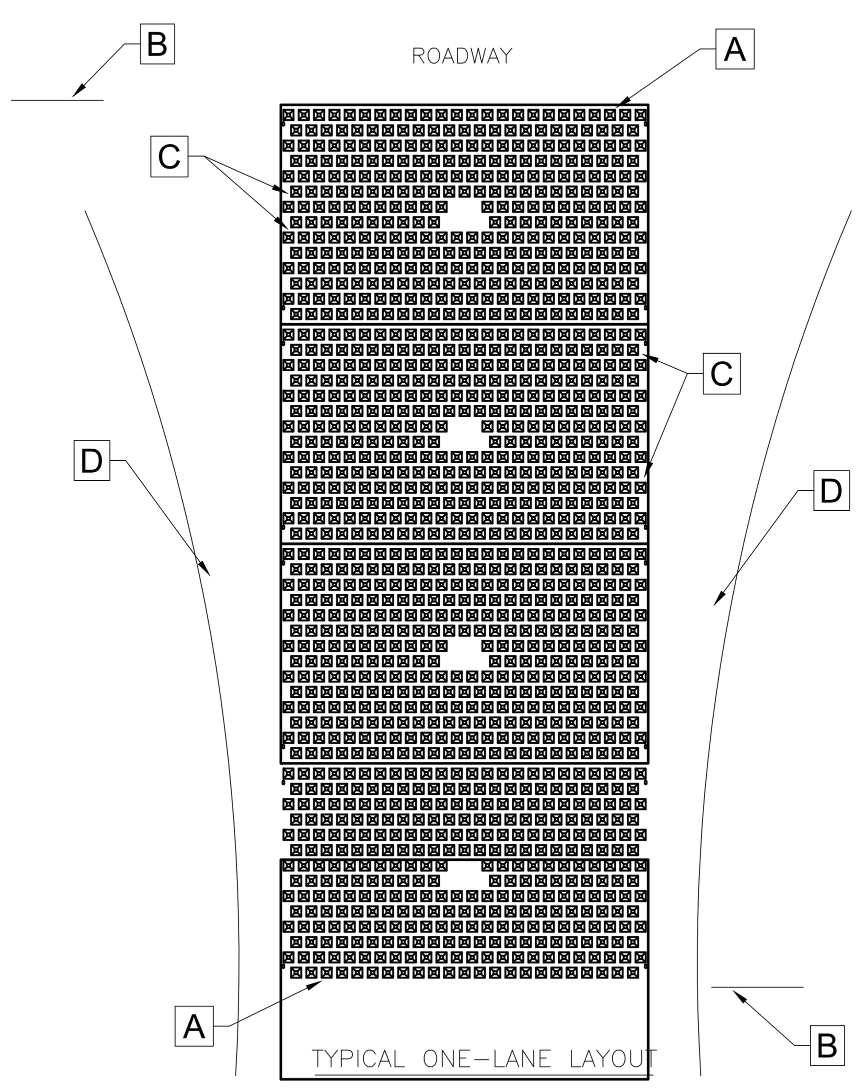
REVISIONS:

SLOTDRAIN®

TITLE:	CATCH BASIN			
PROJECT:				
JOB#	DATE: 3/2/2016	DRAWN BY: ARIS	SHEET: 1 OF 1	DWG#: SALES-SD9554-FGPIT

SLOT DRAIN DETAILS

NTS



INSTALLATION:

THE PURPOSE AND DESIGN OF THE FODS TRACKOUT CONTROL SYSTEM IS TO EFFECTIVELY REMOVE MOST SEDIMENT FROM VEHICLE TIRES AS THEY EXIT A DISTURBED LAND AREA ONTO A PAVED STREET. THIS MANUAL IS A PLATFORM FROM WHICH TO INSTALL A FODS TRACKOUT CONTROL SYSTEM. (NOTE: THIS IS NOT A ONE SIZE FITS ALL GUIDE.) THE INSTALLATION MAY NEED TO BE MODIFIED TO MEET THE EXISTING CONDITIONS, EXPECTATIONS, OR DEMANDS OF A PARTICULAR SITE. THIS IS A GUIDELINE. ULTIMATELY THE FODS TRACKOUT CONTROL SYSTEM SHOULD BE INSTALLED SAFELY WITH PROPER ANCHORING AND SIGNS PLACED AT THE ENTRANCE AND EXIT TO CAUTION USERS AND OTHERS.

KEY NOTES:

A. FODS TRACKOUT CONTROL SYSTEM MAT.
B. FODS SAFETY SIGN.
C. ANCHOR POINT.
D. SILT OR ORANGE CONSTRUCTION FENCE.

INSTALLATION:

1. THE SITE WHERE THE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED SHOULD CORRESPOND TO BEST MANAGEMENT PRACTICES AS MUCH AS POSSIBLE. THE SITE WHERE FODS TRACKOUT CONTROL SYSTEM IS PLACED SHOULD ALSO MEET OR EXCEED THE LOCAL JURISDICTION OR STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.
2. CALL FOR UTILITY LOCATES 3 BUSINESS DAYS IN ADVANCE OF THE OF FODS TRACKOUT CONTROL SYSTEM INSTALLATION FOR THE MARKING OF UNDERGROUND UTILITIES. CALL THE UTILITY NOTIFICATION CENTER AT 811.
3. ONCE THE SITE IS ESTABLISHED WHERE FODS TRACKOUT CONTROL SYSTEM IS TO BE PLACED, ANY EXCESSIVE UNEVEN TERRAIN SHOULD BE LEVELED OUT OR REMOVED SUCH AS LARGE ROCKS, LANDSCAPING MATERIALS, OR SUDDEN ABRUPT CHANGES IN ELEVATION.
4. THE INDIVIDUAL MATS CAN START TO BE PLACED INTO POSITION. THE FIRST MAT SHOULD BE PLACED NEXT TO THE CLOSEST POINT OF EGRESS. THIS WILL ENSURE THAT THE VEHICLE WILL EXIT STRAIGHT FROM THE SITE ONTO THE PAVED SURFACE.
8. AFTER THE FIRST MAT IS PLACED DOWN IN THE PROPER LOCATION, MATS SHOULD BE ANCHORED TO PREVENT THE POTENTIAL MOVEMENT WHILE THE ADJOINING MATS ARE INSTALLED. ANCHORS SHOULD BE PLACED AT EVERY ANCHOR POINT (IF FEASIBLE) TO HELP MAINTAIN THE MAT IN ITS CURRENT POSITION.
9. AFTER THE FIRST MAT IS ANCHORED IN ITS PROPER PLACE, AN H BRACKET SHOULD BE PLACED AT THE END OF THE FIRST MAT BEFORE ANOTHER MAT IS PLACED ADJACENT TO THE FIRST MAT.
10. ONCE THE SECOND MAT IS PLACED ADJACENT TO THE FIRST MAT, MAKE SURE THE H BRACKET IS CORRECTLY SITUATED BETWEEN THE TWO MATS, AND SLIDE MATS TOGETHER.
11. NEXT THE CONNECTOR STRAPS SHOULD BE INSTALLED TO CONNECT THE TWO MATS TOGETHER.
12. UPON PLACEMENT OF EACH NEW MAT IN THE SYSTEM, THAT MAT SHOULD BE ANCHORED AT EVERY ANCHOR POINT TO HELP STABILIZE THE MAT AND ENSURE THE SYSTEM IS CONTINUOUS WITH NO GAPS IN BETWEEN THE MATS.
13. SUCCESSIVE MATS CAN THEN BE PLACED TO CREATE THE FODS TRACKOUT CONTROL SYSTEM REPEATING THE ABOVE STEPS.

USE AND MAINTENANCE

1. VEHICLES SHOULD TRAVEL DOWN THE LENGTH OF THE TRACKOUT CONTROL SYSTEM AND NOT CUT ACROSS THE MATS.
2. DRIVERS SHOULD TURN THE WHEEL OF THEIR VEHICLES SUCH THAT THE VEHICLE WILL MAKE A SHALLOW S-TURN ROUTE DOWN THE LENGTH OF THE FODS TRACKOUT CONTROL SYSTEM.
3. MATS SHOULD BE CLEANED ONCE THE VOIDS BETWEEN THE PYRAMIDS BECOME FULL OF SEDIMENT. TYPICALLY THIS WILL NEED TO BE PERFORMED WITHIN TWO WEEKS AFTER A STORM EVENT. BRUSHING IS THE PREFERRED METHOD OF CLEANING, EITHER MANUALLY OR MECHANICALLY.
4. THE USE OF ICE MELT, ROCK SALT, SNOW MELT, DE-ICER, ETC. SHOULD BE UTILIZED AS NECESSARY DURING THE WINTER MONTHS AND AFTER A SNOW EVENT TO PREVENT ICE BUILDUP.

REMOVAL

1. REMOVAL OF FODS TRACKOUT CONTROL SYSTEM IS REVERSE ORDER OF INSTALLATION.
2. STARTING WITH THE LAST MAT, THE MAT THAT IS PLACED AT THE INNERMOST POINT OF THE SITE OR THE MAT FURTHEST FROM THE EXIT OR PAVED SURFACE SHOULD BE REMOVED FIRST.
3. THE ANCHORS SHOULD BE REMOVED.
4. THE CONNECTOR STRAPS SHOULD BE UNBOLTED AT ALL LOCATIONS IN THE FODS TRACKOUT CONTROL SYSTEM.
5. STARTING WITH THE LAST MAT IN THE SYSTEM, EACH SUCCESSIVE MAT SHOULD THEN BE MOVED AND STACKED FOR LOADING BY FORKLIFT OR EXCAVATOR ONTO A TRUCK FOR REMOVAL FROM THE SITE.

FODS SEDIMENT TRACKING SYSTEM DETAIL

NTS

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS
PERMIT PLANS

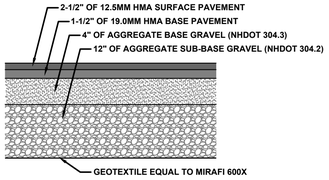
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT
MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE
SITE DETAILS

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 7651 · LICENSED · PROFESSIONAL ENGINEER

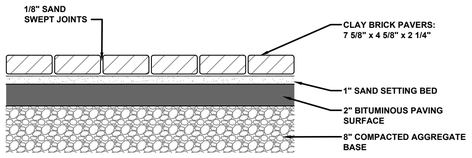
DATE	SCALE	
JULY 2024	NTS	
DRAWN BY: PJM	DESIGNED BY: ---	CHECKED BY: JRC
PROJECT No. 5010156.3406		
SHEET No. C501	REV No. 2	



ROADWAY BUILDUP

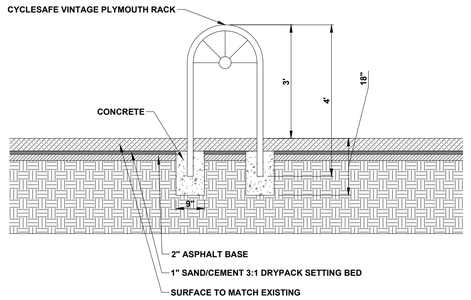
TYPICAL ROADWAY BUILDUP DETAIL

NTS



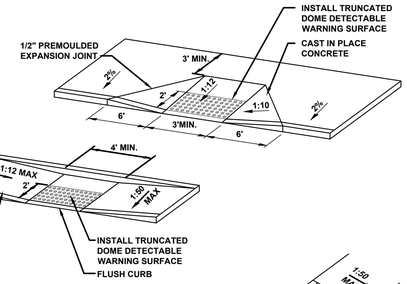
TYPICAL BRICK SIDEWALK DETAIL

NTS



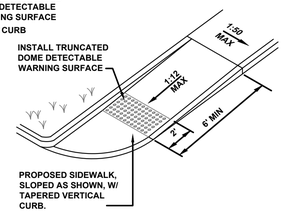
BIKE RACK DETAIL

NTS



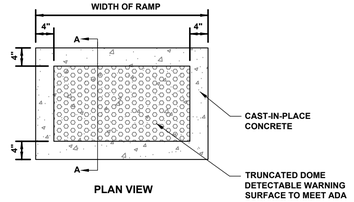
NOTES:

1. THE TEXTURE OF THE WARNING FEATURE MUST CONTRAST WITH THE SURROUNDING SURFACES (EITHER LIGHT ON DARK, OR DARK ON LIGHT).
2. SIZE OF DETECTABLE SURFACE TO BE 24" MIN. HEIGHT x THE FULL WIDTH OF THE RAMP / WALK.
3. CAST IRON DETECTABLE WARNING PAVER SURFACE SHALL BE EQUAL TO NEENAH FOUNDRY, UN-PAINTED.
4. PAVERS SHALL BE INSTALLED IN ACCORDANCE WITH ADA GUIDELINES, AND PER MANUFACTURER'S WRITTEN INSTRUCTIONS.



TYPICAL HANDICAP CURB RAMP DETAILS

NTS



PLAN VIEW

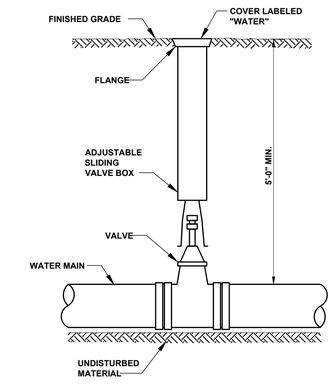
SECTION A-A

NOTES:

1. DETECTABLE WARNINGS SHALL BE AN INTEGRAL PART OF THE RAMP AND COMPLY WITH ALL SECTIONS OF THE ADA ACCESSIBILITY GUIDELINES AND ALL SECTIONS OF THE ADA STANDARDS FOR ACCESSIBLE DESIGN.
2. ALL DETECTABLE WARNING AREAS SHALL START 6-10" FROM THE FLOW LINE OF THE CURB, BE 24" IN DEPTH AND COVER THE COMPLETE WIDTH OF THE RAMP AREA ONLY. MATCH ROADWAY RADIUS, TYP.

TYPICAL DETECTABLE WARNING SURFACE DETAIL

NTS



NOTES:

1. GATE VALVE TO BE LOCATED WITHIN ROADWAY PAVEMENT WHERE POSSIBLE.
2. PROPER SIZE VALVE BOX SHALL BE INSTALLED WHERE GATE VALVES ARE SHOWN ON PLANS.

TYPICAL VALVE AND BOX DETAIL

NTS

HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK

UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
4"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
6"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
8"	1'-2"	1'-2"	1'-2"	1'-2"	1'-0"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
10"	1'-4"	1'-4"	1'-4"	1'-4"	1'-0"	1'-0"	0'-9"	1'-0"	0'-9"	1'-0"
12"	1'-8"	1'-8"	1'-8"	1'-8"	1'-3"	1'-3"	1'-0"	1'-0"	0'-9"	1'-0"

* - FOR 3" AND SMALLER PIPES

HORIZONTAL ANCHOR DIMENSIONS FOR AVERAGE SOIL CONDITIONS

UP TO 150 P.S.I. WORKING PRESSURE

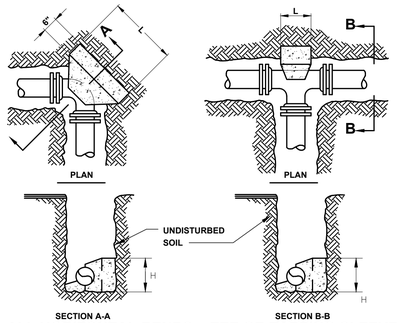
PIPE SIZE	TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	H	L	H	L	H	L	H	L	H	L
4"	1'-0"	2'-0"	1'-0"	2'-0"	1'-0"	1'-4"	0'-9"	1'-0"	0'-6"	1'-0"
6"	1'-0"	2'-0"	1'-0"	2'-0"	1'-0"	1'-4"	0'-9"	1'-0"	0'-6"	1'-0"
8"	1'-4"	2'-8"	1'-4"	2'-8"	1'-4"	1'-6"	1'-0"	1'-0"	0'-9"	1'-0"
10"	1'-8"	3'-4"	1'-8"	3'-4"	1'-8"	2'-0"	1'-3"	1'-3"	1'-0"	1'-0"
12"	2'-0"	4'-0"	2'-0"	4'-0"	2'-0"	2'-2"	1'-6"	1'-6"	1'-3"	1'-3"

* - FOR 3" AND SMALLER PIPES

NOTES:

1) TABLES ARE BASED ON AN ALLOWABLE SOIL PRESSURE OF 3000 PSF ON UNDISTURBED EARTH BEHIND THE ANCHOR BLOCK. WHERE SOIL HAS BEEN DISTURBED BY ADJACENT EXCAVATIONS OR WHERE SOIL CANNOT WITHSTAND SUCH A PRESSURE, THE TABLE DOES NOT APPLY.

2) WHERE ENTIRE DEPTH OF PIPE IS BELOW THE TOP SURFACE OF SOUND ROCK, USE "HORIZONTAL ANCHOR DIMENSIONS FOR PIPE INSTALLATION IN ROCK" TABLE.



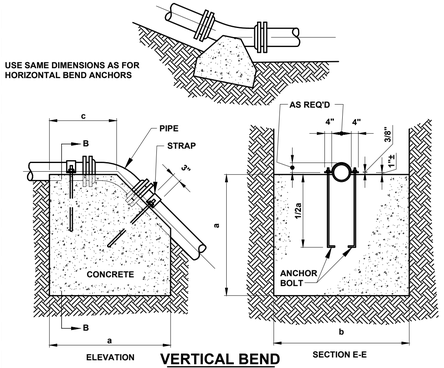
ALL HORIZONTAL BENDS TEE OR TAPPING SLEEVE

HORIZONTAL ANCHORING

VERTICAL ANCHOR DIMENSIONS

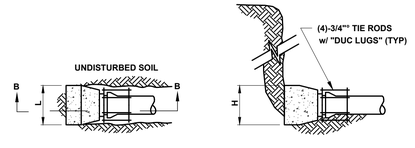
UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	45° BEND				22 1/2° BEND				11 1/4° BEND			
	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.	DIMENSION			ROD DIA.
	a	b	c		a	b	c		a	b	c	
4"	3'-0"	3'-0"	2'-0"	3/4"	2'-6"	2'-3"	1'-6"	3/4"	2'-0"	2'-0"	1'-6"	
6"	3'-0"	3'-0"	2'-0"	3/4"	2'-6"	2'-3"	1'-6"	3/4"	2'-0"	2'-0"	1'-6"	3/4"
8"	3'-6"	3'-6"	2'-6"	3/4"	3'-0"	3'-0"	1'-9"	3/4"	2'-6"	2'-6"	1'-3"	3/4"
10"	4'-3"	4'-0"	3'-0"	3/4"	3'-6"	3'-3"	2'-0"	3/4"	2'-9"	2'-9"	1'-6"	3/4"
12"	4'-9"	4'-6"	3'-3"	3/4"	4'-0"	3'-9"	2'-6"	3/4"	3'-3"	3'-3"	1'-9"	3/4"



ALL EXPOSED PORTIONS OF ANCHOR STRAPS TO RECEIVE TWO FIELD COATS (MIN.) OF BITUMASTIC MATERIAL

VERTICAL BEND



RESTRAINED PLUG OR CAP

NOTE: SEE CHART "HORIZONTAL ANCHOR DIMENSIONS" TIE RODS TO BE PROVIDED IN LIEU OF THRUST BLOCK

VERTICAL ANCHORING

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

4) CATCH BASIN POLYETHYLENE LINER NOTES:

POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.

PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET.

PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF THE GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).

USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.

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).

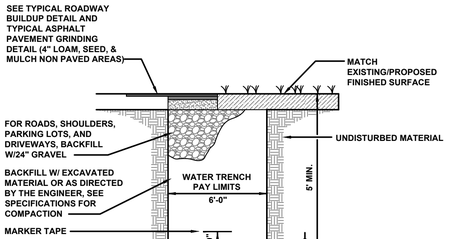
THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.

SEE NHDOT DR-04, "DI-DB, UNDERDRAIN FLUSHING BASIN AND POLYETHYLENE LINER DETAILS," FOR ADDITIONAL INFORMATION.

CATCHBASINS WITHIN CITY RIGHT OF WAY SHALL HAVE A POLYETHYLENE LINER.

5) ALL WATER MAIN & CONNECTIONS SHALL BE INSTALLED PER CITY OF PORTSMOUTH CONSTRUCTION STANDARDS.

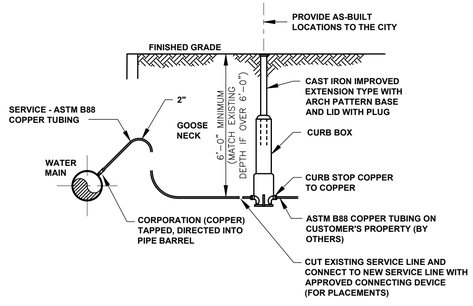


NOTE:

1. MATCH EXISTING SURFACE FINISH, EXCEPT WHERE NOTED. IN LAWN AREAS INSTALL 4" OF LOAM AND SEED AND MULCH.

TYPICAL TRENCH DETAIL - DUCTILE IRON WATER MAIN

NTS



TYPICAL WATER SERVICE CONNECTION DETAIL

NTS

TYPICAL WATER MAIN ANCHORING DETAILS

NTS

REV.	DATE	DESCRIPTION	BY	CHK
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd, Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

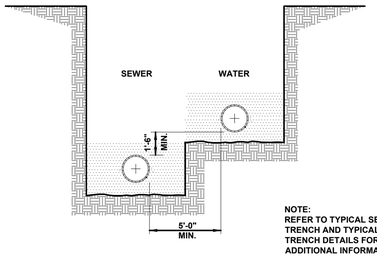
MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

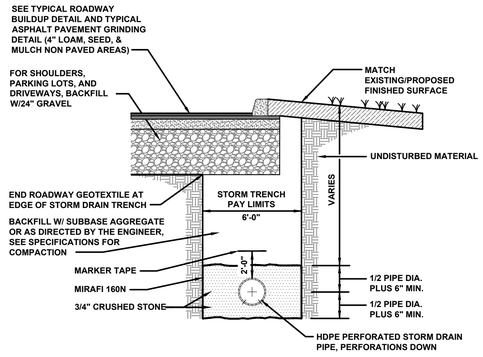
SITE DETAILS

STATE OF NEW HAMPSHIRE - JOHN R. CHAGNON No. 9851 LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	NTS
DRAWN BY: PJM	DESIGNED BY: ---
CHECKED BY: JRC	
PROJECT No.: 5010156.3406	
SHEET No.: C502	REV No.: 2

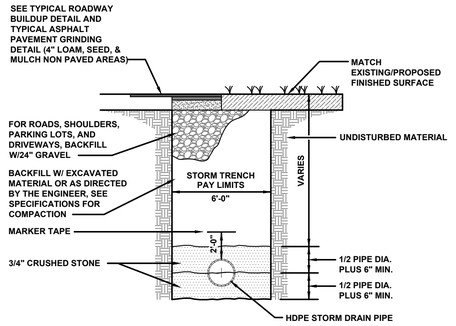


NOTE:
REFER TO TYPICAL SEWER TRENCH AND TYPICAL WATER TRENCH DETAILS FOR ADDITIONAL INFORMATION.



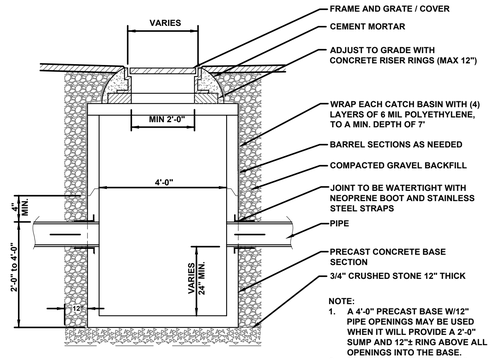
NOTE:

1. STORM DRAIN PIPE TO BE USED FOR UNDERDRAIN SHALL BE PERFORATED IN ACCORDANCE WITH THE APPLICABLE PERFORATION REQUIREMENTS OF AASHTO M294 CLASS I PERFORATIONS.



NOTE:

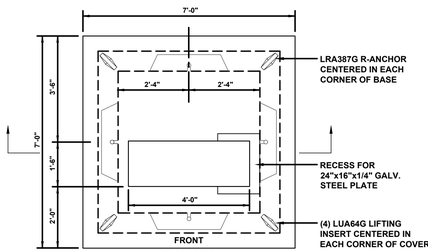
1. MATCH EXISTING SURFACE FINISH, EXCEPT WHERE NOTED. IN LAWN AREAS INSTALL 4" OF LOAM AND SEED AND MULCH.



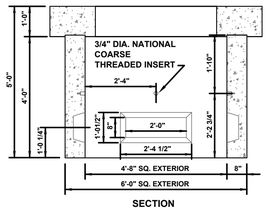
NOTE:
1. A 4'-0" PRECAST BASE W/12" PIPE OPENINGS MAY BE USED WHEN IT WILL PROVIDE A 2'-0" SUMP AND 12"± RING ABOVE ALL OPENINGS INTO THE BASE.
2. PROVIDE THE "ELIMINATOR" CATCH BASIN OIL TRAP.

TYPICAL SEWER / WATER SEPARATION DETAIL

NTS



PLAN VIEW



SECTION

SITE PREPARATION NOTES:
1.1 PAD SHALL BE SET ON A PROPERLY PREPARED GRAVEL BASE AND ORIENTED SO THE FRONT OF THE TRANSFORMER HAS TRUCK ACCESS AND IS PROTECTED FROM TRAFFIC.
1.2 FINISHED GRADE SHALL BE PREPARED IN SUCH A WAY AS TO SHED WATER AWAY FROM THE PAD.

MANUFACTURING NOTES:
2.1 CONCRETE COMPRESSIVE STRENGTH: 4,000 PSI @ 28 DAYS.
2.2 AIR ENTRAINMENT: 4%-6%
2.3 GRADE 60 REINFORCEMENT
2.4 3/4" IDA. NATIONAL COURSE THREADED INSERTS CAST-IN AS SHOWN FOR PULLING EYES

PHYSICAL SPECIFICATIONS
3.1 COVER WEIGHT: 6,290 LBS
3.2 BASE WEIGHT: 8,080 LBS
3.3 TOTAL WEIGHT: 14,370 LBS

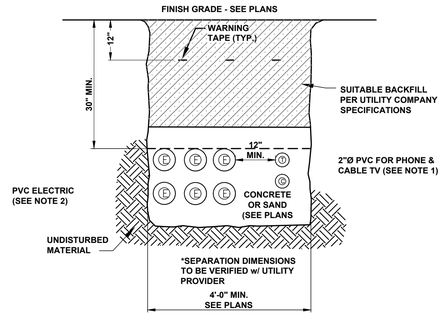
*FRONT DENOTES THE SIDE ON WHICH THE ACCESS DOORS ARE LOCATED

3 PHASE TRANSFORMER PAD DETAIL

NTS

TYPICAL PERFORATED STORM DRAIN TRENCH DETAIL

NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCHED. 40 FOR THE REMAINDER.

2) NORMAL CONDUIT SIZES FOR PSNH ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.

3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)

4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT

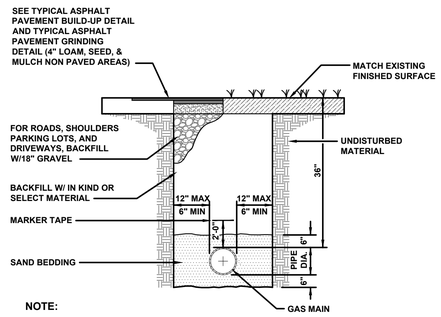
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANY'S PRIOR TO ANY CONSTRUCTION.

TYPICAL UNDERGROUND UTILITY TRENCH DETAIL

NTS

TYPICAL STORM DRAIN TRENCH DETAIL

NTS

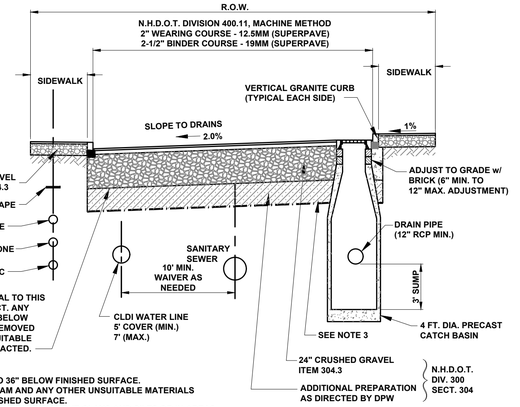


NOTE:

1. COMPACT ALL GRANULAR MATERIAL AND BACKFILL TO 95%.
2. SIDE CLEARANCE APPLICABLE TO BACKHOE OPERATIONS.

TYPICAL CATCH BASIN DETAIL

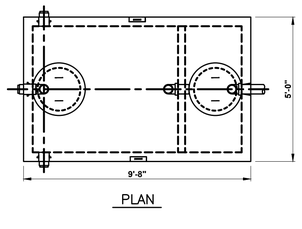
NTS



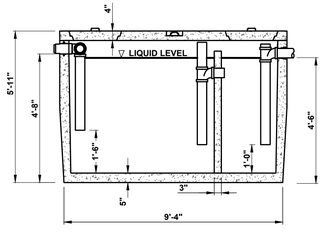
NOTES:
1) REMOVE LEDGE TO 36" BELOW FINISHED SURFACE.
2) REMOVE CLAY, LOAM AND ANY OTHER UNSUITABLE MATERIALS TO 42" BELOW FINISHED SURFACE.
3) INSTALL GEOTEXTILE FABRIC ABOVE CLAYS AND SILTS OR IN AREAS WHERE EXCAVATION IS BELOW THE SEASONAL HIGH WATER TABLE.
4) SIDEWALKS SUBJECT TO REVIEW AND APPROVAL BY CITY.

HIGH STREET ROADWAY CROSS SECTION

NTS



PLAN



SECTION

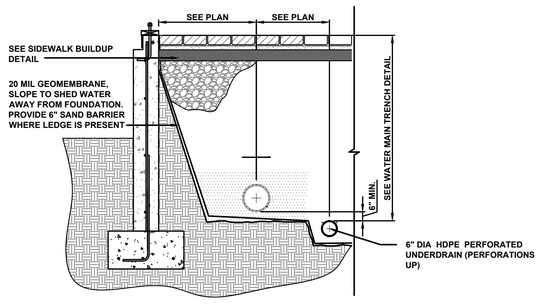
GENERAL NOTES:

CONCRETE SPECIFICATIONS:
1) 4000 PSI @ 28 DAYS.
2) 4%-6% ENTRAINED AIR.
3) TANK PENETRATIONS ARE INTEGRALLY CAST.
4) ALL JOINTS SEALED WITH BUTYL RESIN.
5) EXTERIOR TO BE COATED.

GREASE TRAP INFORMATION:
1) TANKS SHOULD BE PUMPED AS NEEDED.
2) ACCESS COVERS SHOULD HAVE RISERS TO BRING COVER ACCESS TO GRADE.
3) TANKS CAN BE VACUUM TESTED AT AN ADDITIONAL COST.

SHEA CONCRETE - 1000 GALLON 2 COMP. GREASE TRAP DETAIL

NTS



UNDERDRAINED WATER TRENCH DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd, Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

SITE DETAILS

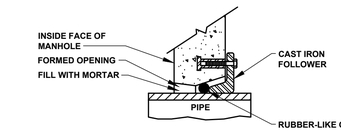
STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 7651 · LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	NTS

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

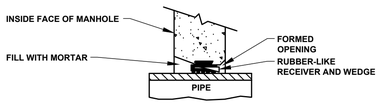
PROJECT No. 5010156.3406

SHEET No. C503 | REV No. 2



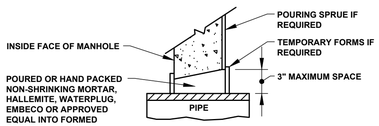
RES-SEAL

(OR ACCEPTABLE SUBSTITUTE)



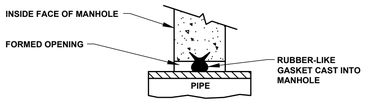
PRESS-WEDGE II

(OR ACCEPTABLE SUBSTITUTE)



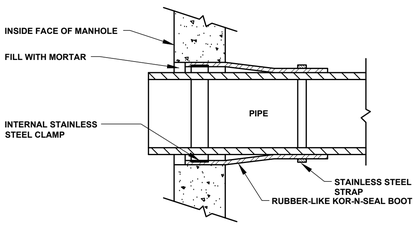
NON-SHRINKING MORTAR

(OR ACCEPTABLE SUBSTITUTE)



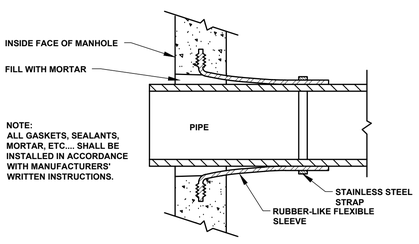
A-LOK

(OR ACCEPTABLE SUBSTITUTE)



KOR-N-SEAL JOINT SLEEVE

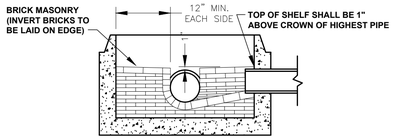
(OR ACCEPTABLE SUBSTITUTE)

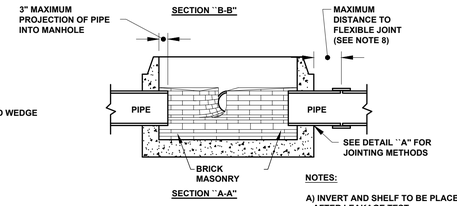


LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR ACCEPTABLE SUBSTITUTE)

DETAIL ''A'' - PIPE TO MANHOLE JOINTS





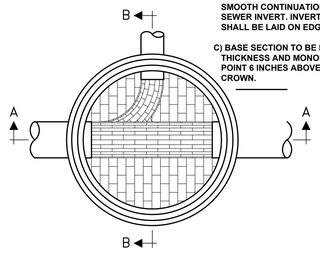
SECTION ''A-A''

NOTES:

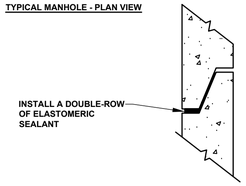
A) INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.

B) CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE.

C) BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6 INCHES ABOVE THE PIPE CROWN.



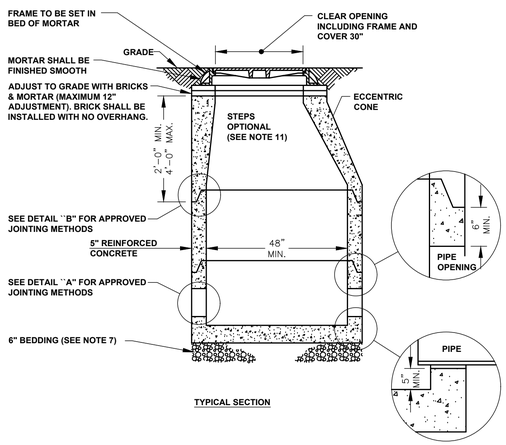
TYPICAL MANHOLE - PLAN VIEW



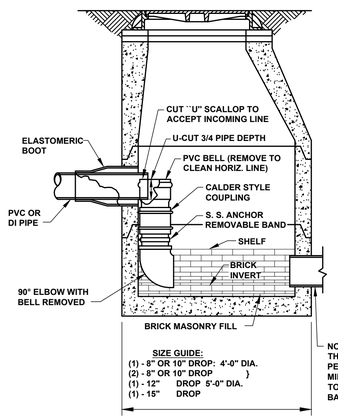
ELASTOMERIC SEALANT

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

DETAIL ''B'' - HORIZONTAL JOINTS



TYPICAL SECTION



INSIDE DROP MANHOLE

GENERAL NOTES

1) IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

2) BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED CONCRETE IF POURED AS A COMPLETE MANHOLE.

3) PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478.

4) LEAKAGE TEST MAY NOT BE FEASIBLE, BUT SHALL CONFORM TO ENV-WQ 704.17.

5) INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE AND TANGENT TO THE CENTERLINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.

6) FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A THREE INCH (MINIMUM HEIGHT) WORD ''SEWER'' FOR SEWERS AND ''DRAIN'' FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER. CASTINGS SHALL CONFORM TO CLASS 30, ASTM A48.

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

100% PASSING 1 INCH SCREEN
90%-100% PASSING 3/4 INCH SCREEN
20%- 55% PASSING 3/8 INCH SCREEN
0%- 10% PASSING #4 SIEVE
0%- 5% PASSING #8 SIEVE

WHEN ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.

8) FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
RCP & CI PIPE - ALL SIZES - 48"

9) SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.

10) MANHOLE STEPS MAY BE PERMITTED UPON REQUEST BY THE OWNER AS SECONDARY ADDITIONAL SAFETY FEATURE SUPPLEMENTARY TO THE PRIMARY PORTABLE LADDER ENTRY AND WHEN INSTALLED UNDER THE FOLLOWING CONDITIONS:

1. THE STEPS SHALL BE MANUFACTURED OF 5/8ths INCH ROUND STAINLESS STEEL, PLASTIC COVERED STEEL OR PLASTIC. THEY SHALL BE SHAPED SO THAT THEY CANNOT BE PULLED OUT OF THE CONCRETE WALL IN WHICH THEY ARE EMBEDDED.
2. THE STEPS SHALL BE EMBEDDED IN THE CONCRETE BY THE MANUFACTURER DURING MANUFACTURE OR IMMEDIATELY FOLLOWING REMOVAL OF FORMS. SECURING THE STEPS WITH MORTAR IN DRILLED OR CAST HOLES, WILL NOT BE ACCEPTABLE.
3. THE STEPS SHALL BE OF THE DROP TYPE WITH A DEPRESSED SECTION FOR HANDHOLD. APPROXIMATELY 14" x 10" IN DIMENSION.

11) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATER TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET, IN 2 ROWS.

12) PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.

13) THE PURPOSE OF THIS PLAN IS TO SHOW STANDARDS FOR SEWER CONSTRUCTION.

14) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV-WQ 704 DESIGN OF SEWERAGE.

15) BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE LARGEST INCOMING PIPE.

GENERAL NOTES

1) MINIMUM PIPE SIZE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
AWWA C900	PVC (SOLID WALL)	8" THROUGH 18"

*PVC: POLYVINYL CHLORIDE

2. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON BELL AND SPIGOT TYPE.

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND REFILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

6) THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: WHEN REQUIRED BY THE GOVERNING AUTHORITY, TESTING SHALL CONFORM TO ENV-WQ 704.09.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) HOUSE WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE, UNLESS IT IS ON A SHELF 12" HIGHER, AND 18" APART.

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

100% PASSING 1 INCH SCREEN
90%-100% PASSING 3/4 INCH SCREEN
20%- 55% PASSING 3/8 INCH SCREEN
0%- 10% PASSING #4 SIEVE
0%- 5% PASSING #8 SIEVE

WHERE ORDERED BY THE ENGINEER, OVEREXCAVATE UNSTABLE TRENCH BOTTOM AND BACKFILL WITH CRUSHED STONE.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL ''CHIMNEY'' DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.

12) CAST-IN-PLACE CONCRETE: SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000 PSI) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS FOLLOWS:

CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG OF CEMENT
MAXIMUM AGGREGATE SIZE: 3/4 INCH

13) BACKFILL UP TO SUBBASE GRAVEL SHALL BE WITH EXCAVATED SOIL FROM TRENCHING OPERATIONS. COMPACT IN 8" LIFTS WITH VIBRATORY PLATE COMPACTORS TO 90% OF MODIFIED PROCTOR DENSITY. IF FINE-GRAINED, COMPACT WITH POGO STICKS OR SHEEPSFOOT ROLLERS. PLACE NO LARGE ROCKS WITHIN 24" OF PIPE. TRENCHES THAT ARE NOT ADEQUATELY COMPACTED SHALL BE RE-EXCAVATED AND BACKFILLED UNDER THE SUPERVISION OF THE DESIGN ENGINEER OR GOVERNING BODY. UNSUITABLE BACKFILL MATERIAL INCLUDES CHUNKS OF PAVEMENT, TOPSOIL, ROCKS OVER 6" IN SIZE, MUCK, PEAT OR PIECES OF PAVEMENT.

14) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB-SITE SAFETY AND COMPLIANCE WITH GOVERNING REGULATIONS.

15) ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. FOR TRENCH WIDTH SEE TRENCH DETAIL.

16) SAND BLANKET: CLEAN SAND, FREE FROM ORGANIC MATTER, SO GRADED THAT 90% - 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.

17) BASE COURSE GRAVEL, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE:

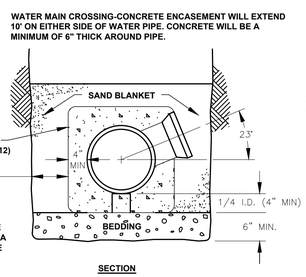
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION.

18) IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.

19) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION.

20) THE PURPOSE OF THIS PLAN IS TO SHOW STANDARDS FOR SEWER CONSTRUCTION.

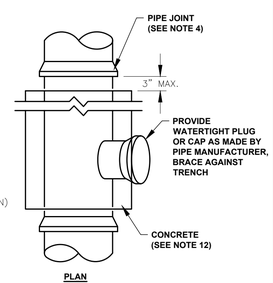
21) ALL WORK SHALL BE IN COMPLIANCE WITH NHDES CODE OF ADMINISTRATIVE RULES PART ENV-WQ 704 DESIGN OF SEWERAGE.



SECTION

CONCRETE FULL ENCASEMENT

NOT TO SCALE



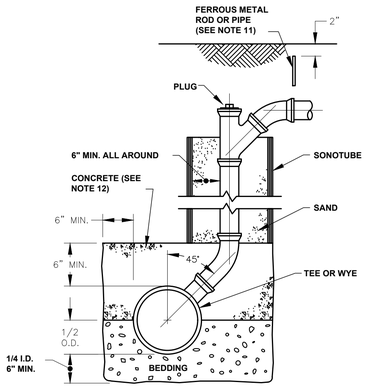
PLAN

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).



NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE)

NOT TO SCALE

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN

DATE

SEWER MANHOLE DETAILS

INSTALL PER PORTSMOUTH REQUIREMENTS NTS

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

SITE DETAILS

JOHN R. CHAGNON No. 3651 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

DATE	SCALE
JULY 2024	NTS

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

PROJECT No. 5010156.3406

SHEET No. **C504** REV. No. **2**

OVERVIEW

The Bio Clean Downspout Filter is the industry's leading solution for treatment of roof runoff. This technology is used to treat commercial and industrial rooftops along with highrise buildings, parking structures, and residential buildings.

Available in 3 sizes, this filter can easily adapt to downspouts 2" to 12" in diameter. The filter comes standard with rubber boots that allow for easy installation to the downspout.

Proven since 2003, the Downspout Filter has been used on hundreds of installations throughout the United States. All internal components are constructed of stainless steel.

The sleek in-line design allows the filter to be used in tight spaces. Approved by the IAPMO, this filter can meet all your needs.

PERFORMANCE

93% REMOVAL OF TSS

87% REMOVAL OF HYDROCARBONS

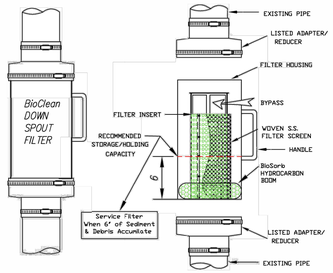
- EFFECTIVE AT REMOVING METALS, NUTRIENTS, AND BACTERIA (MEDIA TYPE)

ADVANTAGES

- 1-YEAR WARRANTY
- NO NETS OR GEOFABRICS
- SLEEK IN-LINE DESIGN
- HIGH TREATMENT FLOW RATE
- HIGH BYPASS FLOW RATE
- LOW COST

SERVICE MANUAL
(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

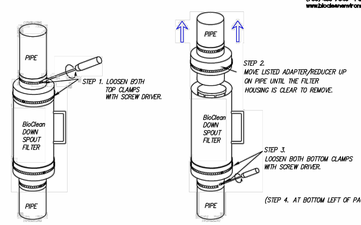
TOOLS AND EQUIPMENT NEEDED:

1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia. (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

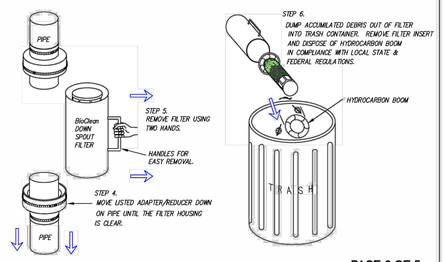
Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

REMOVING FILTER

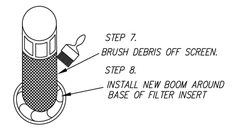
Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net



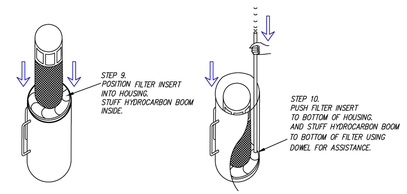
CLEANING FILTER



Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

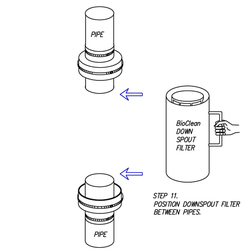


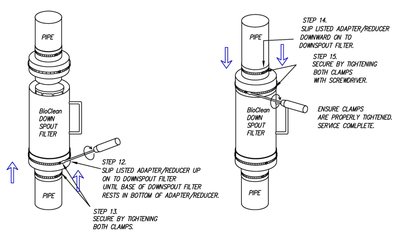
REPLACING FILTER INSERT



REPLACING FILTER

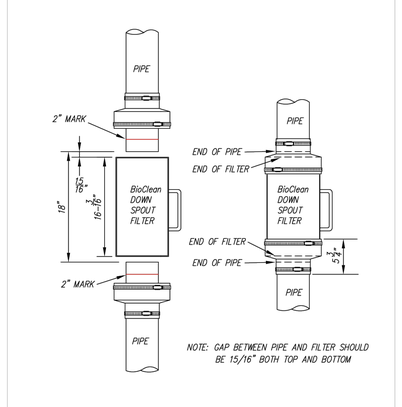
Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net





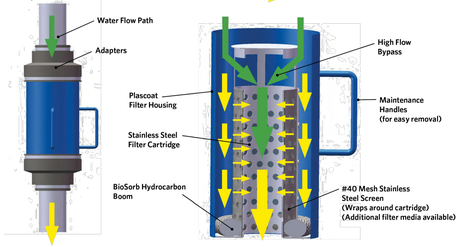
APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



Bio Clean
A Forterra Company
P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.net

OPERATION



APPROVALS

IAPMO Testing & Approval Listing

SPECIFICATIONS

MODEL #	INLET ID (dia., in.)	FILTER OD (dia., in.)	STORAGE CAP. (cu. ft.)	FILTERED FLOW (gpm)	BYPASS FLOW (gpm)
BC-DF4	4	6.625	0.09	249	566
BC-DF6	6	8.625	0.21	509	1006
BC-DF8	8	8.625	0.21	509	1006
BC-DF10	10	12.75	0.77	1145	2264
BC-DF12	12	12.75	0.77	1145	2264

DOWNSPOUT FILTER

MAINTENANCE:

THE FILTER IS DESIGNED TO ALLOW FOR THE USE OF MANUAL OR VACUUM REMOVAL OF CAPTURED MATERIALS IN THE FILTER
STRUCTURE. FILTERS CAN BE CLEANED EASILY BY SIMPLY LOOSENING THE METAL CLAMPS AND REMOVING THE FILTER. THE HYDROCARBON
ADSORBENT MEDIA THEN IS REMOVED AND THE TRASH AND DEBRIS CAN BE REMOVED FROM THE STRUCTURE. AT EACH CLEANING, NEW
HYDROCARBON ADSORBENT MEDIA SHOULD BE REINSTALLED.

MAINTENANCE NOTES:

1. BIO CLEAN ENVIRONMENTAL SERVICES, INC. RECOMMENDS CLEANING AND DEBRIS REMOVAL MAINTENANCE A MINIMUM OF TWO TO FOUR TIMES PER YEAR, AND REPLACEMENT OF MEDIA BOOMS A MINIMUM OF TWICE A YEAR.
2. THE DOWNSPOUT FILTER CAN BE CLEANED BY LOOSING THE METAL CLAMPS AT BOTTOM AND TOP OF RUBBER BOOTS. REMOVE
THE FILTER BY GRASPING THE HANDLES, SLIDE DOWN THE BOTTOM BOOT OVER THE OUTFLOW PIPE AND SLIDE UP THE TOP BOOT OVER
INFLOW PIPE. PLACE THE FILTER ON THE GROUND. DISPOSE OF ANY TRASH AND SEDIMENTS COLLECTED IN FILTER.
3. ONCE THE FILTER IS FREE, REMOVE THE INTERIOR INSERT. REMOVE THE HYDROCARBON ADSORBENT MEDIA BY UNWRAPPING IT
FROM THE INTERIOR INSERT AND REPLACING WITH A NEW MEDIA, WRAPPING IT THE SAME WAY.
4. PLACE THE INTERIOR INSERT BACK INTO THE FILTER.
5. PLACE THE FILTER BACK IN LINE WITH THE PIPE AND SLIDE BACK THE TOP AND BOTTOM BOOTS IN PLACE AND TIGHTEN THE METAL CLAMPS SECURELY.
6. EVALUATION OF THE HYDROCARBON MEDIA SHALL BE PERFORMED AT EACH CLEANING. IF THE MEDIA IS FILLED WITH
HYDROCARBONS AND OILS IT SHOULD BE REPLACED.
7. TRANSPORT ALL DEBRIS, TRASH, ORGANICS AND SEDIMENTS TO APPROVED FACILITY FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.
8. THE HYDROCARBON MEDIA WITH ABSORBED HYDROCARBONS IS CONSIDERED HAZARDOUS WASTE AND NEEDS TO BE HANDLED
AND DISPOSED OF AS HAZARDOUS MATERIAL. PLEASE REFER TO STATE AND LOCAL REGULATIONS FOR THE PROPER DISPOSAL OF USED MOTOR OIL/FILTERS.
9. FOLLOWING MAINTENANCE AND/OR INSPECTION, THE MAINTENANCE OPERATOR SHALL PREPARE A MAINTENANCE/INSPECTION RECORD. THE RECORD SHALL INCLUDE ANY MAINTENANCE ACTIVITIES PERFORMED, AMOUNT AND DESCRIPTION OF DEBRIS COLLECTED, AND CONDITION OF FILTER.
10. THE OWNER SHALL RETAIN THE MAINTENANCE/INSPECTION RECORD FOR A MINIMUM OF FIVE YEARS FROM THE DATE OF MAINTENANCE. THESE RECORDS SHALL BE MADE AVAILABLE TO THE GOVERNING MUNICIPALITY FOR INSPECTION UPON REQUEST AT ANY TIME.
11. ANY TOXIC SUBSTANCE OR ITEM FOUND IN THE FILTER IS CONSIDERED AS HAZARDOUS MATERIAL AND CAN ONLY BE HANDLED BY A CERTIFIED HAZARDOUS WASTE TRAINED PERSON (MINIMUM 24-HOUR HAZWOPER).

REV.	DATE	DESCRIPTION	BY	CHK.
2	2024.11.18	ISSUED FOR SITE PLAN REVIEW	PJM	JRC
1	2024.11.05	ISSUED FOR COMMENTS	PJM	JRC

DRAWING ISSUE STATUS

PERMIT PLANS

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Rd. Unit 14
Portsmouth, New Hampshire 03801
603.430.9282
WWW.HALEYWARD.COM

PROJECT

MIXED USE DEVELOPMENT
1-15 CONGRESS STREET PORTSMOUTH, N.H.

TITLE

SITE DETAILS

STATE OF NEW HAMPSHIRE · JOHN R. CHAGNON No. 9651 LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
JULY 2024	NTS

DRAWN BY	DESIGNED BY	CHECKED BY
PJM	---	JRC

PROJECT No. 5010156.3406

SHEET No. **C505** REV No. **2**

November 18, 2024

NEX-2400328.00

Mr. Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

SUBJECT: Application for Parking Conditional Use Permit (CUP) Approval
Tax Map 117, Lots 12 – 15, #1 & 15 Congress Street

Dear Mr. Chellman and Planning Board members:

On behalf of One Market Square, LLC, Greenman-Pedersen Inc. (GPI) hereby applies for a Parking Conditional Use Permit (CUP) for the redevelopment of the site at #1 & #15 Congress Street. The existing mixed-used use buildings are proposed for redevelopment to provide a total of ±8,430 square feet (SF) of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units. As the site is located within the City's Downtown Overlay District, parking for the proposed office, restaurant, and retail spaces is anticipated to occur within on-street parking spaces and in area public parking garages and lots. Parking for the proposed residential units will be provided in a basement-level parking garage to contain a total of 21 vehicle parking spaces and 36 bicycle parking spaces.

The Applicant has made best efforts to renovate and retrofit the existing buildings on the site. As such, the number of on-site parking spaces that can be provided within the below-ground parking garage is limited by the size of the existing surface lot on Parcel 14 and foundations for the existing buildings on site. The Applicant has maximized the number of vehicle parking spaces to be provided within the underground lot with the introduction of a vehicle elevator. Areas of the underground garage that cannot accommodate vehicle turning maneuvers are proposed for bicycle parking to offset the deficit in vehicle parking spaces within the garage. The site is located in a dense multi-use urban area with immediate access to numerous multi-modal travel opportunities, including walking, biking, and public transit services. In addition, the site is located in close proximity to other land uses for employment, shopping, and entertainment for residents of the proposed apartments, reducing the need to own a vehicle. The provision of 36 bicycle parking spaces within secured, weather-protected parking areas will further reduce the need for residents to own vehicles.

The City's zoning ordinance requires a total of 53 parking spaces on the site to accommodate the proposed 40 residential units, resulting in a deficit of 32 parking spaces. Since 21 vehicle parking spaces are being provided on the site, this request is to provide twenty-one (21) parking spaces where fifty-three (53) are required. A detailed parking demand assessment was performed as part of the *Traffic Impact Assessment* (TIA)[1] that is attached to this letter for reference.

We submit that the application conforms to the Portsmouth Ordinance Sections, repeated below with comments in **bold** text, as follows:

> Section 10.1112.141: An application for a conditional use permit under this section shall include a parking demand analysis demonstrating that the proposed number of off-street parking spaces is sufficient for the proposed use. **The parking demand assessment contained in the attached *Traffic Impact Assessment* indicates that the proposed residential units are anticipated to generate a peak parking demand of 28 parking spaces based on Institute of Transportation Engineers (ITE) parking demand generation rates for similar uses in dense multi-use urban settings. The provision of 36 bicycle parking spaces is anticipated to decrease the vehicle parking demand to 22 parking spaces, resulting in deficit of**

[1] *Traffic Impact Assessment, #1 & 15 Congress Street – Portsmouth, New Hampshire*; prepared by Greenman-Pedersen, Inc.; dated November 18, 2024.

only one parking space on-site for the proposed residential uses. This additional vehicle can easily be accommodated within one of the seven (7) public parking lots and garages that are located within 2,000 feet (10-minute walk) of the site.

Section 10.1112.142: An application for a conditional use permit under this section shall identify permanent evidence-based measures to reduce parking demand, including but not limited to provision of rideshare/micro transit services or bike share station(s) servicing the property, proximity to public transit, car/van-pool incentives, alternative transit subsidies, provisions for teleworking, and shared parking on a separate lot subject to the requirements of 10.1112.62. **The location of the proposed residential units is within a dense urban core and in close proximity to numerous opportunities for employment, shopping, and entertainment within walking distance. In addition, the site is located approximately 200 feet from the Hanover Station where bus transportation is provided along seven (7) bus routes by COAST (Cooperative Alliance for Seacoast Transportation). A stop is also provided on Congress Street at Market Square, less than 100 feet from the building entrance, for COAST Bus Routes 4, 40, and 41. The Applicant will provide 36 bicycle parking spaces within the on-site underground parking garage for secure, weather-protected bicycle parking for residents to further promote alternative travel.**

Section 10.1112.143: The Planning Board may grant a conditional use permit only if it finds that the number of off-street parking spaces required or allowed by the permit will be adequate and appropriate for the proposed use of the property. In making this determination, the Board may accept, modify or reject the findings of the applicant's parking demand analysis. **The parking analysis provided in the *Traffic Impact Assessment* indicates that the proposed development will generate a peak parking demand of 28 parking spaces based on ITE parking demand generation rates. The provision of 36 bicycle parking spaces may reduce this parking demand by up to six spaces, resulting in a peak parking demand of 22 vehicle parking spaces. The proposed on-site parking garage will provide 21 vehicle parking spaces, resulting in a deficit of only one parking space based on ITE data. This additional vehicle can be accommodated within the adjacent Hanover Garage or within one of the other six public parking facilities located within 2,000 feet (10-minute walk) of the site. Further, the Applicant plans to market the proposed residential units to residents desiring a downtown location, close to amenities and public transit services. As such, many of the residents may not own vehicles, thus further reducing the anticipated parking demand.**

Section 10.1112.144: At its discretion, the Planning Board may require more off-street parking spaces than the minimum number requested by the applicant or may allow fewer spaces than the maximum number requested by the applicant. **The application requests approval as presented; the maximum available given the existing site configuration.**

Sincerely,

GREENMAN-PEDERSEN, INC.

Rebecca L. Brown, P.E.
Senior Project Manager
116 South River Road, Building B, Suite 1, Bedford, NH 03110

Enclosure(s)

cc: Mark McNabb, McNabb Properties
Tracy Kozak, Arcove Architects
John Chagnon, Ambit Engineering

TECHNICAL MEMORANDUM

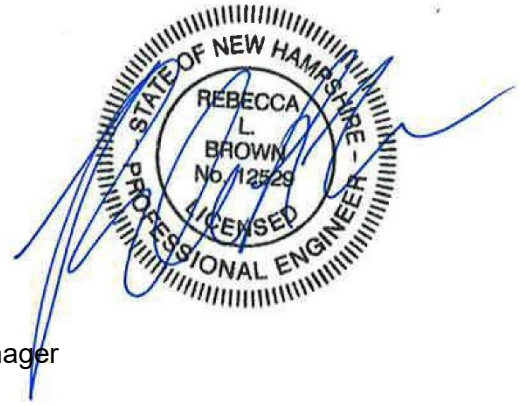
REF: NEX-2200015.00

DATE: November 18, 2024

TO: Mr. Mark A. McNabb
McNabb Properties
3 Pleasant Street, Suite 400
Portsmouth, New Hampshire 03801

FROM: Ms. Rebecca L. Brown, P.E., Senior Project Manager

RE: Traffic Impact Assessment
#1 & 15 Congress Street – Portsmouth, New Hampshire



INTRODUCTION

Greenman-Pedersen, Inc. (GPI) has prepared this *Traffic Impact Assessment* (TIA) for a proposed mixed-use redevelopment located at #1 & 15 Congress Street in Portsmouth, New Hampshire. The site is comprised of two lots on Tax Map 117, Parcels 12 - 15. Parcels 12 and 13 (#15 Congress Street) currently contain a mixed-use building with approximately 11,630 square feet (SF) of restaurant space and 3,430 SF of retail space on the first floor and basement levels, and 35,290 SF of office space and two residential apartment unit on the upper levels. Parcel 14 currently contains a 4-story mixed-use building with retail and restaurant space on the first floor and office and apartment space on the upper floors. Parcel 15 contains a private parking locate. Parcels 14 and 15 (#1 Congress Street) were previously approved for a redevelopment project consisting of renovating a portion of the existing building on Parcel 14 and constructing a 4-story addition to encompass the remainder of Parcels 14 and 15, and constructing basement-level parking. Access to the parking lot was proposed to be provided via a driveway on Haven Court to a vehicle elevator for access to the basement level. Upon completion, the Project was proposed to provide ±8,025 SF of retail space on the first floor, ±8,312 SF of office space on the second floor and a total of 18 residential units on the upper floors. The project has since been modified to include the redevelopment of both #1 and #15 Congress Street. As part of the Project, the space within the building at #15 Congress Street will be converted to approximately ±12,785 SF of retail space, ±8,665 SF of restaurant space and 22 residential apartment units. The redevelopment of #1 Congress Street has also been modified to include extending a portion of the building to connect to the existing JJ Newberry building at #15 Congress Street. Upon completion, #1 Congress Street will provide ±8,430 SF of office space, ±475 SF of restaurant space, ±11,535 SF of retail space, and 18 residential apartment units. Access to the underground parking lot will still be provided via a driveway on Haven Court, which will be extended to Fleet Street and converted to a pedestrian walkway.

This TIA provides a preliminary assessment of the potential vehicular traffic and parking demand to be generated by the proposed redevelopment, and a review of the safety of the roadways providing access/egress for the redevelopment.

The site is bounded by Haven Court to the north, Congress Street to the south, High Street to the east, and Fleet Street to the west. The site location in relation to the surrounding roadways is shown on the map on Figure 1.

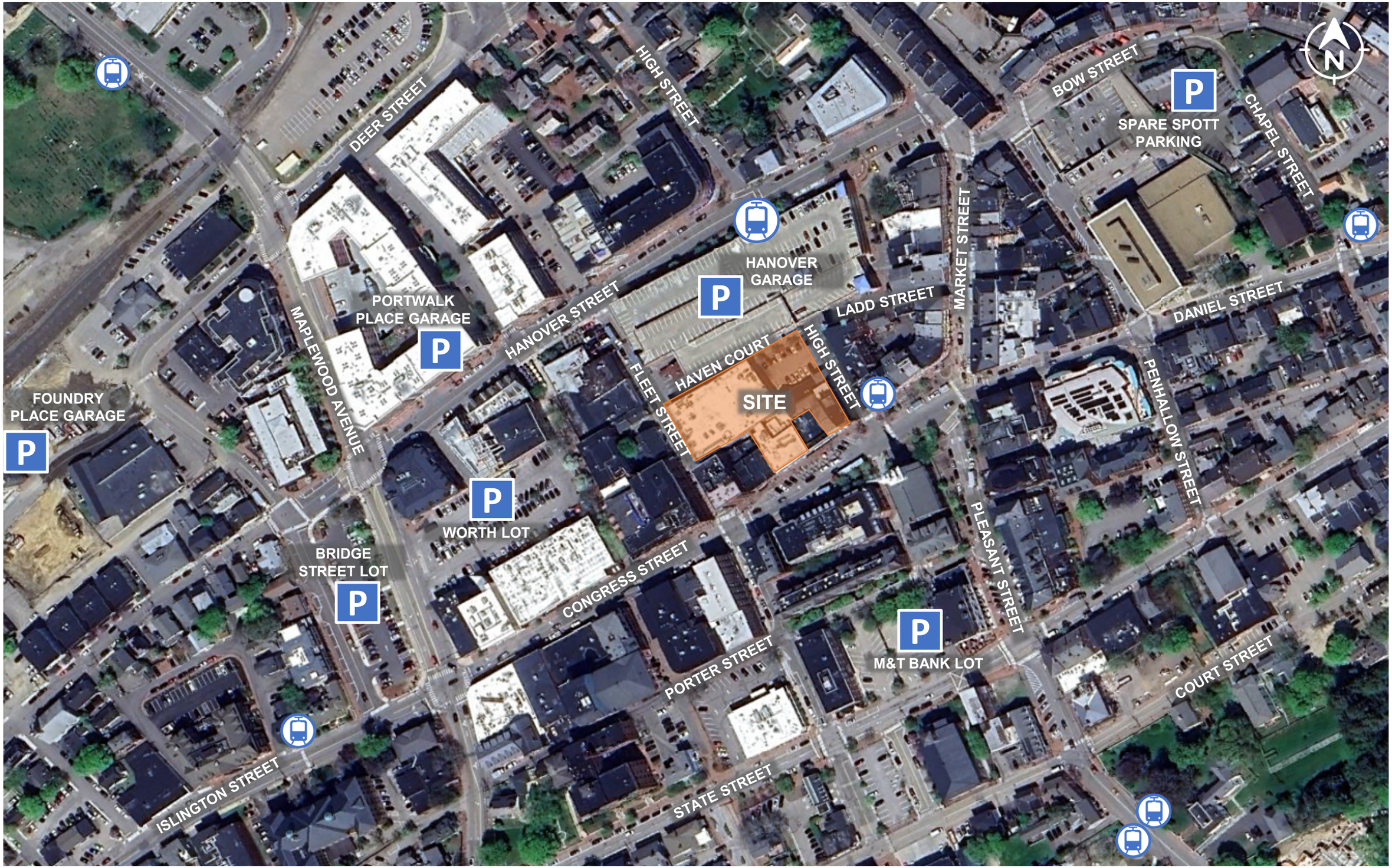


FIGURE 1 – SITE LOCATION MAP

COLLISIONS

Collision data for the section of Congress Street between Market Square and Fleet Street, as well as along High Street, Haven Court, Ladd Street, and Fleet Street, were obtained from NHDOT for the latest complete three years available (2015-2017). A summary of the crashes at this intersection is provided in Table 1. The detailed crash history is provided in the Appendix.

Based on the collision data, the section of Congress Street between Market Square and Fleet Street experienced an average of 5.0 collisions per year over the three-year study period. Of the 15 crashes, three were single-vehicle crashes with a light pole and may have involved vehicles striking the light poles immediately adjacent to the angled parking spaces along the northerly side of Congress Street. Five of the collisions involved a collision with a pedestrian, three of which occurred late at night when visibility of pedestrians in the roadway may have been a factor. Only one of the pedestrian crashes occurred at the intersection with High Street and involved a pedestrian crossing outside of the crosswalk at night.

The section of Fleet Street between Congress Street and Hanover Street experienced an average of 2.0 collisions per year over the three-year study period. One of the collisions occurred with a parked vehicle near the intersection with Congress Street under dark conditions. Two of the collisions occurred late night in front of Gilley's Diner and an additional three collisions occurred in the evening at the driveway with Gilley's Diner. Fleet Street near Gilley's Diner is a narrow two-way roadway with a total 27-foot roadway width consisting of a 7.5-ft parking lane, a 10-ft southbound travel-lane and a 9.5-ft northbound travel-lane. The narrow roadway width, combined with parking along the west side of the roadway makes turning maneuvers in and out of Gilley's Diner parking lot difficult. In addition, the Hanover Street Garage and J.J. Newberry Buildings are located immediately adjacent to the roadway on either side of the parking lot for Gilley's Diner, and block sight lines for vehicles backing out of the parking spaces at Gilley's Diner.

There were no collisions reported along Haven Court, High Street, or Ladd Street over the three-year study period.

TABLE 1
Collision Summary

Location	Number of Collisions		Severity [a]				Collision Type [b]					Percent During	
	Total	Average per Year	PD	PI	F	NR	VEH	PED	FO	SV	U	Commuter Peak [c]	Wet/Icy Conditions [d]
Congress Street from Market Square to Fleet Street	15	5.0	11	4	--	--	7	5	3	--	--	20%	20%
Haven Court	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
High Street	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
Ladd Street	0	0.0	--	--	--	--	--	--	--	--	--	0%	0%
Fleet Street from Congress Street to Hanover Street	6	2.0	5	1	--	--	5	--	1	--	--	0%	0%

Source: NHDOT (2015-2017).

[a] PD = property damage only; PI = personal injury; F = fatality, NR = not reported.

[b] VEH = collision with another motor vehicle; PED = pedestrian / bicycle; FO = fixed object; SV = single vehicle; U = unknown.

[c] Percent of vehicle incidents that occurred during the weekday AM (7:00 AM-9:00 AM) and weekday PM (4:00 PM -6:00 PM) commuter peak periods.

[d] Represents the percentage of only “known” collisions occurring during inclement weather conditions.

TRIP GENERATION

The site at #1 Congress Street currently contains approximately 1,180 SF of retail space and 5,500 SF of restaurant space on the first floor, with an additional 2,720 SF of office space and 10 residential units on the upper floors. The site at #15 Congress Street currently contains 11,630 square feet (SF) of restaurant space , 3,430 SF of retail, 35,290 SF of office space and two residential units. Upon completion, the Project will provide a total of ±8,430 SF of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units. GPI utilized trip-generation rates published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*[1] for Land Use Code (LUC) 221 (Multi-family Housing (Mid-Rise)), LUC 710 (General Office Building), LUC 822 (Strip Retail Plaza <40k)), and LUC 932 (High Turnover Sit-Down Restaurant) to estimate the trips generated by the proposed uses.

The Project will be located in downtown Portsmouth, in close proximity to multiple retail, restaurant, office, residential, and entertainment uses for sharing of trips between uses. As a result, many of the trips generated by the site will be walking and biking trips. In addition, the site is located in close proximity to multiple bus routes, allowing for easy access to public transportation for access to/from the site. Therefore, the trip rates for the residential (LUC 221), office (LUS 710), and retail (LUC 822) uses were based on Dense Multi-Use Urban settings. ITE does not provide trip generation data within dense multi-use urban settings for restaurant uses, therefore, the trip rates for the restaurant uses were based on General Urban / Suburban settings. The resulting trip generation estimate is summarized in Table 2, and the detailed calculations are provided in the Appendix.

TABLE 2 – Proposed Trip Generation Summary

Time Period/Direction	Residential Trips (LUC 221) [a]	Office Trips (LUC 710) [b]	Retail Trips (LUC 822) [c]	Restaurant Trips (LUC 932) [d]	Total Trips [e]
Weekday Daily	118	56	824	980	**1,978**
Weekday AM Peak Hour:					
Enter	2	6	22	48	**78**
Exit	9	1	14	39	**63**
Total	11	7	36	87	**141**
Weekday PM Peak Hour:					
Enter	7	1	50	51	**109**
Exit	3	6	50	32	**91**
Total	10	7	100	83	**200**
Saturday Daily	78	12	1,648	1,118	**2,856**
Saturday Midday Peak Hour:					
Enter	6	0	64	52	**122**
Exit	5	1	62	50	**118**
Total	11	1	126	102	**240**

[a] ITE LUC 221 (Multi-family Housing (Mid-Rise)) in Dense Multi-Use Urban setting for 41 units.
[b] ITE LUC 710 (General Office Building) in Dense Multi-Use Urban setting for 8,430 SF
[c] ITE LUC 822 (Strip Retail Plaza (<40K)) in Dense Multi-Use Urban setting for 24,320 SF.
[d] ITE LUC 932 (High Turnover Sit-Down Restaurant) in General Urban / Suburban setting for 9,140 SF.
[e] Sum of Residential Trips, Office Trips, and Retail Trips.

[1] *Trip Generation Manual*, 11th Edition; Institute of Transportation Engineers; Washington, DC; September 2021.

As previously noted, the site currently contains a mix of residential, office, retail, and restaurant space that is currently generating traffic. Therefore, not all of the site-generated trips will be new to the area. GPI has estimated the trips generated by the former uses on the site based on ITE trip rates for LUC 221 (Multifamily Housing (Mid-Rise)), LUC 710 (General Office), LUC 822 (Strip Retail Plaza <40k)), LUC 931 (Fine-Dining Restaurant), and LUC 932 (High Turnover Sit-Down Restaurant). The trip rates for the office (LUC 710), retail (LUC 822) and residential (LUC 221) uses were based on Dense Multi-Use Urban settings, while the trip rates for the restaurant (LUC 931 and LUC 932) use were based on General Urban/Suburban settings due to the lack of available trip generation data within dense multi-use urban settings for this use. The resulting trip generation estimate is summarized in Table 3, and the detailed calculations are provided in the Appendix.

TABLE 3 – Existing Trip Generation Summary

Time Period/Direction	Residential Trips (LUC 221) [a]	Office Trips (LUC 710) [b]	Retail Trips (LUC 822) [c]	Restaurant Trips (LUC 931) [d]	Total Trips [e]
Weekday Daily	36	248	156	1,708	**2,148**
Weekday AM Peak Hour:					
Enter	0	28	4	63	**95**
Exit	3	4	2	52	**61**
Total	3	32	6	115	**156**
Weekday PM Peak Hour:					
Enter	2	5	9	93	**109**
Exit	1	28	9	55	**93**
Total	3	33	18	148	**202**
Saturday Daily	24	50	312	1,920	**2,306**
Saturday Midday Peak Hour:					
Enter	2	0	12	101	**115**
Exit	1	6	12	88	**107**
Total	3	6	24	189	**222**

[a] ITE LUC 221 (Multifamily Housing (Mid-Rise)) in Dense Multi-Use Urban setting for 12 dwelling units.

[b] ITE LUC 710 (General Office Building) in Dense Multi-Use Urban setting for 38,010 SF.

[c] ITE LUC 822 (Strip Retail Plaza (<40K)) in Dense Multi-Use Urban setting for 4,610 SF.

[d] Sum of ITE LUC 931 (Fine-Dining Restaurant) in General Urban/Suburban setting for 5,500 SF and ITE LUC 932 (High Turnover Sit-Down Restaurant) in General Urban/Suburban setting for 11,630 SF.

[e] Sum of Residential Trips, Office Trips, Retail Trips, and Restaurant Trips.

Table 4 provides a comparison of the trips generated by the proposed land uses to the trips generated by the former uses on the site.

TABLE 4 – Trip Generation Comparison

Time Period/Direction	Existing Trips [a]	Proposed Trips [b]	Net Increase in Trips [c]
Weekday Daily	2,148	1,978	**-170**
Weekday AM Peak Hour:			
Enter	95	78	**-17**
Exit	61	63	**2**
Total	156	141	**-15**
Weekday PM Peak Hour:			
Enter	109	109	**0**
Exit	93	91	**-2**
Total	202	200	**-2**
Saturday Daily	2,306	2,856	**550**
Saturday Midday Peak Hour:			
Enter	115	122	**7**
Exit	107	118	**11**
Total	222	240	**18**

[a] Total Existing Trips (From Table 3).
[b] Total Proposed Trips (From Table 4).
[c] Proposed Trips minus Existing Trips.

As shown in Table 4, the proposed redevelopment will result in a minimal increase in vehicle trips of 18 additional trips (7 entering and 11 exiting) during the Saturday midday peak hour. These increases in traffic volumes represent less than one additional vehicle every three minutes on downtown roadways and are anticipated to result in negligible impacts to traffic operations downtown. The proposed redevelopment will result in a net reduction in overall weekday daily trips and trips during the weekday AM and PM peak hours.

PARKING

As part of the project, a total of 21 car parking spaces and 36 bicycle parking spaces will be provided in the basement level parking structure for use by the residents. No on-site parking will be provided for the proposed retail and restaurant uses.

The site is located within the Downtown Overlay District, in close proximity to numerous municipal parking garages and on-street public parking. Based on Section 10.1115.21 of the Zoning Ordinance, non-residential uses within the Downtown Overlay District are not required to provide any parking. Therefore, no on-site parking will be provided for the proposed retail and restaurant uses. It is assumed that the office, retail and restaurant employees will walk, bike, or use public transit to work or park in the adjacent Hanover Street parking garage. Similarly, it is assumed that retail and restaurant patrons will either park in one of the municipal parking lots or utilize on-street parking spaces in the area.

Residential Parking

Section 10.1112.311 of the City of Portsmouth Zoning Ordinance requires:

- 0.5 parking spaces per unit for residential dwellings of less than 500 SF;
- 1.0 parking spaces per unit for residential dwellings of between 500 SF and 750 SF; and
- 1.3 parking spaces per unit for residential dwellings of greater than 750 SF.

The Project proposes to include a total of 2 units with 500-750 SF, and 38 units greater than 750 SF. Therefore, a total of 51.4 parking spaces are required to serve the proposed residential units.

In addition, Section 10.1112.312 of the Zoning Ordinance states that:

"In addition to the off-street parking spaces provided in accordance with Sec. 10.1112.311, any dwelling or group of dwellings on a lot containing more than 4 dwelling units shall provide one visitor parking space for every 5 dwelling units or portion thereof."

Therefore, a total of 8.0 visitor parking spaces would be required to meet zoning regulations, which would result in a total of 59.4 parking spaces required for the residential use.

The Project is located within Downtown Overlay District. Section 10.1115.23 of the Zoning Ordinance allows for a 4-space reduction from the requirements of Section 10.1115.21 for any uses located within the Downtown Overlay District. Applying this reduction would result in a total parking requirement of 55.4 parking spaces.

The Zoning Ordinance also allows for a reduction in parking requirements of 1.0 parking spaces for every six (6.0) bicycle parking spaces with a maximum reduction of 5 percent. As 36 bicycle parking spaces are proposed on the site, a reduction of up to six vehicle parking spaces could be applied. However, the reduction is limited to a maximum of 5 percent of the total parking requirement or 2.77 spaces. Therefore, a total of 53 parking spaces would be required to serve the proposed residential units based on the Zoning Ordinance.

As the proposed parking supply of 21 vehicle parking spaces will result in a deficit of 32 parking spaces as compared to the Zoning Ordinance requirement, a Conditional Use Permit will be required for this project for parking.

ITE Parking Demand Data

To assess the adequacy of the proposed parking supply to accommodate the parking demand generated by the proposed residential units, GPI reviewed parking demand generation rates contained in the ITE publication *Parking Generation Manual, 6th Edition*. ITE provides separate parking demand generation rates for studio and 1-bedroom units as compared to units with 2 or more bedrooms. Within a dense multi-use urban setting, studio and 1-bedroom units generate a peak parking demand of 0.28 spaces per unit based on Land Use Code (LUC) 218 (Multifamily Housing – 1 BR (Mid-Rise)). Similarly, within a dense multi-use urban setting, units with 2 or more bedrooms generate a peak parking demand of 0.93 spaces per unit based on LUC 221 (Multifamily Housing – 2+ BR (Mid-Rise)).

There are a total of 14 apartment units proposed as studio or one-bedroom units and 26 units proposed with 2 or more bedrooms. Therefore, the proposed residential development is anticipated to generate a peak parking demand of 28 parking spaces based on ITE parking demand data. As the development is proposed to provide 21 parking spaces, the proposed parking supply will result in a deficit of 7 vehicle parking spaces based on ITE parking demand data. These additional parking spaces can be accommodated within the adjacent Hanover Garage or other area parking garages. As shown in Figure 1,

there are seven public parking garages / lots withing 2,000 feet (10-minute walk) of the site, providing more than adequate parking for any overflow from the proposed on-site garage. In addition, the provision of 36 bicycle parking spaces is anticipated to offset the parking deficit based on the City's Zoning Ordinance that allows for a reduction in vehicle parking spaces of one space for every six bicycle parking spaces provided.

CONCLUSIONS

- The site is comprised of four lots on Tax Map 117, Parcels 12 - 15. Parcel 14 currently contains a 4-story mixed-use building with retail and restaurant space on the first floor and office and apartment space on the upper floors. Parcel 15 contains a private parking locate. Parcels 12 and 13 contain a mixed-use building with retail and restaurant space on the first and basement levels and office and apartment space on the upper levels. The project consists of renovating a portion of the existing building on Parcel 14 and constructing a 4-story addition to encompass the remainder of Parcels 14 and 15, and constructing basement-level parking. In addition, the building on Parcels 12 – 13 will be redeveloped to convert a substantial portion of the office space to retail space and residential apartment units. Access to the parking lot would be provided via a driveway on Haven Court to a vehicle elevator for access to the basement level. Upon completion, the Project would provide ±8,430 SF of office space, ±24,320 SF of retail space, ±9,140 SF of restaurant space, and 40 residential apartment units.

- The section of Congress Street between Market Square and Fleet Street experienced an average of 5.0 collisions per year over the three-year study period. Of the 15 crashes, three were single-vehicle crashes with a light pole and may have involved vehicles striking the light poles immediately adjacent to the angled parking spaces along the northerly side of Congress Street. Five of the collisions involved a collision with a pedestrian, three of which occurred late at night when visibility of pedestrians in the roadway may have been a factor. Only one of the pedestrian crashes occurred at the intersection with High Street and involved a pedestrian crossing outside of the crosswalk at night. The occurrence of collisions with pedestrians at night may be an indication that the crosswalk is not adequately lit due either to poor lighting or overgrown street trees blocking existing light poles.

- The section of Fleet Street between Congress Street and Hanover Street experienced an average of 2.0 collisions per year over the three-year study period. One of the collisions occurred with a parked vehicle near the intersection with Congress Street under dark conditions. Two of the collisions occurred late night in front of Gilley's Diner and an additional three collisions occurred in the evening at the driveway with Gilley's Diner. Fleet Street near Gilley's Diner is a narrow two-way roadway with a total 27-foot roadway width consisting of a 7.5-ft parking lane, a 10-ft southbound travel-lane and a 9.5-ft northbound travel-lane. The narrow roadway width, combined with parking along the west side of the roadway makes turning maneuvers in and out of Gilley's Diner parking lot difficult. In addition, the Hanover Street Garage and J.J. Newberry Buildings are located immediately adjacent to the roadway on either side of the parking lot for Gilley's Diner, and block sight lines for vehicles backing out of the parking spaces at Gilley's Diner.

- There were no collisions reported along Haven Court, High Street, or Ladd Street over the three-year study period.

- The proposed redevelopment will result in a minimal increase in vehicle trips of 18 additional trips (7 entering and 11 exiting) during the Saturday midday peak hour, which represents less than one additional vehicle every three minutes on downtown roadways and is anticipated to result in negligible impacts to traffic operations downtown. The proposed redevelopment will result in a net reduction in overall weekday daily trips and trips during the weekday AM and PM peak hours.

- A total of 21 vehicle parking spaces and 36 bicycle parking spaces are proposed within the basement level parking garage at #1 Congress Street. Based on the City's zoning regulations a total of 53 parking spaces would be required to serve the proposed residential uses within the Downtown Overlay District. Therefore, a Conditional Use Permit will be required to allow a reduction in parking supply for the proposed development. No on-site parking is required for office, retail and restaurant uses within the Downtown Overlay District.

- Although the zoning ordinance estimates a deficit of 32 vehicle parking spaces on the site, the proposed residential uses are anticipated to generate a peak parking demand of 28 parking spaces based on ITE parking demand generation rates for similar residential uses in dense multi-use urban settings. The proposed parking supply of 21 residential parking spaces will accommodate the majority of the parking demand. The additional seven vehicles can be accommodated within the adjacent Hanover Garage or other area parking facilities. In addition, the proposed 36 bicycle parking spaces will offset a 6-space deficit in vehicle parking spaces based on the City's zoning regulations allowing for a reduction in vehicle parking spaces of one space for every six bicycle parking spaces provided.

- APPENDIX

- ***NHDOT Crash Data***
- ***Trip Generation Calculations***

NHDOT CRASH DATA

FID	ACDYEAR_NU	CRASH_DATE	ACDDAY	ACDTIME	ACDSTREET	INTERSTREE	MILESFTFRO	NSEW_TO_IN	TYPE_OF_AC	FIXED_OBJE	LOCATION_F	NUMVEHICLE	TOTALFATAL	TOTALINJUR	PEDFATALS	PROPDAMAGE	INFONOTREP	SEVERITY	ROAD_ALIGN	ROAD_CONDI	SURFACE_CO	LIGHTING_D	WEATHER_DE	ROAD_DESIG	TRAFFIC_CO
414619	15009106	3/17/2015	TUE	2331	90 FLEET ST	62 CONGRESS ST	100	N	Parked Motor Vehicle		Intersection Related	2	0	0	0		X	Unknown	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Not Physically Divided (2 Way Traffic)	Visible Road Markings
466799	16009879	4/30/2016	SAT	1955	175 FLEET ST	HANOVER ST	150	S	Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Not Physically Divided (2 Way Traffic)	Visible Road Markings
481652	16014951	6/27/2016	MON	1436	174 FLEET ST	HANOVER ST	100	S	Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Unknown	Normal	Dry	Daylight	Clear		None
483078	16019691	8/6/2016	SAT	120	175 FLEET ST		0		Other Motor Vehicle		Along Road at Driveway Access	1	0	0	0		X	Unknown	Straight and Level	Normal	Unknown	Dark-Street Light On	Unknown	Not Physically Divided (2 Way Traffic)	None
488681	16019675	8/4/2016	THU	53	175 FLEET ST		0		Other Motor Vehicle		Along the Road	2	0	1	0			Non-Incapacitating	Unknown	Normal	Dry	Dark-Street Light On	Clear		None
496398	16019655	8/20/2016	SAT	1453	175 FLEET ST		0		Other Motor Vehicle		Along the Road	2	0	0	0		X	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Not Physically Divided (2 Way Traffic)	None

FID	CRASH_DATE	ACDDAY	ACDTIME	ACDSTREET	INTERSTREE	MILESFTFR	NSEW_TO	TYPE_OF_AC	FIXED_OBJE	LOCATION_F	NUMVEHICLE	TOTALFATAL	TOTALINJUR	PEDFATALS	SEVERITY	ROAD_ALIGN	ROAD_CONDI	SURFACE_CO	LIGHTING_D	WEATHER_DE	TRAFFIC_CO
417934	6/22/2015	MON	1558	151 HIGH ST	HIGH ST AND DEER ST	150	E	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
434430	8/13/2015	THU	933	75 CONGRESS ST	FLEET ST	10	S	Fixed Object	Light Pole	Along the Road	1	0	0	0	Unknown	Straight and Level	Normal	Dry	Daylight	Clear	Visible Road Markings
455142	11/4/2015	WED	1443	1 DANIEL ST	1 MARKET SQ	0	AT	Pedestrian		At Intersection	1	0	1	0	No Apparent Injury	Other	Normal	Dry	Daylight	Clear	Stop Sign
466467	5/17/2016	TUE	1242	5 MARKET SQ	CONGRESS ST	10	N	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
488867	6/16/2016	TUE	2302	5 MARKET SQ	PLEASANT ST	0	AT	Pedestrian		Intersection Related	3	0	2	0	Non_Incapacitating	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Visible Road Markings
481938	7/17/2016	SUN	1444	62 CONGRESS ST	FLEET ST	20	W	Other Motor Vehicle		Unknown	2	0	0	0	No Apparent Injury	Unknown	Normal	Dry	Daylight	Clear	None
482191	7/19/2016	TUE	1356	10 PLEASANT ST	14 MARKET SQ	0	AT	Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	None
482892	10/25/2016	TUE	1638	29 CONGRESS ST		0		Other Motor Vehicle		Unknown	2	0	0	0	Non_Incapacitating	Unknown	Normal	Dry	Daylight	Clear	Yield Sign
469157	11/8/2016	TUE	1934	14 MARKET SQ		0		Other Motor Vehicle		Along the Road	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Daylight	Clear	Lane Control
499903	11/20/2016	SUN	1251	75 CONGRESS ST	FLEET ST	40	W	Pedestrian		Intersection Related	2	0	1	0	Non_Incapacitating	Straight and Level	Normal	Dry	Daylight	Clear	Traffic Signals
481331	12/8/2016	THU	2018	5 CONGRESS ST	HIGH ST	0	AT	Pedestrian		At Intersection	2	0	0	0	No Apparent Injury	Straight and Level	Normal	Dry	Dark-Street Light On	Clear	Visible Road Markings
469809	12/12/2016	MON	1612	40 PLEASANT ST		0		Other Motor Vehicle		Unknown	2	0	0	0	No Apparent Injury	Unknown	Normal	Dry	Dusk	Clear	None
479143	12/22/2016	THU	1426	8 CONGRESS ST		0		Fixed Object	Light Pole	At Intersection	1	0	0	0	No Apparent Injury	Unknown	Normal	Wet	Daylight	Snow	None
484255	12/24/2016	SAT	1	5 MARKET SQ	1 PLEASANT ST	0	AT	Pedestrian		Intersection Related	2	0	1	0	Possible	Straight and Level	Normal	Wet	Dark-Street Light On	Cloudy	Stop Sign
477050	3/28/2017	TUE	833	6 CONGRESS ST	1 CHURCH ST	0	AT	Fixed Object	Light Pole	Along the Road	1	0	0	0	Unknown	Straight and Level	Normal	Wet	Unknown	Cloudy	None

TRIP-GENERATION CALCULATIONS

Proposed Use	Size	Variable
Residential (LUC 221)	40	Units
Office (LUC 710)	8430	SF
Retail (LUC 822)	24320	SF
Restaurant (LUC 931)	0	SF
Restaurant (LUC 932)	9140	SF

Existing Uses	Size	Variable
Residential (LUC 221)	12	Units
Office (LUC 710)	38010	SF
Retail (LUC 822)	4610	SF
Restaurant (LUC 931)	5500	SF
Restaurant (LUC 932)	11630	SF

Time Period / Direction	Proposed Trips					First Floor Office					Net Change in Trips
	Office LUC 710	Residential LUC 221	Retail LUC 822	Restaurant LUC 930	Total Trips	Office LUC 710	Residential LUC 221	Retail LUC 822	Restaurant LUC 930	Total Trips	
Weekday Daily	56	118	824	980	1,978	248	36	156	1,708	2,148	-170
Weekday AM Peak Hour											
Enter	6	2	22	48	78	28	0	4	63	95	-17
Exit	1	9	14	39	63	4	3	2	52	61	2
Total	7	11	36	87	141	32	3	6	115	156	-15
Weekday PM Peak Hour											
Enter	1	7	50	51	109	5	2	9	93	109	0
Exit	6	3	50	32	91	28	1	9	55	93	-2
Total	7	10	100	83	200	33	3	18	148	202	-2
Saturday Daily	12	78	1,648	1,118	2,856	50	24	312	1,920	2,306	550
Saturday Midday Peak Hour											
Enter	0	6	64	52	122	0	2	12	101	115	7
Exit	1	5	62	50	118	6	1	12	88	107	11
Total	1	11	126	102	240	6	3	24	189	222	18

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 40

AVERAGE WEEKDAY DAILY

T = 2.93 * (X)
T = 2.93 * 40
T = 117.20
T = 118 vehicle trips
with 50% (59 vpd) entering and 50% (59 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.28 * (X)
T = 0.28 * 40
T = 11.20
T = 11 vehicle trips
with 14% (2 vph) entering and 86% (9 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.26 * (X)
T = 0.26 * 40
T = 10.40
T = 10 vehicle trips
with 72% (7 vph) entering and 28% (3 vph) exiting.

SATURDAY DAILY

T = 1.95 * (X)
T = 1.95 * 40
T = 78.00
T = 78 vehicle trips
with 50% (39 vpd) entering and 50% (39 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.27 * (X)
T = 0.27 * 40
T = 10.80
T = 11 vehicle trips
with 51% (6 vph) entering and 49% (5 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 710 - General Office Building

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 8.430

AVERAGE WEEKDAY DAILY

$$\frac{\text{ITE LUC 710 Weekday Trip Rate (U)}}{\text{ITE LUC 710 Weekday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{10.84} = \frac{0.87}{1.44} \qquad Y = 6.55$$

T = Y * 8.430
T = 55.21
T = 56 vehicle trips
with 50% (28 vpd) entering and 50% (28 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.84 * (X)
T = 0.84 * 8.430
T = 7.08
T = 7 vehicle trips
with 87% (6 vph) entering and 13% (1 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.87 * (X)
T = 0.87 * 8.430
T = 7.33
T = 7 vehicle trips
with 16% (1 vph) entering and 84% (6 vph) exiting.

SATURDAY DAILY

$$\frac{\text{ITE LUC 710 Saturday Trip Rate (U)}}{\text{ITE LUC 710 Saturday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{2.21} = \frac{0.87}{1.44} \qquad Y = 1.34$$

T = Y * 8.430
T = 1.34 * 8.430
T = 11.26
T = 12 vehicle trips
with 50% (6 vpd) entering and 32% (6 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.17 * (X)
T = 0.17 * 8.430
T = 1.43
T = 1 vehicle trips
with 8% (0 vph) entering and 92% (1 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 822 - Strip Retail Plaza (<40k)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Ft. Gross Floor Area
Independent Variable (X): 24.320

AVERAGE WEEKDAY DAILY

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday Daily Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday Daily Trip Rate

3.23 / 5.19 = (Y) / 54.45 Y = 33.89

T = Y * 24.320
T = 824.20
T = 824 vehicle trips
with 500% (412 vpd) entering and 50% (412 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday Daily)

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday AM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday AM Trip Rate

3.23 / 5.19 = (Y) / 2.36 Y = 1.47

T = Y * 24.320
T = 35.75
T = 36 vehicle trips
with 60% (22 vpd) entering and 40% (14 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday PM Trip Rate

3.23 / 5.19 = (Y) / 6.59 Y = 4.10

T = Y * 24.320
T = 99.71
T = 100 vehicle trips
with 50% (50 vpd) entering and 50% (50 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday PM)

SATURDAY DAILY

ITE LUC 821 (General Urban/Suburban) Saturday Daily Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Peak Hour Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Daily Trip Rate / ITE LUC 822 (Dense Multi-Use Urban) Saturday Peak Hour Trip Rate

81.07 / 6.22 = (Y) / 5.20 Y = 67.78

T = Y * 24.320
T = 1648.41
T = 1,648 vehicle trips
with 50% (824 vpd) entering and 50% (824 vpd) exiting.

(same distribution split as ITE LUC 821 during the Saturday Daily)

SATURDAY PEAK HOUR OF GENERATOR

ITE LUC 821 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Midday Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 822 (General Urban/Suburban) Saturday Midday Trip Rate

4.92 / 6.22 = (Y) / 6.57 Y = 5.20

T = Y * 24.320
T = 126.46
T = 126 vehicle trips
with 51% (64 vpd) entering and 49% (62 vpd) exiting.

(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Saturday Midday)

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 932 - High Turnover Sit-Down Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 9.140

AVERAGE WEEKDAY DAILY

T = 107.2 * (X)
T = 107.20 * 9.140
T = 979.81
T = 980 vehicle trips
with 50% (490 vpd) entering and 50% (490 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.57 * (X)
T = 9.57 * 9.140
T = 87.47
T = 87 vehicle trips
with 55% (48 vph) entering and 45% (39 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.05 * (X)
T = 9.05 * 9.140
T = 82.72
T = 83 vehicle trips
with 61% (51 vph) entering and 39% (32 vph) exiting.

SATURDAY DAILY

T = 122.40 * (X)
T = 122.40 * 9.140
T = 1118.74
T = 1,118 vehicle trips
with 50% (559 vpd) entering and 50% (559 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 11.19 * (X)
T = 11.19 * 9.140
T = 102.28
T = 102 vehicle trips
with 51% (52 vph) entering and 49% (50 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 12

AVERAGE WEEKDAY DAILY

T = 2.93 * (X)
T = 2.93 * 12
T = 35.16
T = 36 vehicle trips
with 50% (18 vpd) entering and 50% (18 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.28 * (X)
T = 0.28 * 12
T = 3.36
T = 3 vehicle trips
with 14% (0 vph) entering and 86% (3 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.26 * (X)
T = 0.26 * 12
T = 3.12
T = 3 vehicle trips
with 72% (2 vph) entering and 28% (1 vph) exiting.

SATURDAY DAILY

T = 1.95 * (X)
T = 1.95 * 12
T = 23.40
T = 24 vehicle trips
with 50% (12 vpd) entering and 50% (12 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.27 * (X)
T = 0.27 * 12
T = 3.24
T = 3 vehicle trips
with 51% (2 vph) entering and 49% (1 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 710 - General Office Building

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 38.010

AVERAGE WEEKDAY DAILY

$$\frac{\text{ITE LUC 710 Weekday Trip Rate (U)}}{\text{ITE LUC 710 Weekday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{10.84} = \frac{0.87}{1.44} \qquad Y = 6.55$$

T = Y * 38.010
T = 248.93
T = 248 vehicle trips
with 50% (124 vpd) entering and 50% (124 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.84 * (X)
T = 0.84 * 38.010
T = 31.93
T = 32 vehicle trips
with 87% (28 vph) entering and 13% (4 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.87 * (X)
T = 0.87 * 38.010
T = 33.07
T = 33 vehicle trips
with 16% (5 vph) entering and 84% (28 vph) exiting.

SATURDAY DAILY

$$\frac{\text{ITE LUC 710 Saturday Trip Rate (U)}}{\text{ITE LUC 710 Saturday Trip Rate (S)}} = \frac{\text{ITE LUC 710 Weekday Evening Trip Rate (U)}}{\text{ITE LUC 710 Weekday Evening Trip Rate (S)}}$$

$$\frac{(Y)}{2.21} = \frac{0.87}{1.44} \qquad Y = 1.34$$

T = Y * 38.010
T = 1.34 * 38.010
T = 50.75
T = 50 vehicle trips
with 50% (25 vpd) entering and 32% (25 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 0.17 * (X)
T = 0.17 * 38.010
T = 6.46
T = 6 vehicle trips
with 8% (0 vph) entering and 92% (6 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 822 - Strip Retail Plaza (<40k)

Dense Multi-Use Urban

Average Vehicle Trips Ends vs: 1000 Sq. Ft. Gross Floor Area
Independent Variable (X): 4.610

AVERAGE WEEKDAY DAILY

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday Daily Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday Daily Trip Rate

3.23 / 5.19 = (Y) / 54.45 Y = 33.89

T = Y * 4.610
T = 156.23
T = 156 vehicle trips
with 500% (78 vpd) entering and 50% (78 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday Daily)

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday AM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday AM Trip Rate

3.23 / 5.19 = (Y) / 2.36 Y = 1.47

T = Y * 4.610
T = 6.78
T = 6 vehicle trips
with 60% (4 vpd) entering and 40% (2 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

ITE LUC 821 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 821 (General Urban/Suburban) Weekday PM Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Weekday PM Trip Rate / ITE LUC 822 (General Urban/Suburban) Weekday PM Trip Rate

3.23 / 5.19 = (Y) / 6.59 Y = 4.10

T = Y * 4.610
T = 18.90
T = 18 vehicle trips
with 50% (9 vpd) entering and 50% (9 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Weekday PM)

SATURDAY DAILY

ITE LUC 821 (General Urban/Suburban) Saturday Daily Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Peak Hour Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Daily Trip Rate / ITE LUC 822 (Dense Multi-Use Urban) Saturday Peak Hour Trip Rate

81.07 / 6.22 = (Y) / 5.20 Y = 67.78

T = Y * 4.610
T = 312.47
T = 312 vehicle trips
with 50% (156 vpd) entering and 50% (156 vpd) exiting.
(same distribution split as ITE LUC 821 during the Saturday Daily)

SATURDAY PEAK HOUR OF GENERATOR

ITE LUC 821 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 821 (General Urban/Suburban) Saturday Midday Trip Rate = ITE LUC 822 (Dense Multi-Use Urban) Saturday Midday Trip Rate / ITE LUC 822 (General Urban/Suburban) Saturday Midday Trip Rate

4.92 / 6.22 = (Y) / 6.57 Y = 5.20

T = Y * 4.610
T = 23.97
T = 24 vehicle trips
with 51% (12 vpd) entering and 49% (12 vpd) exiting.
(same distribution split as ITE LUC 822 (General Urban/Suburban) during the Saturday Midday)

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 931 - Fine Dining Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 5.500

AVERAGE WEEKDAY DAILY

T = 83.84 * (X)
T = 83.84 * 5.500
T = 461.12
T = 462 vehicle trips
with 50% (231 vpd) entering and 50% (231 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.73 * (X)
T = 0.73 * 5.500
T = 4.02
T = 4 vehicle trips
with 55% (2 vph) entering and 45% (2 vph) exiting.
(same distribution split as ITE LUC 932 during the Weekday AM)

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 7.80 * (X)
T = 7.8 * 5.500
T = 42.90
T = 43 vehicle trips
with 67% (29 vph) entering and 33% (14 vph) exiting.

SATURDAY DAILY

T = 90.04 * (X)
T = 90.04 * 5.500
T = 495.22
T = 496 vehicle trips
with 50% (248 vpd) entering and 50% (248 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 10.68 * (X)
T = 10.68 * 5.500
T = 58.74
T = 59 vehicle trips
with 59% (35 vph) entering and 41% (24 vph) exiting.

Institute of Transportation Engineers (ITE)

Land Use Code (LUC) 932 - High Turnover Sit-Down Restaurant

General Urban / Suburban

Average Vehicle Trips Ends vs: 1,000 Sq. Ft. Gross Floor Area
Independent Variable (X): 11.630

AVERAGE WEEKDAY DAILY

T = 107.2 * (X)
T = 107.20 * 11.630
T = 1246.74
T = 1,246 vehicle trips
with 50% (623 vpd) entering and 50% (623 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.57 * (X)
T = 9.57 * 11.630
T = 111.30
T = 111 vehicle trips
with 55% (61 vph) entering and 45% (50 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 9.05 * (X)
T = 9.05 * 11.630
T = 105.25
T = 105 vehicle trips
with 61% (64 vph) entering and 39% (41 vph) exiting.

SATURDAY DAILY

T = 122.40 * (X)
T = 122.40 * 11.630
T = 1423.51
T = 1,424 vehicle trips
with 50% (712 vpd) entering and 50% (712 vpd) exiting.

SATURDAY PEAK HOUR OF GENERATOR

T = 11.19 * (X)
T = 11.19 * 11.630
T = 130.14
T = 130 vehicle trips
with 51% (66 vph) entering and 49% (64 vph) exiting.

That Chapter 10, ZONING ORDINANCE, be amended by striking Article 5, Measurement Rules, Section 10.515.14; by amending Section 10.515.13; and by adding new Sections 10.811.60 and 10.811.61, relating to Accessory Uses to Permitted Residential Uses of the Ordinances of the City of Portsmouth, all in order to bring the Zoning Ordinance into better alignment with the Building Code, and to increase governmental efficiency, to be amended as follows (deletions from existing language ~~**stricken**~~; additions to existing language **bolded**; remaining language unchanged from existing):

Article 5 Dimensional and Intensity Standards

Section 10.510 General Requirements

10.515 Measurement Rules

10.515.13 Fences not over 4 feet in height shall be exempt from front yard requirements, and fences not over **8** ~~6~~ feet in height shall be exempt from side and rear yard requirements.

~~10.515.14 A mechanical system (i.e. HVAC, power generator, etc.) that is less than 36 inches above the ground level with a mounting pad not exceeding 10 square feet shall be exempt from yard requirements, but shall be set back at least 10 feet from a property line; and shall not be located closer to the street than the front of the principal structure.~~

Article 8 Supplemental Use Standards

Section 10.810 Residential and Institutional Residence of Care Uses

10.811 Accessory Uses to Permitted Residential Uses

10.811.60 Any **lot** containing one or two **dwelling units** is permitted to construct and maintain up to one, one-story detached accessory structure used as a tool or storage shed, playhouse, treehouse, or similar use per dwelling unit on the property, with a square footage not greater than 120 square feet. Accessory structures permitted by this section shall not require any permit, and shall be generally exempt from all provisions of this ordinance except Article 10, Environmental Protection Standards, Section 10.516.30, Corner Lot Vision Obstruction, and Section 10.630 **Historic District**.

10.811.61 Swings and other playground equipment as well as above-ground prefabricated pools and hot tubs are permitted as accessory to single and two family **dwellings** and are generally exempt from all provisions of this ordinance except Article 10, Environmental Protection Standards and Section 10.516.30, Corner Lot Vision Obstruction.

The City Clerk shall properly alphabetize and/or re-number the ordinances as necessary in accordance with this amendment.

All ordinances or parts of ordinances inconsistent herewith are hereby deleted.

This ordinance shall take effect upon its passage.

APPROVED:

_____
Deaglan McEachern, Mayor

ADOPTED BY COUNCIL:

_____
Kelli L. Barnaby, City Clerk

M5131001
December 17, 2024

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

Re: **Site Plan Review & Conditional Use Approval Extension Request (LU-23-149)**
Proposed Multi-Family Development, 815 Lafayette Road, Portsmouth, NH

Dear Peter,

On behalf of Prospect North 815, LLC (owner/applicant), we respectfully request to extend the Site Plan Review, Development Site and Wetland Conditional Use approvals that were granted on January 18, 2024, for an additional one (1) year.

If you have any questions or need any additional information, please contact me by phone at (603) 433-8818 or by email at NAHansen@tighebond.com.

Sincerely,

TIGHE & BOND, INC.

Patrick M. Crimmins, PE
Vice President

Neil A. Hansen, PE
Project Manager

Copy: Prospect North 815, LLC (via E-mail)

J:\M\M5131 MB2 Development, LLC\001 815 Lafayette Road\Reports\Applications\City of Portsmouth\20241217_PB Extension Request\20241217 PB Approval Extension Request.docx

HALEY WARD

30 December 2024

Rick Chellman, Planning Board Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

RE: Request for Second Extension of Site Plan Approval at 1 Congress Street, LU – 22 - 12

Dear Mr. Chellman and Planning Board Members:

The above-mentioned project was approved at your **February 16, 2023,** Planning Board Meeting. The project has been expanded to include development at the JJ Newbury building, and approvals for the expanded site are well underway. The Developer met with the Planning Board for Concept Approval, obtained Technical Advisory Committee Approval, and submitted the project for Site Plan approval. The plans will be on your January 16, 2025, agenda. At that meeting we respectfully request that the Board grant a second 1-year extension to the 1 Congress Site Plan approval unless the Board grants approval for the updated 1-15 Congress Street project. The Board, having granted the first extension on November 16, 2023, to run to February 16, 2025, would need to take up this matter in January, since the February 2025 Planning Board meeting will be on February 20, 2025, after the extension expires.

We hereby request your approval of a second one-year extension for this project, if the 1-15 Congress approval is not grated, at the January Planning Board meeting.

Sincerely,

John R. Chagnon, PE
CC: Project Team

200 Griffin Rd., Unit 14, Portsmouth, NH 03801
T: 603.430.9282 | HALEYWARD.COM